SECTION EXL
EXTERIOR LIGHTING SYSTEM

CONTENTS

XENON TYPE

HALOGEN TYPE

PRECAUTION

PRECAUTIONS

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

INFOID:0000000011321419

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 AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 “SRS AIR BAG”.**
- **Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

Always observe the following items for preventing accidental activation.

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

Precautions For Xenon Headlamp Service

INFOID:0000000011321420

WARNING:

Comply with the following warnings to prevent any serious accident.

- **Disconnect the battery cable (negative terminal) or the power supply fuse before installing, removing, or touching the xenon headlamp (bulb included). The xenon headlamp contains high-voltage generated parts.**
- **Never work with wet hands.**
- **Check the xenon headlamp ON-OFF status after assembling it to the vehicle. Never turn the xenon headlamp ON in other conditions. Connect the power supply to the vehicle-side connector. (Turning it ON outside the lamp case may cause fire or visual impairments.)**
- **Never touch the bulb glass immediately after turning it OFF. It is extremely hot.**

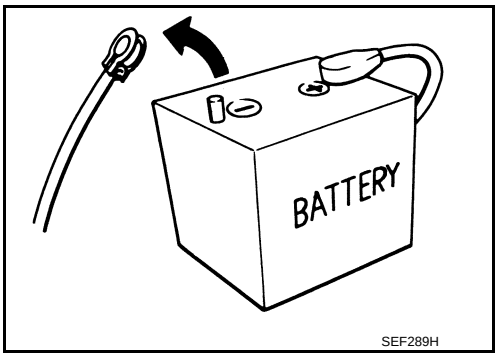
CAUTION:

Comply with the following cautions to prevent any error and malfunction.

- **Install the xenon bulb securely. (Insufficient bulb socket installation may melt the bulb, the connector, the housing, etc. by high-voltage leakage or corona discharge.)**
- **Never perform HID circuit inspection with a tester.**
- **Never touch the xenon bulb glass with hands. Never put oil and grease on it.**
- **Dispose of the used xenon bulb after packing it in thick vinyl without breaking it.**
- **Never wipe out dirt and contamination with organic solvent (thinner, gasoline, etc.).**

Precautions for Removing Battery Terminal

INFOID:0000000011321421



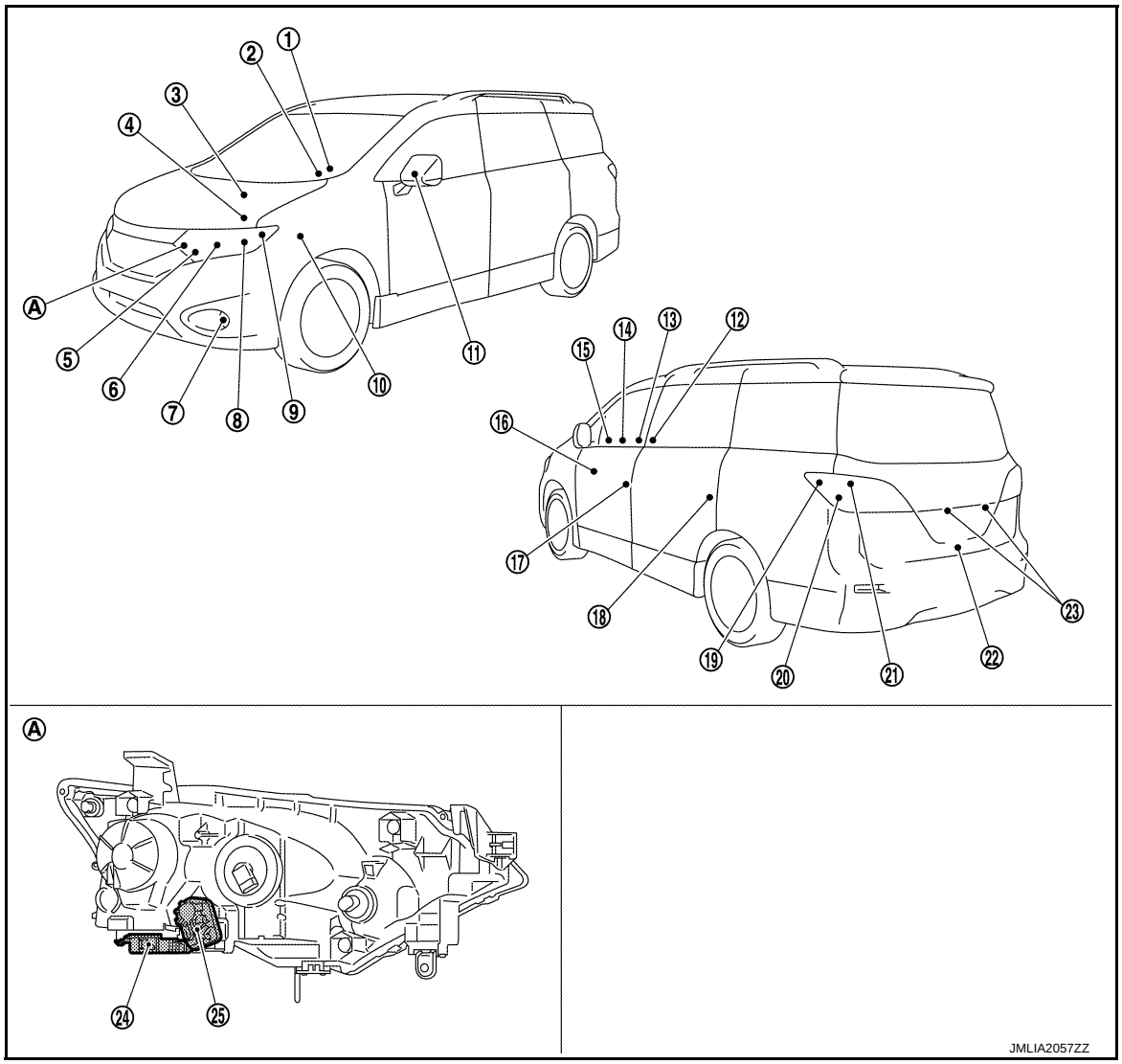
- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
  NOTE:
  ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.
- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000011321422



A. Front combination lamp (back)

No.	Part	Function
1.	Optical sensor	Refer to EXL-9, "Optical Sensor".
2.	BCM	• Detects each switch condition by the combination switch reading function • Judges that the exterior lamps are turned ON according to the vehicle condition • Requests the headlamp relay (High/Low), tail lamp relay and front fog lamp relay ON to IPDM E/R (via CAN communication) • Requests the high beam indicator lamp and tail lamp indicator lamp ON to the combination meter (via CAN communication) • Judges the outside brightness from the optical sensor signal. • Judges the ON/OFF timing according to the vehicle condition. • Judges the ON/OFF status of the exterior lamp according to the outside brightness and the vehicle condition. • Refer to BCS-4, "BODY CONTROL SYSTEM : Component Parts Location" for detailed installation location.

No.	Part	Function
3.	Daytime running light relay*	Refer to EXL-9, "Daytime Running Light Relay".
4.	IPDM E/R	• Controls the integrated relay, and supplies voltage to the load according to the request from BCM (via CAN communication). • Refer to PCS-4, "IPDM E/R : Component Parts Location" for detailed installation location.
5.	Front turn signal lamp/Parking lamp	Refer to EXL-11, "Bulb Specifications".
6.	Headlamp HI	Refer to EXL-11, "Bulb Specifications".
7.	Front fog lamp	Refer to EXL-11, "Bulb Specifications".
8.	Headlamp LO (Xenon headlamp)	Refer to EXL-9, "Xenon Headlamp".
9.	Front side marker lamp	Refer to EXL-11, "Bulb Specifications".
10.	Air bag diagnosis sensor unit	Transmits air bag signal to BCM. Refer to SRC-8, "Component Parts Location" for detailed installation location.
11.	Side turn signal lamp	Refer to EXL-11, "Bulb Specifications".
12.	Hazard switch	Refer to EXL-10, "Hazard Switch".
13.	Push-button ignition switch	Refer to DLK-18, "DOOR LOCK SYSTEM : Component Parts Location".
14.	Combination meter	• Blinks the turn signal indicator lamp and outputs the turn signal operating sound with integrated buzzer according to the request from BCM (via CAN communication). • Turns the high beam indicator lamp and tail lamp indicator lamp ON according to the request from BCM (via CAN communication).
15.	Combination switch (Lighting & turn signal switch)	Refer to BCS-8, "COMBINATION SWITCH READING SYSTEM : System Description".
16.	Headlamp aiming switch	Refer to EXL-10, "Headlamp Aiming Switch".
17.	Front door switch (driver side)	Refer to DLK-18, "DOOR LOCK SYSTEM : Component Parts Location".
18.	Slide door switch (LH)	Refer to DLK-18, "DOOR LOCK SYSTEM : Component Parts Location".
19.	Rear side marker lamp	Refer to EXL-11, "Bulb Specifications".
20.	Rear turn signal lamp	Refer to EXL-11, "Bulb Specifications".
21.	Tail lamp	Refer to EXL-11, "Bulb Specifications".
22.	Back door switch	Refer to DLK-18, "DOOR LOCK SYSTEM : Component Parts Location".
23.	License plate lamp	Refer to EXL-11, "Bulb Specifications".
24.	HID control unit	Refer to EXL-10, "HID control unit".
25.	Headlamp aiming motor	Refer to EXL-10, "Headlamp Aiming Motor".

*: With daytime running light system

Optical Sensor

INFOID:0000000011321423

Optical sensor converts the outside brightness (lux) to voltage and transmits the optical sensor signal to BCM.

Daytime Running Light Relay

INFOID:0000000011321424

Headlamp HI ground circuit is switched according to request from IPDM E/R.

Xenon Headlamp

INFOID:0000000011321425

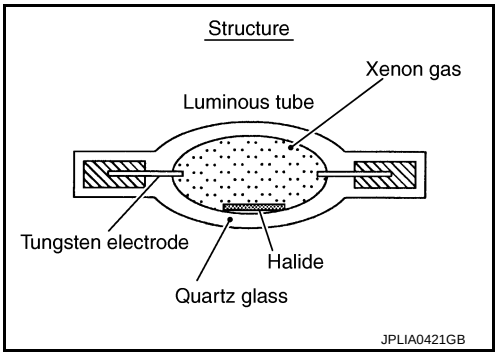
OUTLINE

- The lamp light source is by the arch discharge by applying high voltage into the xenon gas-filled bulb instead of the halogen bulb filament.
- Sight becomes more natural and brighter because the amount of light are gained adequately and the color of light is sunshine-like white.
- The xenon bulb drops the amount of light, repeats blinking, and illuminates in red if the bulb reaches the service life.

ILLUMINATION PRINCIPLE

1. Discharging starts in high voltage pulse between bulb electrodes.
2. Xenon gas is activated by current between electrodes. Pale light is emitted.
3. The luminous tube (bulb) temperature elevates. Evaporated halide is activated by discharge. The color of light changes into white.

NOTE:
- Brightness and the color of light may change slightly immediately after the headlamp turned ON until the xenon bulb becomes stable. This is not malfunction.
- Illumination time lag may occur between right and left. This is not malfunction.



PRECAUTIONS FOR TROUBLE DIAGNOSIS

Representative malfunction examples are; “Light does not turn ON”, “Light blinks”, and “Brightness is inadequate.” The cause often be the xenon bulb. Such malfunctions, however, are occurred occasionally by HID control unit malfunction or lamp case malfunction. Specify the malfunctioning part with diagnosis procedure.

WARNING:
- **Never touch the harness, HID control unit, the inside and metal part of lamp when turning the headlamp ON or operating the lighting switch.**
- **Never work with wet hands.**

CAUTION:
- **Never perform HID control unit circuit diagnosis with a circuit tester or an equivalent, for preventing electrical shock.**
- **Temporarily install the headlamps on the vehicle. Connect the battery to the connector (vehicle side) when checking ON/OFF status, for preventing electrical shock.**
- **Disconnect the battery negative terminal before disconnecting the lamp socket connector or the harness connector.**
- **Check for fusing of the fusible link(s), open around connector, short, disconnection if the symptom is caused by electric error.**

NOTE:
- Turn the switch OFF once before turning ON, if the ON/OFF is inoperative.
- The xenon bulb drops the amount of light, repeats blinking, and illuminates in red if the bulb reaches the service life.

Hazard Switch

INFOID:0000000011321426

Inputs the hazard switch ON/OFF signal to BCM.

Headlamp Aiming Switch

INFOID:0000000011321427

Adjusts height of headlamp aiming.

HID control unit

INFOID:0000000011321428

Headlamp (LO) circuit is connected to HID control unit integrated in the headlamp. Headlamp (LO) circuit turns xenon headlamp ON.
For the details of HID control unit and the xenon headlamp, refer to EXL-9, "Xenon Headlamp".

Headlamp Aiming Motor

INFOID:0000000011321429

The headlamp levelizer adjusts the headlamp light axis upward and downward with the headlamp aiming motor integrated in the front combination lamp.

Bulb Specifications

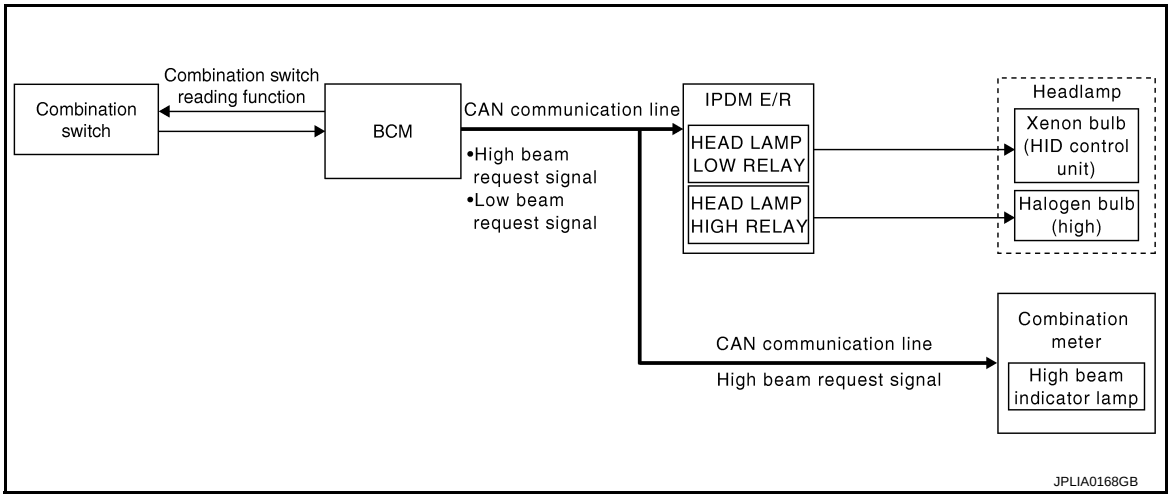
INFOID:0000000011321430

Item		Type	Wattage (W)
Front combination lamp	Headlamp (HI)	HB3 (Halogen)	60
	Headlamp (LO)	D2S (Xenon)	35
	Front turn signal lamp/ Parking lamp	S25 (Amber)	27/8
	Front side marker lamp	W5W	5
Front fog lamp		H8	35
Side turn signal lamp (integrated into the door mirror)		LED	—
Rear combination lamp	Stop lamp/ Tail lamp (side marker)	W21/5W	21/5
	Rear turn signal lamp	WY21W (Amber)	21
Back-up lamp		W16W	16
License plate lamp		W5W	5
High-mounted stop lamp		LED	—

SYSTEM
HEADLAMP SYSTEM
HEADLAMP SYSTEM : System Description

INFOID:0000000011321431

SYSTEM DIAGRAM



OUTLINE

Headlamp is controlled by combination switch reading function and headlamp control function of BCM, and relay control function of IPDM E/R.

HEADLAMP (LO) OPERATION

- BCM detects the combination switch condition with the combination switch reading function.
- BCM transmits the low beam request signal to IPDM E/R with CAN communication according to the headlamp (LO) ON condition.

Headlamp (LO) ON condition

- Lighting switch 2ND
- Lighting switch AUTO (auto light function ON judgment)
- Lighting switch PASS

- IPDM E/R turns the integrated headlamp low relay ON, and turns the headlamp ON according to the low beam request signal.

HEADLAMP (HI) OPERATION

- BCM transmits the high beam request signal to IPDM E/R and the combination meter with CAN communication according to the headlamp (HI) ON condition.

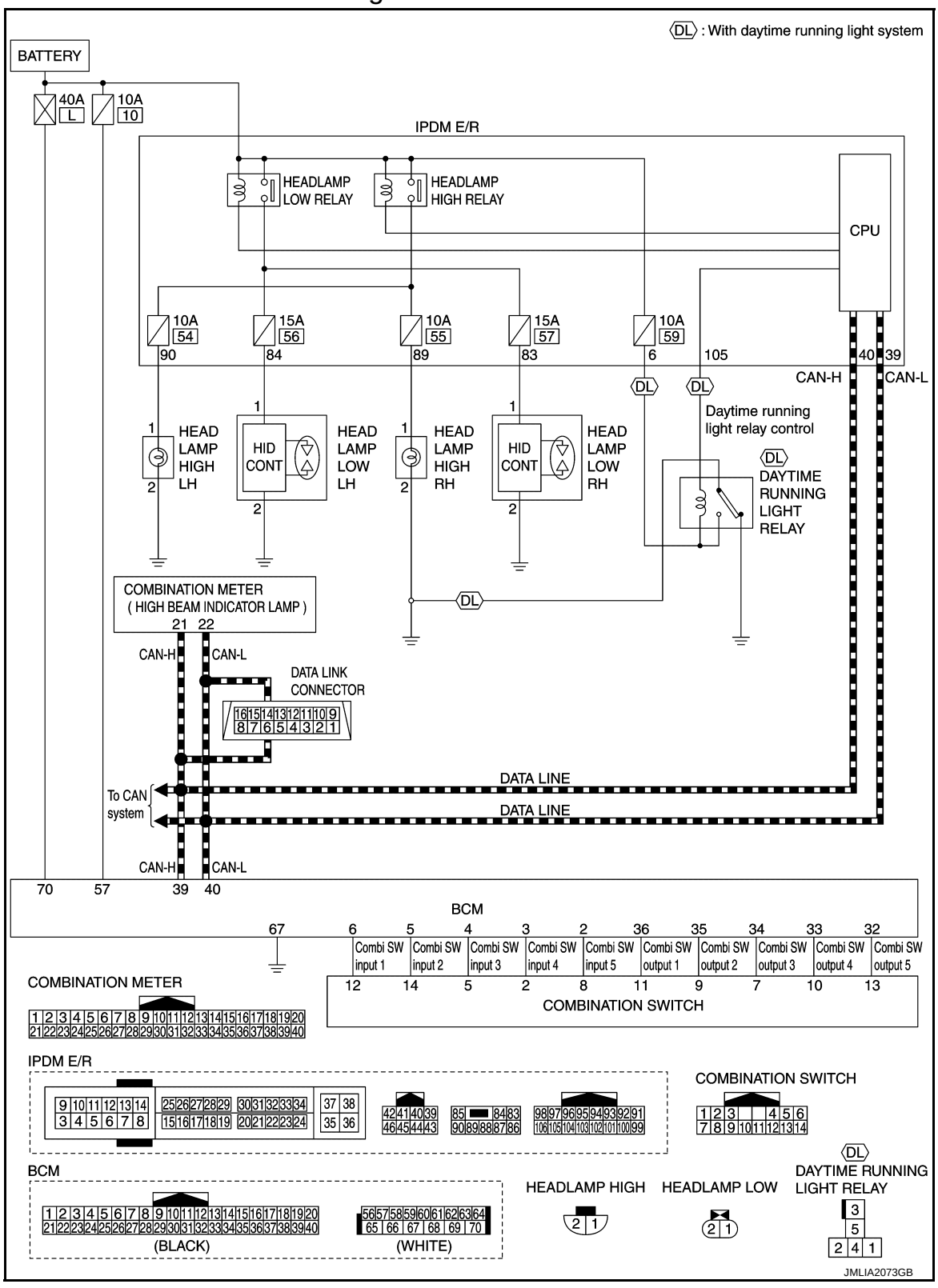
Headlamp (HI) ON condition

- Lighting switch HI with the lighting switch 2ND or AUTO (auto light function ON judgment)
- Lighting switch PASS

- Combination meter turns the high beam indicator lamp ON according to the high beam request signal.
- IPDM E/R turns the integrated headlamp high relay ON, and turns the headlamp ON according to the high beam request signal.

HEADLAMP SYSTEM : Circuit Diagram

INFOID:0000000011321432



HEADLAMP SYSTEM : Fail-safe

INFOID:0000000011321433

CAN COMMUNICATION CONTROL

When CAN communication with ECM and BCM is impossible, IPDM E/R performs fail-safe control. After CAN communication recovers normally, it also returns to normal control.

If No CAN Communication Is Available With BCM

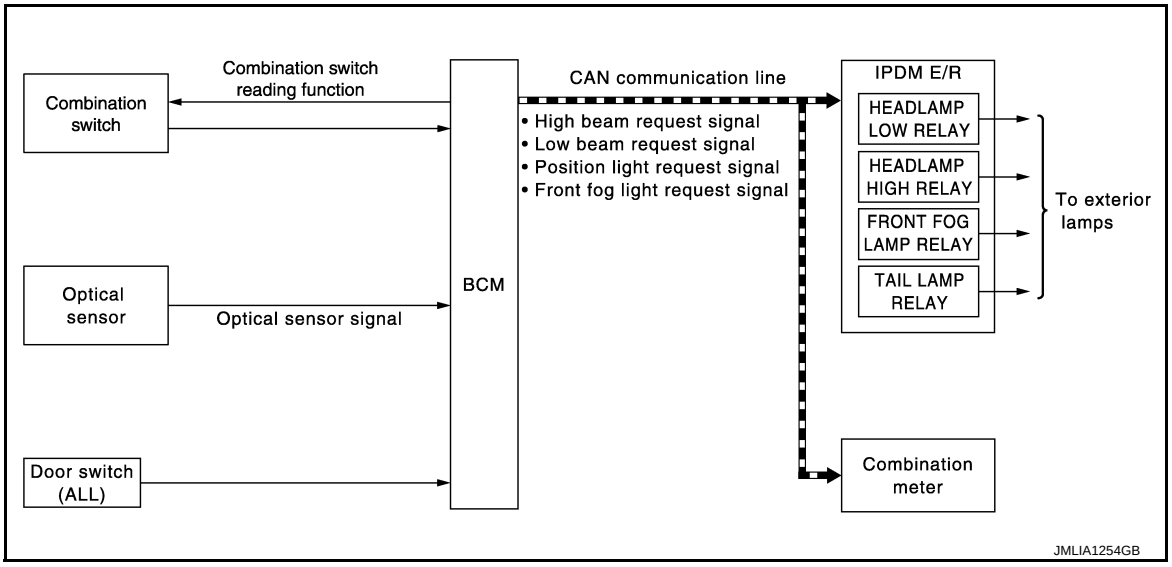
Control part	Fail-safe operation
Headlamp	• Turns ON the headlamp low relay when the ignition switch is turned ON • Turns OFF the headlamp low relay when the ignition switch is turned OFF • Headlamp high relay OFF

AUTO LIGHT SYSTEM (EXCEPT FOR CANADA)

AUTO LIGHT SYSTEM (EXCEPT FOR CANADA) : System Description

INFOID:0000000011321434

SYSTEM DIAGRAM



OUTLINE

• Auto light system is controlled by each function of BCM and IPDM E/R.

Control by BCM
- Combination switch reading function
- Headlamp control function
- Auto light function
- Delay timer function
- Wiper linked auto lighting function
- Auto light adjustment system

Control by IPDM E/R
- Relay control function

• Auto light system has the auto light function (with twilight lighting function), wiper linked auto lighting function and delay timer function.
- Auto light function automatically turns ON/OFF the exterior lamps* and each illumination automatically, depending on the outside brightness.
- Wiper linked auto lighting function automatically turns ON/OFF the exterior lamps* and each illumination when the light switch is in the AUTO position, according to a front wiper operation.
- When auto light system turns the exterior lamps ON with the ignition switch OFF, delay timer function turns the exterior lamps OFF, depending on the vehicle condition with the auto light function after a certain period of time.

*: Headlamp (LO/HI), parking lamp, side marker lamp, tail lamp and front fog lamp (Headlamp HI and front fog lamp depend on the combination switch condition.)

NOTE:

The settings of the twilight lighting function and the wiper linked auto lighting function can be changed with CONSULT. Refer to EXL-32, "HEADLAMP : CONSULT Function (BCM - HEADLAMP) (Xenon Type Headlamp)".

AUTO LIGHT FUNCTION (WITH TWILIGHT LIGHTING FUNCTION)

Description

• BCM detects the combination switch condition with the combination switch reading function.

- BCM supplies voltage to the optical sensor when the ignition switch is turned ON or ACC.
- Optical sensor converts outside brightness (lux) to voltage and transmits the optical sensor signal to BCM.
- When ignition switch is turned ON, BCM detects outside brightness from the optical sensor signal and judges ON/OFF condition of the exterior lamp and each illumination, depending on the outside brightness condition (standard or twilight).
- BCM transmits each request signal to IPDM E/R and combination meter via CAN communication, according to ON/OFF condition by the auto light function.

NOTE:
As to ON/OFF timing, the sensitivity depends on settings. The settings can be changed with CONSULT. Refer to EXL-32, "HEADLAMP : CONSULT Function (BCM - HEADLAMP) (Xenon Type Headlamp)".

WIPER LINKED AUTO LIGHTING FUNCTION

BCM turns the exterior lamp ON when detecting 4 operations of the front wiper work the light switch in AUTO position.

NOTE:
BCM turns OFF the headlamps 3 seconds after the front wiper switch is turned from HI⇒OFF.

AUTO LIGHT ADJUSTMENT SYSTEM

The auto light adjustment system automatically, dims/brightens the display and combination meter, according to brightness outside the vehicle, when lighting switch 1ST, lighting switch 2ND or lighting switch AUTO is operated. Refer to INL-17, "AUTO LIGHT ADJUSTMENT SYSTEM : System Description".

DELAY TIMER FUNCTION

BCM turns the exterior lamp OFF depending on the vehicle condition with the auto light function when the ignition switch is turned OFF.

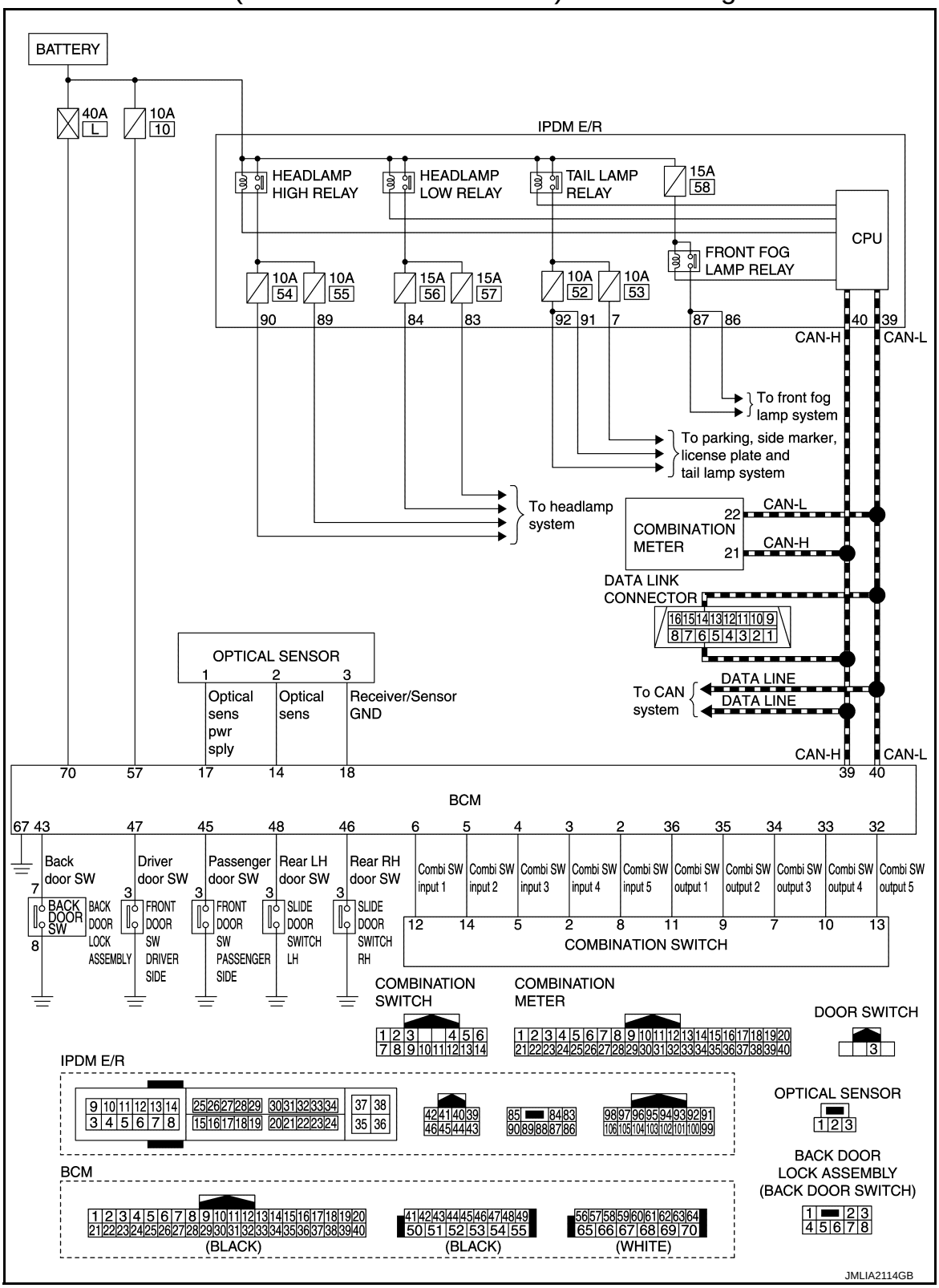
- Turns the exterior lamp OFF 5 minutes after detecting that any door opens. (Door switch ON).
- Turns the exterior lamp OFF a certain period of time* after closing all doors. (Door switch ON→OFF).
- Turns the exterior lamp OFF with the ignition switch ACC or the light switch OFF.

*: The preset time is 45 seconds. The timer operating time can be set by CONSULT. Refer to EXL-32, "HEADLAMP : CONSULT Function (BCM - HEADLAMP) (Xenon Type Headlamp)".

NOTE:
When any position other than the light switch AUTO is set, the auto light system function switches to the exterior lamp battery saver function.

AUTO LIGHT SYSTEM (EXCEPT FOR CANADA) : Circuit Diagram

INFOID:0000000011321435

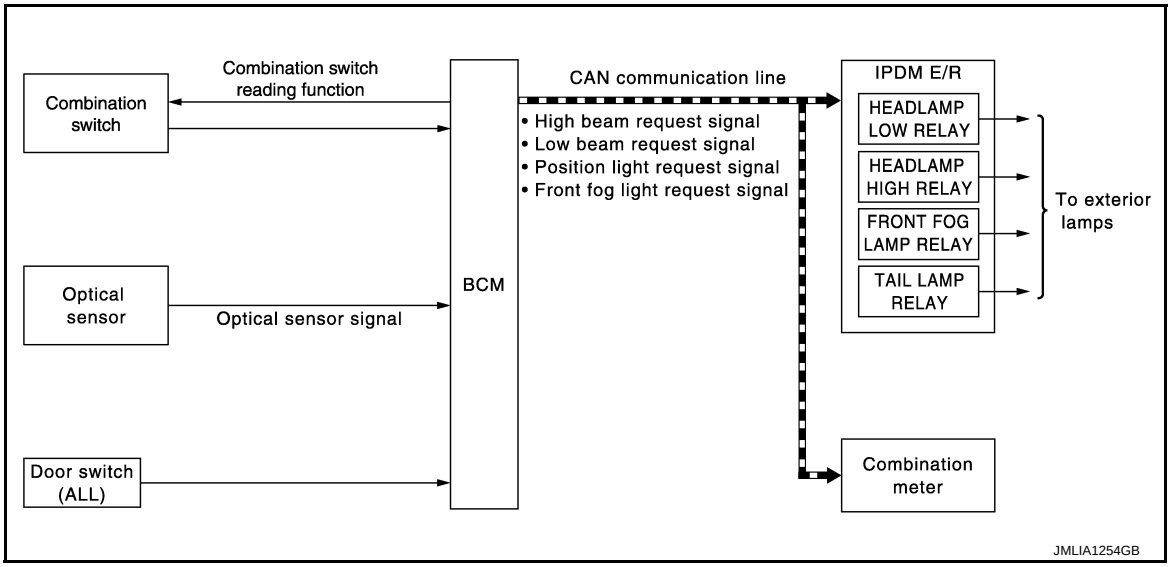


AUTO LIGHT SYSTEM (FOR CANADA)

AUTO LIGHT SYSTEM (FOR CANADA) : System Description

INFOID:0000000011321436

SYSTEM DIAGRAM



OUTLINE

- Auto light system is controlled by each function of BCM and IPDM E/R.

Control by BCM
- Combination switch reading function
- Headlamp control function
- Auto light function
- Delay timer function
- Auto light adjustment system

Control by IPDM E/R
- Relay control function
- Auto light system has the auto light function and delay timer function.
- Auto light function automatically turns ON/OFF the exterior lamps* and each illumination automatically, depending on the outside brightness.
- When auto light system turns the exterior lamps ON with the ignition switch OFF, delay timer function turns the exterior lamps OFF, depending on the vehicle condition with the auto light function after a certain period of time.

*: Headlamp (LO/HI), parking lamp, side marker lamp, tail lamp and front fog lamp (Headlamp HI and front fog lamp depend on the combination switch condition.)

AUTO LIGHT FUNCTION

- BCM detects the combination switch condition with the combination switch reading function.
- BCM supplies voltage to optical sensor when the ignition switch is turned ON or ACC.
- Optical sensor converts outside brightness (lux) to voltage and transmits the optical sensor signal to BCM.
- BCM judges outside brightness from the optical sensor signal and judges ON/OFF condition of the exterior lamp and each illumination according to the outside brightness.
- BCM transmits each request signal to IPDM E/R and combination meter via CAN communication according to ON/OFF condition by the auto light function.

NOTE:
ON/OFF timing differs based on the sensitivity from the setting. The setting can be set by CONSULT. Refer to EXL-32, "HEADLAMP : CONSULT Function (BCM - HEADLAMP) (Xenon Type Headlamp)".

AUTO LIGHT ADJUSTMENT SYSTEM

The auto light adjustment system automatically, dims/brightens the display, according to brightness outside the vehicle, when lighting switch 1ST, lighting switch 2ND or lighting switch AUTO is operated. Refer to INL-17, "AUTO LIGHT ADJUSTMENT SYSTEM : System Description".

DELAY TIMER FUNCTION

BCM turns the exterior lamp OFF depending on the vehicle condition with the auto light function when the ignition switch is turned OFF.

- Turns the exterior lamp OFF 5 minutes after detecting that any door opens. (Door switch ON).
- Turns the exterior lamp OFF a certain period of time* after closing all doors. (Door switch ON→OFF).
- Turns the exterior lamp OFF with the ignition switch ACC or the light switch OFF.

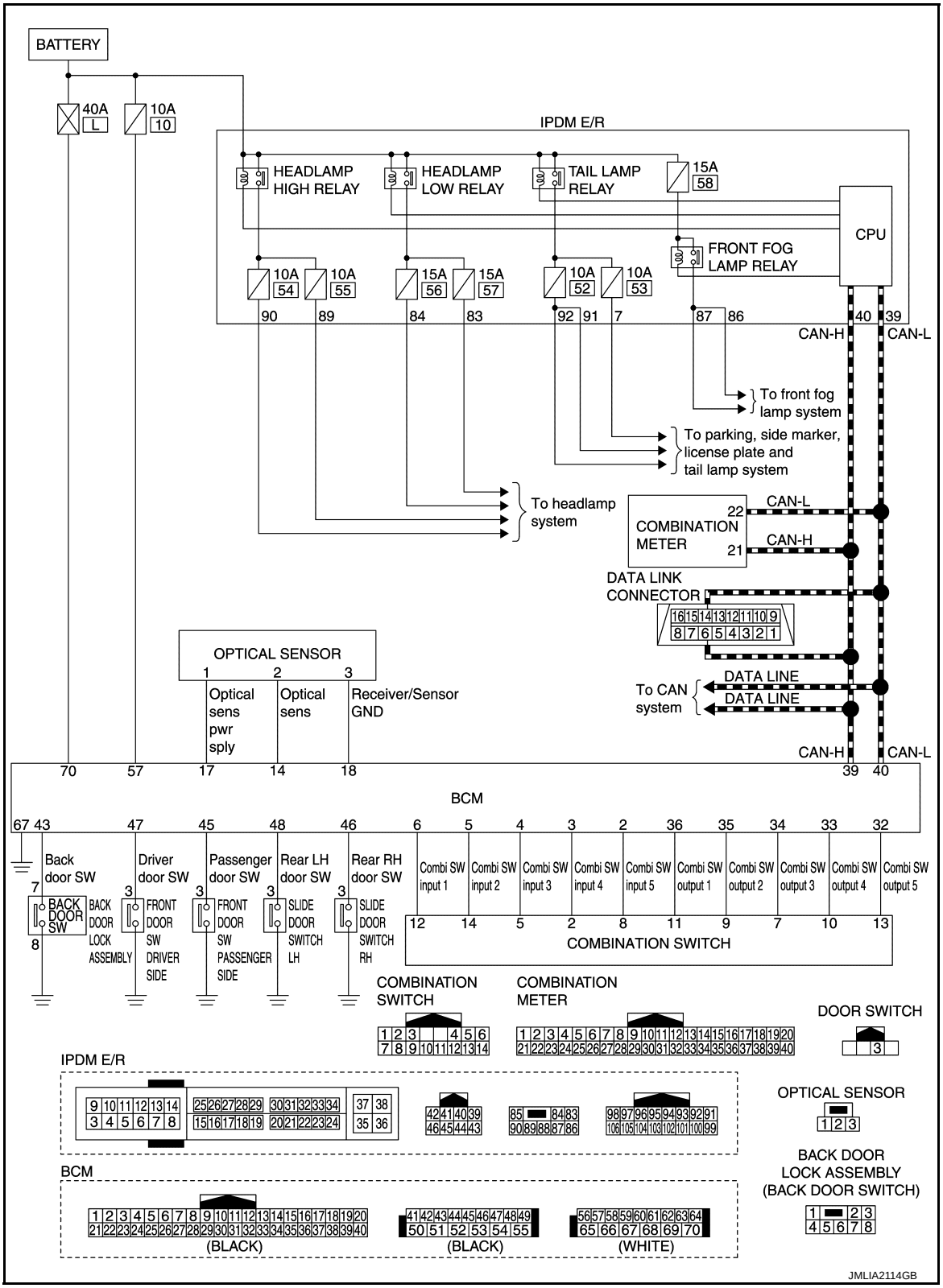
*: The preset time is 45 seconds. The timer operating time can be set by CONSULT. Refer to EXL-32, "HEADLAMP : CONSULT Function (BCM - HEADLAMP) (Xenon Type Headlamp)".

NOTE:

When any position other than the light switch AUTO is set, the auto light system function switches to the exterior lamp battery saver function.

AUTO LIGHT SYSTEM (FOR CANADA) : Circuit Diagram

INFOID:0000000011321437

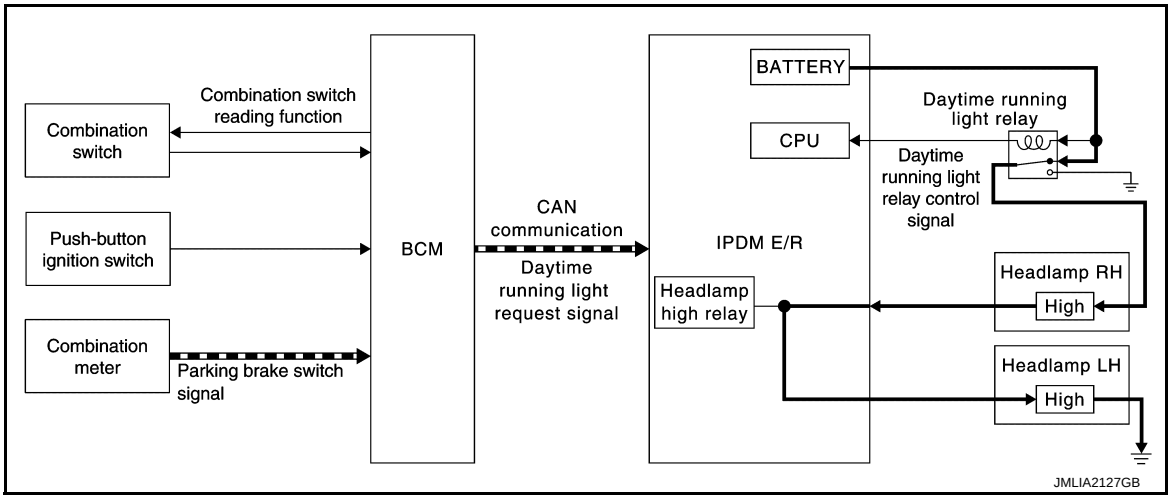


DAYTIME RUNNING LIGHT SYSTEM

DAYTIME RUNNING LIGHT SYSTEM : System Description

INFOID:0000000011321438

SYSTEM DIAGRAM



OUTLINE

- Turns the headlamp high ON (high beam at approximately half illumination) as the daytime running light.
- Daytime running light is controlled by daytime running light control function and combination switch reading function of BCM, and relay control function of IPDM E/R.

DAYTIME RUNNING LIGHT OPERATION

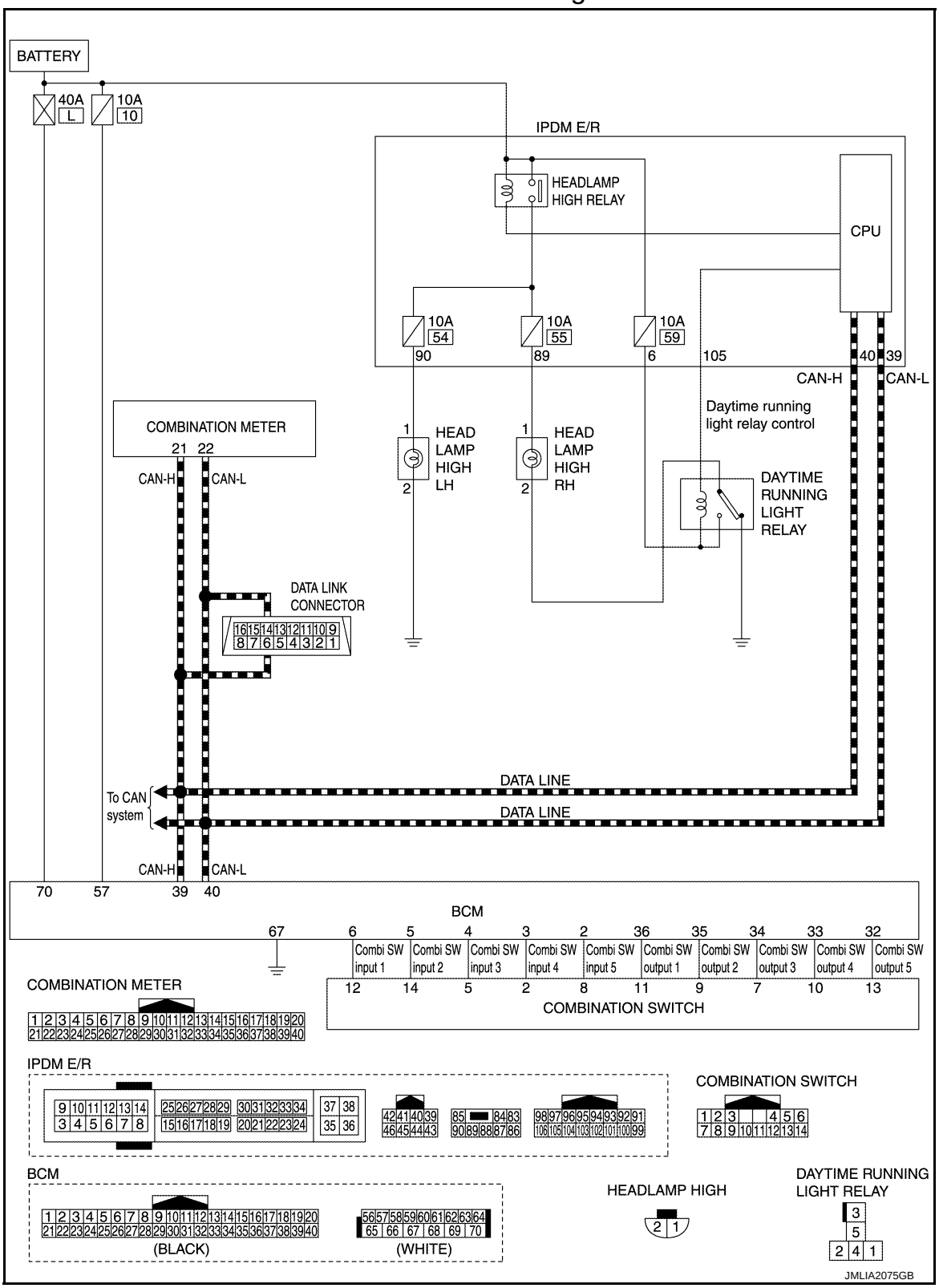
- BCM detects the combination switch condition by the combination switch reading function.
- BCM detects the engine condition according to push-button ignition switch
- BCM detects the parking brake condition by the parking brake switch signal received from combination meter using CAN communication.
- BCM transmits the daytime running light request signal to IPDM E/R using CAN communication according to the daytime running light ON condition.

Daytime running light ON condition
- Engine running
- Lighting switch OFF or 1ST
- Lighting switch AUTO, and the auto light function OFF judgment
- Parking brake switch OFF

- IPDM E/R controls the daytime running light relay (ground-side) to turn ON according to the daytime running light request signal.
- Power is supplied from the daytime running light relay through headlamp high RH and IPDM E/R to headlamp high LH. And high beam headlamps are illuminated (approximately half illumination) as the daytime running light.

DAYTIME RUNNING LIGHT SYSTEM : Circuit Diagram

INFOID:0000000011321439



HEADLAMP AIMING CONTROL (MANUAL)

HEADLAMP AIMING CONTROL (MANUAL) : System Description

INFOID:0000000011321440

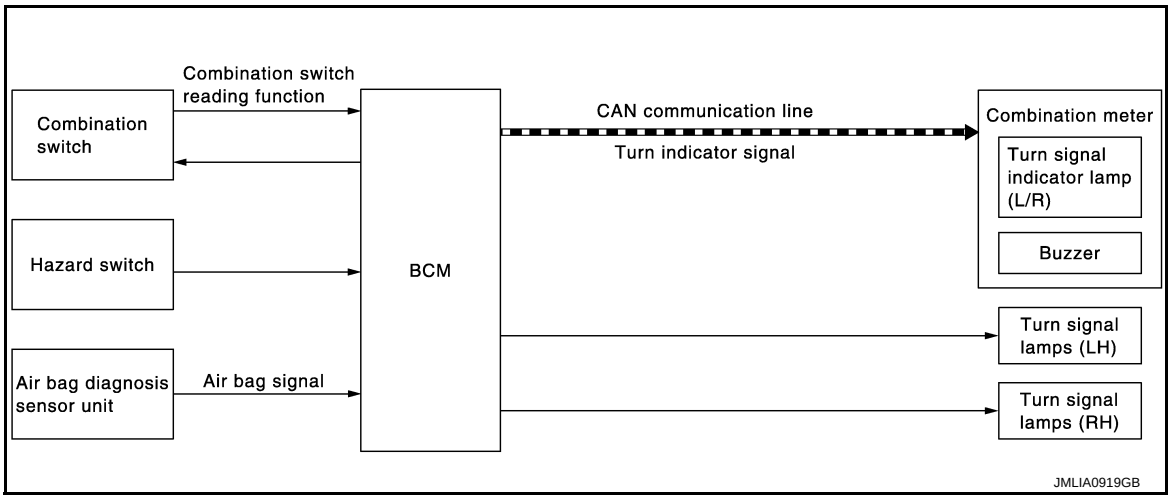
The headlamp levelizer adjusts the headlamp light axis upward and downward with the aiming motor integrated in the front combination lamp.

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM : System Description

INFOID:0000000011321441

SYSTEM DIAGRAM



OUTLINE

Turn signal and the hazard warning lamp is controlled by combination switch reading function, flasher control function and auto hazard function of BCM.

TURN SIGNAL LAMP OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM supplies voltage to the right (left) turn signal lamp circuit when the ignition switch is turned ON and the turn signal switch is in the right (left) position. BCM blinks the turn signal lamp.

HAZARD WARNING LAMP OPERATION

BCM supplies voltage to both turn signal lamp circuit when the hazard switch is turned ON. BCM blinks the hazard warning lamp.

TURN SIGNAL INDICATOR LAMP AND TURN SIGNAL SOUND OPERATION

- BCM transmits the turn indicator signal to the combination meter via CAN communication while the turn signal lamp and the hazard warning lamp operating.
- Combination meter outputs the turn signal sound with the integrated buzzer while blinking the turn signal indicator lamp according to the turn indicator signal.

AUTO HAZARD FUNCTION

- Air bag diagnosis sensor unit transmits air bag signal to BCM, when air bag diagnosis sensor unit detects strong impact to the vehicle body while ignition switch is ON.
- When air bag signal from air bag diagnosis sensor unit is detected, BCM supplies voltage to each turn signal lamp system and hazard lamp blinks.

NOTE:
Auto hazard function may not be operated depending on status of collision.

3-TIME FLASHER FUNCTION

- By a short touch of the turn signal lever, BCM blinks the turn signal lamps 3 times in the selected direction.
- Cancels the operation when short touch of the turn signal lever in the reverse direction during the 3-time flasher function operation.

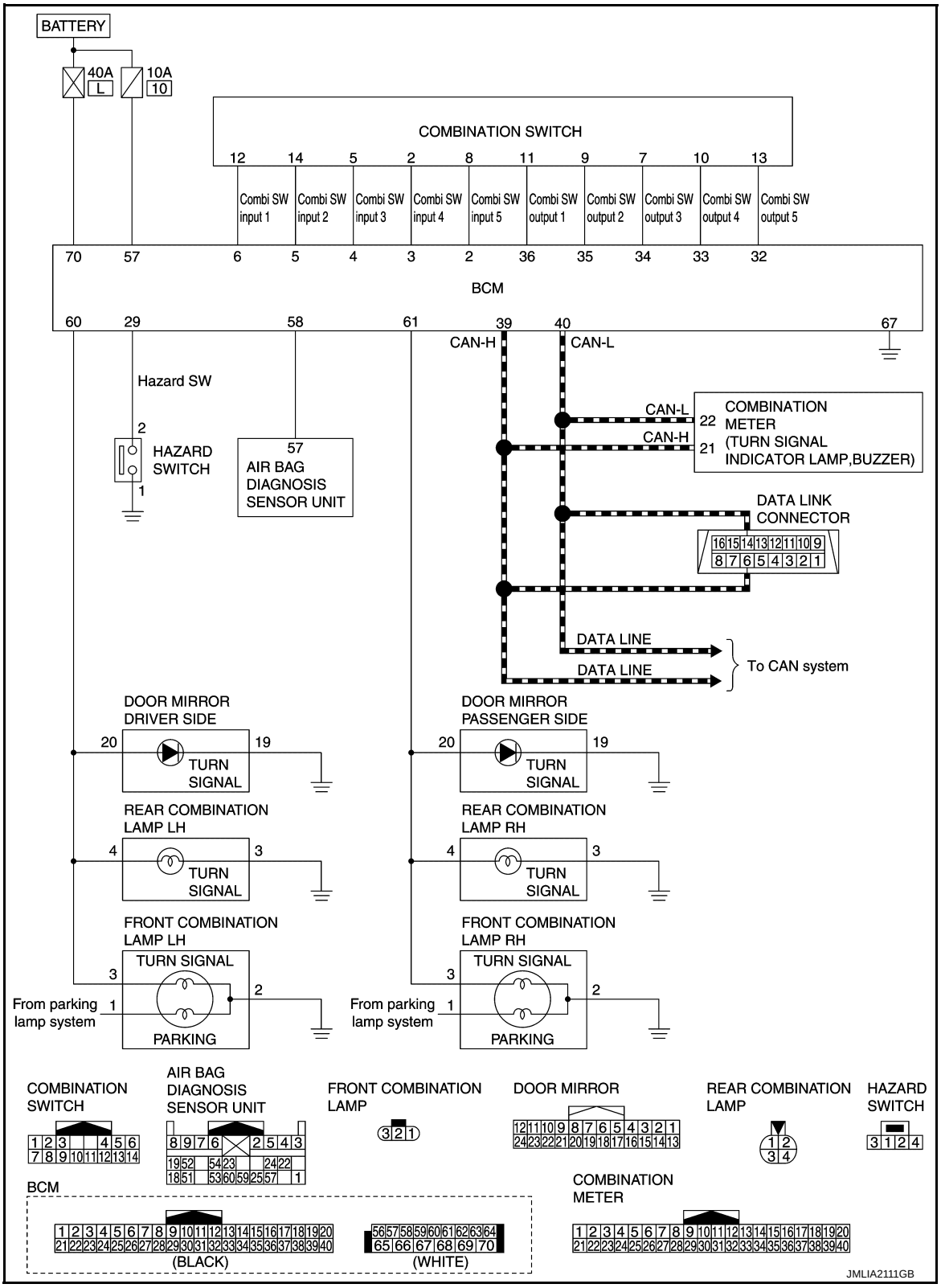
HIGH FLASHER OPERATION

- BCM detects the turn signal lamp circuit status from the current value.
- BCM increases the turn signal lamp blinking speed if the bulb or harness open is detected with the turn signal lamp operating.

  NOTE:
  The blinking speed is normal while operating the hazard warning lamp.

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM : Circuit Diagram

INFOID:0000000011321442



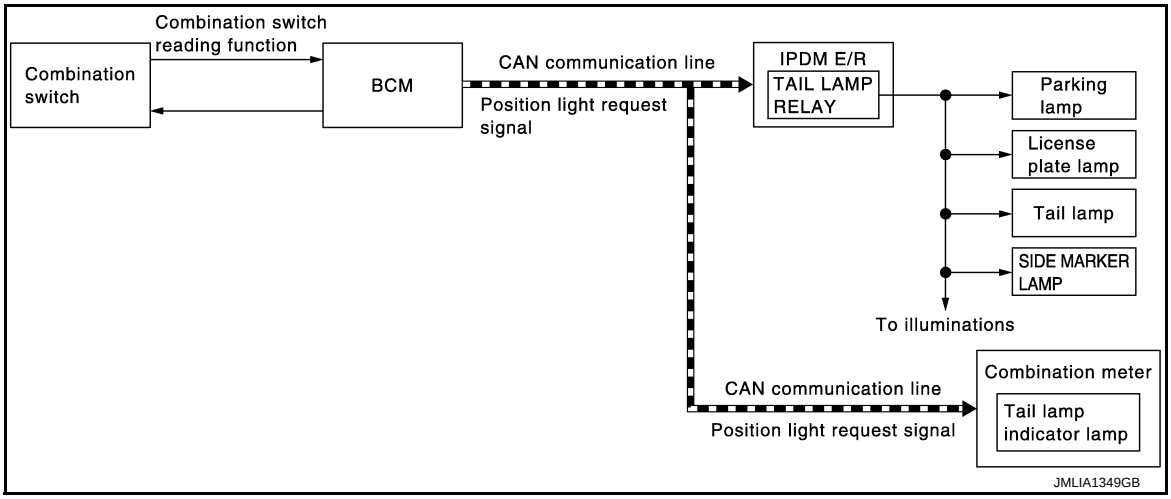
PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMP SYSTEM

PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMP SYSTEM : System De-

scription

INFOID:0000000011321443

SYSTEM DIAGRAM



OUTLINE

Parking, license plate, side marker and tail lamps are controlled by combination switch reading function and headlamp control function of BCM, and relay control function of IPDM E/R.

PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMPS OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the position light request signal to IPDM E/R and the combination meter via CAN communication according to the ON/OFF condition of the parking, license plate, side marker and tail lamps.

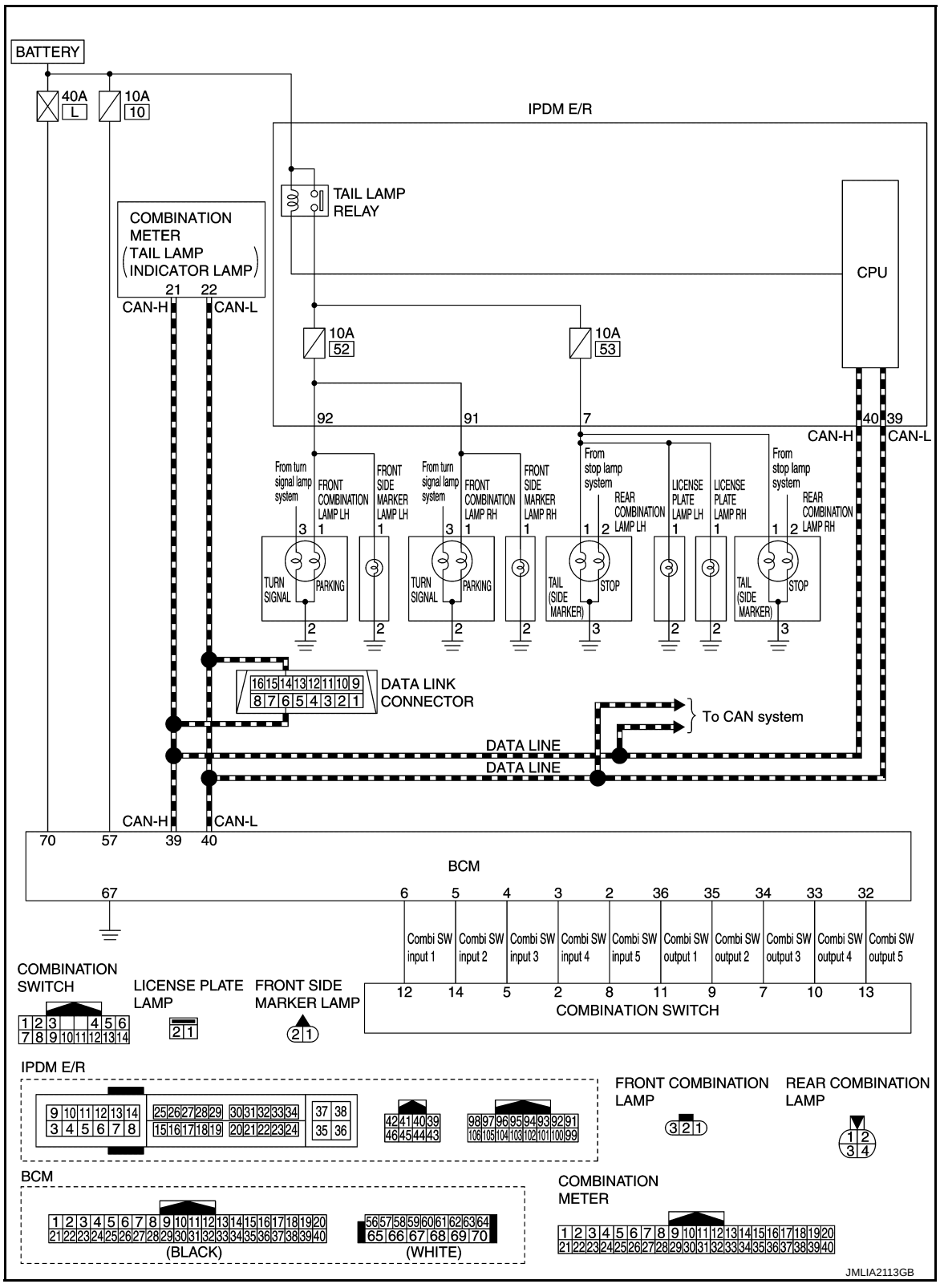
Parking, license plate, side marker and tail lamps ON condition
- Lighting switch 1ST
- Lighting switch 2ND
- Lighting switch AUTO, and the auto light function ON judgment.

- IPDM E/R turns the integrated tail lamp relay ON and turns the parking, license plate, side marker and tail lamps ON according to the position light request signal.
- Combination meter turns the tail lamp indicator lamp ON according to the position light request signal.

PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMP SYSTEM : Circuit Dia-

gram

INFOID:0000000011321444



PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMP SYSTEM : Fail-safe

INFOID:0000000011321445

CAN COMMUNICATION CONTROL

When CAN communication with ECM and BCM is impossible, IPDM E/R performs fail-safe control. After CAN communication recovers normally, it also returns to normal control.

