SECTION EXL
EXTERIOR LIGHTING SYSTEM

CONTENTS

XENON TYPE

PRECAUTION

PRECAUTIONS

FOR USA AND CANADA

FOR USA AND CANADA : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000007621403

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.**

FOR USA AND CANADA : Precautions For Xenon Headlamp Service

INFOID:0000000007621404

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.).**

FOR USA AND CANADA : Precaution for Battery Service

INFOID:0000000007621405

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

FOR MEXICO

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

INFOID:0000000007621406

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. 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.**

FOR MEXICO : Precautions For Xenon Headlamp Service

INFOID:0000000007621407

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.).**

FOR MEXICO : Precaution for Battery Service

INFOID:0000000007621408

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

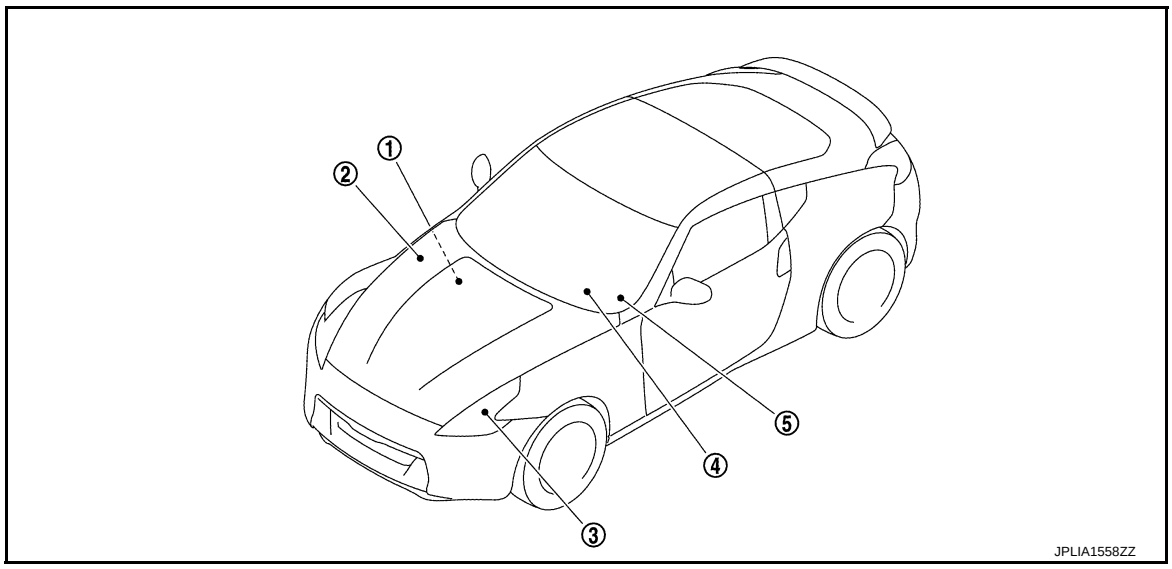
SYSTEM DESCRIPTION

COMPONENT PARTS

HEADLAMP SYSTEM

HEADLAMP SYSTEM : Component Parts Location

INFOID:0000000007621409



1. BCM
   Refer to BCS-9, "Component Parts Location".
2. IPDM E/R
   Refer to PCS-5, "Component Parts Location".
3. Headlamp
4. Combination meter
   (High beam indicator lamp)
5. Combination switch

HEADLAMP SYSTEM : Component Description

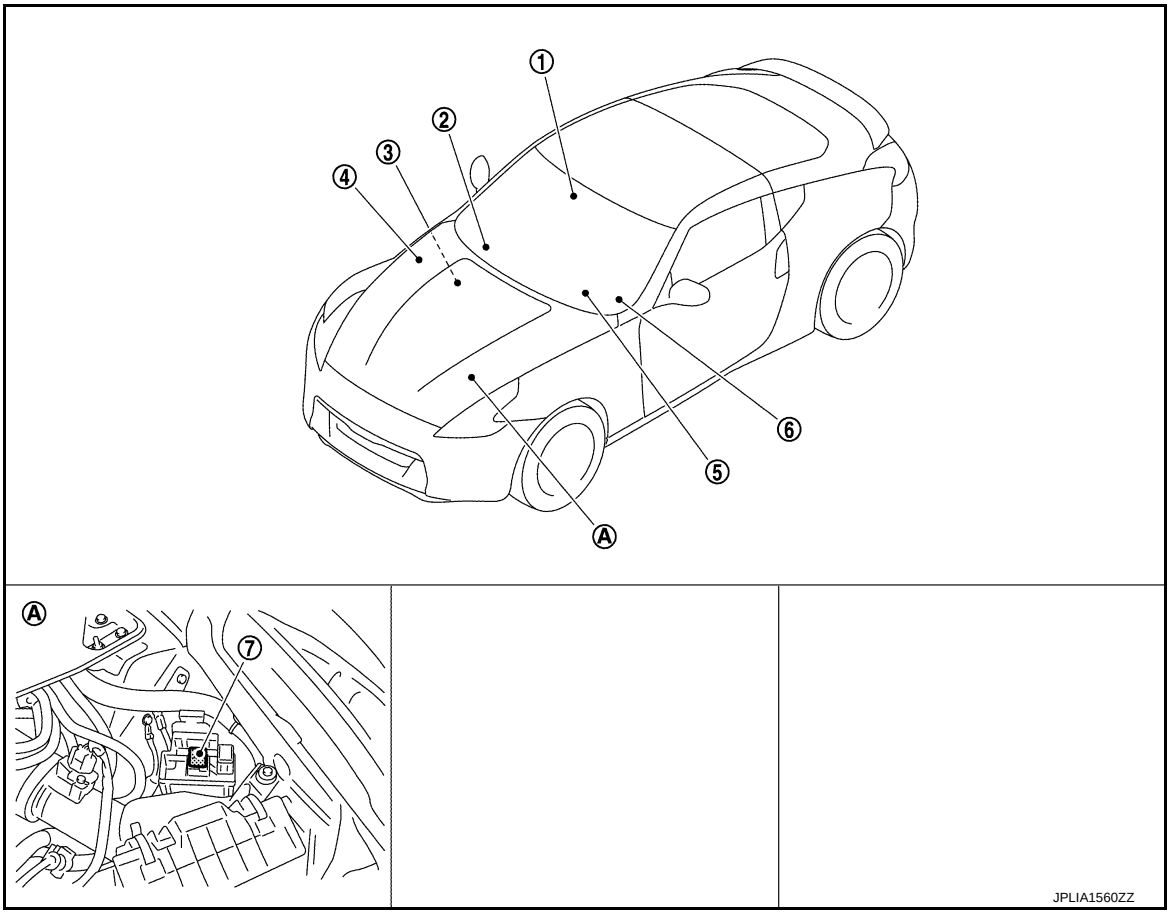
INFOID:0000000007621410

Part		Description
BCM		• Detects each switch condition by the combination switch reading function. • Judges that the headlamp is turned ON according to the vehicle condition. - Requests the headlamp relay (HI/LO) ON to IPDM E/R (with CAN communication). - Requests the high beam indicator lamp ON to the combination meter (with CAN communication).
IPDM E/R		Controls the integrated relay, and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)		Refer to BCS-10, "System Diagram".
Combination meter (High beam indicator lamp)		Turns the high beam indicator lamp ON according to the request from BCM (with CAN communication).
Headlamp assembly	• HID control unit • Xenon bulb	Refer to EXL-53, "Description".
	High beam solenoid	Refer to EXL-49, "Description".

AUTO LIGHT SYSTEM

AUTO LIGHT SYSTEM : Component Parts Location

INFOID:0000000007621411



1. Door switch
2. Optical sensor
3. BCM
   Refer to BCS-9, "Component Parts Location".
4. IPDM E/R
   Refer to PCS-5, "Component Parts Location".
5. Combination meter
6. Combination switch
7. Daytime running light relay

A. Engine room (LH)

AUTO LIGHT SYSTEM : Component Description

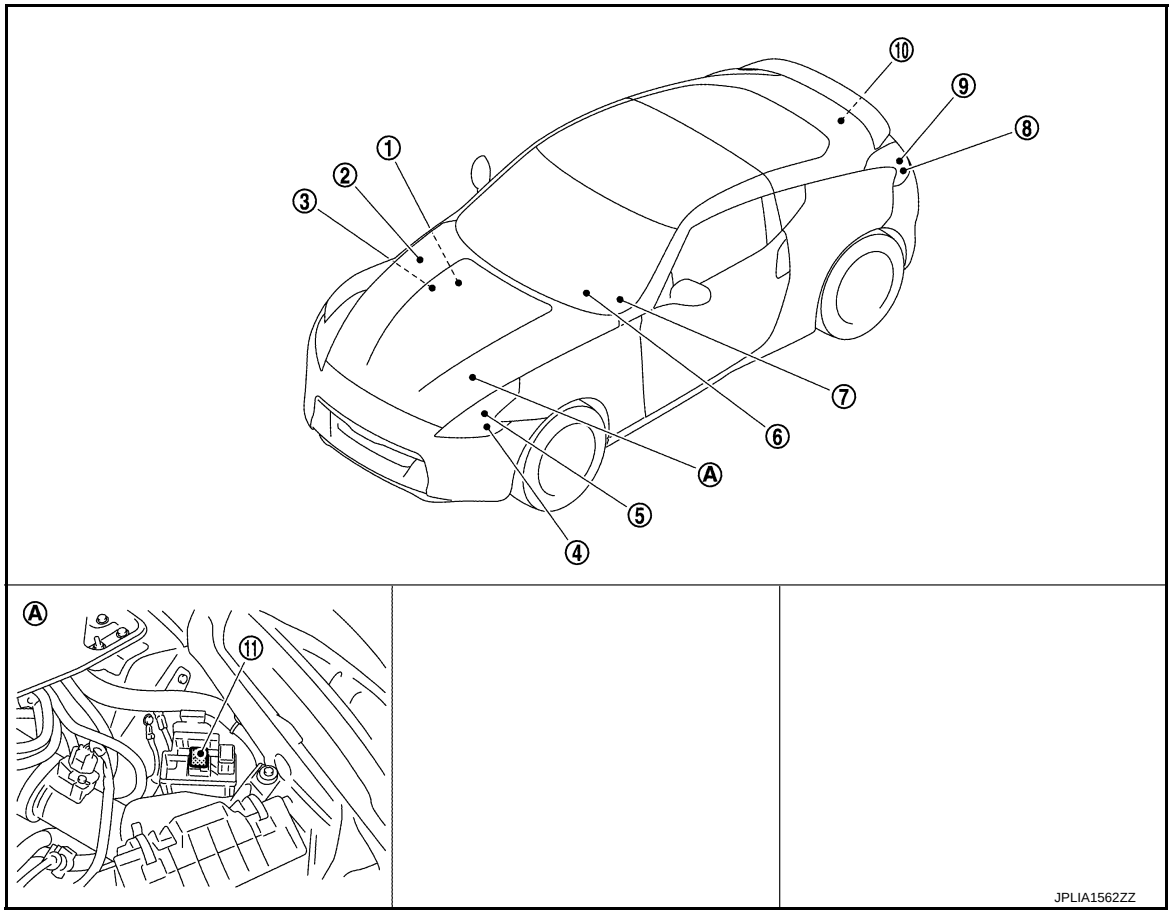
INFOID:0000000007621412

Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges the outside brightness from the optical sensor signal. • Judges the OFF timing according to the vehicle condition. • Judges the ON/OFF status of the exterior lamp and each illumination according to the outside brightness and the vehicle condition. - Requests ON/OFF of each relay to IPDM E/R (with CAN communication).
IPDM E/R	Controls the integrated relay, and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-10, "System Diagram".
Optical sensor	Refer to EXL-65, "Description".

DAYTIME RUNNING LIGHT SYSTEM

DAYTIME RUNNING LIGHT SYSTEM : Component Parts Location

INFOID:0000000007621413



1. BCM
   Refer to BCS-9, "Component Parts Location".
2. IPDM E/R
   Refer to PCS-5, "Component Parts Location".
3. ECM
   Refer to EC-39, "Component Parts Location".
4. Parking lamp
5. Front side marker lamp
6. Combination meter
7. Combination switch
8. Rear side marker lamp
9. Tail lamp
10. License plate lamp
11. Daytime running light relay

A. Engine room (LH)

DAYTIME RUNNING LIGHT SYSTEM : Component Description

INFOID:0000000007621414

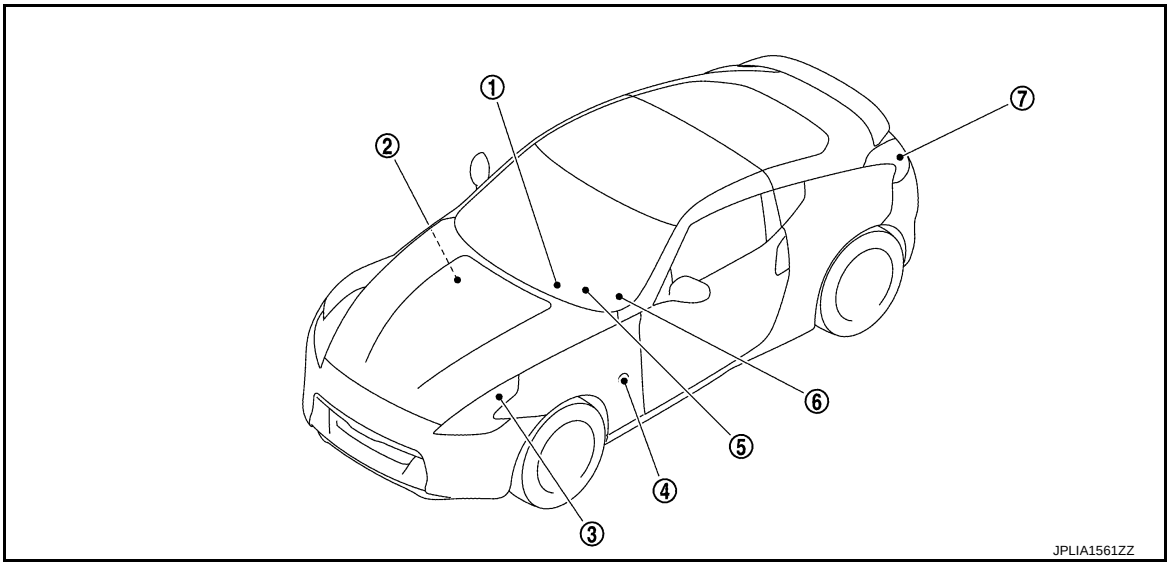
Part	Description
BCM	• Detects each switch condition with the combination switch reading function. • Judges each lamps ON/OFF condition according to the vehicle condition. - Requests the each relay ON to IPDM E/R (with CAN communication).
IPDM E/R	Controls the integrated relay and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-10, "System Diagram".
ECM	Transmits the engine status signal to BCM with CAN communication.
Combination meter	Transmits the parking brake switch signal to BCM with CAN communication.

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM : Component Parts Loca-

tion

INFOID:0000000007621415



1. Hazard switch
2. BCM
   Refer to BCS-9, "Component Parts Location".
3. Front turn signal lamp
4. Side turn signal lamp
5. Combination meter
   (Turn signal indicator lamp)
6. Combination switch
7. Rear turn signal lamp

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM : Component Description

INFOID:0000000007621416

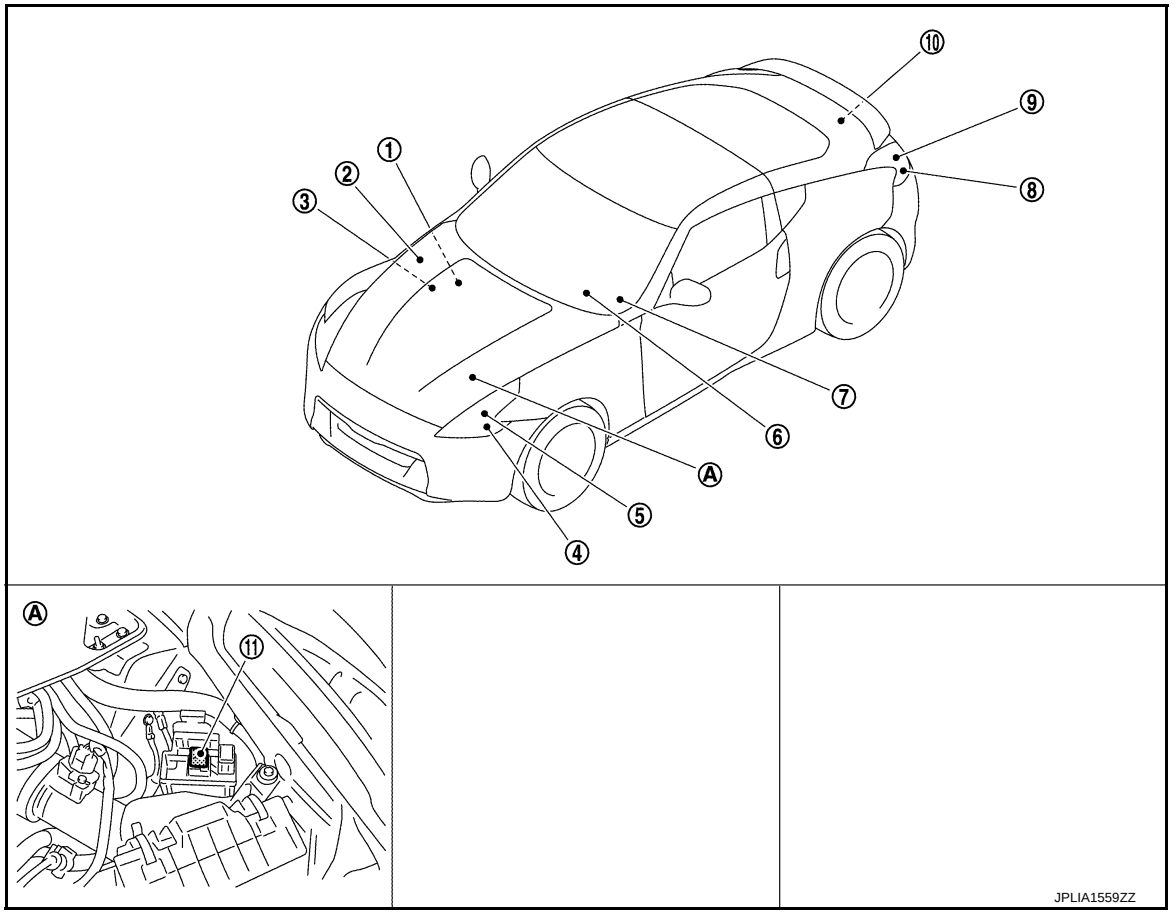
Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges the blinks of the turn signal lamp and the hazard warning lamp from each switch status. The applicable turn signal lamp blinks. - Requests the turn signal indicator lamp blink to the combination meter (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-10, "System Diagram".
Hazard switch	Inputs the hazard switch ON/OFF signal to BCM.
Combination meter (Turn signal indicator lamp & buzzer)	Blinks the turn signal indicator lamp and outputs the turn signal operating sound with integrated buzzer according to the request from BCM (with CAN communication).

PARKING, LICENSE PLATE AND TAIL LAMP SYSTEM (WITH DTRL)

PARKING, LICENSE PLATE AND TAIL LAMP SYSTEM (WITH DTRL) : Component

Parts Location

INFOID:0000000007621417



1. BCM
   Refer to BCS-9, "Component Parts Location".
2. IPDM E/R
   Refer to PCS-5, "Component Parts Location".
3. ECM
   Refer to EC-39, "Component Parts Location".
4. Parking lamp
5. Front side marker lamp
6. Combination meter
   (Tail lamp indicator lamp)
7. Combination switch
8. Rear side marker lamp
9. Tail lamp
10. License plate lamp
11. Daytime running light relay

A. Engine room (LH)

PARKING, LICENSE PLATE AND TAIL LAMP SYSTEM (WITH DTRL) : Component Description

INFOID:0000000007621418

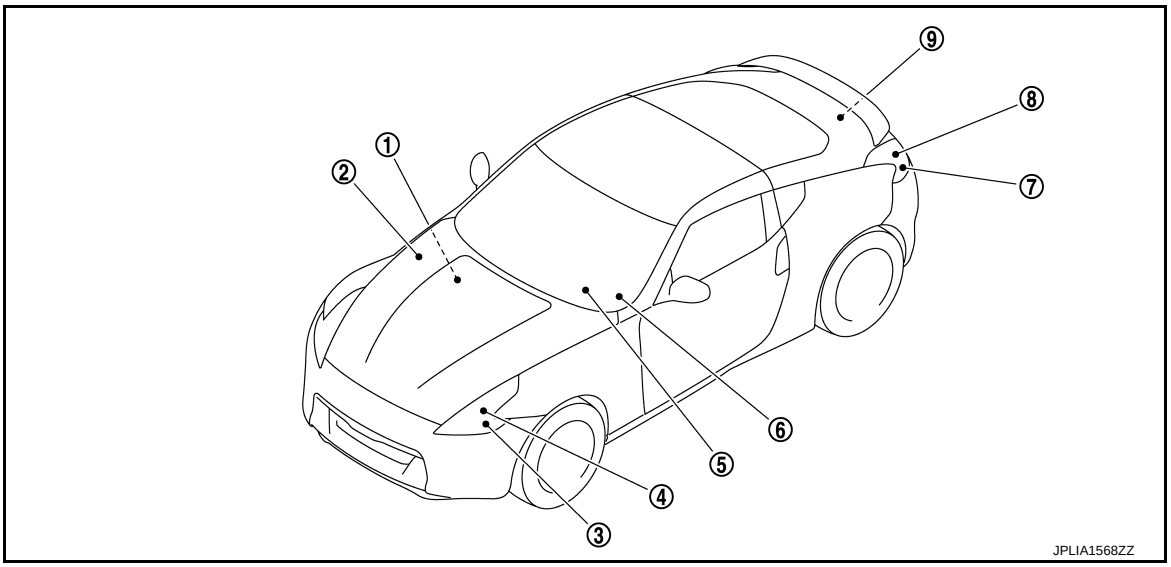
Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges the ON/OFF status of the parking, license plate, tail and side marker lamps according to the vehicle condition. - Requests the daytime running light relay and tail lamp relay ON to IPDM E/R (with CAN communication).
IPDM E/R	• Controls the daytime running light relay and supplies voltage to the load according to the request from BCM (with CAN communication). • Controls the integrated relay and supplies voltage to the load according to the request from BCM (with CAN communication).

Part	Description
Combination switch (Lighting & turn signal switch)	Refer to BCS-10, "System Diagram".
Combination meter (Tail lamp indicator lamp)	Turns the tail lamp indicator lamp ON according to the request from BCM (with CAN communication).

