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Revision: October 2015

< PRECAUTION > PRECAUTION PRECAUTIONS

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

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:000000013051777

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:000000012407857

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.

PRECAUTIONS

< PRECAUTION >	
 (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 tor, 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. 	the bulb, the connec-
 Dispose of the used xenon bulb after packing it in thick vinyl without breaking i Never wipe out dirt and contamination with organic solvent (thinner, gasoline, e) 	it. (ətc.).
Precautions for Removing Battery Terminal	INFOID:000000013051778
 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
HRA2DDT	: 12 minutes	YS23DDTT
K9K engine	: 4 minutes	ZD30DDTi
M9R engine	: 4 minutes	ZD30DDTT
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.

: 4 minutes

: 4 minutes

: 60 seconds : 60 seconds

- After high-load driving, if the vehicle is equipped with the V9X engine, turn the ignition switch OFF and wait J 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. ${}_{\rm M}$

• 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.

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SYSTEM DESCRIPTION COMPONENT PARTS

Component Parts Location

INFOID:000000012407859



A. Front combination lamp (back)

No.	Part	Function		
1.	Optical sensor	Refer to EXL-9, "Optical Sensor".		
2.	ВСМ	 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 <u>BCS-5. "BODY CONTROL SYSTEM : Component Parts Location"</u> for detailed installation location. 		

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[XENON TYPE]

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 <u>PCS-4. "IPDM E/R : Component Parts Location"</u> 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 <u>SRC-8. "Component Parts Location"</u> for detailed installa 10. Side turn signal lamp		Transmits air bag signal to BCM. Refer to <u>SRC-8, "Component Parts Location"</u> for detailed installation location.		
10.	Side turn signal lamp	Refer to EXL-11, "Bulb Specifications".		
11.	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 <u>BCS-9</u> , "COMBINATION SWITCH READING SYSTEM : System Descrip- tion".		
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:000000012407860

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

Xenon Headlamp

INFOID:000000012407862

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OUTLINE

- The lamp light source is by the arch discharge by applying high voltage into the xenon gas-filled bulb instead
 N
 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

COMPONENT PARTS

< SYSTEM DESCRIPTION >

- 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

Inputs the hazard switch ON/OFF signal to BCM.

Headlamp Aiming Switch

Adjusts height of headlamp aiming.

HID control unit

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

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



[XENON TYPE]

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COMPONENT PARTS

< SYSTEM DESCRIPTION >

Bulb Specifications

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[XENON TYPE]

	Item	Туре	Wattage (W)	
Headlamp (HI)		HB3 (Halogen)	60	
	Headlamp (LO)	D2S (Xenon)	35	
Front combination lamp	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	—	

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SYSTEM HEADLAMP SYSTEM

HEADLAMP SYSTEM : System Description

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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.

< SYSTEM DESCRIPTION >

HEADLAMP SYSTEM : Circuit Diagram

[XENON TYPE]



HEADLAMP SYSTEM : Fail-safe

INFOID:000000012407870

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

Revision: October 2015

< SYSTEM DESCRIPTION >

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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

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 <u>EXL-27</u>, "<u>HEADLAMP</u> : <u>CONSULT</u> Function (<u>BCM</u> - <u>HEADLAMP</u>) (<u>Xenon</u> <u>Type</u> <u>Head-lamp</u>)".

AUTO LIGHT FUNCTION (WITH TWILIGHT LIGHTING FUNCTION)

Description

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

Revision: October 2015

INFOID:000000012407871

< SYSTEM DESCRIPTION >

- 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 C 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 \Rightarrow 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 <u>EXL-27, "HEAD-</u> LAMP : 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.

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HEADLAMP AIMING CONTROL (MANUAL)

HEADLAMP AIMING CONTROL (MANUAL) : System Description

INFOID:000000012407877

JMLIA2114GB

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

Revision: October 2015

INFOID:000000012407872

< SYSTEM DESCRIPTION >

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM : System Description

INFOID:000000012407878 A

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[XENON TYPE]

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



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

< SYSTEM DESCRIPTION >

scription

[XENON TYPE]

INFOID:000000012407880

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-

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< SYSTEM DESCRIPTION >



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

INFOID:000000012407882

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.

Revision: October 2015

[XENON TYPE]

< SYSTEM DESCRIPTION >

INFOID:000000012407883

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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 	В

FRONT FOG LAMP SYSTEM

FRONT FOG LAMP SYSTEM : System Description

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.

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< SYSTEM DESCRIPTION >

FRONT FOG LAMP SYSTEM : Circuit Diagram



INFOID:000000012407884



FRONT FOG LAMP SYSTEM : Fail-safe

INFOID:000000012407885

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

Revision: October 2015

< SYSTEM DESCRIPTION >

Control part Fail-safe operation А Front fog lamp relay OFF Front fog lamp EXTERIOR LAMP BATTERY SAVER SYSTEM В EXTERIOR LAMP BATTERY SAVER SYSTEM : System Description INFOID:000000012407886 SYSTEM DIAGRAM IPDM E/R D CAN communication line HEADLAMP High beam request signal LOW RELAY •Low beam request signal HEADLAMP Position light request signal Ε •Front fog light request signal HIGH RELAY To exterior Combination switch FRONT FOG lamps reading function LAMP RELAY всм Combination switch TAIL LAMP RELAY Combination meter JPLIA1037GB Н 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 Κ 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 EXL BCM activates the timer and turns the exterior lamp OFF 45 seconds after the ignition switch is turned from $ON \rightarrow OFF$ with the exterior lamps ON. NOTE: Μ 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 \rightarrow 1ST or 2ND with the exterior lamps OFF. Ν

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< SYSTEM DESCRIPTION >

EXTERIOR LAMP BATTERY SAVER SYSTEM : Circuit Diagram



[XENON TYPE]



< SYSTEM DESCRIPTION > DIAGNOSIS SYSTEM (BCM) COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:000000013035220

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.	D
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM.	
Data Monitor	The BCM input/output signals are displayed.	E
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.	F

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.

		1		×: Applicable item	ŀ
System	Sub system selection item	Diagnosis mode			
e yetem		Work Support	Data Monitor	Active Test	
Door lock	DOOR LOCK	×	×	×	1
Rear window defogger	REAR DEFOGGER		×	×	
Warning chime	BUZZER		×	×	J
Interior room lamp control system	INT LAMP	×	×	×	
Exterior lamp	HEAD LAMP	×	×	×	
Wiper and washer	WIPER	×	×	×	K
Turn signal and hazard warning lamps	FLASHER	×	×	×	
Air conditioning control system	AIR CONDITONER		×	×*	Ε>
Intelligent Key systemEngine start system	INTELLIGENT KEY	×	×	×	
Combination switch	COMB SW		×		N
Body control system	BCM	×			
NVIS	IMMU	×	×	×	
Interior room lamp battery saver	BATTERY SAVER	×	×	×	Ν
Back door open	TRUNK		×		
Vehicle security system	THEFT ALM	×	×	×	C
RAP system	RETAINED PWR		×		0
Signal buffer system	SIGNAL BUFFER		×	×	
TPMS	AIR PRESSURE MONITOR	×	×	×	F

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.

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< SYSTEM DESCRIPTION >

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	r value) of the moment a particular DTC is detected	
	SLEEP>LOCK	-	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 (Emergen- cy stop operation)	
	ACC>OFF		While turning power supply position from ACC to OFF (OFF)	
Vehicle Condition	OFF>LOCK	Power position status of the moment a particular DTC is detected*	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 posi- tion is OFF (OFF)] to low power consumption mode	
	LOCK>SLEEP		While turning BCM status from normal mode [Power supply posi- tion 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 tha The number is 0 when The number increases whenever ignition swit The number is fixed to	It ignition switch is turned ON after DTC is detected a malfunction is detected now. Is like $1 \rightarrow 2 \rightarrow 338 \rightarrow 39$ after returning to the normal condition in OFF \rightarrow ON.	

