SECTION EXL
EXTERIOR LIGHTING SYSTEM

CONTENTS

XENON TYPE

PRECAUTION

PRECAUTIONS

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

INFOID:0000000012407856

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:

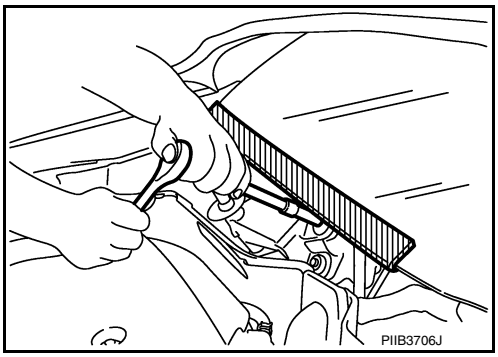
Always observe the following items for preventing accidental activation.

- **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.**

Precaution for Procedure without Cowl Top Cover

INFOID:0000000013051777

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc to prevent damage to windshield.



Precautions For Xenon Headlamp Service

INFOID:0000000012407857

WARNING:

Comply with the following warnings to prevent any serious accident.

- **Disconnect the battery cable (negative terminal) or the power supply fuse before installing, removing, or touching the xenon headlamp (bulb included). The xenon headlamp contains high-voltage generated parts.**
- **Never work with wet hands.**
- **Check the xenon headlamp ON-OFF status after assembling it to the vehicle. Never turn the xenon headlamp ON in other conditions. Connect the power supply to the vehicle-side connector.**

(Turning it ON outside the lamp case may cause fire or visual impairments.)
- **Never touch the bulb glass immediately after turning it OFF. It is extremely hot.**

CAUTION:

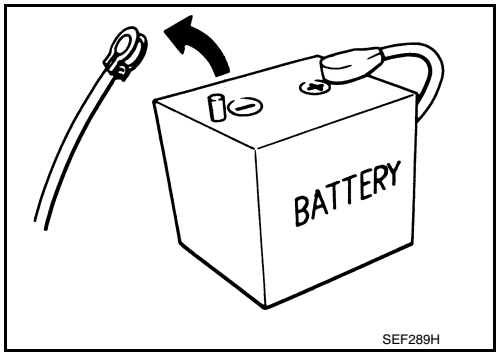
Comply with the following cautions to prevent any error and malfunction.
- **Install the xenon bulb securely. (Insufficient bulb socket installation may melt the bulb, the connector, the housing, etc. by high-voltage leakage or corona discharge.)**
- **Never perform HID circuit inspection with a tester.**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

Precautions for Removing Battery Terminal

INFOID:0000000013051778

When disconnecting the battery terminal, pay attention to the following.
- Always use a 12V battery as power source.
- Never disconnect battery terminal while engine is running.
- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
- For vehicles with the engine listed below, remove the battery terminal after a lapse of the specified time:

D4D engine	: 20 minutes	YS23DDT	: 4 minutes
HRA2DDT	: 12 minutes	YS23DDTT	: 4 minutes
K9K engine	: 4 minutes	ZD30DDTi	: 60 seconds
M9R engine	: 4 minutes	ZD30DDTT	: 60 seconds
R9M engine	: 4 minutes		
V9X engine	: 4 minutes		
YD25DDTi	: 2 minutes		



NOTE:
ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.
- After high-load driving, if the vehicle is equipped with the V9X engine, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery terminal.

NOTE:
- Turbocharger cooling pump may operate in a few minutes after the ignition switch is turned OFF.
- Example of high-load driving
  - Driving for 30 minutes or more at 140 km/h (86 MPH) or more.
  - Driving for 30 minutes or more on a steep slope.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

NOTE:
If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.
- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.

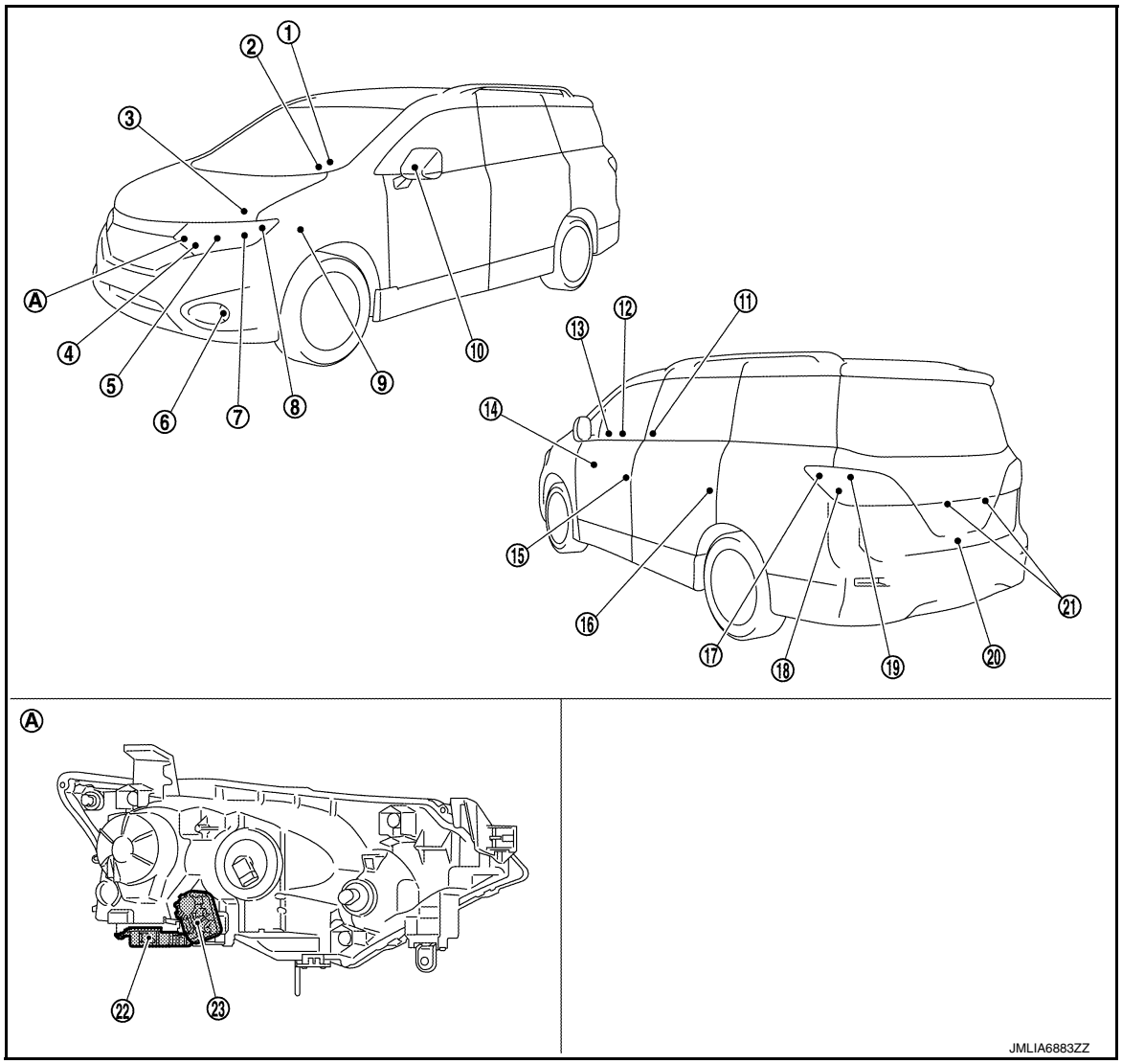
NOTE:
The removal of 12V battery may cause a DTC detection error.

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000012407859



A. Front combination lamp (back)

No.	Part	Function
1.	Optical sensor	Refer to EXL-9, "Optical Sensor".
2.	BCM	• Detects each switch condition by the combination switch reading function • Judges that the exterior lamps are turned ON according to the vehicle condition • Requests the headlamp relay (High/Low), tail lamp relay and front fog lamp relay ON to IPDM E/R (via CAN communication) • Requests the high beam indicator lamp and tail lamp indicator lamp ON to the combination meter (via CAN communication) • Judges the outside brightness from the optical sensor signal. • Judges the ON/OFF timing according to the vehicle condition. • Judges the ON/OFF status of the exterior lamp according to the outside brightness and the vehicle condition. • Refer to BCS-5, "BODY CONTROL SYSTEM : Component Parts Location" for detailed installation location.

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

Optical Sensor

INFOID:0000000012407860

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

Xenon Headlamp

INFOID:0000000012407862

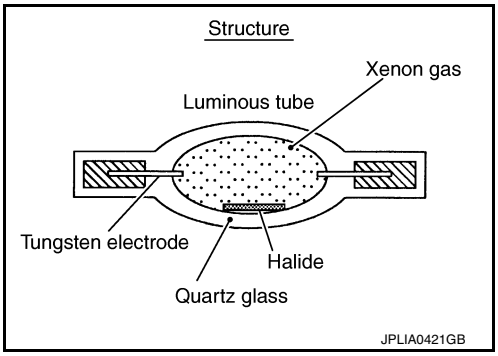
OUTLINE

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

ILLUMINATION PRINCIPLE

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

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



PRECAUTIONS FOR TROUBLE DIAGNOSIS

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

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

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

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

Hazard Switch

INFOID:0000000012407863

Inputs the hazard switch ON/OFF signal to BCM.

Headlamp Aiming Switch

INFOID:0000000012407864

Adjusts height of headlamp aiming.

HID control unit

INFOID:0000000012407865

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

Headlamp Aiming Motor

INFOID:0000000012407866

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

Bulb Specifications

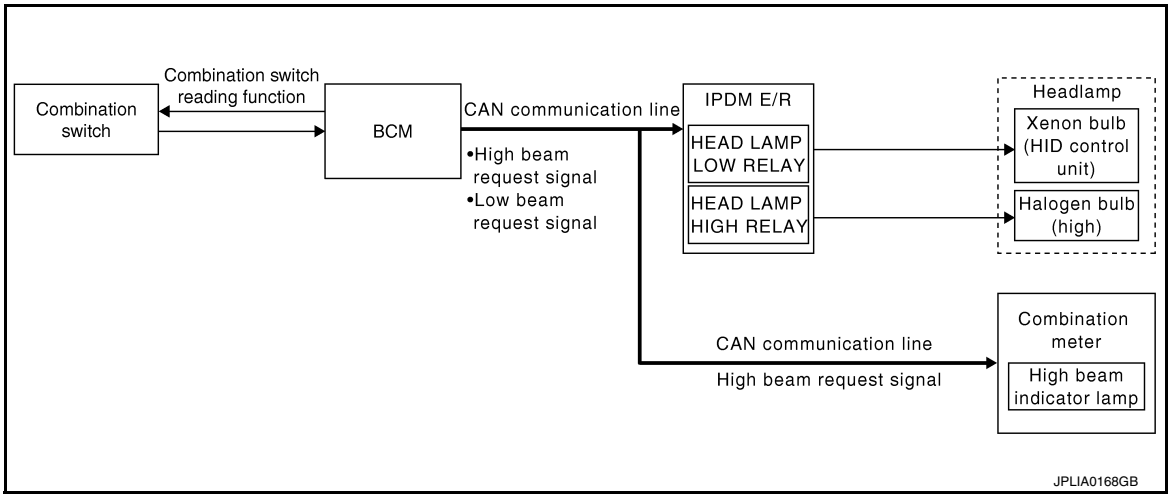
INFOID:0000000012407867

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

SYSTEM
HEADLAMP SYSTEM
HEADLAMP SYSTEM : System Description

INFOID:0000000012407868

SYSTEM DIAGRAM



OUTLINE

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

HEADLAMP (LO) OPERATION

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

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

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

HEADLAMP (HI) OPERATION

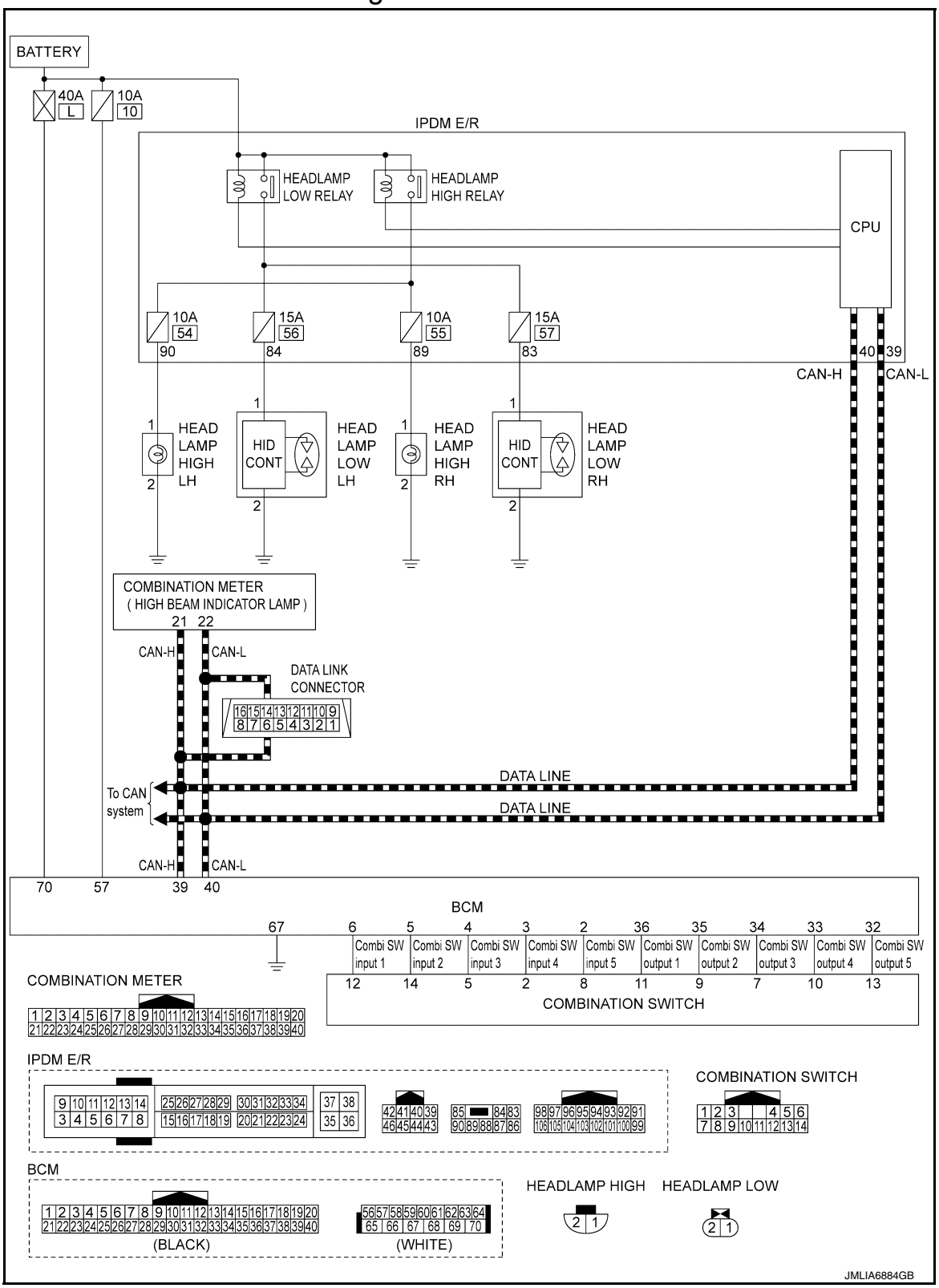
- BCM transmits the high beam request signal to IPDM E/R and the combination meter with CAN communication according to the headlamp (HI) ON condition.

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

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

HEADLAMP SYSTEM : Circuit Diagram

INFOID:0000000012407869



HEADLAMP SYSTEM : Fail-safe

INFOID:0000000012407870

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With BCM

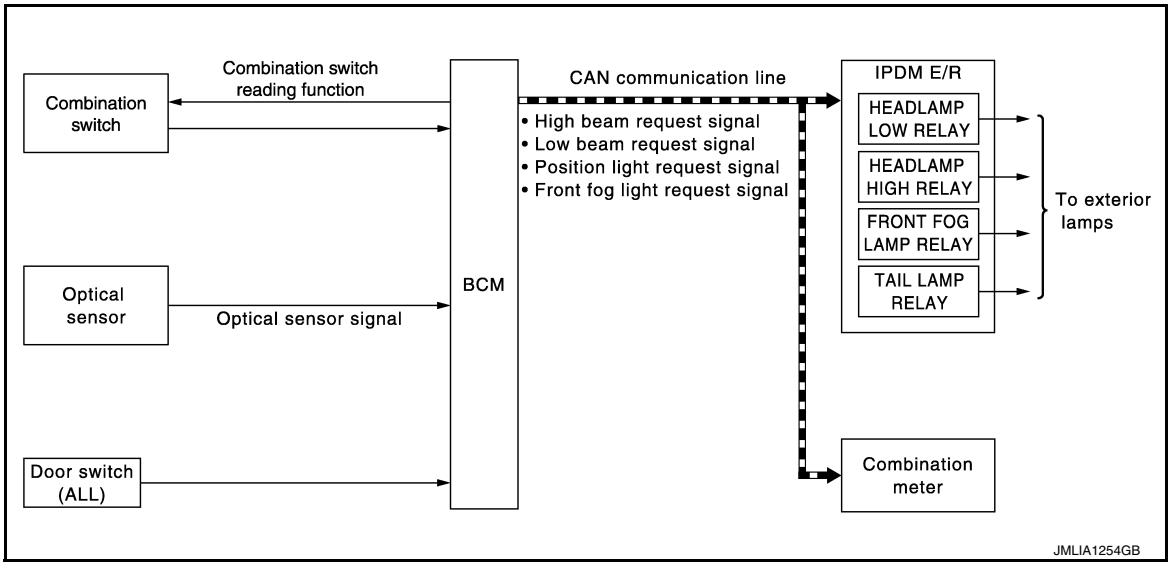
Control part	Fail-safe operation
Headlamp	• Turns ON the headlamp low relay when the ignition switch is turned ON • Turns OFF the headlamp low relay when the ignition switch is turned OFF • Headlamp high relay OFF

AUTO LIGHT SYSTEM

AUTO LIGHT SYSTEM : System Description

INFOID:0000000012407871

SYSTEM DIAGRAM



OUTLINE

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

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

Control by IPDM E/R
- Relay control function

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

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

NOTE:

The settings of the twilight lighting function and the wiper linked auto lighting function can be changed with CONSULT. Refer to EXL-27, "HEADLAMP : CONSULT Function (BCM - HEADLAMP) (Xenon Type Headlamp)".

AUTO LIGHT FUNCTION (WITH TWILIGHT LIGHTING FUNCTION)

Description

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

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

NOTE:
As to ON/OFF timing, the sensitivity depends on settings. The settings can be changed with CONSULT. Refer to EXL-27, "HEADLAMP : CONSULT Function (BCM - HEADLAMP) (Xenon Type Headlamp)".

WIPER LINKED AUTO LIGHTING FUNCTION

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

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

AUTO LIGHT ADJUSTMENT SYSTEM

The auto light adjustment system automatically, dims/brightens the display and combination meter, according to brightness outside the vehicle, when lighting switch 1ST, lighting switch 2ND or lighting switch AUTO is operated. Refer to INL-18, "AUTO LIGHT ADJUSTMENT SYSTEM : System Description".

DELAY TIMER FUNCTION

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

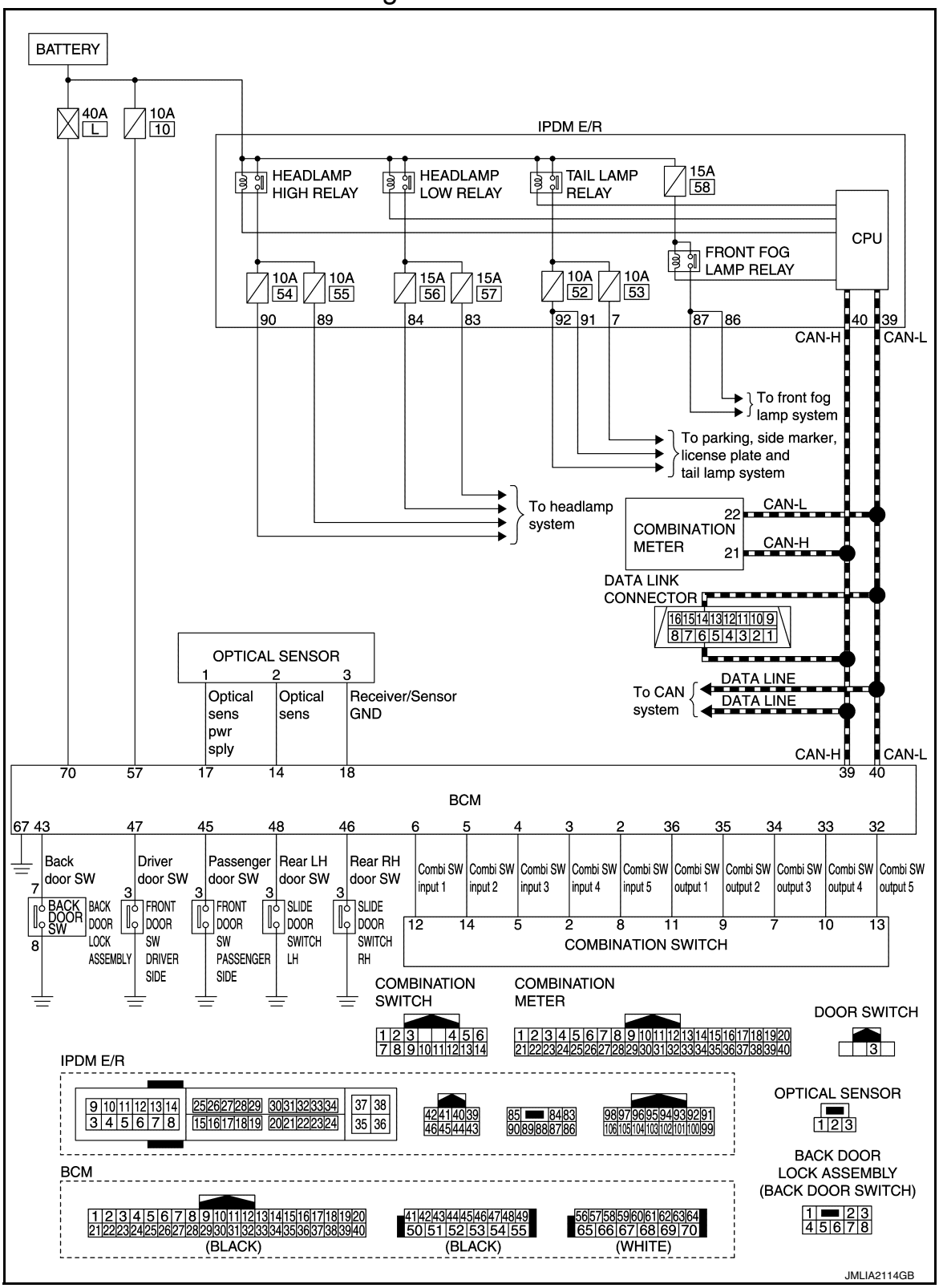
- Turns the exterior lamp OFF 5 minutes after detecting that any door opens. (Door switch ON).
- Turns the exterior lamp OFF a certain period of time* after closing all doors. (Door switch ON→OFF).
- Turns the exterior lamp OFF with the ignition switch ACC or the light switch OFF.

*: The preset time is 45 seconds. The timer operating time can be set by CONSULT. Refer to EXL-27, "HEADLAMP : CONSULT Function (BCM - HEADLAMP) (Xenon Type Headlamp)".

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

AUTO LIGHT SYSTEM : Circuit Diagram

INFOID:0000000012407872



HEADLAMP AIMING CONTROL (MANUAL)

HEADLAMP AIMING CONTROL (MANUAL) : System Description

INFOID:0000000012407877

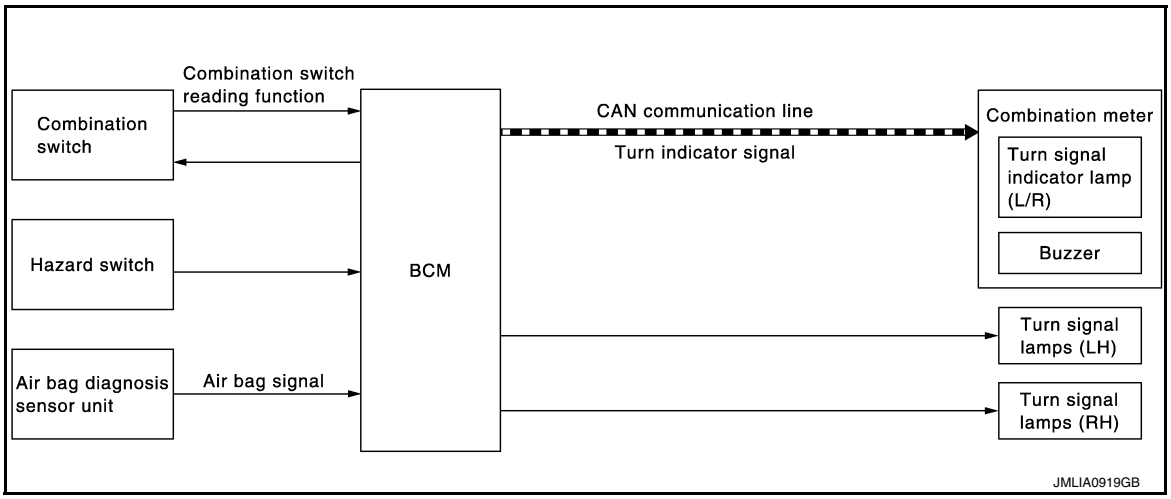
The headlamp levelizer adjusts the headlamp light axis upward and downward with the aiming motor integrated in the front combination lamp.

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM : System Description

INFOID:0000000012407878

SYSTEM DIAGRAM



OUTLINE

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

TURN SIGNAL LAMP OPERATION

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

HAZARD WARNING LAMP OPERATION

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

TURN SIGNAL INDICATOR LAMP AND TURN SIGNAL SOUND OPERATION

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

AUTO HAZARD FUNCTION

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

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

3-TIME FLASHER FUNCTION

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

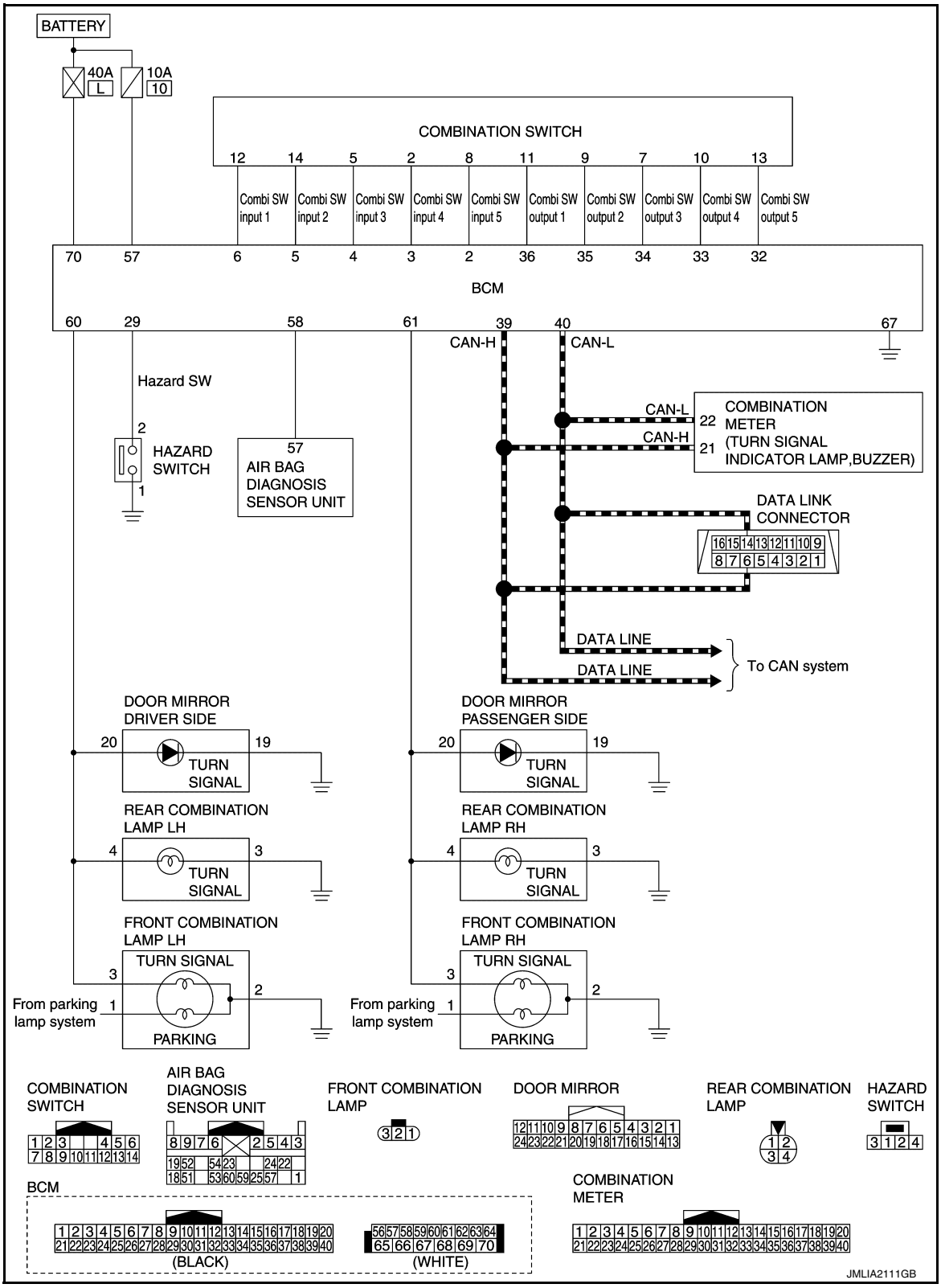
HIGH FLASHER OPERATION

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

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

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM : Circuit Diagram

INFOID:0000000012407879



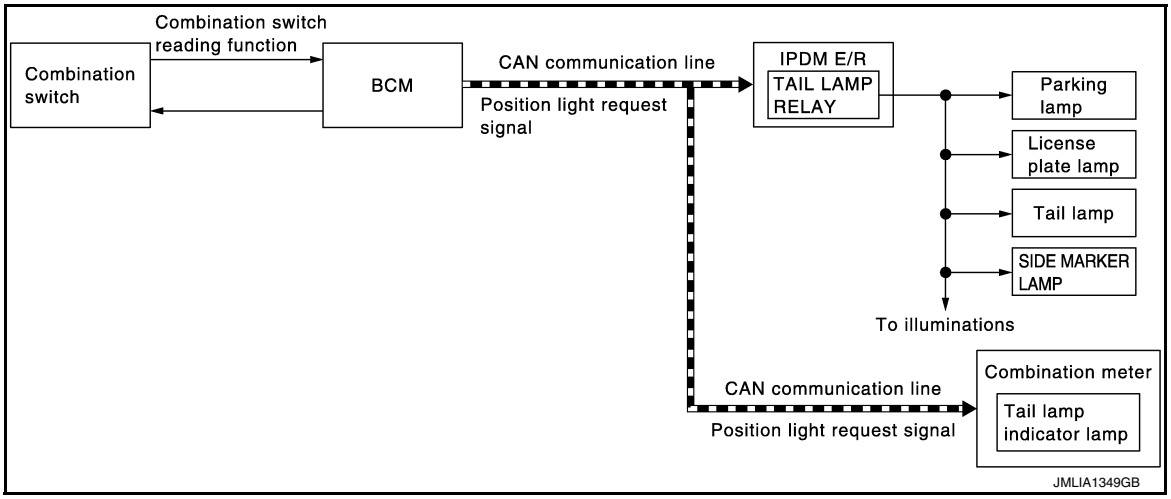
PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMP SYSTEM

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

scription

INFOID:0000000012407880

SYSTEM DIAGRAM



OUTLINE

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

PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMPS OPERATION

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

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

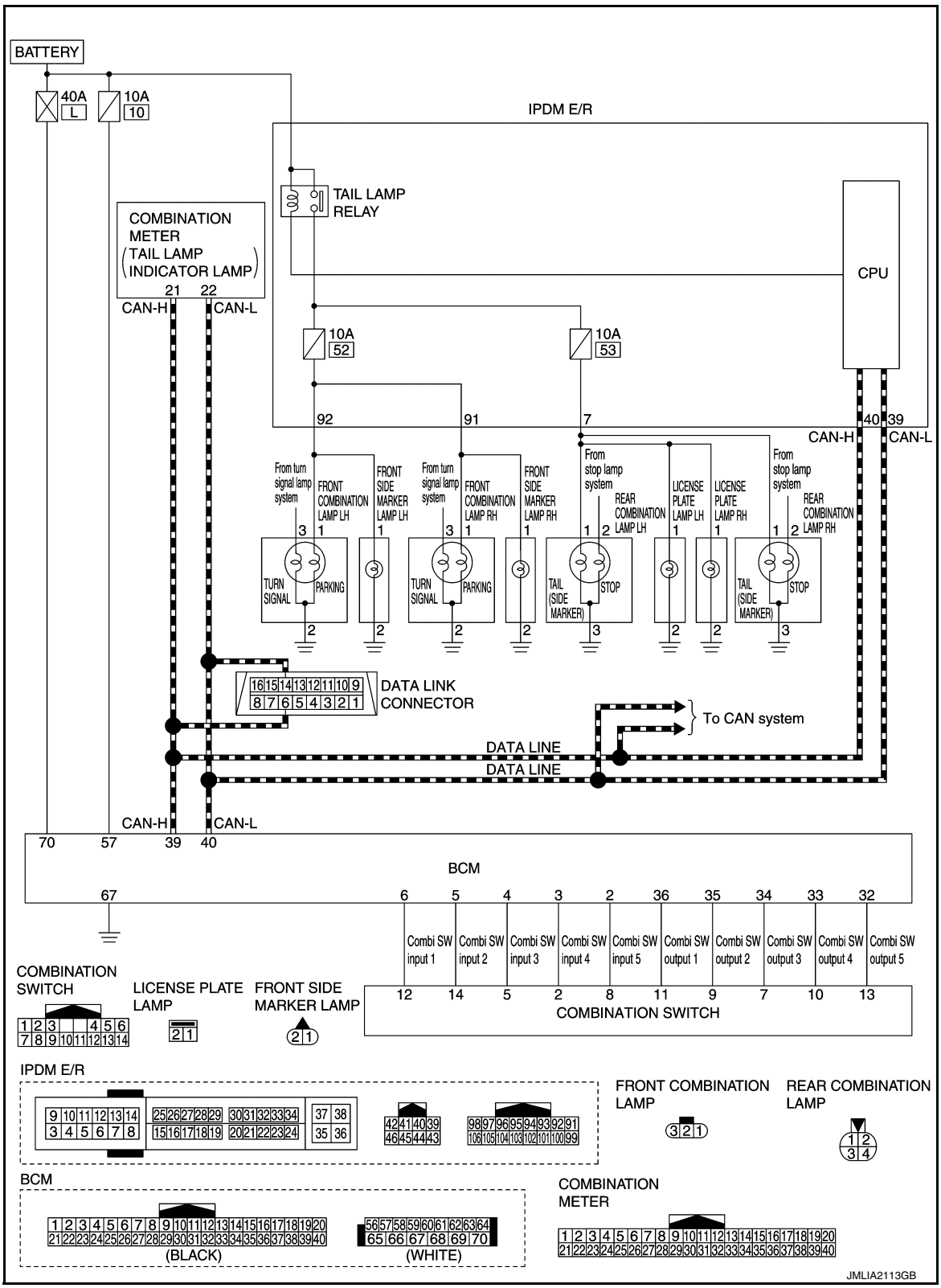
- Lighting switch 1ST
- Lighting switch 2ND
- Lighting switch AUTO, and the auto light function ON judgment.

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

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

gram

INFOID:0000000012407881



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

INFOID:0000000012407882

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With BCM

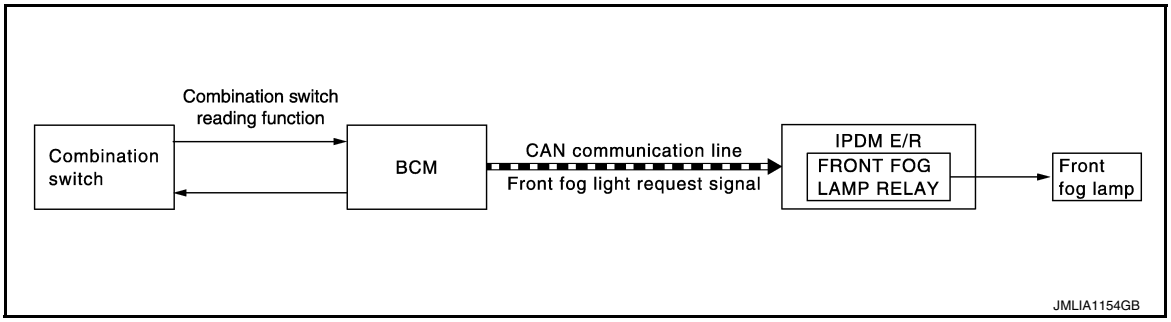
Control part	Fail-safe operation
• Parking lamp • License plate lamp • Illumination • Tail lamp • Side marker lamp	• Turns ON the tail lamp relay when the ignition switch is turned ON • Turns OFF the tail lamp relay when the ignition switch is turned OFF

FRONT FOG LAMP SYSTEM

FRONT FOG LAMP SYSTEM : System Description

INFOID:0000000012407883

SYSTEM DIAGRAM



OUTLINE

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

FRONT FOG LAMP OPERATION

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

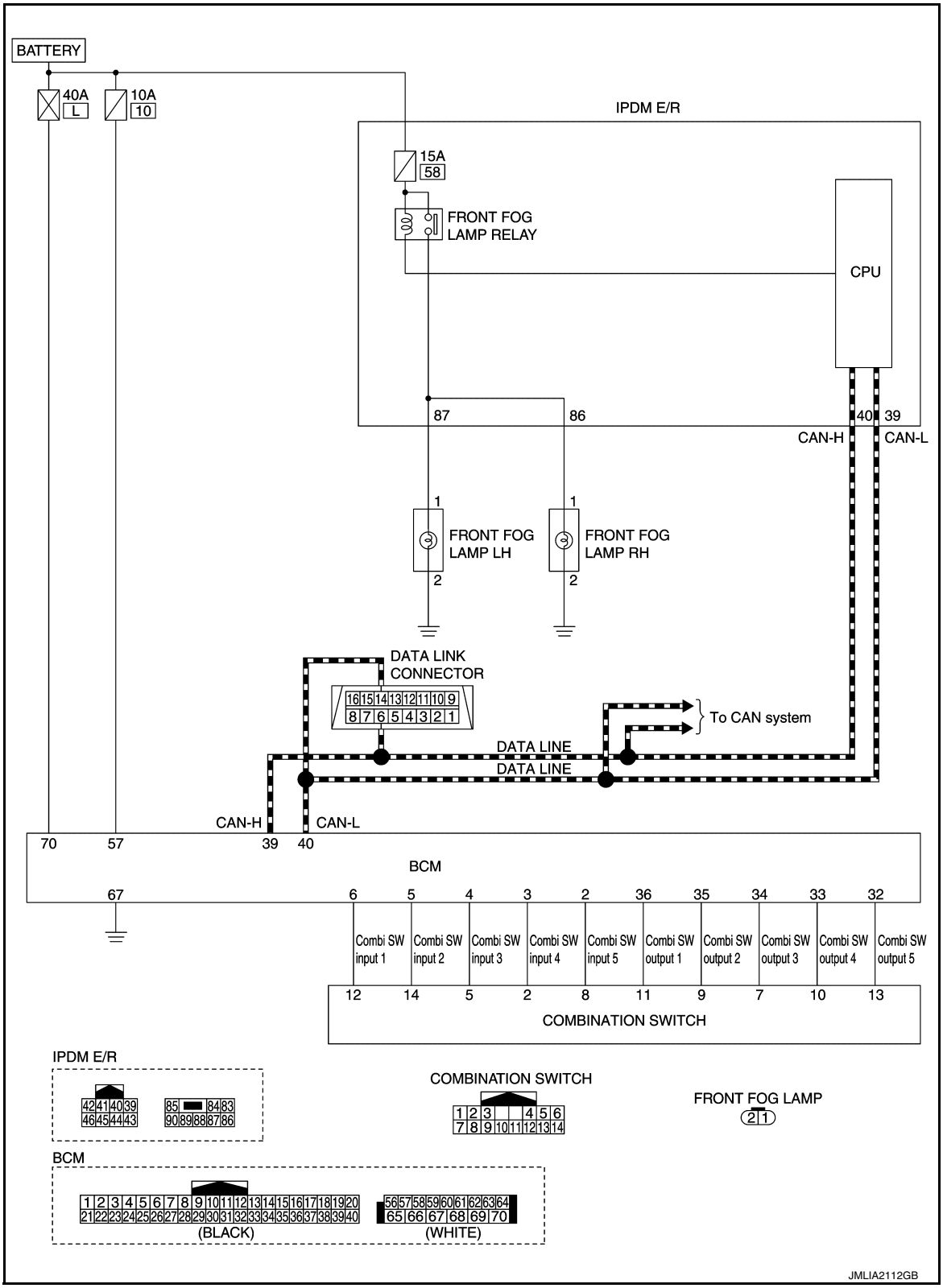
Front fog lamp ON condition

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

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

FRONT FOG LAMP SYSTEM : Circuit Diagram

INFOID:0000000012407884



FRONT FOG LAMP SYSTEM : Fail-safe

INFOID:0000000012407885

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With BCM

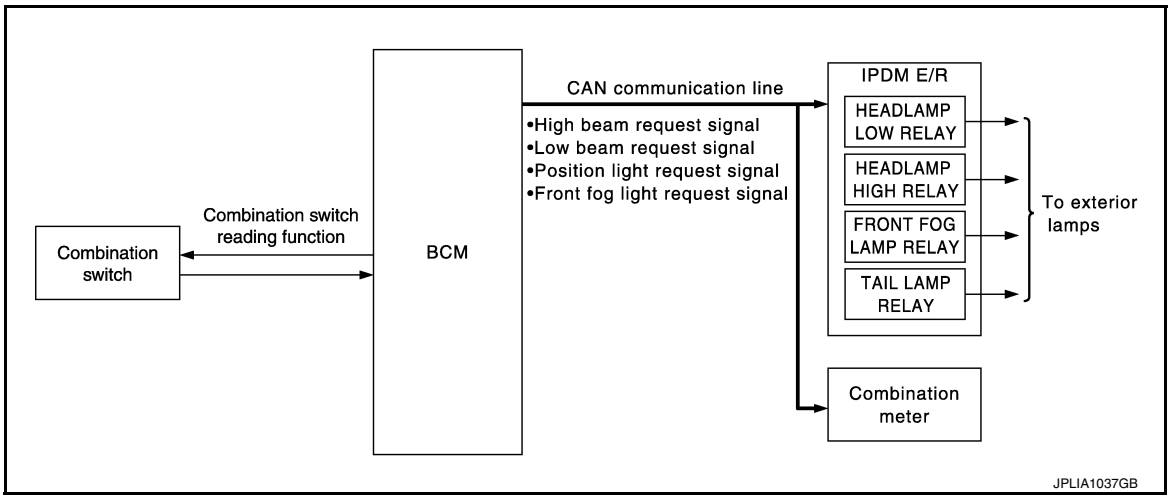
Control part	Fail-safe operation
Front fog lamp	Front fog lamp relay OFF

EXTERIOR LAMP BATTERY SAVER SYSTEM

EXTERIOR LAMP BATTERY SAVER SYSTEM : System Description

INFOID:0000000012407886

SYSTEM DIAGRAM



OUTLINE

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

Control by BCM
- Combination switch reading function
- Headlamp control function
- Exterior lamp battery saver function

Control by IPDM E/R
- Relay control function

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

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

EXTERIOR LAMP BATTERY SAVER ACTIVATION

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

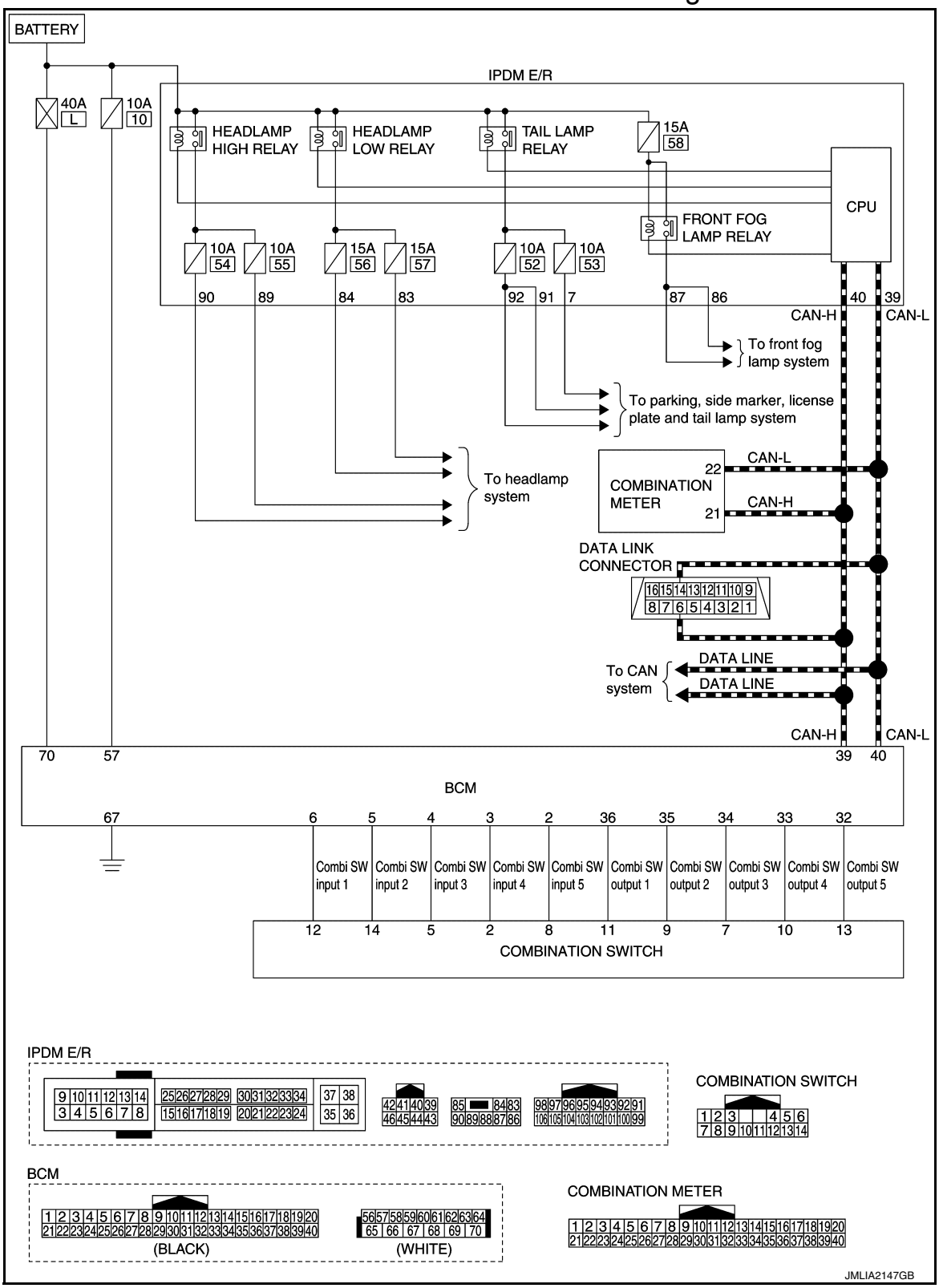
NOTE:

• Headlamp control function turns the exterior lamps ON normally when the ignition switch is turned ACC or ON (both before and after the exterior lamp battery saver is turned OFF).

