SECTION LT
LIGHTING SYSTEM

CONTENTS

PRECAUTIONS

PFP:00011

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

AKS004D3

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

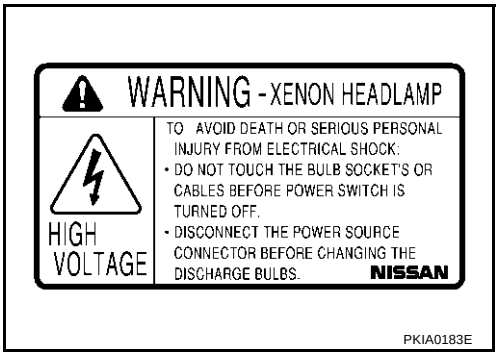
WARNING:

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

General Precautions for Service Operations

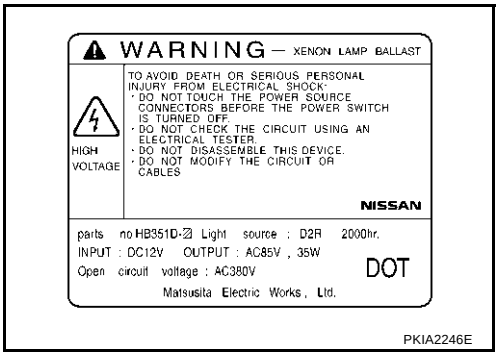
AKS002EU

- 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.



PKIA0183E

- 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 long period of time can deteriorate performance of the lens and reflector (dirt, clouding). Always prepare a new bulb and have it on hand when replacing the bulb.



PKIA2246E

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

Wiring Diagrams and Trouble Diagnosis

AKS002EV

When you read wiring diagrams, refer to the following:

- Refer to GI-14, "How to Read Wiring Diagrams" in GI section
- Refer to PG-2, "POWER SUPPLY ROUTING" for power distribution circuit in PG section

When you perform trouble diagnosis, refer to the following:

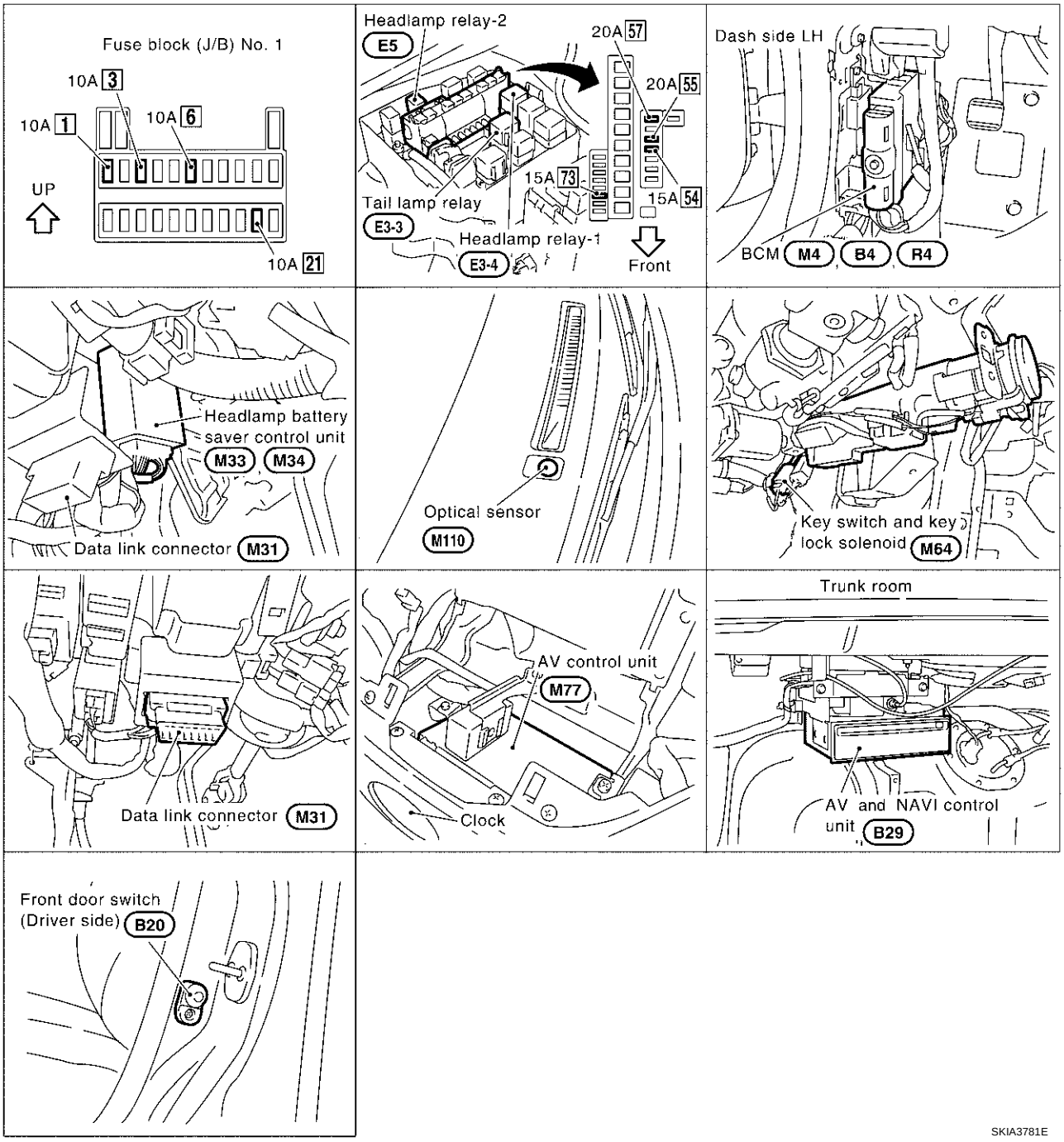
- Refer to GI-10, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES"GI-10, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES" in GI section
- Refer to GI-26, "How to Perform Efficient Diagnosis for an Electrical Incident" in GI section

HEADLAMP (FOR USA)

PFP:26010

Component Parts and Harness Connector Location

AKS002EW



System Description

AKS002EX

The headlamp operation is controlled by the lighting switch which is built into the spiral cable and headlamp battery saver control unit. And the headlamp battery saver system is controlled by the headlamp battery saver control unit and BCM.

OUTLINE

Power is supplied at all times

- to headlamp relay-1 terminal 2,
- to headlamp relay-1 terminal 3
- through 20A fuse [No. 57, located in the fuse, fusible link and relay block (J/B)],
- to headlamp relay-1 terminal 7

- through 20A fuse [No. 55, located in the fuse, fusible link and relay block (J/B)],
- to headlamp relay-2 terminals 1 and 3
- through 15A fuse [No. 73, located in the fuse, fusible link and relay block (J/B)],
- to headlamp battery saver control unit terminal 7
- through 10A fuse [No. 6, located in the fuse block (J/B) No. 1], and
- to BCM terminal 105
- through 10A fuse [No. 3, located in the fuse block (J/B) No. 1].

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

- to headlamp battery saver control unit terminal 1
- to BCM terminal 68
- through 10A fuse [No. 1, located in the fuse block (J/B) No. 1].

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

- to BCM terminal 60
- through 10A fuse [No. 21, located in the fuse block (J/B) No. 1].

Ground is supplied

- to headlamp battery saver control unit terminals 4 and 11
- through body grounds M25 and M115, and
- to BCM terminals 56 and 113
- through body grounds M24 and M114.

Power Supply to Low Beam and High Beam

When lighting switch is in 2ND or PASS position, ground is supplied

- to headlamp relay-1 terminal 1 and headlamp relay-2 terminal 2 from headlamp battery saver control unit terminals 2 and 8
- through headlamp battery saver control unit terminals 3 and 9,
- through lighting switch terminals 12 and 8
- through body grounds M25 and M115.

Headlamp relays are energized and then power is supplied to headlamps.

Low Beam Operation

When lighting switch is turned to the 2ND position and placed in LOW position, power is supplied

- from terminals 5 and 6 of headlamp relay-1
- to terminal 3 of each headlamp.

Ground is supplied

- to terminal 4 of each headlamp
- through body grounds E24 and E42.

With power and ground supplied, low beam headlamps illuminate.

High Beam Operation/Flash-to-pass Operation

When lighting switch is turned to the 2ND position and placed in HIGH position or PASS position, power is supplied

- from terminal 5 of headlamp relay-2
- to terminal 1 of each headlamp, and
- to combination meter terminal 9 for the HIGH BEAM indicator.

Ground is supplied

- to headlamp LH terminal 2
- to combination meter terminal 10 for the HIGH BEAM indicator
- through lighting switch terminals 9 and 8
- through body grounds M25 and M115, and
- to headlamp RH terminal 2
- through lighting switch terminals 6 and 5

- through body grounds M25 and M115.

With power and ground supplied, the high beams headlamps and the HIGH BEAM indicator illuminate.

NOTE:
The lamp will be force to turn off when the driver door is opened with the ignition switch in OFF or ACC position. (When except for lighting switch is "AUTO" position)

BATTERY SAVER CONTROL

When the ignition switch is turned from ON (or START) to OFF (or ACC) positions while headlamps are illuminated, the RAP signal is supplied to terminal 10 of the headlamp battery saver control unit from BCM terminal 135.
After counting 45 seconds by the RAP signal from the BCM to headlamp battery saver control unit, the ground supply to both terminal 1 of headlamp relay-1 and terminal 2 of headlamp relay-2 from headlamp battery saver control unit terminals 2 and 8 is terminated.
Then the headlamps are turned off.
The headlamps are turned off when front door (driver or passenger side) is opened even if 45 seconds have not passed after ignition switch is turned from ON (or START) to OFF (or ACC) positions while headlamps are illuminated.
When the lighting switch is turned from OFF to 2ND after headlamps are turned to off by the battery saver control, ground is supplied

- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11, and then,
- to both terminal 1 of headlamp relay-1 and terminal 2 of headlamp relay-2 from headlamp battery saver control unit terminals 2 and 8
- through headlamp battery saver control unit terminals 3 and 9, and
- through lighting switch terminal 12.

Then headlamps illuminate again.

AUTO LIGHT OPERATION

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 (clearance) 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-19, "SETTING CHANGE FUNCTION FOR AUTO LIGHT SYSTEM" .
When lighting switch is in "AUTO" position, ground is supplied

- to BCM terminal 14
- from lighting switch terminal 42.

When ignition switch is turn to "ON" or "START" position and
Outside brightness is darker than prescribed level, ground is supplied

- to headlamp relay-1 terminal 1
- to headlamp relay-2 terminal 2
- through headlamp battery saver control unit terminal 2, 8 and 4, 11, and
- to tail lamp relay terminal 1
- through headlamp battery saver control unit terminals 6, 14 and 4,11.

Then headlamp relay-1, 2 and tail lamp relay are energized, headlamps (low or high) and tail lamps are illuminate according to switch position.

Shut Off Delay

When the lighting switch is in "AUTO" position and the ignition switch is turned from ON to OFF while the auto light system is activated and the headlamps are illuminated, the shut off delay feature is activated for 45 seconds. Headlamps lighting time can be adjusted from about 0 to 3 minutes. (This function is not applicable to the tail lamps.)
Auto light shut off delay timer can be adjusted in seven steps. For the details of the setting, refer to LT-19, "SETTING CHANGE FUNCTION FOR AUTO LIGHT SYSTEM" .

VEHICLE SECURITY SYSTEM

The vehicle security system will flash the high beams if the system is triggered. Refer to BL-125, "VEHICLE SECURITY (THEFT WARNING) SYSTEM" .

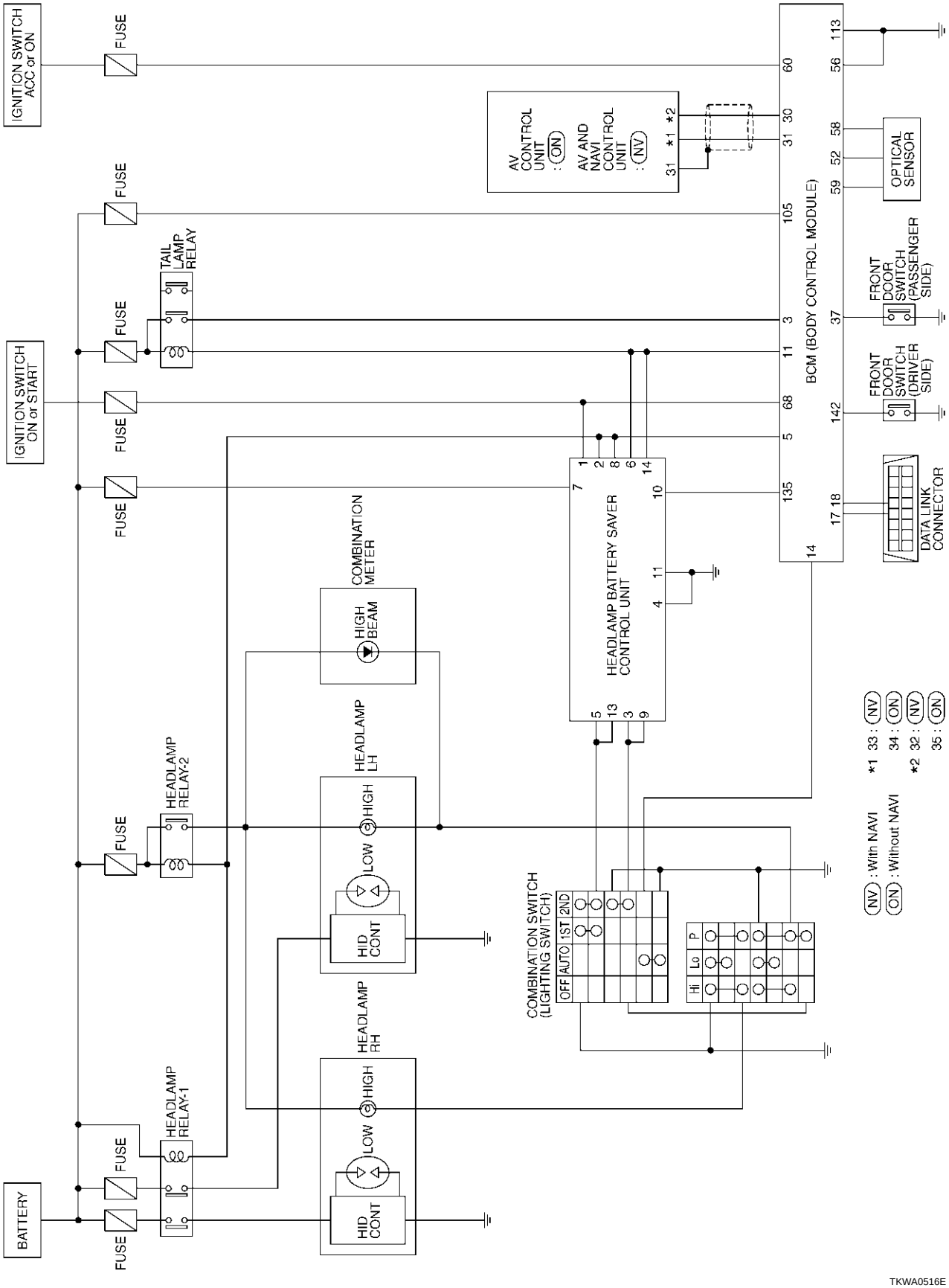
XENON HEADLAMP

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

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

Schematic

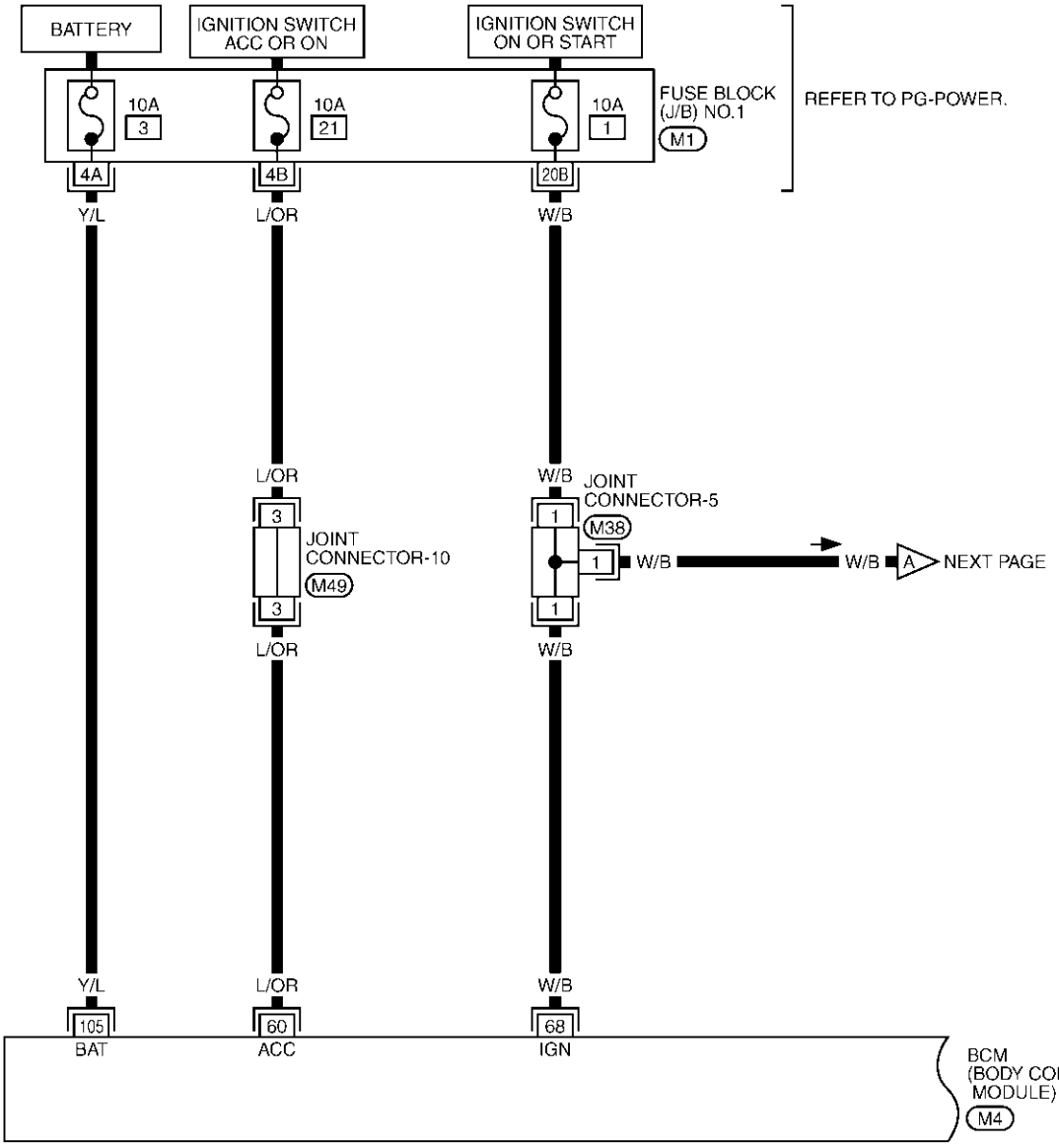
AKS002EY

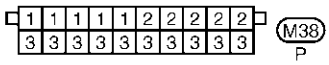


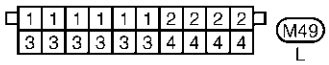
Wiring Diagram — H/LAMP —

AKS002EZ

LT-H/LAMP-01







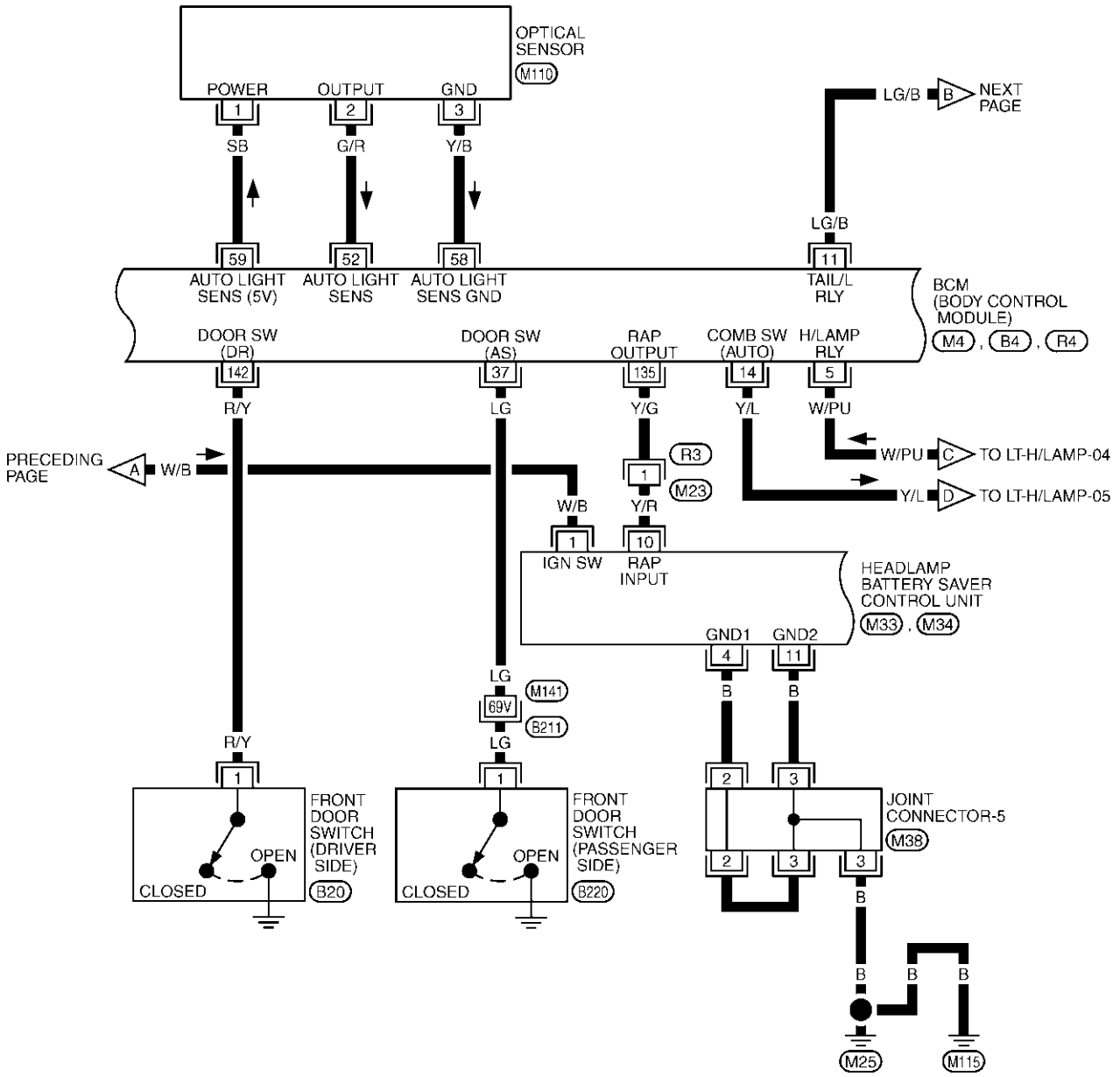
REFER TO THE FOLLOWING.

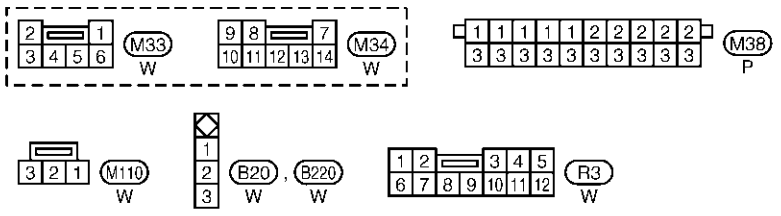
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

M4 -ELECTRICAL UNITS

TKWA0517E

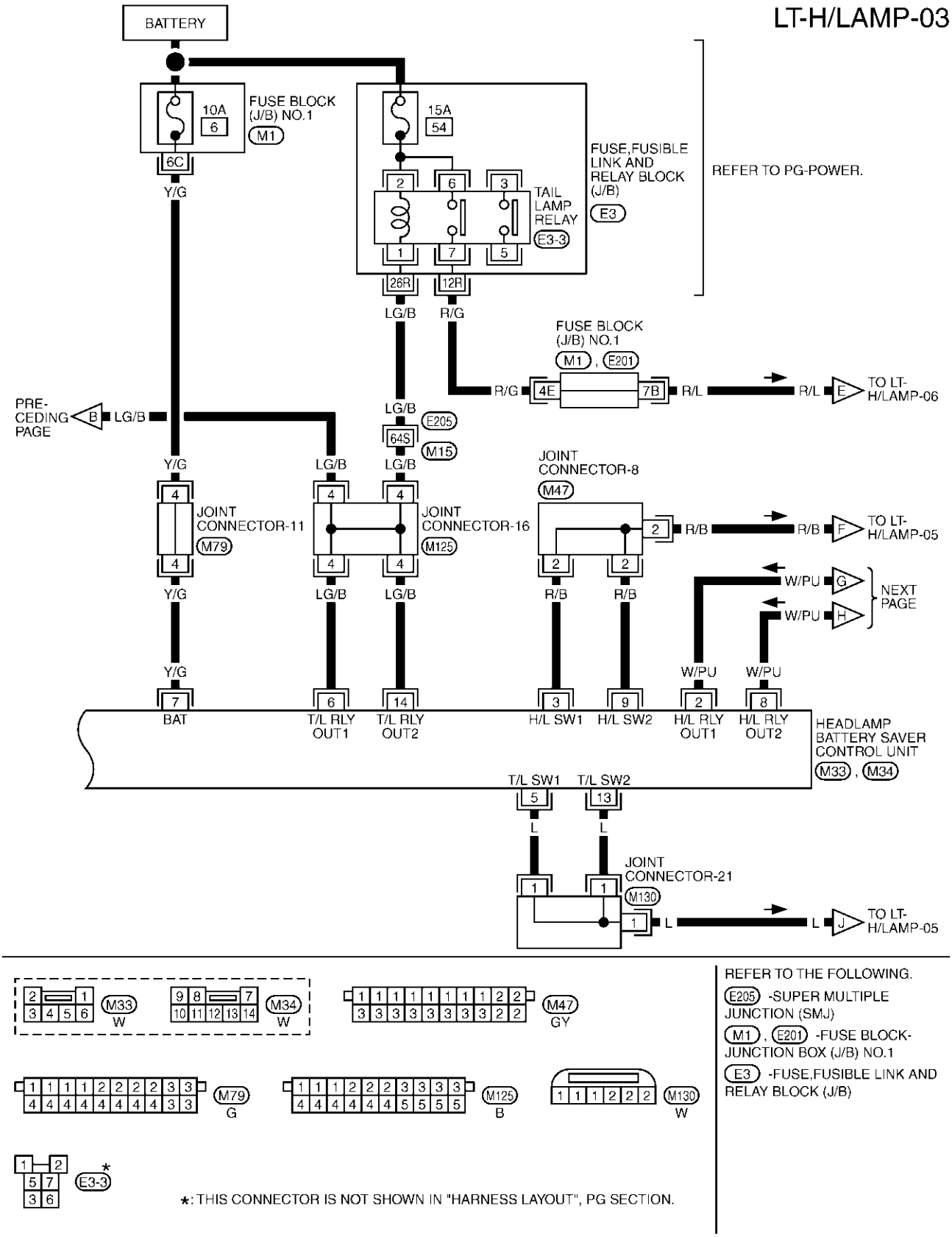
LT-H/LAMP-02



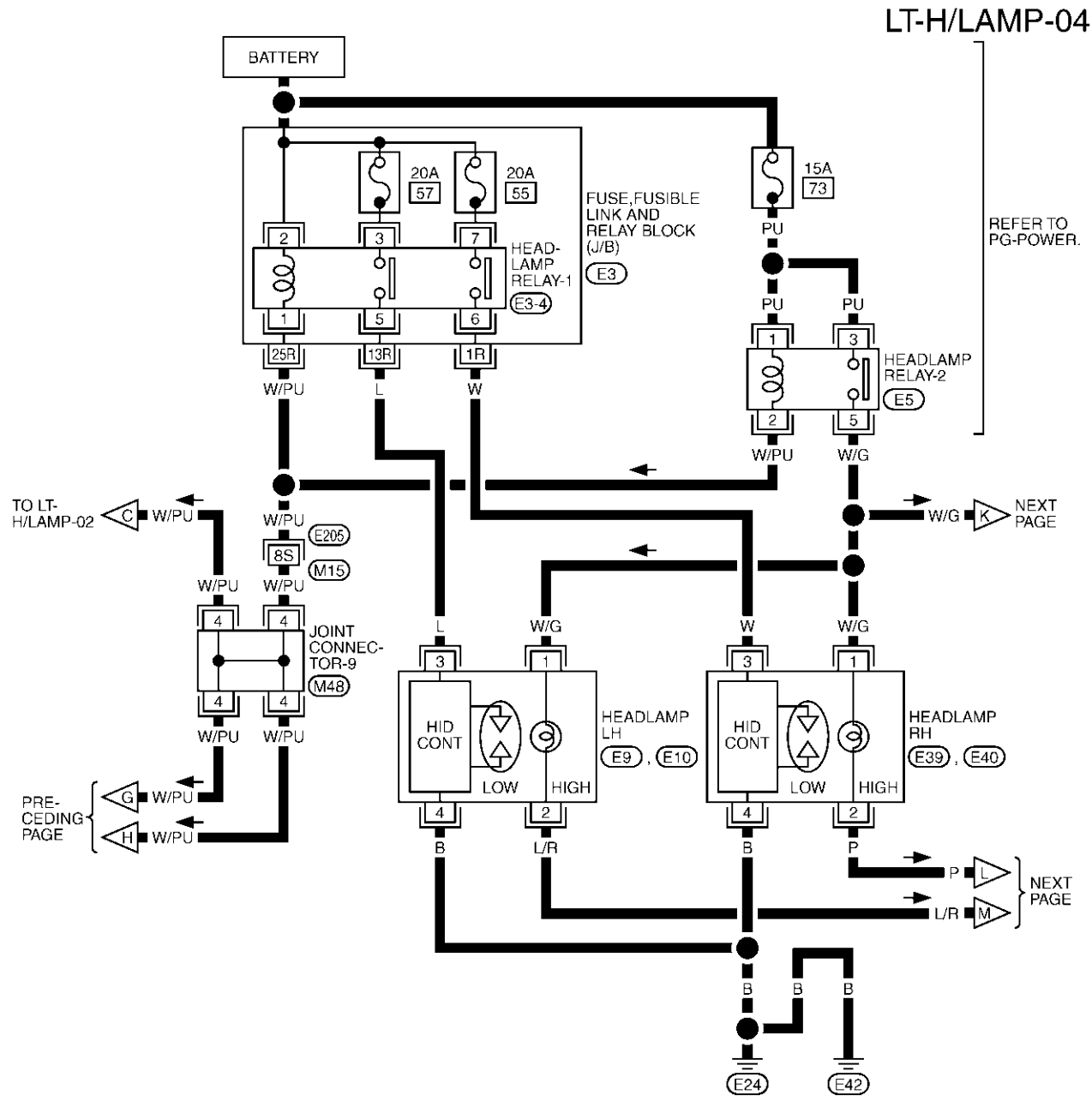


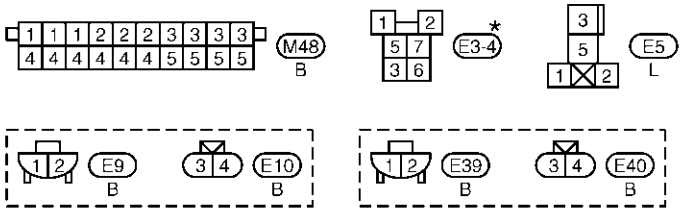
REFER TO THE FOLLOWING.
B211 -SUPER MULTIPLE JUNCTION (SMJ)
M4 , B4 , R4
-ELECTRICAL UNITS

TKWA0518E


LT-H/LAMP-03
BATTERY
10A
6
FUSE BLOCK
(J/B) NO.1
M1
6C
Y/G
15A
54
FUSE,FUSIBLE
LINK AND
RELAY BLOCK
(J/B)
E3
TAIL
LAMP
RELAY
E3-3
REFER TO PG-POWER.
26R
12R
LG/B
R/G
FUSE BLOCK
(J/B) NO.1
M1 , E201
4E
7B
R/L
TO LT-
H/LAMP-06
PRE-
CEDING
PAGE
B
LG/B
E205
64S
M15
JOINT
CONNECTOR-11
M79
JOINT
CONNECTOR-16
M125
JOINT
CONNECTOR-8
M47
R/B
TO LT-
H/LAMP-05
W/PU
G
H
NEXT
PAGE
BAT
T/L RLY
OUT1
T/L RLY
OUT2
H/L SW1
H/L SW2
H/L RLY
OUT1
H/L RLY
OUT2
HEADLAMP
BATTERY SAVER
CONTROL UNIT
M33 , M34
T/L SW1
T/L SW2
JOINT
CONNECTOR-21
M130
TO LT-
H/LAMP-05
M33
W
M34
W
M47
GY
M79
G
M125
B
M130
W
E3-3
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.
REFER TO THE FOLLOWING.
E205 -SUPER MULTIPLE
JUNCTION (SMJ)
M1 , E201 -FUSE BLOCK-
JUNCTION BOX (J/B) NO.1
E3 -FUSE,FUSIBLE LINK AND
RELAY BLOCK (J/B)

TKWA0519E





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

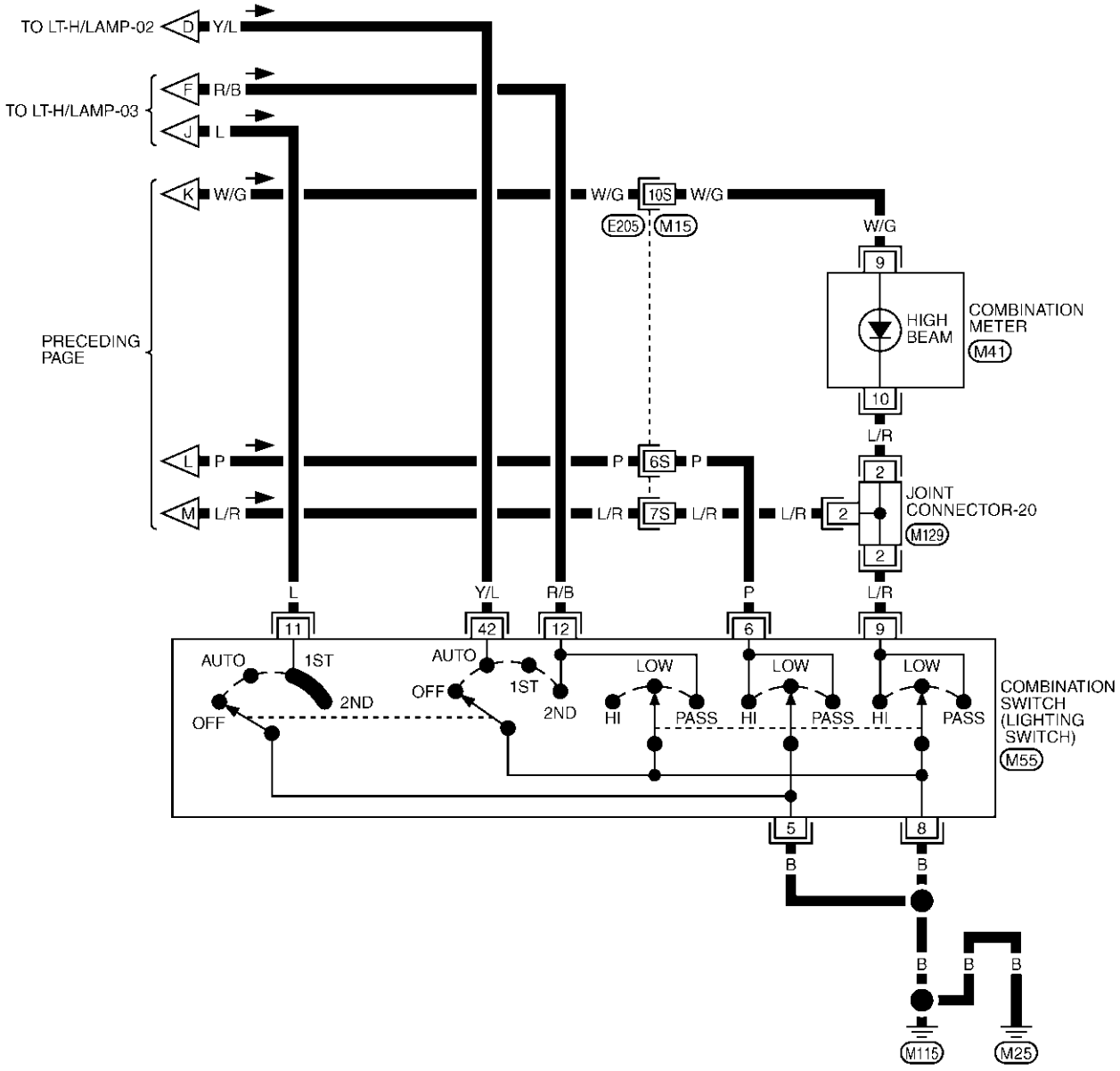
REFER TO THE FOLLOWING.

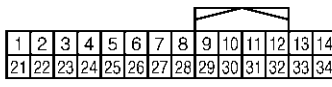
E205 -SUPER MULTIPLE JUNCTION (SMJ)

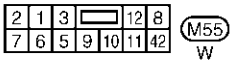
E3 -FUSE,FUSIBLE LINK AND RELAY BLOCK (J/B)

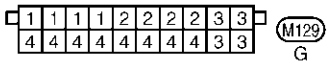
TKWA0520E

LT-H/LAMP-05





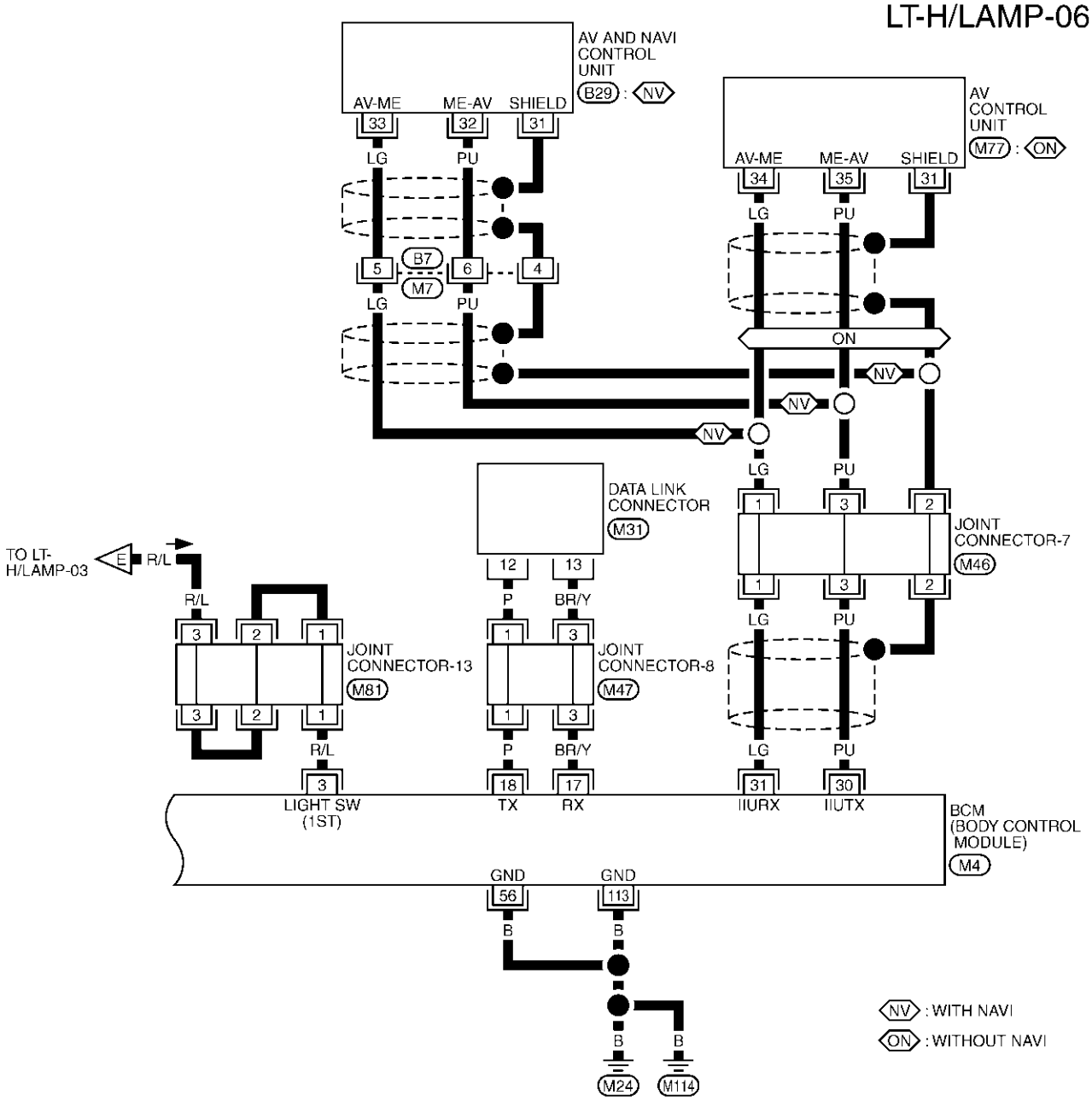


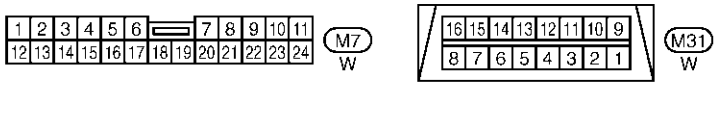


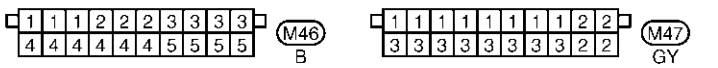
REFER TO THE FOLLOWING.
E205 -SUPER MULTIPLE JUNCTION (SMJ)

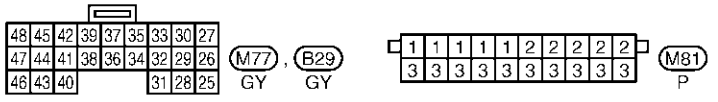
TKWA0521E

LT-H/LAMP-06









REFER TO THE FOLLOWING.
M4 -ELECTRICAL UNITS

TKWA0522E

Terminals and Reference Value for Headlamp Battery Saver Control Unit

AKS002F0

Terminal No.	Wire color	Item	Operation or condition			Reference value
1	W/B	Ignition switch ON or START	Ignition switch	OFF or ACC		Less than 1V
				ON or START		Battery voltage
2	W/PU	Headlamp relay out 1	Ignition switch (with lighting switch except OFF or 1ST)	OFF or ACC	More than 45 seconds after ignition switch is turned OFF or ACC	Battery voltage
					Within 45 seconds after ignition switch is turned OFF or ACC	Less than 1V
				ON or START		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V
3	R/B	Headlamp switch 1	Lighting switch	1ST		2.4V
				PASS or 2ND		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V
4	B	Ground	—			0V
5	L	Tail lamp switch 1	lighting switch	OFF		Battery voltage
				1ST or 2ND		Less than 1V
6	LG/B	Tail lamp relay out 1	Ignition switch (with lighting switch 1ST or 2ND)	OFF or ACC	More than 45 seconds after ignition switch is turned OFF or ACC	Battery voltage
					Within 45 seconds after ignition switch is turned OFF or ACC	Less than 1V
				ON or START		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V
7	Y/G	Battery power supply	—			Battery voltage
8	W/PU	Headlamp relay out 2	Ignition switch (with lighting switch except OFF or 1ST)	OFF or ACC	More than 45 seconds after ignition switch is turned OFF or ACC	Battery voltage
					With 45 seconds after ignition switch is turned OFF or ACC	Less than 1V
				ON or START		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V
9	R/B	Headlamp switch 2	Lighting switch	1ST		2.4V
				PASS or 2ND		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V
10	Y/R	RAP input signal	Ignition switch	OFF or ACC (After more than 45 seconds with ignition switch turned OFF or ACC)		Battery voltage
				ON or START		Less than 1V
11	B	Ground	—			0V
13	L	Tail lamp switch 2	Lighting switch	OFF		Battery voltage
				1ST or 2ND		Less than 1V

Terminal No.	Wire color	Item	Operation or condition			Reference value
14	LG/B	Tail lamp relay out 2	Ignition switch (with lighting switch 1ST or 2ND)	OFF or ACC	More than 45 seconds after ignition switch is turned OFF or ACC	Battery voltage
					Within 45 seconds after ignition switch is turned OFF or ACC	Less than 1V
				ON or START		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V

Terminals and Reference Value for BCM

AKS002F1

Terminal No.	Wire color	Item	Measuring condition			Reference value
			Ignition switch	Operation or condition		
3	R/L	Tail lamp signal	ON	Lighting switch: 1st	ON	Battery voltage
					OFF	Less than 1V
5	W/PU	Headlamp relay control signal	ON	Lighting switch: AUTO	Light is applied to optical sensor.	Battery voltage
					Light is not applied to optical sensor.	Less than 1V
11	LG/B	Tail lamp relay control signal	ON	Light switch: AUTO	Light is applied to optical sensor.	Battery voltage
					Light is not applied to optical sensor.	Less than 1V
14	Y/L	Lighting switch AUTO signal	ON	Lighting switch	AUTO	Less than 1V
					OFF	8V
17	BR/Y	Data link RX	—	—		—
18	P	Data link TX	—	—		—
30	PU	Communication signal TX (BCM-AV: Transmission)	—	—		—
31	LG	Communication signal RX (AV-BCM: Receiving)	—	—		—
37	LG	Front door switch (Passenger side) signal	OFF	Front door switch (Passenger side)	ON (open)	Less than 1V
					OFF (close)	Battery voltage
52	G/R	Optical sensor signal	ON	Light is applied to optical sensor.		3V
				Light is not applied to optical sensor.		Less than 1V
56	B	Ground	—	—		0V
58	Y/B	Optical sensor ground	ON	—		Less than 1V
59	SB	Optical sensor power supply	ON	—		5V
60	L/OR	Ignition switch ACC or ON	ACC	—		Battery voltage
68	W/B	Ignition switch ON or START	ON	—		Battery voltage
105	Y/L	Battery power supply	OFF	—		Battery voltage
113	B	Ground	—	—		0V
135	Y/G	RAP output signal	OFF	When headlamp battery saver timer is operated.		Less than 1V
142	R/Y	Front door switch (Driver side) signal	OFF	Front door switch (Driver side) signal	ON (open)	Less than 1V
					OFF (close)	Battery voltage

Work Flow

AKS002F2

1. Confirm the symptom or customer complaint.
2. Understand system description. Refer to LT-6, "System Description" .
3. Perform the preliminary check. Refer to LT-19, "Preliminary Check" .
4. Find the cause of malfunction following the symptom chart and repair or replace as necessary. Refer to LT-24, "Symptom Chart 1" (for headlamp system) or LT-24, "Symptom Chart 2" (for auto light system).
5. Does the headlamp system or the auto light system operate normally? When YES, go to step 6. When NO, go to step 4.
6. Inspection end.

Preliminary Check

AKS002F3

SETTING CHANGE FUNCTION FOR AUTO LIGHT SYSTEM

- Setting for each operation can be changed using CONSULT-II and a display unit.

Setting mode change	Explanation	CONSULT-II (Work support)	Display Unit (Preset at each vehicle status)	Factory-preset data
AUTO LIGHT SENS ADJ (CONSULT-II) Sensitivity of Automatic Headlights (Display unit)	Auto light sensitivity is set at four grades.	Mode 1	Lower (Dull)	
		Mode 2	↕	
		Normal		×
		Mode 3	Higher (Sensitive)	
Automatic headlights off delay (Display unit)	Auto light time delay is set at seven grades.	–	OFF	
			20 sec.	
			45 sec.	×
			90 sec.	
			120 sec.	
			150 sec.	
			180 sec.	

Note: When setting is changed, even though the battery is removed, mode will be after setting mode.

SKIA3782E

INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSE

Check if any of the following fuses in BCM are blown.

Unit	Power source	Fuse No.
BCM	Battery	3
	Ignition switch ACC or ON	21
	Ignition switch ON or START	1

Refer to LT-11, "Wiring Diagram — H/LAMP —" .

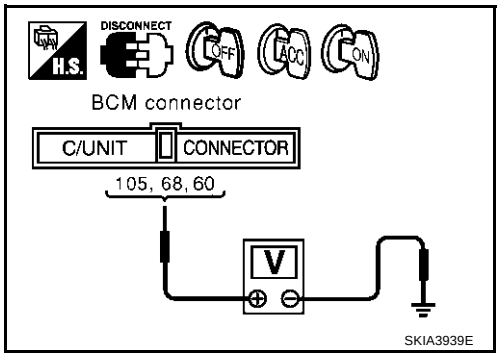
OK or NG

OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-2, "POWER SUPPLY ROUTING"PG-2, "POWER SUPPLY ROUTING" .

2. CHECK BCM POWER SUPPLY CIRCUIT

1. Disconnect the BCM connector.
2. Check voltage between BCM harness connector M4 terminals and ground.



Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M4	105 (Y/L)	Ground	Battery voltage	Battery voltage	Battery voltage
	68 (W/B)		0V	0V	Battery voltage
	60 (L/OR)		0V	Battery voltage	Battery voltage

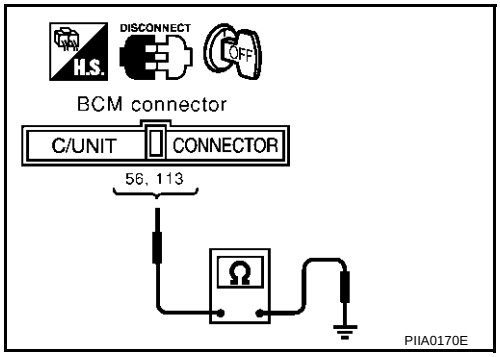
OK or NG

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

3. CHECK BCM GROUND CIRCUIT

1. Turn ignition switch to OFF position.
2. Check continuity between BCM harness connector M4 terminals 56 (B), 113 (B) and ground.

Continuity should exist.



OK or NG

OK >> INSPECTION END
NG >> Repair harness.

CONSULT-II Function for Auto Light System

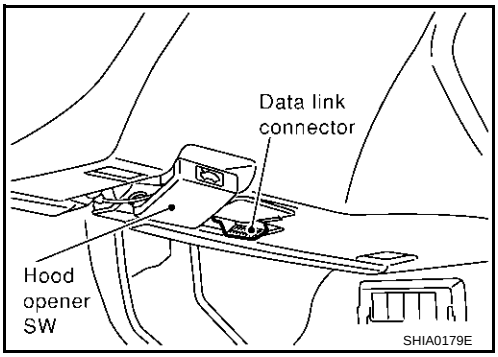
AKS002F4

- CONSULT-II has the display function for the work support, data monitor and active test for each part by combining data receiving and sending via the communication line from the BCM.

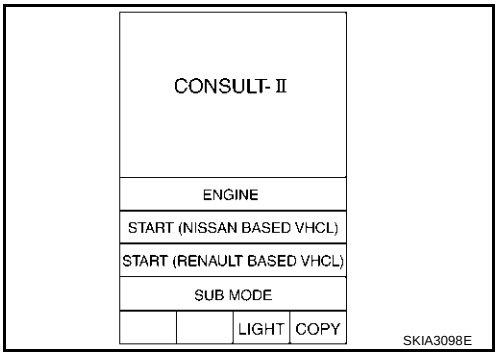
IVMS diagnosis position	Diagnosis mode	Description
Auto light system	Work support	Changes setting of each function.
	Data monitor	Displays input data of the BCM and each LCU in real-time.
	Active test	Operation of electrical loads can be checked by sending driving signal to them.
BCM part number		Displays BCM part No.

CONSULT-II BASIC OPERATION PROCEDURE

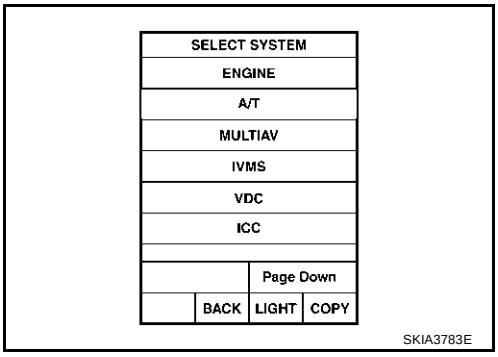
1. With the ignition switch OFF, connect “CONSULT-II” and “CONSULT-II CONVERTER” to the data link connector, then turn ignition switch ON.



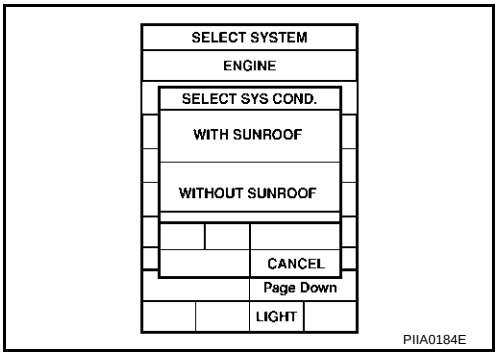
2. Touch “START(NISSAN BASED VHCL)”.



3. Touch “IVMS” on “SELECT SYSTEM” screen. If “IVMS” is not indicated, go to GI-38, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Check the model specification, touch either “WITH SUNROOF” or “WITHOUT SUNROOF”.
5. Touch “OK”. If the selection is wrong, touch “CANCEL”.



6. Select the desired part to be diagnosed on the “SELECT TEST ITEM” screen.

WORK SUPPORT

Operation Procedure

1. Touch “AUTO LIGHT SYSTEM” on the “SELECT TEST ITEM” screen.
2. Touch “WORK SUPPORT” on the “SELECT DIAG MODE” screen.
3. Touch “AUTO LIGHT SENS ADJ” on the “SELECT WORK ITEM” screen.
4. Touch “START”.
5. Touch “NORMAL”·“MODE 1 - 3” of which setting is to be changed.

6. Touch “CHANGE SETT”.
7. The setting will be changed and “CURRENT SETTING STATUS” will be displayed.
8. Touch “END”.

Display Item List

Refer to LT-19, "SETTING CHANGE FUNCTION FOR AUTO LIGHT SYSTEM" .

DATA MONITOR

Operation Procedure

1. Touch “AUTO LIGHT SYSTEM” on the “SELECT TEST ITEM” screen.
2. Touch “DATA MONITOR” on the “SELECT DIAG MODE” screen.
3. Touch “ALL SIGNALS” or “SELECTION FROM MENU” on the “SELECT MONITOR ITEM” screen.

MAIN SIGNALS	Monitors the main items.
SELECTION FROM MENU	Selects and monitors the items.

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

Data Monitor Item

Monitored item [“OPERATION OR UNIT”]		Description
IGN ON SW	[ON/OFF]	Displays status of the ignition switch as judged from the ignition switch signal. (Key is in ON position: ON/Key is in ACC or OFF position: OFF)
DOOR SW-DR	[ON/OFF]	Displays status of the driver door as judged from the front door switch (driver side) signal. (Door is open: ON/Door is closed: OFF)
AUTO LIGHT SW	[ON/OFF]	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
HD/LMP 1ST SW	[ON/OFF]	Displays status of the lighting switch as judged from the lighting switch signal. (OFF or AUTO position: OFF/Other than OFF and AUTO position: ON)
OPTICAL SEN	[ON/OFF]	Displays “Illumination outside of the vehicle (close to 5V when light/close to 0V when dark)” as judged from the optical sensor signal.

ACTIVE TEST

Operation Procedure

1. Touch “AUTO LIGHT SYSTEM” on the “SELECT TEST ITEM” screen.
2. Touch “ACTIVE TEST” on the “SELECT DIAG MODE” screen.
3. Touch item to be tested and check operation of the selected item.
4. Touch “STOP” while testing and the operation will be stopped.

Active Test Item

Test items	Display on CONSULT–II screen	Description
Headlamp relay output	HEAD LAMP RELAY	Headlamp relay can be operated by any on-off operation of the headlamp.
Tail lamp relay output	TAIL LAMP RELAY	Tail lamp relay can be operated by any on-off operation of the tail lamp.
Auto light adjustment output	ILL DIM SIGNAL	Night time dimming signal can be operated by any on-off operation.

On Board Diagnosis

AKS002F5

BCM can check malfunction in each local control unit (LCU), switches, loads and communications using the self-diagnosis function.

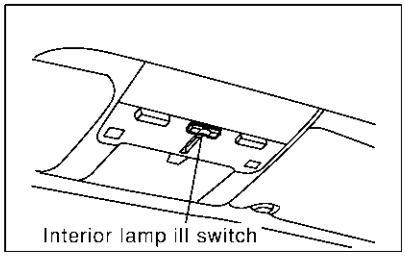
DIAGNOSIS ITEM

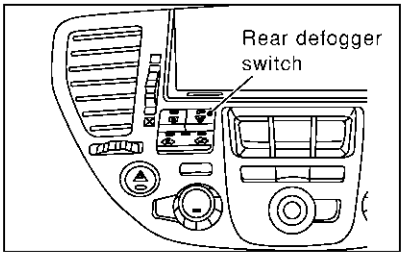
Diagnosis item	Description
Switch monitor	Checks for malfunction in switch systems that input to BCM and each LCU.

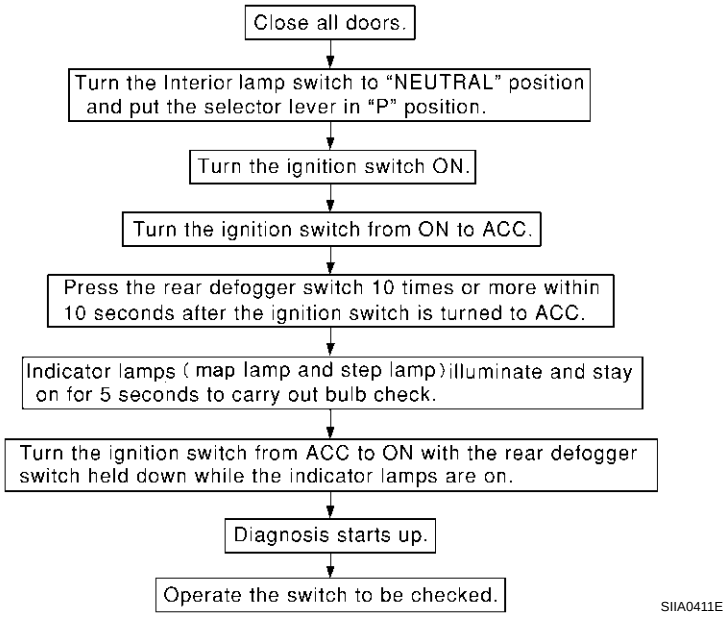
SWITCH MONITOR

- Perform the diagnosis on the switch system to each control unit.

How to Perform Switch Monitor

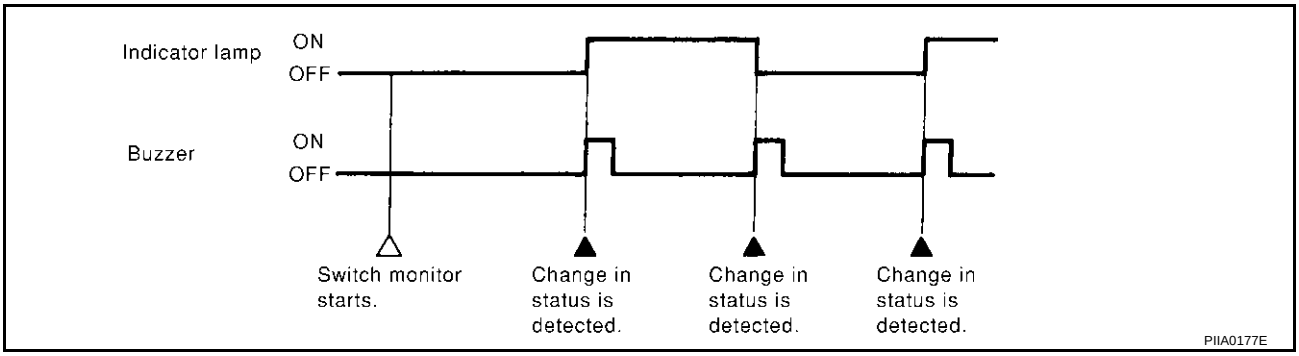






Description

- In this mode, when BCM detects the input signal from a switch in IVMS as shown below, the detection is indicated by the map lamps and front step lamps with buzzer.



Switch Monitor Item

- The status of the switch (except the ignition switch, interior lamp ill switch, and map lamp switch) as input to each control unit can be monitored.

Control unit	Item
BCM	Lighting switch (AUTO, 1ST position)
	Front door switch (Driver side)
	Front door switch (Passenger side)

Cancel of Switch Monitor

If the following conditions are satisfied, the communication diagnosis is cancelled.

- Turn ignition switch OFF.
- Drive the vehicle more than 7 km/h (4 MPH).

Symptom Chart 1
HEADLAMP SYSTEM

AKS002F6

Symptom	Possible cause and reference
Neither headlamp operates.	● Refer to LT-25, "Power Supply and Ground Circuit Inspection" . ● Refer to LT-31, "Lighting Switch Circuit Inspection" . If above systems are normal, replace the headlamp battery saver control unit.
Headlamp (low beam) does not operate, but headlamp (high beam) does operate.	● Refer to LT-25, "Power Supply and Ground Circuit Inspection" . ● Refer to LT-26, "Headlamp Relay-1 Circuit Inspection" . If above systems are normal, replace the headlamp battery saver control unit.
Headlamp (high beam) does not operate, but headlamp (low beam) does operate.	● Refer to LT-25, "Power Supply and Ground Circuit Inspection" . ● Refer to LT-27, "Headlamp Relay-2 Circuit Inspection" . If above systems are normal, replace the headlamp battery saver control unit.
RH low beam does not operate, but LH low beam does operate. LH low beam does not operate, but RH low beam does operate.	● Refer to LT-25, "Power Supply and Ground Circuit Inspection" . ● Refer to LT-26, "Headlamp Relay-1 Circuit Inspection" . ● Refer to LT-27, "Headlamp (Low) Circuit Inspection" .
RH high beam does not operate, but LH high beam does operate. LH high beam does not operate, but RH high beam does operate.	● Refer to LT-29, "Headlamp (High) Circuit Inspection" . ● Refer to LT-31, "Lighting Switch Circuit Inspection" .
High beam indicator does not work.	● Refer to LT-30, "High Beam Indicator Circuit Inspection" . If above systems are normal, replace the combination meter.
Battery saver control does not operate properly.	● Refer to LT-32, "Front Door Switch Circuit Inspection" . ● Refer to LT-34, "Headlamp Battery Sever Control Unit Circuit Inspection" . ● Refer to LT-31, "Lighting Switch Circuit Inspection" . If above systems are normal, replace the headlamp battery saver control unit.

Symptom Chart 2
AUTO LIGHT SYSTEM

AKS003ZN

Symptom	Possible cause and reference
● Parking (clearance) lamps and headlamps will not illuminate when outside of the vehicle becomes dark. (Lighting switch 1st position and 2nd position operate normally.) ● Parking (clearance) lamps and headlamp will not go out when outside of the vehicle becomes light. (Lighting switch 1st position and 2nd position operate normally.)	● Refer to LT-35, "Lighting Switch (AUTO) System Inspection" . ● Refer to LT-36, "Optical Sensor System Inspection" . If above systems are normal, replace the BCM.
Parking (clearance) lamps illuminate when outside of the vehicle becomes dark, but headlamp stay off. (Lighting switch 1st position and 2nd position operate normally.)	● Refer to LT-37, "Headlamp Relay System Inspection" . ● Refer to LT-36, "Optical Sensor System Inspection" . If above systems are normal, replace the BCM.
● Headlamps illuminate when outside of the vehicle becomes dark, but clearance lamps stay off. (Lighting switch 1st position and 2nd position operate normally.) ● Headlamps go out when outside of the vehicle becomes light, but parking (clearance) lamps stay on.	● Refer to LT-38, "Tail Lamp Relay System Inspection" . If above system is normal, replace the BCM.

Power Supply and Ground Circuit Inspection

AKS003RY

1. CHECK FUSE

Check if the headlamp battery saver control unit, headlamp relay-1 and -2 fuses are blown.

Unit or relay	Fuse No.
Headlamp battery saver control unit	6
Headlamp relay-1	55
	57
Headlamp relay-2	73

Refer to LT-11, "Wiring Diagram — H/LAMP —" .

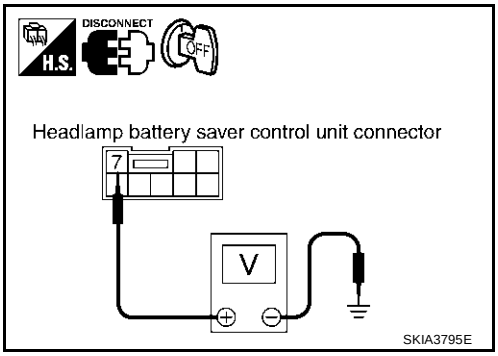
OK or NG

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

2. CHECK HEADLAMP BATTERY SAVER CONTROL UNIT POWER SUPPLY CIRCUIT

1. Disconnect the headlamp battery saver control unit connector.
2. Check voltage between headlamp battery saver control unit harness connector M34 terminal 7 (Y/G) and ground.

Battery voltage should exist.



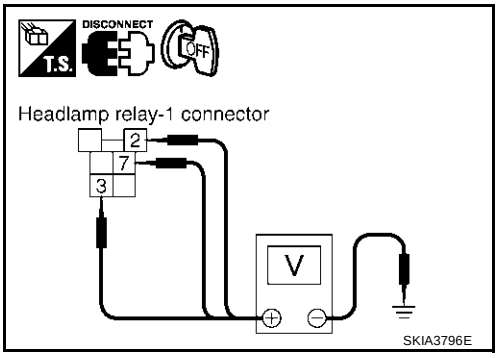
OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short between headlamp battery saver control unit and fuse.

3. CHECK HEADLAMP RELAY-1 POWER SUPPLY CIRCUIT

1. Remove the headlamp relay-1.
2. Check voltage between headlamp relay-1 harness connector E3-4 terminals 2, 3 or 7 and ground.

Battery voltage should exist.



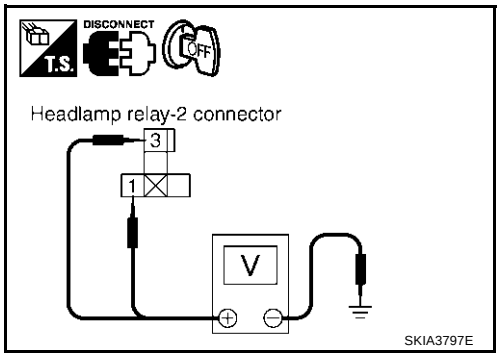
OK or NG

OK >> GO TO 4.
NG >> Replace fuse, fusible link and relay block (J/B).

4. CHECK HEADLAMP RELAY-2 POWER SUPPLY CIRCUIT

1. Remove the headlamp relay-2.
2. Check voltage between headlamp relay-2 harness connector E5 terminals 1 (PU), 3 (PU) and ground.

Battery voltage should exist.



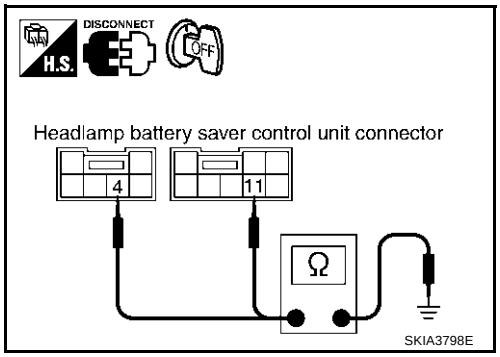
OK or NG

OK >> GO TO 5.
NG >> Check harness for open or short between headlamp relay-2 and fuse.

5. CHECK HEADLAMP BATTERY SAVER CONTROL UNIT GROUND CIRCUIT

Check continuity between headlamp battery saver control unit harness connector terminals and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal (Wire color)		
M33	4 (B)	Ground	Yes
M34	11 (B)		



OK or NG

OK >> INSPECTION END
NG >> Check harness.

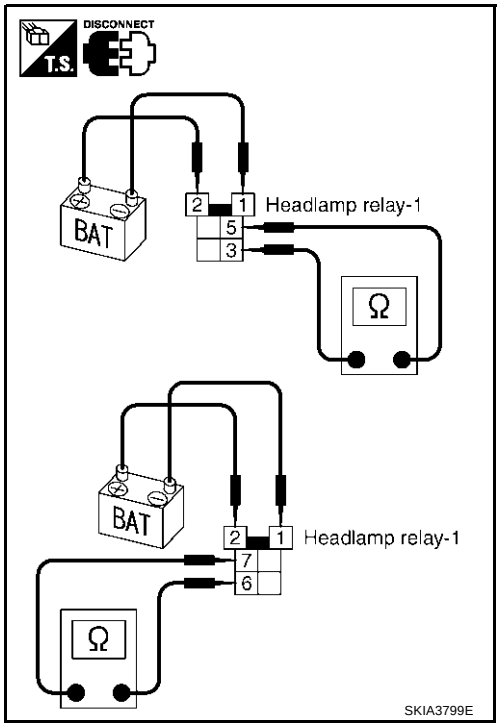
Headlamp Relay-1 Circuit Inspection

AKS003S0

1. CHECK HEADLAMP RELAY-1

1. Remove the headlamp relay-1.
2. Apply 12V between headlamp relay-1 terminals 2 and 1, and check continuity between terminals 3 and 5 and between 6 and 7.

3 - 5 : Continuity should exist.
6 - 7 : Continuity should exist.



OK or NG

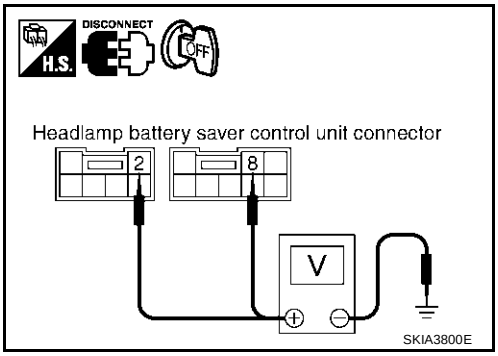
OK >> GO TO 2.
NG >> Replace the headlamp relay-1.

2. CHECK HEADLAMP RELAY-1 CONTROL SIGNAL

1. Install the headlamp relay-1.
2. Remove the headlamp relay-2 and disconnect the headlamp battery saver control unit connectors.
3. Check voltage between headlamp battery saver control unit harness connector M33 terminal 2 (W/PU) or harness connector M34 terminal 8 (W/PU) and ground.

2 - Ground : Battery voltage should exist.

8 - Ground : Battery voltage should exist.



OK or NG

OK >> INSPECTION END
NG >> Check harness for open or short between headlamp relay-1 and headlamp battery saver control unit.

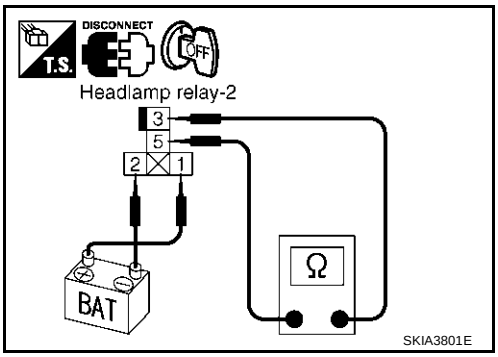
Headlamp Relay-2 Circuit Inspection

AKS003S1

1. CHECK HEADLAMP RELAY-2

1. Remove the headlamp relay-2.
2. Apply 12V between headlamp relay-2 terminals 2 and 1, and check continuity between terminals 3 and 5.

Continuity should exist.



OK or NG

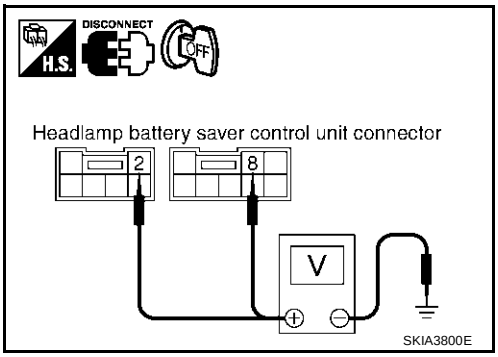
OK >> GO TO 2.
NG >> Replace the headlamp relay-2.

2. CHECK HEADLAMP RELAY-2 CONTROL SIGNAL

1. Install the headlamp relay-2.
2. Remove the headlamp relay-1 and disconnect the headlamp battery saver control unit connectors.
3. Check voltage between headlamp battery saver control unit harness connector M33 terminal 2 (W/PU) or harness connector M34 terminal 8 (W/PU) and ground.

2 - Ground : Battery voltage should exist.

8 - Ground : Battery voltage should exist.



OK or NG

OK >> INSPECTION END
NG >> Check harness for open or short between headlamp relay-2 and headlamp battery saver control unit.

Headlamp (Low) Circuit Inspection

AKS003S2

1. CHECK XENON BULB

1. Replace the xenon bulb with other side bulb or new one.
2. Check if headlamp is eclampsia illuminate correctly.

OK or NG

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

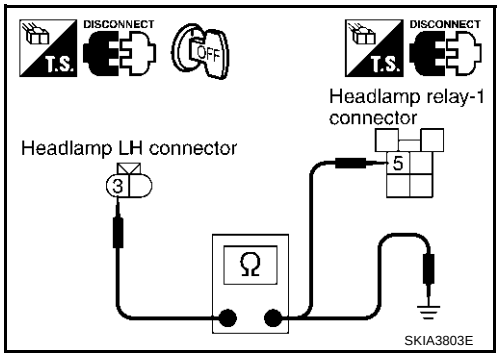
2. CHECK HEADLAMP LH POWER SUPPLY CIRCUIT

1. Remove the headlamp relay-1 and disconnect the headlamp LH connector.
2. Check continuity between headlamp LH harness connector E10 terminal 3 (L) and headlamp relay-1 harness connector E3-4 terminal 5 (L).

Continuity should exist.

3. Check continuity between headlamp LH harness connector E10 terminal 3 (L) and ground.

Continuity should not exist.



NOTE:
If headlamp LH is normal, skip this procedure and go to 3.