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

< SYSTEM DESCRIPTION >

[XENON TYPE]

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

INFOID:000000012407889

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WORK SUPPORT

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

*: Factory setting

DATA MONITOR

NOTE:

EXL 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 communi- cation

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< SYSTEM DESCRIPTION >

[XENON TYPE]

Monitor item [Unit]	Description		
TURN SIGNAL R [On/Off]			
TURN SIGNAL L [On/Off]			
TAIL LAMP SW [On/Off]			
HI BEAM SW [On/Off]			
HEAD LAMP SW1 [On/Off]	Each switch status that BCM judges from the combination switch reading funct		
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 commu- nication 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 commu- nication to turn the front fog lamp ON
	Off	Stops the front light request signal transmission

< SYSTEM DESCRIPTION >

[XENON TYPE]

Test item		Operation	Description	Δ
	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 	A
	Off	Stops the dimmer signal transmission	В	

FLASHER

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

INFOID:000000012407890

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WORK SUPPORT

Service item	Setting item		Setting	
HAZARD ANSWER BACK	Lock Only	With locking only		E
	Unlk Only	With unlocking only	Sets the hazard warning lamp answer back function	
	Lock&Unlk*	With locking/unlocking	the key fob.	F
	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 RCM detects from the combination switch reading function	
TURN SIGNAL L [On/Off]	 Each switch status that BCM detects from the combination switch reading function 	
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	
	RH	Outputs the voltage to turn on the right side turn signal lamps.	
FLASHER	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 Description

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.
- 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 <u>DLK-247.</u> <u>"Component Function Check"</u>.

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 \rightarrow 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)	$ON \Leftrightarrow OFF 5 times$
6	Cooling fan	LO for 5 seconds \rightarrow MID for 3 seconds \rightarrow HI for 2 seconds

< SYSTEM DESCRIPTION >

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		YES	BCM signal input circuit	
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 op- erate?	NO	 Lamp or motor Lamp or motor ground circuit Harness or connector between IPDM E/ R and applicable system IPDM E/R 	J
A/C compressor does not operate	Perform auto active test. Does the magnet clutch oper-	YES	 Combination meter signal input circuit CAN communication signal between Combination meter and ECM CAN communication signal between ECM and IPDM E/R 	EX
	ate?	NO	 Magnet clutch Harness or connector between IPDM E/ R and magnet clutch IPDM E/R 	N
Oil pressure warning lamp does not operate	Perform auto active test.	YES	 Harness or connector between IPDM E/ R and oil pressure switch Oil pressure switch IPDM E/R 	N
	Does the oil pressure warning lamp blink?	NO	 CAN communication signal between IPDM E/R and BCM CAN communication signal between BCM and Combination meter Combination meter 	P

[XENON TYPE]

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< SYSTEM DESCRIPTION >

[XENON TYPE]

Symptom	Inspection contents		Possible cause
		YES	 ECM signal input circuit CAN communication signal between ECM and IPDM E/R
Cooling fan does not operate	Perform auto active test. Does the cooling fan operate?	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:000000013035222

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 <u>PCS-23, "DTC Index"</u>.

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 SIG- NALS	Description
MOTOR FAN REQ [1/2/3/4]	×	Displays the value of the cooling fan speed signal received from ECM via CAN com- munication.
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 com- munication.
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 com- munication.
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.

Revision: October 2015

< SYSTEM DESCRIPTION >

[XENON TYPE]

Monitor Item [Unit]	MAIN SIG- NALS	Description	А
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.	В
ST RLY CONT [Off/On]		Displays the status of the starter relay status signal received from BCM via CAN communication.	С
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.	D
DETENT SW [Off/On]		Displays the status of the CVT shift selector (detention switch) judged by IPDM E/R.	E
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.	F
DTRL REQ [Off/On]		NOTE: The item is indicated, but not monitored.	G
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.	Η
HL WASHER REQ [Off/On]		NOTE: The item is indicated, but not monitored.	1
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 commu- nication.	J
CRNRNG LMP REQ [Off/On]		NOTE: The item is indicated, but not monitored.	K

ACTIVE TEST

Test item

			EXL
Test item	Operation	Description	
CORNERING LAMP	Off	NOTE: The item is indicated, but cannot be tested.	
	LH		M
	RH		
HORN	On	Operates horn relay for 20 ms.	N
FRONT WIPER	Off	OFF	
	Lo	Operates the front wiper relay.	
	Hi	Operates the front wiper relay and front wiper HI/LO relay.	0
MOTOR FAN	1	OFF	
	2	Operates the cooling fan relay-1.	D
	3	Operates the cooling fan relay-2.	P
	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.	

< SYSTEM DESCRIPTION >

[XENON TYPE]

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 sec- ond intervals.
	Fog	Operates the front fog lamp relay.

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION BCM, IPDM E/R

List of ECU Reference

А

В

ECU	Reference	-
	BCS-41, "Reference Value"	
PCM	BCS-63. "Fail-safe"	
BCM	BCS-63. "DTC Inspection Priority Chart"	D
	BCS-64, "DTC Index"	
	PCS-15, "Reference Value"	
IPDM E/R	PCS-22, "Fail-safe"	
	PCS-23, "DTC Index"	
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WIRING DIAGRAM EXTERIOR LIGHTING SYSTEM