If No CAN Communication Is Available With BCM

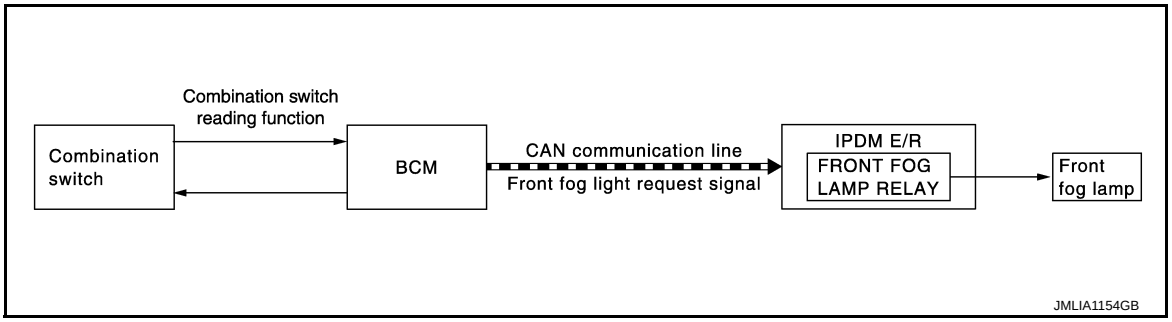
Control part	Fail-safe operation
• Parking lamp • License plate lamp • Illumination • Tail lamp • Side marker lamp	• Turns ON the tail lamp relay when the ignition switch is turned ON • Turns OFF the tail lamp relay when the ignition switch is turned OFF

FRONT FOG LAMP SYSTEM

FRONT FOG LAMP SYSTEM : System Description

INFOID:0000000011321446

SYSTEM DIAGRAM



OUTLINE

Front fog lamp is controlled by combination switch reading function, front fog lamp control function of BCM, and relay control function of IPDM E/R.

FRONT FOG LAMP OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the front fog light request signal to IPDM E/R via CAN communication according to the front fog lamp ON condition.

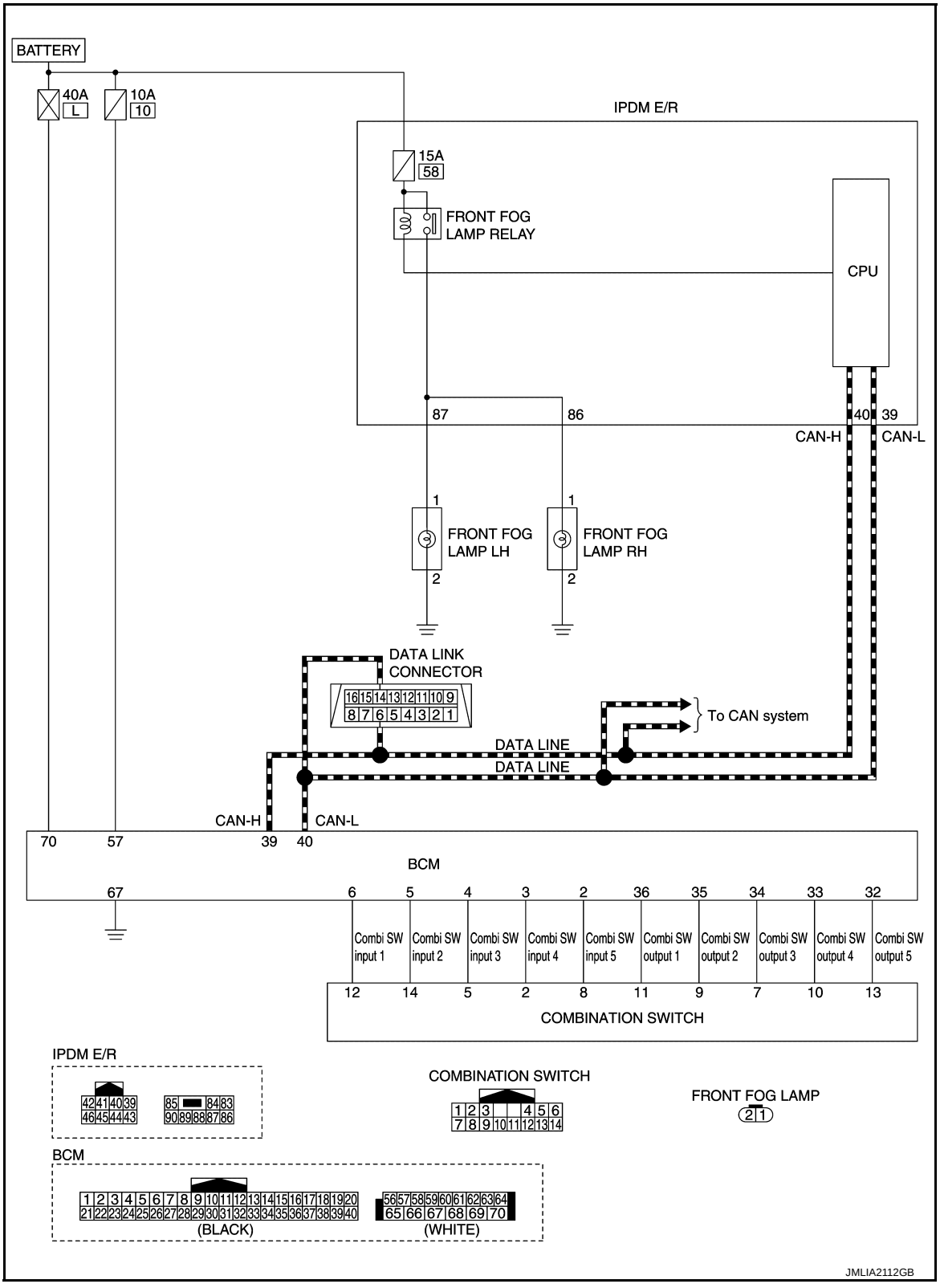
Front fog lamp ON condition

- Front fog lamp switch ON, and any of the following condition is satisfied. (except for the high beam ON)
- Lighting switch 2ND
- Lighting switch AUTO (auto light function ON judgment)

IPDM E/R turns the integrated front fog lamp relay ON, and turns the front fog lamp ON according to the front fog light request signal.

FRONT FOG LAMP SYSTEM : Circuit Diagram

INFOID:0000000011321447



FRONT FOG LAMP SYSTEM : Fail-safe

INFOID:0000000011321448

CAN COMMUNICATION CONTROL

When CAN communication with ECM and BCM is impossible, IPDM E/R performs fail-safe control. After CAN communication recovers normally, it also returns to normal control.

If No CAN Communication Is Available With BCM

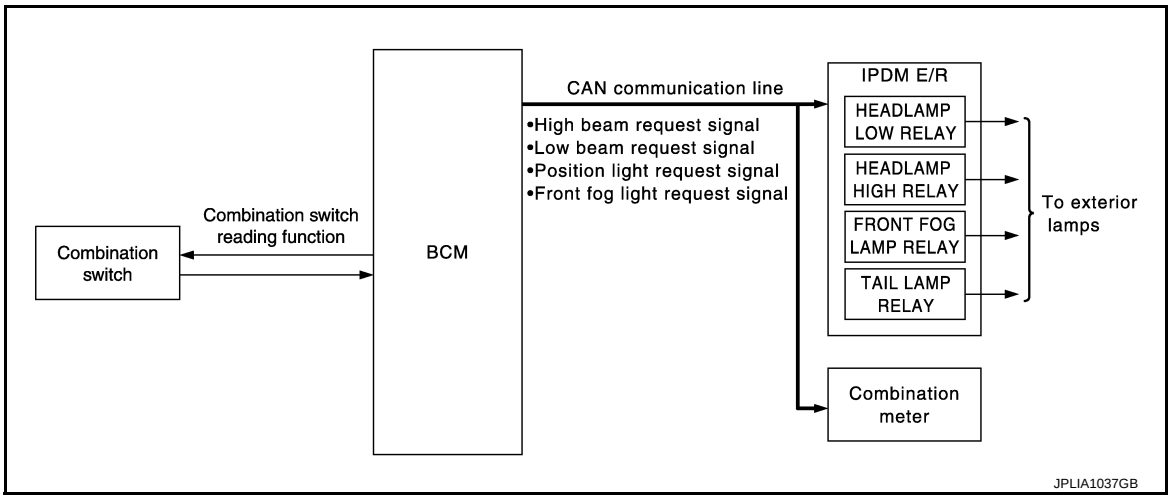
Control part	Fail-safe operation
Front fog lamp	Front fog lamp relay OFF

EXTERIOR LAMP BATTERY SAVER SYSTEM

EXTERIOR LAMP BATTERY SAVER SYSTEM : System Description

INFOID:0000000011321449

SYSTEM DIAGRAM



OUTLINE

- Exterior lamp battery saver system is controlled by each function of BCM and IPDM E/R.

Control by BCM

- Combination switch reading function
- Headlamp control function
- Exterior lamp battery saver function

Control by IPDM E/R

- Relay control function
- BCM turns the exterior lamps* OFF after a period of time to prevent the battery from over-discharge when the ignition switch is turned OFF with the exterior lamps ON.

*: Headlamp (LO/HI), parking lamp, tail lamp, side marker lamp, license plate lamp and front fog lamp

EXTERIOR LAMP BATTERY SAVER ACTIVATION

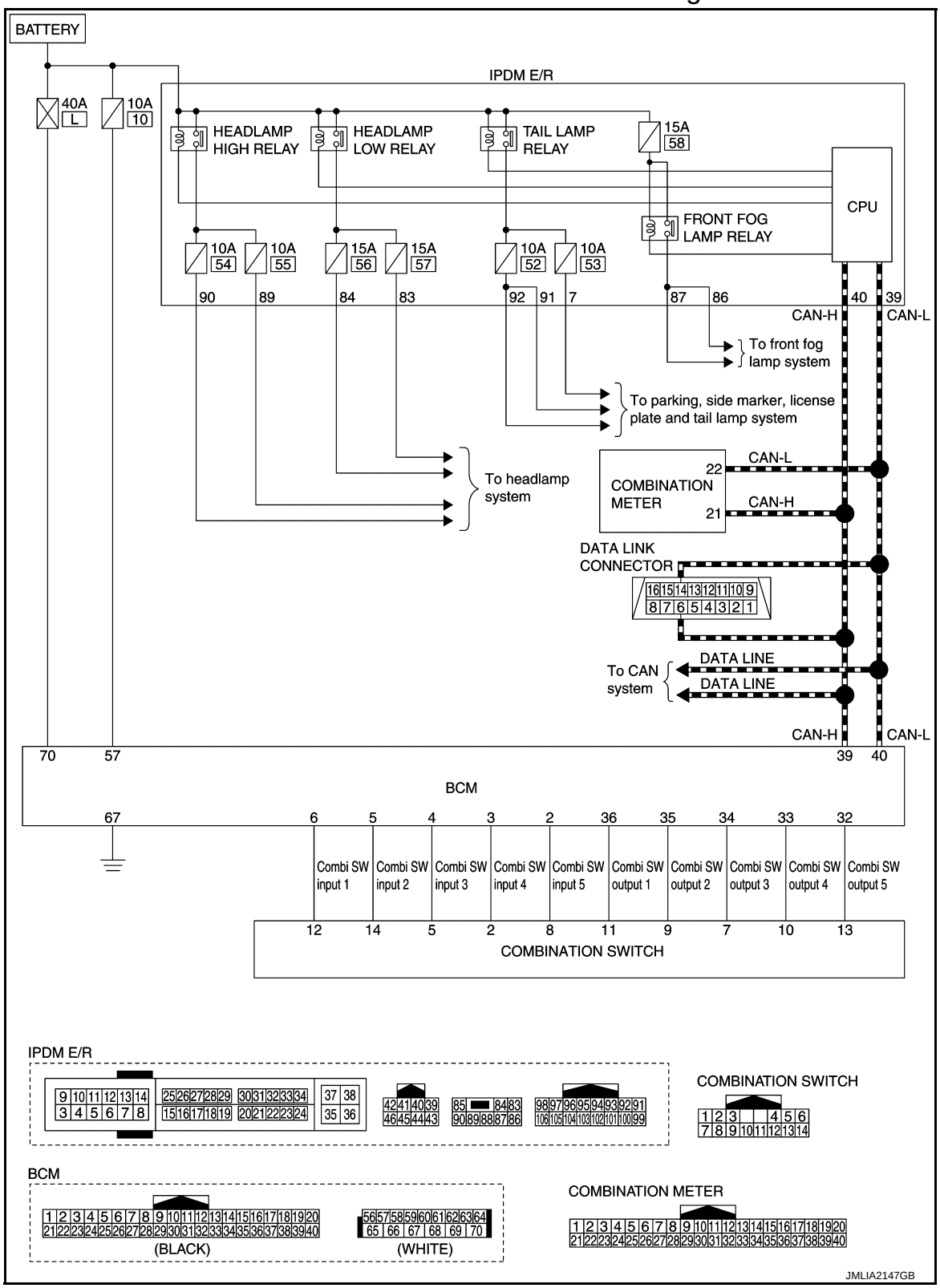
BCM activates the timer and turns the exterior lamp OFF 45 seconds after the ignition switch is turned from ON → OFF with the exterior lamps ON.

NOTE:

- Headlamp control function turns the exterior lamps ON normally when the ignition switch is turned ACC or ON (both before and after the exterior lamp battery saver is turned OFF).
- The timer starts at the time that the lighting switch is turned from OFF → 1ST or 2ND with the exterior lamps OFF.

EXTERIOR LAMP BATTERY SAVER SYSTEM : Circuit Diagram

INFOID:0000000011321450



DIAGNOSIS SYSTEM (BCM)
COMMON ITEM
COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:0000000011561137

APPLICATION ITEM
CONSULT performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
Work Support	Changes the setting for each system function.
Self Diagnostic Result	Displays the diagnosis results judged by BCM.
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM.
Data Monitor	The BCM input/output signals are displayed.
Active Test	The signals used to activate each device are forcibly supplied from BCM.
Ecu Identification	The BCM part number is displayed.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing BCM.

SYSTEM APPLICATION
BCM can perform the following functions for each system.
NOTE:
It can perform the diagnosis modes except the following for all sub system selection items.

×: Applicable item

System	Sub system selection item	Diagnosis mode		
		Work Support	Data Monitor	Active Test
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp control system	INT LAMP	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER	×	×	×
Air conditioning control system	AIR CONDITONER		×	×*
• Intelligent Key system • Engine start system	INTELLIGENT KEY	×	×	×
Combination switch	COMB SW		×	
Body control system	BCM	×		
NVIS	IMMU	×	×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door open	TRUNK		×	
Vehicle security system	THEFT ALM	×	×	×
RAP system	RETAINED PWR		×	
Signal buffer system	SIGNAL BUFFER		×	×
TPMS	AIR PRESSURE MONITOR	×	×	×

NOTE:

*: For models with automatic air conditioning control system, this diagnosis mode is not used.

FREEZE FRAME DATA (FFD)
The BCM records the following vehicle condition at the time a particular DTC is detected, and displays on CONSULT.

CONSULT screen item	Indication/Unit	Description	
Vehicle Speed	km/h	Vehicle speed of the moment a particular DTC is detected	
Odo/Trip Meter	km	Total mileage (Odometer value) of the moment a particular DTC is detected	
Vehicle Condition	SLEEP>LOCK	Power position status of the moment a particular DTC is detected*	While turning BCM status from low power consumption mode to normal mode [Power supply position is OFF (LOCK)]
	SLEEP>OFF		While turning BCM status from low power consumption mode to normal mode [Power supply position is OFF (OFF)]
	LOCK>ACC		While turning power supply position from OFF (LOCK) to ACC
	ACC>ON		While turning power supply position from ACC to ON
	RUN>ACC		While turning power supply position from RUN to ACC (Except emergency stop operation)
	CRANK>RUN		While turning power supply position from CRANK to RUN
	RUN>URGENT		While turning power supply position from RUN to ACC (Emergency stop operation)
	ACC>OFF		While turning power supply position from ACC to OFF (OFF)
	OFF>LOCK		While turning power supply position from OFF (OFF) to OFF (LOCK)
	OFF>ACC		While turning power supply position from OFF (OFF) to ACC
	ON>CRANK		While turning power supply position from ON to CRANK
	OFF>SLEEP		While turning BCM status from normal mode [Power supply position is OFF (OFF)] to low power consumption mode
	LOCK>SLEEP		While turning BCM status from normal mode [Power supply position is OFF (LOCK)] to low power consumption mode
	LOCK		Power supply position is OFF (LOCK)
	OFF		Power supply position is OFF (OFF)
	ACC		Power supply position is ACC
	ON		Power supply position is ON
	ENGINE RUN		Power supply position is RUN
	CRANKING		Power supply position is CRANK
IGN Counter	0 - 39	The number of times that ignition switch is turned ON after DTC is detected • The number is 0 when a malfunction is detected now. • The number increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. • The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.	

NOTE:

*: Refer to the following for details of the power supply position.

- OFF (OFF, LOCK): Ignition switch OFF
- ACC: Ignition switch ACC
- IGN: Ignition switch ON with engine stopped
- RUN: Ignition switch ON with engine running
- CRANK: At engine cranking

Power supply position shifts to “OFF (LOCK)” from “OFF (OFF)”, when ignition switch is in the OFF position, shift position is in the P position, and any of the following conditions are met.

- Closing door
- Opening door
- Door is locked using door request switch
- Door is locked using Intelligent Key

The power supply position shifts to “ACC” when the push-button ignition switch (push switch) is pushed at “OFF (LOCK)”.

HEADLAMP

HEADLAMP : CONSULT Function (BCM - HEADLAMP) (Xenon Type Headlamp)

INFOID:0000000011321452

WORK SUPPORT

Service item	Setting item	Setting	
CUSTOM A/LIGHT SETTING*1	MODE 1*3	Normal	
	MODE 2	More sensitive setting than normal setting (Turns ON earlier than normal operation)	
	MODE 3	More sensitive setting than MODE 2 (Turns ON earlier than MODE 2)	
	MODE 4	Less sensitive setting than normal setting (Turns ON later than normal operation.)	
BATTERY SAVER SET	On*3	With the exterior lamp battery saver function	
	Off	Without the exterior lamp battery saver function	
ILL DELAY SET*1	MODE 1*3	45 sec.	Sets delay timer function timer operation time. (All doors closed)
	MODE 2	Without the function	
	MODE 3	30 sec.	
	MODE 4	60 sec.	
	MODE 5	90 sec.	
	MODE 6	120 sec.	
	MODE 7	150 sec.	
	MODE 8	180 sec.	
AUTO LIGHT LOGIC SET*2	MODE 1*3	With twilight ON custom & with wiper INT, LO and HI	
	MODE 2	With twilight ON custom & with wiper LO and HI	
	MODE 3	With twilight ON custom & without	
	MODE 4	Without twilight ON custom & with wiper INT, LO and HI	
	MODE 5	Without twilight ON custom & with wiper LO and HI	
	MODE 6	Without twilight ON custom & without	

*1: For models without auto light system, this item is displayed but is not operated.

*2: For models without auto light system and all models for Canada, this item is displayed but is not operated.

*3: Factory setting

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor item [Unit]	Description
PUSH SW [On/Off]	The switch status input from push-button ignition switch
ENGINE STATE [Stop/Stall/Crank/Run]	The engine status received from ECM with CAN communication
VEH SPEED 1 [km/h]	The value of the vehicle speed received from combination meter via CAN communication

Monitor item [Unit]	Description
TURN SIGNAL R [On/Off]	Each switch status that BCM judges from the combination switch reading function
TURN SIGNAL L [On/Off]	
TAIL LAMP SW [On/Off]	
HI BEAM SW [On/Off]	
HEAD LAMP SW1 [On/Off]	
HEAD LAMP SW2 [On/Off]	
PASSING SW [On/Off]	
AUTO LIGHT SW*1 [On/Off]	
FR FOG SW*2 [On/Off]	
DOOR SW-DR [On/Off]	The switch status input from front door switch (driver side)
DOOR SW-AS [On/Off]	The switch status input from front door switch (passenger side)
DOOR SW-RR [On/Off]	The switch status input from sliding door switch RH
DOOR SW- RL [On/Off]	The switch status input from sliding door switch LH
DOOR SW-BK [On/Off]	The switch status input from back door switch
OPTICAL SENSOR [On/Off/NG]	**NOTE:** This item is indicated, but can not monitored
OPTI SEN (DTCT)*1 [V]	The value of outside brightness voltage input from the optical sensor
OPTI SEN (FILT)*1 [V]	The value of outside brightness voltage filtered by BCM

*1: For models without auto light system, this item is not displayed.
*2: For models without front fog lamp, this item is displayed but is not monitored.

ACTIVE TEST

Test item	Operation	Description
TAIL LAMP	On	Transmits the position light request signal to IPDM E/R via CAN communication to turn the tail lamp ON
	Off	Stops the tail lamp request signal transmission
HEAD LAMP	Hi	Transmits the high beam request signal via CAN communication to turn the headlamp (HI)
	Lo	Transmits the low beam request signal via CAN communication to turn the headlamp (LO)
	Off	Stops the high & low beam request signal transmission
FR FOG LAMP*1	On	Transmits the front fog light request signal to IPDM E/R via CAN communication to turn the front fog lamp ON
	Off	Stops the front light request signal transmission

Test item	Operation	Description
DAYTIME RUNNING LIGHT*2	On	Transmits the daytime running light request signal via CAN communication to IPDM E/R
	Off	Stop the daytime running light request signal transmission
ILL DIM SIGNAL	On	• Transmits the dimmer signal to combination meter via CAN communication and dims combination meter*3 • Transmits the dimmer signal to AV control unit and dims display
	Off	Stops the dimmer signal transmission

*1: For models without front fog lamp, this item is displayed but is not tested.
*2: For models without daytime running light system, this item is not displayed.
*3: Except for CANADA

FLASHER

FLASHER : CONSULT Function (BCM - FLASHER) (Xenon Type Headlamp)

INFOID:0000000011321453

WORK SUPPORT

Service item	Setting item	Setting	
HAZARD ANSWER BACK	Lock Only	With locking only	Sets the hazard warning lamp answer back function when the door is lock/unlock with the request switch or the key fob.
	Unlk Only	With unlocking only	
	Lock&Unlk*	With locking/unlocking	
	Off	Without the function	

*: Factory setting

DATA MONITOR

NOTE:
The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor item [Unit]	Description
REQ SW-DR [On/Off]	The switch status input from the request switch (driver side)
REQ SW-AS [On/Off]	The switch status input from the request switch (passenger side)
PUSH SW [On/Off]	The switch status input from the push-button ignition switch
TURN SIGNAL R [On/Off]	Each switch status that BCM detects from the combination switch reading function
TURN SIGNAL L [On/Off]	
HAZARD SW [On/Off]	The switch status input from the hazard switch
RKE-LOCK [On/Off]	Lock signal status received from the remote keyless entry receiver
RKE-UNLOCK [On/Off]	Unlock signal status received from the remote keyless entry receiver
RKE-PANIC [On/Off]	Panic alarm signal status received from the remote keyless entry receiver

ACTIVE TEST

Test item	Operation	Description
FLASHER	RH	Outputs the voltage to turn on the right side turn signal lamps.
	LH	Outputs the voltage to turn on the left side turn signal lamps.
	Off	Stops the voltage to turn the turn signal lamps OFF.

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:0000000011561141

AUTO ACTIVE TEST

Description

In auto active test, the IPDM E/R sends a drive signal to the following systems to check their operation.

- Oil pressure warning lamp
- Front wiper (LO, HI)
- Parking lamp
- License plate lamp
- Tail lamp
- Side marker lamp
- Front fog lamp
- Headlamp (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan

Operation Procedure

NOTE:

Never perform auto active test in the following condition.

- Passenger door is open.
- CONSULT is connected.

1. Close the hood and lift the wiper arms from the windshield. (Prevent windshield damage due to wiper operation)
   NOTE:
   When auto active test is performed with hood opened, sprinkle water on windshield beforehand.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON, and within 20 seconds, press the front door switch (driver side) 10 times. Then turn the ignition switch OFF.
4. Turn the ignition switch ON within 10 seconds. After that the horn sounds once and the auto active test starts.
   NOTE:
   Engine starts when ignition switch is turned ON while brake pedal is depressed.
5. The oil pressure warning lamp starts blinking when the auto active test starts.
6. After a series of the following operations is repeated 3 times, auto active test is completed.

NOTE:

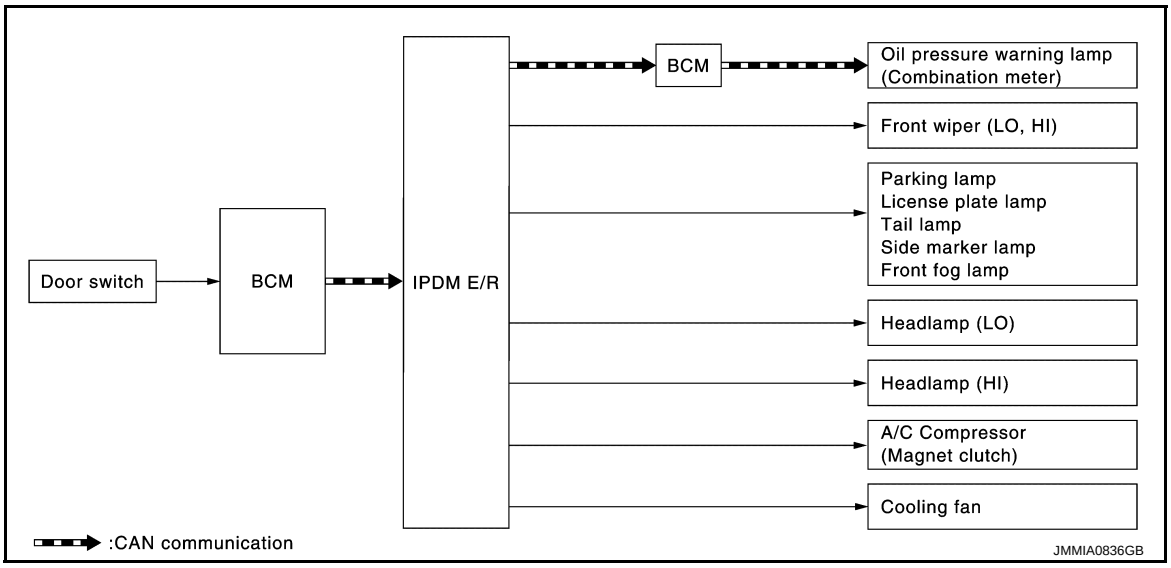
- When auto active test has to be cancelled halfway through test, turn the ignition switch OFF.
- When auto active test is not activated, door switch may be the cause. Check door switch. Refer to DLK-241, "Component Function Check".

Inspection in Auto Active Test

When auto active test is actuated, the following 6 steps are repeated 3 times.

Operation sequence	Inspection location	Operation
1	Oil pressure warning lamp	Blinks continuously during operation of auto active test
2	Front wiper motor	LO for 5 seconds → HI for 5 seconds
3	• Parking lamp • License plate lamp • Tail lamp • Side marker lamp • Front fog lamp	10 seconds
4	Headlamp	• LO 10 seconds • HI ON ⇔ OFF 5 times
5	A/C compressor (magnet clutch)	ON ⇔ OFF 5 times
6	Cooling fan	LO for 5 seconds →MID for 3 seconds → HI for 2 seconds

Concept of auto active test



- IPDM E/R starts the auto active test with the door switch signals transmitted by BCM via CAN communication. Therefore, the CAN communication line between IPDM E/R and BCM is considered normal if the auto active test starts successfully.
- The auto active test facilitates troubleshooting if any systems controlled by IPDM E/R cannot be operated.

Diagnosis chart in auto active test

Symptom	Inspection contents		Possible cause
Any of the following components do not operate • Parking lamp • License plate lamp • Tail lamp • Side marker lamp • Front fog lamp • Headlamp (HI, LO) • Front wiper motor	Perform auto active test. Does the applicable system operate?	YES	BCM signal input circuit
		NO	• Lamp or motor • Lamp or motor ground circuit • Harness or connector between IPDM E/R and applicable system • IPDM E/R
A/C compressor does not operate	Perform auto active test. Does the magnet clutch operate?	YES	• Combination meter signal input circuit • CAN communication signal between Combination meter and ECM • CAN communication signal between ECM and IPDM E/R
		NO	• Magnet clutch • Harness or connector between IPDM E/R and magnet clutch • IPDM E/R
Oil pressure warning lamp does not operate	Perform auto active test. Does the oil pressure warning lamp blink?	YES	• Harness or connector between IPDM E/R and oil pressure switch • Oil pressure switch • IPDM E/R
		NO	• CAN communication signal between IPDM E/R and BCM • CAN communication signal between BCM and Combination meter • Combination meter

Symptom	Inspection contents		Possible cause
Cooling fan does not operate	Perform auto active test. Does the cooling fan operate?	YES	• ECM signal input circuit • CAN communication signal between ECM and IPDM E/R
		NO	• Cooling fan • Harness or connector between cooling fan and cooling fan relay • Harness or connector between IPDM E/R and cooling fan relay • Cooling fan relay • IPDM E/R

CONSULT Function (IPDM E/R)

INFOID:0000000011561142

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with IPDM E/R.

Diagnosis mode	Description
Ecu Identification	Allows confirmation of IPDM E/R part number.
Self Diagnostic Result	Displays the diagnosis results judged by IPDM E/R.
Data Monitor	Displays the real-time input/output data from IPDM E/R input/output data.
Active Test	IPDM E/R can provide a drive signal to electronic components to check their operations.
CAN Diag Support Monitor	The results of transmit/receive diagnosis of CAN communication can be read.

SELF DIAGNOSTIC RESULT

Refer to PCS-24, "DTC Index".

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor Item [Unit]	MAIN SIGNALS	Description
MOTOR FAN REQ [1/2/3/4]	×	Displays the value of the cooling fan speed signal received from ECM via CAN communication.
AC COMP REQ [Off/On]	×	Displays the status of the A/C compressor request signal received from ECM via CAN communication.
TAIL&CLR REQ [Off/On]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR FOG REQ [Off/On]	×	Displays the status of the front fog light request signal received from BCM via CAN communication.
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper stop position signal judged by IPDM E/R.
WIP PROT [Off/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.
IGN RLY1 -REQ [Off/On]		Displays the status of the ignition switch ON signal received from BCM via CAN communication.
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.

Monitor Item [Unit]	MAIN SIGNALS	Description
PUSH SW [Off/On]		Displays the status of the push-button ignition switch judged by IPDM E/R.
INTER/NP SW [Off/On]		Displays the status of the shift position judged by IPDM E/R.
ST RLY CONT [Off/On]		Displays the status of the starter relay status signal received from BCM via CAN communication.
IHBT RLY -REQ [Off/On]		Displays the status of the starter control relay signal received from BCM via CAN communication.
ST/INHI RLY [Off/ ST /INHI/UNKWN]		Displays the status of the starter relay and starter control relay judged by IPDM E/R.
DETENT SW [Off/On]		Displays the status of the CVT shift selector (detention switch) judged by IPDM E/R.
S/L RLY -REQ [Off/On]		**NOTE:** The item is indicated, but not monitored.
S/L STATE [LOCK/UNLK/UNKWN]		**NOTE:** The item is indicated, but not monitored.
DTRL REQ [Off/On]		Displays the status of the daytime running light request signal received from BCM via CAN communication. **NOTE:** This item is monitored only on the vehicle with daytime running light system.
OIL P SW [Open/Close]		**NOTE:** The item is indicated, but not monitored.
HOOD SW [Off/On]		**NOTE:** The item is indicated, but not monitored.
HL WASHER REQ [Off/On]		**NOTE:** The item is indicated, but not monitored.
THFT HRN REQ [Off/On]		Displays the status of the theft warning horn request signal received from BCM via CAN communication.
HORN CHIRP [Off/On]		Displays the status of the horn reminder signal received from BCM via CAN communication.
CRNRNG LMP REQ [Off/On]		**NOTE:** The item is indicated, but not monitored.

ACTIVE TEST

Test item

Test item	Operation	Description
CORNERING LAMP	Off	**NOTE:** The item is indicated, but cannot be tested.
	LH	
	RH	
HORN	On	Operates horn relay for 20 ms.
FRONT WIPER	Off	OFF
	Lo	Operates the front wiper relay.
	Hi	Operates the front wiper relay and front wiper high relay.
MOTOR FAN	1	OFF
	2	Operates the cooling fan relay-1.
	3	Operates the cooling fan relay-2.
	4	Operates the cooling fan relay-2 and cooling fan relay-3.
HEAD LAMP WASHER	On	**NOTE:** The item is indicated, but cannot be tested.

Test item	Operation	Description
EXTERNAL LAMPS	Off	OFF
	TAIL	Operates the tail lamp relay and the daytime running light relay.
	Lo	Operates the headlamp low relay.
	Hi	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.
	Fog	Operates the front fog lamp relay.

ECU DIAGNOSIS INFORMATION

BCM, IPDM E/R

List of ECU Reference

INFOID:0000000011321456

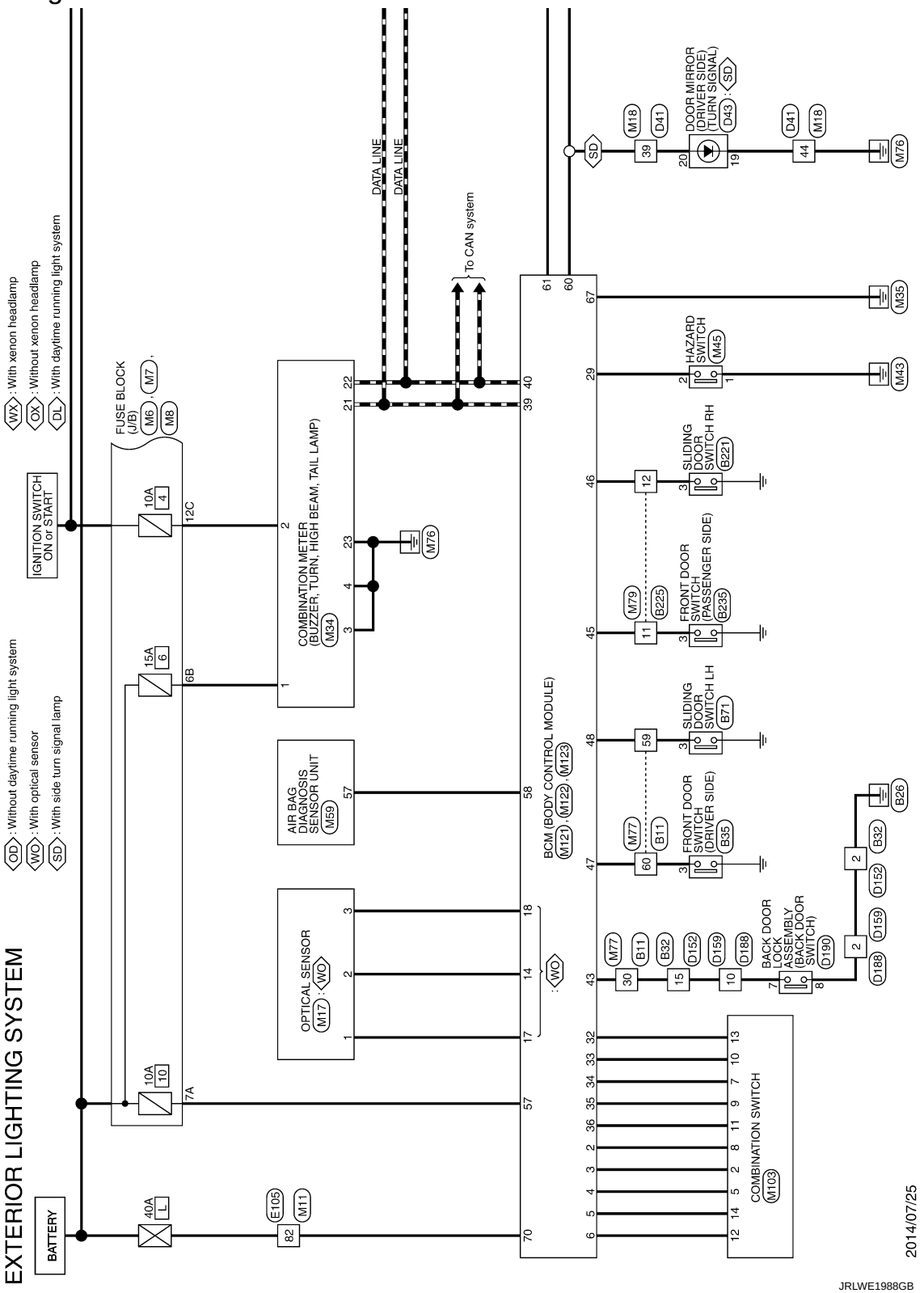
ECU	Reference
BCM	BCS-40, "Reference Value"
	BCS-62, "Fail-safe"
	BCS-62, "DTC Inspection Priority Chart"
	BCS-63, "DTC Index"
IPDM E/R	PCS-16, "Reference Value"
	PCS-23, "Fail-safe"
	PCS-24, "DTC Index"

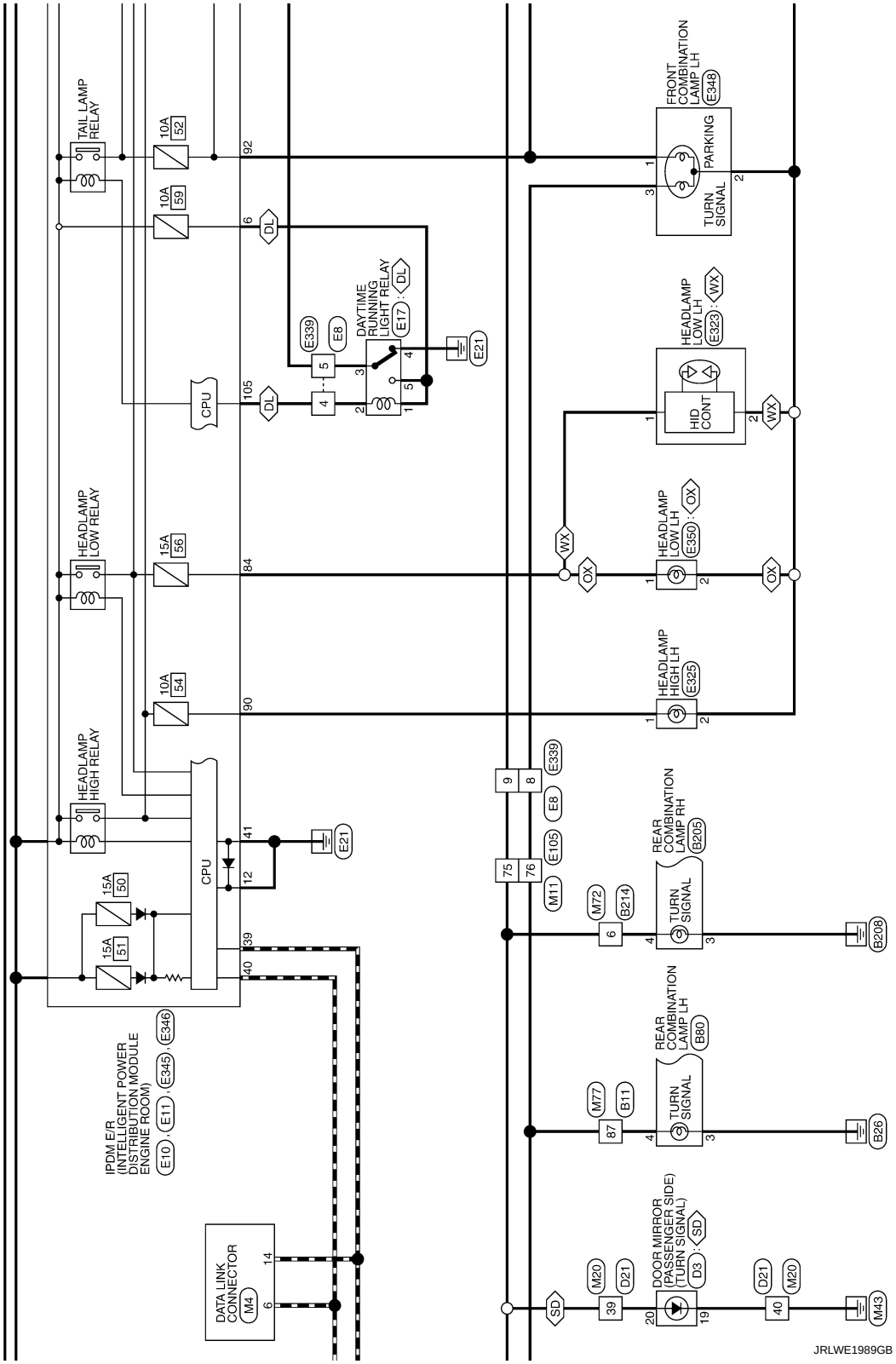
WIRING DIAGRAM

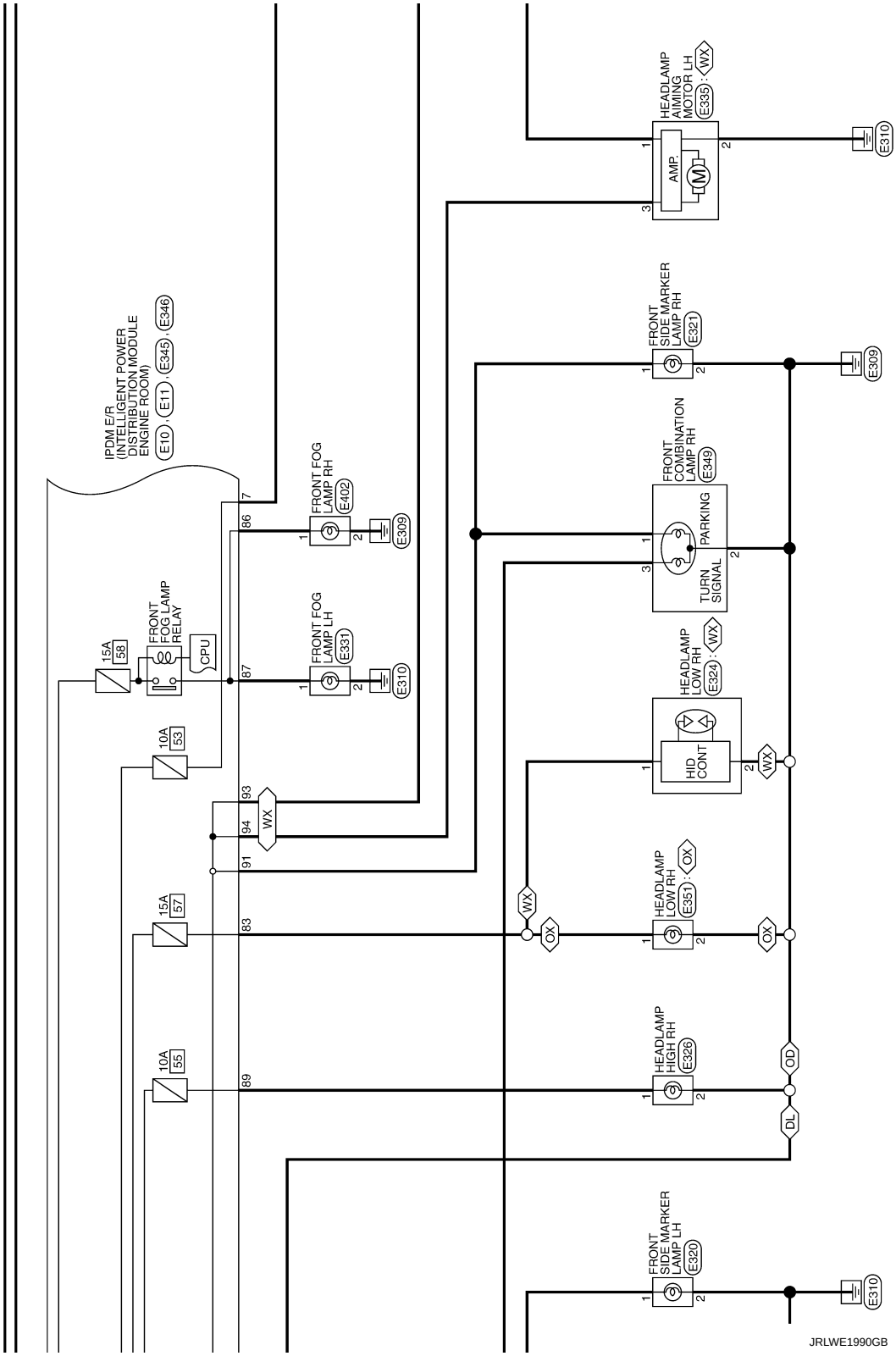
EXTERIOR LIGHTING SYSTEM

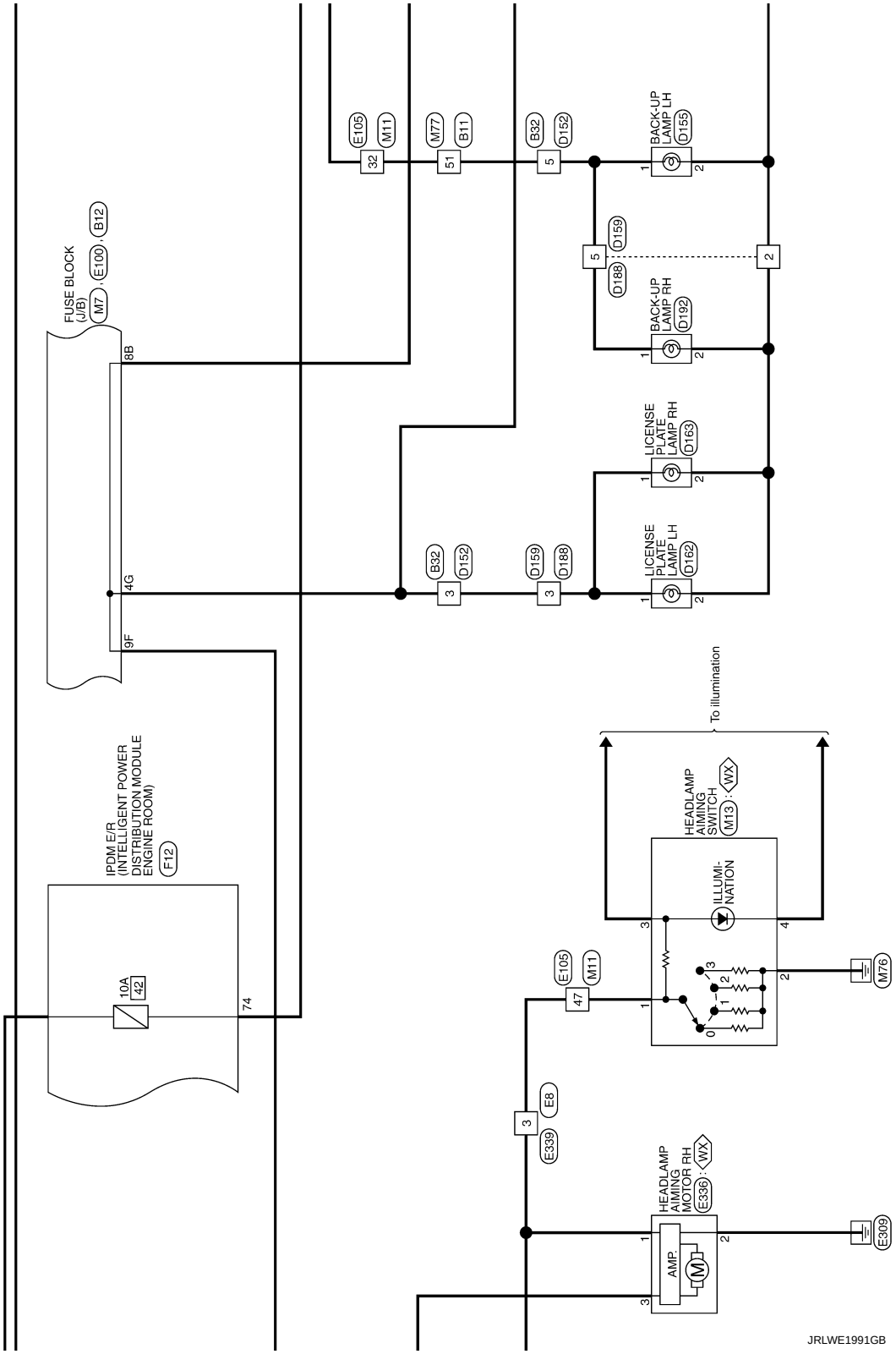
Wiring Diagram

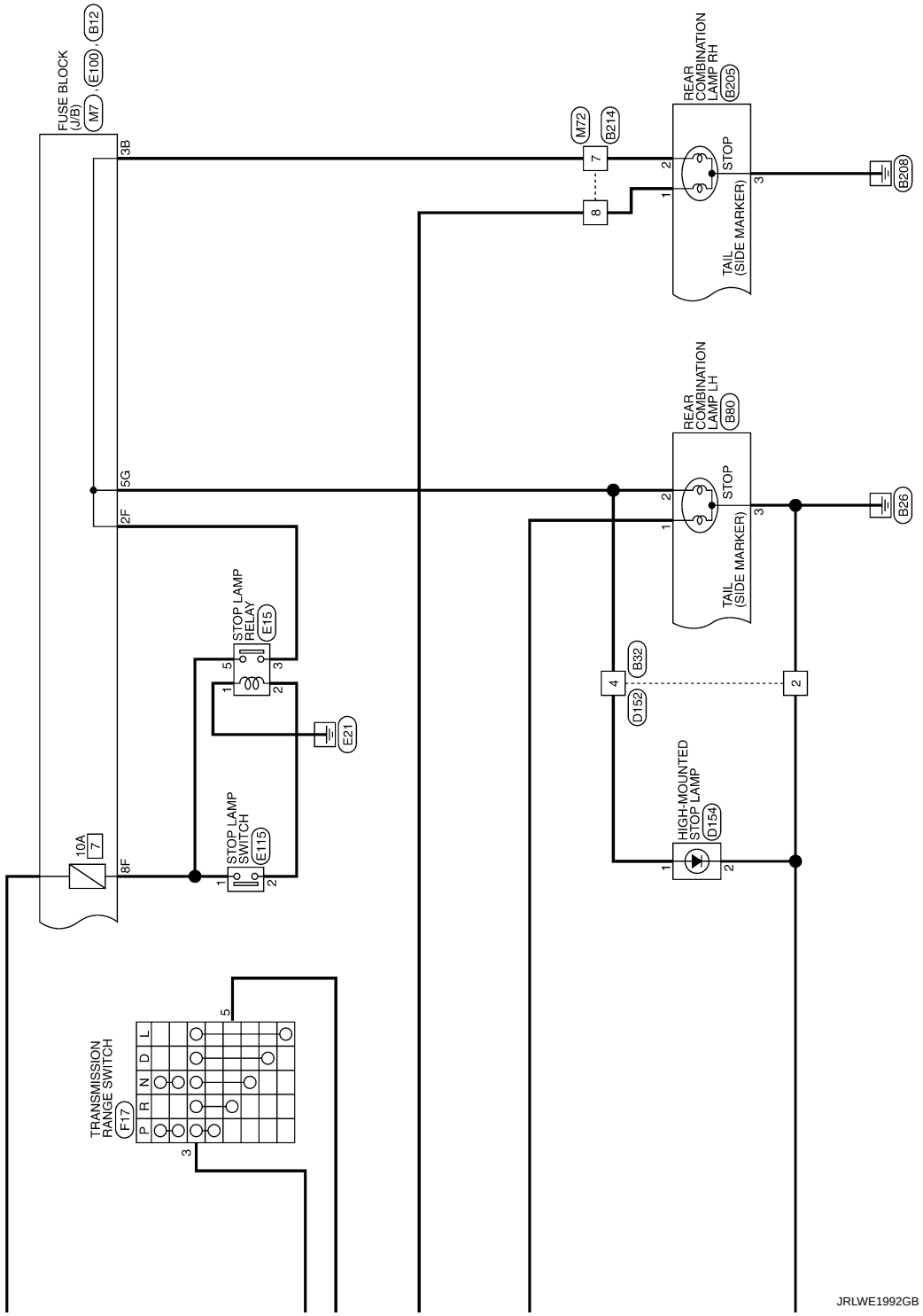
INFOID:0000000011321457

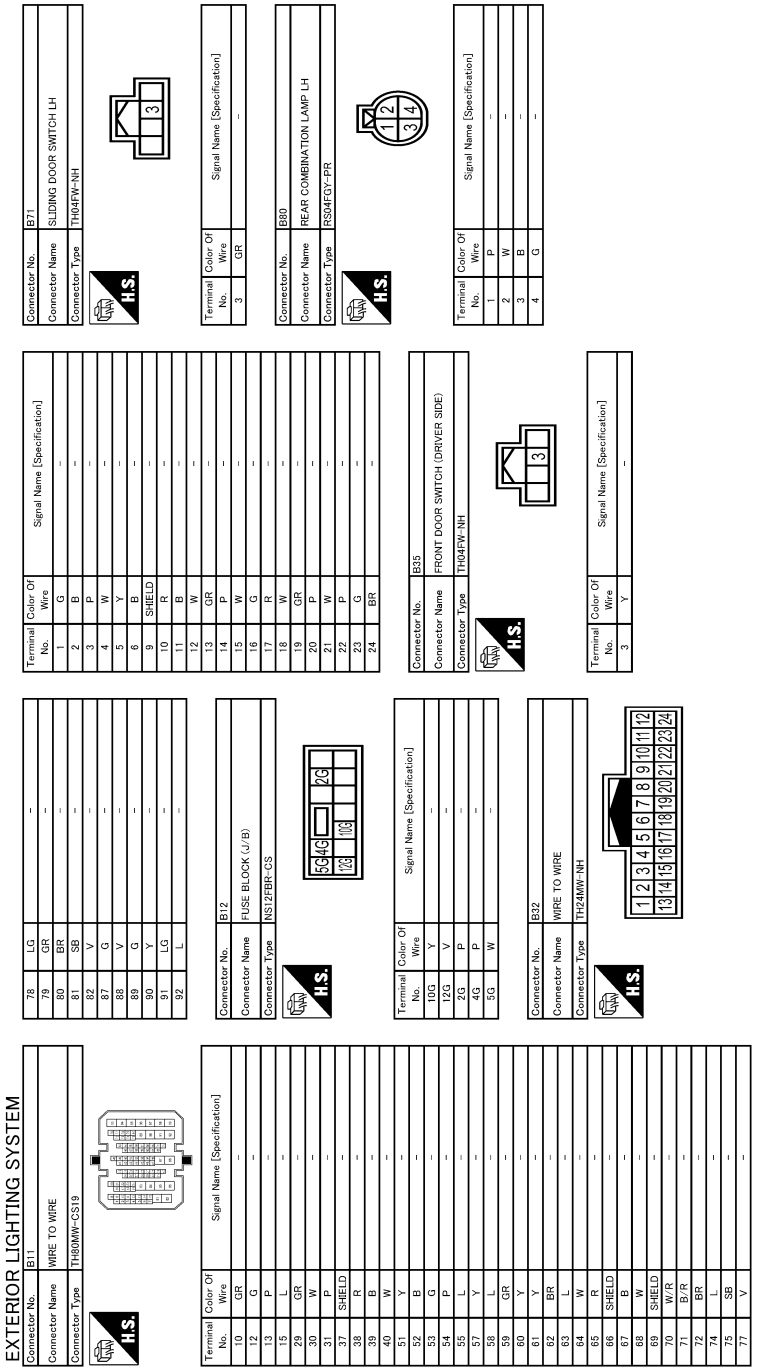



TAIL LAMP RELAY
HEADLAMP LOW RELAY
HEADLAMP HIGH RELAY
10A 52
10A 59
10A 54
15A 56
15A 50
15A 51
CPU
DAYTIME RUNNING LIGHT RELAY
E17 : DL
E339
E8
E21
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10 , E11 , E345 , E346
DATA LINK CONNECTOR M4
FRONT COMBINATION LAMP LH E348
PARKING
TURN SIGNAL
HEADLAMP LOW LH (E323) : WX
HID CONT
HEADLAMP LOW LH E350 : OX
HEADLAMP HIGH LH E325
REAR COMBINATION LAMP RH B205
REAR COMBINATION LAMP LH B80
DOOR MIRROR (PASSENGER SIDE) (TURN SIGNAL) D3 : SD
B208
B26
M43
JRLWE1989GB


IPDM E/R
(INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10, E11, E345, E346
15A 58
FRONT FOG LAMP RELAY
CPU
10A 53
15A 57
10A 55
FRONT FOG LAMP RH E402
FRONT FOG LAMP LH E331
E309
E310
HEADLAMP AIMING MOTOR LH E335 : WX
AMP.
FRONT SIDE MARKER LAMP RH E321
FRONT COMBINATION LAMP RH E349
PARKING
TURN SIGNAL
HEADLAMP LOW RH E324 : WX
HID CONT
HEADLAMP LOW RH E351 : OX
HEADLAMP HIGH RH E326
FRONT SIDE MARKER LAMP LH E320
W/X
WX
OX
OD
DL
JRLWE1990GB


FUSE BLOCK (J/B)
M7
E100
B12
8B
4G
9F
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
F12
10A
42
74
E105
M11
32
M77
B11
51
B32
D152
5
BACK-UP LAMP LH
D155
D159
D188
BACK-UP LAMP RH
D192
LICENSE PLATE LAMP RH
D163
LICENSE PLATE LAMP LH
D162
3
To illumination
HEADLAMP AIMING SWITCH
M13
WX
ILLUMI-NATION
M76
47
E8
E339
HEADLAMP AIMING MOTOR RH
E336
AMP.
E309
JRLWE1991GB


FUSE BLOCK (J/B)
M7, E100, B12
3B
5G
2F
8F
10A
7
STOP LAMP RELAY
E15
STOP LAMP SWITCH
E115
E21
TRANSMISSION RANGE SWITCH
F17
P R N D L
5
3
M72
B214
7
8
REAR COMBINATION LAMP RH
B205
STOP
TAIL (SIDE MARKER)
B208
REAR COMBINATION LAMP LH
B80
B26
B32
D152
4
2
HIGH-MOUNTED STOP LAMP
D154
JRLWE1992GB



JRLWE1993GB

EXTERIOR LIGHTING SYSTEM

Connector No.	B205
Connector Name	REAR COMBINATION LAMP RH
Connector Type	RS04FGY-PR

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	–
2	W	–
3	B	–
4	V	–

Connector No.	B214
Connector Name	WIRE TO WIRE
Connector Type	NS12MBR-CS

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	–
2	L	–
4	BR	–
5	Y	–
6	V	–
7	W	–
8	R	–
9	LG	–
10	Y	–
11	G	–
12	SB	–

Connector No.	B221
Connector Name	SLIDING DOOR SWITCH RH
Connector Type	TH04FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
3	GR	–

Connector No.	B225
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
2	W	–
3	B	–
4	P	–
5	G	–
9	L	–
10	P	–
11	SB	–
12	GR	–
13	R	–
14	G	–
15	L	–
16	Y	–

Connector No.	B235
Connector Name	FRONT DOOR SWITCH (PASSENGER SIDE)
Connector Type	TH04FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
3	SB	–

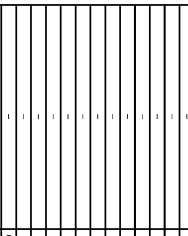
Connector No.	D3
Connector Name	DOOR MIRROR (PASSENGER SIDE)
Connector Type	TH24MW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	–
5	W	–
6	R	–
7	P	–
10	W	–
11	G	–
12	R	–
13	Y	–
17	SHIELD	–
18	B	–
19	B	–
20	LG	–
21	R	–
22	P	–
23	W	–
24	GR	–

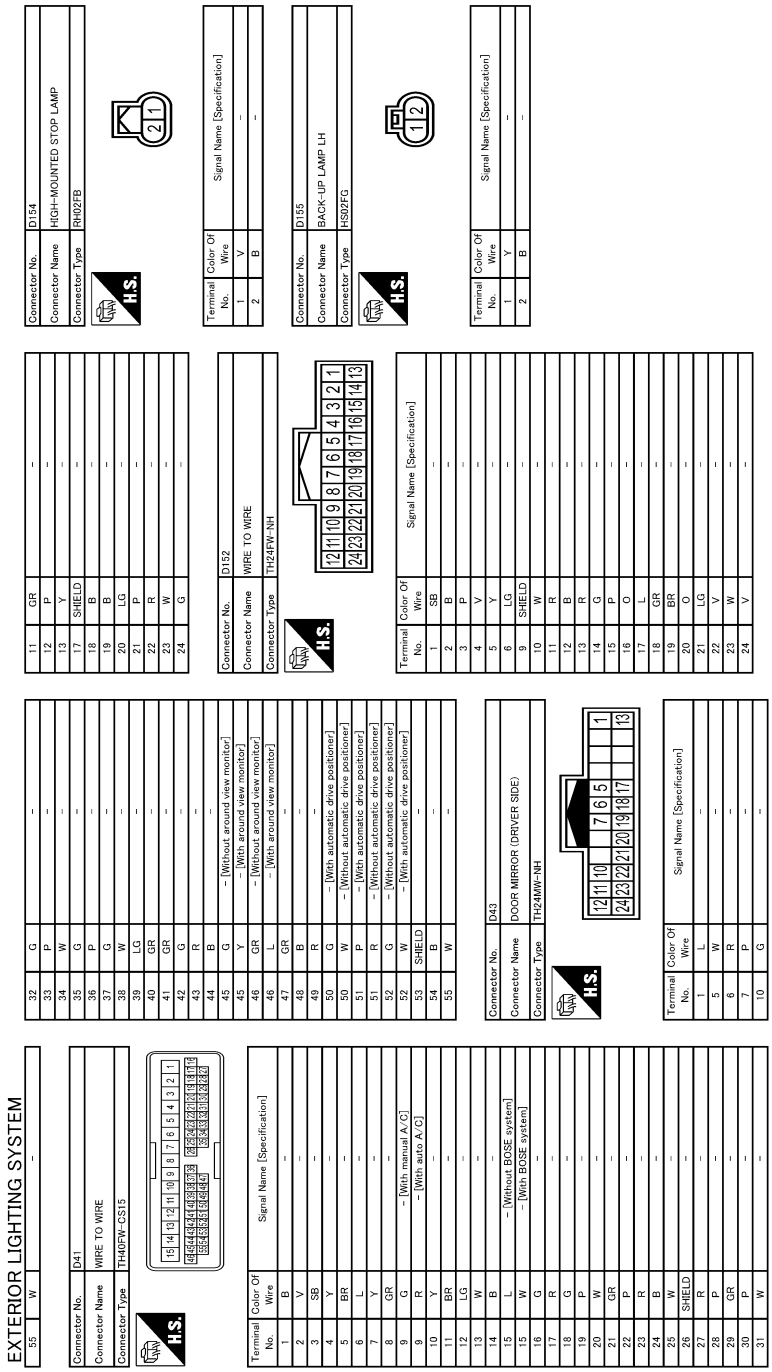
Connector No.	D21
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
7	B	–
8	V	–
9	BR	– [With manual A/C]
9	W	– [With auto A/C]
10	LG	–
11	LG	–
12	BR	–
14	B	– [Without BOSE system]
14	R	– [With BOSE system]
15	L	– [Without BOSE system]
15	W	– [With BOSE system]
16	P	–
17	GR	–
18	R	–
19	W	–
21	R	–
22	B	–
23	W	–
24	SHIELD	–
25	Y	–
26	L	–
36	P	–
37	G	–
38	W	–
39	LG	–
40	B	–
41	GR	–
42	G	–
43	R	–
45	G	–
46	GR	–
50	W	–
51	R	–
52	G	–
53	SHIELD	–
54	B	–

JRLWE1994GB

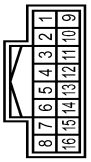


JRLWE1995GB

EXTERIOR LIGHTING SYSTEM

Connector No.	D159
Connector Name	WIRE TO WIRE
Connector Type	TH16FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	–
2	B	–
3	P	–
4	V	–
5	Y	–
9	R	–
10	P	–
11	O	–
12	L	–
13	GR	–
14	O	–
15	LG	–
16	V	–

Connector No.	D162
Connector Name	LICENSE PLATE LAMP LH
Connector Type	TK02FBR

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	–
2	B	–

Connector No.	D163
Connector Name	LICENSE PLATE LAMP RH
Connector Type	TK02FBR

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	–
2	B	–

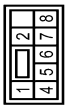
Connector No.	D188
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	–
2	B	–
3	Y	–
4	P	–
5	BR	–
9	R	–
10	P	–
11	R	–
12	W	–
13	G	–
14	GR	–
15	R	–
16	V	– [For Canada without BOSE]
16	W	– [Except for Canada without BOSE]

Connector No.	D190
Connector Name	BACK DOOR LOCK ASSEMBLY
Connector Type	NS08FW-CS

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	–
2	V	–
4	R	–
5	W	–
6	G	–
7	P	–
8	B	–

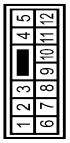
Connector No.	D192
Connector Name	BACK-UP LAMP RH
Connector Type	HSD2FG

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	–
2	B	–

Connector No.	E8
Connector Name	WIRE TO WIRE
Connector Type	NS12MBR-CS

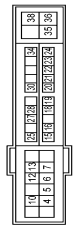
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	–
2	Y	–
3	V	–
4	BR	–
5	LG	–
6	O	–
7	G	–
8	Y	–
9	SB	–
10	GR	–
11	L	–
12	R	–

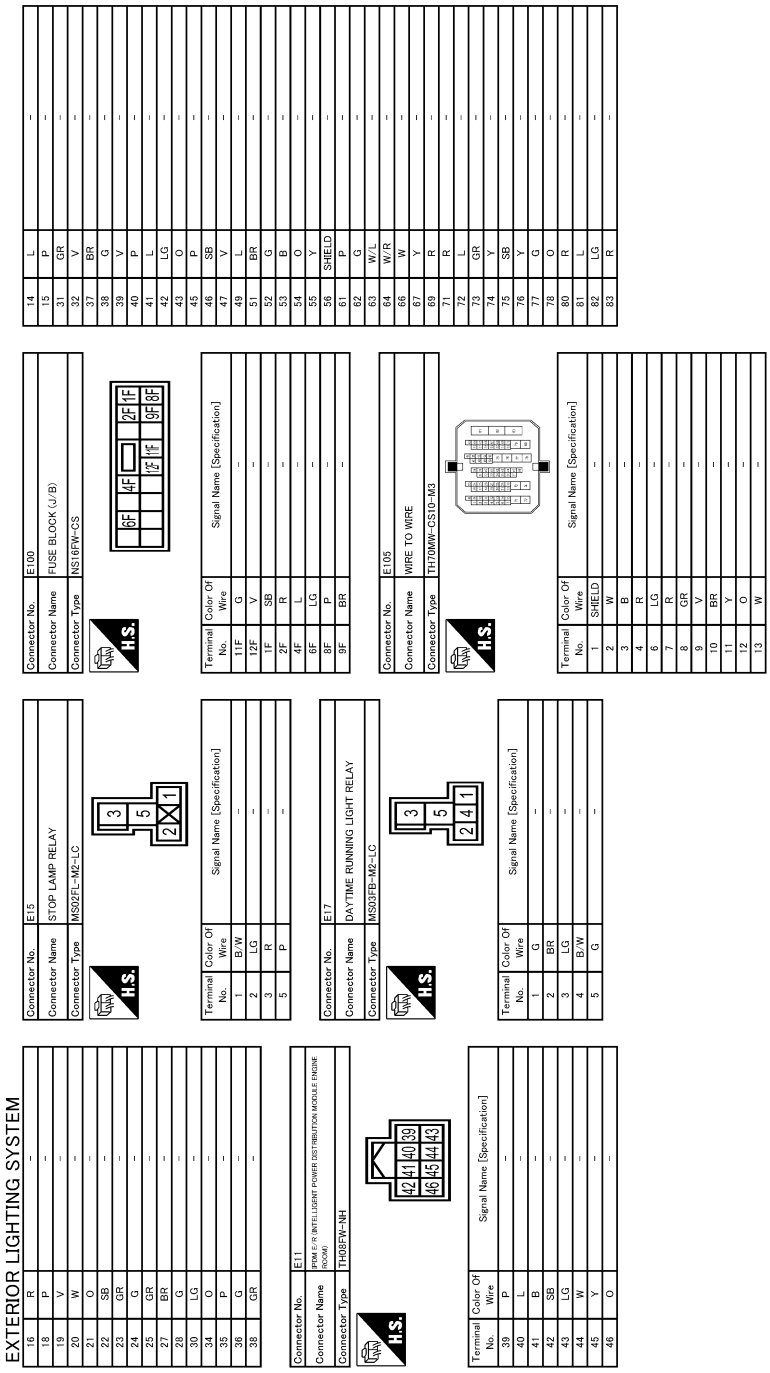
Connector No.	E10
Connector Name	50AM FUSE (FOR INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20DFW-CS12-M4 -1V

H.S.