OK or NG

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

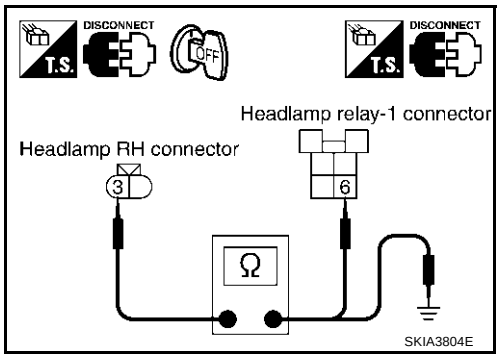
3. CHECK HEADLAMP RH POWER SUPPLY CIRCUIT

1. Remove the headlamp relay-1 and disconnect the headlamp RH connector.
2. Check continuity between headlamp RH harness connector E40 terminal 3 (W) and headlamp relay-1 harness connector E3-4 terminal 6 (W).

Continuity should exist.

3. Check continuity between headlamp RH harness connector E40 terminal 3 (W) and ground.

Continuity should not exist.



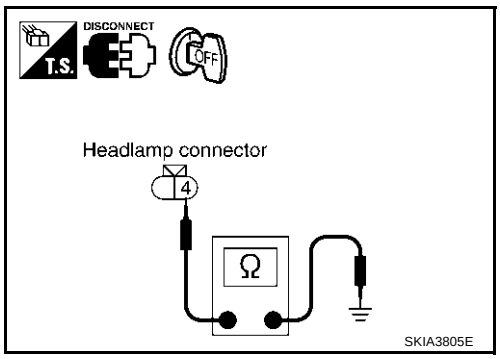
OK or NG

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

4. CHECK HEADLAMP GROUND CIRCUIT

Check continuity between headlamp LH harness connector E10 terminal 4 (B) or headlamp RH harness connector E40 terminal 4 (B) and ground.

Unit	Terminals			Continuity
	(+)		(–)	
	Connector	Terminal (Wire color)		
Headlamp LH	E10	4 (B)	Ground	Yes
Headlamp RH	E40			



NOTE:
Only the headlamp which does not turn on should be inspection.

OK or NG

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

5. CHECK HID CONTROL UNIT

1. Install the headlamp relay-1.
2. Replace the HID control unit with other side control unit or new one.
3. Check if headlamp is eclampsia illuminate correctly.

OK or NG

OK >> Replace the HID control unit.
NG >> INSPECTION END

Headlamp (High) Circuit Inspection

AKS003S3

1. CHECK BULB

1. Replace the bulb with other side bulb or new one.
2. Check if the headlamp is eclampsia illuminate correctly.

OK or NG

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

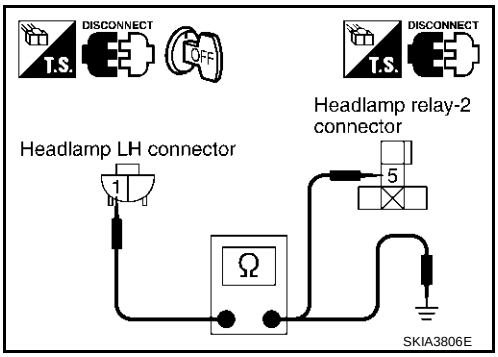
2. CHECK HEADLAMP LH POWER SUPPLY CIRCUIT

1. Install the headlamp relay-2 and disconnect the headlamp LH connector.
2. Check continuity between headlamp LH harness connector E9 terminal 1 (W/G) and headlamp relay-2 harness connector E5 terminal 5 (W/G).

Continuity should exist.

3. Check continuity between headlamp LH harness connector E9 terminal 1 (W/G) and ground.

Continuity should not exist.



NOTE:
If headlamp LH is normal, skip this procedure and go to 3.

OK or NG

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

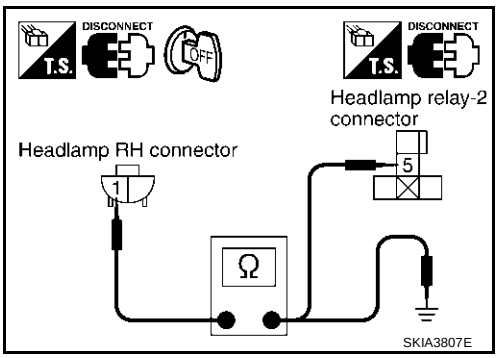
3. CHECK HEADLAMP RH POWER SUPPLY CIRCUIT

1. Remove the headlamp relay-2 and disconnect the headlamp RH connector.
2. Check continuity between headlamp RH harness connector E39 terminal 1 (W/G) and headlamp relay-2 harness connector E5 terminal 5 (W/G).

Continuity should exist.

3. Check continuity between headlamp RH harness connector E39 terminal 1 (W/G) and ground.

Continuity should not exist.



OK or NG

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

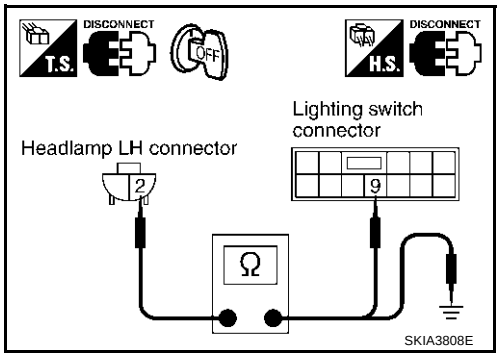
4. CHECK HEADLAMP LH GROUND CIRCUIT

1. Disconnect the lighting switch connector.
2. Check continuity between headlamp LH harness connector E9 terminal 2 (L/R) and lighting switch harness connector M55 terminal 9 (L/R).

Continuity should exist.

3. Check continuity between headlamp LH harness connector E9 terminal 2 (L/R) and ground.

Continuity should not exist.



OK or NG

OK >> Inspection end.
NG >> Repair harness or connector.

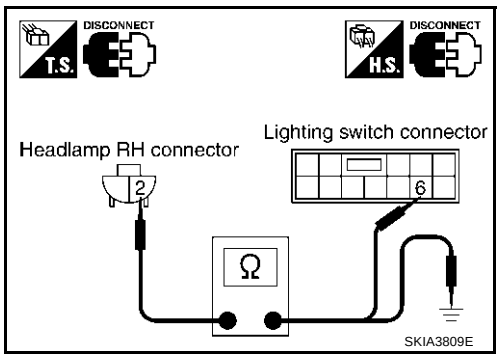
5. CHECK HEADLAMP RH GROUND CIRCUIT

1. Disconnect the lighting switch connector.
2. Check continuity between headlamp RH harness connector E39 terminal 2 (P) and lighting switch harness connector M55 terminal 6 (P).

Continuity should exist.

3. Check continuity between headlamp RH harness connector E39 terminal 2 (P) and ground.

Continuity should not exist.



OK or NG

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

High Beam Indicator Circuit Inspection

AKS003SC

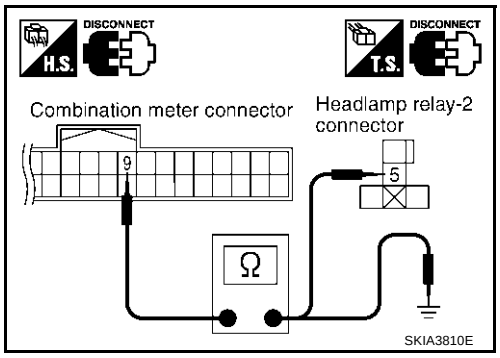
1. CHECK HIGH BEAM INDICATOR POWER SUPPLY CIRCUIT

1. Remove the headlamp relay-2 and disconnect the combination meter connector.
2. Check continuity between combination meter harness connector M41 terminal 9 (W/G) and headlamp relay-2 harness connector E5 terminal 5 (W/G).

Continuity should exist.

3. Check continuity between combination meter harness connector M41 terminal 9 (W/G) and ground.

Continuity should not exist.



OK or NG

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

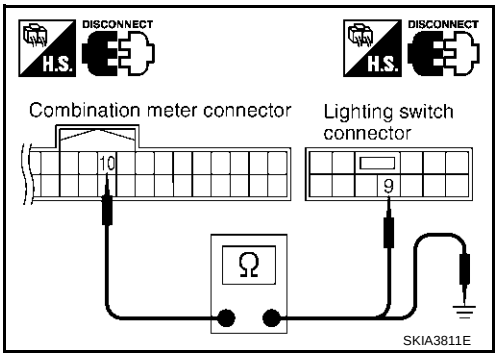
2. CHECK HIGH BEAM INDICATOR GROUND CIRCUIT

1. Disconnect the lighting switch connector.
2. Check continuity between combination meter harness connector M41 terminal 10 (L/R) and lighting switch harness connector M55 terminal 9 (L/R).

Continuity should exist.

3. Check continuity between combination meter harness connector M41 terminal 10 (L/R) and ground.

Continuity should not exist.



OK or NG

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

Lighting Switch Circuit Inspection

AKS003S4

1. CHECK LIGHTING SWITCH

Check continuity of lighting switch. Refer to LT-100, "Switch Circuit Inspection" .

OK or NG

OK >> GO TO 2.
NG >> Replace the lighting switch.

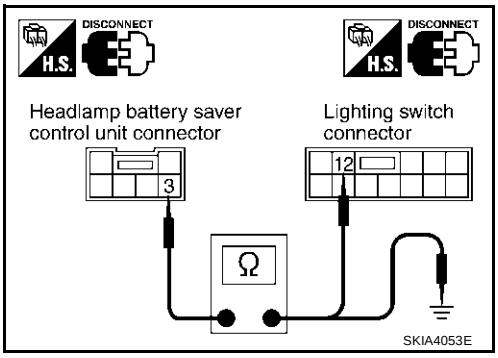
2. CHECK LIGHTING SWITCH POWER SUPPLY CIRCUIT 1

1. Disconnect the headlamp battery saver control unit connector and the lighting switch connector.
2. Check continuity between headlamp battery saver control unit harness connector M33 terminal 3 (R/B) and lighting switch harness connector M55 terminal 12 (R/B).

Continuity should exist.

3. Check continuity between headlamp battery saver control unit harness connector M33 terminal 3 (R/B) and ground.

Continuity should not exist.



OK or NG

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

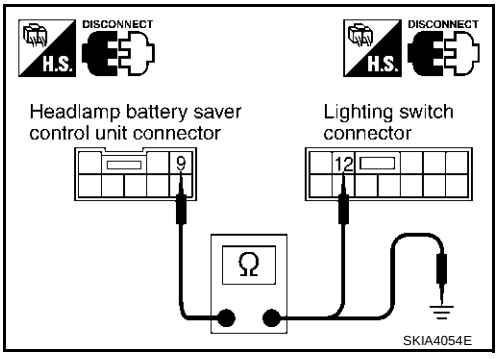
3. CHECK LIGHTING SWITCH POWER SUPPLY CIRCUIT 2

1. Check continuity between headlamp battery saver control unit harness connector M34 terminal 9 (R/B) and lighting switch harness connector M55 terminal 12 (R/B).

Continuity should exist.

2. Check continuity between headlamp battery saver control unit harness connector M34 terminal 9 (R/B) and ground.

Continuity should not exist.



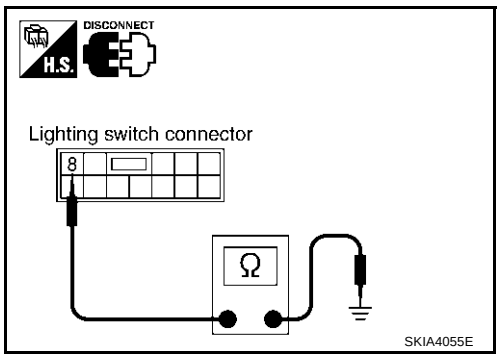
OK or NG

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

4. CHECK LIGHTING SWITCH GROUND CIRCUIT

Check continuity between lighting switch harness connector M55 terminal 8 (B) and ground.

Continuity should exist.



OK or NG

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

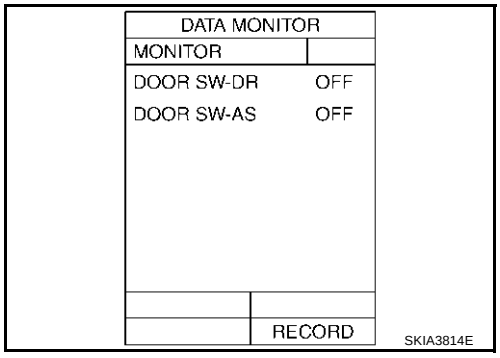
Front Door Switch Circuit Inspection

AKS003S5

1. CHECK DOOR SWITCH SIGNAL

With CONSULT-II

1. Select “INTERIOR ILLUMINATION” of “IVMS” on “SELECT SYSTEM” screen.
2. Operate each door via “DOOR SW-DR” and “DOOR SW-AS” on “DATA MONITOR” screen and make sure that the switch turns on and off as commanded.



Without CONSULT-II

- Open and close the front door (driver side, passenger side) and make sure that the switch turns on and off by “switch monitor” in the self-diagnosis function.

OK or NG

OK >> INSPECTION END
NG >>
- When front door switch (driver side) is malfunction, go to 2.
- When front door switch (passenger side) is malfunction, go to 4.

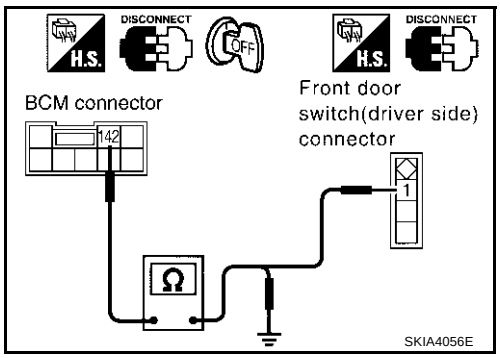
2. CHECK FRONT DOOR SWITCH (DRIVER SIDE) CIRCUIT

1. Turn ignition switch to OFF position.
2. Disconnect the BCM connector and the front door switch (driver side) connector.
3. Check continuity between BCM harness connector B4 terminal 142 (R/Y) and front door switch (driver side) harness connector B20 terminal 1 (R/Y).

Continuity should exist.

4. Check continuity between BCM harness connector B4 terminal 142 (R/Y) and ground.

Continuity should not exist.



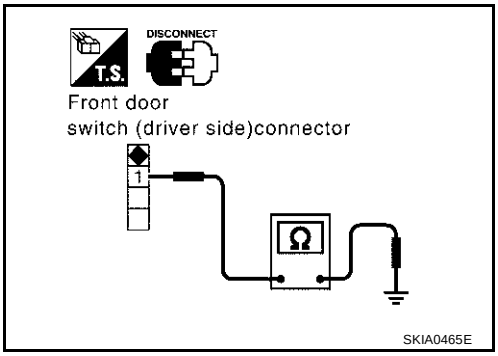
OK or NG

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

3. CHECK FRONT DOOR SWITCH (DRIVER SIDE)

1. Check continuity between front door switch (driver side) connector B20 terminal 1 (R/Y) and ground.

Switch released (ON) : Continuity should exists.
Switch pressed (OFF) : Continuity should not exist.



OK or NG

OK >> Replace the BCM.
NG >> Replace the front door switch (driver side).

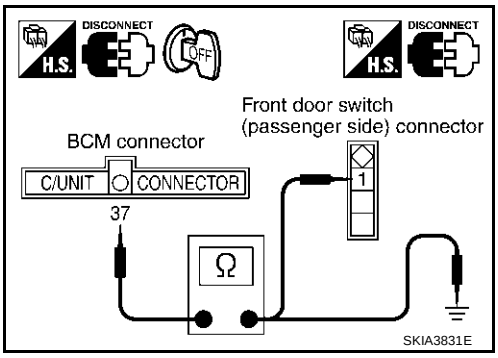
4. CHECK FRONT DOOR SWITCH (PASSENGER SIDE) CIRCUIT

1. Turn ignition switch to OFF position.
2. Disconnect the BCM connector and the front door switch (passenger side) connector.
3. Check continuity between BCM harness connector M4 terminal 37 (LG) and front door switch (passenger side) harness connector B220 terminal 1 (LG).

Continuity should exist.

4. Check continuity between BCM harness connector M4 terminal 37 (LG) and ground.

Continuity should not exist.



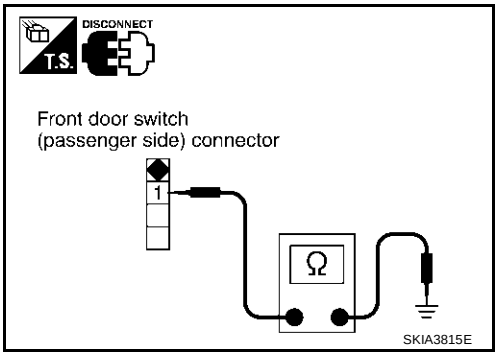
OK or NG

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

5. CHECK FRONT DOOR SWITCH (PASSENGER SIDE)

Check continuity between front door switch (passenger side) connector B220 terminal 1 (LG) and ground.

Switch released (ON) : Continuity should exist.
Switch pressed (OFF) : Continuity should not exist.



OK or NG

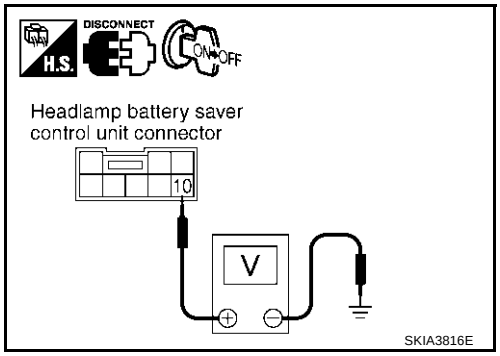
OK >> Replace the BCM.
NG >> Replace the front door switch (passenger side).

Headlamp Battery Sever Control Unit Circuit Inspection

AKS003S6

1. CHECK RAP SIGNAL

1. Disconnect the battery saver control unit connector.
2. Turn ignition switch to ON position.
3. Check voltage between headlamp battery saver control unit harness connector M34 terminal 10 (Y/R) and ground after turning off the ignition switch.



Connector	Terminal (Wire color)	Condition	Voltage
M34	10 (Y/R)	Within 45 seconds after ignition switch is turned off	Less than 1V
		Front door is opened or more than 45 seconds after ignition switch is turned off	Battery voltage

OK or NG

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

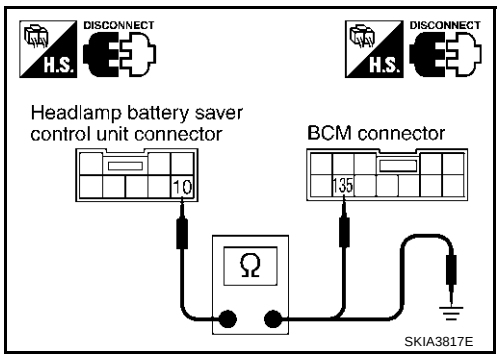
2. CHECK HARNESS CIRCUIT

1. Disconnect the BCM connector.
2. Check continuity between headlamp battery saver control unit harness connector M34 terminal 10 (Y/R) and BCM harness connector R4 terminal 135 (Y/G).

Continuity should exist.

3. Check continuity between headlamp battery saver control unit harness connector M34 terminal 10 (Y/R) and ground.

Continuity should not exist.



OK or NG

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

Lighting Switch (AUTO) System Inspection

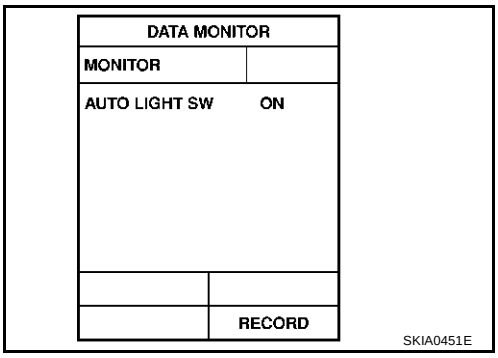
AKS002F7

1. CHECK LIGHTING SWITCH (AUTO) SIGNAL

With CONSULT-II

- Operate the lighting switch via “AUTO LIGHT SWITCH” on DATA MONITOR screen and make sure that the lamp turns on and off as commanded.

Lighting switch AUTO : AUTO LIGHT SW ON
Lighting switch OFF : AUTO LIGHT SW OFF



Without CONSULT-II

- Operate the lighting switch via “switch monitor” of self-diagnosis function make sure that the lamp turns on and off as commanded.

OK or NG

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

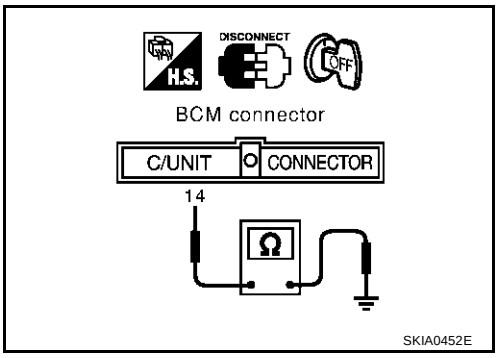
2. CHECK LIGHTING SWITCH (AUTO) SIGNAL CIRCUIT

1. Turn ignition switch to OFF position.
2. Disconnect the BCM connector.
3. Check continuity between BCM harness connector M4 terminal 14 (Y/L) and ground while operating the lighting switch in AUTO.

Lighting switch AUTO : Continuity should exist.

OK or NG

OK >> INSPECTION END
NG >> GO TO 3.



3. CHECK LIGHTING SWITCH (AUTO) CIRCUIT

1. Disconnect the lighting switch connector.
2. Check continuity between BCM harness connector M4 terminal 14 (Y/L) and lighting switch harness connector M55 terminal 42 (Y/L).

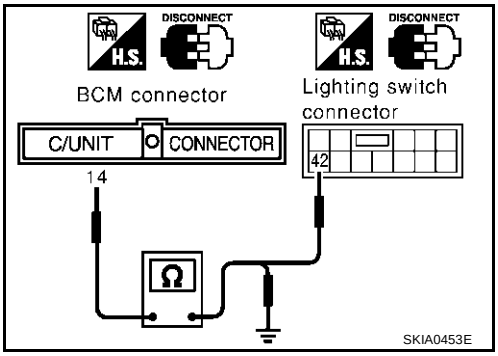
Continuity should exist.

3. Check continuity between BCM harness connector M4 terminal 14 (Y/L) and ground.

Continuity should not exist.

OK or NG

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



4. CHECK LIGHTING SWITCH

Check continuity of the lighting switch. Refer to LT-100, "Switch Circuit Inspection" .

OK or NG

OK >> Check harness ground circuit.
NG >> Replace the lighting switch.

Optical Sensor System Inspection

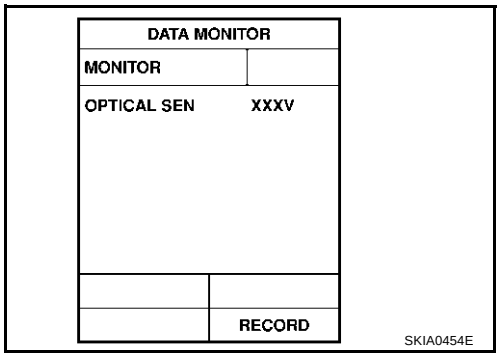
AKS002F8

1. CHECK OPTICAL SENSOR OUTPUT SIGNAL

With CONSULT-II

- Using “OPTICAL SEN” on DATA MONITOR screen, check difference in the voltage when light is applied to optical sensor and light is not applied to optical sensor.

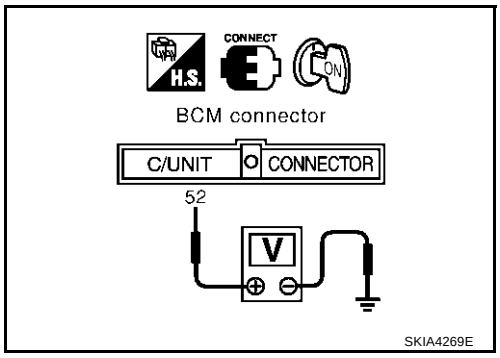
Condition	Reference value of data monitor [V]
Light is applied to optical sensor.	More than 3
Light is not applied to optical sensor.	Approx. 0.5



Without CONSULT-II

- Turn ignition switch to ON position.
- Check voltage between BCM harness connector M4 terminal 52 (G/R) and ground when light is applied to optical sensor and light is not applied to optical sensor.

Terminals			Condition	Voltage (V)
(+)		(–)		
Connector	Terminal (Wire color)			
M4	52 (G/R)	Ground	Light is applied to optical sensor	More than 3
			Light is not applied to optical sensor	Approx. 0.5



OK or NG

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

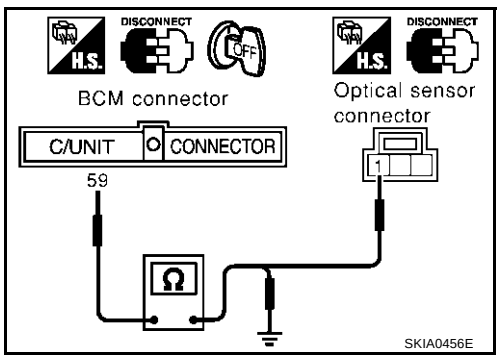
2. CHECK OPTICAL SENSOR POWER SUPPLY CIRCUIT

1. Turn ignition switch to OFF position.
2. Disconnect the BCM connector and the optical sensor connector.
3. Check continuity between BCM harness connector M4 terminal 59 (SB) and optical sensor harness connector M110 terminal 1 (SB).

   Continuity should exist.

4. Check continuity between BCM harness connector M4 terminal 59 (SB) and 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 between BCM harness connector M4 terminal 52 (G/R) and optical sensor harness connector M110 terminal 2 (G/R).

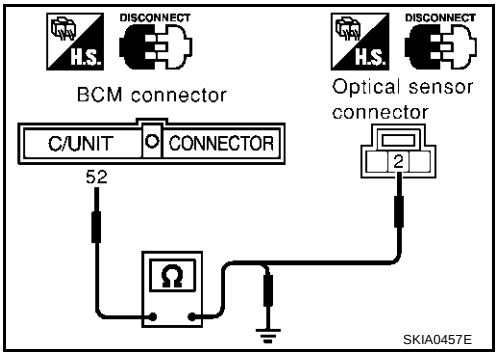
Continuity should exist.

2. Check continuity between BCM harness connector M4 terminal 52 (G/R) and 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 between BCM harness connector M4 terminal 58 (Y/B) and optical sensor harness connector M110 terminal 3 (Y/B).

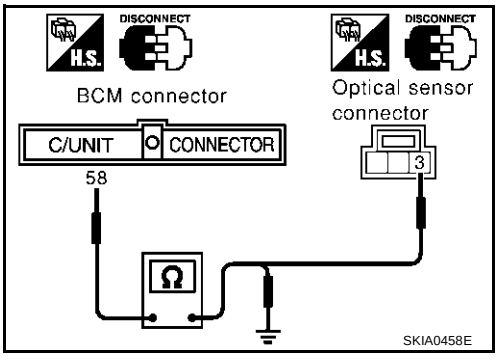
Continuity should exist.

2. Check continuity between BCM harness connector M4 terminal 58 (Y/B) and ground.

Continuity should not exist.

OK or NG

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



5. CHECK OPTICAL SENSOR POWER SUPPLY OUTPUT SIGNAL

1. Connect BCM connector.
2. Check voltage between BCM harness connector M4 terminal 59 (SB).

Approx. 5V

OK or NG

OK >> Replace the optical sensor.
NG >> Replace the BCM.

Headlamp Relay System Inspection

AKS002F9

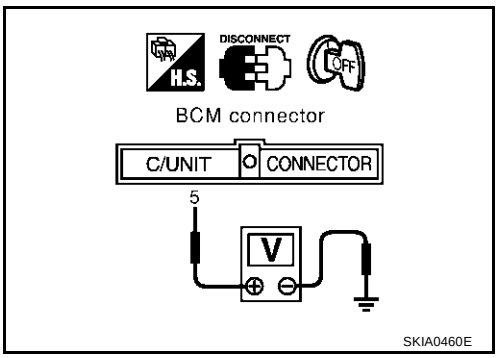
1. CHECK HEADLAMP RELAY CONTROL SIGNAL

1. Turn ignition switch to OFF position.
2. Disconnect the BCM connector.
3. Check voltage between BCM harness connector M4 terminal 5 (W/PU) and ground while operating the lighting switch in OFF.

Lighting switch OFF : Battery voltage should exist.

OK or NG

OK >> INSPECTION END
NG >> Check harness for open or short between BCM and headlamp relay-1 and 2.



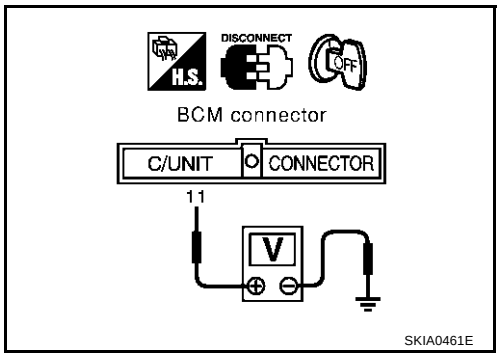
Tail Lamp Relay System Inspection

AKS002FA

1. CHECK TAIL LAMP RELAY CONTROL SIGNAL

1. Turn ignition switch to OFF position.
2. Disconnect the BCM connector.
3. Check voltage between BCM harness connector M4 terminal 11 (LG/B) and ground while operating the lighting switch in OFF.

Lighting switch OFF : Battery voltage should exist.



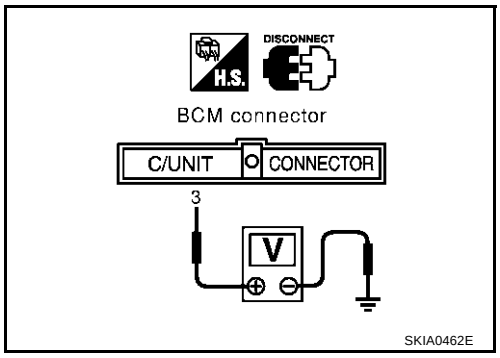
OK or NG

OK >> GO TO 2.
NG >> Check harness for open or short between BCM and tail lamp relay.

2. CHECK TAIL LAMP SIGNAL

Check voltage between BCM harness connector M4 terminal 3 (R/L) and ground while operating lighting switch in 1ST position.

Lighting switch 1ST : Battery voltage should exist.



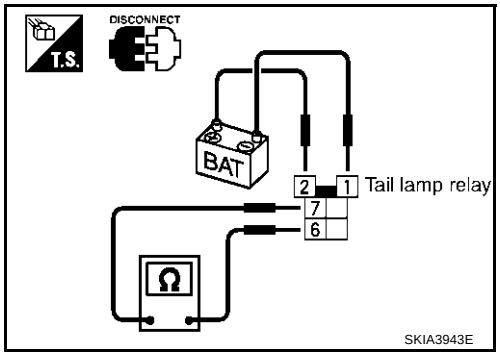
OK or NG

OK >> INSPECTION END
NG >> GO TO 3.

3. CHECK TAIL LAMP RELAY

1. Remove the tail lamp relay.
2. Apply 12V between tail lamp relay terminals 2 and 1, and check continuity between terminals 6 and 7.

Continuity should exist.

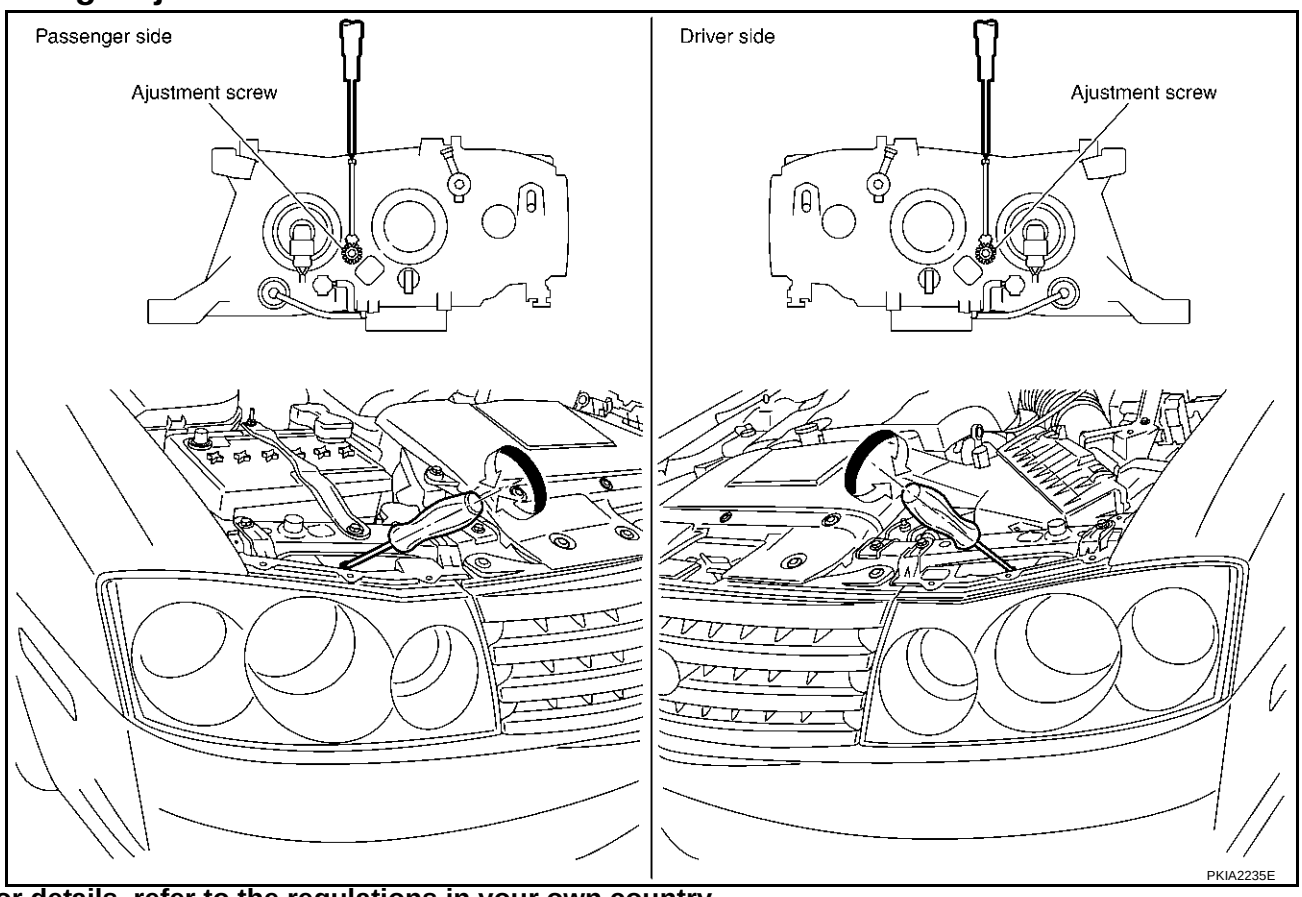


OK or NG

OK >> Check harness for open or short between BCM and tail lamp relay.
NG >> Replace the tail lamp relay.

Aiming Adjustment

AKS002FC



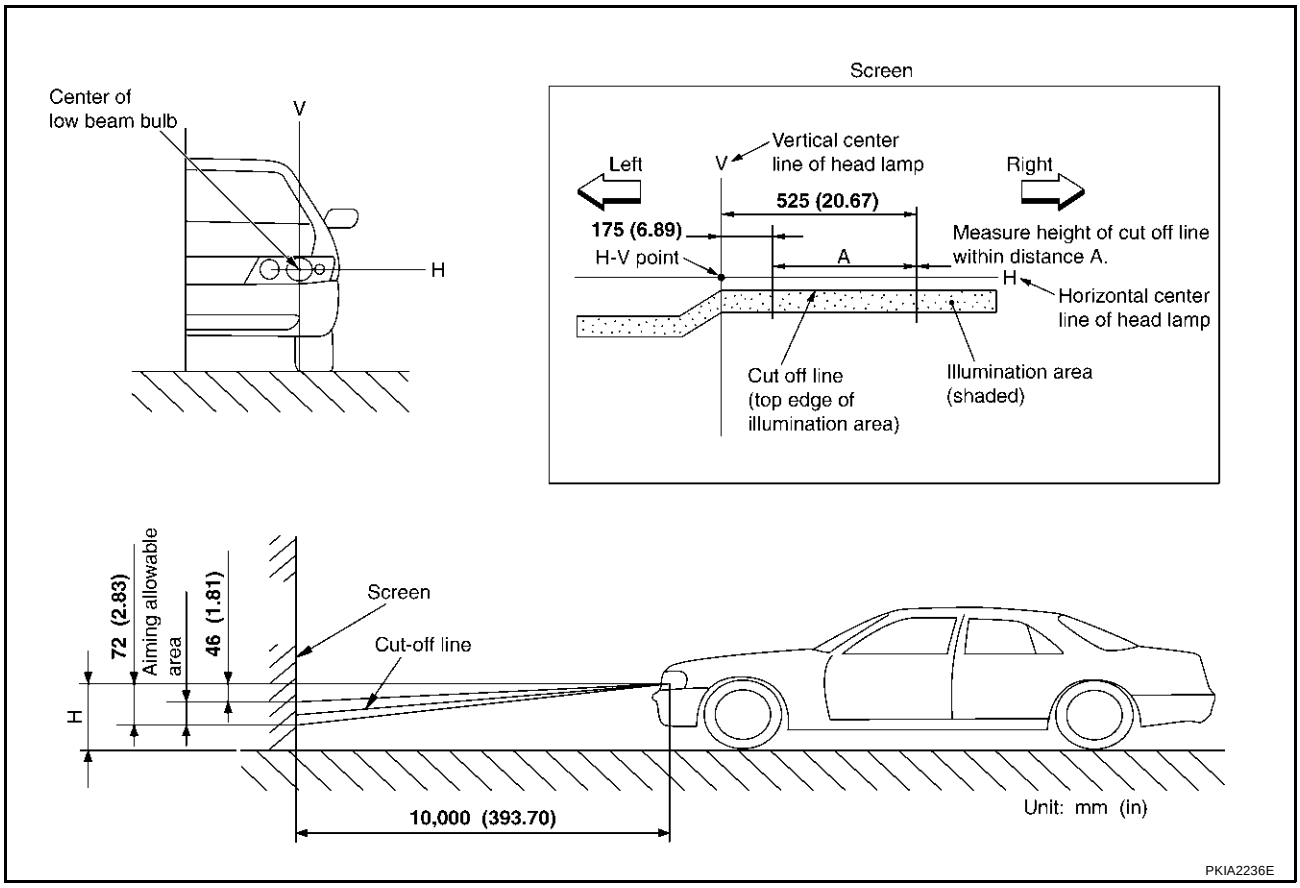
For details, refer to the regulations in your own country.

Before performing aiming adjustment, check the following.

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

LOW BEAM AND HIGH BEAM

1. Turn headlamp low beam on.
2. Use adjusting screws to perform aiming adjustment.
   - **First tighten the adjusting screw all the way and then make adjustment by loosening the screw.**

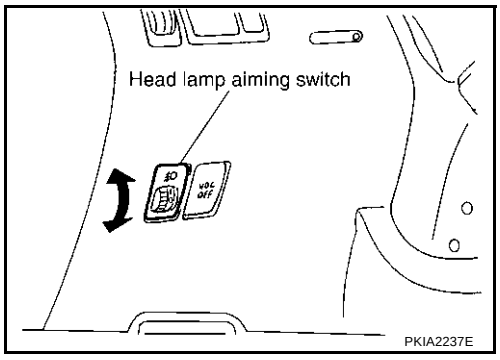


If the vehicle front body has been repaired and/or the headlamp assembly has been replaced, check aiming. Use the aiming chart shown in the figure.

- **Basic illuminating area for adjustment should be within the range shown on the aiming chart. Adjust headlamps accordingly.**

CAUTION:

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

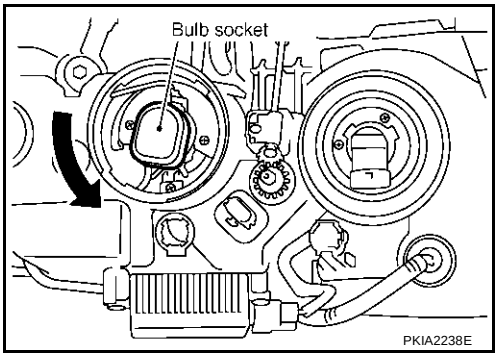


Bulb Replacement

AKS002FD

HEADLAMP (OUTER SIDE), FOR LOW BEAM

1. Remove the headlamps. Refer to LT-42, "Removal and Installation" .
2. Turn the plastic cap counterclockwise and unlock it.
3. Turn the bulb socket counterclockwise and unlock it.
4. Unlock the retaining spring and remove the bulb from the headlamp.



HEADLAMP (INNER SIDE), FOR HIGH BEAM

1. Turn the lighting switch to OFF position.
2. Disconnect the negative battery cable or remove the power fuse.
3. Remove the mass air flow sensor cover and the air cleaner assembly (when replacing LH bulb). Refer to EM-15, "AIR CLEANER AND AIR DUCT" in “ENGINE MECHANICAL (EM)” section.
4. Remove the battery cover and the battery (when replacing RH bulb). Refer to SC-8, "Removal and Installation" in “STARTING AND CHARGING SYSTEM (SC)” section.
5. Disconnect the headlamp connector.
6. Turn the bulb socket counterclockwise and unlock it.
7. Remove the bulb from the headlamp.

FRONT TURN SIGNAL AND PARKING (CLEARANCE) LAMP

1. Turn the lighting switch to OFF position.
2. Remove the mass air flow sensor cover and the air cleaner assembly (when replacing LH bulb). Refer to EM-15, "AIR CLEANER AND AIR DUCT" in “ENGINE MECHANICAL (EM)” section.
3. Remove the battery cover and the battery (when replacing RH bulb). Refer to SC-8, "Removal and Installation" in “STARTING AND CHARGING SYSTEM (SC)” section.
4. Turn the bulb socket counterclockwise and unlock it.
5. Remove the bulb from its socket.

Headlamp (outer side), for low beam	**: 12V 35W (D2R)**
Headlamp (inner side), for high beam	**: 12V 60W (HB3) (#9005)**
Front turn signal and parking lamp	**: 12V 27/8W (amber)**

CAUTION:

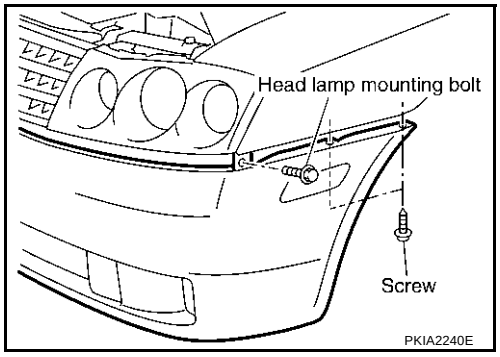
After installing the bulb, be sure to install the plastic cap and the bulb socket securely to ensure watertightness.

Removal and Installation

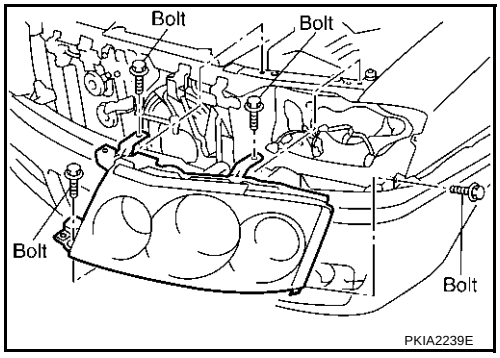
AKS002FE

REMOVAL

1. Disconnect the negative battery cable or remove the power fuse.
2. Remove the front grille. Refer to EI-19, "FRONT GRILLE" in "EXTERIOR & INTERIOR (EI)" section.
3. Remove the fender protector. Refer to in "EXTERIOR & INTERIOR (EI)" section.
4. Remove mounting screws on the side of the front bumper. Refer to EI-15, "FRONT BUMPER" in "EXTERIOR & INTERIOR (EI)" section.



5. Pull the side of the front bumper toward the front of the vehicle and remove the headlamp mounting bolt of out side.
6. Remove the headlamp mounting bolts inside the headlamp.
7. Pull the headlamp toward the front of the vehicle, disconnect the connector, and remove from the vehicle.



CAUTION:

When removing the headlamp, place a rag between the headlamp and the bumper to protect the bumper.

INSTALLATION

Install in the reverse order of removal, taking care of the following points.

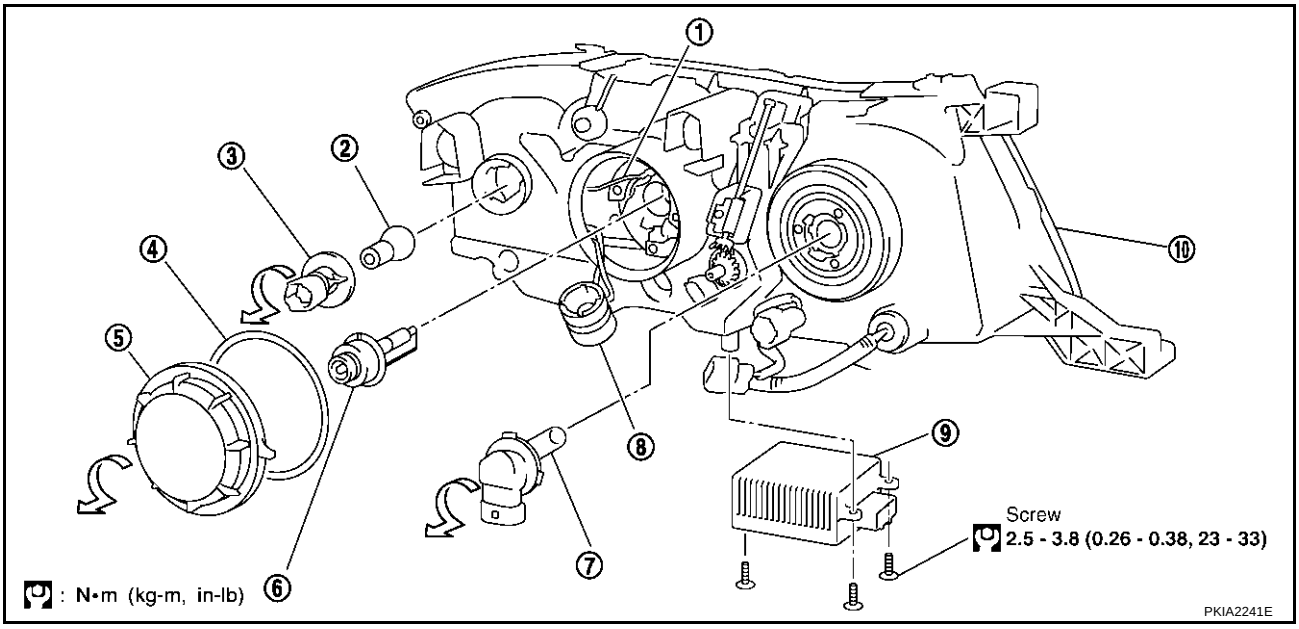
Headlamp mounting bolt:

: 4.4 - 6.5 N·m (0.45 - 0.66 kg-m, 39 - 57 in-lb)

Disassembly and Assembly

AKS002FF

DISASSEMBLY



1. Retaining springs	2. Front turn signal and parking lamp bulb	3. Front turn signal and parking lamp bulb socket
4. Seal rubber	5. Plastic cap (low)	6. Xenon bulb
7. Halogen bulb	8. Xenon bulb socket	9. HID control unit
10. Xenon headlamp assembly		

1. Turn the plastic cap (low) counterclockwise and unlock it.
2. Turn the xenon bulb socket counterclockwise and unlock it.
3. Unlock the retaining spring and remove the xenon bulb (low).
4. Disconnect the HID control unit connector and remove the HID control unit mounting screws.
5. Turn the halogen bulb socket counterclockwise and unlock it.
6. Remove the halogen bulb from the headlamp.
7. Turn the front turn signal and parking lamp bulb socket counterclockwise and unlock it.
8. Remove the front turn signal and parking lamp bulb from its socket.

ASSEMBLY

Assemble in the reverse order of disassembly, taking care of the following points.

HID control unit mounting screws:

: 2.5 - 3.8 N·m (0.26 - 0.38 kg-m, 23 - 33 in-lb)

CAUTION:

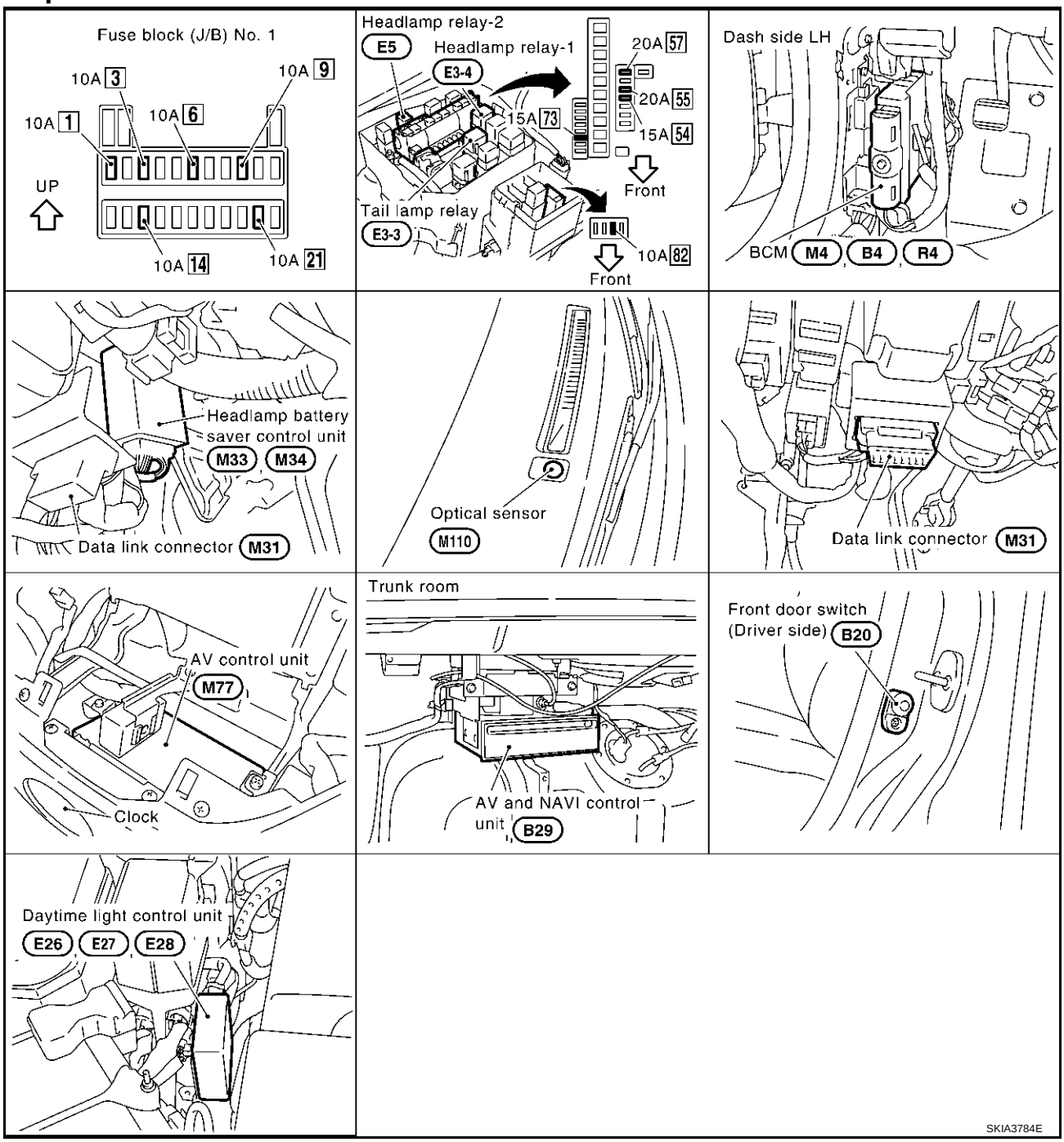
- **When the HID control unit is removed, reinstall it securely and avoid any looseness.**
- **After installing the bulb, be sure to install the plastic cap and the bulb socket securely to ensure watertightness.**

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

PFP:26010

Component Parts and Harness Connector Location

AKS002FG



System Description

AKS002FH

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

And battery saver system is controlled by the headlamp battery saver control unit and BCM.

Power is supplied at all times

- to headlamp relay-1 terminal 2,
- to headlamp relay-1 terminal 3
- through 20A fuse [No. 57, located in the fuse, fusible link and relay block (J/B)],

- to headlamp relay-1 terminal 7
- through 20A fuse [No. 55, located in the fuse, fusible link and relay block (J/B)],
- to headlamp relay-2 terminals 1 and 3
- through 15A fuse (No. 73, located in the fuse, fusible link and relay box),
- to headlamp battery saver control unit terminal 7
- through 10A fuse [No. 6, located in the fuse block (J/B) No. 1], and
- to BCM terminal 105
- through 10A fuse [No. 3, located in the fuse block (J/B) No. 1].

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

- to daytime light control unit terminal 3
- through 10A fuse (No. 82, located in the fuse, fusible link and relay box), and
- to headlamp battery saver control unit terminal 1 and
- to BCM terminal 68
- through 10A fuse [No. 1, located in the fuse block (J/B) No. 1].

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

- to BCM terminal 60
- through 10A fuse [No. 21, located in the fuse block (J/B) No. 1].

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

- to daytime light control unit terminal 2
- through 10A fuse [No. 14, located in the fuse block (J/B) No. 1].

Ground is supplied

- to daytime light control unit terminal 16
- through body grounds E42 and E62,
- to headlamp battery saver control unit terminals 4 and 11
- through body grounds M25 and M115, and
- to BCM terminals 56 and 113
- through body grounds M24 and M114.

HEADLAMP OPERATION

Power Supply to Low Beam and High Beam

When lighting switch is in 2ND or PASS position, ground is supplied

- to headlamp relay-1 terminal 1
- to headlamp relay-2 terminal 2
- from headlamp battery saver control unit terminals 2 and 8
- through headlamp battery saver control unit terminals 3 and 9
- through lighting switch terminals 12 and 8
- through body grounds M25 and M115.

Headlamp relays are energized and then power is supplied to headlamps.

Low Beam Operation

When the lighting switch is turned to 2ND position and placed in LOW positions, power is supplied

- from terminals 5 and 6 of headlamp relay-1
- to terminal 3 of each headlamp

Ground is supplied

- to terminal 4 of each headlamp
- through body grounds E24 and E42.

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

High Beam Operation/Flash-to-pass Operation

When the lighting switch is turned to 2ND position and placed in HIGH position or PASS position, power is supplied

- from terminal 5 of headlamp relay-2
- to terminals 4 and 5 of daytime light control unit and
- to combination meter terminal 9 for the HIGH BEAM indicator.

Ground is supplied

- to headlamp LH terminal 2
- through daytime light control unit terminals 10 and 13, and
- to combination meter terminal 10 for the HIGH BEAM indicator
- through lighting switch terminals 9 and 8
- through body grounds M25 and M115, and
- to headlamp RH terminal 2
- through daytime light control unit terminals 9 and 14
- through lighting switch terminals 6 and 5
- through body grounds M25 and M115.

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

BATTERY SAVER CONTROL

When the ignition switch is turned from ON (or START) to OFF (or ACC) positions while headlamps are illuminated, The RAP signal is supplied to terminal 10 of the headlamp battery saver control unit from BCM terminal 135.
After counting 45 seconds by the RAP signal from the BCM to headlamp battery saver control unit, the ground supply to both terminal 1 of headlamp relay-1 and terminal 2 of headlamp relay-2 from headlamp battery saver control unit terminals 2 and 8 is terminated.
Then headlamps are turned off.
The headlamps are turned off when front door (driver or passenger side) is opened even if 45 seconds have not passed after the ignition switch is turned from ON (or START) to OFF (or ACC) positions while headlamps are illuminated.
When the lighting switch is turned from OFF to 2ND after headlamps are turned to off by the battery saver control, ground is supplied

- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11, and then
- to both terminal 1 of headlamp relay-1 and terminal 2 of headlamp relay-2 from headlamp battery saver control unit terminals 2 and 8
- through headlamp battery saver control unit terminals 3 and 9, and
- through lighting switch terminal 12.

Then headlamps illuminate again.

AUTO LIGHT OPERATION

For auto light operation, refer to LT-8, "AUTO LIGHT OPERATION" in “HEADLAMP (USA)”.

DAYTIME LIGHT OPERATION

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

- through daytime light control unit terminal 7
- to headlamp RH terminal 1
- through headlamp RH terminal 2
- to daytime light control unit terminal 9
- through daytime light control unit terminal 6
- to headlamp LH terminal 1
- through headlamp LH terminal 2
- to daytime light control unit terminal 10.

Ground is supplied

- to daytime light control unit terminal 16
- through body grounds E42 and E62.

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

OPERATION

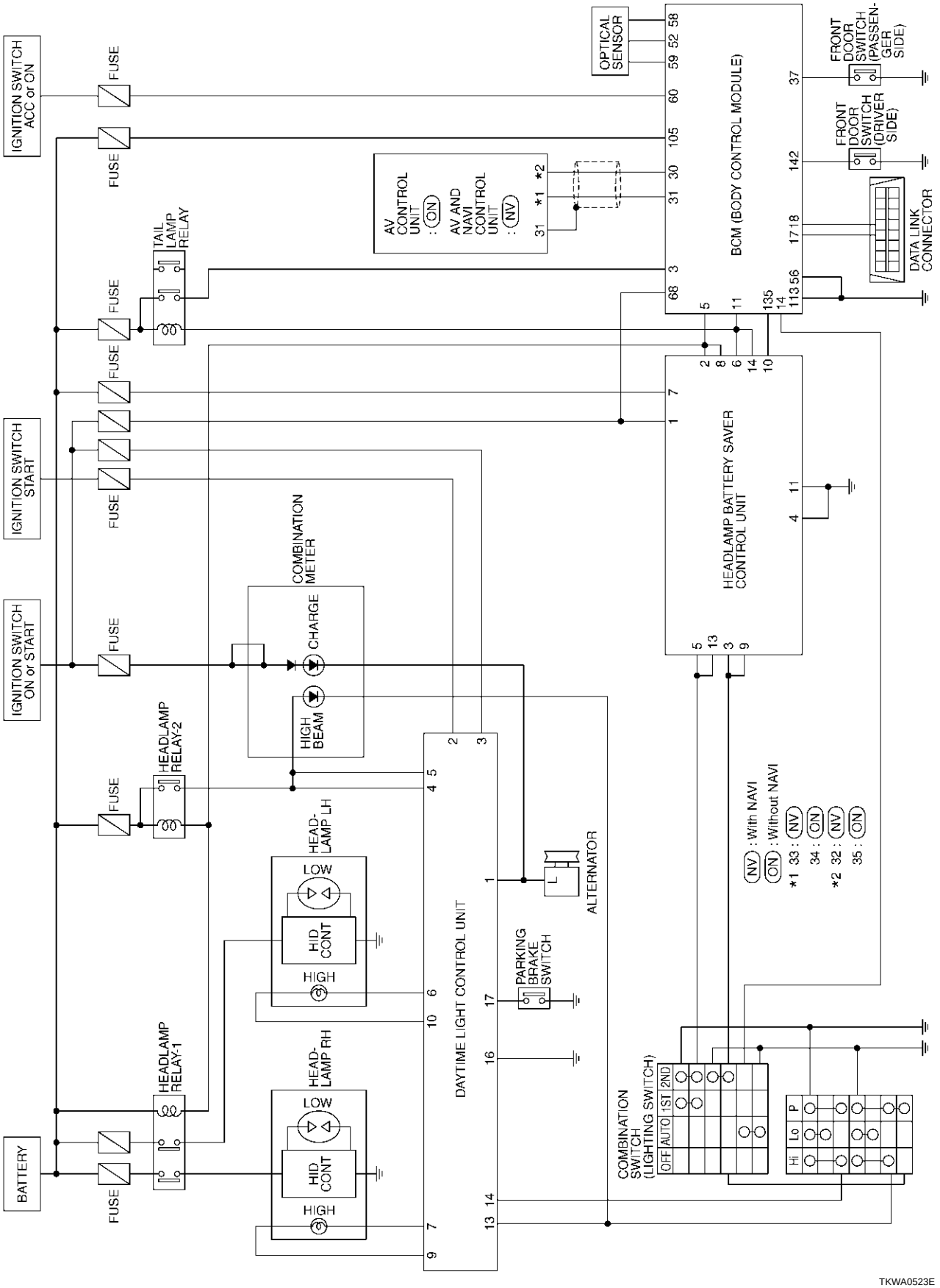
After starting the engine with the lighting switch in the “OFF” or “1ST” position, the headlamp high beam automatically turns on. Lighting switch operations other than the above are the same as conventional light systems.

Engine		With engine stopped									With engine running								
Lighting switch		OFF			1ST			2ND			OFF			1ST			2ND		
		Hi	Lo	P	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P
Headlamp	High beam	–	–	–	–	–	×	×	–	×	●*	●*	×	●*	●*	×	×	–	×
	Low beam	–	–	–	–	–	×	×	×	×	–	–	×	–	–	×	×	×	×
Parking (clearance), side marker and tail lamp		–	–	–	×	×	×	×	×	×	–	–	–	×	×	×	×	×	×
License and instrument illumination lamp		–	–	–	×	×	×	×	×	×	–	–	–	×	×	×	×	×	×

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

Schematic

AKS002FI

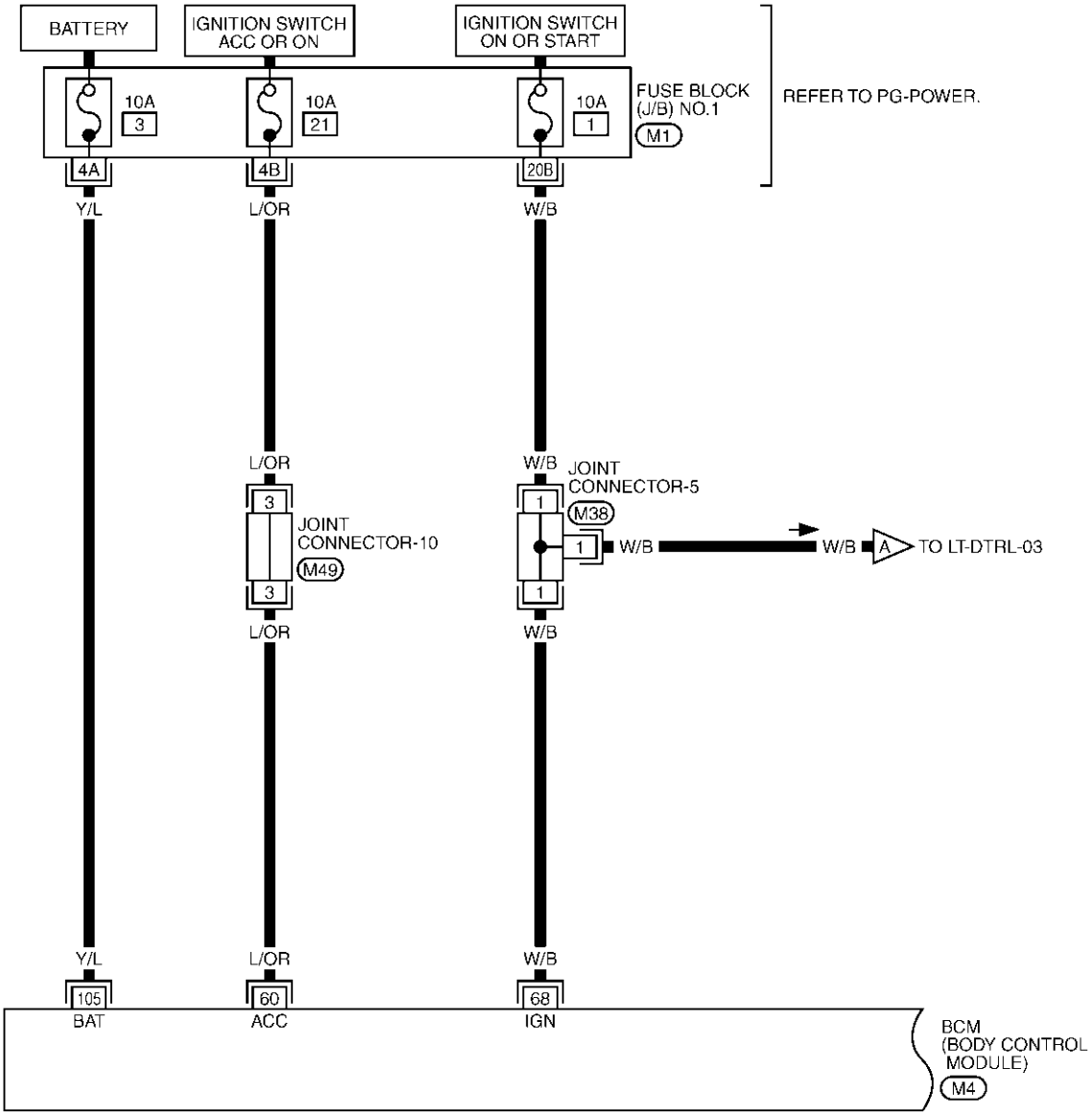


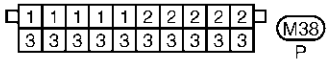
TKWA0523E

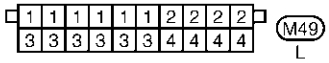
Wiring Diagram — DTRL —

AKS002FJ

LT-DTRL-01







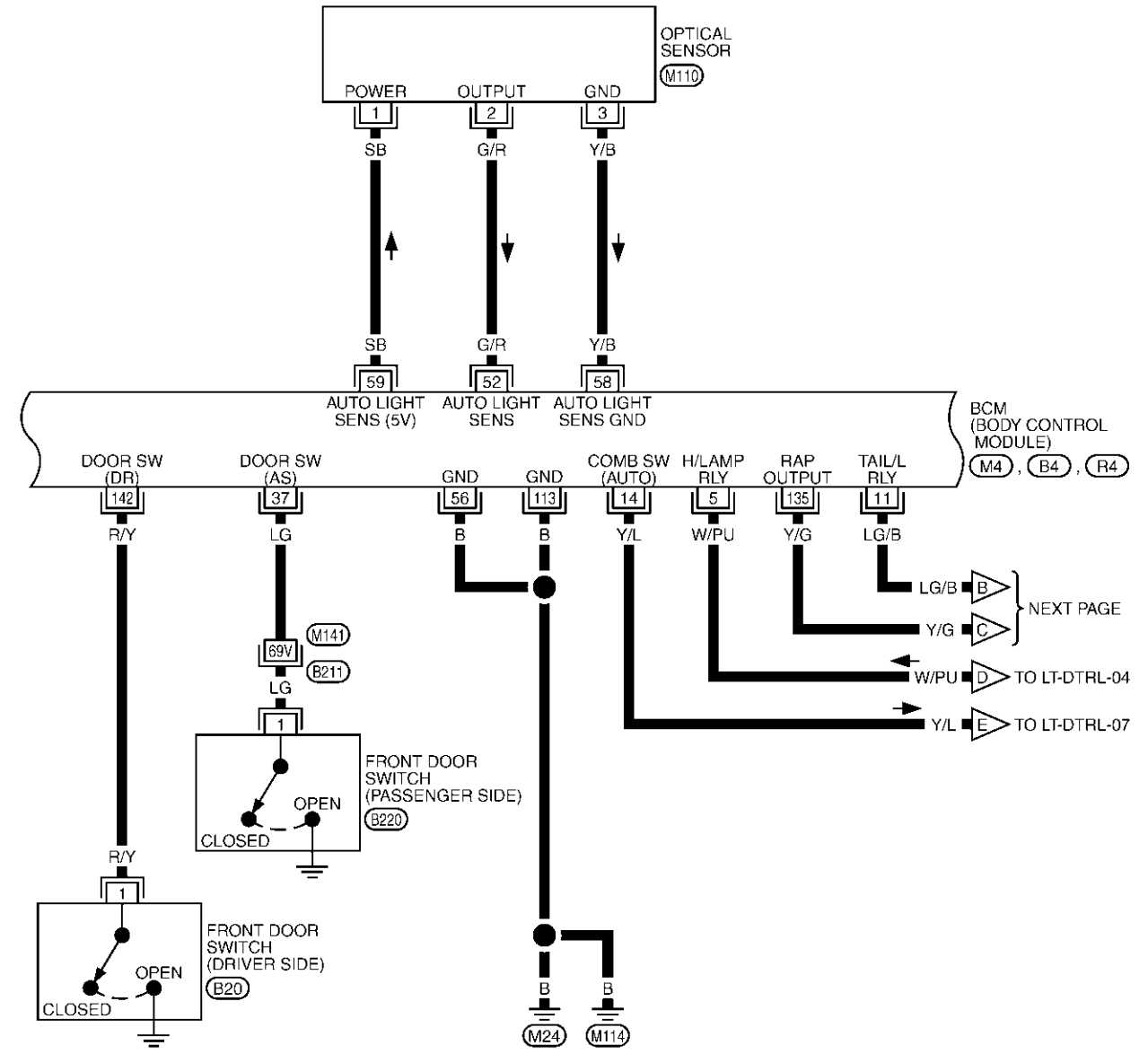
REFER TO THE FOLLOWING.