• The timer starts at the time that the lighting switch is turned from OFF → 1ST or 2ND with the exterior lamps OFF.

EXTERIOR LAMP BATTERY SAVER SYSTEM : Circuit Diagram

INFOID:0000000012407887



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

INFOID:0000000013035220

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

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

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

×: Applicable item

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

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

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

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

NOTE:

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

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

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

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

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

HEADLAMP

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

INFOID:0000000012407889

WORK SUPPORT

Service item	Setting item	Setting	
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.)	
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.	
AUTO LIGHT LOGIC SET	MODE 1*	With twilight ON custom & with wiper INT, LO and HI	
	MODE 2	With twilight ON custom & with wiper LO and HI	
	MODE 3	With twilight ON custom & without	
	MODE 4	Without twilight ON custom & with wiper INT, LO and HI	
	MODE 5	Without twilight ON custom & with wiper LO and HI	
	MODE 6	Without twilight ON custom & without	

*: Factory setting

DATA MONITOR

NOTE:

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

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

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

ACTIVE TEST

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

Test item	Operation	Description
ILL DIM SIGNAL	On	• Transmits the dimmer signal to combination meter via CAN communication and dims combination meter • Transmits the dimmer signal to AV control unit and dims display
	Off	Stops the dimmer signal transmission

FLASHER

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

INFOID:0000000012407890

WORK SUPPORT

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

*: Factory setting

DATA MONITOR

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

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

ACTIVE TEST

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

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:0000000013035221

AUTO ACTIVE TEST

Description

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

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

Operation Procedure

NOTE:

Never perform auto active test in the following condition.

- Passenger door is open.
- CONSULT is connected.

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

NOTE:

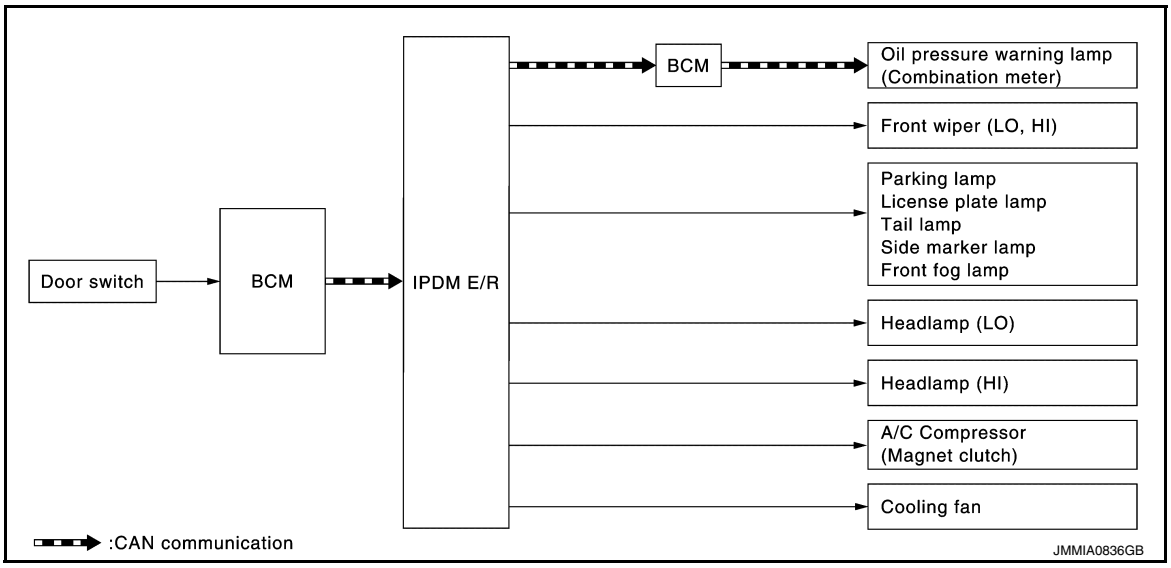
- When auto active test has to be cancelled halfway through test, turn the ignition switch OFF.
- When auto active test is not activated, door switch may be the cause. Check door switch. Refer to DLK-247, "Component Function Check".

Inspection in Auto Active Test

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

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

Concept of auto active test



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

Diagnosis chart in auto active test

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

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

CONSULT Function (IPDM E/R)

INFOID:0000000013035222

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-23, "DTC Index".

DATA MONITOR

NOTE:

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

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

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

ACTIVE TEST

Test item

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

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

ECU DIAGNOSIS INFORMATION

BCM, IPDM E/R

List of ECU Reference

INFOID:0000000012407893

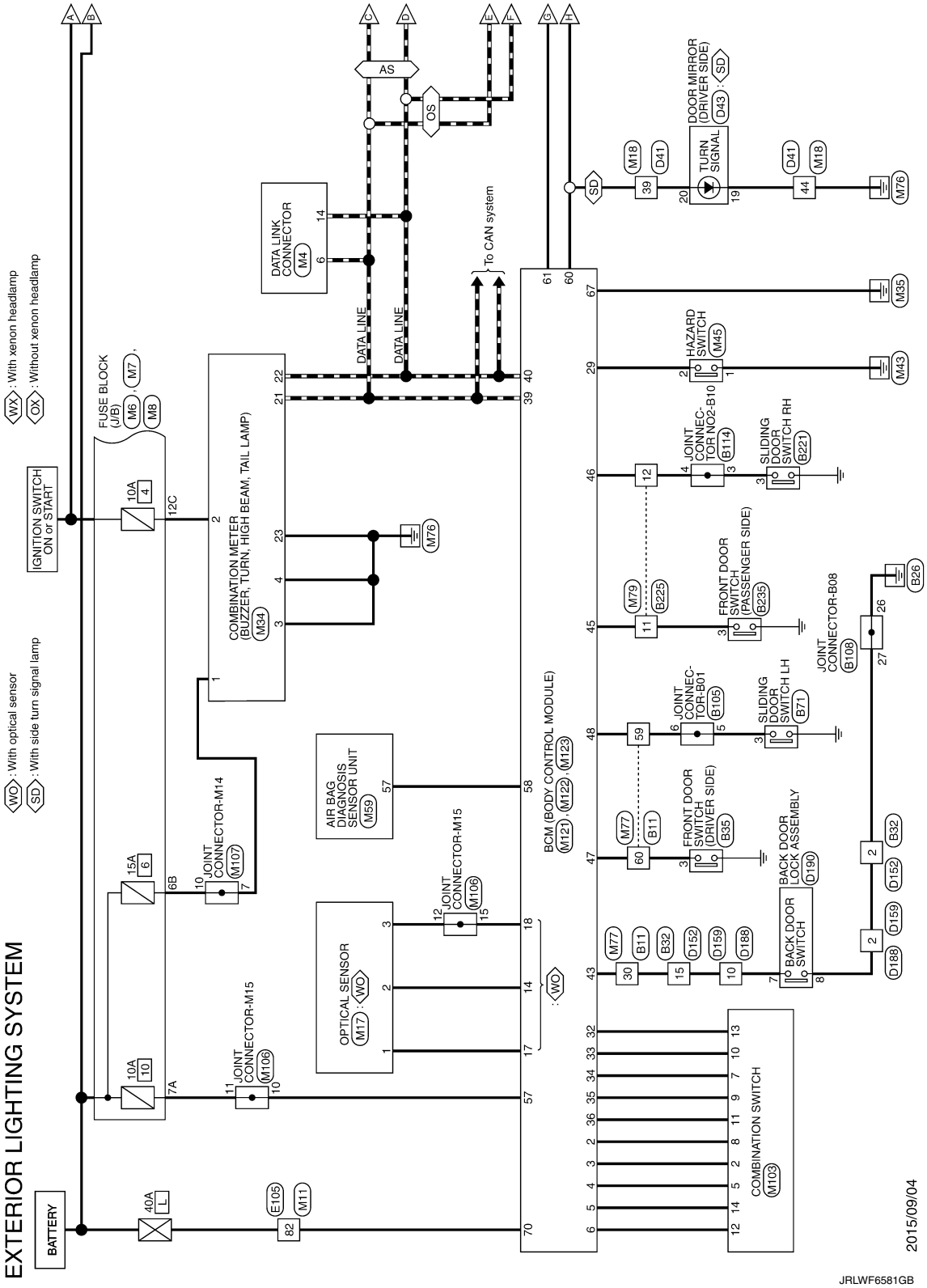
ECU	Reference
BCM	BCS-41, "Reference Value"
	BCS-63, "Fail-safe"
	BCS-63, "DTC Inspection Priority Chart"
	BCS-64, "DTC Index"
IPDM E/R	PCS-15, "Reference Value"
	PCS-22, "Fail-safe"
	PCS-23, "DTC Index"

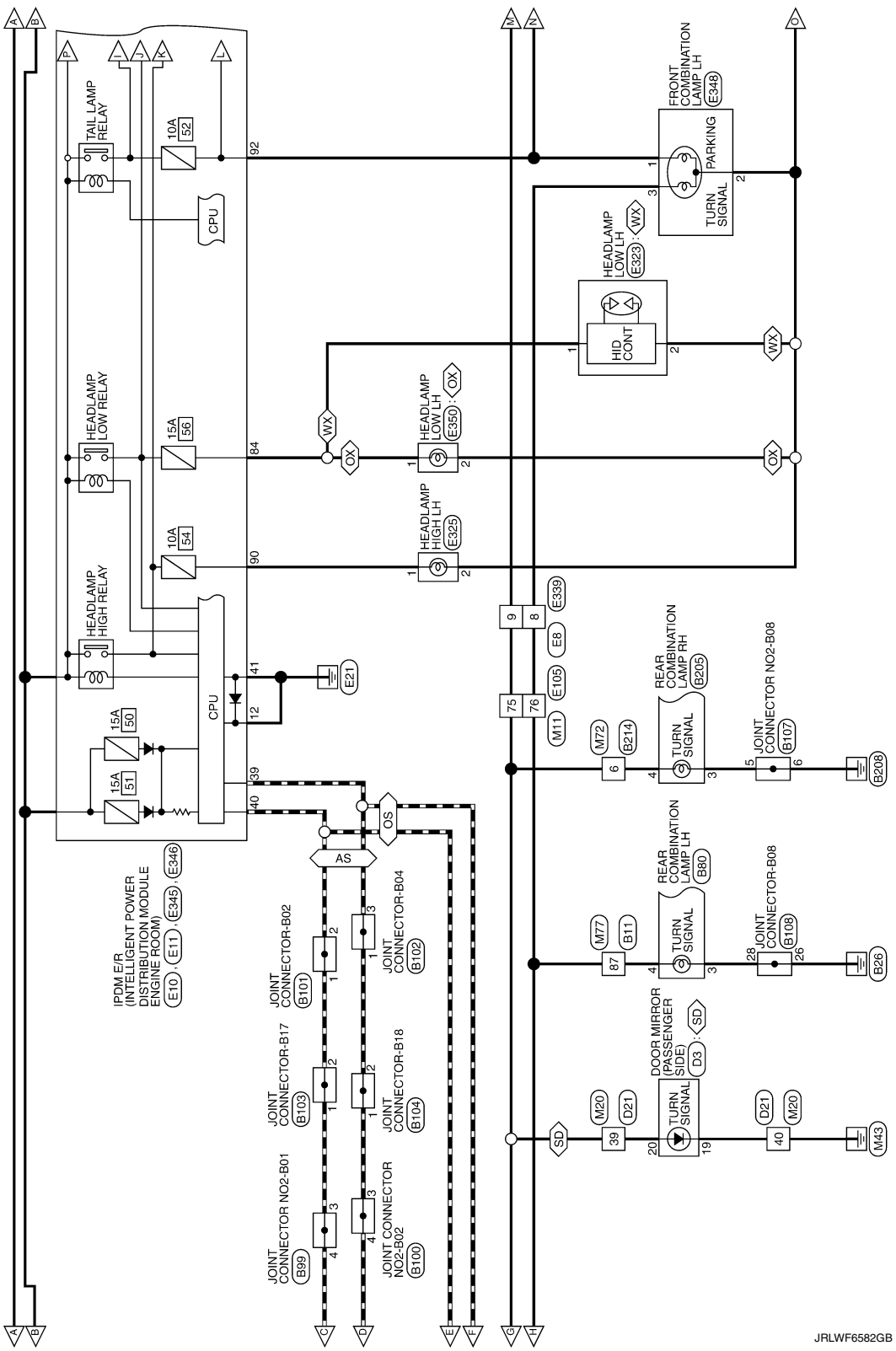
WIRING DIAGRAM

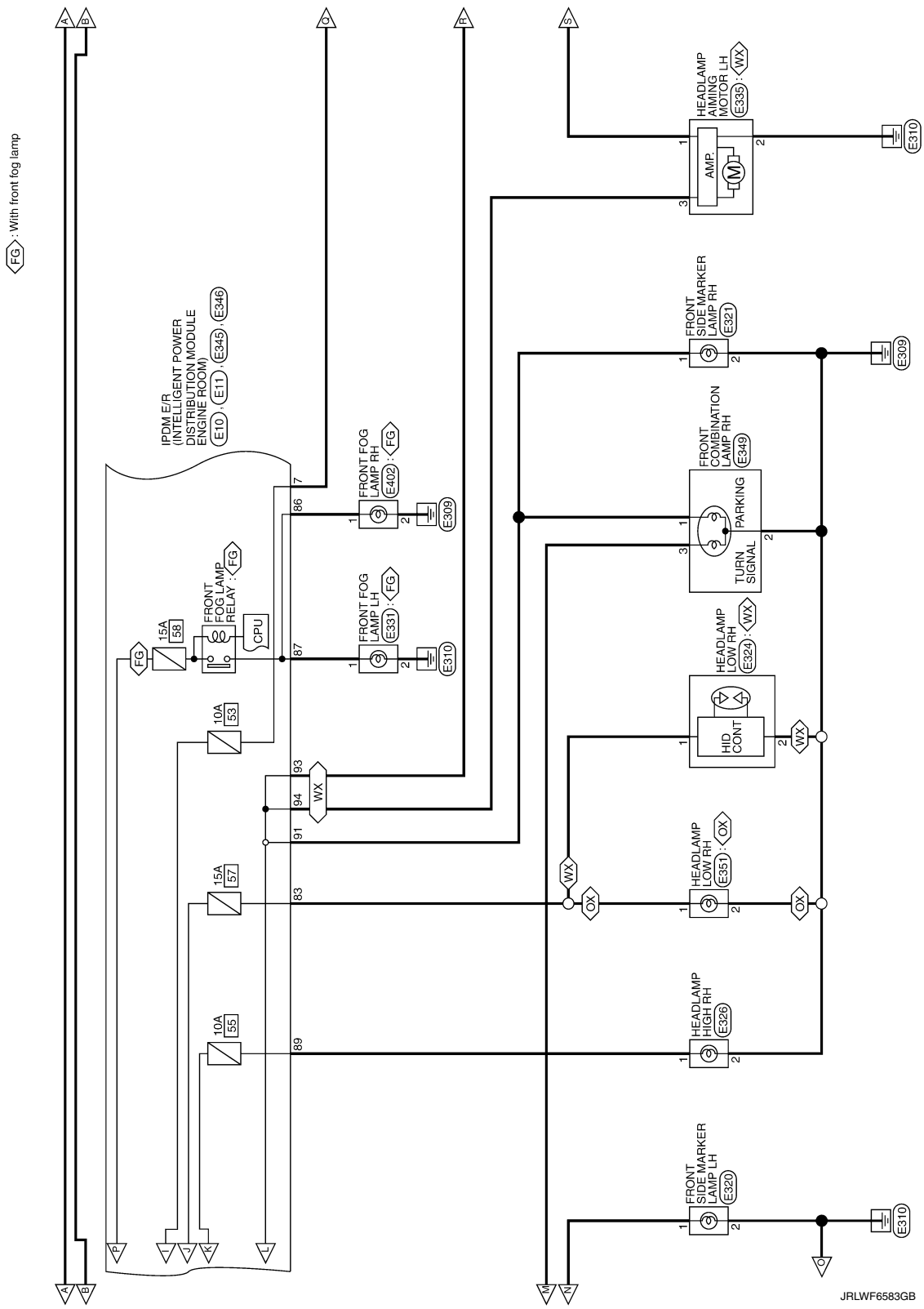
EXTERIOR LIGHTING SYSTEM

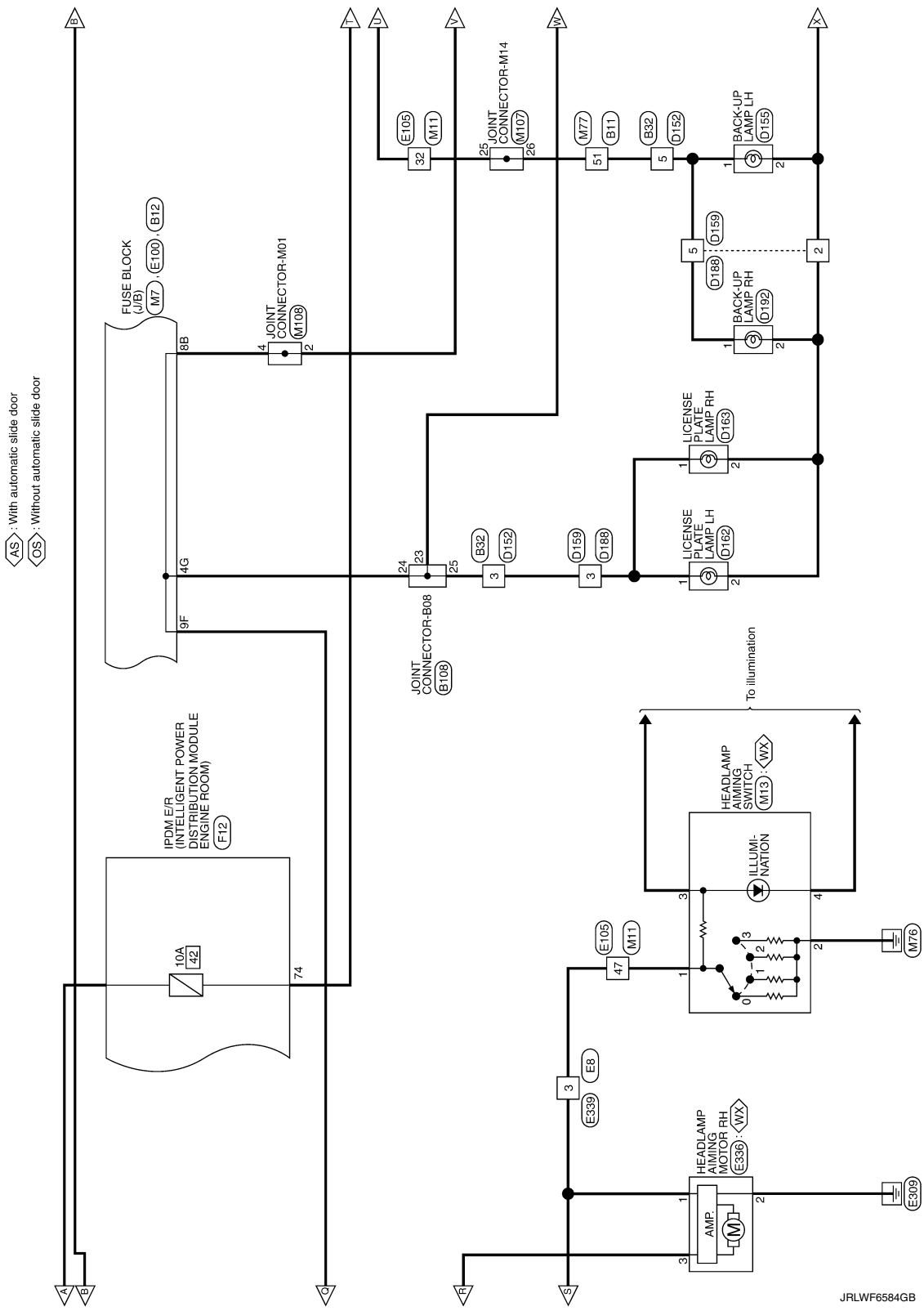
Wiring Diagram

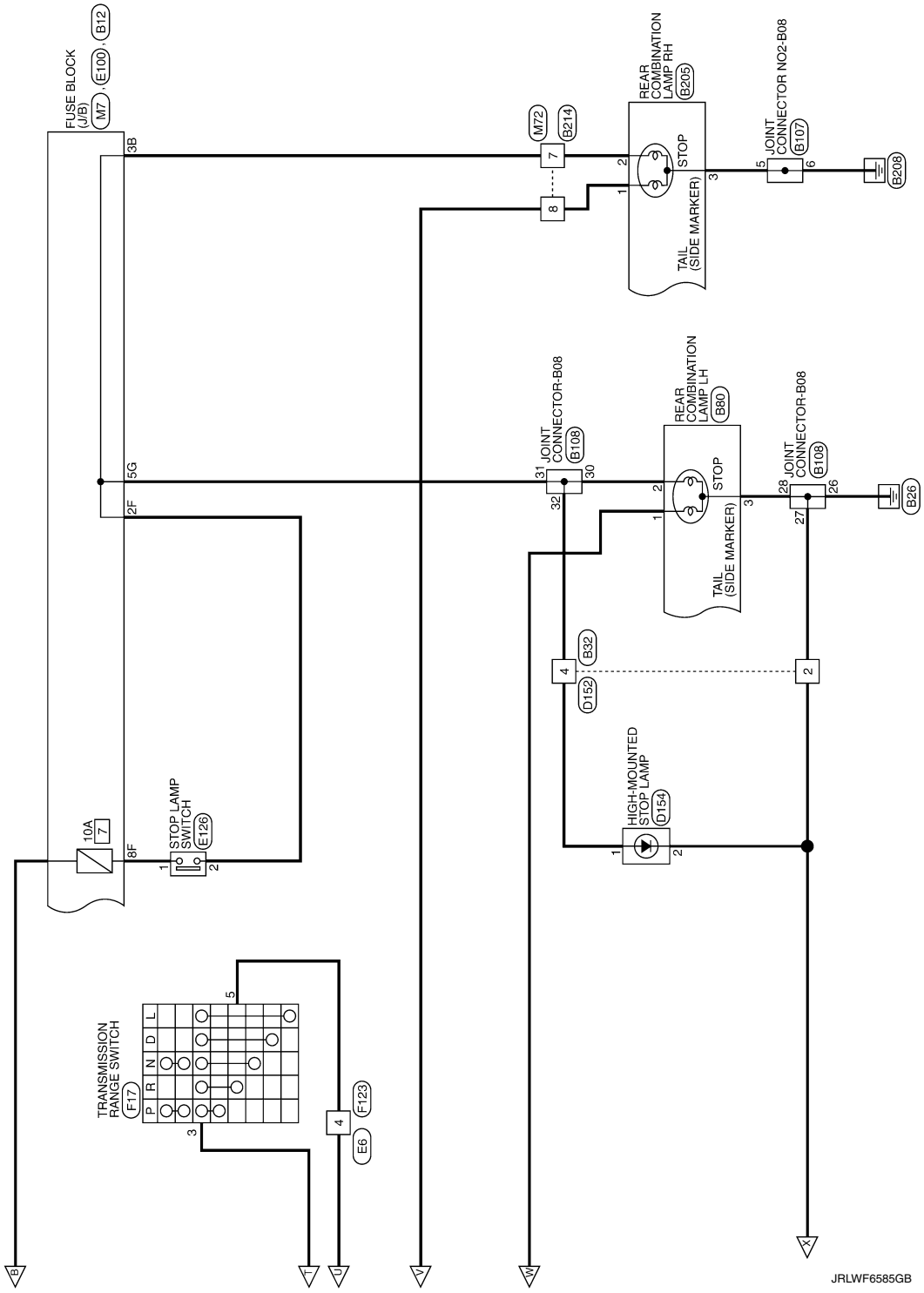
INFOID:0000000012407894




IPDM E/R
(INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
(E10), (E11), (E345), (E346)
CPU
TAIL LAMP RELAY
HEADLAMP LOW RELAY
HEADLAMP HIGH RELAY
10A 52
15A 56
10A 54
15A 50
15A 51
92
84
90
41
12
39
40
E21
AS
OS
WX
OX
HEADLAMP LOW LH (E350) : OX
HEADLAMP HIGH LH (E325)
HEADLAMP LOW LH (E323) : WX
HID CONT
FRONT COMBINATION LAMP LH (E348)
PARKING
TURN SIGNAL
E339
E8
E105
M11
75
76
9
8
REAR COMBINATION LAMP RH (B205)
M72
B214
6
JOINT CONNECTOR NO2-B08 (B107)
B208
REAR COMBINATION LAMP LH (B80)
M77
B11
87
JOINT CONNECTOR-B08 (B108)
B26
DOOR MIRROR (PASSENGER SIDE) (D3) : SD
M20
D21
39
20
19
40
M43
SD
JOINT CONNECTOR-B02 (B101)
JOINT CONNECTOR-B04 (B102)
JOINT CONNECTOR-B17 (B103)
JOINT CONNECTOR-B18 (B104)
JOINT CONNECTOR NO2-B01 (B99)
JOINT CONNECTOR NO2-B02 (B100)
JRLWF6582GB

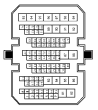

FG : With front fog lamp
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10, E11, E345, E346
FRONT FOG LAMP RELAY
FG
15A 58
CPU
10A 53
15A 57
10A 55
FRONT FOG LAMP RH E402
FRONT FOG LAMP LH E331
HEADLAMP AIMING MOTOR LH E335
WX
AMP.
E310
FRONT SIDE MARKER LAMP RH E321
E309
FRONT COMBINATION LAMP RH E349
PARKING
TURN SIGNAL
HEADLAMP LOW RH E324
HID CONT
HEADLAMP LOW RH E351
OX
HEADLAMP HIGH RH E326
FRONT SIDE MARKER LAMP LH E320
JRLWF6583GB


AS : With automatic slide door
OS : Without automatic slide door
FUSE BLOCK (J/B)
M7, E100, B12
JOINT CONNECTOR-M01
M108
JOINT CONNECTOR-M14
M107
JOINT CONNECTOR-B08
B108
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
F12
10A 42
74
8B
4G
9F
E105
M11
32
25
26
M77
B11
51
B32
D152
5
BACK-UP LAMP LH
D155
D159
D188
BACK-UP LAMP RH
D192
LICENSE PLATE LAMP RH
D163
LICENSE PLATE LAMP LH
D162
24
23
3
To illumination
HEADLAMP AIMING SWITCH
M13
WX
ILLUMI-NATION
47
M76
E8
E339
HEADLAMP AIMING MOTOR RH
E336
AMP.
E309
JRLWF6584GB


FUSE BLOCK (J/B)
M7, E100, B12
3B
5G
2F
8F
10A
7
STOP LAMP SWITCH
E126
TRANSMISSION RANGE SWITCH
F17
P R N D L
5
3
4
F123
E6
M72
B214
7
8
REAR COMBINATION LAMP RH
B205
STOP
TAIL (SIDE MARKER)
JOINT CONNECTOR NO2-B08
B107
B208
JOINT CONNECTOR-B08
B108
31
32
30
REAR COMBINATION LAMP LH
B80
STOP
TAIL (SIDE MARKER)
JOINT CONNECTOR-B08
B108
28
27
26
B26
B32
D152
4
2
HIGH-MOUNTED STOP LAMP
D154
B
I
U
V
W
X
JRLWF6585GB

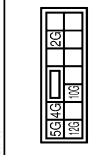
EXTERIOR LIGHTING SYSTEM

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS19



Terminal No.	Color Of Wire	Signal Name [Specification]
10	GR	-
12	G	-
13	P	-
15	L	-
29	GR	-
30	W	-
31	P	-
37	SHIELD	-
38	R	-
39	B	-
40	W	-
51	Y	-
52	B	-
53	G	-
54	P	-
55	L	-
57	Y	-
58	L	-
59	GR	-
60	Y	-
61	Y	-
62	BR	-
63	L	-
64	W	-
65	R	-
66	SHIELD	-
67	B	-
68	W	-
69	SHIELD	-
70	W/R	-
71	B/R	-
72	BR	-
74	L	-
75	SB	-
77	V	-
78	LG	-
79	GR	-
80	BR	-
81	SB	-
82	V	-
87	G	-
88	V	-
89	G	-
90	Y	-
91	LG	-
92	L	-

Connector No.	B12
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS12FBR-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
10G	Y	-
12G	V	-
2G	P	-
4G	P	-
5G	W	-

Connector No.	B32
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	B	-
3	P	-
4	W	-
5	Y	-
6	B	-
9	SHIELD	-
10	R	-
11	B	-
12	W	-
13	GR	-
14	P	-
15	W	-
16	G	-
17	R	-
18	W	-
19	GR	-
20	P	-
21	W	-
22	P	-
23	G	-
24	BR	-

Connector No.	B35
Connector Name	FRONT DOOR SWITCH (DRIVER SIDE)
Connector Type	TH04FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
3	Y	-

Connector No.	B71
Connector Name	SLIDING DOOR SWITCH LH
Connector Type	TH04FW-NH

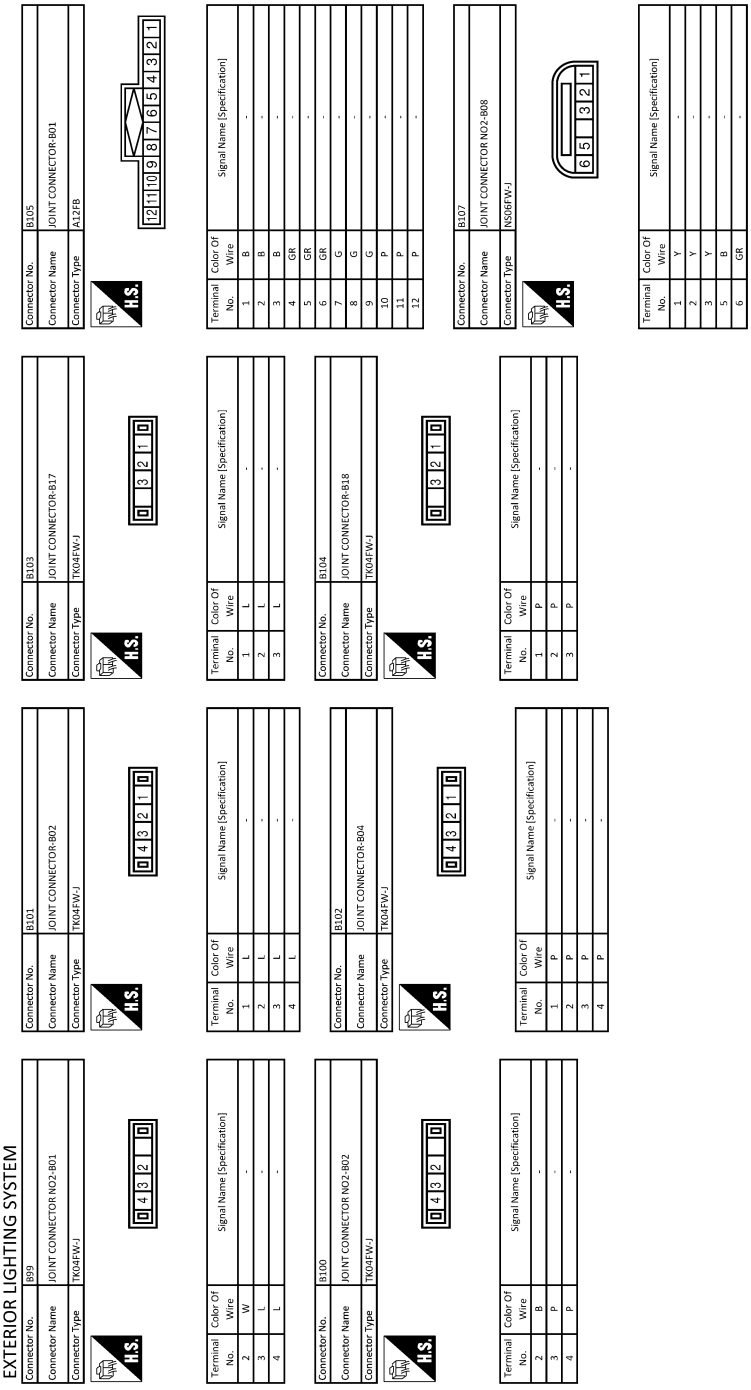
Terminal No.	Color Of Wire	Signal Name [Specification]
3	GR	-

Connector No.	B80
Connector Name	REAR COMBINATION LAMP LH
Connector Type	RS04FGY-PR

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

JRLWF6586GB

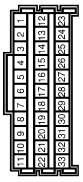
EXTERIOR LIGHTING SYSTEM



JRLWF6587GB

EXTERIOR LIGHTING SYSTEM

Connector No.	B108
Connector Name	JOINT CONNECTOR-808
Connector Type	BJ30FW



Terminal No.	Color Of Wire	Signal Name [Specification]
3	BR	-
4	BR	-
5	G	-
6	G	-
13	V	-
14	V	-
15	V	-
17	GR	-
18	GR	-
19	GR	-
20	GR	-
21	GR	-
22	GR	-
23	P	-
24	P	-
25	P	-
26	B	-
27	B	-
28	B	-
30	W	-
31	W	-
32	W	-

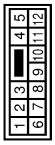
Connector No.	B114
Connector Name	JOINT CONNECTOR-NO2-B10
Connector Type	TK04FW-J

Terminal No.	Color Of Wire	Signal Name [Specification]
2	GR	-
3	GR	-
4	GR	-

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

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

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

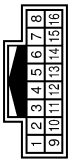


Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	L	-
4	BR	-
5	Y	-
6	V	-
7	W	-
8	R	-
9	LG	-
10	Y	-
11	G	-
12	SB	-

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

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

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

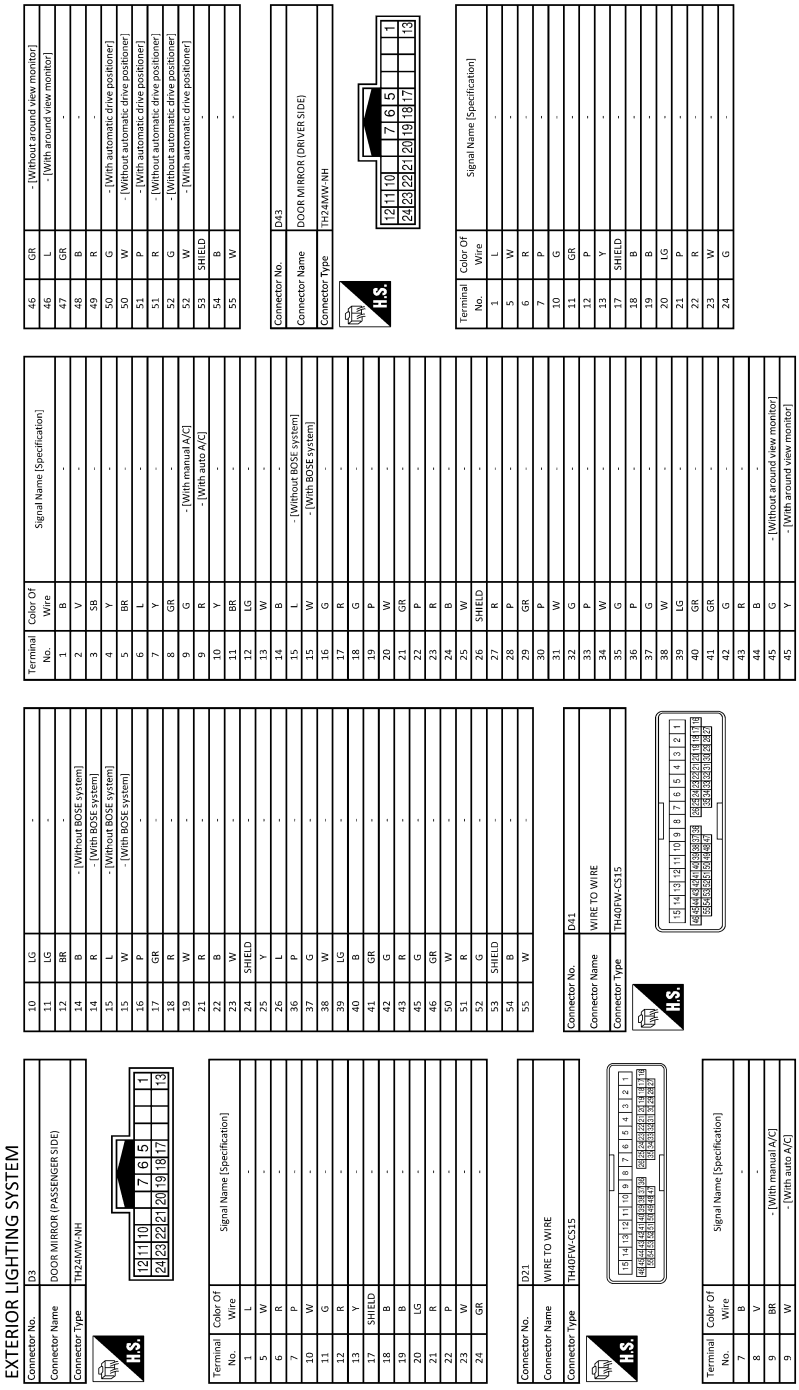


Terminal No.	Color Of Wire	Signal Name [Specification]
2	W	-
3	B	-
4	P	-
5	G	-
9	L	-
10	P	-
11	SB	-
12	GR	-
13	R	-
14	G	-
15	L	-
16	Y	-

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

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

JRLWF6588GB

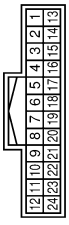


JRLWF6589GB

EXTERIOR LIGHTING SYSTEM

Connector No.	D152
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	B	-
3	P	-
4	V	-
5	Y	-
6	LG	-
9	SHIELD	-
10	W	-
11	R	-
12	B	-
13	R	-
14	G	-
15	P	-
16	O	-
17	L	-
18	GR	-
19	BR	-
20	O	-
21	LG	-
22	V	-
23	W	-
24	V	-

Connector No.	D154
Connector Name	HIGH-MOUNTED STOP LAMP
Connector Type	RH02FB

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	B	-

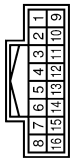
Connector No.	D155
Connector Name	BACK-UP LAMP LH
Connector Type	H5002FG

H.S.

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

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

H.S.



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

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

H.S.

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

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

H.S.

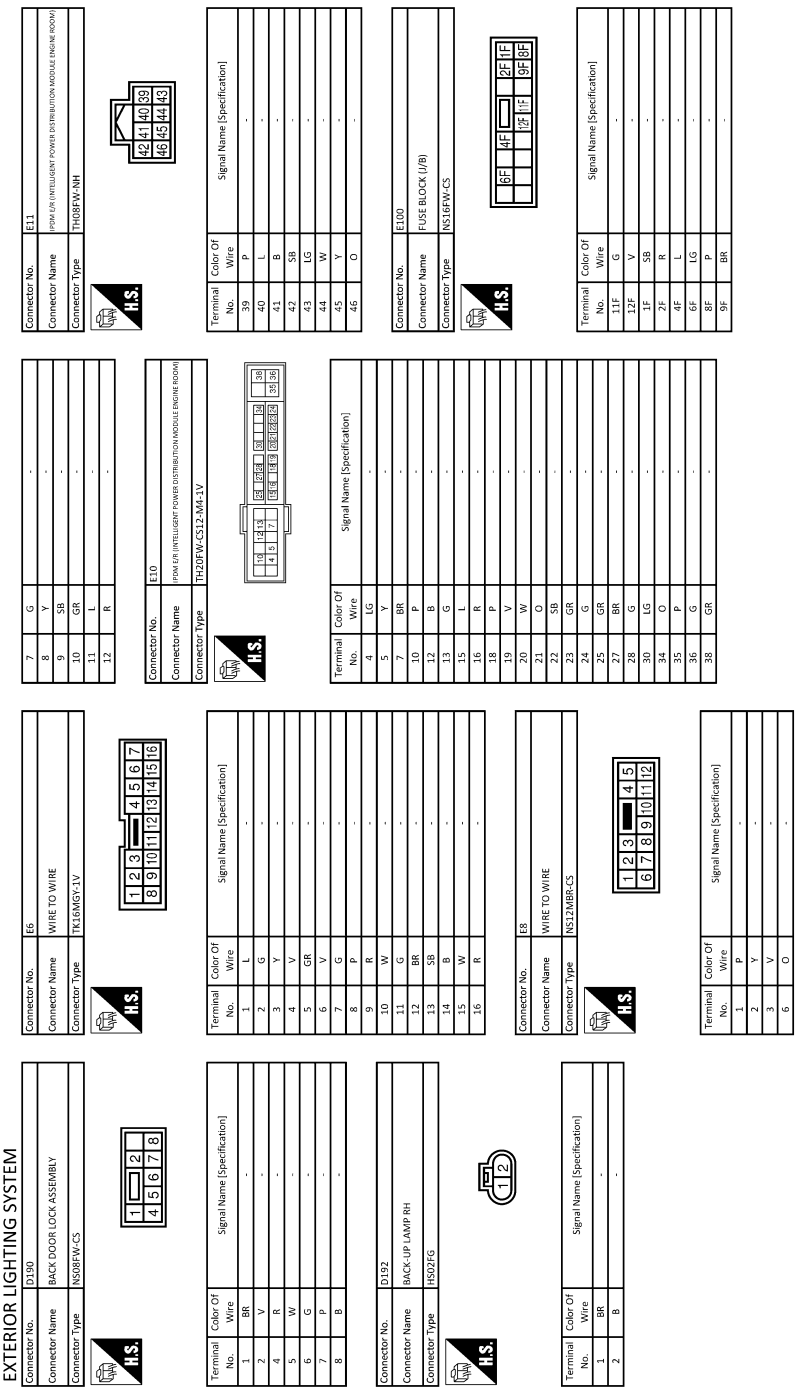
Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	B	-

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

H.S.