Wiring Diagram


EXTERIOR LIGHTING SYSTEM

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EXTERIOR LIGHTING SYSTEM

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EXTERIOR LIGHTING SYSTEM

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2 6 0.170/1 3 4 1 3 6 0.070/1 9 4 1 20 6 0.070/1 9 4 1 33 8 9 9 9 1 20 0 11 9 1 9 1 20 0 11 9 1 9 1 1 20 0 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1<	8 L - [With manual A/C] 8 Y - [With auto A/C] 9 GR - [With auto A/C] 0 IG - [With auto A/C]			
3 R 000000 23 C 8 2 2 Connector No. N1 9 V 9 V Connector No. N1 9 V 9 V Connector No. N1 9 V 9 V Connector No. N1 9 V 11 9 V Connector No. N1 9 V 11 12 12 12 Connector No. N1 11 1 11 13 12 V 11 13 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 </td <td>8 γ - [With auto A/C] 9 GR - [With auto A/C] α 1G . [With married A/C]</td> <td>Termina</td> <td>il Color Of</td> <td></td>	8 γ - [With auto A/C] 9 GR - [With auto A/C] α 1G . [With married A/C]	Termina	il Color Of	
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Multiple	E EU			Desirer POWER SOFFLIT [VIIIIOUL AUTOMIAUC BITWE POSITIONE]
Connector Name Wite TO Wite 35 U.G. 11 29 11 59 11 59 11 59 11 59 11 59 11 50 11 50 11 50 11 50 11 50 11 50 11 50 11 50 11 50 11 50 11 50 11 50 11 50 11 50 11 50 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 <th< td=""><td>- · ·</td><td>2</td><td>9</td><td>IGNITION SIGNAL (Without automatic drive positioner)</td></th<>	- · ·	2	9	IGNITION SIGNAL (Without automatic drive positioner)
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Connector Type TH40AW-CS15 38 P · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · <td>12 V -</td> <td>3</td> <td>8</td> <td>GROUND</td>	12 V -	3	8	GROUND
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	14 L -	4	8	GROUND
40 8 15 66 66 16 17 19 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 16 </td <td>15 B - [Without BOSE system]</td> <td>n</td> <td></td> <td>ILLUMINATION CONTROL SIGNAL [Without automatic drive positioner]</td>	15 B - [Without BOSE system]	n		ILLUMINATION CONTROL SIGNAL [Without automatic drive positioner]
1 2 1 1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	15 1G - [Mith BOCE evetam]		a/a	IIIIIMINATION CONTROL SIGNAL With a recently drive positioner
1 1 2 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	TO TO		1/0	
Ref Ref Ref Ref P Ref Ref 42 W - 17 P Ref Ref - - - - 18 R Ref - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -	91		,	TRUE RESET SWITCH SKRWM, WITHOUT AUTOMATIC OTIVE positioner]
「利用型 2011は2020日間 「利用型 2011は2020日間 13 6	17 P -		88	TRIP RESET SWITCH SIGNAL [With automatic drive positioner]
	18 R -	10	٩	METER CONTROL SWITCH GROUND
	19 LG -	11	σ	ENTER SWITCH SIGNAL
45 B - [With around view monitor] 21 R	21 R -	12	BB	SELECT SWITCH SIGNAL [With automatic drive positioner]
AE CD [Mildhout second down manifold] 13 D		I ÷	•	set per switch stands in though in the set there a
		7	- ;	Sector Statistic Content factorion antonione hostinone losinone.
Terminal Color Of Signal Name [Specification] 46 R - [Without around view monitor] 23 W	23 W -	13	>	ILLUMINATION CONTROL SWITCH SIGNAL [+] [Without automatic drive positioner]
No. Wire - 24 SHIELD - 24 SHIELD	24 SHIELD -	13	>	ALLIMINATION CONTROL SWITCH SIGNAL (+) [With automatic drive positioner]
1 B 25 B	25 B -	14	0	ILLUMMMATION CONTROL SWITCH SIGNAL ([WITHOUT automatic drive positioner]
2 R	26 W -	14	>	ILLUMINATION CONTROL SWITCH SIGNAL (-) [With autocmatic drive positioner]
3 W 36 D(Mithout automatic drive ancitionard 16	36 16	15	aa	AIR BAG SIGNAL
A V A V 37 W	37 W	4	-	ENGINE COOLANT TEMEFRATI IDE SIGNAL
	, in the second se	01		
5 5B - (With automatic drive positioner) 38 P	38 P -	18	_	AMBIENT SENSOR SIGNAL [Without automatic drive positioner]
6 LG - LG 50 W - [Without automatic drive positioner] 39 Υ	39 Y -	18	g	AMBIENT SENSOR SIGNAL [With automatic drive positioner]
7 V - 51 B - [Without automatic drive positioner] 40 B	40 B ·	19	æ	A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL
8 1 51 G . [Mith anthromatic drive notificated] A1 GR	A1 GP .	2	e	AMBIENT SENSOR GROUND (Mithout automatic drive positioner)
	5 1		, :	
9 GK - [Without automatic drive positioner] 42 Bt	42 Bt -	70	-	AMBIENT SENSOR GROUND (With automatic drive positioner)
10 Y 52 P - (With automatic drive positioner) 43 R	43 R -	21	-	CAN-H
11 V - 5 53 SHELD - 45 R	45 R -	22	д	CAN-L
17 G 46 GR	. GR	EC	4	GROTIND
		9	•	ANDONE
				FUEL LEVEL SENSOR GROUND
	50 W	24	•	
14 B - (Without BOSE system) 51 B	50 W	25	₀ ₩	ALTERNATOR SIGNAL [With automatic drive positioner]
14 B - (Wrbhout BOSE system) 51 B 14 R - (Wrbhout BOSE system) 52 GR	50 W	25 25	• # ≥	ALTERNATOR SIGNAL [With automatic drive positioner] ALTERNATOR SIGNAL [Without automatic drive positioner]
14 B - (Wrthout BOSE system) 51 B 14 R - (Wrthout BOSE system) 52 6R 14 R - (Wrthout BOSE system) 52 6R 14 R - (Wrthout BOSE system) 52 6R	50 W	25	° # ≥ 8	ALTERNATOR SIGNAL [With automatic drive positioner] ALTERNATOR SIGNAL [Without automatic drive positioner] DADRVIAG IDDAR EVAILTER SIGNAL
14 B - (Wrth BOSE system) 51 B 14 R - (Wrth BOSE system) 52 GR 15 W - (Wrth BOSE system) 53 SHELD	50 W	25 25 25	• # ≥ #	ALTERNATOR SIGNAL [With automatic drive positioner] ALTERNATOR SIGNAL [Without automatic drive positioner] PARKING BRAKE SWITCH SIGNAL

JRLWF6596GB

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EXTERIOR LIGHTING SYSTEM

[XENON TYPE]

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Connector No. M121 Connector Name Eck/ (BODY CONTROL MODULE) Connector Type TH40FE-KHH	Terminal Glou Of Nure Signal Name [specification] 1 W K RAWINDOUR 2 R COMBI SVINPUT 4 3 G COMBI SVINPUT 4 4 RE COMBI SVINPUT 4 5 G COMBI SVINPUT 4 6 R COMBI SVINPUT 4 7 W ECOMBI SVINPUT 3 6 R COMBI SVINPUT 3 7 W COMBI SVINPUT 3 9 C COMBI SVINPUT 3 10 W ECOMBI SVINPUT 3 11 L COMBI SVINPUT 3 12 C COMBI SVINPUT 3 13 R COMBI SVINPUT 3 14 L DOOR UK & MUK SVINDOCK 15 V STECLERT NUNCOK 16 RESEMINOCK MOOR K & MUK SVINDOCK 17 D STECLERT NUNCOK 18 V STECLERT NUNCOK 19 C STECLERT NUNCOK 10 STECLERT NUNCOK MO	
12 Y . 13 Y . 14 Y . 15 B . 16 B . 17 B . 16 B . 17 B . 20 Y . 21 G .(With automatic drive positioner) 21 Y . 22 G .(With automatic drive positioner) 23 Y Mith automatic drive positioner)	23 V Immediate and performance on performance of perfo	
8 GR	21 6 - (With out automatic drive positioner) 22 Y - (With automatic drive positioner) 23 6R - (With automatic drive positioner) 23 6R - (With automatic drive positioner) 23 5R - (With automatic drive positioner) 24 MIT ONNECTORALI 4 Connector Type JBJRV - (With automatic drive positioner) 23 R - (With automatic drive dr	
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BCM (BOD)

Name

H.S.

< WIRING DIAGRAM >

Signal Name [Specification]	BK DOOR SW	REAR WIPER STOP POSITION	PASS DOOR SW	SL DOOR RH SW	DR DOOR SW	SL DOOR LH SW	LUGGAGE LAMP CONT	SELECT UNLK RELAY CONT	BACK DOOR REQ SW	BK DOOR OPEN	REAR WIPER OUTPUT	SL DOOR LH UNLK CONT	
Color Of Wire	Ь	GR	w	R	0	BE	В	N	9	BR	R	υ	
Terminal No.	43	44	45	46	47	48	49	50	51	53	54	55	

M123	BCM (BODY CONTROL MODULE)	FEA09FW-FHA6-SA	5615715815960161162163164 65156515815960161162163164
Connector No.	Connector Name	Connector Type	强 H.S.

	Т						
Signal Name [Specification]	INT ROOM LAMP PWR SPLY	BAT	AIR BAG	PASS DOOR UNLK OUTPUT	TURN SIG LH OUTPUT	TURN SIG RH OUTPUT	STEP LAMP CONT
Color Of Wire	٩	~	0	SB	^	9	N
Terminal No.	56	57	58	59	60	19	62

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JRLWF6599GB

< BASIC INSPECTION >

BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

OVERALL SEQUENCE



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INFOID:000000012407895

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< BASIC INSPECTION >

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 CONFIR-MATION PROCEDURE.

Is DTC detected?

YES >> GO TO 7.

NO >> Check according to <u>GI-41, "Intermittent Incident"</u>.

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 CON-SULT.

1.DETECT MALFUNCTIONING PART BY DIAGNOSIS PROCEDURE

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >	[XENON TYPE]
Inspect according to Diagnosis Procedure of the system.	
Is malfunctioning part detected?	
YES >> GO TO 8.	
NO >> Check according to <u>GI-41, "Intermittent Incident"</u> .	
Ö .REPAIR OR REPLACE THE MALFUNCTIONING PART	
 Repair or replace the malfunctioning part. Reconnect parts or connectors disconnected during Diagnosis Procedure again after rement. 	pair and replace-
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 the	nen check that the
malfunction is repaired securely. When symptom is described by the customer, refer to confirmed symptom in step 3 or 4, a symptom is not detected.	nd check that the
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.	

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[XENON TYPE]

INFOID:000000012407896

DTC/CIRCUIT DIAGNOSIS HEADLAMP (HI) CIRCUIT

Component Function Check

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 <u>EXL-58, "Diagnosis Procedure"</u>.

Diagnosis Procedure

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.