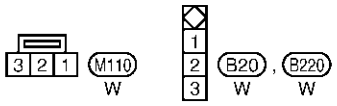
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

M4 -ELECTRICAL UNITS

TKWA0524E

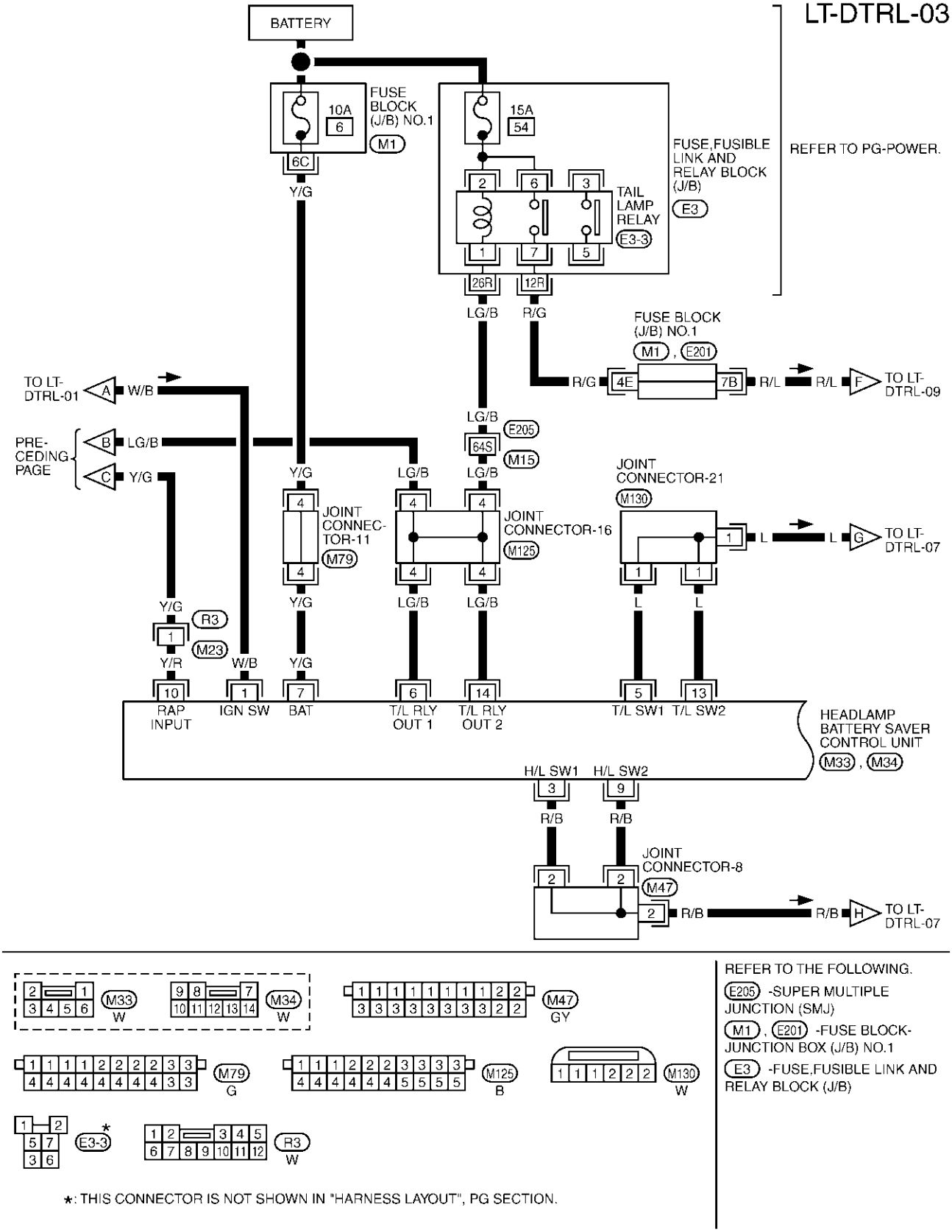
LT-DTRL-02





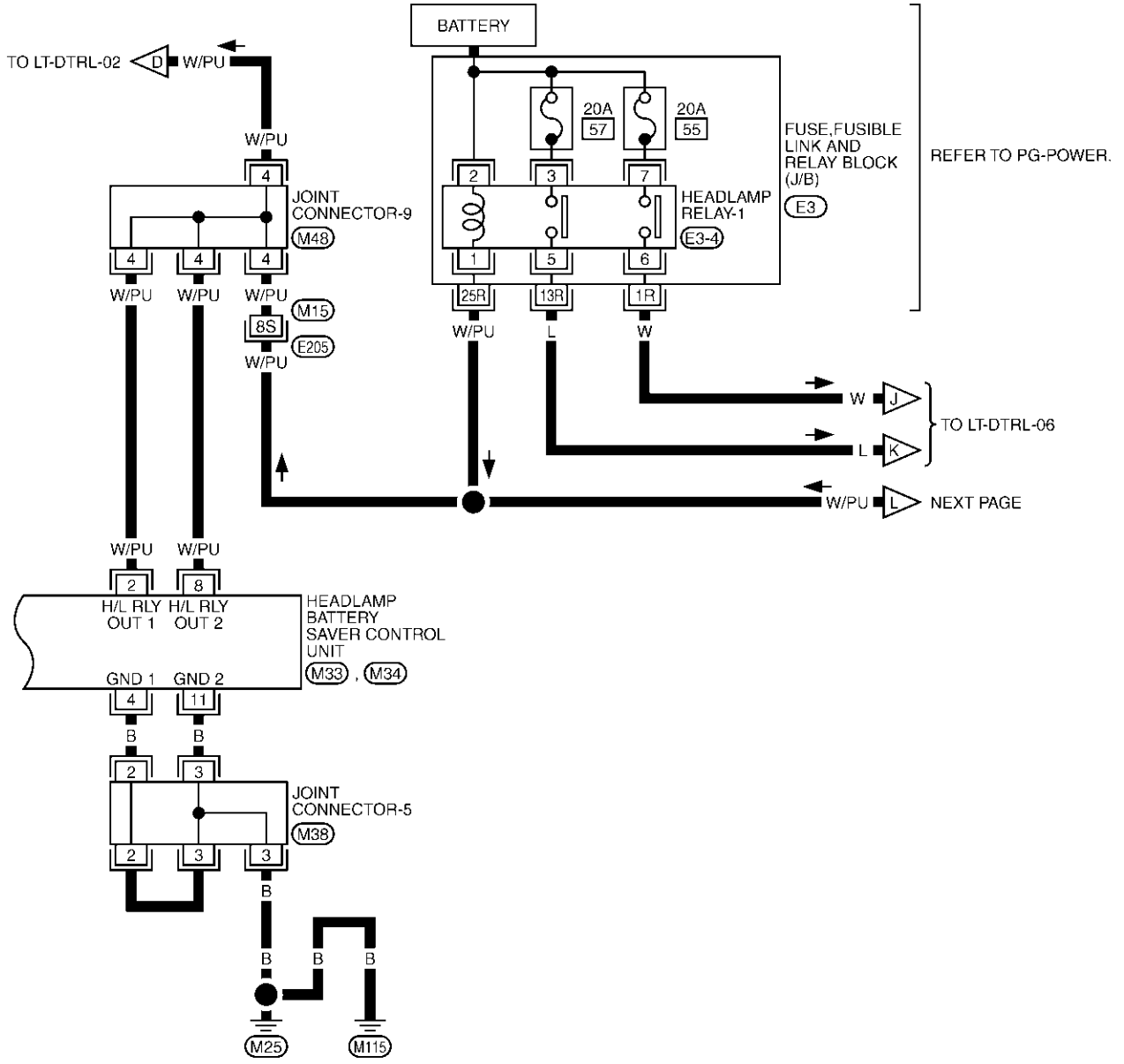
REFER TO THE FOLLOWING.
B211 -SUPER MULTIPLE JUNCTION (SMJ)
M4 , B4 , R4
-ELECTRICAL UNITS

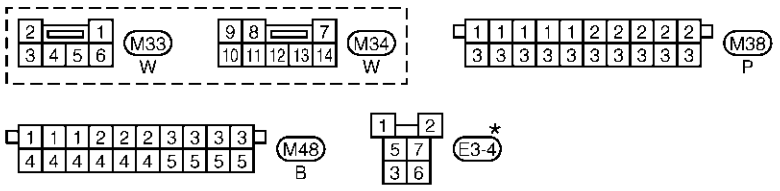
TKWA0525E


LT-DTRL-03
BATTERY
FUSE BLOCK (J/B) NO.1
10A
6
M1
6C
Y/G
15A
54
FUSE,FUSIBLE LINK AND RELAY BLOCK (J/B)
E3
TAIL LAMP RELAY
E3-3
2
6
3
1
7
5
26R
12R
LG/B
R/G
REFER TO PG-POWER.
FUSE BLOCK (J/B) NO.1
M1 , E201
4E
7B
R/L
TO LT-DTRL-09
TO LT-DTRL-01
A
W/B
PRE-CEDING PAGE
B
LG/B
C
Y/G
E205
64S
M15
JOINT CONNEC-TOR-11
M79
JOINT CONNECTOR-16
M125
JOINT CONNECTOR-21
M130
L
G
TO LT-DTRL-07
R3
M23
Y/R
W/B
10
1
7
6
14
5
13
RAP INPUT
IGN SW
BAT
T/L RLY OUT 1
T/L RLY OUT 2
T/L SW1
T/L SW2
HEADLAMP BATTERY SAVER CONTROL UNIT
M33 , M34
H/L SW1
H/L SW2
3
9
R/B
JOINT CONNECTOR-8
M47
H
TO LT-DTRL-07
M33
W
M34
W
M47
GY
M79
G
M125
B
M130
W
E3-3
R3
W
★: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.
REFER TO THE FOLLOWING.
E205 -SUPER MULTIPLE JUNCTION (SMJ)
M1 , E201 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1
E3 -FUSE,FUSIBLE LINK AND RELAY BLOCK (J/B)

TKWA0526E

LT-DTRL-04





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

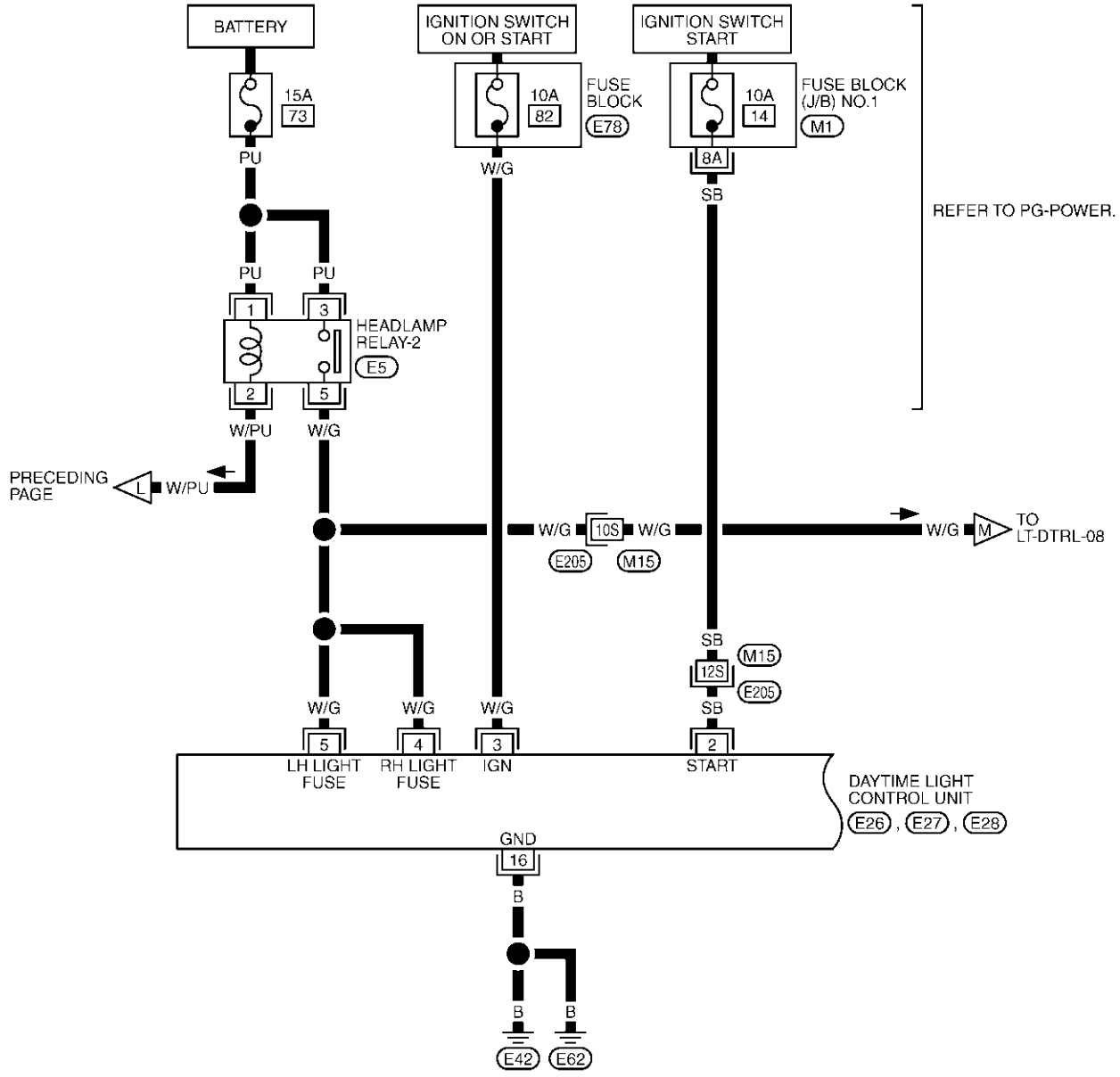
REFER TO THE FOLLOWING.

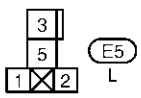
E205 -SUPER MULTIPLE JUNCTION (SMJ)

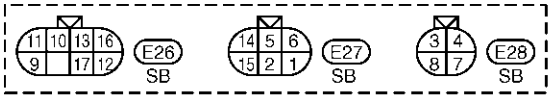
E3 -FUSE,FUSIBLE LINK AND RELAY BLOCK (J/B)

TKWA0527E

LT-DTRL-05







REFER TO THE FOLLOWING.

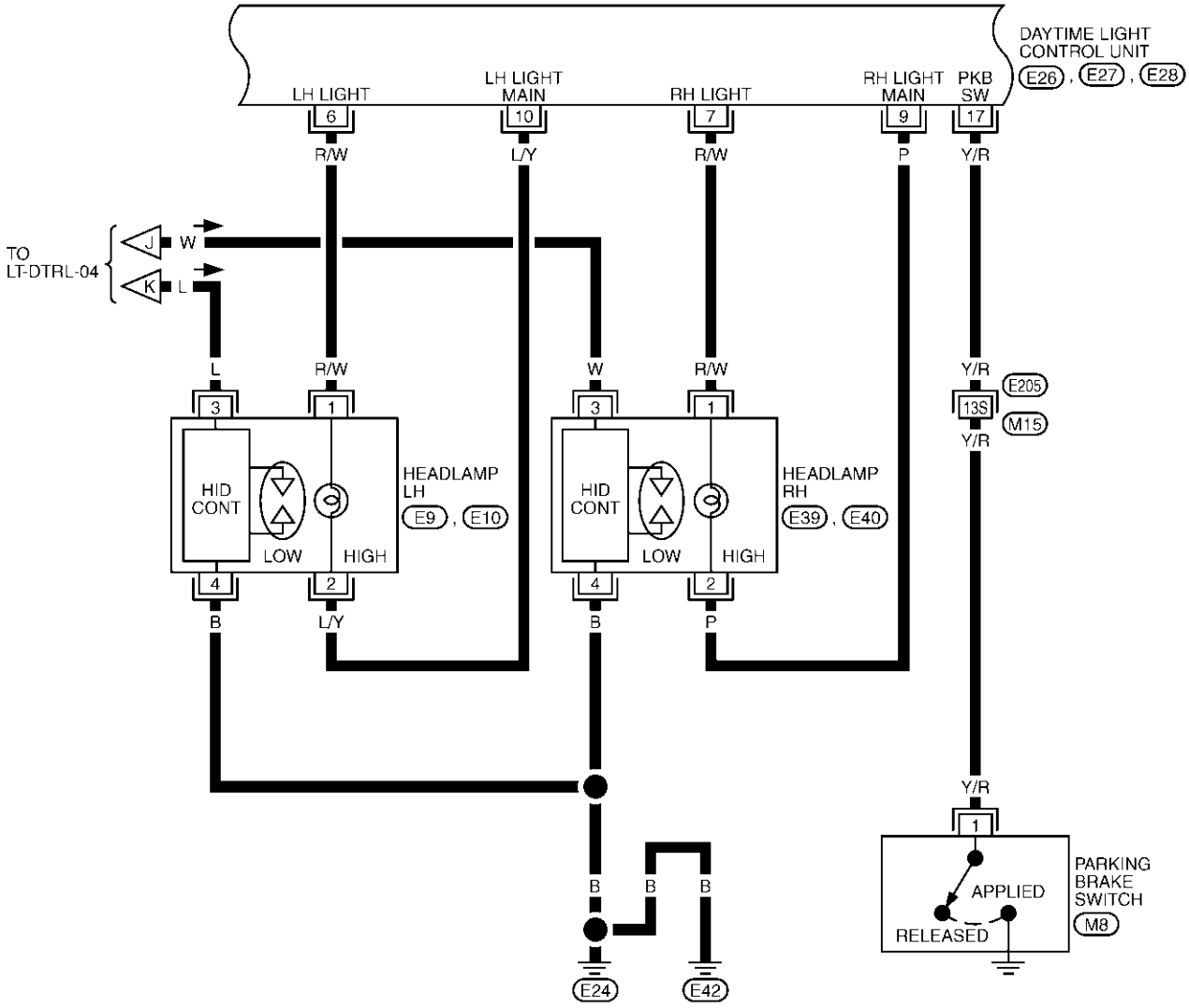
(E205) -SUPER MULTIPLE JUNCTION (SMJ)

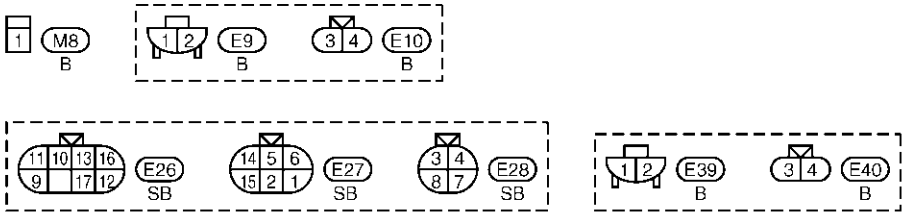
(M1) -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

(E78) -FUSE BLOCK

TKWA0528E

LT-DTRL-06

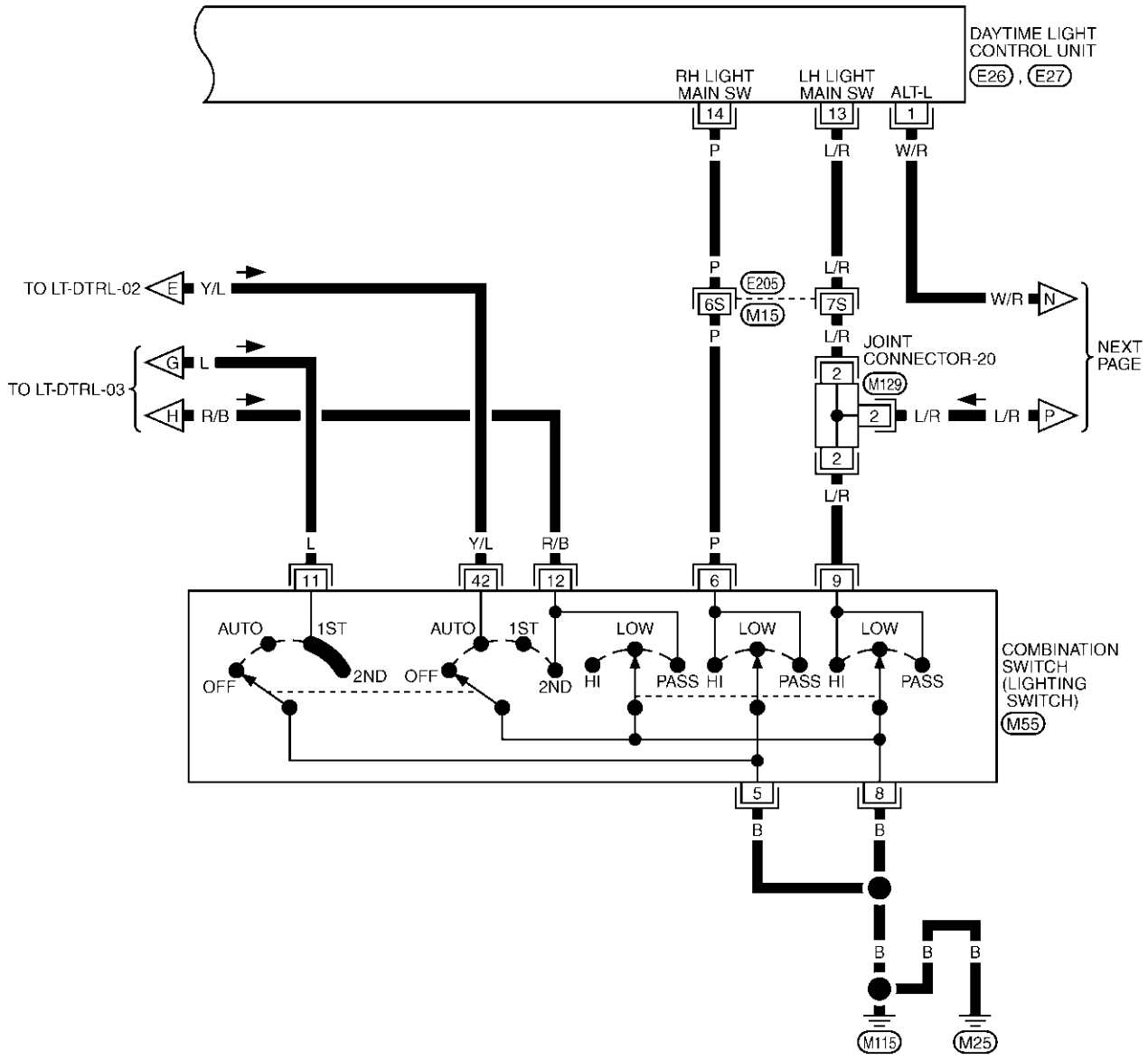


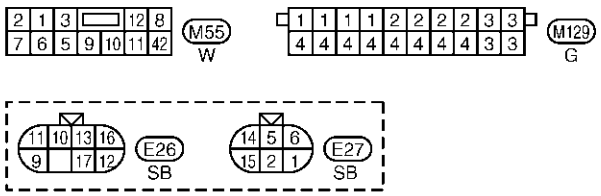


REFER TO THE FOLLOWING.
E205 -SUPER MULTIPLE JUNCTION (SMJ)

TKWA0529E

LT-DTRL-07

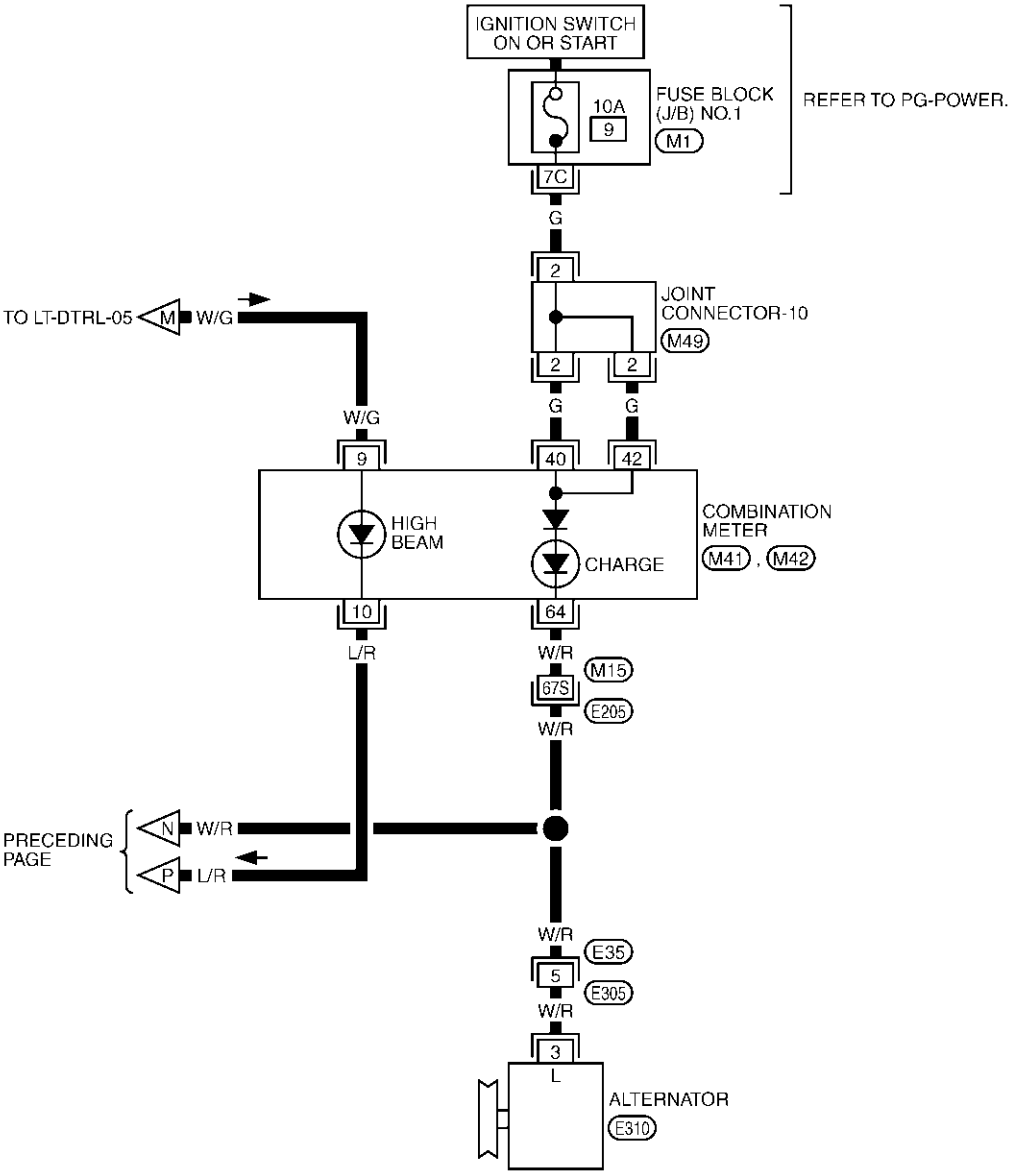


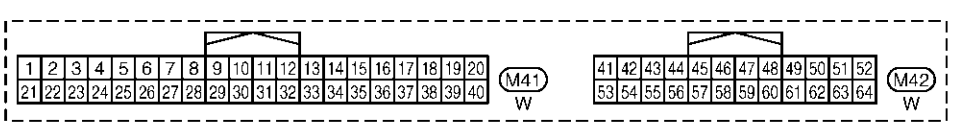


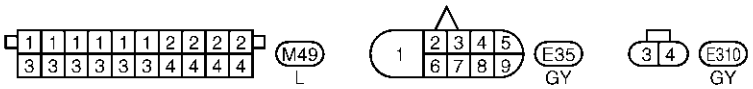
REFER TO THE FOLLOWING.
E205 -SUPER MULTIPLE JUNCTION (SMJ)

TKWA0530E

LT-DTRL-08







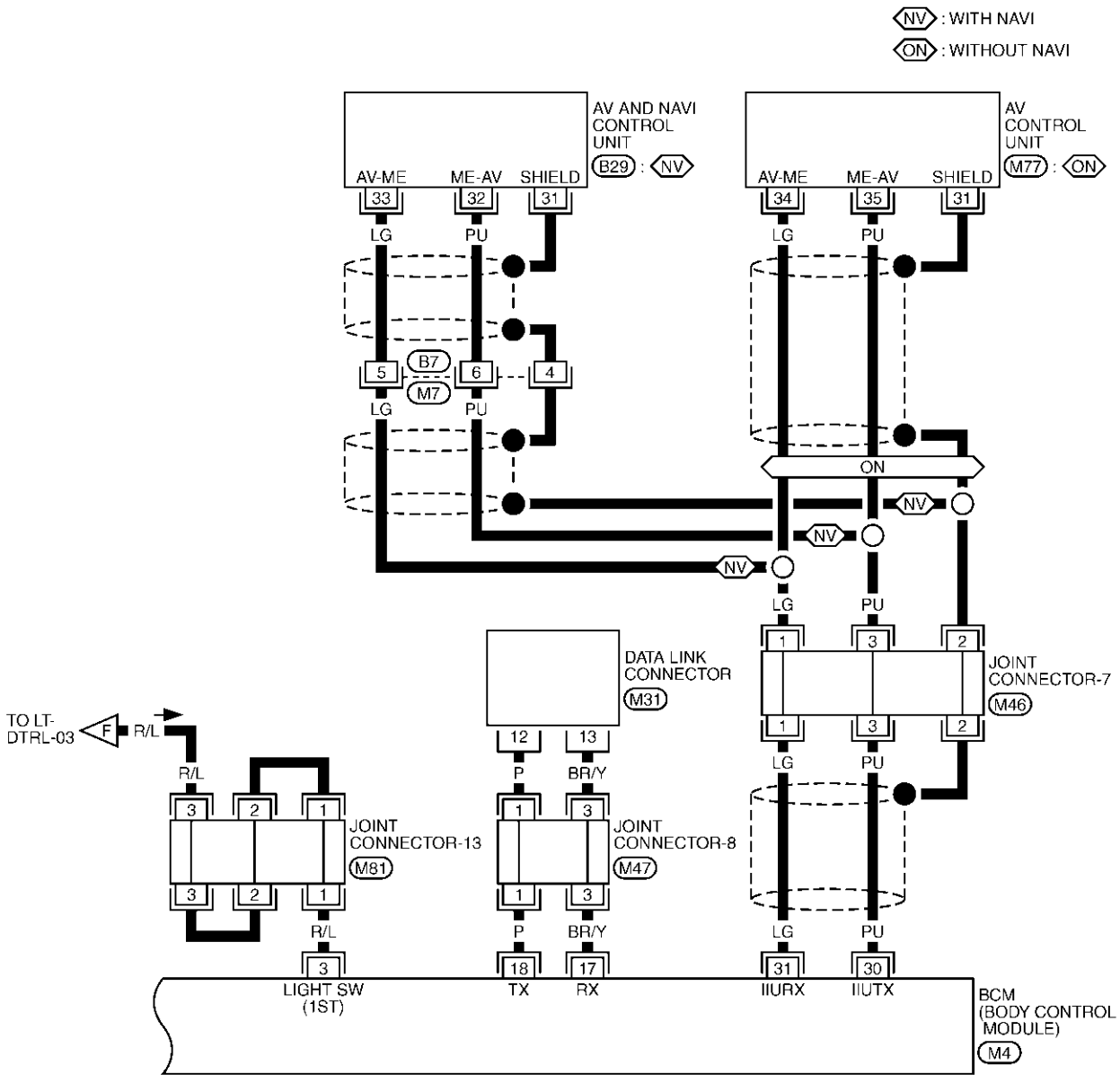
REFER TO THE FOLLOWING.

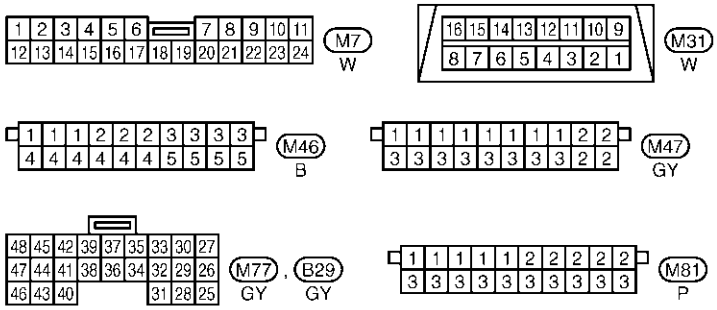
E205 -SUPER MULTIPLE JUNCTION (SMJ)

M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TKWA0531E

LT-DTRL-09





REFER TO THE FOLLOWING.
M4 -ELECTRICAL UNITS

TKWA0532E

Terminals and Reference Value for Headlamp Battery Saver Control Unit

AKS004D0

Terminal No.	Wire color	Item	Operation or condition			Reference value
1	W/B	Ignition switch ON or START	Ignition switch	OFF or ACC		Less than 1V
				ON or START		Battery voltage
2	W/PU	Headlamp relay out 1	Ignition switch (with lighting switch except OFF or 1ST)	OFF or ACC	More than 45 seconds after ignition switch is turned OFF or ACC	Battery voltage
					Within 45 seconds after ignition switch is turned OFF or ACC	Less than 1V
				ON or START		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V
3	R/B	Headlamp switch 1	Lighting switch	1ST		2.4V
				PASS or 2ND		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V
4	B	Ground	—			0V
5	L	Tail lamp switch out 1	Lighting switch	OFF		Battery voltage
				1ST or 2ND		Less than 1V
6	LG/B	Tail lamp relay out 1	Ignition switch (with lighting switch 1ST or 2ND)	OFF or ACC	More than 45 seconds after ignition switch is turned OFF or ACC	Battery voltage
					Within 45 seconds after ignition switch is turned OFF or ACC	Less than 1V
				ON or START		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V
7	Y/G	Battery power supply	—			Battery voltage
8	W/PU	Headlamp relay out 2	Ignition switch (with lighting switch except OFF or 1ST)	OFF or ACC	More than 45 seconds after ignition switch is turned OFF or ACC	Battery voltage
					With 45 seconds after ignition switch is turned OFF or ACC	Less than 1V
				ON or START		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V
9	R/B	Headlamp switch 2	Lighting switch	1ST		2.4V
				PASS or 2ND		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V
10	Y/R	RAP input signal	Ignition switch	OFF or ACC (After more than 45 seconds with ignition switch turned OFF or ACC)		Battery voltage
				ON or START		Less than 1V
11	B	Ground	—			0V
13	L	Tail lamp switch 2	Lighting switch	OFF		Battery voltage
				1ST or 2ND		Less than 1V

Terminal No.	Wire color	Item	Operation or condition			Reference value
14	LG/B	Tail lamp relay out 2	Ignition switch (with lighting switch 1ST or 2ND)	OFF or ACC	More than 45 seconds after ignition switch is turned OFF or ACC	Battery voltage
					Within 45 seconds after ignition switch is turned OFF or ACC	Less than 1V
				ON or START		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V

Terminals and Reference Value for BCM

AKS004D1

Terminal No.	Wire color	Item	Measuring condition			Reference value
			Ignition switch	Operation or condition		
3	R/L	Tail lamp signal	ON	Lighting switch: 1st	ON	Battery voltage
					OFF	Less than 1V
5	W/PU	Headlamp relay control signal	ON	Lighting switch: AUTO	Light is applied to optical sensor.	Battery voltage
					Light is not applied to optical sensor.	Less than 1V
11	LG/B	Tail lamp relay control signal	ON	Light switch: AUTO	Light is applied to optical sensor.	Battery voltage
					Light is not applied to optical sensor.	Less than 1V
14	Y/L	Lighting switch AUTO signal	ON	Lighting switch	AUTO	Less than 1V
					OFF	8V
17	BR/Y	Data link RX	—	—		—
18	P	Data link TX	—	—		—
30	PU	Communication signal TX (BCM-AV: Transmission)	—	—		—
31	LG	Communication signal RX (AV-BCM: Receiving)	—	—		—
37	LG	Front door switch (Passenger side) signal	OFF	Front door switch (Passenger side)	ON (open)	Less than 1V
					OFF (close)	Battery voltage
52	G/R	Optical sensor signal	ON	Light is applied to optical sensor.		3V
				Light is not applied to optical sensor.		Less than 1V
56	B	Ground	—	—		0V
58	Y/B	Optical sensor ground	ON	—		Less than 1V
59	SB	Optical sensor power supply	ON	—		5V
60	L/OR	Ignition switch ACC or ON	ACC	—		Battery voltage
68	W/B	Ignition switch ON or START	ON	—		Battery voltage
105	Y/L	Battery power supply	OFF	—		Battery voltage
113	B	Ground	—	—		0V
135	Y/G	RAP output signal	OFF	When headlamp battery saver timer is operated.		Less than 1V
142	R/Y	Front door switch (Driver side) signal	OFF	Front door switch (Driver side) signal	ON (open)	Less than 1V
					OFF (close)	Battery voltage

Terminals and Reference Value for Daytime Light Control Unit

AKS004T0

Terminal No.	Wire color	Item	Condition	Reference value
1	W/R	Alternator	When turning ignition switch to “ON”	Less than 1V
			When engine is running	Battery voltage
			When turning ignition switch to “OFF” and “ACC”	Less than 1V
2	SB	Ignition switch START	When turning ignition switch to “START”	Battery voltage
			When turning ignition switch to “ON” from “START”	Less than 1V
			When turning ignition switch to “OFF” and “ACC”	Less than 1V
3	W/G	Ignition switch ON or START	When turning ignition switch to “ON”	Battery voltage
			When turning ignition switch to “START”	Battery voltage
			When turning ignition switch to “OFF” and “ACC”	Less than 1V
4	W/G	RH light fuse	When lighting switch is turned to the 2ND position with “HI BEAM” or “FLASH TO PASS” position	Battery voltage
			When lighting switch is turned to “FLASH TO PASS” position with ignition switch “ON” position	Battery voltage
5	W/G	LH light fuse	When lighting switch is turned to the 2ND position with “HI BEAM” or “FLASH TO PASS” position	Battery voltage
			When lighting switch is turned to “FLASH TO PASS” position with ignition switch “ON” position	Battery voltage
6	R/W	LH high beam	When lighting switch is turned to the 2ND position with “HI BEAM” or “FLASH TO PASS” position	Battery voltage
			When releasing parking brake with engine running and turning lighting switch to “OFF” (daytime light operation) **CAUTION:** **Block wheels and ensure selector lever is in N or P position.**	Half battery voltage
7	R/W	RH high beam	When lighting switch is turned to the 2ND position with “HI BEAM” or “FLASH TO PASS” position	Battery voltage
			When releasing parking brake with engine running and turning lighting switch to “OFF” (daytime light operation) **CAUTION:** **Block wheels and ensure selector lever is in N or P position.**	Battery voltage
9	P	RH high beam (ground)	When turning lighting switch to the 2ND position with “HI BEAM“ or “FLASH TO PASS” position	Less than 1V
			When releasing parking brake with engine running and turning lighting switch to “OFF” (daytime light operation) **CAUTION:** **Block wheels and ensure selector lever is in N or P position.**	Half battery voltage
10	L/Y	LH high beam (ground)	When turning lighting switch to the 2ND position with “HI BEAM” or “FLASH TO PASS” position	Less than 1V
			When releasing parking brake with engine running and turning lighting switch to “OFF” (daytime light operation) **CAUTION:** **Block wheels and ensure selector lever is in N or P position.**	Less than 1V
13	L/R	LH light switch (High beam)	When turning lighting switch to the 2ND position with “HI BEAM” or “FLASH TO PASS” position	Less than 1V
14	P	RH light switch (High beam)	When turning lighting switch to the 2ND position with “HI BEAM” or “FLASH TO PASS” position	Less than 1V
16	B	Ground	—	0V

Terminal No.	Wire color	Item	Condition	Reference value
17	Y/R	Parking brake switch	When parking brake is released	Battery voltage
			When parking brake is set	Less than 1.7V

Symptom Chart

AKS002FL

Symptom	Possible cause and reference
Neither headlamp operates.	● Refer to LT-62, "Power Supply and Ground Circuit Inspection" . ● Refer to LT-70, "Lighting Switch Circuit Inspection" . If above systems are normal, replace the headlamp battery saver control unit.
Headlamp (low beam) does not operate, but headlamp (high beam) does operate.	● Refer to LT-62, "Power Supply and Ground Circuit Inspection" . ● Refer to LT-64, "Headlamp Relay-1 Circuit Inspection" . If above systems are normal, replace the headlamp battery saver control unit.
Headlamp (high beam) does not operate, but headlamp (low beam) does operate.	● Refer to LT-62, "Power Supply and Ground Circuit Inspection" . ● Refer to LT-65, "Headlamp Relay-2 Circuit Inspection" . If above systems are normal, replace the headlamp battery saver control unit.
RH low beam does not operate, but LH low beam does operate. LH low beam does not operate, but RH low beam does operate.	● Refer to LT-62, "Power Supply and Ground Circuit Inspection" . ● Refer to LT-64, "Headlamp Relay-1 Circuit Inspection" . ● Refer to LT-65, "Headlamp (Low) Circuit Inspection" .
RH high beam does not operate, but LH high beam does operate.	● Refer to LT-68, "Headlamp RH (High) Circuit Inspection" . ● Refer to LT-70, "Lighting Switch Circuit Inspection" . If above systems are normal, replace the daytime light control unit.
LH high beam does not operate, but RH high beam does operate.	● Refer to LT-67, "Headlamp LH (High) Circuit Inspection" . ● Refer to LT-70, "Lighting Switch Circuit Inspection" . If above systems are normal, replace the daytime light control unit.
High beam indicator does not work.	● Refer to LT-69, "High Beam Indicator Circuit Inspection" . If above system is normal, replace the combination meter.
Battery saver control does not operate properly.	● Refer to LT-71, "Front Door Switch Circuit Inspection" . ● Refer to LT-73, "Headlamp Battery Sever Control Unit Circuit Inspection" . ● Refer to LT-70, "Lighting Switch Circuit Inspection" . If the above systems are normal, replace the headlamp battery saver control unit.
Daytime light control does not operate properly.	● Refer to LT-62, "Power Supply and Ground Circuit Inspection" . ● Refer to LT-74, "Daytime Light Control Unit Circuit Inspection" . If the above systems are normal, replace the daytime light control unit.

Power Supply and Ground Circuit Inspection

AKS003SD

1. CHECK FUSE

Check for blown headlamp battery saver control unit, headlamp relay-1 and -2, and daytime light control unit fuses.

Unit or relay	Fuse No.
Headlamp battery saver control unit	6
Headlamp relay-1	55
	57
Headlamp relay-2	73
Daytime light control unit	82

Refer to LT-49, "Wiring Diagram — DTRL —" .

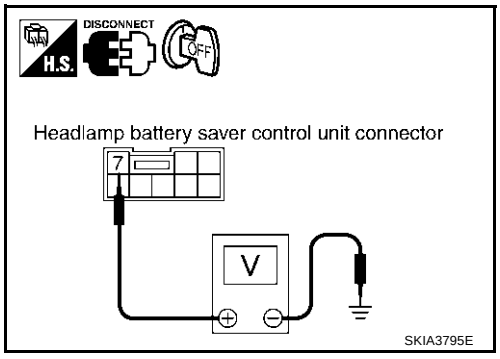
OK or NG

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

2. CHECK HEADLAMP BATTERY SAVER CONTROL UNIT POWER SUPPLY CIRCUIT

1. Disconnect the headlamp battery saver control unit connector.
2. Check voltage between headlamp battery saver control unit harness connector M34 terminal 7 (Y/G) and ground.

Battery voltage should exist.



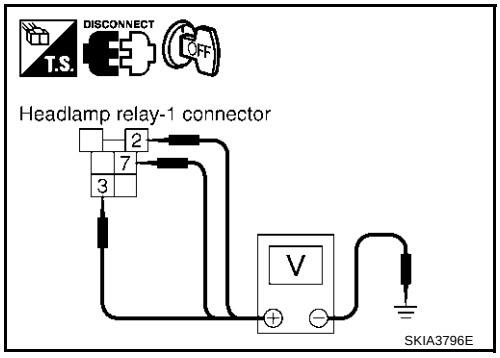
OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short between headlamp battery saver control unit and fuse.

3. CHECK HEADLAMP RELAY-1 POWER SUPPLY CIRCUIT

1. Remove the headlamp relay-1.
2. Check voltage between headlamp relay-1 harness connector E3-4 terminals 2, 3 or 7 and ground.

Battery voltage should exist.



OK or NG

OK >> GO TO 4.
NG >> Replace fuse, fusible link and relay bock (J/B).

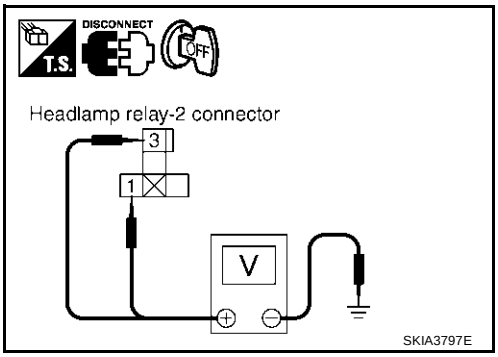
4. CHECK HEADLAMP RELAY-2 POWER SUPPLY CIRCUIT

1. Remove the headlamp relay-2.
2. Check voltage between headlamp relay-2 harness connector E5 terminals 1 or 3 and ground.

Battery voltage should exist.

OK or NG

OK >> GO TO 5.
NG >> Replace fuse, fusible link and relay box.



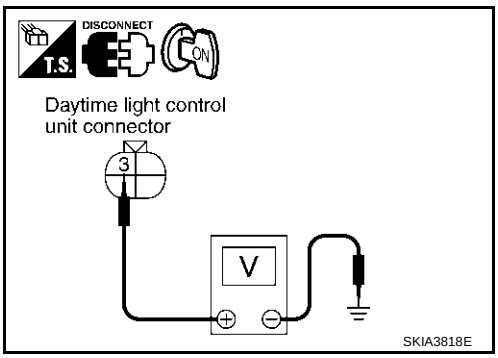
5. CHECK DAYTIME LIGHT CONTROL UNIT POWER SUPPLY CIRCUIT

1. Disconnect the daytime light control unit connector.
2. Turn ignition switch to ON position.
3. Check voltage between daytime light control unit harness connector E28 terminal 3 (W/G) and ground.

Battery voltage should exist.

OK or NG

OK >> GO TO 6.
NG >> Check harness for open or short between daytime light control unit and fuse.



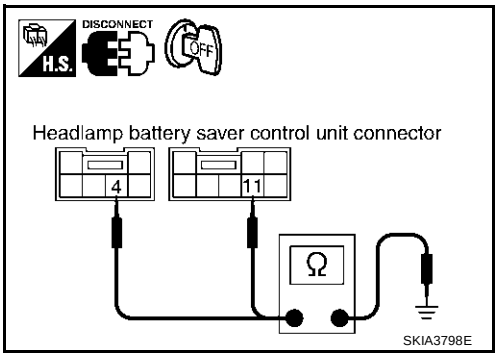
6. CHECK HEADLAMP BATTERY SAVER CONTROL UNIT GROUND CIRCUIT

1. Turn ignition switch to OFF position.
2. Check continuity between headlamp battery saver control unit harness connector terminals and ground.

Connector	Terminal (Wire color)	Continuity
M33	4 (B)	Yes
M34	11 (B)	

OK or NG

OK >> GO TO 7.
NG >> Check harness ground circuit.



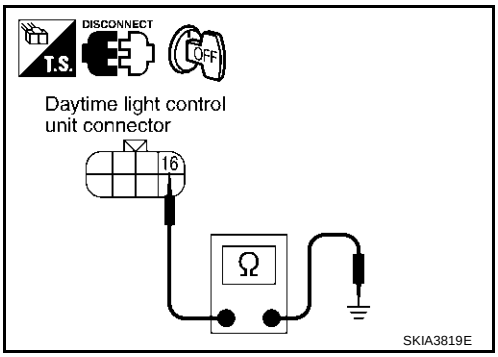
7. CHECK DAYTIME LIGHT CONTROL UNIT GROUND CIRCUIT

Check continuity between daytime light control unit harness connector E26 terminal 16 (B) and ground.

Continuity should exist.

OK or NG

OK >> INSPECTION END
NG >> Repair harness.



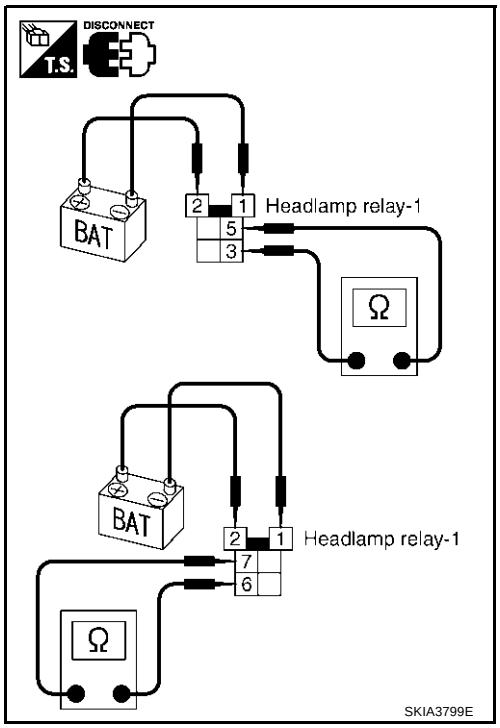
Headlamp Relay-1 Circuit Inspection

AKS003SE

1. CHECK HEADLAMP RELAY-1

1. Remove the headlamp relay-1.
2. Apply 12V between headlamp relay-1 terminals 2 and 1, and check continuity between terminals 3 and 5 and between terminals 6 and 7.

3 - 5 : Continuity should exist.
6 - 7 : Continuity should exist.



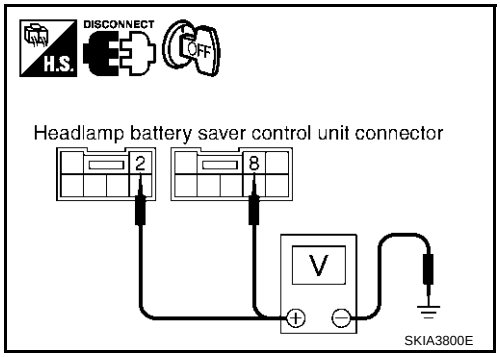
OK or NG

OK >> GO TO 2.
NG >> Replace the headlamp relay-1.

2. CHECK HEADLAMP RELAY-1 CONTROL SIGNAL

1. Install the headlamp relay-1.
2. Disconnect the headlamp relay-2 and the headlamp battery saver control unit connectors.
3. Check voltage between headlamp battery saver control unit harness connector M33 terminal 2 (W/PU) or harness connector M34 terminal 8 (W/PU) and ground.

2 - Ground : Battery voltage should exist.
8 - Ground : Battery voltage should exist.



OK or NG

OK >> INSPECTION END
NG >> Check harness for open or short between headlamp relay-1 and headlamp battery saver control unit.

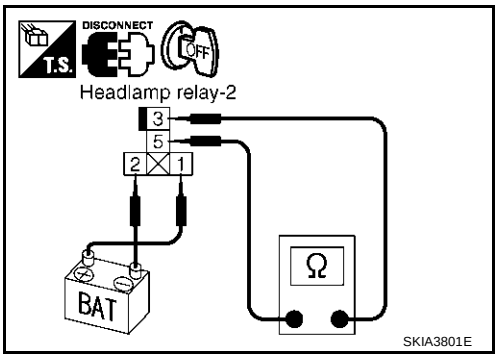
Headlamp Relay-2 Circuit Inspection

AKS003SF

1. CHECK HEADLAMP RELAY-2

1. Remove the headlamp relay-2.
2. Apply 12V between headlamp relay-2 terminals 2 and 1, and check continuity between terminals 3 and 5.

Continuity should exist.



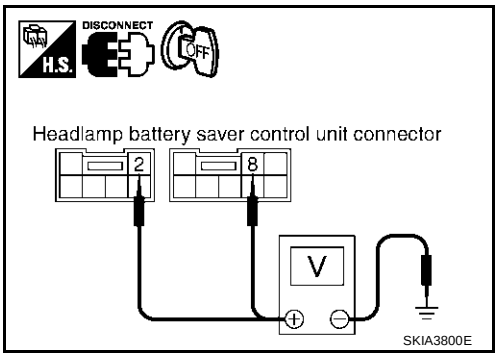
OK or NG

OK >> GO TO 2.
NG >> Replace the headlamp relay-2.

2. CHECK HEADLAMP RELAY-2 CONTROL SIGNAL

1. Install the headlamp relay-2.
2. Disconnect headlamp relay-1 and headlamp battery saver control unit connectors.
3. Check voltage between headlamp battery saver control unit harness connector M33 terminal 2 (W/PU) or harness connector M34 terminal 8 (W/PU) and ground.

2 - Ground : Battery voltage should exist.
8 - Ground : Battery voltage should exist.



OK or NG

OK >> INSPECTION END
NG >> Check harness for open or short between headlamp relay-2 and headlamp battery saver control unit.

Headlamp (Low) Circuit Inspection

AKS003SG

1. CHECK XENON BULB

1. Replace the xenon bulb with other side bulb or new one.
2. Check if headlamp is eclampsia illuminate correctly.

OK or NG

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

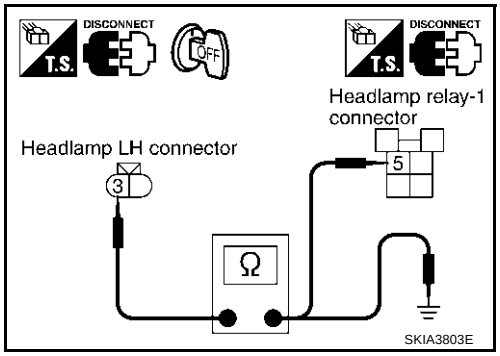
2. CHECK HEADLAMP LH POWER SUPPLY CIRCUIT

1. Turn ignition switch to OFF position.
2. Remove the headlamp relay-1 and disconnect the headlamp LH connector.
3. Check continuity between headlamp LH harness connector E10 terminal 3 (L) and headlamp relay-1 harness connector E3-4 terminal 5.

   Continuity should exist.

4. Check continuity between headlamp LH harness connector E10 terminal 3 (L) and ground.

   Continuity should not exist.



NOTE:
If headlamp LH is normal, skip this procedure and go to 3.

OK or NG

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

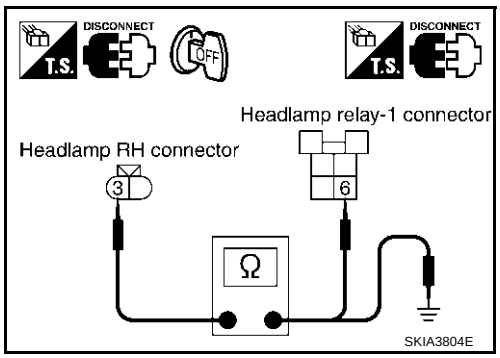
3. CHECK HEADLAMP RH POWER SUPPLY CIRCUIT

1. Remove the headlamp relay-1 and disconnect the headlamp RH connector.
2. Check continuity between headlamp RH harness connector E40 terminal 3 (W) and headlamp relay-1 harness connector E3-4 terminal 6.

   Continuity should exist.

3. Check continuity between headlamp RH harness connector E40 terminal 3 (W) and ground.

   Continuity should not exist.



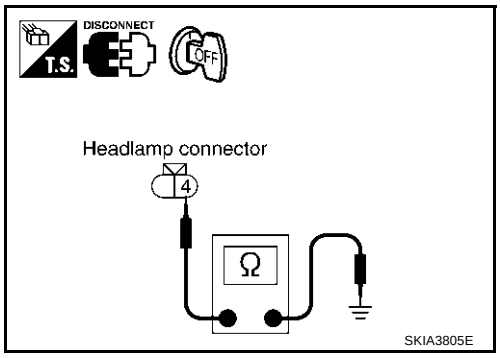
OK or NG

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

4. CHECK HEADLAMP GROUND CIRCUIT

Check continuity between headlamp LH harness connector E10 terminal 4 (B) or headlamp RH harness connector E40 terminal 4 (B) and ground.

Unit	Connector	Terminal (Wire color)	Continuity
Headlamp LH	E10	4 (B)	Yes
Headlamp RH	E40		



NOTE:
Only the headlamp which does not turn on should be inspected.

OK or NG

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

5. CHECK HID CONTROL UNIT

1. Install the headlamp relay-1.
2. Replace the HID control unit with other side control unit or new one.
3. Check if headlamp is eclampsia illuminate correctly.

OK or NG

OK >> Replace the HID control unit.
NG >> INSPECTION END

Headlamp LH (High) Circuit Inspection

AKS003TU

1. CHECK BULB

1. Replace the bulb with other side bulb or new one.
2. Check if headlamp is eclampsia illuminate correctly.

OK or NG

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

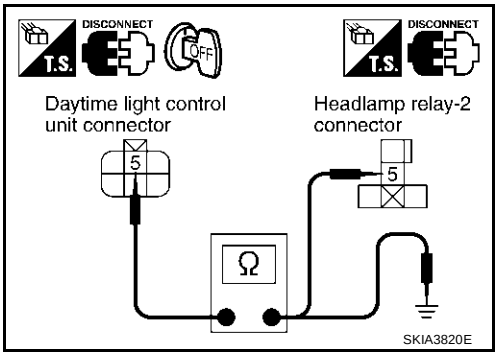
2. CHECK LH LIGHT POWER SUPPLY CIRCUIT

1. Turn ignition switch to OFF position.
2. Remove the headlamp relay-2 and disconnect the daytime light control unit connector.
3. Check continuity between daytime light control unit harness connector E27 terminal 5 (W/G) and headlamp relay-2 harness connector E5 terminal 5 (W/G).

Continuity should exist.

4. Check continuity between daytime light control unit harness connector E27 terminal 5 (W/G) and ground.

Continuity should not exist.



OK or NG

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

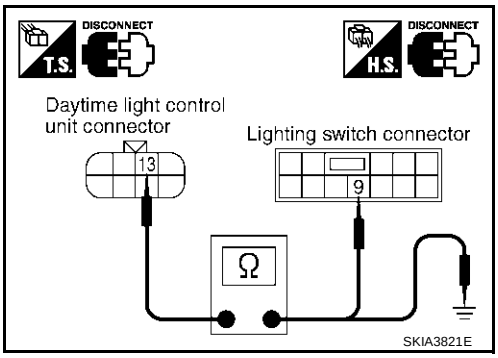
3. CHECK LH LIGHT MAIN SWITCH CIRCUIT

1. Disconnect the lighting switch.
2. Check continuity between daytime light control unit harness connector E26 terminal 13 (L/R) and lighting switch harness connector M55 terminal 9 (L/R).

Continuity should exist.

3. Check continuity between daytime light control unit connector E26 terminal 13 (L/R) and ground.

Continuity should not exist.



OK or NG

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

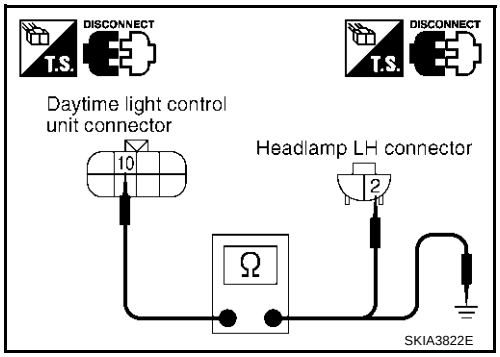
4. CHECK LH LIGHT MAIN CIRCUIT

1. Disconnect the headlamp LH connector.
2. Check continuity between daytime light control unit harness connector E26 terminal 10 (L/Y) and headlamp LH harness connector E9 terminal 2 (L/Y).

Continuity should exist.

3. Check continuity between daytime light control unit harness connector E26 terminal 10 (L/Y) and ground.

Continuity should not exist.



OK or NG

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

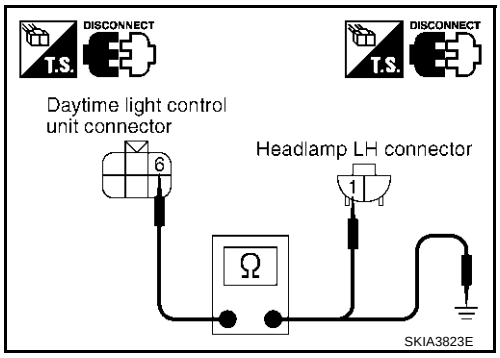
5. CHECK LH LIGHT GROUND CIRCUIT

1. Check continuity between daytime light control unit harness connector E27 terminal 6 (R/W) and headlamp LH harness connector E9 terminal 1 (R/W).

Continuity should exist.

2. Check continuity between daytime light control unit harness connector E27 terminal 6 (R/W) and ground.

Continuity should not exist.



OK or NG

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

Headlamp RH (High) Circuit Inspection

AKS003SH

1. CHECK BULB

1. Replace the bulb with other side bulb or new one.
2. Check if headlamp is eclampsia illuminate correctly.

OK or NG

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

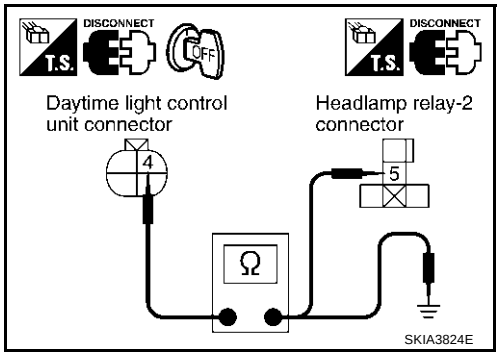
2. CHECK RH LIGHT POWER SUPPLY CIRCUIT

1. Turn ignition switch to OFF position.
2. Remove the headlamp relay-2 and disconnect the daytime light control unit connector.
3. Check continuity between daytime light control unit harness connector E28 terminal 4 (W/G) and headlamp relay-2 harness connector E5 terminal 5 (W/G).

Continuity should exist.

4. Check continuity between daytime light control unit harness connector E28 terminal 4 (W/G) and ground.

Continuity should not exist.



OK or NG

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

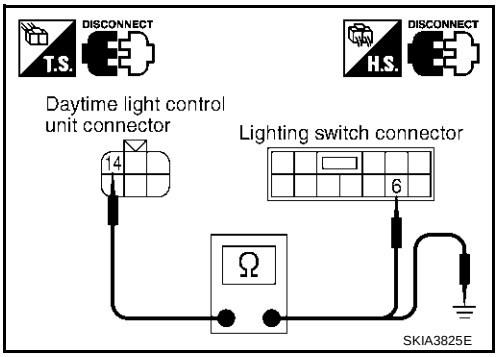
3. CHECK RH LIGHT MAIN SWITCH CIRCUIT

1. Disconnect the lighting switch connector.
2. Check continuity between daytime light control unit harness connector E27 terminal 14 (P) and lighting switch harness connector M55 terminal 6 (P).

Continuity should exist.

3. Check continuity between daytime light control unit harness connector E27 terminal 14 (P) and ground.

Continuity should not exist.



OK or NG

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

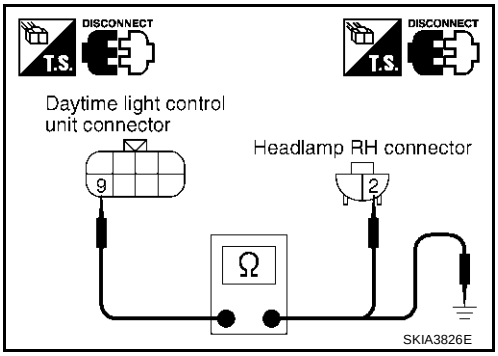
4. CHECK RH LIGHT MAIN CIRCUIT

1. Disconnect the headlamp RH connector.
2. Check continuity between daytime light control unit harness connector E26 terminal 9 (P) and headlamp RH harness connector E39 terminal 2 (P).

Continuity should exist.

3. Check continuity between daytime light control unit harness connector E26 terminal 9 (P) and ground.

Continuity should not exist.



OK or NG

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

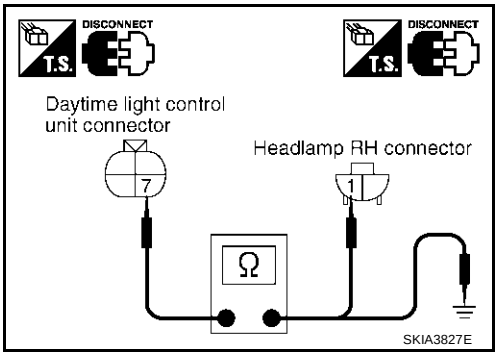
5. CHECK RH LIGHT GROUND CIRCUIT

1. Check continuity between daytime light control unit harness connector E28 terminal 7 (R/W) and headlamp RH harness connector E39 terminal 1 (R/W).

Continuity should exist.

2. Check continuity between daytime light control unit harness connector E28 terminal 7 (R/W) and ground.

Continuity should not exist.



OK or NG

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

High Beam Indicator Circuit Inspection

AKS003SI

1. CHECK BULB

Check the bulb in combination meter.

OK or NG

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

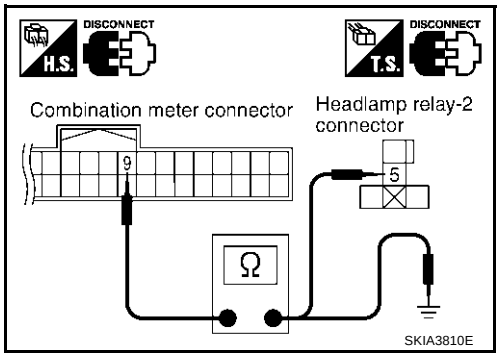
2. CHECK HIGH BEAM INDICATOR POWER SUPPLY CIRCUIT

1. Remove the headlamp relay-2 and disconnect the combination meter connector.
2. Check continuity between combination meter harness connector M41 terminal 9 (W/G) and headlamp relay-2 harness connector E5 terminal 5 (W/G).

Continuity should exist.

3. Check continuity between combination meter harness connector M41 terminal 9 (W/G) and ground.

Continuity should not exist.



OK or NG

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

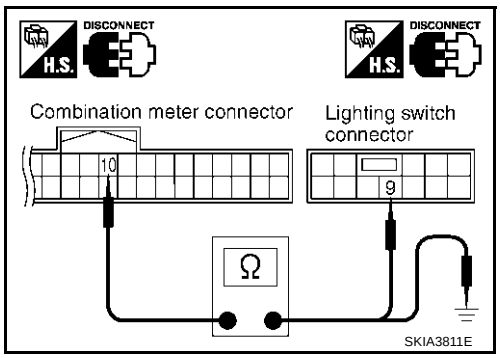
3. CHECK HIGH BEAM INDICATOR GROUND CIRCUIT

1. Disconnect the lighting switch connector.
2. Check continuity between combination meter harness connector M41 terminal 10 (L/R) and lighting switch harness connector M55 terminal 9 (L/R).

Continuity should exist.

3. Check continuity between combination meter harness connector M41 terminal 10 (L/R) and ground.

Continuity should not exist.



OK or NG

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

Lighting Switch Circuit Inspection

AKS003SJ

1. CHECK LIGHTING SWITCH

Check continuity of the lighting switch. Refer to LT-100, "Switch Circuit Inspection" .

OK or NG

OK >> GO TO 2.
NG >> Replace the lighting switch.

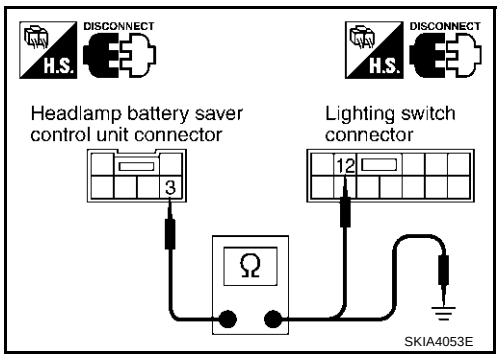
2. CHECK LIGHTING SWITCH POWER SUPPLY CIRCUIT 1

1. Disconnect the headlamp battery saver control unit connector and the lighting switch connector.
2. Check continuity between headlamp battery saver control unit harness connector M33 terminal 3 (R/B) and lighting switch harness connector M55 terminal 12 (R/B).

Continuity should exist.

3. Check continuity between headlamp battery saver control unit harness connector M33 terminal 3 (R/B) and ground.

Continuity should not exist.



OK or NG

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

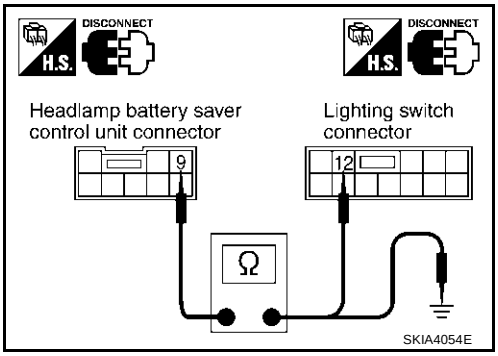
3. CHECK LIGHTING SWITCH POWER SUPPLY CIRCUIT 2

1. Check continuity between headlamp battery saver control unit harness connector M34 terminal 9 (R/B) and lighting switch harness connector M55 terminal 12 (R/B).

   Continuity should exist.

2. Check continuity between headlamp battery saver control unit harness connector M34 terminal 9 (R/B) and ground.

   Continuity should not exist.



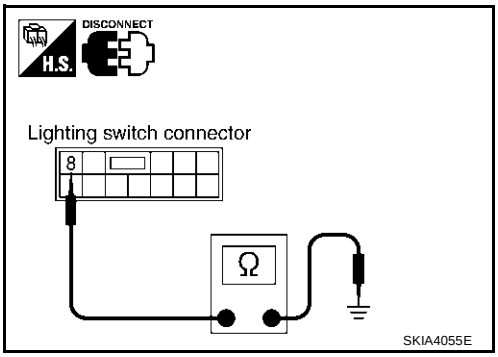
OK or NG

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

4. CHECK LIGHTING SWITCH GROUND CIRCUIT

Check continuity between lighting switch harness connector M55 terminal 8 (B) and ground.

Continuity should exist.



OK or NG

OK >> INSPECTION END
NG >> Repair harness ground circuit.

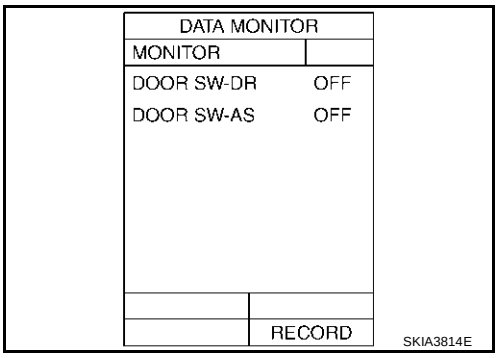
Front Door Switch Circuit Inspection

AKS003SK

1. CHECK DOOR SWITCH SIGNAL

With CONSULT-II

1. Select “INTERIOR ILLUMINATION” of “IVMS” on “SELECT SYSTEM” screen.
2. Operate each door via “DOOR SW-DR” and “DOOR SW-AS” on “DATA MONITOR” screen and make sure that the switch turns on and off as commanded.



Without CONSULT-II

- Open and close the front door (driver side, passenger side) and make sure that the switch turns on and off by “switch monitor” in the self-diagnosis function.

OK or NG

OK >> INSPECTION END
NG >> ● When front door switch (driver side) is malfunction, go to 2.
● When front door switch (passenger side) is malfunction, go to 4.

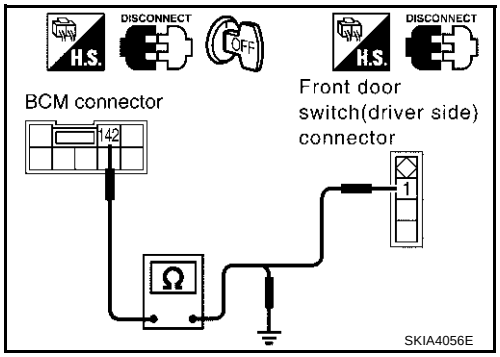
2. CHECK FRONT DOOR SWITCH (DRIVER SIDE) CIRCUIT

1. Turn ignition switch to OFF position.
2. Disconnect the BCM connector and the front door switch (driver side) connector.
3. Check continuity between BCM harness connector B4 terminal 142 (R/Y) and front door switch (driver side) harness connector B20 terminal 1 (R/Y).

   Continuity should exist.

4. Check continuity between BCM harness connector B4 terminal 142 (R/Y) and ground.

   Continuity should not exist.



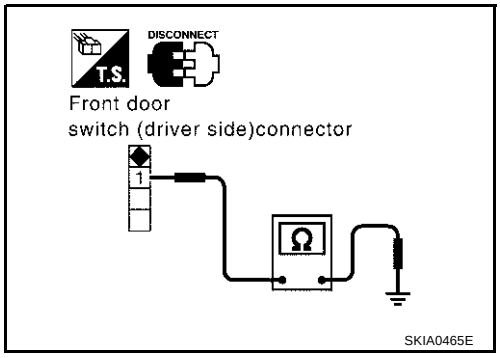
OK or NG

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

3. CHECK FRONT DOOR SWITCH (DRIVER SIDE)

1. Check continuity between front door switch (driver side) connector B20 terminal 1 (R/Y) and ground.

   Switch released (ON) : Continuity should exist.
   Switch pressed (OFF) : Continuity should not exist.



OK or NG

OK >> Replace the BCM.
NG >> Replace the front door switch (driver side).

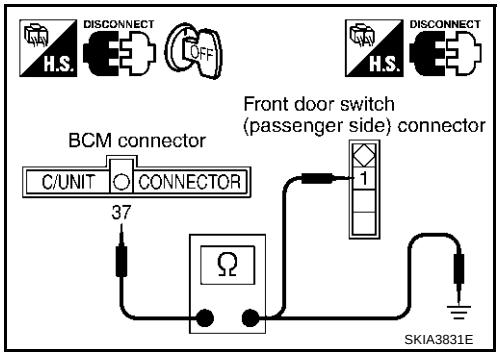
4. CHECK FRONT DOOR SWITCH (PASSENGER SIDE) CIRCUIT

1. Turn ignition switch to OFF position.
2. Disconnect the BCM connector and the front door switch (passenger side) connector.
3. Check continuity between BCM harness connector M4 terminal 37 (LG) and front door switch (passenger side) harness connector B220 terminal 1 (LG).

   Continuity should exist.

4. Check continuity between BCM harness connector M4 terminal 37 (LG) and ground.

   Continuity should not exist.



OK or NG

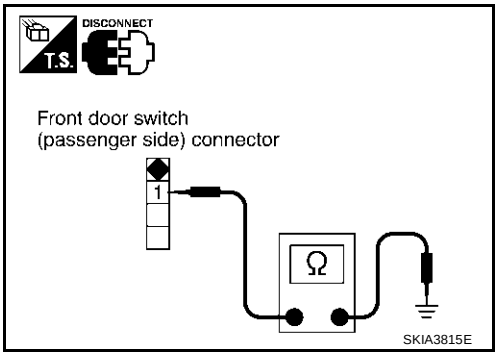
OK >> GO TO 5.
NG >> Repair harness or connector.

5. CHECK FRONT DOOR SWITCH (PASSENGER SIDE)

Check continuity between front door switch (passenger side) connector B220 terminal 1 (LG) and ground.

Switch released (ON) : Continuity should exist.

Switch pressed (OFF) : Continuity should not exist.



OK or NG

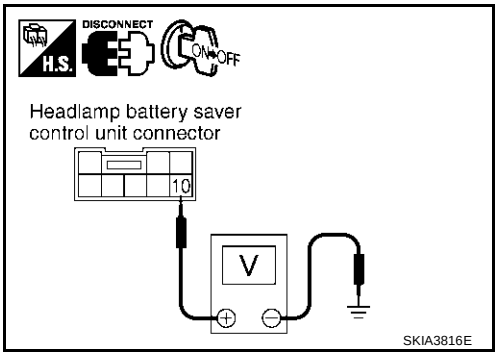
OK >> Replace the BCM.
NG >> Replace the front door switch (passenger side).

Headlamp Battery Sever Control Unit Circuit Inspection

AKS003SL

1. CHECK RAP SIGNAL

1. Disconnect the battery saver control unit connector.
2. Turn ignition switch to ON position.
3. Check voltage between headlamp battery saver control unit harness connector M34 terminal 10 (Y/R) and ground after turning off the ignition switch.



Connector	Terminal (Wire color)	Condition	Voltage
M34	10 (Y/R)	Within 45 seconds after ignition switch is turned off	Less than 1V
		Front door is opened or more than 45 seconds after ignition switch is turned off	Battery voltage

OK or NG

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

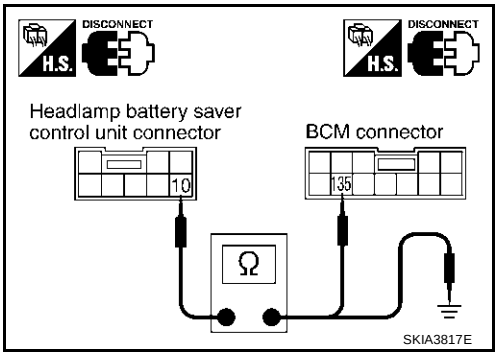
2. CHECK RAP SIGNAL CIRCUIT

1. Disconnect the BCM connector.
2. Check continuity between headlamp battery saver control unit harness connector M34 terminal 10 (Y/R) and BCM harness connector R4 terminal 135 (Y/G).

Continuity should exist.

3. Check continuity between headlamp battery saver control unit harness connector M34 terminal 10 (Y/R) and ground.

Continuity should not exist.



OK or NG

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

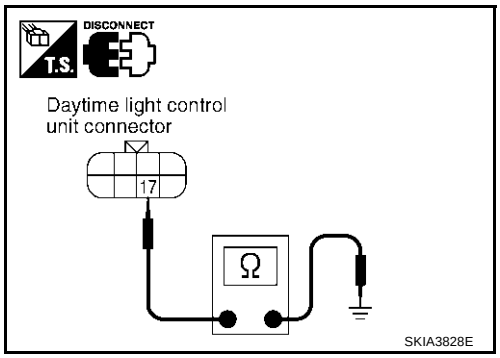
Daytime Light Control Unit Circuit Inspection

AKS003SM

1. CHECK PARKING BREAK SWITCH SIGNAL

1. Disconnect the daytime light control unit.
2. Check continuity between daytime light control unit harness connector E26 terminal 17 (Y/R) and ground.

Connector	Terminal (Wire color)	Condition	Continuity
E26	17 (Y/R)	Parking break applied	Yes
		Parking break released	No



OK or NG

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

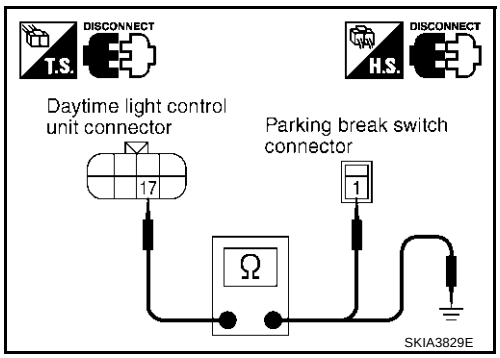
2. CHECK PARKING BREAK SWITCH CIRCUIT

1. Disconnect the parking break switch connector.
2. Check continuity between daytime light control unit harness connector E26 terminal 17 (Y/R) and parking break switch harness connector M8 terminal 1 (Y/R).

Continuity should exist.

3. Check continuity between daytime light control unit harness connector E26 terminal 17 (Y/R) and ground.

Continuity should not exist.



OK or NG

OK >> Check parking break switch and case ground.
NG >> Repair harness or connector.