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

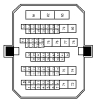
JRLWF6590GB



JRLWF6591GB

EXTERIOR LIGHTING SYSTEM

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH70MW-CS10-M3



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SHIELD	-
2	W	-
3	B	-
4	R	-
6	LG	-
7	R	-
8	GR	-
9	V	-
10	BR	-
11	Y	-
12	O	-
13	W	-
14	L	-
15	P	-
31	GR	-
32	V	-
37	BR	-
38	G	-
39	V	-
40	P	-
41	L	-
42	LG	-
43	O	-
45	P	-
46	SB	-
47	V	-
49	L	-
51	BR	-
52	G	-
53	B	-
54	O	-
55	Y	-
56	SHIELD	-
61	P	-
62	G	-
63	W/L	-
64	W/R	-
66	W	-
67	Y	-
69	R	-
71	R	-
72	L	-
73	GR	-
74	Y	-
75	SB	-
76	Y	-
77	G	-
78	O	-
80	R	-
81	L	-
82	LG	-
83	R	-

Connector No.	E126
Connector Name	STOP LAMP SWITCH
Connector Type	M04FB-LC

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	R	-
3	O	-
4	W	-

Connector No.	E320
Connector Name	FRONT SIDE MARKER LAMP LH
Connector Type	RK02FGY

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	GR	-

Connector No.	E321
Connector Name	FRONT SIDE MARKER LAMP RH
Connector Type	RK02FGY

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

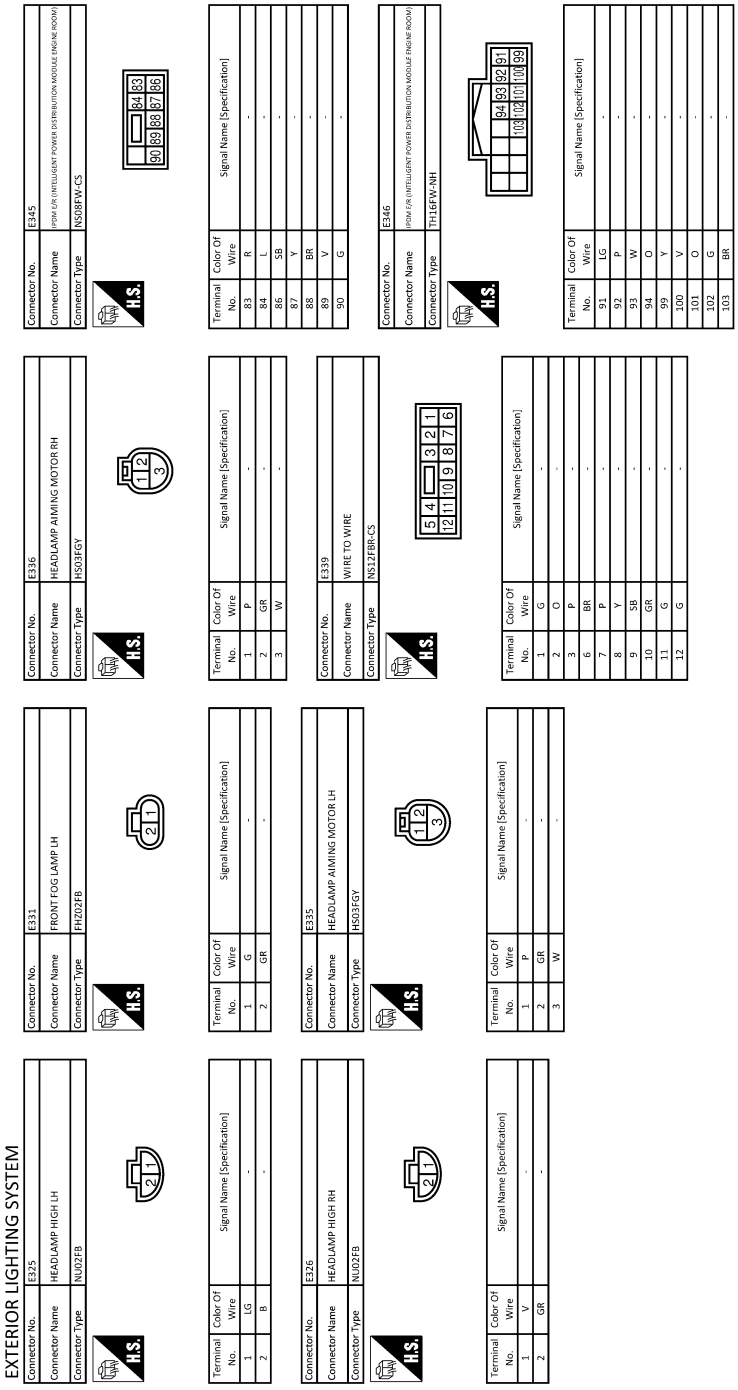
Connector No.	E323
Connector Name	HEADLAMP LOW LH
Connector Type	E02FGY-RS

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	B	-

Connector No.	E324
Connector Name	HEADLAMP LOW RH
Connector Type	E02FGY-RS

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-

JRLWF6592GB



JRLWF6593GB

EXTERIOR LIGHTING SYSTEM

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

H.S.

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

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

H.S.

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

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

H.S.

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

Connector No.	E351
Connector Name	HEADLAMP LOW RH
Connector Type	FH202FB

H.S.

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

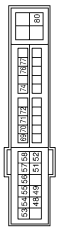
Connector No.	E402
Connector Name	FRONT FOG LAMP RH
Connector Type	FH202FB

H.S.

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

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

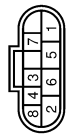
H.S.



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

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

H.S.



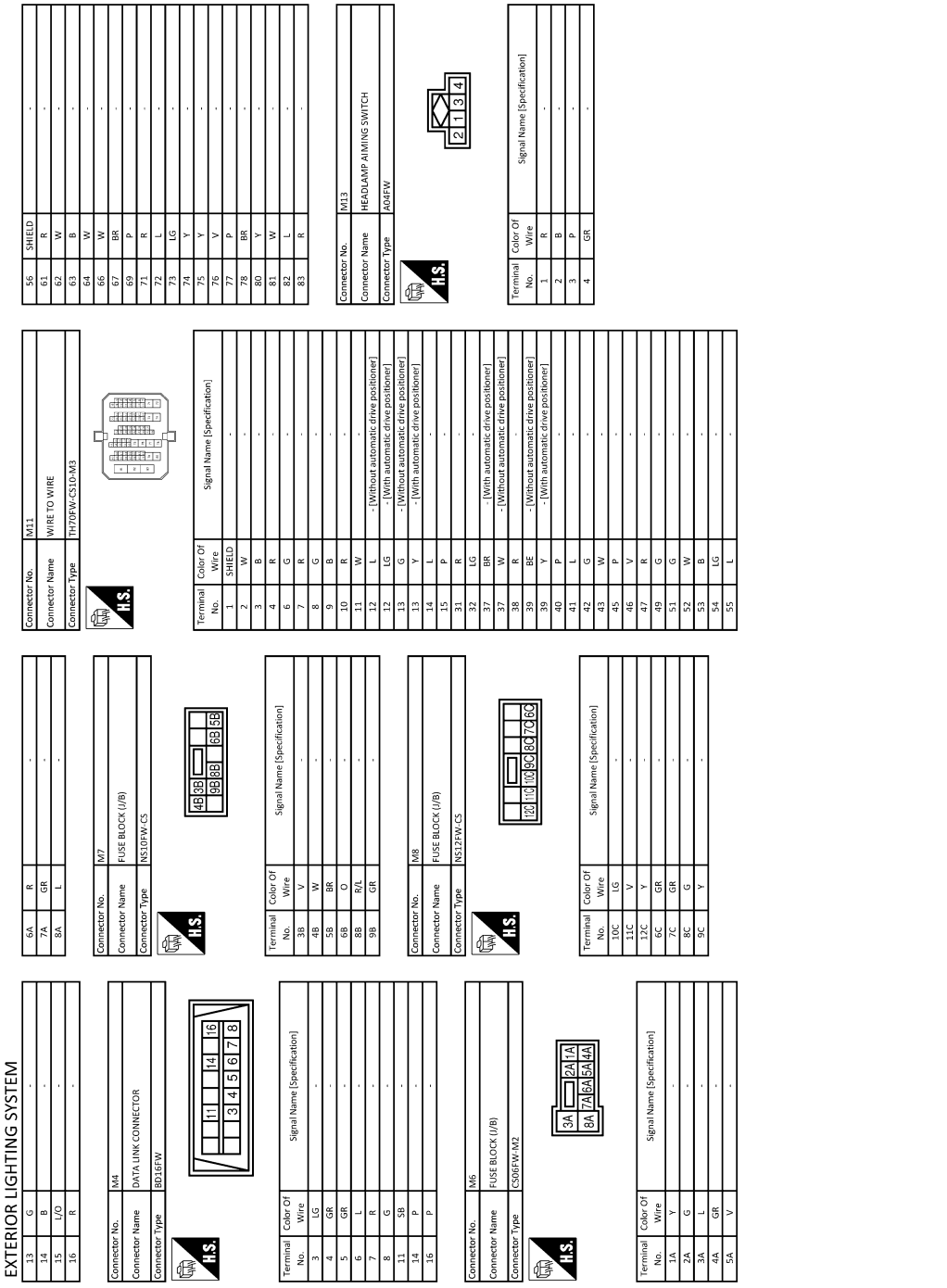
Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	-
2	R/B	-
3	LG	-
4	BR/W	-
5	P/B	-
6	P/L	-
7	G/O	-
8	GR	-

Connector No.	F123
Connector Name	WIRE TO WIRE
Connector Type	TK16FGY-LV

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	W	-
3	G/R	-
4	P/B	-
5	R	-
6	L/R	-
7	P	-
8	P	-
9	W/R	-
10	Y/B	-
11	BR/W	-
12	BR	-

JRLWF6594GB



JRLWF6595GB

EXTERIOR LIGHTING SYSTEM

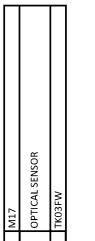
Connector No.	M17
Connector Name	OPTICAL SENSOR
Connector Type	TK03FW

H.S.

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

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

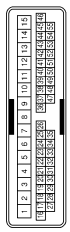
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	R	-
3	W	-
4	Y	-
5	SB	-
6	LG	-
7	V	-
8	L	-
9	GR	-
10	Y	-
11	V	-
12	G	-
13	G	-
14	B	- [Without BOSE system]
14	R	- [With BOSE system]
15	W	- [With BOSE system]
15	Y	- [Without BOSE system]
16	W	-
17	BE	-
18	P	-
19	W	-
20	LG	-
21	P	-
22	G	-
23	R	-
24	B	-
25	W	-
26	SHIELD	-
27	Y	-
28	G	-
29	W	-
30	R	-
31	W	-
32	G	-
33	BE	-
34	P	-
35	W	-
36	LG	-
37	W	-
38	P	-
39	V	-
40	R	-
41	B	-
42	W	-
43	G	-
44	B	-
45	B	- [With around view monitor]
45	GR	- [Without around view monitor]
46	R	- [Without around view monitor]
46	W	- [With around view monitor]
47	GR	-
48	GR	-
49	P	- [Without automatic drive positioner]
49	R	- [With automatic drive positioner]
50	GR	- [With automatic drive positioner]
50	W	- [Without automatic drive positioner]
51	B	- [Without automatic drive positioner]
51	G	- [With automatic drive positioner]
52	GR	- [Without automatic drive positioner]
52	P	- [With automatic drive positioner]
53	SHIELD	-
54	W	-
55	B	-

Connector No.	M20
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
7	B	-
8	L	- [With manual A/C]
8	Y	- [With auto A/C]
9	GR	[With auto A/C]
9	LG	- [With manual A/C]
10	V	-
11	SB	-
12	V	-
14	L	-
15	B	- [Without BOSE system]
15	LG	- [With BOSE system]
16	G	-
17	P	-
18	R	-
19	LG	-
21	R	-
22	B	-
23	W	-
24	SHIELD	-
25	B	-
26	W	-

Connector No.	-
Connector Name	-
Connector Type	-

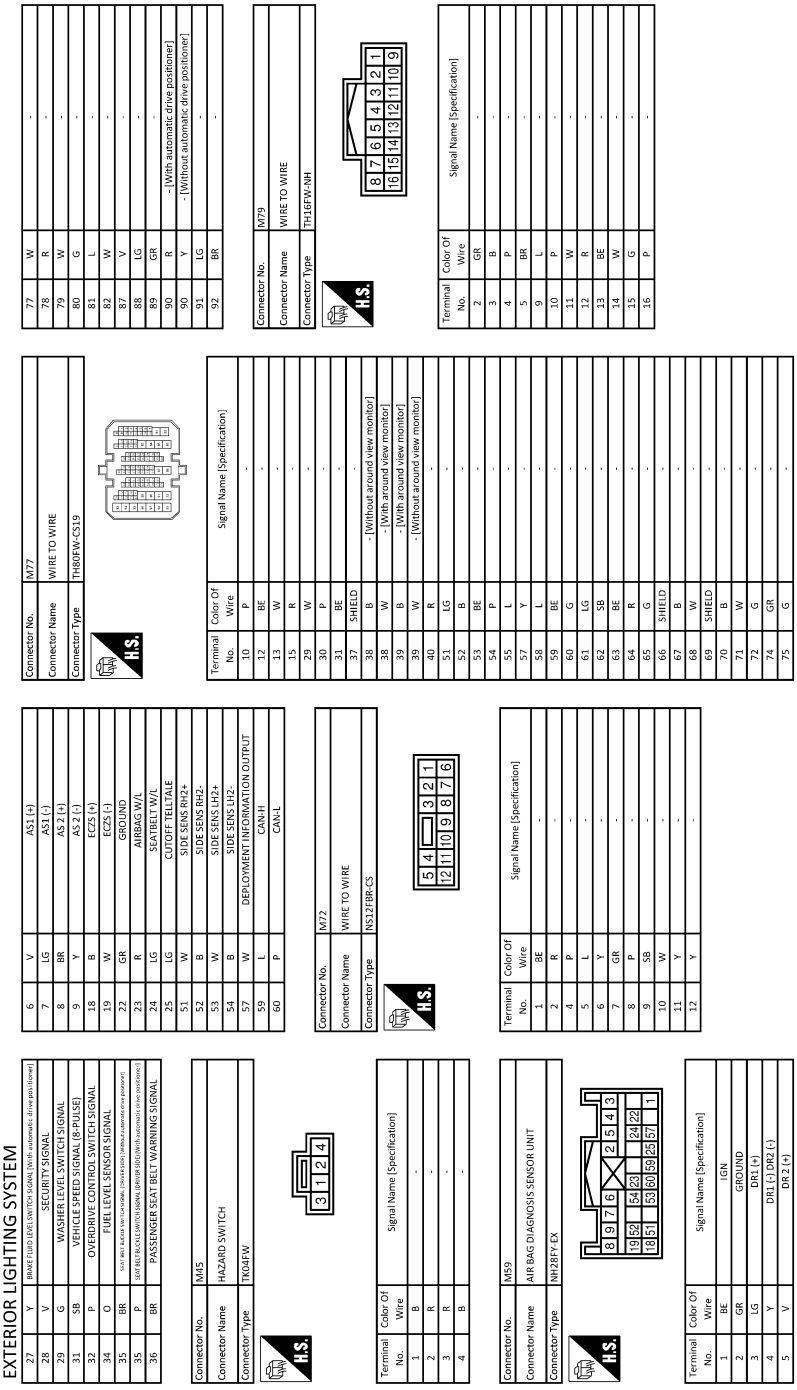
Terminal No.	Color Of Wire	Signal Name [Specification]
55	B	-

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

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	O	BATTERY POWER SUPPLY [With automatic drive positioner]
1	P	BATTERY POWER SUPPLY [Without automatic drive positioner]
2	G	IGNITION SIGNAL [Without automatic drive positioner]
2	Y	IGNITION SIGNAL [With automatic drive positioner]
3	B	GROUND
4	B	GROUND
5	B	ILLUMINATION CONTROL SIGNAL [Without automatic drive positioner]
5	B/P	ILLUMINATION CONTROL SIGNAL [With automatic drive positioner]
8	G	TRIP RESET SWITCH SIGNAL [Without automatic drive positioner]
8	SB	TRIP RESET SWITCH SIGNAL [With automatic drive positioner]
10	P	METER CONTROL SWITCH GROUND
11	G	ENTER SWITCH SIGNAL
12	BR	SELECT SWITCH SIGNAL [With automatic drive positioner]
12	R	SELECT SWITCH SIGNAL [Without automatic drive positioner]
13	W	ILLUMINATION CONTROL SWITCH SIGNAL (+) [Without automatic drive positioner]
13	Y	ILLUMINATION CONTROL SWITCH SIGNAL (+) [With automatic drive positioner]
14	G	ILLUMINATION CONTROL SWITCH SIGNAL (-) [Without automatic drive positioner]
14	V	ILLUMINATION CONTROL SWITCH SIGNAL (-) [With automatic drive positioner]
15	BR	AIR BAG SIGNAL
16	L	ENGINE COOLANT TEMPERATURE SIGNAL
18	L	AMBIENT SENSOR SIGNAL [Without automatic drive positioner]
18	LG	AMBIENT SENSOR SIGNAL [With automatic drive positioner]
19	R	A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL
20	G	AMBIENT SENSOR GROUND [Without automatic drive positioner]
20	Y	AMBIENT SENSOR GROUND [With automatic drive positioner]
21	L	CAN-H
22	P	CAN-L
23	B	GROUND
24	B	FUEL LEVEL SENSOR GROUND
25	BR	ALTERNATOR SIGNAL [With automatic drive positioner]
25	W	ALTERNATOR SIGNAL [Without automatic drive positioner]
26	BR	PARKING BRAKE SWITCH SIGNAL
27	BE	BRAKE FLUID LEVEL SWITCH SIGNAL [Without automatic drive positioner]

JRLWF6596GB

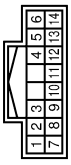


JRLWF6597GB

EXTERIOR LIGHTING SYSTEM

Connector No.	M103
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	RR
2	G	OUTPUT 4
3	P	FR
4	W	IGN
5	BE	OUTPUT 3
6	B/Y	GROUND
7	P	INPUT 3
8	R	OUTPUT 5
9	GR	INPUT 2
10	W	INPUT 4
11	R	INPUT 1
12	W	OUTPUT 1
13	R	INPUT 5
14	G	OUTPUT 2

Connector No.	M106
Connector Name	JOINT CONNECTOR-M15
Connector Type	BJ30FW

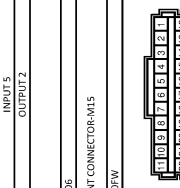
H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	B	-
3	B	-
4	L	-
5	L	-
6	L	-

8	GR	-
9	Y	-
10	Y	-
11	Y	-
12	R	-
14	R	-
15	R	-
17	Y	-
18	Y	-
19	Y	-
20	Y	-
21	G	- [Without automatic drive positioner]
21	Y	- [With automatic drive positioner]
22	G	- [Without automatic drive positioner]
22	Y	- [With automatic drive positioner]
23	GR	-
25	GR	-
26	V	-
27	V	-
28	V	-
29	SB	-
30	BE	-
31	SB	-
32	SB	-
33	BE	-

Connector No.	M107
Connector Name	JOINT CONNECTOR-M14
Connector Type	BJ30FW

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
2	R	-
3	R	-
4	R	-
6	O	-
7	O	-
8	O	-
9	P	-
10	P	-
11	O	-

12	Y	-
13	Y	-
14	Y	-
15	B	-
16	B	-
17	B	-
20	Y	-
21	G	- [Without automatic drive positioner]
21	Y	- [With automatic drive positioner]
22	G	- [Without automatic drive positioner]
22	Y	- [With automatic drive positioner]
23	V	-
25	LG	-
26	LG	-
27	V	-
29	P	-
30	P	-
31	P	-
32	P	-
33	P	-

Connector No.	M108
Connector Name	JOINT CONNECTOR-M01
Connector Type	TK04FW-J

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/G	-
2	P	-
3	P	-
4	P	-

Connector No.	M121
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

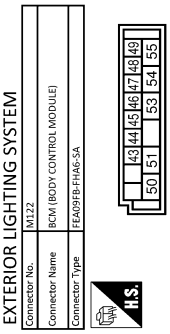
H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	REAR WINDOW DEF RELAY CONT
2	R	COMBI SW INPUT 5
3	G	COMBI SW INPUT 4
4	BE	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	W	COMBI SW INPUT 1
7	W	KEY CYL UNLOCK SW
8	GR	PW SW COMM [With automatic slide door]
8	Y	KEY CYL LOCK SW [Without automatic slide door]
9	GR	STOP LAMP SW 1
12	GR	DOOR LK & UNLK SW LOCK
13	BR	DOOR LK & UNLK SW UNLOCK
14	L	OPTICAL SENS
15	W	REAR WINDOW DEF SW
16	Y	DIMMER
17	O	SENS PWR SPLY
18	R	RECEIV/SENS GND
21	GR	NATS ANT AMP.
23	W	SECURITY IND CONT
25	P	NATS ANT AMP.
27	O	A/C ON
28	BR	BLOWER FAN ON
29	P	HAZARD SW
30	L	RK DOOR OPNR SW
31	G	DR DOOR UNLK SENS
32	R	COMBI SW OUTPUT 5
33	W	COMBI SW OUTPUT 4
34	P	COMBI SW OUTPUT 3
35	GR	COMBI SW OUTPUT 2
36	R	COMBI SW OUTPUT 1
37	G	DETENT SW
38	BE	RECEIVER COMM
39	L	CAN-H
40	P	CAN-L

JRLWF6598GB

EXTERIOR LIGHTING SYSTEM

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FB-FHA6-SA



Terminal No.	Color Of Wire	Signal Name [Specification]
43	P	Bk DOOR SW
44	GR	REAR WIPER STOP POSITION
45	W	PASS DOOR SW
46	R	SL DOOR RH SW
47	G	DR DOOR SW
48	BE	SL DOOR LH SW
49	B	LUGGAGE LAMP CONT
50	V	SELECT UNLK RELAY CONT
51	G	BACK DOOR REQ SW
53	BR	BK DOOR OPEN
54	R	REAR WIPER OUTPUT
55	G	SL DOOR LH UNLK CONT
64	W	CRANK REQ
65	V	ALL DOOR LOCK OUTPUT
66	G	DR DOOR UNLK OUTPUT
67	B	GROUND
68	L	PW PWR SPLY (IGN)
69	P	PW PWR SPLY (BAT)
70	L	BAT

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FW-FHA6-SA

Terminal No.	Color Of Wire	Signal Name [Specification]
56	P	INT ROOM LAMP PWR SPLY
57	Y	BAT
58	O	AIR BAG
59	SB	PASS DOOR UNLK OUTPUT
60	V	TURN SIG LH OUTPUT
61	G	TURN SIG RH OUTPUT
62	W	STEP LAMP CONT
63	R	INT ROOM LAMP CONT

JRLWF6599GB

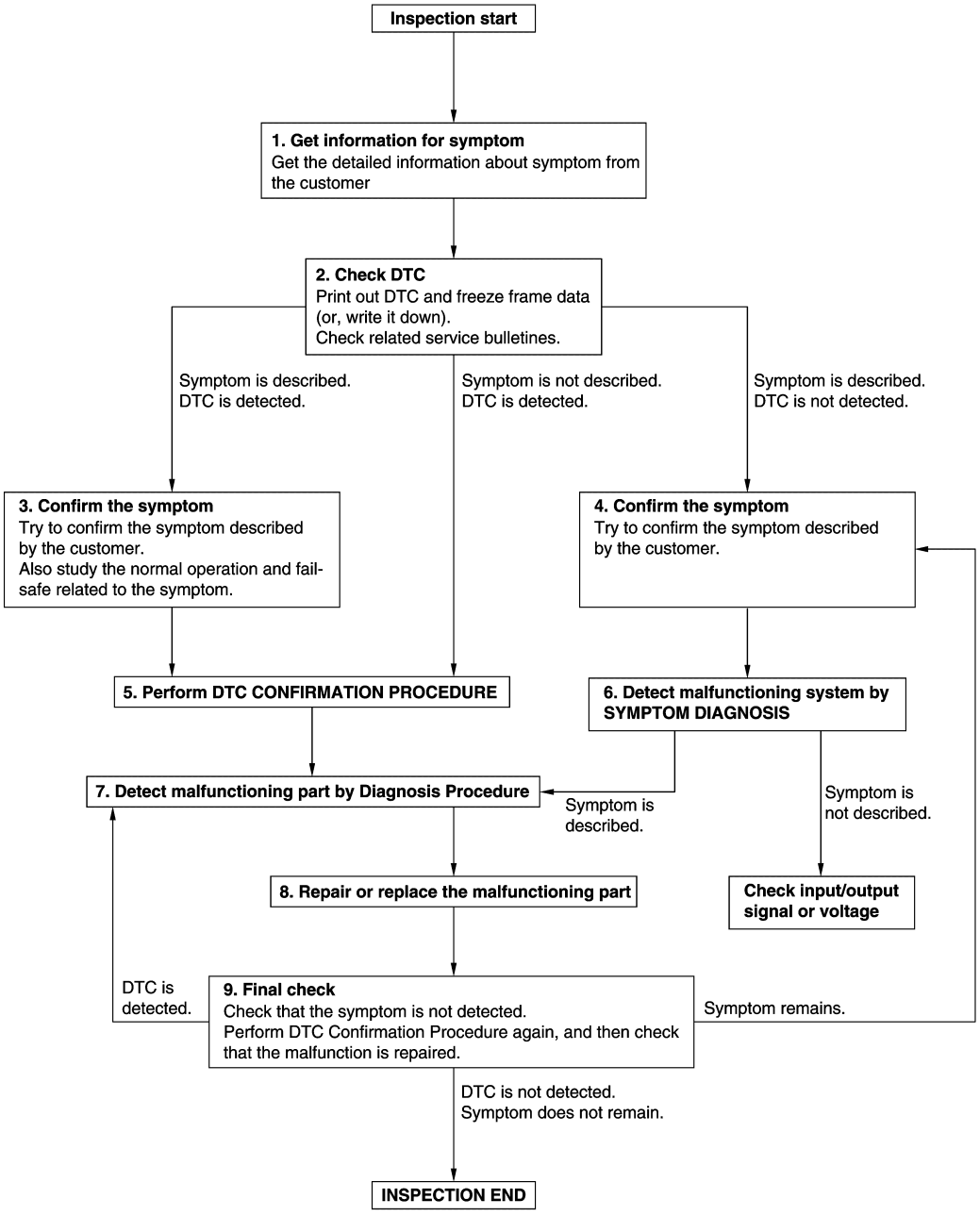
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000012407895

OVERALL SEQUENCE



JMKIA8652GB

DETAILED FLOW

1.GET INFORMATION FOR SYMPTOM

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

>> GO TO 2.

2.CHECK DTC

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

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

3. Check related service bulletins for information.

Are any symptoms described and any DTC detected?

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

3.CONFIRM THE SYMPTOM

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

>> GO TO 5.

4.CONFIRM THE SYMPTOM

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

>> GO TO 6.

5.PERFORM DTC CONFIRMATION PROCEDURE

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

NOTE:

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

Is DTC detected?

YES >> GO TO 7.
NO >> Check according to GI-41, "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-41, "Intermittent Incident".

8. REPAIR OR REPLACE THE MALFUNCTIONING PART

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

>> GO TO 9.

9. FINAL CHECK

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

Is DTC detected and does symptom remain?

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

DTC/CIRCUIT DIAGNOSIS

HEADLAMP (HI) CIRCUIT

Component Function Check

INFOID:0000000012407896

1.CHECK HEADLAMP (HI) OPERATION

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

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

NOTE:
ON/OFF is repeated 1 second each.

Is the inspection result normal?

YES >> Headlamp (HI) circuit is normal.
NO >> Refer to EXL-58, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012407897

1.CHECK HEADLAMP (HI) OUTPUT VOLTAGE

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

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

Is the inspection result normal?

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

2.CHECK HEADLAMP (HI) OPEN CIRCUIT

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

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

Is the inspection result normal?

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

3.CHECK HEADLAMP (HI) FUSE

1. Turn ignition switch OFF.
2. Check that the following fuses are not blown (open).

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

Is the fuse blown (open)?

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

4.CHECK HEADLAMP (HI) SHORT CIRCUIT

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

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

Is the inspection result normal?

YES >> Replace fuse. [Replace IPDM E/R if the fuse blown (open) again.]
NO >> Repair or replace harness. And then replace the fuse.

5.CHECK HEADLAMP (HI) GROUND OPEN CIRCUIT

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

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

Is the inspection result normal?

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

HEADLAMP (LO) CIRCUIT

Component Function Check

INFOID:0000000012407900

1.CHECK HEADLAMP (LO) OPERATION

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

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

Is the inspection result normal?

YES >> Headlamp (LO) is normal.
NO >> Refer to EXL-60, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012407901

1.CHECK HEADLAMP (LO) OUTPUT VOLTAGE

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

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

Is the inspection result normal?

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

2.CHECK HEADLAMP (LO) OPEN CIRCUIT

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

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

Is the inspection result normal?

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

3.CHECK HEADLAMP (LO) FUSE

1. Turn ignition switch OFF.
2. Check that the following fuses are not blown (open).

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

Is the fuse blown (open)?

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 IPDM E/R harness connector and ground.

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

Is the inspection result normal?

YES >> Replace fuse. [Replace IPDM E/R if the fuse blown (open) again.]
NO >> Repair or replace harness. And then replace the fuse.

5. CHECK HEADLAMP (LO) GROUND OPEN CIRCUIT

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

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

Is the inspection result normal?

YES >> Perform the xenon headlamp diagnosis. Refer to EXL-62, "Diagnosis Procedure".
NO >> Repair or replace harness.

XENON HEADLAMP

Diagnosis Procedure

INFOID:0000000012407905

1.CHECK XENON BULB

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

Is the headlamp turned ON?

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

2.CHECK HID CONTROL UNIT

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

Is the headlamp turned ON?

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

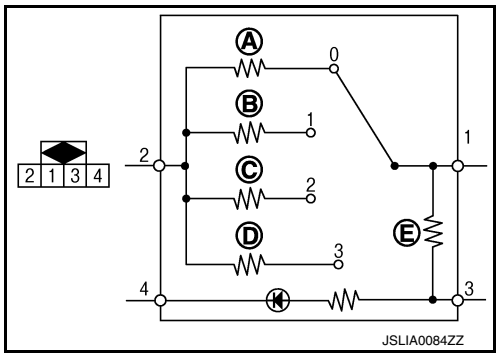
HEADLAMP AIMING SYSTEM (MANUAL)

Component Inspection

INFOID:0000000012407906

1.CHECK HEADLAMP AIMING SWITCH

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



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

Is the inspection result normal?

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

PARKING LAMP CIRCUIT

Component Function Check

INFOID:0000000012407907

1.CHECK PARKING LAMP OPERATION

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

TAIL : Parking lamp ON
Off : Parking lamp OFF

Is the inspection result normal?

YES >> Parking lamp circuit is normal.
NO >> Refer to EXL-64, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012407908

1.CHECK PARKING LAMP FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not blown (open).

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

Is the fuse blown (open)?

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

2.CHECK PARKING LAMP SHORT CIRCUIT

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

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

Is the inspection result normal?

YES >> Replace fuse. [Replace IPDM E/R if the fuse blown (open) again.]
NO >> Repair or replace harness. And then replace the fuse.

3.CHECK PARKING LAMP BULB

Check applicable lamp bulb.

Is the inspection result normal?

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

4.CHECK PARKING LAMP OUTPUT VOLTAGE

CONSULT ACTIVE TEST

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

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

Is the inspection result normal?

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

5.CHECK PARKING LAMP OPEN CIRCUIT

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

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

Is the inspection result normal?

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

6.CHECK PARKING LAMP GROUND OPEN CIRCUIT

Check continuity between front combination lamp harness connector and ground.

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

Is the inspection result normal?

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

FRONT SIDE MARKER LAMP CIRCUIT

Component Function Check

INFOID:0000000012407909

1.CHECK PARKING LAMP OPERATION

Check that the parking lamp is turned ON.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Check parking lamp circuit. Refer to EXL-64, "Component Function Check".

2.CHECK FRONT SIDE MARKER LAMP OPERATION

CONSULT ACTIVE TEST

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

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

Is the inspection result normal?

YES >> Front side marker lamp circuit is normal.
NO >> Refer to EXL-66, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012407910

1.CHECK FRONT SIDE MARKER LAMP BULB

Check applicable lamp bulb.

Is the inspection result normal?

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

2.CHECK FRONT SIDE MARKER LAMP OPEN CIRCUIT

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

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

Is the inspection result normal?

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

3.CHECK FRONT SIDE MARKER LAMP GROUND OPEN CIRCUIT

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

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

Is the inspection result normal?

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

TAIL LAMP CIRCUIT

Component Function Check

INFOID:0000000012407911

1.CHECK TAIL LAMP OPERATION

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

TAIL : Tail Lamp ON
Off : Tail lamp OFF

Is the inspection result normal?

YES >> Tail lamp circuit is normal.
NO >> Refer to EXL-67, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012407912

1.CHECK TAIL LAMP FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not blown (open).

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

Is the fuse blown (open)?

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

2.CHECK TAIL LAMP SHORT CIRCUIT

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

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

Is the inspection result normal?

YES >> Replace fuse. [Replace IPDM E/R if the fuse blown (open) again.]
NO >> Repair or replace harness. And then replace the fuse.

3.CHECK TAIL LAMP BULB

Check applicable lamp bulb.

Is the inspection result normal?

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

4.CHECK TAIL LAMP OUTPUT VOLTAGE

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

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

Is the inspection result normal?

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

5.CHECK TAIL LAMP OPEN CIRCUIT

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

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

Is the inspection result normal?

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

6.CHECK TAIL LAMP GROUND OPEN CIRCUIT

Check continuity between rear combination lamp harness connector and ground.

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

Is the inspection result normal?

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

LICENSE PLATE LAMP CIRCUIT

Component Function Check

INFOID:0000000012407913

1.CHECK TAIL LAMP OPERATION

Check that the tail lamp is turned ON.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Check tail lamp circuit. Refer to EXL-67, "Component Function Check".

2.CHECK LICENSE PLATE LAMP OPERATION

CONSULT ACTIVE TEST

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

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

Is the inspection result normal?

YES >> License plate lamp circuit is normal.
NO >> Refer to EXL-69, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012407914

1.CHECK LICENSE PLATE LAMP BULB

Check the applicable lamp bulb.

Is the inspection result normal?

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

2.CHECK LICENSE PLATE LAMP OPEN CIRCUIT

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

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

Is the inspection result normal?

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

3.CHECK LICENSE PLATE LAMP GROUND OPEN CIRCUIT

Check continuity between license plate lamp harness connector and ground.

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

Is the inspection result normal?

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

TURN SIGNAL LAMP CIRCUIT

Component Function Check

INFOID:0000000012407915

1.CHECK TURN SIGNAL LAMP

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

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

Is the inspection result normal?

YES >> Turn signal lamp circuit is normal.
NO >> Refer to EXL-70, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012407916

1.CHECK TURN SIGNAL LAMP

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

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

Which turn signal lamp does not turn ON?

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

2.CHECK TURN SIGNAL LAMP BULB

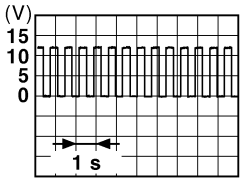
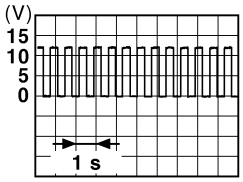
Check the applicable lamp bulb.

Is the inspection result normal?

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

3.CHECK TURN SIGNAL LAMP OUTPUT VOLTAGE

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

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

Is the inspection result normal?

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

4. CHECK TURN SIGNAL LAMP OPEN CIRCUIT

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

Front turn signal lamp

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

Side turn signal lamp

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

Rear turn signal lamp

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

Is the inspection result normal?

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

5. CHECK TURN SIGNAL LAMP SHORT CIRCUIT

Check continuity between BCM harness connector and ground.

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

Is the inspection result normal?

YES-1 >> (When side turn signal lamp does not turn ON) Replace BCM. Refer to BCS-99, "Removal and Installation".

YES-2 >> (When lamp other than side turn signal lamp does not turn ON) Check each bulb socket for internal short circuit, and if check result is normal, replace BCM. Refer to BCS-99, "Removal and Installation".

NO >> Repair or replace harness.

6. CHECK TURN SIGNAL LAMP GROUND OPEN CIRCUIT

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

Front turn signal lamp

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

Side turn signal lamp

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

Rear turn signal lamp

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

Is the inspection result normal?

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

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

NO >> Repair or replace harness.

FRONT FOG LAMP CIRCUIT

Component Function Check

INFOID:0000000012407917

1.CHECK FRONT FOG LAMP OPERATION

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

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

Is the measurement normal?

YES >> Front fog lamp circuit is normal.
NO >> Refer to EXL-73, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012407918

1.CHECK FRONT FOG LAMP BULB

Check the applicable lamp bulb.

Is the inspection result normal?

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

2.CHECK FRONT FOG LAMP OUTPUT VOLTAGE

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

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

Is the inspection result normal?

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

3.CHECK FRONT FOG LAMP OPEN CIRCUIT

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

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

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness.

4. CHECK FRONT FOG LAMP GROUND CIRCUIT OPEN CIRCUIT

Check continuity between front fog lamp harness connector and ground.

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

Is the inspection result normal?

YES >> Refer to GI-41, "Intermittent Incident".
NO >> Repair or replace harness.

OPTICAL SENSOR

Component Function Check

INFOID:0000000012407919

1.CHECK OPTICAL SENSOR SIGNAL BY CONSULT

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

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

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

Is the inspection result normal?

YES >> Optical sensor is normal.
NO >> Refer to EXL-75, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012407920

1.CHECK OPTICAL SENSOR POWER SUPPLY INPUT

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

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

Is the inspection result normal?

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

2.CHECK OPTICAL SENSOR GROUND INPUT

Check voltage between optical sensor harness connector and ground.

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

Is the inspection result normal?

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

3.CHECK OPTICAL SENSOR SIGNAL OUTPUT

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

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

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

Is the inspection result normal?

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

4. CHECK OPTICAL SENSOR OPEN CIRCUIT

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

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

Is the inspection result normal?

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

5. CHECK OPTICAL SENSOR SHORT CIRCUIT

Check continuity between optical sensor harness connector and ground.

Optical sensor		Ground	Continuity
Connector	Terminal		
M17	1		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-99, "Removal and Installation".
NO >> Repair or replace harness.

6. CHECK OPTICAL SENSOR GROUND OPEN CIRCUIT

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

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

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-99, "Removal and Installation".
NO >> Repair or replace harness.

7. CHECK OPTICAL SENSOR SIGNAL OPEN CIRCUIT

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

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

Is the inspection result normal?

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

8. CHECK OPTICAL SENSOR SHORT CIRCUIT

Check continuity between optical sensor harness connector and ground.

Optical sensor		Ground	Continuity
Connector	Terminal		
M17	2		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-99, "Removal and Installation".
NO >> Repair or replace harness.

HAZARD SWITCH

Component Function Check

INFOID:0000000012407921

1.CHECK HAZARD SWITCH SIGNAL BY CONSULT

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

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

Is the inspection result normal?

YES >> Hazard switch circuit is normal.
NO >> Refer to EXL-78, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012407922

1.CHECK HAZARD SWITCH SIGNAL INPUT

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

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

Is the inspection result normal?

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

2.CHECK HAZARD SWITCH SIGNAL OPEN CIRCUIT

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

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

Is the inspection result normal?

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

3.CHECK HAZARD SWITCH SIGNAL SHORT CIRCUIT

Check continuity between hazard switch harness connector and ground.

Hazard switch		Ground	Continuity
Connector	Terminal		
M45	2		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-99, "Removal and Installation".
NO >> Repair or replace harness.

4. CHECK HAZARD SWITCH GROUND OPEN CIRCUIT

Check continuity between hazard switch harness connector and ground.

Hazard switch		Ground	Continuity
Connector	Terminal		
M45	1		Existed

Is the inspection result normal?

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

SYMPTOM DIAGNOSIS

EXTERIOR LIGHTING SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000012407923

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

Symptom		Possible cause	Inspection item
Headlamp (HI) is not turned ON.	One side	• Fuse • Halogen bulb (HI) • Harness between IPDM E/R and headlamp (HI) • Harness between headlamp (HI) and ground • IPDM E/R	Headlamp (HI) circuit Refer to EXL-58, "Component Function Check".
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON" Refer to EXL-83, "Diagnosis Procedure".	
High beam indicator lamp is not turned ON. [Headlamp (HI) is turned ON.]		Combination meter	• Combination meter Data monitor "HI-BEAM IND" • BCM (HEAD LAMP) Active test "HEADLAMP"
Headlamp (LO) is not turned ON.	One side	• Fuse • Xenon bulb (LO) • Harness between IPDM E/R and headlamp lamp (LO) • Harness between headlamp (LO) and ground • IPDM E/R	Headlamp (LO) circuit Refer to EXL-60, "Component Function Check".
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON" Refer to EXL-84, "Diagnosis Procedure".	
Each lamp is not turned ON/OFF with lighting switch AUTO.		• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-97, "Symptom Table".
		• Optical sensor • Harness between optical sensor and BCM • BCM	Optical sensor Refer to EXL-75, "Component Function Check".
Parking lamp is not turned ON.		• Fuse • Parking lamp bulb • Harness between IPDM E/R and front combination lamp • Harness between front combination lamp and ground • IPDM E/R	Parking lamp circuit Refer to EXL-64, "Component Function Check".
Front side marker lamp is not turned ON.		• Front side marker lamp bulb • Harness between IPDM E/R and front side marker lamp • Harness between front side marker lamp and ground	Front side marker lamp circuit Refer to EXL-66, "Component Function Check".

Symptom		Possible cause	Inspection item
Tail lamp (Rear side marker lamp) is not turned ON.		• Fuse • Tail lamp bulb • Harness between IPDM E/R and rear combination lamp • Harness between rear combination lamp and ground • IPDM E/R	Tail lamp circuit Refer to EXL-67, "Component Function Check".
License plate lamp is not turned ON.		• License plate lamp bulb • Harness between IPDM E/R and license plate lamp • Harness between license plate lamp and ground	License plate lamp circuit Refer to EXL-69, "Component Function Check".
Parking lamp, side marker lamp, tail lamp and license plate lamp are not turned ON.		**Symptom diagnosis** “PARKING, SIDE MARKER, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON” Refer to EXL-85, "Diagnosis Procedure".	
Tail lamp indicator is not turned ON. (Exterior lamps are turned ON.)		Combination meter	• Combination meter Data monitor “LIGHT IND” • BCM (HEADLAMP) Active test “TAIL LAMP”
Turn signal lamp does not blink.	Indicator lamp is normal. (Applicable side performs high flasher activation.)	• Turn signal lamp bulb • Door mirror • Harness between BCM and each turn signal lamp • Harness between each turn signal lamp and ground	Turn signal lamp circuit Refer to EXL-70, "Component Function Check".
	Indicator lamp is included.	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-97, "Symptom Table".
Turn signal indicator lamp does not blink. (Turn signal lamp is normal.)	One side	Combination meter	—
	Both sides (Always)	• Turn signal indicator lamp signal • BCM • Combination meter	• Combination meter Data monitor “TURN IND” • BCM (FLASHER) Active test “FLASHER”
	Both sides (Only when activating hazard warning lamp with ignition switch OFF)	• Combination meter power supply and ground circuit • Combination meter	Combination meter Power supply and ground circuit Refer to MWI-77, "COMBINATION METER : Diagnosis Procedure".
• Hazard warning lamp does not activate. • Hazard warning lamp continues activating. (Turn signal is normal.)		• Hazard switch • Harness between hazard switch and BCM • Harness between hazard switch and ground • BCM	Hazard switch circuit Refer to EXL-78, "Component Function Check".
Front fog lamp is not turned ON.	One side	• Front fog lamp bulb • Harness between IPDM E/R and front fog lamp • Harness between front fog lamp and ground • IPDM E/R	Front fog lamp circuit Refer to EXL-73, "Component Function Check".
	Both sides	**Symptom diagnosis** “BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON” Refer to EXL-86, "Diagnosis Procedure".	