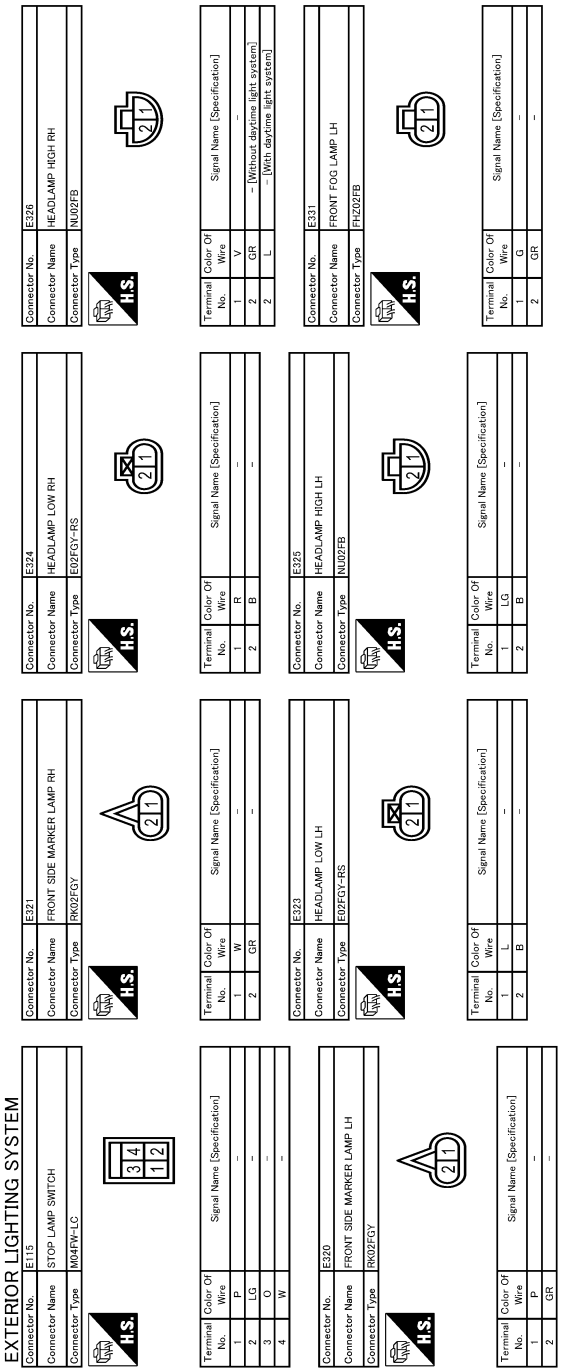


Terminal No.	Color Of Wire	Signal Name [Specification]
4	LG	–
5	Y	–
6	G	–
7	BR	–
10	P	–
12	B	–
13	G	–
15	L	–

JRLWE1996GB



JRLWE1997GB



JRLWE1998GB

EXTERIOR LIGHTING SYSTEM

Connector No.	E335
Connector Name	HEADLAMP AIMING MOTOR LH
Connector Type	HS03FGY

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	–
2	GR	–
3	W	–

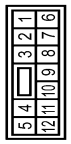
Connector No.	E336
Connector Name	HEADLAMP AIMING MOTOR RH
Connector Type	HS03FGY

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	–
2	GR	–
3	W	–

Connector No.	E339
Connector Name	WIRE TO WIRE
Connector Type	NS12FBR-CS

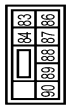
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	–
2	O	–
3	P	–
4	LG	–
5	L	–
6	BR	–
7	P	–
8	G	–
9	W	–
10	GR	–
11	GR	– [Without automatic drive positioner]
11	Y	– [With automatic drive positioner]
12	G	–

Connector No.	E345
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS08FW-CS

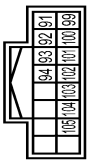
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
83	R	–
84	L	–
86	SB	–
87	Y	–
88	BR	–
89	V	–
90	G	–

Connector No.	E346
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH16FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
91	LG	–
92	P	–
93	W	–
94	O	–
99	Y	–
100	V	–
101	O	–
102	G	–
103	BR	–
104	LG	–
105	R	–

Connector No.	E348
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	Z03FBR

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	–
2	B	–
3	G	–

Connector No.	E349
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	Z03FBR

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	–
2	GR	–
3	W	–

Connector No.	E350
Connector Name	HEADLAMP LOW LH
Connector Type	FH202FB

H.S.

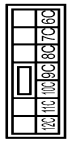
Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	–
2	GR	–

JRLWE1999GB

JRLWE2000GB

EXTERIOR LIGHTING SYSTEM

Connector No.	M8
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS12FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
10C	LG	–
11C	V	–
12C	Y	–
6C	GR	–
7C	GR	–
8C	G	–
9C	Y	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH70FW-CS10-M3

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SHIELD	–
2	W	–
3	B	–
4	R	–
6	G	–
7	R	–
8	G	–
9	B	–
10	R	–
11	W	– [Without automatic drive positioner]
12	L	– [With automatic drive positioner]
12	LG	– [Without automatic drive positioner]
13	G	– [With automatic drive positioner]

13	Y	– [With automatic drive positioner]
14	L	–
15	P	–
31	R	–
32	LG	–
37	BR	– [With automatic drive positioner]
37	W	– [Without automatic drive positioner]
38	R	–
39	BE	– [Without automatic drive positioner]
39	Y	– [With automatic drive positioner]
40	P	–
41	L	–
42	G	–
43	W	–
45	P	–
46	V	–
47	R	–
49	G	–
51	G	–
52	W	–
53	B	–
54	LG	–
55	L	–
56	SHIELD	–
61	R	–
62	W	–
63	B	–
64	W	–
66	W	–
67	BR	–
69	P	–
71	R	–
72	L	–
73	LG	–
74	Y	–
75	Y	–
76	V	–
77	P	–
78	BR	–
80	Y	–
81	W	–
82	L	–
83	R	–

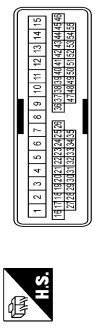
Connector No.	M13
Connector Name	HEADLAMP AIMING SWITCH
Connector Type	A04FW

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	–
2	B	–
3	P	–
4	GR	–

Connector No.	M17
Connector Name	OPTICAL SENSOR
Connector Type	TK03FW

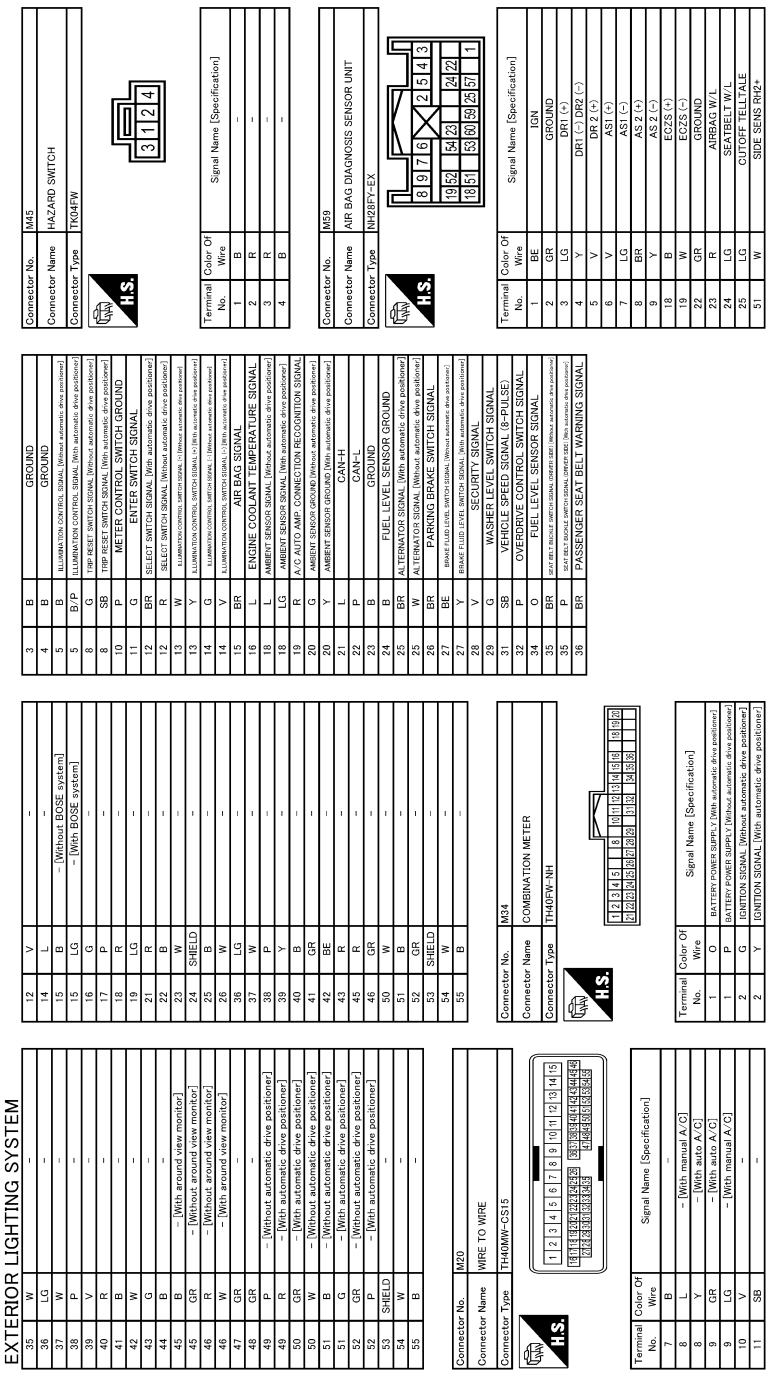
Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	POWER
2	G	OUTPUT
3	R	GROUND

Connector No.	M18
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15

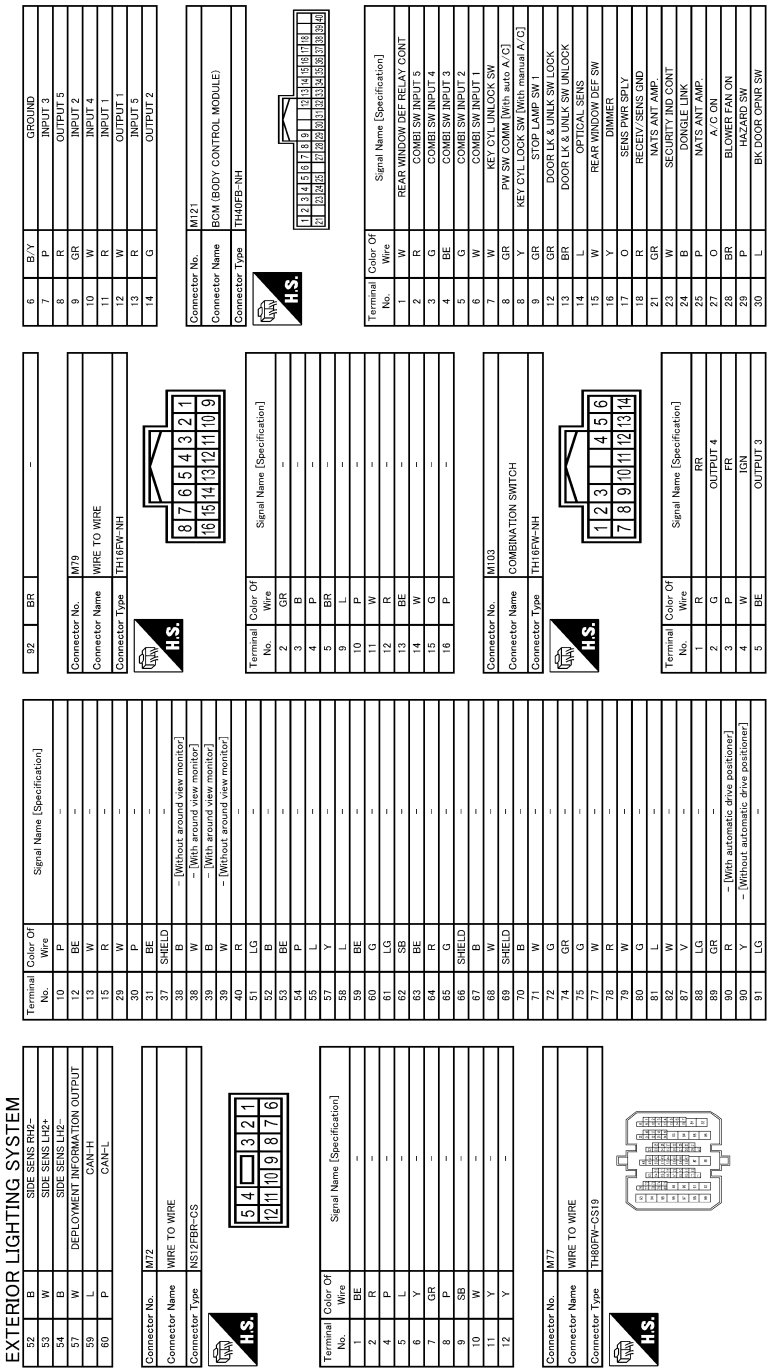


Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	–
2	R	–
3	W	–
4	Y	–
5	SB	–
6	LG	–
7	V	–
8	L	–
9	GR	–
10	Y	–
11	V	–
12	G	–
13	G	–
14	B	– [Without BOSE system]
14	R	– [With BOSE system]
15	W	– [With BOSE system]
15	Y	– [Without BOSE system]
16	W	–
17	BE	–
18	P	–
19	W	–
20	LG	–
21	P	–
22	G	–
23	R	–
24	B	–
25	W	–
26	SHIELD	–
27	Y	–
28	G	–
29	W	–
30	R	–
31	W	–
32	G	–
33	BE	–
34	P	–

JRLWE2001GB



JRLWE2002GB



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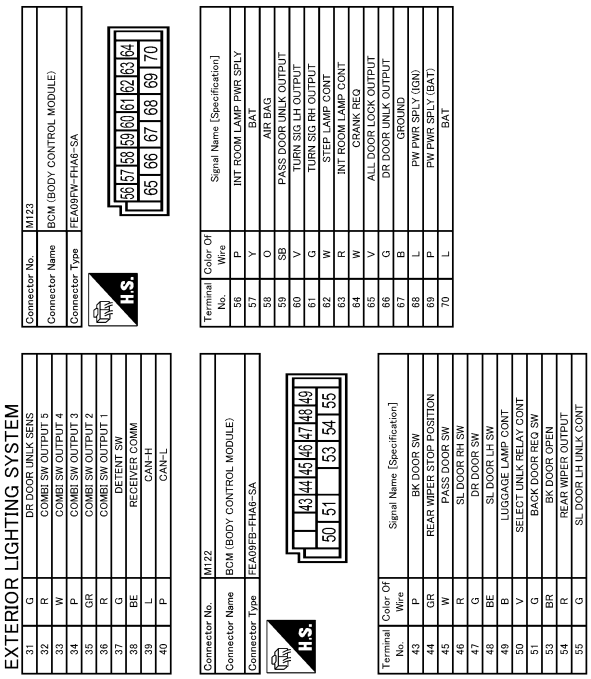


JRLWE2004GB

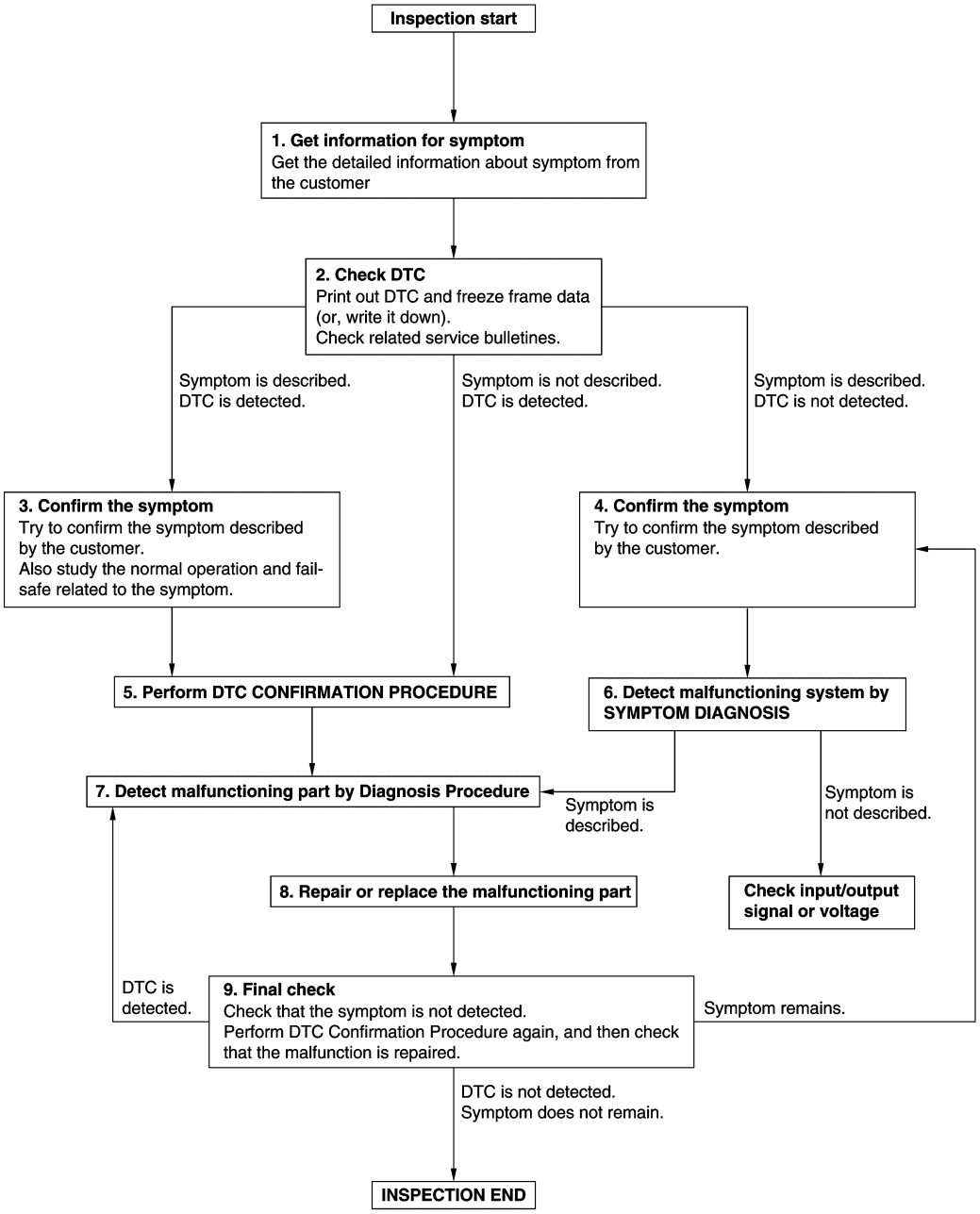
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000011321458

OVERALL SEQUENCE



JMKIA8652GB

DETAILED FLOW

1.GET INFORMATION FOR SYMPTOM

1. Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurs).
2. Check operation condition of the function that is malfunctioning.

>> GO TO 2.

2.CHECK DTC

1. Check DTC.
2. Perform the following procedure if DTC is detected.

- Record DTC and freeze frame data (Print them out using CONSULT.)
- Erase DTC.
- Study the relationship between the cause detected by DTC and the symptom described by the customer.

3. Check related service bulletins for information.

Are any symptoms described and any DTC detected?

Symptom is described, DTC is detected>>GO TO 3.
Symptom is described, DTC is not detected>>GO TO 4.
Symptom is not described, DTC is detected>>GO TO 5.

3.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.
Also study the normal operation and fail-safe related to the symptom.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

4.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6.

5.PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC CONFIRMATION PROCEDURE for the detected DTC, and then check that DTC is detected again. At this time, always connect CONSULT to the vehicle, and check self diagnostic results in real time.
If two or more DTCs are detected, refer to DTC INSPECTION PRIORITY CHART, and determine trouble diagnosis order.

NOTE:

- Freeze frame data is useful if the DTC is not detected.
- Perform Component Function Check if DTC CONFIRMATION PROCEDURE is not included on Service Manual. This simplified check procedure is an effective alternative though DTC cannot be detected during this check.
  If the result of Component Function Check is NG, it is the same as the detection of DTC by DTC CONFIRMATION PROCEDURE.

Is DTC detected?

YES >> GO TO 7.
NO >> Check according to GI-42, "Intermittent Incident".

6.DETECT MALFUNCTIONING SYSTEM BY SYMPTOM DIAGNOSIS

Detect malfunctioning system according to SYMPTOM DIAGNOSIS based on the confirmed symptom in step 4, and determine the trouble diagnosis order based on possible causes and symptom.

Is the symptom described?

YES >> GO TO 7.
NO >> Monitor input data from related sensors or check voltage of related module terminals using CONSULT.

7.DETECT MALFUNCTIONING PART BY DIAGNOSIS PROCEDURE

Inspect according to Diagnosis Procedure of the system.

Is malfunctioning part detected?

YES >> GO TO 8.
NO >> Check according to GI-42, "Intermittent Incident".

8. REPAIR OR REPLACE THE MALFUNCTIONING PART

1. Repair or replace the malfunctioning part.
2. Reconnect parts or connectors disconnected during Diagnosis Procedure again after repair and replacement.
3. Check DTC. If DTC is detected, erase it.

>> GO TO 9.

9. FINAL CHECK

When DTC is detected in step 2, perform DTC CONFIRMATION PROCEDURE again, and then check that the malfunction is repaired securely.
When symptom is described by the customer, refer to confirmed symptom in step 3 or 4, and check that the symptom is not detected.

Is DTC detected and does symptom remain?

YES-1 >> DTC is detected: GO TO 7.
YES-2 >> Symptom remains: GO TO 4.
NO >> Before returning the vehicle to the customer, always erase DTC.

DTC/CIRCUIT DIAGNOSIS

HEADLAMP (HI) CIRCUIT

WITHOUT DAYTIME RUNNING LIGHT SYSTEM

WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Component Function Check

INFOID:0000000011321459

1.CHECK HEADLAMP (HI) OPERATION

CONSULT ACTIVE TEST
1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the test items, check that the headlamp (HI) is turned ON.

Hi : Headlamp (HI) ON
Off : Headlamp (HI) OFF

NOTE:
ON/OFF is repeated 1 second each.

Is the inspection result normal?

YES >> Headlamp (HI) circuit is normal.
NO >> Refer to EXL-62, "WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure".

WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure

INFOID:0000000011321460

1.CHECK HEADLAMP (HI) OUTPUT VOLTAGE

CONSULT ACTIVE TEST
1. Turn ignition switch OFF.
2. Disconnect headlamp high connector.
3. Turn ignition switch ON.
4. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
5. With operating the test items, check voltage between IPDM E/R harness connector and ground.

(+)			(–)	Test item		Voltage (Approx.)
IPDM E/R						
Connector		Terminal				
RH	E345	89	Ground	EXTERNAL LAMPS	Hi	Battery voltage
					Off	0 V
LH		90			Hi	Battery voltage
					Off	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> GO TO 3.

2.CHECK HEADLAMP (HI) OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and headlamp high harness connector.

IPDM E/R			Headlamp high		Continuity
Connector		Terminal	Connector	Terminal	
RH	E345	89	E326	1	Existed
LH		90	E325		

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace harness.

3. CHECK HEADLAMP (HI) FUSE

1. Turn ignition switch OFF.
2. Check that the following fuses are not fusing.

Unit	Location	Fuse No.	Capacity
Headlamp HI (RH)	IPDM E/R	#55	10 A
Headlamp HI (LH)		#54	

Is the inspection result normal?

YES >> Replace IPDM E/R.
NO >> GO TO 4.

4. CHECK HEADLAMP (HI) SHORT CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E345	89		Not existed
LH		90		

Is the inspection result normal?

YES >> Replace fuse. (Replace IPDM E/R if the fuse is fusing again.)
NO >> Repair or replace harness. And then replace the fuse.

5. CHECK HEADLAMP (HI) GROUND OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect headlamp high connector.
3. Check continuity between headlamp high harness connector and ground.

Headlamp high			Ground	Continuity
Connector		Terminal		
RH	E326	2		Existed
LH	E325			

Is the inspection result normal?

YES >> Replace headlamp (HI) bulb. (Bulb socket is abnormal.)
NO >> Repair or replace harness.

WITH DAYTIME RUNNING LIGHT SYSTEM

WITH DAYTIME RUNNING LIGHT SYSTEM : Component Function Check

INFOID:0000000011321461

1. CHECK HEADLAMP (HI) OPERATION

CONSULT ACTIVE TEST

1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the test items, check that the headlamp (HI) is turned ON.

Hi : Headlamp (HI) ON
Off : Headlamp (HI) OFF

NOTE:
ON/OFF is repeated 1 second each.

Is the inspection result normal?

YES >> Headlamp (HI) circuit is normal.
NO >> Refer to EXL-64, "WITH DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure".

WITH DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure

INFOID:0000000011321462

1.CHECK HEADLAMP (HI) OUTPUT VOLTAGE

CONSULT ACTIVE TEST
1. Turn ignition switch OFF.
2. Disconnect headlamp high connector.
3. Turn ignition switch ON.
4. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
5. With operating the test items, check voltage between IPDM E/R harness connector and ground.

(+)			(–)	Test item		Voltage (Approx.)
IPDM E/R						
Connector		Terminal				
RH	E345	89	Ground	EXTERNAL LAMPS	Hi	Battery voltage
					Off	0 V
LH		90			Hi	Battery voltage
					Off	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> GO TO 3.

2.CHECK HEADLAMP (HI) OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and headlamp high harness connector.

IPDM E/R			Headlamp high		Continuity
Connector		Terminal	Connector	Terminal	
RH	E345	89	E326	1	Existed
LH		90	E325		

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness.

3.CHECK HEADLAMP (HI) FUSE

1. Turn ignition switch OFF.
2. Check that the following fuses are not fusing.

Unit	Location	Fuse No.	Capacity
Headlamp HI (RH)	IPDM E/R	#55	10 A
Headlamp HI (LH)		#54	

Is the inspection result normal?

YES >> Replace IPDM E/R.
NO >> GO TO 4.

4.CHECK HEADLAMP (HI) SHORT CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E345	89		Not existed
LH		90		

Is the inspection result normal?

YES >> Replace fuse. (Replace IPDM E/R if the fuse is fusing again.)
NO >> Repair or replace harness. And then replace the fuse.

5. CHECK ILLUMINATION STATUS OF HEADLAMPS

Check illumination status of headlamps.

Which headlamp does not turn ON?

RH >> GO TO 6.
LH >> GO TO 8.

6. CHECK HEADLAMP HI (RH) GROUND OPEN CIRCUIT-1

1. Remove daytime running light relay.
2. Check continuity between daytime running light relay harness connector and headlamp high RH harness connector.

Daytime running light relay		Headlamp high RH		Continuity
Connector	Terminal	Connector	Terminal	
E17	3	E326	2	Existed

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair or replace harness.

7. CHECK HEADLAMP HI (RH) GROUND OPEN CIRCUIT-2

Check continuity between daytime running light relay harness connector and ground.

Daytime running light relay		Ground	Continuity
Connector	Terminal		
E17	4		Existed

Is the inspection result normal?

YES >> Replace headlamp (HI) bulb. (Bulb socket is abnormal.)
NO >> Repair or replace harness.

8. CHECK HEADLAMP HI (LH) GROUND OPEN CIRCUIT

Check continuity between headlamp high LH harness connector and ground.

Headlamp high LH		Ground	Continuity
Connector	Terminal		
E325	2		Existed

Is the inspection result normal?

YES >> Replace headlamp (HI) bulb. (Bulb socket is abnormal.)
NO >> Repair or replace harness.

HEADLAMP (LO) CIRCUIT

Component Function Check

INFOID:0000000011321463

1.CHECK HEADLAMP (LO) OPERATION

CONSULT ACTIVE TEST
1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the test items, check that the headlamp (LO) is turned ON.

Lo : Headlamp (LO) ON
Off : Headlamp (LO) OFF

Is the inspection result normal?

YES >> Headlamp (LO) is normal.
NO >> Refer to EXL-66, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011321464

1.CHECK HEADLAMP (LO) OUTPUT VOLTAGE

CONSULT ACTIVE TEST
1. Turn ignition switch OFF.
2. Disconnect headlamp low connector.
3. Turn ignition switch ON.
4. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
5. With operating the test items, check voltage between IPDM E/R harness connector and ground.

(+)			(–)	Test item		Voltage (Approx.)
IPDM E/R						
Connector		Terminal				
RH	E345	83	Ground	EXTERNAL LAMPS	Lo	Battery voltage
					Off	0 V
LH		84			Lo	Battery voltage
					Off	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> GO TO 3.

2.CHECK HEADLAMP (LO) OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and headlamp low harness connector.

IPDM E/R			Headlamp low		Continuity
Connector		Terminal	Connector	Terminal	
RH	E345	83	E324	1	Existed
LH		84	E323		

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness.

3.CHECK HEADLAMP (LO) FUSE

1. Turn ignition switch OFF.
2. Check that the following fuses are not fusing.

Unit	Lotion	Fuse No.	Capacity
Headlamp LO (RH)	IPDM E/R	#57	15 A
Headlamp LO (LH)		#56	

Is the inspection result normal?

YES >> Replace IPDM E/R.
NO >> GO TO 4.

4. CHECK HEADLAMP (LO) SHORT CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E345	83		Not existed
LH		84		

Is the inspection result normal?

YES >> Replace fuse. (Replace IPDM E/R if the fuse is fusing again.)
NO >> Repair or replace harness. And then replace the fuse.

5. CHECK HEADLAMP (LO) GROUND OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect headlamp low connector.
3. Check continuity between headlamp low harness connector and ground.

Headlamp low			Ground	Continuity
Connector		Terminal		
RH	E324	2		Existed
LH	E323			

Is the inspection result normal?

YES >> Perform the xenon headlamp diagnosis. Refer to EXL-70, "Diagnosis Procedure".
NO >> Repair or replace harness.

DAYTIME RUNNING LIGHT RELAY CIRCUIT

Component Function Check

INFOID:0000000011321465

1.CHECK DAYTIME RUNNING LIGHT OPERATION

CONSULT ACTIVE TEST
1. Select “DAYTIME RUNNING LIGHT” of BCM (HEADLAMP) active test item.
2. With operating the test items, check that daytime running light operation.

On : Daytime running light ON
Off : Daytime running light OFF

Is the inspection result normal?

YES >> Daytime running light relay circuit is normal.
NO >> Refer to EXL-68, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011321466

1.CHECK DAYTIME RUNNING LIGHT RELAY FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not fusing.

Unit	Fuse No.	Capacity
Daytime running light relay	#59	10 A

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace the fuse after repairing the applicable circuit.

2.CHECK DAYTIME RUNNING LIGHT RELAY POWER SUPPLY

1. Remove daytime running light relay.
2. Check voltage between daytime running light relay harness connector and ground.

(+)		(–)	Voltage (Approx.)
Daytime running light relay			
Connector	Terminal		
E17	1	Ground	Battery voltage
	5		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.CHECK DAYTIME RUNNING LIGHT RELAY

Check daytime running light relay. Refer to EXL-69, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace daytime running light relay.

4.CHECK DAYTIME RUNNING LIGHT RELAY CONTROL SIGNAL OUTPUT

CONSULT ACTIVE TEST
1. Install daytime running light relay.
2. Turn ignition switch ON.
3. Select “DAYTIME RUNNING LIGHT” of BCM (HEADLAMP) active test item.
4. With operating the test item, check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Test item		Voltage (Approx.)
IPDM E/R					
Connector	Terminal				
E346	105	Ground	DAYTIME RUNNING LIGHT	On	0 V
				Off	Battery voltage

Is the inspection result normal?

YES >> Daytime running light relay circuit is OK.
NO-1 (Fixed at 0 V)>>GO TO 5.
NO-2 (Fixed at battery voltage) >>Replace IPDM E/R.

5.CHECK DAYTIME RUNNING LIGHT RELAY CONTROL SIGNAL OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Remove daytime running light relay.
3. Disconnect IPDM E/R harness connector.
4. Check continuity between IPDM E/R harness connector and daytime running light relay harness connector.

IPDM E/R		Daytime running light relay		Continuity
Connector	Terminal	Connector	Terminal	
E346	105	E17	2	Existed

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness.

6.CHECK DAYTIME RUNNING LIGHT RELAY CONTROL SIGNAL SHORT CIRCUIT

Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E346	105		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R.
NO >> Repair or replace harness.

Component Inspection

INFOID:0000000011321467

1.CHECK DAYTIME RUNNING LIGHT RELAY

1. Turn the ignition switch OFF.
2. Remove daytime running light relay.
3. Apply battery voltage to daytime running light relay- between terminals 1 and 2.
4. Check continuity between daytime running light relay terminals.

Daytime running light relay			Condition		Continuity
Terminal					
E17	5	3	Voltage	Apply	Existed
				Not Apply	Not existed
	4			Apply	Not existed
				Not Apply	Existed

Is the inspection result normal?

YES >> Daytime running light relay is normal.
NO >> Replace daytime running light relay.

XENON HEADLAMP

Diagnosis Procedure

INFOID:0000000011321468

1.CHECK XENON BULB

Install the normal bulb to the applicable headlamp. Check that the lighting switch is turned ON.

Is the headlamp turned ON?

YES >> Replace xenon bulb.
NO >> GO TO 2.

2.CHECK HID CONTROL UNIT

Install the normal HID control unit to the applicable headlamp. Check that the lighting switch is turned ON.

Is the headlamp turned ON?

YES >> Replace HID control unit.
NO >> Xenon headlamp is normal. Check headlamp control system.

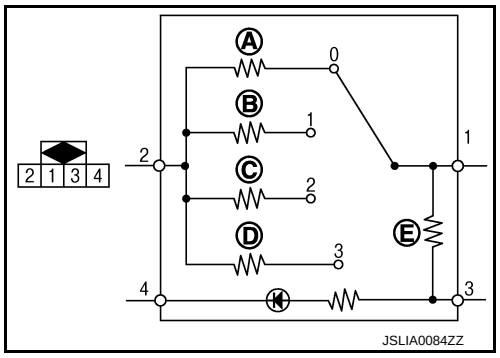
HEADLAMP AIMING SYSTEM (MANUAL)

Component Inspection

INFOID:0000000011321469

1.CHECK HEADLAMP AIMING SWITCH

1. Turn ignition switch OFF.
2. Remove headlamp aiming switch.
3. Check resistance among each headlamp aiming switch terminal.



Headlamp aiming switch		Condition	Resistance (Approx.)
Terminal		Switch position	
1	2	0	A: 1000 Ω
		1	B: 750 Ω
		2	C: 365 Ω
		3	D: 221 Ω
	3	—	E: 390 Ω

Is the inspection result normal?

YES >> Headlamp aiming switch is normal.
NO >> Replace the headlamp aiming switch.

PARKING LAMP CIRCUIT

Component Function Check

INFOID:0000000011321470

1.CHECK PARKING LAMP OPERATION

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

TAIL : Parking lamp ON
Off : Parking lamp OFF

Is the inspection result normal?

YES >> Parking lamp circuit is normal.
NO >> Refer to EXL-72, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011321471

1.CHECK PARKING LAMP FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not fusing.

Unit	Location	Fuse No.	Capacity
• Parking lamp • Front side marker lamp	IPDM E/R	#52	10 A

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 2.

2.CHECK PARKING LAMP SHORT CIRCUIT

1. Disconnect the following connectors.
- IPDM E/R
- Front combination lamp
- Front side marker lamp
- Headlamp aiming motor
2. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R			Continuity
Connector	Terminal		
E346	91	Ground	Not existed
	92		
	93		
	94		

Is the inspection result normal?

YES >> Replace fuse. (Replace IPDM E/R if fusing is found again.)
NO >> Repair or replace harness. And then replace the fuse.

3.CHECK PARKING LAMP BULB

Check applicable lamp bulb.

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace bulb.

4.CHECK PARKING LAMP OUTPUT VOLTAGE

CONSULT ACTIVE TEST

1. Disconnect front combination lamp connector.
2. Turn ignition switch ON.
3. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
4. With operating the test items, check voltage between IPDM E/R harness connector and ground.

(+)			(–)	Test item		Voltage (Approx.)
IPDM E/R						
Connector		Terminal				
RH	E346	91	Ground	EXTERNAL LAMPS	TAIL	Battery voltage
					Off	0 V
LH		92			TAIL	Battery voltage
					Off	0 V

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace IPDM E/R.

5. CHECK PARKING LAMP OPEN CIRCUIT

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

IPDM E/R			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E346	91	E349	1	Existed
LH		92	E348		

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness.

6. CHECK PARKING LAMP GROUND OPEN CIRCUIT

Check continuity between front combination lamp harness connector and ground.

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E349	2		Existed
LH	E348			

Is the inspection result normal?

YES >> Check corresponding bulb socket and harness. Repair or replace if necessary.
NO >> Repair or replace harness.

FRONT SIDE MARKER LAMP CIRCUIT

Component Function Check

INFOID:0000000011321472

1.CHECK PARKING LAMP OPERATION

Check that the parking lamp is turned ON.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Check parking lamp circuit. Refer to EXL-72, "Component Function Check".

2.CHECK FRONT SIDE MARKER LAMP OPERATION

CONSULT ACTIVE TEST

1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the test items, check that the front side marker lamp is turned ON.

TAIL : Front side marker lamp ON
Off : Front side marker lamp OFF

Is the inspection result normal?

YES >> Front side marker lamp circuit is normal.
NO >> Refer to EXL-74, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011321473

1.CHECK FRONT SIDE MARKER LAMP BULB

Check applicable lamp bulb.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace bulb.

2.CHECK FRONT SIDE MARKER LAMP OPEN CIRCUIT

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

IPDM E/R			Front side marker lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E346	91	E321	1	Existed
LH		92	E320		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.CHECK FRONT SIDE MARKER LAMP GROUND OPEN CIRCUIT

Check continuity between front side marker lamp harness connector and ground.

Front side marker lamp			Ground	Continuity
Connector		Terminal		
RH	E321	2		Existed
LH	E320			

Is the inspection result normal?

YES >> Check corresponding bulb socket and harness. Repair or replace if necessary.
NO >> Repair or replace harness.

TAIL LAMP CIRCUIT

Component Function Check

INFOID:0000000011321474

1.CHECK TAIL LAMP OPERATION

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

TAIL : Tail Lamp ON
Off : Tail lamp OFF

Is the inspection result normal?

YES >> Tail lamp circuit is normal.
NO >> Refer to EXL-75, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011321475

1.CHECK TAIL LAMP FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not fusing.

Unit	Location	Fuse No.	Capacity
• Tail lamp • license plate lamp	IPDM E/R	#53	10 A

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 2.

2.CHECK TAIL LAMP SHORT CIRCUIT

1. Disconnect IPDM E/R connector, licence plate lamp connector and rear combination lamp connector.
2. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E10	7		Not existed

Is the inspection result normal?

YES >> Replace fuse. (Replace IPDM E/R if fusing is found again.)
NO >> Repair or replace harness. And then replace the fuse.

3.CHECK TAIL LAMP BULB

Check applicable lamp bulb.

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace bulb.

4.CHECK TAIL LAMP OUTPUT VOLTAGE

CONSULT ACTIVE TEST
1. Disconnect rear combination lamp connector.
2. Turn ignition switch ON.
3. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
4. With operating the test items, check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Test item		Voltage (Approx.)
IPDM E/R					
Connector	Terminal				
E10	7	Ground	EXTERNAL LAMPS	TAIL	Battery voltage
				Off	0 V

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace IPDM E/R.

5.CHECK TAIL LAMP OPEN CIRCUIT

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

IPDM E/R			Rear combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E10	7	B205	1	Existed
LH			B80		

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness.

6.CHECK TAIL LAMP GROUND OPEN CIRCUIT

Check continuity between rear combination lamp harness connector and ground.

Rear combination lamp			Ground	Continuity
Connector		Terminal		
RH	B205	3		Existed
LH	B80			

Is the inspection result normal?

YES >> Check corresponding bulb socket and harness. Repair or replace if necessary.
NO >> Repair or replace harness.

LICENSE PLATE LAMP CIRCUIT

Component Function Check

INFOID:0000000011321476

1.CHECK TAIL LAMP OPERATION

Check that the tail lamp is turned ON.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Check tail lamp circuit. Refer to EXL-75, "Component Function Check".

2.CHECK LICENSE PLATE LAMP OPERATION

CONSULT ACTIVE TEST

1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the lighting switch, check that the license plate lamp is turned ON.

TAIL : License plate lamp ON
Off : License plate lamp OFF

Is the inspection result normal?

YES >> License plate lamp circuit is normal.
NO >> Refer to EXL-77, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011321477

1.CHECK LICENSE PLATE LAMP BULB

Check the applicable lamp bulb.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace bulb.

2.CHECK LICENSE PLATE LAMP OPEN CIRCUIT

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

IPDM E/R			License plate lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E10	7	D163	1	Existed
LH			D162		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.CHECK LICENSE PLATE LAMP GROUND OPEN CIRCUIT

Check continuity between license plate lamp harness connector and ground.

License plate lamp			Ground	Continuity
Connector		Terminal		
RH	D163	2		Existed
LH	D162			

Is the inspection result normal?

YES >> Check corresponding bulb socket and harness. Repair or replace if necessary.
NO >> Repair or replace harness.

TURN SIGNAL LAMP CIRCUIT

Component Function Check

INFOID:0000000011321478

1.CHECK TURN SIGNAL LAMP

CONSULT ACTIVE TEST
1. Select “FLASHER” of BCM (FLASHER) active test item.
2. With operating the test items, check that the turn signal lamps is turned ON.

LH	**: Turn signal lamps (LH) ON**
RH	**: Turn signal lamps (RH) ON**
Off	**: Turn signal lamps OFF**

Is the inspection result normal?

YES >> Turn signal lamp circuit is normal.
NO >> Refer to EXL-78, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011321479

1.CHECK TURN SIGNAL LAMP

CONSULT ACTIVE TEST
1. Select “FLASHER” of BCM (FLASHER) active test item.
2. With operating the test items, check that the turn signal lamps is turned ON.

LH	**: Turn signal lamps (LH) ON**
RH	**: Turn signal lamps (RH) ON**
Off	**: Turn signal lamps OFF**

Which turn signal lamp does not turn ON?

Side turn signal lamp>>GO TO 3.
Other than side turn signal lamp>>GO TO 2.

2.CHECK TURN SIGNAL LAMP BULB

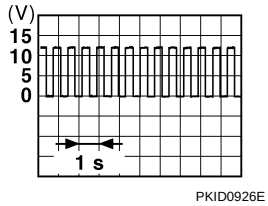
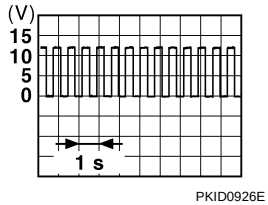
Check the applicable lamp bulb.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace bulb.

3.CHECK TURN SIGNAL LAMP OUTPUT VOLTAGE

1. Turn ignition switch OFF.
2. Disconnect front combination lamp connector, side turn signal lamp connector and rear combination lamp connector.
3. Turn ignition switch ON.
4. With operating the turn signal switch, check voltage between BCM harness connector and ground.

(+)			(–)	Condition		Voltage (Approx.)
BCM						
Connector		Terminal				
LH	M123	60	Ground	Turn signal switch	LH	 PKID0926E
					OFF	0 V
RH		61			RH	 PKID0926E
					OFF	0 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 5.

4. CHECK TURN SIGNAL LAMP OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check continuity between BCM harness connector and front combination lamp, door mirror or rear combination lamp harness connector.

Front turn signal lamp

BCM			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	M123	61	E349	3	Existed
LH		60	E348		

Side turn signal lamp

BCM			Door mirror		Continuity
Connector		Terminal	Connector	Terminal	
Passenger side	M123	61	D3	20	Existed
Driver side		60	D43		

Rear turn signal lamp

BCM			Rear combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	M123	61	B205	4	Existed
LH		60	B80		

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness.

5. CHECK TURN SIGNAL LAMP SHORT CIRCUIT

Check continuity between BCM harness connector and ground.

BCM			Ground	Continuity
Connector		Terminal		
RH	M123	61		Not existed
LH		60		

Is the inspection result normal?

YES-1 >> (When side turn signal lamp does not turn ON) Replace BCM. Refer to BCS-98, "Removal and Installation".

YES-2 >> (When lamp other than side turn signal lamp does not turn ON) Check each bulb socket for internal short circuit, and if check result is normal, replace BCM. Refer to BCS-98, "Removal and Installation".

NO >> Repair or replace harness.

6. CHECK TURN SIGNAL LAMP GROUND OPEN CIRCUIT

Check continuity between BCM harness connector and front combination lamp, door mirror or rear combination lamp and ground.

Front turn signal lamp

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E349	2		Existed
LH	E348			

Side turn signal lamp

Door mirror			Ground	Continuity
Connector		Terminal		
Passenger side	D3	19		Existed
Driver side	D43			

Rear turn signal lamp

Rear combination lamp			Ground	Continuity
Connector		Terminal		
RH	B205	3		Existed
LH	B80			

Is the inspection result normal?

YES-1 >> (When side turn signal lamp does not turn ON) Replace door mirror assembly.

YES-2 >> (When lamp other than side turn signal lamp does not turn ON) Check corresponding bulb socket and harness. Repair or replace if necessary.

NO >> Repair or replace harness.

FRONT FOG LAMP CIRCUIT

Component Function Check

INFOID:0000000011321480

1.CHECK FRONT FOG LAMP OPERATION

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

Fog : Front fog lamp ON
Off : Front fog lamp OFF

Is the measurement normal?

YES >> Front fog lamp circuit is normal.
NO >> Refer to EXL-81, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011321481

1.CHECK FRONT FOG LAMP BULB

Check the applicable lamp bulb.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace bulb.

2.CHECK FRONT FOG LAMP OUTPUT VOLTAGE

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

(+)			(–)	Test item		Voltage (Approx.)
IPDM E/R						
Connector		Terminal				
RH	E345	86	Ground	EXTERNAL LAMPS	Fog	Battery voltage
					Off	0 V
LH		87			Fog	Battery voltage
					Off	0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace IPDM E/R.

3.CHECK FRONT FOG LAMP OPEN CIRCUIT

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

IPDM E/R			Front fog lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E345	86	E402	1	Existed
LH		87	E331		

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness.

4. CHECK FRONT FOG LAMP GROUND CIRCUIT OPEN CIRCUIT

Check continuity between front fog lamp harness connector and ground.

Front fog lamp			Ground	Continuity
Connector		Terminal		
RH	E402	2		Existed
LH	E331			

Is the inspection result normal?

YES >> Refer to GI-42, "Intermittent Incident".
NO >> Repair or replace harness.

OPTICAL SENSOR

Component Function Check

INFOID:0000000011321482

1.CHECK OPTICAL SENSOR SIGNAL BY CONSULT

CONSULT DATA MONITOR
1. Turn ignition switch ON.
2. Select “OPTISEN (DTCT)” of BCM (HEADLAMP) data monitor item.
3. Turn lighting switch AUTO.
4. With the optical sensor illuminating, check the monitor status.

Monitor item	Condition		Voltage (Approx.)
OPTISEN (DTCT)	Optical sensor	When illuminating	3.1 V or more *
		When shutting off light	0.6 V or less

*: Illuminates the optical sensor. The value may be less than the standard value if brightness is weak.

Is the inspection result normal?

YES >> Optical sensor is normal.
NO >> Refer to EXL-83, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011321483

1.CHECK OPTICAL SENSOR POWER SUPPLY INPUT

1. Turn ignition switch ON.
2. Turn lighting switch AUTO.
3. Check voltage between optical sensor harness connector and ground.

(+)		(–)	Voltage (Approx.)
Optical sensor			
Connector	Terminal		
M17	1	Ground	5 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> GO TO 4.

2.CHECK OPTICAL SENSOR GROUND INPUT

Check voltage between optical sensor harness connector and ground.

(+)		(–)	Voltage (Approx.)
Optical sensor			
Connector	Terminal		
M17	3	Ground	0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 6.

3.CHECK OPTICAL SENSOR SIGNAL OUTPUT

With illuminating the optical sensor, check voltage between optical sensor harness connector and ground.

(+)		(–)	Condition		Voltage (Approx.)
Optical sensor					
Connector	Terminal				
M17	2	Ground	Optical sensor	When illuminating	3.1 V or more *
				When shutting off light	0.6 V or less

*: Illuminate the optical sensor. The value may be less than the standard if brightness is weak.

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace the optical sensor.

4. CHECK OPTICAL SENSOR OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect optical sensor connector and BCM connector.
3. Check continuity between optical sensor harness connector and BCM harness connector.

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M17	1	M121	17	Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness.

5. CHECK OPTICAL SENSOR SHORT CIRCUIT

Check continuity between optical sensor harness connector and ground.

Optical sensor		Ground	Continuity
Connector	Terminal		
M17	1		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-98, "Removal and Installation".
NO >> Repair or replace harness.

6. CHECK OPTICAL SENSOR GROUND OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect optical sensor connector and BCM connector.
3. Check continuity between optical sensor harness connector and BCM harness connector.

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M17	3	M121	18	Existed

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-98, "Removal and Installation".
NO >> Repair or replace harness.

7. CHECK OPTICAL SENSOR SIGNAL OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect optical sensor connector and BCM connector.
3. Check continuity between optical sensor harness connector and BCM harness connector.

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M17	2	M121	14	Existed

Is the inspection result normal?

YES >> GO TO 8.
NO >> Repair or replace harness.

8. CHECK OPTICAL SENSOR SHORT CIRCUIT

Check continuity between optical sensor harness connector and ground.

Optical sensor		Ground	Continuity
Connector	Terminal		
M17	2		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-98, "Removal and Installation".
NO >> Repair or replace harness.

HAZARD SWITCH

Component Function Check

INFOID:0000000011321484

1.CHECK HAZARD SWITCH SIGNAL BY CONSULT

CONSULT DATA MONITOR
1. Turn ignition switch ON.
2. Select “HAZARD SW” of BCM (FLASHER) data monitor item.
3. With operating the hazard switch, check the monitor status.

Monitor item	Condition		Monitor status
HAZARD SW	Hazard switch	ON	On
		OFF	Off

Is the inspection result normal?

YES >> Hazard switch circuit is normal.
NO >> Refer to EXL-86, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011321485

1.CHECK HAZARD SWITCH SIGNAL INPUT

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

(+)		(–)	Voltage (Approx.)
Hazard switch			
Connector	Terminal		
M45	2	Ground	12 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 2.

2.CHECK HAZARD SWITCH SIGNAL OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between hazard switch harness connector and BCM harness connector.

Hazard switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M45	2	M121	29	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.CHECK HAZARD SWITCH SIGNAL SHORT CIRCUIT

Check continuity between hazard switch harness connector and ground.

Hazard switch		Ground	Continuity
Connector	Terminal		
M45	2		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-98, "Removal and Installation".
NO >> Repair or replace harness.

4.CHECK HAZARD SWITCH GROUND OPEN CIRCUIT

Check continuity between hazard switch harness connector and ground.

Hazard switch		Ground	Continuity
Connector	Terminal		
M45	1		Existed

Is the inspection result normal?

YES >> Replace hazard switch.
NO >> Repair or replace harness.

SYMPTOM DIAGNOSIS

EXTERIOR LIGHTING SYSTEM SYMPTOMS
WITHOUT DAYTIME RUNNING LIGHT SYSTEM

WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Symptom Table

INFOID:0000000011321486

CAUTION:
Perform the self-diagnosis with CONSULT before the symptom diagnosis. Perform the trouble diagnosis if any DTC is detected.

Symptom		Possible cause	Inspection item
Headlamp (HI) is not turned ON.	One side	• Fuse • Halogen bulb (HI) • Harness between IPDM E/R and headlamp (HI) • Harness between headlamp (HI) and ground • IPDM E/R	Headlamp (HI) circuit Refer to EXL-62, "WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Component Function Check".
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON" Refer to EXL-94, "WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure".	
High beam indicator lamp is not turned ON. [Headlamp (HI) is turned ON.]		Combination meter	• Combination meter Data monitor "HI-BEAM IND" • BCM (HEAD LAMP) Active test "HEADLAMP"
Headlamp (LO) is not turned ON.	One side	• Fuse • Xenon bulb (LO) • Harness between IPDM E/R and headlamp lamp (LO) • Harness between headlamp (LO) and ground • IPDM E/R	Headlamp (LO) circuit Refer to EXL-66, "Component Function Check".
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON" Refer to EXL-96, "Diagnosis Procedure".	
Each lamp is not turned ON/OFF with lighting switch AUTO.		• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-96, "Symptom Table".
		• Optical sensor • Harness between optical sensor and BCM • BCM	Optical sensor Refer to EXL-83, "Component Function Check".
Parking lamp is not turned ON.		• Fuse • Parking lamp bulb • Harness between IPDM E/R and front combination lamp • Harness between front combination lamp and ground • IPDM E/R	Parking lamp circuit Refer to EXL-72, "Component Function Check".
Front side marker lamp is not turned ON.		• Front side marker lamp bulb • Harness between IPDM E/R and front side marker lamp • Harness between front side marker lamp and ground	Front side marker lamp circuit Refer to EXL-74, "Component Function Check".