PARKING, LICENSE PLATE AND TAIL LAMP SYSTEM (WITHOUT DTRL)

PARKING, LICENSE PLATE AND TAIL LAMP SYSTEM (WITHOUT DTRL) : Component Parts Location

INFOID:0000000007621419



1. BCM
   Refer to BCS-9, "Component Parts Location".
2. IPDM E/R
   Refer to PCS-5, "Component Parts Location".
3. Parking lamp
4. Front side marker lamp
5. Combination meter (Tail lamp indicator lamp)
6. Combination switch
7. Rear side marker lamp
8. Tail lamp
9. License plate lamp

PARKING, LICENSE PLATE AND TAIL LAMP SYSTEM (WITHOUT DTRL) : Component Description

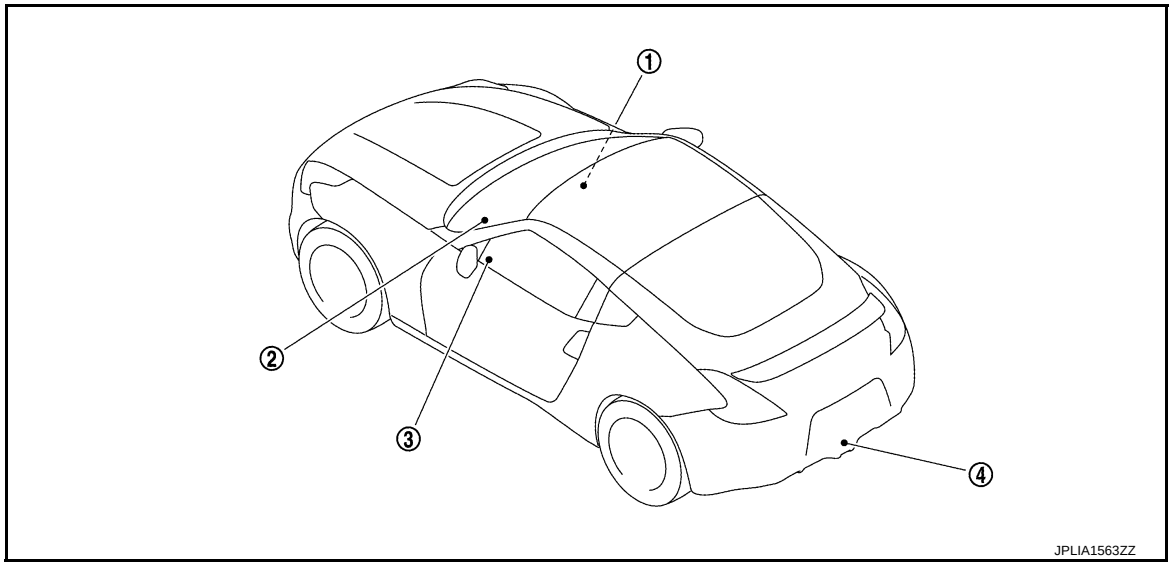
INFOID:0000000007621420

Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges the ON/OFF status of the parking, license plate, tail and side marker lamps according to the vehicle condition. - Requests the tail lamp relay ON to IPDM E/R (with CAN communication). - Requests the tail lamp indicator lamp ON to the combination meter (with CAN communication).
IPDM E/R	Controls the integrated relay and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-10, "System Diagram".
Combination meter (Tail lamp indicator lamp)	Turns the tail lamp indicator lamp ON according to the request from BCM (with CAN communication).

REAR FOG LAMP SYSTEM

REAR FOG LAMP SYSTEM : Component Parts Location

INFOID:0000000007621421



1. BCM
   Refer to BCS-9, "Component Parts Location".
2. Combination meter
   (Rear fog lamp indicator lamp)
3. Combination switch
4. Rear fog lamp

REAR FOG LAMP SYSTEM : Component Description

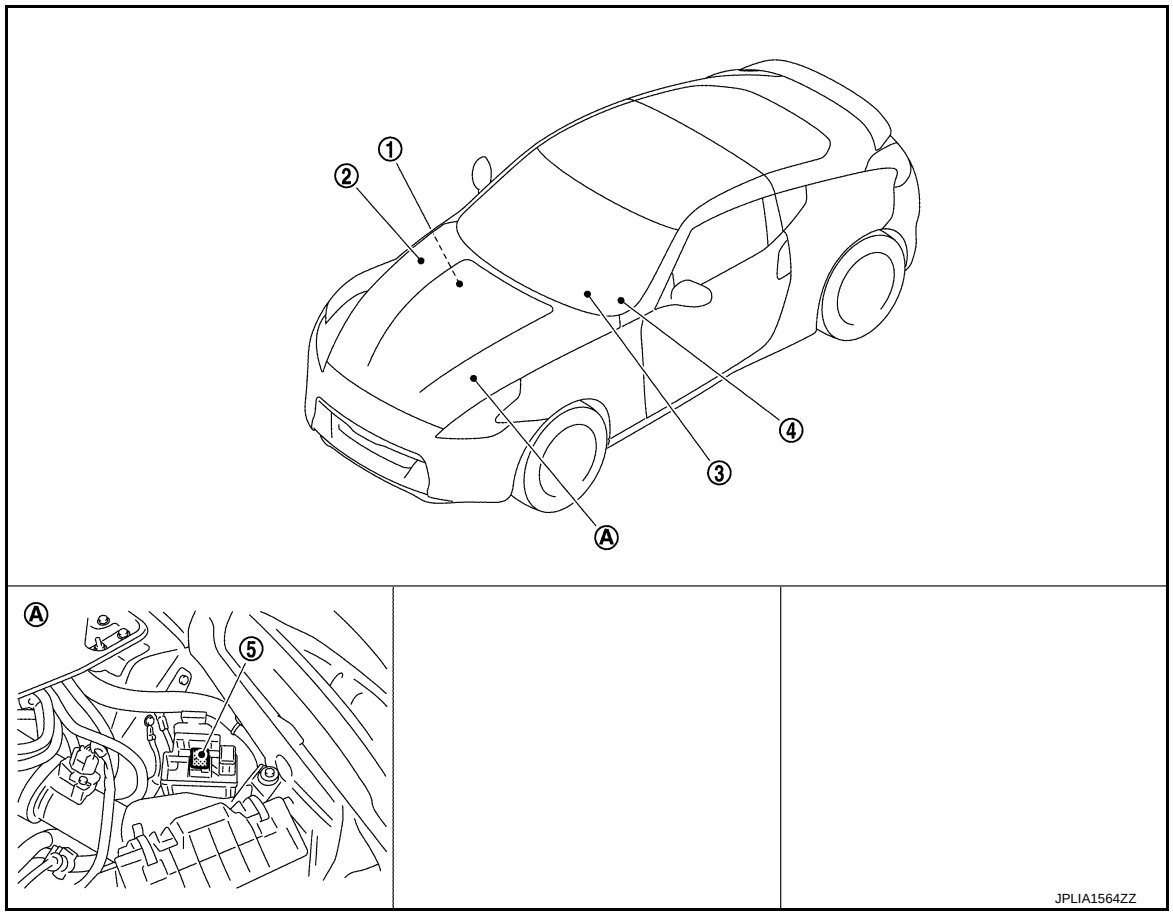
INFOID:0000000007621422

Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges that the rear fog lamp is turned ON according to the vehicle status - Supplies voltage to the rear fog lamp - Requests the rear fog lamp indicator lamp ON to the combination meter (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-10, "System Diagram".
Combination meter (Rear fog lamp indicator lamp)	Turns the rear fog lamp indicator lamp ON according to the request from BCM (with CAN communication).

EXTERIOR LAMP BATTERY SAVER SYSTEM

EXTERIOR LAMP BATTERY SAVER SYSTEM : Component Parts Location

INFOID:0000000007621423



1. BCM
   Refer to BCS-9, "Component Parts Location".
2. IPDM E/R
   Refer to PCS-5, "Component Parts Location".
3. Combination meter
4. Combination switch
5. Daytime running light relay

A. Engine room (LH)

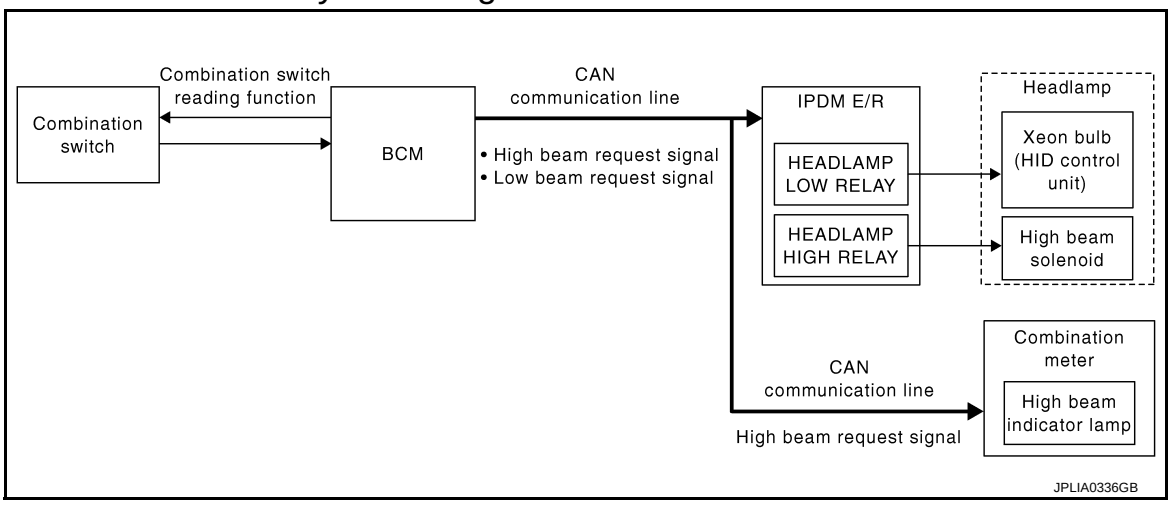
EXTERIOR LAMP BATTERY SAVER SYSTEM : Component Description

INFOID:0000000007621424

Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges the exterior lamp OFF according to the vehicle condition. - Requests each relay OFF to IPDM E/R (with CAN communication). - Turn rear fog lamp OFF.
IPDM E/R	Controls the integrated relay according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-10, "System Diagram".

SYSTEM
HEADLAMP SYSTEM
HEADLAMP SYSTEM : System Diagram

INFOID:0000000007621425



HEADLAMP SYSTEM : System Description

INFOID:0000000007621426

OUTLINE
- Mobile valve shade type is adopted. Xenon headlamp switches the high beam and the low beam with one xenon bulb each on right and left.
- Headlamp is controlled by combination switch reading function and headlamp control function of BCM, and relay control function of IPDM E/R.

HEADLAMP BASIC 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 ON condition.

Headlamp ON condition
- Lighting switch 2ND
- Lighting switch PASS
- Lighting switch AUTO, and the auto light function ON judgment

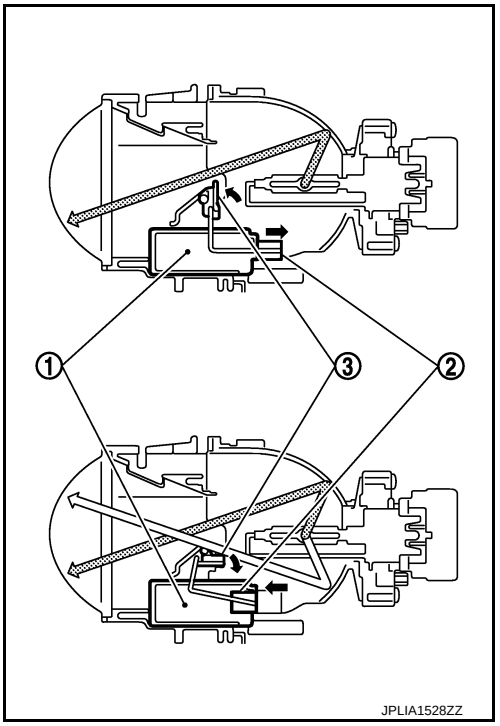
- IPDM E/R turns the integrated headlamp low relay ON, and turns the headlamp ON according to the low beam request signal.

HEADLAMP HI/LO SWITCHING OPERATION
- BCM transmits the high beam request signal to IPDM E/R and the combination meter with CAN communication according to the high beam switching condition.

High beam switching condition
- Lighting switch HI with the headlamp ON
- 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.

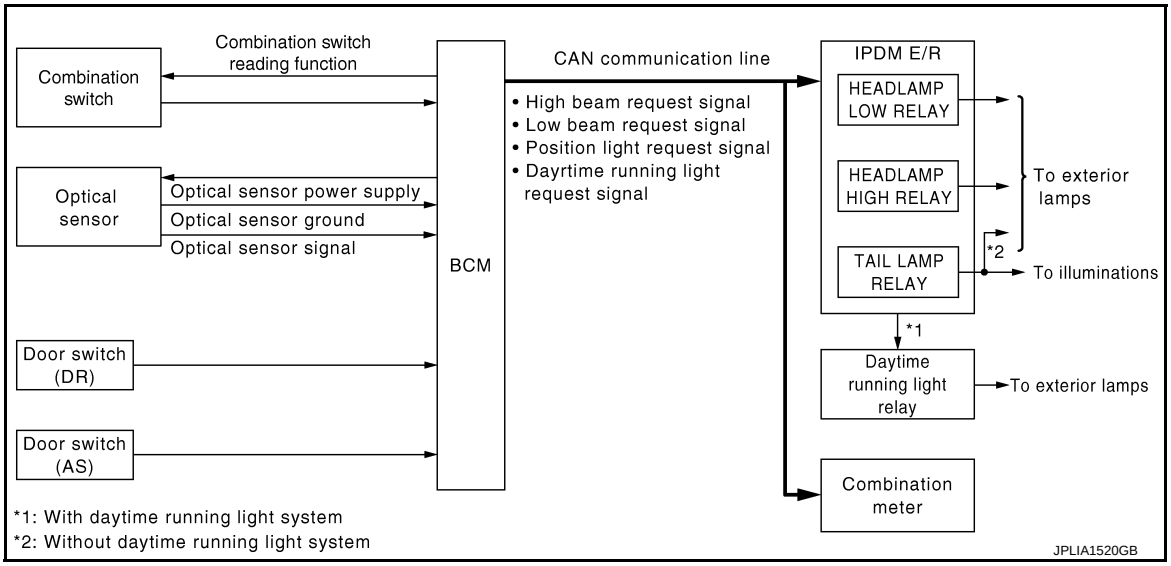
- When the headlamp high relay is turned ON, magnetic force is applied to the high beam solenoid (1) by a current. The mobile valve shade (3) is switched to the high beam position through the actuator rod (2).
- When the headlamp high relay is turned OFF, the current stops. The mobile valve shade returns to the low beam position automatically.



AUTO LIGHT SYSTEM

AUTO LIGHT SYSTEM : System Diagram

INFOID:0000000007621427



AUTO LIGHT SYSTEM : System Description

INFOID:0000000007621428

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

Control by IPDM E/R
- Relay control function

- Auto light system has the auto light function and the delay timer function.

- Auto light function turns the exterior lamps* and each illumination ON/OFF automatically according to 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 and tail lamp (Headlamp HI 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 with 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-25, "HEADLAMP : CONSULT Function (BCM - HEAD LAMP)".

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.

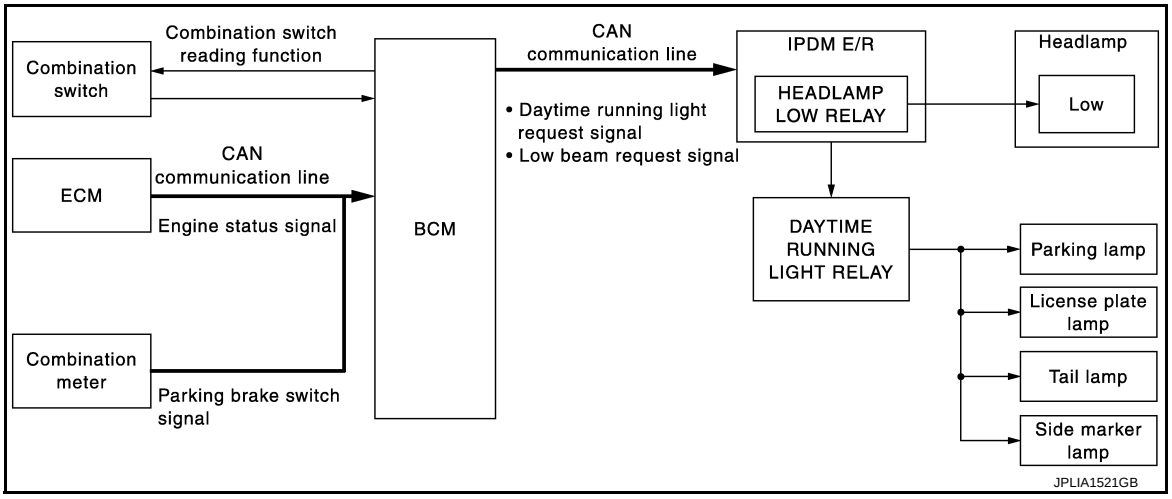
*: The preset time is 45 seconds. The timer operating time can be set by CONSULT. Refer to EXL-25, "HEADLAMP : CONSULT Function (BCM - HEAD LAMP)".

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.

DAYTIME RUNNING LIGHT SYSTEM

DAYTIME RUNNING LIGHT SYSTEM : System Diagram

INFOID:0000000007621429



DAYTIME RUNNING LIGHT SYSTEM : System Description

INFOID:0000000007621430

OUTLINE

- Turns the following exterior lamps ON as the daytime running light.
- Headlamp (LO)
- Parking, tail, license plate and side marker lamps.
- 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

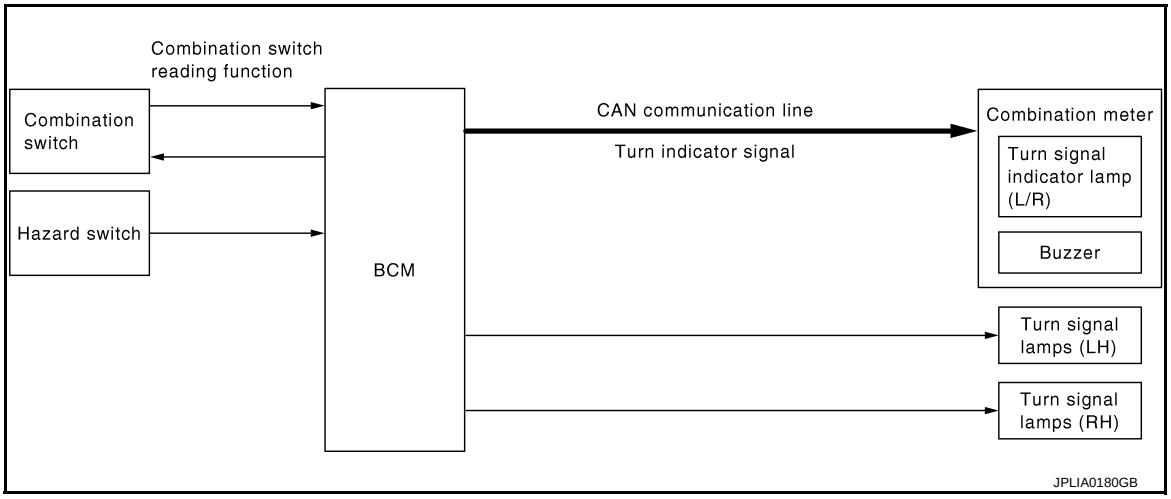
- BCM detects the combination switch condition by the combination switch reading function.
- BCM detects vehicle condition depending on the following signals.
- Engine condition signal (received from ECM with CAN communication).
- Parking brake switch signal (received from combination meter with CAN communication)
- BCM transmits the daytime running light request signal and low beam request signal to IPDM E/R with CAN communication according to the daytime running light ON condition.

Daytime running light ON condition
- While the engine running with the parking brake released.
- Lighting switch OFF
- IPDM E/R turns the integrated headlamp low relay and daytime running light relay ON according to the daytime running light request signal and low beam request signal. And it turns each lamps ON.

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM : System Diagram

INFOID:0000000007621431



TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM : System Description

INFOID:0000000007621432

OUTLINE

Turn signal and the hazard warning lamp is controlled by combination switch reading function and the flasher control 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 with 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.

HIGH FLASHER OPERATION (FAIL-SAFE)

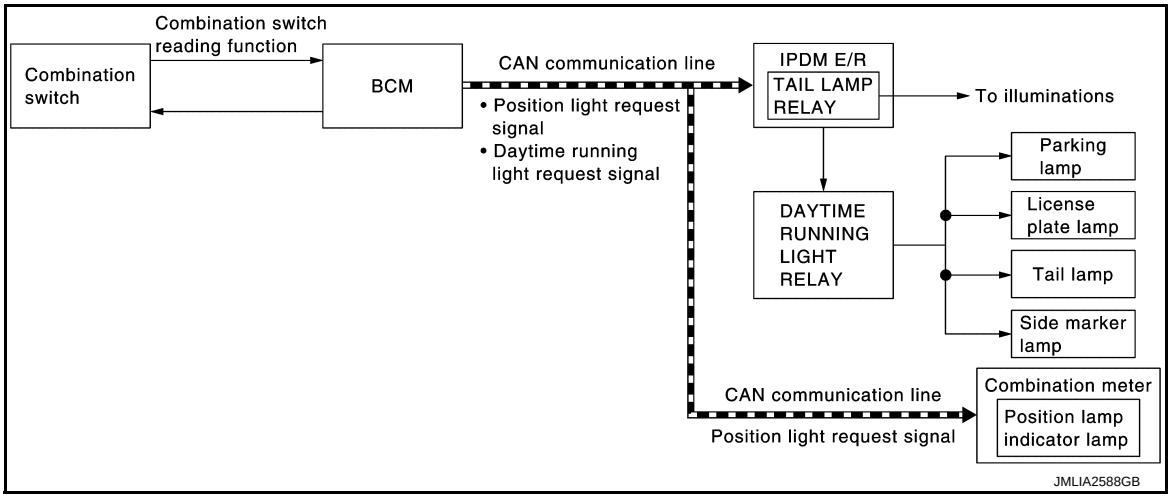
- BCM detects the turn signal lamp circuit status from the current value.
- BCM increases the turn signal lamp blinking speed if the bulb or harness open is detected with the turn signal lamp operating.

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

PARKING, LICENSE PLATE AND TAIL LAMP SYSTEM (WITH DTRL)

PARKING, LICENSE PLATE AND TAIL LAMP SYSTEM (WITH DTRL) : System Diagram

INFOID:0000000007621433



PARKING, LICENSE PLATE AND TAIL LAMP SYSTEM (WITH DTRL) : System Description

INFOID:0000000007621434

OUTLINE

Parking, license plate, tail and side marker 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, TAIL AND SIDE MARKER LAMPS OPERATION

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

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

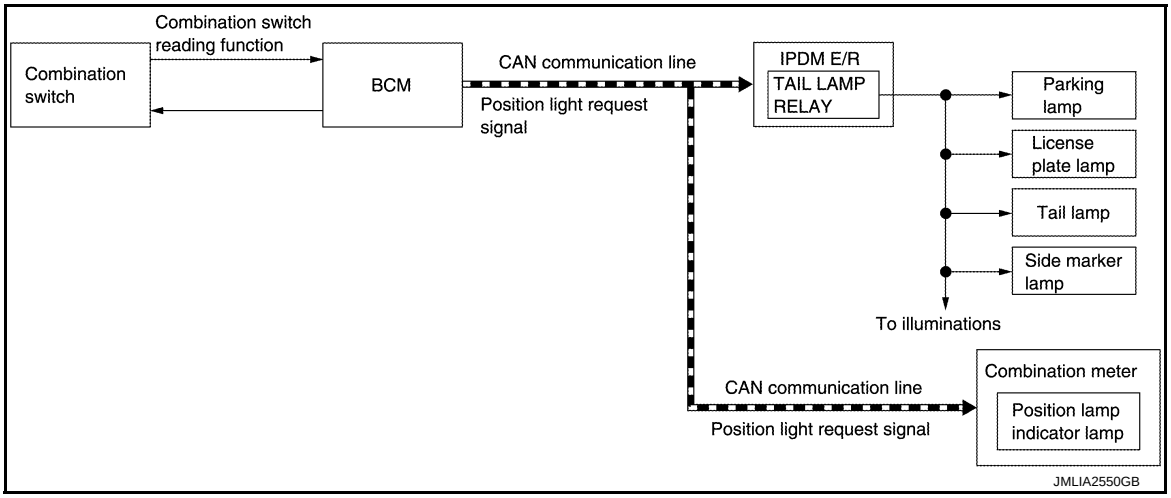
- IPDM E/R turns the daytime running light relay and tail lamp relay ON according to the daytime running light request signal or position light request signal. And turns the parking, license plate, tail, side marker lamps and illuminations ON.
- Combination meter turns the position lamp indicator lamp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

PARKING, LICENSE PLATE AND TAIL LAMP SYSTEM (WITHOUT DTRL)

PARKING, LICENSE PLATE AND TAIL LAMP SYSTEM (WITHOUT DTRL) : System

Diagram

INFOID:0000000007621435



PARKING, LICENSE PLATE AND TAIL LAMP SYSTEM (WITHOUT DTRL) : System Description

INFOID:0000000007621436

OUTLINE

Parking, license plate, tail and side marker 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, TAIL AND SIDE MARKER 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 with CAN communication according to the ON/OFF condition of the parking, license plate, tail and side marker lamps.