NORMAL OPERATING CONDITION

Description

INFOID:0000000012407925

XENON HEADLAMP

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

AUTO LIGHT SYSTEM

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

BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON

Description

INFOID:0000000012407928

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

Diagnosis Procedure

INFOID:0000000012407929

1.COMBINATION SWITCH INSPECTION

Check combination switch. Refer to BCS-97, "Symptom Table".

Is the inspection result normal?

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

2.CHECK HEADLAMP (HI) REQUEST SIGNAL INPUT

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

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

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-99, "Removal and Installation".

3.HEADLAMP (HI) CIRCUIT INSPECTION

Check headlamp (HI) circuit. Refer to EXL-58, "Component Function Check".

Is the inspection result normal?

YES >> Refer to GI-41, "Intermittent Incident".
NO >> Repair or replace the malfunctioning part.

BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON

Description

INFOID:0000000012407930

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

Diagnosis Procedure

INFOID:0000000012407931

1.CHECK COMBINATION SWITCH

Check combination switch. Refer to BCS-97, "Symptom Table".

Is the inspection result normal?

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

2.CHECK HEADLAMP (LO) REQUEST SIGNAL INPUT

CONSULT DATA MONITOR

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

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

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-99, "Removal and Installation".

3.HEADLAMP (LO) CIRCUIT INSPECTION

Check headlamp (LO) circuit. Refer to EXL-60, "Component Function Check".

Is the inspection result normal?

YES >> Refer to GI-41, "Intermittent Incident".
NO >> Repair or replace the malfunctioning part.

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

Description

INFOID:0000000012407932

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

Diagnosis Procedure

INFOID:0000000012407933

1.COMBINATION SWITCH INSPECTION

Check combination switch. Refer to BCS-97, "Symptom Table".

Is the combination switch normal?

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

2.CHECK TAIL LAMP RELAY REQUEST SIGNAL INPUT

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

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

Is the inspection result normal?

YES >> Replace IPDM E/R.
NO >> Replace BCM. Refer to BCS-99, "Removal and Installation".

BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

Description

INFOID:0000000012407934

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

Diagnosis Procedure

INFOID:0000000012407935

1.CHECK FRONT FOG LAMP FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not blown (open).

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

Is the fuse blown (open)?

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

2.CHECK FRONT FOG LAMP SHORT CIRCUIT

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

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

Is the inspection result normal?

YES >> Replace fuse. [Replace IPDM E/R if the fuse blown (open) again.]
NO >> Repair or replace harness. And then replace the fuse.

3.COMBINATION SWITCH INSPECTION

Check combination switch. Refer to BCS-97, "Symptom Table".

Is the inspection result normal?

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

4.CHECK FRONT FOG LAMP REQUEST SIGNAL INPUT

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

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

Is the item status normal?

YES >> GO TO 5.
NO >> Replace BCM. Refer to BCS-99, "Removal and Installation".

5.FRONT FOG LAMP CIRCUIT INSPECTION

Check the front fog lamp circuit. Refer to EXL-73, "Component Function Check".

Is the inspection result normal?

YES >> Refer to GI-41, "Intermittent Incident".
NO >> Repair or replace the malfunctioning part.

PERIODIC MAINTENANCE

HEADLAMP AIMING ADJUSTMENT

Description

INFOID:0000000012407936

PREPARATION BEFORE ADJUSTING

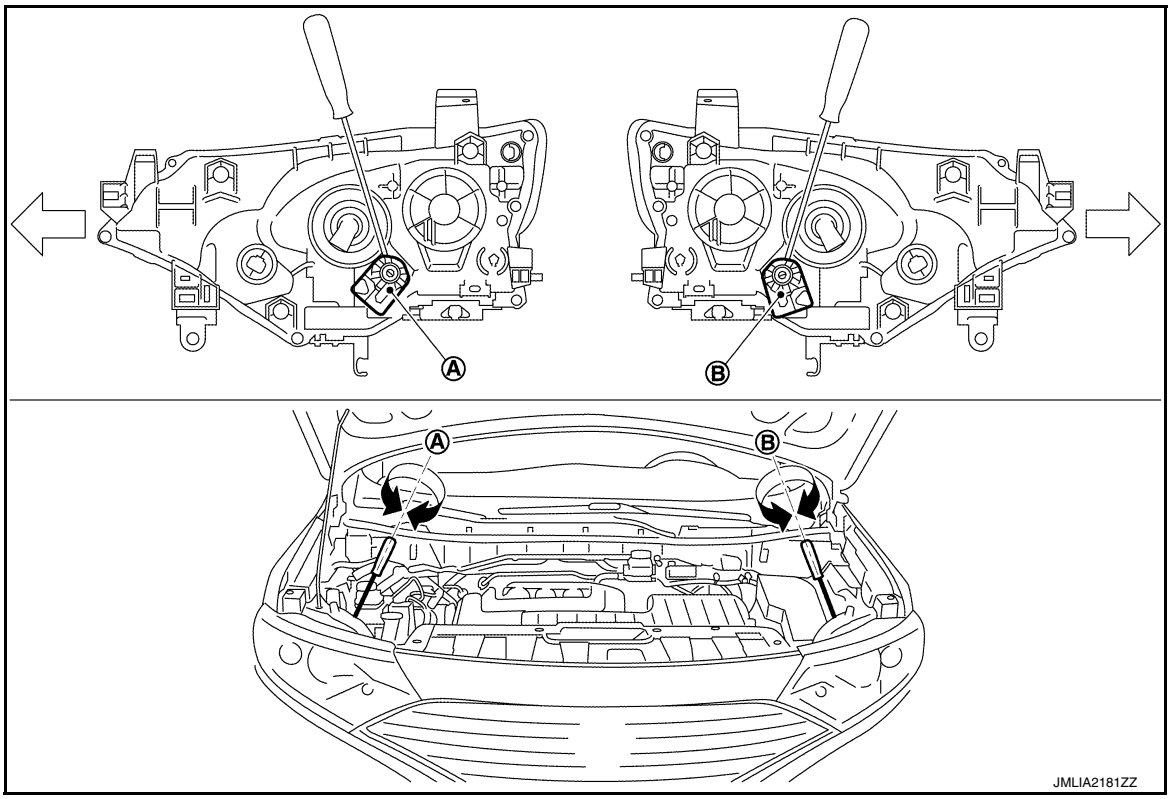
NOTE:

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

Before performing aiming adjustment, check the following.

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

AIMING ADJUSTMENT SCREW



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

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

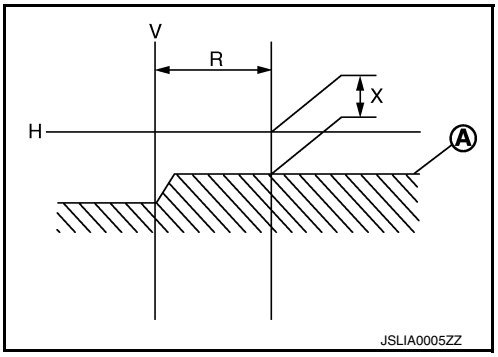
Aiming Adjustment Procedure

INFOID:0000000012407937

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

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

Low beam distribution on the screen

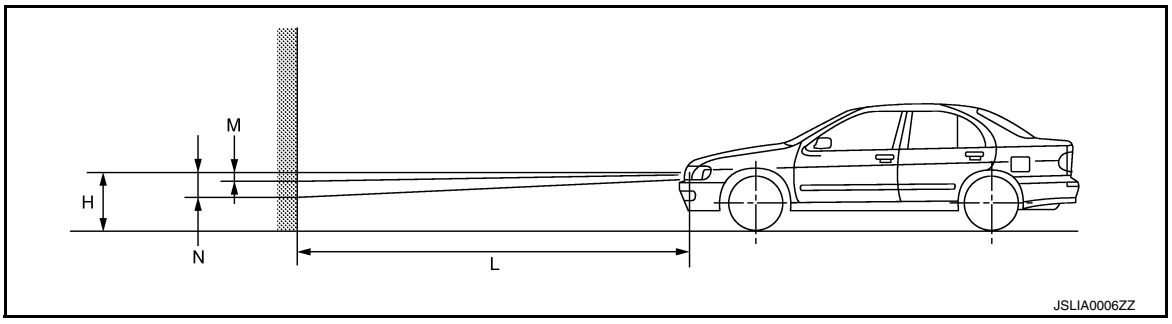


5. Adjust the cutoff line height (X) with the aiming adjustment screw so as to enter in the adjustment range (M–N) according to the horizontal center line of headlamp (H).

unit: mm (in)

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

Side view



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

FRONT FOG LAMP AIMING ADJUSTMENT

Description

INFOID:0000000012407938

PREPARATION BEFORE ADJUSTING

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

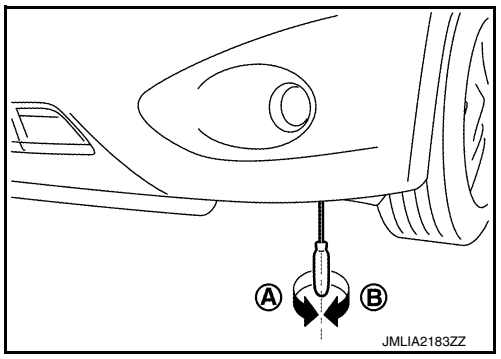
Before performing aiming adjustment, check the following.
- Adjust the tire pressure to the specification.
- Fill with fuel, engine coolant and each oil.
- Maintain the unloaded vehicle condition. (Remove luggage from the passenger compartment and the trunk room.)
  NOTE:
  Do not remove the temporary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

AIMING ADJUSTMENT SCREW

- Turn the aiming adjusting screw for adjustment.

  A: UP
  B: DOWN

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

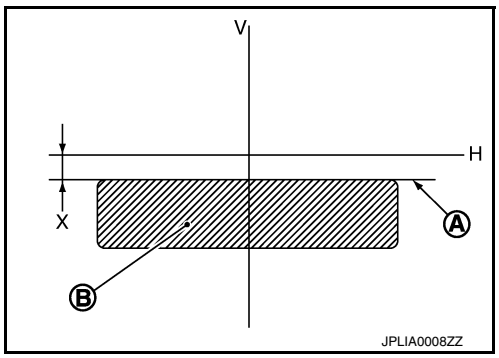


Aiming Adjustment Procedure

INFOID:0000000012407939

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

Front fog lamp light distribution on the screen



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

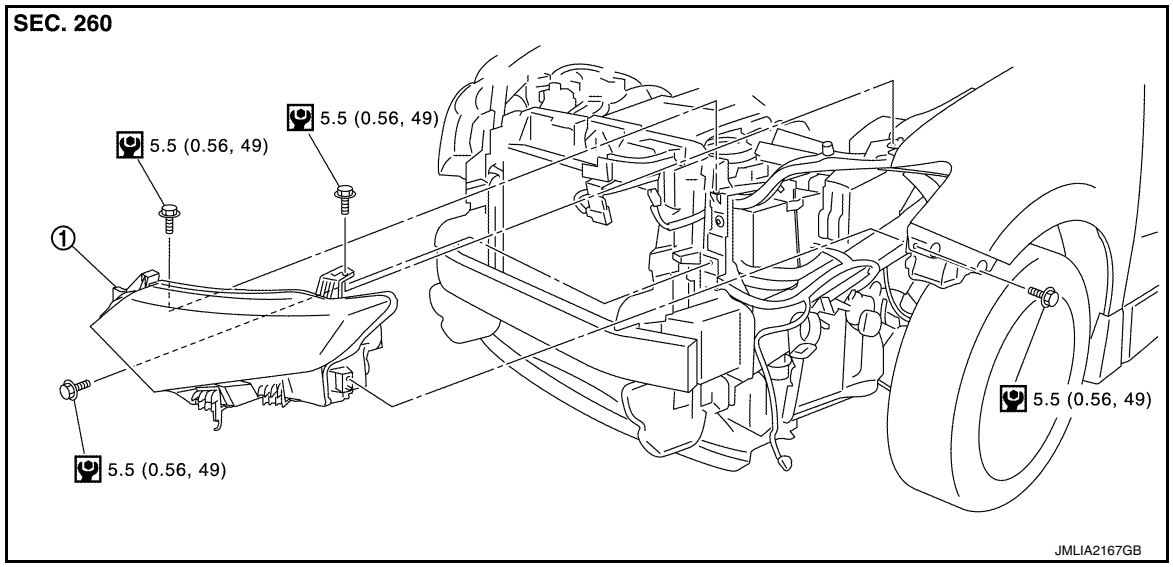
REMOVAL AND INSTALLATION

FRONT COMBINATION LAMP

Exploded View

INFOID:0000000012407940

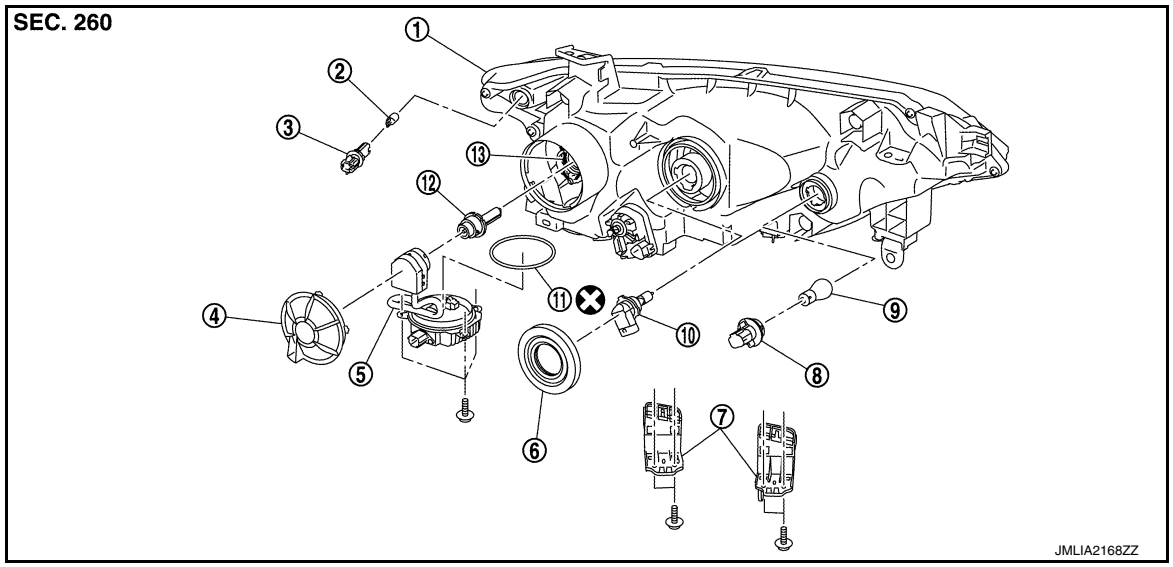
REMOVAL



1. Front combination lamp

: N·m (kg-m, in-lb)

DISASSEMBLY



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

13. Retaining spring

: Always replace after every disassembly.

Removal and Installation

INFOID:0000000012407941

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

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

INSTALLATION

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

CAUTION:
- **After installation, perform aiming adjustment. Refer to EXL-87, "Description".**
- **After installation, check that headlamp lighting. Refer to EXL-93, "Inspection After Installation (HID Control Unit)".**

Replacement

INFOID:0000000012407942

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

HEADLAMP BULB (HI)

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

HEADLAMP BULB (LO)

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

FRONT TURN SIGNAL LAMP/PARKING LAMP BULB

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

FRONT SIDE MARKER LAMP BULB

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

Disassembly and Assembly

INFOID:0000000012407943

DISASSEMBLY

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

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

ASSEMBLY

Assemble in the reverse order of disassembly.

CAUTION:

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

Inspection After Installation (HID Control Unit)

INFOID:0000000012407944

CAUTION:

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

XENON HEADLAMP LIGHTING CHECK

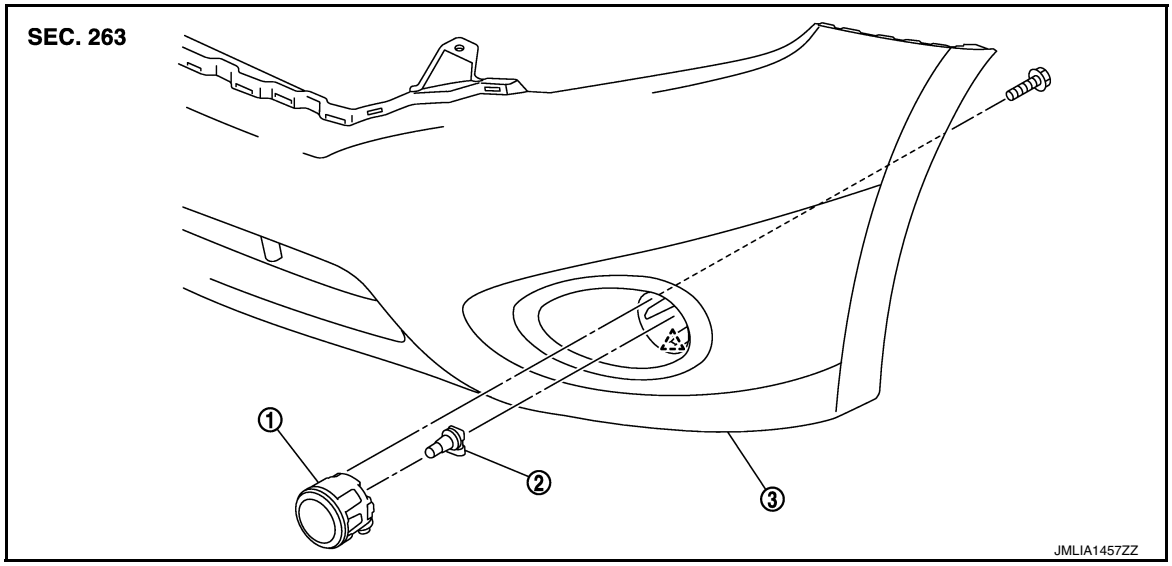
When recycled HID Control Unit, check the following, when there is abnormality replace the HID Control Unit.

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

FRONT FOG LAMP

Exploded View

INFOID:0000000012407945



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

: Pawl

Removal and Installation

INFOID:0000000012407946

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

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

INSTALLATION

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

CAUTION:
After installation, perform aiming adjustment. Refer to EXL-89, "Description".

Replacement

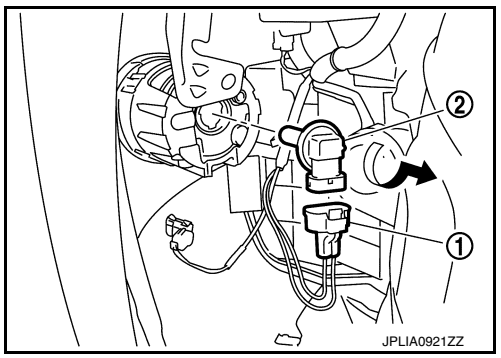
INFOID:0000000012407947

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

FRONT FOG LAMP BULB

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

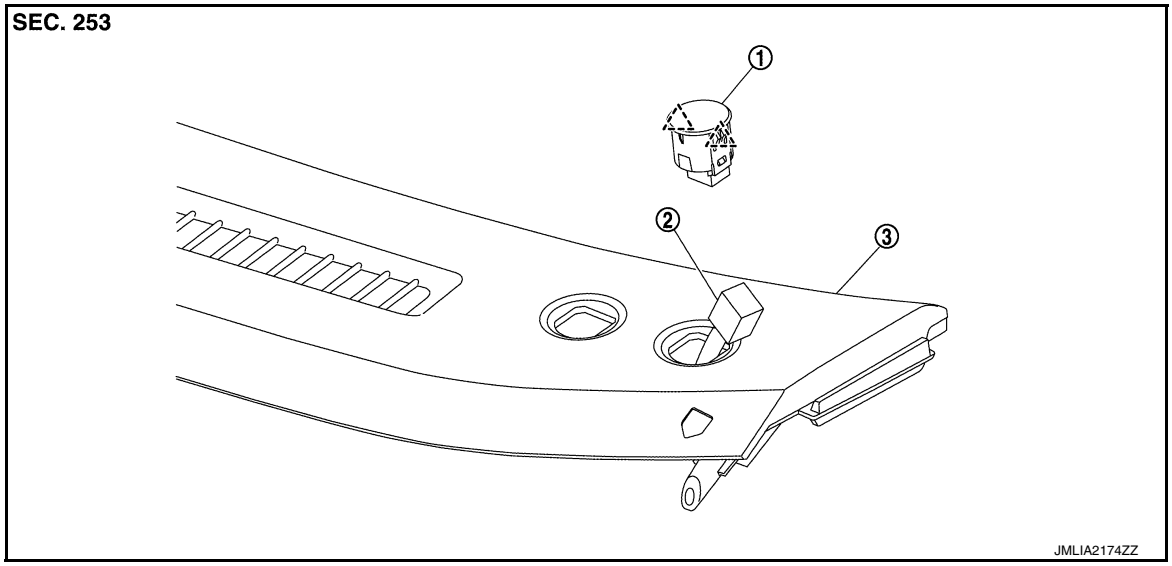
2. Disconnect front fog lamp bulb connector (1).
3. Rotate the bulb (2) counterclockwise and unlock it.



OPTICAL SENSOR

Exploded View

INFOID:0000000012407948



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

: Pawl

Removal and Installation

INFOID:0000000012407949

REMOVAL

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

INSTALLATION

Install in the reverse order of removal.

LIGHTING & TURN SIGNAL SWITCH

Exploded View

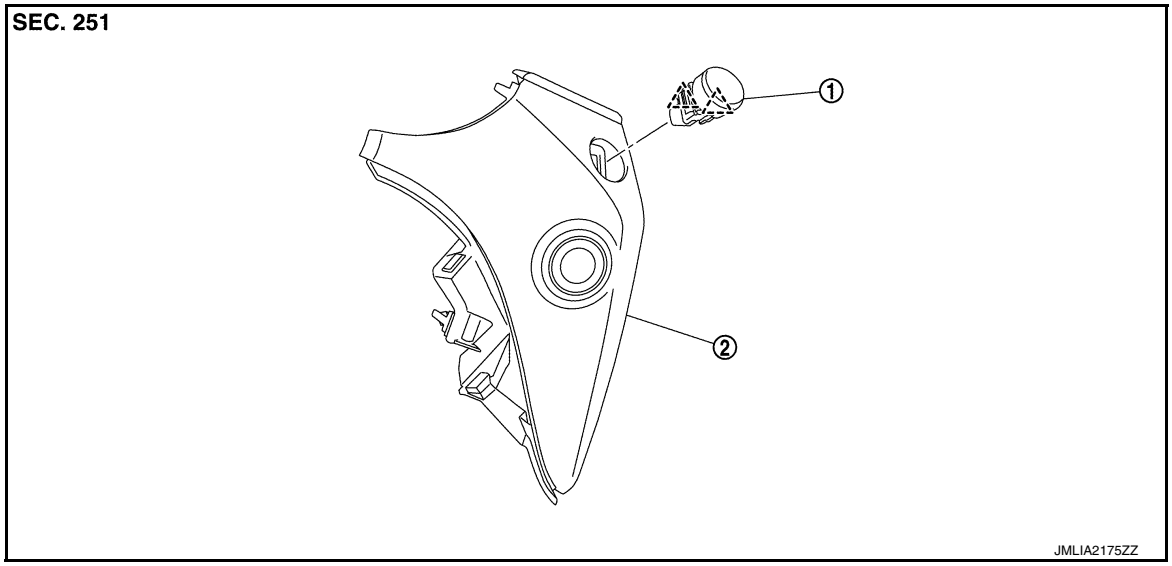
INFOID:0000000012407950

The lighting & turn signal switch is integrated in the combination switch. Refer to BCS-100, "Exploded View".

HAZARD SWITCH

Exploded View

INFOID:0000000012407951



1. Hazard switch
2. Instrument finisher A

: Pawl

Removal and Installation

INFOID:0000000012407952

REMOVAL

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

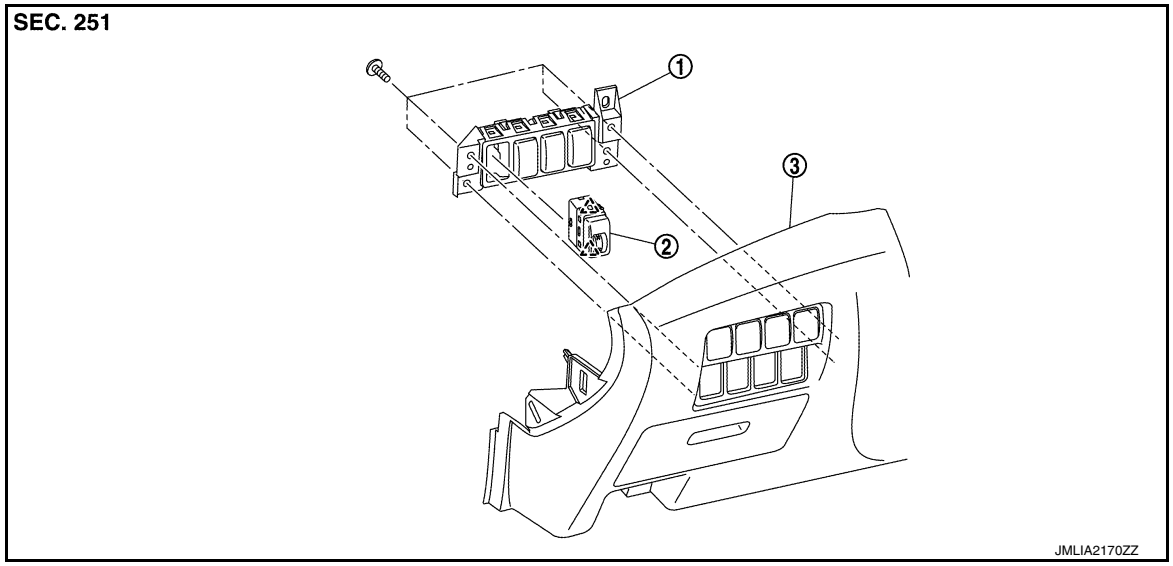
INSTALLATION

Install in the reverse order of removal.

HEADLAMP AIMING SWITCH

Exploded View

INFOID:0000000012407953



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

: Pawl

Removal and Installation

INFOID:0000000012407954

REMOVAL

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

INSTALLATION

Install in the reverse order of removal.

SIDE TURN SIGNAL LAMP

Exploded View

INFOID:0000000012407955

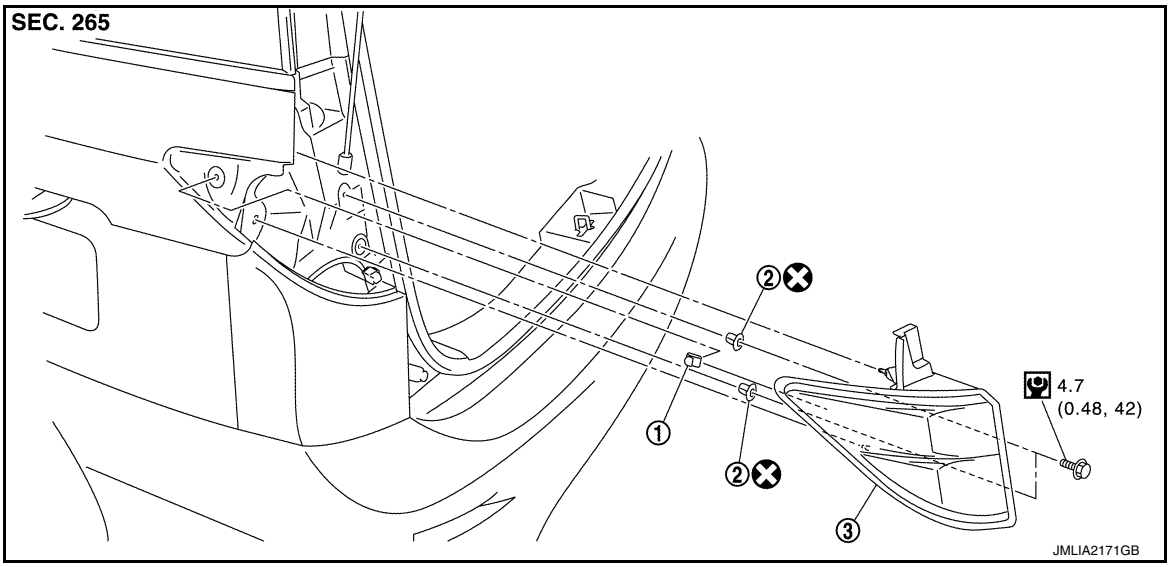
Side turn signal lamp is integrated in the door mirror. Refer to MIR-34, "Exploded View".

REAR COMBINATION LAMP

Exploded View

INFOID:0000000012407956

REMOVAL

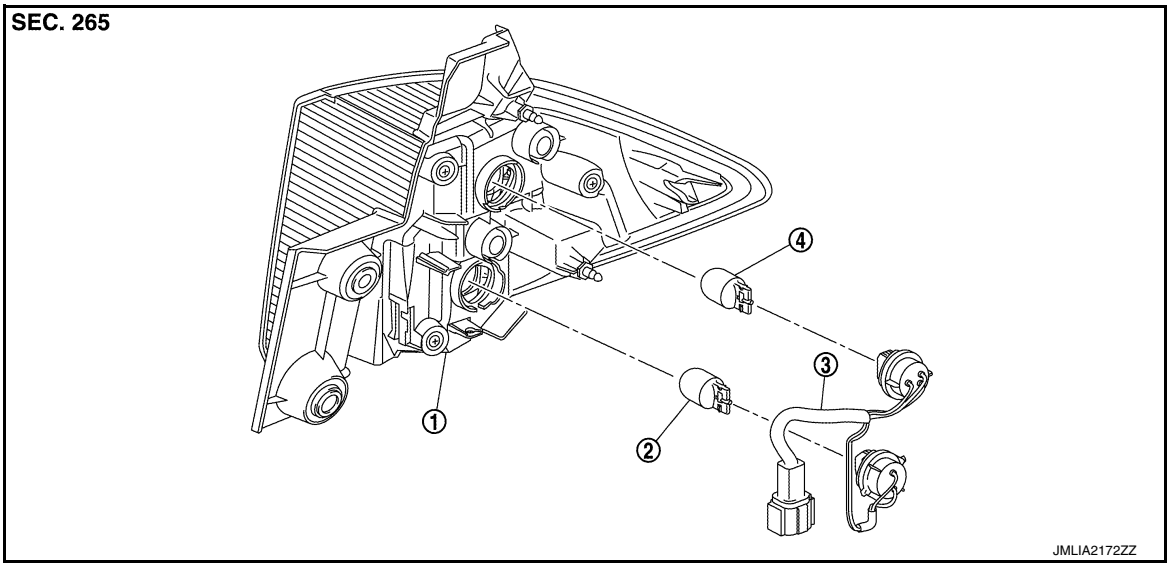


1. Clip
2. Grommet
3. Rear combination lamp assembly

: Always replace after every disassembly.

: N·m (kg-m, in-lb)

DISASSEMBLY



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

Removal and Installation

INFOID:0000000012407957

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

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

INSTALLATION

Install in the reverse order of removal.

Replacement

INFOID:0000000012407958

CAUTION:

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

REAR TURN SIGNAL LAMP BULB

1. Remove rear combination lamp assembly. Refer to EXL-101, "Removal and Installation".
2. Rotate rear turn signal lamp bulb socket counterclockwise, and then remove rear turn signal lamp bulb socket.
3. Remove rear turn signal lamp bulb from rear turn signal lamp bulb socket.

TAIL LAMP/STOP LAMP BULB

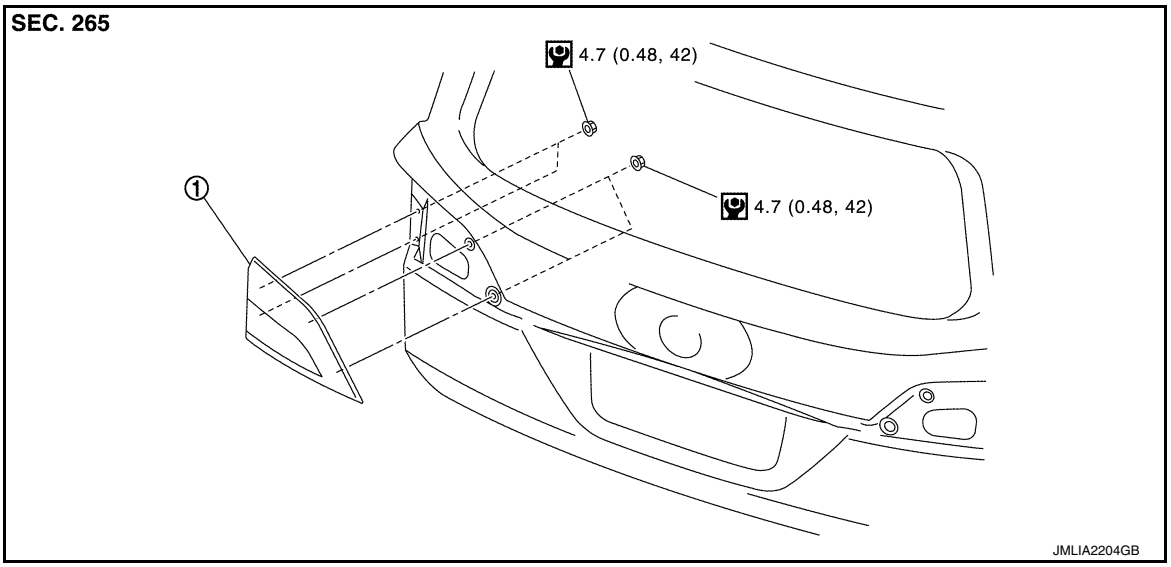
1. Remove rear combination lamp assembly. Refer to EXL-101, "Removal and Installation".
2. Rotate tail lamp/stop lamp bulb socket counterclockwise, and then remove tail lamp/stop lamp bulb socket.
3. Remove tail lamp/stop lamp bulb from tail lamp/stop lamp bulb socket.

BACK-UP LAMP

Exploded View

INFOID:0000000012407959

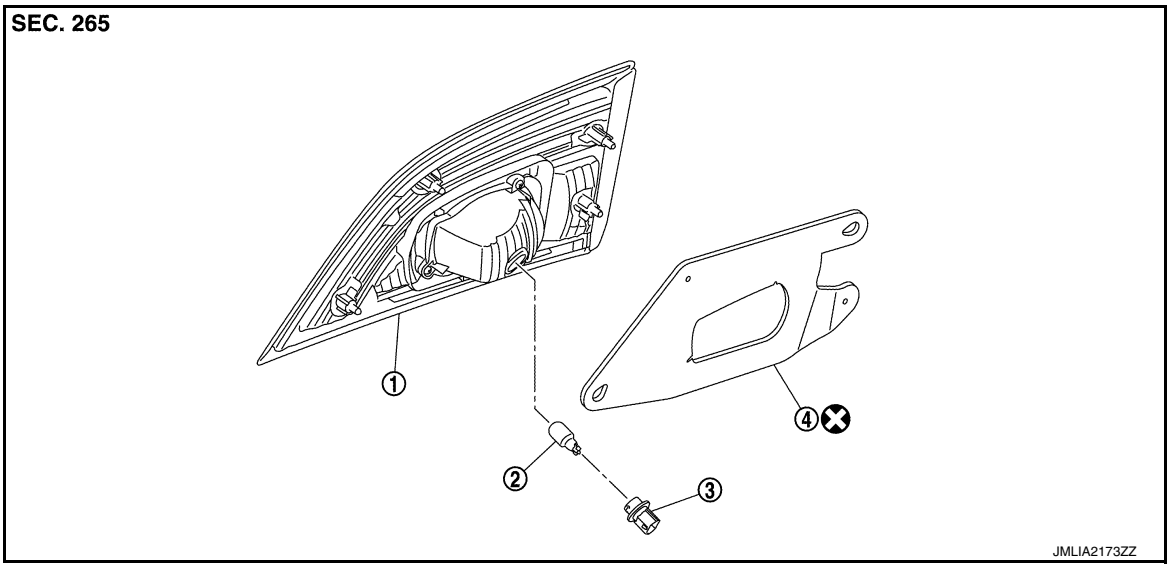
REMOVAL



1. Back-up lamp assembly

: N·m (kg-m, in-lb)

DISASSEMBLY



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

: Always replace after every disassembly.

Removal and Installation

INFOID:0000000012407960

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

1. Remove touch sensor (with automatic back door). Refer to DLK-476, "TOUCH SENSOR : Removal and Installation".
2. Remove back door lower finisher. Refer to INT-48, "BACK DOOR LOWER FINISHER : Removal and Installation".
3. Disconnect back-up lamp connector.
4. Remove back-up lamp mounting nuts, and then remove back-up lamp.
5. Remove seal packing

INSTALLATION

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

CAUTION:

Seal packing cannot be reused.

Replacement

INFOID:0000000012407961

CAUTION:

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

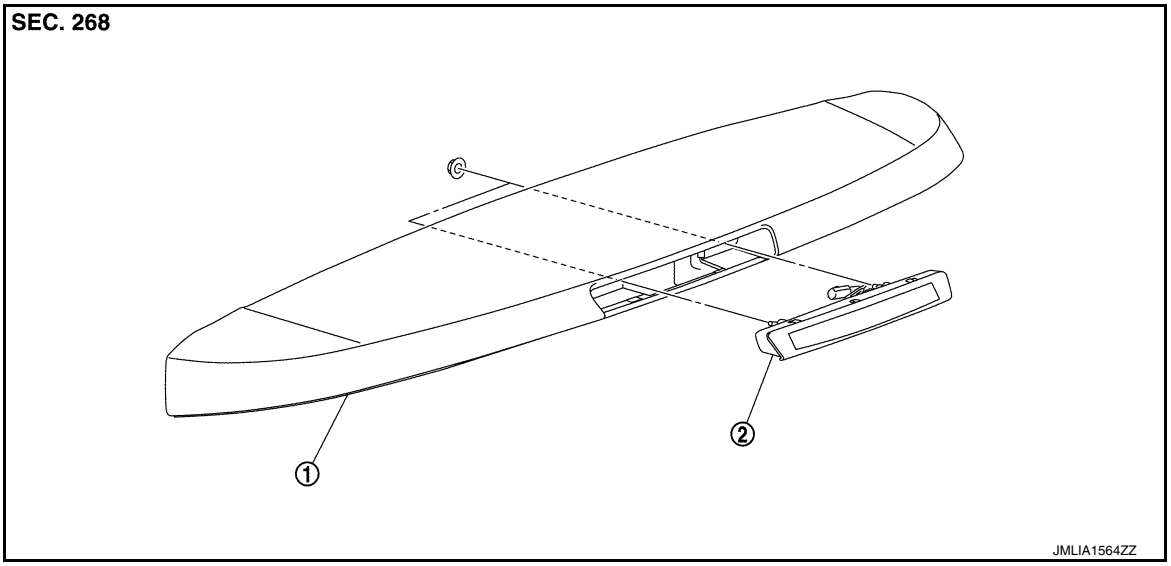
BACK-UP LAMP BULB

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

HIGH-MOUNTED STOP LAMP

Exploded View

INFOID:0000000012407962



1. Rear spoiler
2. High-mounted stop lamp

Removal and Installation

INFOID:0000000012407963

REMOVAL

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

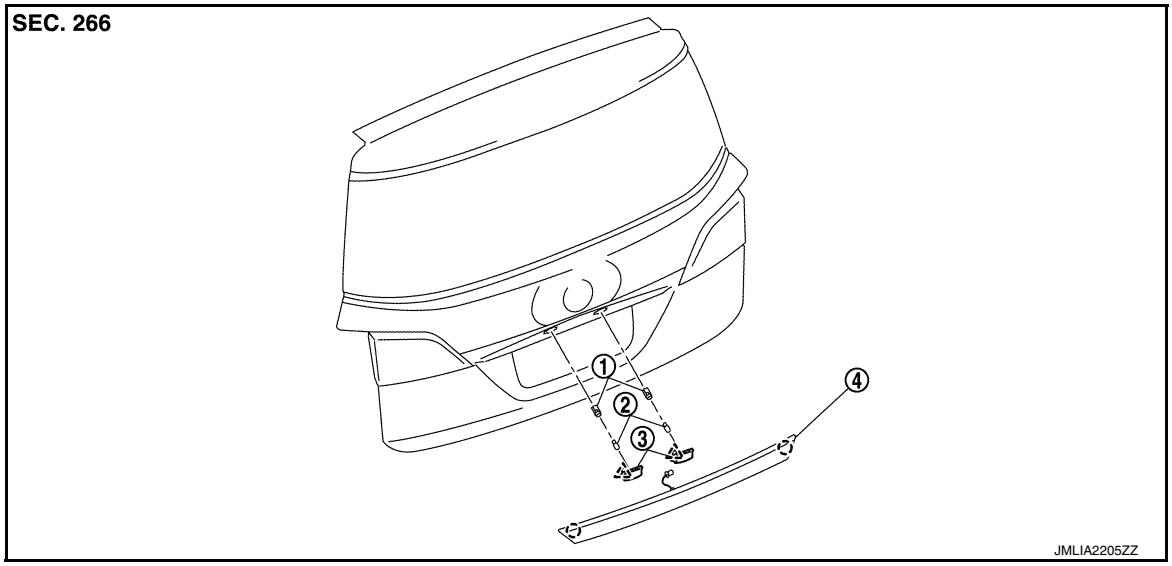
INSTALLATION

Install in the reverse order of removal.

LICENSE PLATE LAMP

Exploded View

INFOID:0000000012407964



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

: Clip

: Pawl

Removal and Installation

INFOID:0000000012407965

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

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

INSTALLATION

Install in the reverse order of removal.

Replacement

INFOID:0000000012407966

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

LICENSE PLATE LAMP BULB

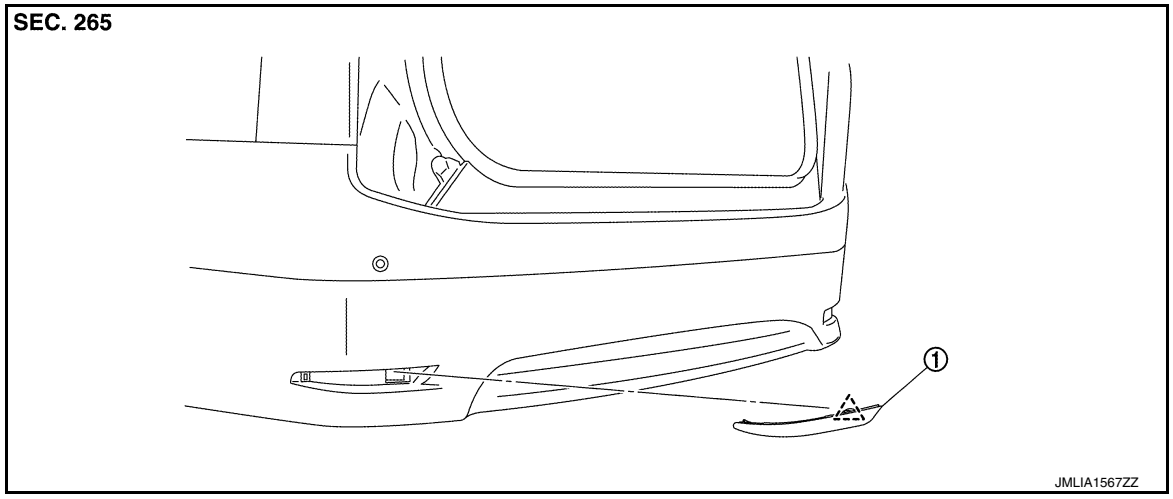
1. Remove back door lower finisher. Refer to EXT-47, "Removal and Installation".
2. Disconnect license plate lamp connector.
3. Rotate license plate lamp bulb socket counterclockwise and unlock it.
4. Remove license plate lamp bulb from license plate lamp bulb socket.