Symptom		Possible cause	Inspection item
Tail lamp (Rear side marker lamp) is not turned ON.		• Fuse • Tail lamp bulb • Harness between IPDM E/R and rear combination lamp • Harness between rear combination lamp and ground • IPDM E/R	Tail lamp circuit Refer to EXL-75, "Component Function Check".
License plate lamp is not turned ON.		• License plate lamp bulb • Harness between IPDM E/R and license plate lamp • Harness between license plate lamp and ground	License plate lamp circuit Refer to EXL-77, "Component Function Check".
Parking lamp, side marker lamp, tail lamp and license plate lamp are not turned ON.		**Symptom diagnosis** "PARKING, SIDE MARKER, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON" Refer to EXL-97, "Diagnosis Procedure".	
Tail lamp indicator is not turned ON. (Exterior lamps are turned ON.)		Combination meter	• Combination meter Data monitor "LIGHT IND" • BCM (HEADLAMP) Active test "TAIL LAMP"
Turn signal lamp does not blink.	Indicator lamp is normal. (Applicable side performs high flasher activation.)	• Turn signal lamp bulb • Door mirror • Harness between BCM and each turn signal lamp • Harness between each turn signal lamp and ground	Turn signal lamp circuit Refer to EXL-78, "Component Function Check".
	Indicator lamp is included.	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-96, "Symptom Table".
Turn signal indicator lamp does not blink. (Turn signal lamp is normal.)	One side	Combination meter	—
	Both sides (Always)	• Turn signal indicator lamp signal • BCM • Combination meter	• Combination meter Data monitor "TURN IND" • BCM (FLASHER) Active test "FLASHER"
	Both sides (Only when activating hazard warning lamp with ignition switch OFF)	• Combination meter power supply and ground circuit • Combination meter	Combination meter Power supply and ground circuit Refer to MWI-71, "COMBINATION METER : Diagnosis Procedure".
• Hazard warning lamp does not activate. • Hazard warning lamp continues activating. (Turn signal is normal.)		• Hazard switch • Harness between hazard switch and BCM • Harness between hazard switch and ground • BCM	Hazard switch circuit Refer to EXL-86, "Component Function Check".
Front fog lamp is not turned ON.	One side	• Front fog lamp bulb • Harness between IPDM E/R and front fog lamp • Harness between front fog lamp and ground • IPDM E/R	Front fog lamp circuit Refer to EXL-81, "Component Function Check".
	Both sides	**Symptom diagnosis** "BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON" Refer to EXL-98, "Diagnosis Procedure".	

WITH DAYTIME RUNNING LIGHT SYSTEM

WITH DAYTIME RUNNING LIGHT SYSTEM : Symptom Table

INFOID:0000000011321487

CAUTION:
Perform the self-diagnosis with CONSULT before the symptom diagnosis. Perform the trouble diagnosis if any DTC is detected.

Symptom		Possible cause	Inspection item
Headlamp (HI) is not turned ON.	One side	• Fuse • Halogen bulb (HI) • Harness between IPDM E/R and headlamp (HI) • Harness between headlamp (HI) and ground • IPDM E/R	Headlamp (HI) circuit Refer to EXL-63, "WITH DAYTIME RUNNING LIGHT SYSTEM : Component Function Check".
		• Harness between IPDM E/R and daytime running light relay • Daytime running light relay • IPDM E/R	Daytime running light relay circuit Refer to EXL-68, "Component Function Check".
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON" Refer to EXL-94, "WITH DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure".	
High beam indicator lamp is not turned ON. [Headlamp (HI) is turned ON.]		Combination meter	• Combination meter Data monitor "HI-BEAM IND" • BCM (HEAD LAMP) Active test "HEADLAMP"
Headlamp (LO) is not turned ON.	One side	• Fuse • Xenon bulb (LO) • Harness between IPDM E/R and headlamp lamp (LO) • Harness between headlamp (LO) and ground • IPDM E/R	Headlamp (LO) circuit Refer to EXL-66, "Component Function Check".
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON" Refer to EXL-96, "Diagnosis Procedure".	
Each lamp is not turned ON/OFF with lighting switch AUTO.		• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-96, "Symptom Table".
		• Optical sensor • Harness between optical sensor and BCM • BCM	Optical sensor Refer to EXL-83, "Component Function Check".
Daytime running light is not turned ON. [Headlamp (HI) is turned ON.]		• Fuse • Harness between IPDM E/R and daytime running light relay • Daytime running light relay • IPDM E/R • BCM • ECM • Combination meter	• Daytime running light relay circuit Refer to EXL-68, "Component Function Check". • BCM (HEADLAMP) Data monitor "ENGINE STATE" • Combination meter Data monitor "PKB SW" • BCM (HEADLAMP) Active test "DAYTIME RUNNING LIGHT"
Parking lamp is not turned ON.		• Fuse • Parking lamp bulb • Harness between IPDM E/R and front combination lamp • IPDM E/R	Parking lamp circuit Refer to EXL-97, "Diagnosis Procedure".

Symptom		Possible cause	Inspection item
Front side marker lamp is not turned ON.		• Front side marker lamp bulb • Harness between IPDM E/R and front side marker lamp • Harness between front side marker lamp and ground • IPDM E/R	Front side marker lamp circuit Refer to EXL-74, "Component Function Check".
Tail lamp (Rear side marker lamp) is not turned ON.		• Fuse • Tail lamp bulb • Harness between IPDM E/R and rear combination lamp • Harness between and rear combination lamp and ground	Tail lamp circuit Refer to EXL-75, "Component Function Check".
License plate lamp is not turned ON.		• License plate lamp bulb • Harness between IPDM E/R and license plate lamp • Harness between license plate lamp and ground	License plate lamp circuit Refer to EXL-77, "Component Function Check".
Parking lamp, side marker lamp, tail lamp and license plate lamp are not turned ON.		**Symptom diagnosis** “PARKING, SIDE MARKER, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON” Refer to EXL-97, "Diagnosis Procedure".	
Tail lamp indicator is not turned ON. (Exterior lamps are turned ON.)		Combination meter	• Combination meter Data monitor “LIGHT IND” • BCM (HEADLAMP) Active test “TAIL LAMP”
Turn signal lamp does not blink.	Indicator lamp is normal. (Applicable side performs high flasher activation.)	• Turn signal lamp bulb • Door mirror • Harness between BCM and each turn signal lamp • Harness between each turn signal lamp and ground	Turn signal lamp circuit Refer to EXL-78, "Component Function Check".
	Indicator lamp is included.	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-96, "Symptom Table".
Turn signal indicator lamp does not blink. (Turn signal lamp is normal.)	One side	Combination meter	—
	Both sides (Always)	• Turn signal indicator lamp signal • BCM • Combination meter	• Combination meter Data monitor “TURN IND” • BCM (FLASHER) Active test “FLASHER”
	Both sides (Only when activating hazard warning lamp with ignition switch OFF)	• Combination meter power supply and ground circuit • Combination meter	Combination meter Power supply and ground circuit Refer to MWI-71, "COMBINATION METER : Diagnosis Procedure".
• Hazard warning lamp does not activate. • Hazard warning lamp continues activating. (Turn signal is normal.)		• Hazard switch • Harness between hazard switch and BCM • Harness between hazard switch and ground • BCM	Hazard switch circuit Refer to EXL-86, "Component Function Check".

Symptom		Possible cause	Inspection item
Front fog lamp is not turned ON.	One side	• Front fog lamp bulb • Harness between IPDM E/R and front fog lamp • Harness between front fog lamp and ground • IPDM E/R	Front fog lamp circuit Refer to EXL-81, "Component Function Check".
	Both sides	**Symptom diagnosis** “BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON” Refer to EXL-98, "Diagnosis Procedure".	

NORMAL OPERATING CONDITION

Description

INFOID:0000000011321488

XENON HEADLAMP

- Brightness and the color of light may change slightly immediately after turning the headlamp ON until the xenon bulb becomes stable. This is normal.
- Illumination time lag may occur between right and left. This is normal.

AUTO LIGHT SYSTEM

The headlamp may not be turned ON/OFF immediately after passing dark area or bright area (short tunnel, sky bridge, shadowed area etc.) while using the auto light system. This causes for the control difference. This is normal.

BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON WITH DAYTIME RUNNING LIGHT SYSTEM

WITH DAYTIME RUNNING LIGHT SYSTEM : Description

INFOID:0000000011321489

Both side headlamps (HI) are not turned ON when setting to the lighting switch HI or PASS.

WITH DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure

INFOID:0000000011321490

1.COMBINATION SWITCH INSPECTION

Check combination switch. Refer to BCS-96, "Symptom Table".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning part.

2.CHECK HEADLAMP (HI) REQUEST SIGNAL INPUT

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

Monitor item	Condition		Monitor status
HL HI REQ	Lighting switch (2ND)	HI or PASS	On
		LO	Off

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-98, "Removal and Installation".

3.HEADLAMP (HI) CIRCUIT INSPECTION

Check headlamp (HI) circuit. Refer to EXL-63, "WITH DAYTIME RUNNING LIGHT SYSTEM : Component Function Check".

Is the inspection result normal?

YES >> Refer to GI-42, "Intermittent Incident".
NO >> Repair or replace the malfunctioning part.

WITHOUT DAYTIME RUNNING LIGHT SYSTEM

WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Description

INFOID:0000000011321491

Both side headlamps (HI) are not turned ON when setting to the lighting switch HI or PASS.

WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure

INFOID:0000000011321492

1.COMBINATION SWITCH INSPECTION

Check combination switch. Refer to BCS-96, "Symptom Table".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning part.

2.CHECK HEADLAMP (HI) REQUEST SIGNAL INPUT

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

Monitor item	Condition		Monitor status
HL HI REQ	Lighting switch (2ND)	HI or PASS	On
		LO	Off

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-98, "Removal and Installation".

3. HEADLAMP (HI) CIRCUIT INSPECTION

Check headlamp (HI) circuit. Refer to EXL-62, "WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Component Function Check".

Is the inspection result normal?

YES >> Refer to GI-42, "Intermittent Incident".
NO >> Repair or replace the malfunctioning part.

BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON

Description

INFOID:0000000011321493

Both side headlamps (LO) are not turned ON in any condition.

Diagnosis Procedure

INFOID:0000000011321494

1.CHECK COMBINATION SWITCH

Check combination switch. Refer to BCS-96, "Symptom Table".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning part.

2.CHECK HEADLAMP (LO) REQUEST SIGNAL INPUT

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

Monitor item	Condition		Monitor status
HL LO REQ	Lighting switch	2ND	On
		OFF	Off

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-98, "Removal and Installation".

3.HEADLAMP (LO) CIRCUIT INSPECTION

Check headlamp (LO) circuit. Refer to EXL-66, "Component Function Check".

Is the inspection result normal?

YES >> Refer to GI-42, "Intermittent Incident".
NO >> Repair or replace the malfunctioning part.

PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMPS ARE NOT TURNED ON

Description

INFOID:0000000011321495

The parking, license plate, side marker, tail lamps and each illumination are not turned ON in any condition.

Diagnosis Procedure

INFOID:0000000011321496

1.COMBINATION SWITCH INSPECTION

Check combination switch. Refer to BCS-96, "Symptom Table".

Is the combination switch normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning part.

2.CHECK TAIL LAMP RELAY REQUEST SIGNAL INPUT

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

Monitor item	Condition		Monitor status
TAIL & CLR REQ	Lighting switch	1ST	On
		OFF	Off

Is the inspection result normal?

YES >> Replace IPDM E/R.
NO >> Replace BCM. Refer to BCS-98, "Removal and Installation".

BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

Description

INFOID:0000000011321497

The front fog lamps are not turned ON in any condition.

Diagnosis Procedure

INFOID:0000000011321498

1.CHECK FRONT FOG LAMP FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not fusing.

Unit	Location	Fuse No.	Capacity
Front fog lamp	IPDM E/R	#58	15 A

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 2.

2.CHECK FRONT FOG LAMP SHORT CIRCUIT

1. Disconnect front fog connector and IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E345	86		Not existed
LH		87		

Is the inspection result normal?

YES >> Replace fuse. (Replace IPDM E/R if the fuse is fusing again.)
NO >> Repair or replace harness. And then replace the fuse.

3.COMBINATION SWITCH INSPECTION

Check combination switch. Refer to BCS-96, "Symptom Table".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace the malfunctioning part.

4.CHECK FRONT FOG LAMP REQUEST SIGNAL INPUT

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

Monitor item	Condition		Monitor status
FR FOG REQ	Front fog lamp switch (With lighting switch 2ND)	ON	On
		OFF	Off

Is the item status normal?

YES >> GO TO 5.
NO >> Replace BCM. Refer to BCS-98, "Removal and Installation".

5.FRONT FOG LAMP CIRCUIT INSPECTION

Check the front fog lamp circuit. Refer to EXL-81, "Component Function Check".

Is the inspection result normal?

YES >> Refer to GI-42, "Intermittent Incident".
NO >> Repair or replace the malfunctioning part.

PERIODIC MAINTENANCE

HEADLAMP AIMING ADJUSTMENT

Description

INFOID:0000000011321499

PREPARATION BEFORE ADJUSTING

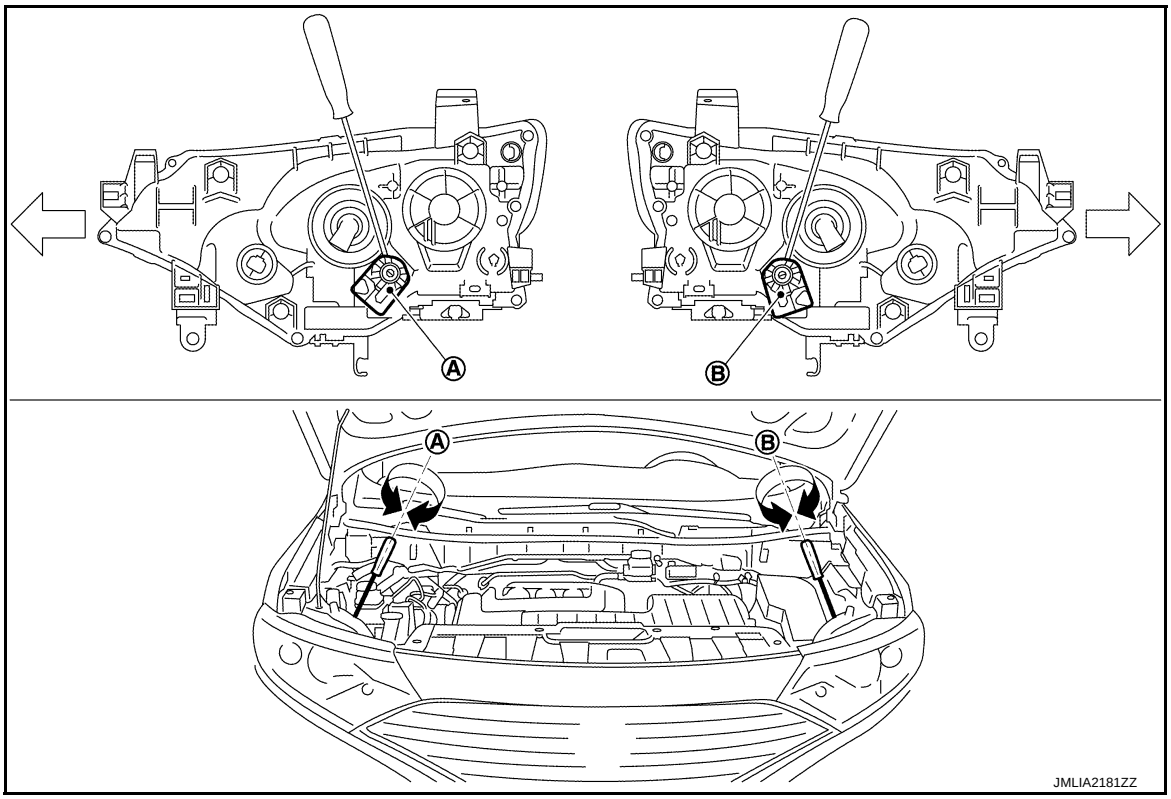
NOTE:

- For details, refer to the regulations in your own country.
- Perform aiming if the vehicle front body has been repaired and/or the headlamp assembly has been replaced.

Before performing aiming adjustment, check the following.

- Adjust the tire pressure to the specification.
- Fill with fuel, engine coolant and each oil.
- Maintain the unloaded vehicle condition. (remove luggage from the passenger compartment and the luggage room.)
  NOTE:
  Do not remove the temporary tire, jack and on-vehicle tool.
- Wipe out dirt on the headlamp.
  CAUTION:
  Never use organic solvent (thinner, gasoline etc.)
- Ride alone on the driver seat.

AIMING ADJUSTMENT SCREW



A. Headlamp RH HI/LO (UP/DOWN) adjustment screw
B. Headlamp LH HI/LO (UP/DOWN) adjustment screw
⇦ : Vehicle center

Adjustment screw		Screw driver rotation	Facing direction
A	Headlamp RH HI/LO (UP/DOWN)	Clockwise	UP
		Counterclockwise	DOWN
B	Headlamp LH HI/LO (UP/DOWN)	Clockwise	UP
		Counterclockwise	DOWN

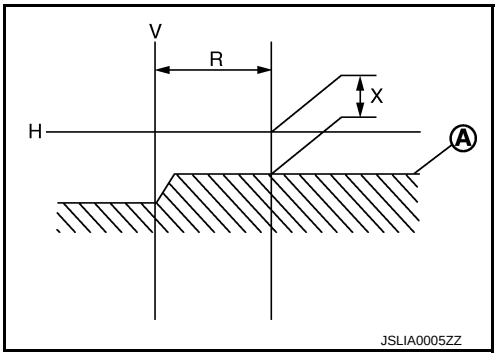
Aiming Adjustment Procedure

INFOID:0000000011321500

1. Place the screen.
   NOTE:
   - Stop the vehicle facing the wall.
   - Place the board on a plain road vertically.
2. Face the vehicle with the screen. Maintain 10 m (32.8 ft) between the headlamp center and the screen.
3. Start the engine. Turn the headlamp (LO) ON.
   NOTE:
   Shut off the headlamp light with the board to prevent from illuminating the adjustment screen.
   CAUTION:
   Never cover the lens surface with a tape etc. The lens is made of resin.
4. Measure the distance (X) between the horizontal center line of headlamp (H) and the cutoff line (A) within the light axis measurement range (R) from the vertical center line ahead of headlamp (V).

Light axis measurement range (R) : 350 ± 175 mm (13.78 ± 6.89 in)

Low beam distribution on the screen

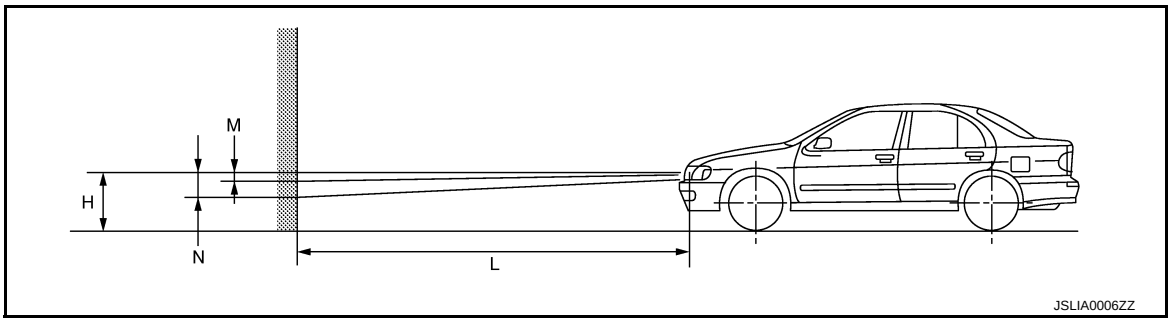


5. Adjust the cutoff line height (X) with the aiming adjustment screw so as to enter in the adjustment range (M–N) according to the horizontal center line of headlamp (H).

unit: mm (in)

Horizontal center line of headlamp (H)	Highest cutoff line height (M)	Lowest cutoff line height (N)
700 (27.56) or less	4 (0.16)	30 (1.18)
701(27.60) – 800 (31.50)	4 (0.16)	30 (1.18)
801 (31.54) or more	17 (0.67)	44 (1.73)

Side view



Distance between the headlamp center and the screen (L) : 10 m (32.8 ft)

FRONT FOG LAMP AIMING ADJUSTMENT

Description

INFOID:0000000011321501

PREPARATION BEFORE ADJUSTING

NOTE:
- For details, refer to the regulations in your own country.
- Perform aiming if the vehicle front body has been repaired and/or the front fog lamp assembly has been replaced.

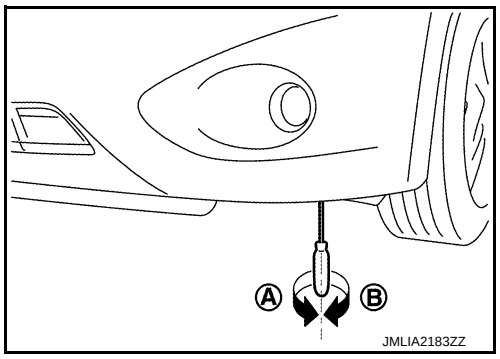
Before performing aiming adjustment, check the following.
- Adjust the tire pressure to the specification.
- Fill with fuel, engine coolant and each oil.
- Maintain the unloaded vehicle condition. (Remove luggage from the passenger compartment and the trunk room.)
  NOTE:
  Do not remove the temporary tire, jack and on-vehicle tool.
- Wipe out dirt on the front fog lamp.
  CAUTION:
  Never use organic solvent (thinner, gasoline etc.)
- Ride alone on the driver seat.

AIMING ADJUSTMENT SCREW

- Turn the aiming adjusting screw for adjustment.

  A: UP
  B: DOWN

- For the position and direction of the adjusting screw, refer to the figure.
  NOTE:
  A screwdriver or hexagonal wrench [6 mm (0.24 in)] can be used for adjustment.

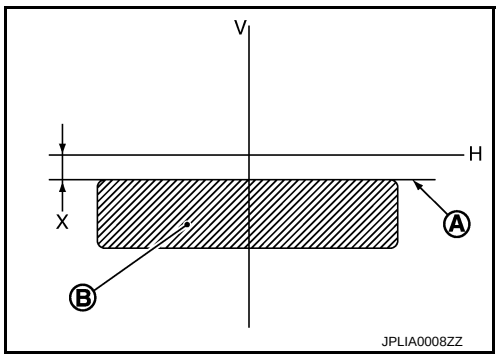


Aiming Adjustment Procedure

INFOID:0000000011321502

1. Place the screen.
   NOTE:
   - Stop the vehicle facing the wall.
   - Place the board on a plain road vertically.
2. Face the vehicle with the screen. Maintain 7.63 m (25 ft) between the front fog lamp center and the screen.
3. Start the engine. Turn the front fog lamp ON.
   NOTE:
   Shut off the headlamp light with the board to prevent from illuminating the adjustment screen.
   CAUTION:
   Never cover the lens surface with a tape etc. The lens is made of resin.
4. Adjust the cutoff line height (A) with the aiming adjustment screw so that the distance (X) between the horizontal center line of front fog lamp (H) and (A) becomes 100 mm (3.94 in).

Front fog lamp light distribution on the screen



A : Cutoff line
B : High illuminance area
H : Horizontal center line of front fog lamp
V : Vertical center line of front fog lamp
X : Cutoff line height

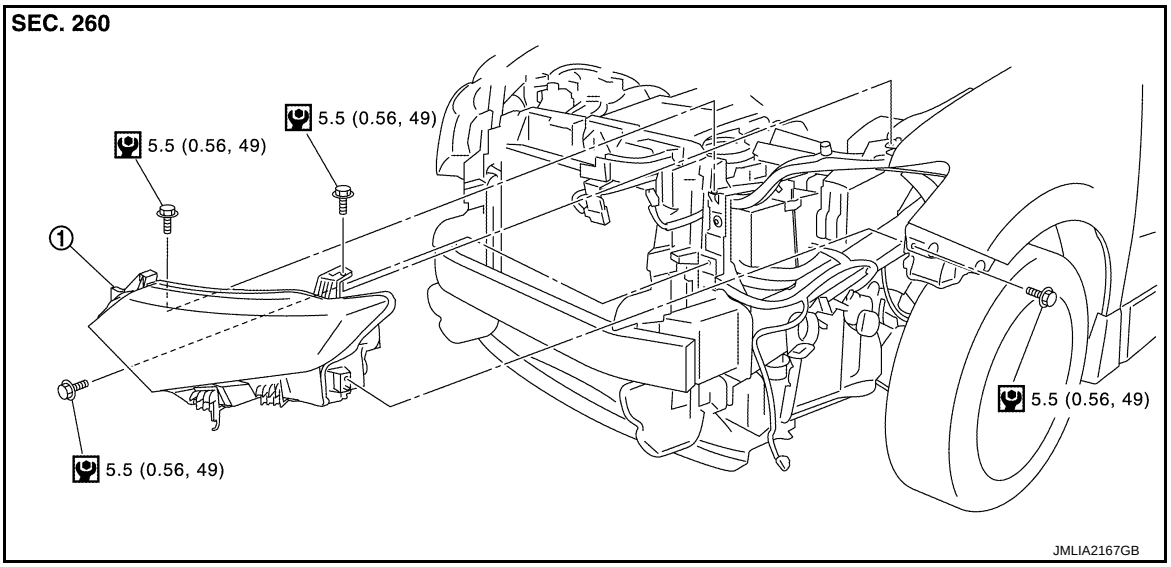
REMOVAL AND INSTALLATION

FRONT COMBINATION LAMP

Exploded View

INFOID:0000000011321503

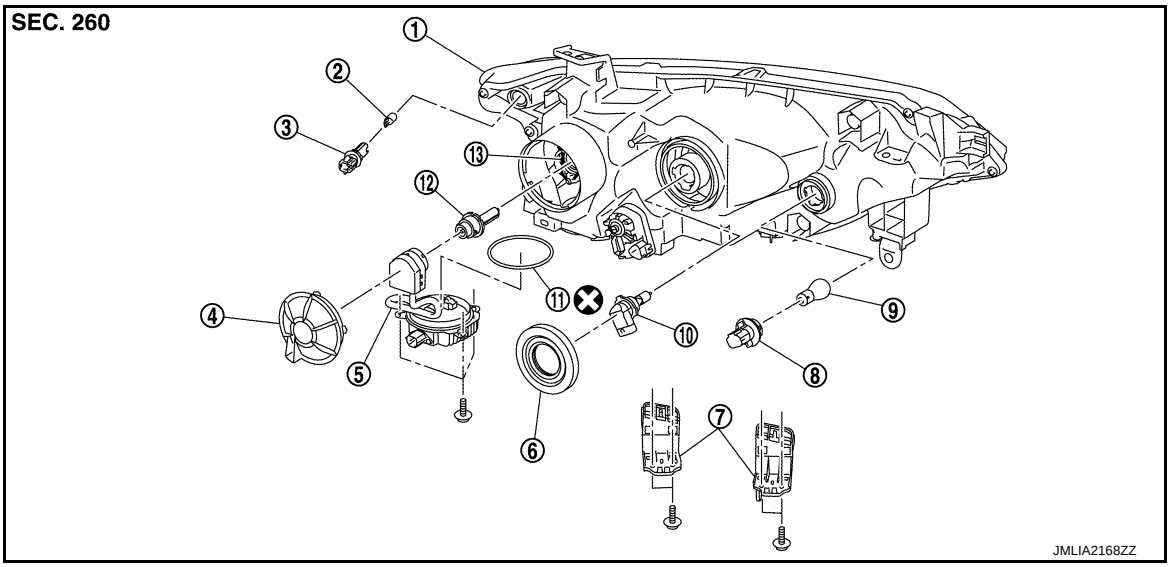
REMOVAL



1. Front combination lamp

: N·m (kg-m, in-lb)

DISASSEMBLY



1. Front combination lamp housing assembly
2. Front side marker lamp bulb
3. Front side marker lamp bulb socket
4. Resin cap
5. HID control unit assembly
6. Back cover
7. Bumper bracket
8. Front turn signal lamp/parking lamp bulb socket
9. Front turn signal lamp/parking lamp bulb
10. Halogen bulb (HI)
11. Seal packing
12. Xenon bulb (LO)

13. Retaining spring

: Always replace after every disassembly.

Removal and Installation

INFOID:0000000011321504

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

1. Remove front bumper fascia. Refer to EXT-12, "Removal and Installation".
2. Remove front combination lamp mounting bolts.
3. Pull out the front combination lamp forward the vehicle, and then disconnect the connector.
4. Remove front combination lamp.

INSTALLATION

Note the following items, and then install in the reverse order of removal.

CAUTION:
- **After installation, perform aiming adjustment. Refer to EXL-99, "Description".**
- **After installation, check that headlamp lighting. Refer to EXL-105, "Inspection After Installation (HID Control Unit)".**

Replacement

INFOID:0000000011321505

CAUTION:
- **Disconnect the battery negative terminal or the fuse.**
- **After installing the bulb, install the resin cap and the bulb socket securely for watertightness.**
- **Never touch the glass of bulb directly by hand. Keep grease and other oily matters away from it.**
- **Never touch bulb by hand while it is lit or right after being turned off.**
- **Never leave bulb out of lamp reflector for a long time because dust, moisture smoke, etc. may affect the performance of lamp. When replacing bulb, be sure to replace it with new one.**

HEADLAMP BULB (HI)

1. Disconnect the halogen bulb connector.
2. Rotate the halogen bulb socket counterclockwise and unlock it.
3. Remove halogen bulb socket from the front combination lamp housing assembly.

HEADLAMP BULB (LO)

1. Rotate the resin cap counterclockwise and unlock it.
2. Rotate the xenon bulb socket counterclockwise and unlock it.
3. Remove retaining spring lock, and then remove xenon bulb from the front combination lamp housing assembly.
   CAUTION:
   Never break the xenon bulb ceramic tube when replacing the bulb.

FRONT TURN SIGNAL LAMP/PARKING LAMP BULB

1. Rotate the bulb socket counterclockwise and unlock it.
2. Remove the bulb from the bulb socket.

FRONT SIDE MARKER LAMP BULB

1. Rotate the bulb socket counterclockwise and unlock it.
2. Remove the bulb from the bulb socket.

Disassembly and Assembly

INFOID:0000000011321506

DISASSEMBLY

1. Rotate the resin cap counterclockwise and unlock it.
2. Rotate the xenon bulb socket counterclockwise and unlock it.
3. Remove the retaining spring lock, and then remove the xenon bulb.

4. Rotate the halogen bulb socket counterclockwise and unlock it.
5. Remove halogen bulb socket from the front combination lamp assembly.
6. Rotate the front turn signal lamp/parking lamp bulb socket counterclockwise and unlock it.
7. Remove front turn signal lamp/parking lamp bulb.
8. Rotate the front side marker lamp bulb socket counterclockwise and unlock it.
9. Remove the bulb from the front side marker lamp bulb socket.

ASSEMBLY

Assemble in the reverse order of disassembly.

CAUTION:

After installing the bulb, install the resin cap, back cover and the bulb socket securely for watertightness.

Inspection After Installation (HID Control Unit)

INFOID:0000000011321507

CAUTION:

Temporarily install the headlamp on the vehicle. Connect the battery to the connector (vehicle side) when checking ON/OFF status.

XENON HEADLAMP LIGHTING CHECK

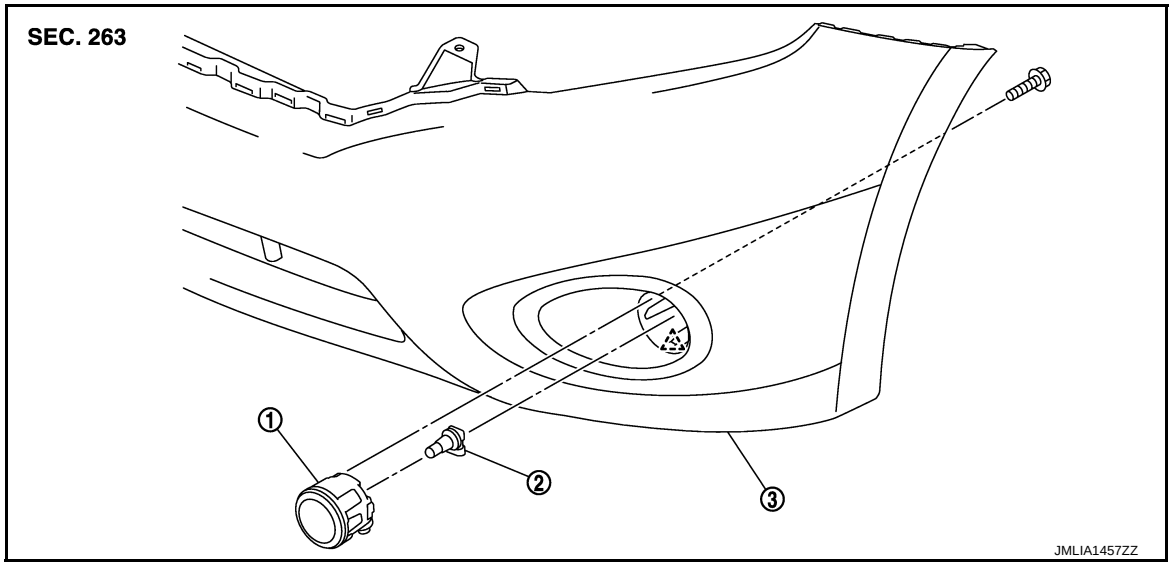
When recycled HID Control Unit, check the following, when there is abnormality replace the HID Control Unit.

1. Xenon bulb is cold condition (turn OFF more than 10 minutes), and repetition does headlamp turned ON/OFF, check that a headlamp illuminated it surely.
2. Headlamp is turn ON until the xenon bulb becomes stable condition (for about 5 minutes) from cold condition, check that there are not on and off light, abnormality such as blinking.
3. Xenon bulb is warm condition (turn ON more than 15 minutes and turn OFF for 1 minute), and repetition does headlamp turned ON/OFF, check that a headlamp illuminated it surely.
4. Headlamp is turn ON for about 30 minutes, check that there are not on and off light, abnormality such as blinking whether brightness of right and left does not have a difference.

FRONT FOG LAMP

Exploded View

INFOID:0000000011321508



1. Front fog lamp
2. Halogen bulb
3. Front bumper fascia

: Pawl

Removal and Installation

INFOID:0000000011321509

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

1. Remove front fender protector (front) fixing screws and clips, and then keep a service area. Refer to EXT-23, "Removal and Installation".
2. Disconnect front fog lamp connector.
3. Remove front fog lamp mounting bolt.
4. Disengage fixing pawl, and then remove front fog lamp.

INSTALLATION

Note the following item, and then install in the reverse order of removal.

CAUTION:
After installation, perform aiming adjustment. Refer to EXL-101, "Description".

Replacement

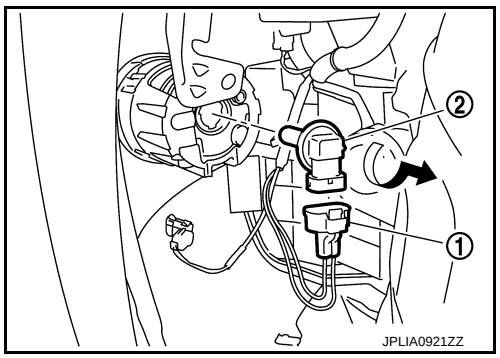
INFOID:0000000011321510

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

FRONT FOG LAMP BULB

1. Remove front fender protector (front) fixing screws and clips, and then keep a service area. Refer to EXT-23, "Removal and Installation".

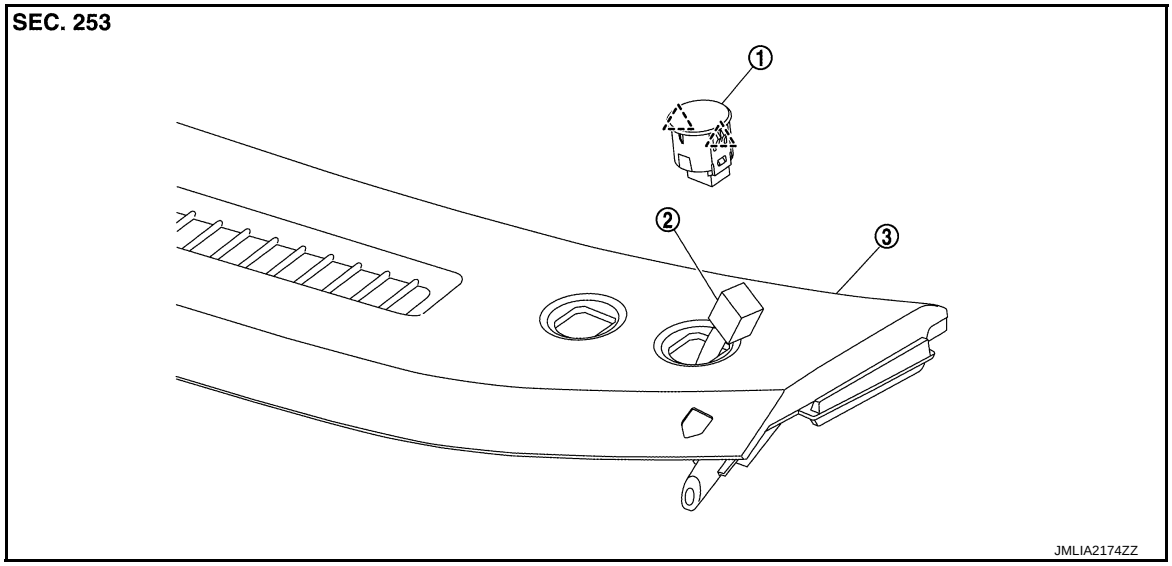
2. Disconnect front fog lamp bulb connector (1).
3. Rotate the bulb (2) counterclockwise and unlock it.



OPTICAL SENSOR

Exploded View

INFOID:0000000011321511



1. Optical sensor
2. Harness connector
3. Instrument upper garnish

: Pawl

Removal and Installation

INFOID:0000000011321512

REMOVAL

1. Insert an appropriate tool between the optical sensor and the instrument upper garnish. Pull out the optical sensor upward.
2. Disconnect the optical sensor connector, and then remove optical sensor.

INSTALLATION

Install in the reverse order of removal.

LIGHTING & TURN SIGNAL SWITCH

Exploded View

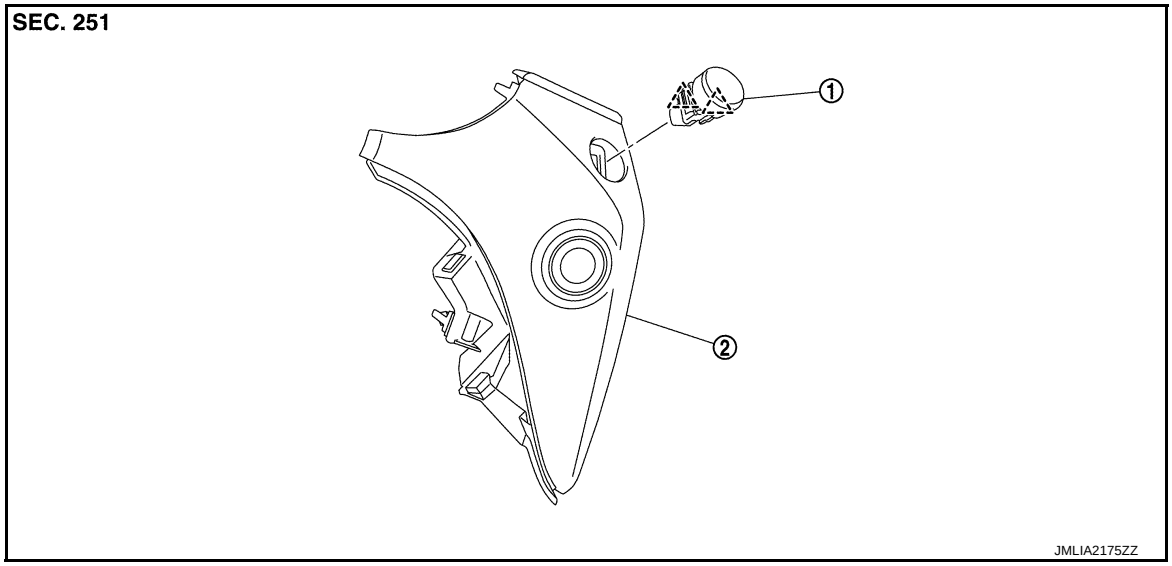
INFOID:0000000011321513

The lighting & turn signal switch is integrated in the combination switch. Refer to BCS-99, "Exploded View".

HAZARD SWITCH

Exploded View

INFOID:0000000011321514



1. Hazard switch
2. Instrument finisher A

: Pawl

Removal and Installation

INFOID:0000000011321515

REMOVAL

1. Remove instrument finisher A. Refer to IP-14, "Removal and Installation".
2. Disengage fixing pawls, and then remove hazard switch from instrument finisher A.

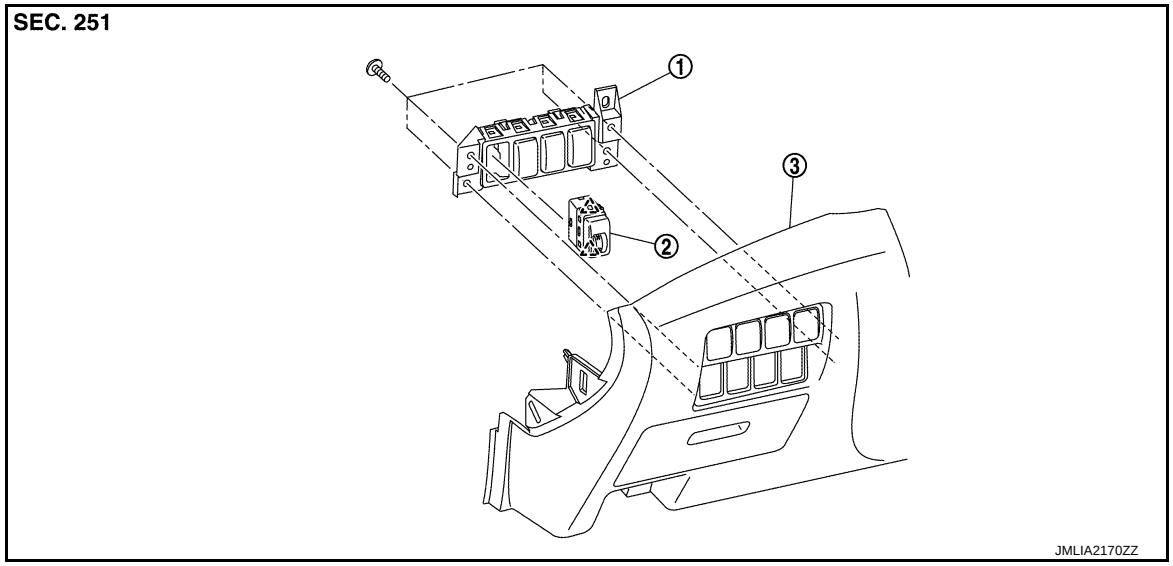
INSTALLATION

Install in the reverse order of removal.

HEADLAMP AIMING SWITCH

Exploded View

INFOID:0000000011321516



1. Switch bracket B
2. Headlamp aiming switch
3. Instrument lower panel LH

: Pawl

Removal and Installation

INFOID:0000000011321517

REMOVAL

1. Remove instrument lower panel LH. Refer to IP-14, "Removal and Installation".
2. Remove switch bracket B.
3. Remove headlamp aiming switch fixing clips, and then remove headlamp aiming switch from switch bracket B.

INSTALLATION

Install in the reverse order of removal.

SIDE TURN SIGNAL LAMP

Exploded View

INFOID:0000000011321518

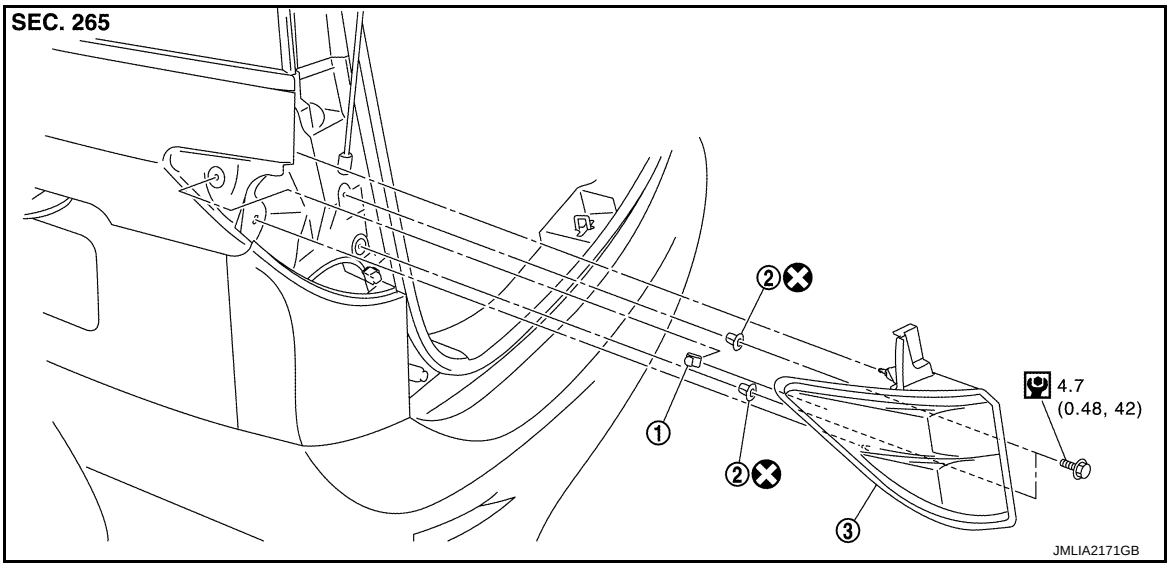
Side turn signal lamp is integrated in the door mirror. Refer to MIR-31, "Exploded View".

REAR COMBINATION LAMP

Exploded View

INFOID:0000000011321519

REMOVAL

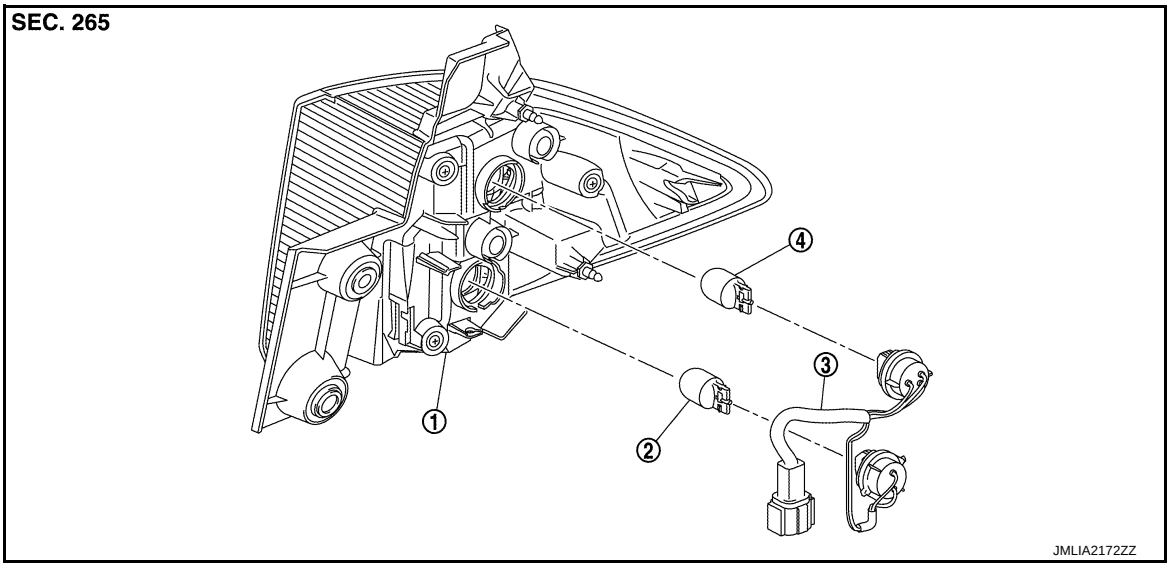


1. Clip
2. Grommet
3. Rear combination lamp assembly

: Always replace after every disassembly.

: N·m (kg-m, in-lb)

DISASSEMBLY



1. Rear combination lamp housing assembly
2. Rear turn signal lamp bulb
3. Bulb socket assembly
4. Tail lamp/stop lamp bulb

Removal and Installation

INFOID:0000000011321520

CAUTION:

Disconnect the battery negative terminal or the fuse.

REMOVAL

1. Fully open back door.
2. Remove rear combination lamp assembly mounting bolts.
3. Pull the rear combination lamp assembly toward rear of the vehicle, and then remove rear combination lamp assembly.
4. Disconnect the rear combination lamp connector.

INSTALLATION

Install in the reverse order of removal.

Replacement

INFOID:0000000011321521

CAUTION:

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

REAR TURN SIGNAL LAMP BULB

1. Remove rear combination lamp assembly. Refer to EXL-113, "Removal and Installation".
2. Rotate rear turn signal lamp bulb socket counterclockwise, and then remove rear turn signal lamp bulb socket.
3. Remove rear turn signal lamp bulb from rear turn signal lamp bulb socket.

TAIL LAMP/STOP LAMP BULB

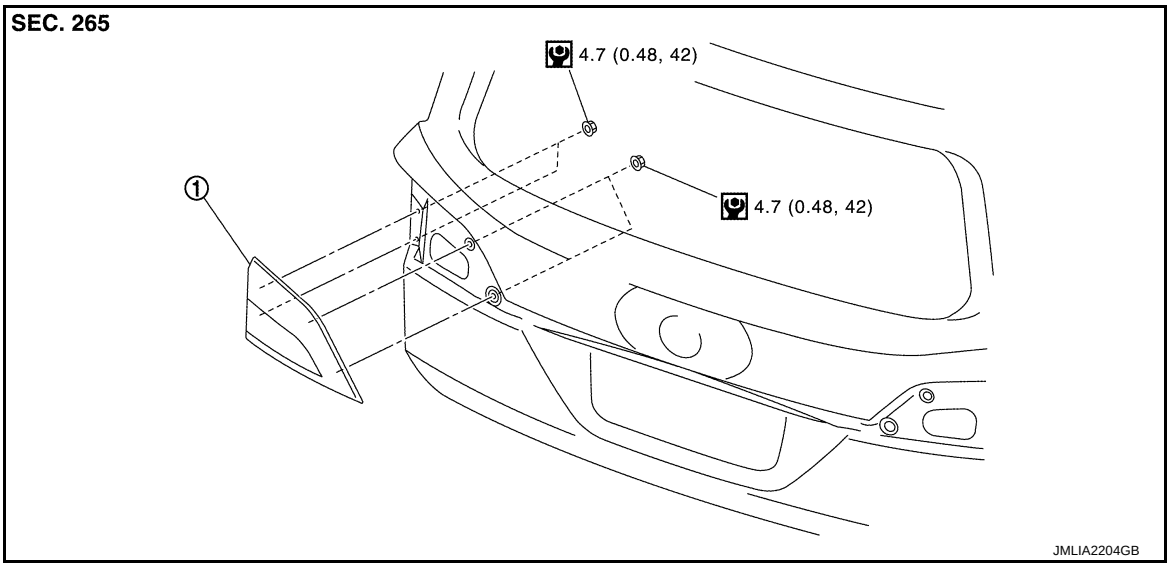
1. Remove rear combination lamp assembly. Refer to EXL-113, "Removal and Installation".
2. Rotate tail lamp/stop lamp bulb socket counterclockwise, and then remove tail lamp/stop lamp bulb socket.
3. Remove tail lamp/stop lamp bulb from tail lamp/stop lamp bulb socket.

BACK-UP LAMP

Exploded View

INFOID:0000000011321522

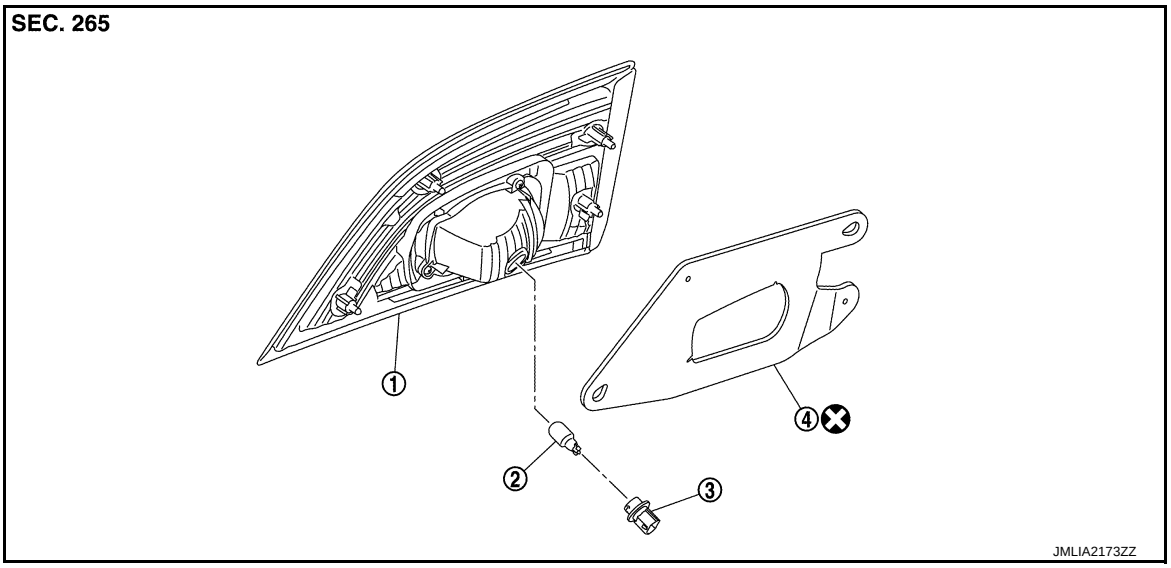
REMOVAL



1. Back-up lamp assembly

: N·m (kg-m, in-lb)

DISASSEMBLY



1. Back-up lamp housing assembly
2. Back-up lamp bulb
3. Back-up lamp bulb socket
4. Seal packing

: Always replace after every disassembly.

Removal and Installation

INFOID:0000000011321523

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

1. Remove touch sensor (with automatic back door). Refer to DLK-470, "TOUCH SENSOR : Removal and Installation".
2. Remove back door lower finisher. Refer to INT-48, "BACK DOOR LOWER FINISHER : Removal and Installation".
3. Disconnect back-up lamp connector.
4. Remove back-up lamp mounting nuts, and then remove back-up lamp.
5. Remove seal packing

INSTALLATION

Note the following item, and then install in the reverse order of removal.

CAUTION:

Seal packing cannot be reused.

Replacement

INFOID:0000000011321524

CAUTION:

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

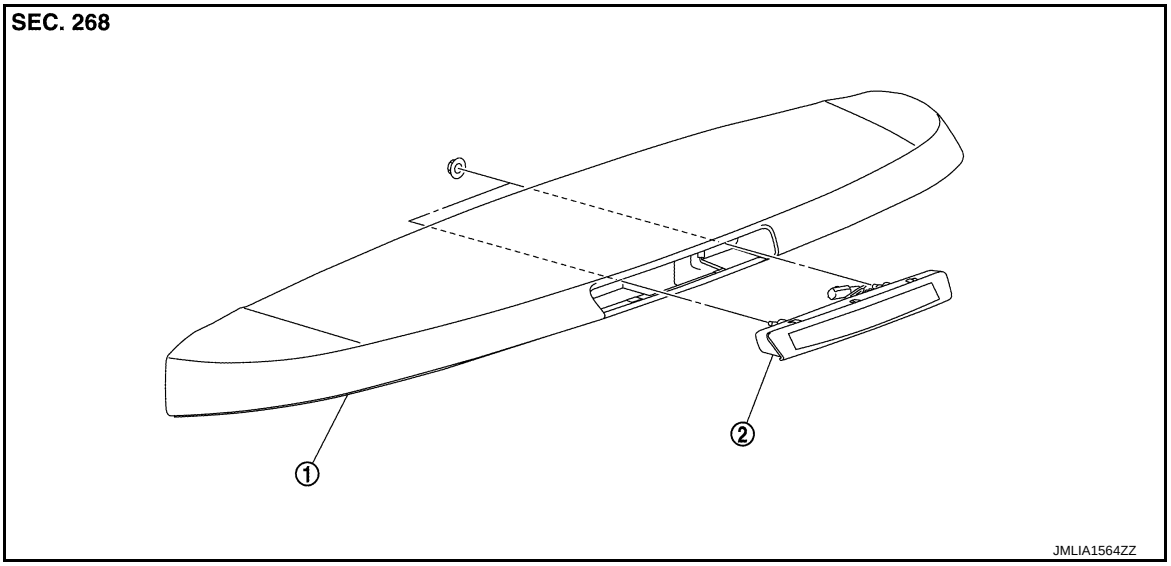
BACK-UP LAMP BULB

1. Remove back door lower finisher. Refer to INT-48, "BACK DOOR LOWER FINISHER : Removal and Installation".
2. Rotate back-up lamp bulb socket counterclockwise, and then remove back-up lamp bulb socket.
3. Remove back-up lamp bulb from back-up lamp bulb socket.

HIGH-MOUNTED STOP LAMP

Exploded View

INFOID:0000000011321525



1. Rear spoiler
2. High-mounted stop lamp

Removal and Installation

INFOID:0000000011321526

REMOVAL

1. Remove rear spoiler. Refer to EXT-45, "Removal and Installation".
2. Remove high-mounted stop lamp mounting nuts.
3. Remove high-mounted stop lamp from rear spoiler.

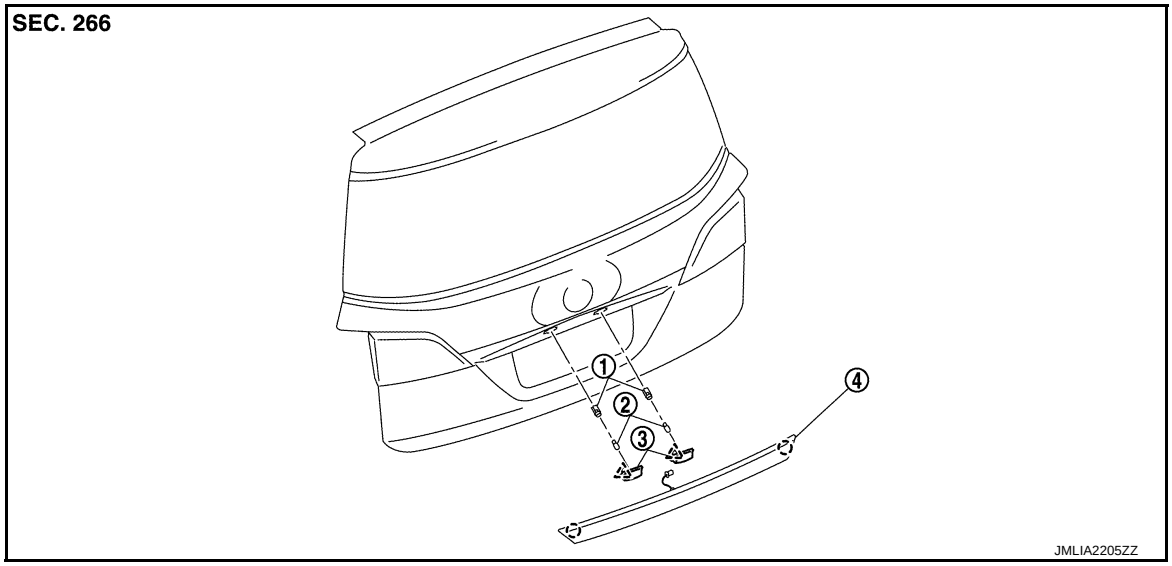
INSTALLATION

Install in the reverse order of removal.

LICENSE PLATE LAMP

Exploded View

INFOID:0000000011321527



1. License plate lamp bulb socket
2. License plate lamp bulb
3. License plate lamp housing
4. Back door finisher

: Clip

: Pawl

Removal and Installation

INFOID:0000000011321528

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

1. Remove back door lower finisher. Refer to EXT-47, "Removal and Installation".
2. Disconnect license plate lamp connector.
3. Remove license plate lamp while pushing a resin clip, and then remove license plate lamp.

INSTALLATION

Install in the reverse order of removal.