	(+) IPDM E/R		(-)	Test	Voltage				
Conr	nector	Terminal							
PH		80			Hi	Battery voltage			
	E345	03	Ground	EXTERNAL	Off	0 V			
14	L340	90	Ground	LAMPS	Hi	Battery voltage			
		30			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	Headla	mp high	Continuity	
Conr	nector	Terminal	Connector	Terminal	Continuity
RH	E345	89	E326	1	Existed
LH	L345	90	E325	I	LAISted

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace harness.

INFOID:000000012407897

HEADLAMP (HI) CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

3.CHECK HEADLAMP (HI) FUSE

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

Unit	Locatio	n	Fuse No.	Capacity
Headlamp HI (RH) Headlamp HI (LH)	IPDM E/R		#55 #54	10 A
the fuse blown (oper	<u>י(ר)?</u>			
NO >> Replace IF	PDM E/R.			
.CHECK HEADLAM	P (HI) SHORT CIRCL	ЛТ		
Disconnect IPDM Check continuity b	E/R connector. etween IPDM E/R ha	rness connector an	d ground.	
	IPDM E/R			Continuity
Con	nector	Terminal	Ground	Continuity
RH	E345	89		Not existed
LH		90		
CHECK HEADLAM Turn ignition switcl Disconnect headla Check continuity b	P (HI) GROUND OPE h OFF. Imp high connector. etween headlamp hig	N CIRCUIT	or and ground.	
	Headlamp high	Г <u> </u>		Continuity
Con	nector	Terminal	Ground	
	E326	2		Existed
the inspection result	normal?			
YES >> Replace h NO >> Repair or r	eadlamp (HI) bulb. (B replace harness.	ulb socket is abnor	mal.)	

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[XENON TYPE]

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HEADLAMP (LO) CIRCUIT

Component Function Check

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:000000012407901

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.

(+) IPDM E/R		(-)	Test item		Voltage (Approx.)		
Coni	nector	Terminal	1			(, , , , , , , , , , , , , , , , , , ,	
PH		83			Lo	Battery voltage	
	E345	84	Ground	EXTERNAL LAMPS	Off	0 V	
1.11	L343		Ground		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				amp low	Continuity
Coni	nector	Terminal	Connector	Terminal	Continuity
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).

INFOID:000000012407900

HEADLAMP (LO) CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[XENON TYPE]

Unit	Lotior	ו I	Fuse No.	Capacity
Headlamp LO (RH)			#57	15 A
Headlamp LO (LH)			#56	15 A
the fuse blown (ope	<u>en)?</u>			
ES >> GO TO 4				
		шт		
		011		
Check continuity	between IPDM E/R ha	rness connector and	d ground.	
	IPDM E/R			Continuity
Co	nnector	Terminal	Ground	Continuity
RH	E345	83	Ground	Not existed
IH	L343	84		
the inspection results S >> Replace for CHECK HEADLAN	t normal? use. [Replace IPDM E replace harness. And IP (LO) GROUND OP	/R if the fuse blown then replace the fus EN CIRCUIT	(open) again.] se.	
the inspection resu ES >> Replace f O >> Repair or CHECK HEADLAN Turn ignition swite Disconnect headl Check continuity	t normal? fuse. [Replace IPDM E replace harness. And IP (LO) GROUND OP ch OFF. amp low connector. between headlamp low	/R if the fuse blown then replace the fus EN CIRCUIT v harness connector	(open) again.] se.	
the inspection resu (ES >> Replace f IO >> Repair or CHECK HEADLAN Turn ignition swite Disconnect headl Check continuity	t normal? fuse. [Replace IPDM E replace harness. And IP (LO) GROUND OP ch OFF. amp low connector. between headlamp low Headlamp low	/R if the fuse blown then replace the fus EN CIRCUIT v harness connector	(open) again.] se.	Continuity
the inspection resu (ES >> Replace f NO >> Repair or .CHECK HEADLAN Turn ignition swite Disconnect headl Check continuity	t normal? fuse. [Replace IPDM E replace harness. And IP (LO) GROUND OP ch OFF. amp low connector. between headlamp low Headlamp low	/R if the fuse blown then replace the fus EN CIRCUIT v harness connector	(open) again.] se.	Continuity
the inspection resu (ES >> Replace f IO >> Repair or .CHECK HEADLAN Turn ignition swite Disconnect headl Check continuity Co RH	t normal? iuse. [Replace IPDM E replace harness. And IP (LO) GROUND OP ch OFF. amp low connector. between headlamp low Headlamp low nnector E324	/R if the fuse blown then replace the fus EN CIRCUIT wharness connector Terminal	(open) again.] se.	Continuity
the inspection resu ES >> Replace f O >> Repair or CHECK HEADLAN Turn ignition swite Disconnect headl Check continuity Co RH LH	t normal? iuse. [Replace IPDM E replace harness. And IP (LO) GROUND OP ch OFF. amp low connector. between headlamp low Headlamp low nnector E324 E323	/R if the fuse blown then replace the fus EN CIRCUIT v harness connector Terminal	(open) again.] se. and ground.	Continuity Existed

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< DTC/CIRCUIT DIAGNOSIS >

XENON HEADLAMP Diagnosis Procedure

INFOID:000000012407905

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. <u>Is the headlamp turned ON?</u>

YES >> Replace HID control unit.

NO >> Xenon headlamp is normal. Check headlamp control system.

Turn ignition switch OFF.

2. Remove headlamp aiming switch.

1. CHECK HEADLAMP AIMING SWITCH

Component Inspection

1.

3. Check resistance among each headlamp aiming switch terminal.

Headlamp a	Headlamp aiming switch		Headlamp aiming switch Condition		Resistance
Ter	Terminal		(Approx.)		
		0	Α: 1000 Ω		
	2	1	Β: 750 Ω		
1	2	2	C: 365 Ω		
		3	D: 221 Ω		
	3	—	Ε: 390 Ω		

Is the inspection result normal?

YES >> Headlamp aiming switch is normal.

NO >> Replace the headlamp aiming switch.

< DTC/CIRCUIT DIAGNOSIS > HEADLAMP AIMING SYSTEM (MANUAL)

С **A** B D -1 ₩ 2134 C 2 0 ₩ Ε €≷ D 3 ₩ -₩ F JSLIA0084ZZ

INFOID:000000012407906

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[XENON TYPE]

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< DTC/CIRCUIT DIAGNOSIS >

PARKING LAMP CIRCUIT

Component Function Check

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

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 lampFront 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			Continuity	
Connector	Terminal		Continuity	
	91	Cround		
E246	92	- Grouna	Not ovisted	
E340	93		NOL EXISTED	
	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

INFOID:000000012407907

INFOID:000000012407908

PARKING LAMP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

- 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.

(+) IPDM E/R		(-)	Test item		Voltage (Approx.)	
	Connector	Terminal				(
пц		01			TAIL	Battery voltage
КП	E246	Ground	Cround	EXTERNAL	Off	0 V
	E340		00	Ground	LAMPS	TAIL
LU	92	92	92		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.

Check continuity between IPDM E/R harness connector and front combination lamp harness connector. 3.

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

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace harness.

$\mathbf{6}$.CHECK PARKING LAMP GROUND OPEN CIRCUIT

Check continuity between front combination lamp harness connector and ground.

-			-		K
	Front combination lamp		Continuity	-	
Connector		Terminal	Ground	Continuity	
RH	E349	2	Ground	Existed	- EX
LH	E348	2		LAISIEU	

Is the inspection result normal?

YES >> Check corresponding bulb socket and harness. Repair or replace if necessary.

>> Repair or replace harness. NO

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< DTC/CIRCUIT DIAGNOSIS >

FRONT SIDE MARKER LAMP CIRCUIT

Component Function Check

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 <u>EXL-64</u>, "Component Function Check".

2.CHECK FRONT SIDE MARKER LAMP OPERATION

ONSULT 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

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

 ${
m 3.}$ CHECK FRONT SIDE MARKER LAMP GROUND OPEN CIRCUIT

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

Front side marker lamp				Continuity	
Connector		Terminal	- Oracina d	Continuity	
RH	E321	2	Giouna	Existed	
LH	E320	2		Existed	

Is the inspection result normal?

YES >> Check corresponding bulb socket and harness. Repair or replace if necessary.

NO >> Repair or replace harness.