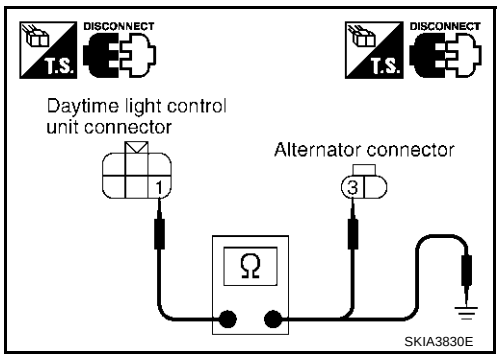
3. CHECK ALTERNATOR CIRCUIT

1. Disconnect the alternator connector.
2. Check continuity between daytime light control unit harness connector E27 terminal 1 (W/R) and the alternator harness connector E310 terminal 3 (W/R).

Continuity should exist.

3. Check continuity between daytime light control unit harness connector E27 terminal 1 (W/R) and ground.

Continuity should not exist.



OK or NG

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

Aiming Adjustment

AKS002FM

Refer to LT-39, "Aiming Adjustment" in “HEADLAMP (FOR USA)”.

Bulb Replacement

AKS002FN

Refer to LT-41, "Bulb Replacement" in “HEADLAMP (FOR USA)”.

Removal and Installation

AKS002FO

Refer to LT-42, "Removal and Installation" in “HEADLAMP (FOR USA)”.

Disassembly and Assembly

AKS002FP

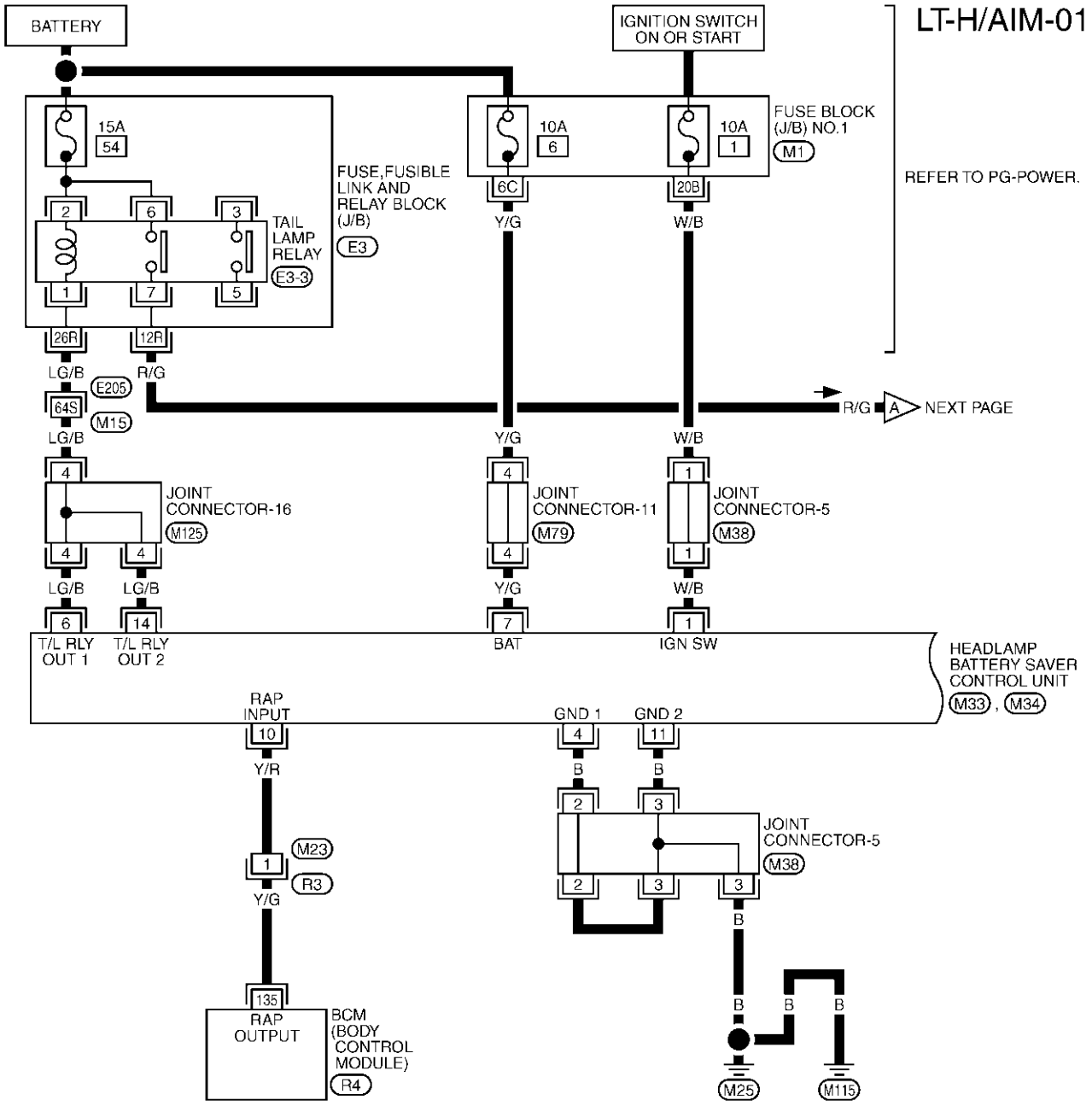
Refer to LT-43, "Disassembly and Assembly" in “HEADLAMP (FOR USA)”.

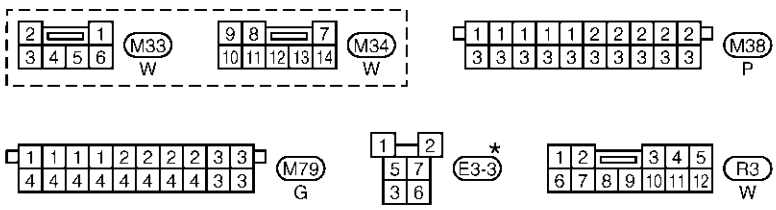
HEADLAMP AIMING CONTROL

PFP:26010

Wiring Diagram — H/AIM —

AKS002FQ





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

REFER TO THE FOLLOWING.

E205 -SUPER MULTIPLE JUNCTION (SMJ)

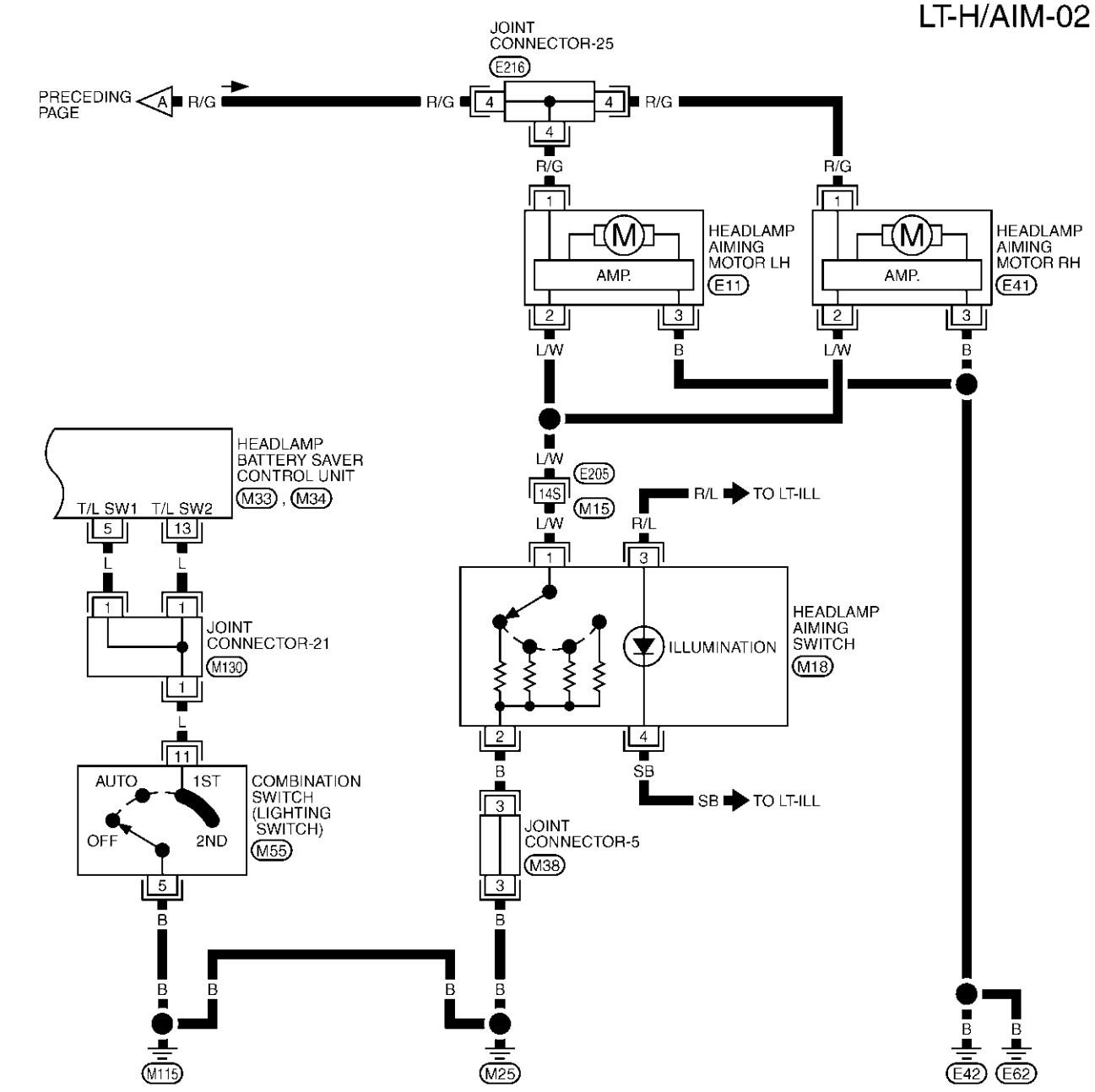
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

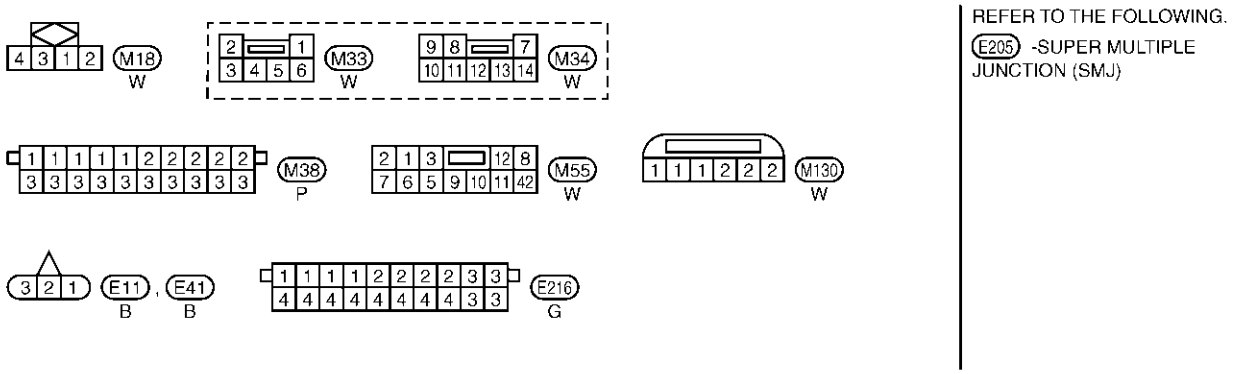
E3 -FUSE,FUSIBLE LINK AND RELAY BLOCK (J/B)

R4 -ELECTRICAL UNITS

TKWA0533E

LT-H/AIM-02





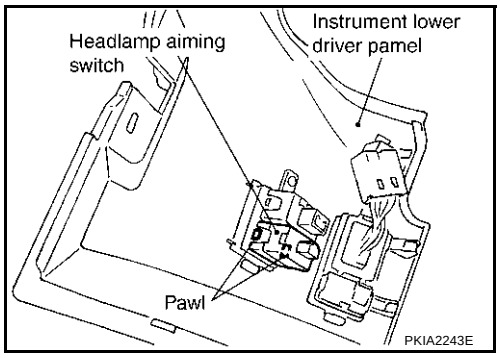
REFER TO THE FOLLOWING.
E205 -SUPER MULTIPLE JUNCTION (SMJ)

TKWA0534E

Removal and Installation

AKS002FR

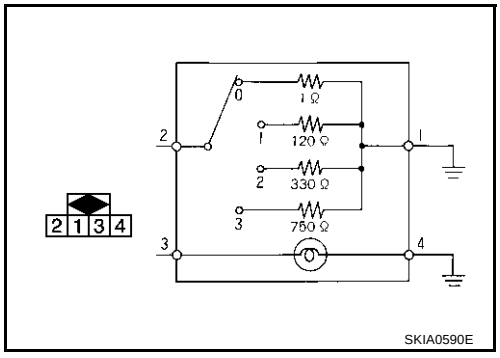
1. Remove the instrument lower driver panel. Refer to IP-11, "WORK STEPS" in “INSTRUMENT PANEL (IP)” section.
2. Press the headlamp aiming switch fixing pawls and remove the unit from the instrument lower driver panel.



Switch Circuit Inspection

AKS002FS

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



FRONT FOG LAMP

PFP:26150

System Description

AKS003RR

OUTLINE

Power is supplied at all times

- to headlamp relay-1 terminal 2, and
- to headlamp relay-1 terminal 3
- through 20A fuse [No. 57, located in the fuse, fusible link and relay block (J/B)], and
- to headlamp relay-1 terminal 7
- through 20A fuse [No. 55, located in the fuse, fusible link and relay block (J/B)], and
- to headlamp battery saver control unit terminal 7
- through 10A fuse [No. 6, located in the fuse block (J/B) No. 1], and
- to front fog lamp relay terminal 3
- through 15A fuse (No. 76, located in the fuse, fusible link and relay box).

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

- to headlamp battery saver control unit terminal 1.
- through 10A fuse [No. 1, located in the fuse block (J/B) No. 1].

Ground is supplied to headlamp battery saver control unit terminals 4 and 11.
When lighting switch is in 2ND position, ground is supplied

- to headlamp relay-1 terminal 1 from headlamp battery saver control unit terminals 2 and 8
- through headlamp battery saver control unit terminals 3 and 9
- through lighting switch terminals 8 and 12
- through body grounds M25 and M115.

Fog Lamp Operation

The fog lamp switch is built into the combination switch. The lighting switch must be in the 2ND position and low (B) position, and the fog lamp switch must be ON for fog lamp operation.
With the fog lamp switch in the ON position, ground is supplied

- to front fog lamp relay terminal 2
- through the front fog lamp switch, lighting switch and body grounds M25 and M115.

The front fog lamp relay is energized and power is supplied

- from front fog lamp relay terminal 5
- to terminal 2 of each front fog lamp.

Ground is supplied to terminal 1 of each front fog lamp through body grounds E24, E42 and E62.
With power and ground supplied, the front fog lamps illuminate.

BATTERY SAVER CONTROL

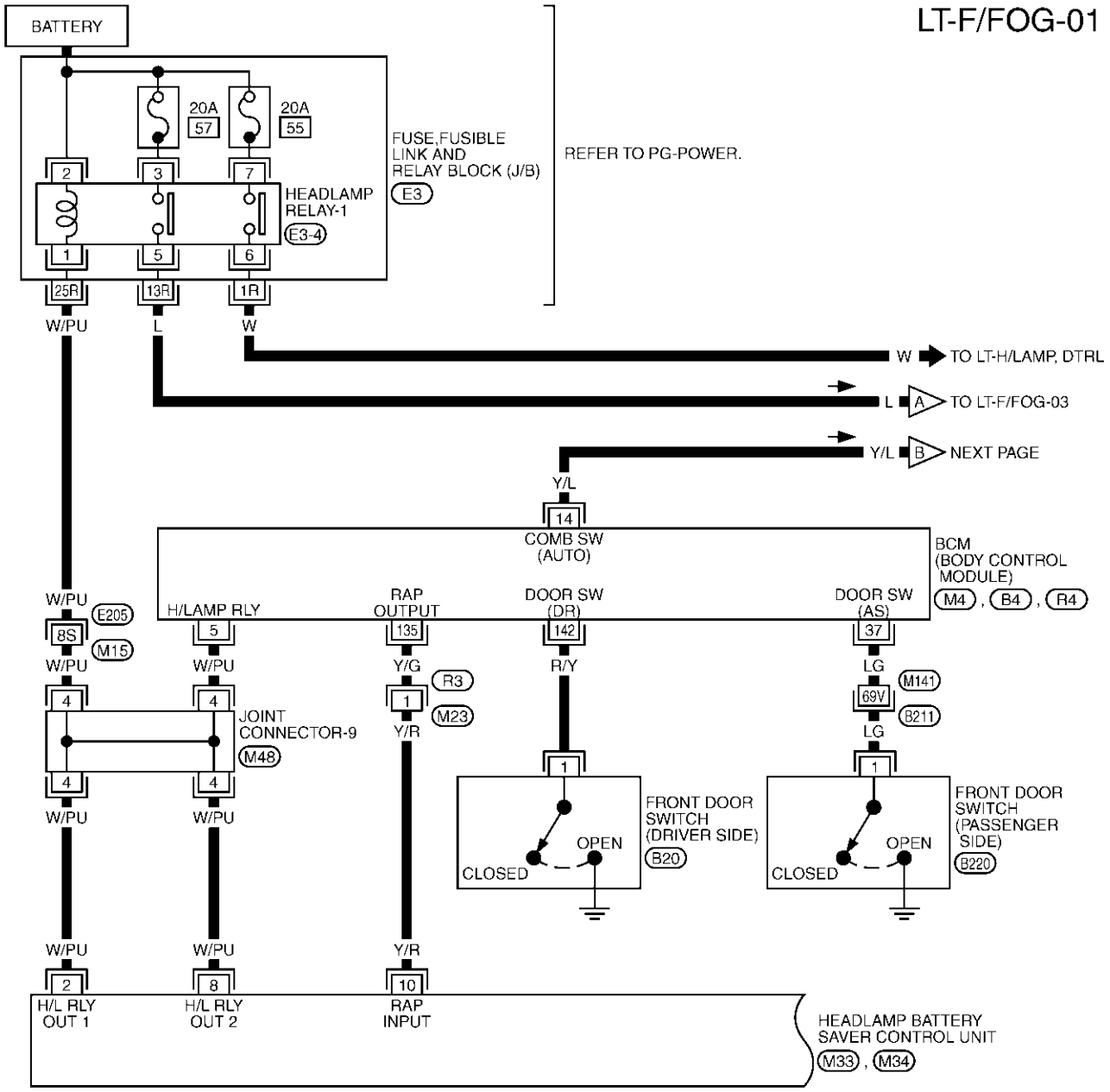
When the ignition switch is turned from ON (or START) to OFF (or ACC) positions while front fog lamps are illuminated, the RAP signal is supplied to terminal 10 of the headlamp battery saver control unit from BCM terminal 135.
After counting 45 seconds by the RAP signal from the BCM to headlamp battery saver control unit, the ground supply to headlamp relay-1 terminal 1 from headlamp battery saver control unit terminals 2 and 8 is terminated.
Then the front fog lamps are turned off.
The front fog lamps are turned off when front door (driver or passenger side) is opened even if 45 seconds have not passed after ignition switch is turned from ON (or START) to OFF (or ACC) positions while front fog lamp are illuminated.
When the lighting switch is turned from OFF to 2ND after front fog lamps are turned to off by the battery saver control, ground is supplied

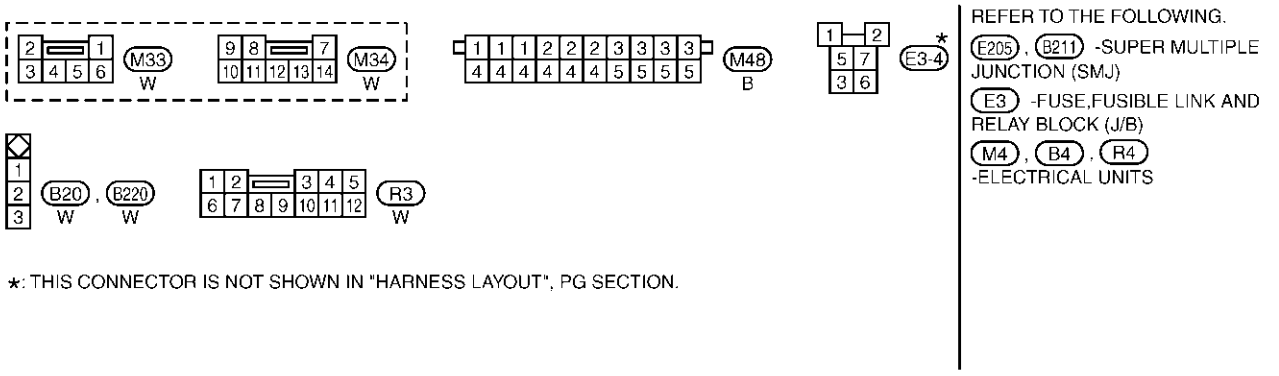
- to headlamp relay-1 terminal 1 from headlamp battery saver control unit terminals 2 and 8
- through headlamp battery saver control unit terminals 3 and 9 from lighting switch terminal 12.

Then front fog lamps illuminate again.

Wiring Diagram — F/FOG —

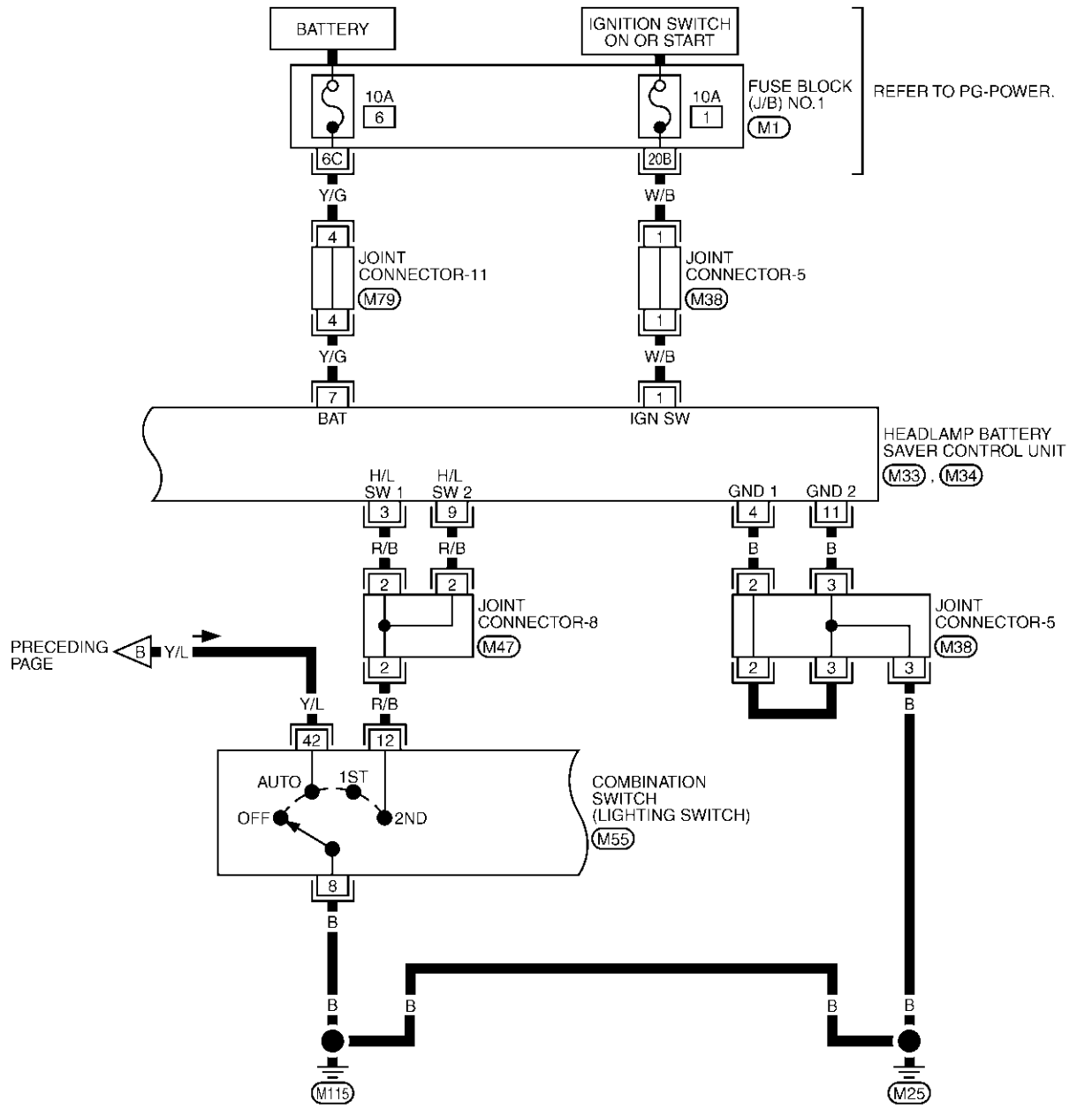
AKS003RS

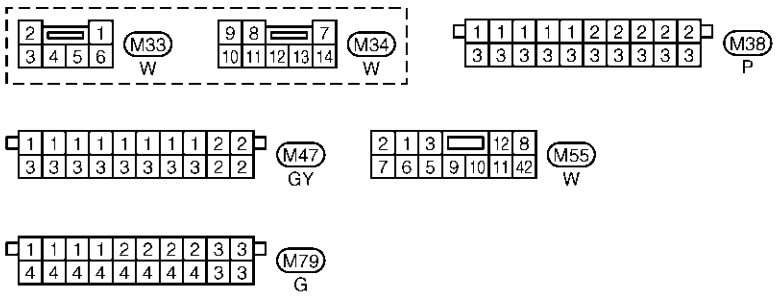




TKWA0542E

LT-F/FOG-02

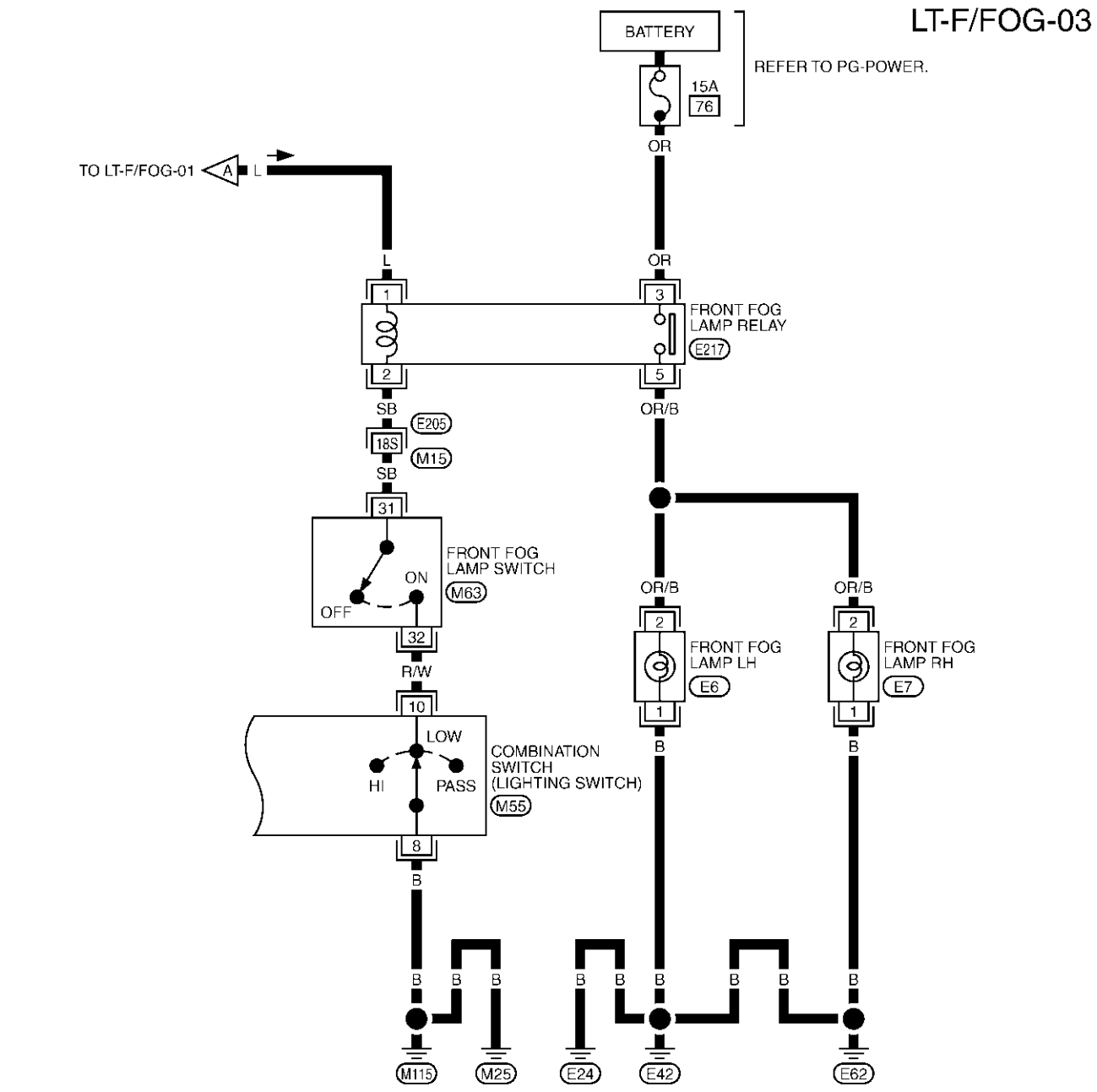


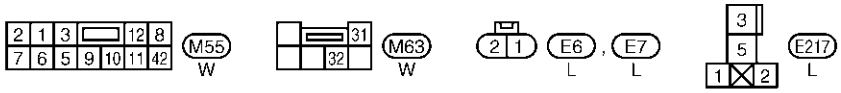


REFER TO THE FOLLOWING.

M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TKWA0543E





REFER TO THE FOLLOWING.
E205 -SUPER MULTIPLE JUNCTION (SMJ)

TKWA0544E

Terminals and Reference Value for Headlamp Battery Saver Control Unit

AKS004SY

Terminal No.	Wire color	Item	Operation or condition			Reference value
1	W/B	Ignition switch ON or START	Ignition switch	OFF or ACC		Less than 1V
				ON or START		Battery voltage
2	W/PU	Headlamp relay out 1	Ignition switch (with lighting switch except OFF or 1ST)	OFF or ACC	More than 45 seconds after ignition switch is turned OFF or ACC	Battery voltage
					Within 45 seconds after ignition switch is turned OFF or ACC	Less than 1V
				ON or START		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V
3	R/B	Headlamp switch 1	Lighting switch	1ST		2.4V
				PASS or 2ND		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V
4	B	Ground	—			0V
7	Y/G	Battery power supply	—			Battery voltage
8	W/PU	Headlamp relay out 2	Ignition switch (with lighting switch except OFF or 1ST)	OFF or ACC	More than 45 seconds after ignition switch is turned OFF or ACC	Battery voltage
					With 45 seconds after ignition switch is turned OFF or ACC	Less than 1V
				ON or START		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V
9	R/B	Headlamp switch 2	Lighting switch	1ST		2.4V
				PASS or 2ND		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V
10	Y/G	RAP input signal	Ignition switch	OFF or ACC (After more than 45 seconds with ignition switch turned OFF or ACC)		Battery voltage
				ON or START		Less than 1V
11	B	Ground	—			0V

Terminals and Reference Value for BCM

AKS004SZ

Terminal No.	Wire color	Item	Measuring condition			Reference value
			Ignition switch	Operation or condition		
5	W/PU	Headlamp relay control signal	ON	Lighting switch: AUTO	Light is applied to optical sensor.	Battery voltage
					Light is not applied to optical sensor.	Less than 1V
14	Y/L	Lighting switch AUTO signal	ON	Lighting switch	AUTO	Less than 1V
					OFF	8V
37	LG	Front door switch (Passenger side) signal	OFF	Front door switch (Passenger side)	ON (open)	Less than 1V
					OFF (close)	Battery voltage
135	Y/G	RAP output signal	OFF	When headlamp battery saver timer is operated.		Less than 1V

Terminal No.	Wire color	Item	Measuring condition			Reference value
			Ignition switch	Operation or condition		
142	R/Y	Front door switch (Driver side) signal	OFF	Front door switch (Driver side) signal	ON (open)	Less than 1V
					OFF (close)	Battery voltage

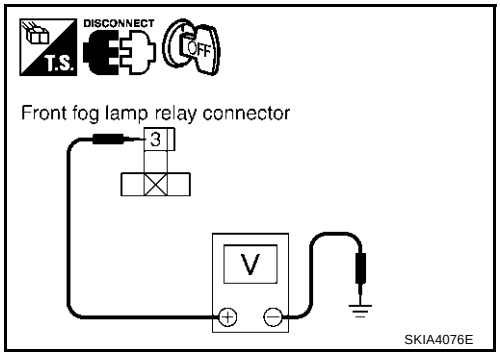
Front Fog Lamps Do Not Illuminate (Both Sides)

AKS003RT

1. CHECK FRONT FOG LAMP POWER SUPPLY CIRCUIT

1. Remove the front fog lamp relay.
2. Check voltage between front fog lamp relay harness connector E217 terminal 3 (OR) and ground.

Battery voltage should exist.



OK or NG

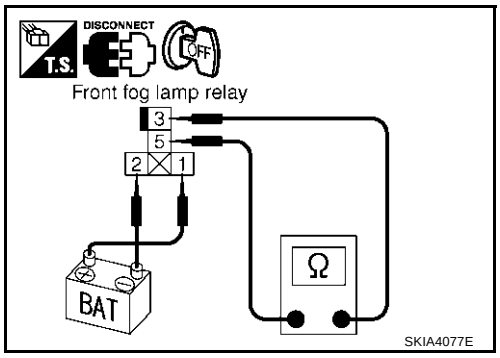
OK >> GO TO 2.
NG >> Check the following.

- 15A fuse (No.76 located in fuse, fusible link and relay box)
- Harness for open or short between front fog lamp relay and fuse

2. CHECK FRONT FOG LAMP RELAY

Apply 12V between front fog lamp relay terminals 2 and 1, and check continuity between terminals 3 and 5.

Continuity should exist.



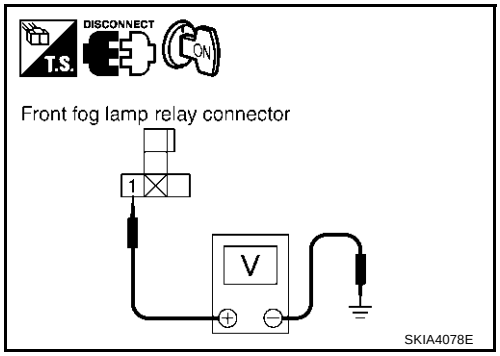
OK or NG

OK >> GO TO 3.
NG >> Replace the front fog lamp relay.

3. CHECK FRONT FOG LAMP RELAY POWER SUPPLY CIRCUIT

1. Turn ignition switch to ON position.
2. Check voltage between front fog lamp relay harness connector E217 terminal 1 (L) and ground.

Lighting switch 2ND : Battery voltage should exist.



OK or NG

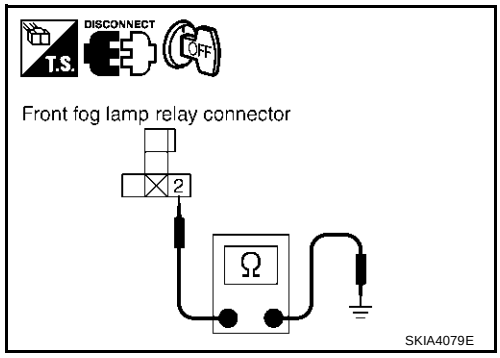
OK >> GO TO 4.
NG >> Check harness for open or short between front fog lamp relay and headlamp relay-1.

4. CHECK FRONT FOG LAMP SWITCH CIRCUIT

1. Turn ignition switch to OFF position.
2. Check continuity between front fog lamp relay harness connector E217 terminal 2 (SB) and ground while operating the front fog lamp switch with lighting switch “LOW” position.

Front fog lamp switch ON **: Continuity should exist.**

Front fog lamp switch OFF **: Continuity should not exist.**



OK or NG

OK >> Check harness for open or short between front fog lamp relay and front fog lamps.

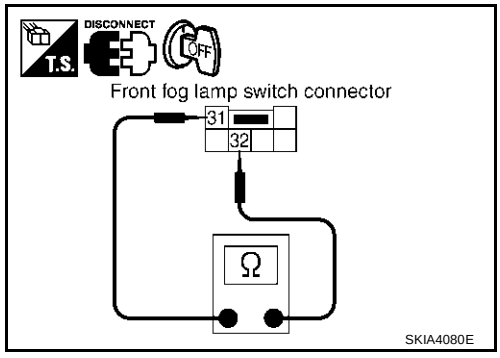
NG >> GO TO 5.

5. CHECK FRONT FOG LAMP SWITCH

1. Disconnect the front fog lamp switch.
2. Check continuity between front fog lamp switch connector M63 terminals 31 and 32 while operating the front fog lamp switch.

Front fog lamp switch ON **: Continuity should exist.**

Front fog lamp switch OFF **: Continuity should not exist.**



OK or NG

OK >> GO TO 6.

NG >> Replace the front fog lamp switch.

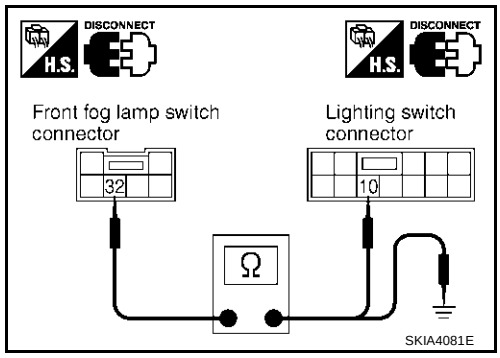
6. CHECK LIGHTING SWITCH CIRCUIT

1. Disconnect the lighting switch.
2. Check continuity between front fog lamp switch harness connector M63 terminal 32 (R/W) and lighting switch harness connector M55 terminal 10 (R/W).

Continuity should exist.

3. Check continuity between front fog lamp switch harness connector M63 terminal 32 (R/W) and ground.

Continuity should not exist.



OK or NG

OK >> Check lighting switch. Refer to LT-100, "Switch Circuit Inspection" .

NG >> Repair harness or connector.

Front Fog Lamp Does Not Illuminate (One Side)

AKS003RU

1. VALVE INSPECTION

1. Replace the bulb with other side bulb or new one.
2. Check if front fog lamp is eclampsia illuminate correctly.

OK or NG

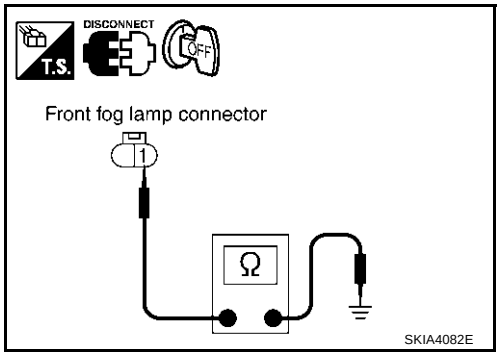
OK >> Replace the bulb.

NG >> GO TO 2.

2. CHECK FRONT FOG LAMP CIRCUIT

1. Turn ignition switch to OFF position.
2. Disconnect the front fog lamp connector.
3. Check continuity between front fog lamp harness connector terminal 1 (B) of lamp which does not illumination and ground.

Continuity should exist.



OK or NG

OK >> Check harness for open or short between front fog lamp relay and front fog lamp.

NG >> Repair harness.

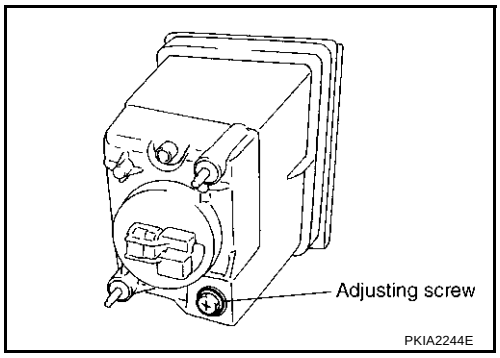
Aiming Adjustment

AKS003RV

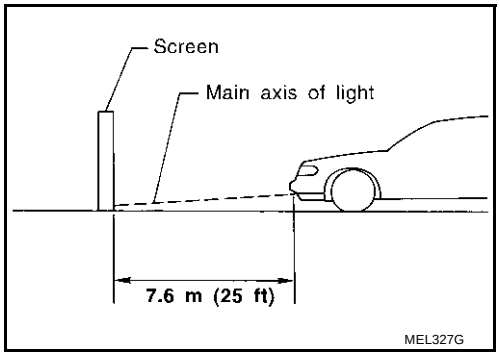
The fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb. Before performing aiming adjustment, make sure of the following.

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

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

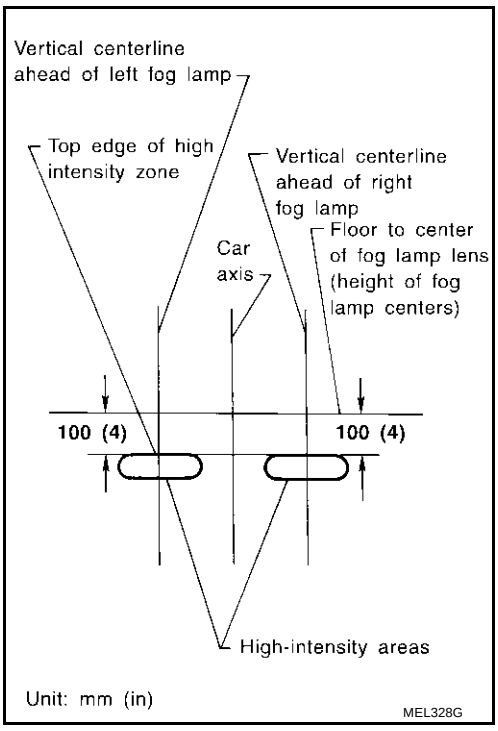


1. Set the distance between the screen and the center of the fog lamp lens as shown.
2. Turn front fog lamps ON.



3. Adjust front fog lamps using adjusting screw so that the top edge of the high intensity zone is 100 mm (4 in) below the height of the fog lamp centers as shown.

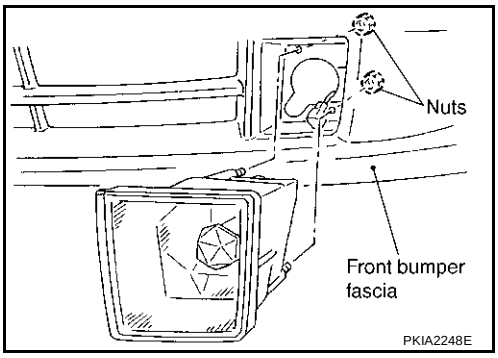
- When performing adjustment, if necessary, cover the headlamps and opposite fog lamp



Bulb Replacement, Removal and Installation

AKS003RX

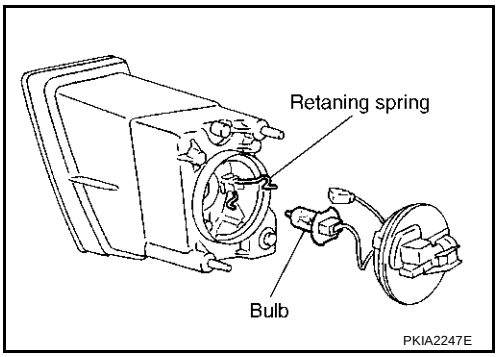
1. Remove the fender protector. Refer to EI-21, "FENDER PROTECTOR" .
2. Disconnect front fog lamp connector.
3. Remove nuts, and slide fog lamp out of front bumper fascia.



4. Turn the plastic cap counterclockwise and unlock it.
5. Unlock the retaining spring and remove the bulb from the front fog lamp.

Fog lamp **:12V 55W (H3 halogen)**

6. Install in the reverse order of removal.



CAUTION:

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

TURN SIGNAL AND HAZARD WARNING LAMPS

PFP:26120

System Description

AKS002FT

TURN SIGNAL LAMP OPERATION

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

- through 10A fuse [No. 5, located in the fuse block (J/B) No. 1]
- to combination flasher unit terminal 1
- through combination flasher unit terminal 2
- to combination switch (turn signal) terminal 1.

Ground is supplied to combination flasher unit terminal 7 through body grounds M24 and M114.

Turn Signal Lamp LH

When the combination switch (turn signal) is moved to the L position, power is supplied from combination switch (turn signal) terminal 3

- to front combination lamp LH terminal 3
- to rear combination lamp LH terminal 5
- to door mirror (driver side) terminal 7
- to combination meter terminal 19.

Ground is supplied to the front combination lamp LH terminal 2 through body grounds E24, E42 and E62.
Ground is supplied to the rear combination lamp LH terminal 6 through body grounds B17and B57.
Ground is supplied to the door mirror (driver side) terminal 5 through body grounds M24 and M114.
Ground is supplied to the combination meter terminal 45 through body grounds M24 and M114.
With power and ground supplied, the combination flasher unit controls the flashing of the LH turn signal lamps.

Turn Signal Lamp RH

When the combination switch (turn signal) is moved to the R position, power is supplied from combination switch (turn signal) terminal 2

- to front combination lamp RH terminal 3
- to rear combination lamp RH terminal 5
- to door mirror (passenger side) terminal 7
- to combination meter terminal 41.

Ground is supplied to the front combination lamp RH terminal 2 through body grounds E24, E42 and E62.
Ground is supplied to the rear combination lamp RH terminal 6 through body grounds B17 and B57.
Ground is supplied to the door mirror (passenger side) terminal 5 through body grounds M24 and M114.
Ground is supplied to the combination meter terminal 45 through body grounds M24 and M114.
With power and ground supplied, the combination flasher unit controls the flashing of the RH turn signal lamps.

HAZARD LAMP OPERATION

Power is supplied at all times

- through 15A fuse [No. 22, located in the fuse block (J/B) No. 1]
- to combination flasher unit terminal 4
- through combination flasher unit terminal 6
- to hazard switch terminal 1.

With the hazard switch in the ON position, power is supplied
Ground is supplied to hazard switch terminal 2 through body grounds M24 and M114.
Power is supplied through terminal 8 of the combination flasher unit

- to front combination lamp LH terminal 3
- to rear combination lamp LH terminal 5
- to door mirror (driver side) terminal 7
- to combination meter terminal 19.

Power is supplied through terminal 3 of the combination flasher unit

- to front combination lamp RH terminal 3
- to rear combination lamp RH terminal 5

- to door mirror (passenger side) terminal 7
- to combination meter terminal 41.

Ground is supplied to terminal 2 of each front combination lamp through body grounds E24, E42 and E62.
Ground is supplied to terminal 6 of each rear combination lamp through body grounds B17and B57.
Ground is supplied to terminal 5 of each door mirror through body grounds M24 and M114.
Ground is supplied to combination meter terminal 45 through body grounds M24 and M114.
With power and ground supplied, the combination flasher unit controls the flashing of the hazard warning lamps.

MULTI-REMOTE CONTROL SYSTEM OPERATION

Power is supplied at all times

- through 15A fuse [No. 22, located in the fuse block (J/B) No. 1]
- to combination flasher unit terminal 4.

Ground is supplied to combination flasher unit terminal 6, when the multi-remote control system is triggered through the BCM.
Refer to BL-51, "REMOTE KEYLESS ENTRY SYSTEM" in BL section.
The BCM is energized.
Power is supplied through terminal 8 of the combination flasher unit

- to front combination lamp LH terminal 3
- to rear combination lamp LH terminal 5
- to door mirror (driver side) terminal 7
- to combination meter terminal 19.

Power is supplied through terminal 3 of the combination flasher unit

- to front combination lamp RH terminal 3
- to rear combination lamp RH terminal 5
- to door mirror (passenger side) terminal 7
- to combination meter terminal 41.

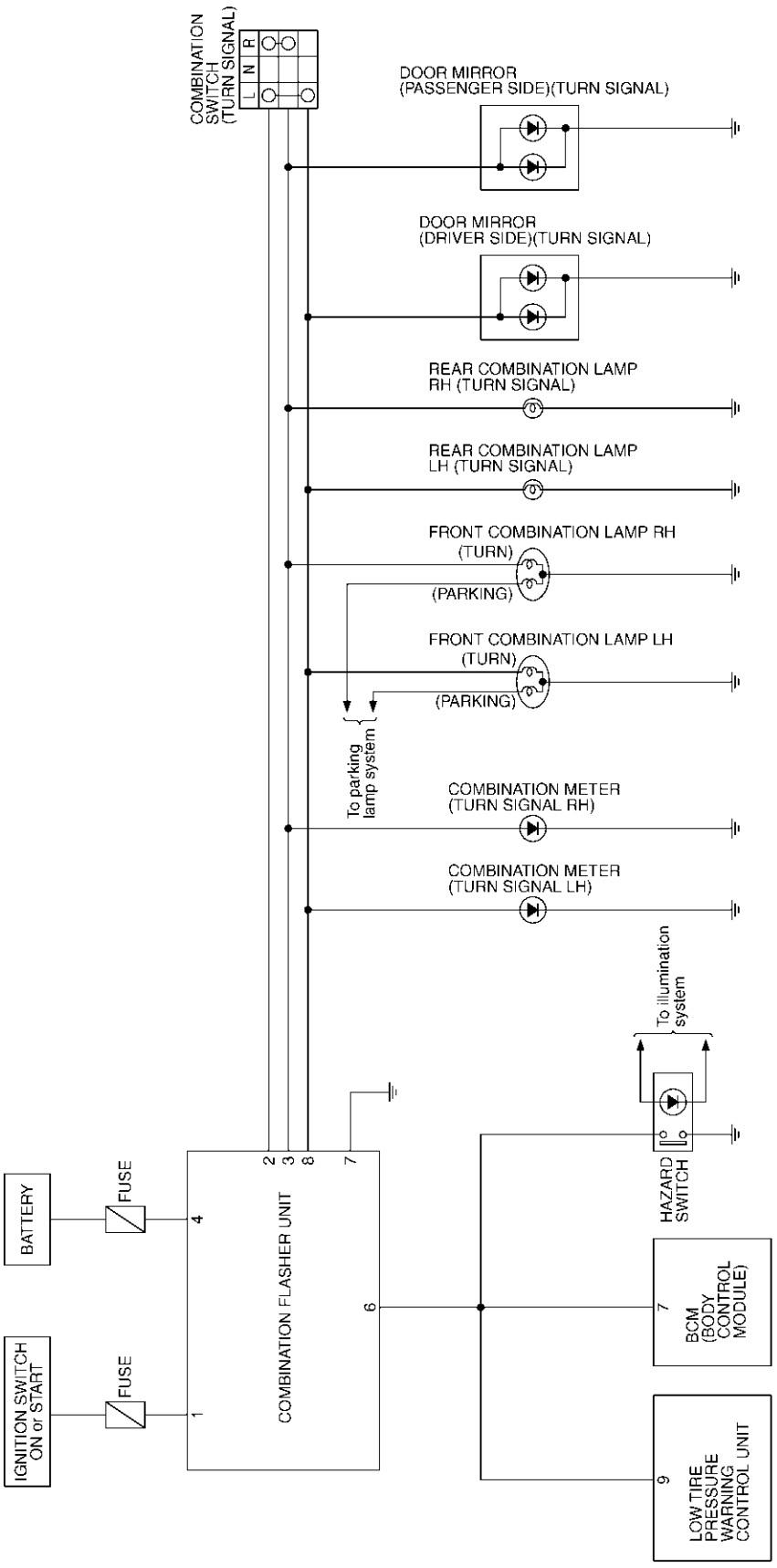
Ground is supplied to terminal 2 of each front combination lamp through body grounds E24, E42 and E62.
Ground is supplied to terminal 6 of each rear combination lamp through body grounds B17 and B57.
Ground is supplied to terminal 5 of each door mirror through body grounds M24 and M114.
Ground is supplied to combination meter terminal 45 through body grounds M24 and M114.
With power and ground supplied, the BCM controls the flashing of the hazard warning lamps.

LOW TIRE PRESSURE WARNING CONTROL SYSTEM

When ID is normally registered to each transmitter in the low tire pressure warning control unit, the hazard warning lamp flashes twice. Refer to WT-14, "ID Registration Procedure" in WT section.

Schematic

AKS002FU

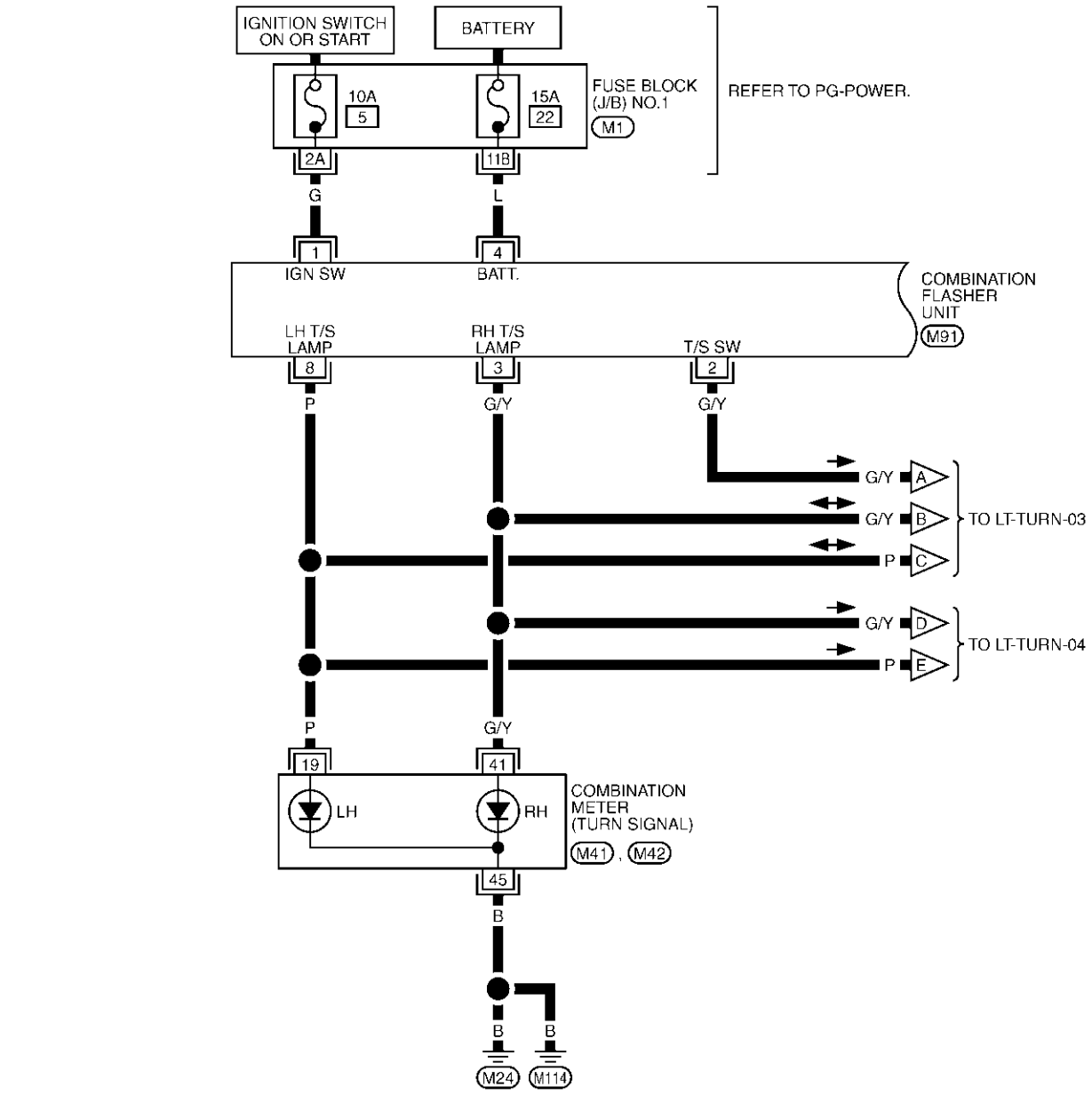


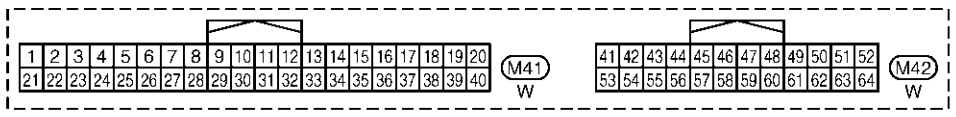
TKWA0547E

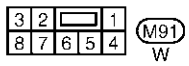
Wiring Diagram — TURN —

AKS002FV

LT-TURN-01



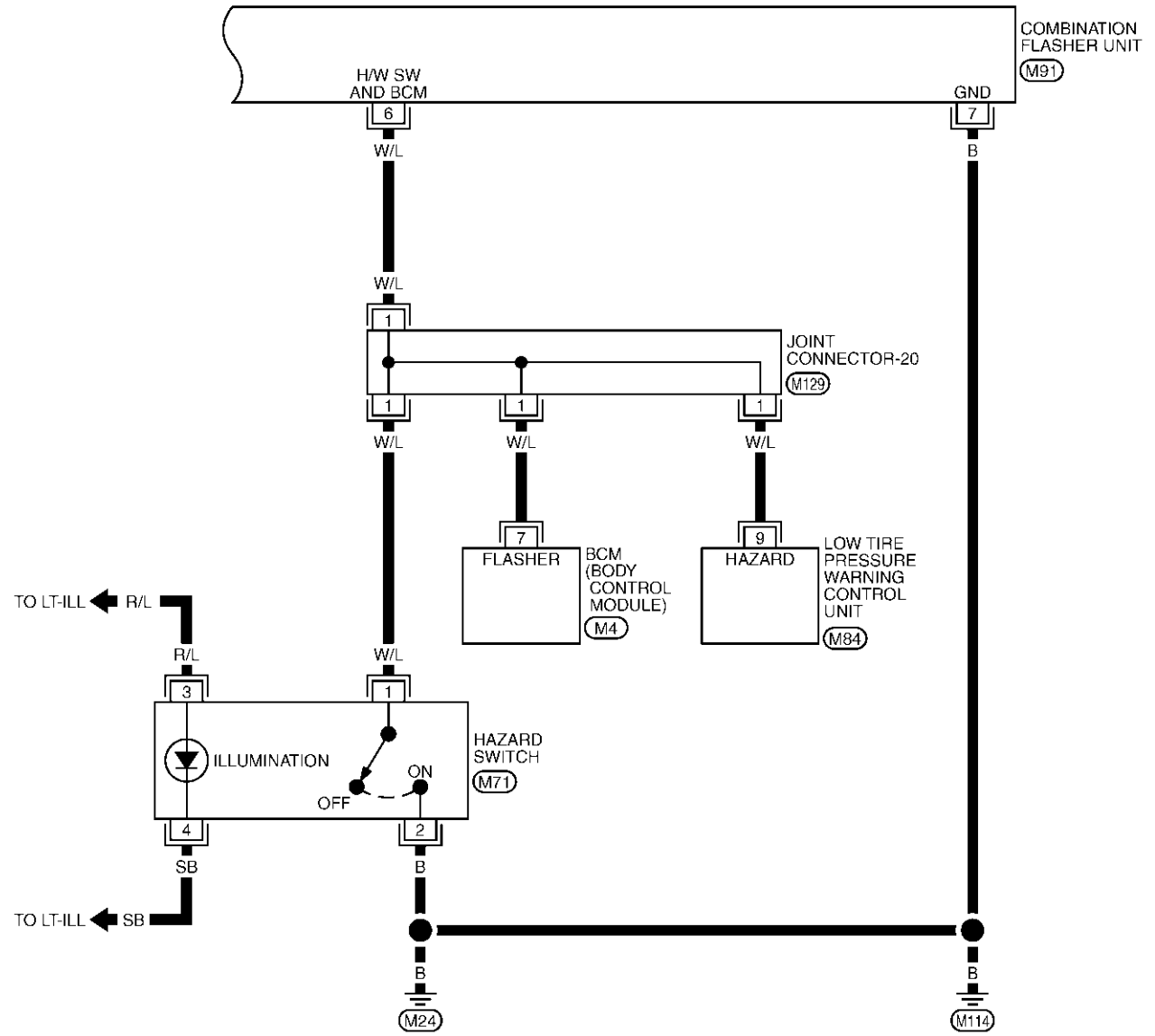


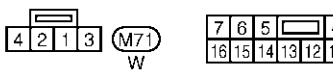


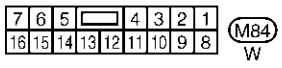
REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

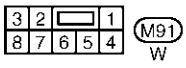
TKWA0548E

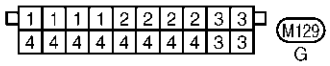
LT-TURN-02







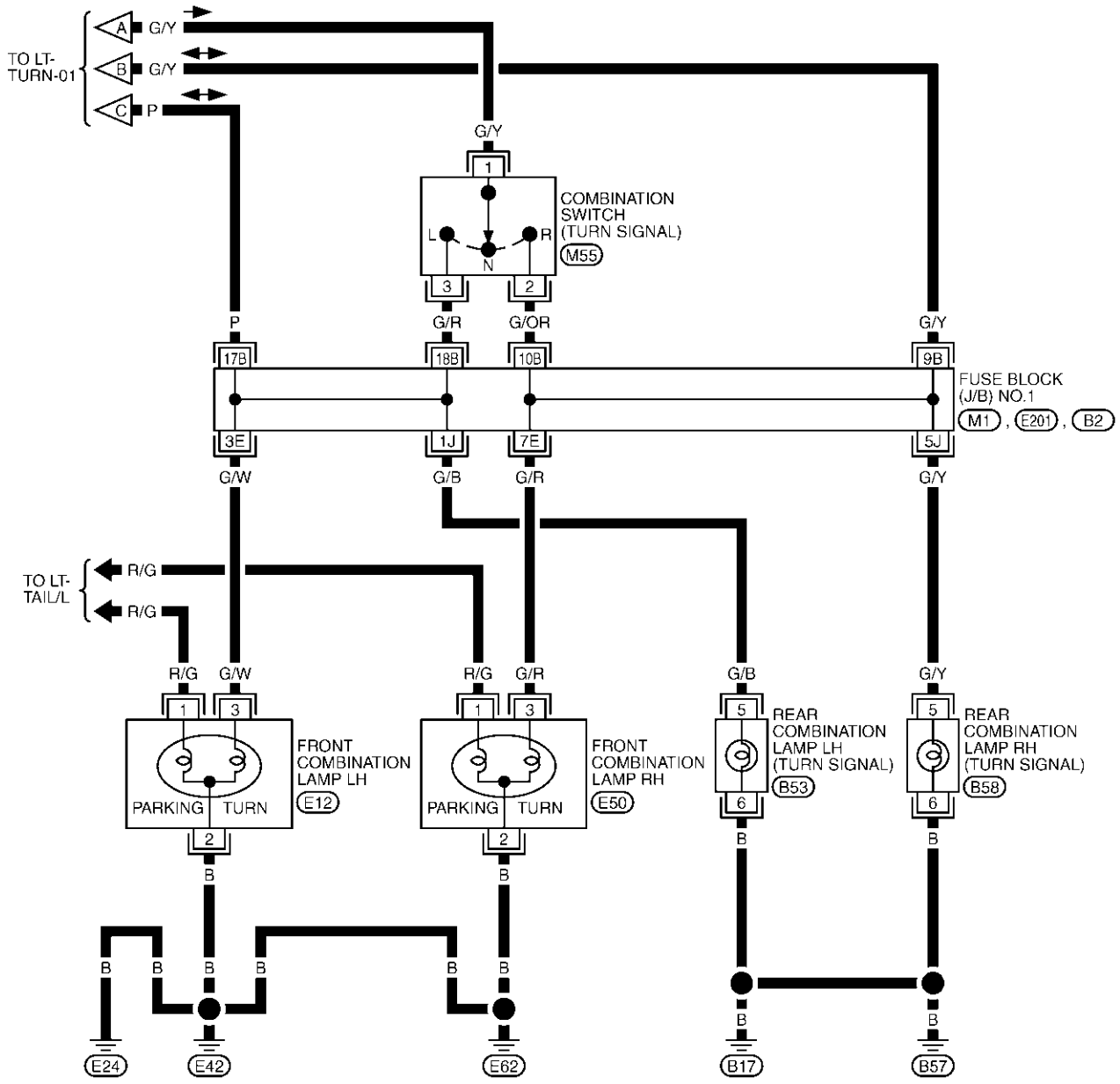




REFER TO THE FOLLOWING.
M4 -ELECTRICAL UNITS

TKWA0549E

LT-TURN-03



M55 W

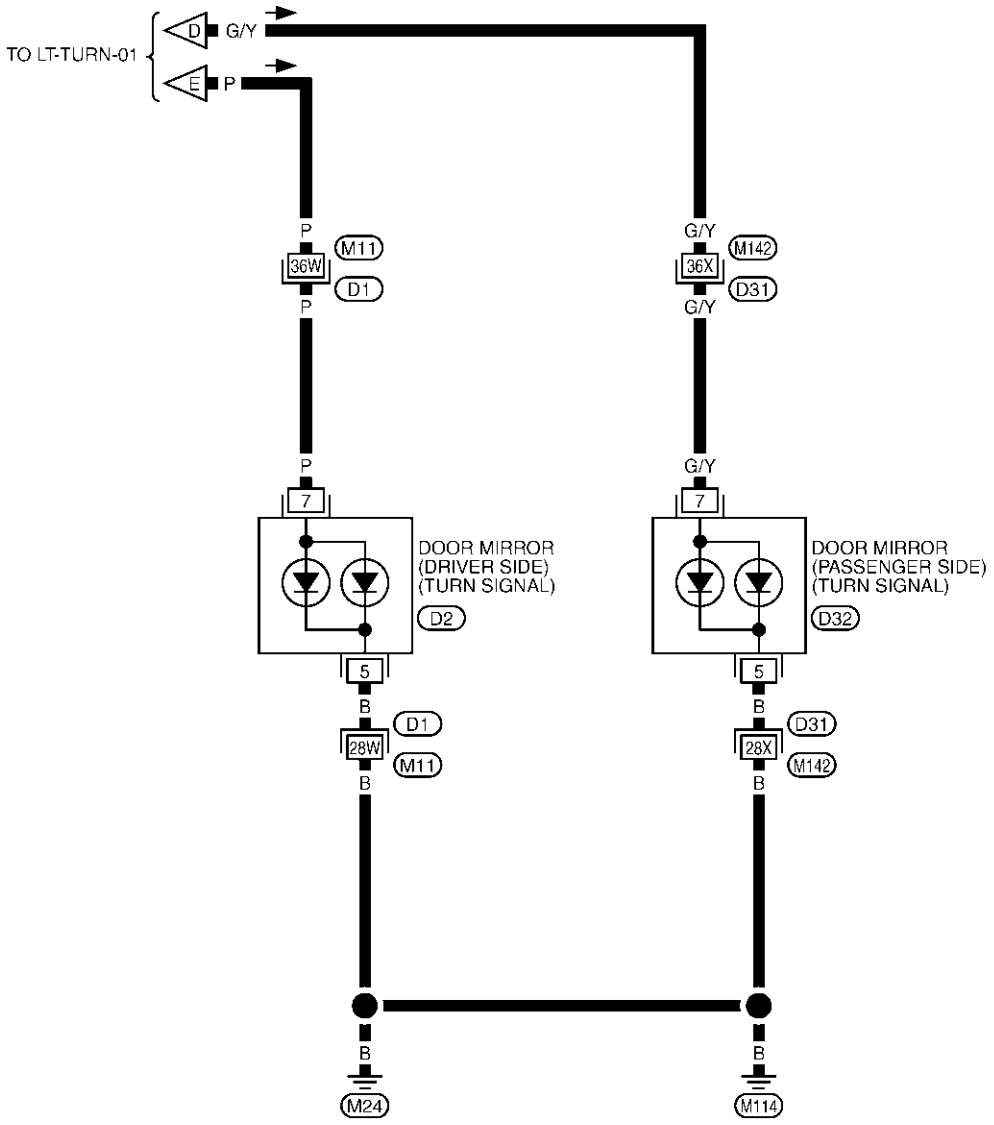
E12 , E50 GY GY

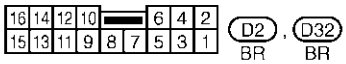
B53 , B58 W W

REFER TO THE FOLLOWING.
M1 , E201 , B2 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TKWA0550E

LT-TURN-04





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

TKWA0551E

Turn Signal Lamps Does Not Operate

AKS003V8

1. CHECK FUSE

Check for blown combination flusher unit fuse.

Unit	Fuse No.
Combination flasher unit	5

Refer to LT-91, "Wiring Diagram — TURN —" .

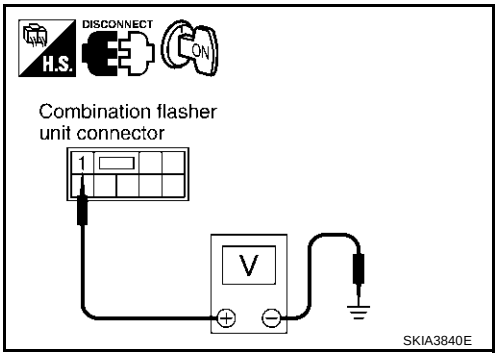
OK or NG

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

2. CHECK COMBINATION FLASHER UNIT POWER SUPPLY CIRCUIT

1. Disconnect the combination flasher unit connector.
2. Turn ignition switch to ON position.
3. Check voltage between combination flasher unit harness connector M91 terminal 1 (G) and ground.

Battery voltage should exist.



OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short between combination flasher unit and fuse.

3. CHECK COMBINATION FLASHER UNIT

1. Turn ignition switch to OFF position.
2. Check operation of the combination flasher unit. Refer to LT-99, "COMBINATION FLASHER UNIT CHECK" .

OK or NG

OK >> GO TO 4.
NG >> Replace the combination flasher unit.

4. CHECK COMBINATION SWITCH (TURN SIGNAL)

1. Disconnect combination switch (turn signal) connector.
2. Check operation of the combination switch. Refer to LT-100, "Switch Circuit Inspection" .

OK or NG

OK >> Check harness for open or short between combination flasher unit and combination switch (turn signal).
NG >> Replace the combination switch (turn signal).

Hazard Warning Lamps Does Not Operate

AKS003V9

1. CHECK FUSE

Check for blown combination flusher unit fuse.

Unit or relay	Fuse No.
Combination flasher unit	22

Refer to LT-91, "Wiring Diagram — TURN —" .

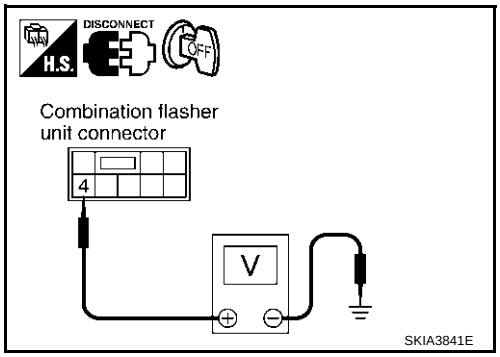
OK or NG

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

2. CHECK COMBINATION FLASHER UNIT POWER SUPPLY CIRCUIT

1. Disconnect the combination flasher unit connector.
2. Check voltage between combination flasher unit harness connector M91 terminal 4 (L) and ground.

Battery voltage should exist.



OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short between combination flasher unit and fuse.

3. CHECK COMBINATION FLASHER UNIT

Check operating of the combination flasher unit. Refer to LT-99, "COMBINATION FLASHER UNIT CHECK" .

OK or NG

OK >> GO TO 4.
NG >> Replace the combination flasher unit.

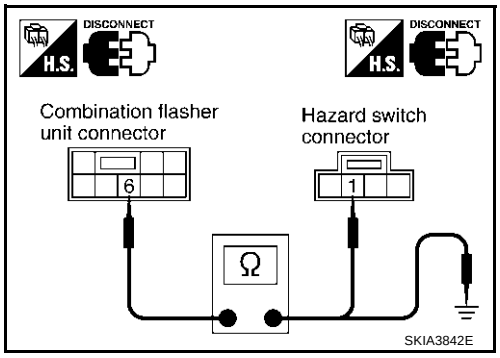
4. CHECK HAZARD SWITCH CIRCUIT

1. Disconnect the hazard switch connector.
2. Check continuity between combination flasher unit harness connector M91 terminal 6 (W/L) and hazard switch harness connector M71 terminal 1(W/L).

Continuity should exist.

3. Check continuity between combination flasher unit harness connector M91 terminal 6 (W/L) and ground.

Continuity should not exist.



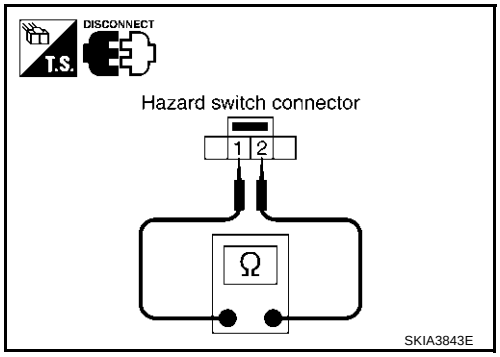
OK or NG

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

5. CHECK HAZARD SWITCH

Check continuity between hazard switch connector M71 terminals 1 and 2.

Switch released (OFF) : Continuity should not exist.
Switch pressed (ON) : Continuity should exist.



OK or NG

OK >> Check harness ground circuit.
NG >> Replace the hazard switch.

Front Turn Signal Lamp LH or RH Does Not Operate

AKS003VA

1. CHECK BULB

1. Replace the bulb with other side bulb or new one.
2. Check if front turn signal lamp is eclampsia illuminate correctly.

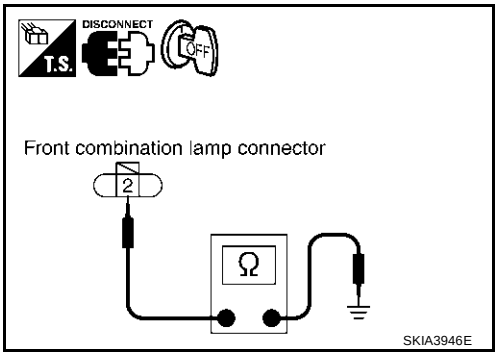
OK or NG

OK >> Replace the combination flasher unit.
NG >> GO TO 2.

2. CHECK FRONT COMBINATION LAMP GROUND CIRCUIT

1. Turn ignition switch to OFF position.
2. Disconnect the front combination lamp connector.
3. Check continuity between front combination lamp harness connector E12:LH, E50:RH terminal 2 (B) and ground.