Replacement

INFOID:0000000011321529

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

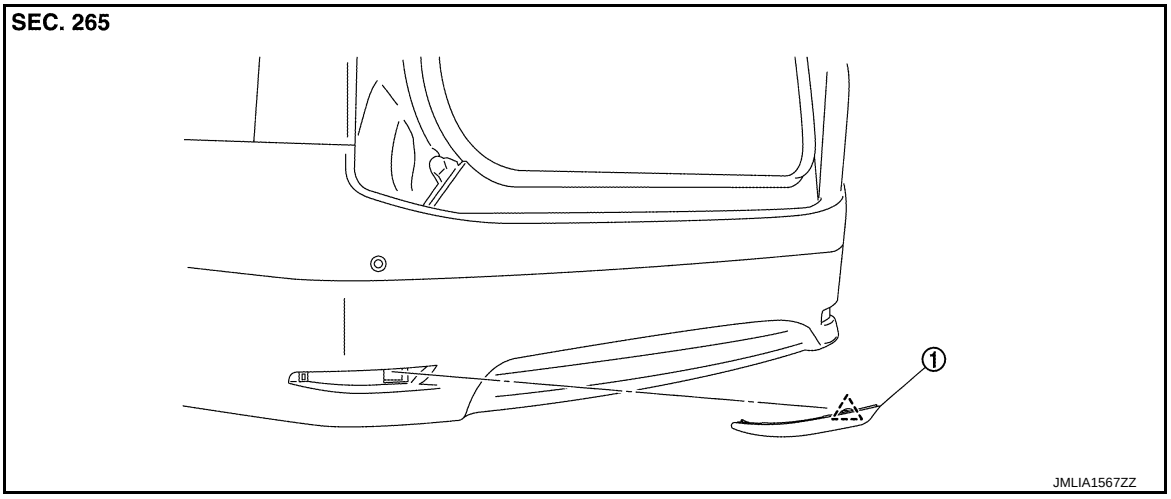
LICENSE PLATE LAMP BULB

1. Remove back door lower finisher. Refer to EXT-47, "Removal and Installation".
2. Disconnect license plate lamp connector.
3. Rotate license plate lamp bulb socket counterclockwise and unlock it.
4. Remove license plate lamp bulb from license plate lamp bulb socket.

REFLEX REFLECTOR

Exploded View

INFOID:0000000011321530



1. Reflex reflector

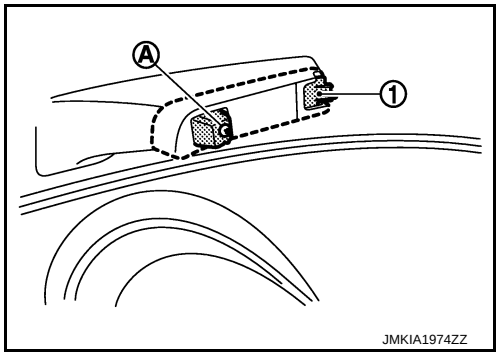
: Pawl

Removal and Installation

INFOID:0000000011321531

REMOVAL

1. Remove rear bumper fascia assembly. Refer to EXT-16, "REAR BUMPER : Removal and Installation".
2. Remove reflex reflector (1) fixing screws (A) (LH and RH), and then remove reflex reflector (LH and RH).



INSTALLATION

Install in the reverse order of removal.

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Bulb Specifications

INFOID:0000000011321532

Item		Type	Wattage (W)
Front combination lamp	Headlamp (HI)	HB3 (Halogen)	60
	Headlamp (LO)	D2S (Xenon)	35
	Front turn signal lamp/ Parking lamp	S25 (Amber)	27/8
	Front side marker lamp	W5W	5
Front fog lamp		H8	35
Side turn signal lamp (integrated into the door mirror)		LED	—
Rear combination lamp	Stop lamp/ Tail lamp (side marker)	W21/5W	21/5
	Rear turn signal lamp	WY21W (Amber)	21
Back-up lamp		W16W	16
License plate lamp		W5W	5
High-mounted stop lamp		LED	—

PRECAUTION

PRECAUTIONS

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

INFOID:0000000011321533

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 AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 “SRS AIR BAG”.**
- **Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

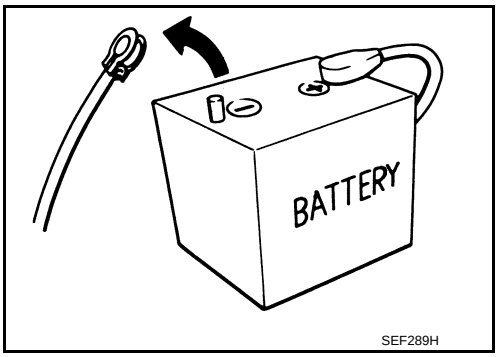
Always observe the following items for preventing accidental activation.

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

Precautions for Removing Battery Terminal

INFOID:0000000011321534

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
  NOTE:
  ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.



SEF289H

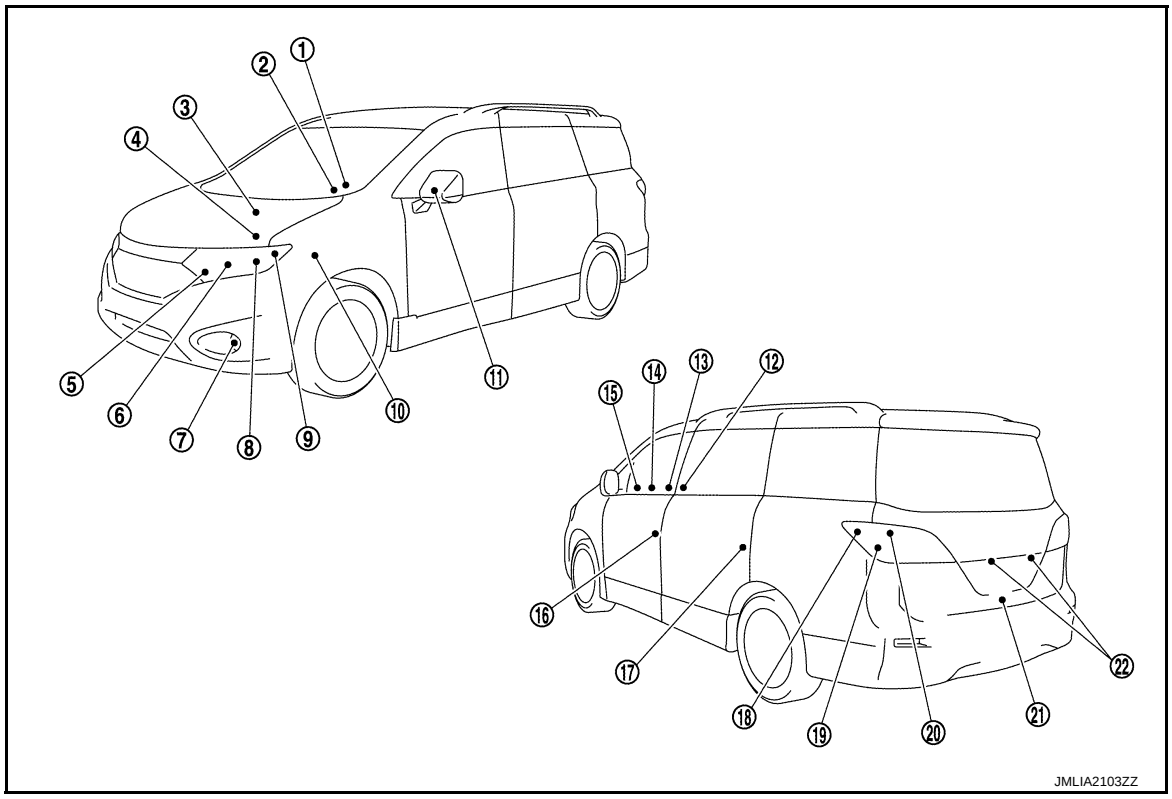
- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000011321535



No.	Part	Function
1.	Optical sensor	Refer to EXL-123, "Optical Sensor".
2.	BCM	• Detects each switch condition by the combination switch reading function • Judges that the exterior lamps are turned ON according to the vehicle condition • Requests the headlamp relay (High/Low), tail lamp relay and front fog lamp relay ON to IPDM E/R (via CAN communication) • Requests the high beam indicator lamp and tail lamp indicator lamp ON to the combination meter (via CAN communication) • Judges the outside brightness from the optical sensor signal. • Judges the ON/OFF timing according to the vehicle condition. • Judges the ON/OFF status of the exterior lamp according to the outside brightness and the vehicle condition. • Refer to BCS-4, "BODY CONTROL SYSTEM : Component Parts Location" for detailed installation location.
3.	Daytime running light relay*	Refer to EXL-123, "Daytime Running Light Relay".
4.	IPDM E/R	• Controls the integrated relay, and supplies voltage to the load according to the request from BCM (via CAN communication). • Refer to PCS-4, "IPDM E/R : Component Parts Location" for detailed installation location.
5.	Front turn signal lamp/Parking lamp	Refer to EXL-123, "Bulb Specifications".
6.	Headlamp HI	Refer to EXL-123, "Bulb Specifications".
7.	Front fog lamp	Refer to EXL-123, "Bulb Specifications".
8.	Headlamp LO	Refer to EXL-123, "Bulb Specifications".
9.	Front side marker lamp	Refer to EXL-123, "Bulb Specifications".

No.	Part	Function
10.	Air bag diagnosis sensor unit	Transmits air bag signal to BCM. Refer to SRC-8, "Component Parts Location" for detailed installation location.
11.	Side turn signal lamp	Refer to EXL-123, "Bulb Specifications".
12.	Hazard switch	Refer to EXL-123, "Hazard Switch".
13.	Push-button ignition switch	Refer to DLK-18, "DOOR LOCK SYSTEM : Component Parts Location".
14.	Combination meter	• Blinks the turn signal indicator lamp and outputs the turn signal operating sound with integrated buzzer according to the request from BCM (via CAN communication). • Turns the high beam indicator lamp and tail lamp indicator lamp ON according to the request from BCM (via CAN communication).
15.	Combination switch (Lighting & turn signal switch)	Refer to BCS-8, "COMBINATION SWITCH READING SYSTEM : System Description".
16.	Front door switch (driver side)	Refer to DLK-18, "DOOR LOCK SYSTEM : Component Parts Location".
17.	Slide door switch (LH)	Refer to DLK-18, "DOOR LOCK SYSTEM : Component Parts Location".
18.	Rear side marker lamp	Refer to EXL-123, "Bulb Specifications".
19.	Rear turn signal lamp	Refer to EXL-123, "Bulb Specifications".
20.	Tail lamp	Refer to EXL-123, "Bulb Specifications".
21.	Back door switch	Refer to DLK-18, "DOOR LOCK SYSTEM : Component Parts Location".
22.	License plate lamp	Refer to EXL-123, "Bulb Specifications".

*: With daytime running light system

Optical Sensor

INFOID:0000000011321536

Optical sensor converts the outside brightness (lux) to voltage and transmits the optical sensor signal to BCM.

Daytime Running Light Relay

INFOID:0000000011321537

Headlamp HI ground circuit is switched according to request from IPDM E/R.

Hazard Switch

INFOID:0000000011321538

Inputs the hazard switch ON/OFF signal to BCM.

Bulb Specifications

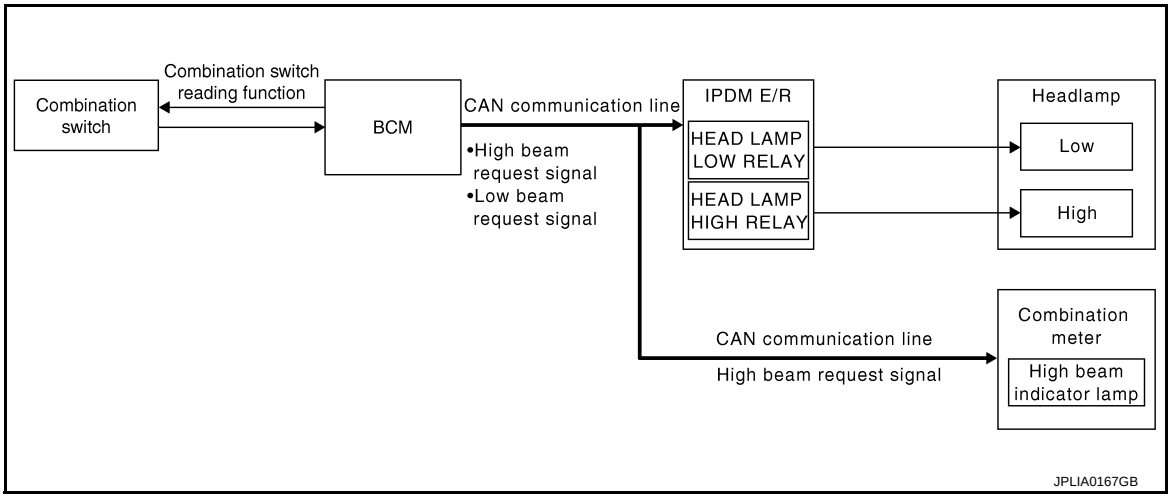
INFOID:0000000011321539

Item		Type	Wattage (W)
Front combination lamp	Headlamp (HI)	HB3 (Halogen)	60
	Headlamp (LO)	H11 (Halogen)	55
	Front turn signal lamp/ Parking lamp	S25	27/8
	Front side marker lamp.	W5W	5
Front fog lamp		H8	35
Side turn signal lamp (integrated into the door mirror)		LED	—
Rear combination lamp	Stop lamp/ Tail lamp (side marker lamp)	W21/5W	21/5
	Rear turn signal lamp	WY21W (Amber)	21
Back-up lamp		W16W	16
License plate lamp		W5W	5
High-mounted stop lamp		LED	—

SYSTEM
HEADLAMP SYSTEM
HEADLAMP SYSTEM : System Description

INFOID:0000000011321540

SYSTEM DIAGRAM



OUTLINE

Headlamp is controlled by combination switch reading function and headlamp control function of BCM, and relay control function of IPDM E/R.

HEADLAMP (LO) OPERATION

- BCM detects the combination switch condition with the combination switch reading function.
- BCM transmits the low beam request signal to IPDM E/R with CAN communication according to the headlamp (LO) ON condition.

Headlamp (LO) ON condition
- Lighting switch 2ND
- Lighting switch AUTO (auto light function ON judgment)
- Lighting switch PASS

- IPDM E/R turns the integrated headlamp low relay ON, and turns the headlamp ON according to the low beam request signal.

HEADLAMP (HI) OPERATION

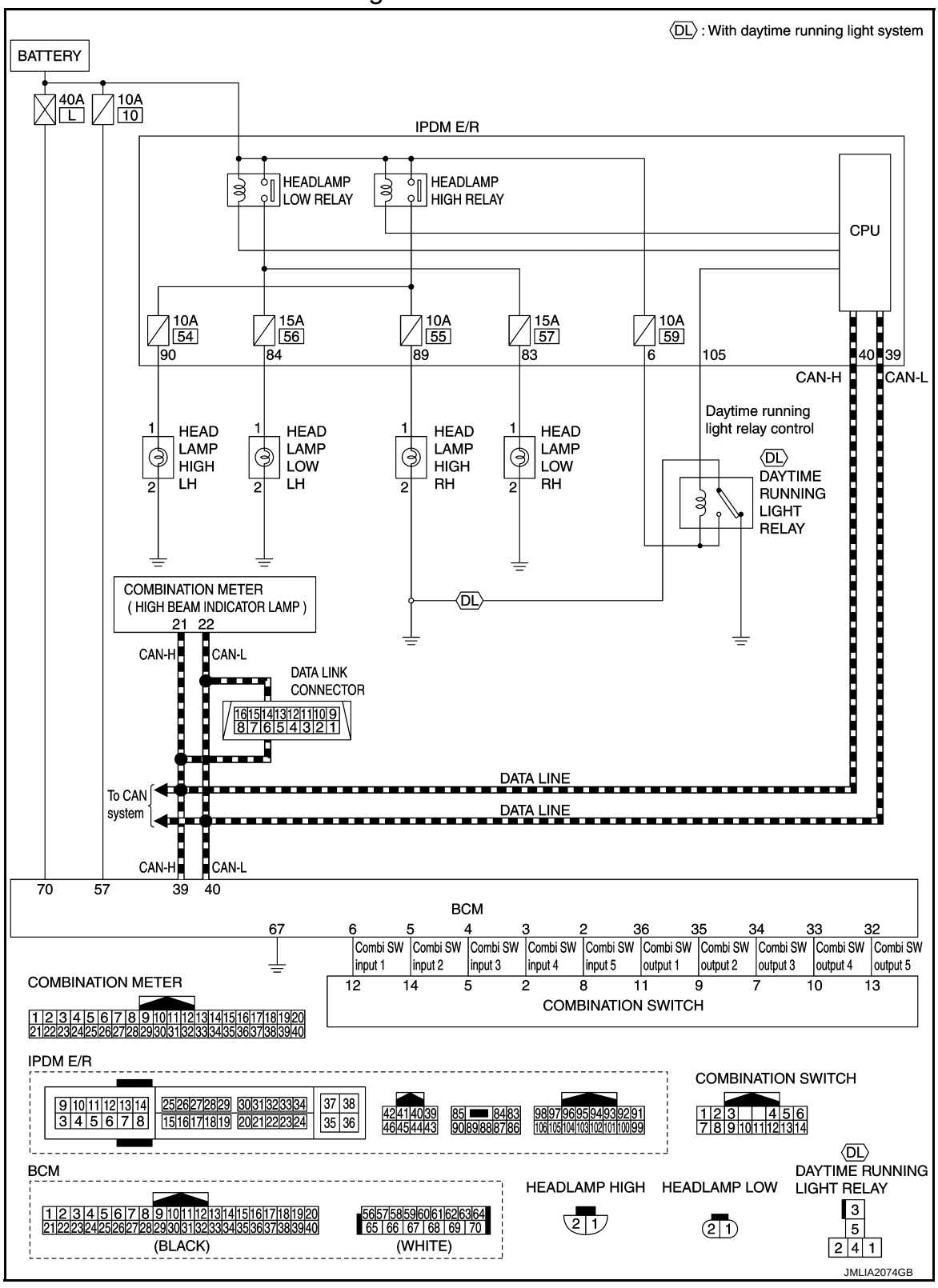
- BCM transmits the high beam request signal to IPDM E/R and the combination meter with CAN communication according to the headlamp (HI) ON condition.

Headlamp (HI) ON condition
- Lighting switch HI with the lighting switch 2ND or AUTO (auto light function ON judgment)
- Lighting switch PASS

- Combination meter turns the high beam indicator lamp ON according to the high beam request signal.
- IPDM E/R turns the integrated headlamp high relay ON, and turns the headlamp ON according to the high beam request signal.

HEADLAMP SYSTEM : Circuit Diagram

INFOID:0000000011321541



HEADLAMP SYSTEM : Fail-safe

INFOID:0000000011321542

CAN COMMUNICATION CONTROL

When CAN communication with ECM and BCM is impossible, IPDM E/R performs fail-safe control. After CAN communication recovers normally, it also returns to normal control.

If No CAN Communication Is Available With BCM

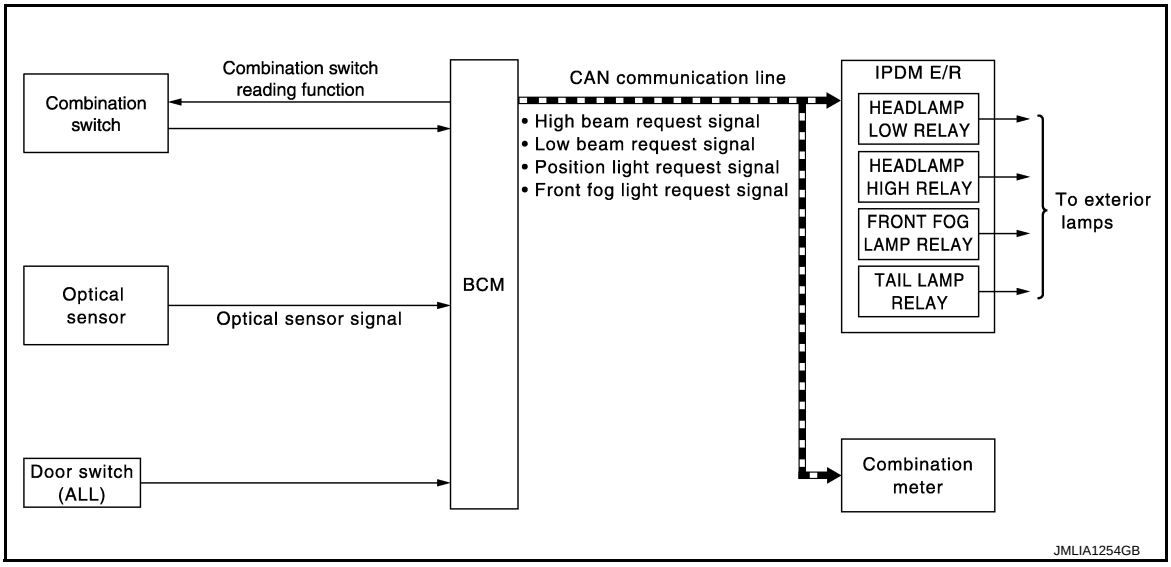
Control part	Fail-safe operation
Headlamp	• Turns ON the headlamp low relay when the ignition switch is turned ON • Turns OFF the headlamp low relay when the ignition switch is turned OFF • Headlamp high relay OFF

AUTO LIGHT SYSTEM (EXCEPT FOR CANADA)

AUTO LIGHT SYSTEM (EXCEPT FOR CANADA) : System Description

INFOID:0000000011321543

SYSTEM DIAGRAM



OUTLINE

• Auto light system is controlled by each function of BCM and IPDM E/R.

Control by BCM
- Combination switch reading function
- Headlamp control function
- Auto light function
- Delay timer function
- Wiper linked auto lighting function
- Auto light adjustment system

Control by IPDM E/R
- Relay control function

• Auto light system has the auto light function (with twilight lighting function), wiper linked auto lighting function and delay timer function.
- Auto light function automatically turns ON/OFF the exterior lamps* and each illumination automatically, depending on the outside brightness.
- Wiper linked auto lighting function automatically turns ON/OFF the exterior lamps* and each illumination when the light switch is in the AUTO position, according to a front wiper operation.
- When auto light system turns the exterior lamps ON with the ignition switch OFF, delay timer function turns the exterior lamps OFF, depending on the vehicle condition with the auto light function after a certain period of time.

*: Headlamp (LO/HI), parking lamp, side marker lamp, tail lamp and front fog lamp (Headlamp HI and front fog lamp depend on the combination switch condition.)

NOTE:

The settings of the twilight lighting function and the wiper linked auto lighting function can be changed with CONSULT. Refer to EXL-144, "HEADLAMP : CONSULT Function (BCM - HEADLAMP) (Halogen Type Headlamp)".

AUTO LIGHT FUNCTION (WITH TWILIGHT LIGHTING FUNCTION)

Description

• BCM detects the combination switch condition with the combination switch reading function.

- BCM supplies voltage to the optical sensor when the ignition switch is turned ON or ACC.
- Optical sensor converts outside brightness (lux) to voltage and transmits the optical sensor signal to BCM.
- When ignition switch is turned ON, BCM detects outside brightness from the optical sensor signal and judges ON/OFF condition of the exterior lamp and each illumination, depending on the outside brightness condition (standard or twilight).
- BCM transmits each request signal to IPDM E/R and combination meter via CAN communication, according to ON/OFF condition by the auto light function.

NOTE:
As to ON/OFF timing, the sensitivity depends on settings. The settings can be changed with CONSULT. Refer to EXL-144, "HEADLAMP : CONSULT Function (BCM - HEADLAMP) (Halogen Type Headlamp)".

WIPER LINKED AUTO LIGHTING FUNCTION

BCM turns the exterior lamp ON when detecting 4 operations of the front wiper work the light switch in AUTO position.

NOTE:
BCM turns OFF the headlamps 3 seconds after the front wiper switch is turned from HI⇒OFF.

AUTO LIGHT ADJUSTMENT SYSTEM

The auto light adjustment system automatically, dims/brightens the display and combination meter, according to brightness outside the vehicle, when lighting switch 1ST, lighting switch 2ND or lighting switch AUTO is operated. Refer to INL-17, "AUTO LIGHT ADJUSTMENT SYSTEM : System Description".

DELAY TIMER FUNCTION

BCM turns the exterior lamp OFF depending on the vehicle condition with the auto light function when the ignition switch is turned OFF.

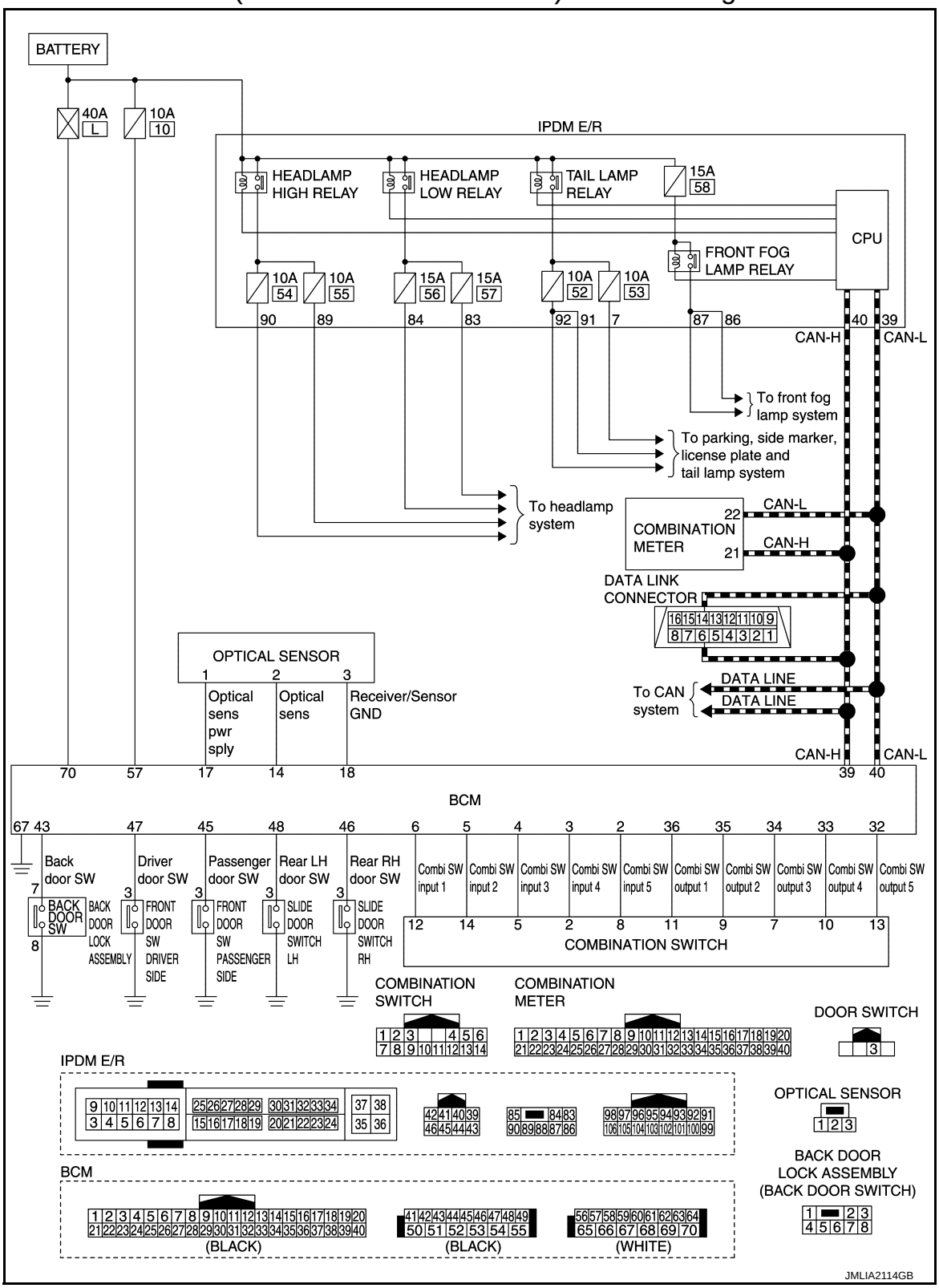
- Turns the exterior lamp OFF 5 minutes after detecting that any door opens. (Door switch ON).
- Turns the exterior lamp OFF a certain period of time* after closing all doors. (Door switch ON→OFF).
- Turns the exterior lamp OFF with the ignition switch ACC or the light switch OFF.

*: The preset time is 45 seconds. The timer operating time can be set by CONSULT. Refer to EXL-144, "HEADLAMP : CONSULT Function (BCM - HEADLAMP) (Halogen Type Headlamp)".

NOTE:
When any position other than the light switch AUTO is set, the auto light system function switches to the exterior lamp battery saver function.

AUTO LIGHT SYSTEM (EXCEPT FOR CANADA) : Circuit Diagram

INFOID:0000000011321544

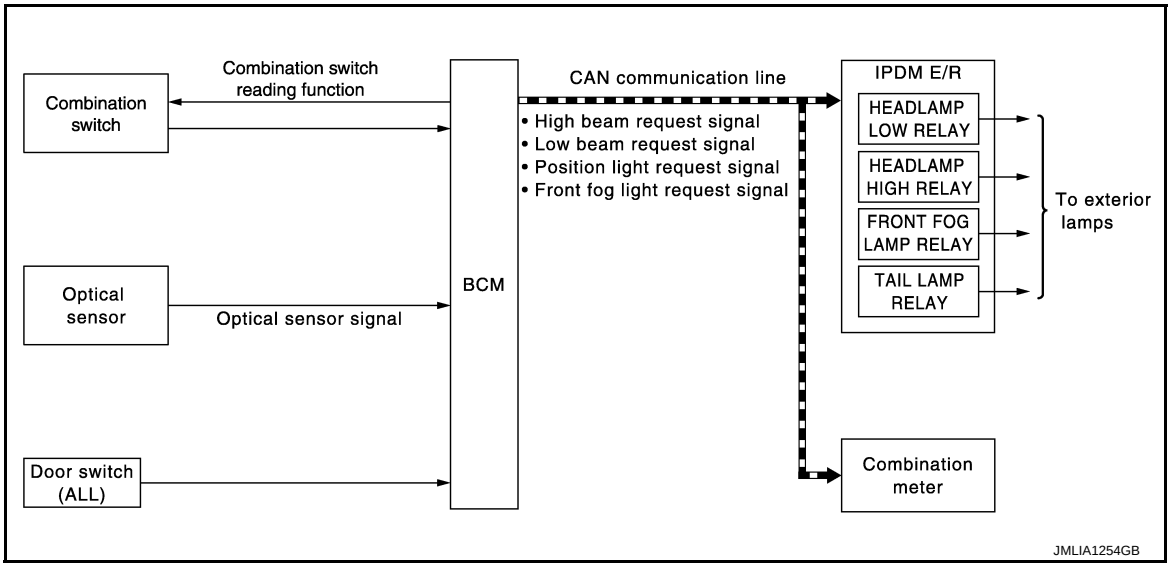


AUTO LIGHT SYSTEM (FOR CANADA)

AUTO LIGHT SYSTEM (FOR CANADA) : System Description

INFOID:0000000011321545

SYSTEM DIAGRAM



OUTLINE

• Auto light system is controlled by each function of BCM and IPDM E/R.

Control by BCM
- Combination switch reading function
- Headlamp control function
- Auto light function
- Delay timer function
- Auto light adjustment system

Control by IPDM E/R
- Relay control function
• Auto light system has the auto light function and delay timer function.
- Auto light function automatically turns ON/OFF the exterior lamps* and each illumination automatically, depending on the outside brightness.
- When auto light system turns the exterior lamps ON with the ignition switch OFF, delay timer function turns the exterior lamps OFF, depending on the vehicle condition with the auto light function after a certain period of time.

*: Headlamp (LO/HI), parking lamp, side marker lamp, tail lamp and front fog lamp (Headlamp HI and front fog lamp depend on the combination switch condition.)

AUTO LIGHT FUNCTION

• BCM detects the combination switch condition with the combination switch reading function.
• BCM supplies voltage to optical sensor when the ignition switch is turned ON or ACC.
• Optical sensor converts outside brightness (lux) to voltage and transmits the optical sensor signal to BCM.
• BCM judges outside brightness from the optical sensor signal and judges ON/OFF condition of the exterior lamp and each illumination according to the outside brightness.
• BCM transmits each request signal to IPDM E/R and combination meter via CAN communication according to ON/OFF condition by the auto light function.

NOTE:
ON/OFF timing differs based on the sensitivity from the setting. The setting can be set by CONSULT. Refer to EXL-144, "HEADLAMP : CONSULT Function (BCM - HEADLAMP) (Halogen Type Headlamp)".

AUTO LIGHT ADJUSTMENT SYSTEM

The auto light adjustment system automatically, dims/brightens the display, according to brightness outside the vehicle, when lighting switch 1ST, lighting switch 2ND or lighting switch AUTO is operated. Refer to INL-17, "AUTO LIGHT ADJUSTMENT SYSTEM : System Description".

DELAY TIMER FUNCTION

BCM turns the exterior lamp OFF depending on the vehicle condition with the auto light function when the ignition switch is turned OFF.

- Turns the exterior lamp OFF 5 minutes after detecting that any door opens. (Door switch ON).
- Turns the exterior lamp OFF a certain period of time* after closing all doors. (Door switch ON→OFF).
- Turns the exterior lamp OFF with the ignition switch ACC or the light switch OFF.

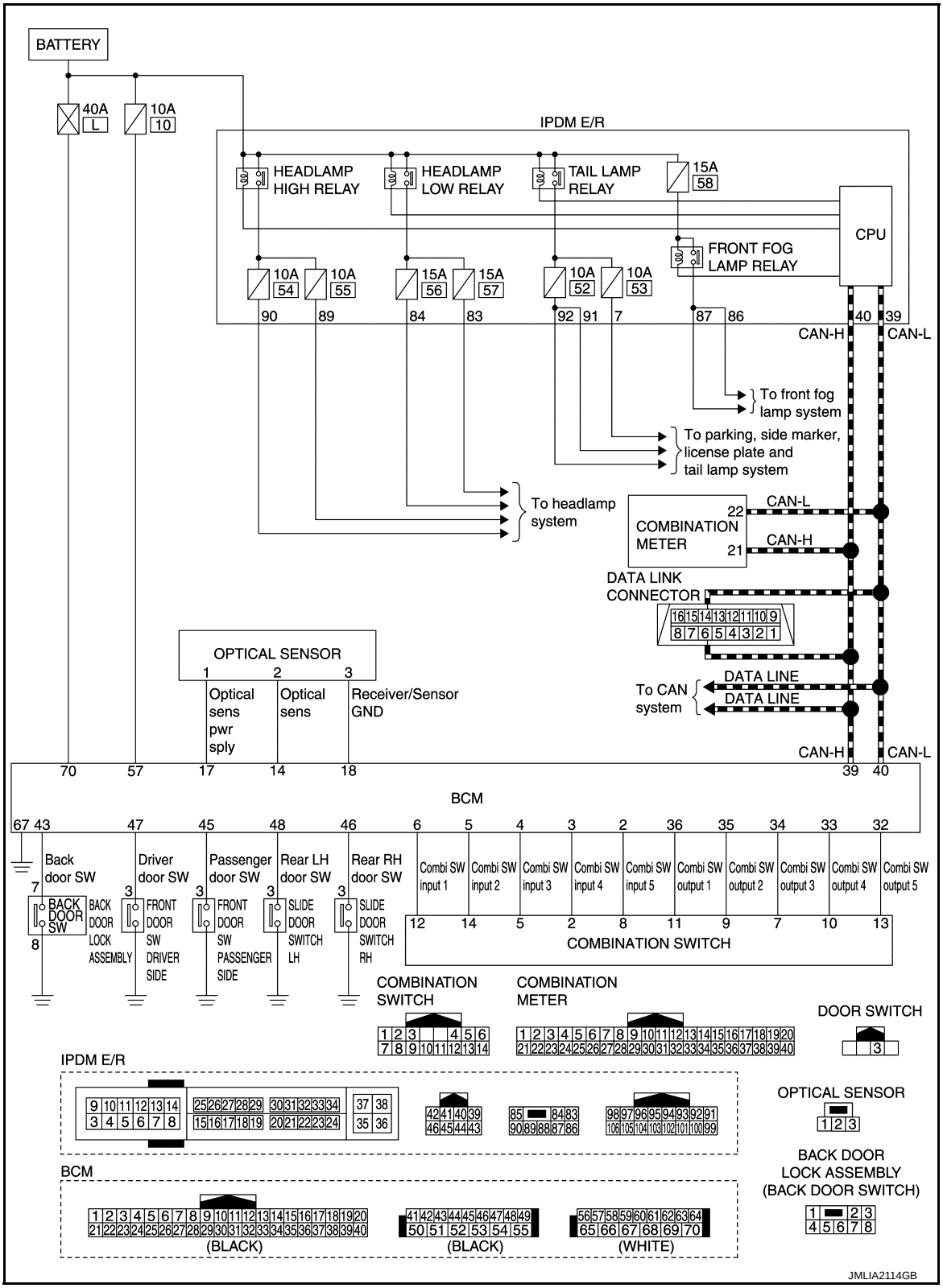
*: The preset time is 45 seconds. The timer operating time can be set by CONSULT. Refer to EXL-144, "HEADLAMP : CONSULT Function (BCM - HEADLAMP) (Halogen Type Headlamp)".

NOTE:

When any position other than the light switch AUTO is set, the auto light system function switches to the exterior lamp battery saver function.

AUTO LIGHT SYSTEM (FOR CANADA) : Circuit Diagram

INFOID:0000000011321546

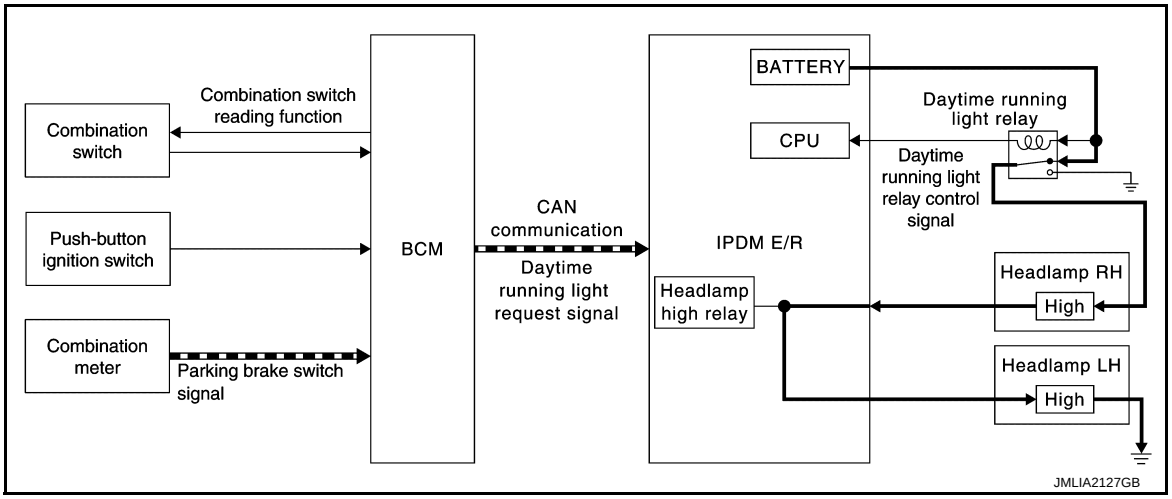


DAYTIME RUNNING LIGHT SYSTEM

DAYTIME RUNNING LIGHT SYSTEM : System Description

INFOID:0000000011321547

SYSTEM DIAGRAM



OUTLINE

- Turns the headlamp high ON (high beam at approximately half illumination) as the daytime running light.
- Daytime running light is controlled by daytime running light control function and combination switch reading function of BCM, and relay control function of IPDM E/R.

DAYTIME RUNNING LIGHT OPERATION

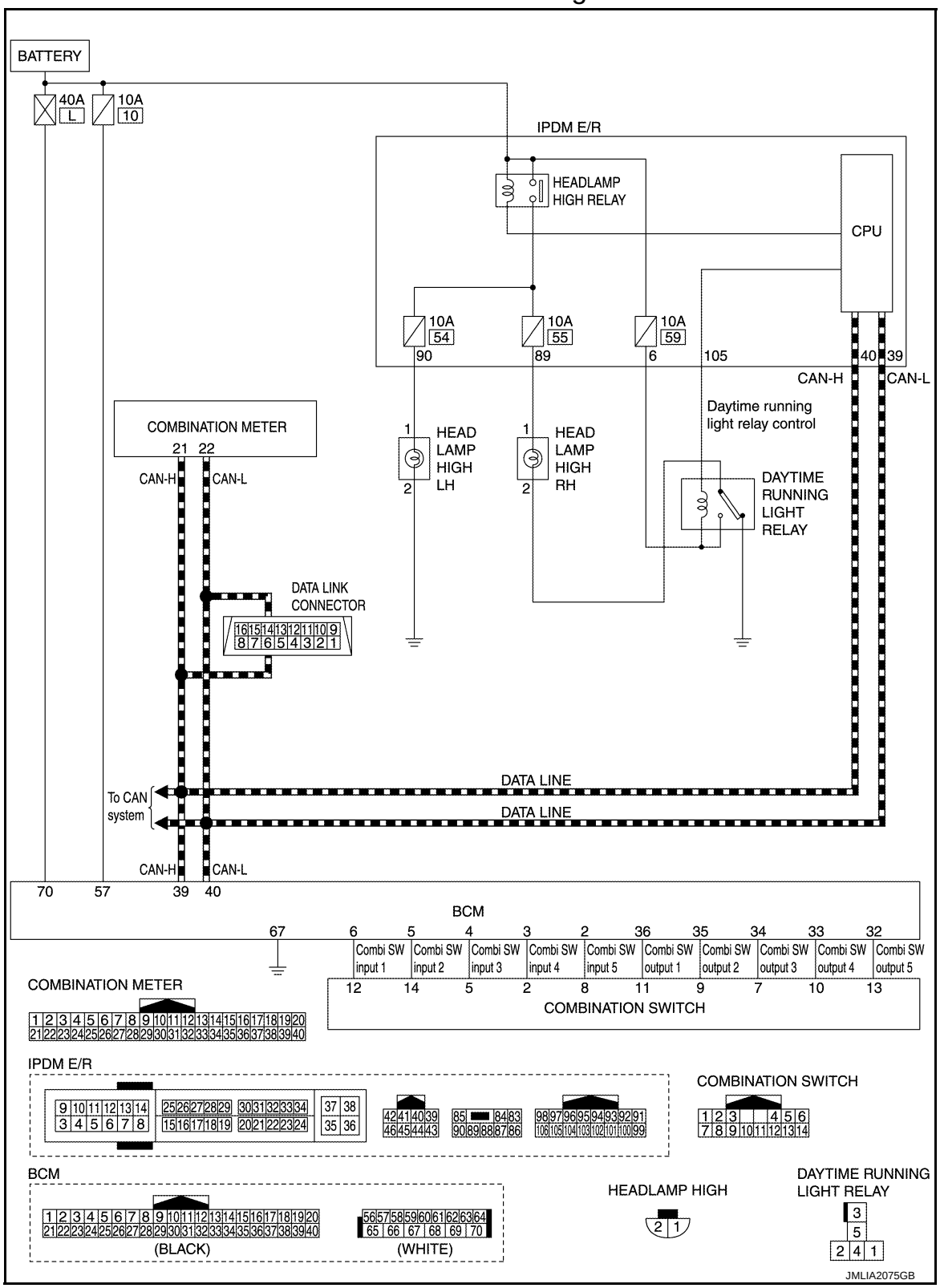
- BCM detects the combination switch condition by the combination switch reading function.
- BCM detects the engine condition according to push-button ignition switch
- BCM detects the parking brake condition by the parking brake switch signal received from combination meter using CAN communication.
- BCM transmits the daytime running light request signal to IPDM E/R using CAN communication according to the daytime running light ON condition.

Daytime running light ON condition
- Engine running
- Lighting switch OFF or 1ST
- Lighting switch AUTO, and the auto light function OFF judgment
- Parking brake switch OFF

- IPDM E/R controls the daytime running light relay (ground-side) to turn ON according to the daytime running light request signal.
- Power is supplied from the daytime running light relay through headlamp high RH and IPDM E/R to headlamp high LH. And high beam headlamps are illuminated (approximately half illumination) as the daytime running light.

DAYTIME RUNNING LIGHT SYSTEM : Circuit Diagram

INFOID:0000000011321548

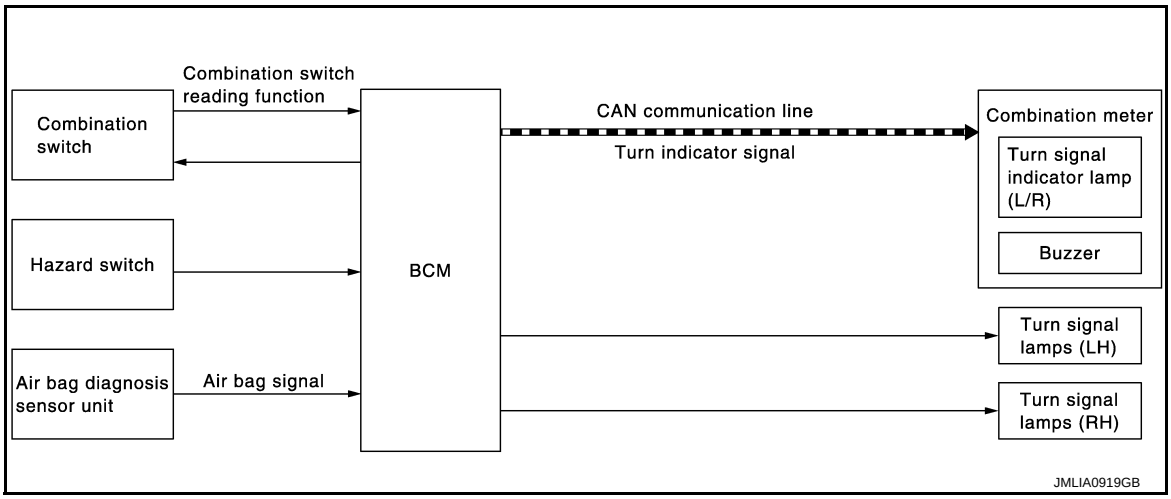


TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM : System Description

INFOID:0000000011321549

SYSTEM DIAGRAM



OUTLINE

Turn signal and the hazard warning lamp is controlled by combination switch reading function, flasher control function and auto hazard function of BCM.

TURN SIGNAL LAMP OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM supplies voltage to the right (left) turn signal lamp circuit when the ignition switch is turned ON and the turn signal switch is in the right (left) position. BCM blinks the turn signal lamp.

HAZARD WARNING LAMP OPERATION

BCM supplies voltage to both turn signal lamp circuit when the hazard switch is turned ON. BCM blinks the hazard warning lamp.

TURN SIGNAL INDICATOR LAMP AND TURN SIGNAL SOUND OPERATION

- BCM transmits the turn indicator signal to the combination meter via CAN communication while the turn signal lamp and the hazard warning lamp operating.
- Combination meter outputs the turn signal sound with the integrated buzzer while blinking the turn signal indicator lamp according to the turn indicator signal.

AUTO HAZARD FUNCTION

- Air bag diagnosis sensor unit transmits air bag signal to BCM, when air bag diagnosis sensor unit detects strong impact to the vehicle body while ignition switch is ON.
- When air bag signal from air bag diagnosis sensor unit is detected, BCM supplies voltage to each turn signal lamp system and hazard lamp blinks.

NOTE:
Auto hazard function may not be operated depending on status of collision.

3-TIME FLASHER FUNCTION

- By a short touch of the turn signal lever, BCM blinks the turn signal lamps 3 times in the selected direction.
- Cancels the operation when short touch of the turn signal lever in the reverse direction during the 3-time flasher function operation.

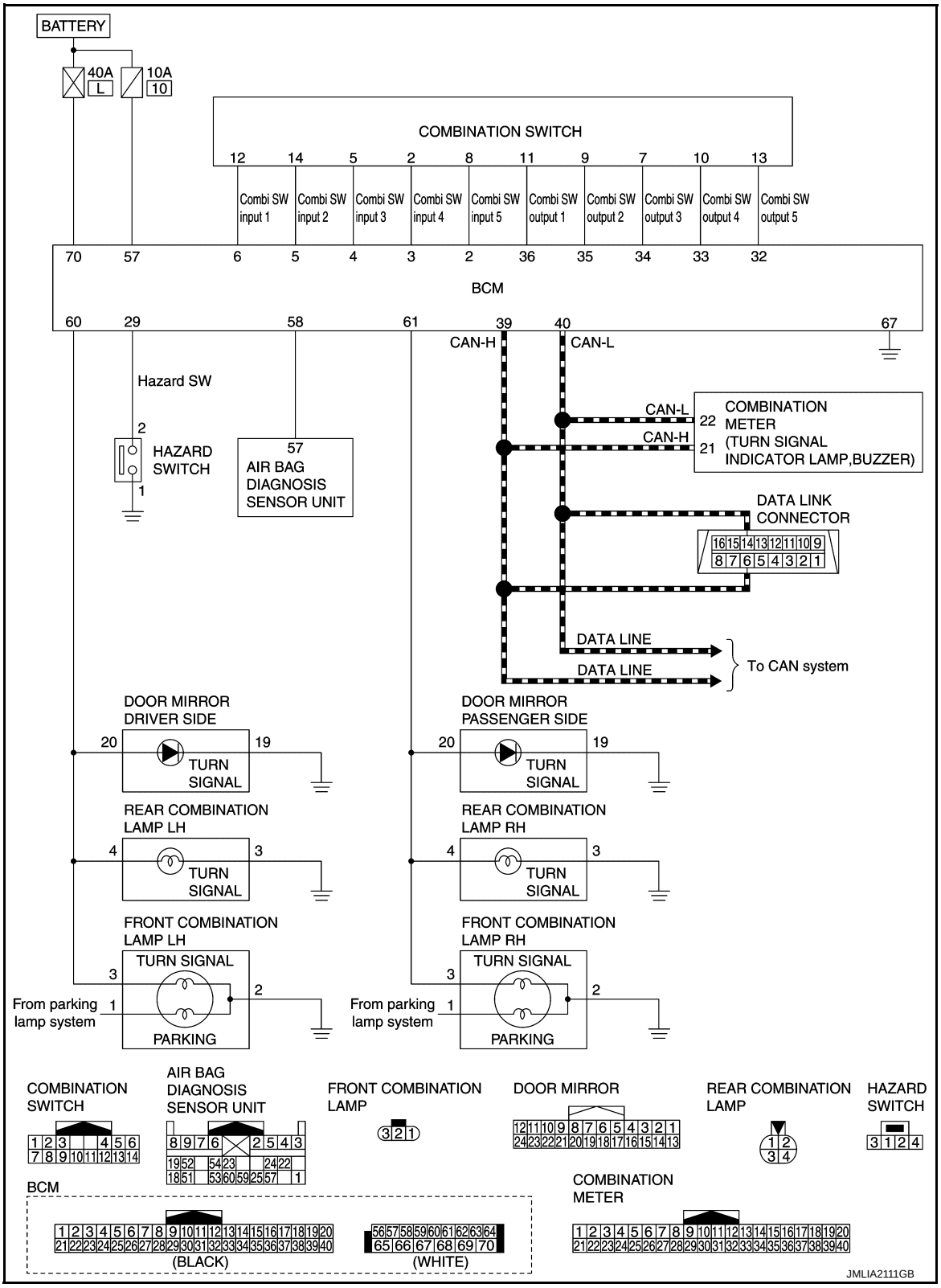
HIGH FLASHER OPERATION

- BCM detects the turn signal lamp circuit status from the current value.
- BCM increases the turn signal lamp blinking speed if the bulb or harness open is detected with the turn signal lamp operating.

  NOTE:
  The blinking speed is normal while operating the hazard warning lamp.

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM : Circuit Diagram

INFOID:0000000011321550



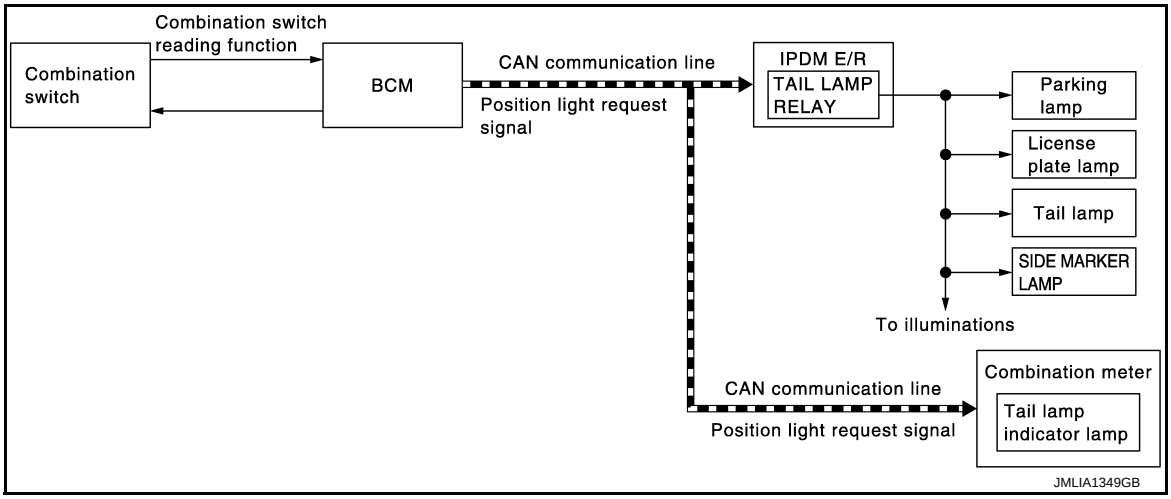
PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMP SYSTEM

PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMP SYSTEM : System De-

scription

INFOID:0000000011321551

SYSTEM DIAGRAM



OUTLINE

Parking, license plate, side marker and tail lamps are controlled by combination switch reading function and headlamp control function of BCM, and relay control function of IPDM E/R.

PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMPS OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the position light request signal to IPDM E/R and the combination meter via CAN communication according to the ON/OFF condition of the parking, license plate, side marker and tail lamps.

Parking, license plate, side marker and tail lamps ON condition

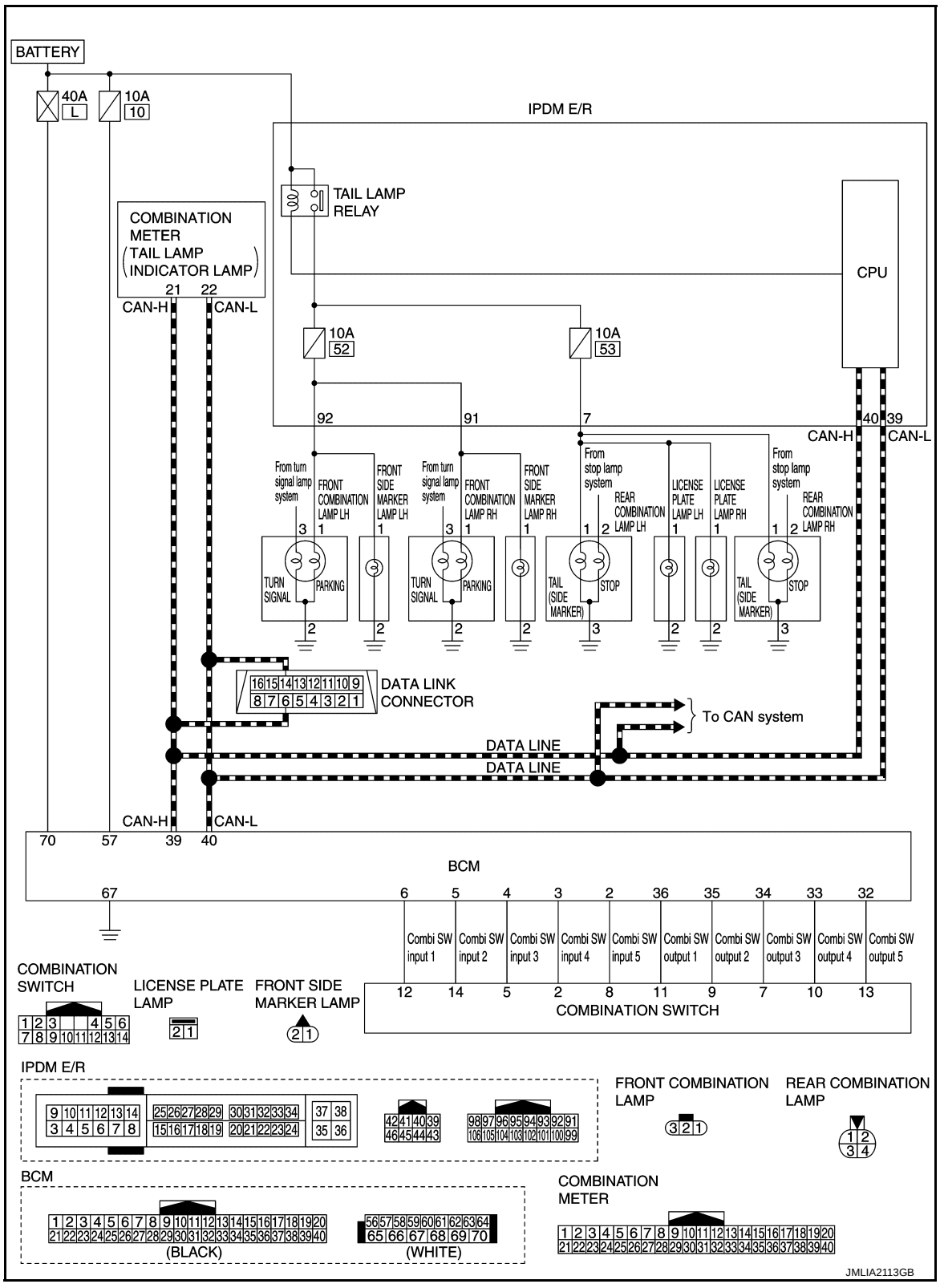
- Lighting switch 1ST
- Lighting switch 2ND
- Lighting switch AUTO, and the auto light function ON judgment.

- IPDM E/R turns the integrated tail lamp relay ON and turns the parking, license plate, side marker and tail lamps ON according to the position light request signal.
- Combination meter turns the tail lamp indicator lamp ON according to the position light request signal.

PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMP SYSTEM : Circuit Dia-

gram

INFOID:0000000011321552



PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMP SYSTEM : Fail-safe

INFOID:0000000011321553

CAN COMMUNICATION CONTROL

When CAN communication with ECM and BCM is impossible, IPDM E/R performs fail-safe control. After CAN communication recovers normally, it also returns to normal control.

If No CAN Communication Is Available With BCM

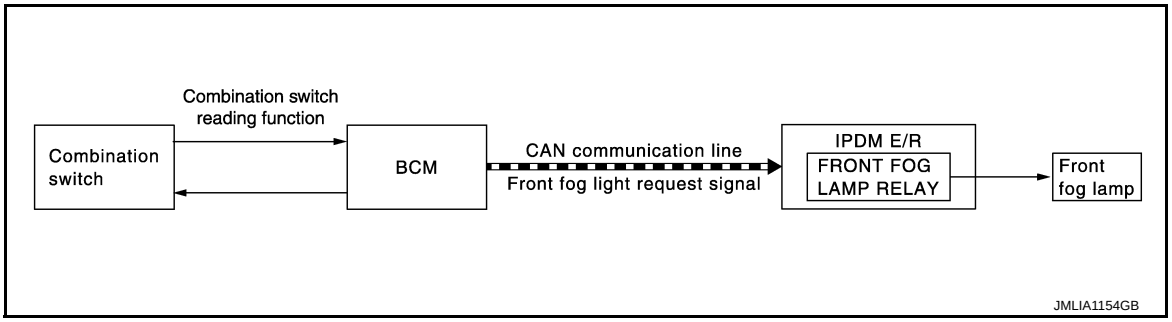
Control part	Fail-safe operation
• Parking lamp • License plate lamp • Illumination • Tail lamp • Side marker lamp	• Turns ON the tail lamp relay when the ignition switch is turned ON • Turns OFF the tail lamp relay when the ignition switch is turned OFF

FRONT FOG LAMP SYSTEM

FRONT FOG LAMP SYSTEM : System Description

INFOID:0000000011321554

SYSTEM DIAGRAM



OUTLINE

Front fog lamp is controlled by combination switch reading function, front fog lamp control function of BCM, and relay control function of IPDM E/R.

FRONT FOG LAMP OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the front fog light request signal to IPDM E/R via CAN communication according to the front fog lamp ON condition.