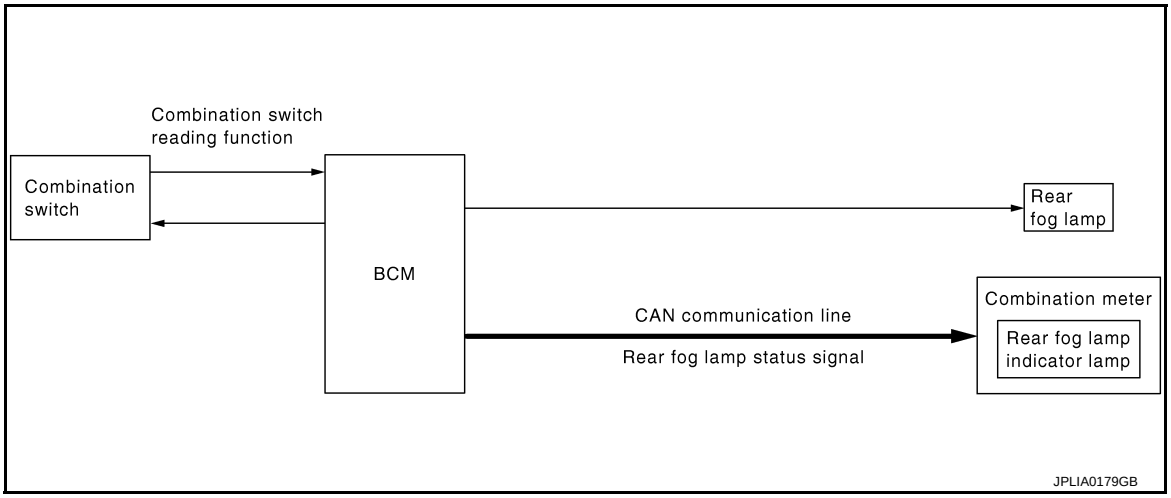
Parking, license plate, tail and side marker lamps ON condition
- Lighting switch 1ST
- Lighting switch 2ND
- Lighting switch AUTO, and the auto light function ON judgment

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

REAR FOG LAMP SYSTEM

REAR FOG LAMP SYSTEM : System Diagram

INFOID:0000000007621437



REAR FOG LAMP SYSTEM : System Description

INFOID:0000000007621438

OUTLINE

Rear fog lamp is controlled with the combination switch reading function and the rear fog lamp control function of BCM.

REAR FOG LAMP OPERATION

- BCM detects the condition of the combination switch by the combination switch reading function.
- BCM supplies voltage to rear fog lamp according to the rear fog lamp ON condition.

Rear fog lamp ON condition
- When rear fog lamp switch signal is input (OFF → ON) with headlamp ON and rear fog lamp OFF

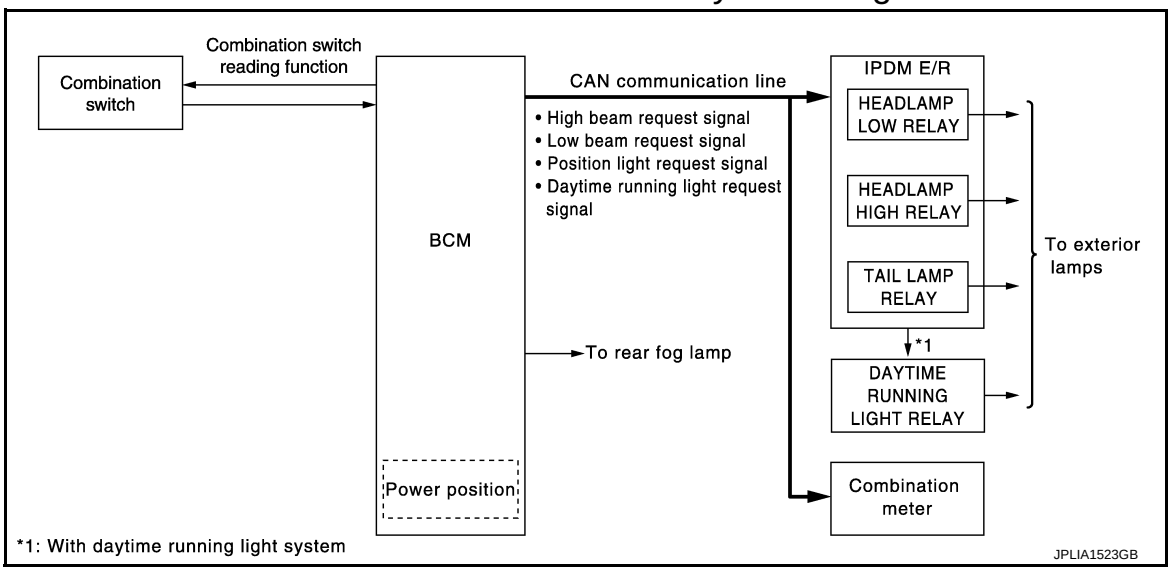
Rear fog lamp OFF condition (satisfied any condition as follows)
- When rear fog lamp switch signal is input (OFF → ON) with rear fog lamp ON
- Headlamp OFF

- BCM transmits the rear fog lamp status signal to the combination meter with CAN communication.
- Combination meter turns the rear fog lamp indicator lamp ON according to the rear fog lamp status signal.

EXTERIOR LAMP BATTERY SAVER SYSTEM

EXTERIOR LAMP BATTERY SAVER SYSTEM : System Diagram

INFOID:0000000007621439



EXTERIOR LAMP BATTERY SAVER SYSTEM : System Description

INFOID:0000000007621440

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 lamp* OFF after a period of time to prevent the battery from over-discharge when the ignition switch is turned OFF with the exterior lamp ON.

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

NOTE:

When the lighting switch is turned AUTO, the exterior lamp battery saver switches to the auto light system. Refer to EXL-17, "AUTO LIGHT SYSTEM : System Diagram".

EXTERIOR LAMP BATTERY SAVER ACTIVATION

BCM activates the timer and turns the exterior lamp OFF 5 minutes 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 the engine started (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 lamp OFF.

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

INFOID:0000000007804827

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 timer	INT LAMP	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER	×	×	×
—	AIR CONDITONER*			
• Intelligent Key system • Engine start system	INTELLIGENT KEY	×	×	×
Combination switch	COMB SW		×	
Body control system	BCM	×		
NVIS - NATS	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door/Trunk lid open	TRUNK		×	×
Vehicle security system	THEFT ALM	×	×	×
RAP system	RETAINED PWR		×	
Signal buffer system	SIGNAL BUFFER		×	×
TPMS	TPMS (AIR PRESSURE MONITOR)	×	×	×

NOTE:
*: This item is displayed, but 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 supply 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 “LOCK”*)
	SLEEP>OFF		While turning BCM status from low power consumption mode to normal mode (Power supply position is “OFF”.)
	LOCK>ACC		While turning power supply position from “LOCK”* to “ACC”
	ACC>ON		While turning power supply position from “ACC” to “IGN”
	RUN>ACC		While turning power supply position from “RUN” to “ACC” (Except emergency stop operation)
	CRANK>RUN		While turning power supply position from “CRANKING” to “RUN” (From cranking up the engine to run it)
	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>LOCK		While turning power supply position from “OFF” to “LOCK”*
	OFF>ACC		While turning power supply position from “OFF” to “ACC”
	ON>CRANK		While turning power supply position from “IGN” to “CRANKING”
	OFF>SLEEP		While turning BCM status from normal mode (Power supply position is “OFF”.) to low power consumption mode
	LOCK>SLEEP		While turning BCM status from normal mode (Power supply position is “LOCK”*.) to low power consumption mode
	LOCK		Power supply position is “LOCK”*
	OFF		Power supply position is “OFF” (Ignition switch OFF)
	ACC		Power supply position is “ACC” (Ignition switch ACC)
	ON		Power supply position is “IGN” (Ignition switch ON with engine stopped)
	ENGINE RUN		Power supply position is “RUN” (Ignition switch ON with engine running)
	CRANKING		Power supply position is “CRANKING” (At engine cranking)
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:
*: Power supply position shifts to “LOCK” from “OFF”, when ignition switch is in the OFF position, selector lever is in the P position (A/T models), 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 “LOCK”.

HEADLAMP

HEADLAMP : CONSULT Function (BCM - HEAD LAMP)

INFOID:0000000007621442

WORK SUPPORT

Service item	Setting item	Setting	
BATTERY SAVER SET	On*	With the exterior lamp battery saver function	
	Off	Without the exterior lamp battery saver function	
ILL DELAY SET	MODE 1*	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.	
CUSTOM A/LIGHT SETTING	MODE 1*	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.)	

*: Factory setting

DATA MONITOR

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 with CAN communication
KEY SW-SLOT [On/Off]	Key switch status input from key slot
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 [On/Off]	
FR FOG SW [On/Off]	**NOTE:** The item is indicated, but not monitored.
RR FOG SW [On/Off]	Each switch status that BCM judges from the combination switch reading function
DOOR SW-DR [On/Off]	The switch status input from driver side door switch

Monitor item [Unit]	Description
DOOR SW-AS [On/Off]	The switch status input from passenger side door switch
DOOR SW-RR [On/Off]	**NOTE:** The item is indicated, but not monitored.
DOOR SW-RL [On/Off]	
DOOR SW-BK [On/Off]	
OPTICAL SENSOR [V]	The value of exterior brightness voltage input from the optical sensor

ACTIVE TEST

Test item	Operation	Description
TAIL LAMP	On	Transmits the position light request signal to IPDM E/R with CAN communication to turn the tail lamp ON.
	Off	Stops the position light request signal transmission.
HEAD LAMP	Hi	Transmits the high beam request signal with CAN communication to turn the headlamp (HI).
	Low	Transmits the low beam request signal with CAN communication to turn the headlamp (LO).
	Off	Stops the high & low beam request signal transmission.
FR FOG LAMP	On	**NOTE:** The item is indicated, but cannot be tested.
	Off	
RR FOG LAMP	On	• Outputs the voltage to turn the rear fog lamp ON. • Transmits the rear fog lamp status signal to the combination meter with CAN communication to turn the rear fog lamp indicator lamp ON.
	Off	• Stops the voltage to turn the rear fog lamp OFF. • Stops the rear fog lamp status signal transmission.
DAYTIME RUNNING LIGHT	On	Transmits the low beam request signal and the daytime running light request signal with CAN communication to turn the headlamp (LO), parking, license plate, tail and side marker lamps ON.
	Off	Stops the low beam request signal and the daytime running light request signal transmission.
CORNERING LAMP	RH	**NOTE:** The item is indicated, but cannot be tested.
	LH	
	Off	
ILL DIM SIGNAL	On	**NOTE:** The item is indicated, but cannot be tested.
	Off	

FLASHER

FLASHER : CONSULT Function (BCM - FLASHER)

INFOID:0000000007621443

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

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 condition that BCM judges 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 blink the right side turn signal lamps.
	LH	Outputs the voltage to blink 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:0000000007804828

AUTO ACTIVE TEST

Description

In auto active test mode, 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 lamps
- License plate lamps
- Side maker lamps
- Tail lamps
- Headlamps (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan (cooling fan control module)

Operation Procedure

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.
   CAUTION:
   Close passenger door.
4. Turn the ignition switch ON within 10 seconds. After that the horn sounds once and the auto active test starts.
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 mode has to be cancelled halfway through test, turn the ignition switch OFF.

CAUTION:

- **If auto active test mode cannot be actuated, check door switch system. Refer to DLK-63, "Component Function Check".**
- **Do not start the engine.**

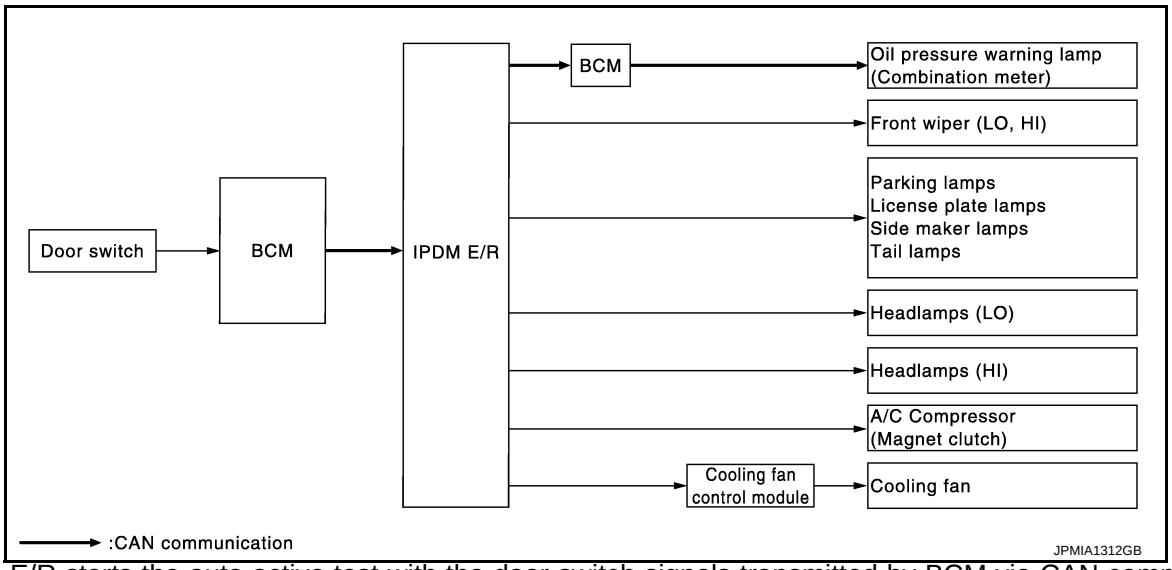
Inspection in Auto Active Test Mode

When auto active test mode 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	LO for 5 seconds → HI for 5 seconds
3	• Parking lamps • License plate lamps • Side maker lamps • Tail lamps	10 seconds
4	Headlamps	LO for 10 seconds → HI ON ⇔ OFF 5 times
5	A/C compressor (magnet clutch)	ON ⇔ OFF 5 times
6*	Cooling fan	MID for 5 seconds → HI for 5 seconds

*: Outputs duty ratio of 50% for 5 seconds → duty ratio of 100% for 5 seconds on the cooling fan control module.

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 mode

Symptom	Inspection contents		Possible cause
Any of the following components do not operate • Parking lamps • License plate lamps • Side maker lamps • Tail lamps • Headlamp (HI, LO) • Front wiper (HI, LO)	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	• Unified meter and A/C amp. signal input circuit • CAN communication signal between unified meter and A/C amp. 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 unified meter and A/C amp. • 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 control module • Cooling fan control module • Harness or connector between IPDM E/R and cooling fan control module • Cooling fan relay • Harness or connector between IPDM E/R and cooling fan relay • IPDM E/R

CONSULT Function (IPDM E/R)

INFOID:0000000007804829

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-31, "DTC Index".

DATA MONITOR

Monitor item

Monitor Item [Unit]	MAIN SIGNALS	Description
RAD FAN REQ [%]	×	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]	×	**NOTE:** The item is indicated, but not monitored.
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.

Monitor Item [Unit]	MAIN SIGNALS	Description
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.
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 clutch interlock switch (M/T models) or shift position (A/T models) 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 ON/INHI ON/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 A/T 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/UNLOCK/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 the vehicle with daytime running light system.
OIL P SW [Open/Close]		Displays the status of the oil pressure switch judged by IPDM E/R.
HOOD SW [Off/On]		Displays the status of the hood switch judged by IPDM E/R.
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 1 and horn relay 2 for 20 ms.
FRONT WIPER	Off	OFF
	Lo	Operates the front wiper relay.
	Hi	Operates the front wiper relay and front wiper high relay.

Test item	Operation	Description
MOTOR FAN	1	OFF
	2	Outputs 50% pulse duty signal (PWM signal) to the cooling fan control module.
	3	Outputs 80% pulse duty signal (PWM signal) to the cooling fan control module.
	4	Outputs 100% pulse duty signal (PWM signal) to the cooling fan control module.
HEAD LAMP WASHER	On	**NOTE:** The item is indicated, but cannot be tested.
EXTERNAL LAMPS	Off	OFF
	TAIL	Operates the tail lamp relay and daytime running light relay. **NOTE:** Daytime running light relay is with daytime running light system only.
	Lo	Operates the headlamp low relay.
	Hi	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.
	Fog	**NOTE:** The item is indicated, but cannot be tested.

ECU DIAGNOSIS INFORMATION

BCM, IPDM E/R

List of ECU Reference

INFOID:0000000007621446

ECU	Reference
BCM	BCS-55, "Reference Value"
	BCS-83, "Fail-safe"
	BCS-84, "DTC Inspection Priority Chart"
	BCS-85, "DTC Index"
IPDM E/R	PCS-20, "Reference Value"
	PCS-29, "Fail-safe"
	PCS-31, "DTC Index"

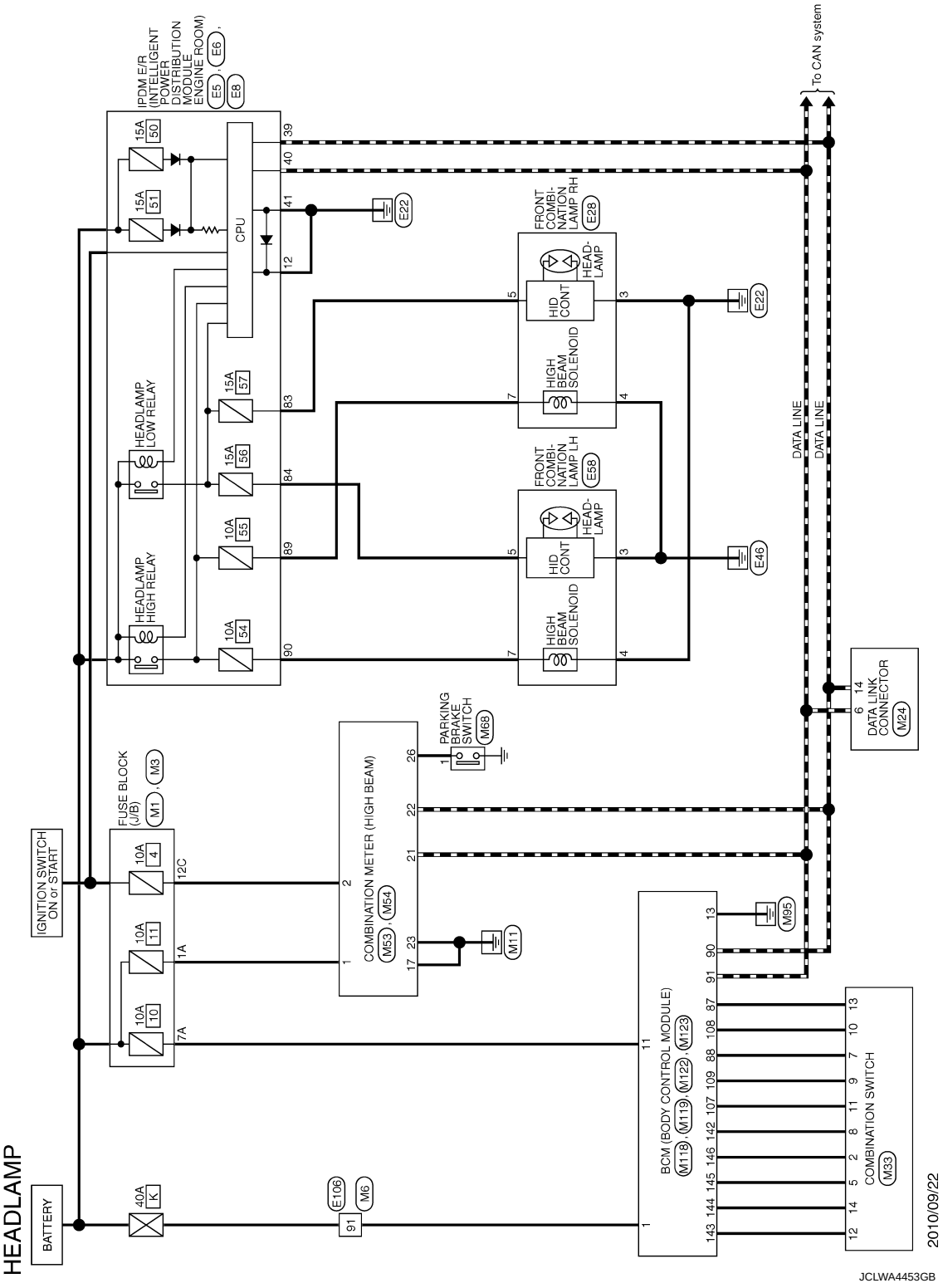
WIRING DIAGRAM

HEADLAMP SYSTEM

Wiring Diagram

INFOID:0000000007621447

For connector terminal arrangements, harness layouts, and alphabets in a ⟨⟩ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