Continuity should exist.



OK or NG

OK >> Check harness for open or short between front combination lamp and combination switch.
NG >> Repair harness.

Rear Turn Signal Lamp LH or RH Does Not Operate

AKS003VB

1. CHECK BULB

1. Replace the bulb with other side bulb or new one.
2. Check if rear turn signal lamp is eclampsia illuminate correctly.

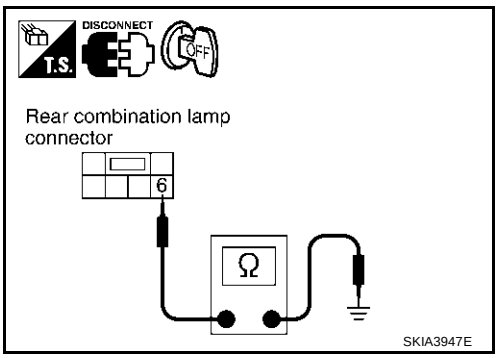
OK or NG

OK >> Replace the combination flasher unit.
NG >> GO TO 2.

2. CHECK REAR COMBINATION LAMP GROUND CIRCUIT

1. Turn ignition switch to OFF position.
2. Disconnect the rear combination lamp connector.
3. Check continuity between rear combination lamp harness connector B53:LH, B58:RH terminal 6 (B) and ground.

Continuity should exist.



OK or NG

OK >> Check harness for open or short between front combination lamp and combination switch.
NG >> Repair harness.

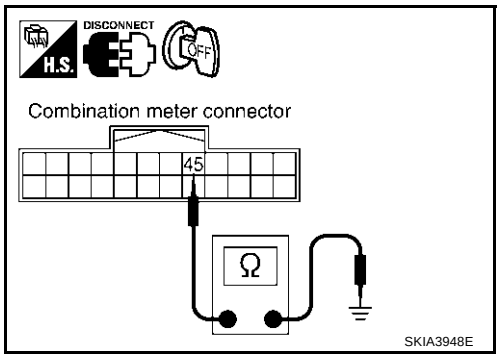
LH and RH Turn Indicators Do Not Operate

AKS003ZL

1. CHECK COMBINATION METER GROUND CIRCUIT

1. Disconnect the combination meter connector.
2. Check continuity between combination meter harness connector M42 terminal 45 (B) and ground.

Continuity should exist.



OK or NG

OK >> Replace the combination meter.
NG >> Repair harness.

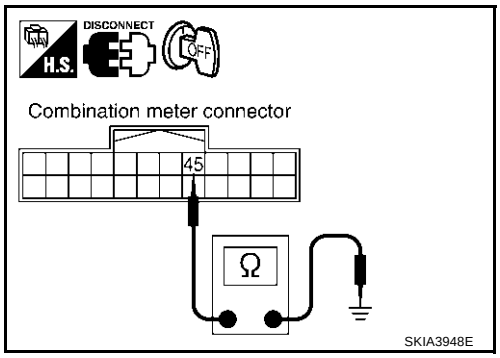
LH or RH Turn Indicator Does Not Operate

AKS003ZM

1. CHECK COMBINATION METER GROUND CIRCUIT

1. Disconnect the combination meter connector.
2. Check continuity between combination meter harness connector M42 terminal 45 (B) and ground.

Continuity should exist.



OK or NG

OK >> ● When LH turn indicator does not operate, go to 2.
● When RH turn indicator does not operate, go to 3.
NG >> Repair harness.

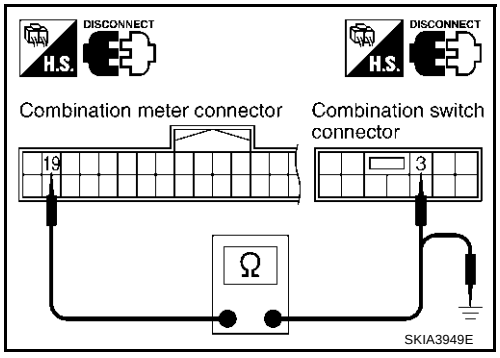
2. CHECK COMBINATION METER LH INDICATOR POWER SUPPLY CIRCUIT

1. Disconnect the combination switch connector.
2. Check continuity between combination meter harness connector M41 terminal 19 (P) and combination switch harness connector M55 terminal 3 (G/R).

Continuity should exist.

3. Check continuity between combination meter harness connector M41 terminal 19 (P) and ground.

Continuity should not exist.



OK or NG

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

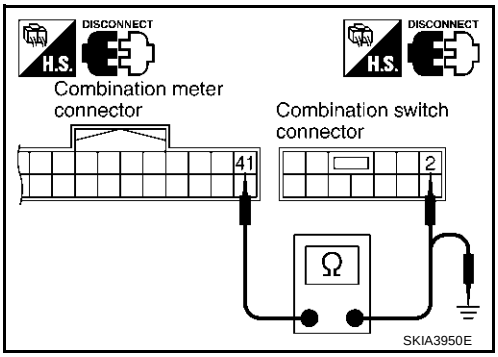
3. CHECK COMBINATION METER RH INDICATOR POWER SUPPLY CIRCUIT

1. Disconnect the combination switch connector.
2. Check continuity between combination meter harness connector M42 terminal 41 (G/Y) and combination switch harness connector M55 terminal 2 (G/OR).

   Continuity should exist.

3. Check continuity between combination meter harness connector M42 terminal 41 (G/Y) and ground.

   Continuity should not exist.



OK or NG

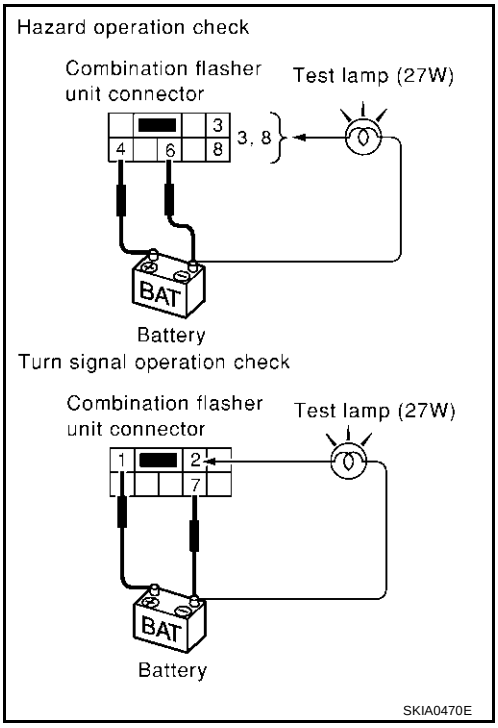
OK >> Replace combination meter.
NG >> Repair harness or connector.

Electrical Components Inspection

AKS002FX

COMBINATION FLASHER UNIT CHECK

- Before checking, ensure that bulbs meet specifications.
- Connect a battery and test lamp to the combination flasher unit, as shown. Combination flasher unit is properly functioning if it blinks when power is supplied to the circuit.



Bulb Replacement

AKS002FY

FRONT TURN SIGNAL LAMP

Refer to LT-41, "Bulb Replacement" in “HEADLAMP (USA)”.

REAR TURN SIGNAL LAMP

Refer to LT-121, "REAR COMBINATION LAMP" in “PARKING, LICENSE PLATE AND TAIL LAMPS”.

Removal and Installation

AKS002FZ

FRONT TURN SIGNAL LAMP

Refer to LT-42, "Removal and Installation" in “HEADLAMP (USA)”.

SIDE TURN SIGNAL LAMP

Refer to GW-118, "Disassembly and Assembly" in “GLASSES, WINDOW SYSTEM & MIRRORS (GW)” section.

REAR TURN SIGNAL LAMP

Refer to LT-123, "REAR COMBINATION LAMP" in “PARKING, LICENSE PLATE AND TAIL LAMPS”.

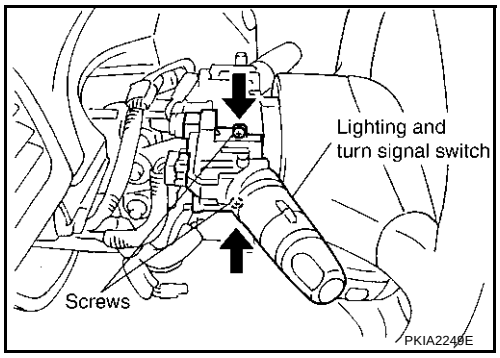
LIGHTING AND TURN SIGNAL SWITCH

PFP:25540

Removal and Installation

AKS002G0

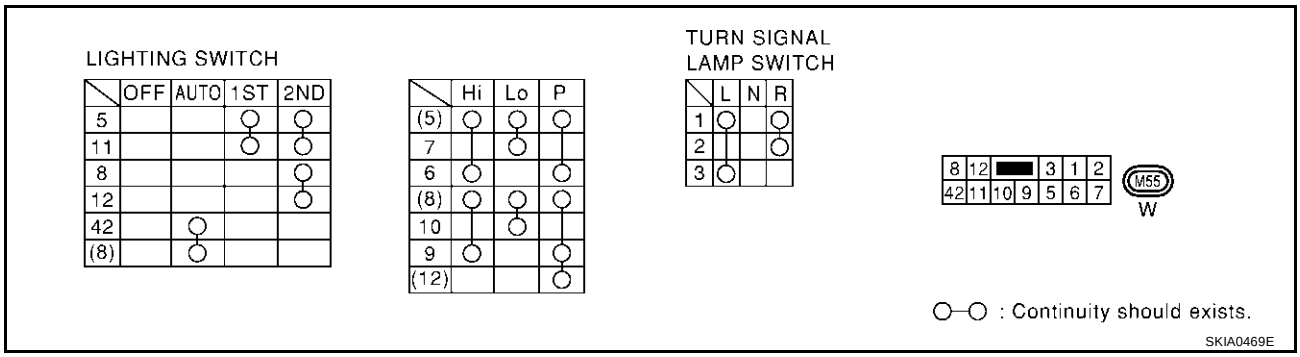
1. Remove the steering column cover. Refer to IP-11, "WORK STEPS" in “IP” section.
2. Remove lighting and turn signal switch mounting screws and remove the lighting and turn signal switch from the spiral cable.
3. Disconnect the lighting and turn signal switch connector.



Switch Circuit Inspection

AKS002G1

Using circuit tester, check continuity between the lighting and turn signal switch connector terminals in each operation status of the switch.



Hi: “HIGH BEAM” position, Lo: “LOW BEAM” position, P: “FLASH TO PASS” position

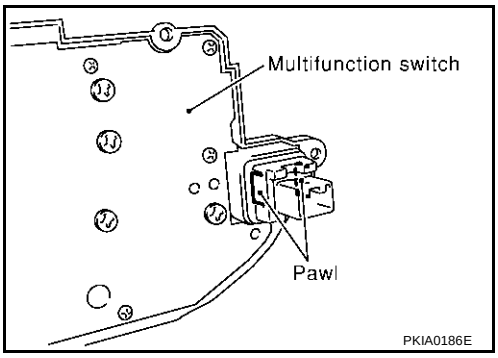
HAZARD SWITCH

PFP:25290

Removal and Installation

AKS002G2

Refer to DI-97, "Disassembly and Assembly for Multifunction Switch" in “DRIVER INFORMATION SYSTEM (DI)” section.



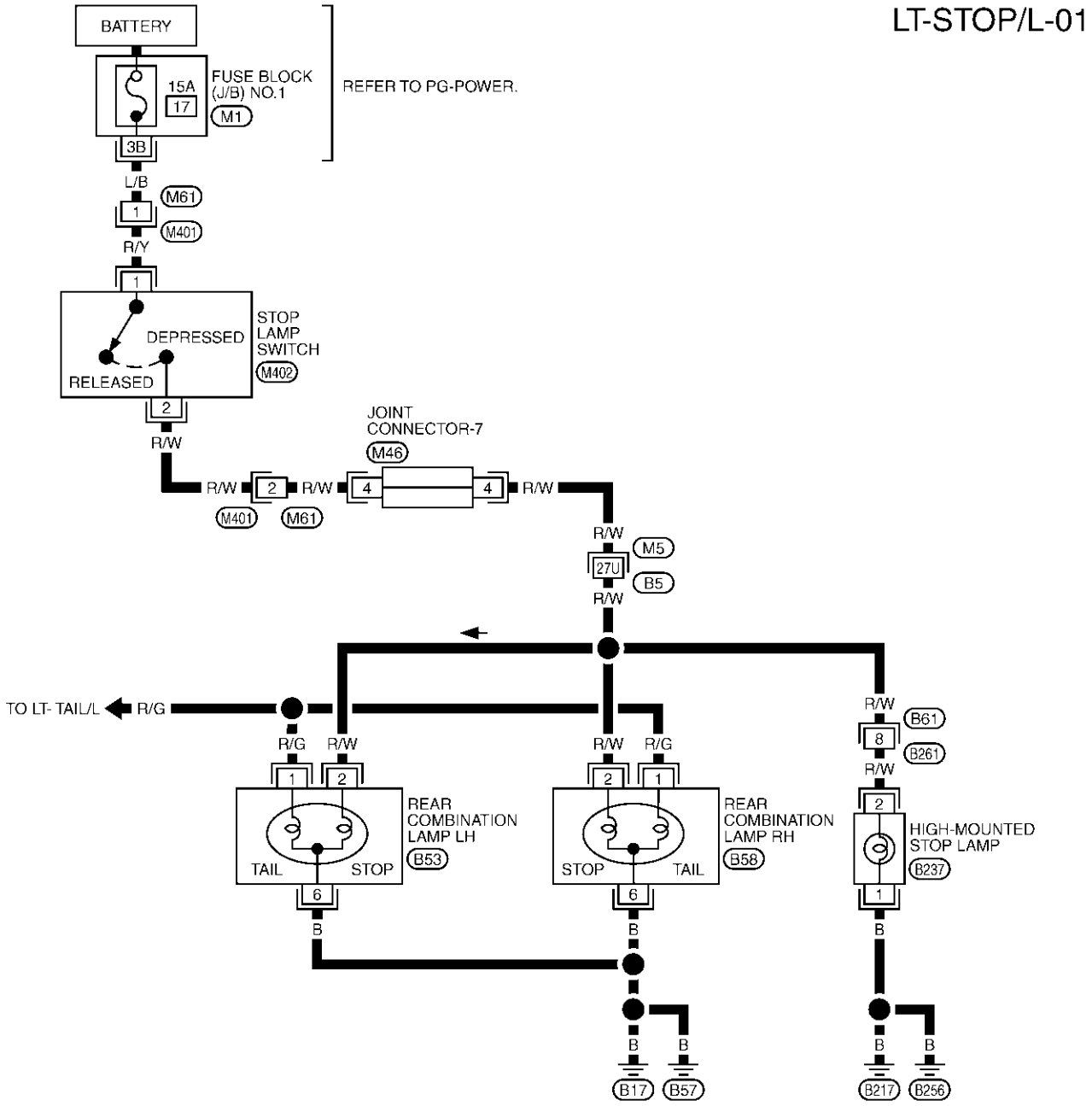
STOP LAMP

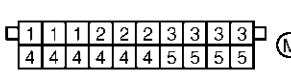
PFP:26550

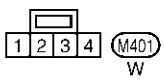
Wiring Diagram — STOP/L —

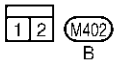
AKS002G3

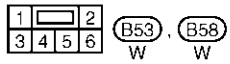
LT-STOP/L-01

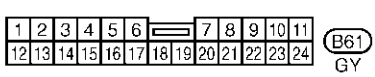


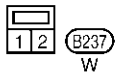












REFER TO THE FOLLOWING.

M5 -SUPER MULTIPLE JUNCTION (SMJ)

M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TKWA0545E

Bulb Replacement

AKS002G4

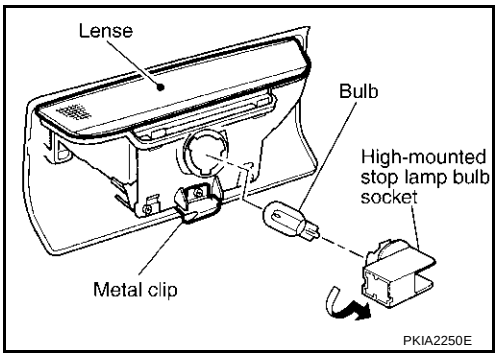
STOP LAMP

Refer to LT-121, "REAR COMBINATION LAMP" in “PARKING, LICENSE PLATE AND TAIL LAMPS”.

HIGH-MOUNTED STOP LAMP

1. Remove the high-mounted stop lamp. Refer to LT-103, "HIGH-MOUNTED STOP LAMP" in “Removal and Installation”.
2. Turn the high-mounted stop lamp bulb socket counterclockwise and unlock it.
3. Remove the bulb.

High-mounted stop lamp : 12V 18W



Removal and Installation

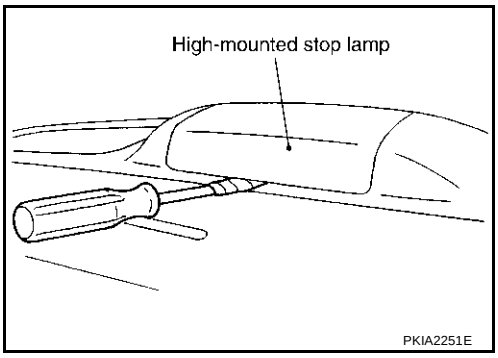
AKS002G5

STOP LAMP

Refer to LT-123, "REAR COMBINATION LAMP" in “PARKING, LICENSE PLATE AND TAIL LAMPS”.

HIGH-MOUNTED STOP LAMP

1. Pull up the high-mounted stop lamp while pressing it toward rear of the vehicle and remove from the vehicle.
2. Disconnect the high-mounted stop lamp connector.

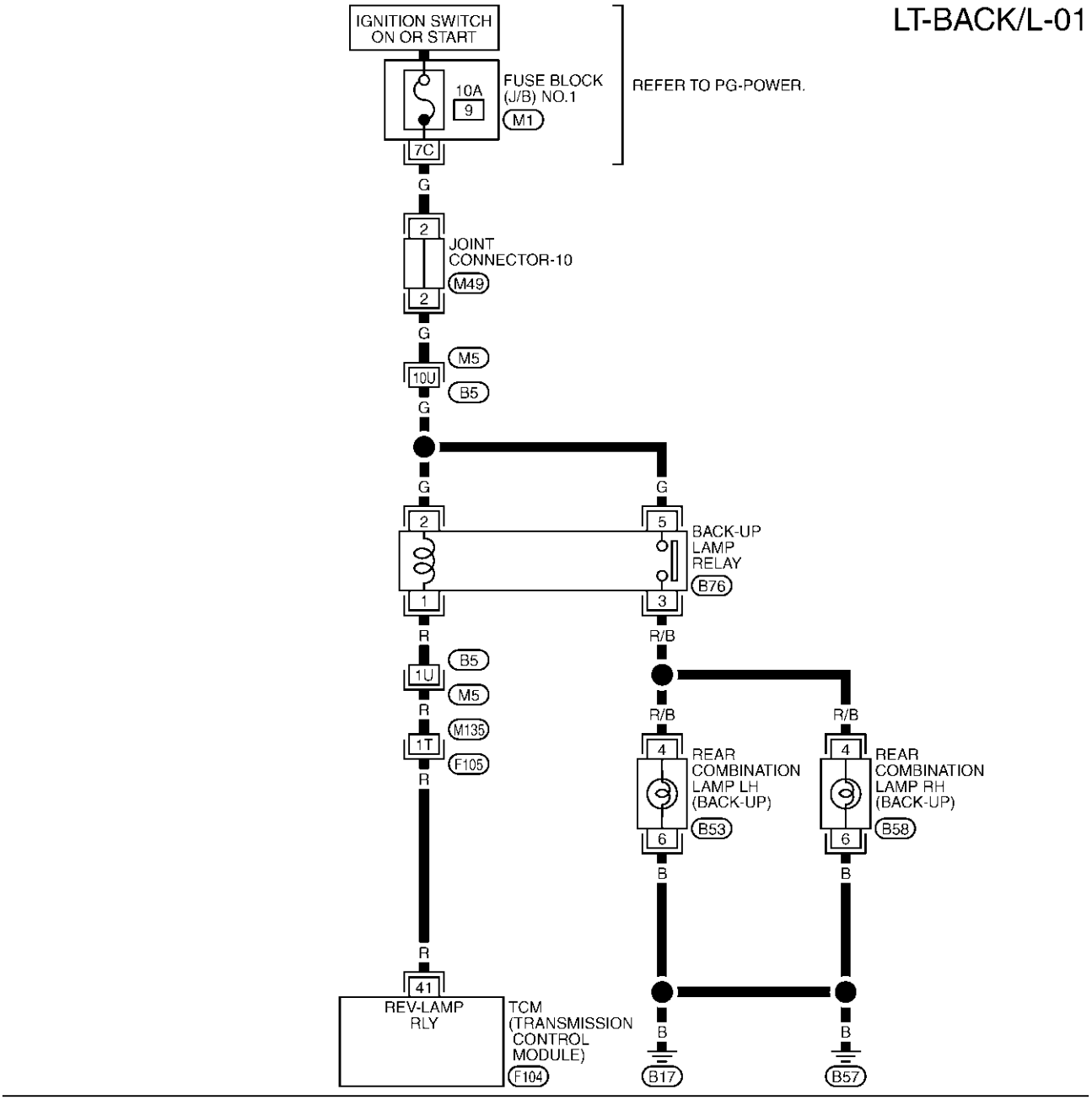


BACK-UP LAMP

PFP:26550

Wiring Diagram — BACK/L —

AKS002G6



TKWA0546E

Bulb Replacement

AKS002G7

Refer to LT-121, "REAR COMBINATION LAMP" in PARKING, LICENSE PLATE AND TAIL LAMPS.

Removal and Installation

AKS002G8

Refer to LT-123, "REAR COMBINATION LAMP" in PARKING, LICENSE PLATE AND TAIL LAMPS.

PARKING, LICENSE PLATE AND TAIL LAMPS

PFP:26550

System Description

AKS002G9

The parking, license side marker and tail lamps operation are controlled by the lighting switch which is built into the spiral cable and BCM. The battery saver system is controlled by the headlamp battery saver control unit and BCM.
Power is supplied at all times

- to tail lamp relay terminals 2 and 6
- through 15A fuse [No. 54, located in the fuse, fusible link and relay block (J/B)], and
- to headlamp battery saver control unit terminal 7
- through 10A fuse [No. 6, located in the fuse block (J/B) No. 1].

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

- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 1, located in the fuse block (J/B) No. 1].

Ground is supplied

- to headlamp battery saver control unit terminals 4 and 11
- through body grounds M25 and M115.

LIGHTING OPERATION BY LIGHTING SWITCH

When lighting switch is in 1ST (or 2ND) position, ground is supplied

- to tail lamp relay terminal 1 from headlamp battery saver control unit terminals 6 and 14
- through headlamp battery saver control unit terminals 5 and 13
- through lighting switch terminals 11 and 5
- through body grounds M25 and M115.

Tail lamp relay is then energized and the parking, license, side marker and tail lamps illuminate.

BATTERY SAVER CONTROL

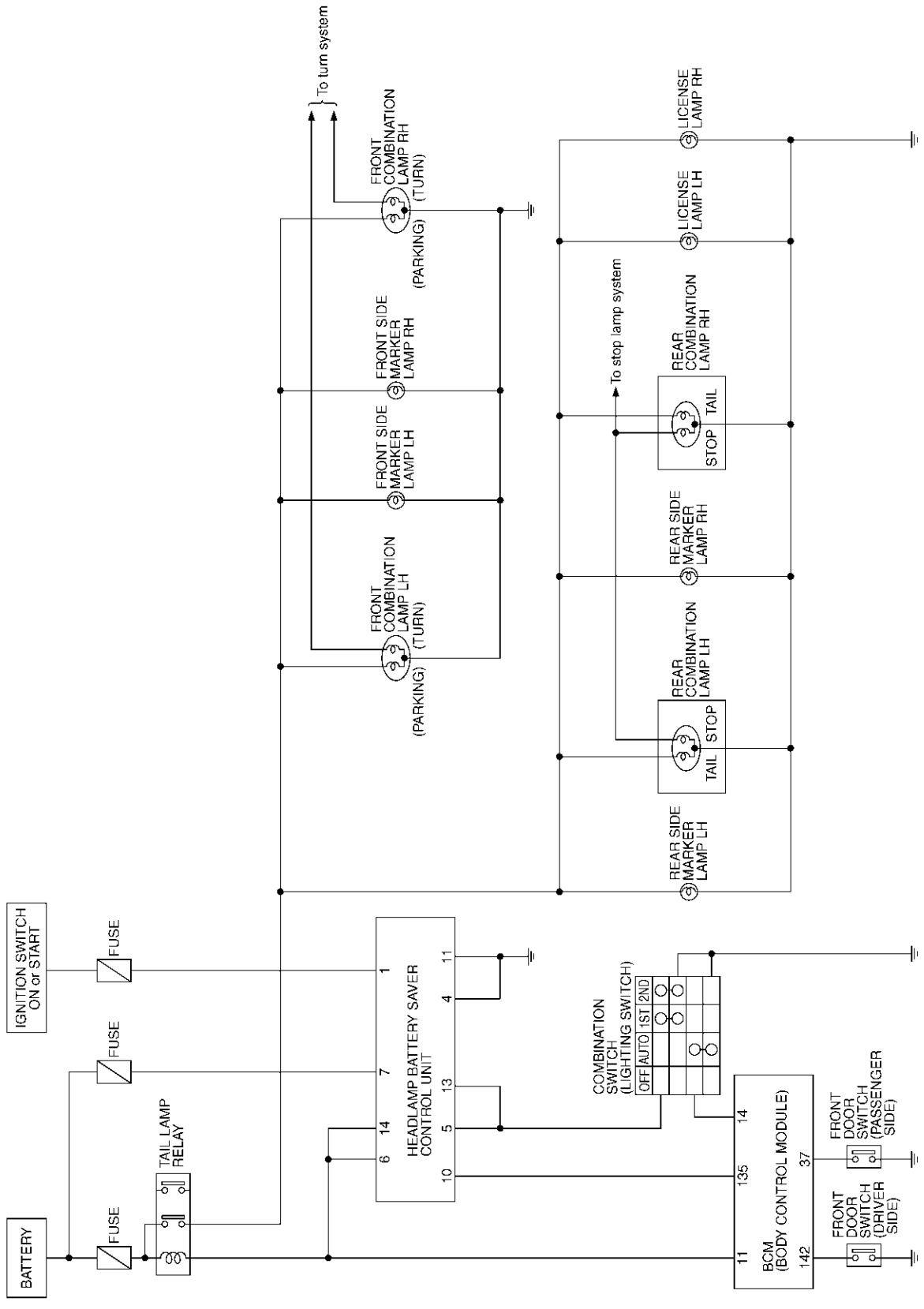
When the ignition switch is turned from ON (or START) to OFF (or ACC) positions while parking, license, side marker and tail lamps are illuminated, the RAP signal is supplied to terminal 10 of headlamp battery saver control unit terminal from BCM terminal 135.
After counting 45 seconds by the RAP signal from the BCM to headlamp battery saver control unit, the ground supply to terminal 1 of the tail lamp relay from headlamp battery saver control unit terminals 6 and 14 is terminated.
Then the parking, license, side marker and tail lamps are turned off.
The parking, license, side marker and tail lamps are turned off when driver or passenger side door is opened even if 45 seconds have not passed after the ignition switch is turned from ON (or START) to OFF (or ACC) positions while the parking, license, side marker and tail lamps are illuminated.
When the lighting switch is turned from OFF to 1ST (or 2ND) after the parking, license, side marker and tail lamps are turned off by the headlamp battery saver control, ground is supplied.

- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11, and
- to tail lamp relay terminal 1 from headlamp battery saver control unit terminals 6 and 14.

Then the parking, license, side marker and tail lamps illuminate again.

Schematic

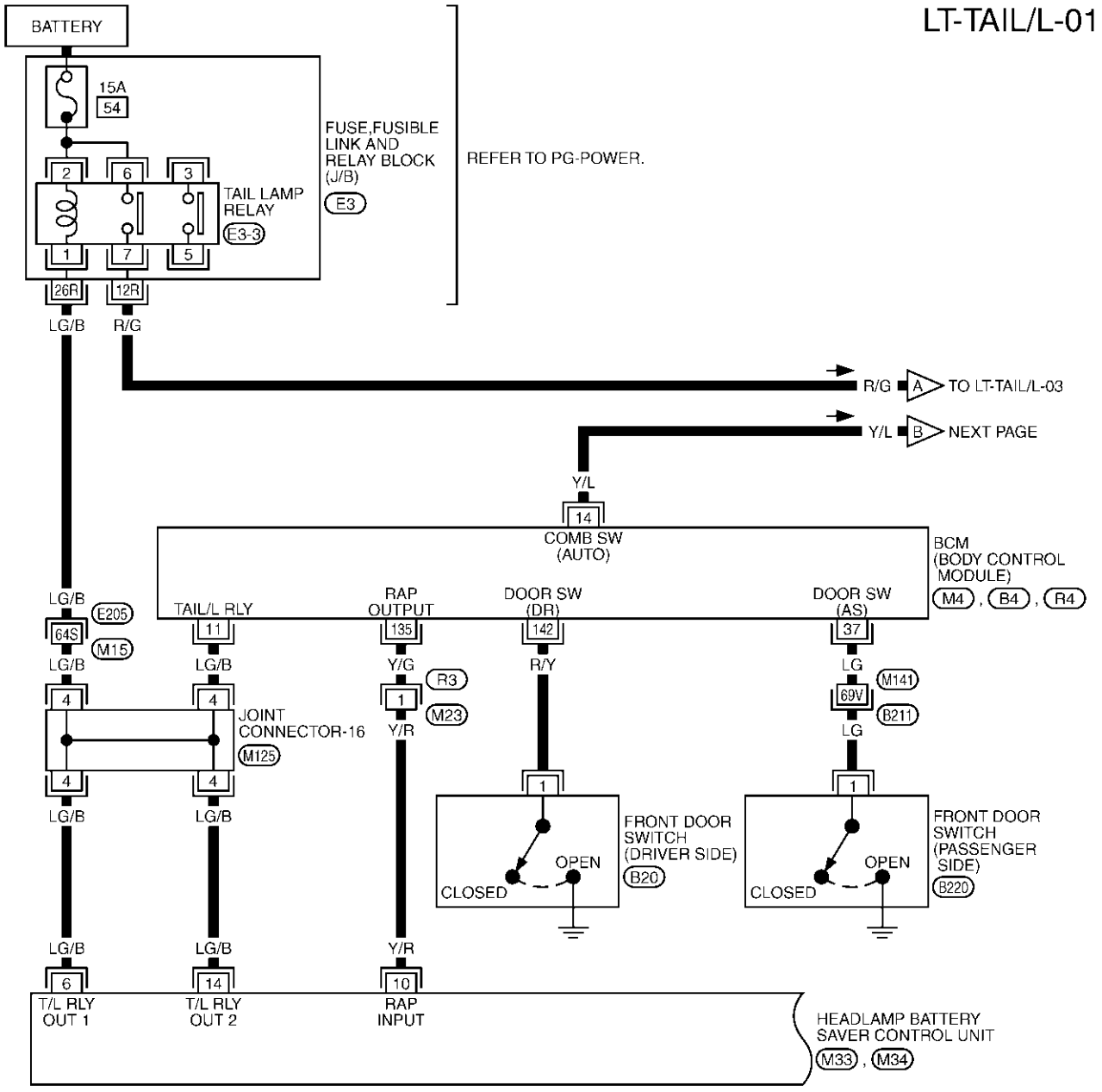
AKS002GA

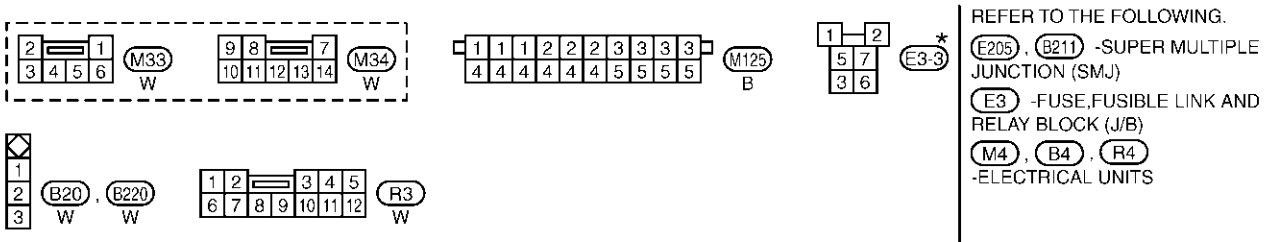


TKWA0535E

Wiring Diagram — TAIL/L —

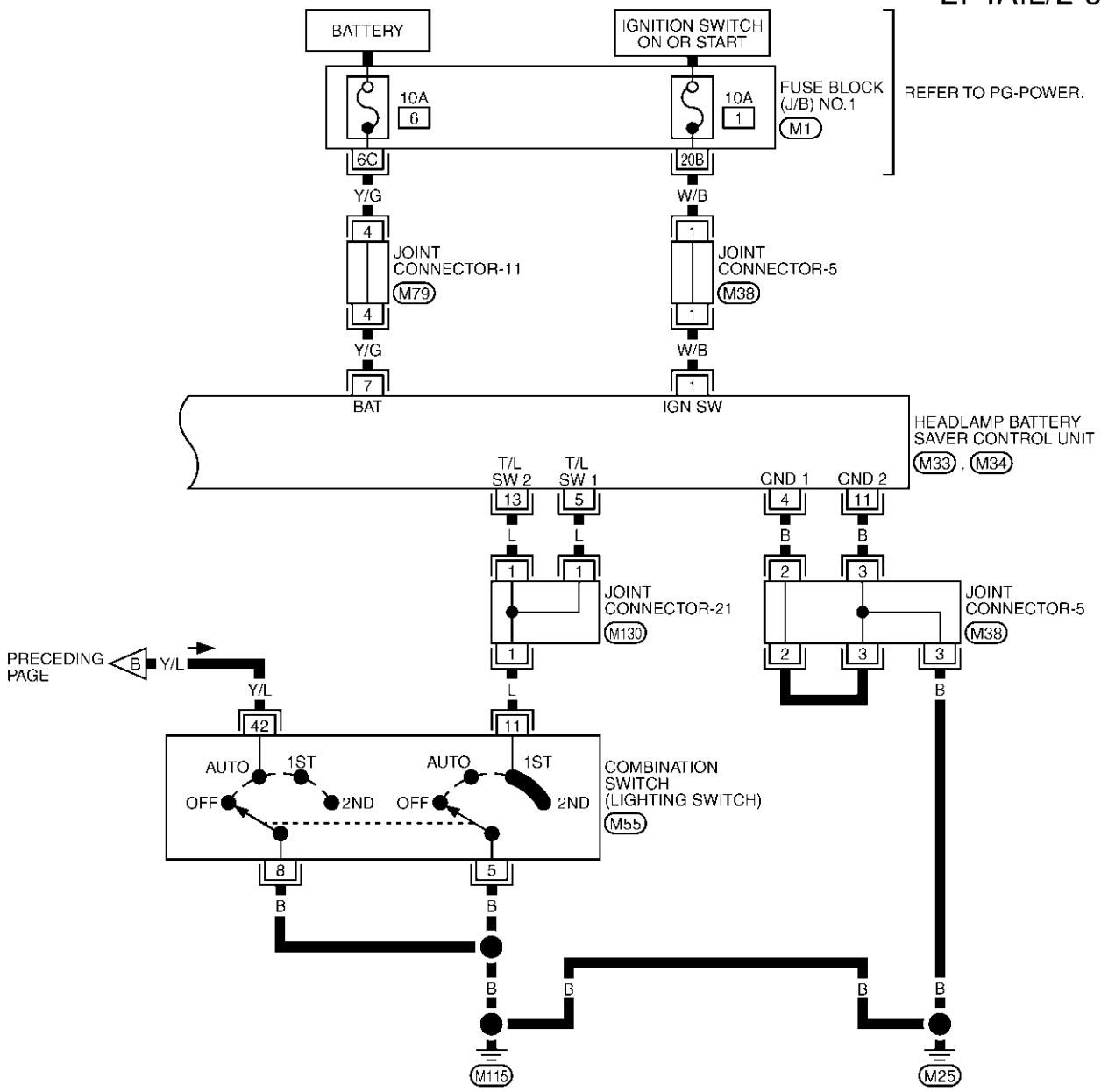
AKS002GB

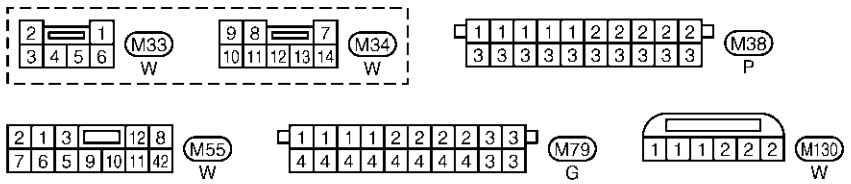




TKWA0536E

LT-TAIL/L-02



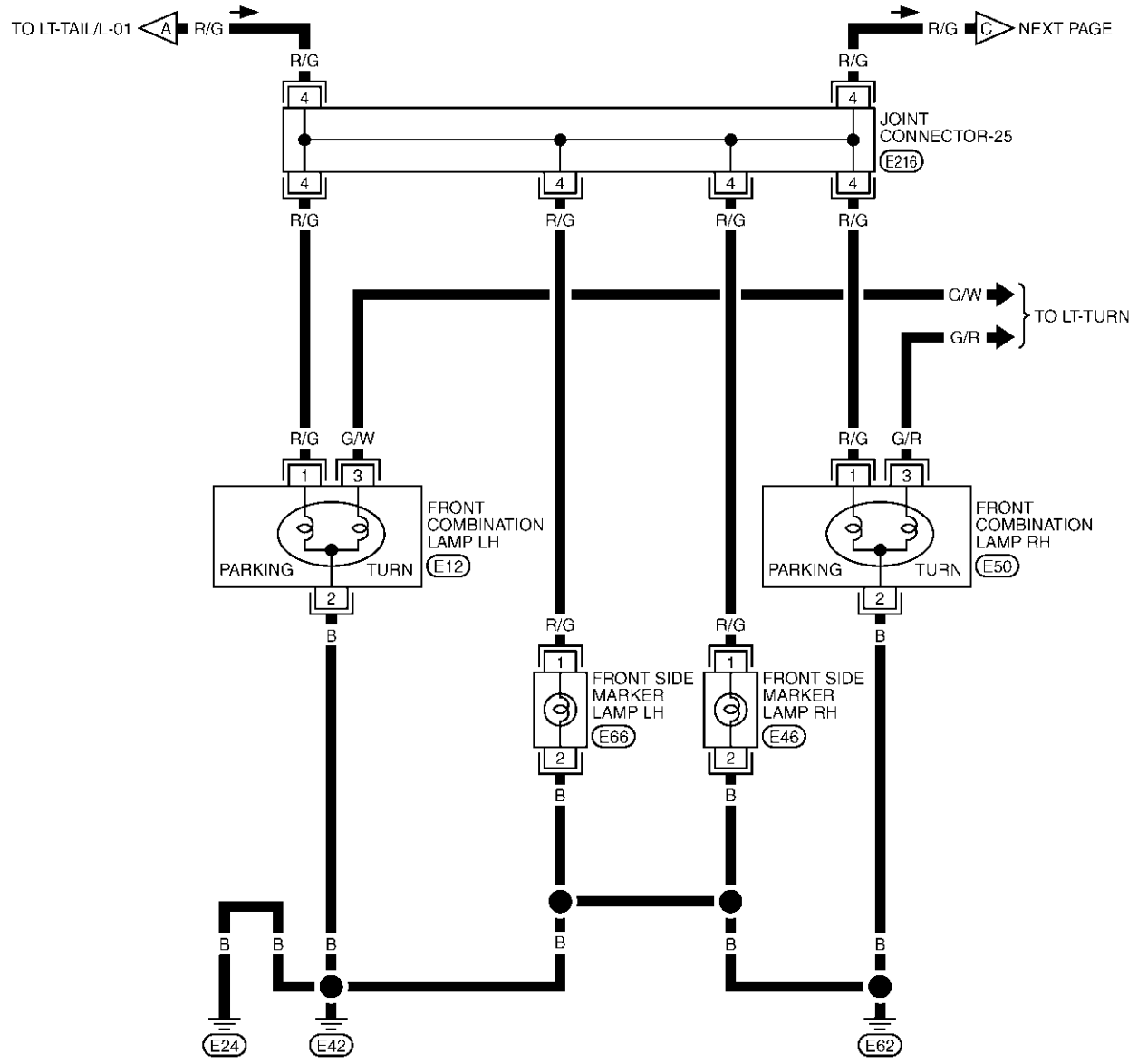


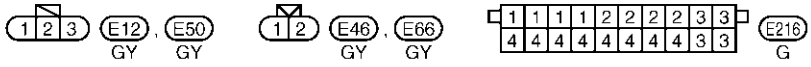
REFER TO THE FOLLOWING.

M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TKWA0537E

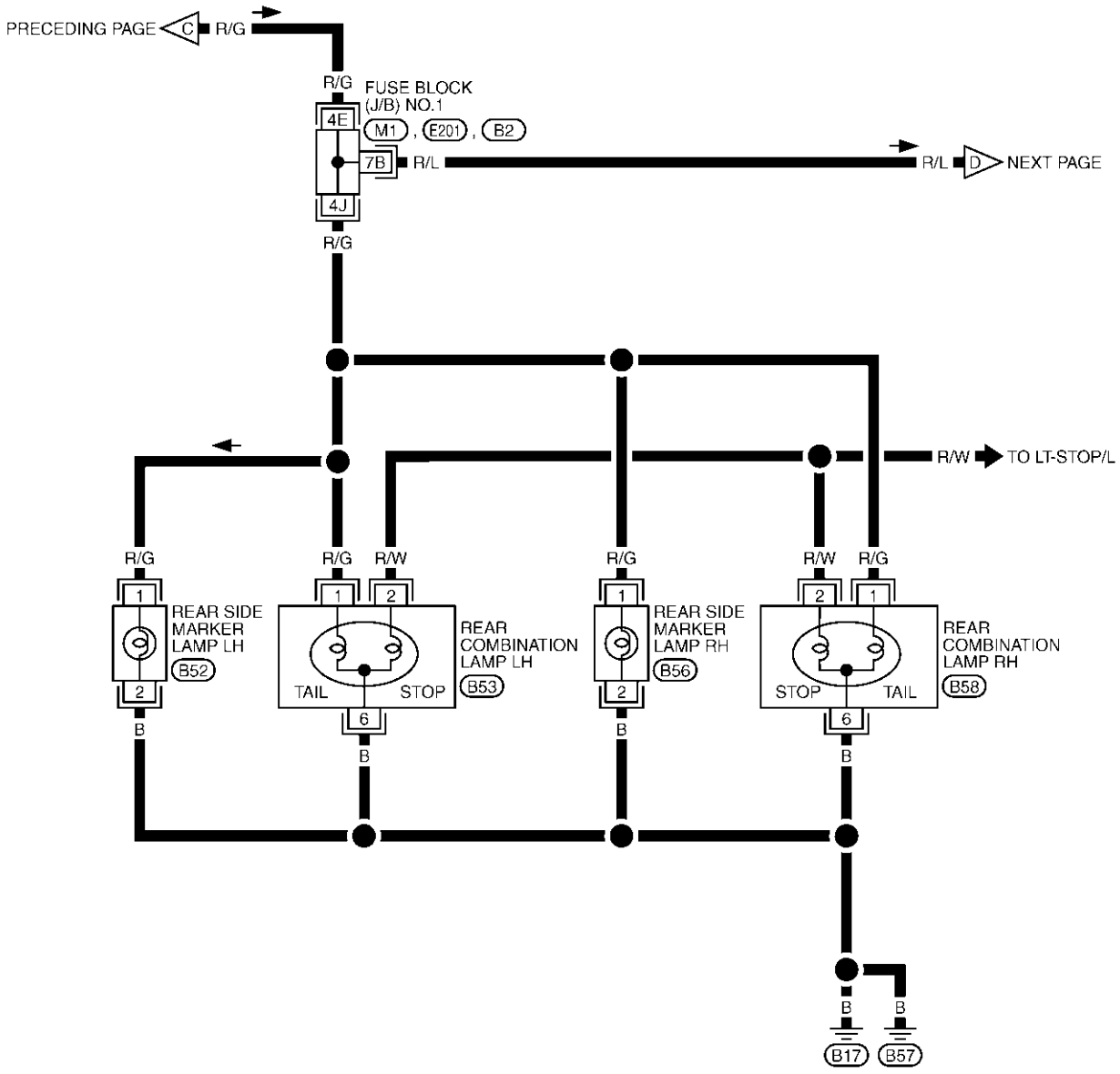
LT-TAIL/L-03





TKWA0538E

LT-TAIL/L-04



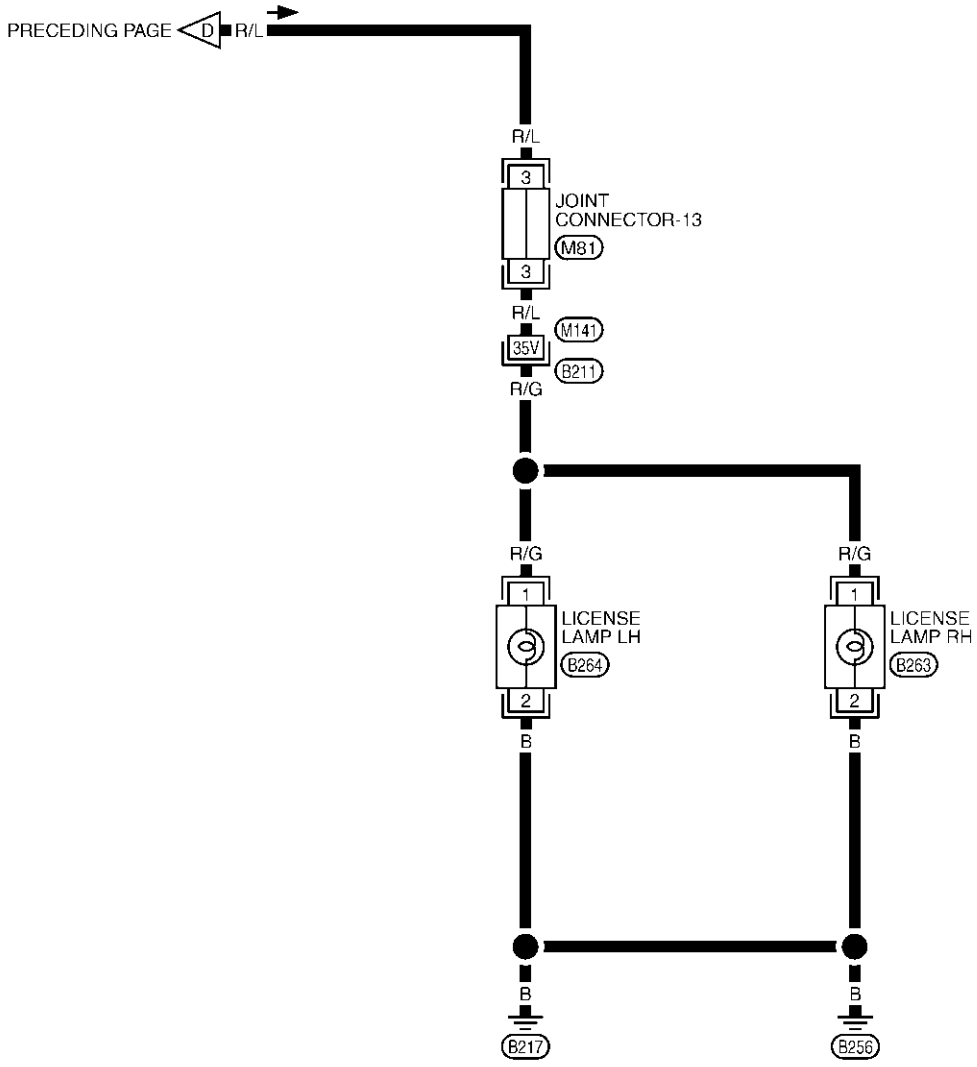
1 2 B52, B56 GY GY

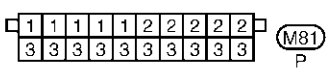
1 2 3 4 5 6 B53, B58 W W

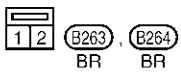
REFER TO THE FOLLOWING.
M1, E201, B2 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TKWA0539E

LT-TAIL/L-05







REFER TO THE FOLLOWING.
B211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWA0540E

Terminals and Reference Value for Headlamp Battery Saver Control Unit

AKS003ZH

Terminal No.	Wire color	Item	Operation or condition			Reference value
1	W/B	Ignition switch ON or START	Ignition switch	OFF or ACC		Less than 1V
				ON or START		Battery voltage
4	B	Ground	—			0V
5	L	Tail lamp switch 1	lighting switch	OFF		Battery voltage
				1ST or 2ND		Less than 1V
6	LG/B	Tail lamp relay 1	Ignition switch (with lighting switch 1ST or 2ND)	OFF or ACC	More than 45 seconds after ignition switch is turned OFF or ACC	Battery voltage
					Within 45 seconds after ignition switch is turned OFF or ACC	Less than 1V
				ON or START		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V
7	Y/G	Battery power supply	—			Battery voltage
10	Y/R	RAP input signal	Ignition switch	OFF or ACC (After more than 45 seconds with ignition switch turned OFF or ACC)		Battery voltage
				ON or START		Less than 1V
11	B	Ground	—			0V
13	L	Tail lamp switch 2	Lighting switch	OFF		Battery voltage
				1ST or 2ND		Less than 1V
14	LG/B	Tail lamp relay 2	Ignition switch (with lighting switch 1ST or 2ND)	OFF or ACC	More than 45 seconds after ignition switch is turned OFF or ACC	Battery voltage
					Within 45 seconds after ignition switch is turned OFF or ACC	Less than 1V
				ON or START		Less than 1V
			Headlamps illuminate by auto light control.			Less than 1V

Terminals and Reference Value for BCM

AKS003ZI

Terminal No.	Wire color	Item	Measuring condition			Reference value
			Ignition switch	Operation or condition		
11	LG/B	Tail lamp relay control signal	ON	Lighting switch: AUTO	Light is applied to optical sensor.	Battery voltage
					Light is not applied to optical sensor.	Less than 1V
14	Y/L	Lighting switch (AUTO) signal	ON	Lighting switch	AUTO	Less than 1V
					OFF	8V
37	LG	Front door switch (passenger side) signal	OFF	Front door switch (passenger side)	ON (open)	Less than 1V
					OFF (close)	Battery voltage
135	Y/G	RAP output signal	OFF	When headlamp battery saver timer is operated.		Less than 1V
142	R/Y	Front door switch (driver side) signal	OFF	Front door switch (driver side)	ON (open)	Less than 1V
					OFF (close)	Battery voltage

CONSULT-II FUNCTION

AKS003ZJ

Refer to LT-20, "CONSULT-II Function for Auto Light System" in HEADLAMP (FOR USA).

No Lamps Operate (Including Headlamps)

AKS003Y6

1. CHECK FUSE

Check for blown headlamp battery saver control unit fuse.

Unit	Fuse No.
Headlamp battery saver control unit	6

Refer to LT-108, "Wiring Diagram — TAIL/L —" .

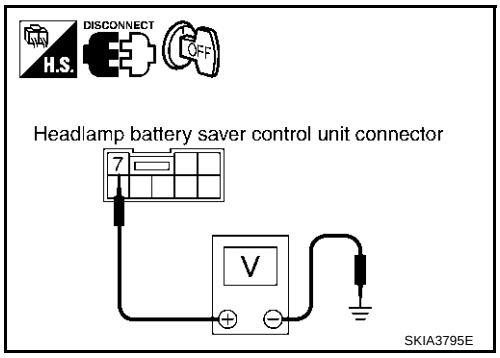
OK or NG

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

2. CHECK HEADLAMP BATTERY SAVER CONTROL UNIT POWER SUPPLY CIRCUIT

1. Disconnect the headlamp battery saver control unit connector.
2. Check voltage between headlamp battery saver control unit harness connector M34 terminal 7 (Y/G) and ground.

Battery voltage should exist.



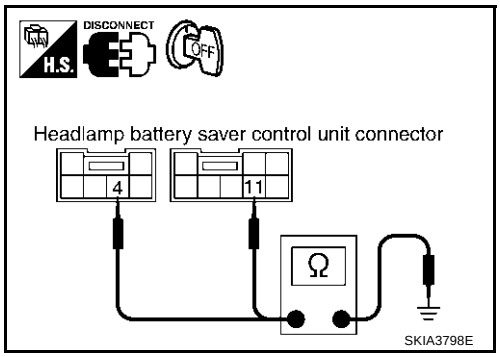
OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short headlamp battery saver control unit and fuse.

3. CHECK HEADLAMP BATTERY SAVER CONTROL UNIT GROUND CIRCUIT

Check continuity between headlamp battery saver control unit harness connector terminals and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal (Wire color)		
M33	4 (B)	Ground	Yes
M34	11 (B)		



OK or NG

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

4. CHECK LIGHTING SWITCH

Check continuity of lighting switch. Refer to LT-100, "Switch Circuit Inspection" .

OK or NG

OK >> GO TO 5.
NG >> Replace lighting switch.

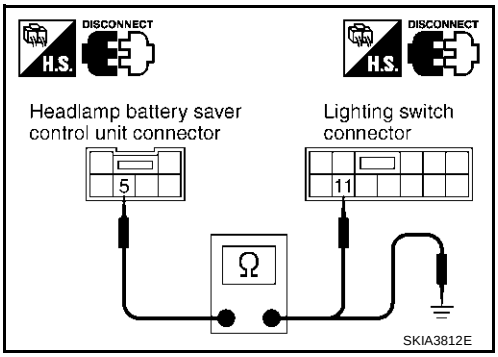
5. CHECK LIGHTING SWITCH POWER SUPPLY CIRCUIT 1

1. Disconnect the headlamp battery saver control unit connector and the lighting switch connector.
2. Check continuity between headlamp battery saver control unit harness connector M33 terminal 5 (L) and lighting switch harness connector M55 terminal 11 (L).

Continuity should exist.

3. Check continuity between headlamp battery saver control unit harness connector M33 terminal 5 (L) and ground.

Continuity should not exist.



OK or NG

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

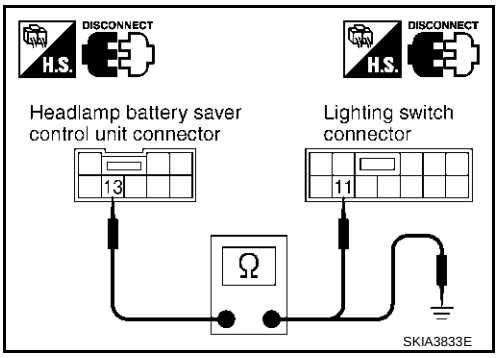
6. CHECK LIGHTING SWITCH POWER SUPPLY CIRCUIT 2

1. Check continuity between headlamp battery saver control unit harness connector M34 terminal 13 (L) and lighting switch harness connector M55 terminal 11 (L).

Continuity should exist.

2. Check continuity between headlamp battery saver control unit harness connector M34 terminal 13 (L) and ground.

Continuity should not exist.



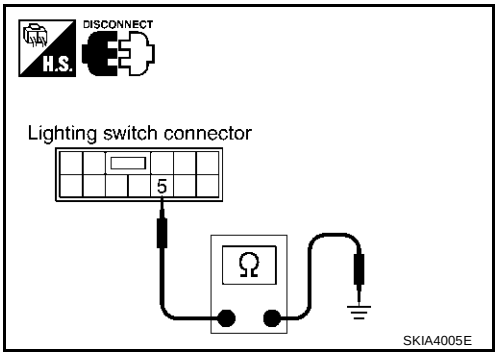
OK or NG

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

7. CHECK LIGHTING SWITCH GROUND CIRCUIT

Check continuity between lighting switch harness connector M55 terminal 5 (B) and ground.

Continuity should exist.



OK or NG

OK >> Replace headlamp battery saver control unit.
NG >> Repair harness.

No Parking, Side Marker, License and Tail Lamps Operate Properly

AKS003Y7

1. CHECK FUSE

Check for blown tail lamp relay fuse.

Relay	Fuse No.
Tail lamp relay	54

Refer to LT-108, "Wiring Diagram — TAIL/L —" .

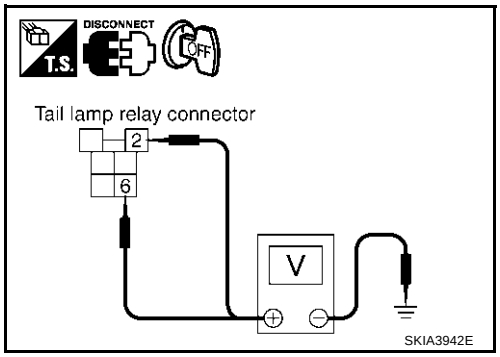
OK or NG

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

2. CHECK TAIL LAMP RELAY POWER SUPPLY CIRCUIT

1. Remove the tail lamp relay.
2. Check voltage between tail lamp relay connector E3-3 terminals 2 or 6 and ground.

Battery voltage should exist.



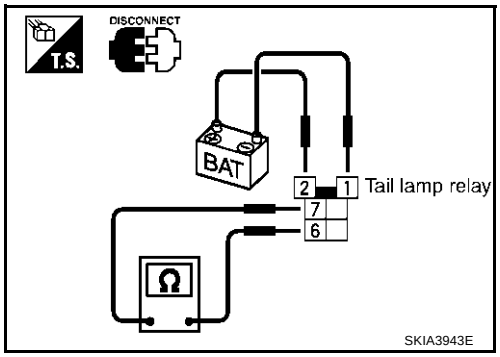
OK or NG

OK >> GO TO 3.
NG >> Replace fuse, fusible link and relay block (J/B).

3. CHECK TAIL LAMP RELAY

Apply 12V between tail lamp relay terminals 2 and 1, and check continuity between terminals 6 and 7.

Continuity should exist.



OK or NG

OK >> GO TO 4.
NG >> Replace the tail lamp relay.

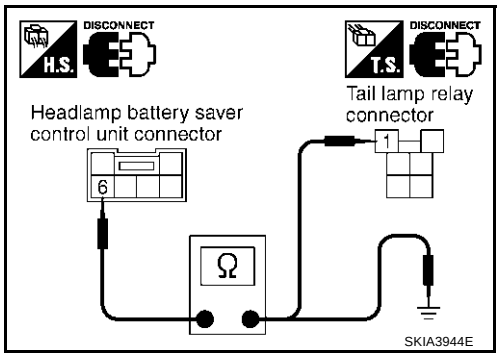
4. CHECK TAIL LAMP RELAY CONTROL SIGNAL CIRCUIT 1

1. Disconnect the headlamp battery saver control unit connector and the BCM connector.
2. Check continuity between headlamp battery saver control unit harness connector M33 terminal 6 (LG/B) and tail lamp relay connector E3-3 terminal 1(LG/B).

Continuity should exist.

3. Check continuity between headlamp battery saver control unit harness connector M33 terminal 6 (LG/B) and ground.

Continuity should not exist.



OK or NG

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

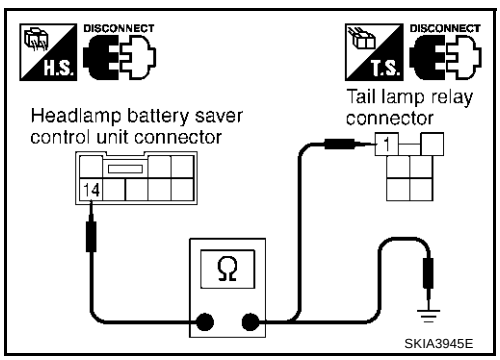
5. CHECK TAIL LAMP RELAY CONTROL SIGNAL CIRCUIT 2

1. Check continuity between headlamp battery saver control unit harness connector M34 terminal 14 (LG/B) and tail lamp relay connector E3-3 terminal 1 (LG/B).

Continuity should exist.

2. Check continuity between headlamp battery saver control unit harness connector M34 terminal 14 (LG/B) and ground.

Continuity should not exist.



OK or NG

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

6. CHECK COMBINATION LAMP POWER SUPPLY CIRCUIT

1. Disconnect each combination lamp connectors.
2. Check continuity between tail lamp relay harness connector E3-3 terminal 7 (R/G) and each combination lamp harness connector terminal 1 (R/G).

Continuity should exist.

3. Check continuity between each combination lamp harness connector terminal 1 (R/G) and ground.

Continuity should not exist.

OK or NG

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

7. CHECK LIGHTING SWITCH

Check continuity of lighting switch. Refer to LT-100, "Switch Circuit Inspection" .

OK or NG

OK >> GO TO 8.
NG >> Replace the lighting switch.

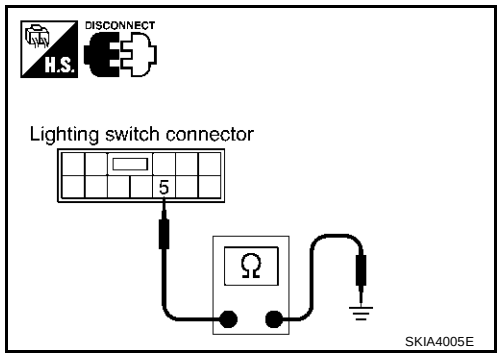
8. CHECK LIGHTING SWITCH GROUND CIRCUIT

Check continuity between lighting switch harness connector M55 terminal 5 (B) and ground.

Continuity should exist.

OK or NG

OK >> Replace the headlamp battery saver control unit.
NG >> Check harness ground circuit.



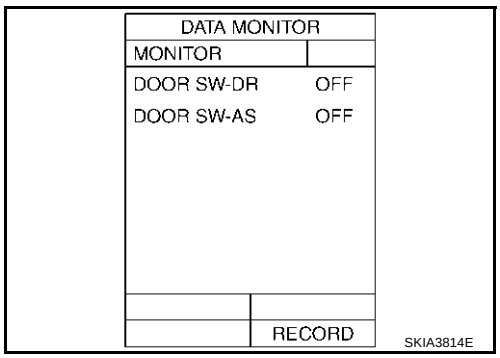
Battery Saver Control Does Not Operate Properly

AKS003Y8

1. CHECK DOOR SWITCH SIGNAL

With CONSULT-II

1. Select “INTERIOR ILLUMINATION” of “IVMS” on “SELECT SYSTEM” screen.
2. Operate each door via “DOOR SW-DR” and “DOOR SW-PA” on “DATA MONITOR” screen and make sure that the switch turns on and off as commanded.



Without CONSULT-II

- Open and close the front door (driver side, passenger side) and make sure that the switch turns on and off by “switch monitor” in the self-diagnosis function.

OK or NG

OK >> GO TO 6.
NG >> ● When front door switch (driver side) is malfunction, go to 2.
● When front door switch (passenger side) is malfunction, go to 4.

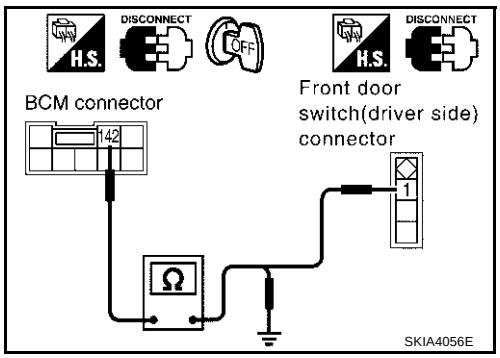
2. CHECK FRONT DOOR SWITCH (DRIVER SIDE) CIRCUIT

1. Turn ignition switch to OFF position.
2. Disconnect the BCM connector and the front door switch (driver side) connector.
3. Check continuity between BCM harness connector B4 terminal 142 (R/Y) and front door switch (driver side) harness connector B20 terminal 1 (R/Y).

Continuity should exist.

4. Check continuity between BCM harness connector B4 terminal 142 (R/Y) and ground.

Continuity should not exist.



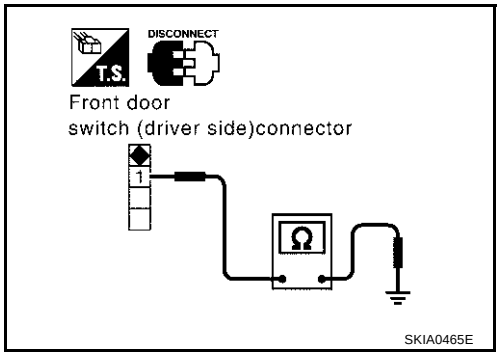
OK or NG

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

3. CHECK FRONT DOOR SWITCH (DRIVER SIDE)

1. Check continuity between front door switch (driver side) harness connector B20 terminal 1 (R/Y) and ground.

Switch released (ON) : Continuity should exist.
Switch pressed (OFF) : Continuity should not exist.



OK or NG

OK >> Replace the BCM.
NG >> Replace the front door switch (driver side).

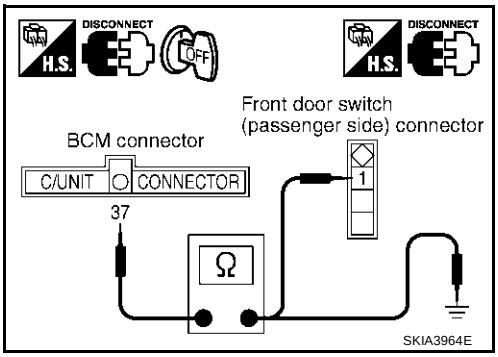
4. CHECK FRONT DOOR SWITCH (PASSENGER SIDE) CIRCUIT

1. Disconnect the BCM and the front door switch (passenger side) connectors.
2. Check continuity between BCM harness connector M4 terminal 37 (LG) and front door switch (passenger side) harness connector B220 terminal 1 (LG).

   Continuity should exist.

3. Check continuity between BCM harness connector M4 terminal 37 (LG) and ground.

   Continuity should not exist.



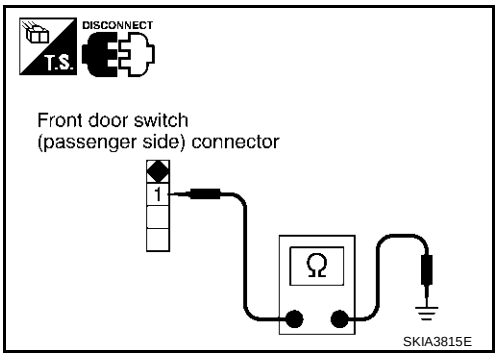
OK or NG

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

5. CHECK FRONT DOOR SWITCH (PASSENGER SIDE)

Check continuity between front door switch (passenger side) connector B220 terminal 1 (LG) and ground.

Switch released (ON) : Continuity should exist.
Switch pressed (OFF) : Continuity should not exist.



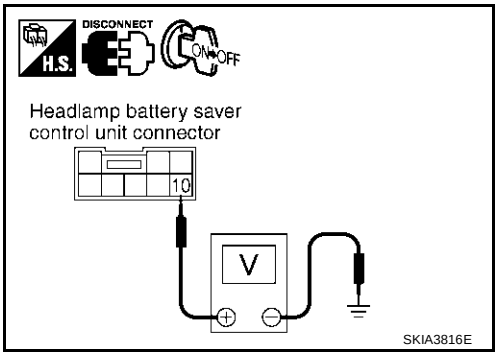
OK or NG

OK >> Replace the BCM.
NG >> Replace the front door switch (passenger side).

6. CHECK RAP SIGNAL

1. Disconnect the headlamp battery saver control unit connector.
2. Check voltage between headlamp battery saver control unit harness connector M34 terminal 10 (Y/R) and ground after turning off the ignition switch.

Connector	Terminal (Wire color)	Condition	Voltage
M34	10 (Y/R)	Within 45 seconds after ignition switch is turned off	Less than 1V
		Front door is opened or more than 45 seconds after ignition switch is turned off	Battery voltage



OK or NG

OK >> GO TO 8.
NG >> GO TO 7.

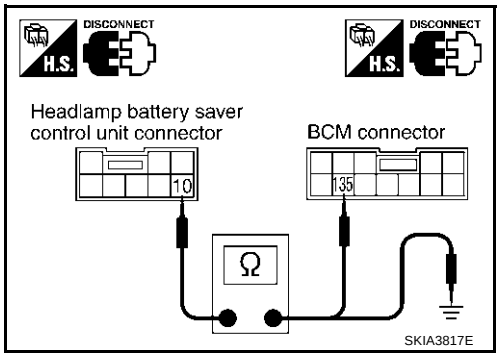
7. CHECK HARNESS CIRCUIT

1. Disconnect the BCM connector.
2. Check continuity between headlamp battery saver control unit harness connector M34 terminal 10 (Y/R) and BCM harness connector R4 terminal 135 (Y/G).

Continuity should exist.

3. Check continuity between headlamp battery saver control unit harness connector M34 terminal 10 (Y/R) and ground.

Continuity should not exist.



OK or NG

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

8. CHECK LIGHTING SWITCH

Check continuity of lighting switch. Refer to LT-100, "Switch Circuit Inspection" .

OK or NG

OK >> GO TO 9.
NG >> Replace the lighting switch.

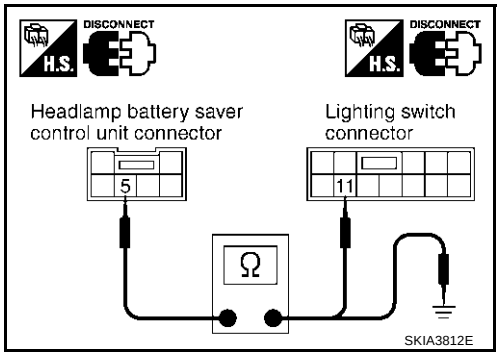
9. CHECK LIGHTING SWITCH POWER SUPPLY CIRCUIT 1

1. Disconnect the headlamp battery saver control unit and lighting switch connectors.
2. Check continuity between headlamp battery saver control unit harness connector M33 terminal 5 (L) and lighting switch harness connector M55 terminal 11 (L).

Continuity should exist.

3. Check continuity between headlamp battery saver control unit harness connector M33 terminal 5 (L) and ground.

Continuity should not exist.



OK or NG

OK >> GO TO 10.
NG >> Repair harness or connector.

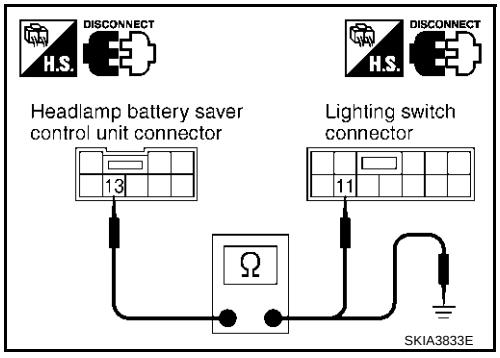
10. CHECK LIGHTING SWITCH POWER SUPPLY CIRCUIT 2

1. Check continuity between headlamp battery saver control unit harness connector M34 terminal 13 (L) and lighting switch harness connector M55 terminal 11 (L).

Continuity should exist.

2. Check continuity between headlamp battery saver control unit harness connector M34 terminal 13 (L) and ground.

Continuity should not exist.



OK or NG

OK >> GO TO 11.
NG >> Repair harness or connector.

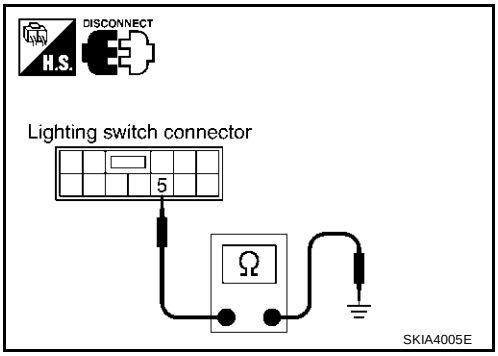
11. CHECK LIGHTING SWITCH GROUND CIRCUIT

Check continuity between lighting switch harness connector M55 terminal 5 (B) and ground.

Continuity should exist.

OK or NG

OK >> Replace headlamp battery saver control unit.
NG >> Repair harness.



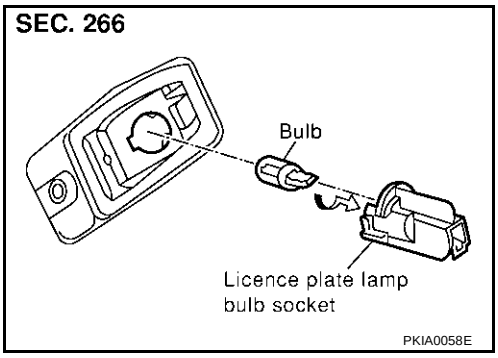
Bulb Replacement

AKS002GD

LICENSE PLATE LAMP

1. Remove the trunk lid finisher. Refer to EI-41, "TRUNK ROOM TRIM & TRUNK LID FINISHER" in “EXTERIOR & INTERIOR (EI)” section.
2. Disconnect the license plate lamp connector.
3. Turn the bulb socket counterclockwise and unlock it.
4. Remove the bulb from its socket.

License plate lamp : 12V 3.8W



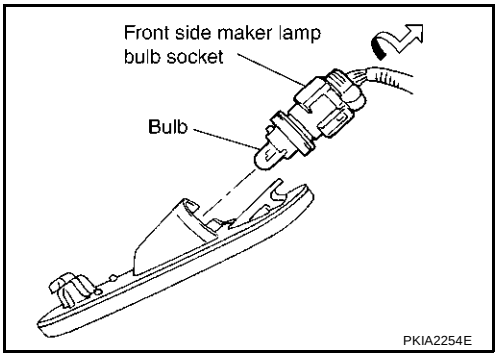
FRONT PARKING LAMP

Refer to LT-41, "FRONT TURN SIGNAL AND PARKING (CLEARANCE) LAMP" in “HEADLAMP (FOR USA)”.

FRONT SIDE MARKER LAMP

1. Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in “EI” section.
2. Turn bulb socket counterclockwise and unlock it.
3. Remove bulb from the its socket.