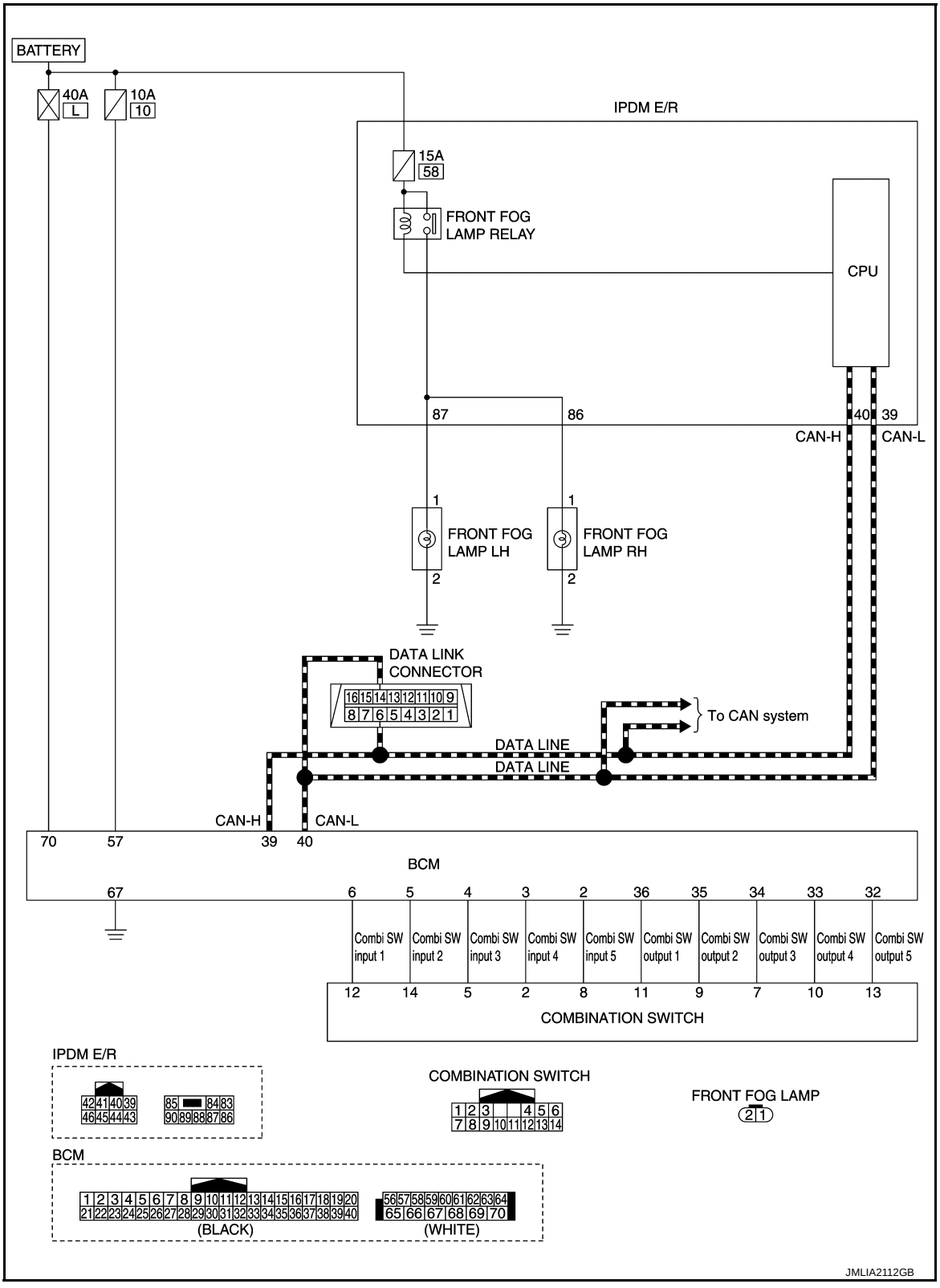
Front fog lamp ON condition

- Front fog lamp switch ON, and any of the following condition is satisfied. (except for the high beam ON)
- Lighting switch 2ND
- Lighting switch AUTO (auto light function ON judgment)

IPDM E/R turns the integrated front fog lamp relay ON, and turns the front fog lamp ON according to the front fog light request signal.

FRONT FOG LAMP SYSTEM : Circuit Diagram

INFOID:0000000011321555



FRONT FOG LAMP SYSTEM : Fail-safe

INFOID:0000000011321556

CAN COMMUNICATION CONTROL

When CAN communication with ECM and BCM is impossible, IPDM E/R performs fail-safe control. After CAN communication recovers normally, it also returns to normal control.

If No CAN Communication Is Available With BCM

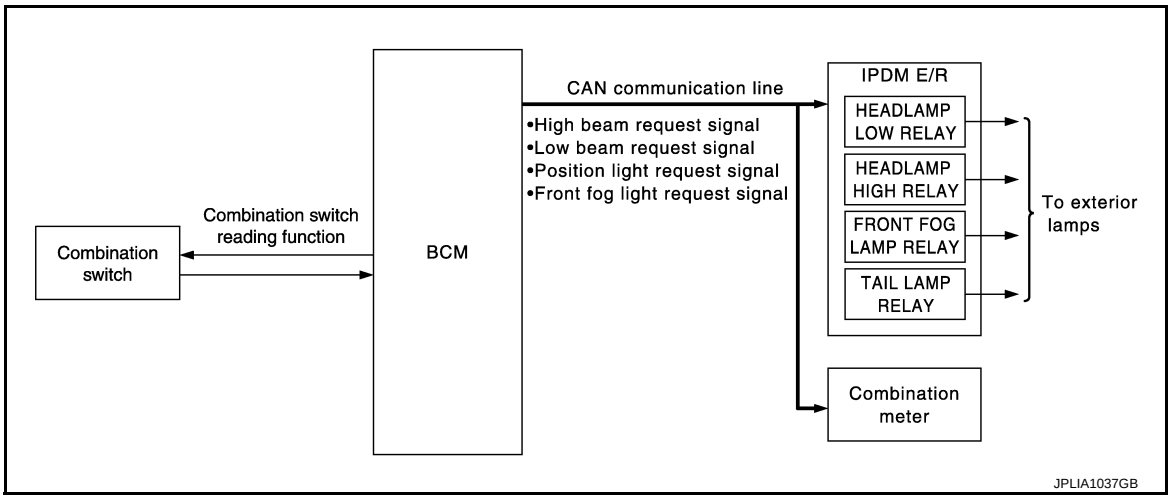
Control part	Fail-safe operation
Front fog lamp	Front fog lamp relay OFF

EXTERIOR LAMP BATTERY SAVER SYSTEM

EXTERIOR LAMP BATTERY SAVER SYSTEM : System Description

INFOID:0000000011321557

SYSTEM DIAGRAM



OUTLINE

- Exterior lamp battery saver system is controlled by each function of BCM and IPDM E/R.

Control by BCM

- Combination switch reading function
- Headlamp control function
- Exterior lamp battery saver function

Control by IPDM E/R

- Relay control function
- BCM turns the exterior lamps* OFF after a period of time to prevent the battery from over-discharge when the ignition switch is turned OFF with the exterior lamps ON.

*: Headlamp (LO/HI), parking lamp, tail lamp, side marker lamp, license plate lamp and front fog lamp

EXTERIOR LAMP BATTERY SAVER ACTIVATION

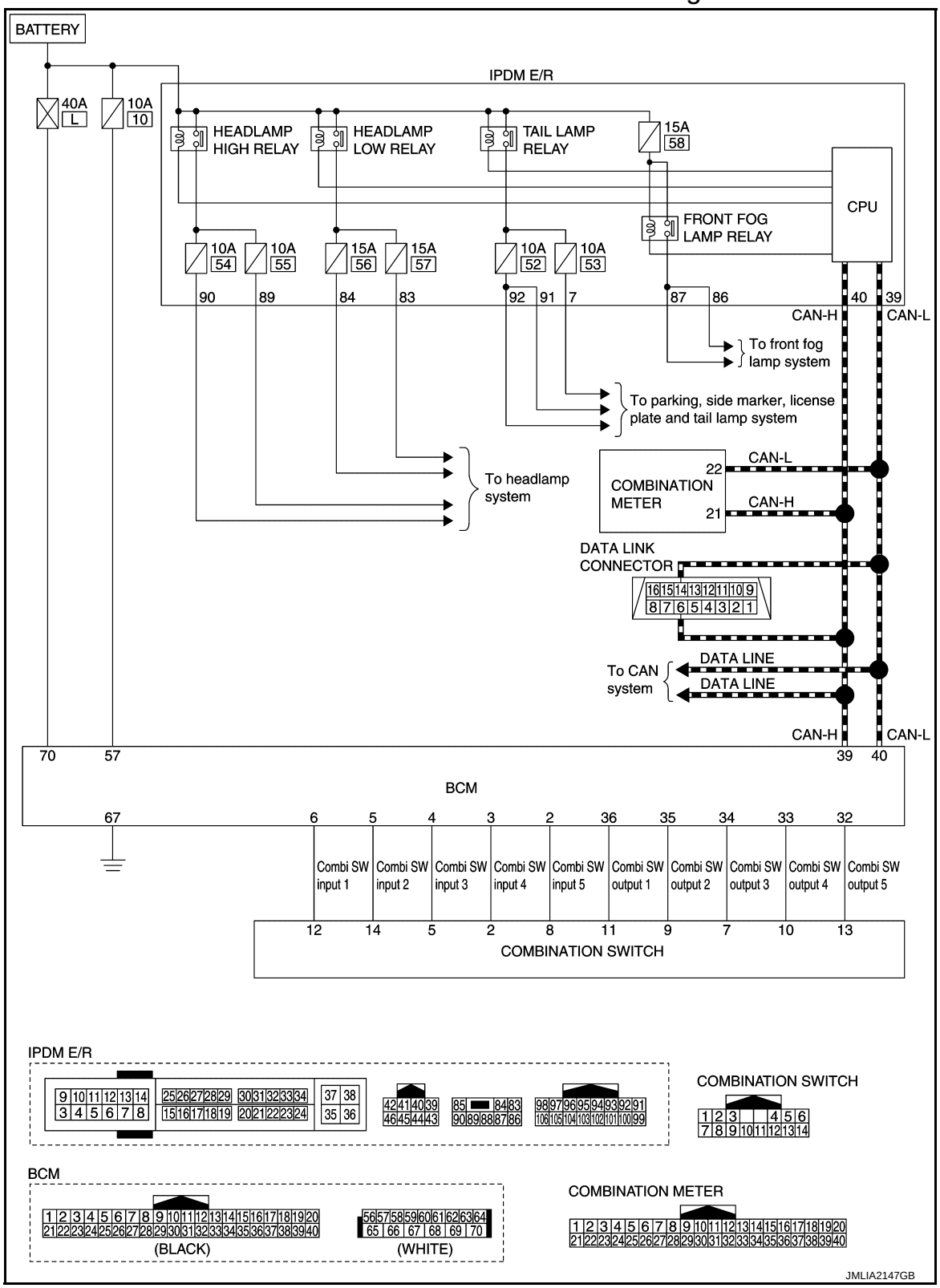
BCM activates the timer and turns the exterior lamp OFF 45 seconds after the ignition switch is turned from ON → OFF with the exterior lamps ON.

NOTE:

- Headlamp control function turns the exterior lamps ON normally when the ignition switch is turned ACC or ON (both before and after the exterior lamp battery saver is turned OFF).
- The timer starts at the time that the lighting switch is turned from OFF → 1ST or 2ND with the exterior lamps OFF.

EXTERIOR LAMP BATTERY SAVER SYSTEM : Circuit Diagram

INFOID:0000000011321558



DIAGNOSIS SYSTEM (BCM)
COMMON ITEM
COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:0000000011561138

APPLICATION ITEM
CONSULT performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
Work Support	Changes the setting for each system function.
Self Diagnostic Result	Displays the diagnosis results judged by BCM.
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM.
Data Monitor	The BCM input/output signals are displayed.
Active Test	The signals used to activate each device are forcibly supplied from BCM.
Ecu Identification	The BCM part number is displayed.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing BCM.

SYSTEM APPLICATION
BCM can perform the following functions for each system.
NOTE:
It can perform the diagnosis modes except the following for all sub system selection items.

×: Applicable item

System	Sub system selection item	Diagnosis mode		
		Work Support	Data Monitor	Active Test
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp control system	INT LAMP	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER	×	×	×
Air conditioning control system	AIR CONDITONER		×	×*
• Intelligent Key system • Engine start system	INTELLIGENT KEY	×	×	×
Combination switch	COMB SW		×	
Body control system	BCM	×		
NVIS	IMMU	×	×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door open	TRUNK		×	
Vehicle security system	THEFT ALM	×	×	×
RAP system	RETAINED PWR		×	
Signal buffer system	SIGNAL BUFFER		×	×
TPMS	AIR PRESSURE MONITOR	×	×	×

NOTE:

*: For models with automatic air conditioning control system, this diagnosis mode is not used.

FREEZE FRAME DATA (FFD)
The BCM records the following vehicle condition at the time a particular DTC is detected, and displays on CONSULT.

CONSULT screen item	Indication/Unit	Description	
Vehicle Speed	km/h	Vehicle speed of the moment a particular DTC is detected	
Odo/Trip Meter	km	Total mileage (Odometer value) of the moment a particular DTC is detected	
Vehicle Condition	SLEEP>LOCK	Power position status of the moment a particular DTC is detected*	While turning BCM status from low power consumption mode to normal mode [Power supply position is OFF (LOCK)]
	SLEEP>OFF		While turning BCM status from low power consumption mode to normal mode [Power supply position is OFF (OFF)]
	LOCK>ACC		While turning power supply position from OFF (LOCK) to ACC
	ACC>ON		While turning power supply position from ACC to ON
	RUN>ACC		While turning power supply position from RUN to ACC (Except emergency stop operation)
	CRANK>RUN		While turning power supply position from CRANK to RUN
	RUN>URGENT		While turning power supply position from RUN to ACC (Emergency stop operation)
	ACC>OFF		While turning power supply position from ACC to OFF (OFF)
	OFF>LOCK		While turning power supply position from OFF (OFF) to OFF (LOCK)
	OFF>ACC		While turning power supply position from OFF (OFF) to ACC
	ON>CRANK		While turning power supply position from ON to CRANK
	OFF>SLEEP		While turning BCM status from normal mode [Power supply position is OFF (OFF)] to low power consumption mode
	LOCK>SLEEP		While turning BCM status from normal mode [Power supply position is OFF (LOCK)] to low power consumption mode
	LOCK		Power supply position is OFF (LOCK)
	OFF		Power supply position is OFF (OFF)
	ACC		Power supply position is ACC
	ON		Power supply position is ON
	ENGINE RUN		Power supply position is RUN
	CRANKING		Power supply position is CRANK
IGN Counter	0 - 39	The number of times that ignition switch is turned ON after DTC is detected • The number is 0 when a malfunction is detected now. • The number increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. • The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.	

NOTE:

*: Refer to the following for details of the power supply position.

- OFF (OFF, LOCK): Ignition switch OFF
- ACC: Ignition switch ACC
- IGN: Ignition switch ON with engine stopped
- RUN: Ignition switch ON with engine running
- CRANK: At engine cranking

Power supply position shifts to “OFF (LOCK)” from “OFF (OFF)”, when ignition switch is in the OFF position, shift position is in the P position, and any of the following conditions are met.

- Closing door
- Opening door
- Door is locked using door request switch
- Door is locked using Intelligent Key

The power supply position shifts to “ACC” when the push-button ignition switch (push switch) is pushed at “OFF (LOCK)”.

HEADLAMP

HEADLAMP : CONSULT Function (BCM - HEADLAMP) (Halogen Type Headlamp)

INFOID:0000000011321560

WORK SUPPORT

Service item	Setting item	Setting	
CUSTOM A/LIGHT SETTING*1	MODE 1*3	Normal	
	MODE 2	More sensitive setting than normal setting (Turns ON earlier than normal operation)	
	MODE 3	More sensitive setting than MODE 2 (Turns ON earlier than MODE 2)	
	MODE 4	Less sensitive setting than normal setting (Turns ON later than normal operation.)	
BATTERY SAVER SET	On*3	With the exterior lamp battery saver function	
	Off	Without the exterior lamp battery saver function	
ILL DELAY SET*1	MODE 1*3	45 sec.	Sets delay timer function timer operation time. (All doors closed)
	MODE 2	Without the function	
	MODE 3	30 sec.	
	MODE 4	60 sec.	
	MODE 5	90 sec.	
	MODE 6	120 sec.	
	MODE 7	150 sec.	
	MODE 8	180 sec.	
AUTO LIGHT LOGIC SET*2	MODE 1*3	With twilight ON custom & with wiper INT, LO and HI	
	MODE 2	With twilight ON custom & with wiper LO and HI	
	MODE 3	With twilight ON custom & without	
	MODE 4	Without twilight ON custom & with wiper INT, LO and HI	
	MODE 5	Without twilight ON custom & with wiper LO and HI	
	MODE 6	Without twilight ON custom & without	

*1: For models without auto light system, this item is displayed but is not operated.

*2: For models without auto light system and all models for Canada, this item is displayed but is not operated.

*3: Factory setting

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor item [Unit]	Description
PUSH SW [On/Off]	The switch status input from push-button ignition switch
ENGINE STATE [Stop/Stall/Crank/Run]	The engine status received from ECM with CAN communication
VEH SPEED 1 [km/h]	The value of the vehicle speed received from combination meter via CAN communication

Monitor item [Unit]	Description
TURN SIGNAL R [On/Off]	Each switch status that BCM judges from the combination switch reading function
TURN SIGNAL L [On/Off]	
TAIL LAMP SW [On/Off]	
HI BEAM SW [On/Off]	
HEAD LAMP SW1 [On/Off]	
HEAD LAMP SW2 [On/Off]	
PASSING SW [On/Off]	
AUTO LIGHT SW*1 [On/Off]	
FR FOG SW*2 [On/Off]	
DOOR SW-DR [On/Off]	The switch status input from front door switch (driver side)
DOOR SW-AS [On/Off]	The switch status input from front door switch (passenger side)
DOOR SW-RR [On/Off]	The switch status input from sliding door switch RH
DOOR SW- RL [On/Off]	The switch status input from sliding door switch LH
DOOR SW-BK [On/Off]	The switch status input from back door switch
OPTICAL SENSOR [On/Off/NG]	**NOTE:** This item is indicated, but can not monitored
OPTI SEN (DTCT)*1 [V]	The value of outside brightness voltage input from the optical sensor
OPTI SEN (FILT)*1 [V]	The value of outside brightness voltage filtered by BCM

*1: For models without auto light system, this item is not displayed.
*2: For models without front fog lamp, this item is displayed but is not monitored.

ACTIVE TEST

Test item	Operation	Description
TAIL LAMP	On	Transmits the position light request signal to IPDM E/R via CAN communication to turn the tail lamp ON
	Off	Stops the tail lamp request signal transmission
HEAD LAMP	Hi	Transmits the high beam request signal via CAN communication to turn the headlamp (HI)
	Lo	Transmits the low beam request signal via CAN communication to turn the headlamp (LO)
	Off	Stops the high & low beam request signal transmission
FR FOG LAMP*1	On	Transmits the front fog light request signal to IPDM E/R via CAN communication to turn the front fog lamp ON
	Off	Stops the front light request signal transmission

Test item	Operation	Description
DAYTIME RUNNING LIGHT*2	On	Transmits the daytime running light request signal via CAN communication to IPDM E/R
	Off	Stop the daytime running light request signal transmission
ILL DIM SIGNAL	On	• Transmits the dimmer signal to combination meter via CAN communication and dims combination meter*3 • Transmits the dimmer signal to AV control unit and dims display
	Off	Stops the dimmer signal transmission

*1: For models without front fog lamp, this item is displayed but is not tested.
*2: For models without daytime running light system, this item is not displayed.
*3: Except for CANADA

FLASHER

FLASHER : CONSULT Function (BCM - FLASHER) (Halagen Type Headlamp)

INFOID:0000000011321561

WORK SUPPORT

Service item	Setting item	Setting	
HAZARD ANSWER BACK	Lock Only	With locking only	Sets the hazard warning lamp answer back function when the door is lock/unlock with the request switch or the key fob.
	Unlk Only	With unlocking only	
	Lock&Unlk*	With locking/unlocking	
	Off	Without the function	

*: Factory setting

DATA MONITOR

NOTE:
The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor item [Unit]	Description
REQ SW-DR [On/Off]	The switch status input from the request switch (driver side)
REQ SW-AS [On/Off]	The switch status input from the request switch (passenger side)
PUSH SW [On/Off]	The switch status input from the push-button ignition switch
TURN SIGNAL R [On/Off]	Each switch status that BCM detects from the combination switch reading function
TURN SIGNAL L [On/Off]	
HAZARD SW [On/Off]	The switch status input from the hazard switch
RKE-LOCK [On/Off]	Lock signal status received from the remote keyless entry receiver
RKE-UNLOCK [On/Off]	Unlock signal status received from the remote keyless entry receiver
RKE-PANIC [On/Off]	Panic alarm signal status received from the remote keyless entry receiver

ACTIVE TEST

Test item	Operation	Description
FLASHER	RH	Outputs the voltage to turn on the right side turn signal lamps.
	LH	Outputs the voltage to blink turn on left side turn signal lamps.
	Off	Stops the voltage to turn the turn signal lamps OFF.

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:0000000011561139

AUTO ACTIVE TEST

Description

In auto active test, the IPDM E/R sends a drive signal to the following systems to check their operation.

- Oil pressure warning lamp
- Front wiper (LO, HI)
- Parking lamp
- License plate lamp
- Tail lamp
- Side marker lamp
- Front fog lamp
- Headlamp (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan

Operation Procedure

NOTE:

Never perform auto active test in the following condition.

- Passenger door is open.
- CONSULT is connected.

1. Close the hood and lift the wiper arms from the windshield. (Prevent windshield damage due to wiper operation)
   NOTE:
   When auto active test is performed with hood opened, sprinkle water on windshield beforehand.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON, and within 20 seconds, press the front door switch (driver side) 10 times. Then turn the ignition switch OFF.
4. Turn the ignition switch ON within 10 seconds. After that the horn sounds once and the auto active test starts.
   NOTE:
   Engine starts when ignition switch is turned ON while brake pedal is depressed.
5. The oil pressure warning lamp starts blinking when the auto active test starts.
6. After a series of the following operations is repeated 3 times, auto active test is completed.

NOTE:

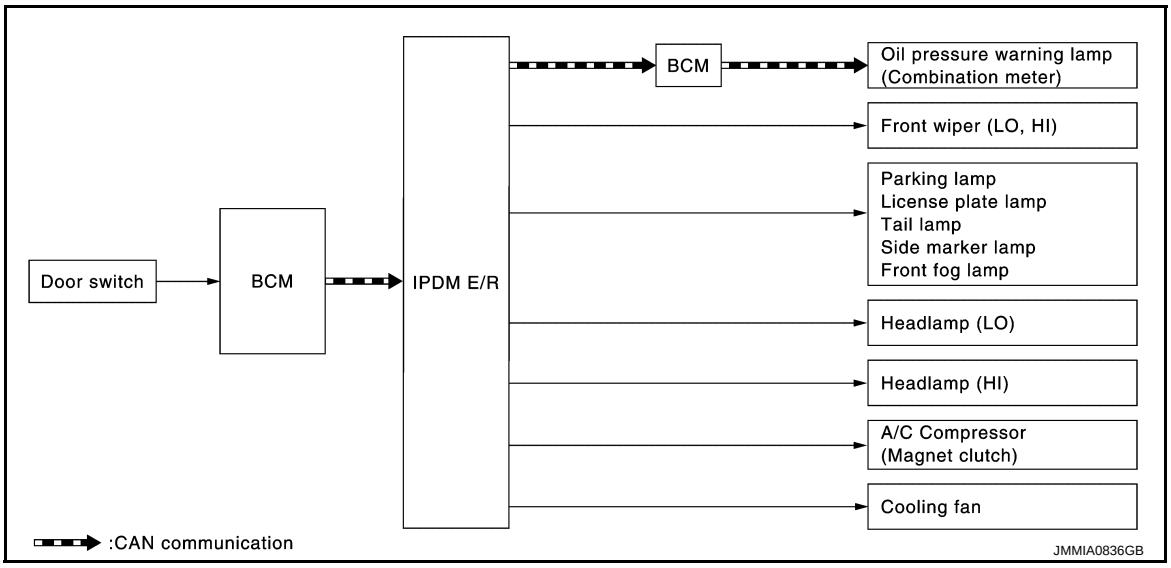
- When auto active test has to be cancelled halfway through test, turn the ignition switch OFF.
- When auto active test is not activated, door switch may be the cause. Check door switch. Refer to DLK-241, "Component Function Check".

Inspection in Auto Active Test

When auto active test is actuated, the following 6 steps are repeated 3 times.

Operation sequence	Inspection location	Operation
1	Oil pressure warning lamp	Blinks continuously during operation of auto active test
2	Front wiper motor	LO for 5 seconds → HI for 5 seconds
3	• Parking lamp • License plate lamp • Tail lamp • Side marker lamp • Front fog lamp	10 seconds
4	Headlamp	• LO 10 seconds • HI ON ⇔ OFF 5 times
5	A/C compressor (magnet clutch)	ON ⇔ OFF 5 times
6	Cooling fan	LO for 5 seconds →MID for 3 seconds → HI for 2 seconds

Concept of auto active test



- IPDM E/R starts the auto active test with the door switch signals transmitted by BCM via CAN communication. Therefore, the CAN communication line between IPDM E/R and BCM is considered normal if the auto active test starts successfully.
- The auto active test facilitates troubleshooting if any systems controlled by IPDM E/R cannot be operated.

Diagnosis chart in auto active test

Symptom	Inspection contents		Possible cause
Any of the following components do not operate • Parking lamp • License plate lamp • Tail lamp • Side marker lamp • Front fog lamp • Headlamp (HI, LO) • Front wiper motor	Perform auto active test. Does the applicable system operate?	YES	BCM signal input circuit
		NO	• Lamp or motor • Lamp or motor ground circuit • Harness or connector between IPDM E/R and applicable system • IPDM E/R
A/C compressor does not operate	Perform auto active test. Does the magnet clutch operate?	YES	• Combination meter signal input circuit • CAN communication signal between Combination meter and ECM • CAN communication signal between ECM and IPDM E/R
		NO	• Magnet clutch • Harness or connector between IPDM E/R and magnet clutch • IPDM E/R
Oil pressure warning lamp does not operate	Perform auto active test. Does the oil pressure warning lamp blink?	YES	• Harness or connector between IPDM E/R and oil pressure switch • Oil pressure switch • IPDM E/R
		NO	• CAN communication signal between IPDM E/R and BCM • CAN communication signal between BCM and Combination meter • Combination meter

Symptom	Inspection contents		Possible cause
Cooling fan does not operate	Perform auto active test. Does the cooling fan operate?	YES	• ECM signal input circuit • CAN communication signal between ECM and IPDM E/R
		NO	• Cooling fan • Harness or connector between cooling fan and cooling fan relay • Harness or connector between IPDM E/R and cooling fan relay • Cooling fan relay • IPDM E/R

CONSULT Function (IPDM E/R)

INFOID:0000000011561140

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with IPDM E/R.

Diagnosis mode	Description
Ecu Identification	Allows confirmation of IPDM E/R part number.
Self Diagnostic Result	Displays the diagnosis results judged by IPDM E/R.
Data Monitor	Displays the real-time input/output data from IPDM E/R input/output data.
Active Test	IPDM E/R can provide a drive signal to electronic components to check their operations.
CAN Diag Support Monitor	The results of transmit/receive diagnosis of CAN communication can be read.

SELF DIAGNOSTIC RESULT

Refer to PCS-24, "DTC Index".

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor Item [Unit]	MAIN SIGNALS	Description
MOTOR FAN REQ [1/2/3/4]	×	Displays the value of the cooling fan speed signal received from ECM via CAN communication.
AC COMP REQ [Off/On]	×	Displays the status of the A/C compressor request signal received from ECM via CAN communication.
TAIL&CLR REQ [Off/On]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR FOG REQ [Off/On]	×	Displays the status of the front fog light request signal received from BCM via CAN communication.
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper stop position signal judged by IPDM E/R.
WIP PROT [Off/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.
IGN RLY1 -REQ [Off/On]		Displays the status of the ignition switch ON signal received from BCM via CAN communication.
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.

Monitor Item [Unit]	MAIN SIGNALS	Description
PUSH SW [Off/On]		Displays the status of the push-button ignition switch judged by IPDM E/R.
INTER/NP SW [Off/On]		Displays the status of the shift position judged by IPDM E/R.
ST RLY CONT [Off/On]		Displays the status of the starter relay status signal received from BCM via CAN communication.
IHBT RLY -REQ [Off/On]		Displays the status of the starter control relay signal received from BCM via CAN communication.
ST/INHI RLY [Off/ ST /INHI/UNKWN]		Displays the status of the starter relay and starter control relay judged by IPDM E/R.
DETENT SW [Off/On]		Displays the status of the CVT shift selector (detention switch) judged by IPDM E/R.
S/L RLY -REQ [Off/On]		**NOTE:** The item is indicated, but not monitored.
S/L STATE [LOCK/UNLK/UNKWN]		**NOTE:** The item is indicated, but not monitored.
DTRL REQ [Off/On]		Displays the status of the daytime running light request signal received from BCM via CAN communication. **NOTE:** This item is monitored only on the vehicle with daytime running light system.
OIL P SW [Open/Close]		**NOTE:** The item is indicated, but not monitored.
HOOD SW [Off/On]		**NOTE:** The item is indicated, but not monitored.
HL WASHER REQ [Off/On]		**NOTE:** The item is indicated, but not monitored.
THFT HRN REQ [Off/On]		Displays the status of the theft warning horn request signal received from BCM via CAN communication.
HORN CHIRP [Off/On]		Displays the status of the horn reminder signal received from BCM via CAN communication.
CRNRNG LMP REQ [Off/On]		**NOTE:** The item is indicated, but not monitored.

ACTIVE TEST

Test item

Test item	Operation	Description
CORNERING LAMP	Off	**NOTE:** The item is indicated, but cannot be tested.
	LH	
	RH	
HORN	On	Operates horn relay for 20 ms.
FRONT WIPER	Off	OFF
	Lo	Operates the front wiper relay.
	Hi	Operates the front wiper relay and front wiper high relay.
MOTOR FAN	1	OFF
	2	Operates the cooling fan relay-1.
	3	Operates the cooling fan relay-2.
	4	Operates the cooling fan relay-2 and cooling fan relay-3.
HEAD LAMP WASHER	On	**NOTE:** The item is indicated, but cannot be tested.

Test item	Operation	Description
EXTERNAL LAMPS	Off	OFF
	TAIL	Operates the tail lamp relay and the daytime running light relay.
	Lo	Operates the headlamp low relay.
	Hi	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.
	Fog	Operates the front fog lamp relay.

ECU DIAGNOSIS INFORMATION

BCM, IPDM E/R

List of ECU Reference

INFOID:0000000011321564

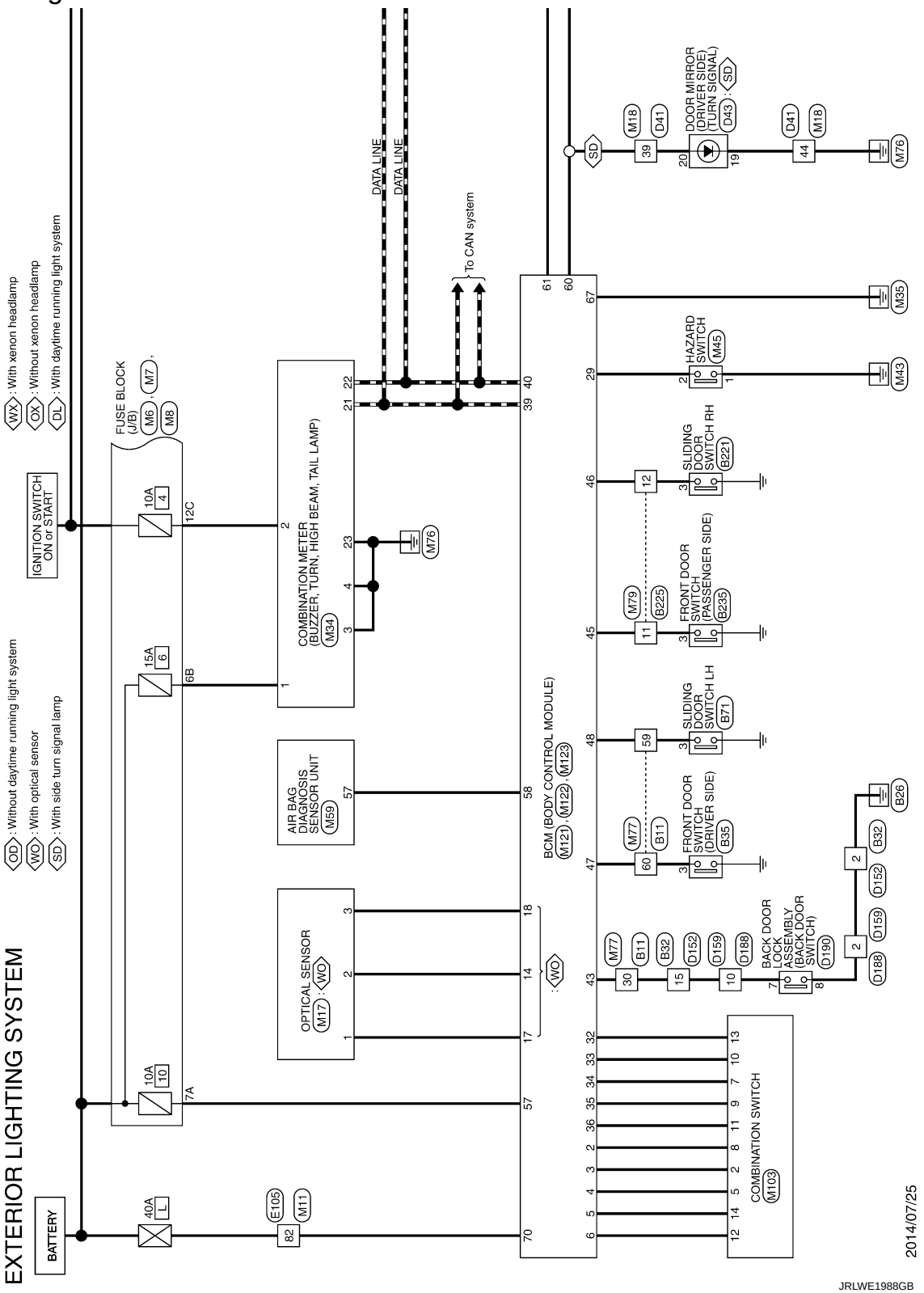
ECU	Reference
BCM	BCS-40, "Reference Value"
	BCS-62, "Fail-safe"
	BCS-62, "DTC Inspection Priority Chart"
	BCS-63, "DTC Index"
IPDM E/R	PCS-16, "Reference Value"
	PCS-23, "Fail-safe"
	PCS-24, "DTC Index"

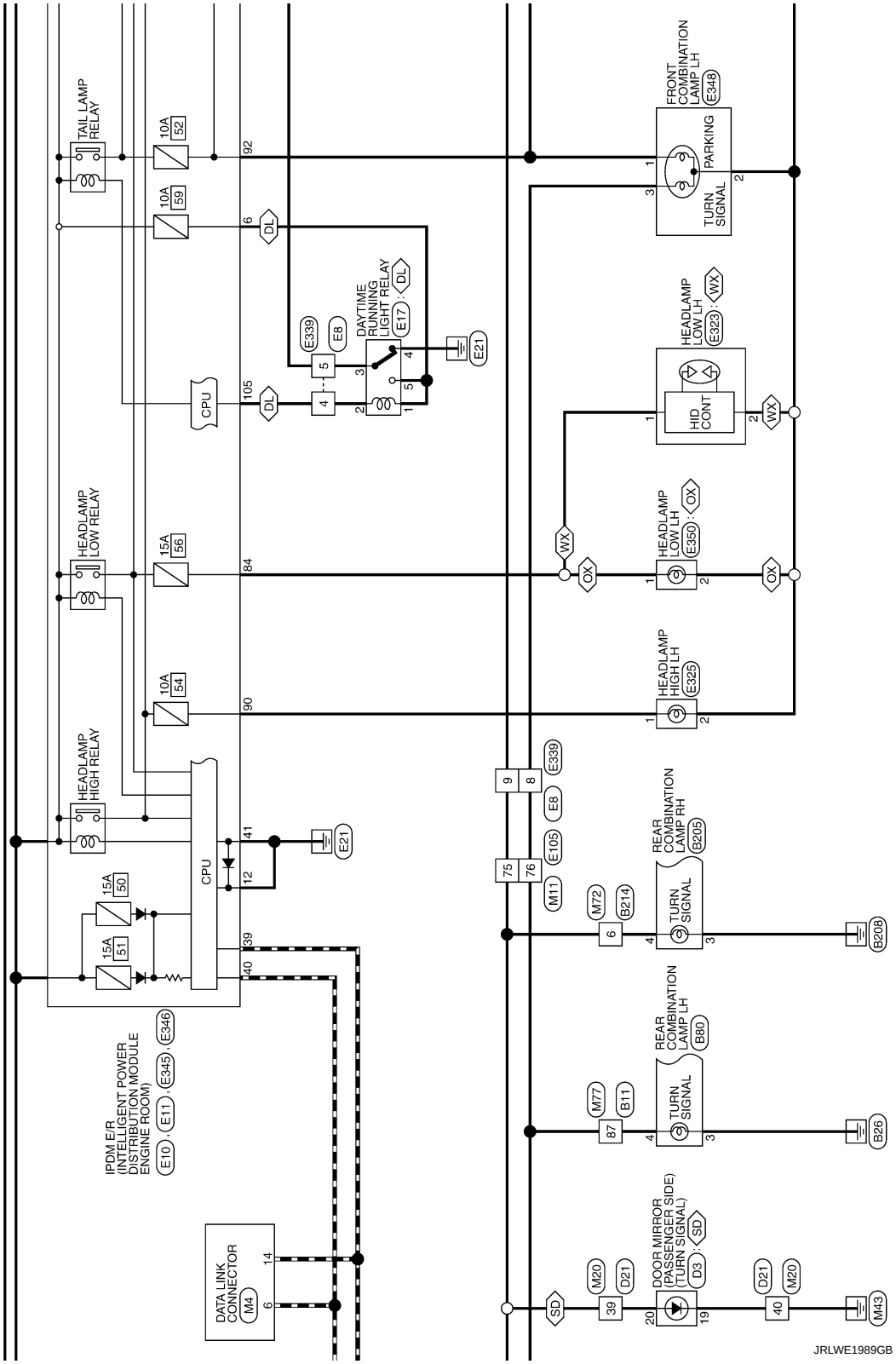
WIRING DIAGRAM

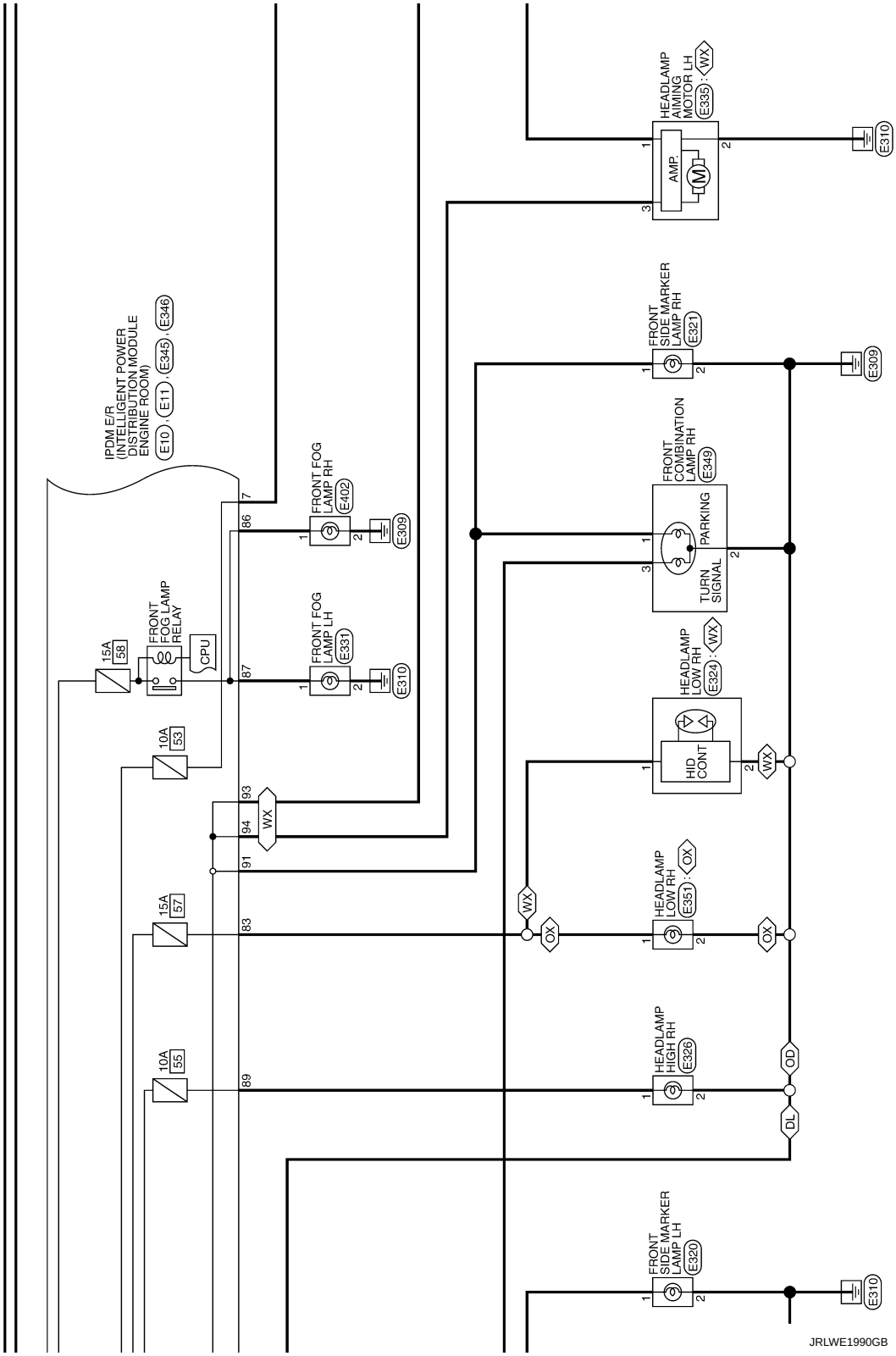
EXTERIOR LIGHTING SYSTEM

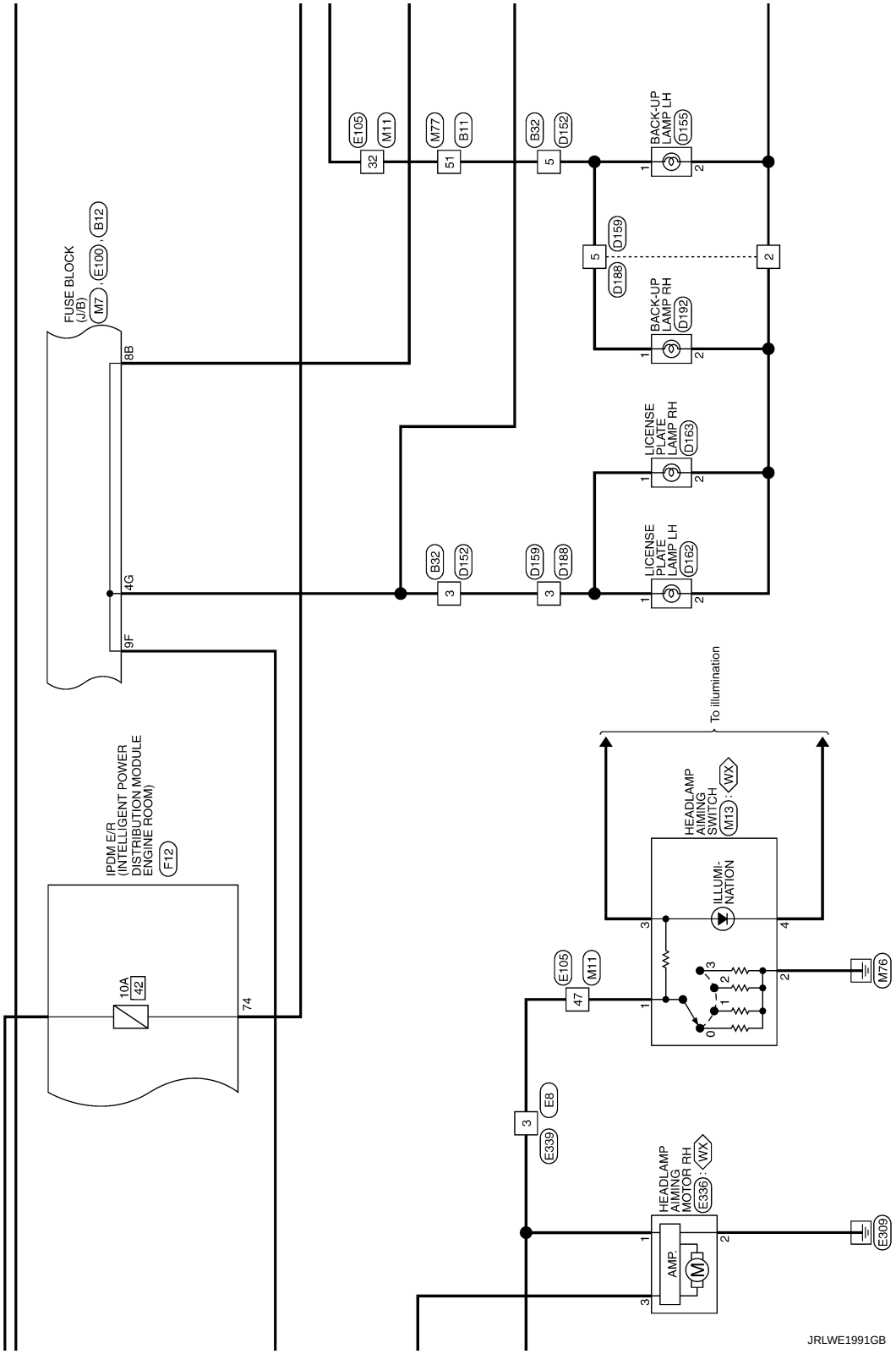
Wiring Diagram

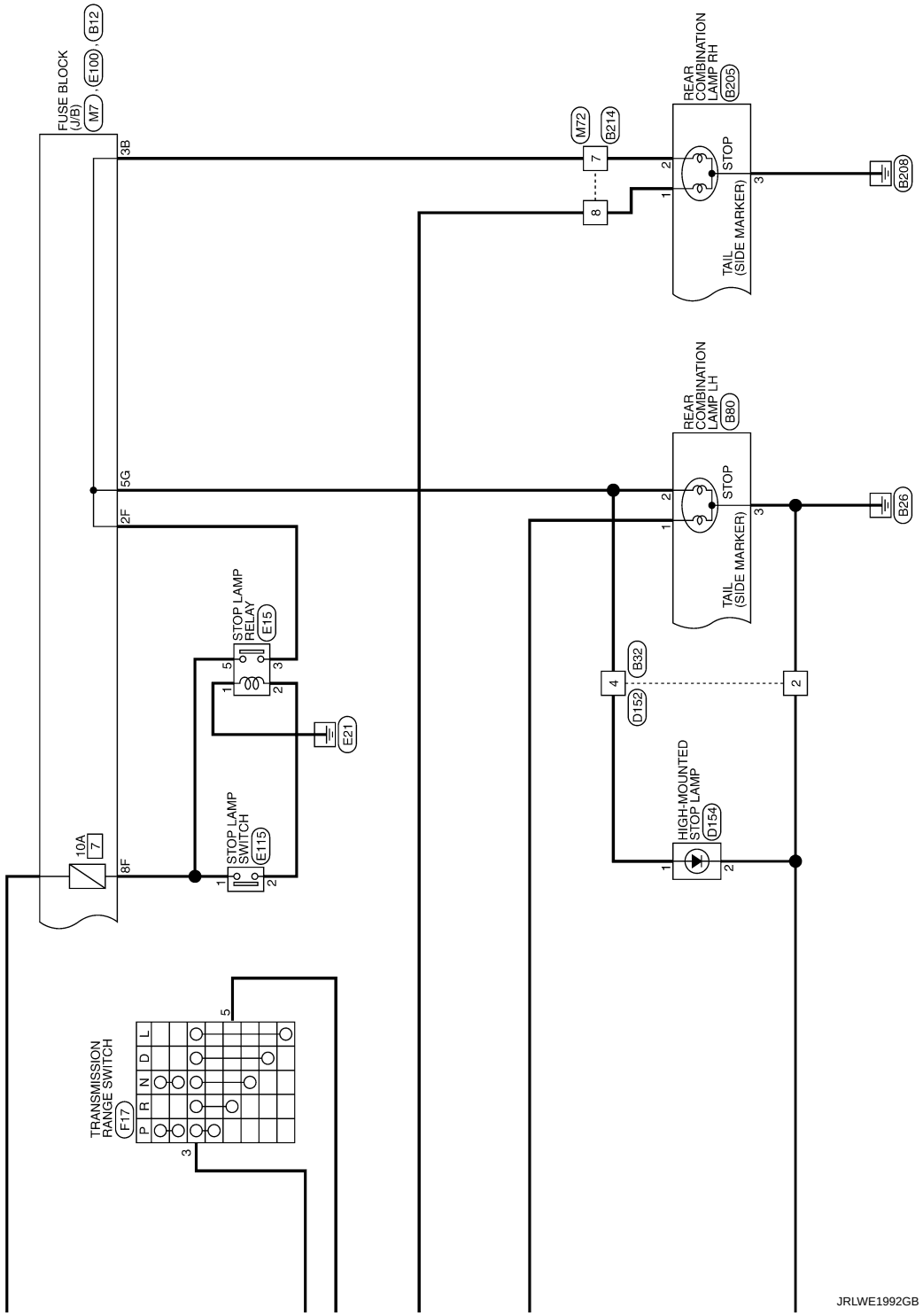
INFOID:0000000011580402

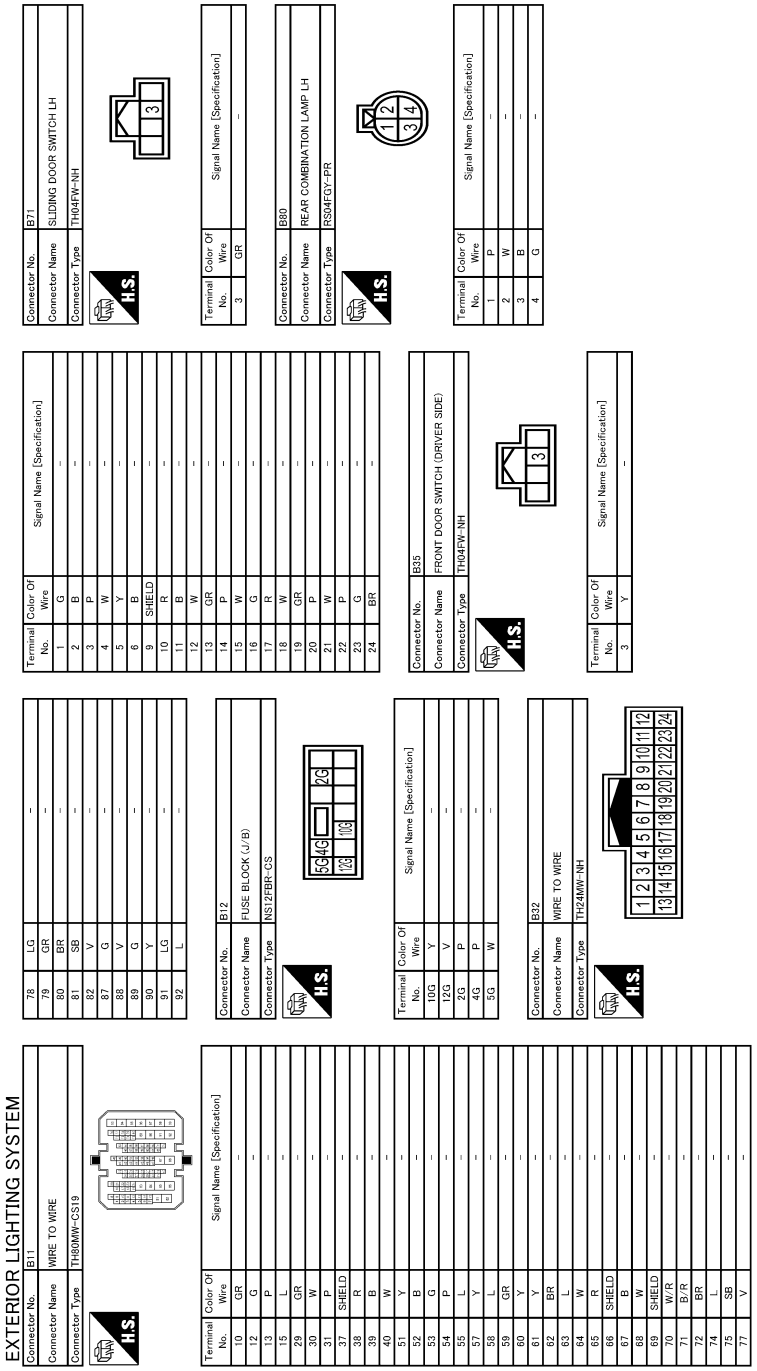



TAIL LAMP RELAY
HEADLAMP LOW RELAY
HEADLAMP HIGH RELAY
10A 52
10A 59
10A 54
15A 56
15A 50
15A 51
CPU
DAYTIME RUNNING LIGHT RELAY
E17 : DL
E339
E8
E21
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10 , E11 , E345 , E346
DATA LINK CONNECTOR M4
FRONT COMBINATION LAMP LH E348
PARKING
TURN SIGNAL
HEADLAMP LOW LH (E323) : WX
HID CONT
HEADLAMP LOW LH (E350) : OX
HEADLAMP HIGH LH E325
REAR COMBINATION LAMP RH B205
REAR COMBINATION LAMP LH B80
DOOR MIRROR (PASSENGER SIDE) (TURN SIGNAL) D3 : SD
B208
B26
M43
JRLWE1989GB


IPDM E/R
(INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10, E11, E345, E346
15A 58
FRONT FOG LAMP RELAY
CPU
10A 53
15A 57
10A 55
7
86
87
93
94
91
83
89
W/X
FRONT FOG LAMP RH E402
FRONT FOG LAMP LH E331
E309
E310
HEADLAMP AIMING MOTOR LH E335 : W/X
AMP.
FRONT SIDE MARKER LAMP RH E321
FRONT COMBINATION LAMP RH E349
PARKING
TURN SIGNAL
HEADLAMP LOW RH E324 : W/X
HID CONT
HEADLAMP LOW RH E351 : O/X
HEADLAMP HIGH RH E326
O/D
DL
FRONT SIDE MARKER LAMP LH E320
JRLWE1990GB


FUSE BLOCK (J/B)
M7, E100, B12
8B
4G
9F
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
F12
10A 42
74
E105 M11 32
M77 B11 51
B32 D152 5
BACK-UP LAMP LH D155
D159 D188 5
2
BACK-UP LAMP RH D192
LICENSE PLATE LAMP RH D163
LICENSE PLATE LAMP LH D162
B32 D152 3
D159 D188 3
To illumination
HEADLAMP AIMING SWITCH M13 WX
ILLUMI-NATION
E105 M11 47
M76
E8 E339 3
HEADLAMP AIMING MOTOR RH E336 WX
AMP.
E309
JRLWE1991GB


FUSE BLOCK (J/B)
M7, E100, B12
3B
5G
2F
8F
10A
7
STOP LAMP RELAY
E15
STOP LAMP SWITCH
E115
E21
TRANSMISSION RANGE SWITCH
F17
P R N D L
5
3
M72
B214
7
8
REAR COMBINATION LAMP RH
B205
STOP
TAIL (SIDE MARKER)
B208
REAR COMBINATION LAMP LH
B80
B26
B32
D152
4
2
HIGH-MOUNTED STOP LAMP
D154
JRLWE1992GB



JRLWE1993GB

EXTERIOR LIGHTING SYSTEM

Connector No.	B205
Connector Name	REAR COMBINATION LAMP RH
Connector Type	RS04FGY-PR

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	–
2	W	–
3	B	–
4	V	–

Connector No.	B214
Connector Name	WIRE TO WIRE
Connector Type	NS12MBR-CS

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	–
2	L	–
4	BR	–
5	Y	–
6	V	–
7	W	–
8	R	–
9	LG	–
10	Y	–
11	G	–
12	SB	–

Connector No.	B221
Connector Name	SLIDING DOOR SWITCH RH
Connector Type	TH04FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
3	GR	–

Connector No.	B225
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
2	W	–
3	B	–
4	P	–
5	G	–
9	L	–
10	P	–
11	SB	–
12	GR	–
13	R	–
14	G	–
15	L	–
16	Y	–

Connector No.	B235
Connector Name	FRONT DOOR SWITCH (PASSENGER SIDE)
Connector Type	TH04FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
3	SB	–

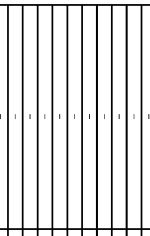
Connector No.	D3
Connector Name	DOOR MIRROR (PASSENGER SIDE)
Connector Type	TH24MW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	–
5	W	–
6	R	–
7	P	–
10	W	–
11	G	–
12	R	–
13	Y	–
17	SHIELD	–
18	B	–
19	B	–
20	LG	–
21	R	–
22	P	–
23	W	–
24	GR	–

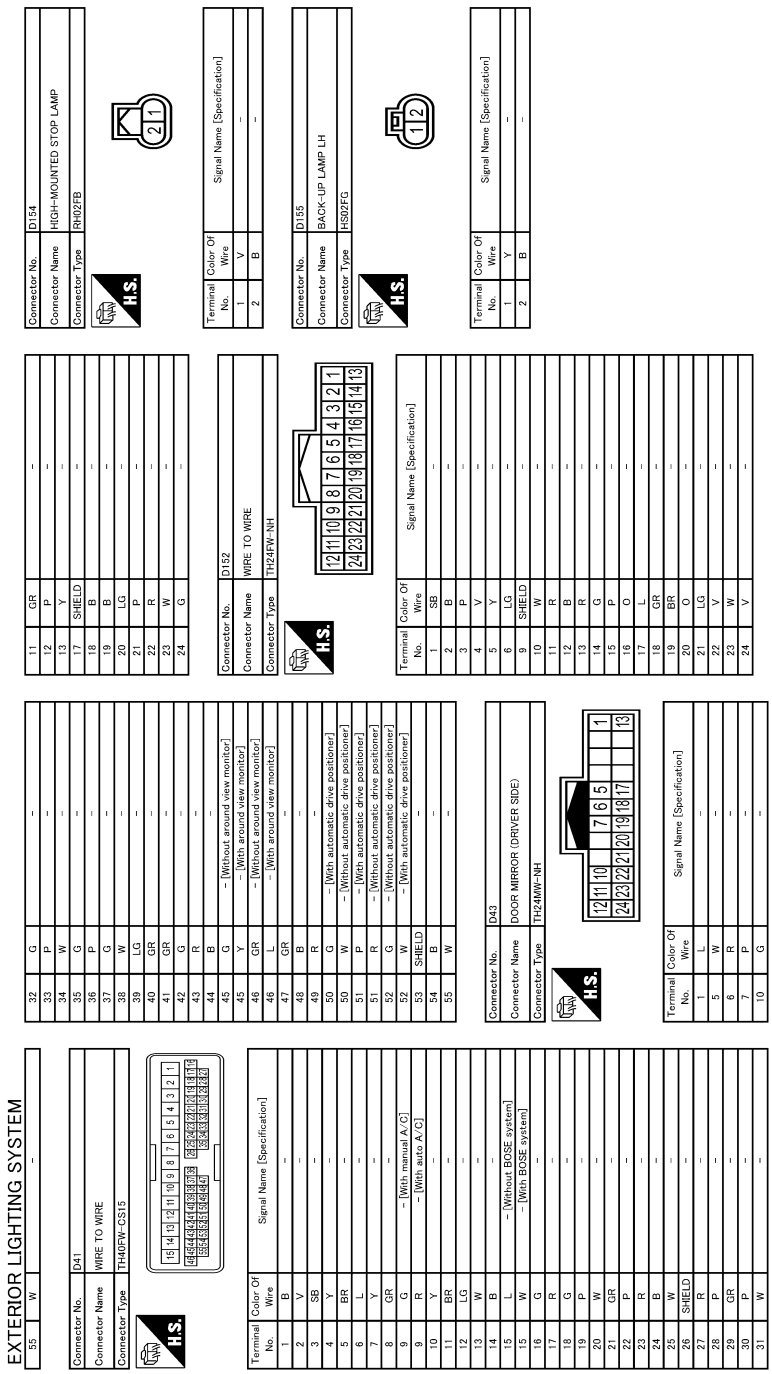
Connector No.	D21
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15

H.S.