INFOID:000000012407909

INFOID:000000012407910

TAIL LAMP CIRCUIT

< DTC/CIRCUIT DIAGNOS	SIS >		[XENON TYPE]
TAIL LAMP CIRCUI	Т		
Component Function	Check		INFOID:000000012407911
1.CHECK TAIL LAMP OPE	RATION		
CONSULT ACTIVE TEST 1. Select "EXTERNAL LAN 2. With operating the test i	MPS" of IPDM E/R active te tems, check that the tail la	est item. mp is turned ON.	
TAIL : Tail Lam	p ON		
Off : Tail lamp	OFF		
Is the inspection result norm	al?		
YES >> Tail lamp circuit NO >> Refer to <u>EXL-67</u>	is normal. ′ <u>, "Diagnosis Procedure"</u> .		
Diagnosis Procedure			INFOID:000000012407912
	-		
	E		
 Turn ignition switch OFF Check that the following 	 I fuse is not blown (open).		
Unit	Location	Fuse No.	Capacity
Tail lamplicense 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 SHC	PRT CIRCUIT	n connector and rear comb	sination lamp connector
2. Check continuity betwee	en IPDM E/R harness conr	nector and ground.	
IPD	M E/R		Continuity
Connector	Terminal	Ground	
E10	7		Not existed
<u>s the inspection result norm</u> YES >> Replace fuse. [F NO >> Repair or replac 3. CHECK TAIL LAMP BUL	ial? Replace IPDM E/R if the fu e harness. And then replace B	se blown (open) again.] ce the fuse.	
Check applicable lamp bulb.			
Is the inspection result norm	al?		
YES >> GO TO 4. NO >> Replace bulb.			
4. CHECK TAIL LAMP OUT	PUT VOLTAGE		
 CONSULT ACTIVE TEST Disconnect rear combin Turn ignition switch ON. Select "EXTERNAL LAN" 	ation lamp connector. MPS" of IPDM E/R active te	est item.	

4. With operating the test items, check voltage between IPDM E/R harness connector and ground.

TAIL LAMP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

(+) IPDM E/R		(-)	Test item		Voltage (Approx)
Connector	Terminal				(
E10	7	Ground	EXTERNAL	TAIL	Battery voltage
210	I	Ground	LAMPS	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
Conr	nector	Terminal	Connector	Terminal	Continuity
RH	E10	7	B205	1	Existed
LH		I	B80		LAISIEU

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		Continuity	
Connector		Terminal		
RH	B205	2	Giouna	Existed
LH	B80			LAISIEU

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

< DTC/CIRCUIT	DIAGNOSIS >				[XENON TYPE]
LICENSE P	LATE LAMP	CIRCUIT			
Component F	Function Chec	k			INFOID:000000012407913
1.CHECK TAIL	LAMP OPERATIC	N			
Check that the ta	ail lamp is turned C	N.			
Is the inspection	result normal?				
NO >> Che	ro 2. ck tail lamp circuit.	Refer to EXL-67,	"Component Fund	ction Check".	
2. CHECK LICE	NSE PLATE LAM	P OPERATION			
	TIVE TEST				
 Select "EXT With operation 	ERNAL LAMPS" o ng the lighting swit	f IPDM E/R active cch, check that the	test item. license plate lam	p is turned ON.	
TAIL Off	: License plate la : License plate la	amp ON amp OFF			
Is the inspection	result normal?				
YES >> Lice	nse plate lamp circ	cuit is normal.			
NO >> Refe	er to <u>EXL-69, "Diac</u>	inosis Procedure".			
Diagnosis Pro	ocedure				INFOID:000000012407914
1. CHECK LICE	NSE PLATE LAM	P BULB			
Check the applic	able lamp bulb.				
Is the inspection	result normal?				
NO >> Rep	lace bulb.				
2.CHECK LICE	NSE PLATE LAM	P OPEN CIRCUIT			
 Turn ignition Disconnect I Check contin 	switch OFF. PDM E/R connect nuity between IPD	or and license plat M E/R harness co	te lamp connector nnector and licens	: se plate lamp harn	ess connector.
	IPDM E/R		License	plate lamp	
Co	onnector	Terminal	Connector	Terminal	Continuity
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.

	,		Ū		0
	License plate lan	np		Continuity	
	Connector	Terminal	Ground	Continuity	
RH	D163	2	Ground	Evicted	P
LH	D162	Ζ		Existed	

Is the inspection result normal?

YES >> Check corresponding bulb socket and harness. Repair or replace if necessary.

NO >> Repair or replace harness. Ν

TURN SIGNAL LAMP CIRCUIT

Component Function Check

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

1.CHECK TURN SIGNAL LAMP

(E)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.

- 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.

INFOID:000000012407915

INFOID:000000012407916

TURN SIGNAL LAMP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[XENON TYPE]



					Continuity
Connec	tor	Terminal	Connector	Terminal	Continuity
Passenger side	M102	61	D3	20	Evisted
Driver side	101123	60	D43	20	Existed

Rear turn signal lamp

	BCM		Rear combination lamp		Continuity	1
C	Connector	Terminal	Connector	Terminal	Continuity	
RH	M122	61	B205	4	Existed	
LH	101125	60	B80	4	LAISLEU	_

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.

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TURN SIGNAL LAMP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[XENON TYPE]

BCM				Continuity	
Conr	nector	Terminal	Ground	Continuity	
RH	M123	61	Ground	Not existed	
LH	WIZ5	60		NOT EXISTED	

Is the inspection result normal?

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

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

	Fro	nt combination	lamp			Continuity	
	Connector		Termir	nal	Cround	Continuity	
RH	RH E349 LH E348		0		Ground	Eviated	
LH			2			Existed	
ide turn signal la	mp						
		Door mir	ror			Continuity	
Connector			Terminal	Cround	Continuity		
Passenger s	Passenger side D3			10	Giouna	Eviptod	
Driver side		D43		19		Existed	
ear turn signal la	imp						
	Rea	ar combination	lamp			Continuity	
Connector		Termi	nal	Cround	Continuity		
RH	B2	05	3		Ground	Existed	
IH	B	30					

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

< DTC/CIRCUIT	DIAGNOSIS	>					[XENON TYPE]
RONT FO	G LAMP C	IRCUIT					
omponent F	unction Che	eck					INFOID:000000012407917
.CHECK FROM	NT FOG LAMP	OPERATION					
CONSULT AC Select "EXTE	TIVE TEST ERNAL LAMPS	" of IPDM E/R	active te	est item	D is turned ON	I	
For				og lann			
Off	: Front fog lan						
the measurem	ent normal?						
ES >> Fron	t fog lamp circu	it is normal.	duro"				
	$\frac{1}{2} \left(\frac{1}{2} \frac$		<u>uure</u> .				
agnosis Pro	ocedure						INFOID:000000012407918
.CHECK FROM	NT FOG LAMP	BULB					
neck the applic	able lamp bulb.						
the inspection	result normal?						
'ES >> GO IO >> Repl	I O 2. ace bulb.						
.CHECK FROM		OUTPUT VOL	TAGE				
Turn ignition Disconnect f Turn ignition Select "EXTE With operatir	switch OFF. ront fog lamp co switch ON. ERNAL LAMPS ng the test items	onnector. " of IPDM E/R s, check the vo	active te ltage be	est item tween ∣	PDM E/R har	ness connect	or and ground.
	(+)						
	IPDM E/R		((-)		st item	Voltage (Approx.)
Con	nector	Terminal				1	, , ,
RH		86				Fog	Battery voltage
	E345		Gro	ound	EXTERNAL LAMPS	Off	
LH		87				FUY	
the inspection	result normal?						
/ES >> GO ⁻	TO 3.						
NO >> Repl	ace IPDM E/R.						
.CHECK FROM	NT FOG LAMP	OPEN CIRCU	IT				
Turn ignition	switch OFF.						
Check contir	nuity between IF	PDM E/R harne	ess conn	ector a	nd front fog la	mp harness c	connector.
	IPDM E/F	ર			Front fog la	mp	
C	connector	Term	inal	Co	nnector	Terminal	Continuity
RH		86	6		=402		

Is the inspection result normal?

E345

YES >> GO TO 4.