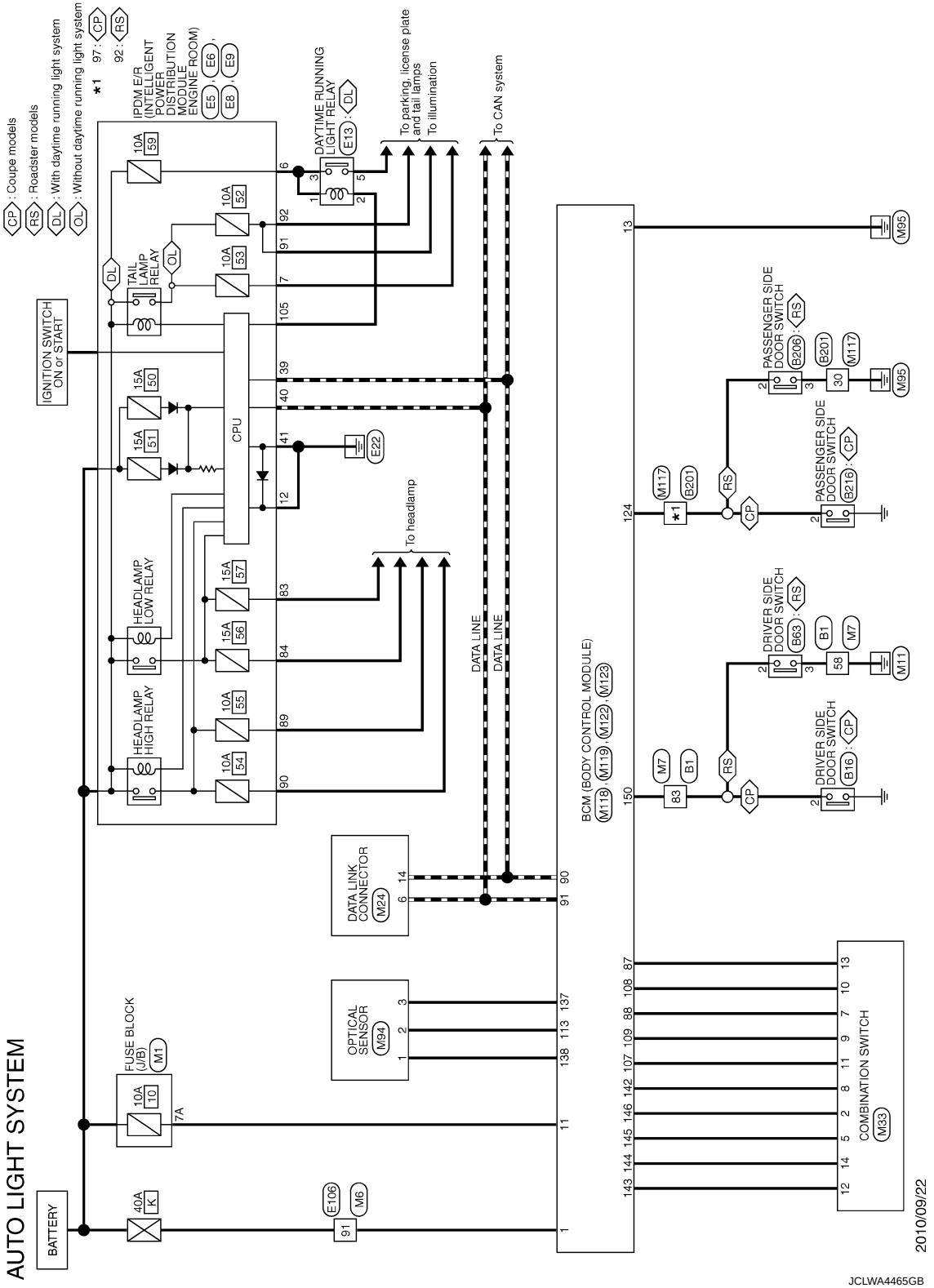


AUTO LIGHT SYSTEM

Wiring Diagram

INFOID:0000000007621448

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

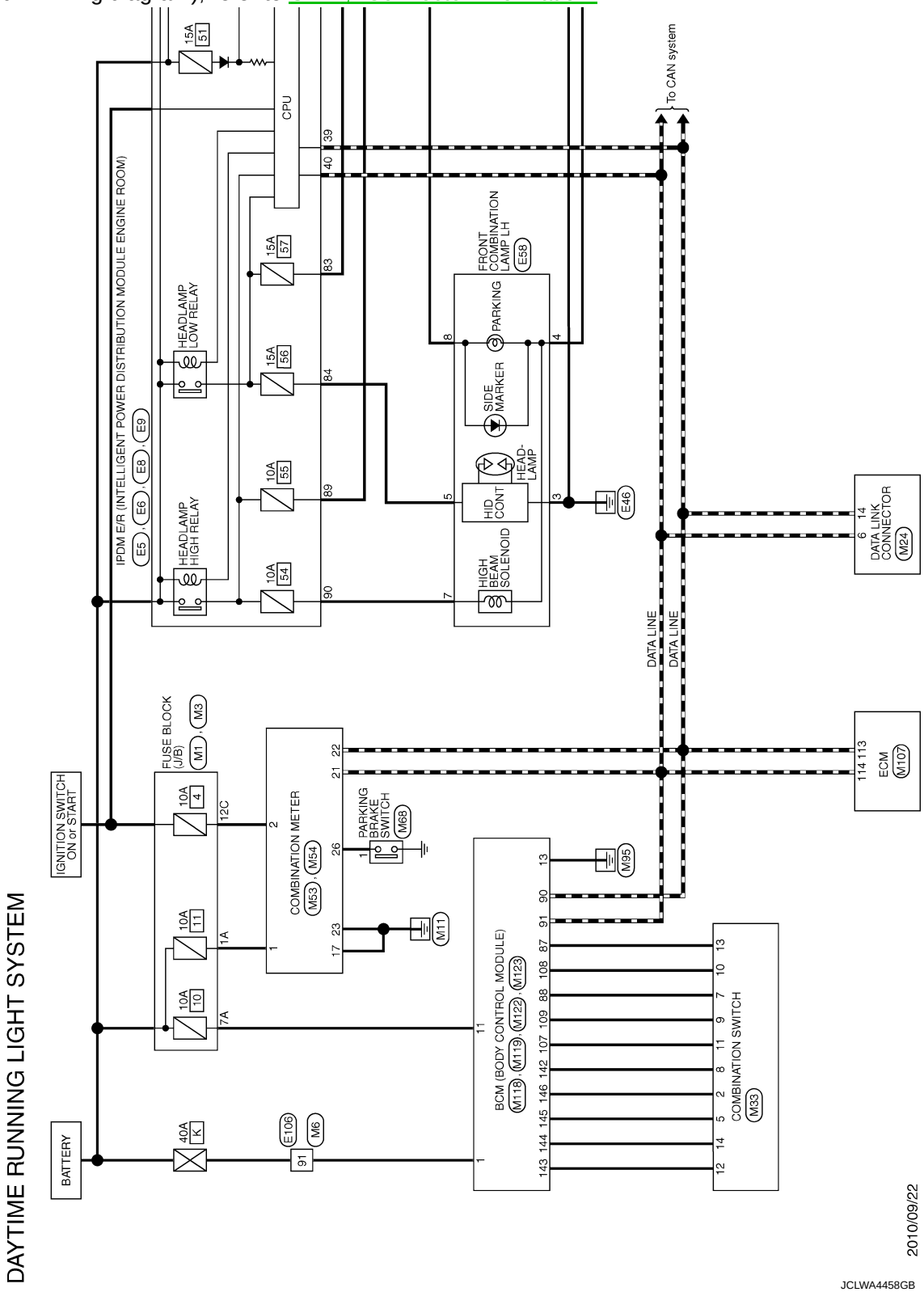


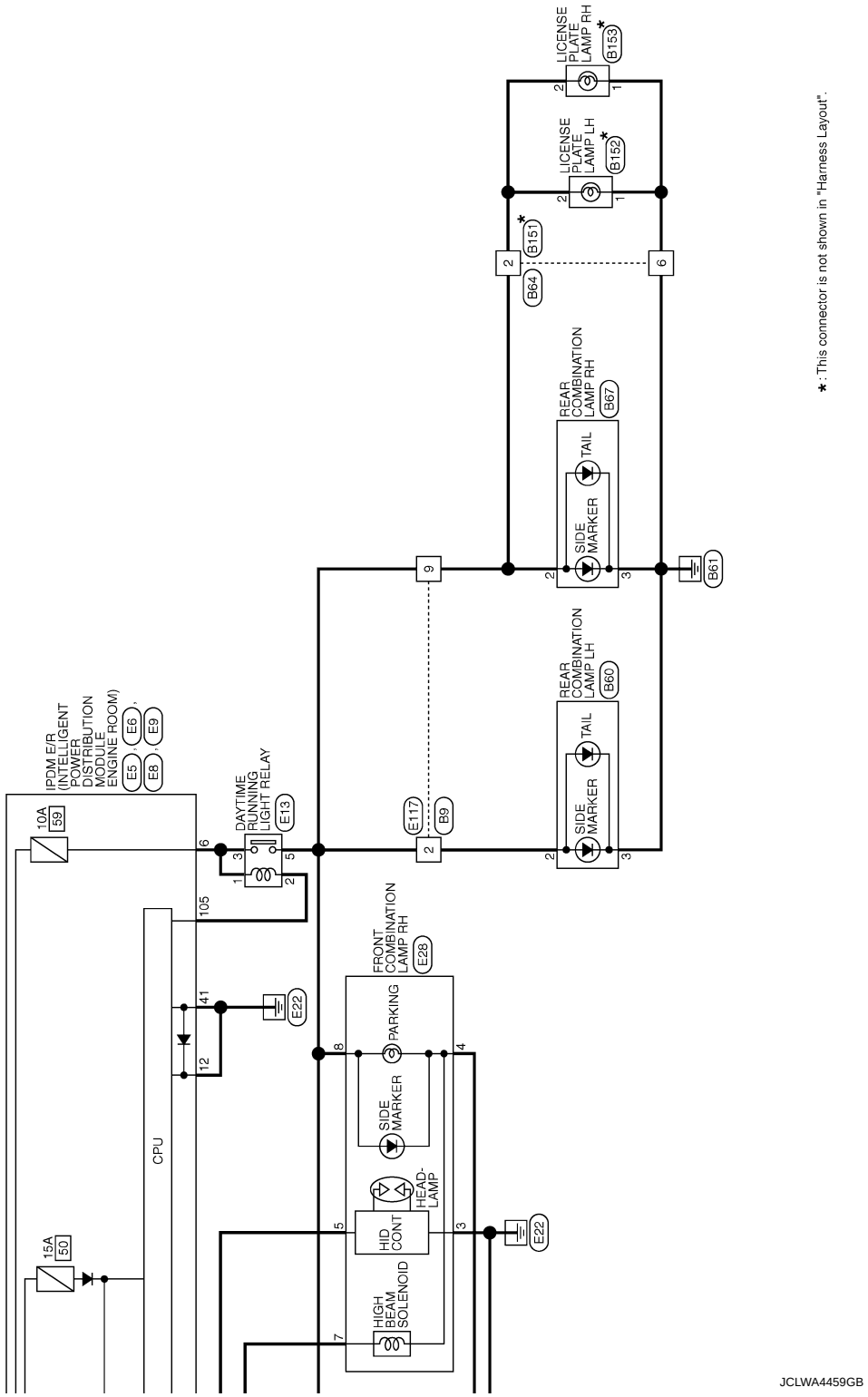
DAYTIME RUNNING LIGHT SYSTEM

Wiring Diagram

INFOID:0000000007621449

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".



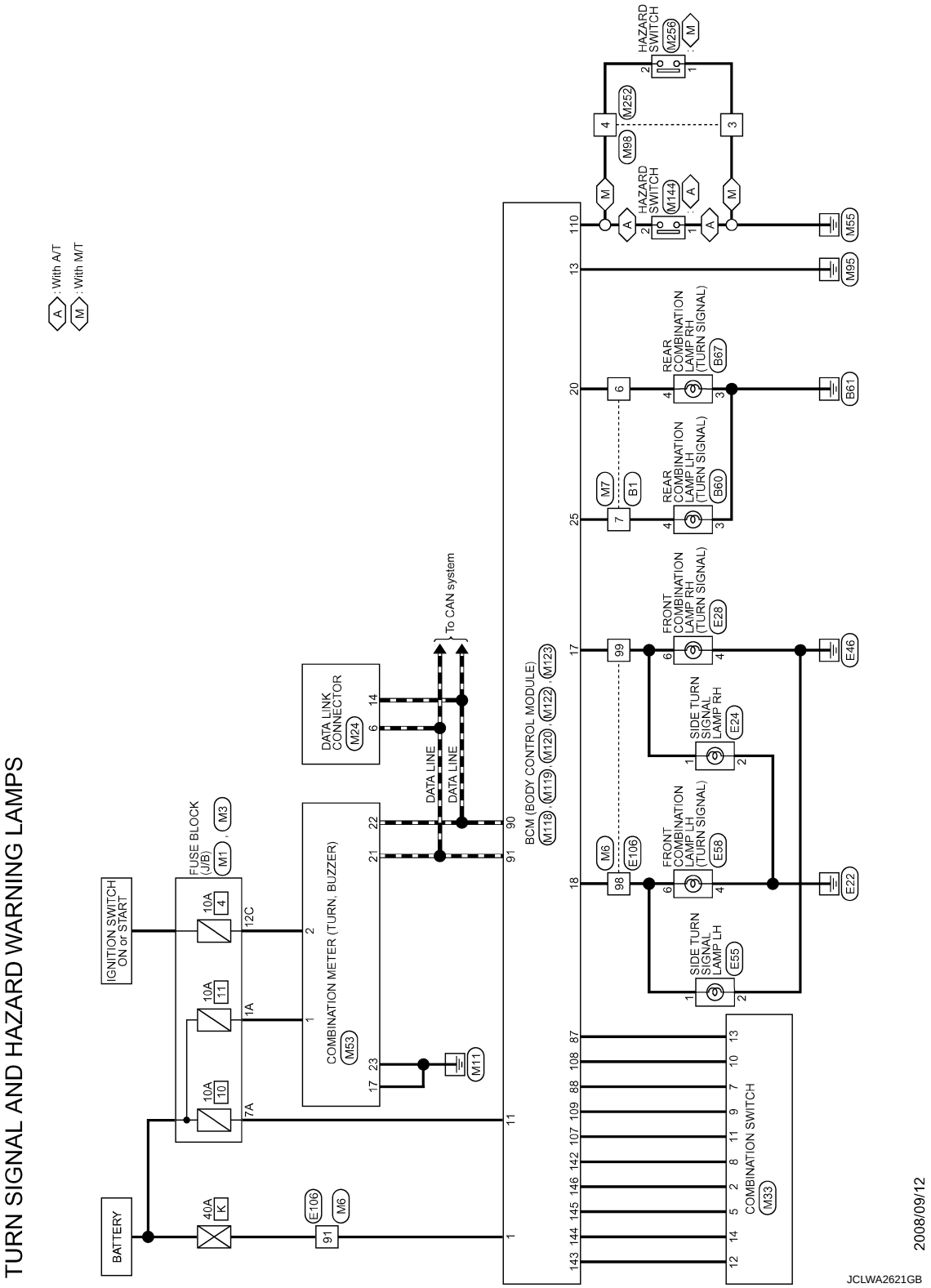

LICENSE PLATE LAMP RH
B153
LICENSE PLATE LAMP LH
B152
B151
B64
REAR COMBINATION LAMP RH
B67
TAIL
SIDE MARKER
B61
REAR COMBINATION LAMP LH
B60
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E5
E8
E6
E9
10A
59
DAYTIME RUNNING LIGHT RELAY
E13
E117
B9
105
41
12
E22
FRONT COMBINATION LAMP RH
E28
PARKING
SIDE MARKER
HEAD-LAMP
HID CONT
HIGH BEAM SOLENOID
15A
50
CPU
*: This connector is not shown in "Harness Layout".
JCLWA4459GB