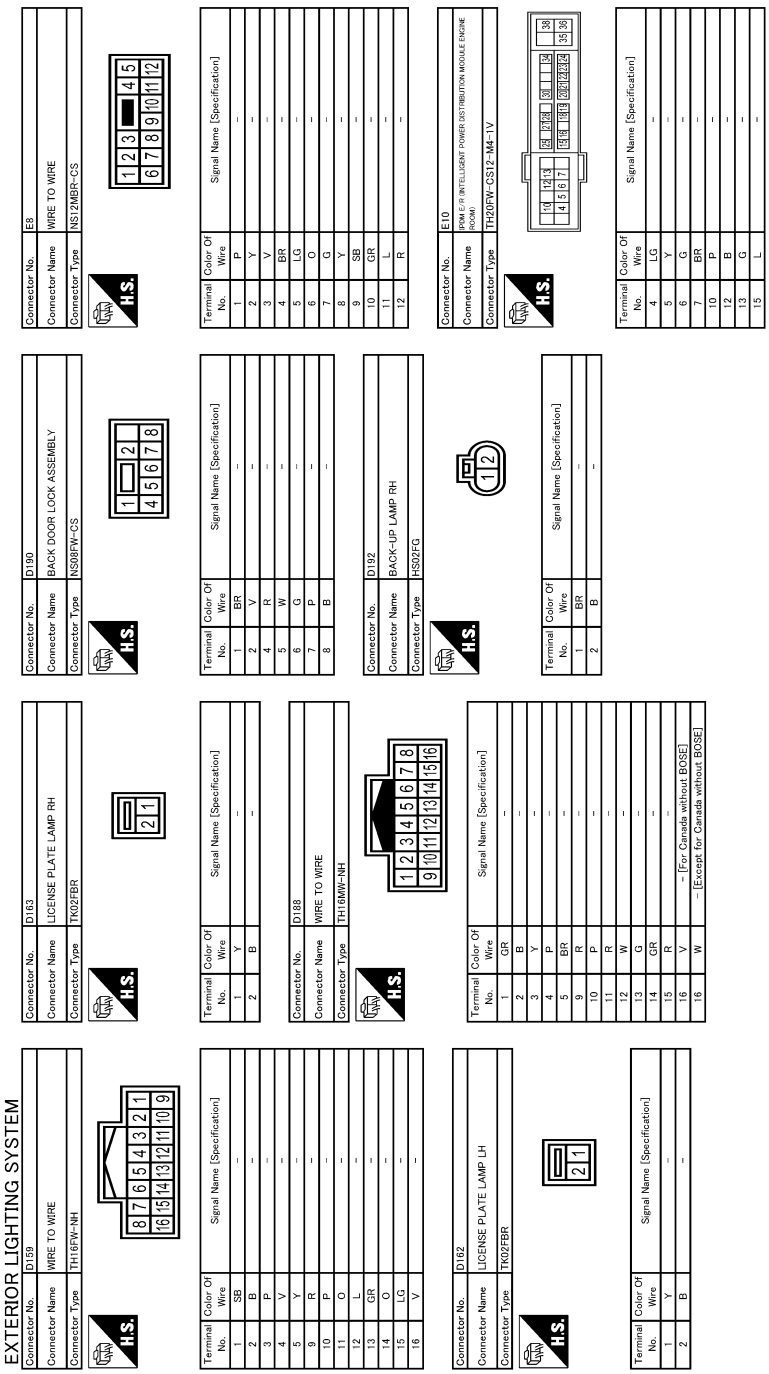
Terminal No.	Color Of Wire	Signal Name [Specification]
7	B	–
8	V	–
9	BR	– [With manual A/C]
9	W	– [With auto A/C]
10	LG	–
11	LG	–
12	BR	–
14	B	– [Without BOSE system]
14	R	– [With BOSE system]
15	L	– [Without BOSE system]
15	W	– [With BOSE system]
16	P	–
17	GR	–
18	R	–
19	W	–
21	R	–
22	B	–
23	W	–
24	SHIELD	–
25	Y	–
26	L	–
36	P	–
37	G	–
38	W	–
39	LG	–
40	B	–
41	GR	–
42	G	–
43	R	–
45	G	–
46	GR	–
50	W	–
51	R	–
52	G	–
53	SHIELD	–
54	B	–

JRLWE1994GB



JRLWE1995GB

EXTERIOR LIGHTING SYSTEM



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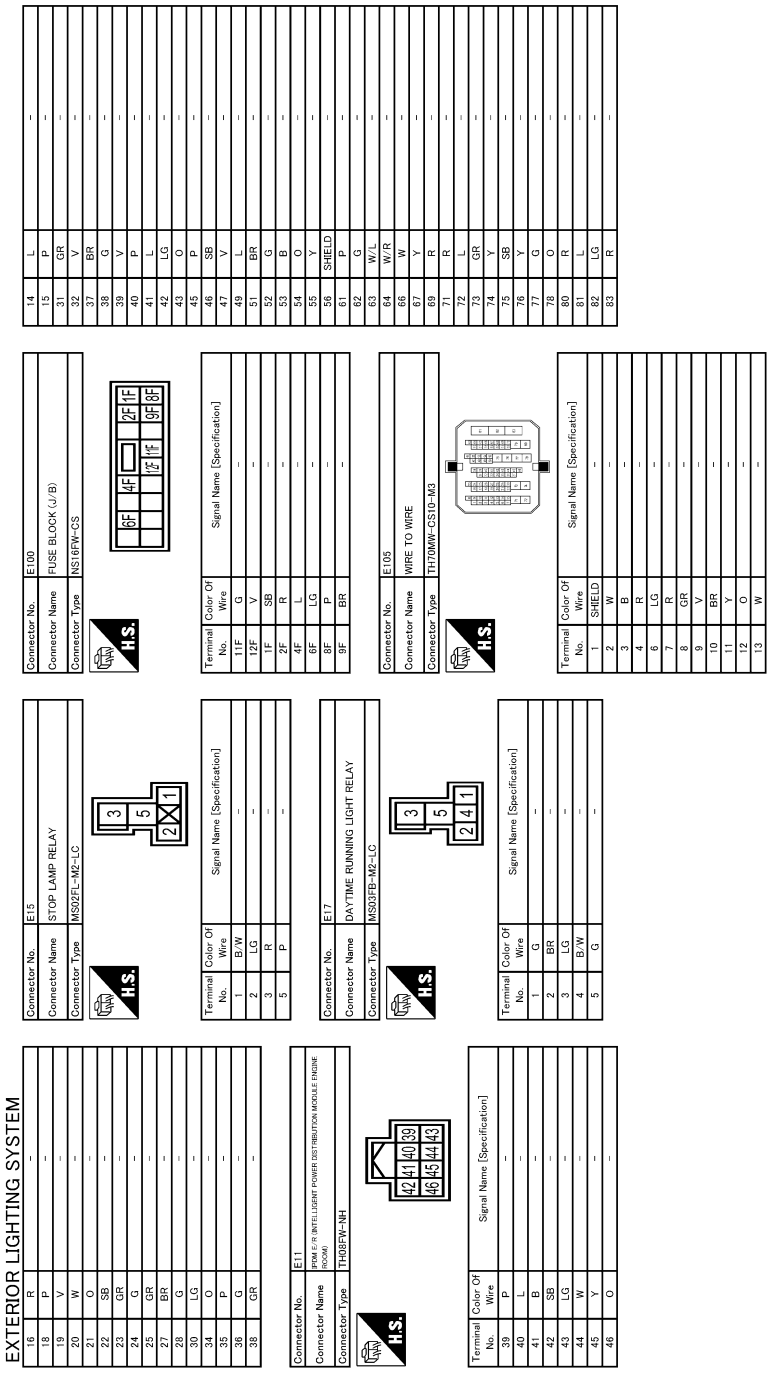

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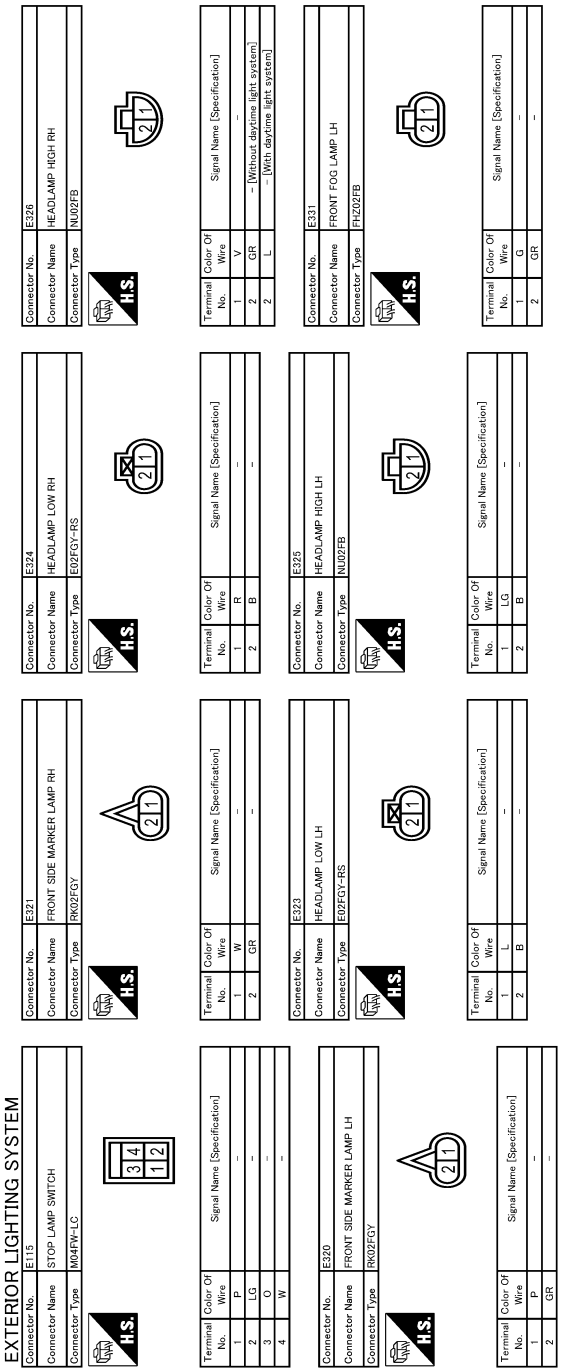


JRLWE1998GB

EXTERIOR LIGHTING SYSTEM

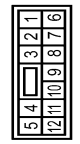
Connector No.	E335
Connector Name	HEADLAMP AIMING MOTOR LH
Connector Type	HS03FGY

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	–
2	GR	–
3	W	–

Connector No.	E336
Connector Name	HEADLAMP AIMING MOTOR RH
Connector Type	HS03FGY

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	–
2	GR	–
3	W	–

Connector No.	E339
Connector Name	WIRE TO WIRE
Connector Type	NS12FBR-CS

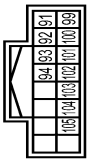


Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	–
2	O	–
3	P	–
4	LG	–
5	L	–
6	BR	–
7	P	–
8	G	–
9	W	–
10	GR	–
11	GR	– [Without automatic drive positioner]
11	Y	– [With automatic drive positioner]
12	G	–

Connector No.	E345
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS08FW-CS

Terminal No.	Color Of Wire	Signal Name [Specification]
83	R	–
84	L	–
86	SB	–
87	Y	–
88	BR	–
89	V	–
90	G	–

Connector No.	E346
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH16FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
91	LG	–
92	P	–
93	W	–
94	O	–
99	Y	–
100	V	–
101	O	–
102	G	–
103	BR	–
104	LG	–
105	R	–

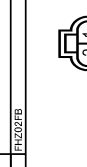
Connector No.	E348
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	Z03FBR

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	–
2	B	–
3	G	–

Connector No.	E349
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	Z03FBR

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	–
2	GR	–
3	W	–

Connector No.	E350
Connector Name	HEADLAMP LOW LH
Connector Type	FHZ02FB



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	–
2	GR	–

JRLWE1999GB

EXTERIOR LIGHTING SYSTEM

Connector No.	E351
Connector Name	HEADLAMP LOW RH
Connector Type	FHZ02FB

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	–
2	GR	–

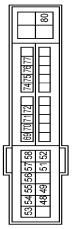
Connector No.	E402
Connector Name	FRONT FOG LAMP RH
Connector Type	FHZ02FB

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	–
2	B	–

Connector No.	F12
Connector Name	PDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4

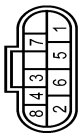
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
48	W	–
49	R/B	–
51	LG	–
52	Y/G	–
53	R/W	–
54	G/W	–
55	W/L	–
56	R/Y	–
57	O	–
58	Y	–
69	W/B	–
70	O	–
71	P	–
72	R/B	–
74	LG	–
75	LG	–
76	GR	–
77	B	–
80	B	–

Connector No.	F17
Connector Name	TRANSMISSION RANGE SWITCH
Connector Type	YDX06FB-HS4

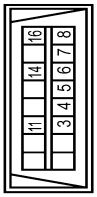
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	–
2	R/B	–
3	LG	–
4	BR/W	–
5	P/B	–
6	P/L	–
7	G/O	–
8	GR	–

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW

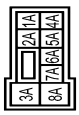
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	–
4	GR	–
5	GR	–
6	L	–
7	R	–
8	G	–
11	SB	–
14	P	–
16	P	–

Connector No.	M6
Connector Name	FUSE BLOCK (J/B)
Connector Type	CS06FW-M2

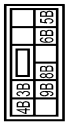
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1A	Y	–
2A	G	–
3A	L	–
4A	GR	–
5A	V	–
6A	R	–
7A	GR	–
8A	L	–

Connector No.	M7
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
3B	V	–
4B	W	–
5B	BR	–
6B	O	–
8B	R/L	–
9B	GR	–

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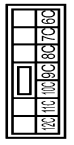
EXTERIOR LIGHTING SYSTEM

Connector No.	M8
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS12FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
10C	LG	–
11C	V	–
12C	Y	–
6C	GR	–
7C	GR	–
8C	G	–
9C	Y	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH70FW-CS10-M3

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SHIELD	–
2	W	–
3	B	–
4	R	–
6	G	–
7	R	–
8	G	–
9	B	–
10	R	–
11	W	– [Without automatic drive positioner]
12	L	– [With automatic drive positioner]
12	LG	– [Without automatic drive positioner]
13	G	– [With automatic drive positioner]
13	Y	– [With automatic drive positioner]
14	L	–
15	P	–
31	R	–
32	LG	–
37	BR	– [With automatic drive positioner]
37	W	– [Without automatic drive positioner]
38	R	–
39	BE	– [Without automatic drive positioner]
39	Y	– [With automatic drive positioner]
40	P	–
41	L	–
42	G	–
43	W	–
45	P	–
46	V	–
47	R	–
49	G	–
51	G	–
52	W	–
53	B	–
54	LG	–
55	L	–
56	SHIELD	–
61	R	–
62	W	–
63	B	–
64	W	–
66	W	–
67	BR	–
69	P	–
71	R	–
72	L	–
73	LG	–
74	Y	–
75	Y	–
76	V	–
77	P	–
78	BR	–
80	Y	–
81	W	–
82	L	–
83	R	–

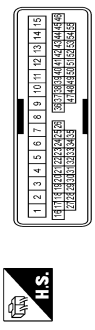
Connector No.	M13
Connector Name	HEADLAMP AIMING SWITCH
Connector Type	A04FW

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	–
2	B	–
3	P	–
4	GR	–

Connector No.	M17
Connector Name	OPTICAL SENSOR
Connector Type	TK03FW

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	POWER
2	G	OUTPUT
3	R	GROUND

Connector No.	M18
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	–
2	R	–
3	W	–
4	Y	–
5	SB	–
6	LG	–
7	V	–
8	L	–
9	GR	–
10	Y	–
11	V	–
12	G	–
13	G	–
14	B	– [Without BOSE system]
14	R	– [With BOSE system]
15	W	– [With BOSE system]
15	Y	– [Without BOSE system]
16	W	–
17	BE	–
18	P	–
19	W	–
20	LG	–
21	P	–
22	G	–
23	R	–
24	B	–
25	W	–
26	SHIELD	–
27	Y	–
28	G	–
29	W	–
30	R	–
31	W	–
32	G	–
33	BE	–
34	P	–

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EXTERIOR LIGHTING SYSTEM

35	W	–
36	LG	–
37	W	–
38	P	–
39	V	–
40	R	–
41	B	–
42	W	–
43	G	–
44	B	–
45	B	– [With around view monitor]
45	GR	– [Without around view monitor]
46	R	– [Without around view monitor]
46	W	– [With around view monitor]
47	GR	–
48	GR	–
49	P	– [Without automatic drive positioner]
49	R	– [With automatic drive positioner]
50	GR	– [With automatic drive positioner]
50	W	– [Without automatic drive positioner]
51	B	– [Without automatic drive positioner]
51	G	– [With automatic drive positioner]
52	GR	– [Without automatic drive positioner]
52	P	– [With automatic drive positioner]
53	SHIELD	–
54	W	–
55	B	–

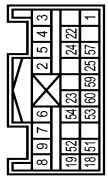
12	V	–
14	L	–
15	B	– [Without BOSE system]
15	LG	– [With BOSE system]
16	G	–
17	P	–
18	R	–
19	LG	–
21	R	–
22	B	–
23	W	–
24	SHIELD	–
25	B	–
26	W	–
36	LG	–
37	W	–
38	P	–
39	Y	–
40	B	–
41	GR	–
42	BE	–
43	R	–
45	R	–
46	GR	–
50	W	–
51	B	–
52	GR	–
53	SHIELD	–
54	W	–
55	B	–

3	B	GROUND
4	B	GROUND
5	B	ILLUMINATION CONTROL SIGNAL [Without automatic drive positioner]
5	B/P	ILLUMINATION CONTROL SIGNAL [With automatic drive positioner]
8	G	TRIP RESET SWITCH SIGNAL [Without automatic drive positioner]
8	SB	TRIP RESET SWITCH SIGNAL [With automatic drive positioner]
10	P	METER CONTROL SWITCH GROUND
11	G	ENTER SWITCH SIGNAL
12	BR	SELECT SWITCH SIGNAL [With automatic drive positioner]
12	R	SELECT SWITCH SIGNAL [Without automatic drive positioner]
13	W	ILLUMINATION CONTROL SWITCH SIGNAL [Without automatic drive positioner]
13	Y	ILLUMINATION CONTROL SWITCH SIGNAL [With automatic drive positioner]
14	G	ILLUMINATION CONTROL SWITCH GROUND [Without automatic drive positioner]
14	V	ILLUMINATION CONTROL SWITCH GROUND [With automatic drive positioner]
15	BR	AIR BAG SIGNAL
16	L	ENGINE COOLANT TEMPERATURE SIGNAL
18	L	AMBIENT SENSOR SIGNAL [Without automatic drive positioner]
18	LG	AMBIENT SENSOR SIGNAL [With automatic drive positioner]
19	R	A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL
20	G	AMBIENT SENSOR GROUND [Without automatic drive positioner]
20	Y	AMBIENT SENSOR GROUND [With automatic drive positioner]
21	L	CAN–H
22	P	CAN–L
23	B	GROUND
24	B	FUEL LEVEL SENSOR GROUND
25	BR	ALTERNATOR SIGNAL [With automatic drive positioner]
25	W	ALTERNATOR SIGNAL [Without automatic drive positioner]
26	BR	PARKING BRAKE SWITCH SIGNAL
27	BE	BRAKE FLUID LEVEL SWITCH SIGNAL [Without automatic drive positioner]
27	Y	BRAKE FLUID LEVEL SWITCH SIGNAL [With automatic drive positioner]
28	V	SECURITY SIGNAL
29	G	WASHER LEVEL SWITCH SIGNAL
31	SB	VEHICLE SPEED SIGNAL (8-PULSE)
32	P	OVERDRIVE CONTROL SWITCH SIGNAL
34	O	FUEL LEVEL SENSOR SIGNAL
35	BR	SEAT BELT BUCKLE SWITCH SIGNAL [Without automatic drive positioner]
35	P	SEAT BELT BUCKLE SWITCH SIGNAL [With automatic drive positioner]
36	BR	PASSENGER SEAT BELT WARNING SIGNAL

Connector No.	M45
Connector Name	HAZARD SWITCH
Connector Type	TK04FW

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	–
2	R	–
3	R	–
4	B	–

Connector No.	M59
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Type	NH28FY-EX



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BE	IGN
2	GR	GROUND
3	LG	DR1 (+)
4	Y	DR1 (–) DR2 (–)
5	V	DR 2 (+)
6	V	AS1 (–)
7	LG	AS1 (+)
8	BR	AS 2 (+)
9	Y	AS 2 (–)
18	B	ECZS (+)
19	W	ECZS (–)
22	GR	GROUND
23	R	AIRBAG W/L
24	LG	SEATBELT W/L
25	LG	CUTOFF TELLTALE
51	W	SIDE SENS RH2*

Connector No.	M20
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS16

Terminal No.	Color Of Wire	Signal Name [Specification]
7	B	–
8	L	– [With manual A/C]
8	Y	– [With auto A/C]
9	GR	– [With auto A/C]
9	LG	– [With manual A/C]
10	V	–
11	SB	–

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
1	O	BATTERY POWER SUPPLY [With automatic drive positioner]
1	P	BATTERY POWER SUPPLY [Without automatic drive positioner]
2	G	IGNITION SIGNAL [Without automatic drive positioner]
2	Y	IGNITION SIGNAL [With automatic drive positioner]

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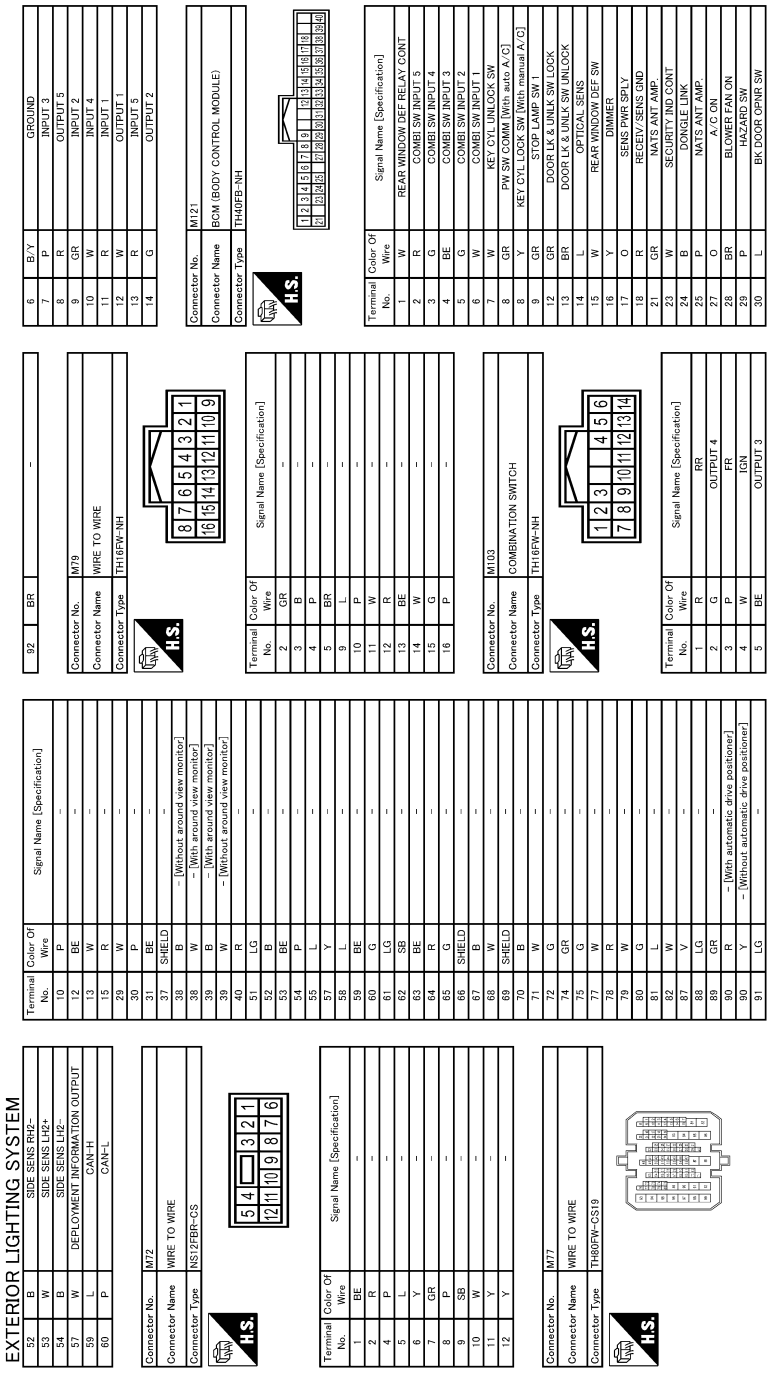

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EXTERIOR LIGHTING SYSTEM

31	G	DR DOOR UNLK SENS
32	R	COMBI SW OUTPUT 5
33	W	COMBI SW OUTPUT 4
34	P	COMBI SW OUTPUT 3
35	GR	COMBI SW OUTPUT 2
36	R	COMBI SW OUTPUT 1
37	G	DETENT SW
38	BE	RECEIVER COMM
39	L	CAN-H
40	P	CAN-L

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FB-FHA8-SA

H.S.

		43	44	45	46	47	48	49	
50	51				53		54		55

Terminal No.	Color Of Wire	Signal Name [Specification]
43	P	BK DOOR SW
44	GR	REAR WIPER STOP POSITION
45	W	PASS DOOR SW
46	R	SL DOOR RH SW
47	G	DR DOOR SW
48	BE	SL DOOR LH SW
49	B	LUGGAGE LAMP CONT
50	V	SELECT UNLK RELAY CONT
51	G	BACK DOOR REQ SW
53	BR	BK DOOR OPEN
54	R	REAR WIPER OUTPUT
55	G	SL DOOR LH UNLK CONT

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FW-FHA8-SA

H.S.

56	57	58	59	60	61	62	63	64	
65	66	67	68	69	70				

Terminal No.	Color Of Wire	Signal Name [Specification]
56	P	INT ROOM LAMP PWR SPLY
57	Y	BAT
58	O	AIR BAG
59	SB	PASS DOOR UNLK OUTPUT
60	V	TURN SIG LH OUTPUT
61	G	TURN SIG RH OUTPUT
62	W	STEP LAMP CONT
63	R	INT ROOM LAMP CONT
64	W	CRANK REQ
65	V	ALL DOOR LOCK OUTPUT
66	G	DR DOOR UNLK OUTPUT
67	B	GROUND
68	L	PW PWR SPLY (IGN)
69	P	PW PWR SPLY (BAT)
70	L	BAT

JRLWE2004GB

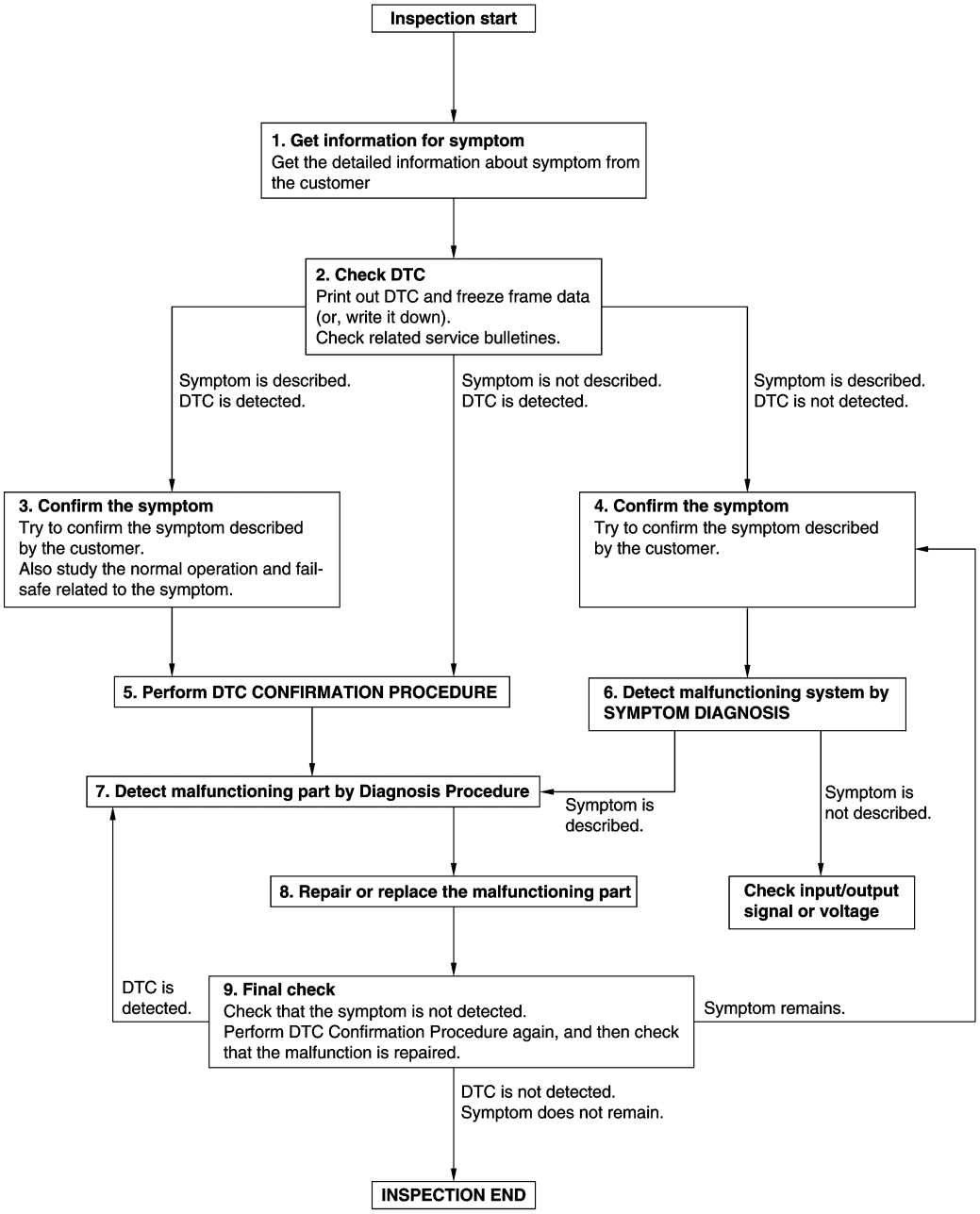
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000011321566

OVERALL SEQUENCE



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DETAILED FLOW

1.GET INFORMATION FOR SYMPTOM

1. Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurs).
2. Check operation condition of the function that is malfunctioning.

>> GO TO 2.

2.CHECK DTC

1. Check DTC.
2. Perform the following procedure if DTC is detected.

- Record DTC and freeze frame data (Print them out using CONSULT.)
- Erase DTC.
- Study the relationship between the cause detected by DTC and the symptom described by the customer.

3. Check related service bulletins for information.

Are any symptoms described and any DTC detected?

Symptom is described, DTC is detected>>GO TO 3.
Symptom is described, DTC is not detected>>GO TO 4.
Symptom is not described, DTC is detected>>GO TO 5.

3.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.
Also study the normal operation and fail-safe related to the symptom.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

4.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6.

5.PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC CONFIRMATION PROCEDURE for the detected DTC, and then check that DTC is detected again. At this time, always connect CONSULT to the vehicle, and check self diagnostic results in real time.
If two or more DTCs are detected, refer to DTC INSPECTION PRIORITY CHART, and determine trouble diagnosis order.

NOTE:

- Freeze frame data is useful if the DTC is not detected.
- Perform Component Function Check if DTC CONFIRMATION PROCEDURE is not included on Service Manual. This simplified check procedure is an effective alternative though DTC cannot be detected during this check.
  If the result of Component Function Check is NG, it is the same as the detection of DTC by DTC CONFIRMATION PROCEDURE.

Is DTC detected?

YES >> GO TO 7.
NO >> Check according to GI-42, "Intermittent Incident".

6.DETECT MALFUNCTIONING SYSTEM BY SYMPTOM DIAGNOSIS

Detect malfunctioning system according to SYMPTOM DIAGNOSIS based on the confirmed symptom in step 4, and determine the trouble diagnosis order based on possible causes and symptom.

Is the symptom described?

YES >> GO TO 7.
NO >> Monitor input data from related sensors or check voltage of related module terminals using CONSULT.

7.DETECT MALFUNCTIONING PART BY DIAGNOSIS PROCEDURE

Inspect according to Diagnosis Procedure of the system.

Is malfunctioning part detected?

YES >> GO TO 8.
NO >> Check according to GI-42, "Intermittent Incident".

8. REPAIR OR REPLACE THE MALFUNCTIONING PART

1. Repair or replace the malfunctioning part.
2. Reconnect parts or connectors disconnected during Diagnosis Procedure again after repair and replacement.
3. Check DTC. If DTC is detected, erase it.

>> GO TO 9.

9. FINAL CHECK

When DTC is detected in step 2, perform DTC CONFIRMATION PROCEDURE again, and then check that the malfunction is repaired securely.
When symptom is described by the customer, refer to confirmed symptom in step 3 or 4, and check that the symptom is not detected.

Is DTC detected and does symptom remain?

YES-1 >> DTC is detected: GO TO 7.
YES-2 >> Symptom remains: GO TO 4.
NO >> Before returning the vehicle to the customer, always erase DTC.

DTC/CIRCUIT DIAGNOSIS

HEADLAMP (HI) CIRCUIT
WITHOUT DAYTIME RUNNING LIGHT SYSTEM

WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Component Function Check

INFOID:0000000011321567

1.CHECK HEADLAMP (HI) OPERATION

CONSULT ACTIVE TEST
1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the test items, check that the headlamp (HI) is turned ON.

Hi : Headlamp (HI) ON
Off : Headlamp (HI) OFF

NOTE:
ON/OFF is repeated 1 second each.

Is the inspection result normal?

YES >> Headlamp (HI) circuit is normal.
NO >> Refer to EXL-174, "WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure".

WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure

INFOID:0000000011321568

1.CHECK HEADLAMP (HI) OUTPUT VOLTAGE

CONSULT ACTIVE TEST
1. Turn ignition switch OFF.
2. Disconnect headlamp high connector.
3. Turn ignition switch ON.
4. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
5. With operating the test items, check voltage between IPDM E/R harness connector and ground.

(+)			(–)	Test item		Voltage (Approx.)
IPDM E/R						
Connector		Terminal				
RH	E345	89	Ground	EXTERNAL LAMPS	Hi	Battery voltage
					Off	0 V
LH		90			Hi	Battery voltage
					Off	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> GO TO 3.

2.CHECK HEADLAMP (HI) OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and headlamp high harness connector.

IPDM E/R			Headlamp high		Continuity
Connector		Terminal	Connector	Terminal	
RH	E345	89	E326	1	Existed
LH		90	E325		

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace harness.

3. CHECK HEADLAMP (HI) FUSE

1. Turn ignition switch OFF.
2. Check that the following fuses are not fusing.

Unit	Location	Fuse No.	Capacity
Headlamp HI (RH)	IPDM E/R	#55	10 A
Headlamp HI (LH)		#54	

Is the inspection result normal?

YES >> Replace IPDM E/R.
NO >> GO TO 4.

4. CHECK HEADLAMP (HI) SHORT CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E345	89		Not existed
LH		90		

Is the inspection result normal?

YES >> Replace fuse. (Replace IPDM E/R if the fuse is fusing again.)
NO >> Repair or replace harness. And then replace the fuse.

5. CHECK HEADLAMP (HI) GROUND OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect headlamp high connector.
3. Check continuity between headlamp high harness connector and ground.

Headlamp high			Ground	Continuity
Connector		Terminal		
RH	E326	2		Existed
LH	E325			

Is the inspection result normal?

YES >> Replace headlamp (HI) bulb. (Bulb socket is abnormal.)
NO >> Repair or replace harness.

WITH DAYTIME RUNNING LIGHT SYSTEM

WITH DAYTIME RUNNING LIGHT SYSTEM : Component Function Check

INFOID:0000000011321569

1. CHECK HEADLAMP (HI) OPERATION

CONSULT ACTIVE TEST

1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the test items, check that the headlamp (HI) is turned ON.

Hi : Headlamp (HI) ON
Off : Headlamp (HI) OFF

NOTE:
ON/OFF is repeated 1 second each.

Is the inspection result normal?

YES >> Headlamp (HI) circuit is normal.
NO >> Refer to EXL-176, "WITH DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure".

WITH DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure

INFOID:0000000011321570

1.CHECK HEADLAMP (HI) OUTPUT VOLTAGE

CONSULT ACTIVE TEST
1. Turn ignition switch OFF.
2. Disconnect headlamp high connector.
3. Turn ignition switch ON.
4. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
5. With operating the test items, check voltage between IPDM E/R harness connector and ground.

(+)			(–)	Test item		Voltage (Approx.)
IPDM E/R						
Connector		Terminal				
RH	E345	89	Ground	EXTERNAL LAMPS	Hi	Battery voltage
					Off	0 V
LH		90			Hi	Battery voltage
					Off	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> GO TO 3.

2.CHECK HEADLAMP (HI) OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and headlamp high harness connector.

IPDM E/R			Headlamp high		Continuity
Connector		Terminal	Connector	Terminal	
RH	E345	89	E326	1	Existed
LH		90	E325		

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness.

3.CHECK HEADLAMP (HI) FUSE

1. Turn ignition switch OFF.
2. Check that the following fuses are not fusing.

Unit	Location	Fuse No.	Capacity
Headlamp HI (RH)	IPDM E/R	#55	10 A
Headlamp HI (LH)		#54	

Is the inspection result normal?

YES >> Replace IPDM E/R.
NO >> GO TO 4.

4.CHECK HEADLAMP (HI) SHORT CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E345	89		Not existed
LH		90		

Is the inspection result normal?

YES >> Replace fuse. (Replace IPDM E/R if the fuse is fusing again.)
NO >> Repair or replace harness. And then replace the fuse.

5. CHECK ILLUMINATION STATUS OF HEADLAMPS

Check illumination status of headlamps.

Which headlamp does not turn ON?

RH >> GO TO 6.
LH >> GO TO 8.

6. CHECK HEADLAMP HI (RH) GROUND OPEN CIRCUIT-1

1. Remove daytime running light relay.
2. Check continuity between daytime running light relay harness connector and headlamp high RH harness connector.

Daytime running light relay		Headlamp high RH		Continuity
Connector	Terminal	Connector	Terminal	
E17	3	E326	2	Existed

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair or replace harness.

7. CHECK HEADLAMP HI (RH) GROUND OPEN CIRCUIT-2

Check continuity between daytime running light relay harness connector and ground.

Daytime running light relay		Ground	Continuity
Connector	Terminal		
E17	4		Existed

Is the inspection result normal?

YES >> Replace headlamp (HI) bulb. (Bulb socket is abnormal.)
NO >> Repair or replace harness.

8. CHECK HEADLAMP HI (LH) GROUND OPEN CIRCUIT

Check continuity between headlamp high LH harness connector and ground.

Headlamp high LH		Ground	Continuity
Connector	Terminal		
E325	2		Existed

Is the inspection result normal?

YES >> Replace headlamp (HI) bulb. (Bulb socket is abnormal.)
NO >> Repair or replace harness.

HEADLAMP (LO) CIRCUIT

Component Function Check

INFOID:0000000011321571

1.CHECK HEADLAMP (LO) OPERATION

CONSULT ACTIVE TEST
1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the test items, check that the headlamp (LO) is turned ON.

Lo : Headlamp (LO) ON
Off : Headlamp (LO) OFF

Is the inspection result normal?

YES >> Headlamp (LO) is normal.
NO >> Refer to EXL-178, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011321572

1.CHECK HEADLAMP (LO) OUTPUT VOLTAGE

CONSULT ACTIVE TEST
1. Turn ignition switch OFF.
2. Disconnect headlamp low connector.
3. Turn ignition switch ON.
4. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
5. With operating the test items, check voltage between IPDM E/R harness connector and ground.

(+)			(–)	Test item		Voltage (Approx.)
IPDM E/R						
Connector		Terminal				
RH	E345	83	Ground	EXTERNAL LAMPS	Lo	Battery voltage
					Off	0 V
LH		84			Lo	Battery voltage
					Off	0 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> GO TO 3.

2.CHECK HEADLAMP (LO) OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and headlamp low harness connector.

IPDM E/R			Headlamp low		Continuity
Connector		Terminal	Connector	Terminal	
RH	E345	83	E351	1	Existed
LH		84	E350		

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness.

3.CHECK HEADLAMP (LO) FUSE

1. Turn ignition switch OFF.
2. Check that the following fuses are not fusing.

Unit	Lotion	Fuse No.	Capacity
Headlamp LO (RH)	IPDM E/R	#57	15 A
Headlamp LO (LH)		#56	

Is the inspection result normal?

YES >> Replace IPDM E/R.
NO >> GO TO 4.

4. CHECK HEADLAMP (LO) SHORT CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E345	83		Not existed
LH		84		

Is the inspection result normal?

YES >> Replace fuse. (Replace IPDM E/R if the fuse is fusing again.)
NO >> Repair or replace harness. And then replace the fuse.

5. CHECK HEADLAMP (LO) GROUND OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect headlamp low connector.
3. Check continuity between headlamp low harness connector and ground.

Headlamp low			Ground	Continuity
Connector		Terminal		
RH	E351	2		Existed
LH	E350			

Is the inspection result normal?

YES >> Replace headlamp (LO) bulb. (Bulb socket is abnormal.)
NO >> Repair or replace harness.

DAYTIME RUNNING LIGHT RELAY CIRCUIT

Component Function Check

INFOID:0000000011321573

1.CHECK DAYTIME RUNNING LIGHT OPERATION

CONSULT ACTIVE TEST
1. Select “DAYTIME RUNNING LIGHT” of BCM (HEADLAMP) active test item.
2. With operating the test items, check that daytime running light operation.

On : Daytime running light ON
Off : Daytime running light OFF

Is the inspection result normal?

YES >> Daytime running light relay circuit is normal.
NO >> Refer to EXL-180, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011321574

1.CHECK DAYTIME RUNNING LIGHT RELAY FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not fusing.

Unit	Fuse No.	Capacity
Daytime running light relay	#59	10 A

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace the fuse after repairing the applicable circuit.

2.CHECK DAYTIME RUNNING LIGHT RELAY POWER SUPPLY

1. Remove daytime running light relay.
2. Check voltage between daytime running light relay harness connector and ground.

(+)		(–)	Voltage (Approx.)
Daytime running light relay			
Connector	Terminal		
E17	1	Ground	Battery voltage
	5		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.CHECK DAYTIME RUNNING LIGHT RELAY

Check daytime running light relay. Refer to EXL-181, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace daytime running light relay.

4.CHECK DAYTIME RUNNING LIGHT RELAY CONTROL SIGNAL OUTPUT

CONSULT ACTIVE TEST
1. Install daytime running light relay.
2. Turn ignition switch ON.
3. Select “DAYTIME RUNNING LIGHT” of BCM (HEADLAMP) active test item.
4. With operating the test item, check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Test item		Voltage (Approx.)
IPDM E/R					
Connector	Terminal				
E346	105	Ground	DAYTIME RUNNING LIGHT	On	0 V
				Off	Battery voltage

Is the inspection result normal?

YES >> Daytime running light relay circuit is OK.
NO-1 (Fixed at 0 V)>>GO TO 5.
NO-2 (Fixed at battery voltage) >>Replace IPDM E/R.

5.CHECK DAYTIME RUNNING LIGHT RELAY CONTROL SIGNAL OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Remove daytime running light relay.
3. Disconnect IPDM E/R harness connector.
4. Check continuity between IPDM E/R harness connector and daytime running light relay harness connector.

IPDM E/R		Daytime running light relay		Continuity
Connector	Terminal	Connector	Terminal	
E346	105	E17	2	Existed

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness.

6.CHECK DAYTIME RUNNING LIGHT RELAY CONTROL SIGNAL SHORT CIRCUIT

Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E346	105		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R.
NO >> Repair or replace harness.

Component Inspection

INFOID:0000000011321575

1.CHECK DAYTIME RUNNING LIGHT RELAY

1. Turn the ignition switch OFF.
2. Remove daytime running light relay.
3. Apply battery voltage to daytime running light relay- between terminals 1 and 2.
4. Check continuity between daytime running light relay terminals.

Daytime running light relay			Condition		Continuity
Terminal					
E17	5	3	Voltage	Apply	Existed
				Not Apply	Not existed
	4			Apply	Not existed
				Not Apply	Existed

Is the inspection result normal?

YES >> Daytime running light relay is normal.
NO >> Replace daytime running light relay.

PARKING LAMP CIRCUIT

Component Function Check

INFOID:0000000011321576

1.CHECK PARKING LAMP OPERATION

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

TAIL : Parking lamp ON
Off : Parking lamp OFF

Is the inspection result normal?

YES >> Parking lamp circuit is normal.
NO >> Refer to EXL-182, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011321577

1.CHECK PARKING LAMP FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not fusing.

Unit	Location	Fuse No.	Capacity
• Parking lamp • Front side marker lamp	IPDM E/R	#52	10 A

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 2.

2.CHECK PARKING LAMP SHORT CIRCUIT

1. Disconnect the following connectors.
- IPDM E/R
- Front combination lamp
- Front side marker lamp
2. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E346	91		Not existed
	92		

Is the inspection result normal?

YES >> Replace fuse. (Replace IPDM E/R if fusing is found again.)
NO >> Repair or replace harness. And then replace the fuse.

3.CHECK PARKING LAMP BULB

Check applicable lamp bulb.

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace bulb.

4.CHECK PARKING LAMP OUTPUT VOLTAGE

CONSULT ACTIVE TEST
1. Disconnect front combination lamp connector.
2. Turn ignition switch ON.
3. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
4. With operating the test items, check voltage between IPDM E/R harness connector and ground.

(+)			(–)	Test item		Voltage (Approx.)
IPDM E/R						
Connector		Terminal				
RH	E346	91	Ground	EXTERNAL LAMPS	TAIL	Battery voltage
					Off	0 V
LH		92			TAIL	Battery voltage
					Off	0 V

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace IPDM E/R.

5.CHECK PARKING LAMP OPEN CIRCUIT

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

IPDM E/R			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E346	91	E349	1	Existed
LH		92	E348		

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness.

6.CHECK PARKING LAMP GROUND OPEN CIRCUIT

Check continuity between front combination lamp harness connector and ground.

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E349	2		Existed
LH	E348			

Is the inspection result normal?

YES >> Check corresponding bulb socket and harness. Repair or replace if necessary.
NO >> Repair or replace harness.

FRONT SIDE MARKER LAMP CIRCUIT

Component Function Check

INFOID:0000000011321578

1.CHECK PARKING LAMP OPERATION

Check that the parking lamp is turned ON.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Check parking lamp circuit. Refer to EXL-182, "Component Function Check".

2.CHECK FRONT SIDE MARKER LAMP OPERATION

CONSULT ACTIVE TEST

1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the test items, check that the front side marker lamp is turned ON.

TAIL : Front side marker lamp ON
Off : Front side marker lamp OFF

Is the inspection result normal?

YES >> Front side marker lamp circuit is normal.
NO >> Refer to EXL-184, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011321579

1.CHECK FRONT SIDE MARKER LAMP BULB

Check applicable lamp bulb.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace bulb.

2.CHECK FRONT SIDE MARKER LAMP OPEN CIRCUIT

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

IPDM E/R			Front side marker lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E346	91	E321	1	Existed
LH		92	E320		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.CHECK FRONT SIDE MARKER LAMP GROUND OPEN CIRCUIT

Check continuity between front side marker lamp harness connector and ground.

Front side marker lamp			Ground	Continuity
Connector		Terminal		
RH	E321	2		Existed
LH	E320			

Is the inspection result normal?

YES >> Check corresponding bulb socket and harness. Repair or replace if necessary.
NO >> Repair or replace harness.

TAIL LAMP CIRCUIT

Component Function Check

INFOID:0000000011321580

1.CHECK TAIL LAMP OPERATION

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

TAIL : Tail Lamp ON
Off : Tail lamp OFF

Is the inspection result normal?

YES >> Tail lamp circuit is normal.
NO >> Refer to EXL-185, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011321581

1.CHECK TAIL LAMP FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not fusing.

Unit	Location	Fuse No.	Capacity
• Tail lamp • license plate lamp	IPDM E/R	#53	10 A

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 2.

2.CHECK TAIL LAMP SHORT CIRCUIT

1. Disconnect IPDM E/R connector, licence plate lamp connector and rear combination lamp connector.
2. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E10	7		Not existed

Is the inspection result normal?

YES >> Replace fuse. (Replace IPDM E/R if fusing is found again.)
NO >> Repair or replace harness. And then replace the fuse.

3.CHECK TAIL LAMP BULB

Check applicable lamp bulb.

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace bulb.

4.CHECK TAIL LAMP OUTPUT VOLTAGE

CONSULT ACTIVE TEST
1. Disconnect rear combination lamp connector.
2. Turn ignition switch ON.
3. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
4. With operating the test items, check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Test item		Voltage (Approx.)
IPDM E/R					
Connector	Terminal				
E10	7	Ground	EXTERNAL LAMPS	TAIL	Battery voltage
				Off	0 V

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace IPDM E/R.

5.CHECK TAIL LAMP OPEN CIRCUIT

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

IPDM E/R			Rear combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E10	7	B205	1	Existed
LH			B80		

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness.

6.CHECK TAIL LAMP GROUND OPEN CIRCUIT

Check continuity between rear combination lamp harness connector and ground.

Rear combination lamp			Ground	Continuity
Connector		Terminal		
RH	B205	3		Existed
LH	B80			

Is the inspection result normal?

YES >> Check corresponding bulb socket and harness. Repair or replace if necessary.
NO >> Repair or replace harness.

LICENSE PLATE LAMP CIRCUIT

Component Function Check

INFOID:0000000011321582

1.CHECK TAIL LAMP OPERATION

Check that the tail lamp is turned ON.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Check tail lamp circuit. Refer to EXL-185, "Component Function Check".

2.CHECK LICENSE PLATE LAMP OPERATION

CONSULT ACTIVE TEST

1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the lighting switch, check that the license plate lamp is turned ON.

TAIL : License plate lamp ON
Off : License plate lamp OFF

Is the inspection result normal?

YES >> License plate lamp circuit is normal.
NO >> Refer to EXL-187, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011321583

1.CHECK LICENSE PLATE LAMP BULB

Check the applicable lamp bulb.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace bulb.

2.CHECK LICENSE PLATE LAMP OPEN CIRCUIT

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

IPDM E/R			License plate lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E10	7	D163	1	Existed
LH			D162		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.CHECK LICENSE PLATE LAMP GROUND OPEN CIRCUIT

Check continuity between license plate lamp harness connector and ground.

License plate lamp			Ground	Continuity
Connector		Terminal		
RH	D163	2		Existed
LH	D162			

Is the inspection result normal?

YES >> Check corresponding bulb socket and harness. Repair or replace if necessary.
NO >> Repair or replace harness.

TURN SIGNAL LAMP CIRCUIT

Component Function Check

INFOID:0000000011321584

1.CHECK TURN SIGNAL LAMP

CONSULT ACTIVE TEST
1. Select “FLASHER” of BCM (FLASHER) active test item.
2. With operating the test items, check that the turn signal lamps is turned ON.

LH : Turn signal lamps (LH) ON
RH : Turn signal lamps (RH) ON
Off : Turn signal lamps OFF

Is the inspection result normal?

YES >> Turn signal lamp circuit is normal.
NO >> Refer to EXL-188, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011321585

1.CHECK TURN SIGNAL LAMP

CONSULT ACTIVE TEST
1. Select “FLASHER” of BCM (FLASHER) active test item.
2. With operating the test items, check that the turn signal lamps is turned ON.

LH : Turn signal lamps (LH) ON
RH : Turn signal lamps (RH) ON
Off : Turn signal lamps OFF

Which turn signal lamp does not turn ON?

Side turn signal lamp>>GO TO 3.
Other than side turn signal lamp>>GO TO 2.

2.CHECK TURN SIGNAL LAMP BULB

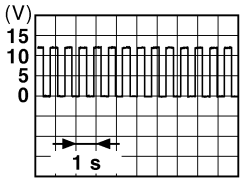
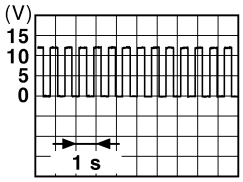
Check the applicable lamp bulb.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace bulb.

3.CHECK TURN SIGNAL LAMP OUTPUT VOLTAGE

1. Turn ignition switch OFF.
2. Disconnect front combination lamp connector, side turn signal lamp connector and rear combination lamp connector.
3. Turn ignition switch ON.
4. With operating the turn signal switch, check voltage between BCM harness connector and ground.

(+) BCM Connector		(+) BCM Terminal	(–)	Condition		Voltage (Approx.)
LH	M123	60	Ground	Turn signal switch	LH	 PKID0926E
					OFF	0 V
RH		61			RH	 PKID0926E
					OFF	0 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 5.

4. CHECK TURN SIGNAL LAMP OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check continuity between BCM harness connector and front combination lamp, door mirror or rear combination lamp harness connector.

Front turn signal lamp

BCM Connector		BCM Terminal	Front combination lamp Connector	Front combination lamp Terminal	Continuity
RH	M123	61	E349	3	Existed
LH		60	E348		

Side turn signal lamp

BCM Connector		BCM Terminal	Door mirror Connector	Door mirror Terminal	Continuity
Passenger side	M123	61	D3	20	Existed
Driver side		60	D43		

Rear turn signal lamp

BCM Connector		BCM Terminal	Rear combination lamp Connector	Rear combination lamp Terminal	Continuity
RH	M123	61	B205	4	Existed
LH		60	B80		

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness.

5. CHECK TURN SIGNAL LAMP SHORT CIRCUIT

Check continuity between BCM harness connector and ground.

BCM			Ground	Continuity
Connector		Terminal		
RH	M123	61		Not existed
LH		60		

Is the inspection result normal?

YES-1 >> (When side turn signal lamp does not turn ON) Replace BCM. Refer to BCS-98, "Removal and Installation".

YES-2 >> (When lamp other than side turn signal lamp does not turn ON) Check each bulb socket for internal short circuit, and if check result is normal, replace BCM. Refer to BCS-98, "Removal and Installation".

NO >> Repair or replace harness.

6. CHECK TURN SIGNAL LAMP GROUND OPEN CIRCUIT

Check continuity between BCM harness connector and front combination lamp, door mirror or rear combination lamp and ground.

Front turn signal lamp

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E349	2		Existed
LH	E348			

Side turn signal lamp

Door mirror			Ground	Continuity
Connector		Terminal		
Passenger side	D3	19		Existed
Driver side	D43			

Rear turn signal lamp

Rear combination lamp			Ground	Continuity
Connector		Terminal		
RH	B205	3		Existed
LH	B80			

Is the inspection result normal?

YES-1 >> (When side turn signal lamp does not turn ON) Replace door mirror assembly.

YES-2 >> (When lamp other than side turn signal lamp does not turn ON) Check corresponding bulb socket and harness. Repair or replace if necessary.

NO >> Repair or replace harness.

FRONT FOG LAMP CIRCUIT

Component Function Check

INFOID:0000000011321586

1.CHECK FRONT FOG LAMP OPERATION

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

Fog : Front fog lamp ON
Off : Front fog lamp OFF

Is the measurement normal?

YES >> Front fog lamp circuit is normal.
NO >> Refer to EXL-191, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011321587

1.CHECK FRONT FOG LAMP BULB

Check the applicable lamp bulb.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace bulb.

2.CHECK FRONT FOG LAMP OUTPUT VOLTAGE

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

(+)			(–)	Test item		Voltage (Approx.)
IPDM E/R						
Connector		Terminal				
RH	E345	86	Ground	EXTERNAL LAMPS	Fog	Battery voltage
					Off	0 V
LH		87			Fog	Battery voltage
					Off	0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace IPDM E/R.

3.CHECK FRONT FOG LAMP OPEN CIRCUIT

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

IPDM E/R			Front fog lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E345	86	E402	1	Existed
LH		87	E331		

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness.

4. CHECK FRONT FOG LAMP GROUND CIRCUIT OPEN CIRCUIT

Check continuity between front fog lamp harness connector and ground.

Front fog lamp			Ground	Continuity
Connector		Terminal		
RH	E402	2		Existed
LH	E331			

Is the inspection result normal?

YES >> Refer to GI-42, "Intermittent Incident".
NO >> Repair or replace harness.

OPTICAL SENSOR

Component Function Check

INFOID:0000000011321588

1.CHECK OPTICAL SENSOR SIGNAL BY CONSULT

CONSULT DATA MONITOR
1. Turn ignition switch ON.
2. Select “OPTISEN (DTCT)” of BCM (HEADLAMP) data monitor item.
3. Turn lighting switch AUTO.
4. With the optical sensor illuminating, check the monitor status.

Monitor item	Condition		Voltage (Approx.)
OPTISEN (DTCT)	Optical sensor	When illuminating	3.1 V or more *
		When shutting off light	0.6 V or less

*: Illuminates the optical sensor. The value may be less than the standard value if brightness is weak.

Is the inspection result normal?

YES >> Optical sensor is normal.
NO >> Refer to EXL-193, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011321589

1.CHECK OPTICAL SENSOR POWER SUPPLY INPUT

1. Turn ignition switch ON.
2. Turn lighting switch AUTO.
3. Check voltage between optical sensor harness connector and ground.

(+)		(–)	Voltage (Approx.)
Optical sensor			
Connector	Terminal		
M17	1	Ground	5 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> GO TO 4.

2.CHECK OPTICAL SENSOR GROUND INPUT

Check voltage between optical sensor harness connector and ground.

(+)		(–)	Voltage (Approx.)
Optical sensor			
Connector	Terminal		
M17	3	Ground	0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 6.

3.CHECK OPTICAL SENSOR SIGNAL OUTPUT

With illuminating the optical sensor, check voltage between optical sensor harness connector and ground.

(+)		(–)	Condition		Voltage (Approx.)
Optical sensor					
Connector	Terminal				
M17	2	Ground	Optical sensor	When illuminating	3.1 V or more *
				When shutting off light	0.6 V or less

*: Illuminate the optical sensor. The value may be less than the standard if brightness is weak.

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace the optical sensor.

4. CHECK OPTICAL SENSOR OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect optical sensor connector and BCM connector.
3. Check continuity between optical sensor harness connector and BCM harness connector.

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M17	1	M121	17	Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness.

5. CHECK OPTICAL SENSOR SHORT CIRCUIT

Check continuity between optical sensor harness connector and ground.

Optical sensor		Ground	Continuity
Connector	Terminal		
M17	1		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-98, "Removal and Installation".
NO >> Repair or replace harness.

6. CHECK OPTICAL SENSOR GROUND OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect optical sensor connector and BCM connector.
3. Check continuity between optical sensor harness connector and BCM harness connector.

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M17	3	M121	18	Existed

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-98, "Removal and Installation".
NO >> Repair or replace harness.

7. CHECK OPTICAL SENSOR SIGNAL OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect optical sensor connector and BCM connector.
3. Check continuity between optical sensor harness connector and BCM harness connector.

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M17	2	M121	14	Existed

Is the inspection result normal?

YES >> GO TO 8.
NO >> Repair or replace harness.

8. CHECK OPTICAL SENSOR SHORT CIRCUIT

Check continuity between optical sensor harness connector and ground.

Optical sensor		Ground	Continuity
Connector	Terminal		
M17	2		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-98, "Removal and Installation".
NO >> Repair or replace harness.

HAZARD SWITCH

Component Function Check

INFOID:0000000011321590

1.CHECK HAZARD SWITCH SIGNAL BY CONSULT

CONSULT DATA MONITOR
1. Turn ignition switch ON.
2. Select “HAZARD SW” of BCM (FLASHER) data monitor item.
3. With operating the hazard switch, check the monitor status.

Monitor item	Condition		Monitor status
HAZARD SW	Hazard switch	ON	On
		OFF	Off

Is the inspection result normal?

YES >> Hazard switch circuit is normal.
NO >> Refer to EXL-196, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011321591

1.CHECK HAZARD SWITCH SIGNAL INPUT

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

(+)		(–)	Voltage (Approx.)
Hazard switch			
Connector	Terminal		
M45	2	Ground	12 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 2.

2.CHECK HAZARD SWITCH SIGNAL OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between hazard switch harness connector and BCM harness connector.

Hazard switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M45	2	M121	29	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.CHECK HAZARD SWITCH SIGNAL SHORT CIRCUIT

Check continuity between hazard switch harness connector and ground.

Hazard switch		Ground	Continuity
Connector	Terminal		
M45	2		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-98, "Removal and Installation".
NO >> Repair or replace harness.

4. CHECK HAZARD SWITCH GROUND OPEN CIRCUIT

Check continuity between hazard switch harness connector and ground.

Hazard switch		Ground	Continuity
Connector	Terminal		
M45	1		Existed

Is the inspection result normal?

YES >> Replace hazard switch.
NO >> Repair or replace harness.

SYMPTOM DIAGNOSIS

EXTERIOR LIGHTING SYSTEM SYMPTOMS WITHOUT DAYTIME RUNNING LIGHT SYSTEM

WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Symptom Table

INFOID:0000000011321592

CAUTION:
Perform the self-diagnosis with CONSULT before the symptom diagnosis. Perform the trouble diagnosis if any DTC is detected.