LH

E331

87

Existed

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FRONT FOG LAMP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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		Continuity		
Connector		Terminal	Ground	Continuity	
RH	E402	2	Ground	Evicted	
LH	E331	Ζ.		Existed	

Is the inspection result normal?

YES >> Refer to GI-41, "Intermittent Incident".

NO >> Repair or replace harness.

[XENON TYPE]

OPTICAL SENS	OR				Δ
Component Function	on Check			INFOID:000000012407919	P
1.CHECK OPTICAL SE	ENSOR SIGNAL	BY CONSULT			E
CONSULT DATA MO 1. Turn ignition switch 2. Select "OPTISEN (I 3. Turn lighting switch 4. With the optical sen	NITOR ON. DTCT)" of BCM (AUTO. sor illuminating.	HEADLAMP) data mo	nitor item.		С
	loor marmaanig,				C
Monitor item		Condition		Voltage (Approx.)	
OPTISEN (DTCT)	OPTISEN (DTCT) Optical sensor When illu When shu			3.1 V or more *	E
* Illuminates the ontical sens	or The value may be	less than the standard value	le if brightness is	weak	
Is the inspection result r YES >> Optical sense NO >> Refer to EX	normal? sor is normal. L-75, "Diagnosis	Procedure".		wear.	F
Diagnosis Procedu	ire			INFOID:000000012407920	(
 Turn ignition switch Turn lighting switch Check voltage betw 	ON. AUTO. een optical sens	or harness connector	and ground.		
0.15	(+)			Voltage	
	al sensor	(-)	(-)	(Approx.)	,
	1 Termina	Grou	nd	5 V	
Is the inspection result r YES >> GO TO 2. NO >> GO TO 4. 2.CHECK OPTICAL SE Check voltage between	normal? ENSOR GROUN optical sensor h	D INPUT arness connector and	ground.		Đ
	(+)				N
Ontics				Voltage	
Connector	Termina			(Approx.)	1
 M17	3	Grou	nd	0 V	
Is the inspection result r YES >> GO TO 3. NO >> GO TO 6. 3.CHECK OPTICAL SI	normal? ENSOR SIGNAL	OUTPUT			(

< DTC/CIRCUIT DIAGNOSIS >

< DTC/CIRCUIT DIAGNOSIS >

(+ Optical :) sensor	(-) Condition		Condition		
Connector	Terminal				(
M17	2	Ground	Ontical sensor	When illuminating	3.1 V or more *	
10117	2	Ground	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		B	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
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.

Optica	l sensor		Continuity
Connector	Terminal	Ground	Continuity
M17	1		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to <u>BCS-99</u>, "Removal and Installation".

NO >> Repair or replace harness.

$\mathbf{6}.$ 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.

Optica	Optical sensor		BCM	
Connector	Terminal	Connector	Terminal	Continuity
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.

< DTC/CIRCUIT DIAGNOSIS >

[XENON TYPE]

Connector	sensor	BC	CM	Continuity
	Terminal	Connector	Terminal	
M17	2	M121	14	Existed
s the inspection result YES >> GO TO 8 NO >> Repair or CHECK OPTICAL Check continuity both	<u>it normal?</u> . replace harness. . SENSOR SHORT C	IRCUIT	d groupd	
neck continuity betw			a groana.	
Ор	itical sensor			Continuity
Connector	Terminal		iround	Continuity
M17	2			Not existed

< DTC/CIRCUIT DIAGNOSIS >

HAZARD SWITCH

Component Function Check

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	Con	Monitor status	
	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:000000012407922

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.

(*	+)			
Hazard	l switch	(-)	Voltage (Approx.)	
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.

Hazaro	Hazard switch		СМ	Continuity
Connector	Terminal	Connector	tor Terminal	
M45	2	M121	29	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

 ${
m 3.}$ CHECK HAZARD SWITCH SIGNAL SHORT CIRCUIT

Check continuity between hazard switch harness connector and ground.

Hazaro	d switch		Continuity
Connector	Terminal	Ground	Continuity
M45	2		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to <u>BCS-99, "Removal and Installation"</u>.

NO >> Repair or replace harness.

INFOID:000000012407921

HAZARD SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[XENON TYPE]

4. CHECK HAZARD SWITCH GROUND OPEN CIRCUIT

Check continuity between hazard switch harness connector and ground.

Hazard	switch		Continuity	B
Connector	Terminal	Ground	Continuity	
M45	1		Existed	
the inspection result norr	nal?			
YES >> Replace hazard	d switch.			
NO >> Repair or repla	ce harness.			

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EXTERIOR LIGHTING SYSTEM SYMPTOMS

SYMPTOM DIAGNOSIS EXTERIOR LIGHTING SYSTEM SYMPTOMS

Symptom Table

INFOID:000000012407923

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 <u>EXL-58, "Component</u> <u>Function Check"</u> .	
	Both sides	Symptom diagnosis "BOTH SIDE HEADLAMPS (HI) A Refer to <u>EXL-83, "Diagnosis Proce</u>	ARE NOT TURNED ON" edure".	
High beam indicator lamp [Headlamp (HI) is turned C	is not turned ON. DN.]	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 <u>EXL-60, "Component</u> <u>Function Check"</u> .	
	Both sides	Symptom diagnosis "BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON" Refer to <u>EXL-84. "Diagnosis Procedure"</u> .		
Each lamp is not turned ON/OFF with lighting switch AUTO.		 Combination switch Harness between combination switch and BCM BCM 	Combination switch Refer to <u>BCS-97, "Symptom Table"</u> .	
		 Optical sensor Harness between optical sensor and BCM BCM 	Optical sensor Refer to <u>EXL-75, "Component</u> <u>Function Check"</u> .	
Parking lamp is not turned ON.		 Fuse Parking lamp bulb Harness between IPDM E/R and front combination lamp Harness between front combi- nation lamp and ground IPDM E/R 	Parking lamp circuit Refer to <u>EXL-64, "Component</u> <u>Function Check"</u> .	
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 <u>EXL-66, "Component</u> <u>Function Check"</u> .	

EXTERIOR LIGHTING SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[XENON TYPE]

Symp	otom	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 combi- nation lamp and ground IPDM E/R 	Tail lamp circuit Refer to <u>EXL-67, "Component</u> <u>Function Check"</u> .
License plate lamp is not to	urned 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 <u>EXL-69, "Component</u> <u>Function Check"</u> .
Parking lamp, side marker cense plate lamp are not to	lamp, tail lamp and li- urned ON.	Symptom diagnosis "PARKING, SIDE MARKER, LICEN NOT TURNED ON" Refer to <u>EXL-85, "Diagnosis Proce</u>	NSE PLATE AND TAIL LAMPS ARE
Tail lamp indicator is not tu (Exterior lamps are turned	rned ON. ON.)	Combination meter	 Combination meter Data monitor "LIGHT IND" BCM (HEADLAMP) Active test "TAIL LAMP"
Turn signal lamp does not blink.	Indicator lamp is nor- mal. (Applicable side per- forms high flasher acti- vation.)	 Turn signal lamp bulb Door mirror Harness between BCM and each turn signal lamp Harness between each turn sig- nal lamp and ground 	Turn signal lamp circuit Refer to <u>EXL-70, "Component</u> <u>Function Check"</u> .
	Indicator lamp is includ- ed.	 Combination switch Harness between combination switch and BCM BCM 	Combination switch Refer to <u>BCS-97, "Symptom Table"</u> .
	One side	Combination meter	
Turn signal indicator lamp does not blink.	Both sides (Always)	 Turn signal indicator lamp signal BCM Combination meter 	 Combination meter Data monitor "TURN IND" BCM (FLASHER) Active test "FLASHER"
(Turn signal lamp is nor- mal.)	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 <u>MWI-77, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u> .
 Hazard warning lamp do Hazard warning lamp co (Turn signal is normal.) 	es not activate. ntinues activating.	 Hazard switch Harness between hazard switch and BCM Harness between hazard switch and ground BCM 	Hazard switch circuit Refer to <u>EXL-78, "Component</u> <u>Function Check"</u> .
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 <u>EXL-73, "Component</u> <u>Function Check"</u> .
	Both sides	Symptom diagnosis "BOTH SIDE FRONT FOG LAMPS Refer to <u>EXL-86.</u> "Diagnosis Proce	S ARE NOT TURNED ON" edure".