REFLEX REFLECTOR

Exploded View

INFOID:0000000012407967

SEC. 265



1. Reflex reflector

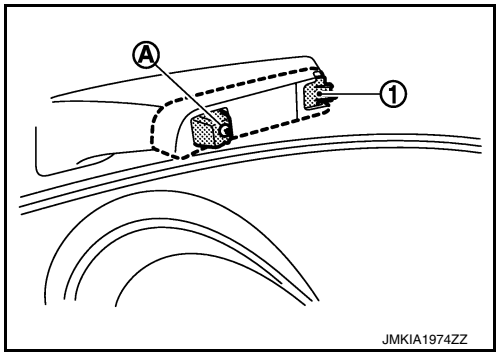
: Pawl

Removal and Installation

INFOID:0000000012407968

REMOVAL

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



INSTALLATION

Install in the reverse order of removal.

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Bulb Specifications

INFOID:0000000012407969

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

PRECAUTION

PRECAUTIONS

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

INFOID:0000000012407970

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:

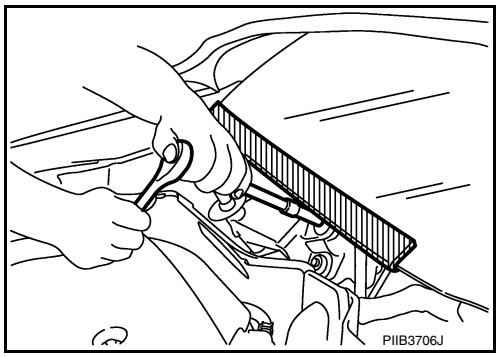
Always observe the following items for preventing accidental activation.

- **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.**

Precaution for Procedure without Cowl Top Cover

INFOID:0000000013051784

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc to prevent damage to windshield.



Precautions For Xenon Headlamp Service

INFOID:0000000013051786

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.

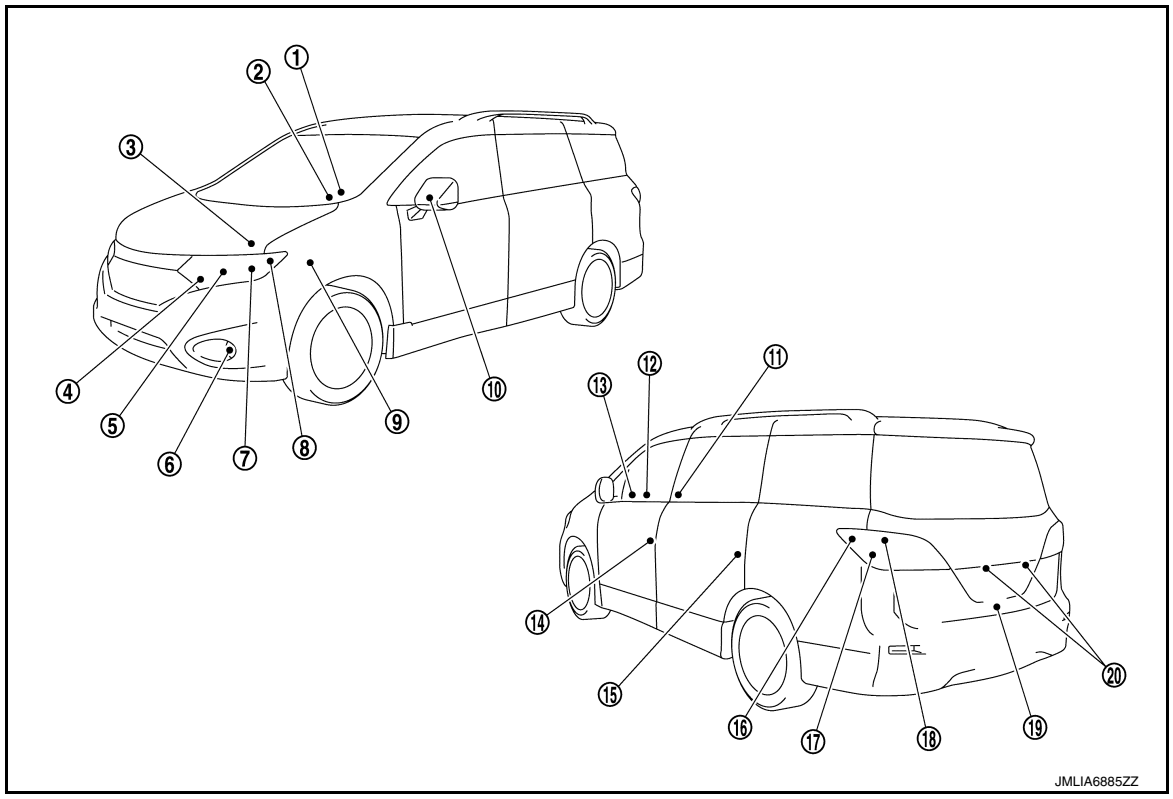
- **Install the xenon bulb securely. (Insufficient bulb socket installation may melt the bulb, the connector, the housing, etc. by high-voltage leakage or corona discharge.)**
- **Never perform HID circuit inspection with a tester.**
- **Never touch the xenon bulb glass with hands. Never put oil and 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.).**

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000012407972



No.	Part	Function
1.	Optical sensor*1	Refer to EXL-112, "Optical Sensor".
2.	BCM	• Detects each switch condition by the combination switch reading function • Judges that the exterior lamps are turned ON according to the vehicle condition • Requests the headlamp relay (High/Low), tail lamp relay and front fog lamp relay ON to IPDM E/R (via CAN communication) • Requests the high beam indicator lamp and tail lamp indicator lamp ON to the combination meter (via CAN communication) • Judges the outside brightness from the optical sensor signal. • Judges the ON/OFF timing according to the vehicle condition. • Judges the ON/OFF status of the exterior lamp according to the outside brightness and the vehicle condition. • Refer to BCS-5, "BODY CONTROL SYSTEM : Component Parts Location" for detailed installation location.
3.	IPDM E/R	• Controls the integrated relay, and supplies voltage to the load according to the request from BCM (via CAN communication). • Refer to PCS-4, "IPDM E/R : Component Parts Location" for detailed installation location.
4.	Front turn signal lamp/Parking lamp	Refer to EXL-112, "Bulb Specifications".
5.	Headlamp HI	Refer to EXL-112, "Bulb Specifications".
6.	Front fog lamp*2	Refer to EXL-112, "Bulb Specifications".
7.	Headlamp LO	Refer to EXL-112, "Bulb Specifications".
8.	Front side marker lamp	Refer to EXL-112, "Bulb Specifications".
9.	Air bag diagnosis sensor unit	Transmits air bag signal to BCM. Refer to SRC-8, "Component Parts Location" for detailed installation location.

No.	Part	Function
10.	Side turn signal lamp	Refer to EXL-112, "Bulb Specifications".
11.	Hazard switch	Refer to EXL-112, "Hazard Switch".
12.	Combination meter	• Blinks the turn signal indicator lamp and outputs the turn signal operating sound with integrated buzzer according to the request from BCM (via CAN communication). • Turns the high beam indicator lamp and tail lamp indicator lamp ON according to the request from BCM (via CAN communication).
13.	Combination switch (Lighting & turn signal switch)	Refer to BCS-9, "COMBINATION SWITCH READING SYSTEM : System Description".
14.	Front door switch (driver side)	Refer to DLK-18, "DOOR LOCK SYSTEM : Component Parts Location".
15.	Slide door switch (LH)	Refer to DLK-18, "DOOR LOCK SYSTEM : Component Parts Location".
16.	Rear side marker lamp	Refer to EXL-112, "Bulb Specifications".
17.	Rear turn signal lamp	Refer to EXL-112, "Bulb Specifications".
18.	Tail lamp	Refer to EXL-112, "Bulb Specifications".
19.	Back door switch	Refer to DLK-18, "DOOR LOCK SYSTEM : Component Parts Location".
20.	License plate lamp	Refer to EXL-112, "Bulb Specifications".

*1: With auto light system
*2: With front fog lamp

Optical Sensor

INFOID:0000000012407973

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

Hazard Switch

INFOID:0000000012407975

Inputs the hazard switch ON/OFF signal to BCM.

Bulb Specifications

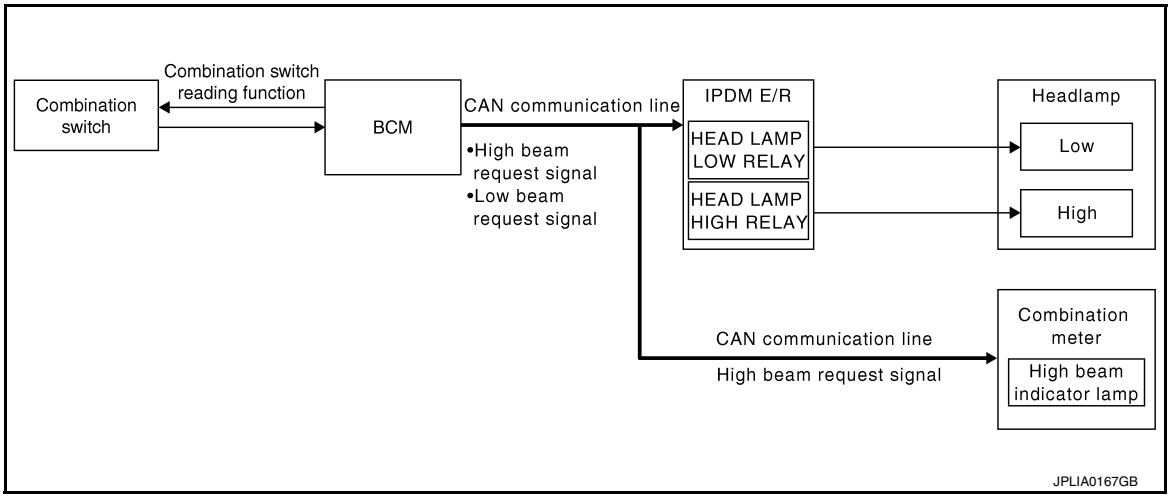
INFOID:0000000012407976

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

SYSTEM
HEADLAMP SYSTEM
HEADLAMP SYSTEM : System Description

INFOID:0000000012407977

SYSTEM DIAGRAM



OUTLINE

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

HEADLAMP (LO) OPERATION

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

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

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

HEADLAMP (HI) OPERATION

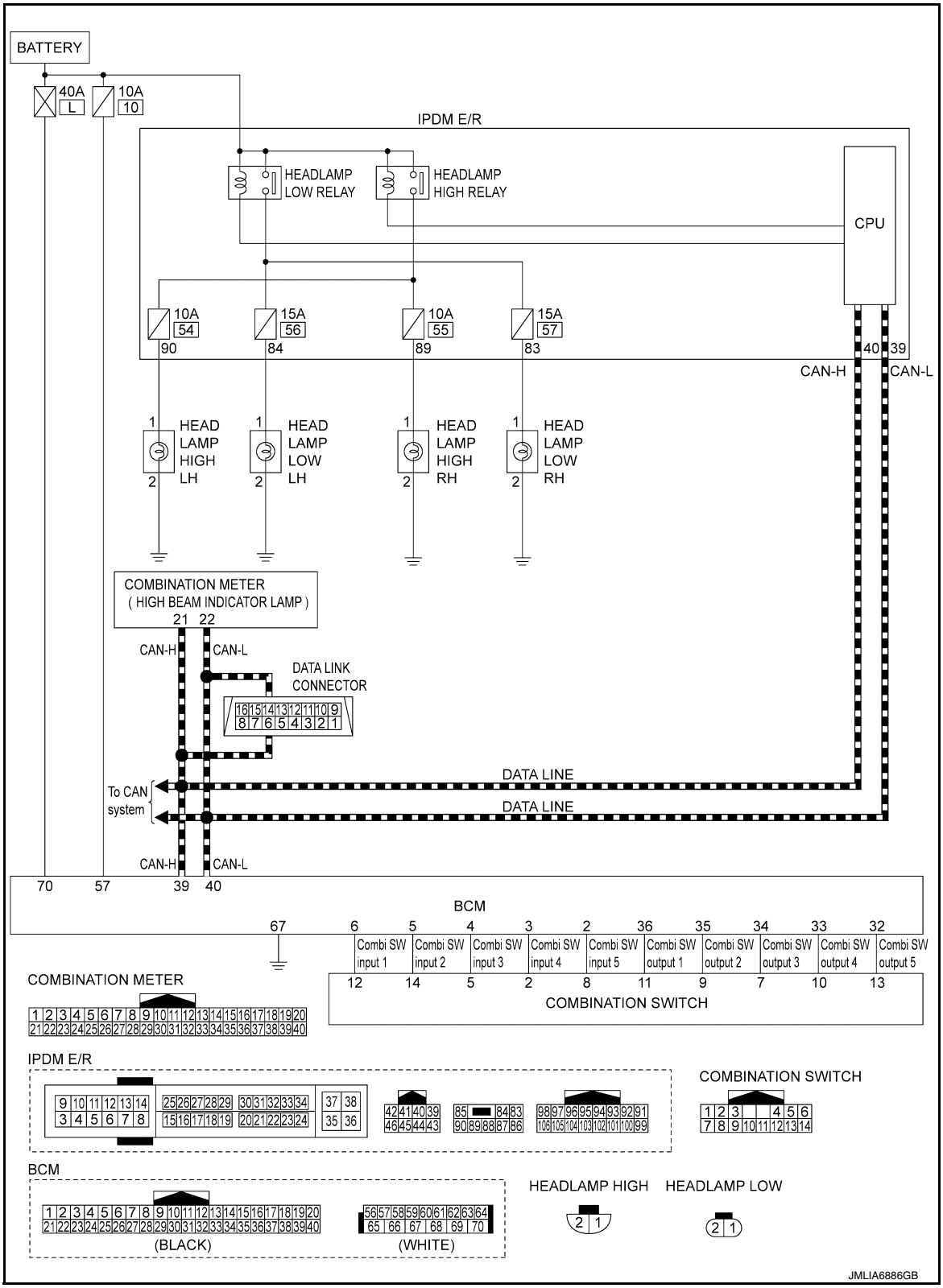
- BCM transmits the high beam request signal to IPDM E/R and the combination meter with CAN communication according to the headlamp (HI) ON condition.

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

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

HEADLAMP SYSTEM : Circuit Diagram

INFOID:0000000012407978



HEADLAMP SYSTEM : Fail-safe

INFOID:0000000012407979

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With BCM

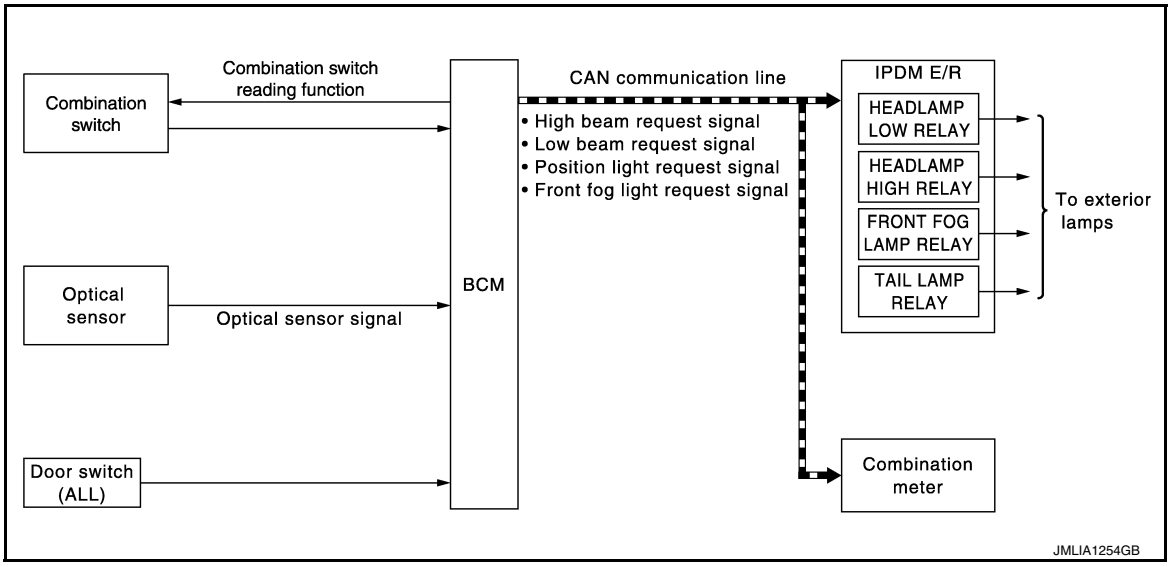
Control part	Fail-safe operation
Headlamp	• Turns ON the headlamp low relay when the ignition switch is turned ON • Turns OFF the headlamp low relay when the ignition switch is turned OFF • Headlamp high relay OFF

AUTO LIGHT SYSTEM

AUTO LIGHT SYSTEM : System Description

INFOID:0000000012407980

SYSTEM DIAGRAM



OUTLINE

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

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

Control by IPDM E/R
- Relay control function

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

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

NOTE:
The settings of the twilight lighting function and the wiper linked auto lighting function can be changed with CONSULT. Refer to EXL-128, "HEADLAMP : CONSULT Function (BCM - HEADLAMP) (Halogen Type Headlamp)".

AUTO LIGHT FUNCTION (WITH TWILIGHT LIGHTING FUNCTION)

Description

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

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

NOTE:
As to ON/OFF timing, the sensitivity depends on settings. The settings can be changed with CONSULT. Refer to EXL-128, "HEADLAMP : CONSULT Function (BCM - HEADLAMP) (Halogen Type Headlamp)".

WIPER LINKED AUTO LIGHTING FUNCTION

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

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

AUTO LIGHT ADJUSTMENT SYSTEM

The auto light adjustment system automatically, dims/brightens the display and combination meter, according to brightness outside the vehicle, when lighting switch 1ST, lighting switch 2ND or lighting switch AUTO is operated. Refer to INL-18, "AUTO LIGHT ADJUSTMENT SYSTEM : System Description".

DELAY TIMER FUNCTION

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

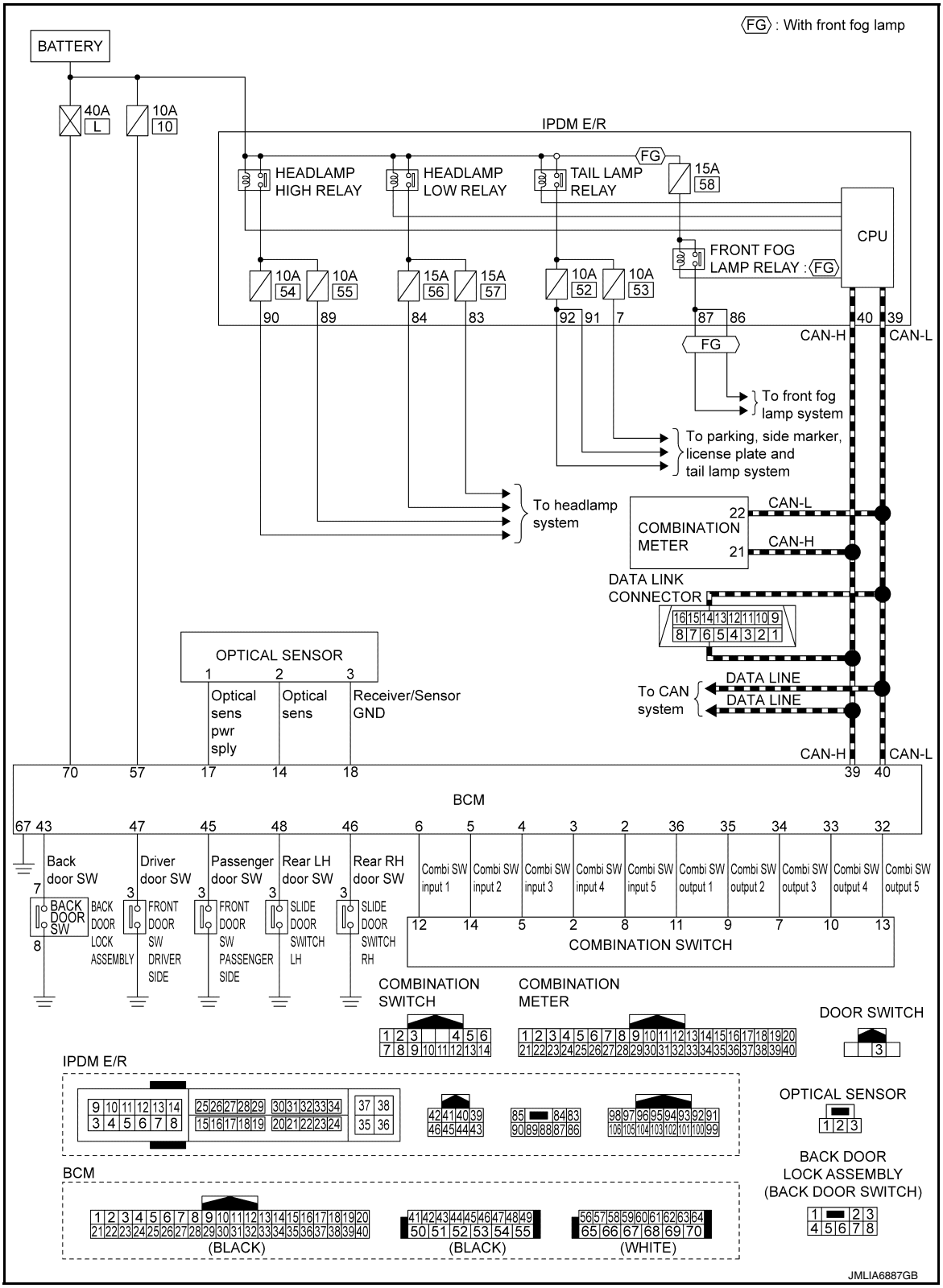
- Turns the exterior lamp OFF 5 minutes after detecting that any door opens. (Door switch ON).
- Turns the exterior lamp OFF a certain period of time* after closing all doors. (Door switch ON→OFF).
- Turns the exterior lamp OFF with the ignition switch ACC or the light switch OFF.

*: The preset time is 45 seconds. The timer operating time can be set by CONSULT. Refer to EXL-128, "HEADLAMP : CONSULT Function (BCM - HEADLAMP) (Halogen Type Headlamp)".

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

AUTO LIGHT SYSTEM : Circuit Diagram

INFOID:0000000012407981

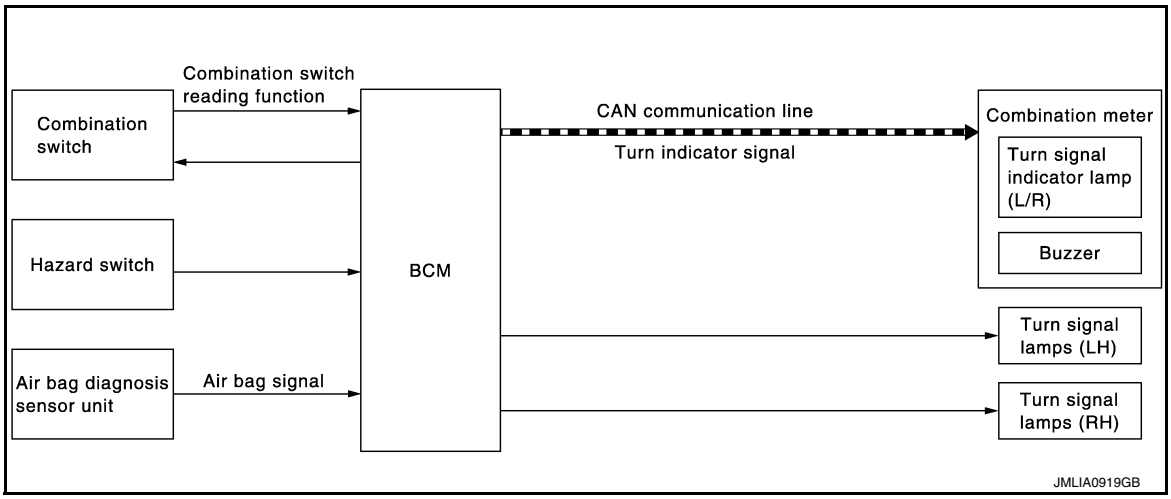


TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM : System Description

INFOID:0000000012407986

SYSTEM DIAGRAM



OUTLINE

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

TURN SIGNAL LAMP OPERATION

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

HAZARD WARNING LAMP OPERATION

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

TURN SIGNAL INDICATOR LAMP AND TURN SIGNAL SOUND OPERATION

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

AUTO HAZARD FUNCTION

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

NOTE:

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

3-TIME FLASHER FUNCTION

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

HIGH FLASHER OPERATION

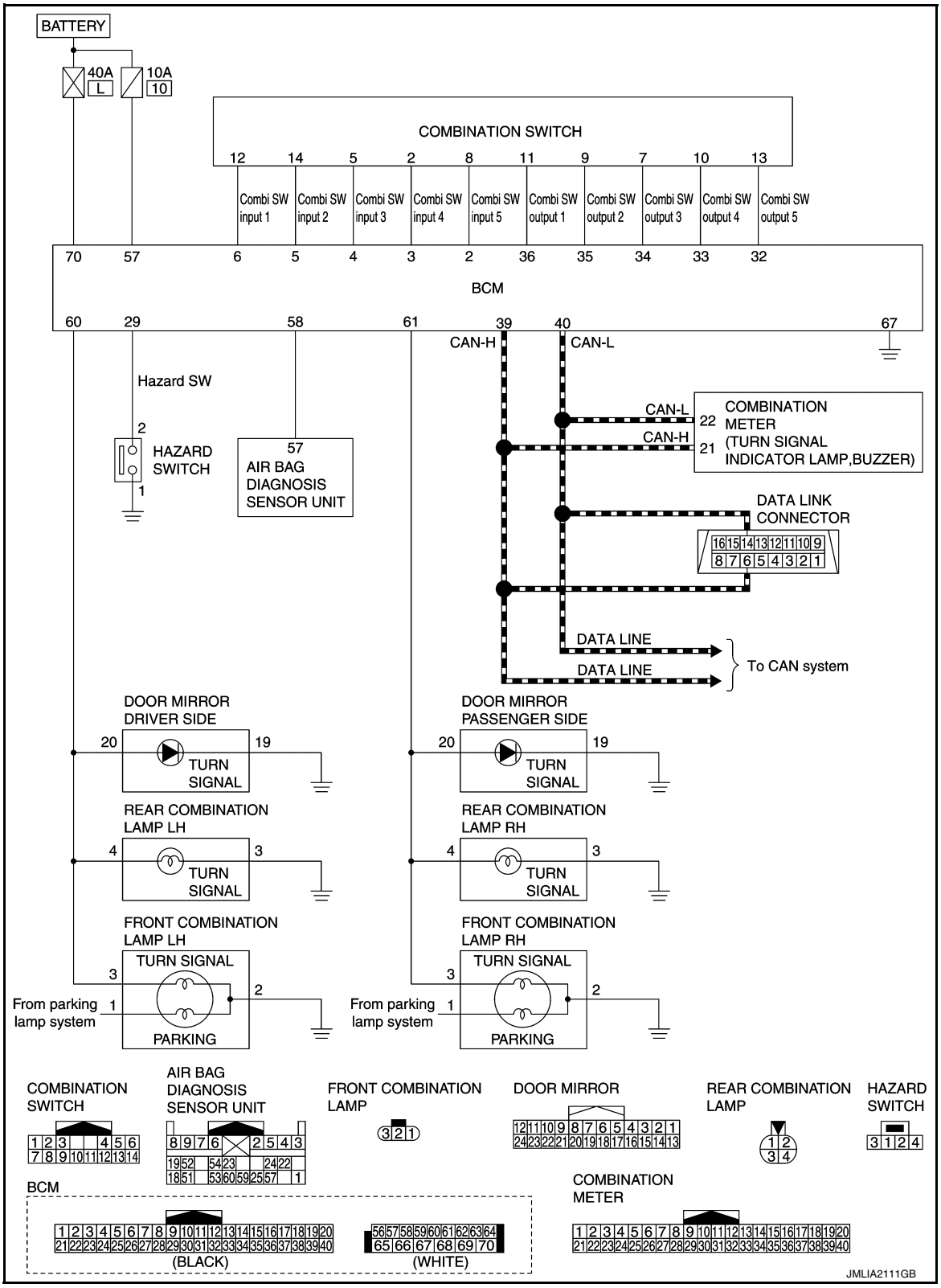
- BCM detects the turn signal lamp circuit status from the current value.
- BCM increases the turn signal lamp blinking speed if the bulb or harness open is detected with the turn signal lamp operating.

  NOTE:

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

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM : Circuit Diagram

INFOID:0000000012407987



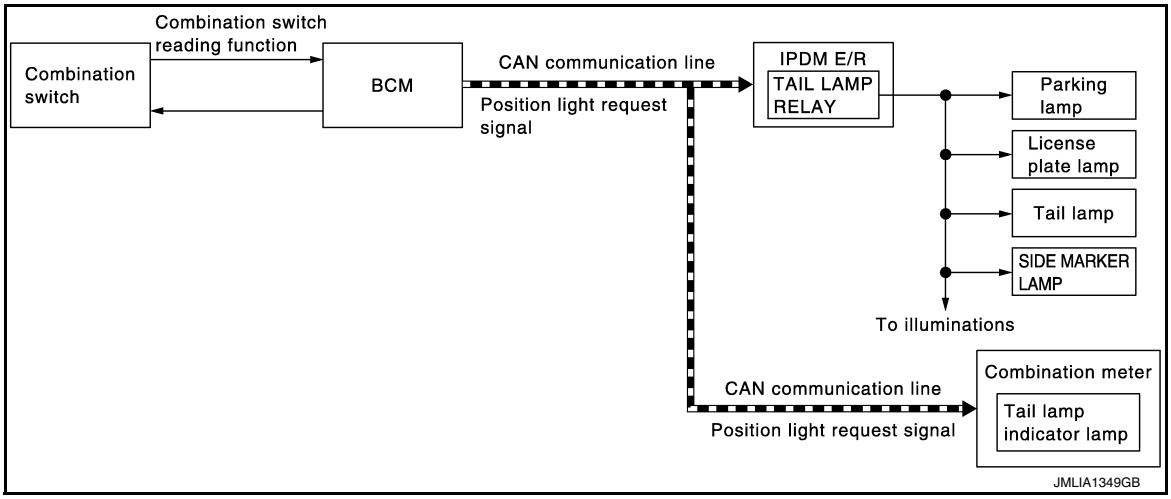
PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMP SYSTEM

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

scription

INFOID:0000000012407988

SYSTEM DIAGRAM



OUTLINE

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

PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMPS OPERATION

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

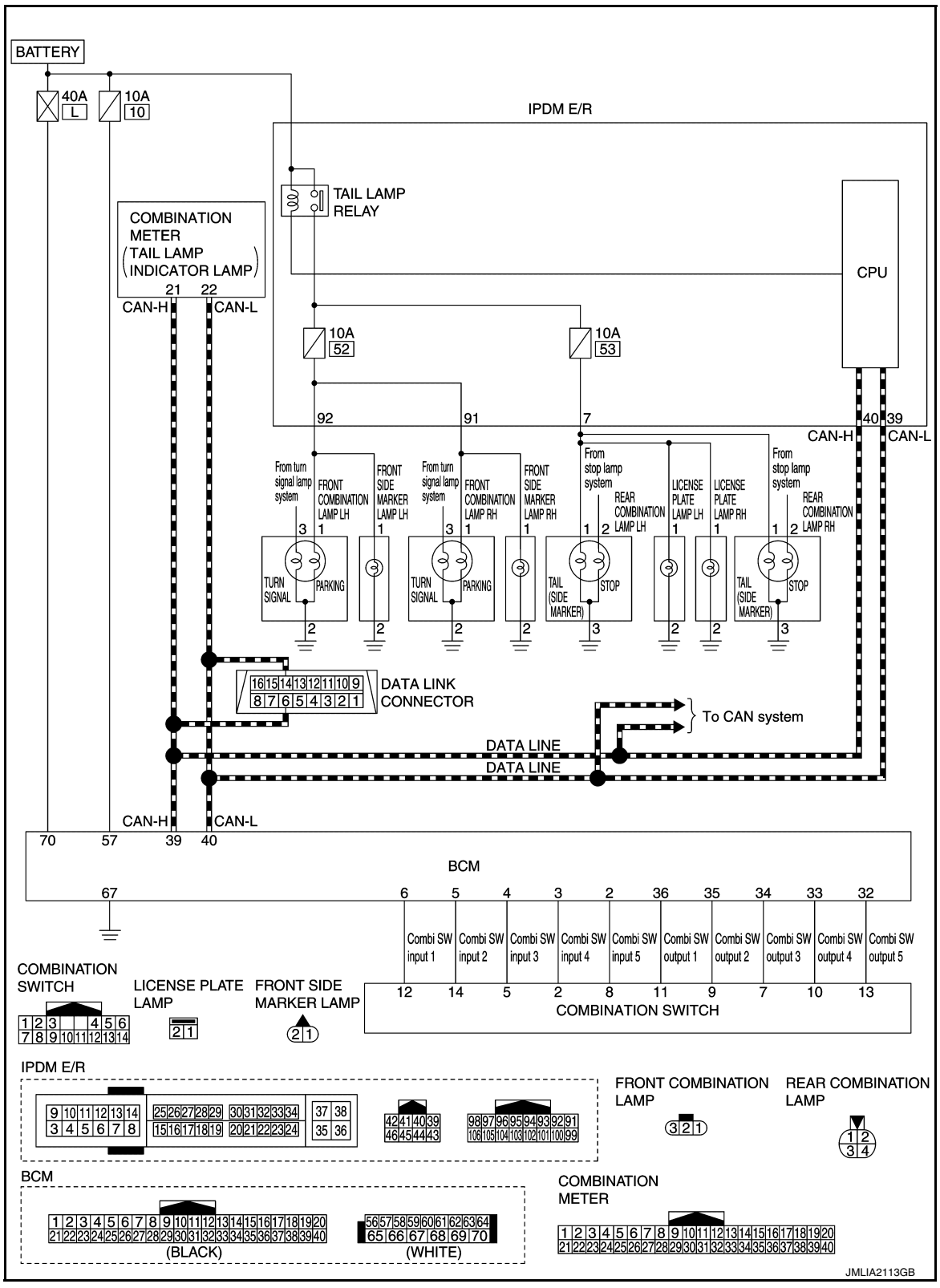
Parking, license plate, side marker and tail lamps ON condition
- Lighting switch 1ST
- Lighting switch 2ND
- Lighting switch AUTO, and the auto light function ON judgment.

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

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

gram

INFOID:0000000012407989



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

INFOID:0000000012407990

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With BCM

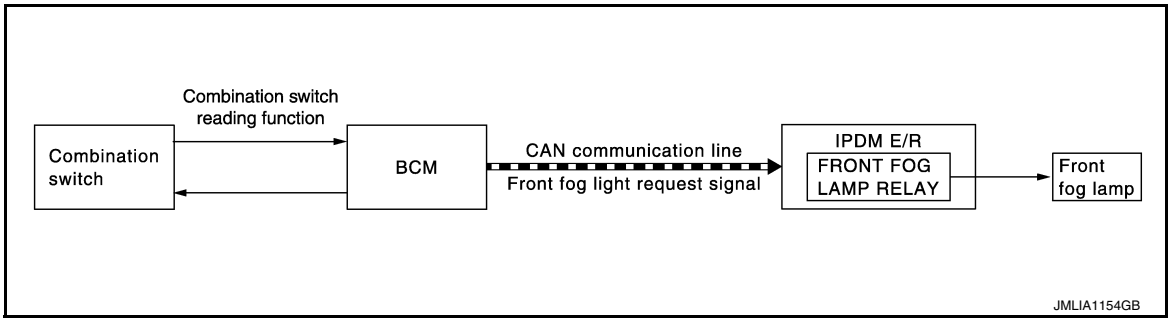
Control part	Fail-safe operation
• Parking lamp • License plate lamp • Illumination • Tail lamp • Side marker lamp	• Turns ON the tail lamp relay when the ignition switch is turned ON • Turns OFF the tail lamp relay when the ignition switch is turned OFF

FRONT FOG LAMP SYSTEM

FRONT FOG LAMP SYSTEM : System Description

INFOID:0000000012407991

SYSTEM DIAGRAM



OUTLINE

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

FRONT FOG LAMP OPERATION

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

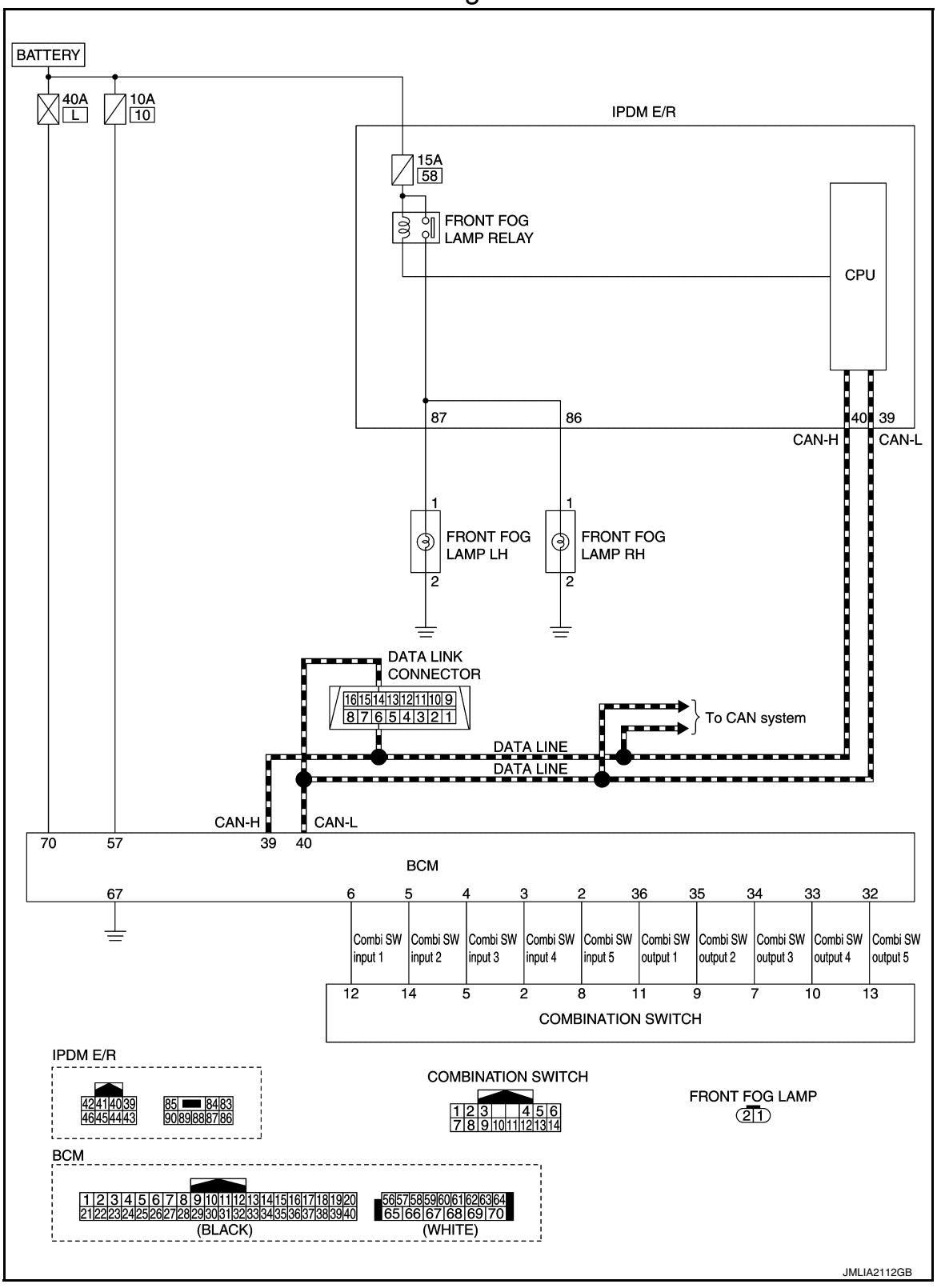
Front fog lamp ON condition

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

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

FRONT FOG LAMP SYSTEM : Circuit Diagram

INFOID:0000000012407992



FRONT FOG LAMP SYSTEM : Fail-safe

INFOID:0000000012407993

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With BCM

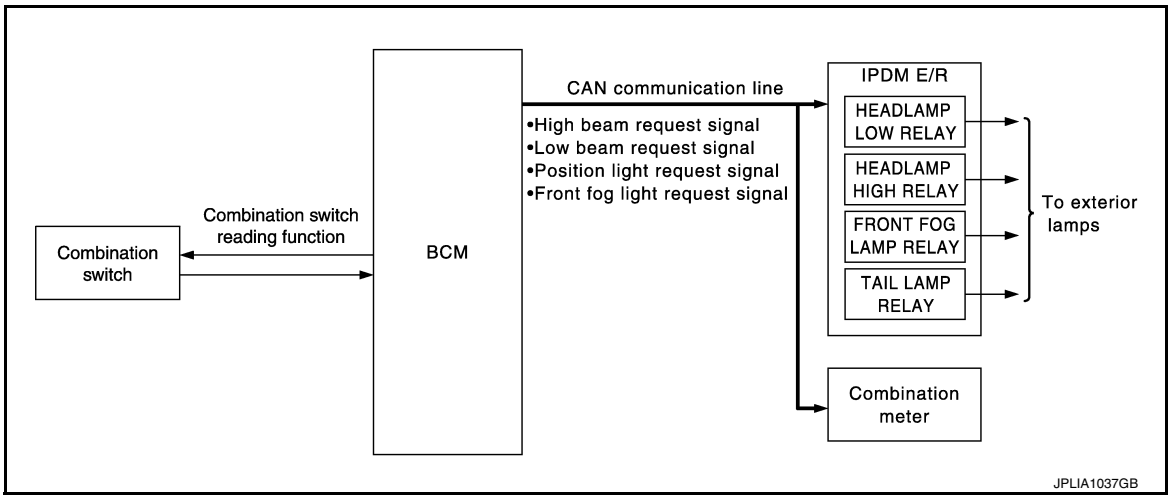
Control part	Fail-safe operation
Front fog lamp	Front fog lamp relay OFF

EXTERIOR LAMP BATTERY SAVER SYSTEM

EXTERIOR LAMP BATTERY SAVER SYSTEM : System Description

INFOID:0000000012407994

SYSTEM DIAGRAM



OUTLINE

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

Control by BCM
- Combination switch reading function
- Headlamp control function
- Exterior lamp battery saver function

Control by IPDM E/R
- Relay control function

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

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

EXTERIOR LAMP BATTERY SAVER ACTIVATION

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

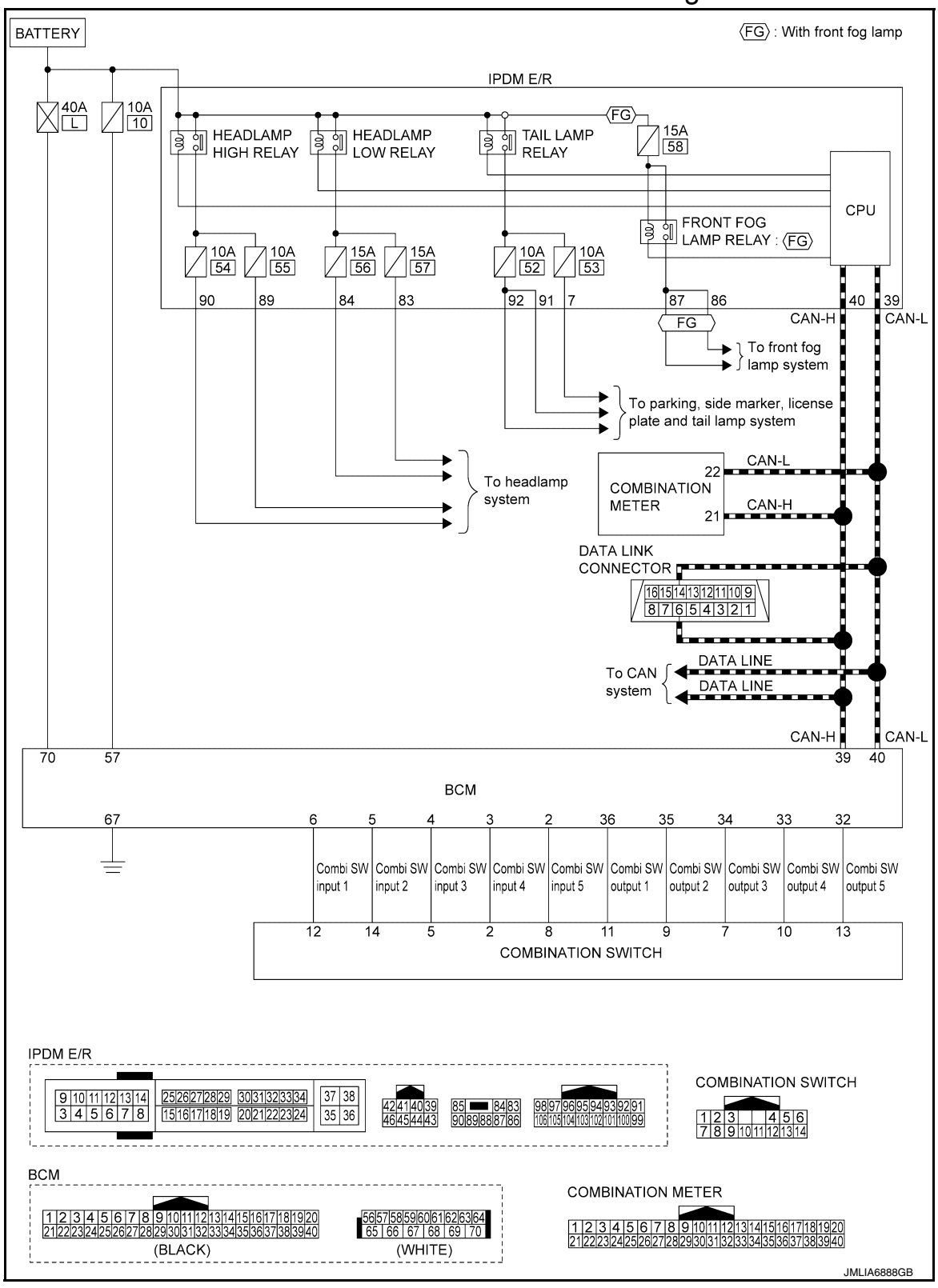
NOTE:

• Headlamp control function turns the exterior lamps ON normally when the ignition switch is turned ACC or ON (both before and after the exterior lamp battery saver is turned OFF).