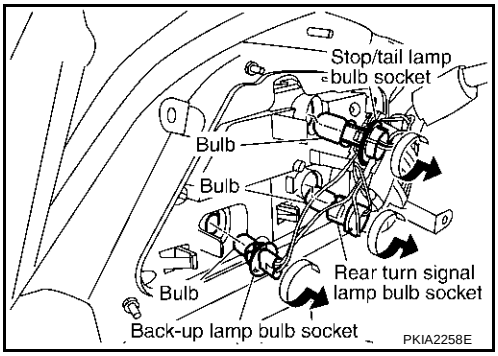
Front side marker lamp : 12V 3.8W



REAR COMBINATION LAMP

1. Remove the trunk side finisher. Refer to EI-41, "TRUNK ROOM TRIM & TRUNK LID FINISHER" in “EXTERIOR & INTERIOR (EI)” section.
2. Turn the bulb socket counterclockwise and unlock it.
3. Remove the bulb.

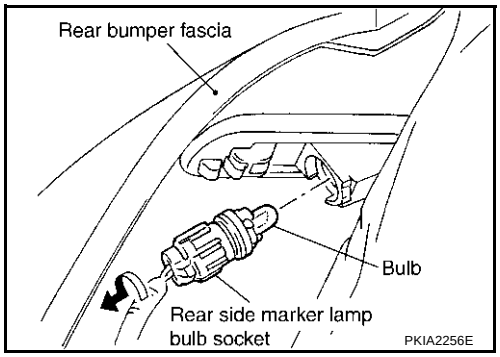
Stop/Tail lamp (outer·inner side) : 12V 21/5W
Rear turn signal lamp : 12V 21W (amber)
Buck-up lamp : 12V 18W



REAR SIDE MARKER LAMP

1. Remove rear combination lamp. Refer to LT-123, "REAR COMBINATION LAMP" .
2. Turn bulb socket counterclockwise and unlock it.
3. Remove bulb from the bulb socket.

Rear side marker lamp : 12V 3.8W



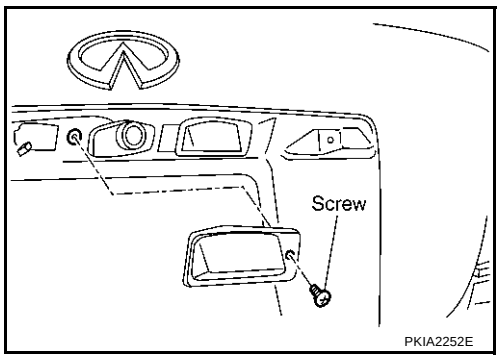
Removal and Installation

AKS002GE

LICENSE PLATE LAMP

Removal

1. Remove the trunk lid finisher outer. Refer to EI-30, "TRUNK LID FINISHER" in “EXTERIOR & INTERIOR (EI)” section.
2. Disconnect the license plate lamp connector.
3. Remove the license plate lamp mounting screw and remove the license plate lamp from the vehicle.



Installation

Install in the reverse order of removal, taking care of the following points.

License plate lamp mounting screw:

: 1.86 - 2.94 N·m (0.19 - 0.29 kg-m, 17 - 26 in-lb)

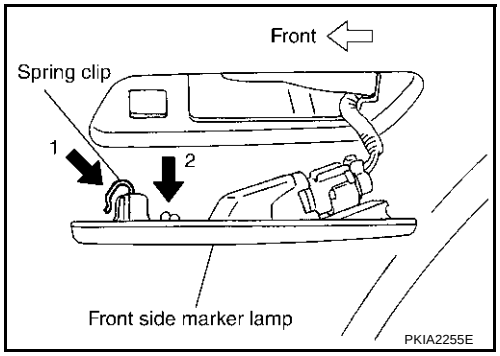
FRONT PARKING LAMP

Refer to LT-42, "Removal and Installation" in “HEADLAMP (FOR USA)”.

FRONT SIDE MARKER LAMP

Removal

1. Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in “EI” section.
2. While keep pressing the spring clip of lamp with a pair of pliers, pull the lamp unit toward outside of vehicle.
3. Disconnect the bulb socket connector and remove the lamp from the vehicle.



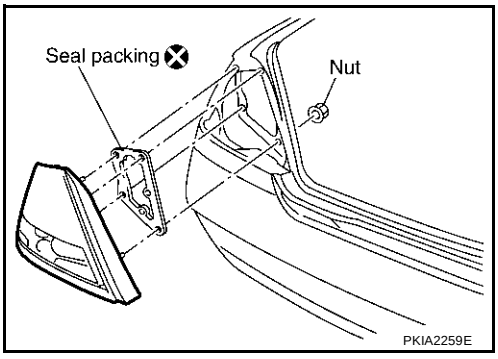
Installation

Install in the reverse order of removal.

REAR COMBINATION LAMP

Removal

1. Remove the trunk side finisher. Refer to EI-41, "TRUNK ROOM TRIM & TRUNK LID FINISHER" in “EXTERIOR & INTERIOR (EI)” section.
2. Disconnect the rear combination lamp connector.
3. Remove the rear combination lamp mounting nuts.
4. Pull the rear combination lamp toward rear of the vehicle and remove from the vehicle.
5. Remove the seal packing from the vehicle.



Installation

Install in the reverse order of removal, taking care of the following points.

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

CAUTION:
Seal packing cannot be reused.

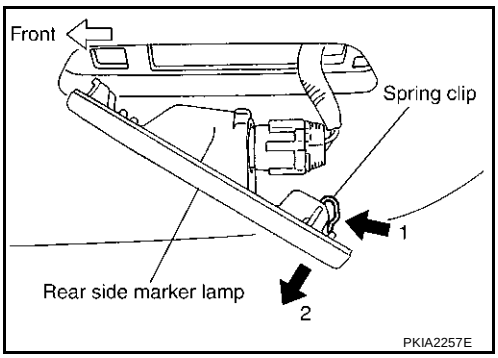
Rear combination lamp mounting nut:

: 2.5 - 3.8 N·m (0.26 - 0.38 kg-m, 23 - 33 in-lb)

REAR SIDE MARKER LAMP

Removal

1. Remove rear combination lamp. Refer to LT-123, "REAR COMBINATION LAMP" .
2. While keep pressing the spring clip of lamp with a flat blade screwdriver, pull the lamp unit toward out of vehicle.
3. Disconnect the bulb socket connector and remove the lamp from the vehicle



Installation

Install in the reverse order of removal.

INTERIOR ROOM LAMP

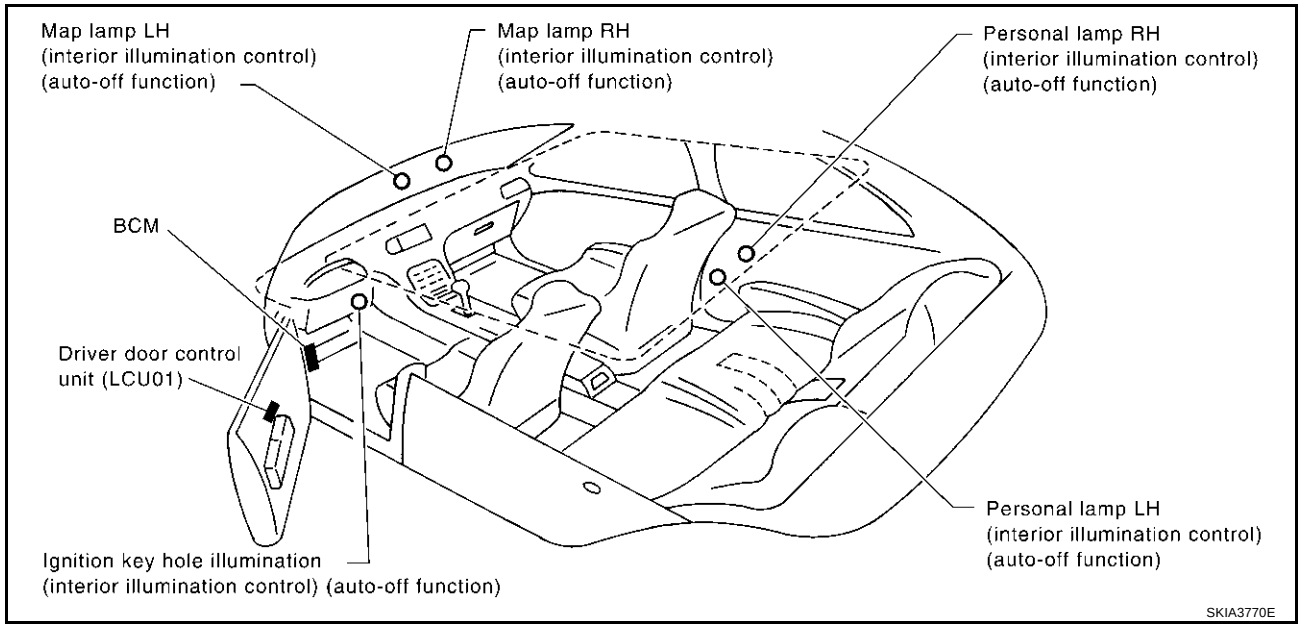
PFP:26410

System Description

AKS002GF

OUTLINE

Controls on/off and afterglow time of the map lamp (front personal light), personal lamp (rear personal light), and ignition key hole illumination.



TIMER FUNCTION

Controls the illumination duration of the lamps and illuminations according to the signals from the front door lock actuator (driver side) (door unlock sensor), front door switch (driver side), ignition switch and key switch.

- The timer operates for approx. 30 seconds.
- The timer will be actuated or cancelled by the signals from the following switches.

Function	Operation
Front door lock actuator (driver side) (door unlock sensor)	● Timer will be actuated by input of the door unlock sensor ON (door unlocked) signal when the front door switch (driver side) is OFF (door closed) and the key switch is OFF (key withdrawn). ● Timer will be cancelled by input of the door unlock sensor OFF (door locked) signal.
Front door switch (driver side)	● Timer will be actuated by input of the front door switch (driver side) ON→OFF (door open→closed) signal when the key switch is OFF. ● Timer will be cancelled by input of the front door switch (driver side) ON (door open) signal.
Ignition switch	● Timer will be cancelled by input of the ignition switch ACC or ON signal.
key switch	● Timer will be actuated by input of the key switch ON→OFF (key inserted→withdrawn) signal when the front door switch (driver side) is OFF (door closed).

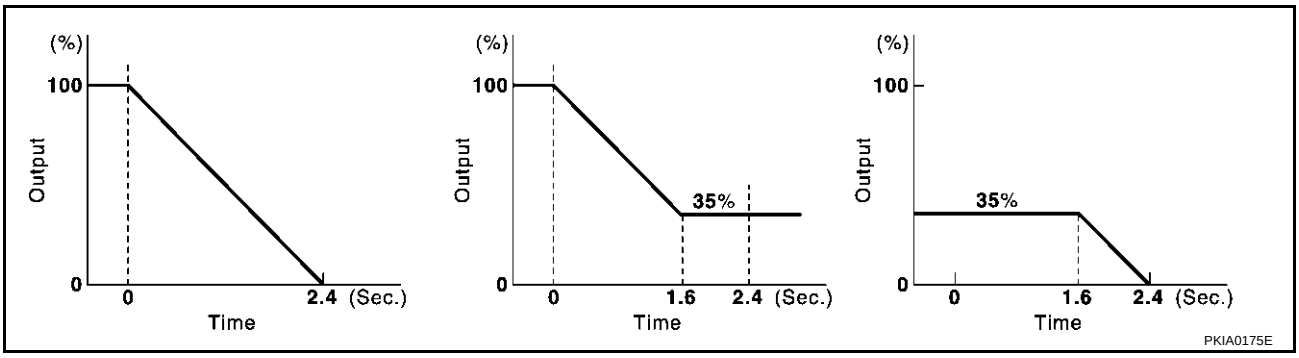
- If a new timer actuation signal is input while the timer is operating, the later input will have priority.
- If any lamp switch is operated and a separate actuation signal is input while the timer is operating, the lamp operation will be prioritized. However, the timer operation will not be renewed or cancelled.

LAMP OUTPUT CONTROL FUNCTION

Controls output of lamps except for the ignition key hole illumination.

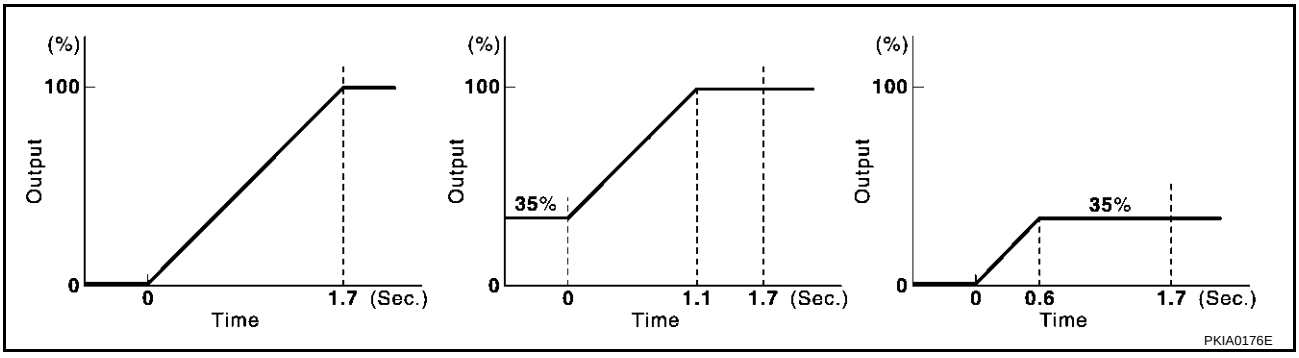
- In case from full illumination to off, from full illumination to half illumination, and from half illumination to off.

  NOTE:
  In full illumination, brightness of the lamps is 100%. In half illumination, it is 35% (25% for the personal lamp).



- In case from off to full illumination, from half illumination to full illumination, and from off to half illumination.

  NOTE:
  In full illumination, brightness of the lamps is 100%. In half illumination, it is 35% (25% for the personal lamp).



AUTO OFF FUNCTION

When ignition switch is in OFF, and following condition is continued for approximately 30 minutes without the change, then interior room lamps are automatically turned OFF.

- Interior lamp ill switch and personal lamps switch are “AUTO” position, and then door switch of either is opened.
- Interior lamp ill switch is “ON” position.
- Personal lamp switch is “FULL” position.

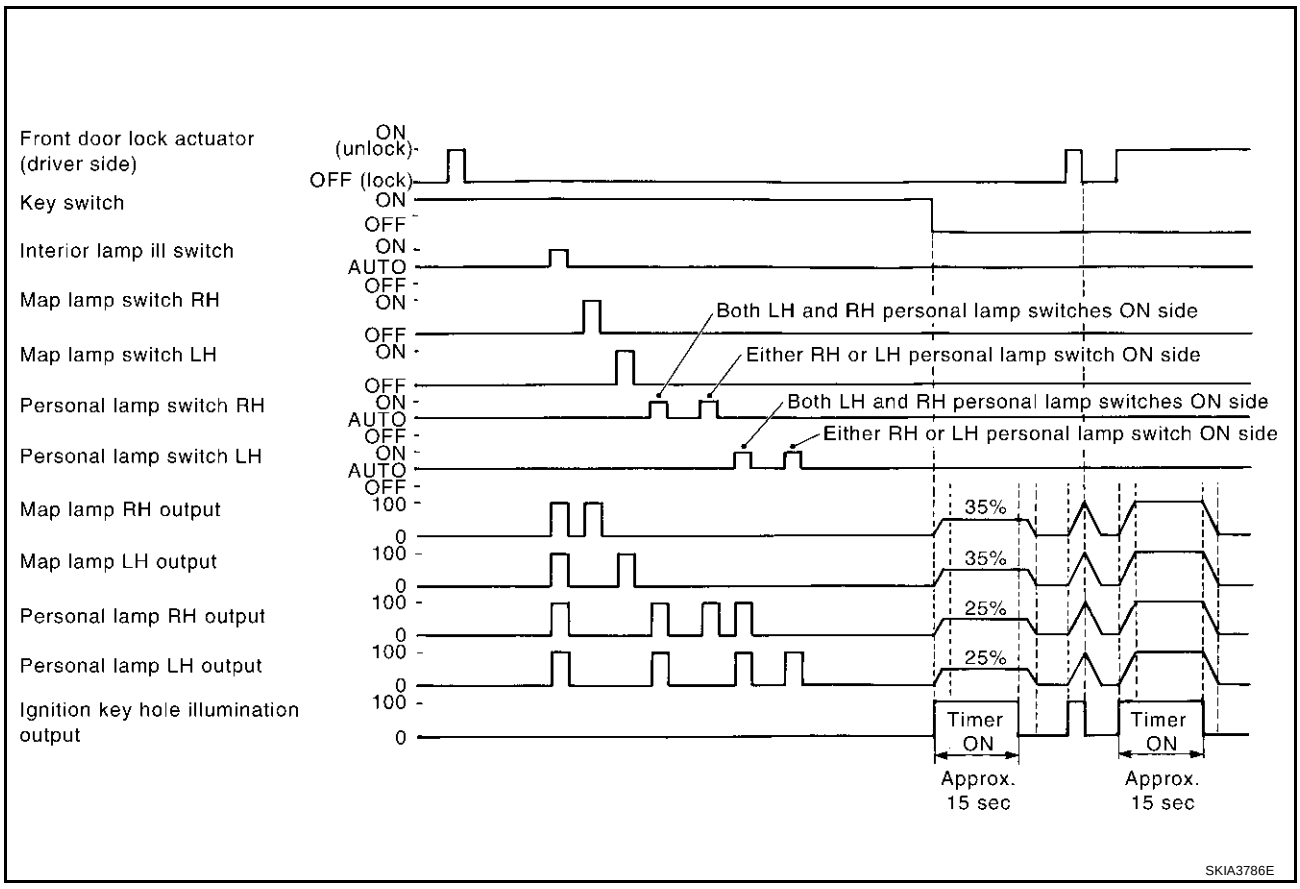
The auto off function is turned OFF when the one of following change is operated, and executes a usual operation control thereafter.

- Ignition switch is turned from OFF to ON.
- Each door switch is switched from OFF to ON. (Door closed → open)
- Interior lamp ill switch is switched from OFF to ON.
- Personal lamp switch is switched from AUTO to ON.

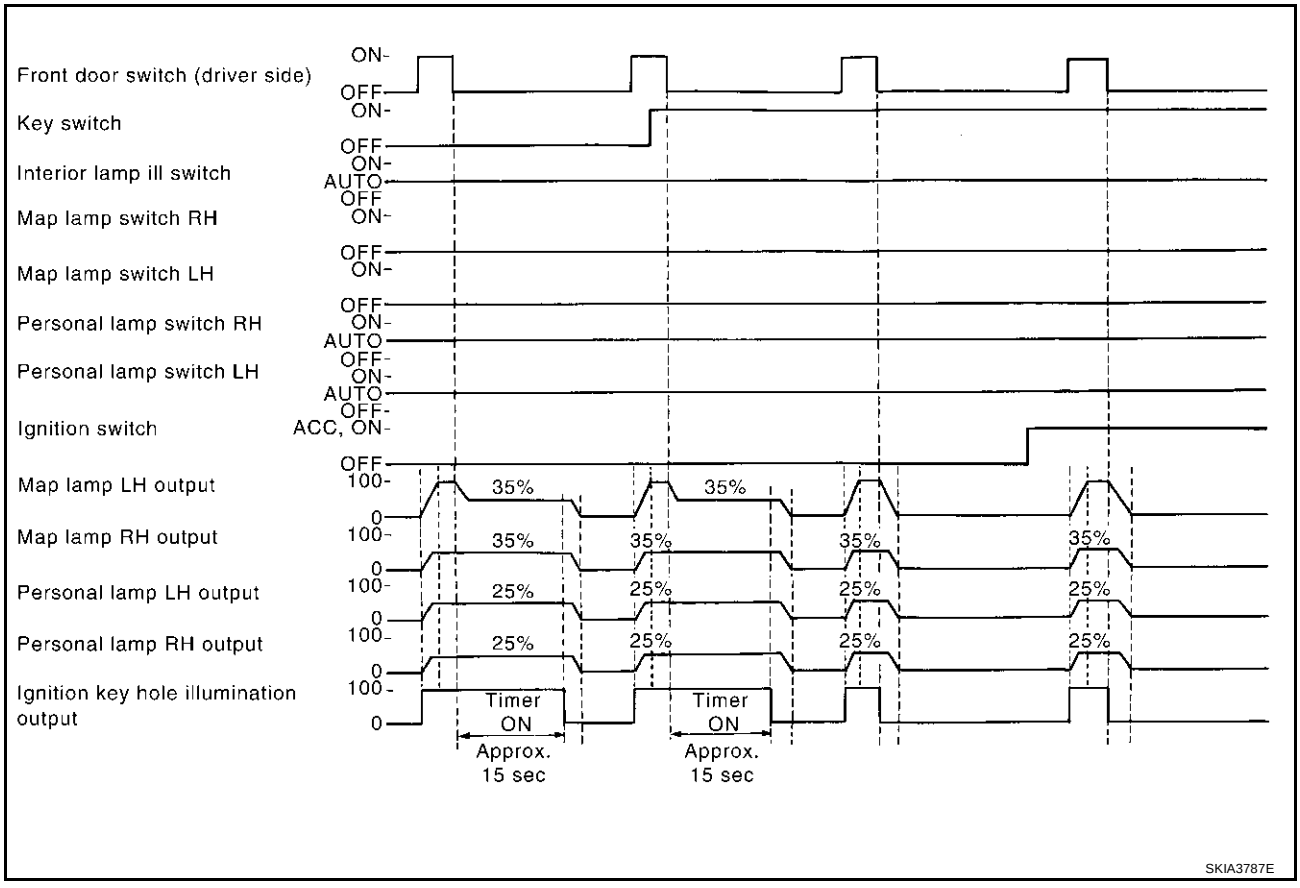
LIGHTS ON/OFF MODES

Separate signal from each switch and signals of higher output have priority over these modes.

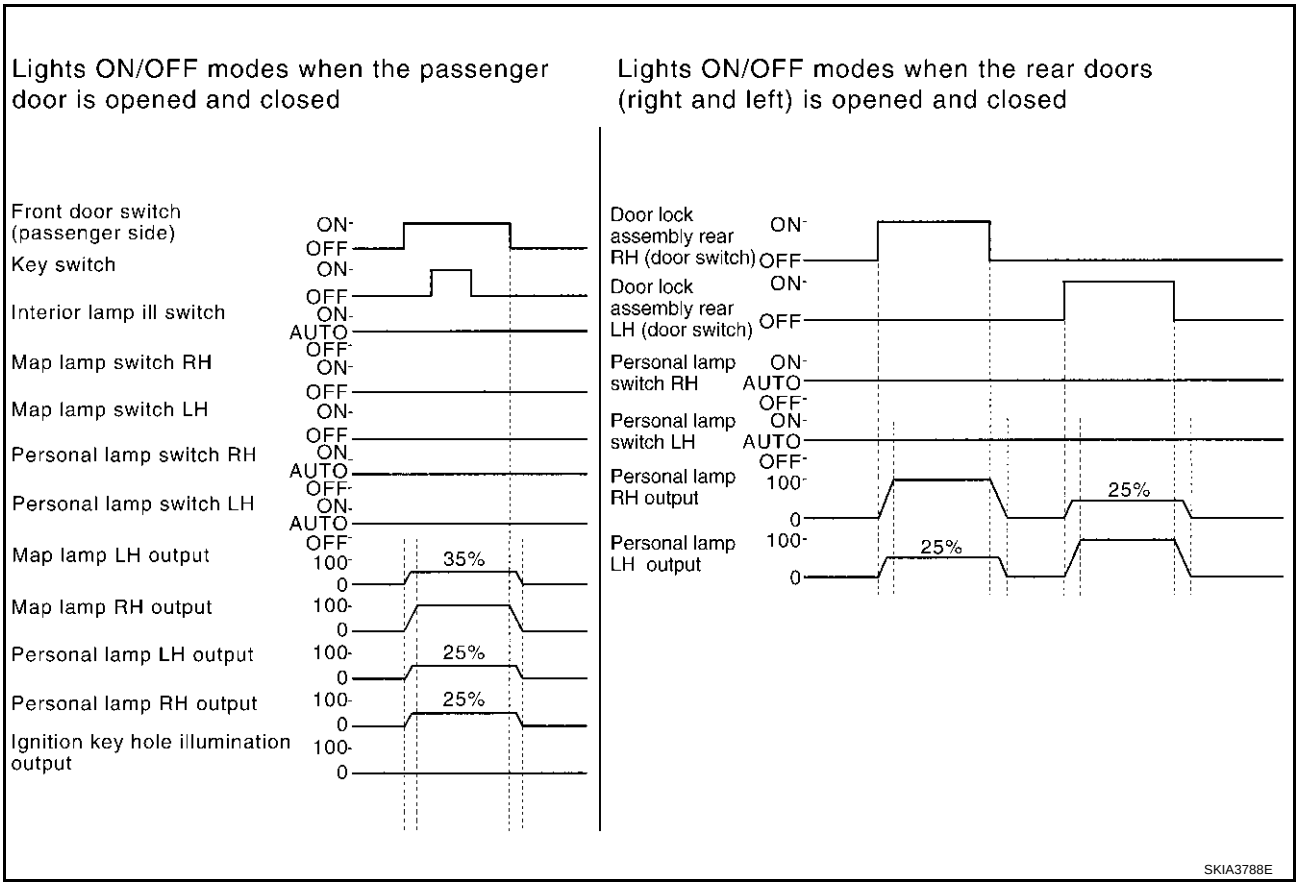
1. Lights on-off modes when each lamp switch is operated



2. Lights on-off modes when the driver door is opened and closed



3. Lights on-off modes when the passenger door is opened and closed, lights on-off modes when door lock assembly rear LH, RH are opened and closed



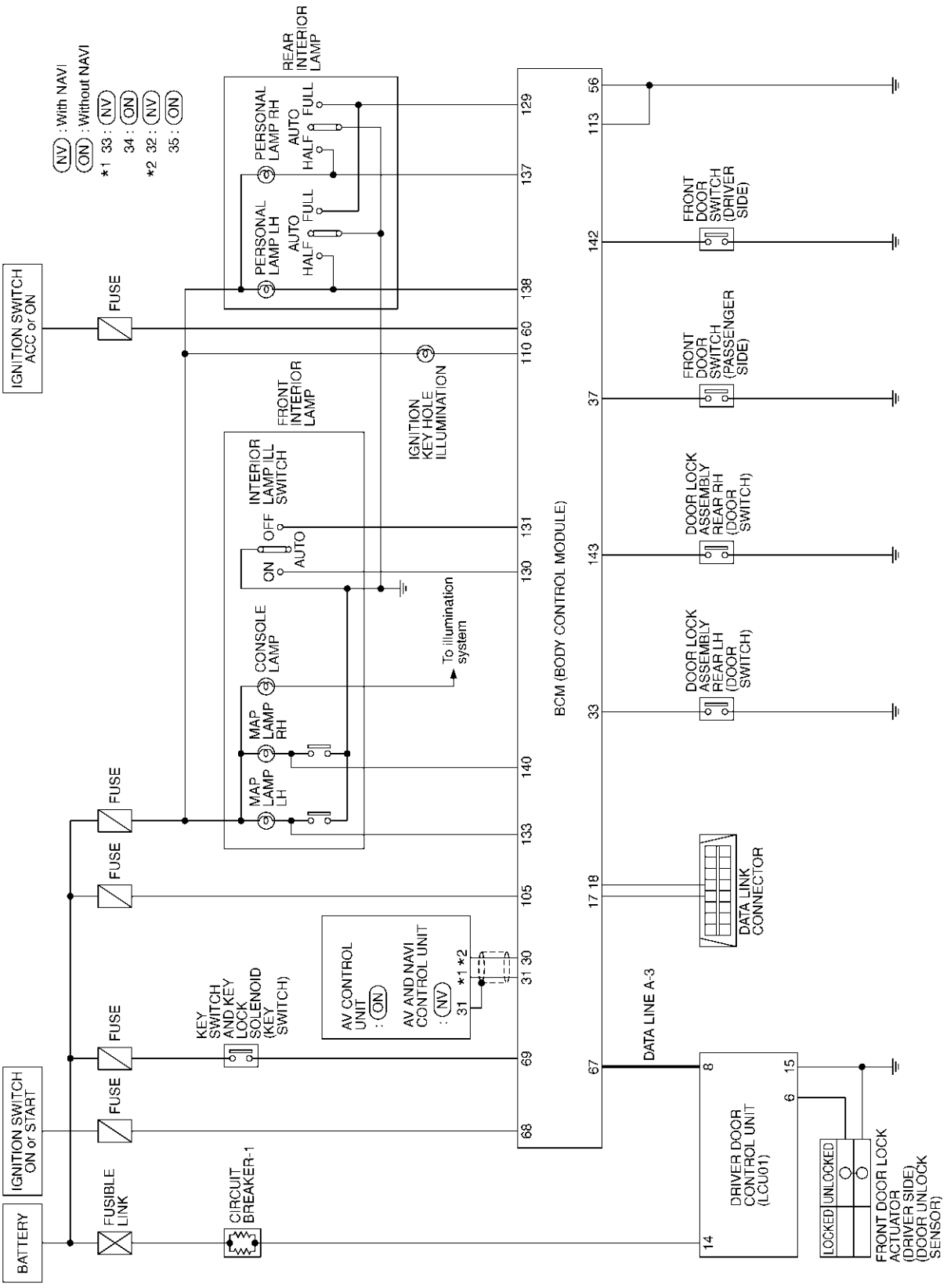
Major Components and Their Functions

AKS002GG

Components	Functions
BCM	● Controls on/off and afterglow time of the interior lamps and illuminations according to the signals from the ignition switch, key switch, lighting switch, each door switch, front door lock actuator (driver side) (door unlock sensor), and each lamp switch. **CAUTION:** **On/off control varies with signal input from each switch. Refer to LT-125, "LIGHTS ON/OFF MODES" .**
Front door lock actuator (driver side)	● Detects driver door lock (switch OFF)/unlock (switch ON) status and inputs it to the BCM via the driver door control unit.
Front door switch (driver side)	● Detects driver door open (switch ON)/closed (switch OFF) status and inputs it to the BCM.
Ignition switch	● Detects ignition switch OFF (OFF), ACC·IGN (ON) status and inputs it to the BCM.
key switch	● Detects ignition key inserted (ON)/withdrawn (OFF) status and inputs it to the BCM.

Schematic

AKS002GH

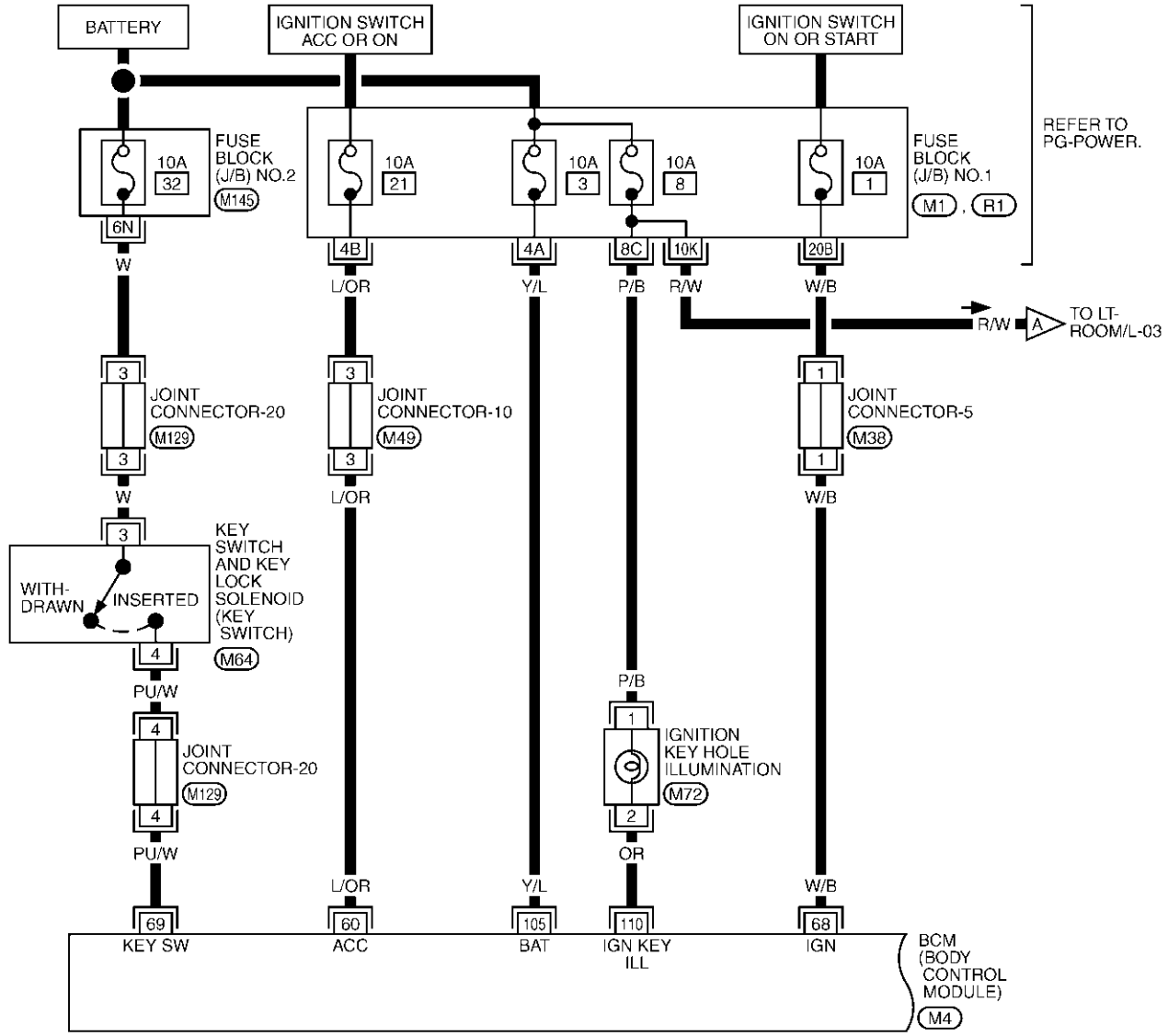


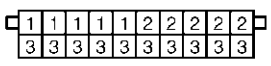
TKWA0562E

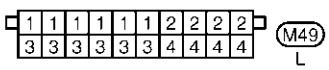
Wiring Diagram — ROOM/L —

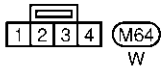
AKS002GI

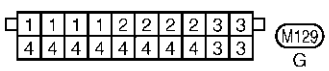
LT-ROOM/L-01











REFER TO THE FOLLOWING.

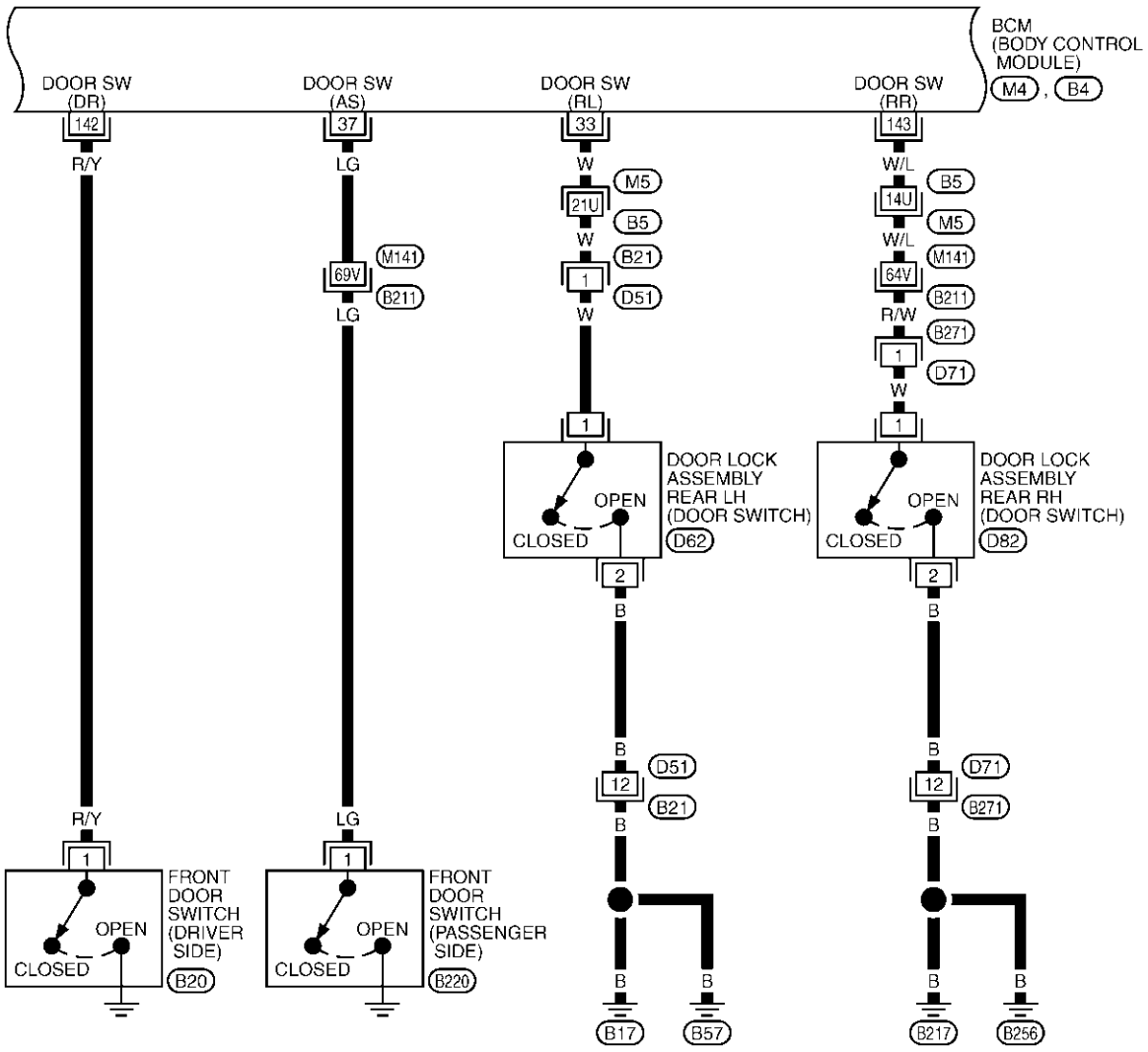
M1, R1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

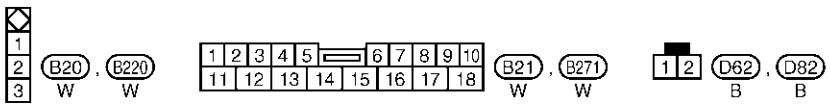
M145 -FUSE BLOCK-JUNCTION BOX (J/B) NO.2

M4 -ELECTRICAL UNITS

TKWA0565E

LT-ROOM/L-02





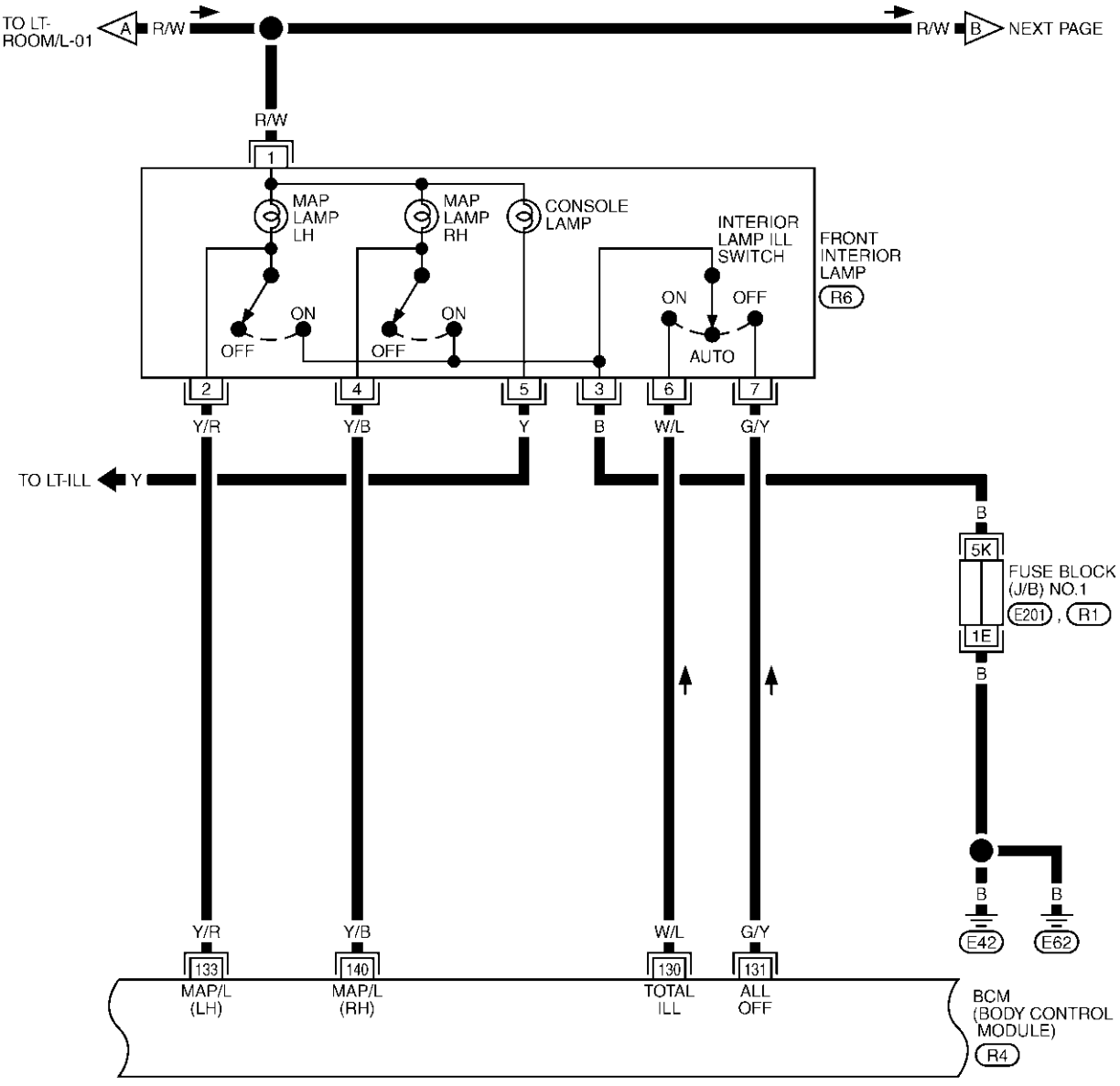
REFER TO THE FOLLOWING.

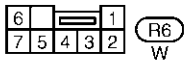
M5 , B211 -SUPER MULTIPLE JUNCTION (SMJ)

M4 , B4 -ELECTRICAL UNITS

TKWA0566E

LT-ROOM/L-03

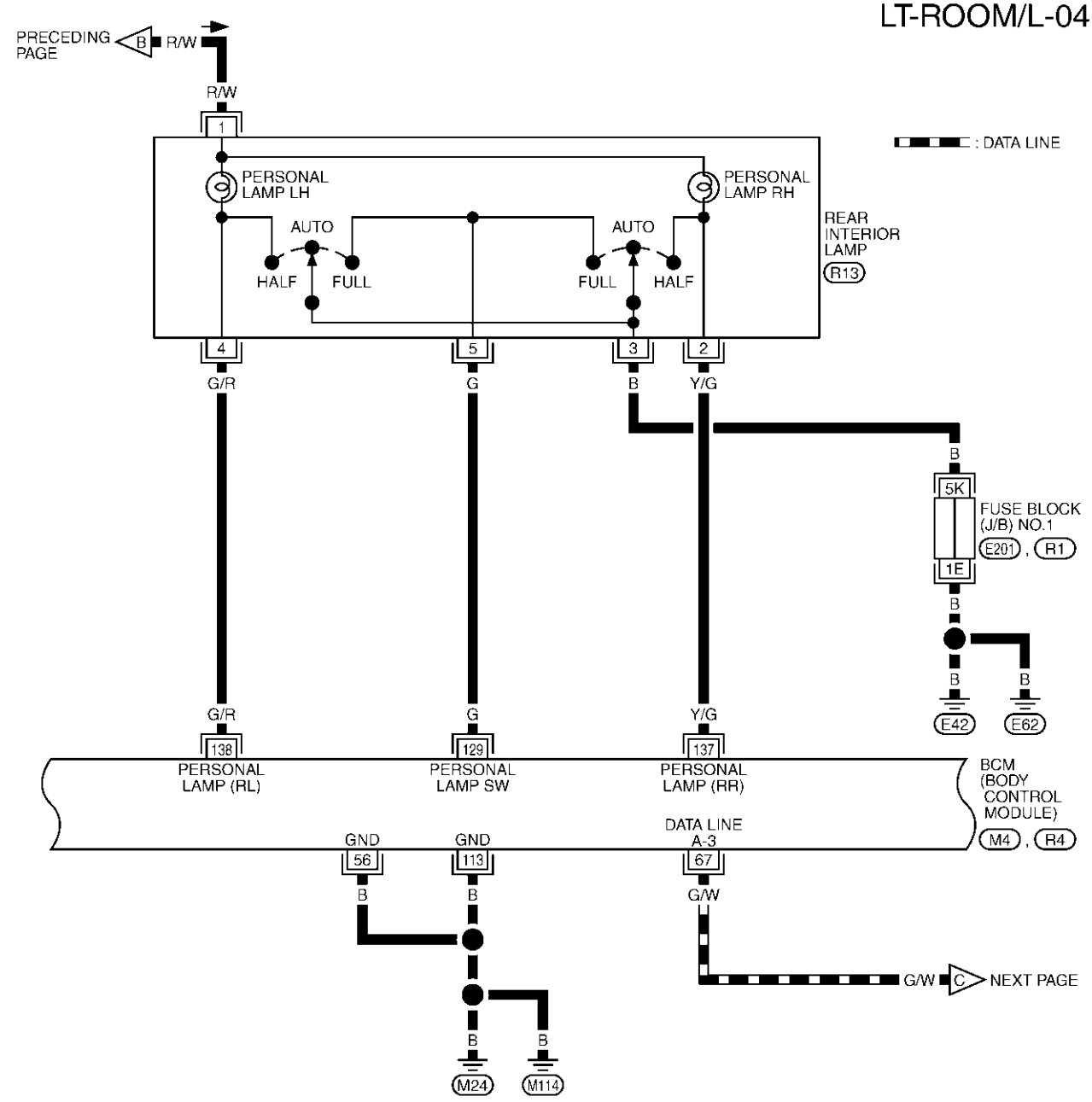


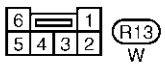


REFER TO THE FOLLOWING.
E201 , R1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1
R4 -ELECTRICAL UNITS

TKWA0567E

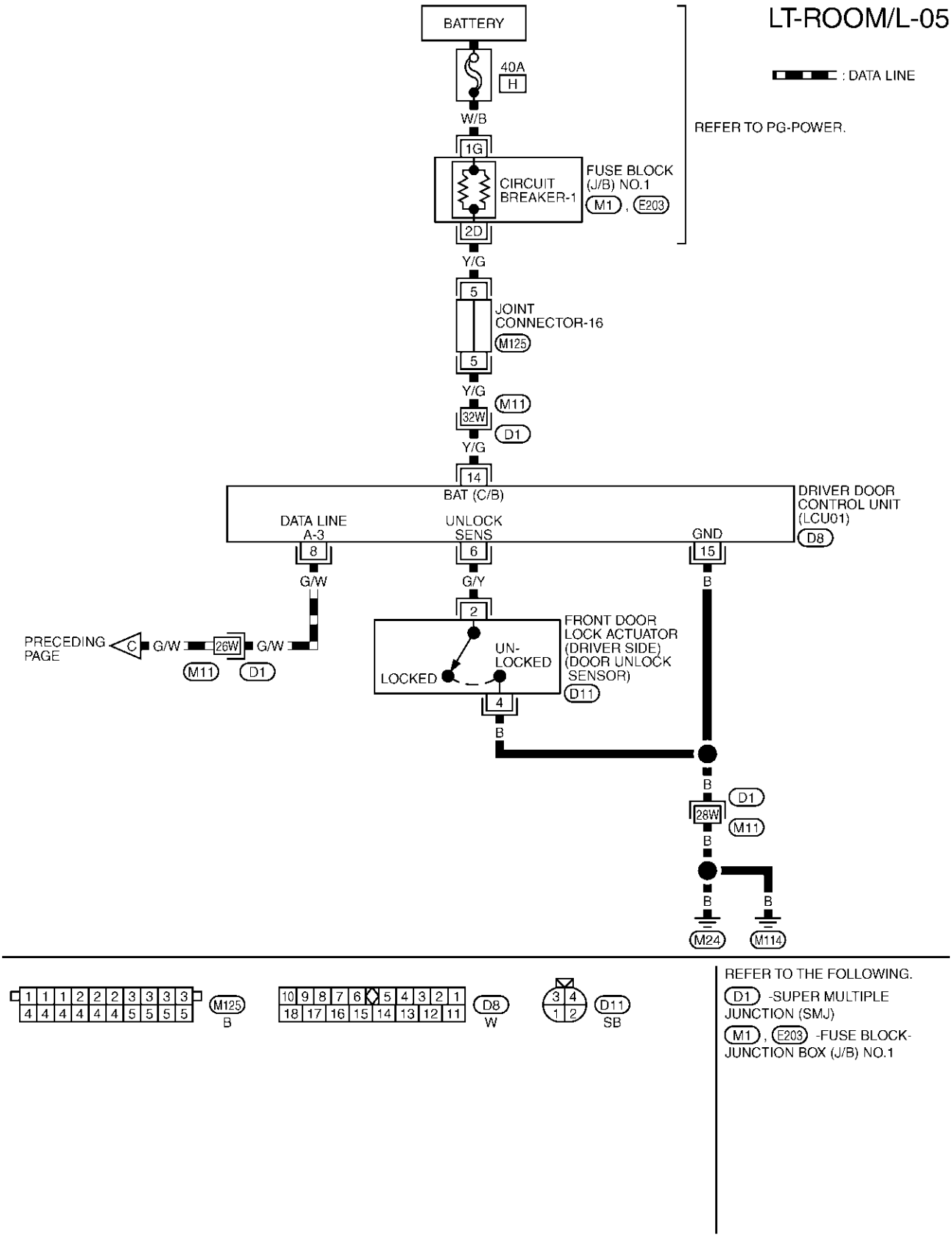
LT-ROOM/L-04



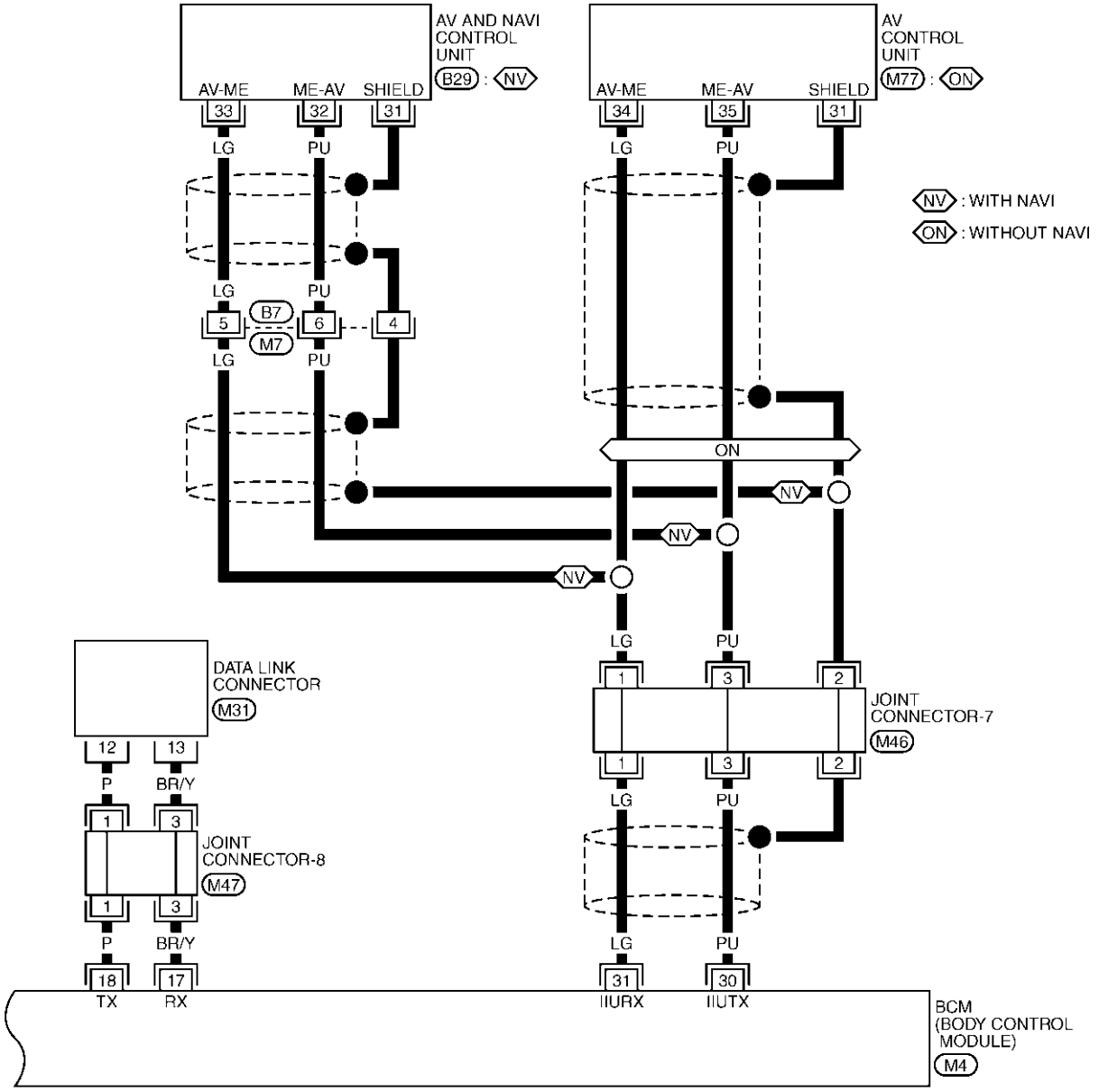


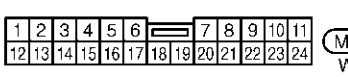
REFER TO THE FOLLOWING.
E201 , R1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1
M4 , R4 -ELECTRICAL UNITS

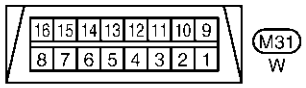
TKWA0568E

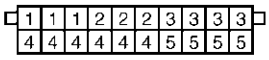

LT-ROOM/L-05
: DATA LINE
REFER TO PG-POWER.
BATTERY
40A
H
W/B
1G
CIRCUIT BREAKER-1
FUSE BLOCK (J/B) NO.1
M1 , E203
2D
Y/G
5
JOINT CONNECTOR-16
M125
5
Y/G
M11
32W
D1
Y/G
14
BAT (C/B)
DRIVER DOOR CONTROL UNIT (LCU01)
D8
DATA LINE A-3
UNLOCK SENS
GND
8
6
15
G/W
G/Y
B
PRECEDING PAGE
C
G/W
26W
G/W
M11
D1
2
FRONT DOOR LOCK ACTUATOR (DRIVER SIDE) (DOOR UNLOCK SENSOR)
UN-LOCKED
LOCKED
D11
4
B
B
D1
28W
M11
B
B
B
M24
M114
M125
B
D8
W
D11
SB
REFER TO THE FOLLOWING.
D1 -SUPER MULTIPLE JUNCTION (SMJ)
M1 , E203 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1
TKWA0569E

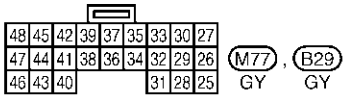
LT-ROOM/L-06











REFER TO THE FOLLOWING.
M4 -ELECTRICAL UNITS

TKWA0570E

Terminals and Reference Value for BCM

AKS002GJ

Terminal No.	Wire color	Signal description	Measuring condition			Reference value
			Ignition switch	Operation or condition		
17	BR/Y	Data link RX	—	—		—
18	P	Data link TX	—	—		—
30	PU	Communication signal TX (BCM-AV: Transmission)	—	—		—
31	LG	Communication signal RX (AV-BCM: Receiving)	—	—		—
33	W	Door lock assembly rear LH (door switch) signal	OFF	Door lock assembly rear LH (door switch)	ON (open)	Less than 1V
					OFF (closed)	Battery voltage
37	LG	Front door switch (passenger side) signal	OFF	Front door switch (passenger side)	ON (open)	Less than 1V
					OFF (closed)	Battery voltage
56	B	Ground	—	—		0V
60	L/OR	Ignition switch ACC or ON	ACC	—		Battery voltage
67	G/W	DATA line A-3	—	—		—
68	W/B	Ignition switch ON or START	ON	—		Battery voltage
69	PU/W	key switch signal	OFF	Key withdrawn (OFF)		Less than 1V
				Key inserted (ON)		Battery voltage
105	Y/L	Battery power supply	OFF	—		Battery voltage
110	OR	Ignition key hole illumination signal	OFF	Turned OFF		Battery voltage
				Turned ON		Less than 1V
113	B	Ground	—	—		0V
129	G	Personal lamp switch signal	OFF	Personal lamp switch	One switch ON	5V
					AUTO	5V
					Both switch ON	Less than 1V
130	W/L	Interior lamp switch ON signal	OFF	Room lamp switch	ON	Less than 1V
					AUTO	5V
					OFF	5V
131	G/Y	Interior lamp switch OFF signal	OFF	Room lamp switch	ON	5V
					AUTO	5V
					OFF	Less than 1V
133	Y/R	Map lamp LH signal	OFF	Turned OFF		Battery voltage
				Dimming		8V
				Turned ON		Less than 1V
137	Y/G	Personal lamp RH signal	OFF	Turned OFF		Battery voltage
				Dimming		8V
				Turned ON		Less than 1V
138	G/R	Personal lamp LH signal	OFF	Turned OFF		Battery voltage
				Dimming		8V
				Turned ON		Less than 1V
140	Y/B	Map lamp RH signal	OFF	Turned OFF		Battery voltage
				Dimming		8V
				Turned ON		Less than 1V

Terminal No.	Wire color	Signal description	Measuring condition			Reference value
			Ignition switch	Operation or condition		
142	R/Y	Front door switch (driver side) signal	OFF	Front door switch (driver side)	ON (open)	Less than 1V
					OFF (closed)	Battery voltage
143	W/L	Door lock assembly rear RH (door switch) signal	OFF	Door lock assembly rear RH (door switch)	ON (open)	Less than 1V
					OFF (closed)	Battery voltage

Terminals and Reference Value for Driver Door Control Unit (LCU)

AKS002GK

Terminal No.	Wire color	Item	Condition	Reference value
6	G/Y	Door unlock sensor	OFF (Locked) → ON (unlocked)	5V → 0V
8	G/W	Data line A-3	—	—
14	Y/G	Power source (PTC)	—	Battery voltage
15	B	Ground	—	0V

Work Flow

AKS002GL

1. Confirm the symptom or customer complaint.
2. Understand system description. Refer to LT-124, "System Description" .
3. Perform the preliminary check. Refer to LT-136, "Preliminary Check" .
4. Does the door lock system operate normally? When YES, go to step 5. When NO, go to LT-136, "Work Flow" in BL section.
5. Find the cause of trouble following the malfunction diagnosis chart by symptom and repair or replace as necessary. Refer to LT-142, "Symptom Chart" .
6. Does the total coordinated interior illumination operate normally? When YES, go to step 7. When NO, go to step 5.
7. Inspection end.

Preliminary Check

AKS002GM

SETTING CHANGE FUNCTION

- Setting for each operation can be changed using CONSULT-II and a display unit.

Item	Description	CONSULT-II (Work support)	Display unit (Setting of various vehicle conditions)	Factory setting
SET INT- L LOGIC-TIM (CONSULT-II) Interior Lights Off Delay (display unit)	Selects interior lamp timer set time in four steps.	Mode 1 (off)	OFF: Display OFF	—
		Mode 2 (15 seconds)	15 seconds: Display 15 sec.	—
		Normal (30 seconds)	30 seconds: Display 30 sec.	×
		Mode 3 (45 seconds)	45 seconds: Display 45 sec.	—
SET I/L LGC-D- UNLCK (CONSULT-II) Illuminate Interior When Unlocking Vehicle (display unit)	Selects ON-OFF of the interior lamp illumination at the time the driver door is unlocked.	ON	ON: Indicator ON	×
		OFF	OFF: indicator OFF	—

CAUTION:

After the setting is changed, the new setting will be maintained even if the battery is disconnected.

INSPECTION FOR POWER AND GROUND CIRCUIT

1. CHECK FUSE

Check if any of the following fuses in BCM are blown.

Unit	Power source	Fuse No.
BCM	Battery	3
	Ignition switch ACC or ON	21
	Ignition switch ON or START	1

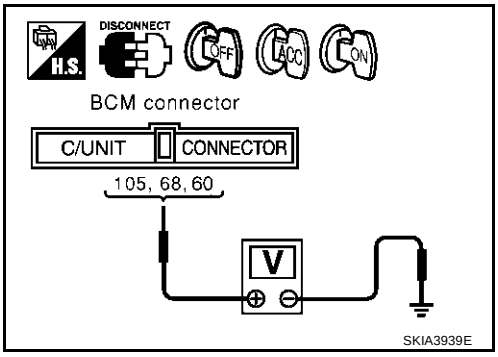
Refer to LT-129, "Wiring Diagram — ROOM/L —" .

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-2, "POWER SUPPLY ROUTING" .

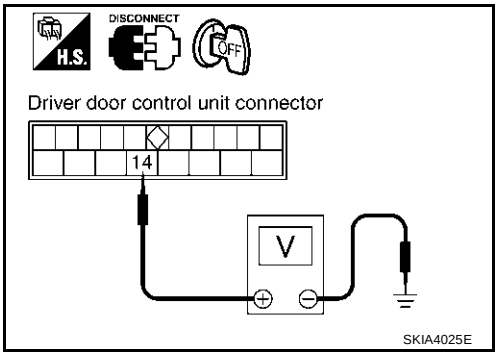
2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect the BCM connector and driver door control unit connector.
2. Check voltage between BCM harness connector M4 terminals and ground.



Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M4	105 (Y/L)	Ground	Battery voltage	Battery voltage	Battery voltage
	68 (W/B)		0V	0V	Battery voltage
	60 (L/OR)		0V	Battery voltage	Battery voltage

3. Check voltage between driver door control unit harness connector D8 terminal 14 (Y/G) and ground.



Terminals			Ignition switch position	Voltage
(+)		(–)		
Connector	Terminal (Wire color)			
D8	14 (Y/G)	Ground	OFF	Battery voltage

OK or NG

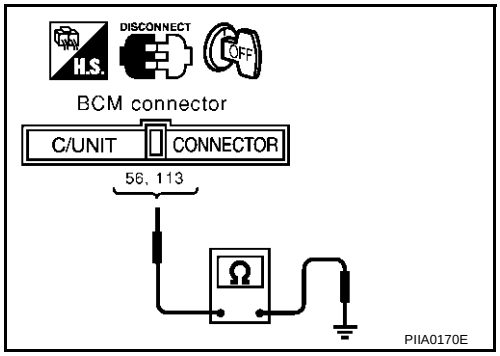
OK >> GO TO 3.
NG >> Check the following.

- Harness for open or short between BCM and fuse
- Harness for open or short between driver door control unit and fusible link

3. CHECK GROUND CIRCUIT

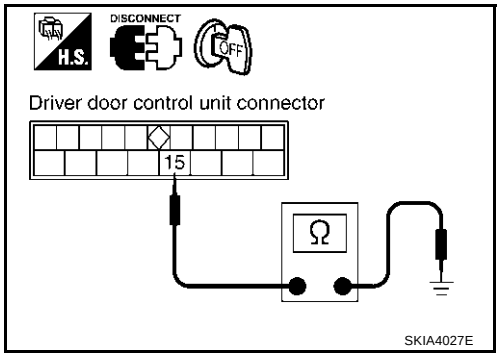
1. Check continuity between BCM harness connector M4 terminals 56 (B), 113 (B) and ground.

   Continuity should exist.



2. Check continuity between driver door control unit harness connector D8 terminal 15 (B) and ground.

   Continuity should exist.



OK or NG

OK >> INSPECTION END
NG >> Repair harness.

CONSULT-II Function

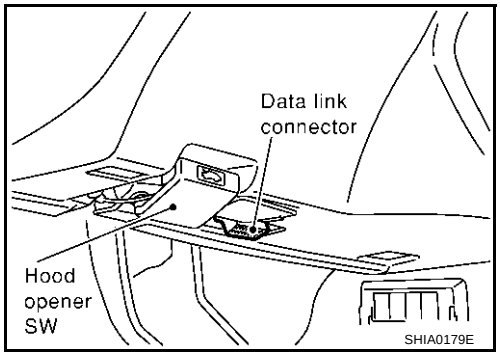
AKS002GN

- CONSULT-II has the display function for the work support, data monitor and active test for each part by combining data receiving and sending via the communication line from the BCM.

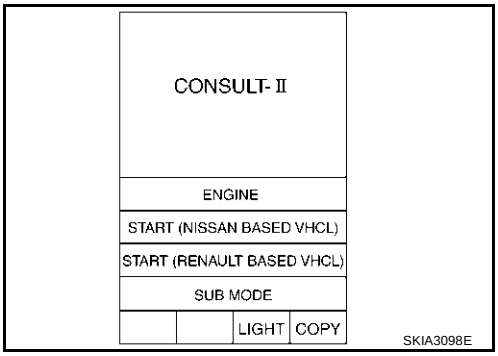
IVMS diagnosis position	Diagnosis mode	Description
Interior illumination	Work support	Changes setting of each function.
	Data monitor	Displays input data of the BCM and each LCU in real-time.
	Active test	Operation of electrical loads can be checked by sending driving signal to them.
BCM part number		Displays BCM part No.

CONSULT-II BASIC OPERATION PROCEDURE

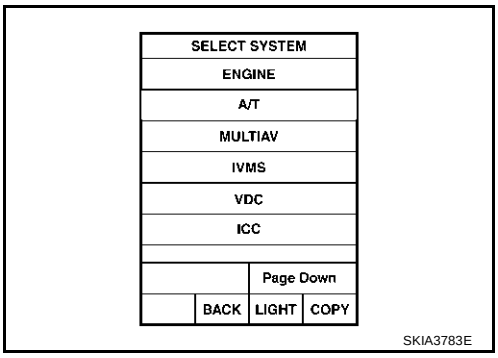
1. With the ignition switch OFF, connect “CONSULT-II” and “CONSULT-II CONVERTER” to the data link connector, then turn ignition switch ON.



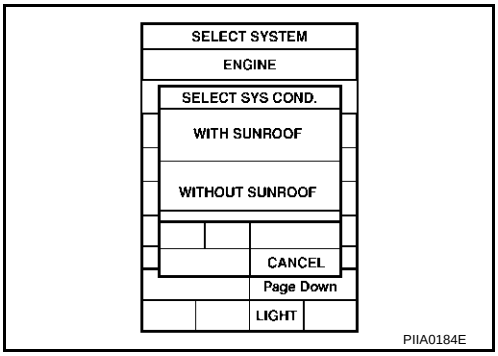
2. Touch “START(NISSAN BASED VHCL)”.



3. Touch “IVMS” on “SELECT SYSTEM” screen. If “IVMS” is not indicated, go to GI-38, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Check the model specification, touch either “WITH SUNROOF” or “WITHOUT SUNROOF”.
5. Touch “OK”. If the selection is wrong, touch “CANCEL”.



6. Select the desired part to be diagnosed on the “SELECT TEST ITEM” screen.

WORK SUPPORT

Operation procedure

1. Touch “INTERIOR ILLUMINATION” on the “SELECT TEST ITEM” screen.
2. Touch “WORK SUPPORT” on the “SELECT DIAG MODE” screen.
3. Touch “SET INT-L LOGIC-TIM” or “SET I/L LGC-D-UNLCK” on the “SELECT WORK ITEM” screen.
4. Touch “START”.
5. Touch “NORMAL”/“MODE 1 - 3” of which setting is to be changed (for the interior lamp logic timer setting only).
6. Touch “CHANGE SET”.
7. The setting will be changed and the current setting status will be displayed.
8. Touch “END”.

Display item list

Refer to LT-136, "SETTING CHANGE FUNCTION" .

DATA MONITOR

Operation procedure

1. Touch “INTERIOR ILLUMINATION” on the “SELECT TEST ITEM” screen.
2. Touch “DATA MONITOR” on the “SELECT DIAG MODE” screen.
3. Touch “ALL SIGNALS” or “SELECTION FROM MENU” on the “DATA MONITOR” screen.

MAIN SIGNALS	Monitors the main items.
SELECTION FROM MENU	Selects and monitors the items.

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

Data Monitor Item

Monitored item [“OPERATION OR UNIT”]		Description
IGN ON SW	[ON/OFF]	Displays status of the ignition switch as judged from the ignition switch signal. (Key is in ON position: ON/Key is in ACC or OFF position: OFF)
DOOR SW-DR	[ON/OFF]	Displays “Door open (ON)/door closed (OFF)” status as judged from the front door switch (driver side) signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-AS	[ON/OFF]	Displays “Door open (ON)/door closed (OFF)” status judged from the front door switch (passenger side) signal.
DOOR SW-RR	[ON/OFF]	Displays “Door open (ON)/door closed (OFF)” status judged from the door lock assembly rear RH (door switch) signal.
DOOR SW-RL	[ON/OFF]	Displays “Door open (ON)/door closed (OFF)” status judged from the door lock assembly rear LH (door switch) signal.
HD/LMP 1ST SW	[ON/OFF]	Displays status of the lighting switch as judged from the lighting switch signal. (OFF or AUTO position: OFF/Other than OFF and AUTO position: ON)
IGN KEY SW	[ON/OFF]	Displays “Key inserted (ON)/key withdrawn (OFF)” status judged from the key switch signal.
IGN ACC SW	[ON/OFF]	Displays “Ignition ON or ACC (ON)/ignition OFF (OFF)” status judged from the ignition switch signal.
LOCK SIG-DR	[LOCK/UNLK]	Displays “Door locked (LOCK)/door unlocked (UNLK)” status judged from the front door lock actuator (driver side) (door unlock sensor) signal.

ACTIVE TEST

Operation procedure

1. Touch “INTERIOR ILLUMINATION” on the “SELECT TEST ITEM” screen.
2. Touch “ACTIVE TEST” on the “SELECT DIAG MODE” screen.
3. Touch item to be tested and check operation of the selected item.
4. Touch “STOP” while testing and the operation will be stopped.

Active Test Item

Test items	Display on CONSULT-II screen	Description
Map lamp output	FR PERSONAL LAMP	Map lamp can be operated by any ON-OFF operation of lights.
Personal lamp output	RR PERSONAL LAMP	Personal lamp can be operated by any ON-OFF operation of lights.
Ignition key hole illumination output	KEY RING ILLUM	Ignition key hole illumination can be operated by any ON-OFF operation of lights.

CAUTION:

Active test should be conducted with the lamp switch in AUTO position.

On Board Diagnosis

AKS002GO

ON BOARD DIAGNOSTIC RESULTS INDICATOR LAMP.

- Map lamps and step lamps (all seats) act the indicators for the on board diagnosis.

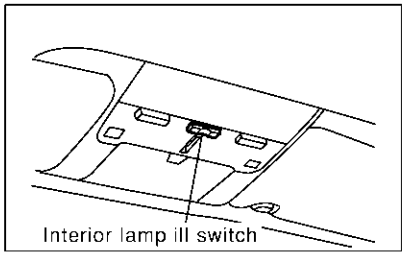
DIAGNOSIS ITEM

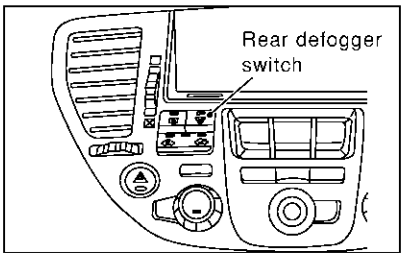
Diagnosis item	Description
Switch monitor	Checks for malfunction in switch systems that input to BCM and each LCU.

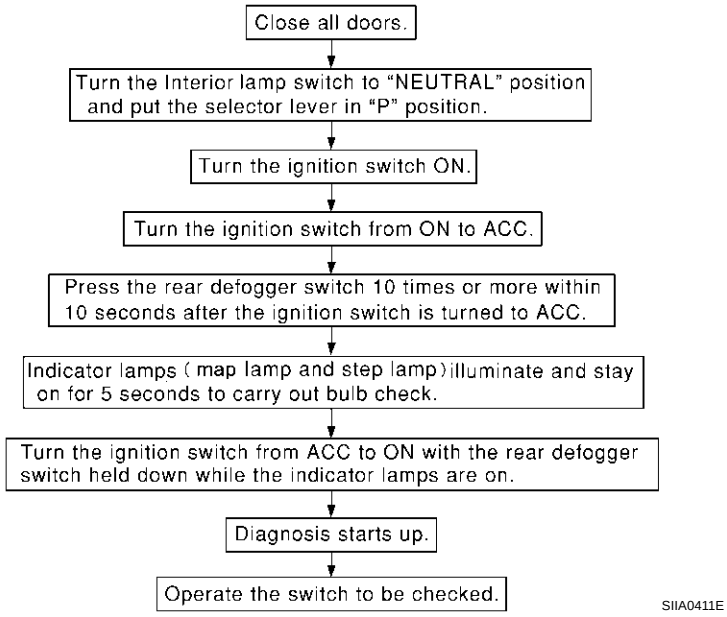
SWITCH MONITOR

- Perform the diagnosis on the switch system to each control unit.

How to perform switch monitor

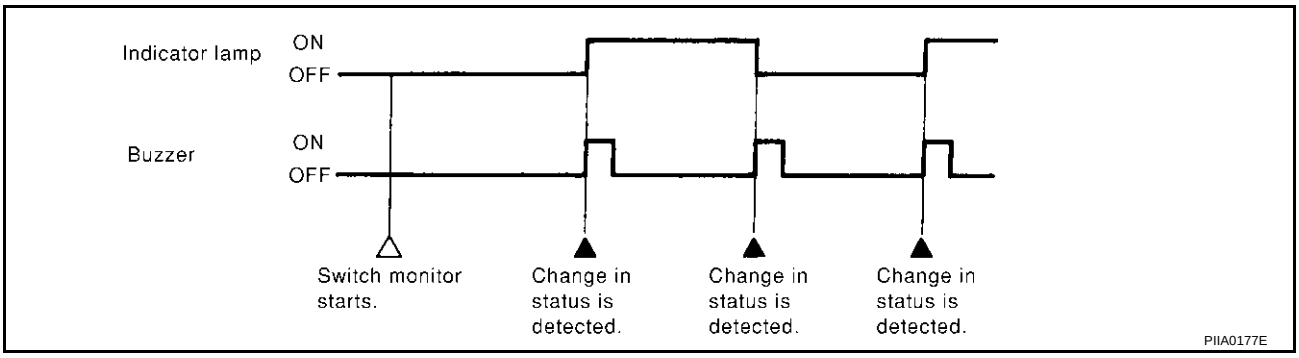






Description

- In this mode, when BCM detects the input signal from a switch in IVMS as shown below, the detection is indicated by the map lamps and front step lamps with buzzer.