NORMAL OPERATING CONDITION

Description

INFOID:000000012407925

[XENON TYPE]

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.

BOTHS	SIDE HEADLA	MPS (HI) ARE NOT TU	JRNED ON
< SYMPTOM DIAGNOSIS	>		[XENON TYPE]
BOTH SIDE HEADL	AMPS (HI) A	RE NOT TURNED C)N
Description			INFOID:000000012407928
Both side headlamps (HI) ar	e not turned ON w	hen setting to the lighting swite	ch HI or PASS.
Diagnosis Procedure			INFOID:000000012407929
1.COMBINATION SWITCH	INSPECTION		
Check combination switch. F	Refer to <u>BCS-97, "</u>	Symptom Table".	
Is the inspection result norm	<u>al?</u>		
YES >> GO TO 2.			
NO >> Repair or replac	e the malfunctionir	ng part.	
2.CHECK HEADLAMP (HI)	REQUEST SIGN/	AL INPUT	
CONSULT DATA MONITO 1. Select "HL HI REQ" of II 2. With operating the lighting	DR PDM E/R data mor ng switch, check th	nitor item. ne monitor status.	
Monitor item		Condition	Monitor status
	Lighting switch	HI or PASS	On

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?				1		
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?		(2ND)	LO	Off		
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?	Is the inspection result no	rmal?				
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 >> GO TO 3.					
3.HEADLAMP (HI) CIRCUIT INSPECTION Check headlamp (HI) circuit. Refer to <u>EXL-58, "Component Function Check"</u> . Is the inspection result normal?	NO >> Replace BCM	NO >> Replace BCM. Refer to <u>BCS-99, "Removal and Installation"</u> .				
Check headlamp (HI) circuit. Refer to <u>EXL-58, "Component Function Check"</u> . Is the inspection result normal?	3. HEADLAMP (HI) CIRCUIT INSPECTION					
Is the inspection result normal?	Check headlamp (HI) circuit. Refer to EXL-58, "Component Function Check".					
	Is the inspection result normal?					
YES >> Refer to <u>GI-41, "Intermittent Incident"</u> . NO >> Repair or replace the malfunctioning part.						

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BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON

< SYMPTOM DIAGNOSIS >

BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON

Description

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

Diagnosis Procedure

1.CHECK COMBINATION SWITCH

Check combination switch. Refer to <u>BCS-97, "Symptom Table"</u>.

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
	Lighting switch	2ND	On
		OFF	Off

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace BCM. Refer to <u>BCS-99</u>, "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 <u>GI-41, "Intermittent Incident"</u>.

NO >> Repair or replace the malfunctioning part.

[XENON TYPE]

INFOID:000000012407930

INFOID:000000012407931

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

< SYMPTOM DIAGNOSIS >	[XENON TYPE]	
PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAM	PS ARE NOT	
TURNED ON		А
Description	INFOID:000000012407932	В
The parking, license plate, side marker, tail lamps and each illumination are not turned ON	in any condition.	
Diagnosis Procedure	INFOID:000000012407933	С
1.COMBINATION SWITCH INSPECTION		-
Check combination switch. Refer to <u>BCS-97, "Symptom Table"</u> .		D
Is the combination switch normal?		
YES >> GO TO 2.		
NO >> Repair or replace the malfunctioning part.		E

2.CHECK TAIL LAMP RELAY REQUEST SIGNAL INPUT

(E)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	G
	Lighting switch	1ST	On	
		OFF	Off	L

Is the inspection result normal?

YES >> Replace IPDM E/R.

NO >> Replace BCM. Refer to <u>BCS-99, "Removal and Installation"</u>.

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BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

< SYMPTOM DIAGNOSIS >

BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

Description

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

Diagnosis Procedure

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				Continuity
Connector		Terminal	Cround	Continuity
RH	E245	86	Giouna	Not existed
LH	E345	87		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.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

(E)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
	Front fog lamp switch	ON	On
	(With lighting switch 2ND)	OFF	Off

Is the item status normal?

YES >> GO TO 5.

NO >> Replace BCM. Refer to <u>BCS-99, "Removal and Installation"</u>.

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.

[XENON TYPE]

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INFOID:000000012407935

INFOID:000000012407936

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PERIODIC MAINTENANCE HEADLAMP AIMING ADJUSTMENT

Description

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

HEADLAMP AIMING ADJUSTMENT

< PERIODIC MAINTENANCE >

[XENON TYPE]

	Adjustment screw	Screw driver rotation	Facing direction
		Clockwise	UP
	Counterclockwise	DOWN	
Б		Clockwise	UP
	Counterclockwise	DOWN	

Aiming Adjustment Procedure

INFOID:000000012407937

- 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) \pm 350 \pm 175 mm (13.78 \pm 6.89 in)

Low beam distribution on the screen



 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)



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

FRONT FOG LAMP AIMING ADJUSTMENT

< PERIODIC MAINTENANCE > FRONT FOG LAMP AIMING ADJUSTMENT

Description

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

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).



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[XENON TYPE]

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EXL-89

FRONT FOG LAMP AIMING ADJUSTMENT

< PERIODIC MAINTENANCE >

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 >

REMOVAL AND INSTALLATION FRONT COMBINATION LAMP

Exploded View

REMOVAL



- Front combination lamp 1.
- . N·m (kg-m, in-lb)

DISASSEMBLY



- assembly
- Resin cap 4.

1.

- 7. Bumper bracket
- 10. Halogen bulb (HI)

- 5. HID control unit assembly
- Front turn signal lamp/parking lamp 8. 9. bulb socket
- Seal packing 11.

- Front side marker lamp bulb socket
- 6. Back cover
 - Front turn signal lamp/parking lamp bulb
- 12. Xenon bulb (LO)

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13. Retaining spring

Always replace after every disassembly.

Removal and Installation

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 <u>EXL-93, "Inspection After Installation (HID</u> <u>Control Unit)"</u>.

Replacement

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

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.

INFOID:000000012407943

FRONT COMBINATION LAMP

< R	EMOVAL AND INSTALLATION >	[XENON TYPE]
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 unloc	∶k 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.	
AS	SEMBLY	
Ass	semble in the reverse order of disassembly.	
CA	UTION:	alv for watertight
nes	er instanling the build, install the resin cap, back cover and the build socket secul	ery for watertight-
Inc	epoction After Installation (HID Control Linit)	
1115		INFOID:000000012407944
CA	UTION:	
Ten	nporarily install the headlamp on the vehicle. Connect the battery to the conne	ctor (vehicle side)
WI		
XE	NON HEADLAMP LIGHTING CHECK	a LID Control Linit
1.	Xenon bulb is cold condition (turn OFF more than 10 minutes), and repetition does he	adlamp 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 minut	es) from cold condi-
3	Xenon bulb is warm condition (turn ON more than 15 minutes and turn OFF for 1 min	ute) and repetition
0.	does headlamp turned ON/OFF, check that a headlamp illuminated it surely.	late), and repetition
4.	Headlamp is turn ON for about 30 minutes, check that there are not on and off light, a	abnormality such as
	blinking whether brightness of right and left does not have a difference.	

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< REMOVAL AND INSTALLATION >

FRONT FOG LAMP

Exploded View

INFOID:000000012407945

[XENON TYPE]



八:Pawl

Removal and Installation

INFOID:000000012407946

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 <u>EXT-23. "Removal and Installation"</u>.
- 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:000000012407947

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 <u>EXT-23, "Removal and Installation"</u>.

FRONT FOG LAMP

< REMOVAL AND INSTALLATION >

2. Disconnect front fog lamp bulb connector (1).

3. Rotate the bulb (2) counterclockwise and unlock it.

[XENON TYPE]



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Revision: October 2015

< REMOVAL AND INSTALLATION >

OPTICAL SENSOR

Exploded View

INFOID:000000012407948



Optical sensor 1.

∠____: Pawl

Removal and Installation

INFOID:000000012407949

REMOVAL

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

INSTALLATION

Install in the reverse order of removal.