• The timer starts at the time that the lighting switch is turned from OFF → 1ST or 2ND with the exterior lamps OFF.

EXTERIOR LAMP BATTERY SAVER SYSTEM : Circuit Diagram

INFOID:0000000012407995



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

INFOID:0000000013035223

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

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

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

×: Applicable item

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

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

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

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

NOTE:

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

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

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

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

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

HEADLAMP

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

INFOID:0000000012407997

WORK SUPPORT

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

*1: For models without auto light system, this item cannot be used.

*2: Factory setting

DATA MONITOR

NOTE:

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

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

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

*1: For models without auto light system, this item cannot be monitored.
*2: For models without front fog lamp, this item cannot be monitored.

ACTIVE TEST

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

Test item	Operation	Description
ILL DIM SIGNAL	On	• Transmits the dimmer signal to combination meter via CAN communication and dims combination meter • Transmits the dimmer signal to AV control unit and dims display
	Off	Stops the dimmer signal transmission

*: For models without front fog lamp, this item cannot be tested.

FLASHER

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

INFOID:0000000012407998

WORK SUPPORT

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

*: Factory setting

DATA MONITOR

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

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

ACTIVE TEST

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

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:0000000013035224

AUTO ACTIVE TEST

Description

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

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

Operation Procedure

NOTE:

Never perform auto active test in the following condition.

- Passenger door is open.
- CONSULT is connected.

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

NOTE:

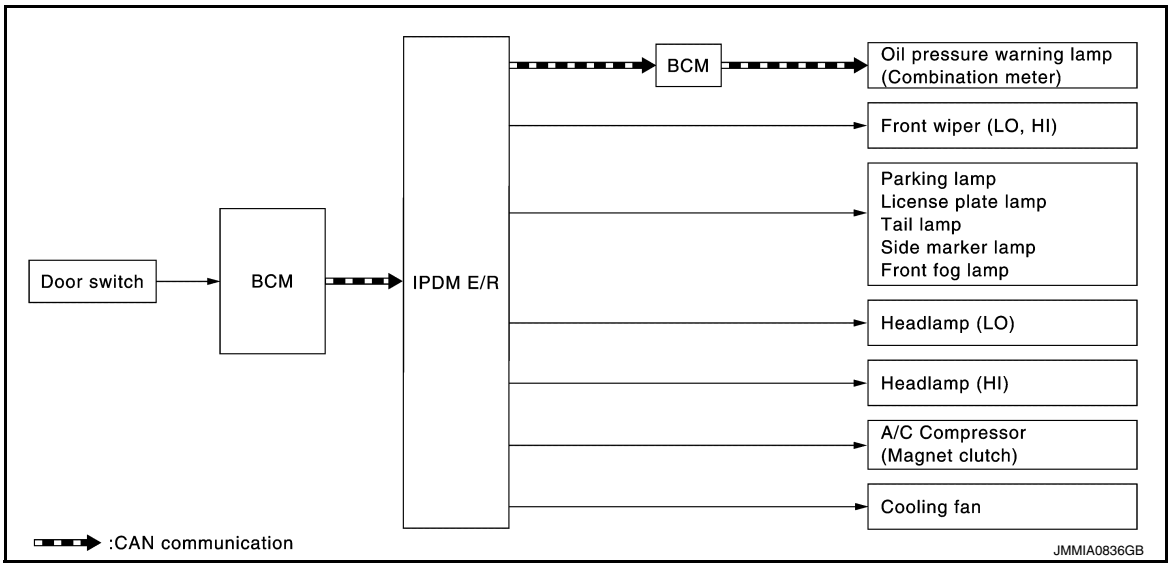
- When auto active test has to be cancelled halfway through test, turn the ignition switch OFF.
- When auto active test is not activated, door switch may be the cause. Check door switch. Refer to DLK-247, "Component Function Check".

Inspection in Auto Active Test

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

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

Concept of auto active test



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

Diagnosis chart in auto active test

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

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

CONSULT Function (IPDM E/R)

INFOID:0000000013035225

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-23, "DTC Index".

DATA MONITOR

NOTE:

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

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

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

ACTIVE TEST

Test item

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

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

ECU DIAGNOSIS INFORMATION

BCM, IPDM E/R

List of ECU Reference

INFOID:0000000012408001

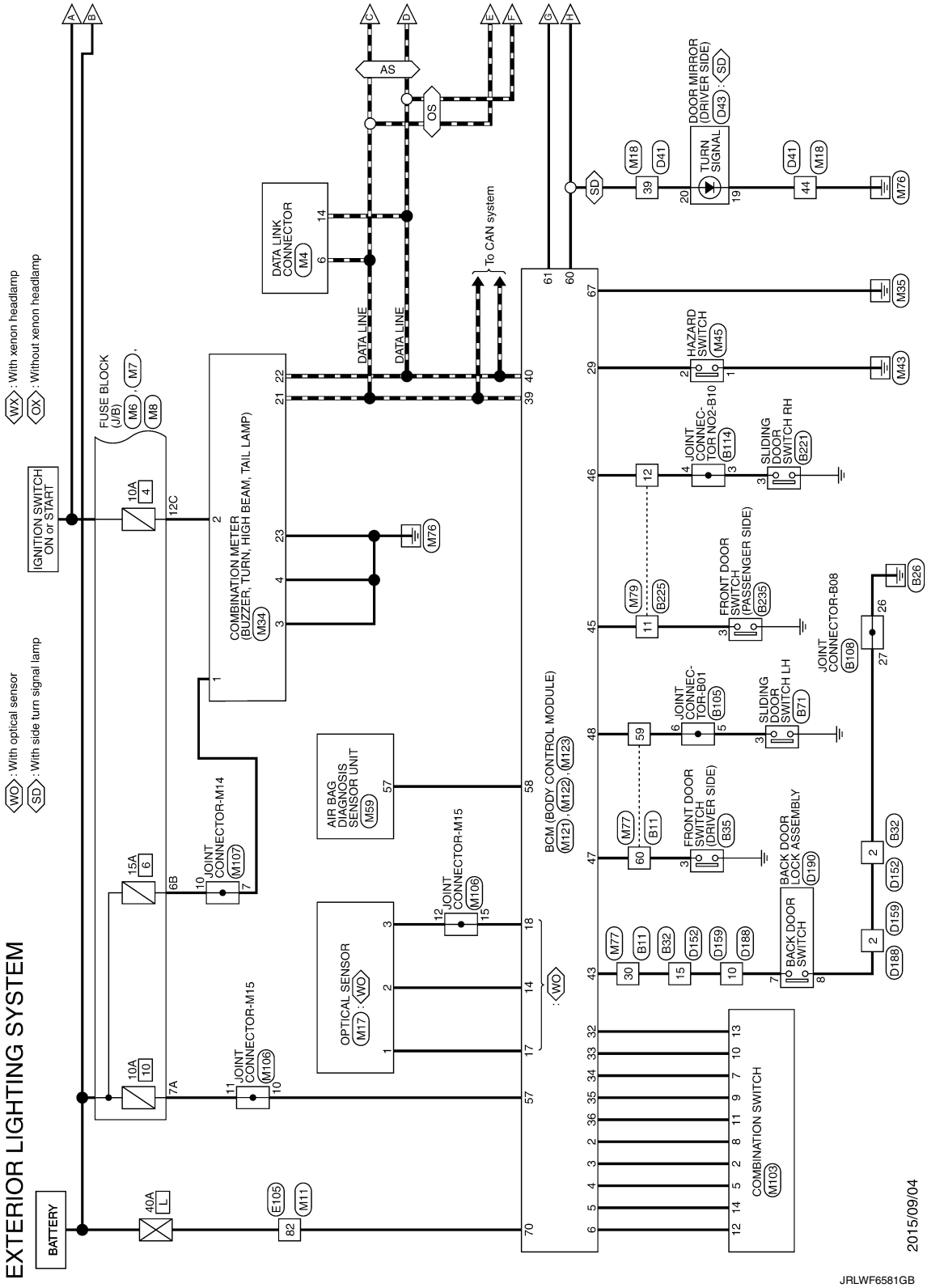
ECU	Reference
BCM	BCS-41, "Reference Value"
	BCS-63, "Fail-safe"
	BCS-63, "DTC Inspection Priority Chart"
	BCS-64, "DTC Index"
IPDM E/R	PCS-15, "Reference Value"
	PCS-22, "Fail-safe"
	PCS-23, "DTC Index"

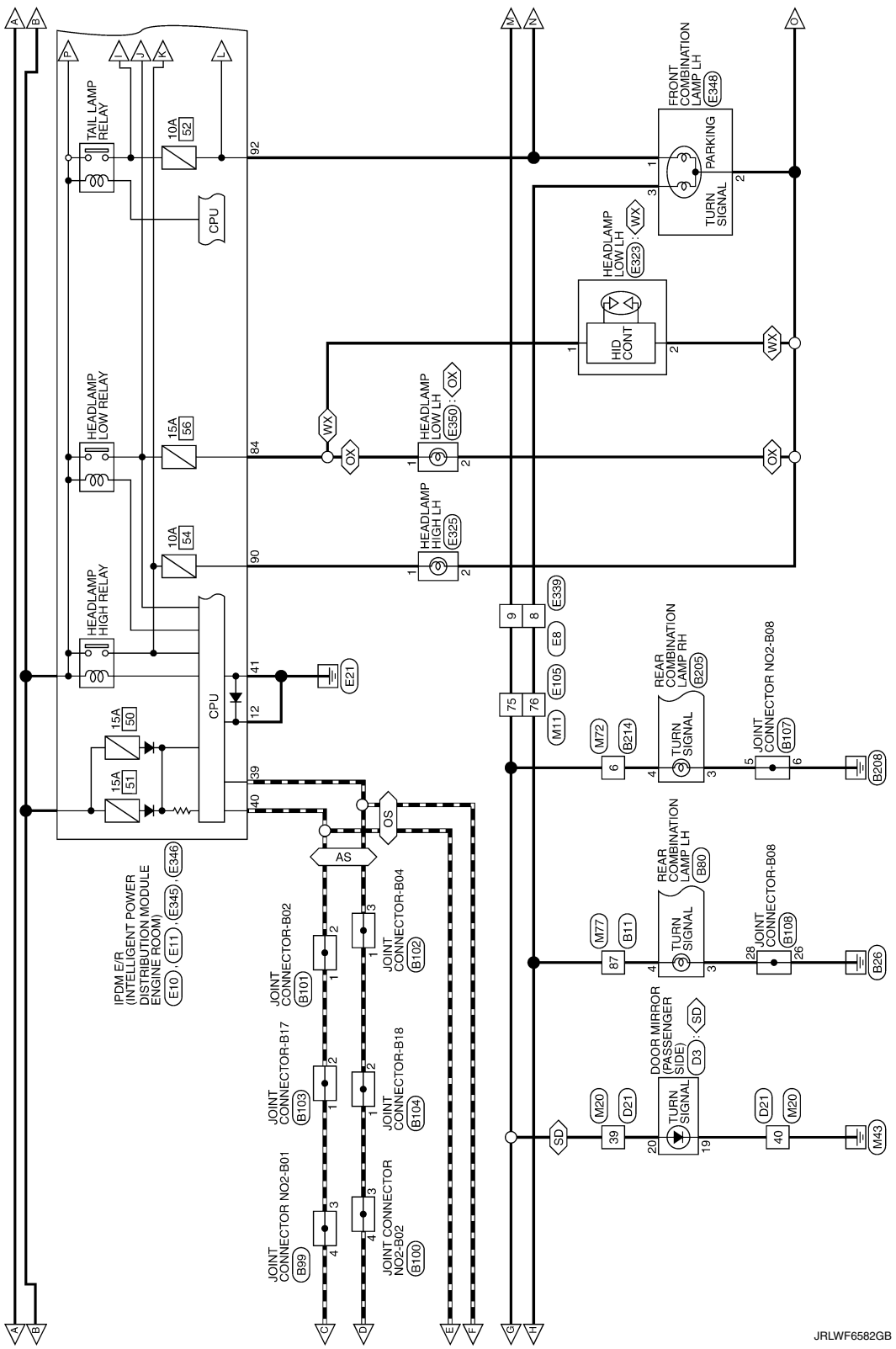
WIRING DIAGRAM

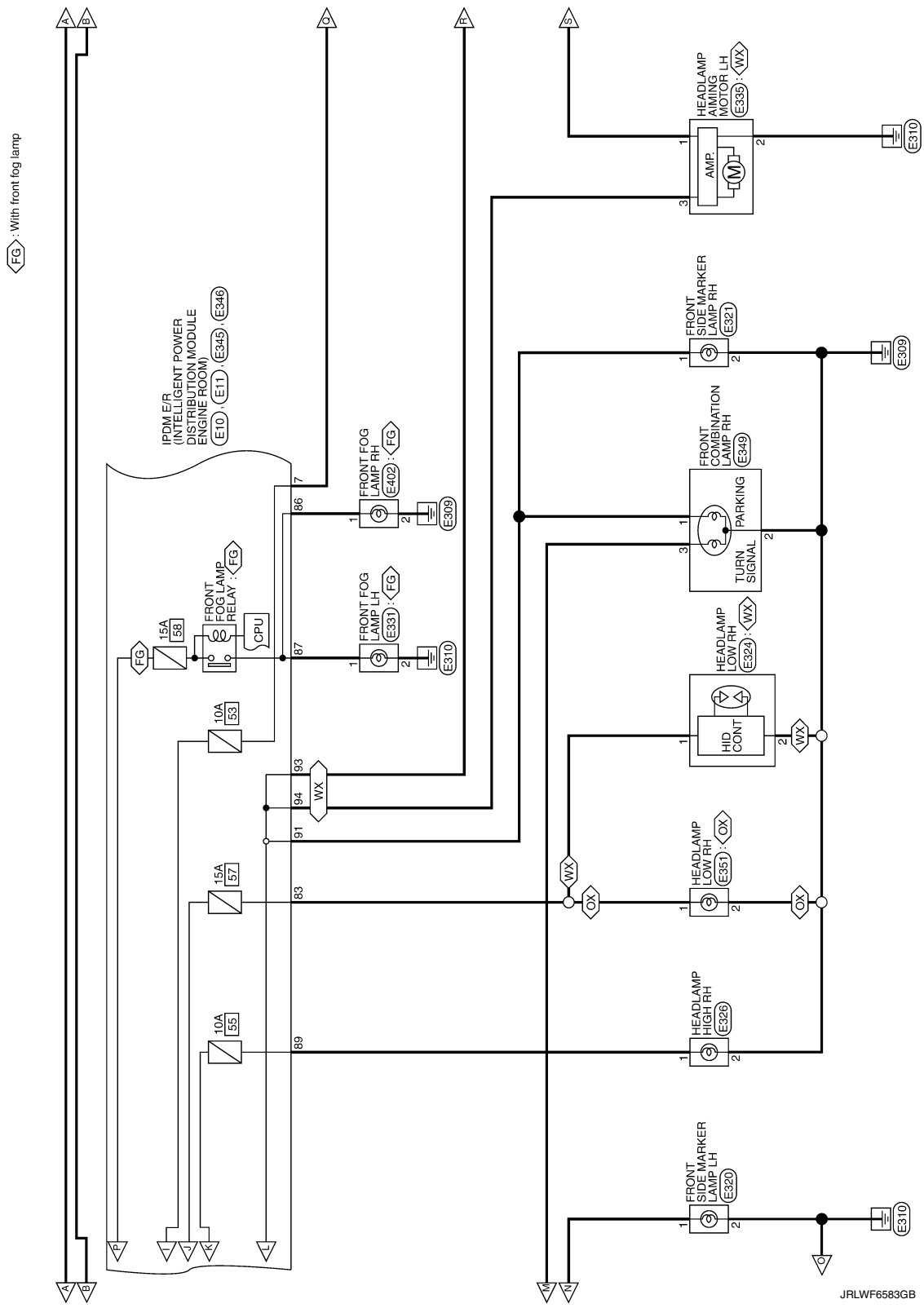
EXTERIOR LIGHTING SYSTEM

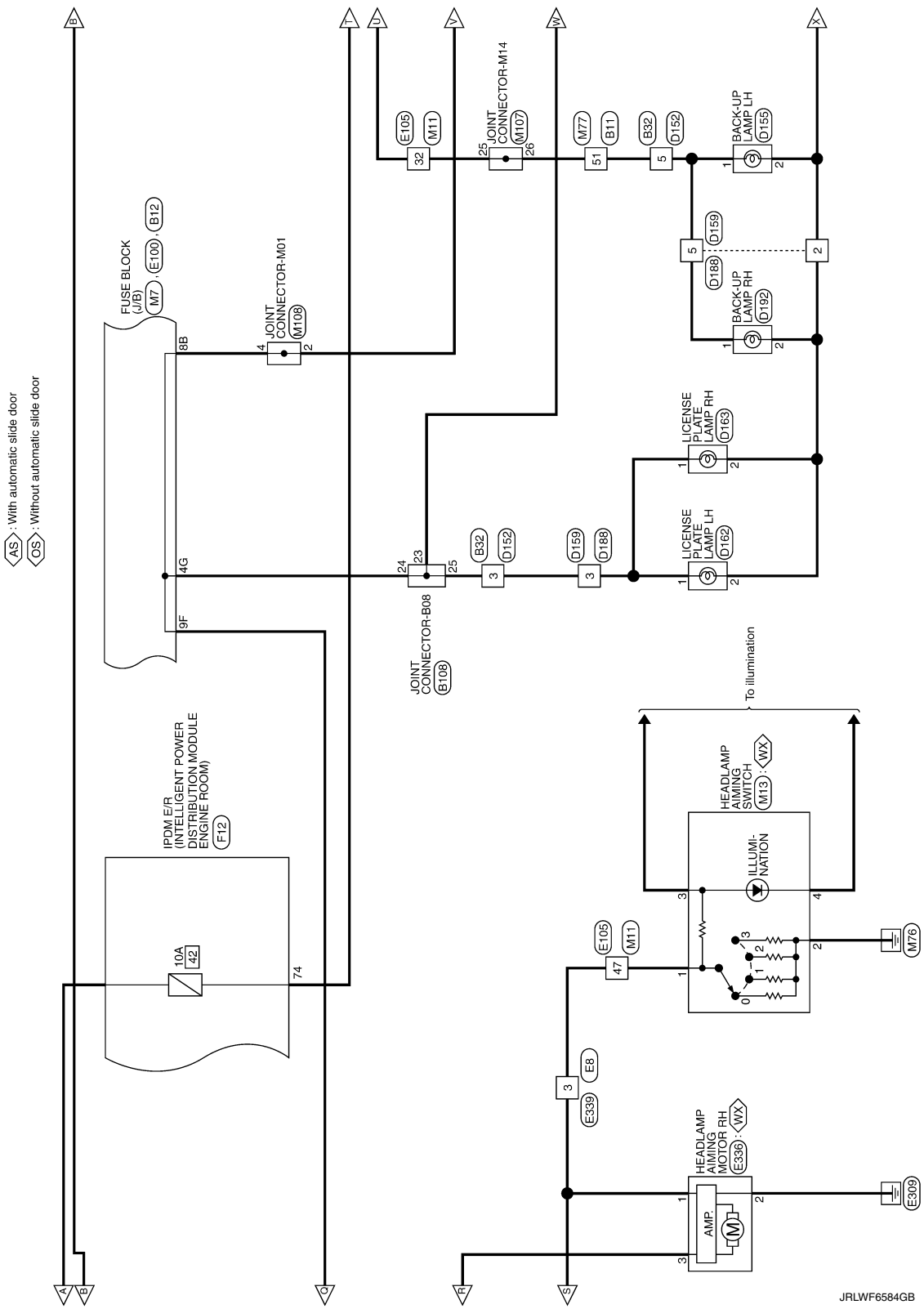
Wiring Diagram

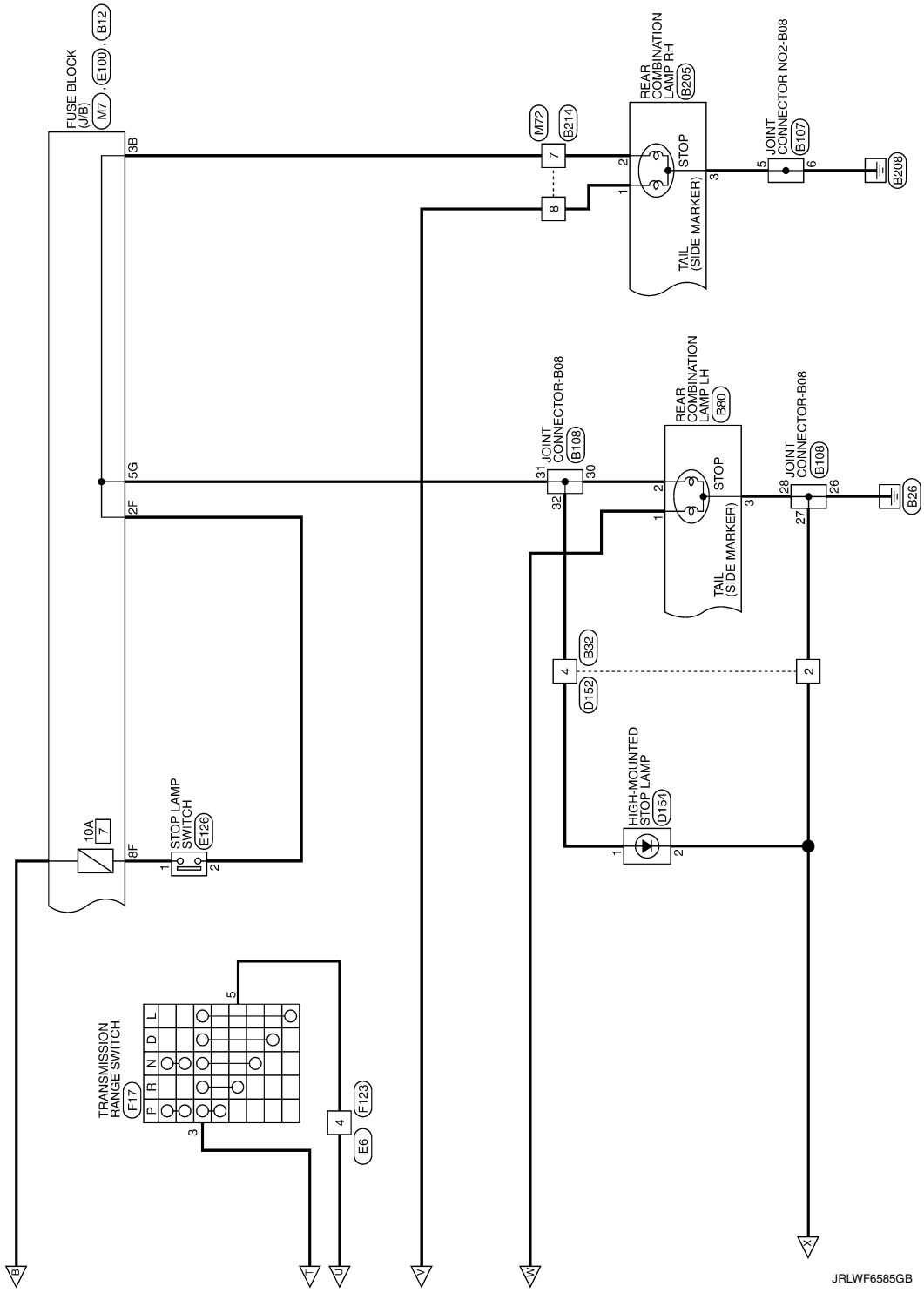
INFOID:0000000013035226

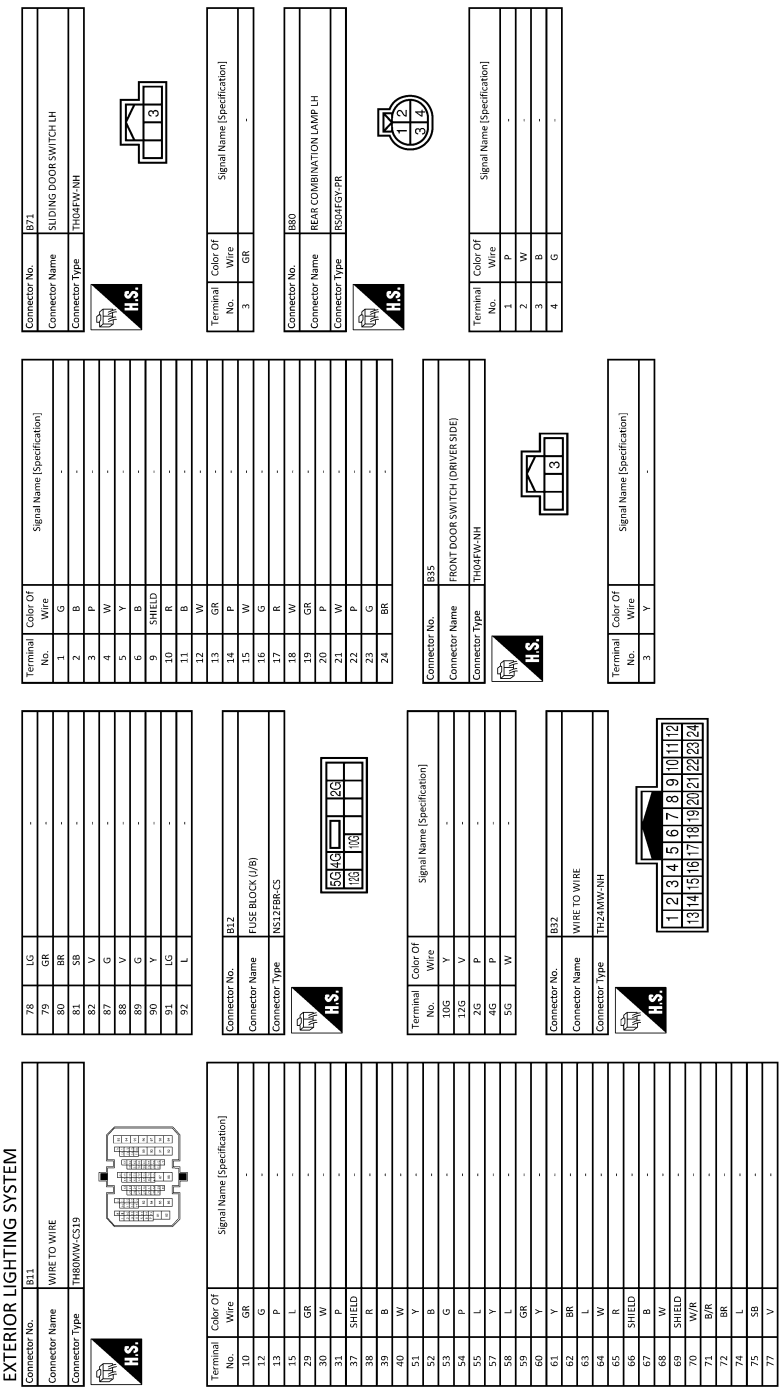



IPDM E/R
(INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
(E10), (E11), (E345), (E346)
CPU
TAIL LAMP RELAY
HEADLAMP LOW RELAY
HEADLAMP HIGH RELAY
10A 52
15A 56
10A 54
15A 50
15A 51
92
84
90
41
12
39
40
E21
OS
AS
WX
OX
HEADLAMP LOW LH (E350) : OX
HEADLAMP HIGH LH (E325)
HID CONT
HEADLAMP LOW LH (E323) : WX
FRONT COMBINATION LAMP LH (E348)
PARKING
TURN SIGNAL
E339
E8
E105
M11
75
76
9
8
REAR COMBINATION LAMP RH (B205)
M72
B214
6
JOINT CONNECTOR NO2-B08 (B107)
B208
REAR COMBINATION LAMP LH (B80)
M77
B11
87
JOINT CONNECTOR-B08 (B108)
B26
DOOR MIRROR (PASSENGER SIDE) (D3) : SD
M20
D21
39
SD
20
19
40
M43
JOINT CONNECTOR-B02 (B101)
JOINT CONNECTOR-B04 (B102)
JOINT CONNECTOR-B17 (B103)
JOINT CONNECTOR-B18 (B104)
JOINT CONNECTOR NO2-B01 (B99)
JOINT CONNECTOR NO2-B02 (B100)
JRLWF6582GB

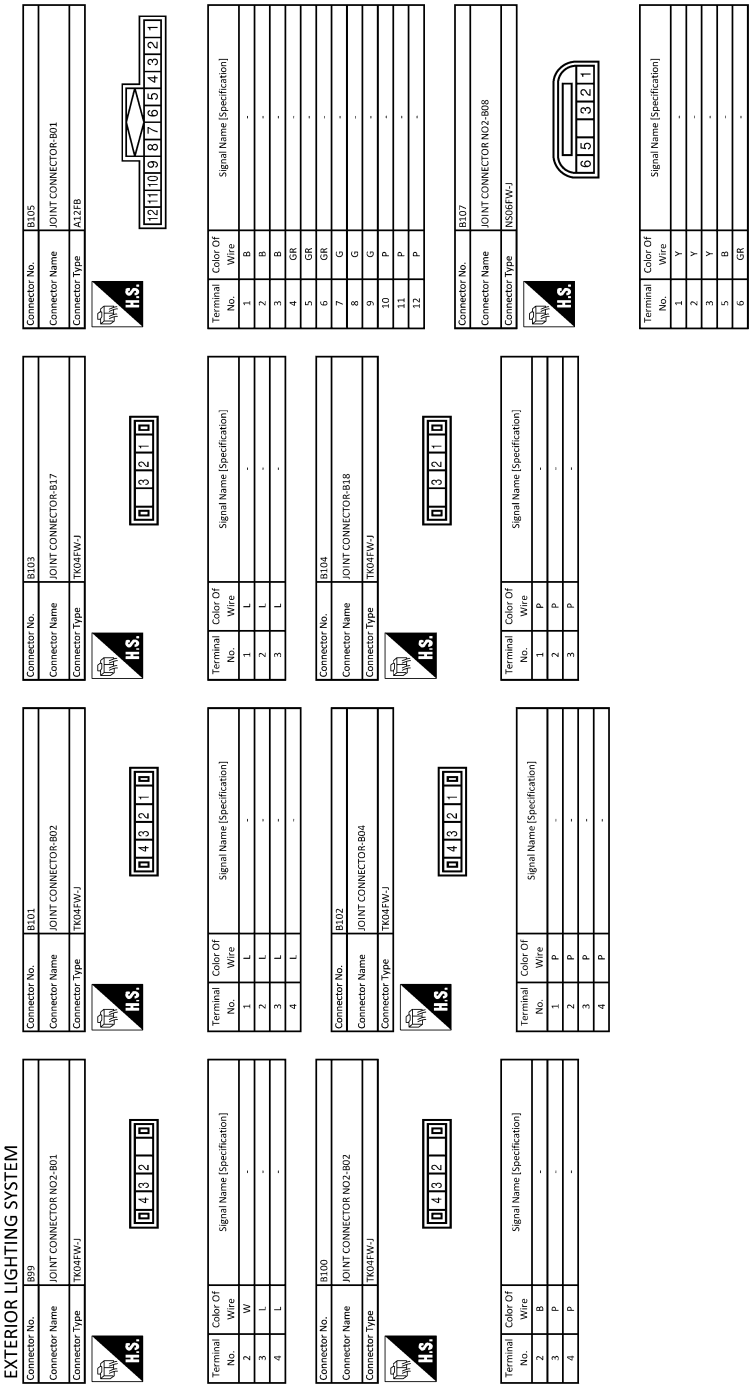

FG : With front fog lamp
IPDM E/R
(INTELLIGENT POWER
DISTRIBUTION MODULE
ENGINE ROOM)
(E10), (E11), (E345), (E346)
FRONT
FOG LAMP
RELAY : FG
15A
58
CPU
10A
53
15A
57
10A
55
FRONT FOG
LAMP RH
(E402) : FG
FRONT FOG
LAMP LH
(E331) : FG
HEADLAMP
AIMING
MOTOR LH
(E335) : WX
AMP.
FRONT
SIDE MARKER
LAMP RH
(E321)
FRONT
COMBINATION
LAMP RH
(E349)
PARKING
TURN
SIGNAL
HEADLAMP
LOW RH
(E324) : WX
HID
CONT
HEADLAMP
LOW RH
(E351) : OX
HEADLAMP
HIGH RH
(E326)
FRONT
SIDE MARKER
LAMP LH
(E320)
E309
E310
WX
OX
JRLWF6583GB


AS : With automatic slide door
OS : Without automatic slide door
FUSE BLOCK (J/B) M7, E100, B12
JOINT CONNECTOR-M01 M108
JOINT CONNECTOR-M14 M107
JOINT CONNECTOR-B08 B108
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) F12
10A 42
74
8B
4G
9F
E105 M11
32
25
26
M77 B11
51
B32 D152
5
BACK-UP LAMP LH D155
BACK-UP LAMP RH D192
D159 D188
LICENSE PLATE LAMP RH D163
LICENSE PLATE LAMP LH D162
24
23
3
To illumination
HEADLAMP AIMING SWITCH M13 : WX
ILLUMI-NATION
47
M76
E8
E339
HEADLAMP AIMING MOTOR RH E336 : WX
AMP.
E309
JRLWF6584GB

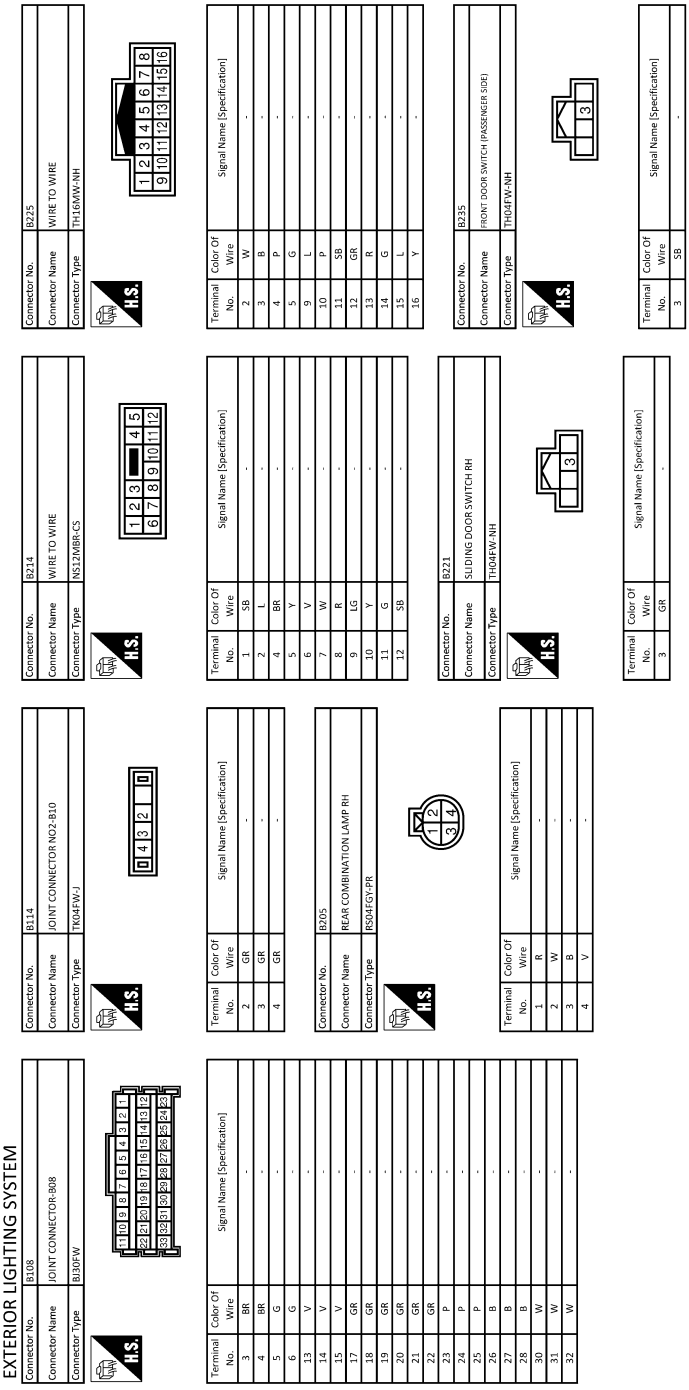

FUSE BLOCK (J/B)
M7, E100, B12
3B
5G
2F
8F
10A
7
STOP LAMP SWITCH
E126
TRANSMISSION RANGE SWITCH
F17
P R N D L
5
3
4
F123
E6
M72
B214
7
8
REAR COMBINATION LAMP RH
B205
STOP
TAIL (SIDE MARKER)
JOINT CONNECTOR NO2-B08
B107
B208
JOINT CONNECTOR-B08
B108
31
32
30
REAR COMBINATION LAMP LH
B80
STOP
TAIL (SIDE MARKER)
JOINT CONNECTOR-B08
B108
28
27
26
B26
B32
D152
4
2
HIGH-MOUNTED STOP LAMP
D154
B
T
U
V
W
X
JRLWF6585GB



JRLWF6586GB



JRLWF6587GB



JRLWF6588GB

EXTERIOR LIGHTING SYSTEM

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

H.S.

12	11	10		7	6	5			1
24	23	22	21	20	19	18	17		13

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

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

H.S.

19	14	13	12	11	10	9	8	7	6	5	4	3	2	1
40	39	38	37	36	35	34	33	32	31	30	29	28	27	26

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

Connector No.	D41
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15

H.S.

19	14	13	12	11	10	9	8	7	6	5	4	3	2	1
40	39	38	37	36	35	34	33	32	31	30	29	28	27	26

Terminal No.	Color Of Wire	Signal Name [Specification]
32	G	-
33	P	-
34	W	-
35	G	-
36	P	-
37	G	-
38	W	-
39	LG	-
40	GR	-
41	GR	-
42	G	-
43	R	-
44	B	-
45	G	- [Without around view monitor]
45	Y	- [With around view monitor]
46	GR	- [Without around view monitor]
46	L	- [With around view monitor]
47	GR	-
48	B	-
49	R	-
50	G	- [With automatic drive positioner]
50	W	[Without automatic drive positioner]
51	P	- [With automatic drive positioner]
51	R	[Without automatic drive positioner]
52	G	- [Without automatic drive positioner]
52	W	- [With automatic drive positioner]
53	SHIELD	-
54	B	-
55	W	-

Connector No.	D43
Connector Name	DOOR MIRROR (DRIVER SIDE)
Connector Type	TH24MW-NH

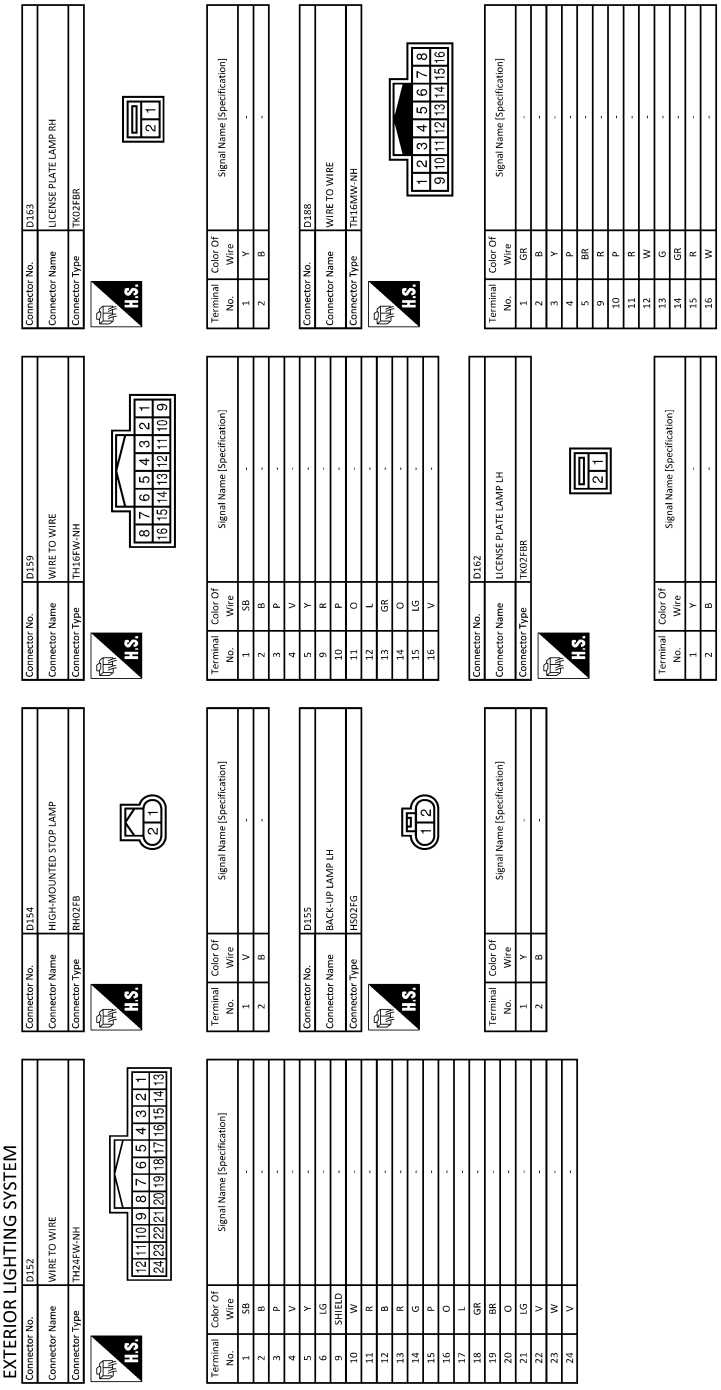
H.S.