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

Wiring Diagram

INFOID:0000000007621450

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

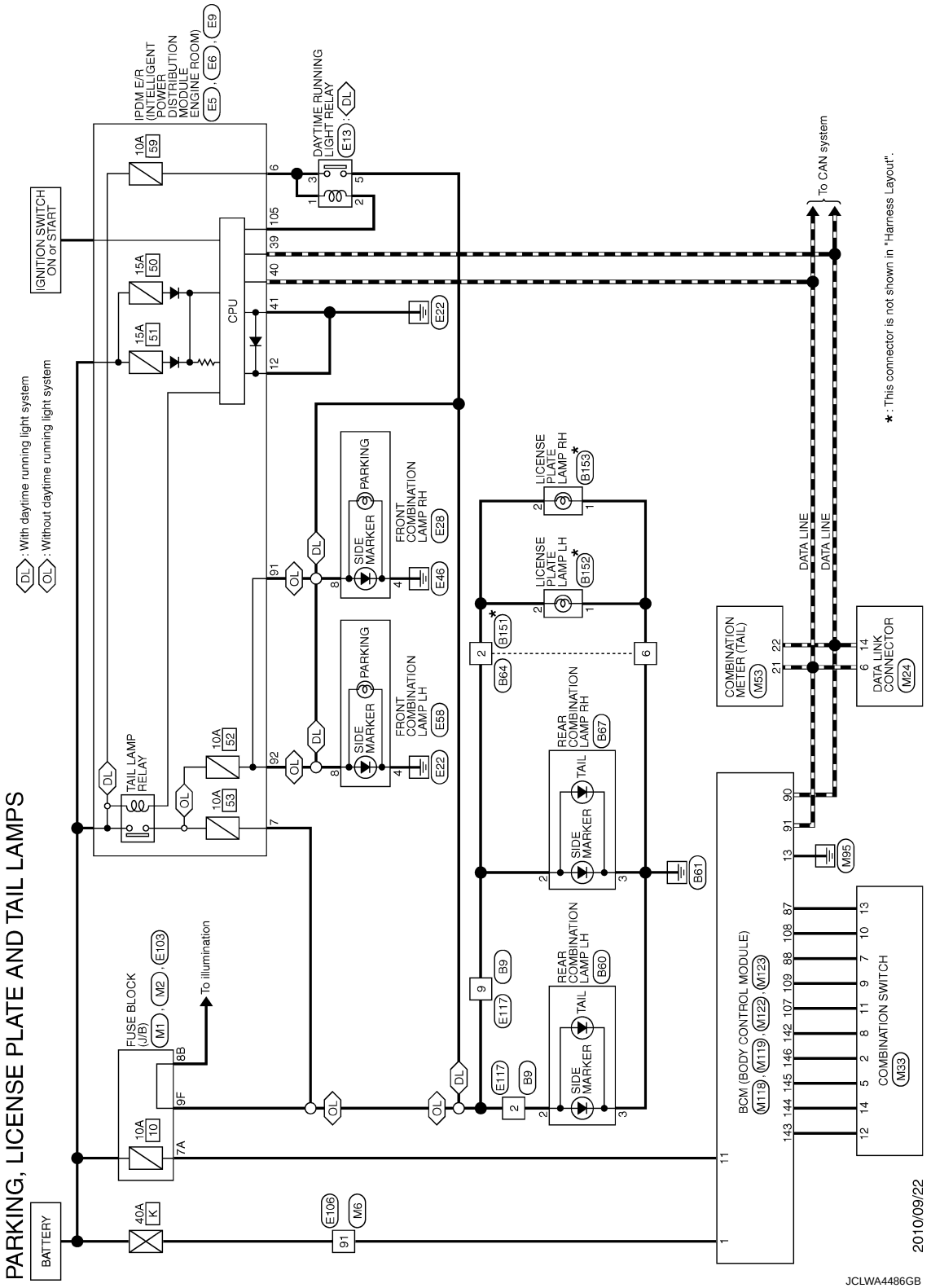


PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

Wiring Diagram

INFOID:0000000007621451

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

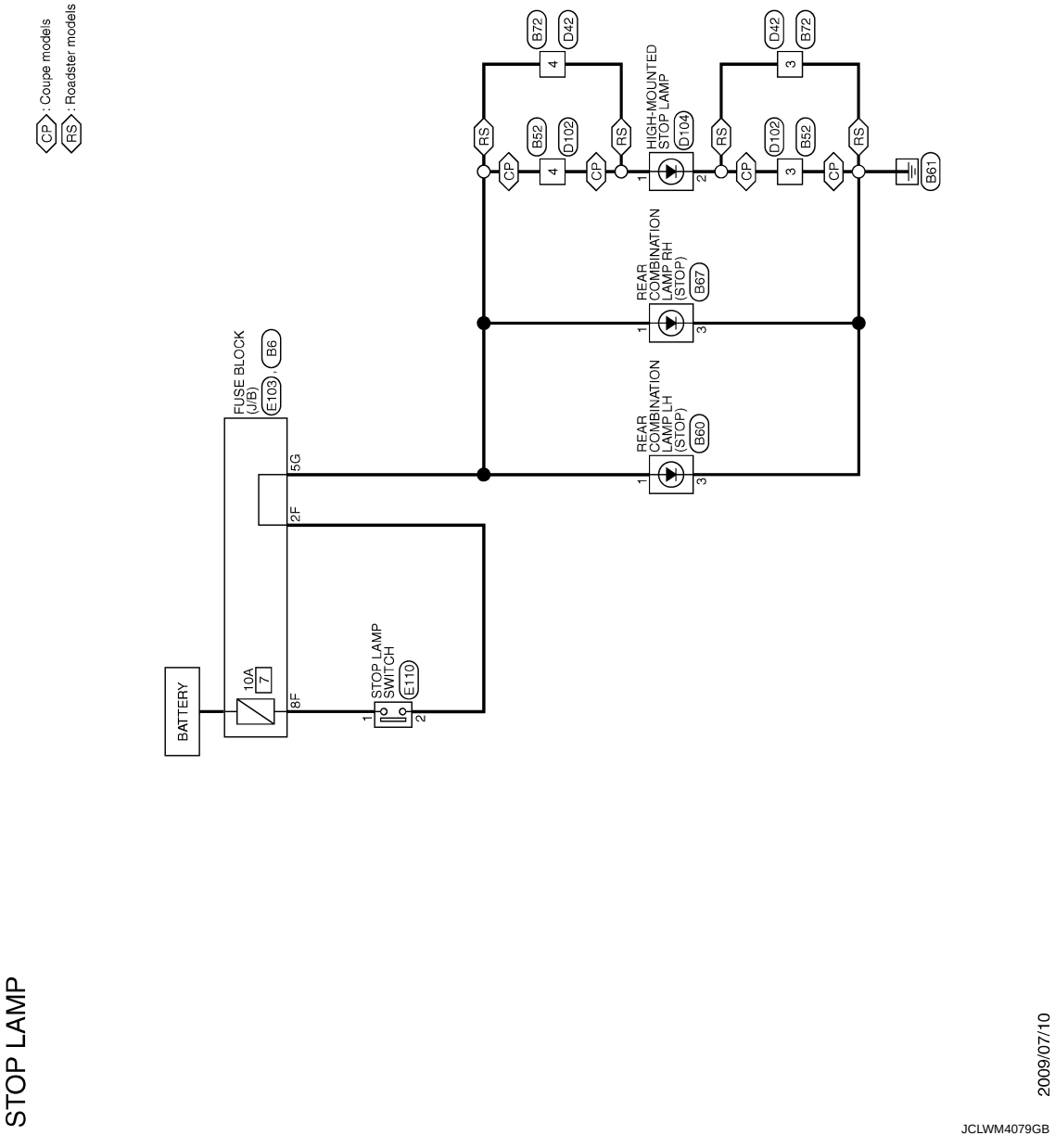


STOP LAMP

Wiring Diagram

INFOID:0000000007621452

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

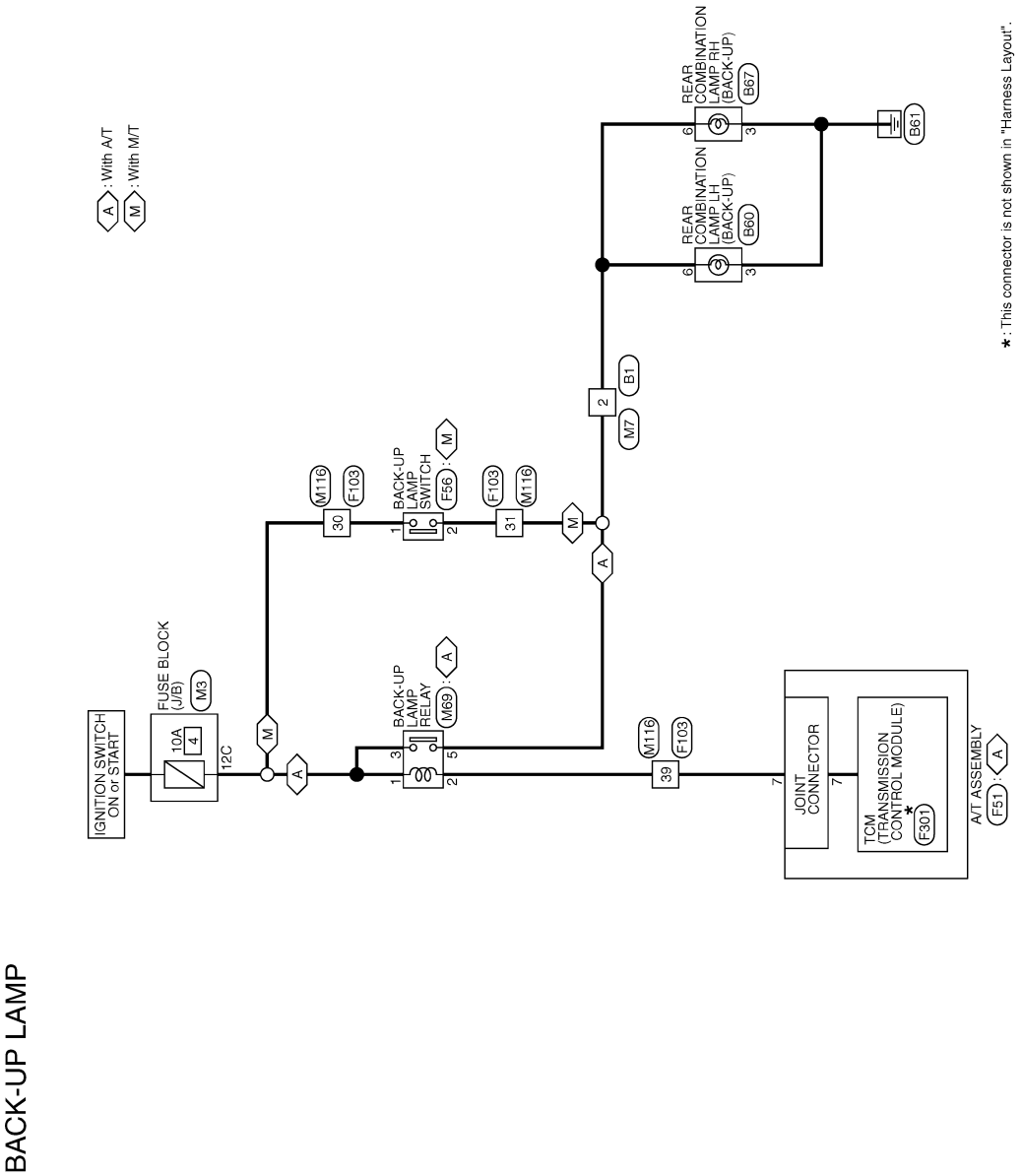


BACK-UP LAMP

Wiring Diagram

INFOID:0000000007621453

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

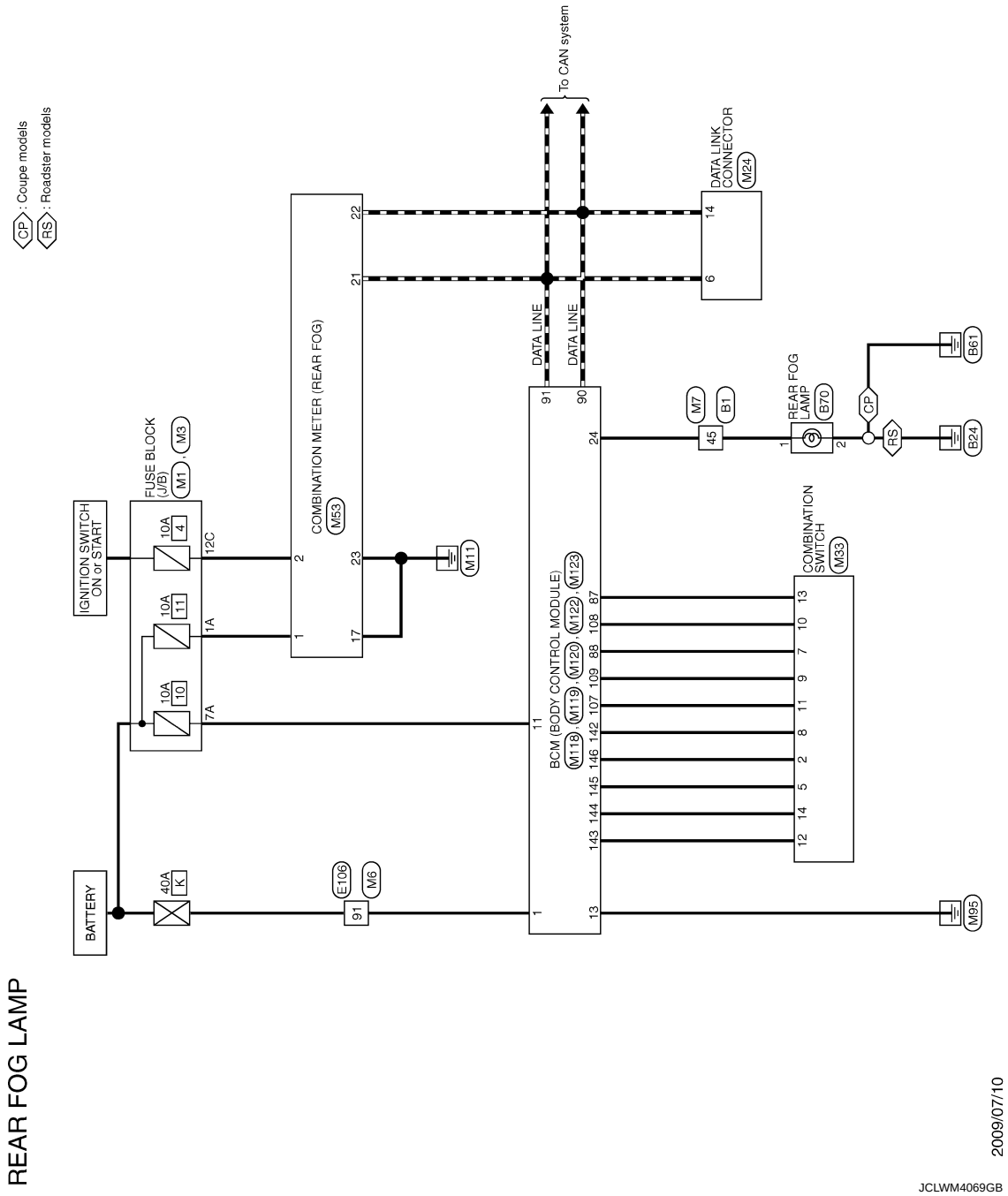


REAR FOG LAMP SYSTEM

Wiring Diagram

INFOID:0000000007621454

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".



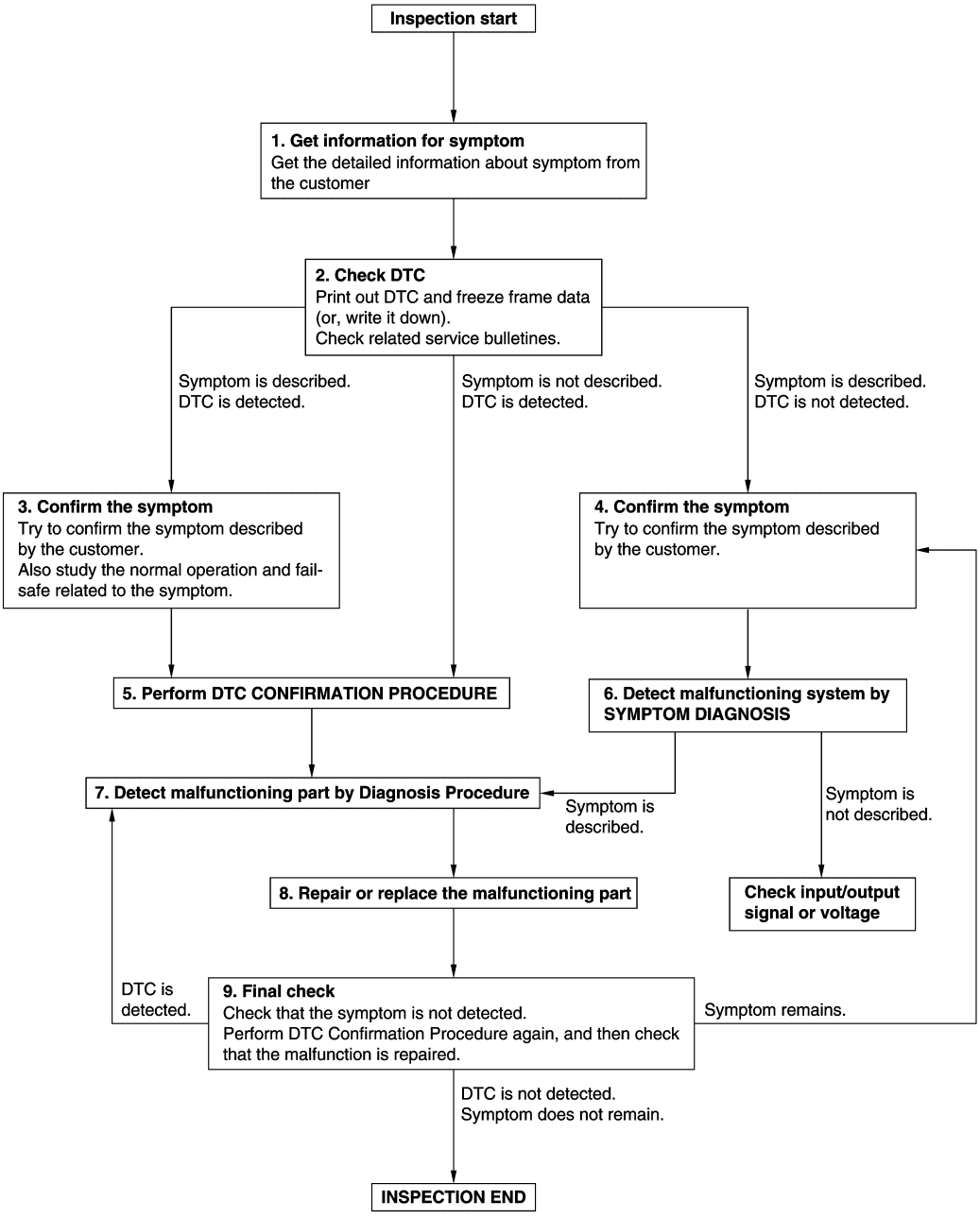
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000007621455

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-44, "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-44, "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

EXTERIOR LAMP FUSE

WITHOUT DAYTIME RUNNING LIGHT SYSTEM

WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Description

INFOID:0000000007621456

Fuse list

Unit	Location	Fuse No.	Capacity
Headlamp HI (LH)	IPDM E/R	#54	10 A
Headlamp HI (RH)	IPDM E/R	#55	10 A
Headlamp LO (LH)	IPDM E/R	#56	15 A
Headlamp LO (RH)	IPDM E/R	#57	15 A
• Parking lamp • Front side marker lamp	IPDM E/R	#52	10 A
• Tail lamp • Rear side marker lamp • License plate lamp • Each illumination	IPDM E/R	#53	10 A
Stop lamp	FUSE BLOCK (J/B)	#7	10 A
Back-up lamp	FUSE BLOCK (J/B)	#4	10 A

WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure

INFOID:0000000007621457

1.CHECK FUSE

Check that the following fuses are not fusing.

Unit	Location	Fuse No.	Capacity
Headlamp HI (LH)	IPDM E/R	#54	10 A
Headlamp HI (RH)	IPDM E/R	#55	10 A
Headlamp LO (LH)	IPDM E/R	#56	15 A
Headlamp LO (RH)	IPDM E/R	#57	15 A
• Parking lamp • Front side marker lamp	IPDM E/R	#52	10 A
• Tail lamp • Rear side marker lamp • License plate lamp • Each illumination	IPDM E/R	#53	10 A
Stop lamp	FUSE BLOCK (J/B)	#7	10 A
Back-up lamp	FUSE BLOCK (J/B)	#4	10 A

Is the fuse fusing?

YES >> Repair the applicable circuit. And then replace the fuse.
NO >> The fuse is normal.

WITH DAYTIME RUNNING LIGHT SYSTEM

WITH DAYTIME RUNNING LIGHT SYSTEM : Description

INFOID:0000000007621458

Fuse list

Unit	Location	Fuse No.	Capacity
Headlamp HI (LH)	IPDM E/R	#54	10 A
Headlamp HI (RH)	IPDM E/R	#55	10 A
Headlamp LO (LH)	IPDM E/R	#56	15 A

Unit	Location	Fuse No.	Capacity
Headlamp LO (RH)	IPDM E/R	#57	15 A
• Daytime running light relay - Parking lamp - Front side marker lamp - Tail lamp - Rear side marker lamp - License plate lamp	IPDM E/R	#59	10 A
Each illumination	IPDM E/R	#53	10 A
Stop lamp	FUSE BLOCK (J/B)	#7	10 A
Back-up lamp	FUSE BLOCK (J/B)	#4	10 A

WITH DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure

INFOID:0000000007621459

1.CHECK FUSE

Check that the following fuses are not fusing.

Unit	Location	Fuse No.	Capacity
Headlamp HI (LH)	IPDM E/R	#54	10 A
Headlamp HI (RH)	IPDM E/R	#55	10 A
Headlamp LO (LH)	IPDM E/R	#56	15 A
Headlamp LO (RH)	IPDM E/R	#57	15 A
• Daytime running light relay - Parking lamp - Front side marker lamp - Tail lamp - Rear side marker lamp - License plate lamp	IPDM E/R	#59	10 A
Each illumination	IPDM E/R	#53	10 A
Stop lamp	FUSE BLOCK (J/B)	#7	10 A
Back-up lamp	FUSE BLOCK (J/B)	#4	10 A

Is the fuse fusing?

YES >> Repair the applicable circuit. And then replace the fuse.
NO >> The fuse is normal.

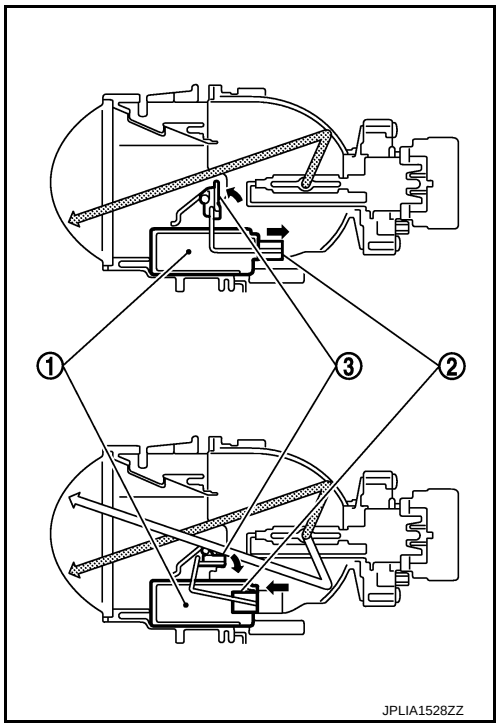
HEADLAMP (HI) CIRCUIT

Description

INFOID:0000000007621460

The high beam solenoid drives the mobile valve shade. And the mobile valve shade switches the high beam and low beam of headlamp.

- When the headlamp high relay is turned ON, magnetic force is applied to the high beam solenoid (1) by a current. The mobile valve shade (3) is switched to the high beam position through the actuator rod (2).
- When the headlamp high relay is turned OFF, the current stops. The mobile valve shade returns to the low beam position automatically.



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Component Function Check

INFOID:0000000007621461

1. CHECK HEADLAMP (HI) OPERATION

IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
2. Check that the headlamp switches to the high beam.

CONSULT ACTIVE TEST

1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the test items, check that the headlamp switches to the high beam.

Hi : Headlamp switches to the high beam.
Off : Headlamp OFF

NOTE:
HI/LO is repeated 1 second each when using the IPDM E/R auto active test.

Does the headlamp switch to the high beam?

YES >> Headlamp (HI) circuit is normal.
NO >> Refer to EXL-49, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000007621462

1. CHECK HEADLAMP (HI) OUTPUT VOLTAGE

CONSULT ACTIVE TEST

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

Terminals				Test item	Voltage (Approx.)
(+)			(–)		
IPDM E/R				EXTERNAL LAMPS	
Connector		Terminal			
RH	E8	89	Ground	Hi	Battery voltage
				Off	0 V
LH		90		Hi	Battery voltage
				Off	0 V

Is the measurement value normal?

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

2.CHECK HEADLAMP (HI) OPEN CIRCUIT

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

IPDM E/R			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E8	89	E28	7	Existed
LH		90	E58	7	

Does continuity exist?

YES >> Replace the front combination lamp.
NO >> Repair the harnesses or connectors.

3.CHECK HEADLAMP (HI) FUSE

1. Turn the 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)	IPDM E/R	#54	10 A

Is the fuse fusing?

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

4.CHECK FRONT COMBINATION LAMP (HI) SHORT CIRCUIT

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

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E8	89		Not existed
LH		90		

Does continuity exist?

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

HEADLAMP (LO) CIRCUIT

Description

INFOID:0000000007621463

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-53, "Description".

Component Function Check

INFOID:0000000007621464

1.CHECK HEADLAMP (LO) OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Start IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
2. Check that the headlamp is turned ON.

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

Lo : Headlamp ON
Off : Headlamp OFF

Is the headlamp turned ON?

YES >> Headlamp (LO) is normal.
NO >> Refer to EXL-51, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000007621465

1.CHECK HEADLAMP (LO) OUTPUT VOLTAGE

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

Terminals				Test item	Voltage (Approx.)
(+)			(–)		
IPDM E/R				EXTERNAL LAMPS	
Connector		Terminal			
RH	E8	83	Ground	Lo	Battery voltage
				Off	0 V
LH		84		Lo	Battery voltage
				Off	0 V

Is the measurement value normal?

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

2.CHECK HEADLAMP (LO) OPEN CIRCUIT

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

IPDM E/R			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E8	83	E28	5	Existed
LH		84	E58	5	

Does continuity exist?

YES >> GO TO 5.
NO >> Repair the harnesses or connectors.

3.CHECK HEADLAMP (LO) FUSE

1. Turn the 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)	IPDM E/R	#56	15 A

Is the fuse fusing?

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

4.CHECK HEADLAMP (LO) SHORT CIRCUIT

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

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E8	83		Not existed
LH		84		

Does continuity exist?

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

5.CHECK HEADLAMP GROUND OPEN CIRCUIT

Check continuity between the front combination lamp harness connector and the ground.

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E28	3		Existed
LH	E58	3		

Does continuity exist?

YES >> Perform the xenon headlamp diagnosis. Refer to EXL-53, "Description".
NO >> Repair the harnesses or connectors.

XENON HEADLAMP

Description

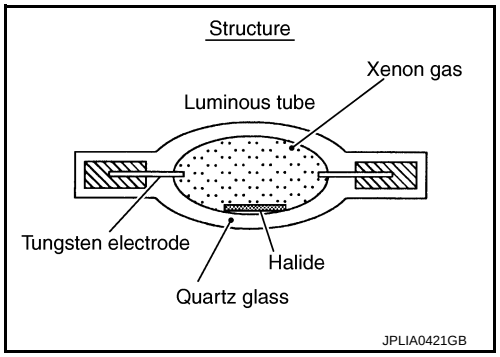
INFOID:0000000007621466

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 light switch.**
- **Never work with wet hands.**

CAUTION:

- **Never perform HID control unit circuit diagnosis with a circuit tester or an equivalent.**
- **Temporarily install the headlamp on the vehicle. Connect the battery to the connector (vehicle side) when checking ON/OFF status.**
- **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.

Diagnosis Procedure

INFOID:0000000007621467

1. CHECK XENON BULB

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

Is the headlamp turned ON?

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

2. CHECK HID CONTROL UNIT

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

Is the headlamp turned ON?

YES >> Replace HID control unit.
NO >> GO TO 3.

3. CHECK XENON HEADLAMP HOUSING ASSEMBLY

Install the normal xenon headlamp housing assembly to the applicable headlamp. Check that the xenon headlamp is turned ON.

Is the headlamp turned ON?

YES >> Replace the front combination lamp. (Xenon headlamp housing voltage converter malfunctions.)
NO >> Xenon headlamp is normal. Check the headlamp control system.

DAYTIME RUNNING LIGHT RELAY CIRCUIT

Component Function Check

INFOID:0000000007621468

1.CHECK DAYTIME RUNNING LIGHT OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
2. Check that the parking lamp and tail lamp are turned ON.

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

TAIL : Parking lamp and tail lamp ON
Off : Parking lamp and tail lamp OFF

Are parking lamp and tail lamp turned ON?

YES >> Daytime running light relay circuit is normal.
NO >> Refer to EXL-55, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000007621469

1.CHECK DAYTIME RUNNING LIGHT RELAY FUSE

Check that the following fuse is not fusing.

Unit	Location	Fuse No.	Capacity
Daytime running light relay	IPDM E/R	#59	10 A

Is the fuse fusing?

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

2.CHECK DAYTIME RUNNING LIGHT RELAY POWER SUPPLY

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

Terminals			Voltage (Approx.)
(+)		(–)	
Daytime running light relay		Ground	
Connector	Terminal		
E13	1		Battery voltage
	3		

Is the measurement value normal?

YES >> GO TO 3.
NO >> Repair harnesses or connectors.

3.CHECK DAYTIME RUNNING LIGHT RELAY

Check the daytime running light relay. Refer to EXL-56, "Component Inspection".

Is the daytime running light relay normal?

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

4.CHECK DAYTIME RUNNING LIGHT RELAY CONTROL SIGNAL OUTPUT

CONSULT ACTIVE TEST
1. Turn the ignition switch OFF.
2. Install the daytime running light relay.

3. Turn the ignition switch ON.
4. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
5. With operating the test item, check voltage between the IPDM E/R harness connector and the ground.

Terminals			Test item	Voltage (Approx.)
(+)		(–)		
IPDM E/R		Ground	EXTERNAL LAMPS	
Connector	Terminal			
E9	105		TAIL	0 V
			Off	Battery voltage

Is the measurement value normal?

YES >> Check the parking lamp circuit. Refer to EXL-60, "WITH DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure".
Fixed at 0 V >> GO TO 5.
Fixed at battery voltage >>Replace IPDM E/R.

5.CHECK DAYTIME RUNNING LIGHT RELAY CONTROL SIGNAL OPEN CIRCUIT

1. Remove the daytime running light relay.
2. Disconnect IPDM E/R harness connector.
3. Check continuity between the IPDM E/R harness connector and the daytime running light relay harness connector.

IPDM E/R		Daytime running light relay		Continuity
Connector	Terminal	Connector	Terminal	
E9	105	E13	2	Existed

Does continuity exist?

YES >> GO TO 6.
NO >> Repair the harnesses or connectors.

6.CHECK DAYTIME RUNNING LIGHT RELAY CONTROL SIGNAL SHORT CIRCUIT

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E9	105		Not existed

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> Replace IPDM E/R.

Component Inspection

INFOID:0000000007621470

1.CHECK DAYTIME RUNNING LIGHT RELAY EXCITATION COIL SIDE

1. Turn the ignition switch OFF.
2. Remove the daytime running light relay.
3. Check continuity of the daytime running light relay excitation coil side.

Daytime running light relay		Continuity
Terminal		
1	2	Existed

Does continuity exist?

YES >> GO TO 2.
NO >> Replace the daytime running light relay.

2.CHECK DAYTIME RUNNING LIGHT RELAY CONTACT SIDE

1. Apply battery voltage to the daytime running light relay between the terminals 1 and 2.
2. Check continuity of the daytime running light relay.

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

Does continuity exist?

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

PARKING LAMP CIRCUIT
WITHOUT DAYTIME RUNNING LIGHT SYSTEM
WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Component Function Check

INFOID:0000000007621471

1.CHECK PARKING LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
2. Check that the parking lamp is turned ON.

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 parking lamp turned ON?

YES >> Parking lamp circuit is normal.
NO >> Refer to EXL-58, "WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure".

WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure

INFOID:0000000007621472

1.CHECK PARKING LAMP FUSE

1. Turn the 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 fuse fusing?

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

2.CHECK PARKING LAMP SHORT CIRCUIT

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

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E9	91		Not existed
LH		92		

Does continuity exist?

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

3.CHECK PARKING LAMP BULB AND FRONT SIDE MARKER LAMP

Check the applicable lamp bulb.

Is the bulb normal?

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

4.CHECK PARKING LAMP OUTPUT VOLTAGE

CONSULT ACTIVE TEST
1. Disconnect the front combination lamp connector.

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

Terminals				Test item	Voltage (Approx.)
(+)			(–)		
IPDM E/R				EXTERNAL LAMPS	
Connector		Terminal			
RH	E9	91	Ground	TAIL	Battery voltage
				Off	0 V
LH		92		TAIL	Battery voltage
				Off	0 V

Is the measurement value normal?

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

5.CHECK PARKING LAMP OPEN CIRCUIT

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

IPDM E/R			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E9	91	E28	8	Existed
LH		92	E58	8	

Does continuity exist?

YES >> GO TO 6.
NO >> Repair the harnesses or connectors.

6.CHECK PARKING LAMP GROUND OPEN CIRCUIT

Check continuity between the front combination lamp harness connector and the ground.

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E28	4		Existed
LH	E58	4		

Does continuity exist?

YES >> Replace the front combination lamp.
NO >> Repair the harnesses or connectors.

WITH DAYTIME RUNNING LIGHT SYSTEM

WITH DAYTIME RUNNING LIGHT SYSTEM : Component Function Check

INFOID:0000000007621473

NOTE:
Check the daytime running light relay circuit first if the parking lamp, tail lamp, license plate lamp and side marker lamp are not turned ON. Refer to EXL-55, "Component Function Check".

1.CHECK PARKING LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
2. Check that the parking lamp is turned ON.

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 parking lamp turned ON?

YES >> Parking lamp circuit is normal.
NO >> Refer to EXL-60, "WITH DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure".

WITH DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure

INFOID:0000000007621474

1.CHECK PARKING LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

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

2.CHECK PARKING LAMP OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Remove the daytime running light relay.
3. Disconnect the front combination lamp connector.
4. Check continuity between the daytime running light relay harness connector and the front combination lamp harness connector.

Daytime running light relay			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E13	5	E28	8	Existed
LH			E58	8	

Does continuity exist?

YES >> GO TO 3.
NO >> Repair the harnesses or connectors.

3.CHECK PARKING LAMP SHORT CIRCUIT

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

Daytime running light relay		Ground	Continuity
Connector	Terminal		
E13	5		Not existed

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> GO TO 4.

4.CHECK PARKING LAMP GROUND OPEN CIRCUIT

Check continuity between the front combination lamp harness connector and the ground.

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E28	4		Existed
LH	E58	4		

Does continuity exist?

YES >> Replace the front combination lamp.
NO >> Repair the harnesses or connectors.

TURN SIGNAL LAMP CIRCUIT

Description

INFOID:0000000007621475

BCM performs the high flasher operation (fail-safe) if any bulb or harness of the turn signal lamp circuit is open.

NOTE:

Turn signal lamp blinks at normal speed when using the hazard warning lamp.

Component Function Check

INFOID:0000000007621476

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 lamp blinks.

LH : Turn signal lamp LH blinking

RH : Turn signal lamp RH blinking

Off : The turn signal lamp OFF

Does the turn signal lamp blink?

YES >> Turn signal lamp circuit is normal.

NO >> Refer to EXL-61, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000007621477

1.CHECK TURN SIGNAL LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

YES >> GO TO 2.

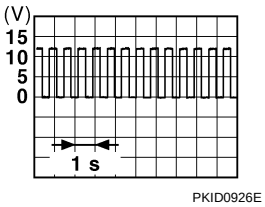
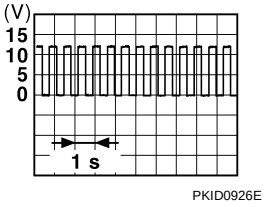
NO >> Replace the bulb.

2.CHECK TURN SIGNAL LAMP OUTPUT VOLTAGE

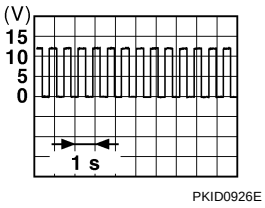
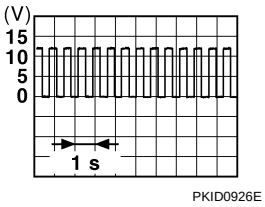
CONSULT ACTIVE TEST

1. Turn the ignition switch OFF.
2. Disconnect the front combination lamp connector, side turn signal lamp connector or the rear combination lamp connector.
3. Turn the ignition switch ON.
4. Select “FLASHER” of BCM (FLASHER) active test item.
5. With operating the turn signal switch, check the voltage between the BCM harness connector and the ground.

Front/side

Terminals (+) BCM Connector		Terminal	(–)	Test item	Voltage (Approx.)
				FLASHER	
RH	M119	17	Ground	RH	 PKID0926E
				Off	0 V
LH		18		LH	 PKID0926E
				Off	0 V

Rear

Terminals (+) BCM Connector		Terminal	(–)	Test item	Voltage (Approx.)
				FLASHER	
RH	M120	20	Ground	RH	 PKID0926E
				Off	0 V
LH		25		LH	 PKID0926E
				Off	0 V

Is the measurement value normal?

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

3. CHECK TURN SIGNAL LAMP OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect BCM connector.
3. Check the continuity between the BCM harness connector and the front combination lamp, side turn signal lamp or rear combination lamp harness connector.

Front turn signal lamp

BCM			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	M119	17	E28	6	Existed
LH		18	E58	6	

Side turn signal lamp

BCM			Side turn signal lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	M119	17	E24	1	Existed
LH		18	E55	1	

Rear turn signal lamp

BCM			Rear combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	M120	20	B67	4	Existed
LH		25	B60	4	

Does continuity exist?

YES >> GO TO 4.
NO >> Repair the harnesses or connectors.

4. CHECK TURN SIGNAL LAMP SHORT CIRCUIT

Check continuity between the BCM harness connector and the ground.

Front/side

BCM			Ground	Continuity
Connector		Terminal		
RH	M119	17		Not existed
LH		18		

Rear

BCM			Ground	Continuity
Connector		Terminal		
RH	M120	20		Not existed
LH		25		

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> GO TO 5.

5. CHECK TURN SIGNAL LAMP GROUND OPEN CIRCUIT

Check the continuity between the front combination lamp, side turn signal lamp or rear combination lamp and the ground.

Front turn signal lamp

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E28	4		Existed
LH	E58	4		

Side turn signal lamp

Side turn signal lamp			Ground	Continuity
Connector		Terminal		
RH	E24	2		Existed
LH	E55	2		

Rear turn signal lamp

Rear combination lamp			Ground	Continuity
Connector		Terminal		
RH	B67	3		Existed
LH	B60	3		

Does continuity exist?

YES >> Replace the front combination lamp, side turn signal lamp or rear combination lamp.
NO >> Repair the harnesses or connectors.

OPTICAL SENSOR

Description

INFOID:0000000007621478

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

Component Function Check

INFOID:0000000007621479

1.CHECK OPTICAL SENSOR SIGNAL BY CONSULT

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

Monitor item	Condition		Voltage (Approx.)
OPTICAL SENSOR	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 item status normal?

YES >> Optical sensor is normal.
NO >> Refer to EXL-65, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000007621480

1.CHECK OPTICAL SENSOR POWER SUPPLY INPUT

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

Terminals			Voltage (Approx.)
(+)		(–)	
Optical sensor		Ground	
Connector	Terminal		
M94	1		5 V

Is the measurement value normal?

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

2.CHECK OPTICAL SENSOR GROUND INPUT

Check the voltage between the optical sensor harness connector and the ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Optical sensor		Ground	
Connector	Terminal		
M94	3		0 V

Is the measurement value normal?

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

3.CHECK OPTICAL SENSOR SIGNAL OUTPUT

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

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
Optical sensor		Ground	Optical sensor	
Connector	Terminal			
M94	2		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 measurement value normal?

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

4. CHECK OPTICAL SENSOR OPEN CIRCUIT

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

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M94	1	M123	138	Existed

Does continuity exist?

YES >> GO TO 5.
NO >> Repair the harnesses or connectors.

5. CHECK OPTICAL SENSOR SHORT CIRCUIT

Check the continuity between the optical sensor harness connector and the ground.

Optical sensor		Ground	Continuity
Connector	Terminal		
M94	1		Not existed

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> Replace BCM.

6. CHECK OPTICAL SENSOR GROUND OPEN CIRCUIT

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

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M94	3	M123	137	Existed

Does continuity exist?

YES >> Replace BCM.
NO >> Repair the harnesses or connectors.

7. CHECK OPTICAL SENSOR SIGNAL OPEN CIRCUIT

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

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M94	2	M123	113	Existed

Does continuity exist?

YES >> GO TO 8.
NO >> Repair the harnesses or connectors.

8. CHECK OPTICAL SENSOR SHORT CIRCUIT

Check the continuity between the optical sensor harness connector and the ground.

Optical sensor		Ground	Continuity
Connector	Terminal		
M94	2		Not existed

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> Replace BCM.

HAZARD SWITCH

Component Function Check

INFOID:0000000007621481

1.CHECK HAZARD SWITCH SIGNAL BY CONSULT

CONSULT DATA MONITOR
1. Turn the 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 item status normal?

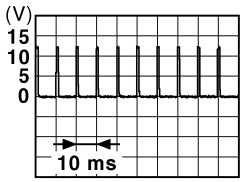
YES >> Hazard switch circuit is normal.
NO >> Refer to EXL-68, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000007621482

1.CHECK HAZARD SWITCH SIGNAL INPUT

With operating the hazard switch, check the voltage between the BCM harness connector and the ground.

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
BCM			Hazard switch	
Connector	Terminal			
M122	110	Ground	ON	0 V
			OFF	

JPMIA0012GB

Is the measurement value normal?

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

2.CHECK HAZARD SWITCH SIGNAL OPEN CIRCUIT

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

Hazard switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M144	2	M122	110	Existed

Does continuity exist?

YES >> GO TO 3.
NO >> Repair the harnesses or connectors.

3.CHECK HAZARD SWITCH SIGNAL SHORT CIRCUIT

Check continuity between the hazard switch harness connector and the ground.

Hazard switch		Ground	Continuity
Connector	Terminal		
M144	2		Not existed

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> GO TO 4.

4. CHECK HAZARD SWITCH GROUND OPEN CIRCUIT

Check continuity between the hazard switch harness connector and the ground.

Hazard switch		Ground	Continuity
Connector	Terminal		
M144	1		Existed

Does continuity exist?

YES >> Replace the hazard switch.
NO >> Repair the harnesses or connectors.

TAIL LAMP CIRCUIT
WITHOUT DAYTIME RUNNING LIGHT SYSTEM
WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Component Function Check

INFOID:0000000007621483

1.CHECK TAIL LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
2. Check that the tail lamp is turned ON.

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 tail lamp turned ON?

YES >> Tail lamp circuit is normal.
NO >> Refer to EXL-70, "WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure".

WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure

INFOID:0000000007621484

1.CHECK TAIL LAMP FUSE

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

Unit	Location	Fuse No.	Capacity
• Tail lamp • Rear side marker lamp • License plate lamp	IPDM E/R	#53	10 A

Is the fuse fusing?

YES >> Repair the malfunctioning part before replacing the fuse.
NO >> GO TO 2.

2.CHECK TAIL LAMP OUTPUT VOLTAGE

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

Terminals			Test item	Voltage (Approx.)
(+)		(–)		
IPDM E/R		Ground	EXTERNAL LAMPS	
Connector	Terminal			
E5	7		TAIL	Battery voltage
			Off	0 V

Is the measurement value normal?

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

3.CHECK TAIL LAMP OPEN CIRCUIT

1. Turn the ignition switch OFF.

2. Disconnect IPDM E/R connector.
3. Check continuity between the IPDM E/R harness connector and the rear combination lamp harness connector.

IPDM E/R			Rear combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E5	7	B67	2	Existed
LH			B60	2	

Does continuity exist?

YES >> GO TO 4.
NO >> Repair the harnesses or connectors.

4.CHECK TAIL LAMP GROUND OPEN CIRCUIT

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

Rear combination lamp			Ground	Continuity
Connector		Terminal		
RH	B67	3		Existed
LH	B60	3		

Does continuity exist?

YES >> Replace the rear combination lamp.
NO >> Repair the harnesses or connectors.

WITH DAYTIME RUNNING LIGHT SYSTEM

WITH DAYTIME RUNNING LIGHT SYSTEM : Component Function Check

INFOID:0000000007621485

NOTE:
Check the daytime running light relay circuit first if the parking lamp, tail lamp, license plate lamp and side marker lamp are not turned ON. Refer to EXL-55, "Component Function Check".

1.CHECK TAIL LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
2. Check that the tail lamp is turned ON.

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 tail lamp turned ON?

YES >> Tail lamp circuit is normal.
NO >> Refer to EXL-71, "WITH DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure".

WITH DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure

INFOID:0000000007621486

1.CHECK TAIL LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

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

2.CHECK TAIL LAMP OPEN CIRCUIT

1. Turn the ignition switch OFF.

2. Remove the daytime running light relay.
3. Disconnect the rear combination lamp connector.
4. Check continuity between the daytime running light relay harness connector and the rear combination lamp harness connector.

Daytime running light relay			Rear combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E13	5	B67	2	Existed
LH			B60	2	

Does continuity exist?

YES >> GO TO 3.
NO >> Repair the harnesses or connectors.

3. CHECK TAIL LAMP GROUND OPEN CIRCUIT

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

Rear combination lamp			Ground	Continuity
Connector		Terminal		
RH	B67	3		Existed
LH	B60	3		

Does continuity exist?

YES >> Replace the rear combination lamp.
NO >> Repair the harnesses or connectors.

LICENSE PLATE LAMP CIRCUIT
WITHOUT DAYTIME RUNNING LIGHT SYSTEM
WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Component Function Check

INFOID:0000000007621487

NOTE:
Check the tail lamp circuit if the tail lamp and the license plate lamp are not turned ON.

1. CHECK LICENSE PLATE LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
2. Check that the license plate lamp is turned ON.

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 license plate lamp turned ON?

YES >> License plate lamp circuit is normal.
NO >> Refer to EXL-73, "WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure".

WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure

INFOID:0000000007621488

1. CHECK LICENSE PLATE LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

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

2. CHECK LICENSE PLATE LAMP OPEN CIRCUIT

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

IPDM E/R			License plate lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E5	7	B153	2	Existed
LH			B152	2	

Does continuity exist?

YES >> GO TO 3.
NO >> Repair the harnesses or connectors.

3. CHECK LICENSE PLATE LAMP GROUND OPEN CIRCUIT

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

License plate lamp			Ground	Continuity
Connector		Terminal		
RH	B153	1		Existed
LH	B152	1		

Does continuity exist?

YES >> Replace the license plate lamp.

NO >> Repair the harnesses or connectors.

WITH DAYTIME RUNNING LIGHT SYSTEM

WITH DAYTIME RUNNING LIGHT SYSTEM : Component Function Check

INFOID:0000000007621489

NOTE:
Check the daytime running light relay circuit first if the parking lamp, tail lamp, license plate lamp and side marker lamp are not turned ON. Refer to EXL-55, "Component Function Check".

1.CHECK LICENSE PLATE LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
2. Check that the license plate lamp is turned ON.

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 license plate lamp turned ON?

YES >> License plate lamp circuit is normal.
NO >> Refer to EXL-74, "WITH DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure".

WITH DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure

INFOID:0000000007621490

1.CHECK LICENSE PLATE LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

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

2.CHECK LICENSE PLATE LAMP OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Remove the daytime running light relay.
3. Disconnect the license plate lamp connector.
4. Check continuity between the daytime running light relay harness connector and the license plate lamp harness connector.

Daytime running light relay			License plate lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E13	5	B153	2	Existed
LH			B152	2	

Does continuity exist?

YES >> GO TO 3.
NO >> Repair the harnesses or connectors.

3.CHECK LICENSE PLATE LAMP GROUND OPEN CIRCUIT

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

License plate lamp			Ground	Continuity
Connector		Terminal		
RH	B153	1		Existed
LH	B152	1		

Does continuity exist?

YES >> Replace the license plate lamp.
NO >> Repair the harnesses or connectors.

REAR FOG LAMP CIRCUIT

Component Function Check

INFOID:0000000007621491

1.CHECK REAR FOG LAMP OPERATION

CONSULT ACTIVE TEST
1. Select “RR FOG LAMP” of BCM (HEAD LAMP) active test item.
2. With operating the test items, check that the rear fog lamp is turned ON.

On : Rear fog lamp ON
Off : Rear fog lamp OFF

Is rear fog lamp turned ON?

YES >> Rear fog lamp circuit is normal.
NO >> Refer to EXL-76, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000007621492

1.CHECK REAR FOG LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

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

2.CHECK REAR FOG LAMP OUTPUT VOLTAGE

CONSULT ACTIVE TEST
1. Turn the ignition switch OFF.
2. Disconnect the rear fog lamp connector.
3. Turn the ignition switch ON.
4. Select “RR FOG LAMP” of BCM (HEAD LAMP) active test item.
5. With operating the test items, check voltage between BCM harness connector and the ground.

Terminals			Test item	Voltage (Approx.)
(+)		(–)		
BCM		Ground	RR FOG LAMP	
Connector	Terminal			
M120	24		On	Battery voltage
			Off	0 V

Is the measurement value normal?

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

3.CHECK REAR FOG LAMP OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect BCM connector.
3. Check continuity between BCM harness connector and rear fog lamp harness connector.

BCM		Rear fog lamp		Continuity
Connector	Terminal	Connector	Terminal	
M120	24	B70	1	Existed

Does continuity exist?

YES >> GO TO 4.
NO >> Repair the harnesses or connectors.

4.CHECK REAR FOG LAMP SHORT CIRCUIT

Check for continuity between BCM harness connector and the ground.

BCM		Ground	Continuity
Connector	Terminal		
M120	24		Not existed

Does continuity exist?

YES >> GO TO 5.
NO >> Repair the harnesses or connectors.

5.CHECK REAR FOG LAMP GROUND OPEN CIRCUIT

Check for continuity between rear fog lamp harness connector and the ground.

Rear fog lamp		Ground	Continuity
Connector	Terminal		
B70	2		Existed

Does continuity exist?

YES >> Replace the rear fog lamp.
NO >> Repair the harnesses or connectors.

SYMPTOM DIAGNOSIS

EXTERIOR LIGHTING SYSTEM SYMPTOMS WITHOUT DAYTIME RUNNING LIGHT SYSTEM

WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Symptom Table

INFOID:0000000007621493

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 does not switch to the high beam.	One side	• Fuse • Harness between IPDM E/R and the front combination lamp • Front combination lamp (High beam solenoid) • IPDM E/R	Headlamp (HI) circuit Refer to EXL-49.
	Both sides	**Symptom diagnosis** “BOTH SIDE HEADLAMPS DO NOT SWITCH TO HIGH BEAM” Refer to EXL-83.	
High beam indicator lamp is not turned ON. (Headlamp switches to the high beam.)		Combination meter	• Combination meter Data monitor “HI-BEAM IND” • BCM (HEAD LAMP) Active test “HEADLAMP”
Headlamp does not switch to the low beam.	One side	Front combination lamp (High beam solenoid)	—
	Both sides	• Combination switch • Harness between the combination switch and BCM • BCM	Combination switch Refer to BCS-88.
		High beam request signal • BCM • IPDM E/R	IPDM E/R Data monitor “HL HI REQ”
		IPDM E/R	—
Headlamp is not turned ON.	One side	• Fuse • Xenon bulb • Harness between IPDM E/R and the front combination lamp • Front combination lamp (xenon headlamp) • IPDM E/R	Headlamp (LO) circuit Refer to EXL-51.
	Both sides	**Symptom diagnosis** “BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON” Refer to EXL-84.	
Headlamp is not turned OFF.	When the ignition switch is turned ON		
	The ignition switch is turned OFF (After activating the battery saver).	IPDM E/R	—
Headlamp is not turned ON/OFF with the lighting switch AUTO.		• Combination switch • Harness between the combination switch and BCM • BCM	Combination switch Refer to BCS-88.
		• Optical sensor • Harness between the optical sensor and BCM • BCM	Optical sensor Refer to EXL-65.

Symptom		Possible cause	Inspection item
Parking lamp is not turned ON.		• Fuse • Parking lamp bulb • Harness between IPDM E/R and the front combination lamp • Front combination lamp • IPDM E/R	Parking lamp circuit Refer to EXL-58.
Tail lamp is not turned ON.		• Harness between IPDM E/R and the rear combination lamp • Rear combination lamp	Tail lamp circuit Refer to EXL-70.
License plate lamp is not turned ON.		• Harness between IPDM E/R and the license plate lamp • License plate lamp	License plate lamp circuit Refer to EXL-73.
Tail lamp and license plate lamp are not turned ON.		• Fuse • Harness between IPDM E/R and the rear combination lamp • IPDM E/R	Tail lamp circuit Refer to EXL-70.
• Parking lamp, tail lamp and license plate lamp are not turned ON. • Parking lamp, tail lamp and license plate lamp are not turned OFF. (Each illumination is turned ON/OFF.)		**Symptom diagnosis** “PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON” Refer to EXL-85.	
Turn signal lamp does not blink.	Indicator lamp is normal. (The applicable side performs the high flasher activation.)	• Harness between BCM and each turn signal lamp • Turn signal lamp bulb	Turn signal lamp circuit Refer to EXL-61.
	Indicator lamp is included	• Combination switch • Harness between the combination switch and BCM • BCM	Combination switch Refer to BCS-88.
Turn signal indicator lamp does not blink. (The turn signal indicator lamp is normal.)	One side	Combination meter	—
	Both sides (Always)	• Turn signal indicator lamp signal - Combination meter - BCM • Combination meter	• Combination meter Data monitor “TURN IND” • BCM (FLASHER) Active test “FLASHER”
	Both sides (Only when activating the hazard warning lamp with the ignition switch OFF)	• Combination meter power supply and the ground circuit • Combination meter	Combination meter Power supply and the ground circuit Refer to MWI-45.
• Hazard warning lamp does not activate. • Hazard warning lamp continues activating. (Turn signal is normal.)		• Hazard switch • Harness between the hazard switch and BCM • BCM	Hazard switch Refer to EXL-68.
Rear fog lamp is not turned ON.	Rear fog lamp indicator lamp is normal.	• Harness between BCM and rear fog lamp • Rear fog lamp bulb • BCM	Rear fog lamp circuit Refer to EXL-76.
	Rear fog lamp indicator lamp is included.	• Rear fog lamp indicator lamp is included. • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-88.