Symptom		Possible cause	Inspection item
Headlamp (HI) is not turned ON.	One side	• Fuse • Halogen bulb (HI) • Harness between IPDM E/R and headlamp (HI) • Harness between headlamp (HI) and ground • IPDM E/R	Headlamp (HI) circuit Refer to EXL-174, "WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Component Function Check".
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON" Refer to EXL-204, "WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure".	
High beam indicator lamp is not turned ON. [Headlamp (HI) is turned ON.]		Combination meter	• Combination meter Data monitor "HI-BEAM IND" • BCM (HEAD LAMP) Active test "HEADLAMP"
Headlamp (LO) is not turned ON.	One side	• Fuse • Halogen bulb (LO) • Harness between IPDM E/R and headlamp lamp (LO) • Harness between headlamp (LO) and ground • IPDM E/R	Headlamp (LO) circuit Refer to EXL-178, "Component Function Check".
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON" Refer to EXL-206, "Diagnosis Procedure".	
Each lamp is not turned ON/OFF with lighting switch AUTO.		• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-96, "Symptom Table".
		• Optical sensor • Harness between optical sensor and BCM • BCM	Optical sensor Refer to EXL-193, "Component Function Check".
Parking lamp is not turned ON.		• Fuse • Parking lamp bulb • Harness between IPDM E/R and front combination lamp • Harness between front combination lamp and ground • IPDM E/R	Parking lamp circuit Refer to EXL-182, "Component Function Check".
Front side marker lamp is not turned ON.		• Front side marker lamp bulb • Harness between IPDM E/R and front side marker lamp • Harness between front side marker lamp and ground	Front side marker lamp circuit Refer to EXL-184, "Component Function Check".

Symptom		Possible cause	Inspection item
Tail lamp (Rear side marker lamp) is not turned ON.		• Fuse • Tail lamp bulb • Harness between IPDM E/R and rear combination lamp • Harness between rear combination lamp and ground • IPDM E/R	Tail lamp circuit Refer to EXL-185, "Component Function Check".
License plate lamp is not turned ON.		• License plate lamp bulb • Harness between IPDM E/R and license plate lamp • Harness between license plate lamp and ground	License plate lamp circuit Refer to EXL-187, "Component Function Check".
Parking lamp, side marker lamp, tail lamp and license plate lamp are not turned ON.		**Symptom diagnosis** “PARKING, SIDE MARKER, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON” Refer to EXL-207, "Diagnosis Procedure".	
Tail lamp indicator is not turned ON. (Exterior lamps are turned ON.)		Combination meter	• Combination meter Data monitor “LIGHT IND” • BCM (HEADLAMP) Active test “TAIL LAMP”
Turn signal lamp does not blink.	Indicator lamp is normal. (Applicable side performs high flasher activation.)	• Turn signal lamp bulb • Door mirror • Harness between BCM and each turn signal lamp • Harness between each turn signal lamp and ground	Turn signal lamp circuit Refer to EXL-188, "Component Function Check".
	Indicator lamp is included.	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-96, "Symptom Table".
Turn signal indicator lamp does not blink. (Turn signal lamp is normal.)	One side	Combination meter	—
	Both sides (Always)	• Turn signal indicator lamp signal • BCM • Combination meter	• Combination meter Data monitor “TURN IND” • BCM (FLASHER) Active test “FLASHER”
	Both sides (Only when activating hazard warning lamp with ignition switch OFF)	• Combination meter power supply and ground circuit • Combination meter	Combination meter Power supply and ground circuit Refer to MWI-71, "COMBINATION METER : Diagnosis Procedure".
• Hazard warning lamp does not activate. • Hazard warning lamp continues activating. (Turn signal is normal.)		• Hazard switch • Harness between hazard switch and BCM • Harness between hazard switch and ground • BCM	Hazard switch circuit Refer to EXL-196, "Component Function Check".
Front fog lamp is not turned ON.	One side	• Front fog lamp bulb • Harness between IPDM E/R and front fog lamp • Harness between front fog lamp and ground • IPDM E/R	Front fog lamp circuit Refer to EXL-191, "Component Function Check".
	Both sides	**Symptom diagnosis** “BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON” Refer to EXL-208, "Description".	

WITH DAYTIME RUNNING LIGHT SYSTEM

WITH DAYTIME RUNNING LIGHT SYSTEM : Symptom Table

INFOID:0000000011321593

CAUTION:
Perform the self-diagnosis with CONSULT before the symptom diagnosis. Perform the trouble diagnosis if any DTC is detected.

Symptom		Possible cause	Inspection item
Headlamp (HI) is not turned ON.	One side	• Fuse • Halogen bulb (HI) • Harness between IPDM E/R and headlamp (HI) • Harness between headlamp (HI) and ground • IPDM E/R	Headlamp (HI) circuit Refer to EXL-175, "WITH DAYTIME RUNNING LIGHT SYSTEM : Component Function Check".
		• Harness between IPDM E/R and daytime running light relay • Daytime running light relay • IPDM E/R	Daytime running light relay circuit Refer to EXL-180, "Component Function Check".
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON" Refer to EXL-204, "WITH DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure".	
High beam indicator lamp is not turned ON. [Headlamp (HI) is turned ON.]		Combination meter	• Combination meter Data monitor "HI-BEAM IND" • BCM (HEAD LAMP) Active test "HEADLAMP"
Headlamp (LO) is not turned ON.	One side	• Fuse • Halogen bulb (LO) • Harness between IPDM E/R and headlamp lamp (LO) • Harness between headlamp (LO) and ground • IPDM E/R	Headlamp (LO) circuit Refer to EXL-180, "Component Function Check".
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON" Refer to EXL-206, "Diagnosis Procedure".	
Each lamp is not turned ON/OFF with lighting switch AUTO.		• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-96, "Symptom Table".
		• Optical sensor • Harness between optical sensor and BCM • BCM	Optical sensor Refer to EXL-193, "Component Function Check".
Daytime running light is not turned ON. [Headlamp (HI) is turned ON.]		• Fuse • Harness between IPDM E/R and daytime running light relay • Daytime running light relay • IPDM E/R • BCM • ECM • Combination meter	• Daytime running light relay circuit Refer to EXL-180, "Component Function Check". • BCM (HEADLAMP) Data monitor "ENGINE STATE" • Combination meter Data monitor "PKB SW" • BCM (HEADLAMP) Active test "DAYTIME RUNNING LIGHT"
Parking lamp is not turned ON.		• Fuse • Parking lamp bulb • Harness between IPDM E/R and front combination lamp • IPDM E/R	Parking lamp circuit Refer to EXL-182, "Component Function Check".

Symptom		Possible cause	Inspection item
Front side marker lamp is not turned ON.		• Front side marker lamp bulb • Harness between IPDM E/R and front side marker lamp • Harness between front side marker lamp and ground • IPDM E/R	Front side marker lamp circuit Refer to EXL-184, "Component Function Check".
Tail lamp (Rear side marker lamp) is not turned ON.		• Fuse • Tail lamp bulb • Harness between IPDM E/R and rear combination lamp • Harness between and rear combination lamp and ground	Tail lamp circuit Refer to EXL-185, "Component Function Check".
License plate lamp is not turned ON.		• License plate lamp bulb • Harness between IPDM E/R and license plate lamp • Harness between license plate lamp and ground	License plate lamp circuit Refer to EXL-187, "Component Function Check".
Parking lamp, side marker lamp, tail lamp and license plate lamp are not turned ON.		**Symptom diagnosis** “PARKING, SIDE MARKER, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON” Refer to EXL-207, "Diagnosis Procedure".	
Tail lamp indicator is not turned ON. (Exterior lamps are turned ON.)		Combination meter	• Combination meter Data monitor “LIGHT IND” • BCM (HEADLAMP) Active test “TAIL LAMP”
Turn signal lamp does not blink.	Indicator lamp is normal. (Applicable side performs high flasher activation.)	• Turn signal lamp bulb • Door mirror • Harness between BCM and each turn signal lamp • Harness between each turn signal lamp and ground	Turn signal lamp circuit Refer to EXL-188, "Component Function Check".
	Indicator lamp is included.	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-96, "Symptom Table".
Turn signal indicator lamp does not blink. (Turn signal lamp is normal.)	One side	Combination meter	—
	Both sides (Always)	• Turn signal indicator lamp signal • BCM • Combination meter	• Combination meter Data monitor “TURN IND” • BCM (FLASHER) Active test “FLASHER”
	Both sides (Only when activating hazard warning lamp with ignition switch OFF)	• Combination meter power supply and ground circuit • Combination meter	Combination meter Power supply and ground circuit Refer to MWI-71, "COMBINATION METER : Diagnosis Procedure".
• Hazard warning lamp does not activate. • Hazard warning lamp continues activating. (Turn signal is normal.)		• Hazard switch • Harness between hazard switch and BCM • Harness between hazard switch and ground • BCM	Hazard switch circuit Refer to EXL-196, "Component Function Check".

Symptom		Possible cause	Inspection item
Front fog lamp is not turned ON.	One side	• Front fog lamp bulb • Harness between IPDM E/R and front fog lamp • Harness between front fog lamp and ground • IPDM E/R	Front fog lamp circuit Refer to EXL-191, "Component Function Check".
	Both sides	**Symptom diagnosis** “BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON” Refer to EXL-208, "Diagnosis Procedure".	

NORMAL OPERATING CONDITION

Description

INFOID:0000000011321594

AUTO LIGHT SYSTEM

The headlamp may not be turned ON/OFF immediately after passing dark area or bright area (short tunnel, sky bridge, shadowed area etc.) while using the auto light system. This causes for the control difference. This is normal.

BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON WITH DAYTIME RUNNING LIGHT SYSTEM

WITH DAYTIME RUNNING LIGHT SYSTEM : Description

INFOID:0000000011321595

Both side headlamps (HI) are not turned ON when setting to the lighting switch HI or PASS.

WITH DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure

INFOID:0000000011321596

1.COMBINATION SWITCH INSPECTION

Check combination switch. Refer to BCS-96, "Symptom Table".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning part.

2.CHECK HEADLAMP (HI) REQUEST SIGNAL INPUT

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

Monitor item	Condition		Monitor status
HL HI REQ	Lighting switch (2ND)	HI or PASS	On
		LO	Off

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-98, "Removal and Installation".

3.HEADLAMP (HI) CIRCUIT INSPECTION

Check headlamp (HI) circuit. Refer to EXL-175, "WITH DAYTIME RUNNING LIGHT SYSTEM : Component Function Check".

Is the inspection result normal?

YES >> Refer to GI-42, "Intermittent Incident".
NO >> Repair or replace the malfunctioning part.

WITHOUT DAYTIME RUNNING LIGHT SYSTEM

WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Description

INFOID:0000000011321597

Both side headlamps (HI) are not turned ON when setting to the lighting switch HI or PASS.

WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure

INFOID:0000000011321598

1.COMBINATION SWITCH INSPECTION

Check combination switch. Refer to BCS-96, "Symptom Table".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning part.

2.CHECK HEADLAMP (HI) REQUEST SIGNAL INPUT

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

Monitor item	Condition		Monitor status
HL HI REQ	Lighting switch (2ND)	HI or PASS	On
		LO	Off

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-98, "Removal and Installation".

3. HEADLAMP (HI) CIRCUIT INSPECTION

Check headlamp (HI) circuit. Refer to EXL-174, "WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Component Function Check".

Is the inspection result normal?

YES >> Refer to GI-42, "Intermittent Incident".
NO >> Repair or replace the malfunctioning part.

BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON

Description

INFOID:0000000011321599

Both side headlamps (LO) are not turned ON in any condition.

Diagnosis Procedure

INFOID:0000000011321600

1.CHECK COMBINATION SWITCH

Check combination switch. Refer to BCS-96, "Symptom Table".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning part.

2.CHECK HEADLAMP (LO) REQUEST SIGNAL INPUT

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

Monitor item	Condition		Monitor status
HL LO REQ	Lighting switch	2ND	On
		OFF	Off

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-98, "Removal and Installation".

3.HEADLAMP (LO) CIRCUIT INSPECTION

Check headlamp (LO) circuit. Refer to EXL-178, "Component Function Check".

Is the inspection result normal?

YES >> Refer to GI-42, "Intermittent Incident".
NO >> Repair or replace the malfunctioning part.

PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMPS ARE NOT TURNED ON

Description

INFOID:0000000011321601

The parking, license plate, side marker, tail lamps and each illumination are not turned ON in any condition.

Diagnosis Procedure

INFOID:0000000011321602

1.COMBINATION SWITCH INSPECTION

Check combination switch. Refer to BCS-96, "Symptom Table".

Is the combination switch normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning part.

2.CHECK TAIL LAMP RELAY REQUEST SIGNAL INPUT

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

Monitor item	Condition		Monitor status
TAIL & CLR REQ	Lighting switch	1ST	On
		OFF	Off

Is the inspection result normal?

YES >> Replace IPDM E/R.
NO >> Replace BCM. Refer to BCS-98, "Removal and Installation".

BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

Description

INFOID:0000000011321603

The front fog lamps are not turned ON in any condition.

Diagnosis Procedure

INFOID:0000000011321604

1.CHECK FRONT FOG LAMP FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not fusing.

Unit	Location	Fuse No.	Capacity
Front fog lamp	IPDM E/R	#58	15 A

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 2.

2.CHECK FRONT FOG LAMP SHORT CIRCUIT

1. Disconnect front fog connector and IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E345	86		Not existed
LH		87		

Is the inspection result normal?

YES >> Replace fuse. (Replace IPDM E/R if the fuse is fusing again.)
NO >> Repair or replace harness. And then replace the fuse.

3.COMBINATION SWITCH INSPECTION

Check combination switch. Refer to BCS-96, "Symptom Table".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace the malfunctioning part.

4.CHECK FRONT FOG LAMP REQUEST SIGNAL INPUT

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

Monitor item	Condition		Monitor status
FR FOG REQ	Front fog lamp switch (With lighting switch 2ND)	ON	On
		OFF	Off

Is the item status normal?

YES >> GO TO 5.
NO >> Replace BCM. Refer to BCS-98, "Removal and Installation".

5.FRONT FOG LAMP CIRCUIT INSPECTION

Check the front fog lamp circuit. Refer to EXL-191, "Component Function Check".

Is the inspection result normal?

YES >> Refer to GI-42, "Intermittent Incident".
NO >> Repair or replace the malfunctioning part.

PERIODIC MAINTENANCE

HEADLAMP AIMING ADJUSTMENT

Description

INFOID:0000000011321605

PREPARATION BEFORE ADJUSTING

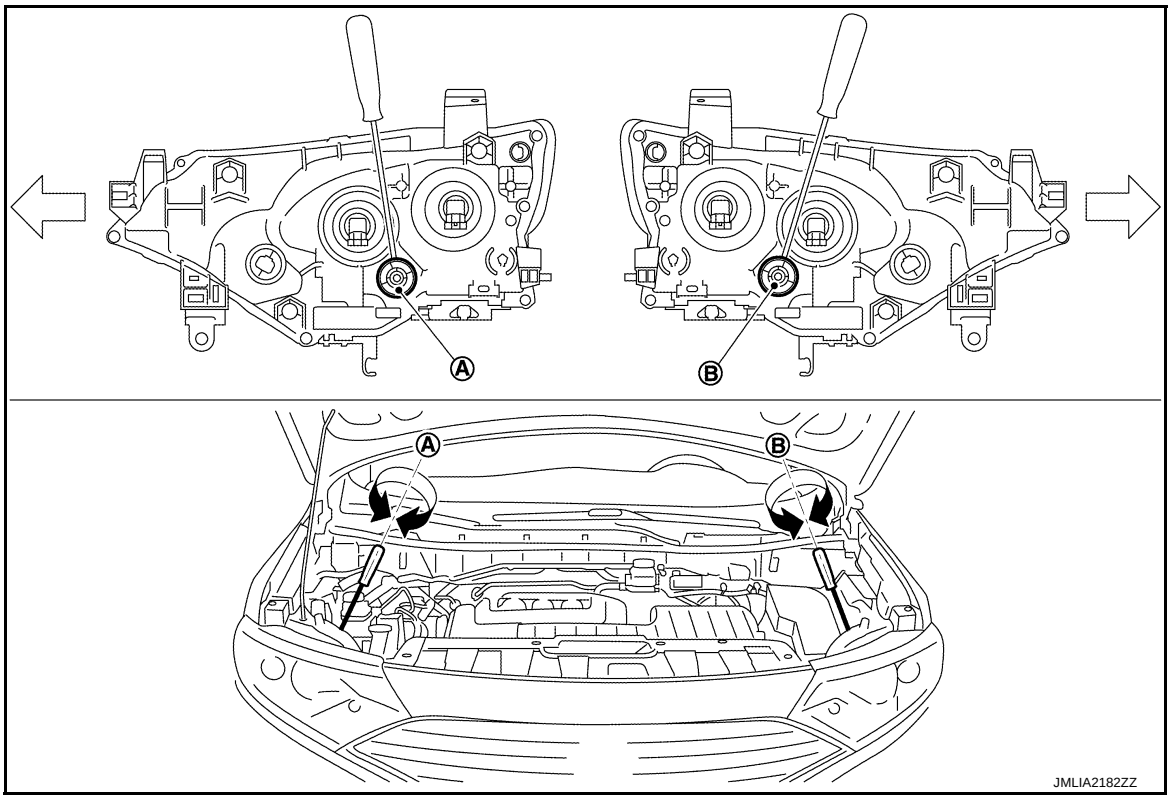
NOTE:

- For details, refer to the regulations in your own country.
- Perform aiming if the vehicle front body has been repaired and/or the front combination lamp assembly has been replaced.

Before performing aiming adjustment, check the following.

- Adjust the tire pressure to the specification.
- Fill with fuel, engine coolant and each oil.
- Maintain the unloaded vehicle condition. (Remove luggage from the passenger compartment and the luggage room.)
  NOTE:
  Do not remove the temporary tire, jack and on-vehicle tool.
- Wipe out dirt on the headlamp.
  CAUTION:
  Never use organic solvent (thinner, gasoline etc.)
- Ride alone on the driver seat.

AIMING ADJUSTMENT SCREW



A. Headlamp RH (UP/DOWN) adjustment screw B. Headlamp LH (UP/DOWN) adjustment screw

⇦ : Vehicle center

Adjustment screw		Screw driver rotation	Facing direction
A	Headlamp RH (UP/DOWN)	Clockwise	UP
		Counterclockwise	DOWN

Adjustment screw		Screw driver rotation	Facing direction
B	Headlamp LH (UP/DOWN)	Clockwise	UP
		Counterclockwise	DOWN

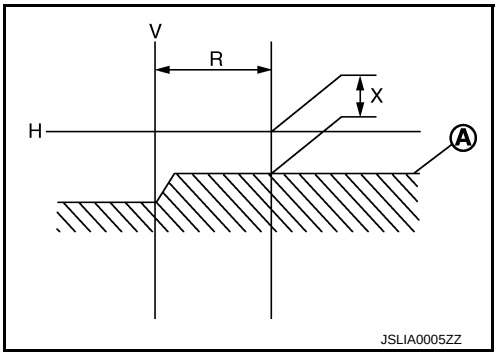
Aiming Adjustment Procedure

INFOID:0000000011321606

1. Place the screen.
   NOTE:
   - Stop the vehicle facing the wall.
   - Place the board on a plain road vertically.
2. Face the vehicle with the screen. Maintain 10 m (32.8 ft) between the headlamp bulb center and the screen.
3. Start the engine. Turn the headlamp (LO) ON.
   NOTE:
   Shut off the headlamp light with the board to prevent from illuminating the adjustment screen.
   CAUTION:
   Never cover the lens surface with a tape etc. The lens is made of resin.
4. Measure the distance (X) between the horizontal center line of headlamp (H) and the cutoff line (A) within the light axis measurement range (R) from the vertical center line ahead of headlamp (V).

Light axis measurement range (R) : 350 ± 175 mm (13.78 ± 6.89 in)

Low beam distribution on the screen

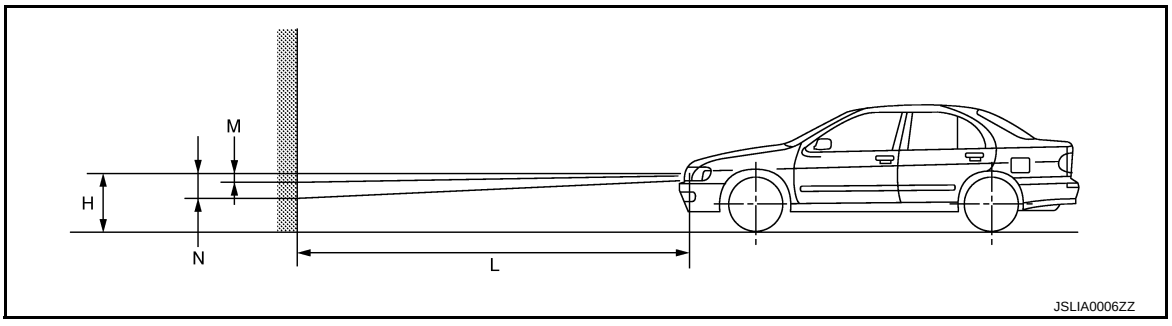


5. Adjust the cutoff line height (X) with the aiming adjustment screw so as to enter in the adjustment range (M–N) according to the horizontal center line of headlamp (H).

unit: mm (in)

Horizontal center line of headlamp (H)	Highest cutoff line height (M)	Lowest cutoff line height (N)
700 (27.56) or less	4 (0.16)	30 (1.18)
701(27.60) – 800 (31.50)	4 (0.16)	30 (1.18)
801 (31.54) or more	17 (0.67)	44 (1.73)

Side view



Distance between the headlamp center and the screen (L) : 10 m (32.8 ft)

FRONT FOG LAMP AIMING ADJUSTMENT

Description

INFOID:0000000011321607

PREPARATION BEFORE ADJUSTING

NOTE:

- For details, refer to the regulations in your own country.
- Perform aiming if the vehicle front body has been repaired and/or the front fog lamp assembly has been replaced.

Before performing aiming adjustment, check the following.

- Adjust the tire pressure to the specification.
- Fill with fuel, engine coolant and each oil.
- Maintain the unloaded vehicle condition. (Remove luggage from the passenger compartment and the luggage room.)
  NOTE:
  Do not remove the temporary tire, jack and on-vehicle tool.
- Wipe out dirt on the front fog lamp.
  CAUTION:
  Never use organic solvent (thinner, gasoline etc.)
- Ride alone on the driver seat.

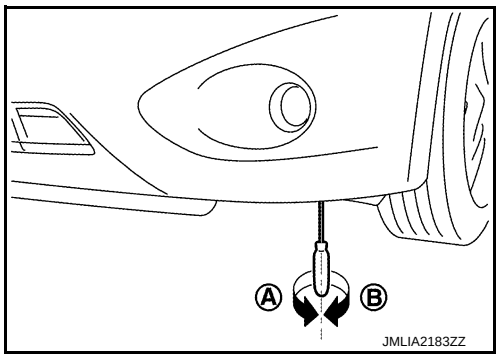
AIMING ADJUSTMENT SCREW

- Turn the aiming adjusting screw for adjustment.

  A: UP

  B: DOWN

- For the position and direction of the adjusting screw, refer to the figure.
  NOTE:
  A screwdriver or hexagonal wrench [6 mm (0.24 in)] can be used for adjustment.

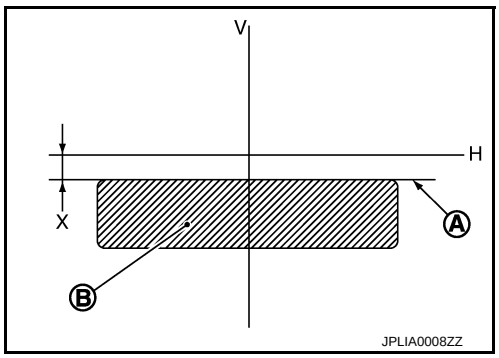


Aiming Adjustment Procedure

INFOID:0000000011321608

1. Place the screen.
   NOTE:
   - Stop the vehicle facing the wall.
   - Place the board on a plain road vertically.
2. Face the vehicle with the screen. Maintain 7.62 m (25 ft) between the front fog lamp center and the screen.
3. Start the engine. Illuminate the front fog lamp.
   CAUTION:
   Never cover the lens surface with a tape etc. The lens is made of resin.
   NOTE:
   Shut off the headlamp light with the board to prevent from illuminating the adjustment screen.
4. Adjust the cutoff line height (A) with the aiming adjustment screw so that the distance (X) between the horizontal center line of front fog lamp (H) and (A) becomes 100 mm (3.94 in).

Front fog lamp light distribution on the screen



A : Cutoff line
B : High illuminance area
H : Horizontal center line of front fog lamp
V : Vertical center line of front fog lamp
X : Cutoff line height

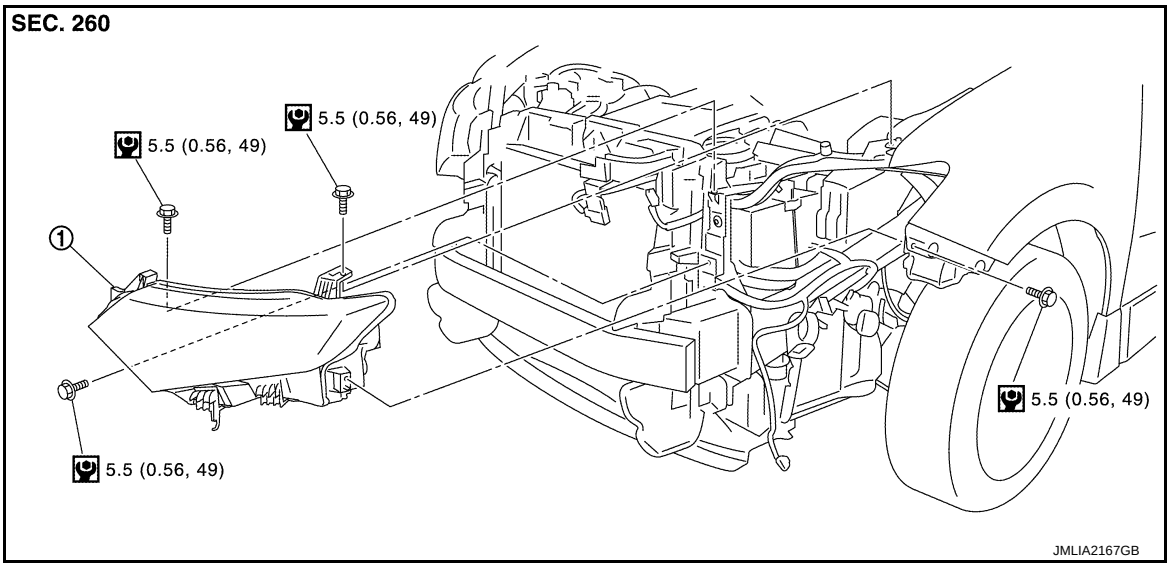
REMOVAL AND INSTALLATION

FRONT COMBINATION LAMP

Exploded View

INFOID:0000000011321609

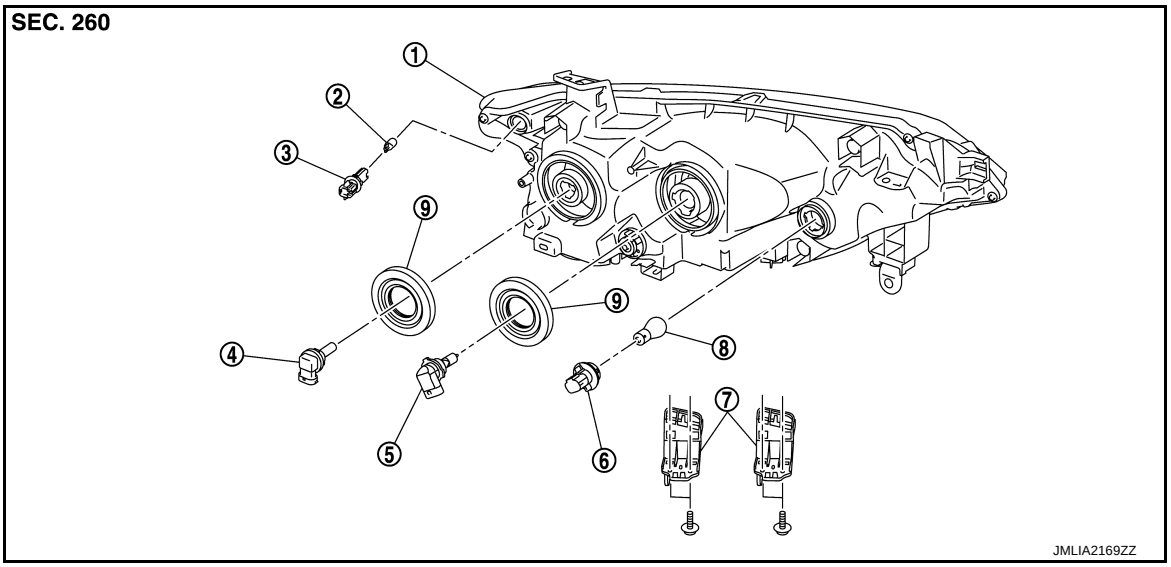
REMOVAL



1. Front combination lamp

: N·m (kg-m, in-lb)

DISASSEMBLY



1. Front combination lamp housing assembly
2. Front side marker lamp bulb
3. Front side marker lamp bulb socket
4. Halogen bulb (LO)
5. Halogen bulb (HI)
6. Front turn signal lamp/parking lamp bulb socket
7. Bumper bracket
8. Front turn signal lamp/parking lamp bulb
9. Back cover

Removal and Installation

INFOID:0000000011321610

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

1. Remove front bumper fascia. Refer to EXT-12, "Removal and Installation".
2. Remove front combination lamp mounting bolts.
3. Pull out the front combination lamp forward the vehicle, and then disconnect the connector.
4. Remove front combination lamp.

INSTALLATION

Note the following item, and then install in the reverse order of removal.

CAUTION:
After installation, perform aiming adjustment. Refer to EXL-209, "Description".

Replacement

INFOID:0000000011321611

CAUTION:
- **Disconnect the battery negative terminal or the fuse.**
- **After installing the bulb, install the resin cap and the bulb socket securely for watertightness.**
- **Never touch the glass of bulb directly by hand. Keep grease and other oily matters away from it.**
- **Never touch bulb by hand while it is lit or right after being turned off.**
- **Never leave bulb out of lamp reflector for a long time because dust, moisture smoke, etc. may affect the performance of lamp. When replacing bulb, be sure to replace it with new one.**

HEADLAMP BULB (HI)

1. Disconnect the halogen bulb connector.
2. Rotate the halogen bulb socket counterclockwise and unlock it.
3. Remove halogen bulb socket from the front combination lamp housing assembly.

HEADLAMP BULB (LO)

1. Disconnect the halogen bulb connector.
2. Rotate the halogen bulb socket counterclockwise and unlock it.
3. Remove halogen bulb socket from the front combination lamp housing assembly.

FRONT TURN SIGNAL LAMP/PARKING LAMP BULB

1. Rotate the bulb socket counterclockwise and unlock it.
2. Remove the bulb from the bulb socket.

FRONT SIDE MARKER LAMP BULB

1. Rotate the bulb socket counterclockwise and unlock it.
2. Remove the bulb from the bulb socket.

Disassembly and Assembly

INFOID:0000000011321612

DISASSEMBLY

1. Rotate the halogen bulb (LO) socket counterclockwise and unlock it.
2. Remove halogen bulb (LO) socket from the front combination lamp assembly.
3. Rotate the halogen bulb (HI) socket counterclockwise and unlock it.
4. Remove halogen bulb (HI) socket from the front combination lamp assembly.
5. Rotate the front turn signal lamp/parking lamp bulb socket counterclockwise and unlock it.
6. Remove front turn signal lamp/parking lamp bulb.
7. Rotate the front side marker lamp bulb socket counterclockwise and unlock it.
8. Remove the bulb from the front side marker lamp bulb socket.

ASSEMBLY

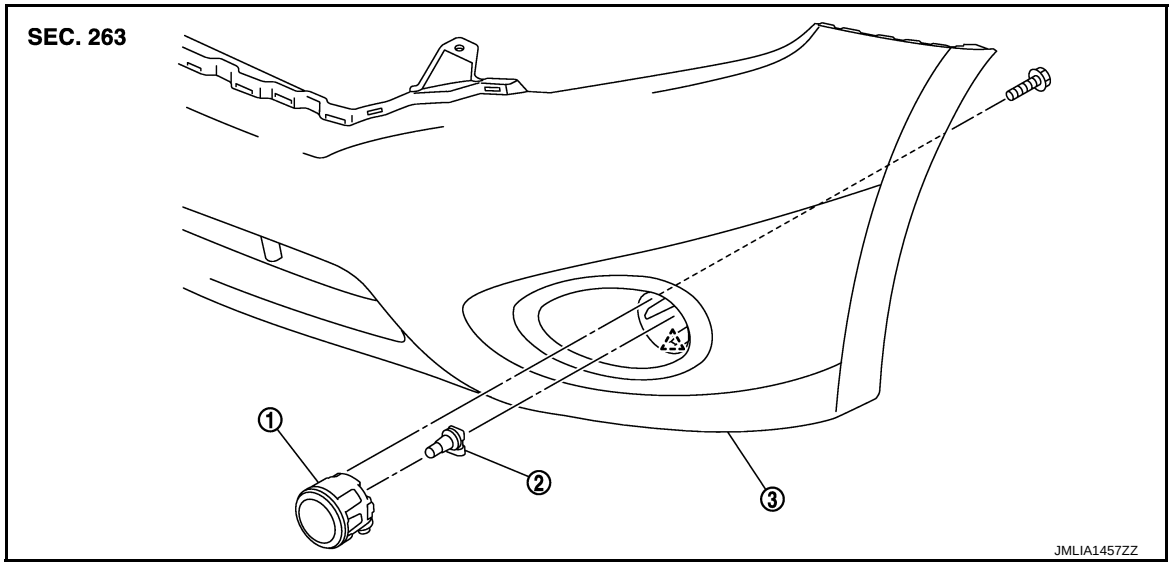
Note the following item, and then assemble in the reverse order of disassembly.

CAUTION:
After installing the bulb, install the back cover and the bulb socket securely for watertightness.

FRONT FOG LAMP

Exploded View

INFOID:0000000011321613



1. Front fog lamp
2. Halogen bulb
3. Front bumper fascia

: Pawl

Removal and Installation

INFOID:0000000011321614

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

1. Remove front fender protector (front) fixing screws and clips, and then keep a service area. Refer to EXT-23, "Removal and Installation".
2. Disconnect front fog lamp connector.
3. Remove front fog lamp mounting bolt.
4. Disengage fixing pawl, and then remove front fog lamp.

INSTALLATION

Note the following item, and then install in the reverse order of removal.

CAUTION:
After installation, perform aiming adjustment. Refer to EXL-211, "Description".

Replacement

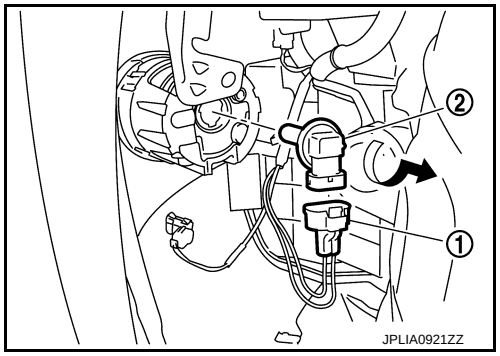
INFOID:0000000011321615

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

FRONT FOG LAMP BULB

1. Remove front fender protector (front) fixing screws and clips, and then keep a service area. Refer to EXT-23, "Removal and Installation".

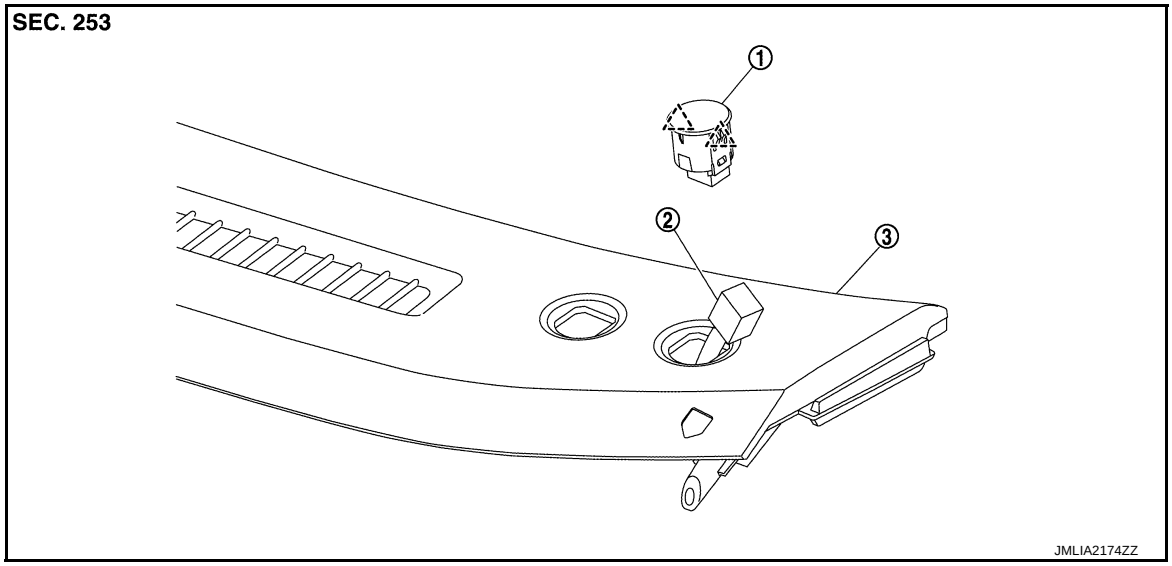
2. Disconnect front fog lamp bulb connector (1).
3. Rotate the bulb (2) counterclockwise and unlock it.



OPTICAL SENSOR

Exploded View

INFOID:0000000011321616



1. Optical sensor
2. Harness connector
3. Instrument upper garnish

: Pawl

Removal and Installation

INFOID:0000000011321617

REMOVAL

1. Insert an appropriate tool between the optical sensor and the instrument upper garnish. Pull out the optical sensor upward.
2. Disconnect the optical sensor connector, and then remove optical sensor.

INSTALLATION

Install in the reverse order of removal.

LIGHTING & TURN SIGNAL SWITCH

Exploded View

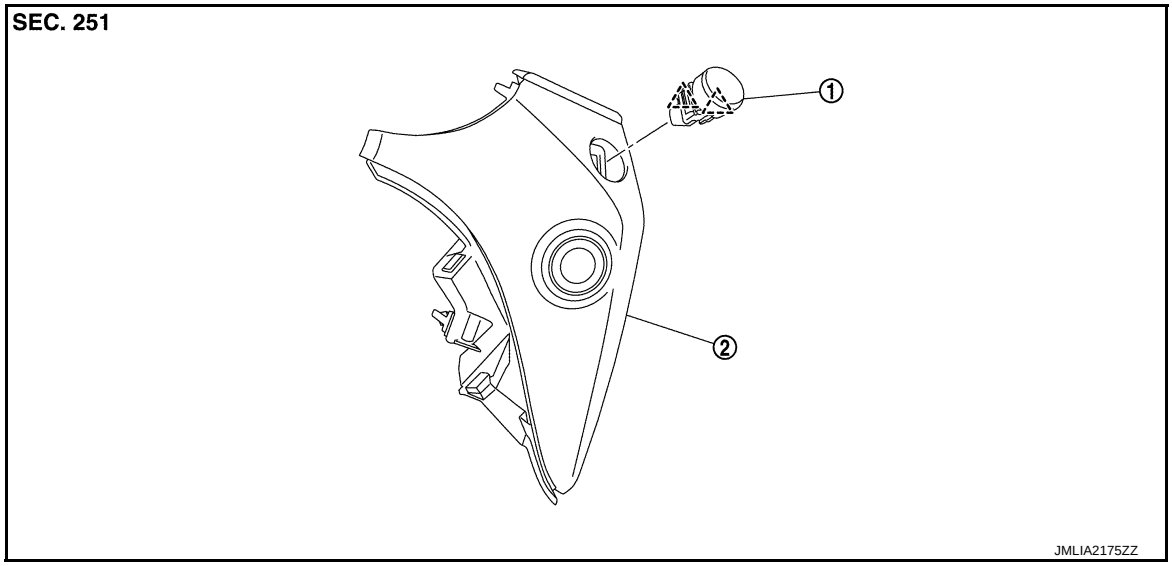
INFOID:0000000011321618

The lighting & turn signal switch is integrated in the combination switch. Refer to BCS-99, "Exploded View".

HAZARD SWITCH

Exploded View

INFOID:0000000011321619



1. Hazard switch
2. Instrument finisher A

: Pawl

Removal and Installation

INFOID:0000000011321620

REMOVAL

1. Remove instrument finisher A. Refer to IP-14, "Removal and Installation".
2. Disengage fixing pawls, and then remove hazard switch from instrument finisher A.

INSTALLATION

Install in the reverse order of removal.

SIDE TURN SIGNAL LAMP

Exploded View

INFOID:0000000011321621

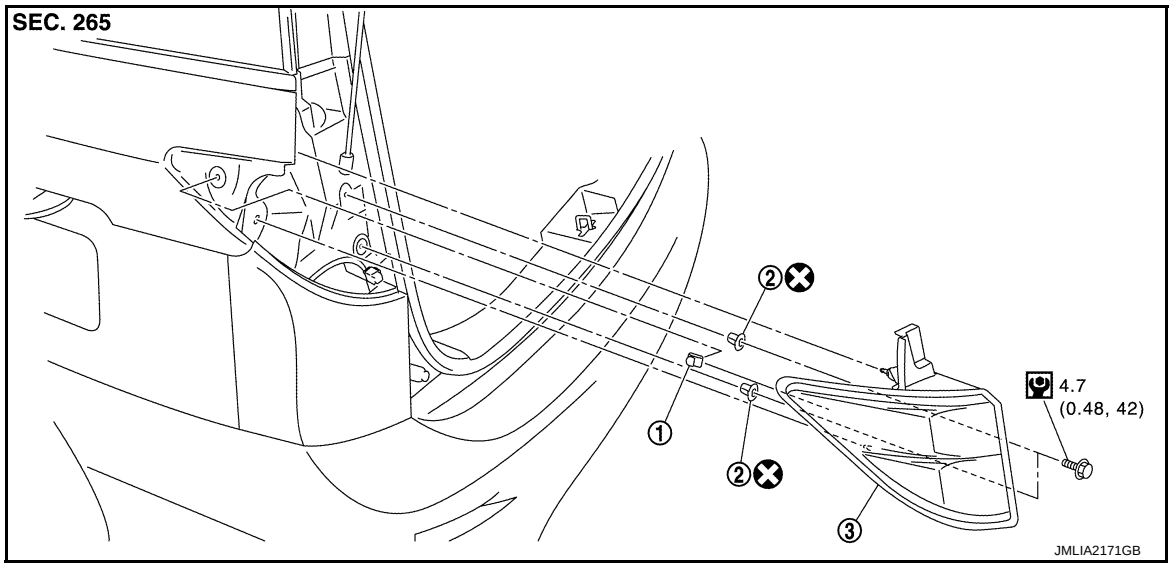
Side turn signal lamp is integrated in the door mirror. Refer to MIR-31, "Exploded View".

REAR COMBINATION LAMP

Exploded View

INFOID:0000000011321622

REMOVAL

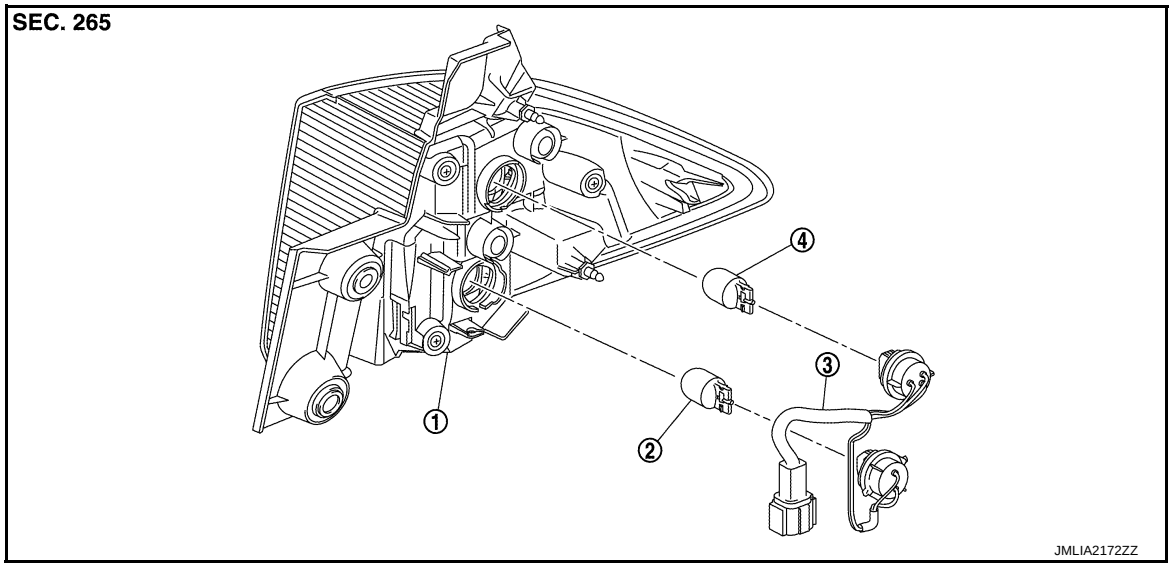


1. Clip
2. Grommet
3. Rear combination lamp assembly

: Always replace after every disassembly.

: N·m (kg-m, in-lb)

DISASSEMBLY



1. Rear combination lamp housing assembly
2. Rear turn signal lamp bulb
3. Bulb socket assembly
4. Tail lamp/stop lamp bulb

Removal and Installation

INFOID:0000000011321623

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

1. Fully open back door.
2. Remove rear combination lamp assembly mounting bolts.
3. Pull the rear combination lamp assembly toward rear of the vehicle, and then remove rear combination lamp assembly.
4. Disconnect the rear combination lamp connector.

INSTALLATION

Install in the reverse order of removal.

Replacement

INFOID:0000000011321624

CAUTION:

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

REAR TURN SIGNAL LAMP BULB

1. Remove rear combination lamp assembly. Refer to EXL-222, "Removal and Installation".
2. Rotate rear turn signal lamp bulb socket counterclockwise, and then remove rear turn signal lamp bulb socket.
3. Remove rear turn signal lamp bulb from rear turn signal lamp bulb socket.

TAIL LAMP/STOP LAMP BULB

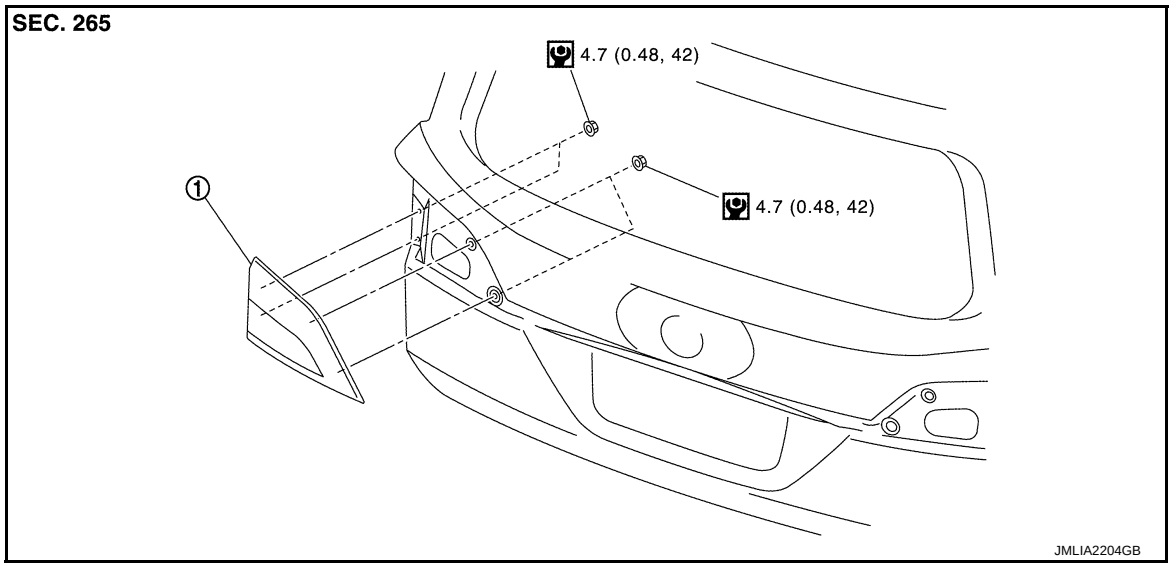
1. Remove rear combination lamp assembly. Refer to EXL-222, "Removal and Installation".
2. Rotate tail lamp/stop lamp bulb socket counterclockwise, and then remove tail lamp/stop lamp bulb socket.
3. Remove tail lamp/stop lamp bulb from tail lamp/stop lamp bulb socket.

BACK-UP LAMP

Exploded View

INFOID:0000000011321625

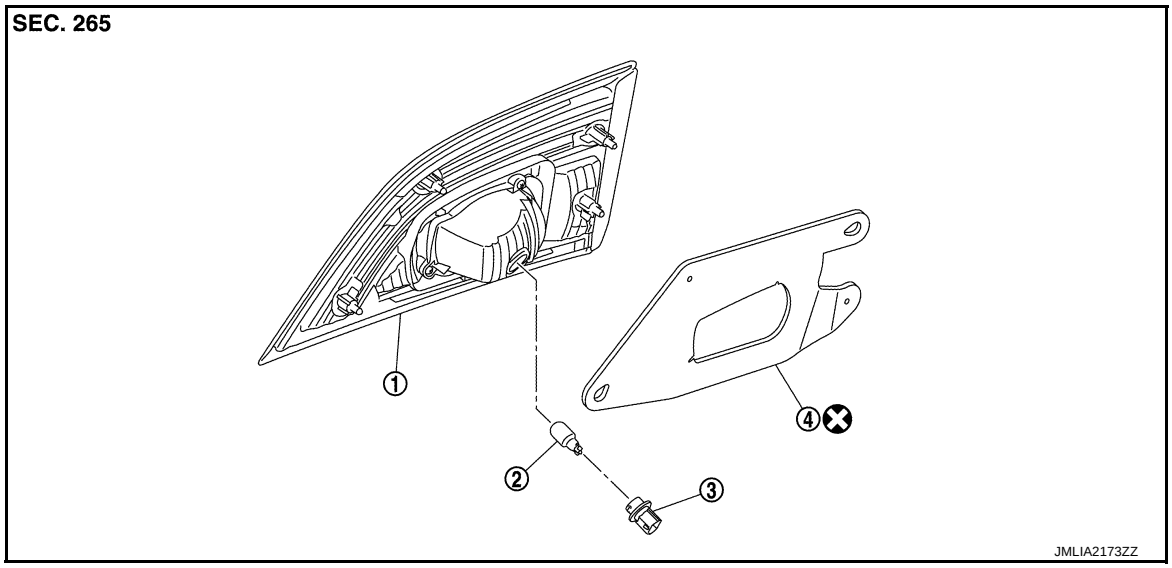
REMOVAL



1. Back-up lamp assembly

: N·m (kg-m, in-lb)

DISASSEMBLY



1. Back-up lamp housing assembly
2. Back-up lamp bulb
3. Back-up lamp bulb socket
4. Seal packing

: Always replace after every disassembly.

Removal and Installation

INFOID:0000000011321626

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

1. Remove touch sensor (with automatic back door). Refer to DLK-470, "TOUCH SENSOR : Removal and Installation".
2. Remove back door lower finisher. Refer to INT-48, "BACK DOOR LOWER FINISHER : Removal and Installation".
3. Disconnect back-up lamp connector.
4. Remove back-up lamp mounting nuts, and then remove back-up lamp.
5. Remove seal packing

INSTALLATION

Note the following item, and then install in the reverse order of removal.

CAUTION:

Seal packing cannot be reused.

Replacement

INFOID:0000000011321627

CAUTION:

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

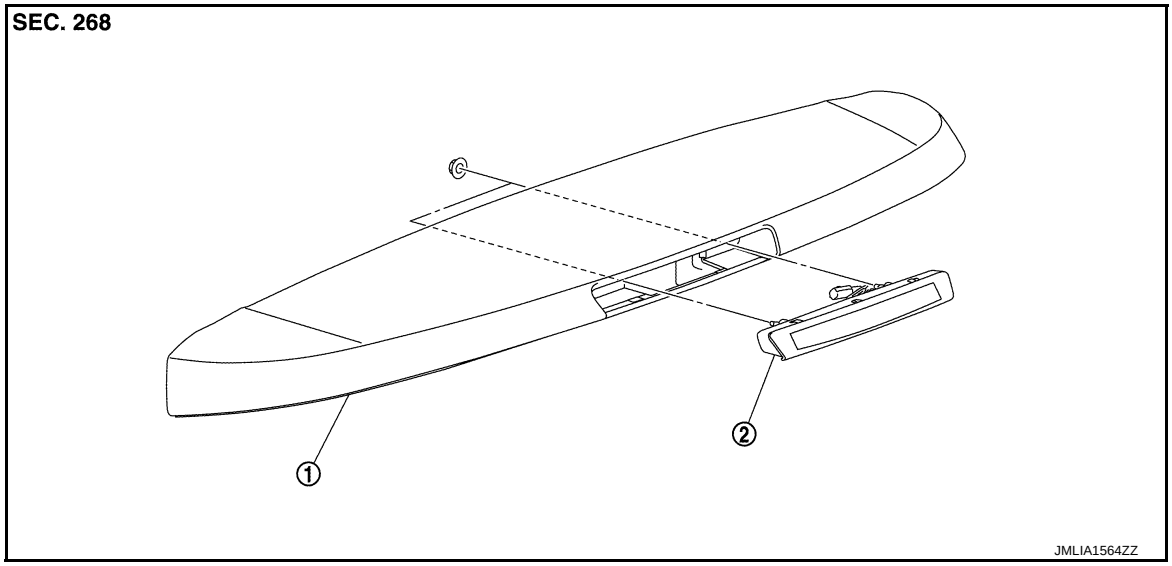
BACK-UP LAMP BULB

1. Remove back door lower finisher. Refer to INT-48, "BACK DOOR LOWER FINISHER : Removal and Installation".
2. Rotate back-up lamp bulb socket counterclockwise, and then remove back-up lamp bulb socket.
3. Remove back-up lamp bulb from back-up lamp bulb socket.

HIGH-MOUNTED STOP LAMP

Exploded View

INFOID:0000000011321628



1. Rear spoiler
2. High-mounted stop lamp

Removal and Installation

INFOID:0000000011321629

REMOVAL

1. Remove rear spoiler. Refer to EXT-45, "Removal and Installation".
2. Remove high-mounted stop lamp mounting nuts.
3. Remove high-mounted stop lamp from rear spoiler.

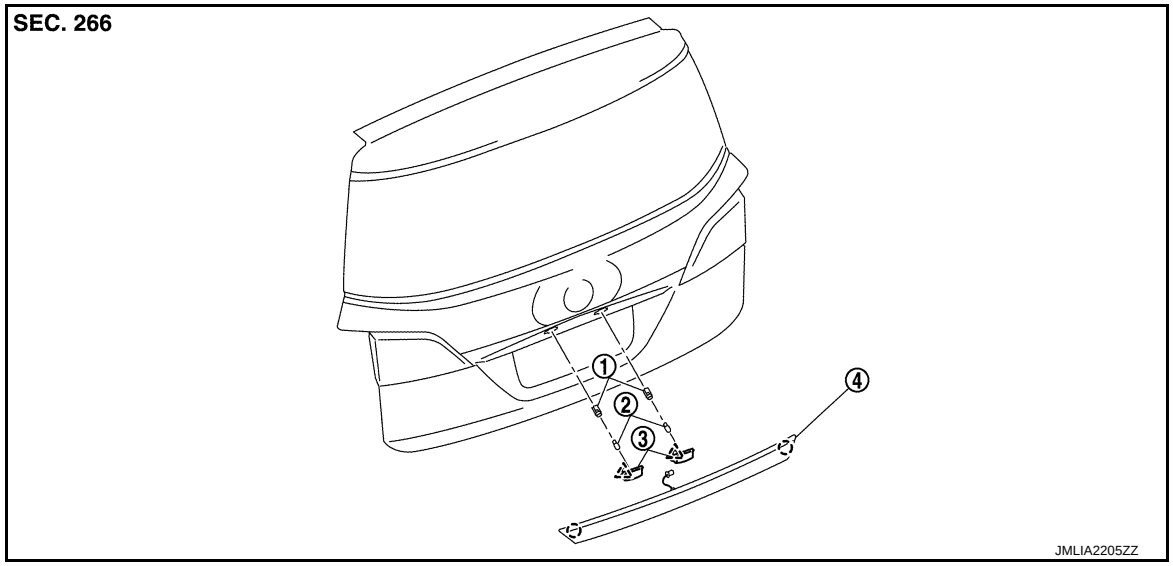
INSTALLATION

Install in the reverse order of removal.

LICENSE PLATE LAMP

Exploded View

INFOID:0000000011321630



1. License plate lamp bulb socket
2. License plate lamp bulb
3. License plate lamp housing
4. Back door finisher

: Clip

: Pawl

Removal and Installation

INFOID:0000000011321631

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

1. Remove back door lower finisher. Refer to EXT-47, "Removal and Installation".
2. Disconnect license plate lamp connector.
3. Remove license plate lamp while pushing a resin clip, and then remove license plate lamp.

INSTALLATION

Install in the reverse order of removal.

Replacement

INFOID:0000000011321632

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

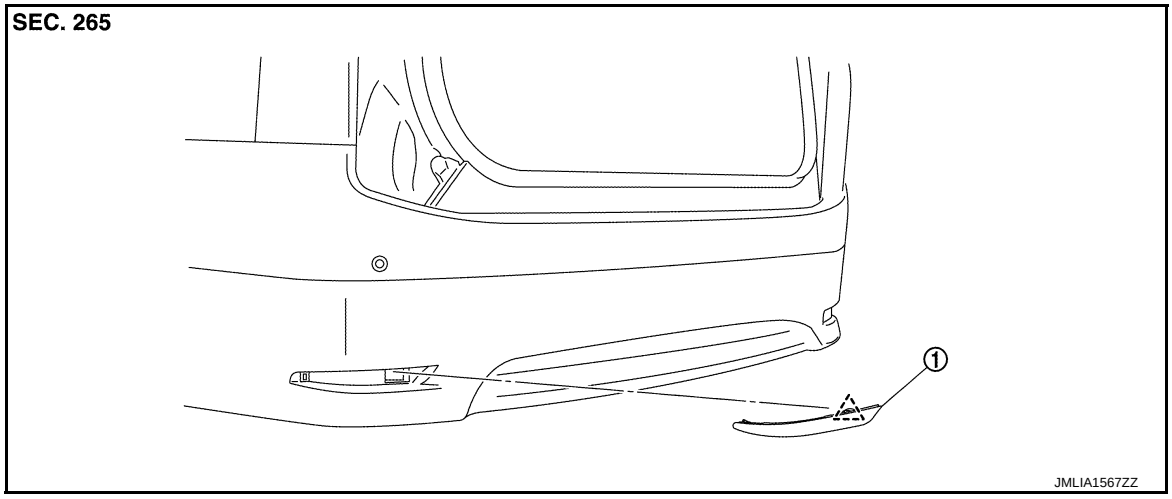
LICENSE PLATE LAMP BULB

1. Remove back door lower finisher. Refer to EXT-47, "Removal and Installation".
2. Disconnect license plate lamp connector.
3. Rotate license plate lamp bulb socket counterclockwise and unlock it.
4. Remove license plate lamp bulb from license plate lamp bulb socket.

REFLEX REFLECTOR

Exploded View

INFOID:0000000011321633



1. Reflex reflector

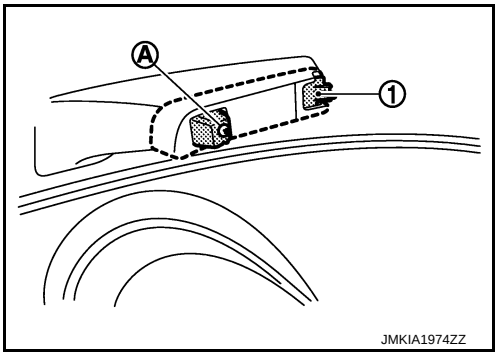
: Pawl

Removal and Installation

INFOID:0000000011321634

REMOVAL

1. Remove rear bumper fascia assembly. Refer to EXT-16, "REAR BUMPER : Removal and Installation".
2. Remove reflex reflector (1) fixing screws (A) (LH and RH), and then remove reflex reflector (LH and RH).



INSTALLATION

Install in the reverse order of removal.

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Bulb Specifications

INFOID:0000000011321635

Item		Type	Wattage (W)
Front combination lamp	Headlamp (HI)	HB3 (Halogen)	60
	Headlamp (LO)	H11 (Halogen)	55
	Front turn signal lamp/ Parking lamp	S25	27/8
	Front side marker lamp.	W5W	5
Front fog lamp		H8	35
Side turn signal lamp (integrated into the door mirror)		LED	—
Rear combination lamp	Stop lamp/ Tail lamp (side marker lamp)	W21/5W	21/5
	Rear turn signal lamp	WY21W (Amber)	21
Back-up lamp		W16W	16
License plate lamp		W5W	5
High-mounted stop lamp		LED	—