12	11	10		7	6	5			1
24	23	22	21	20	19	18	17		13

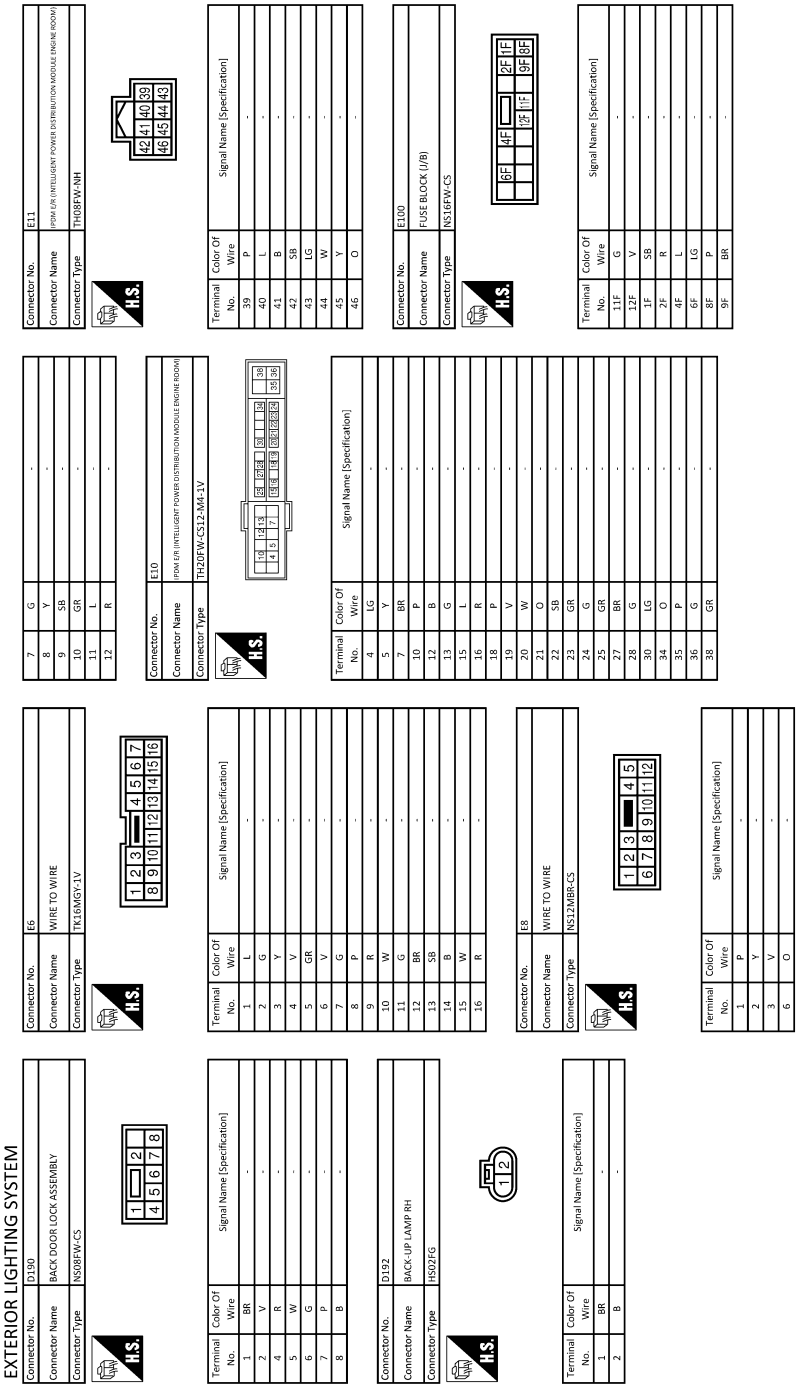
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
5	W	-
6	R	-
7	P	-
10	G	-
11	GR	-
12	P	-
13	Y	-
17	SHIELD	-
18	B	-
19	B	-
20	LG	-
21	P	-
22	R	-
23	W	-
24	G	-

JRLWF6589GB

EXTERIOR LIGHTING SYSTEM



JRLWF6590GB

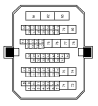


JRLWF6591GB

EXTERIOR LIGHTING SYSTEM

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH70MW-CS10-M3

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SHIELD	-
2	W	-
3	B	-
4	R	-
6	LG	-
7	R	-
8	GR	-
9	V	-
10	BR	-
11	Y	-
12	O	-
13	W	-
14	L	-
15	P	-
31	GR	-
32	V	-
37	BR	-
38	G	-
39	V	-
40	P	-
41	L	-
42	LG	-
43	O	-
45	P	-
46	SB	-
47	V	-
49	L	-
51	BR	-
52	G	-
53	B	-
54	O	-
55	Y	-
56	SHIELD	-
61	P	-
62	G	-
63	W/L	-
64	W/R	-
66	W	-
67	Y	-
69	R	-
71	R	-
72	L	-
73	GR	-
74	Y	-
75	SB	-
76	Y	-
77	G	-
78	O	-
80	R	-
81	L	-
82	LG	-
83	R	-

Connector No.	E126
Connector Name	STOP LAMP SWITCH
Connector Type	M04FB-LC

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	R	-
3	O	-
4	W	-

Connector No.	E320
Connector Name	FRONT SIDE MARKER LAMP LH
Connector Type	RK02FGY

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	GR	-

Connector No.	E321
Connector Name	FRONT SIDE MARKER LAMP RH
Connector Type	RK02FGY

H.S.

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

Connector No.	E323
Connector Name	HEADLAMP LOW LH
Connector Type	E02FGY-RS

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	B	-

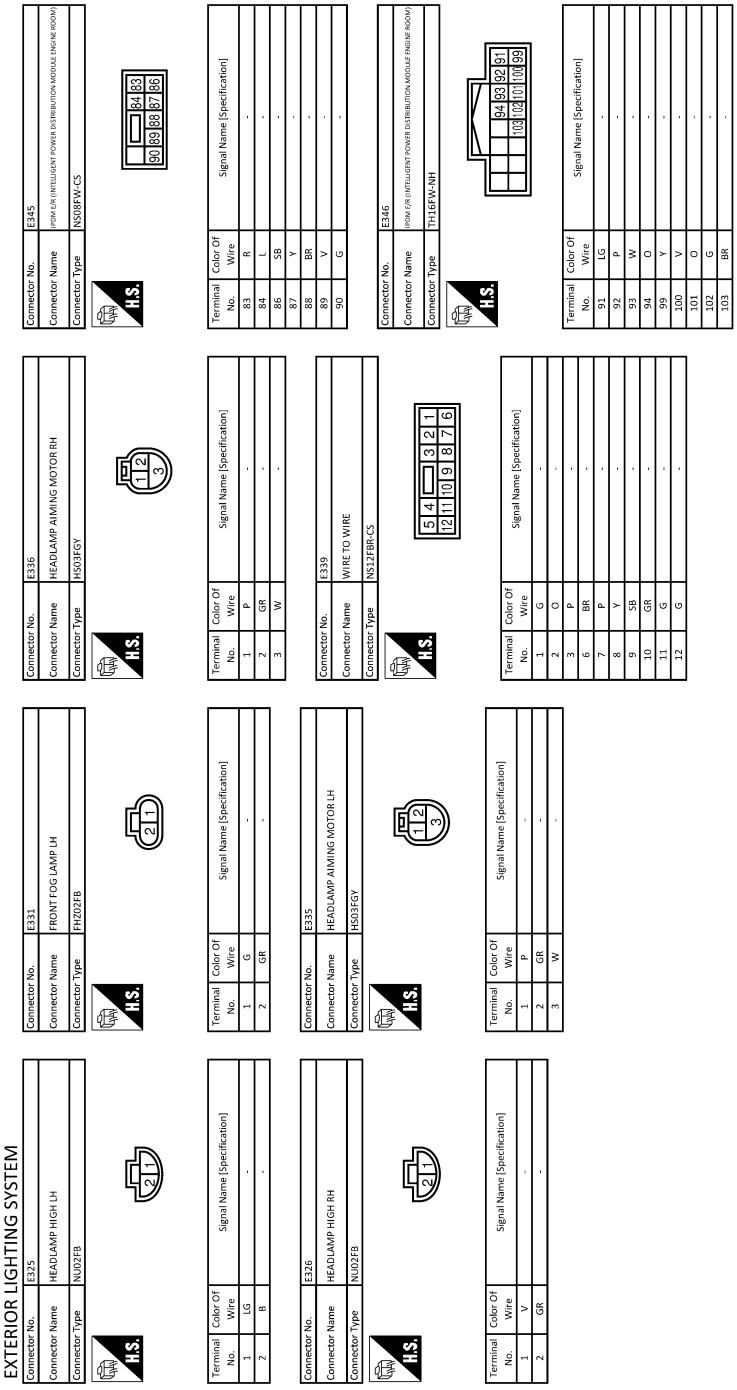
Connector No.	E324
Connector Name	HEADLAMP LOW RH
Connector Type	E02FGY-RS

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-

JRLWF6592GB

EXTERIOR LIGHTING SYSTEM



Connector No.	E325
Connector Name	HEADLAMP HIGH LH
Connector Type	NU02FB

Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	-
2	B	-

Connector No.	E326
Connector Name	HEADLAMP HIGH RH
Connector Type	NU02FB

Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	GR	-

Connector No.	E331
Connector Name	FRONT FOG LAMP LH
Connector Type	FH202FB

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	GR	-

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

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

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

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

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

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	O	-
3	P	-
6	BR	-
7	P	-
8	Y	-
9	SB	-
10	GR	-
11	G	-
12	G	-

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

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

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

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

JRLWF6593GB

EXTERIOR LIGHTING SYSTEM

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

H.S.

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

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

H.S.

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

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

H.S.

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

Connector No.	E351
Connector Name	HEADLAMP LOW RH
Connector Type	FH202FB

H.S.

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

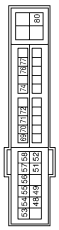
Connector No.	E402
Connector Name	FRONT FOG LAMP RH
Connector Type	FH202FB

H.S.

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

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

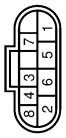
H.S.



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

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

H.S.



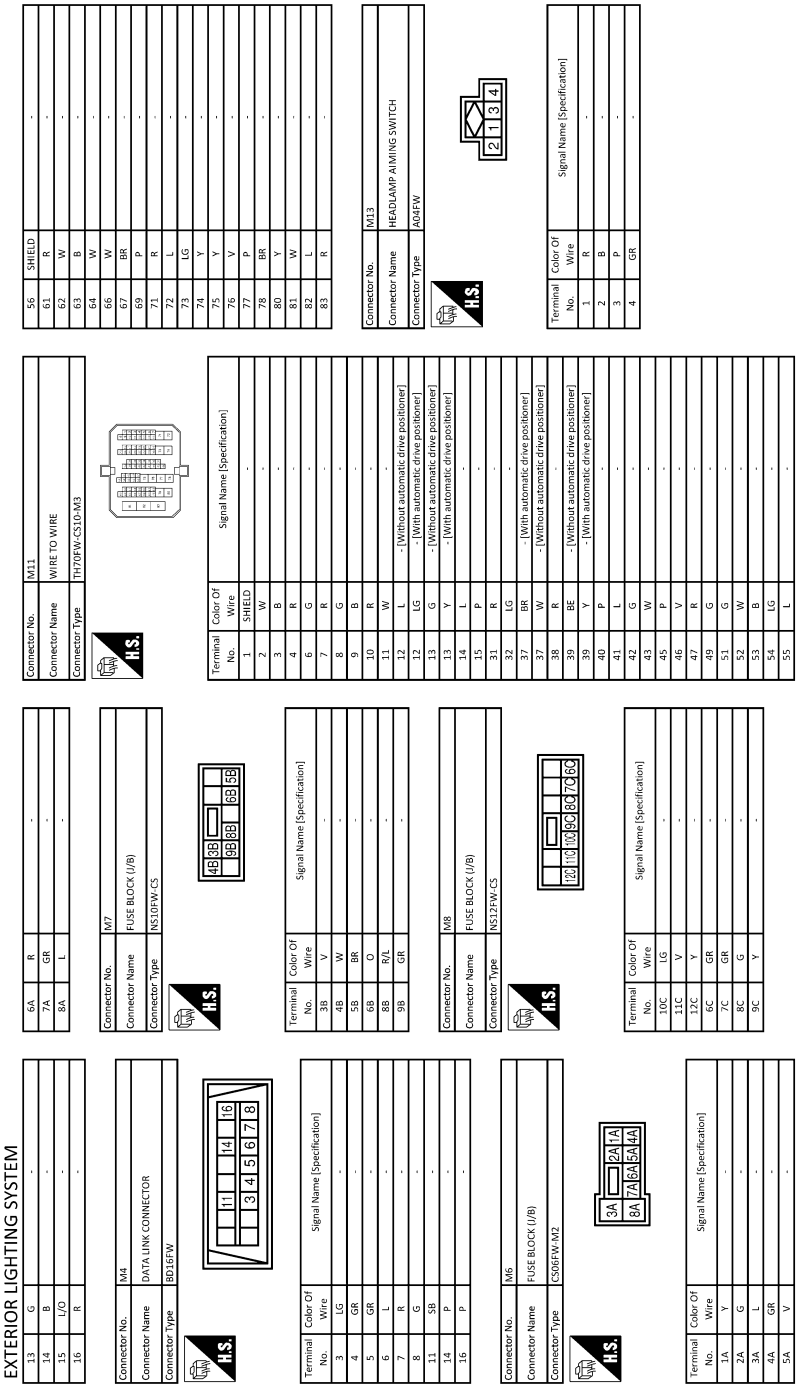
Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	-
2	R/B	-
3	LG	-
4	BR/W	-
5	P/B	-
6	P/L	-
7	G/O	-
8	GR	-

Connector No.	F123
Connector Name	WIRE TO WIRE
Connector Type	TK16FGY-LV

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	W	-
3	G/R	-
4	P/B	-
5	R	-
6	L/R	-
7	P	-
8	P	-
9	W/R	-
10	Y/B	-
11	BR/W	-
12	BR	-

JRLWF6594GB



JRLWF6595GB

EXTERIOR LIGHTING SYSTEM

Connector No.	M17
Connector Name	OPTICAL SENSOR
Connector Type	TK03FW

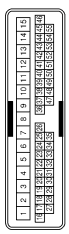
Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	POWER
2	G	OUTPUT
3	R	GROUND

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

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	R	-
3	W	-
4	Y	-
5	SB	-
6	LG	-
7	V	-
8	L	-
9	GR	-
10	Y	-
11	V	-
12	G	-
13	G	-
14	B	- [Without BOSE system]
14	R	- [With BOSE system]
15	W	- [With BOSE system]
15	Y	- [Without BOSE system]

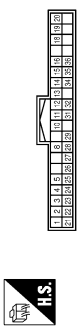
16	W	-
17	BE	-
18	P	-
19	W	-
20	LG	-
21	P	-
22	G	-
23	R	-
24	B	-
25	W	-
26	SHIELD	-
27	Y	-
28	G	-
29	W	-
30	R	-
31	W	-
32	G	-
33	BE	-
34	P	-
35	W	-
36	LG	-
37	W	-
38	P	-
39	V	-
40	R	-
41	B	-
42	W	-
43	G	-
44	B	-
45	B	- [With around view monitor]
45	GR	- [Without around view monitor]
46	R	- [Without around view monitor]
46	W	- [With around view monitor]
47	GR	-
48	GR	-
49	P	- [Without automatic drive positioner]
49	R	- [With automatic drive positioner]
50	GR	- [With automatic drive positioner]
50	W	- [Without automatic drive positioner]
51	B	- [Without automatic drive positioner]
51	G	- [With automatic drive positioner]
52	GR	- [Without automatic drive positioner]
52	P	- [With automatic drive positioner]
53	SHIELD	-
54	W	-
55	B	-

Connector No.	M20
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15



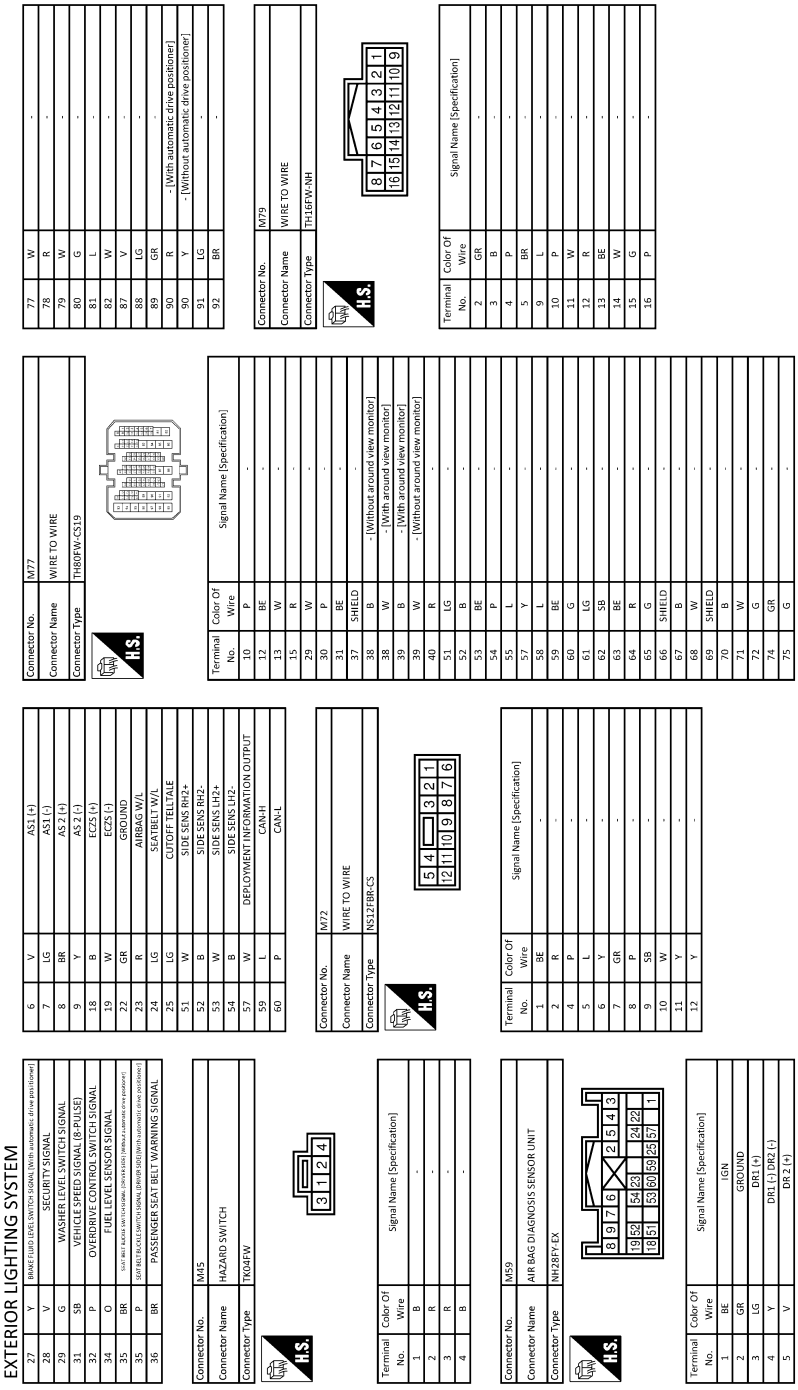
Terminal No.	Color Of Wire	Signal Name [Specification]
7	B	-
8	L	- [With manual A/C]
8	Y	- [With auto A/C]
9	GR	- [With auto A/C]
9	LG	- [With manual A/C]
10	V	-
11	SB	-
12	V	-
14	L	-
15	B	- [Without BOSE system]
15	LG	- [With BOSE system]
16	G	-
17	P	-
18	R	-
19	LG	-
21	R	-
22	B	-
23	W	-
24	SHIELD	-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

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

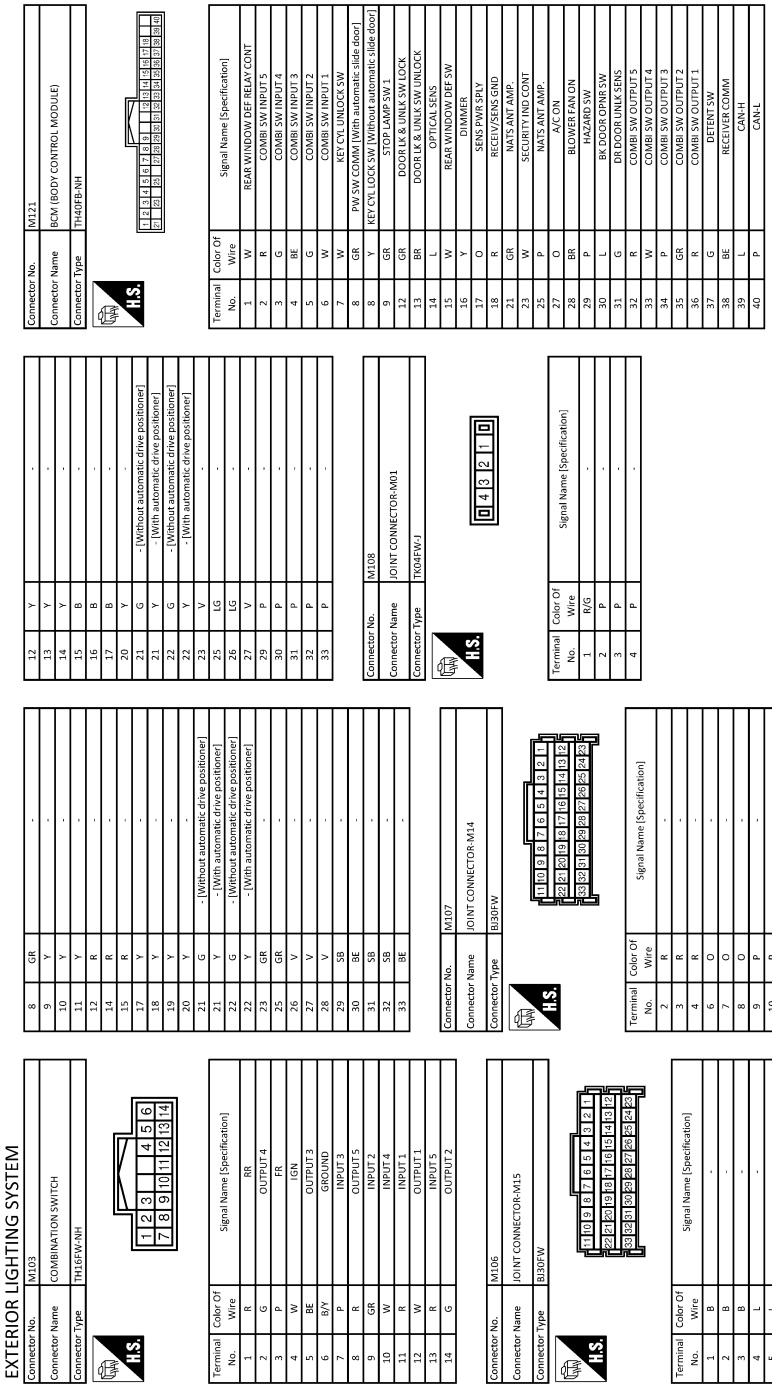


Terminal No.	Color Of Wire	Signal Name [Specification]
1	O	BATTERY POWER SUPPLY [With automatic drive positioner]
1	P	BATTERY POWER SUPPLY [Without automatic drive positioner]
2	G	IGNITION SIGNAL [Without automatic drive positioner]
2	Y	IGNITION SIGNAL [With automatic drive positioner]
3	B	GROUND
4	B	GROUND
5	B	ILLUMINATION CONTROL SIGNAL [Without automatic drive positioner]
5	B/P	ILLUMINATION CONTROL SIGNAL [With automatic drive positioner]
8	G	TRIP RESET SWITCH SIGNAL [Without automatic drive positioner]
8	SB	TRIP RESET SWITCH SIGNAL [With automatic drive positioner]
10	P	METER CONTROL SWITCH GROUND
11	G	ENTER SWITCH SIGNAL
12	BR	SELECT SWITCH SIGNAL [With automatic drive positioner]
12	R	SELECT SWITCH SIGNAL [Without automatic drive positioner]
13	W	ILLUMINATION CONTROL SWITCH SIGNAL [Without automatic drive positioner]
13	Y	ILLUMINATION CONTROL SWITCH SIGNAL [With automatic drive positioner]
14	G	ILLUMINATION CONTROL SWITCH SIGNAL [With automatic drive positioner]
14	V	ILLUMINATION CONTROL SWITCH SIGNAL [With automatic drive positioner]
15	BR	AIR BAG SIGNAL
16	L	ENGINE COOLANT TEMPERATURE SIGNAL
18	L	AMBIENT SENSOR SIGNAL [Without automatic drive positioner]
18	LG	AMBIENT SENSOR SIGNAL [With automatic drive positioner]
19	R	A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL
20	G	AMBIENT SENSOR GROUND [Without automatic drive positioner]
20	Y	AMBIENT SENSOR GROUND [With automatic drive positioner]
21	L	CAN-H
22	P	CAN-L
23	B	GROUND
24	B	FUEL LEVEL SENSOR GROUND
25	BR	ALTERNATOR SIGNAL [With automatic drive positioner]
25	W	ALTERNATOR SIGNAL [Without automatic drive positioner]
26	BR	PARKING BRAKE SWITCH SIGNAL
27	BE	SMART ENTRY UNIT WITH HOMELINK [Without automatic drive positioner]

JRLWF6596GB



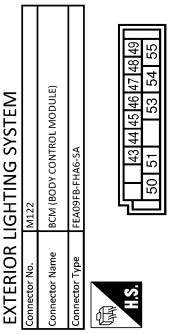
JRLWF6597GB



JRLWF6598GB

EXTERIOR LIGHTING SYSTEM

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FB-FHA6-SA



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

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FW-FHA6-SA

Terminal No.	Color Of Wire	Signal Name [Specification]
56	P	INT ROOM LAMP PWR SPLY
57	Y	BAT
58	O	AIR BAG
59	SB	PASS DOOR UNLK OUTPUT
60	V	TURN SIG LH OUTPUT
61	G	TURN SIG RH OUTPUT
62	W	STEP LAMP CONT
63	R	INT ROOM LAMP CONT

64	W	CRANK REQ
65	V	ALL DOOR LOCK OUTPUT
66	G	DR DOOR UNLK OUTPUT
67	B	GROUND
68	L	PW PWR SPLY (IGN)
69	P	PW PWR SPLY (BAT)
70	L	BAT

JRLWF6599GB

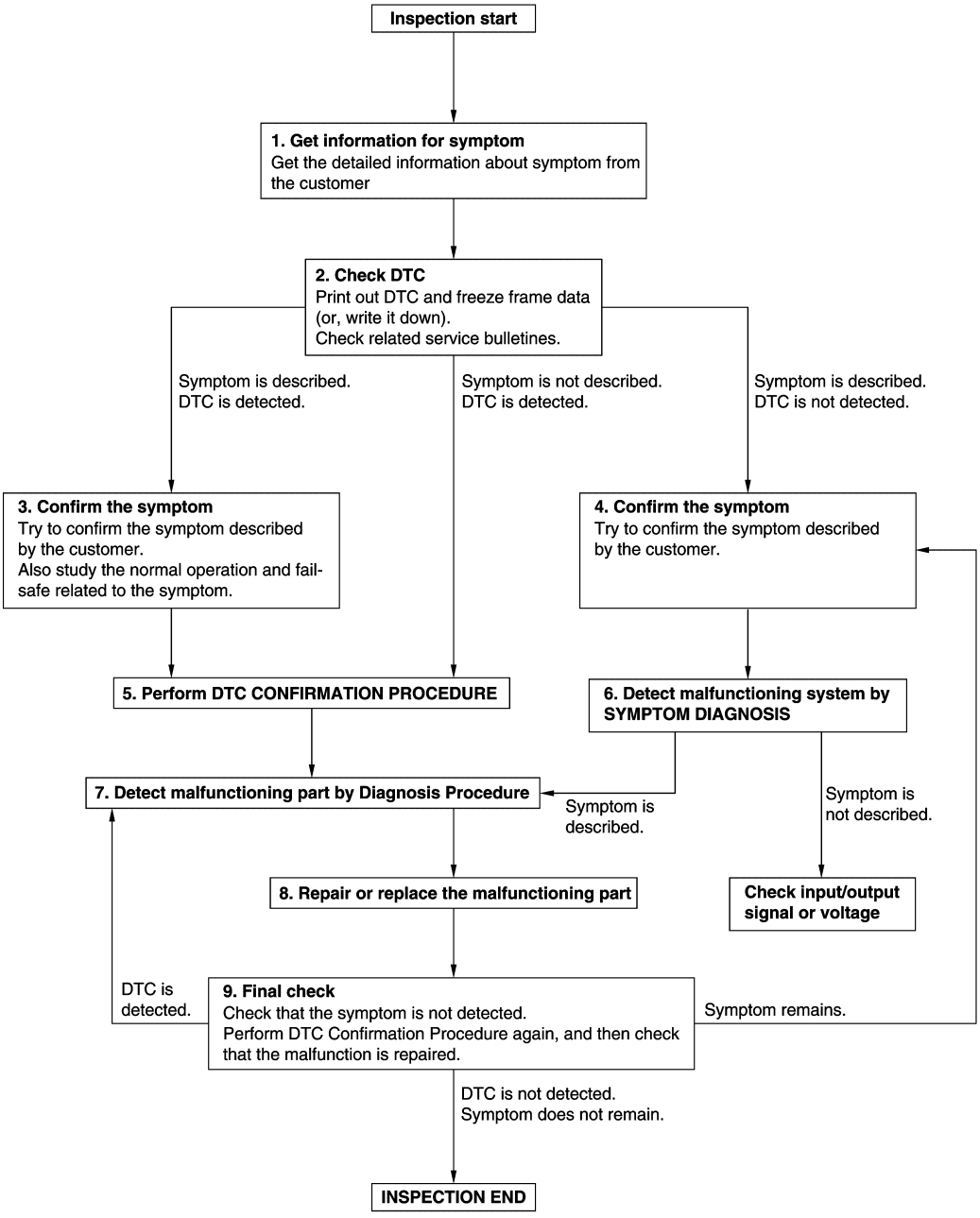
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000012408003

OVERALL SEQUENCE



JMKIA8652GB

DETAILED FLOW

1.GET INFORMATION FOR SYMPTOM

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

>> GO TO 2.

2.CHECK DTC

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

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

3. Check related service bulletins for information.

Are any symptoms described and any DTC detected?

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

3.CONFIRM THE SYMPTOM

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

>> GO TO 5.

4.CONFIRM THE SYMPTOM

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

>> GO TO 6.

5.PERFORM DTC CONFIRMATION PROCEDURE

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

NOTE:

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

Is DTC detected?

YES >> GO TO 7.
NO >> Check according to GI-41, "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-41, "Intermittent Incident".

8.REPAIR OR REPLACE THE MALFUNCTIONING PART

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

>> GO TO 9.

9.FINAL CHECK

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

Is DTC detected and does symptom remain?

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

DTC/CIRCUIT DIAGNOSIS

HEADLAMP (HI) CIRCUIT

Component Function Check

INFOID:0000000012408004

1.CHECK HEADLAMP (HI) OPERATION

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

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

NOTE:
ON/OFF is repeated 1 second each.

Is the inspection result normal?

YES >> Headlamp (HI) circuit is normal.
NO >> Refer to EXL-159, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012408005

1.CHECK HEADLAMP (HI) OUTPUT VOLTAGE

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

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

Is the inspection result normal?

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

2.CHECK HEADLAMP (HI) OPEN CIRCUIT

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

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

Is the inspection result normal?

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

3.CHECK HEADLAMP (HI) FUSE

1. Turn ignition switch OFF.
2. Check that the following fuses are not blown (open).

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

Is the fuse blown (open)?

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

4.CHECK HEADLAMP (HI) SHORT CIRCUIT

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

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

Is the inspection result normal?

YES >> Replace fuse. [Replace IPDM E/R if the fuse blown (open) again.]
NO >> Repair or replace harness. And then replace the fuse.

5.CHECK HEADLAMP (HI) GROUND OPEN CIRCUIT

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

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

Is the inspection result normal?

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

HEADLAMP (LO) CIRCUIT

Component Function Check

INFOID:0000000012408008

1.CHECK HEADLAMP (LO) OPERATION

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

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

Is the inspection result normal?

YES >> Headlamp (LO) is normal.
NO >> Refer to EXL-161, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012408009

1.CHECK HEADLAMP (LO) OUTPUT VOLTAGE

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

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

Is the inspection result normal?

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

2.CHECK HEADLAMP (LO) OPEN CIRCUIT

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

IPDM E/R			Headlamp low		Continuity
Connector		Terminal	Connector	Terminal	
RH	E345	83	E351	1	Existed
LH		84	E350		

Is the inspection result normal?

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

3.CHECK HEADLAMP (LO) FUSE

1. Turn ignition switch OFF.
2. Check that the following fuses are not blown (open).

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

Is the fuse blown (open)

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 IPDM E/R harness connector and ground.

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

Is the inspection result normal?

YES >> Replace fuse. [Replace IPDM E/R if the fuse blown (open) again.]
NO >> Repair or replace harness. And then replace the fuse.

5.CHECK HEADLAMP (LO) GROUND OPEN CIRCUIT

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

Headlamp low			Ground	Continuity
Connector		Terminal		
RH	E351	2		Existed
LH	E350			

Is the inspection result normal?

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

PARKING LAMP CIRCUIT

Component Function Check

INFOID:0000000012408013

1.CHECK PARKING LAMP OPERATION

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

TAIL : Parking lamp ON
Off : Parking lamp OFF

Is the inspection result normal?

YES >> Parking lamp circuit is normal.
NO >> Refer to EXL-163, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012408014

1.CHECK PARKING LAMP FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not blown (open).

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

Is the blown (open)?

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

2.CHECK PARKING LAMP SHORT CIRCUIT

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

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

Is the inspection result normal?

YES >> Replace fuse. [Replace IPDM E/R if the fuse blown (open) again.]
NO >> Repair or replace harness. And then replace the fuse.

3.CHECK PARKING LAMP BULB

Check applicable lamp bulb.

Is the inspection result normal?

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

4.CHECK PARKING LAMP OUTPUT VOLTAGE

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

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

Is the inspection result normal?

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

5.CHECK PARKING LAMP OPEN CIRCUIT

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

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

Is the inspection result normal?

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

6.CHECK PARKING LAMP GROUND OPEN CIRCUIT

Check continuity between front combination lamp harness connector and ground.

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

Is the inspection result normal?

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

FRONT SIDE MARKER LAMP CIRCUIT

Component Function Check

INFOID:0000000012408015

1.CHECK PARKING LAMP OPERATION

Check that the parking lamp is turned ON.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Check parking lamp circuit. Refer to EXL-163, "Component Function Check".

2.CHECK FRONT SIDE MARKER LAMP OPERATION

CONSULT ACTIVE TEST

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

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

Is the inspection result normal?

YES >> Front side marker lamp circuit is normal.
NO >> Refer to EXL-165, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012408016

1.CHECK FRONT SIDE MARKER LAMP BULB

Check applicable lamp bulb.

Is the inspection result normal?

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

2.CHECK FRONT SIDE MARKER LAMP OPEN CIRCUIT

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

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

Is the inspection result normal?

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

3.CHECK FRONT SIDE MARKER LAMP GROUND OPEN CIRCUIT

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

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

Is the inspection result normal?

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

TAIL LAMP CIRCUIT

Component Function Check

INFOID:0000000012408017

1.CHECK TAIL LAMP OPERATION

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

TAIL : Tail Lamp ON
Off : Tail lamp OFF

Is the inspection result normal?

YES >> Tail lamp circuit is normal.
NO >> Refer to EXL-166, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012408018

1.CHECK TAIL LAMP FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not blown (open).

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

Is the fuse blown (open)?

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

2.CHECK TAIL LAMP SHORT CIRCUIT

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

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

Is the inspection result normal?

YES >> Replace fuse. [Replace IPDM E/R if the fuse blown (open) again.]
NO >> Repair or replace harness. And then replace the fuse.

3.CHECK TAIL LAMP BULB

Check applicable lamp bulb.

Is the inspection result normal?

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

4.CHECK TAIL LAMP OUTPUT VOLTAGE

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

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

Is the inspection result normal?

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

5.CHECK TAIL LAMP OPEN CIRCUIT

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

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

Is the inspection result normal?

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

6.CHECK TAIL LAMP GROUND OPEN CIRCUIT

Check continuity between rear combination lamp harness connector and ground.

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

Is the inspection result normal?

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

LICENSE PLATE LAMP CIRCUIT

Component Function Check

INFOID:0000000012408019

1.CHECK TAIL LAMP OPERATION

Check that the tail lamp is turned ON.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Check tail lamp circuit. Refer to EXL-166, "Component Function Check".

2.CHECK LICENSE PLATE LAMP OPERATION

CONSULT ACTIVE TEST

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

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

Is the inspection result normal?

YES >> License plate lamp circuit is normal.
NO >> Refer to EXL-168, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012408020

1.CHECK LICENSE PLATE LAMP BULB

Check the applicable lamp bulb.

Is the inspection result normal?

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

2.CHECK LICENSE PLATE LAMP OPEN CIRCUIT

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

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

Is the inspection result normal?

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

3.CHECK LICENSE PLATE LAMP GROUND OPEN CIRCUIT

Check continuity between license plate lamp harness connector and ground.

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

Is the inspection result normal?

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

TURN SIGNAL LAMP CIRCUIT

Component Function Check

INFOID:0000000012408021

1.CHECK TURN SIGNAL LAMP

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

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

Is the inspection result normal?

YES >> Turn signal lamp circuit is normal.
NO >> Refer to EXL-169, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012408022

1.CHECK TURN SIGNAL LAMP

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

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

Which turn signal lamp does not turn ON?

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

2.CHECK TURN SIGNAL LAMP BULB

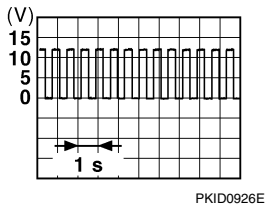
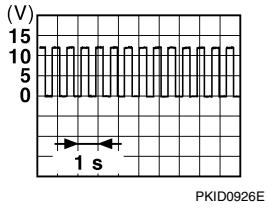
Check the applicable lamp bulb.

Is the inspection result normal?

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

3.CHECK TURN SIGNAL LAMP OUTPUT VOLTAGE

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

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

Is the inspection result normal?

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

4. CHECK TURN SIGNAL LAMP OPEN CIRCUIT

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

Front turn signal lamp

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

Side turn signal lamp

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

Rear turn signal lamp

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

Is the inspection result normal?

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

5. CHECK TURN SIGNAL LAMP SHORT CIRCUIT

Check continuity between BCM harness connector and ground.

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

Is the inspection result normal?

YES-1 >> (When side turn signal lamp does not turn ON) Replace BCM. Refer to BCS-99, "Removal and Installation".

YES-2 >> (When lamp other than side turn signal lamp does not turn ON) Check each bulb socket for internal short circuit, and if check result is normal, replace BCM. Refer to BCS-99, "Removal and Installation".

NO >> Repair or replace harness.

6. CHECK TURN SIGNAL LAMP GROUND OPEN CIRCUIT

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

Front turn signal lamp

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

Side turn signal lamp

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

Rear turn signal lamp

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

Is the inspection result normal?

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

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

NO >> Repair or replace harness.

FRONT FOG LAMP CIRCUIT

Component Function Check

INFOID:0000000012408023

1.CHECK FRONT FOG LAMP OPERATION

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

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

Is the measurement normal?

YES >> Front fog lamp circuit is normal.
NO >> Refer to EXL-172, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012408024

1.CHECK FRONT FOG LAMP BULB

Check the applicable lamp bulb.

Is the inspection result normal?

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

2.CHECK FRONT FOG LAMP OUTPUT VOLTAGE

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

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

Is the inspection result normal?

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

3.CHECK FRONT FOG LAMP OPEN CIRCUIT

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

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

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness.

4. CHECK FRONT FOG LAMP GROUND CIRCUIT OPEN CIRCUIT

Check continuity between front fog lamp harness connector and ground.

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

Is the inspection result normal?

YES >> Refer to GI-41, "Intermittent Incident".
NO >> Repair or replace harness.

OPTICAL SENSOR

Component Function Check

INFOID:0000000012408025

1.CHECK OPTICAL SENSOR SIGNAL BY CONSULT

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

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

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

Is the inspection result normal?

YES >> Optical sensor is normal.
NO >> Refer to EXL-174, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012408026

1.CHECK OPTICAL SENSOR POWER SUPPLY INPUT

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

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

Is the inspection result normal?

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

2.CHECK OPTICAL SENSOR GROUND INPUT

Check voltage between optical sensor harness connector and ground.

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

Is the inspection result normal?

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

3.CHECK OPTICAL SENSOR SIGNAL OUTPUT

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

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

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

Is the inspection result normal?

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

4. CHECK OPTICAL SENSOR OPEN CIRCUIT

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

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

Is the inspection result normal?

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

5. CHECK OPTICAL SENSOR SHORT CIRCUIT

Check continuity between optical sensor harness connector and ground.

Optical sensor		Ground	Continuity
Connector	Terminal		
M17	1		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-99, "Removal and Installation".
NO >> Repair or replace harness.

6. CHECK OPTICAL SENSOR GROUND OPEN CIRCUIT

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

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

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-99, "Removal and Installation".
NO >> Repair or replace harness.

7. CHECK OPTICAL SENSOR SIGNAL OPEN CIRCUIT

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

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

Is the inspection result normal?

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

8. CHECK OPTICAL SENSOR SHORT CIRCUIT

Check continuity between optical sensor harness connector and ground.

Optical sensor		Ground	Continuity
Connector	Terminal		
M17	2		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-99, "Removal and Installation".
NO >> Repair or replace harness.

HAZARD SWITCH

Component Function Check

INFOID:0000000012408027

1.CHECK HAZARD SWITCH SIGNAL BY CONSULT

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

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

Is the inspection result normal?

YES >> Hazard switch circuit is normal.
NO >> Refer to EXL-177, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012408028

1.CHECK HAZARD SWITCH SIGNAL INPUT

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

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

Is the inspection result normal?

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

2.CHECK HAZARD SWITCH SIGNAL OPEN CIRCUIT

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

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

Is the inspection result normal?

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

3.CHECK HAZARD SWITCH SIGNAL SHORT CIRCUIT

Check continuity between hazard switch harness connector and ground.

Hazard switch		Ground	Continuity
Connector	Terminal		
M45	2		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-99, "Removal and Installation".
NO >> Repair or replace harness.

4. CHECK HAZARD SWITCH GROUND OPEN CIRCUIT

Check continuity between hazard switch harness connector and ground.

Hazard switch		Ground	Continuity
Connector	Terminal		
M45	1		Existed

Is the inspection result normal?

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

SYMPTOM DIAGNOSIS

EXTERIOR LIGHTING SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000012408029

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

Symptom		Possible cause	Inspection item
Headlamp (HI) is not turned ON.	One side	• Fuse • Halogen bulb (HI) • Harness between IPDM E/R and headlamp (HI) • Harness between headlamp (HI) and ground • IPDM E/R	Headlamp (HI) circuit Refer to EXL-159, "Component Function Check".
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON" Refer to EXL-182, "Diagnosis Procedure".	
High beam indicator lamp is not turned ON. [Headlamp (HI) is turned ON.]		Combination meter	• Combination meter Data monitor "HI-BEAM IND" • BCM (HEAD LAMP) Active test "HEADLAMP"
Headlamp (LO) is not turned ON.	One side	• Fuse • Halogen bulb (LO) • Harness between IPDM E/R and headlamp lamp (LO) • Harness between headlamp (LO) and ground • IPDM E/R	Headlamp (LO) circuit Refer to EXL-161, "Component Function Check".
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON" Refer to EXL-183, "Diagnosis Procedure".	
Each lamp is not turned ON/OFF with lighting switch AUTO.		• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-97, "Symptom Table".
		• Optical sensor • Harness between optical sensor and BCM • BCM	Optical sensor Refer to EXL-174, "Component Function Check".
Parking lamp is not turned ON.		• Fuse • Parking lamp bulb • Harness between IPDM E/R and front combination lamp • Harness between front combination lamp and ground • IPDM E/R	Parking lamp circuit Refer to EXL-163, "Component Function Check".
Front side marker lamp is not turned ON.		• Front side marker lamp bulb • Harness between IPDM E/R and front side marker lamp • Harness between front side marker lamp and ground	Front side marker lamp circuit Refer to EXL-165, "Component Function Check".

Symptom		Possible cause	Inspection item
Tail lamp (Rear side marker lamp) is not turned ON.		• Fuse • Tail lamp bulb • Harness between IPDM E/R and rear combination lamp • Harness between rear combination lamp and ground • IPDM E/R	Tail lamp circuit Refer to EXL-166, "Component Function Check".
License plate lamp is not turned ON.		• License plate lamp bulb • Harness between IPDM E/R and license plate lamp • Harness between license plate lamp and ground	License plate lamp circuit Refer to EXL-168, "Component Function Check".
Parking lamp, side marker lamp, tail lamp and license plate lamp are not turned ON.		**Symptom diagnosis** “PARKING, SIDE MARKER, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON” Refer to EXL-184, "Diagnosis Procedure".	
Tail lamp indicator is not turned ON. (Exterior lamps are turned ON.)		Combination meter	• Combination meter Data monitor “LIGHT IND” • BCM (HEADLAMP) Active test “TAIL LAMP”
Turn signal lamp does not blink.	Indicator lamp is normal. (Applicable side performs high flasher activation.)	• Turn signal lamp bulb • Door mirror • Harness between BCM and each turn signal lamp • Harness between each turn signal lamp and ground	Turn signal lamp circuit Refer to EXL-169, "Component Function Check".
	Indicator lamp is included.	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-97, "Symptom Table".
Turn signal indicator lamp does not blink. (Turn signal lamp is normal.)	One side	Combination meter	—
	Both sides (Always)	• Turn signal indicator lamp signal • BCM • Combination meter	• Combination meter Data monitor “TURN IND” • BCM (FLASHER) Active test “FLASHER”
	Both sides (Only when activating hazard warning lamp with ignition switch OFF)	• Combination meter power supply and ground circuit • Combination meter	Combination meter Power supply and ground circuit Refer to MWI-77, "COMBINATION METER : Diagnosis Procedure".
• Hazard warning lamp does not activate. • Hazard warning lamp continues activating. (Turn signal is normal.)		• Hazard switch • Harness between hazard switch and BCM • Harness between hazard switch and ground • BCM	Hazard switch circuit Refer to EXL-177, "Component Function Check".
Front fog lamp is not turned ON.	One side	• Front fog lamp bulb • Harness between IPDM E/R and front fog lamp • Harness between front fog lamp and ground • IPDM E/R	Front fog lamp circuit Refer to EXL-172, "Component Function Check".
	Both sides	**Symptom diagnosis** “BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON” Refer to EXL-185, "Description".	