WITH DAYTIME RUNNING LIGHT SYSTEM

WITH DAYTIME RUNNING LIGHT SYSTEM : Symptom Table

INFOID:0000000007621494

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 does not switch to the high beam.	One side	• Fuse • Harness between IPDM E/R and the front combination lamp • Front combination lamp (High beam solenoid) • IPDM E/R	Headlamp (HI) circuit Refer to EXL-49.
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS DO NOT SWITCH TO HIGH BEAM" Refer to EXL-83.	
High beam indicator lamp is not turned ON. (The headlamp switches to the high beam.)		Combination meter	• Combination meter Data monitor "HI-BEAM IND" • BCM (HEAD LAMP) Active test "HEADLAMP"
Headlamp does not switch to the low beam.	One side	Front combination lamp (High beam solenoid)	—
	Both sides	• Combination switch • Harness between the combination switch and BCM • BCM	Combination switch Refer to BCS-88.
		High beam request signal • BCM • IPDM E/R	IPDM E/R Data monitor "HL HI REQ"
		IPDM E/R	—
Headlamp is not turned ON.	One side	• Fuse • Xenon bulb • Harness between IPDM E/R and the front combination lamp • Front combination lamp (xenon headlamp) • IPDM E/R	Headlamp (LO) circuit Refer to EXL-51.
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON" Refer to EXL-84.	
Headlamp is not turned OFF.	When ignition switch is turned ON		
	Ignition switch is turned OFF.	IPDM E/R	—
Headlamp is not turned ON/OFF with the lighting switch AUTO.		• Combination switch • Harness between the combination switch and BCM • BCM	Combination switch Refer to BCS-88.
		• Optical sensor • Harness between the optical sensor and BCM • BCM	Optical sensor Refer to EXL-65.
Parking lamp is not turned ON.		• Parking lamp bulb • Harness between daytime running light relay and the front combination lamp • Front combination lamp	Parking lamp circuit Refer to EXL-59.
Tail lamp is not turned ON.		• Harness between daytime running light relay and the rear combination lamp • Rear combination lamp	Tail lamp circuit Refer to EXL-71.

Symptom		Possible cause	Inspection item
License plate lamp is not turned ON.		• Harness between daytime running light relay and the license plate lamp • License plate lamp	License plate lamp circuit Refer to EXL-74.
Tail lamp and license plate lamp are not turned ON.		• Fuse • Harness between daytime running light relay and the rear combination lamp	Tail lamp circuit Refer to EXL-71.
• Parking lamp, tail lamp and license plate lamp are not turned ON. • Parking lamp, tail lamp and license plate lamp are not turned OFF. (Each illumination is turned ON/OFF.)		**Symptom diagnosis** “PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON” Refer to EXL-85.	
Tail lamp indicator lamp is not turned ON. (Parking and tail lamps are turned ON.)		Combination meter	• Combination meter Data monitor “LIGHT IND” • BCM (HEAD LAMP) Active test “TAIL LAMP”
Turn signal lamp does not blink.	Indicator lamp is normal. (The applicable side performs the high flasher activation.)	• Harness between BCM and each turn signal lamp • Turn signal lamp bulb	Turn signal lamp circuit Refer to EXL-61.
	Indicator lamp is included	• Combination switch • Harness between the combination switch and BCM • BCM	Combination switch Refer to BCS-88.
Turn signal indicator lamp does not blink. (The turn signal indicator lamp is normal.)	One side	Combination meter	—
	Both sides (Always)	• Turn signal indicator lamp signal - combination meter - BCM • Combination meter	• Combination meter Data monitor “TURN IND” • BCM (FLASHER) Active test “FLASHER”
	Both sides (Only when activating the hazard warning lamp with the ignition switch OFF.)	• Combination meter power supply and the ground circuit • Combination meter	Combination meter Power supply and the ground circuit Refer to PCS-19.
• Hazard warning lamp does not activate. • Hazard warning lamp continues activating. (Turn signal is normal.)		• Hazard switch • Harness between the hazard switch and BCM • BCM	Hazard switch Refer to EXL-68.
Rear fog lamp is not turned ON.	Rear fog lamp indicator lamp is normal.	• Harness between BCM and rear fog lamp • Rear fog lamp bulb • BCM	Rear fog lamp circuit Refer to EXL-76.
	Rear fog lamp indicator lamp is included.	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-88.
Rear fog lamp indicator lamp is not turned ON. (Rear fog lamp is turned ON.)		• Rear fog lamp status signal - Combination meter. - BCM • Combination meter	• Combination meter Data monitor “RR FOG IND” • BCM (HEAD LAMP) Active test “RR FOG LAMP”

NORMAL OPERATING CONDITION

Description

INFOID:0000000007621495

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 DO NOT SWITCH TO HIGH BEAM

Description

INFOID:0000000007621496

The headlamp (both sides) does not switch to the high beam when setting to the lighting switch HI or PASS.

Diagnosis Procedure

INFOID:0000000007621497

1.COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-88, "Symptom Table".

Is the combination switch 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
		Except for HI or PASS	Off

Is the item status normal?

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

3.HEADLAMP (HI) CIRCUIT INSPECTION

Check the headlamp (HI) circuit. Refer to EXL-49, "Description".

Is the headlamp (HI) circuit normal?

YES >> Replace IPDM E/R.
NO >> Repair or replace the malfunctioning part.

BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON

Description

INFOID:0000000007621498

The headlamps (both sides) are not turned ON in any condition.

Diagnosis Procedure

INFOID:0000000007621499

1.CHECK COMBINATION SWITCH

Check the combination switch. Refer to BCS-88, "Symptom Table".

Is the combination switch 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 item status normal?

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

3.HEADLAMP (LO) CIRCUIT INSPECTION

Check the headlamp (LO) circuit. Refer to EXL-51, "Description".

Is the headlamp (LO) circuit normal?

YES >> Replace IPDM E/R.
NO >> Repair or replace the malfunctioning part.

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

WITHOUT DAYTIME RUNNING LIGHT SYSTEM

WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Description

INFOID:0000000007621500

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

WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure

INFOID:0000000007621501

1. COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-88, "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 item status normal?

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

3. TAIL LAMP CIRCUIT INSPECTION

Check the tail lamp circuit. Refer to EXL-70, "WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Component Function Check".

Is the tail lamp circuit normal?

YES >> Replace IPDM E/R.
NO >> Repair or replace the malfunctioning part.

WITH DAYTIME RUNNING LIGHT SYSTEM

WITH DAYTIME RUNNING LIGHT SYSTEM : Description

INFOID:0000000007621502

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

WITH DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure

INFOID:0000000007621503

1. SYMPTOM CONFIRMATION

Turn the lighting switch 1ST.

Are each illumination turned ON?

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

2. COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-88, "Symptom Table".

Is the combination switch normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning part.

3. 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 item status normal?

YES >> Replace IPDM E/R.
NO >> Replace BCM.

4. DAYTIME RUNNING LIGHT RELAY CIRCUIT INSPECTION

Check the daytime running light relay circuit. Refer to EXL-55, "Component Function Check".

Is the daytime running light relay circuit normal?

YES >> Check the parking lamp circuit. Refer to EXL-60, "WITH DAYTIME RUNNING LIGHT SYSTEM : Diagnosis Procedure".
NO >> Repair or replace the malfunctioning part.

PERIODIC MAINTENANCE

HEADLAMP AIMING ADJUSTMENT

Description

INFOID:0000000007621504

PREPARATION BEFORE ADJUSTING

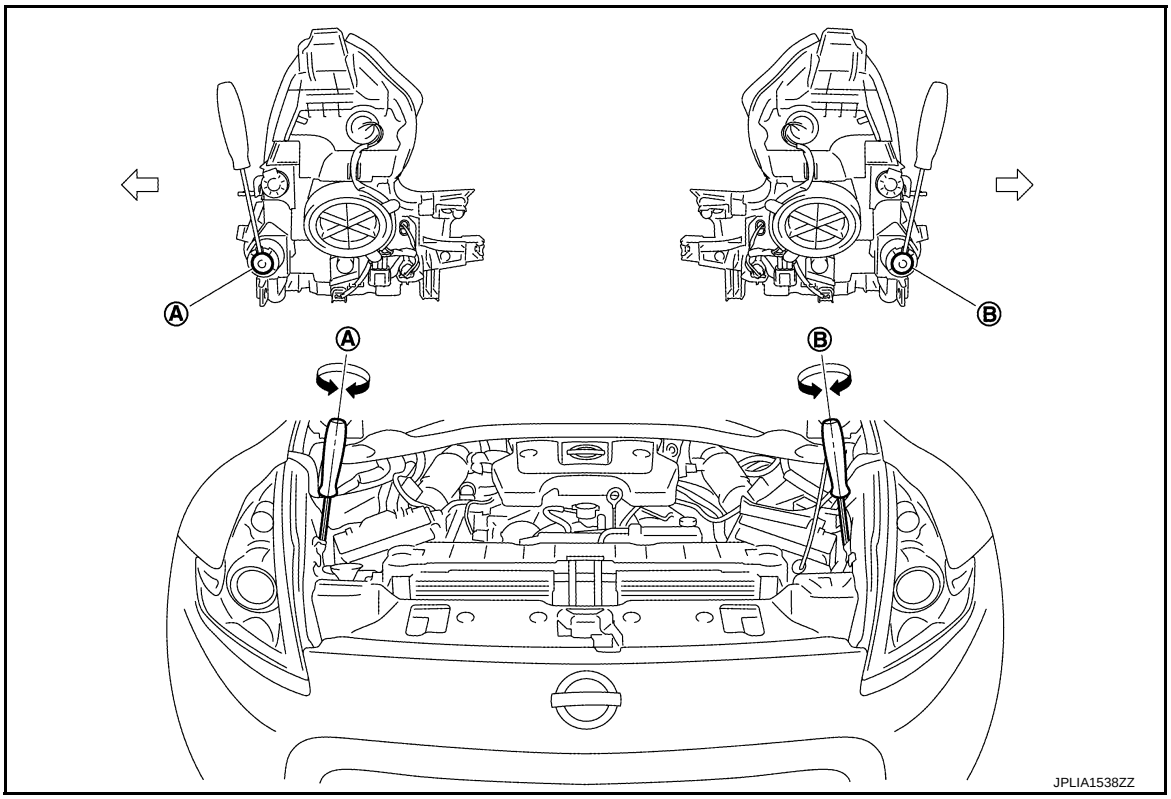
NOTE:

- 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) adjustment screw B. Headlamp (LH) adjustment screw

⇦: Vehicle center

Adjustment screw		Screw driver rotation	Facing direction
A	Headlamp (RH)	Clockwise	UP
		Counterclockwise	DOWN

Adjustment screw		Screw driver rotation	Facing direction
B	Headlamp (LH)	Clockwise	UP
		Counterclockwise	DOWN

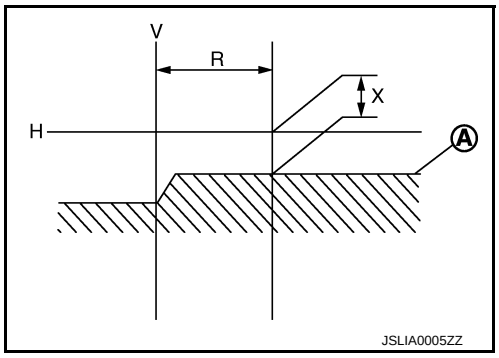
Aiming Adjustment Procedure

INFOID:0000000007621505

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

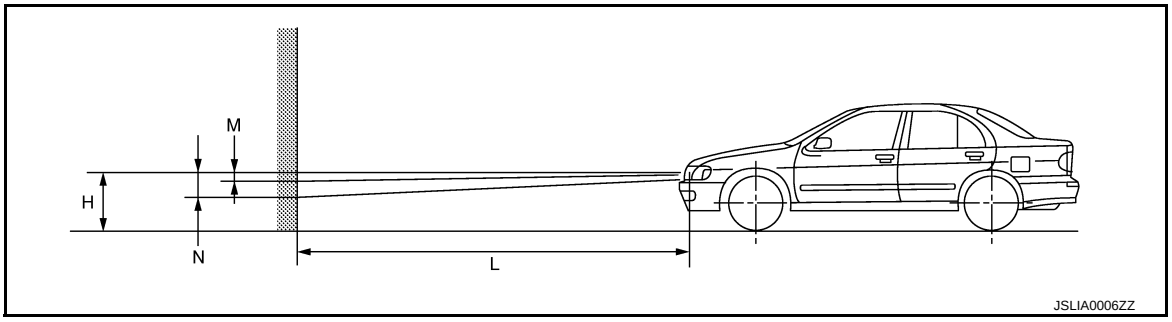


5. Adjust the cutoff line height with the aiming adjustment screw so as to enter in the adjustment range (M–N) according to the horizontal center line of headlamp (H).

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)**

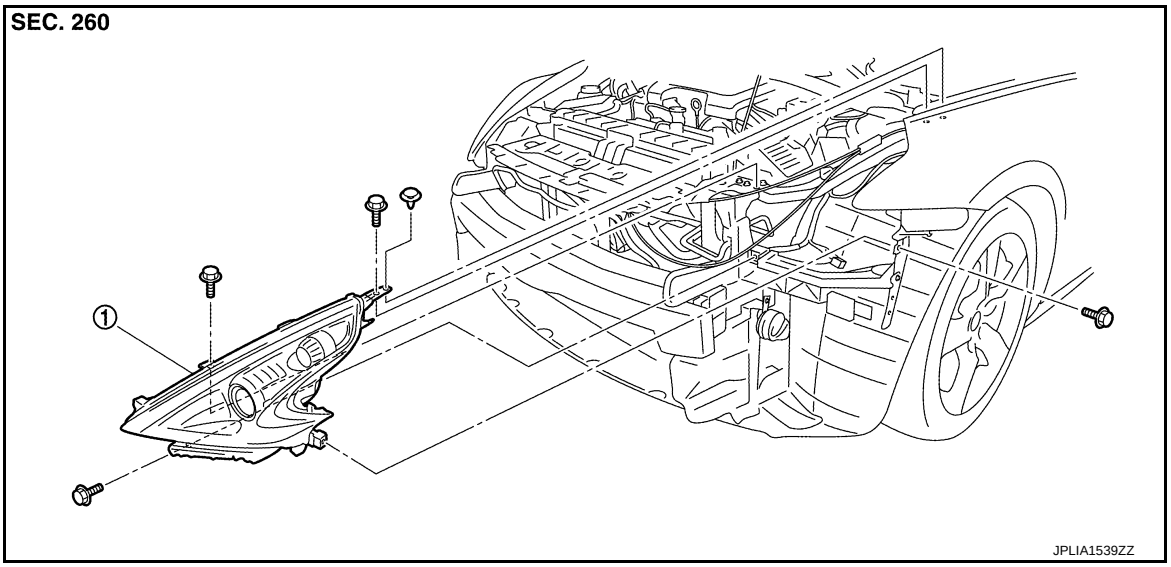
REMOVAL AND INSTALLATION

FRONT COMBINATION LAMP

Exploded View

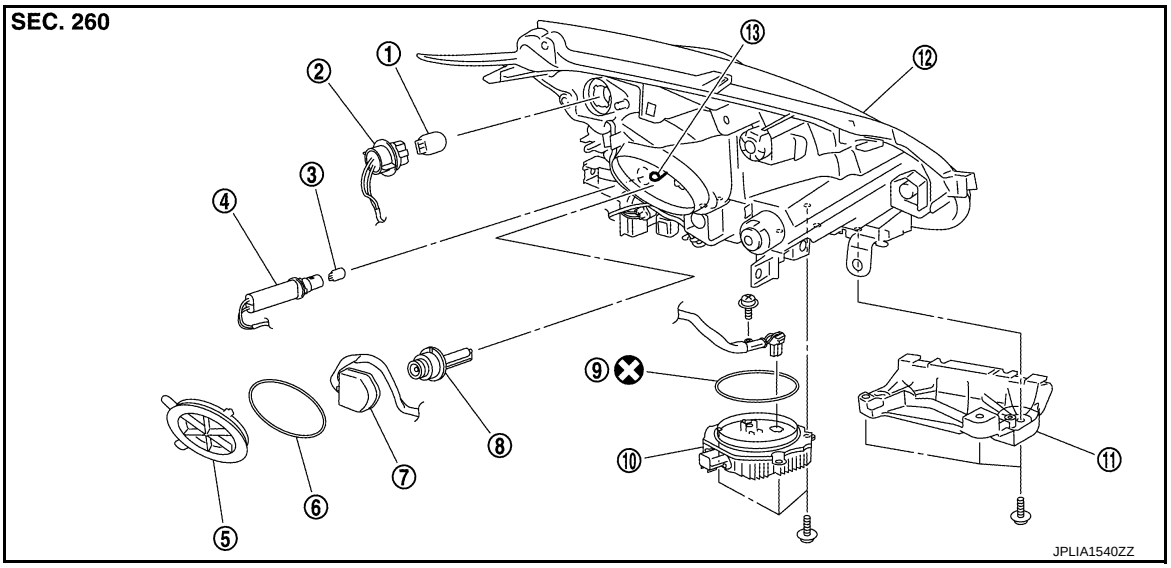
INFOID:0000000007621506

REMOVAL



1. Front combination lamp

DISASSEMBLY



1. Front turn signal lamp bulb
2. Front turn signal lamp bulb socket
3. Parking lamp bulb
4. Parking lamp bulb socket
5. Resin cap
6. Seal packing
7. Xenon bulb socket
8. Xenon bulb
9. Seal packing
10. HID control unit
11. Bumper bracket
12. Headlamp housing assembly
13. Retaining spring

Refer to GI-4, "Components" for symbols in the figure.

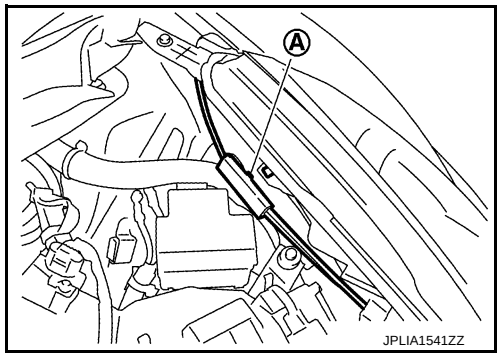
Removal and Installation

INFOID:0000000007621507

CAUTION:
Disconnect the battery negative terminal or remove the fuse.

REMOVAL

1. Remove the front bumper fascia. Refer to EXT-13, "Exploded View".
2. Remove the headlamp mounting bolts and clip.
3. Remove the holding clip (A)* and harness clip.
   *: Left side only
4. Pull out the headlamp assembly forward the vehicle.
5. Disconnect the connector before removing the headlamp housing assembly.



INSTALLATION

Install in the reverse order of removal.
NOTE:
- After installation, perform aiming adjustment. Refer to EXL-87, "Description".
- After installation, check that headlamp lighting. Refer to EXL-91, "Inspection After Installation (HID Control Unit)".

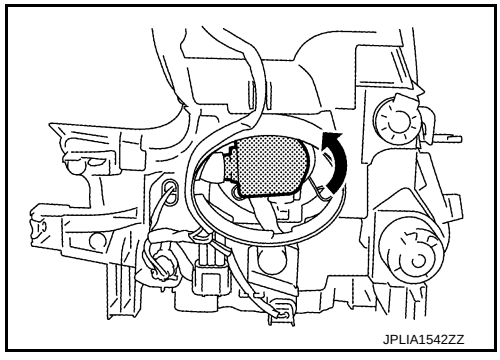
Replacement

INFOID:0000000007621508

CAUTION:
- **Disconnect the battery negative terminal or remove 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

1. Remove the fender protector. Keep a service area. Refer to EXT-25, "FENDER PROTECTOR : Exploded View".
2. Rotate the resin cap counterclockwise and unlock it.
3. Rotate the bulb socket counterclockwise and unlock it.
4. Remove the retaining spring lock. Remove the bulb from the headlamp housing assembly.
   CAUTION:
   Never break the xenon bulb ceramic tube when replacing the bulb.



PARKING LAMP BULB

1. Remove the fender protector. Keep a service area. Refer to EXT-25, "FENDER PROTECTOR : Exploded View".
2. Rotate the bulb socket counterclockwise and unlock it.
3. Remove the bulb from the bulb socket.

FRONT TURN SIGNAL LAMP BULB

1. Remove the fender protector. Keep a service area. Refer to EXT-25, "FENDER PROTECTOR : Exploded View".
2. Rotate the bulb socket counterclockwise and unlock it.
3. Remove the bulb from the bulb socket.

SIDE MARKER LAMP

Replacement integral with front combination lamp. Refer to EXL-89, "Exploded View".

Disassembly and Assembly

INFOID:0000000007621509

DISASSEMBLY

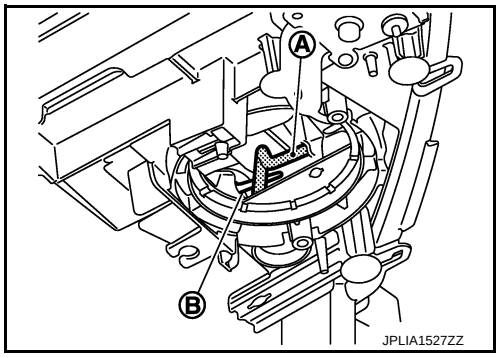
1. Rotate the resin cap counterclockwise and unlock it.
2. Rotate the xenon bulb socket counterclockwise and unlock it.
3. Remove the retaining spring lock. Remove the xenon bulb.
4. Remove the bumper bracket.
5. Remove the HID control unit installation screw.
6. Remove the screw. Disconnect the connector from HID control unit.
7. Pull out the xenon bulb socket from the headlamp housing assembly.
8. Rotate the parking lamp bulb socket counterclockwise and unlock it.
9. Remove the bulb from the parking lamp bulb socket.
10. Rotate the front turn signal lamp bulb socket counterclockwise and unlock it.
11. Remove the bulb from the front turn signal lamp bulb socket.

ASSEMBLY

Assemble in the reverse order of disassembly.

CAUTION:

- **When xenon bulb socket installation, fix xenon bulb socket harness (A) to a protruding portion (B) in a headlamp housing surely.**



- **Install HID control unit securely.**
- **After installing the bulb, install the resin cap and the bulb socket securely for watertightness.**
- **Seal packing cannot be reused.**
- **After installation, check that headlamp lighting. Refer to EXL-91, "Inspection After Installation (HID Control Unit)".**

Inspection After Installation (HID Control Unit)

INFOID:0000000007621510

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.

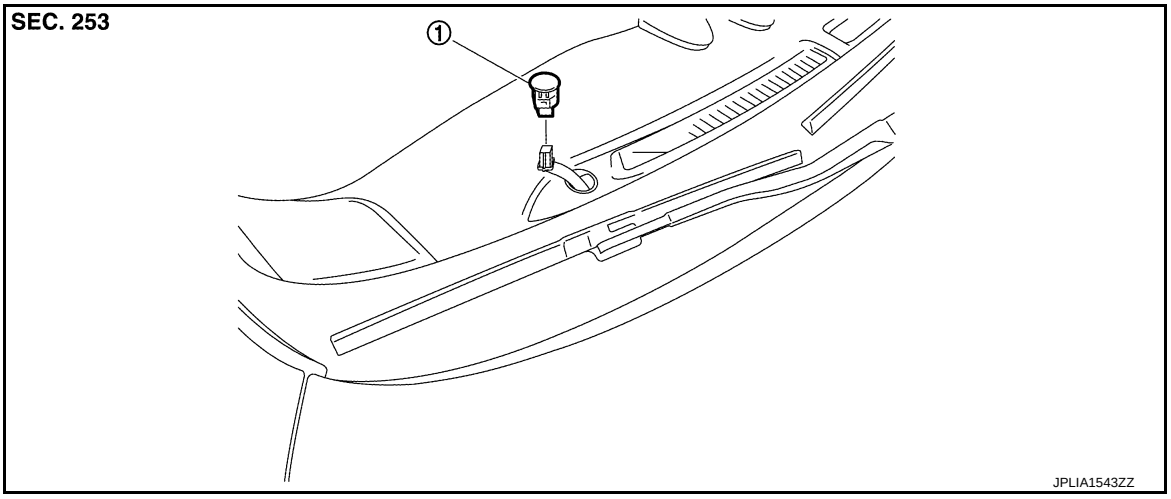
1. Xenon bulb is cold condition (turn OFF more than 10 minutes), and repetition does headlamp turned ON/OFF, check that a headlamp illuminated it surely.
2. Headlamp is turn ON until the xenon bulb becomes stable condition (for about 5 minutes) from cold condition, check that there are not on and off 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.