Switch monitor item

- The status of the switch (except the ignition switch, interior lamp ill switch, and map lamp switch) as input to each control unit can be monitored.

Control unit	Item
BCM	Lighting switch (AUTO, 1st position)
	Each door switch
Driver door control unit (LCU)	Front door lock actuator (driver side) (door lock sensor)

Cancel of Switch Monitor

If the following conditions are satisfied, the communication diagnosis is cancelled.

- Turn ignition switch OFF.
- Drive the vehicle more than 7 km/h (4 MPH).

Symptom Chart

AKS002GP

Symptom	Malfunctioning system and reference
● Map lamp, and personal lamp will not illuminate when the interior lamp ill switch is turned ON with the personal lamp switch in AUTO position. ● Map lamp, and personal lamp will not go out when the interior lamp ill switch is turned OFF with the personal lamp switch in AUTO position.	● Interior lamp ill switch system. Refer to LT-142, "Interior Lamp Illumination Switch System Inspection" . If above systems are normal, replace the BCM.
● Personal lamp will not illuminate when RH personal lamp switch is turned ON with LH personal lamp switch in AUTO position. ● Personal lamp will not illuminate when LH personal lamp switch is turned ON with RH personal lamp switch in AUTO position. ● Personal lamp switch will not go out when both RH and LH personal lamp switches are turned to AUTO position.	● Personal lamp switch system. Refer to LT-144, "Personal Lamp Switch System Inspection" . If above system is normal, replace the BCM.
● All lamps (except step lamp) will not illuminate in the lamp illumination conditions with the interior lamp ill switch and RH and LH personal lamp switches in AUTO position. ● All lamps (except step lamp) will not go out in the lamp off conditions with the interior lamp switch and RH and LH personal lamp switches in AUTO position.	● Interior lamp ill switch system. Refer to LT-142, "Interior Lamp Illumination Switch System Inspection" . ● Door switch system. Refer to LT-145, "Door Switch System Inspection" . ● Key switch system. Refer to LT-147, "Key Switch System Inspection" . If above system is normal, replace the BCM.
● Lamps illuminate fully in half illumination conditions. ● Dimming function will not operate when turning the lamp off.	Replace the BCM. *

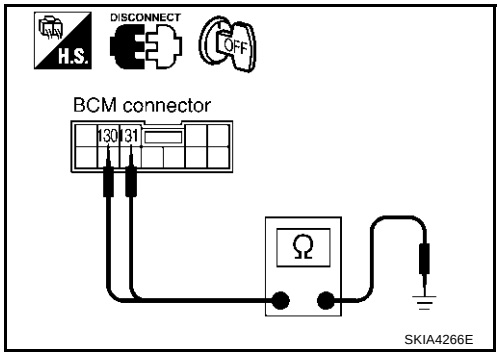
***: When BCM input/output signal are normal**.

Interior Lamp Illumination Switch System Inspection

AKS002GQ

1. CHECK INTERIOR LAMP ILL SWITCH SIGNAL

1. Turn ignition switch to OFF position.
2. Disconnect the BCM connector.
3. Check continuity between BCM harness connector R4 terminals 130 (W/L), 131 (G/Y) and ground while operating the interior lamp ill switch.



Terminals			Condition	Continuity
(+)		(–)		
Connector	Terminal (Wire color)			
R4	130 (W/L)	Ground	Interior lamp ill switch ON	Yes
			Interior lamp ill switch OFF and AUTO	No
	131 (G/Y)		Interior lamp ill switch OFF	Yes
			Interior lamp ill switch ON and AUTO	No

OK or NG

OK >> Interior lamp ill switch is OK.
NG >> GO TO 2.

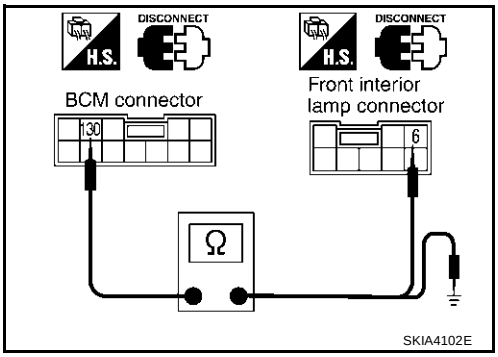
2. CHECK INTERIOR LAMP ILL SWITCH TOTAL ILL CIRCUIT

1. Disconnect the front interior lamp connector.
2. Check continuity between BCM harness connector R4 terminal 130 (W/L) and front interior lamp harness connector R6 terminal 6 (W/L).

Continuity should exist.

3. Check continuity between BCM harness connector R4 terminal 130 (W/L) and ground.

Continuity should not exist.



OK or NG

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

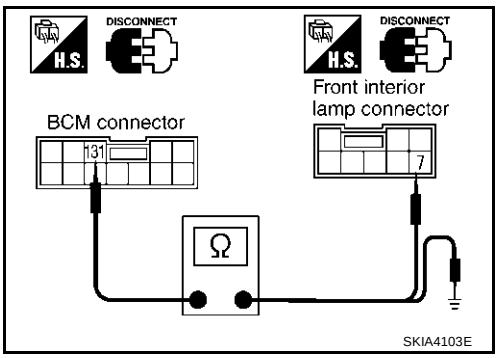
3. CHECK INTERIOR LAMP ILL SWITCH ALL OFF CIRCUIT

1. Disconnect the front interior lamp connector.
2. Check continuity between BCM harness connector R4 terminal 131 (G/Y) and front interior lamp harness connector R6 terminal 7 (G/Y).

Continuity should exist.

3. Check continuity between BCM harness connector R4 terminal 131 (G/Y) and ground.

Continuity should not exist.



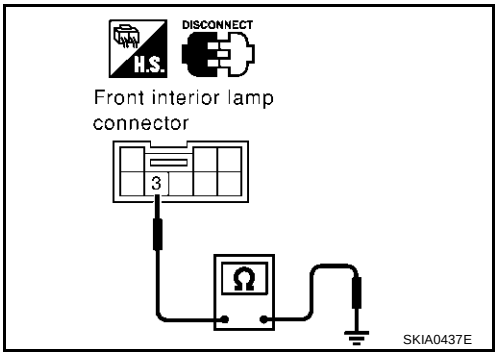
OK or NG

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

4. CHECK INTERIOR LAMP ILL SWITCH GROUND CIRCUIT

Check continuity between the front interior lamp harness connector R6 terminal 3 (B) and ground.

Continuity should exist.



OK or NG

OK >> Replace the front interior lamp.
NG >> Check harness ground circuit.

Personal Lamp Switch System Inspection

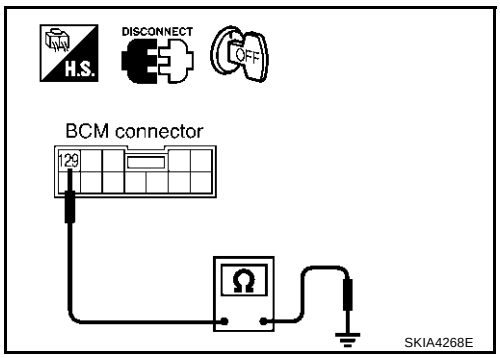
AKS002GR

1. CHECK PERSONAL LAMP SWITCH SIGNAL

1. Turn ignition switch OFF.
2. Disconnect the BCM connector.
3. Check continuity between BCM harness connector R4 terminal 129 (G) and ground while operating the personal lamp switch.

RH, LH personal lamp switches in HALF or AUTO position : **Continuity should not exist.**

RH or LH personal lamp switch in FULL position : **Continuity should exist.**



OK or NG

OK >> Personal lamp switch is OK.
NG >> GO TO 2.

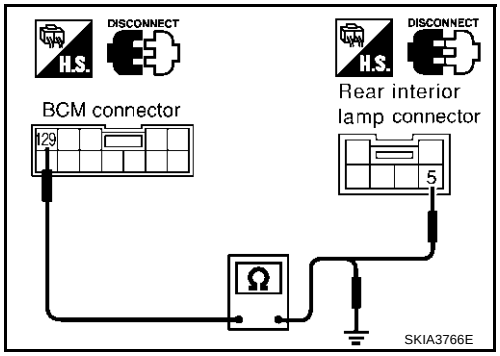
2. CHECK PERSONAL LAMP SWITCH CIRCUIT

1. Disconnect the rear interior lamp connector.
2. Check continuity between BCM harness connector R4 terminal 129 (G) and rear interior lamp harness connector R13 terminal 5 (G).

Continuity should exist.

3. Check continuity between BCM harness connector R4 terminal 129 (G) and ground.

Continuity should not exist.



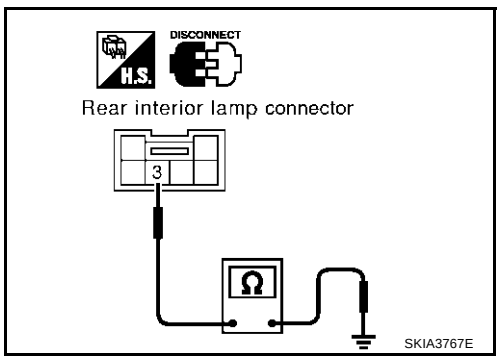
OK or NG

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

3. CHECK PERSONAL LAMP SWITCH GROUND CIRCUIT

Check continuity between rear interior lamp harness connector R13 terminal 3 (B) and ground.

Continuity should exist.



OK or NG

OK >> Replace the rear interior lamp.
NG >> Repair harness.

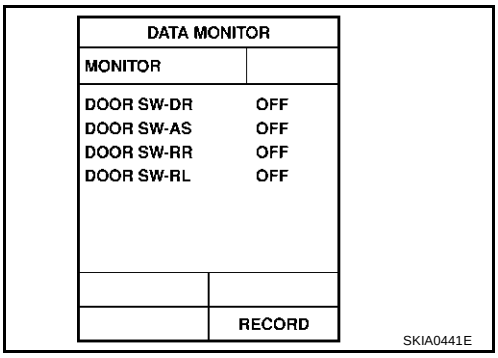
Door Switch System Inspection

AKS002GS

1. CHECK DOOR SWITCH SIGNAL

With CONSULT-II

- Operate each door via “DOOR SW” on DATA MONITOR screen and make sure that the switch turns on and off as commanded.



Without CONSULT-II

- Operate each door and via “switch monitor” of the self-diagnosis function and make sure that the switch turns on and off as commanded.

OK or NG

OK >> Door switch is OK.
NG >> GO TO 2.

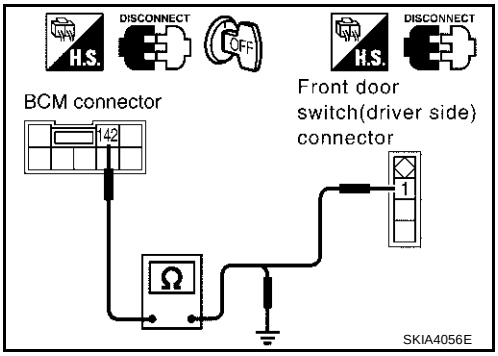
2. CHECK FRONT DOOR SWITCH (DRIVER SIDE) CIRCUIT

1. Turn ignition switch to OFF position.
2. Disconnect the BCM connector and the front door switch (driver side) connector.
3. Check continuity between BCM harness connector B4 terminal 142 (R/Y) and front door switch (driver side) harness connector B20 terminal 1 (R/Y).

   Continuity should exist.

4. Check continuity between BCM harness connector B4 terminal 142 (R/Y) and ground.

   Continuity should not exist.



NOTE:
If front door switch (driver side) is normal, skip this procedure and go to 3.

OK or NG

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

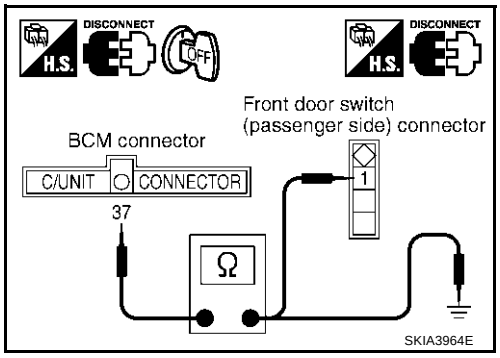
3. CHECK FRONT DOOR SWITCH (PASSENGER SIDE) CIRCUIT

1. Disconnect the front door switch (passenger side) connector.
2. Check continuity between BCM harness connector M4 terminal 37 (LG) and front door switch (passenger side) harness connector B220 terminal 1 (LG).

Continuity should exist.

3. Check continuity between BCM harness connector M4 terminal 37 (LG) and ground.

Continuity should not exist.



NOTE:
If front door switch (passenger side) is normal, skip this procedure and go to 4.

OK or NG

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

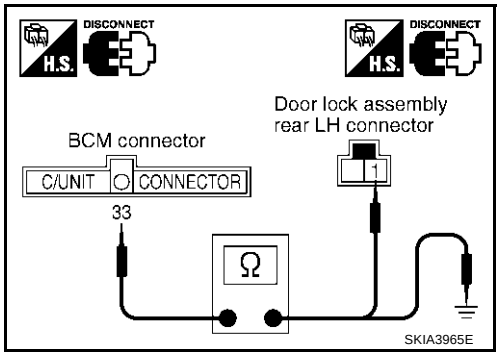
4. CHECK DOOR LOCK ASSEMBLY REAR LH (DOOR SWITCH) CIRCUIT

1. Disconnect the door lock assembly rear LH connector.
2. Check continuity between BCM harness connector M4 terminal 33 (W) and door lock assembly rear LH harness connector D62 terminal 1 (W).

Continuity should exist.

3. Check continuity between BCM harness connector M4 terminal 33 (W) and ground.

Continuity should not exist.



NOTE:
If door lock assembly rear LH (door switch) is normal, skip this procedure and go to 5.

OK or NG

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

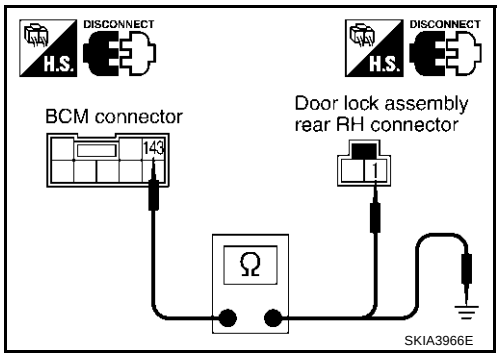
5. CHECK DOOR LOCK ASSEMBLY REAR RH (DOOR SWITCH) CIRCUIT

1. Disconnect door lock assembly rear RH connector.
2. Check continuity between BCM harness connector B4 terminal 143 (W/L) and door lock assembly rear RH harness connector D82 terminal 1 (W).

Continuity should exist.

3. Check continuity between BCM harness connector B4 terminal 143 (W/L) and ground.

Continuity should not exist.



NOTE:
If door lock assembly rear RH (door switch) is normal, skip this procedure and go to 6.

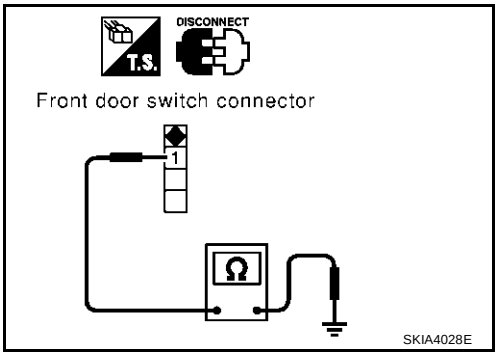
OK or NG

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

6. CHECK DOOR SWITCH

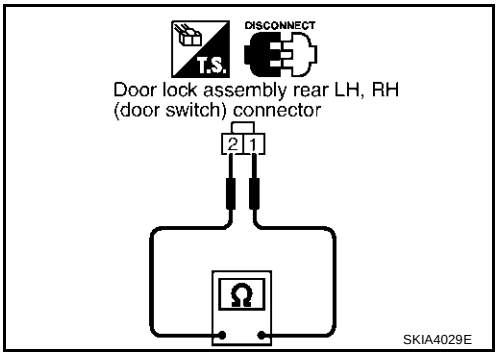
1. Check continuity between front door switch connector B20, B220 terminal 1 and ground while turning the door switches ON (open) and OFF (closed).

Connector	Terminal		Condition	Continuity
B20	1	Ground	ON (Door open)	Yes
B220			OFF (Door closed)	No



2. Check continuity between door lock assembly rear LH, RH (door switch) connector D62, D82 terminals 1 and 2 while turning the door switches ON (open) and OFF (closed).

Connector	Terminal		Condition	Continuity
D62	1	2	ON (Door open)	Yes
D82			OFF (Door closed)	No



OK or NG

OK >> Check front door switch case ground condition or door lock assembly rear LH, RH (door switch) ground circuit.

NG >> Replace the door switch.

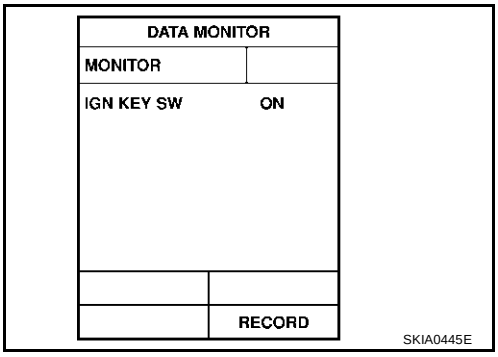
Key Switch System Inspection

AKS002GT

1. CHECK KEY SWITCH SIGNAL

With CONSULT-II

- Insert and withdraw the key via “IGN KEY SW” on DATA MONITOR screen and make sure that the switch turns on and off accordingly.



Without CONSULT-II

- Check voltage between BCM connector M4 terminal 69 (PU/W) and ground while inserting and withdrawing the key.

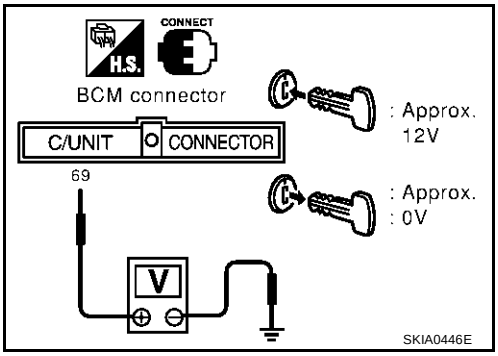
Key withdrawn (Switch OFF) : approx. 0V

Key inserted (Switch ON) : approx. 12V

OK or NG

OK >> Key switch is OK.

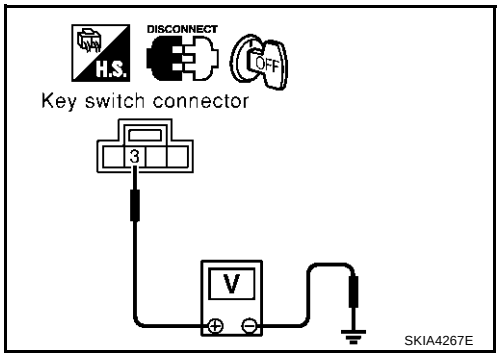
NG >> GO TO 2.



2. CHECK KEY SWITCH POWER SUPPLY CIRCUIT

1. Disconnect the key switch connector.
2. Check voltage between key switch harness connector M64 terminal 3 (W) and ground.

Battery voltage should exist.



OK or NG

OK >> GO TO 3.
NG >> Check the following.

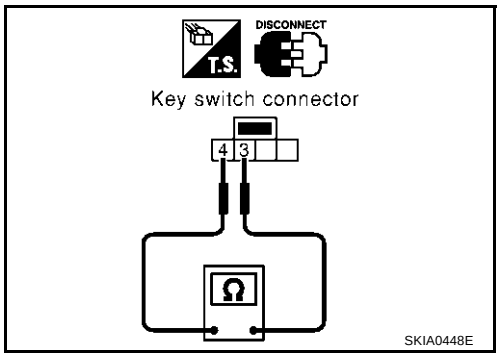
- If the key switch 10A fuse is blown [No. 32 located in fuse block (J/B) No. 2]
- Harness for open or short between key switch and fuse

3. CHECK KEY SWITCH

Check continuity between key switch harness connector M64 terminals 3 (W) and 4 (PU/W) while inserting and withdrawing the ignition key.

Key withdrawn (switch OFF) : Continuity should not exist.

Key inserted (switch ON) : Continuity should exist.



OK or NG?

OK >> GO TO 4.
NG >> Replace the key switch.

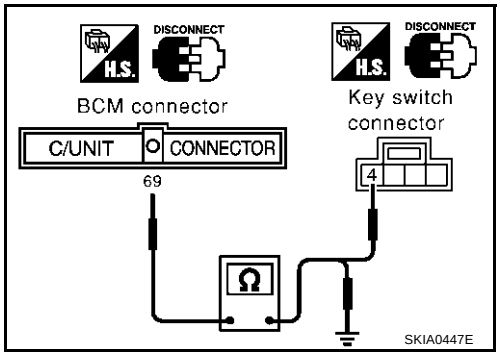
4. CHECK KEY SWITCH CIRCUIT

1. Disconnect the BCM connector.
2. Check continuity between BCM harness connector M4 terminal 69 (PU/W) and the key switch harness connector M64 terminal 4 (PU/W).

Continuity should exist.

3. Check continuity between BCM harness connector M4 terminal 69 (PU/W) and ground.

Continuity should not exist.



OK or NG

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

Bulb Replacement

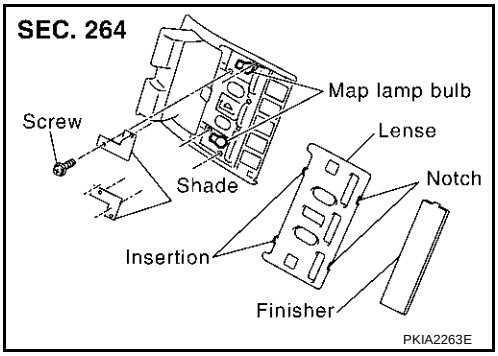
AKS002GU

MAP LAMP (FRONT PERSONAL LIGHT) AND CONSOLE LAMP (CONSOLE LIGHT)

Map Lamp

1. Remove the finisher using a clip driver or a suitable tool.
2. Insert a thin screwdriver in the notch and remove the lens.
3. Remove the screw and remove the shade.
4. Remove the bulb.

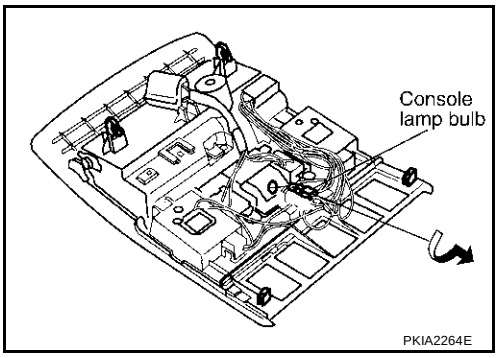
Map lamp (Front personal light) : 12V 8W



Console Lamp

1. Remove the front interior lamp. Refer to LT-149, "FRONT INTERIOR LAMP" .
2. Turn the console lamp bulb socket counterclockwise and unlock it.

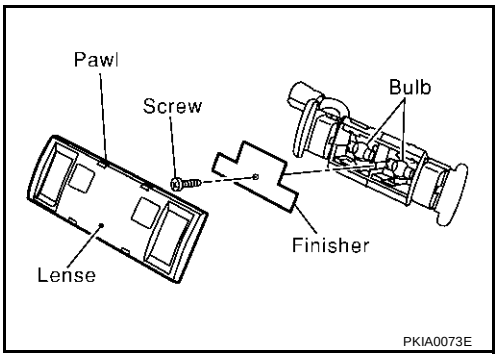
Console lamp (Console light) : 12V 1.4W



PERSONAL LAMP (REAR PERSONAL LIGHT)

1. Unfold the pawls and remove the lens.
2. Remove the shade mounting screw and remove the shade.
3. Remove the bulb.

Personal lamp (Rear personal light) : 12V 8W

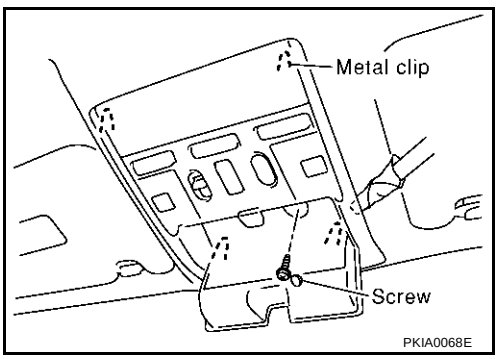


Removal and Installation

AKS002GV

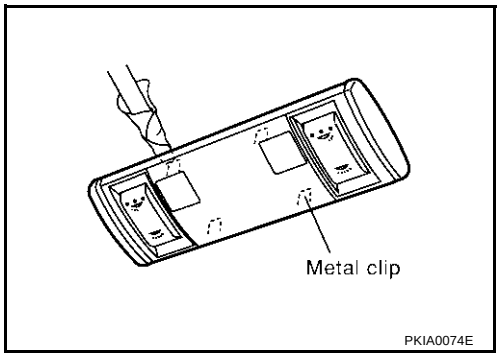
FRONT INTERIOR LAMP

1. Open the front interior lamp box and remove the screw.
2. Insert a clip driver or a suitable tool and disengage the metal clip fittings of the front interior lamp.
3. Disconnect the connector and remove the front interior lamp.



PERSONAL LAMP (REAR PERSONAL LIGHT)

1. Using a clip driver or a suitable tool, press and remove the metal clip of the personal lamp.
2. Disconnect the personal lamp connector.

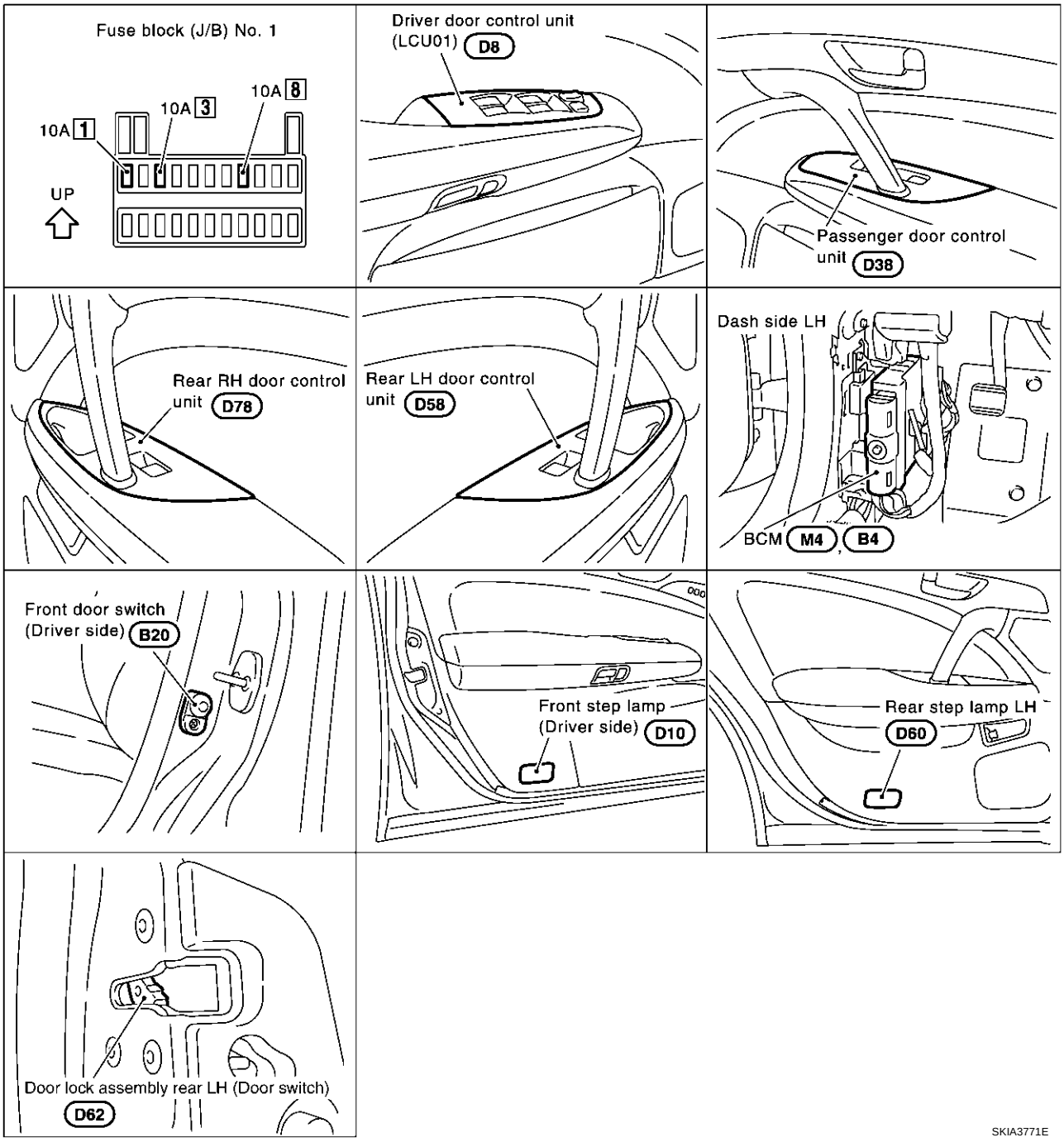


STEP LAMP

PFP:26420

Component Parts and Harness Connector Location

AKS002GW



SKIA3771E

System Description

AKS002GX

POWER SUPPLY AND GROUND

Power is supplied at all times

- to BCM terminal 105
- through 10A fuse [No. 3, located in the fuse block (J/B) No. 1], and
- to all step lamps terminal 1
- through 10A fuse [No. 8, located in the fuse block (J/B) No. 1].

Ground is supplied to terminal 15 of driver door control unit through body grounds M24 and M114.
Ground is supplied to terminal 11 of passenger door control unit through body grounds M24 and M114.
Ground is supplied to terminal 11 of rear LH door control unit through body grounds B17 and B57.
Ground is supplied to terminal 11 of rear RH door control unit through body grounds B217 and B256.

OPERATING PROCEDURE

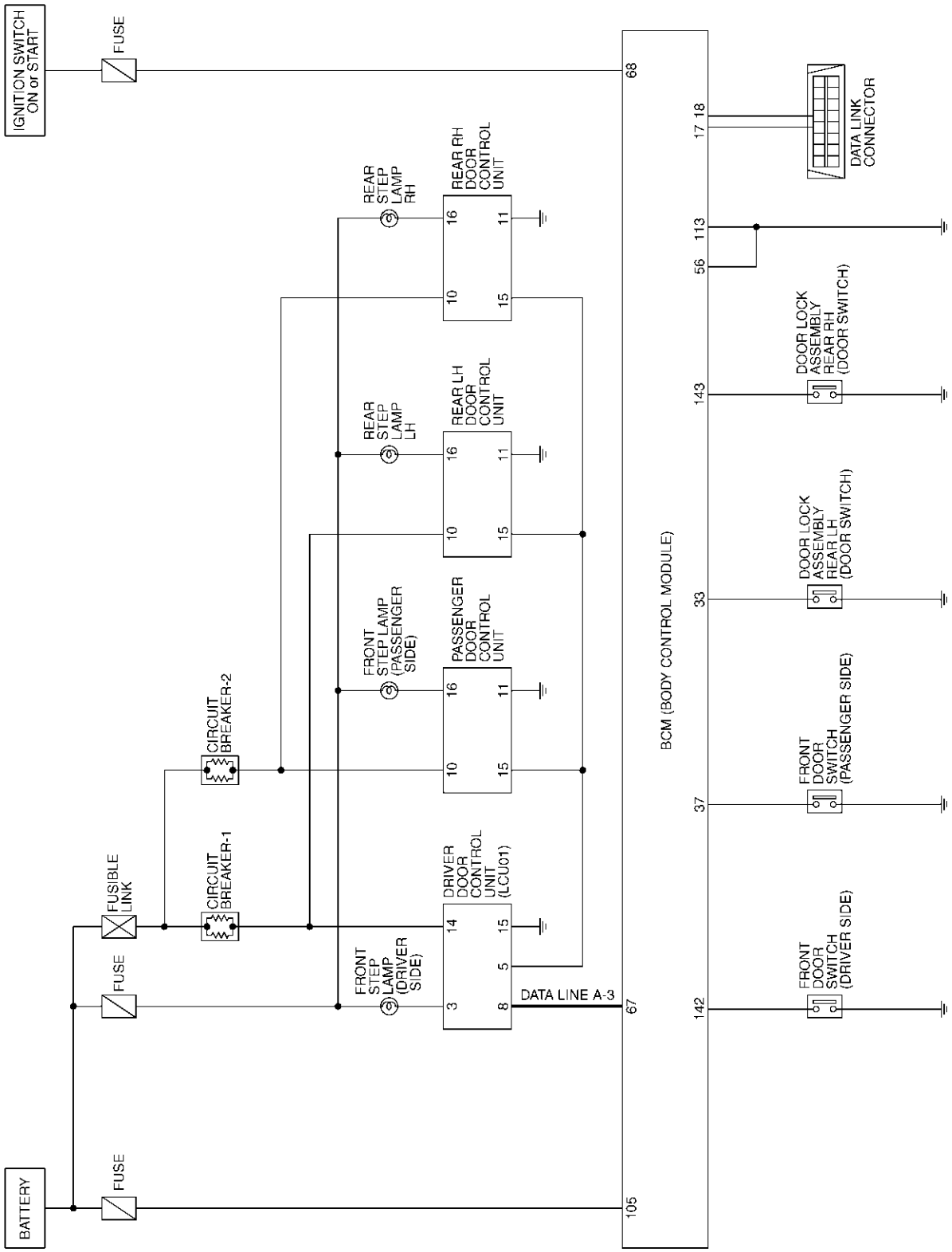
BCM is connected to driver door control unit as DATA LINE A-3.
Then driver door control unit is connected to each door control unit.
When any door switch is in OPEN position, ground is supplied

- to BCM terminal 33, 37, 142, or 143
- through front door switch (driver or passenger side), door lock assembly rear LH or RH (door switch).

Then BCM sends a signal to the driver door control unit (LCU 01) to turn on step lamp. With ground supplied, step lamp turns on.

Schematic

AKS002GY

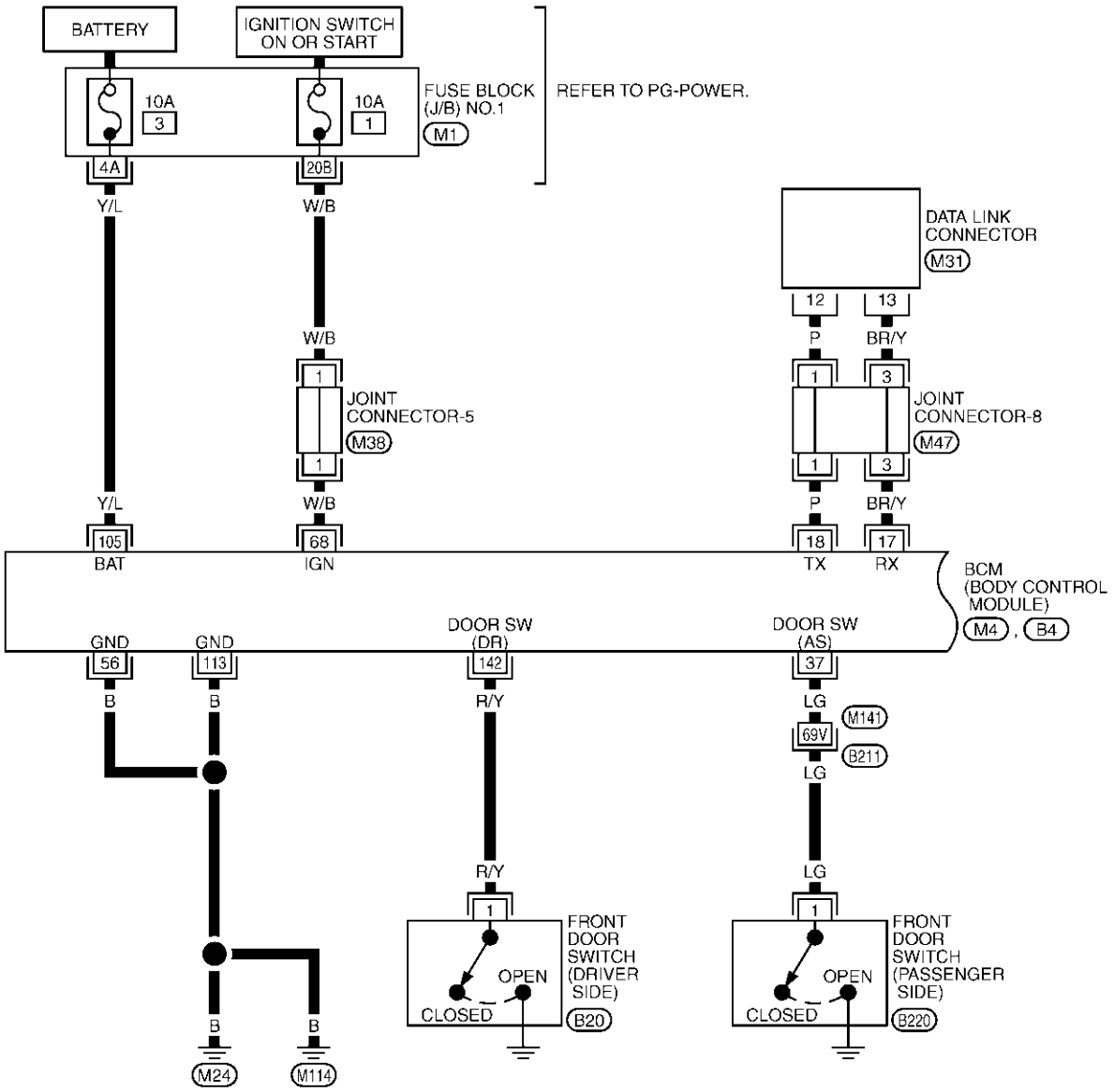


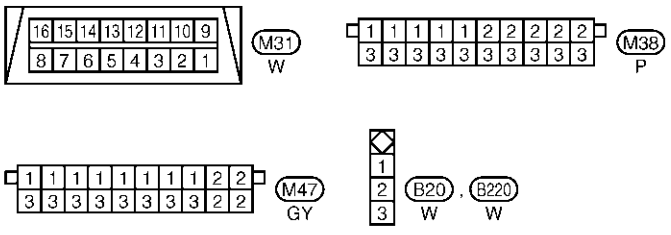
TKWA0571E

Wiring Diagram — STEP/L —

AKS002GZ

LT-STEP/L-01





REFER TO THE FOLLOWING.

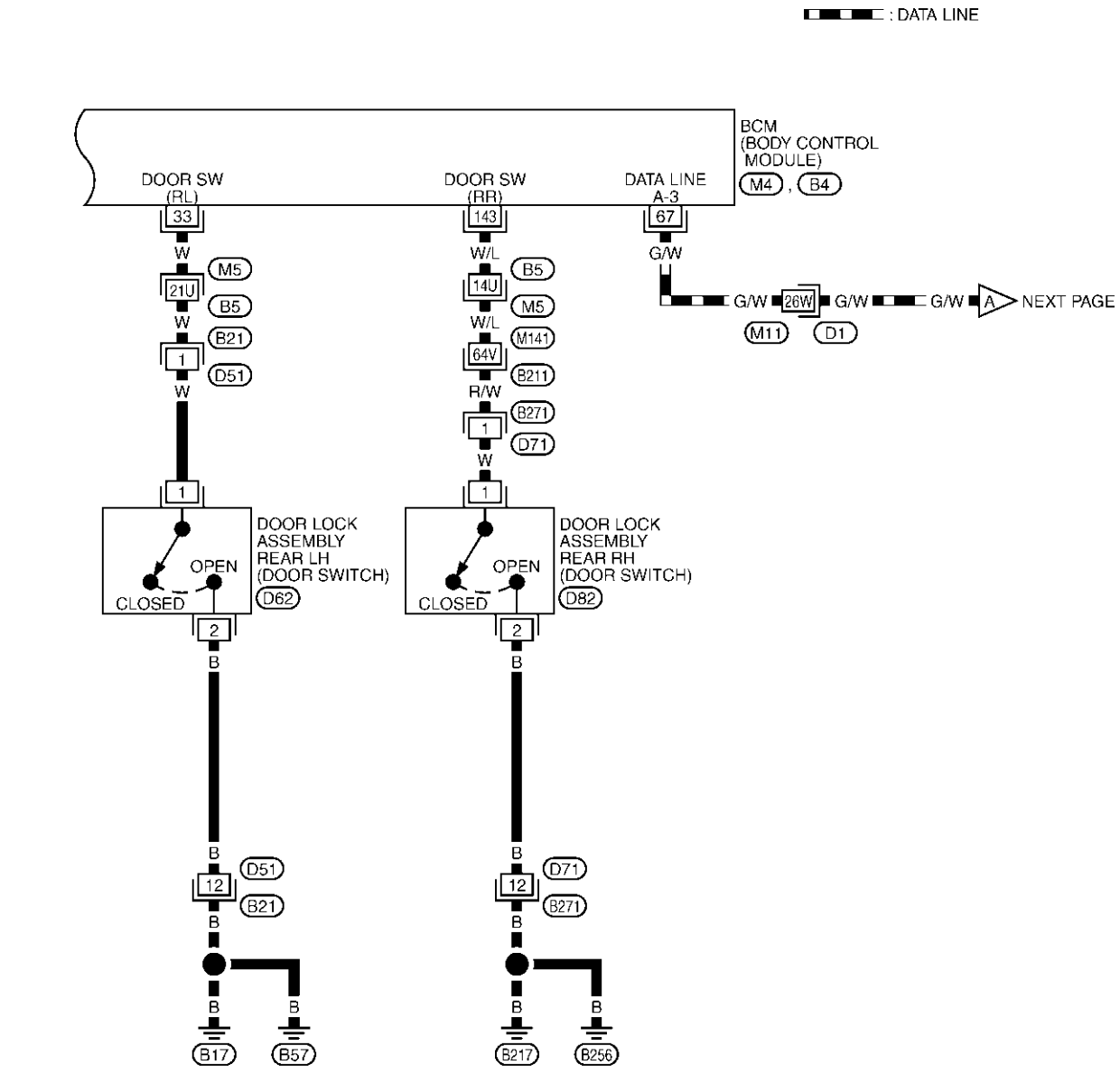
B211 -SUPER MULTIPLE JUNCTION (SMJ)

M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

M4 , B4 -ELECTRICAL UNITS

TKWA0572E

LT-STEP/L-02

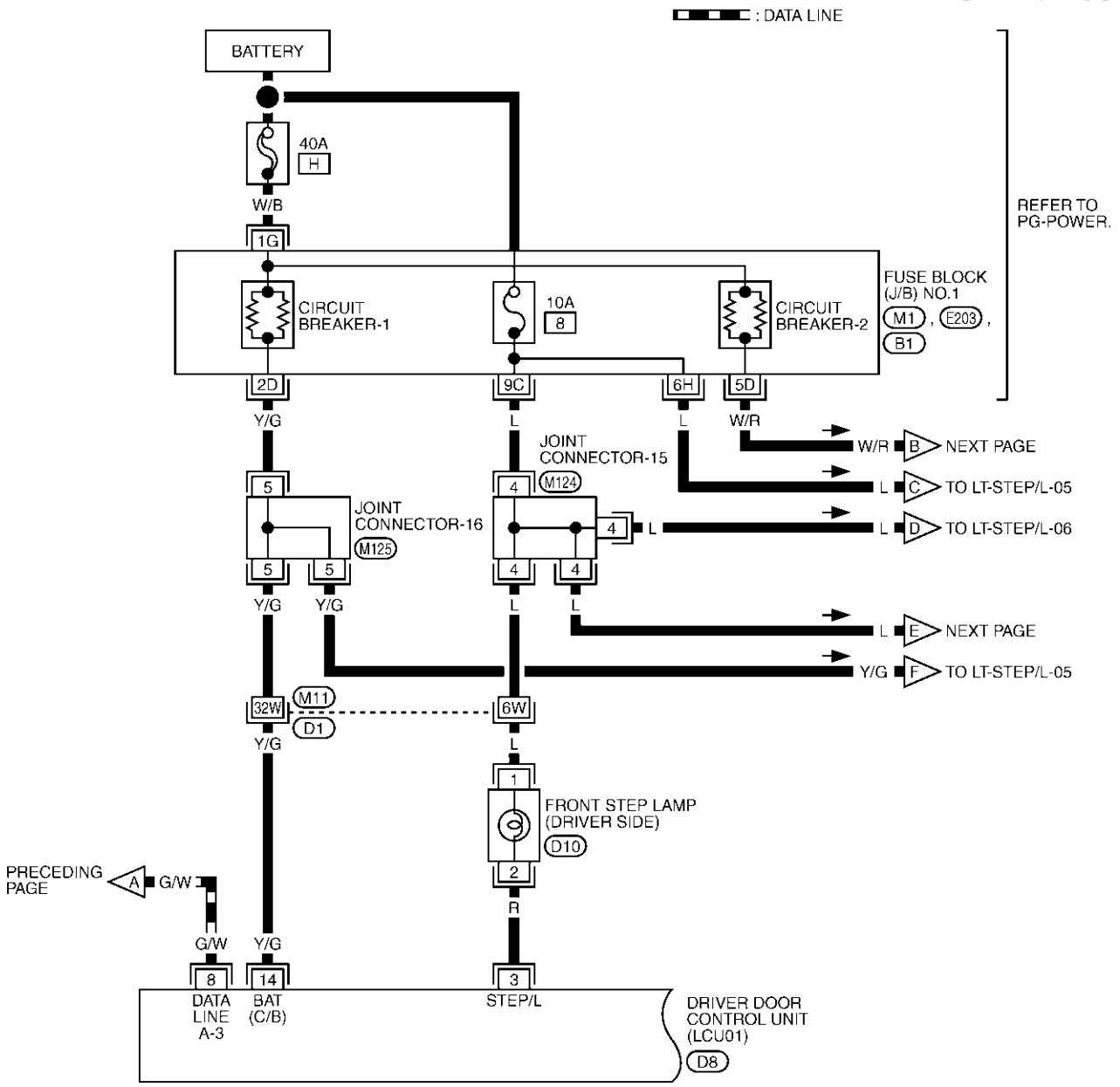


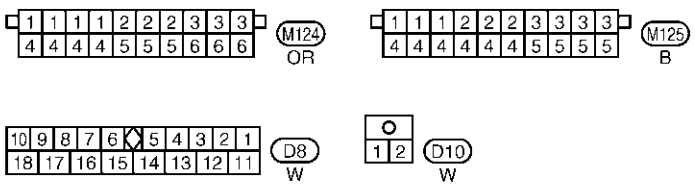
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	B21 (W) , B271 (W)
1 2	D62 (B) , D82 (B)

REFER TO THE FOLLOWING.
M5 , B211 , D1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 , B4 -ELECTRICAL UNITS

TKWA0573E

LT-STEP/L-03





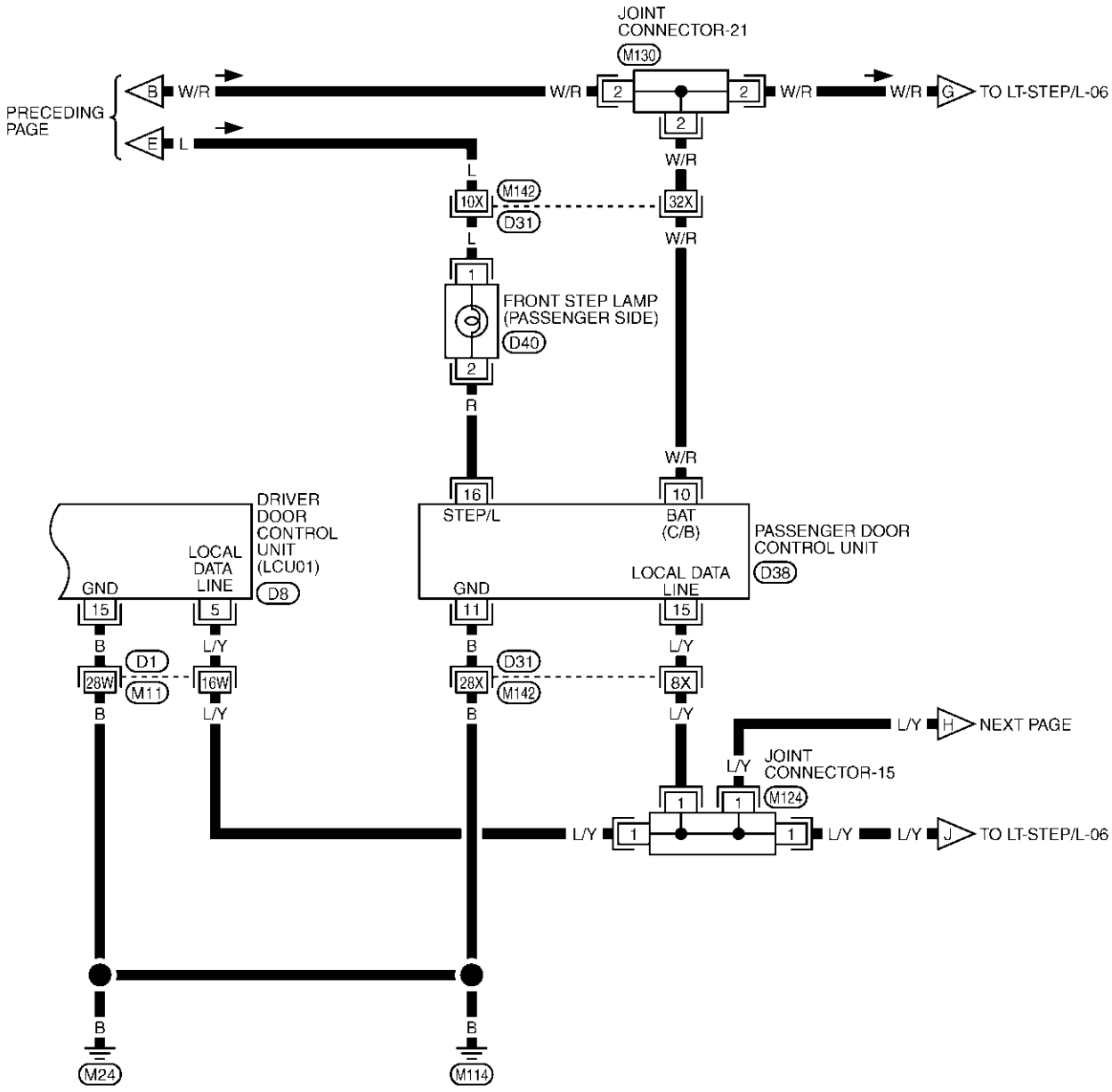
REFER TO THE FOLLOWING.

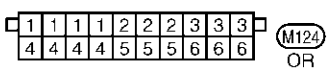
D1 -SUPER MULTIPLE JUNCTION (SMJ)

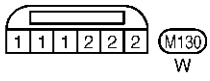
M1, E203, B1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

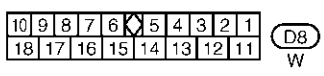
TKWA0574E

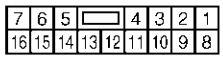
LT-STEP/L-04

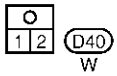








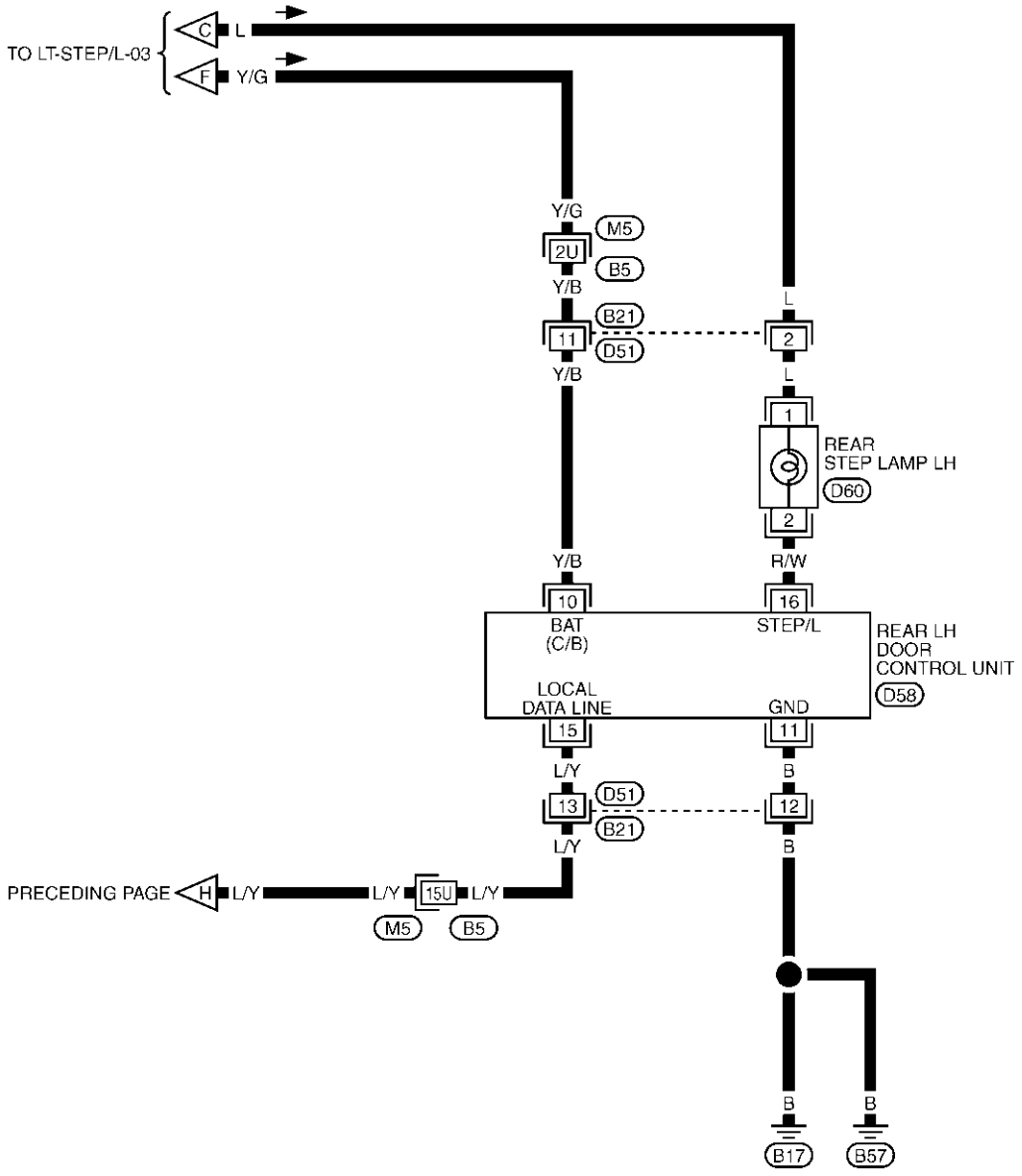


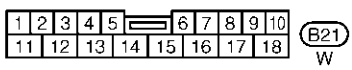


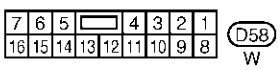
REFER TO THE FOLLOWING.
D1 , D31 -SUPER MULTIPLE JUNCTION (SMJ)

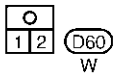
TKWA0575E

LT-STEP/L-05





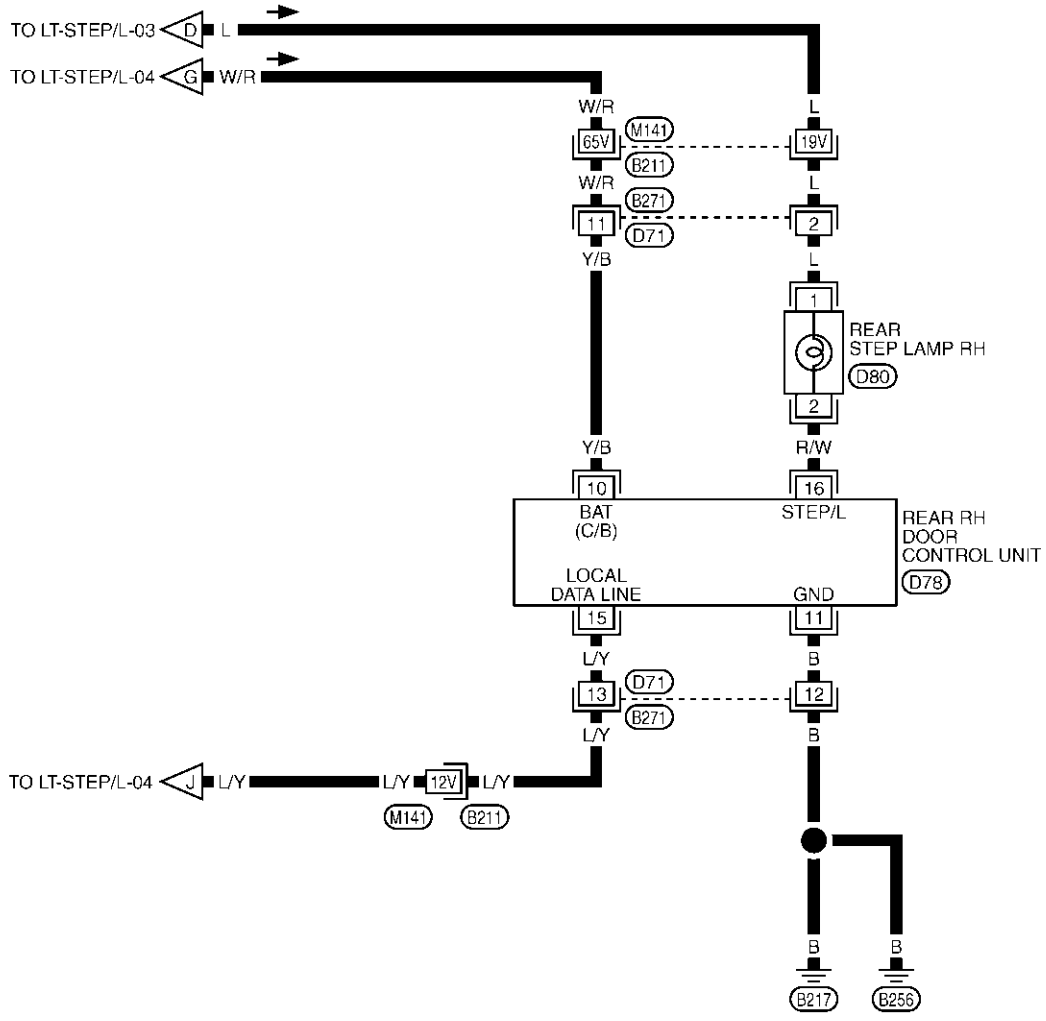


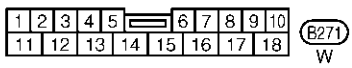


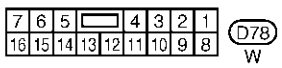
REFER TO THE FOLLOWING.
M5 -SUPER MULTIPLE JUNCTION (SMJ)

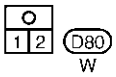
TKWA0576E

LT-STEP/L-06







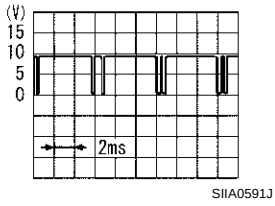


REFER TO THE FOLLOWING.
B211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWA0577E

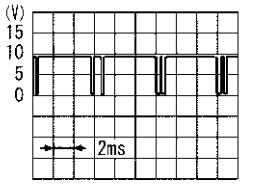
Terminals and Reference Value for Driver Door Control Unit (LCU 01)

AKS004DH

Terminal No.	Wire color	Item	Operation or condition		Reference value
3	R	Step lamp	Each door switch	ON (open)	Less than 1V
				OFF (closed)	Battery voltage
5	L/Y	Local data line	—		 SIIA0591J
8	G/W	Data line A-3	—		—
14	Y/G	Power source (PTC)	—		Battery voltage
15	B	Ground	—		Less than 1V

Terminals and Reference Value for Passenger and Rear LH, RH Door Control Unit

AKS002H2

Terminal No.	Wire color	Item	Operation or condition		Reference value
10	W/R (Y/B)	Power source (PTC)	—		Battery voltage
11	B	Ground	—		Less than 1V
15	L/Y	Local data line	—		 SIIA0591J
16	R (R/W)	Step lamp	Each door switch	ON (open)	Less than 1V
				OFF (closed)	Battery voltage

( ): Rear LH door control unit and rear RH control unit.

Terminals and Reference Value for BCM

AKS004DI

Terminal No.	Wire color	Signal description	Measuring condition			Reference value
			Ignition switch	Operation or condition		
17	BR/Y	Data link RX	—	—		—
18	P	Data link TX	—	—		—
33	W	Door lock assembly rear LH (door switch) signal	OFF	Door lock assembly rear LH (door switch)	ON (open)	Less than 1V
					OFF (closed)	Battery voltage
37	LG	Front door switch (passenger side) signal	OFF	Front door switch (passenger side)	ON (open)	Less than 1V
					OFF (closed)	Battery voltage
56	B	Ground	—	—		0V
67	G/W	Data line A-3	—	—		—
68	W/B	Ignition switch ON or START	ON	—		Battery voltage
105	Y/L	Battery power supply	OFF	—		Battery voltage
113	B	Ground	—	—		0V

Terminal No.	Wire color	Signal description	Measuring condition			Reference value
			Ignition switch	Operation or condition		
142	R/Y	Front door switch (driver side) signal	OFF	Front door switch (driver side)	ON (open)	Less than 1V
					OFF (closed)	Battery voltage
143	W/L	Door lock assembly rear RH (door switch) signal	OFF	Door lock assembly rear RH (door switch)	ON (open)	Less than 1V
					OFF (closed)	Battery voltage

Work Flow

AKS002H3

1. Confirm the symptom or customer complaint.
2. Understand system description. Refer to LT-151, "System Description" .
3. Perform preliminary check. Refer to LT-161, "Preliminary Check" .
4. Does the door lock system operate normally? When YES, go to step 5. When NO, go to BL-30, "Work Flow" in BL section.
5. Find the cause of malfunction following the trouble diagnosis chart by symptom and repair or replace as necessary. Refer to LT-167, "Step Lamp Does Not Illuminate/Does Not Go Off When Door Is Opened/Closed" .
6. Does the total coordinated interior illumination operate normally? When YES, go to step 7. When NO, go to step 5.
7. Inspection end.

Preliminary Check

AKS002H4

INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSE

Check if any of the following fuses in BCM are blown.

Unit	Power source	Fuse No.
BCM	Battery	3
	Ignition switch ON or START	1

Refer to LT-154, "Wiring Diagram — STEP/L —" .

OK or NG

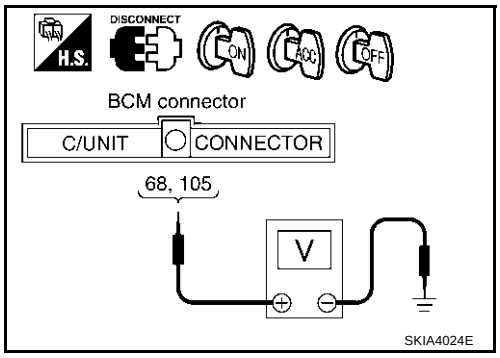
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-2, "POWER SUPPLY ROUTING" .

2. CHECK POWER SUPPLY CIRCUIT

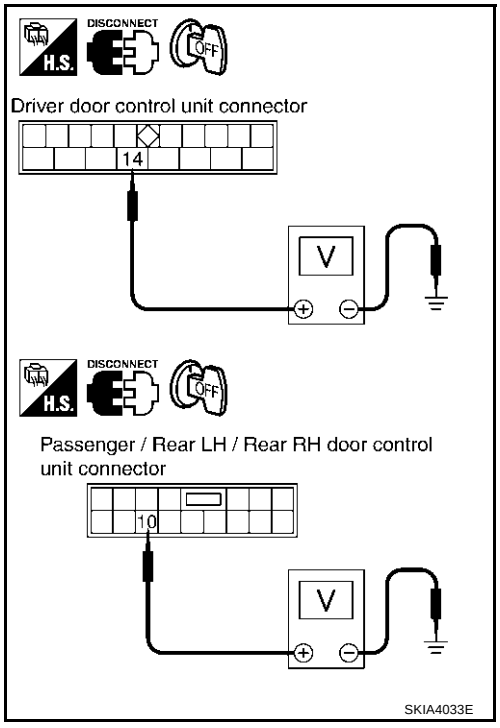
1. Disconnect the connectors for the BCM and driver door control unit, passenger door control unit or rear LH, RH door control units.
2. Check voltage between BCM harness connector M4 terminals 68 (W/B), 105 (Y/L) and ground.

Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminals (Wire color)				
M4	105 (Y/L)	Ground	Battery voltage	Battery voltage	Battery voltage
	68 (W/B)		0V	0V	Battery voltage



3. Check voltage between the following harness connector terminal of the driver door control unit, passenger door control unit or rear LH/RH door control units and ground.

Terminals			Ignition switch position	Voltage
(+)		(–)		
Connector	Terminals (Wire color)			
Driver door control unit (D8)	14 (Y/G)	Ground	OFF	Battery voltage
Passenger door control unit (D38)	10 (W/R)			
Rear LH door control unit (D58)	10 (Y/B)			
Rear RH door control unit (D78)	10 (Y/B)			



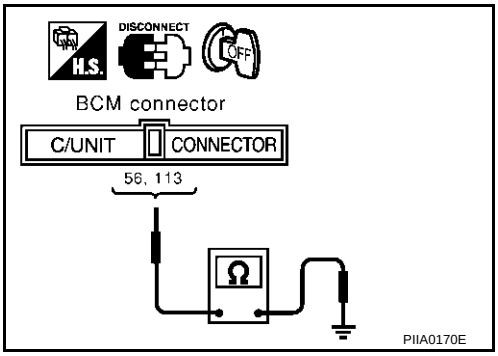
OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short power supply circuit.

3. CHECK GROUND CIRCUIT

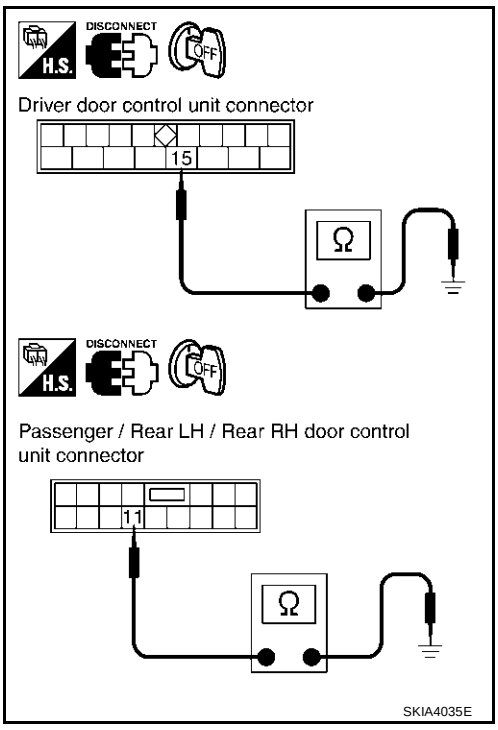
1. Check continuity between BCM harness connector M4 terminals 56 (B), 113 (B) and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal (Wire color)		
BCM (M4)	56 (B)	Ground	Yes
	113 (B)		



2. Check continuity between the following harness connector terminal of the driver door control unit, passenger door control unit, or rear LH/RH door control units and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal (Wire color)		
Driver door control unit (D8)	15 (B)	Ground	Yes
Passenger door control unit (D38)	11 (B)		
Rear LH door control unit (D58)			
Rear RH door control unit (D78)			



OK or NG

OK >> INSPECTION END
NG >> Repair harness.

CONSULT-II Function

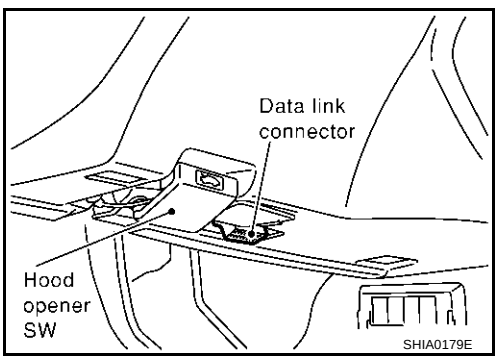
AKS002H5

- CONSULT-II has the display function for the work support, data monitor and active test for each part by combining data receiving and sending via the communication line from the BCM.

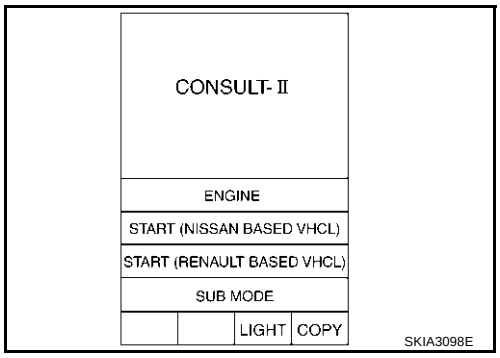
IVMS diagnosis position	Diagnosis mode	Description
Step lamp	Data monitor	Displays input data of the BCM and each LCU in real-time.
	Active test	Operation of electrical loads can be checked by sending driving signal to them.
BCM part number		Displays BCM part No.

CONSULT-II BASIC OPERATION PROCEDURE

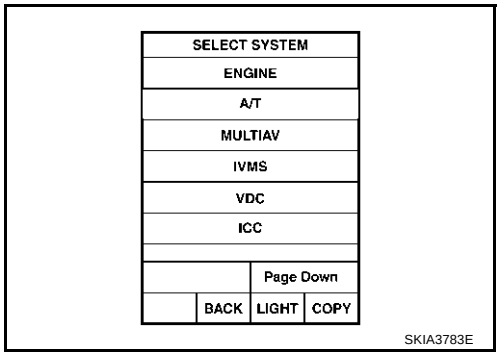
1. With the ignition switch OFF, connect “CONSULT-II” and “CONSULT-II CONVERTER” to the data link connector, then turn ignition switch ON.



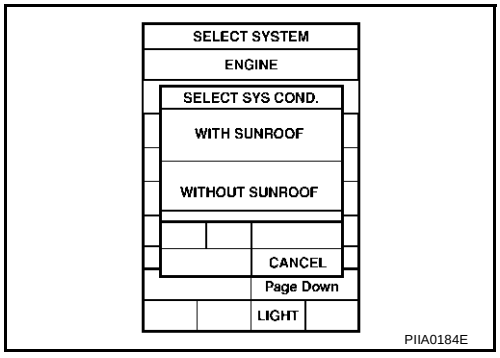
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “IVMS” on “SELECT SYSTEM” screen. If “IVMS” is not indicated, go to GI-38, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Check the model specification, touch either “WITH SUNROOF” or “WITHOUT SUNROOF”.
5. Touch “OK”. If the selection is wrong, touch “CANCEL”.



6. Select the desired part to be diagnosed on the “SELECT TEST ITEM” screen.

DATA MONITOR

Operation Procedure

1. Touch “STEP LAMP” on the “SELECT TEST ITEM” screen.
2. Touch “DATA MONITOR” on the “SELECT DIAG MODE” screen.
3. Touch “ALL SIGNALS” or “SELECTION FROM MENU” on the “DATA MONITOR” screen.

MAIN SIGNALS	Monitors the main items.
SELECTION FROM MENU	Selects and monitors the items.

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

Data Monitor Item

Monitored item ["OPERATION or UNIT"]		Description
DOOR SW-DR	[ON/OFF]	Displays "Door open (ON)/door closed (OFF)" status judged from the front door switch (driver side) signal.
DOOR SW-AS	[ON/OFF]	Displays "Door open (ON)/door closed (OFF)" status judged from the front door switch (passenger side) signal.
DOOR SW-RR	[ON/OFF]	Displays "Door open (ON)/door closed (OFF)" status judged from the door lock assembly rear RH (door switch) signal.
DOOR SW-RL	[ON/OFF]	Displays "Door open (ON)/door closed (OFF)" status judged from the door lock assembly rear LH (door switch) signal.

ACTIVE TEST

Operation Procedure

1. Touch "STEP LAMP" on the "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on the "SELECT DIAG MODE" screen.
3. Touch item to be tested and check operation of the selected item.
4. Touch "STOP" while testing and the operation will be stopped.

Active Test Item

Test items	Display on CONSULT-II screen	Description
Front step lamp (driver side) output	STEP LAMP-DR	Front step lamp (driver side) can be operated by any ON-OFF operation of lights.
Front step lamp (passenger side) output	STEP LAMP-AS	Front step lamp (passenger side) can be operated by any ON-OFF operation of lights.
Rear step lamp RH output	STEP LAMP-RR/RH	Rear step lamp RH can be operated by any ON-OFF operation of lights.
Rear step lamp LH output	STEP LAMP-RR/LH	Rear step lamp LH can be operated by any ON-OFF operation of lights.

On Board Diagnosis

AKS002H6

ON BOARD DIAGNOSTIC RESULTS INDICATOR LAMP.

- Map lamps and step lamps (all seats) act the indicators for the on board diagnosis.

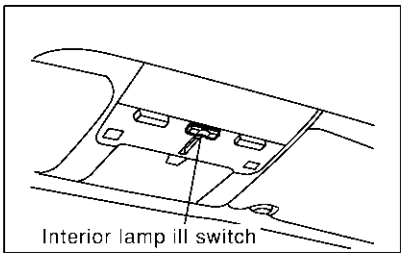
DIAGNOSIS ITEM

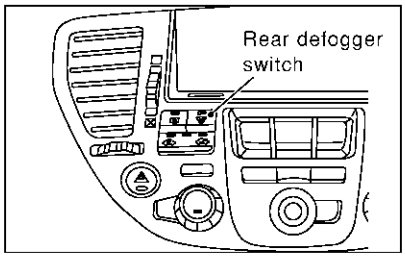
Diagnosis item	Description
Switch monitor	Checks for malfunction in switch systems that input to BCM and each LCU.