NORMAL OPERATING CONDITION

Description

INFOID:0000000012408031

AUTO LIGHT SYSTEM

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

BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON

Description

INFOID:0000000012408034

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

Diagnosis Procedure

INFOID:0000000012408035

1.COMBINATION SWITCH INSPECTION

Check combination switch. Refer to BCS-97, "Symptom Table".

Is the inspection result normal?

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

2.CHECK HEADLAMP (HI) REQUEST SIGNAL INPUT

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

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

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-99, "Removal and Installation".

3.HEADLAMP (HI) CIRCUIT INSPECTION

Check headlamp (HI) circuit. Refer to EXL-159, "Component Function Check".

Is the inspection result normal?

YES >> Refer to GI-41, "Intermittent Incident".
NO >> Repair or replace the malfunctioning part.

BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON

Description

INFOID:0000000012408036

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

Diagnosis Procedure

INFOID:0000000012408037

1.CHECK COMBINATION SWITCH

Check combination switch. Refer to BCS-97, "Symptom Table".

Is the inspection result normal?

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

2.CHECK HEADLAMP (LO) REQUEST SIGNAL INPUT

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

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

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-99, "Removal and Installation".

3.HEADLAMP (LO) CIRCUIT INSPECTION

Check headlamp (LO) circuit. Refer to EXL-161, "Component Function Check".

Is the inspection result normal?

YES >> Refer to GI-41, "Intermittent Incident".
NO >> Repair or replace the malfunctioning part.

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

Description

INFOID:0000000012408038

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

Diagnosis Procedure

INFOID:0000000012408039

1.COMBINATION SWITCH INSPECTION

Check combination switch. Refer to BCS-97, "Symptom Table".

Is the combination switch normal?

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

2.CHECK TAIL LAMP RELAY REQUEST SIGNAL INPUT

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

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

Is the inspection result normal?

YES >> Replace IPDM E/R.
NO >> Replace BCM. Refer to BCS-99, "Removal and Installation".

BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

Description

INFOID:0000000012408040

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

Diagnosis Procedure

INFOID:0000000012408041

1.CHECK FRONT FOG LAMP FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not blown (open).

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

Is the fuse blown (open)?

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

2.CHECK FRONT FOG LAMP SHORT CIRCUIT

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

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

Is the inspection result normal?

YES >> Replace fuse. [Replace IPDM E/R if the fuse blown (open) again.]
NO >> Repair or replace harness. And then replace the fuse.

3.COMBINATION SWITCH INSPECTION

Check combination switch. Refer to BCS-97, "Symptom Table".

Is the inspection result normal?

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

4.CHECK FRONT FOG LAMP REQUEST SIGNAL INPUT

CONSULT DATA MONITOR

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

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

Is the item status normal?

YES >> GO TO 5.
NO >> Replace BCM. Refer to BCS-99, "Removal and Installation".

5.FRONT FOG LAMP CIRCUIT INSPECTION

Check the front fog lamp circuit. Refer to EXL-172, "Component Function Check".

Is the inspection result normal?

YES >> Refer to GI-41, "Intermittent Incident".
NO >> Repair or replace the malfunctioning part.

PERIODIC MAINTENANCE

HEADLAMP AIMING ADJUSTMENT

Description

INFOID:0000000012408042

PREPARATION BEFORE ADJUSTING

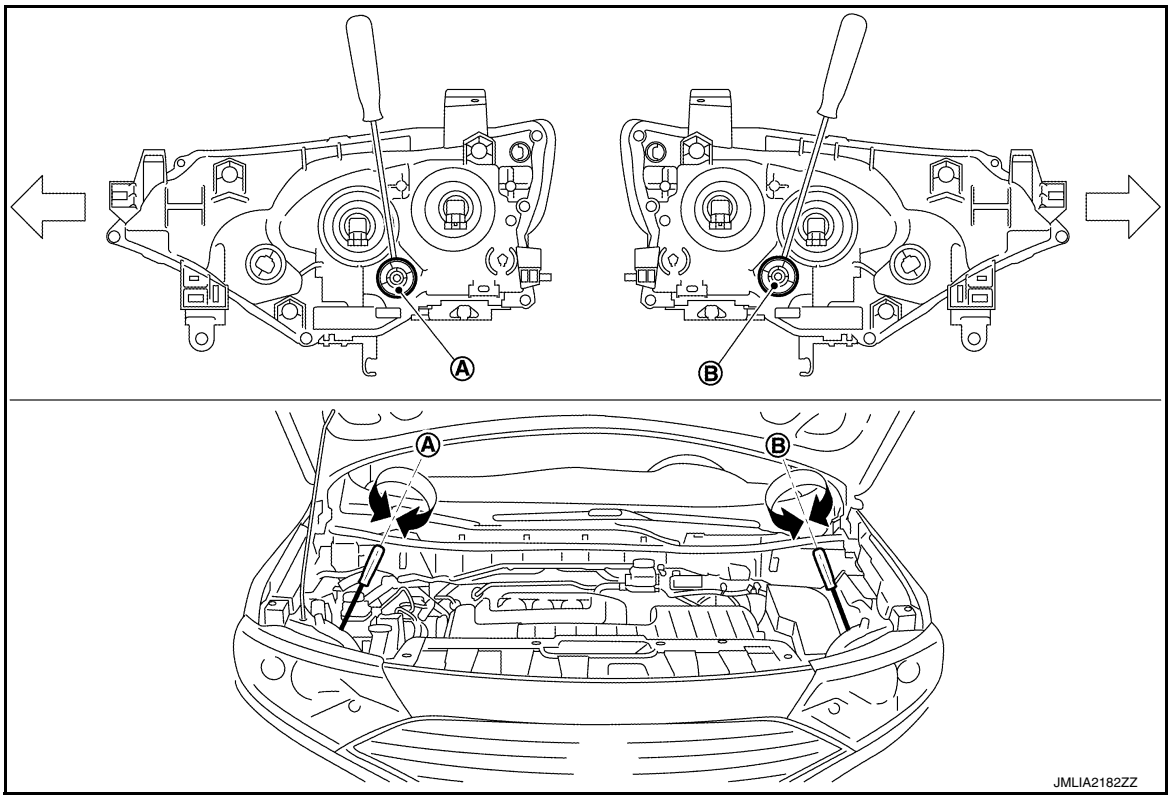
NOTE:

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

Before performing aiming adjustment, check the following.

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

AIMING ADJUSTMENT SCREW



A. Headlamp RH (UP/DOWN) adjustment screw B. Headlamp LH (UP/DOWN) adjustment screw

⇦ : Vehicle center

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

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

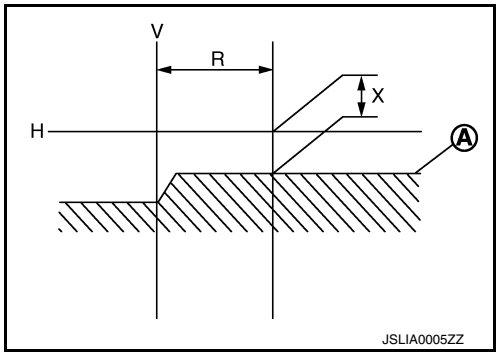
Aiming Adjustment Procedure

INFOID:0000000012408043

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

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

Low beam distribution on the screen

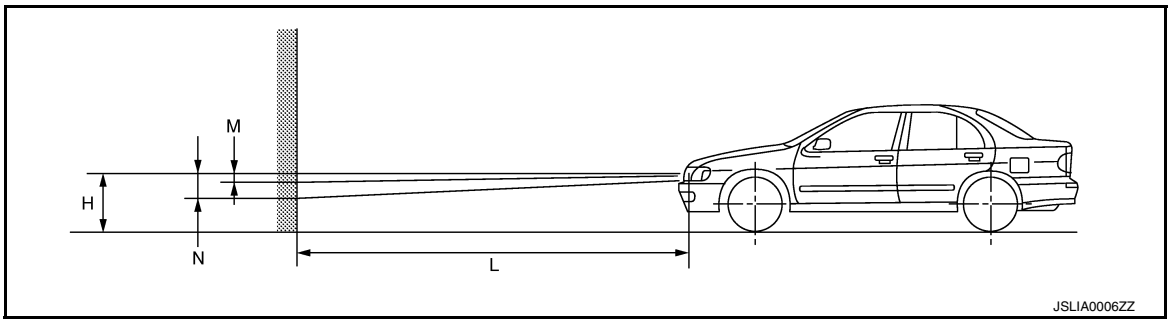


5. Adjust the cutoff line height (X) with the aiming adjustment screw so as to enter in the adjustment range (M–N) according to the horizontal center line of headlamp (H).

unit: mm (in)

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

Side view



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

FRONT FOG LAMP AIMING ADJUSTMENT

Description

INFOID:0000000012408044

PREPARATION BEFORE ADJUSTING

NOTE:

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

Before performing aiming adjustment, check the following.

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

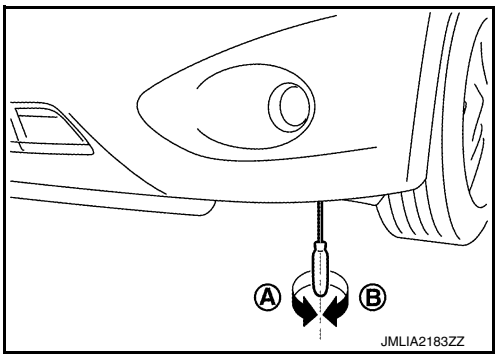
AIMING ADJUSTMENT SCREW

- Turn the aiming adjusting screw for adjustment.

  A: UP

  B: DOWN

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

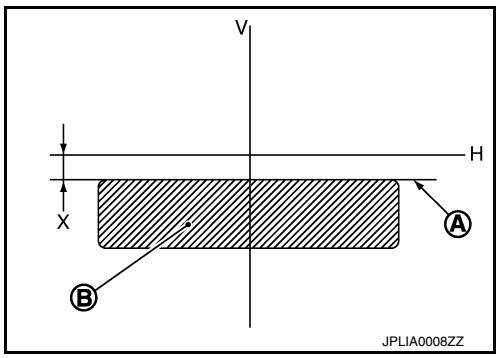


Aiming Adjustment Procedure

INFOID:0000000012408045

1. Place the screen.
   NOTE:
   - Stop the vehicle facing the wall.
   - Place the board on a plain road vertically.
2. Face the vehicle with the screen. Maintain 7.62 m (25 ft) between the front fog lamp center and the screen.
3. Start the engine. Illuminate the front fog lamp.
   CAUTION:
   Never cover the lens surface with a tape etc. The lens is made of resin.
   NOTE:
   Shut off the headlamp light with the board to prevent from illuminating the adjustment screen.
4. Adjust the cutoff line height (A) with the aiming adjustment screw so that the distance (X) between the horizontal center line of front fog lamp (H) and (A) becomes 100 mm (3.94 in).

Front fog lamp light distribution on the screen



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

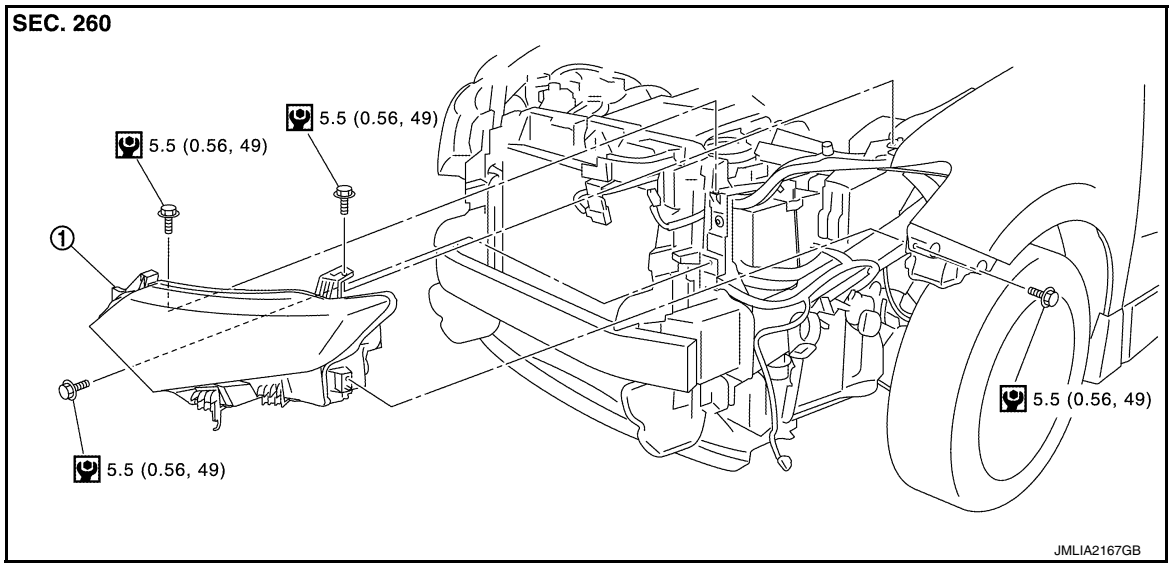
REMOVAL AND INSTALLATION

FRONT COMBINATION LAMP

Exploded View

INFOID:0000000012408046

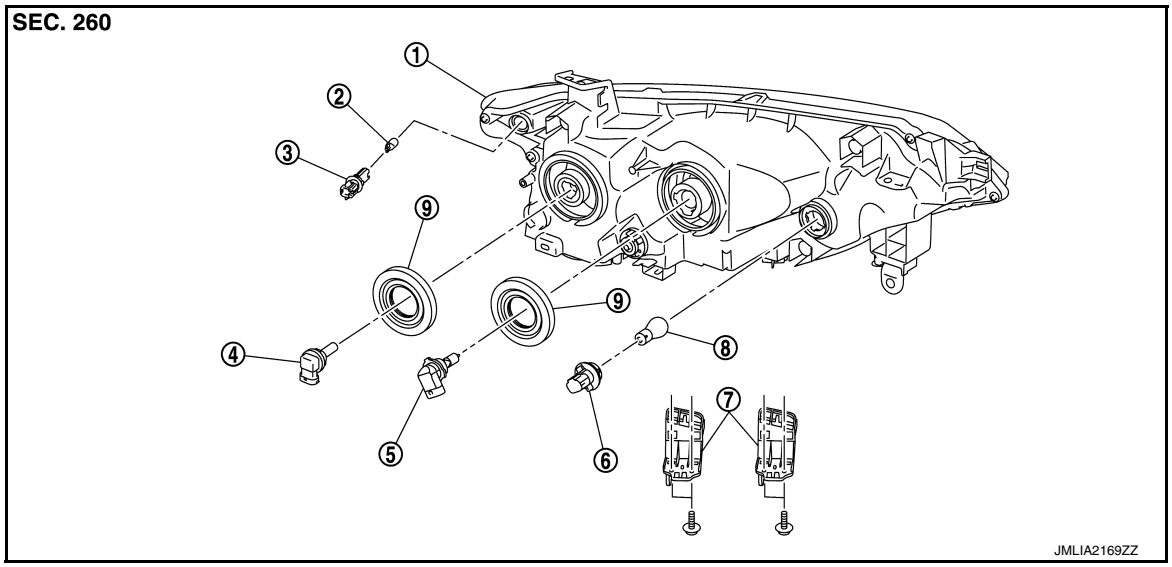
REMOVAL



1. Front combination lamp

: N·m (kg-m, in-lb)

DISASSEMBLY



1. Front combination lamp housing assembly
2. Front side marker lamp bulb
3. Front side marker lamp bulb socket
4. Halogen bulb (LO)
5. Halogen bulb (HI)
6. Front turn signal lamp/parking lamp bulb socket
7. Bumper bracket
8. Front turn signal lamp/parking lamp bulb
9. Back cover

Removal and Installation

INFOID:0000000012408047

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

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

INSTALLATION

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

CAUTION:
After installation, perform aiming adjustment. Refer to EXL-186, "Description".

Replacement

INFOID:0000000012408048

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

HEADLAMP BULB (HI)

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

HEADLAMP BULB (LO)

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

FRONT TURN SIGNAL LAMP/PARKING LAMP BULB

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

FRONT SIDE MARKER LAMP BULB

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

Disassembly and Assembly

INFOID:0000000012408049

DISASSEMBLY

1. Rotate the halogen bulb (LO) socket counterclockwise and unlock it.
2. Remove halogen bulb (LO) socket from the front combination lamp assembly.
3. Rotate the halogen bulb (HI) socket counterclockwise and unlock it.
4. Remove halogen bulb (HI) socket from the front combination lamp assembly.
5. Rotate the front turn signal lamp/parking lamp bulb socket counterclockwise and unlock it.
6. Remove front turn signal lamp/parking lamp bulb.
7. Rotate the front side marker lamp bulb socket counterclockwise and unlock it.
8. Remove the bulb from the front side marker lamp bulb socket.

ASSEMBLY

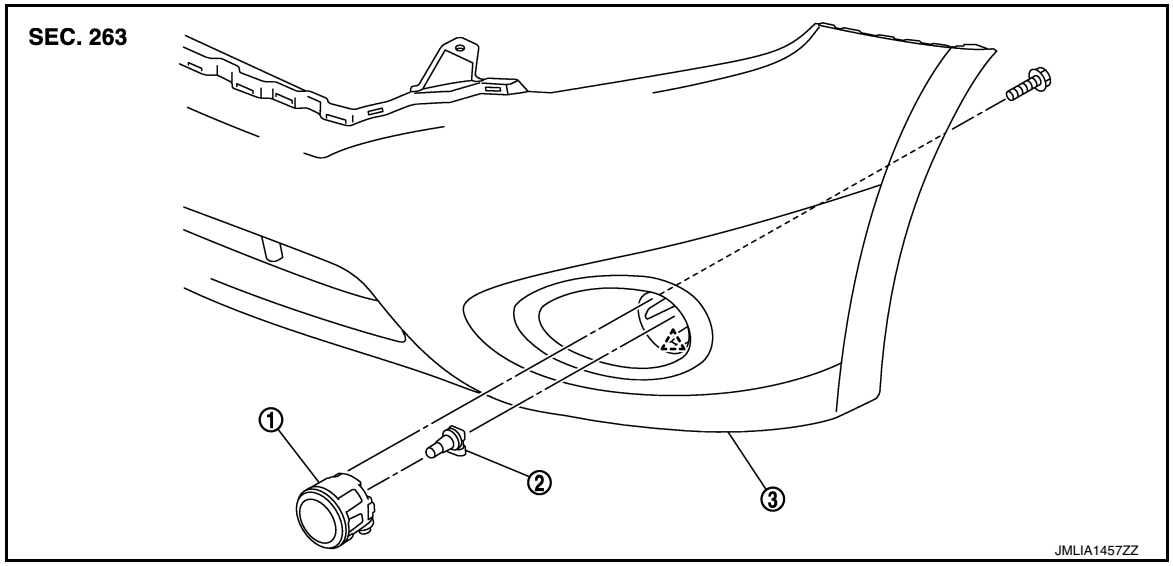
Note the following item, and then assemble in the reverse order of disassembly.

CAUTION:
After installing the bulb, install the back cover and the bulb socket securely for watertightness.

FRONT FOG LAMP

Exploded View

INFOID:0000000012408050



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

: Pawl

Removal and Installation

INFOID:0000000012408051

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

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

INSTALLATION

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

CAUTION:
After installation, perform aiming adjustment. Refer to EXL-188, "Description".

Replacement

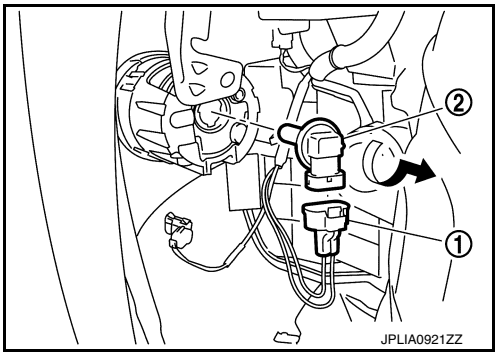
INFOID:0000000012408052

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

FRONT FOG LAMP BULB

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

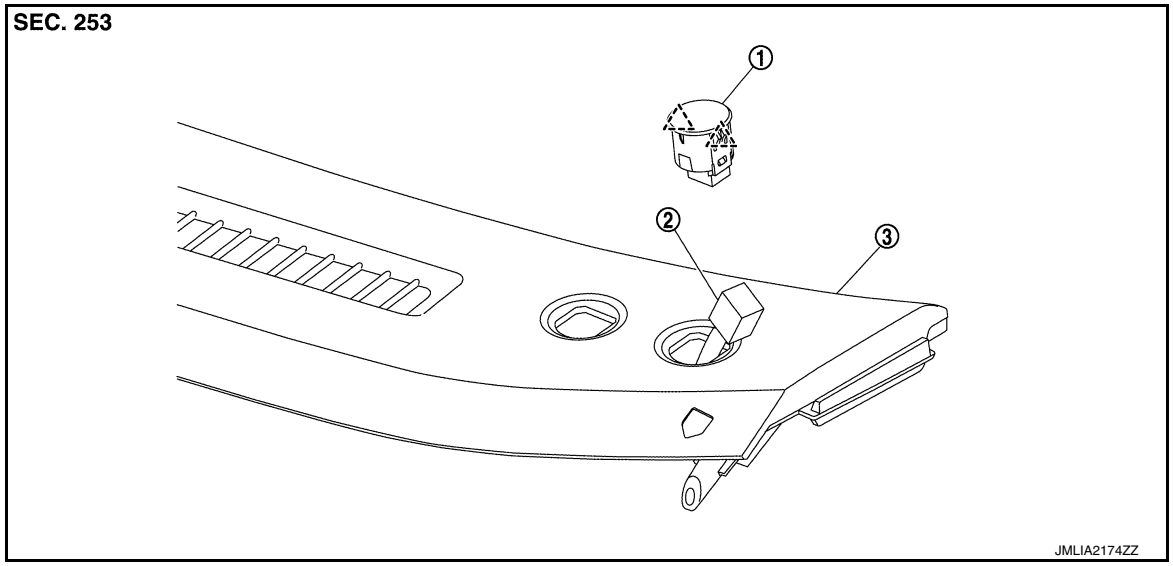
2. Disconnect front fog lamp bulb connector (1).
3. Rotate the bulb (2) counterclockwise and unlock it.



OPTICAL SENSOR

Exploded View

INFOID:0000000012408053



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

: Pawl

Removal and Installation

INFOID:0000000012408054

REMOVAL

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

INSTALLATION

Install in the reverse order of removal.

LIGHTING & TURN SIGNAL SWITCH

Exploded View

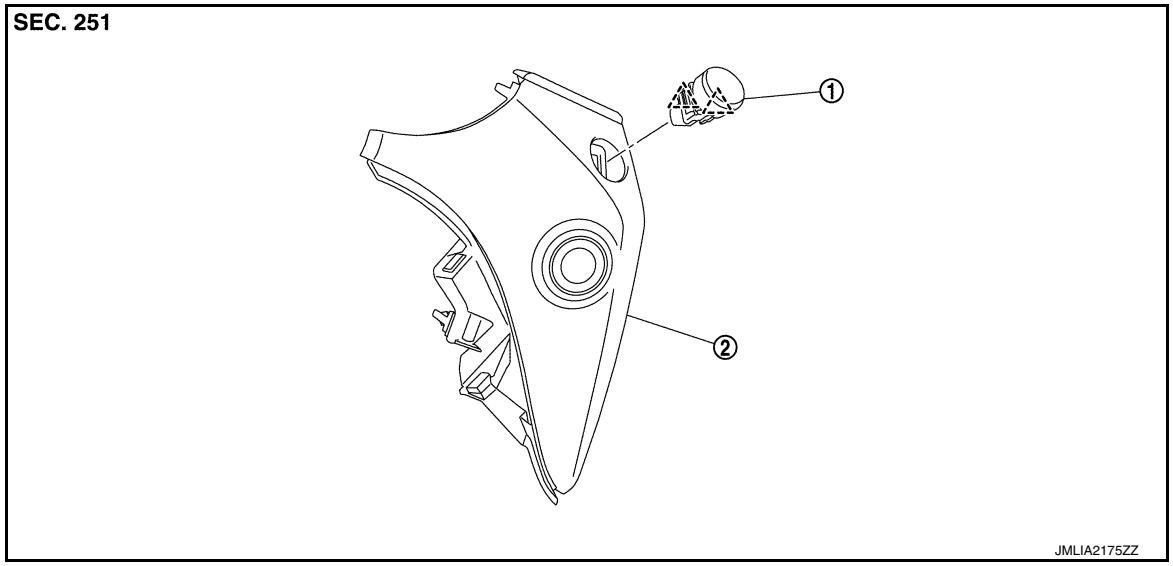
INFOID:0000000012408055

The lighting & turn signal switch is integrated in the combination switch. Refer to BCS-100, "Exploded View".

HAZARD SWITCH

Exploded View

INFOID:0000000012408056



1. Hazard switch
2. Instrument finisher A

: Pawl

Removal and Installation

INFOID:0000000012408057

REMOVAL

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

INSTALLATION

Install in the reverse order of removal.

SIDE TURN SIGNAL LAMP

Exploded View

INFOID:0000000012408058

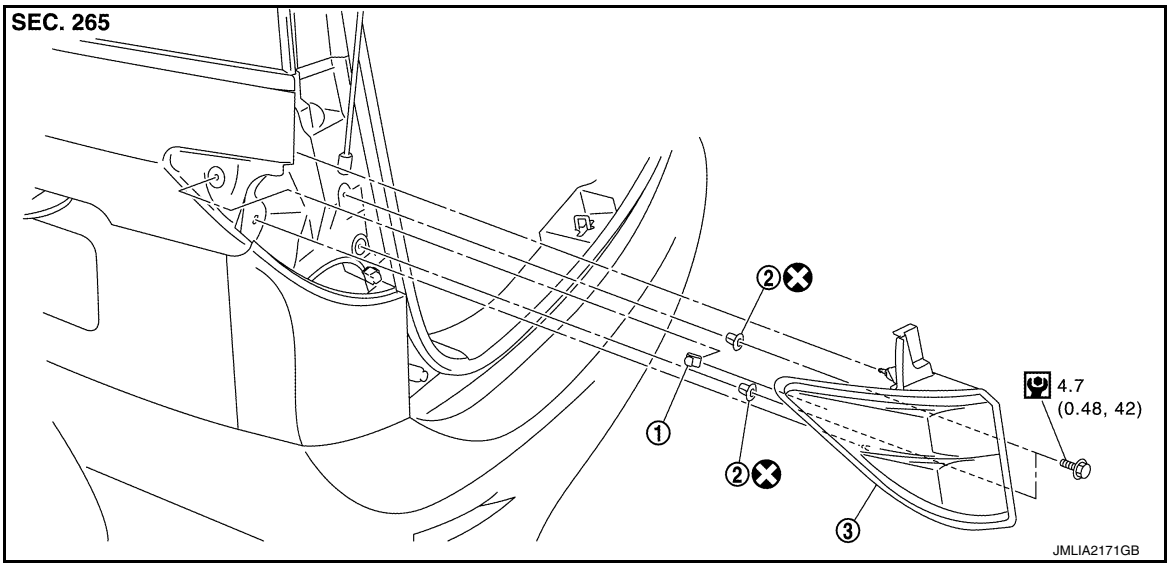
Side turn signal lamp is integrated in the door mirror. Refer to MIR-34, "Exploded View".

REAR COMBINATION LAMP

Exploded View

INFOID:0000000012408059

REMOVAL

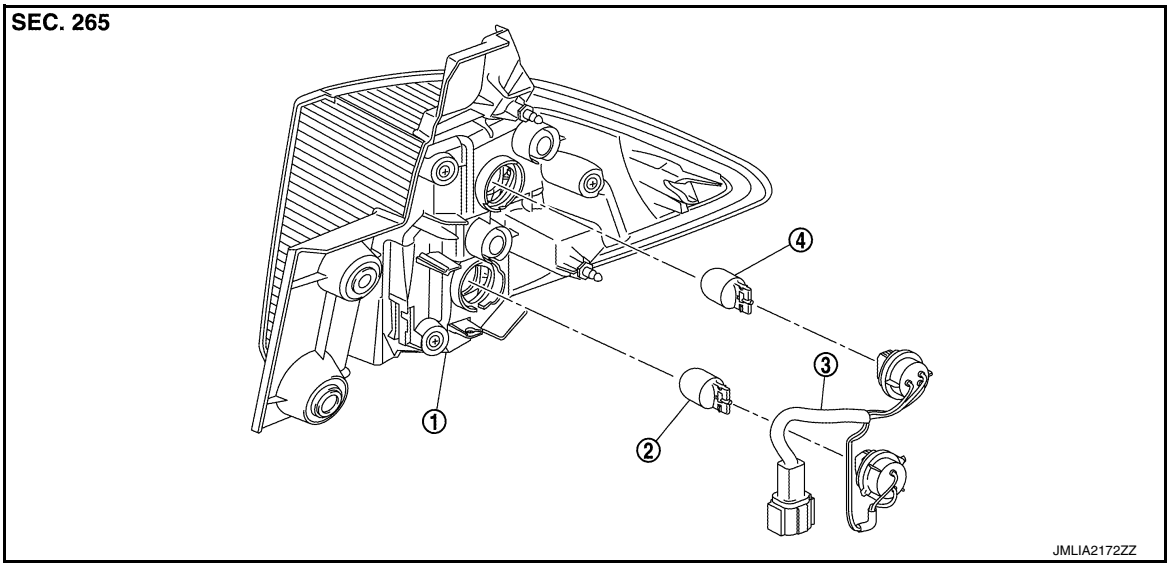


1. Clip
2. Grommet
3. Rear combination lamp assembly

: Always replace after every disassembly.

: N·m (kg-m, in-lb)

DISASSEMBLY



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

Removal and Installation

INFOID:0000000012408060

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

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

INSTALLATION

Install in the reverse order of removal.

Replacement

INFOID:0000000012408061

CAUTION:

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

REAR TURN SIGNAL LAMP BULB

1. Remove rear combination lamp assembly. Refer to EXL-199, "Removal and Installation".
2. Rotate rear turn signal lamp bulb socket counterclockwise, and then remove rear turn signal lamp bulb socket.
3. Remove rear turn signal lamp bulb from rear turn signal lamp bulb socket.

TAIL LAMP/STOP LAMP BULB

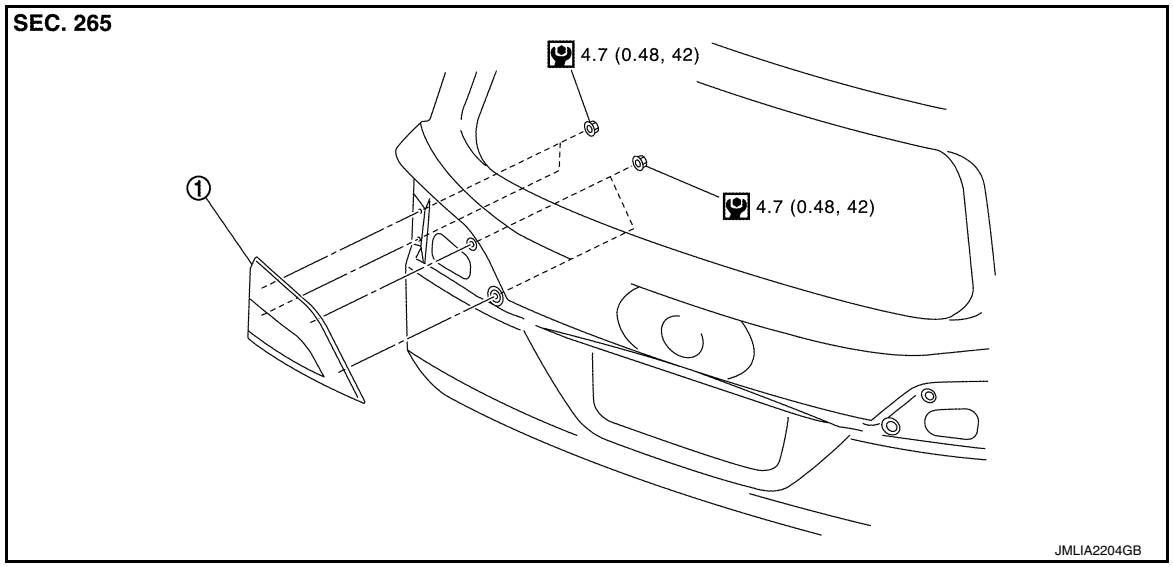
1. Remove rear combination lamp assembly. Refer to EXL-199, "Removal and Installation".
2. Rotate tail lamp/stop lamp bulb socket counterclockwise, and then remove tail lamp/stop lamp bulb socket.
3. Remove tail lamp/stop lamp bulb from tail lamp/stop lamp bulb socket.

BACK-UP LAMP

Exploded View

INFOID:0000000012408062

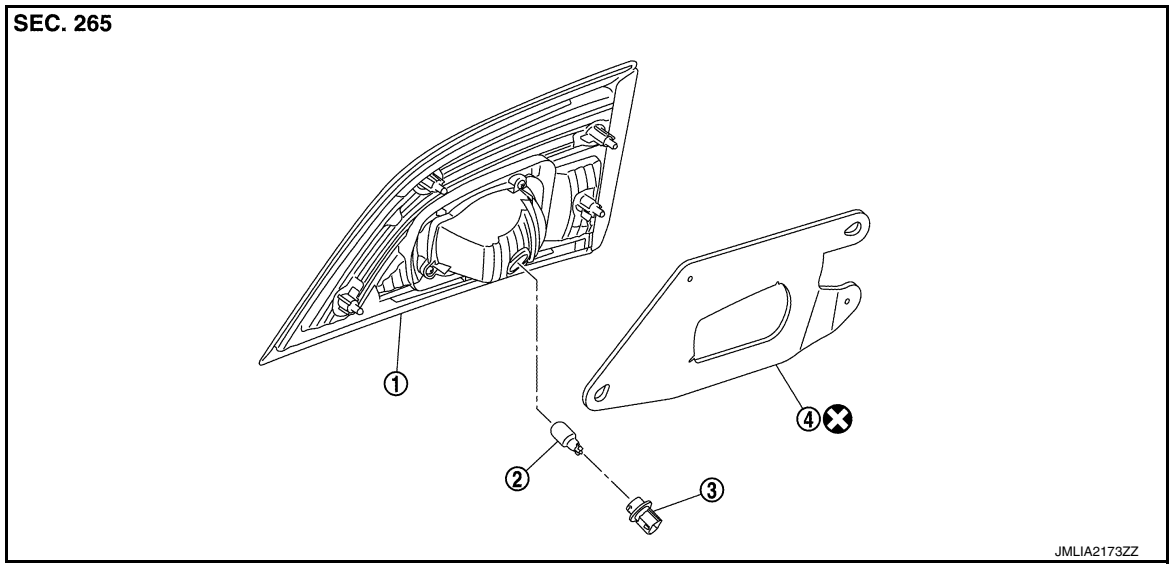
REMOVAL



1. Back-up lamp assembly

: N·m (kg-m, in-lb)

DISASSEMBLY



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

: Always replace after every disassembly.

Removal and Installation

INFOID:0000000012408063

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

1. Remove touch sensor (with automatic back door). Refer to DLK-476, "TOUCH SENSOR : Removal and Installation".
2. Remove back door lower finisher. Refer to INT-48, "BACK DOOR LOWER FINISHER : Removal and Installation".
3. Disconnect back-up lamp connector.
4. Remove back-up lamp mounting nuts, and then remove back-up lamp.
5. Remove seal packing

INSTALLATION

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

CAUTION:

Seal packing cannot be reused.

Replacement

INFOID:0000000012408064

CAUTION:

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

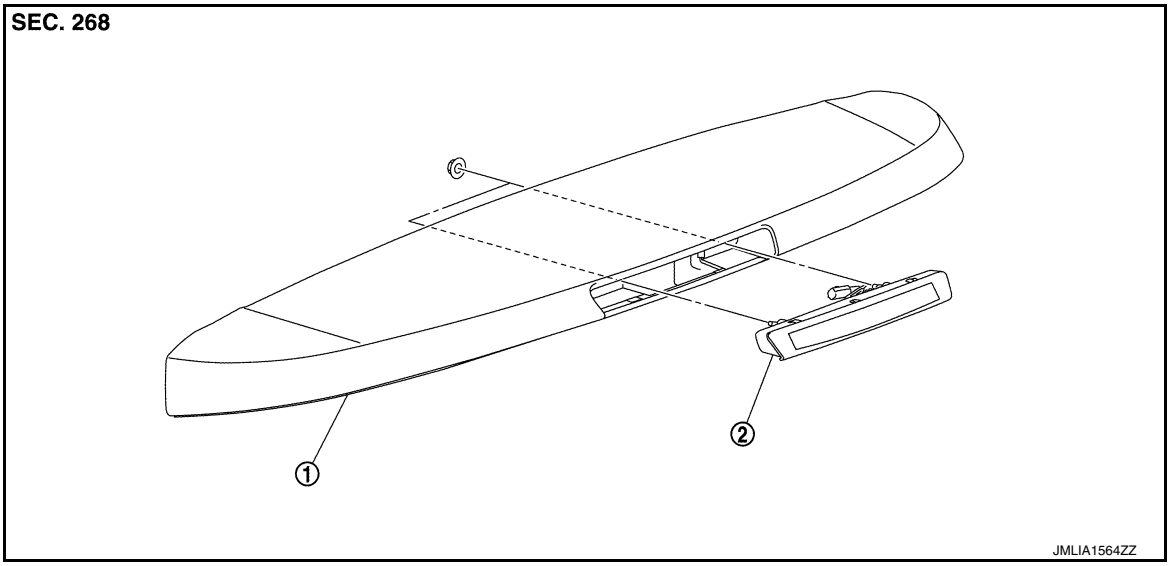
BACK-UP LAMP BULB

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

HIGH-MOUNTED STOP LAMP

Exploded View

INFOID:0000000012408065



1. Rear spoiler
2. High-mounted stop lamp

Removal and Installation

INFOID:0000000012408066

REMOVAL

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

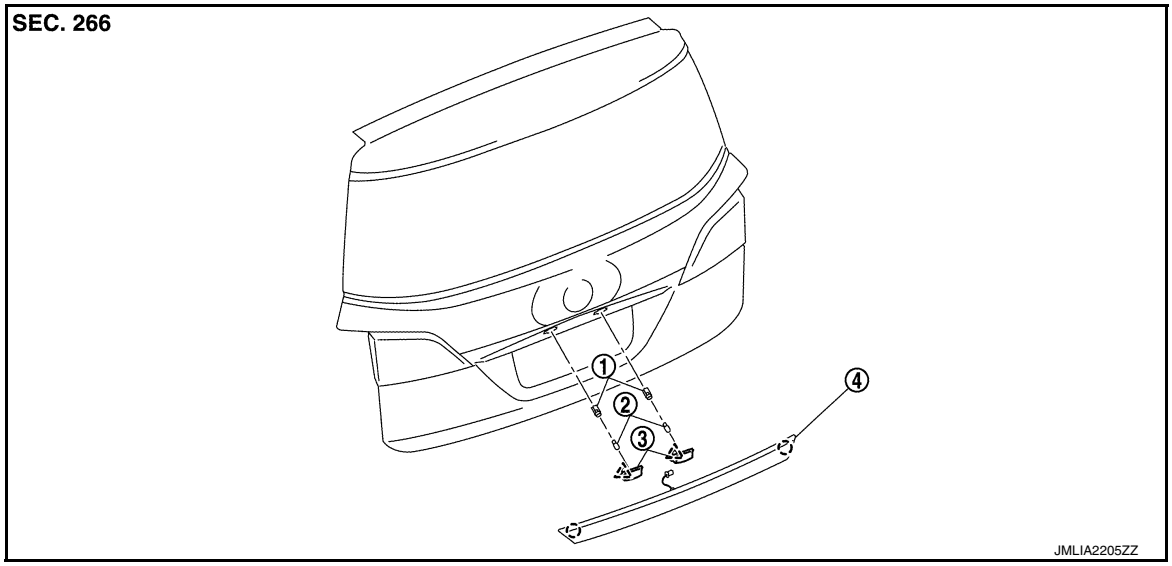
INSTALLATION

Install in the reverse order of removal.

LICENSE PLATE LAMP

Exploded View

INFOID:0000000012408067



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

: Clip

: Pawl

Removal and Installation

INFOID:0000000012408068

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

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

INSTALLATION

Install in the reverse order of removal.

Replacement

INFOID:0000000012408069

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

LICENSE PLATE LAMP BULB

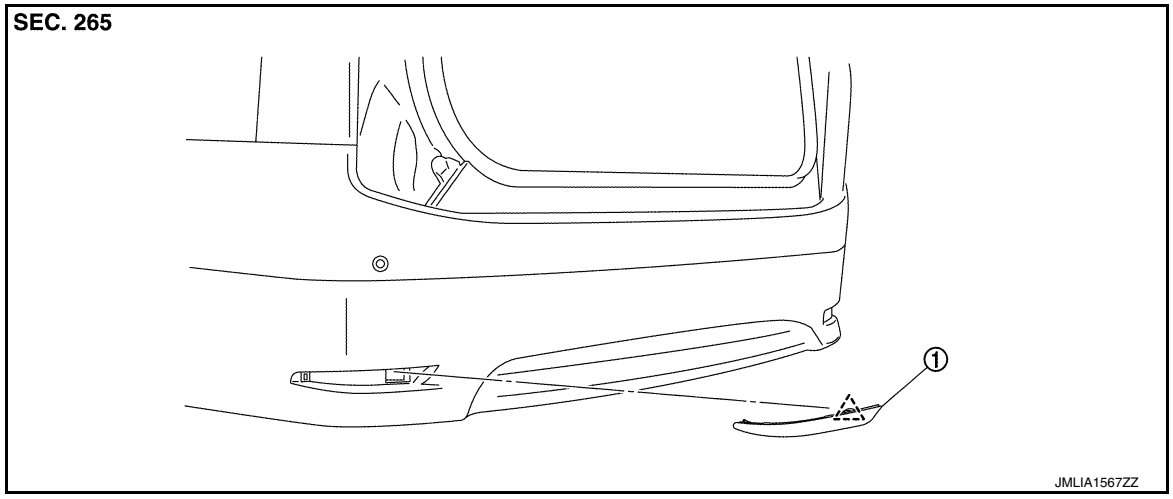
1. Remove back door lower finisher. Refer to EXT-47, "Removal and Installation".
2. Disconnect license plate lamp connector.
3. Rotate license plate lamp bulb socket counterclockwise and unlock it.
4. Remove license plate lamp bulb from license plate lamp bulb socket.

REFLEX REFLECTOR

Exploded View

INFOID:0000000012408070

SEC. 265



1. Reflex reflector

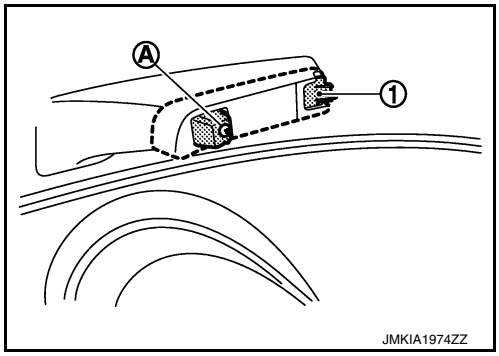
: Pawl

Removal and Installation

INFOID:0000000012408071

REMOVAL

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



INSTALLATION

Install in the reverse order of removal.

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Bulb Specifications

INFOID:0000000012408072

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