OPTICAL SENSOR

Exploded View

INFOID:0000000007621511



1. Optical sensor

Removal and Installation

INFOID:0000000007621512

REMOVAL

1. Insert an appropriate tool between the optical sensor and the instrument upper panel. Pull out the optical sensor upward.
2. Disconnect the connector. Remove the optical sensor.

INSTALLATION

Install in the reverse order of removal.

LIGHTING & TURN SIGNAL SWITCH

Exploded View

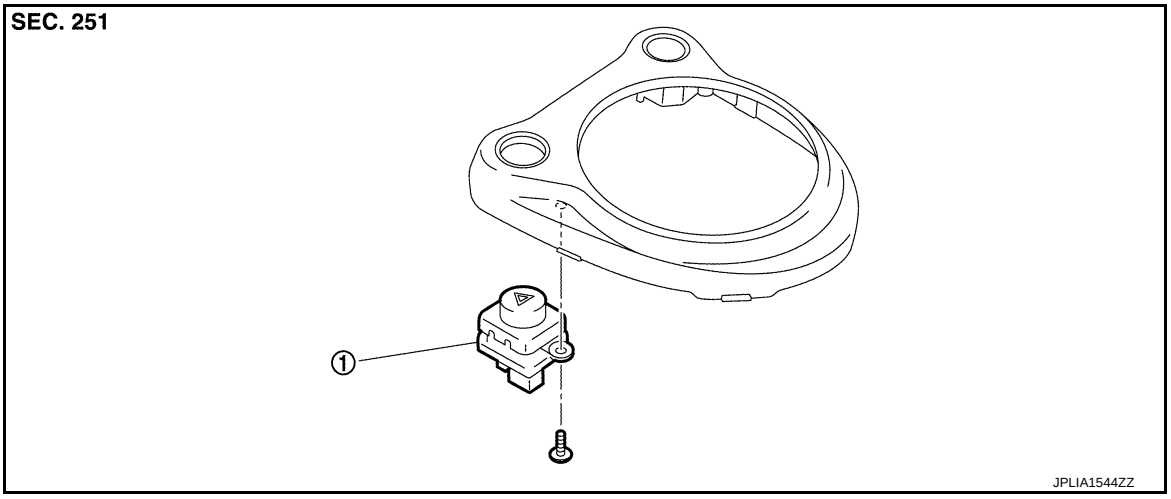
INFOID:0000000007621513

The lighting & turn switch is integrated in the combination switch. Refer to BCS-93, "Exploded View".

HAZARD SWITCH

Exploded View

INFOID:0000000007621514



1. Hazard switch

Removal and Installation

INFOID:0000000007621515

REMOVAL

1. Remove the console finisher. Refer to IP-25, "Exploded View".
2. Remove the hazard switch from the console finisher.

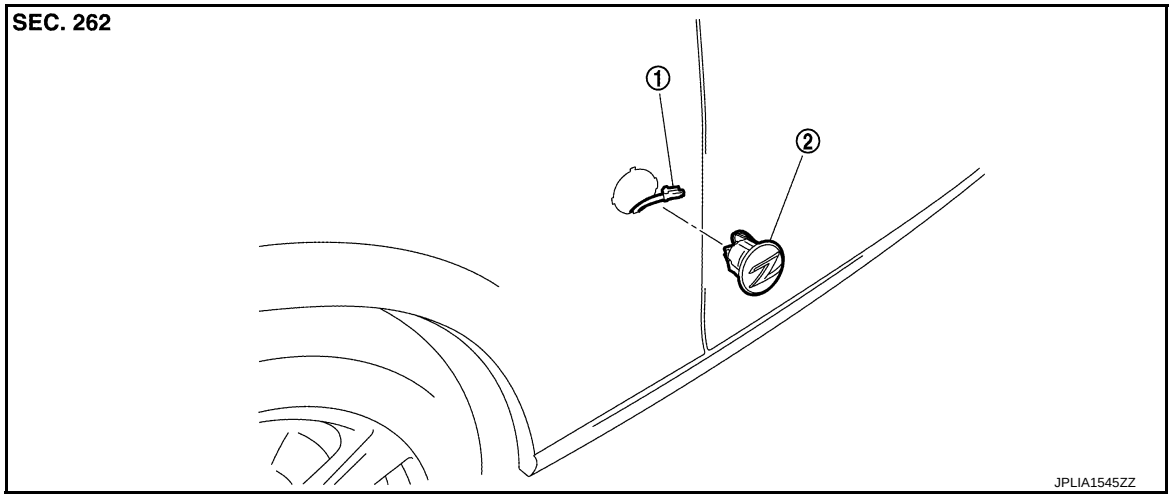
INSTALLATION

Install in the reverse order of removal.

SIDE TURN SIGNAL LAMP

Exploded View

INFOID:0000000007621516



1. Side turn signal lamp connector
2. Side turn signal lamp

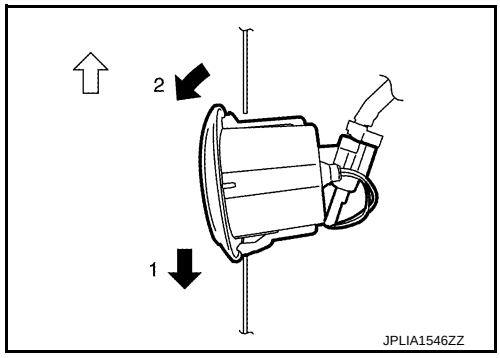
Removal and Installation

INFOID:0000000007621517

CAUTION:
Disconnect battery negative terminal or remove the fuse.

REMOVAL

1. Remove the side turn signal lamp in numerical order shown in the figure.



⇦ : Vehicle front

2. Disconnect the side turn signal lamp connector.

NOTE:
Support the vehicle-side harness of the side turn signal lamp with tape so that it does not drop inside the front fender.

INSTALLATION

1. Connect the connector.
2. Fix the pawl-side behind the side turn signal lamp housing first, then push the resin clip-side.

Replacement

INFOID:0000000007621518

SIDE TURN SIGNAL LAMP BULB

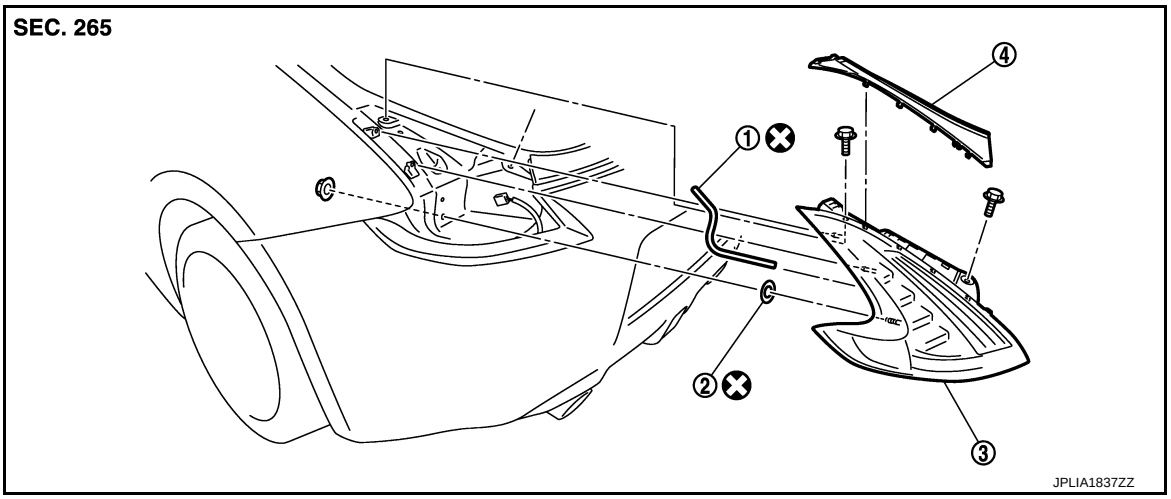
Replace the side turn signal lamp as an assembly because it cannot be disassembled.

REAR COMBINATION LAMP

Exploded View

INFOID:0000000007621519

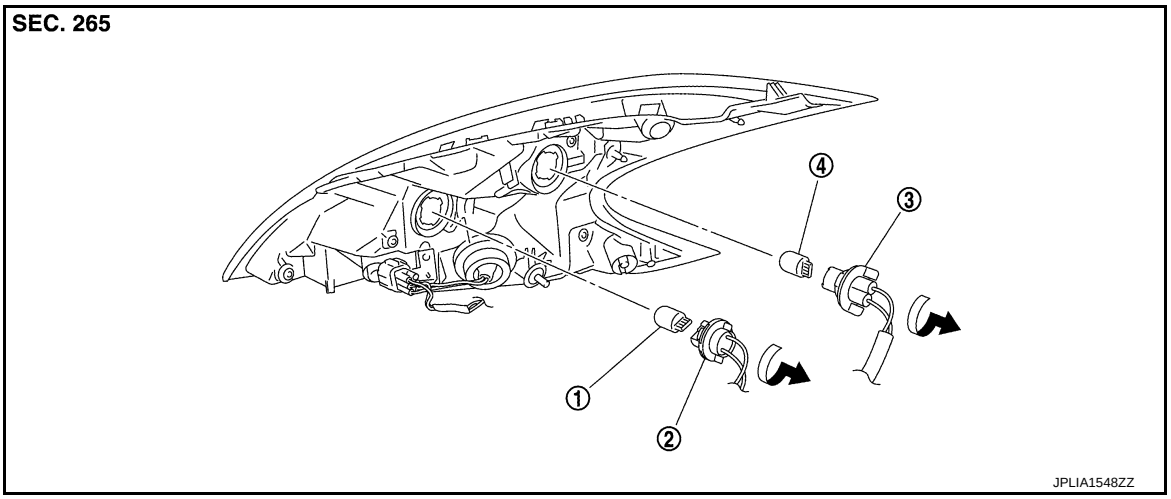
REMOVAL



1. EPT sealer
2. Seal packing
3. Rear combination lamp assembly
4. Rear combination lamp finisher

Refer to GI-4, "Components" for symbols in the figure.

DISASSEMBLY



1. Rear turn signal lamp bulb
2. Rear turn signal lamp bulb socket
3. Back-up lamp bulb socket
4. Back-up lamp

Removal and Installation

INFOID:0000000007621520

CAUTION:
Disconnect the battery negative terminal or remove the fuse.

REMOVAL

1. Remove the rear combination lamp finisher.
2. Remove the luggage side finisher upper / trunk side finisher.
   Coupe models: Refer to INT-31, "Exploded View".
   Roadster models: Refer to INT-75, "Exploded View".
3. Remove the rear combination lamp mounting nut and bolts.

4. Pull the rear combination lamp toward rear of the vehicle.
5. Disconnect the rear combination lamp connector.

INSTALLATION

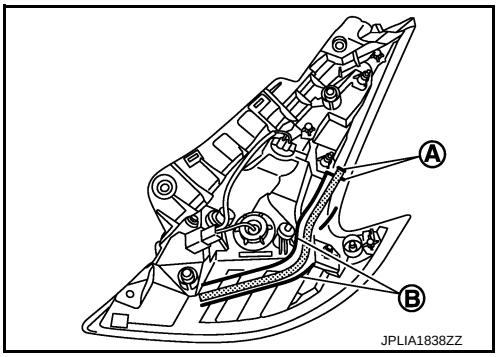
Install in the reverse order of removal.

CAUTION:

Always replace EPT sealer and seal packing with a new one, if rear combination lamp assembly isreused.

Installation EPT sealer

1. Remove the EPT sealer from rear combination lamp assembly.
2. Apply new EPT sealer within mark off line (A) surface while following the mark off line (B) as shown in the figure.



Replacement

INFOID:0000000007621521

CAUTION:

- **Disconnect the battery negative terminal or remove 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 the rear combination lamp assembly.
2. Turn the rear turn signal lamp bulb socket counterclockwise and unlock it.
3. Remove the bulb from the socket.

BACK-UP LAMP BULB

1. Remove the rear combination lamp assembly.
2. Turn the bulb socket counterclockwise and unlock it.
3. Remove the bulb from the socket.

STOP/TAIL LAMP

Replacement integral with rear combination lamp. Refer to EXL-97, "Exploded View".

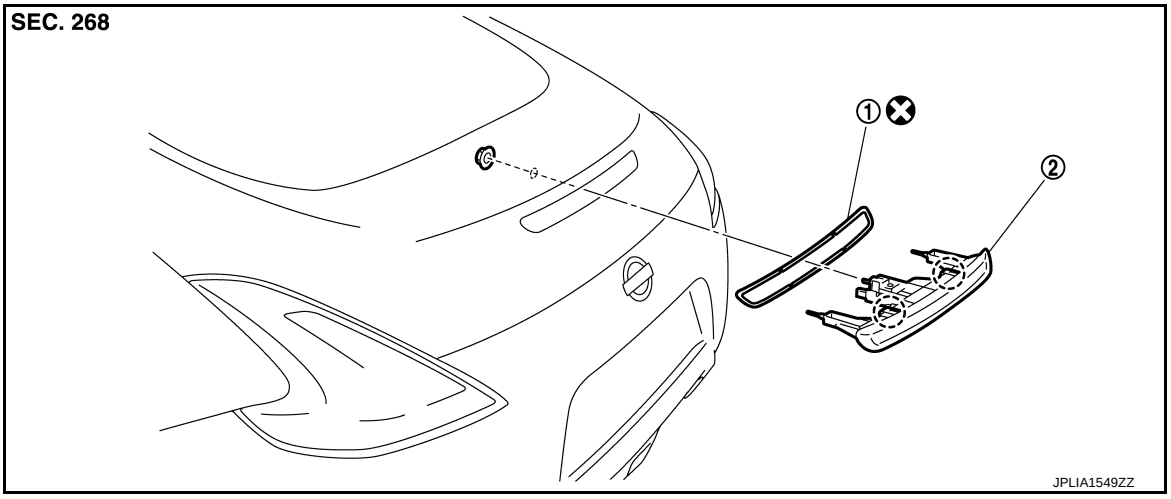
REAR SIDE MARKER LAMP

Replacement integral with rear combination lamp. Refer to EXL-97, "Exploded View".

HIGH-MOUNTED STOP LAMP

Exploded View

INFOID:0000000007621522



1. Seal packing
2. High-mounted stop lamp

: Metal clip

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

INFOID:0000000007621523

CAUTION:
- **Disconnect the battery negative terminal or remove the fuse.**
- **Wrap the tip of remover tool with a cloth to protect the body from damage.**

REMOVAL

1. Remove the back door trim / trunk lid trim.
   Coupe models: Refer to INT-33, "Exploded View".
   Roadster models: Refer to INT-79, "Exploded View".
2. Remove the high-mounted stop lamp mounting nut.
3. Disconnect the high-mounted stop lamp connector.
4. Insert any appropriate tool in high-mounted stop lamp and a gap of the back door. Remove the metal clip.
5. Remove the high-mounted stop lamp from the back door.

INSTALLATION

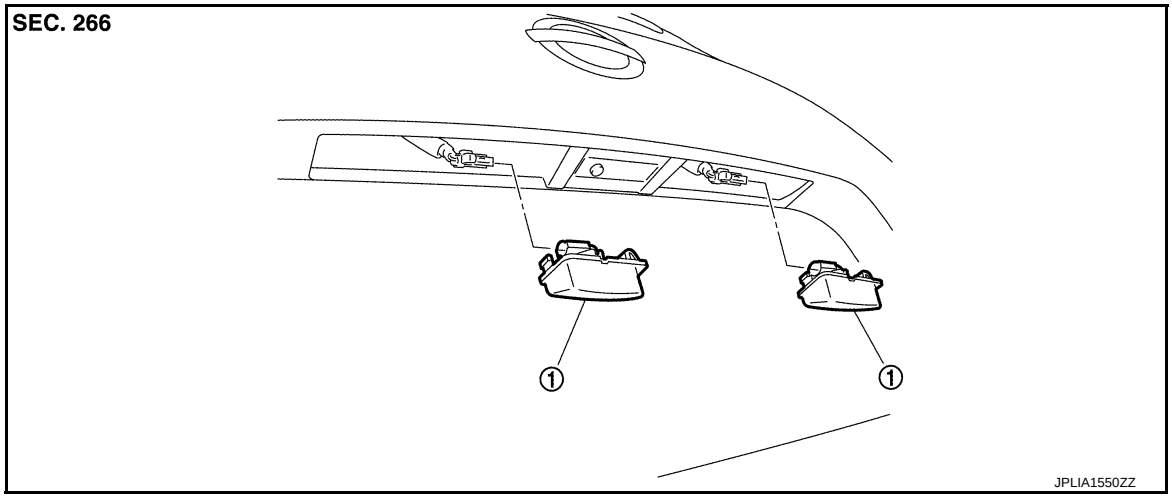
Install in the reverse order of removal.

CAUTION:
Seal packing cannot be reused.

LICENSE PLATE LAMP

Exploded View

INFOID:0000000007621524



1. License plate lamp

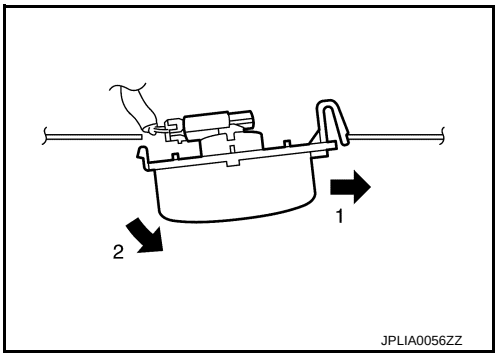
Removal and Installation

INFOID:0000000007621525

CAUTION:
Disconnect the battery negative terminal or remove the fuse.

REMOVAL

1. Remove the license plate lamp in numerical order.
2. Disconnect the license plate lamp connector.
3. Remove the license plate lamp.



INSTALLATION

1. Connect the license plate lamp connector.
2. Fix the pawl side. And then push the resin clip side.

Replacement

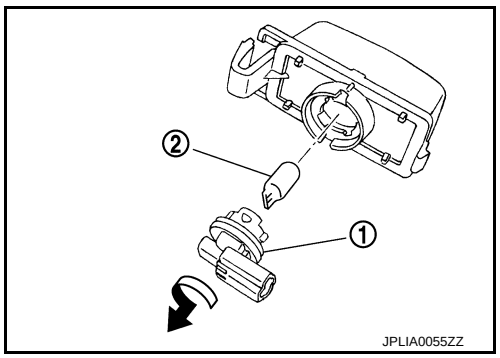
INFOID:0000000007621526

CAUTION:
- **Disconnect the battery negative terminal or remove 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 the license plate lamp.

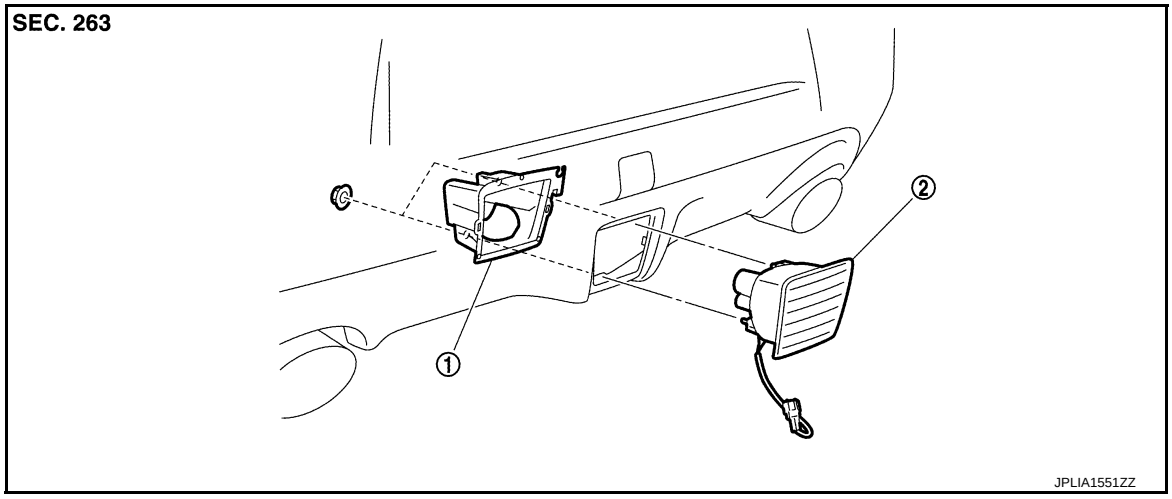
2. Turn the bulb socket (1) counterclockwise and unlock it.
3. Remove the bulb (2) from the socket.



REAR FOG LAMP

Exploded View

INFOID:0000000007621527



1. Rear fog lamp bracket
2. Rear fog lamp

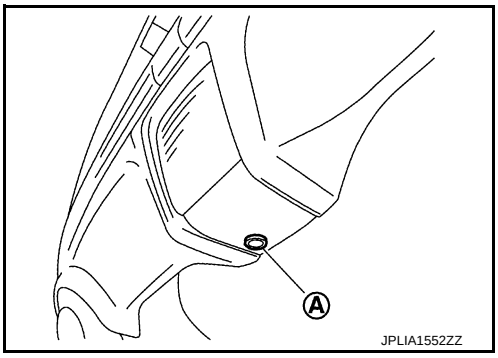
Removal and Installation

INFOID:0000000007621528

CAUTION:
Disconnect battery negative terminal or remove the fuse.

REMOVAL

1. Remove the clip (A), keep a service area.
2. Remove the rear fog lamp mounting nuts.
3. Turn the bulb socket counterclockwise and unlock it.
4. Remove the rear fog lamp from the rear fog lamp bracket.
5. Disconnect the rear fog lamp connector.
6. Remove the rear fog lamp bracket from the rear bumper fascia.



INSTALLATION
Installation is the reverse order of removal.

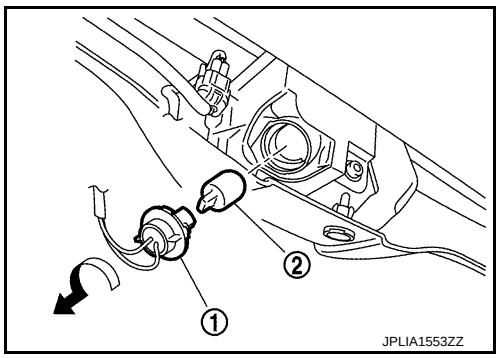
Replacement

INFOID:0000000007621529

CAUTION:
- **Disconnect the battery negative terminal or remove 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 FOG LAMP BULB

1. Turn the bulb socket (1) counterclockwise and unlock it.
2. Remove the bulb (2) from the rear fog lamp bulb socket.



SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Bulb Specifications

INFOID:0000000007621530

Item		Type	Wattage (W)
Front combination lamp	Headlamp (HI/LO)	D2S (Xenon)	35
	Front turn signal lamp	7444NA (Amber)	28/8
	Parking lamp	W5W	5
	Front side marker lamp	LED	—
Side turn signal lamp		LED	—
Rear combination lamp	Stop lamp/Tail lamp	LED	—
	Rear turn signal lamp	WY21W (Amber)	21
	Rear side marker lamp	LED	—
	Back-up lamp	W16W	16
License plate lamp		W5W	5
High-mounted stop lamp		LED	—
Rear fog lamp		W21W	21