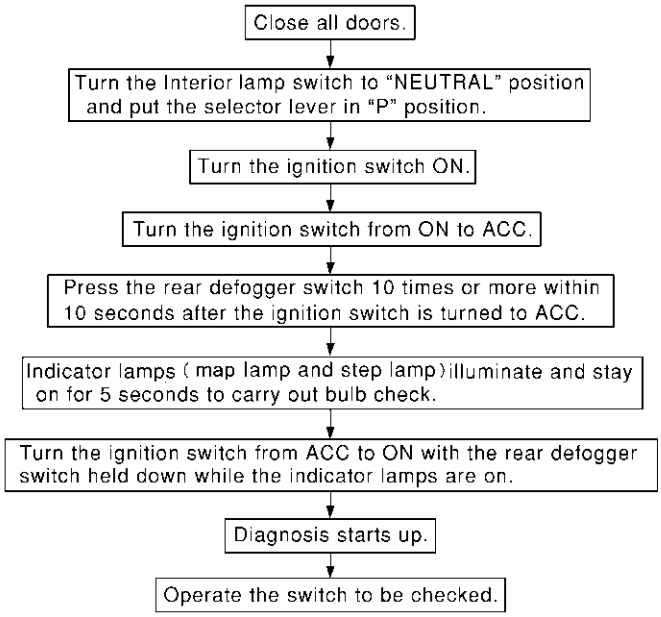
SWITCH MONITOR

- Perform the diagnosis on the switch system to each control unit.

How to Perform Switch Monitor

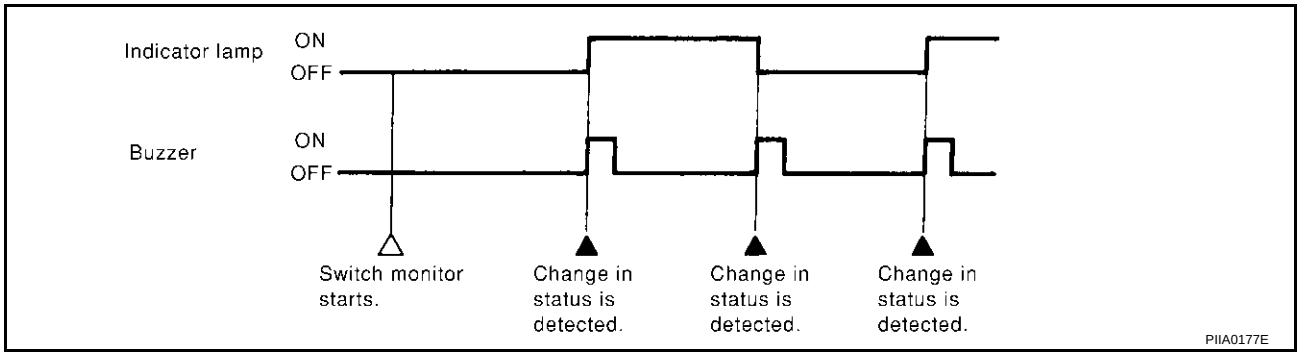






Description

- In this mode, when BCM detects the input signal from a switch in IVMS as shown below, the detection is indicated by the map lamps and front step lamps with buzzer.



Switch Monitor Item

- The status of the switch (except the ignition switch, interior lamp ill switch, and map lamp switch) as input to each control unit can be monitored.

Control unit	Item
BCM	Each door switch

Cancel of Switch Monitor

If the following conditions are satisfied, the communication diagnosis is cancelled.

- Turn ignition switch OFF.
- Drive the vehicle more than 7 km/h (4 MPH).

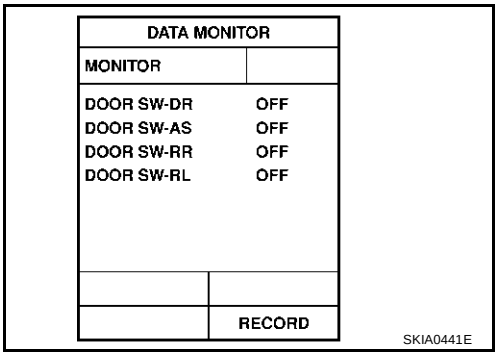
Step Lamp Does Not Illuminate/Does Not Go Off When Door Is Opened/Closed

AKS002H7

1. CHECK DOOR SWITCH SIGNAL

With CONSULT-II

- Operate each door via “DOOR SW” on DATA MONITOR screen and make sure that the switch turns on and off as commanded.



Without CONSULT-II

- Operate each door and via “switch monitor” of the self-diagnosis function and make sure that the switch turns on and off as commanded.

OK or NG

OK >> GO TO 7.
NG >> GO TO 2.

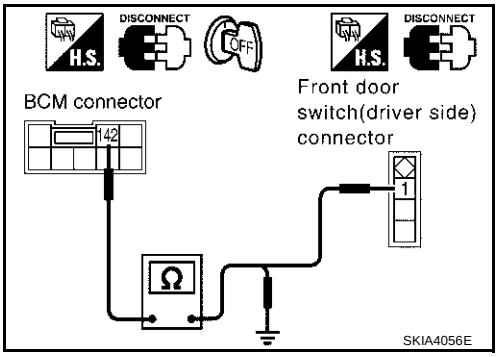
2. CHECK FRONT DOOR SWITCH (DRIVER SIDE) CIRCUIT

1. Turn ignition switch to OFF position.
2. Disconnect the BCM connector and the front door switch (driver side) connector.
3. Check continuity between BCM harness connector B4 terminal 142 (R/Y) and front door switch (driver side) harness connector B20 terminal 1 (R/Y).

   Continuity should exist.

4. Check continuity between BCM harness connector B4 terminal 142 (R/Y) and ground.

   Continuity should not exist.



NOTE:
If front door switch (driver side) is normal, skip this procedure and go to 3.

OK or NG

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

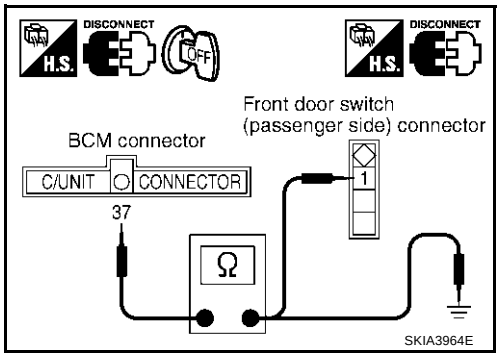
3. CHECK FRONT DOOR SWITCH (PASSENGER SIDE) CIRCUIT

1. Disconnect the front door switch (passenger side) connector.
2. Check continuity between BCM harness connector M4 terminal 37 (LG) and front door switch (passenger side) harness connector B220 terminal 1 (LG).

   Continuity should exist.

3. Check continuity between BCM harness connector M4 terminal 37 (LG) and ground.

   Continuity should not exist.



NOTE:
If front door switch (passenger side) is normal, skip this procedure and go to 4.

OK or NG

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

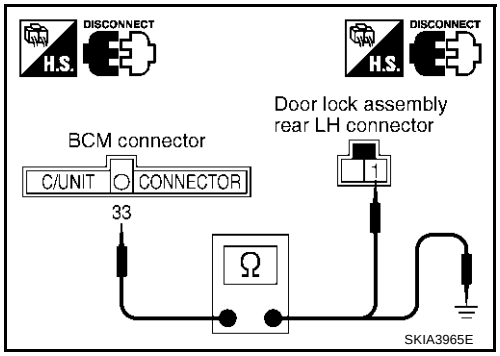
4. CHECK DOOR LOCK ASSEMBLY REAR LH (DOOR SWITCH) CIRCUIT

1. Disconnect the door lock assembly rear LH connector.
2. Check continuity between BCM harness connector M4 terminal 33 (W) and door lock assembly rear LH harness connector D62 terminal 1 (W).

   Continuity should exist.

3. Check continuity between BCM harness connector M4 terminal 33 (W) and ground.

   Continuity should not exist.



NOTE:
If door lock assembly rear LH (door switch) is normal, skip this procedure and go to 5.

OK or NG

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

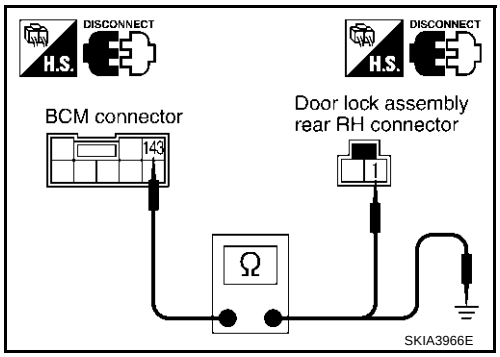
5. CHECK DOOR LOCK ASSEMBLY REAR RH (DOOR SWITCH) CIRCUIT

1. Disconnect door lock assembly rear RH connector.
2. Check continuity between BCM harness connector B4 terminal 143 (W/L) and door lock assembly rear RH harness connector D82 terminal 1 (W).

   Continuity should exist.

3. Check continuity between BCM harness connector B4 terminal 143 (W/L) and ground.

   Continuity should not exist.



NOTE:
If door lock assembly rear RH (door switch) is normal, skip this procedure and go to 6.

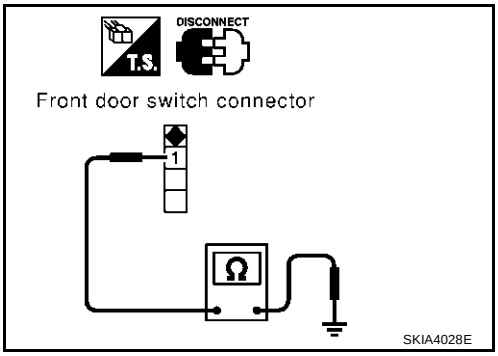
OK or NG

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

6. CHECK DOOR SWITCH

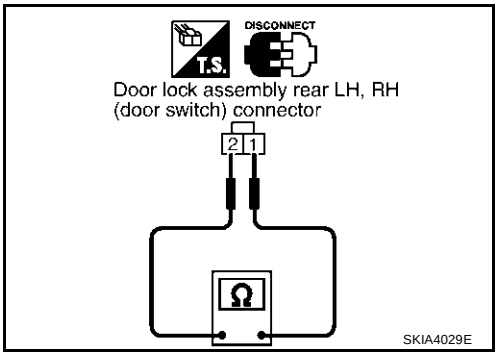
1. Check continuity between front door switch connector B20, B220 terminal 1 and ground while turning the door switches ON (open) and OFF (closed).

Connector	Terminal		Condition	Continuity
B20	1	Ground	ON (Door open)	Yes
B220			OFF (Door closed)	No



2. Check continuity between door lock assembly rear LH, RH (door switch) connector D62, D82 terminals 1 and 2 while turning the door switches ON (open) and OFF (closed).

Connector	Terminal		Condition	Continuity
D62	1	2	ON (Door open)	Yes
D82			OFF (Door closed)	No



OK or NG

OK >> Check front door switch case ground condition or door lock assembly rear LH, RH (door switch) ground circuit.

NG >> Replace the door switch.

7. CHECK BULB

Check step lamp bulb.

OK or NG

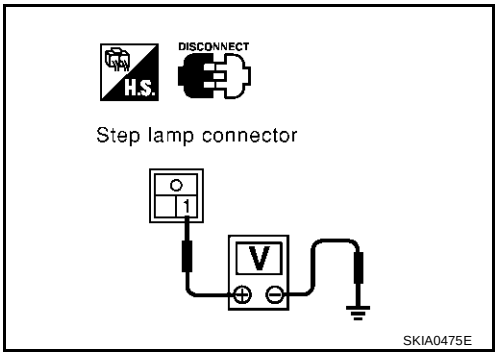
OK >> GO TO 8.

NG >> Replace the bulb.

8. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch to OFF position.
2. Disconnect the step lamp connector.
3. Check voltage between step lamp connector D10, D40, D60 or D80 terminal 1 (L) and ground.

Battery voltage should exist.



OK or NG

OK >> Check connector or harness for open or short between step lamp and door control unit.

NG >> Check the following.

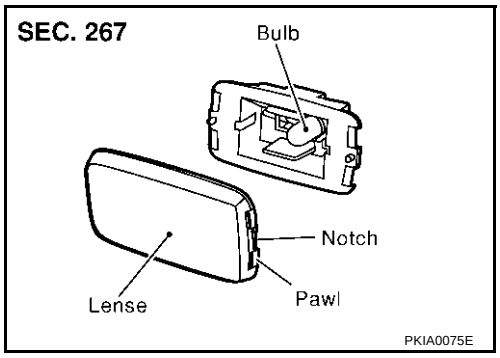
- 10A fuse [No. 8, located in the fuse block (J/B) No. 1]
- Harness for open or short between fuse and step lamp

Bulb Replacement

AKS002H8

1. Insert a screwdriver in the notch and remove the lens.
2. Remove the bulb.

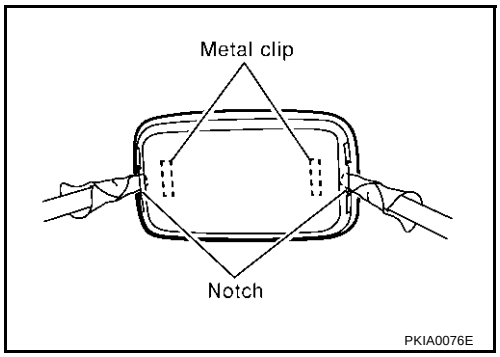
Step lamp : 12V 2.7W



Removal and Installation

AKS002H9

1. Using a clip driver or a suitable tool, press and remove the metal clip of the step lamp.
2. Disconnect the step lamp connector.



ILLUMINATION

PFP:27545

System Description

AKS002HA

The illumination lamp operation is controlled by the lighting switch which is built into the spiral cable and headlamp battery saver control unit. The battery saver system is controlled by headlamp battery saver control unit and BCM.

Power is supplied at all times

- to tail lamp relay terminals 2 and 6
- through 15A fuse [No. 54, located in the fuse, fusible link and relay block (J/B)], and
- to headlamp battery saver control unit terminal 7
- through 10A fuse [No. 6, located in the fuse block (J/B) No. 1].

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

- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 1, located in the fuse block (J/B) No. 1].

Ground is supplied

- to headlamp battery saver control unit terminals 4 and 11
- through body grounds M25 and M115.

LIGHTING OPERATION BY LIGHTING SWITCH

When lighting switch is 1ST (or 2ND) position, ground is supplied

- to tail lamp relay terminal 1 from headlamp battery saver control unit terminals 6 and 14
- through headlamp battery saver control unit terminals 5 and 13, and
- through lighting switch and body grounds M25 and M115.

Tail lamp relay is then energized and illumination lamps illuminate.

The lighting switch must be in the 1ST or 2ND position for illumination.

The illumination control switch that controls the amount of current to the illumination system. As the amount of current increases, the illumination becomes brighter.

The ground for all of the components except for grove box lamp, front cigarette lighter, rear ashtray, AV and NAVI control unit (with NAVI) and AV control unit (without NAVI) are controlled through terminals 2 and 3 of the illumination control switch and body grounds M25 and M115.

BATTERY SAVER CONTROL

When the ignition switch is turned from ON (or START) to OFF (or ACC) positions while illumination lamps are illuminated, the RAP signal is supplied to terminal 10 of the headlamp battery saver control unit from BCM terminal 135.

After counting 45 seconds by the RAP signal from the BCM to headlamp battery saver control unit, the ground supply to terminal 1 of the tail lamp relay from headlamp battery saver control unit terminals 6 and 14 is terminated.

Then illumination lamps are turned off.

Illumination lamps are turned off when driver or passenger side door is opened even if 45 seconds have not passed after the ignition switch is turned from ON (or START) to OFF (or ACC) positions while illumination lamps are illuminated.

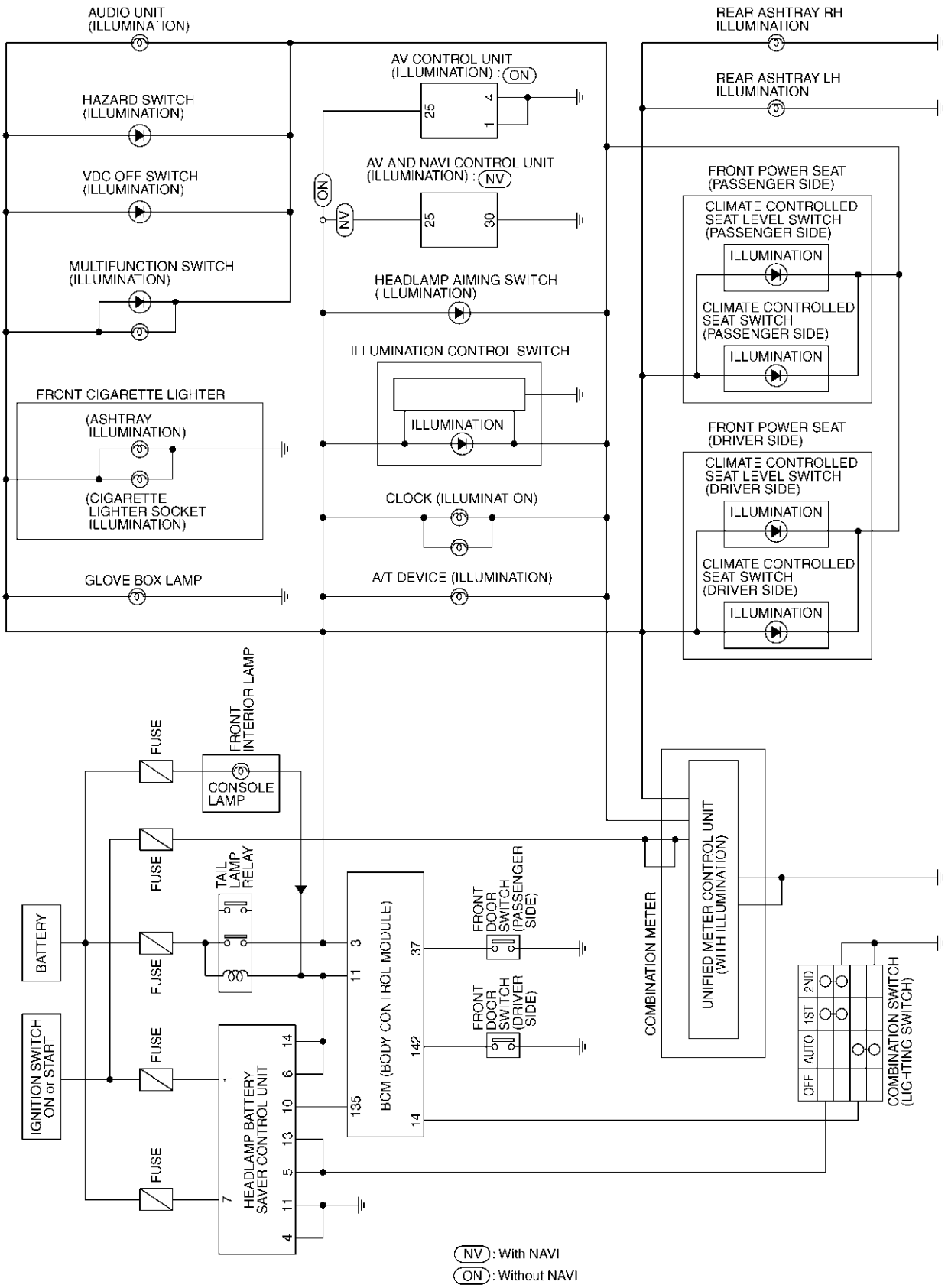
When the lighting switch is turned from OFF to 1ST (or 2ND) after illumination lamps are turned off by the battery saver control, ground is supplied

- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11, and
- to tail lamp relay terminal 1 from headlamp battery saver control unit terminals 6 and 14.

Then illumination lamps illuminate again.

Schematic

AKS002HB

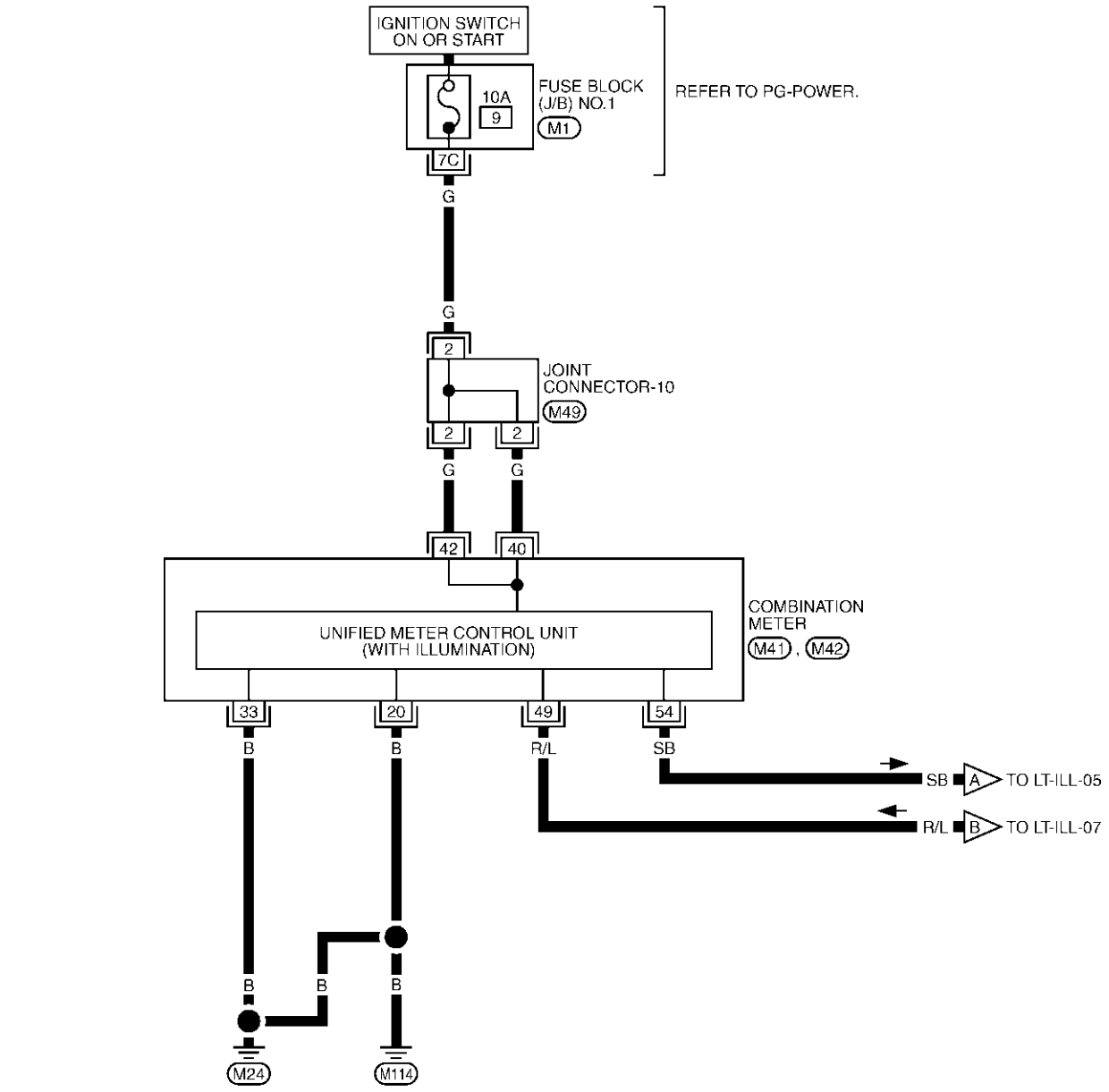


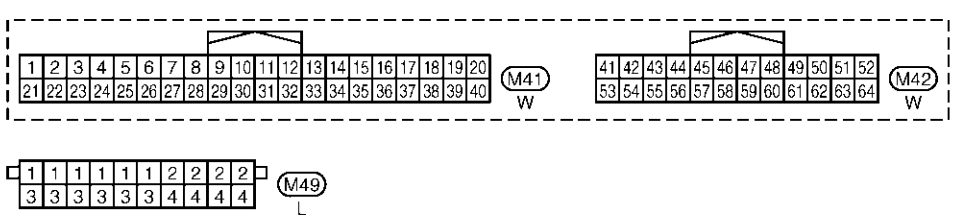
TKWA0552E

Wiring Diagram — ILL —

AKS002HC

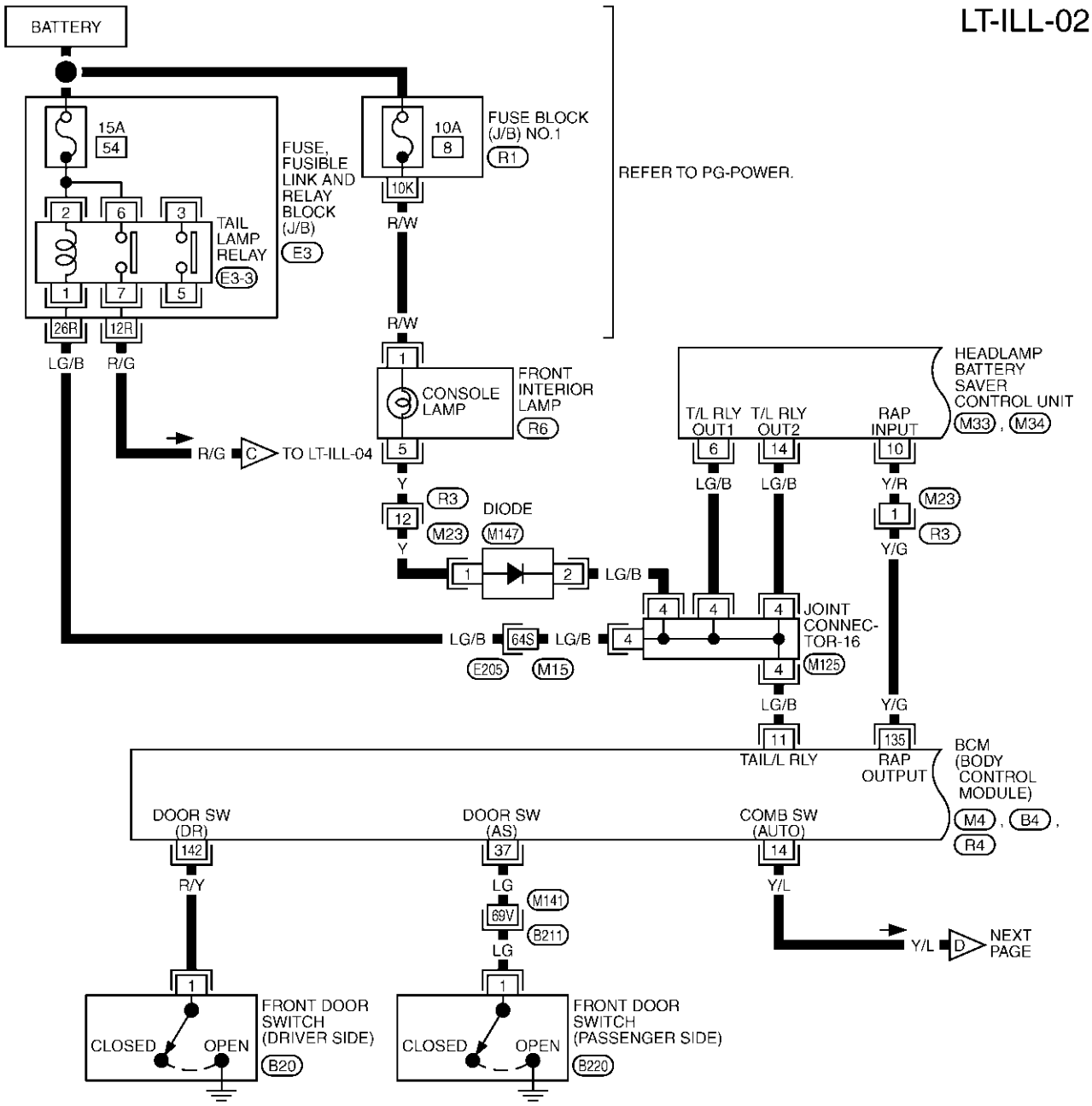
LT-ILL-01



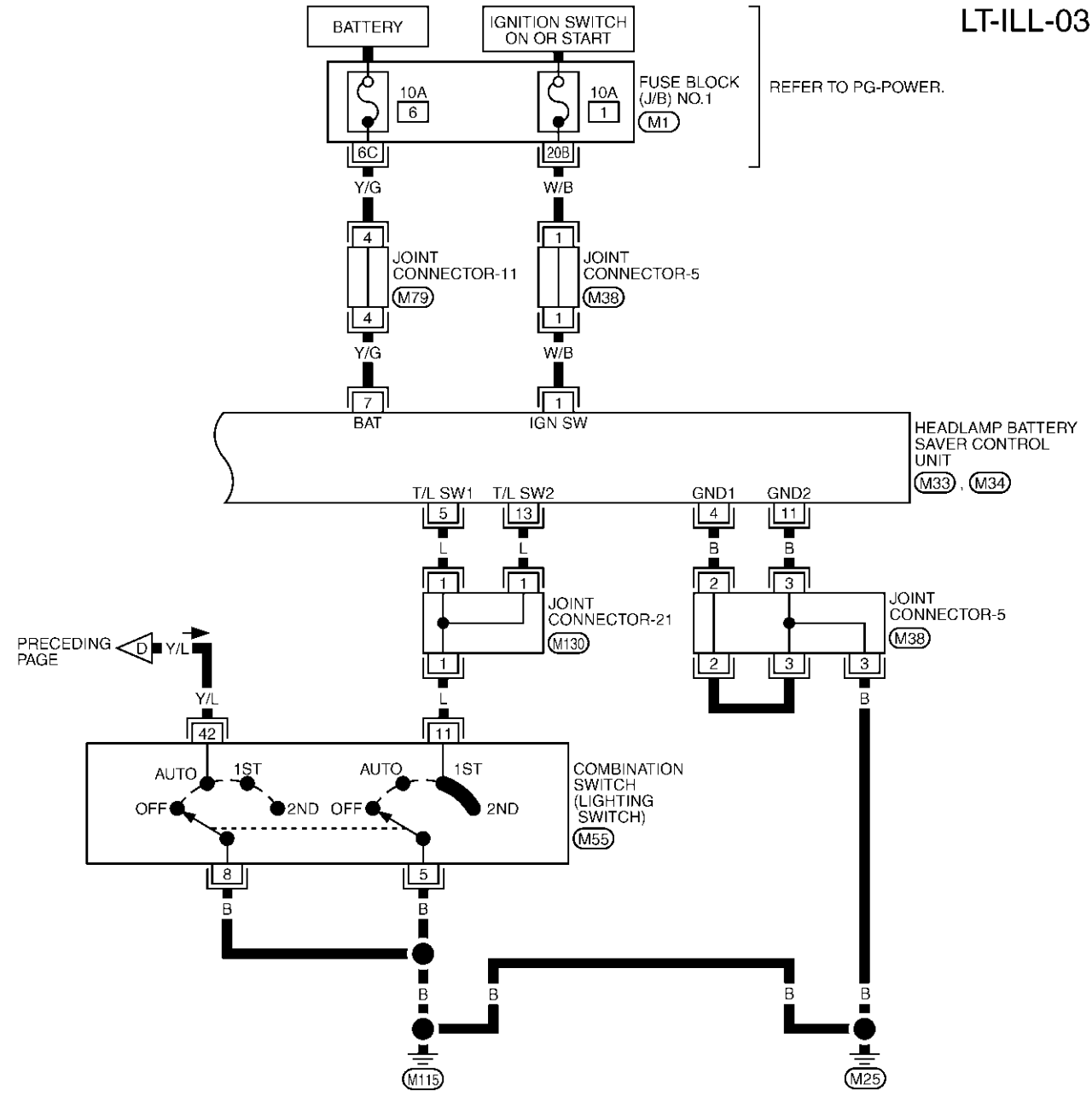


REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TKWA0553E

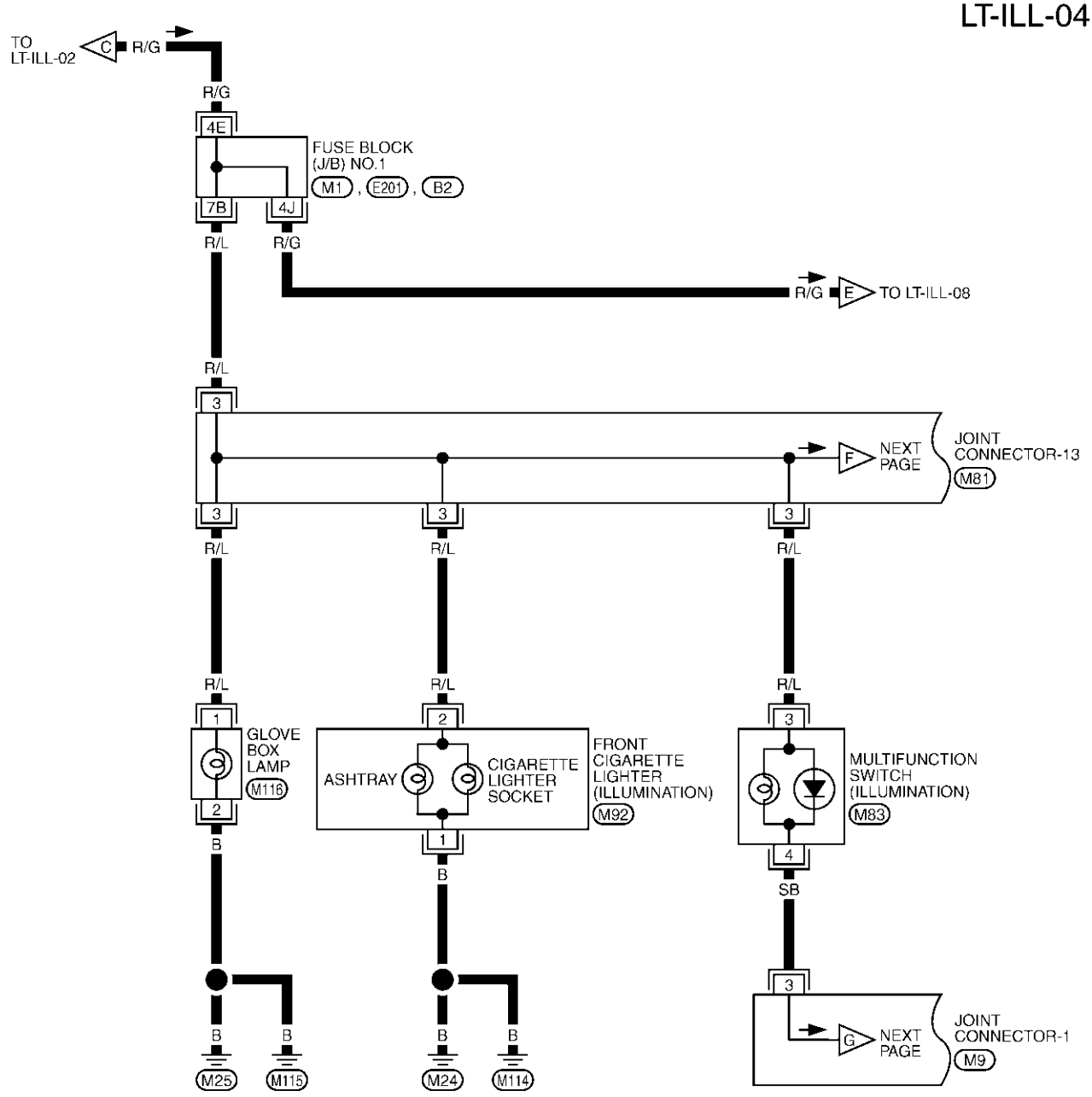

LT-ILL-02
BATTERY
15A
54
FUSE, FUSIBLE LINK AND RELAY BLOCK (J/B)
E3
TAIL LAMP RELAY
E3-3
10A
8
FUSE BLOCK (J/B) NO.1
R1
10K
REFER TO PG-POWER.
R/W
26R
12R
LG/B
R/G
CONSOLE LAMP
FRONT INTERIOR LAMP
R6
R/G C TO LT-ILL-04
HEADLAMP BATTERY SAVER CONTROL UNIT
M33, M34
T/L RLY OUT1
T/L RLY OUT2
RAP INPUT
Y
R3
DIODE
M147
M23
Y/R
Y/G
JOINT CONNEC-TOR-16
M125
64S
E205
M15
TAIL/L RLY
RAP OUTPUT
BCM (BODY CONTROL MODULE)
M4, B4, R4
DOOR SW (DR)
DOOR SW (AS)
COMB SW (AUTO)
142
37
14
R/Y
LG
69V
M141
B211
Y/L
D NEXT PAGE
CLOSED
OPEN
FRONT DOOR SWITCH (DRIVER SIDE)
B20
FRONT DOOR SWITCH (PASSENGER SIDE)
B220
M33 W
M34 W
M125 B
M147 W
E3-3 *
B20, B220 W
R3 W
R6 W
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.
REFER TO THE FOLLOWING.
E205, B211 -SUPER MULTIPLE JUNCTION (SMJ)
R1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1
E3 -FUSE,FUSIBLE LINK AND RELAY BLOCK (J/B)
M4, B4, R4 -ELECTRICAL UNITS

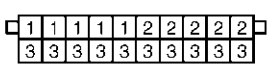
TKWA0554E

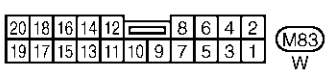

LT-ILL-03
BATTERY
IGNITION SWITCH ON OR START
10A 6
10A 1
FUSE BLOCK (J/B) NO.1
M1
REFER TO PG-POWER.
6C
20B
Y/G
W/B
JOINT CONNECTOR-11
M79
JOINT CONNECTOR-5
M38
BAT
IGN SW
HEADLAMP BATTERY SAVER CONTROL UNIT
M33, M34
T/L SW1
T/L SW2
GND1
GND2
JOINT CONNECTOR-21
M130
PRECEDING PAGE
D
Y/L
AUTO
1ST
2ND
OFF
COMBINATION SWITCH (LIGHTING SWITCH)
M55
M115
M25
M33
W
M34
W
M38
P
M55
W
M79
G
M130
W
REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

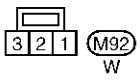
TKWA0555E

LT-ILL-04





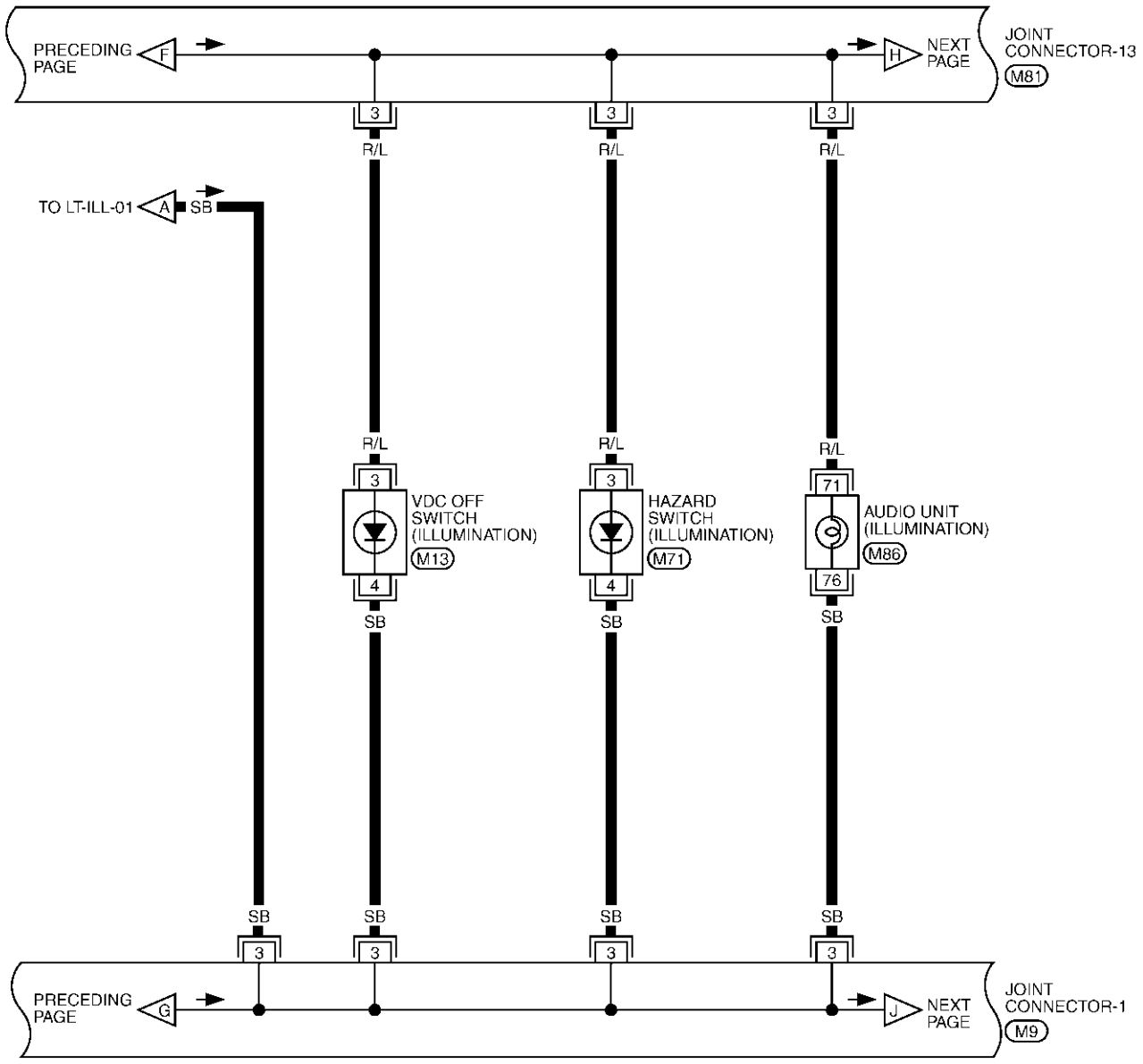


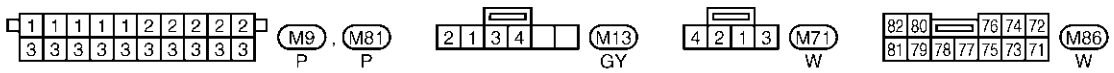


REFER TO THE FOLLOWING.
M1 , E201 , B2
-FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TKWA0556E

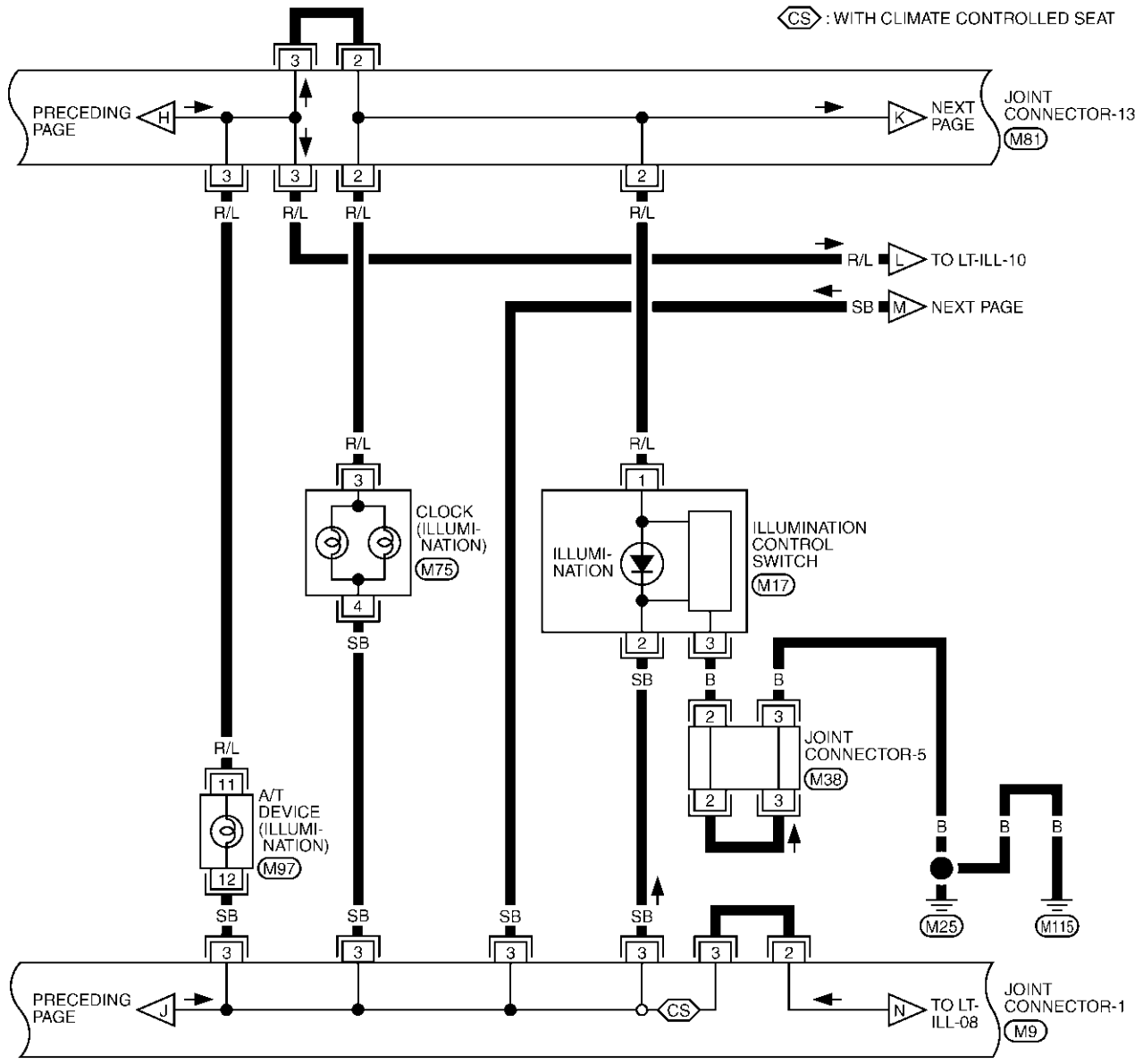
LT-ILL-05

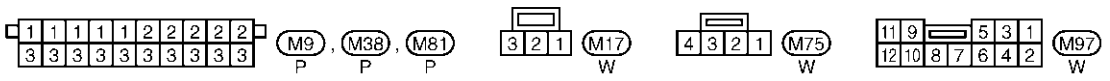




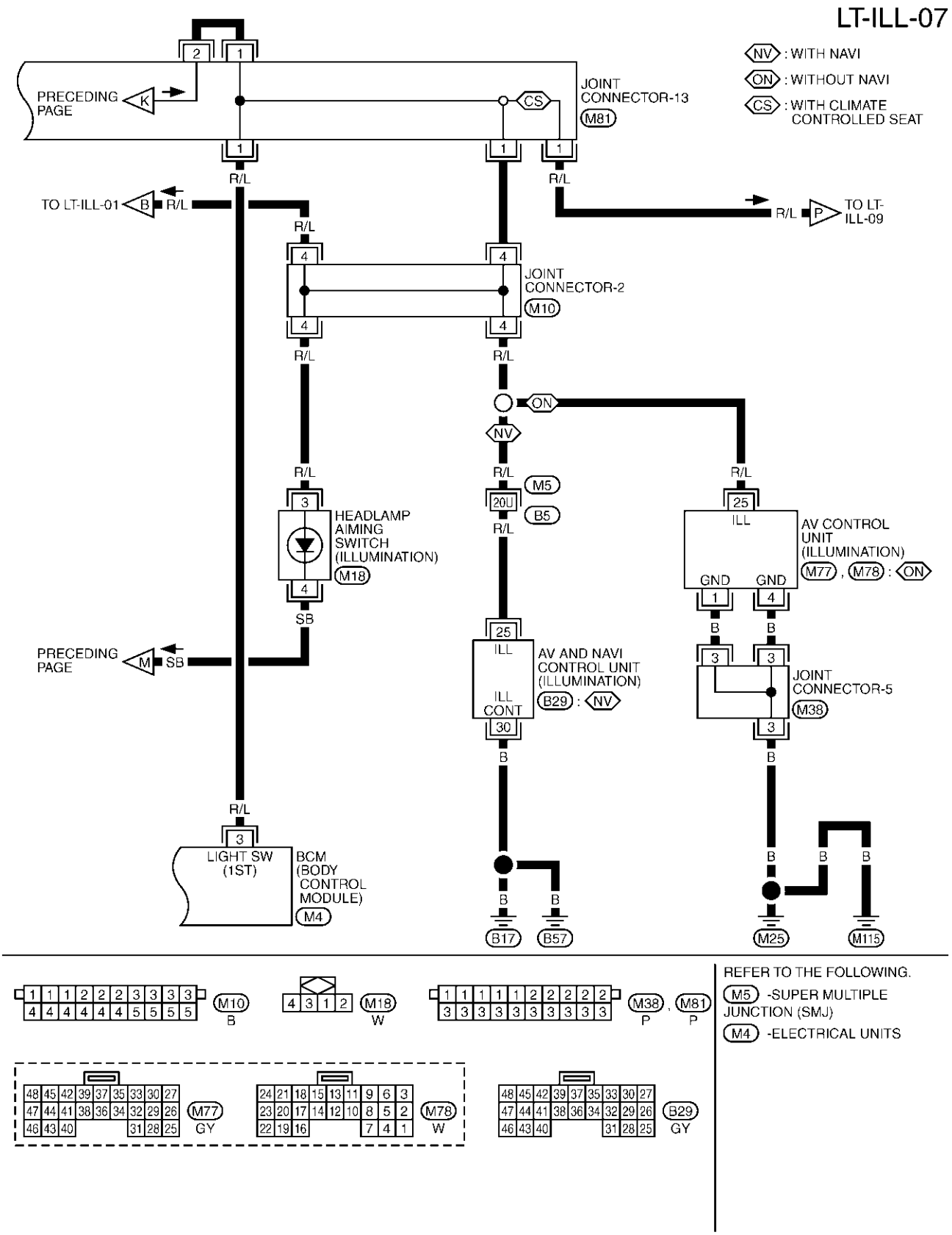
TKWA0557E

LT-ILL-06



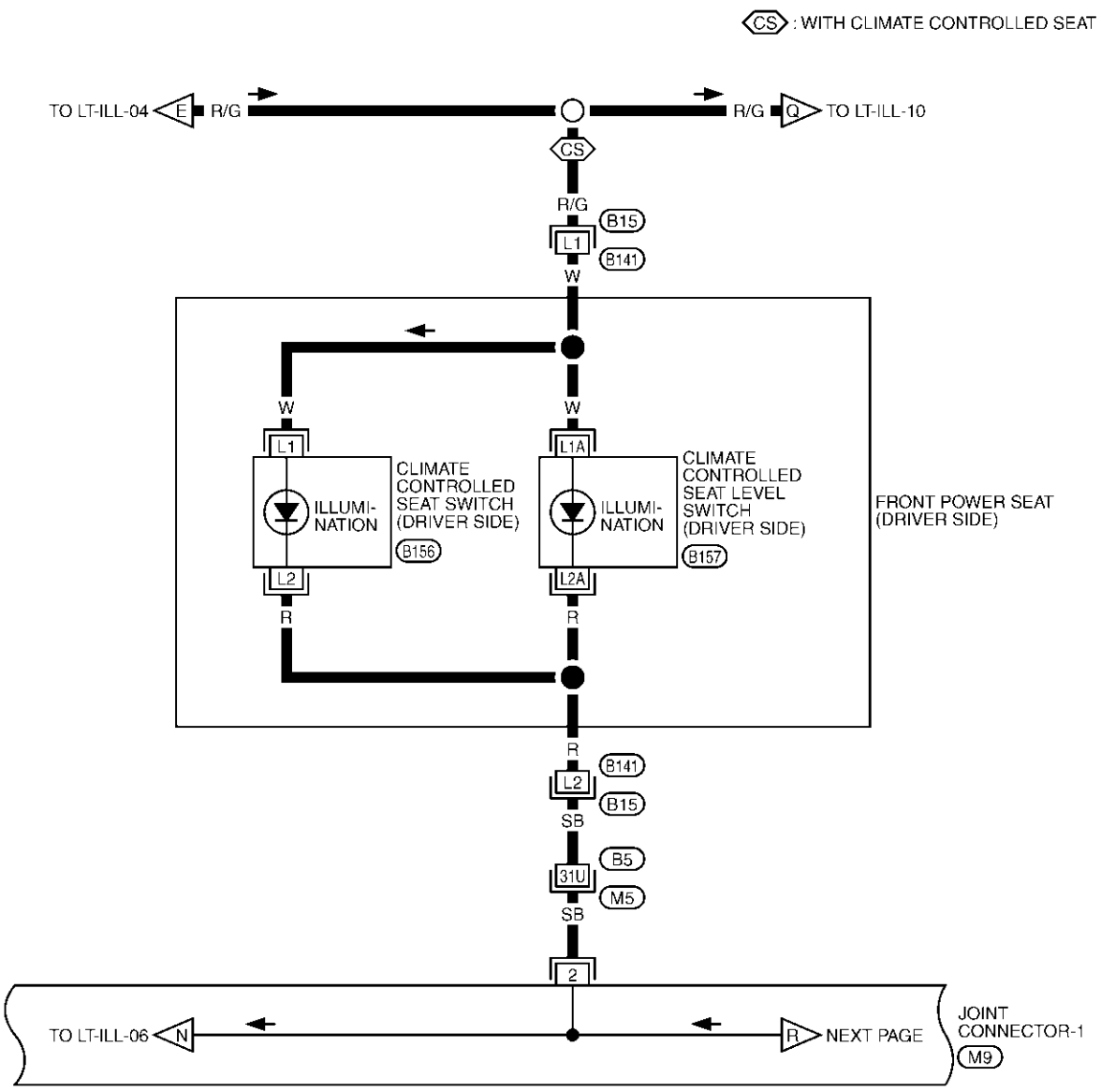


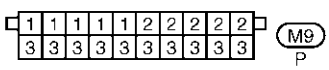
TKWA0558E

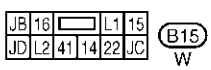

LT-ILL-07
NV : WITH NAVI
ON : WITHOUT NAVI
CS : WITH CLIMATE CONTROLLED SEAT
PRECEDING PAGE
K
JOINT CONNECTOR-13
M81
TO LT-ILL-01
B
R/L
TO LT-ILL-09
P
JOINT CONNECTOR-2
M10
HEADLAMP AIMING SWITCH (ILLUMINATION)
M18
PRECEDING PAGE
M
SB
LIGHT SW (1ST)
BCM (BODY CONTROL MODULE)
M4
ON
NV
M5
20U
B5
AV AND NAVI CONTROL UNIT (ILLUMINATION)
B29 : NV
ILL
ILL CONT
30
B17
B57
AV CONTROL UNIT (ILLUMINATION)
M77 , M78 : ON
GND
25
JOINT CONNECTOR-5
M38
M25
M115
M10 B
M18 W
M38 , M81 P
M77 GY
M78 W
B29 GY
REFER TO THE FOLLOWING.
M5 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -ELECTRICAL UNITS

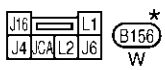
TKWA0559E

LT-ILL-08







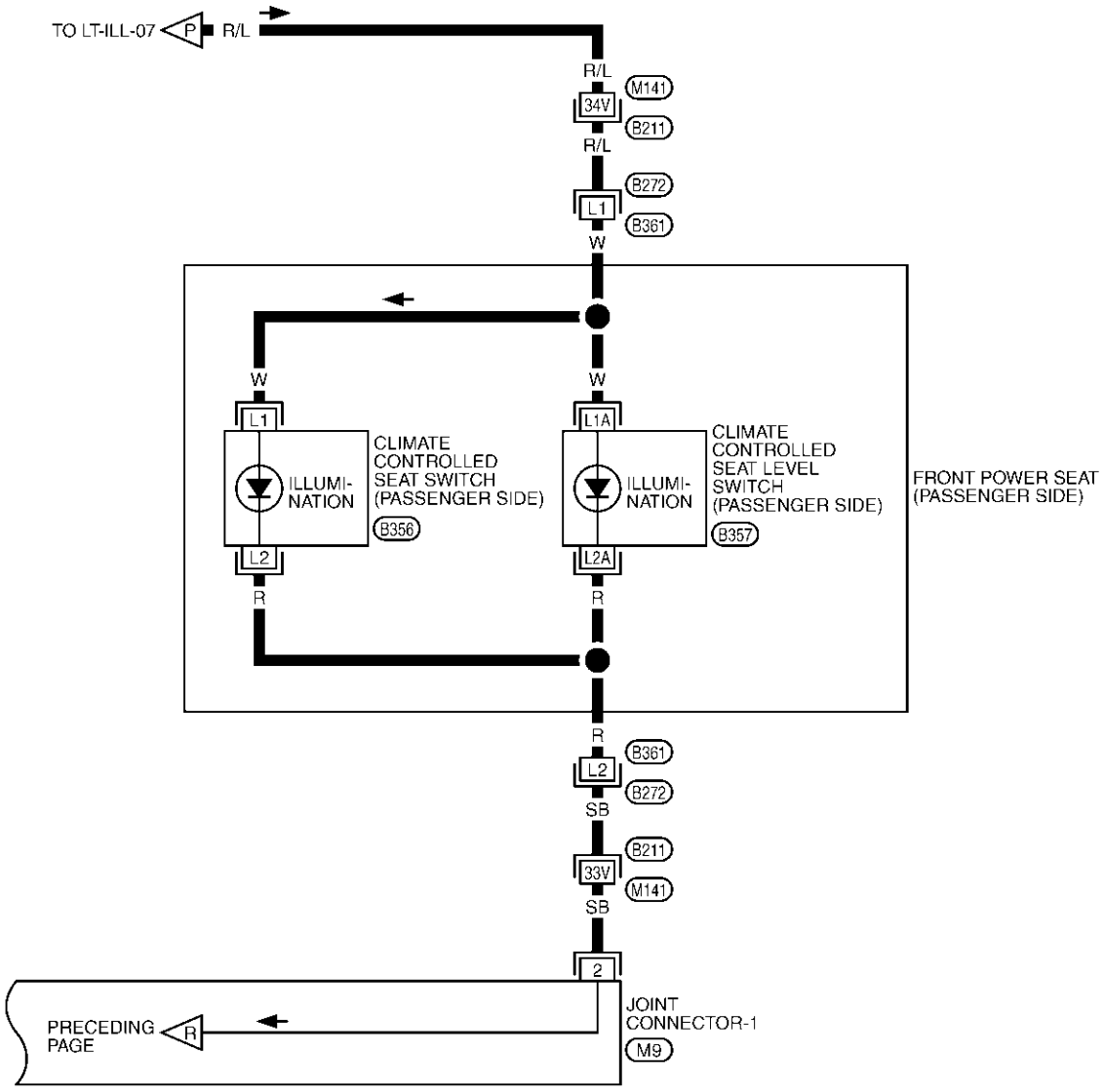


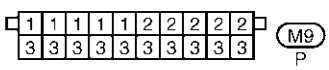
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

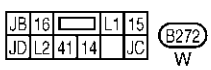
REFER TO THE FOLLOWING.
M5 -SUPER MULTIPLE JUNCTION (SMJ)

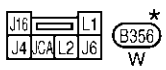
TKWA0902E

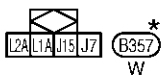
LT-ILL-09









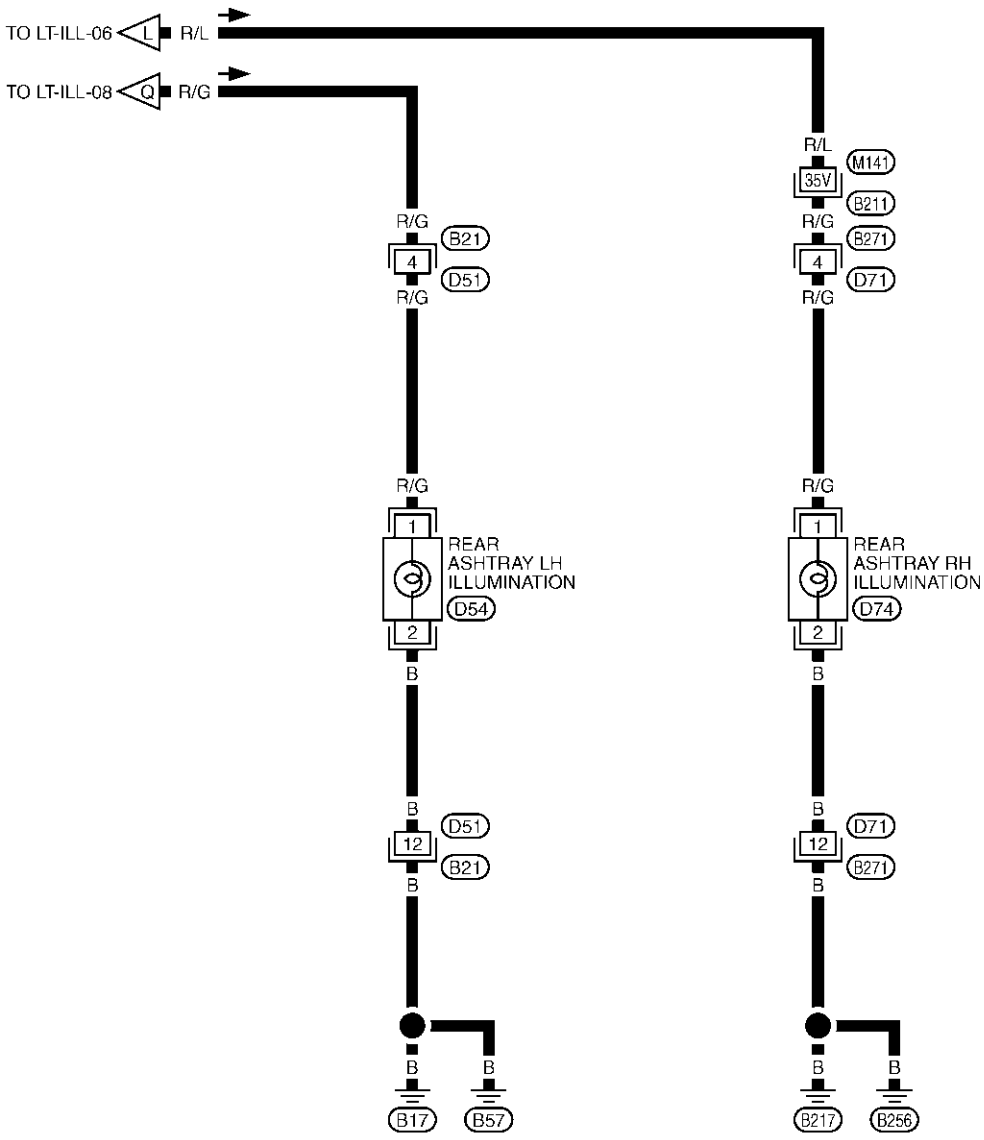


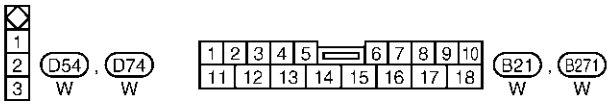
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.
B211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWA0903E

LT-ILL-10





REFER TO THE FOLLOWING.
B211 -SUPER MULTIPLE JUNCTION (SMJ)

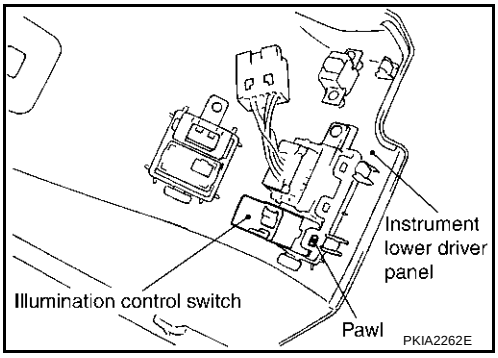
TKWA0560E

Removal and Installation

AKS002HD

ILLUMINATION CONTROL SWITCH

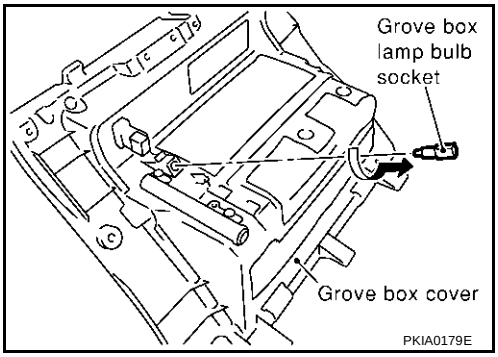
1. Remove the instrument lower driver panel. Refer to IP-10, "Component Parts Drawing" in “INSTRUMENT PANEL (IP)” section.
2. Press the illumination control switch fixing pawls and remove the unit from the instrument lower driver panel.



GLOVE BOX LAMP

1. Remove the glove box cover. Refer to IP-10, "Component Parts Drawing" in “INSTRUMENT PANEL (IP)” section.
2. Turn the bulb socket counterclockwise and unlock it.

Glove box lamp : 12V 1.4W



Removal and Installation

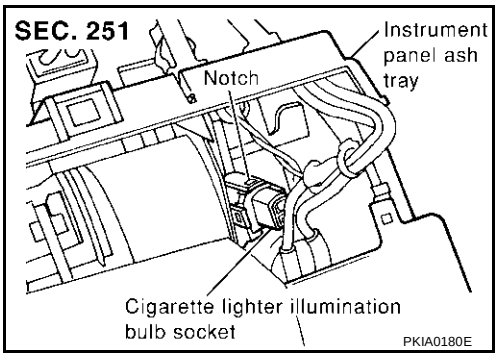
AKS002HE

FRONT CIGARETTE LIGHTER ILLUMINATION

Cigarette Lighter Socket Illumination

1. Remove the instrument panel ashtray. Refer to IP-10, "Component Parts Drawing" in “INSTRUMENT PANEL (IP)” section.
2. Unfold three notches and remove the bulb socket.

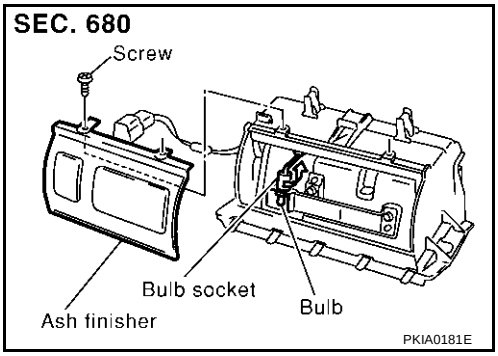
Cigarette lighter illumination : 12V 1.4W



Ashtray Illumination

1. Remove the instrument panel ashtray. Refer to IP-10, "Component Parts Drawing" in “INSTRUMENT PANEL (IP)” section.
2. Remove the ashtray finisher mounting screws and remove the ashtray finisher.
3. Turn the bulb socket counterclockwise and unlock it.

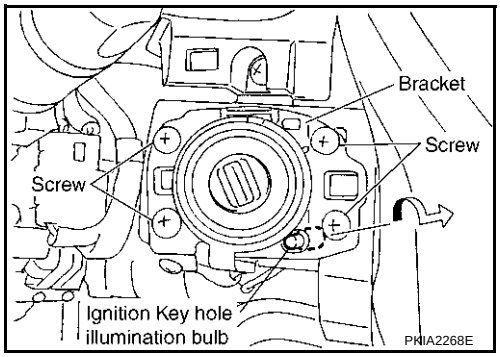
Ashtray illumination : 12V 1.4W



IGNITION KEY HOLE ILLUMINATION

1. Remove the steering lock escutcheon. Refer to IP-10, "Component Parts Drawing" in “INSTRUMENT PANEL (IP)” section.
2. Remove the bracket mounting screws and remove it
3. Turn the bulb socket counterclockwise and unlock it.

Ignition key hole illumination :12V 1.4W

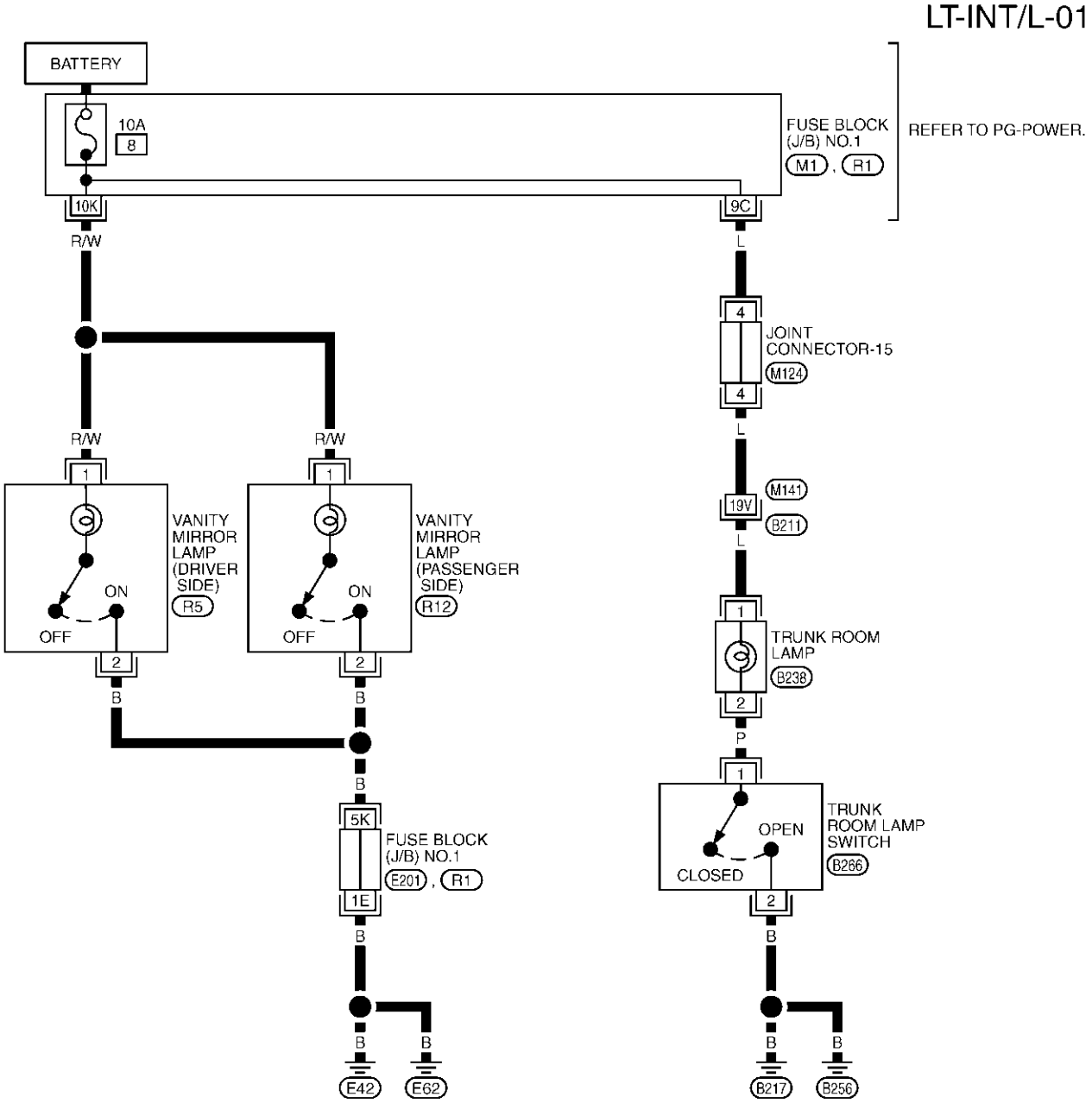


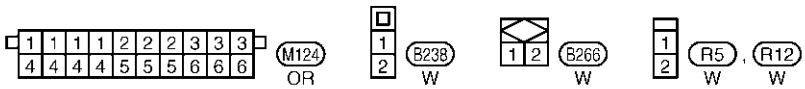
VANITY MIRROR AND TRUNK ROOM LAMPS

PFP:26470

Wiring Diagram — INT/L —

AKS002HF





REFER TO THE FOLLOWING.
B211 -SUPER MULTIPLE JUNCTION (SMJ)
M1 , E201 , R1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TKWA0561E

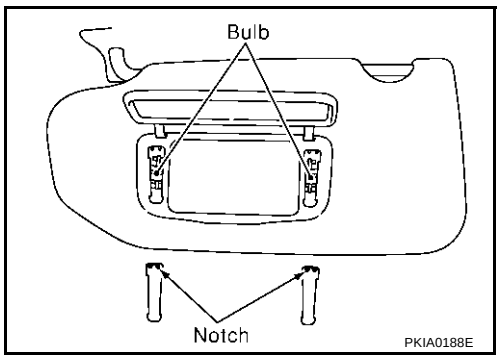
Bulb Replacement

AKS002HG

VANITY MIRROR LAMP

1. Insert a thin screwdriver in the notch and remove the lens.
2. Remove the bulb.

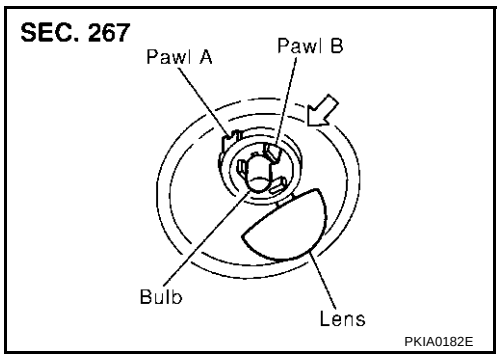
Vanity mirror lamp : 12V 1.4W



TRUNK ROOM LAMP

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

Trunk room lamp : 12V 3.4W



BULB SPECIFICATIONS

PFP:26297

Headlamp

AKS002HH

Item	Wattage (W)
Low	35 (D2R)
High	60W (HB3)

Exterior Lamp

AKS002HI

Item		Wattage (W)
Front fog lamp		55 (H3)
Front combination lamp (Headlamp)	Turn signal lamp and parking lamp (Clearance lamp)	27/8 (amber)
Front side marker lamp		3.8
Rear combination lamp	Stop/Tail lamp	21/5
	Turn signal lamp	21
	Back-up lamp	18
Rear side marker lamp		3.8
License plate lamp		3.8
High-mounted stop lamp		18

Interior Lamp/Illumination

AKS002HJ

Item	Wattage (W)
Map lamp (Front personal light)	8
Console lamp (Console light)	1.4
Personal lamp (Rear personal light)	8
Step lamp	2.7
Vanity mirror lamp	1.4
Trunk room lamp	3.4