Exploded View

LIGHTING & TURN SIGNAL SWITCH

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

[XENON TYPE]

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< REMOVAL AND INSTALLATION >

HAZARD SWITCH

Exploded View

INFOID:000000012407951

[XENON TYPE]



1. Hazard switch

2 : Pawl

Removal and Installation

INFOID:000000012407952

REMOVAL

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

INSTALLATION

Install in the reverse order of removal.

HEADLAMP AIMING SWITCH

< REMOVAL AND INSTALLATION >

HEADLAMP AIMING SWITCH

Exploded View

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< REMOVAL AND INSTALLATION >

SIDE TURN SIGNAL LAMP

Exploded View

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

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REAR COMBINATION LAMP

< REMOVAL AND INSTALLATION >

REAR COMBINATION LAMP

Exploded View

REMOVAL

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DISASSEMBLY



- 1. Rear combination lamp housing assembly
- Rear turn signal lamp bulb 3. Bulb socket assembly

4. Tail lamp/stop lamp bulb

Removal and Installation

CAUTION:

Disconnect the battery negative terminal or the fuse. REMOVAL

2.

INFOID:000000012407957

REAR COMBINATION LAMP

< REMOVAL AND INSTALLATION >

- 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:000000012407958

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.

< REMOVAL AND INSTALLATION >

BACK-UP LAMP

Exploded View

REMOVAL

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1. Back-up lamp assembly

♀ : N·m (kg-m, in-lb)

DISASSEMBLY



Removal and Installation

CAUTION:

Disconnect the battery negative terminal or the fuse. REMOVAL INFOID:000000012407960

BACK-UP LAMP

< REMOVAL AND INSTALLATION >

- 1. Remove touch sensor (with automatic back door). Refer to <u>DLK-476, "TOUCH SENSOR : Removal and</u> <u>Installation"</u>.
- 2. Remove back door lower finisher. Refer to <u>INT-48</u>, "BACK DOOR LOWER FINISHER : Removal and <u>Installation</u>".
- 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:000000012407961

[XENON TYPE]

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 <u>INT-48. "BACK DOOR LOWER FINISHER : Removal and</u> <u>Installation"</u>.
- 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

< REMOVAL AND INSTALLATION >

HIGH-MOUNTED STOP LAMP

Exploded View

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- 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.

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[XENON TYPE]

< REMOVAL AND INSTALLATION >

LICENSE PLATE LAMP

Exploded View

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3.

- License plate lamp bulb socket 1.
- 4 Back door finisher
- : Clip ()
- 八:Pawl

Removal and Installation

CAUTION:

Disconnect the battery negative terminal or the fuse.

REMOVAL

- 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

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.
- Rotate license plate lamp bulb socket counterclockwise and unlock it.
- Remove license plate lamp bulb from license plate lamp bulb socket. 4.

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[XENON TYPE]

REFLEX REFLECTOR

< REMOVAL AND INSTALLATION >

REFLEX REFLECTOR

Exploded View

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A : Pawl

Removal and Installation

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.

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[XENON TYPE]

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< SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS) SERVICE DATA AND SPECIFICATIONS (SDS)

Bulb Specifications

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[XENON TYPE]

Item		Туре	Wattage (W)
	Headlamp (HI)	HB3 (Halogen)	60
Front combination lamp	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	_
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< PRECAUTION > PRECAUTION PRECAUTIONS

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

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

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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

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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.

INFOID:000000013051786

< PRECAUTION >

(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.).

COMPONENT PARTS

< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION COMPONENT PARTS

Component Parts Location

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No.	Part	Function	
1.	Optical sensor*1	Refer to EXL-112, "Optical Sensor".	K
2.	ВСМ	 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 <u>BCS-5. "BODY CONTROL SYSTEM : Component Parts Location"</u> for detailed installation location. 	EX M
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 <u>PCS-4</u>, "IPDM E/R : Component Parts Location" for detailed installation location. 	0
4.	Front turn signal lamp/Parking lamp	Refer to EXL-112, "Bulb Specifications".	Р
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 <u>SRC-8, "Component Parts Location"</u> for detailed installation location.	

[HALOGEN TYPE]

COMPONENT PARTS

< SYSTEM DESCRIPTION >

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 <u>BCS-9</u> , "COMBINATION SWITCH READING SYSTEM : System Descrip- tion".
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

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

Hazard Switch

Inputs the hazard switch ON/OFF signal to BCM.

Bulb Specifications

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

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HEADLAMP SYSTEM : System Description

SYSTEM DIAGRAM



OUTLINE

Headlamp is controlled by combination switch reading function and headlamp control function of BCM, and Н 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
- Κ • 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

EXL 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.

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[HALOGEN TYPE]

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< SYSTEM DESCRIPTION >

HEADLAMP SYSTEM : Circuit Diagram



[HALOGEN TYPE]



HEADLAMP SYSTEM : Fail-safe

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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

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< SYSTEM DESCRIPTION >

[HALOGEN TYPE]

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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 	E	

AUTO LIGHT SYSTEM

AUTO LIGHT SYSTEM : System Description

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 <u>EXL-128</u>, "<u>HEADLAMP</u> : <u>CONSULT Function</u> (<u>BCM - HEADLAMP</u>) (<u>Halogen Type Head-lamp</u>)".

AUTO LIGHT FUNCTION (WITH TWILIGHT LIGHTING FUNCTION)

Description

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

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< SYSTEM DESCRIPTION >

- 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 <u>EXL-128</u>, "<u>HEADLAMP</u> : <u>CONSULT Function (BCM - HEADLAMP</u>) (<u>Halogen Type Headlamp</u>)".

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 \Rightarrow 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 <u>EXL-128</u>, <u>"HEADLAMP : CONSULT Function (BCM - HEADLAMP) (Halogen Type Headlamp)"</u>.

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.

< SYSTEM DESCRIPTION >

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INFOID:000000012407981 (FG): With front fog lamp BATTERY В IPDM E/R TAIL LAMP RELAY 15A 58 HIGH RELAY LOW RELAY CPU FRONT FOG D 10A 10A 52 53 15A 56 10A 10A 55 15A 57 92 91 7 90 89 84 83 87 86 40 39 CAN-H CAN-L FG } To front fog ▶] 10 none i - 3
 ▶] lamp system] To parking, side marker license plate and ▶ ∫ tail lamp system To headlamp 22 CANsystem COMBINATION CAN-H METER 21 DATA LINK CONNECTOR Н /161514131211109 87654321 OPTICAL SENSOR DATA LINE To CAN 4 Optical Optical Receiver/Sensor DATA LINE system GND 4 sens sens pwr sply CAN-L CAN-H 70 18 39 40 14 57 всм 67 43 47 45 48 46 36 32 5 35 33 Back Driver Passenger Rear LH Rear RH Combi SW door SW door SW door SW door SW door SW input 2 input 1 input 3 input 4 input 5 output 1 output 2 output 3 output 4 output 5 FRONT n q lo DOOR 12 10 13 LOCK SWITCH SWITCH SW ŚW 8 COMBINATION SWITCH EXL ASSEMBLY DRIVER PASSENGER LH RH SIDE SIDE COMBINATION COMBINATION SWITCH METER = Ξ = = DOOR SWITCH Μ 3 7 8 9 10 11 12 13 1 IPDM E/R OPTICAL SENSOR 37 38 14 123 85 **m** 8483 9089888786 Ν 345678 1516171819 2021222324 35 36 106105104103102101100199 BACK DOOR LOCK ASSEMBLY BCM (BACK DOOR SWITCH) 1 **—** 2 3 4 5 6 7 8 8 9 10 11 12 13 28 29 30 31 32 33 52 53 54 55 5 66 67 68 69 70 (BLACK) (WHITE) (BLACK) JMLIA6887GB Ρ

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

< SYSTEM DESCRIPTION >

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM : System Description

INFOID:000000012407986

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.

[HALOGEN TYPE]

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM : Circuit Diagram



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

< SYSTEM DESCRIPTION >

[HALOGEN TYPE]

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SYSTEM DIAGRAM

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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-

< SYSTEM DESCRIPTION >



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

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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.

EXL-121

< SYSTEM DESCRIPTION >

If No CAN Communication Is Available With BCM

Control part	Fail-safe operation
 Parking lamp License plate lamp Illumination Tail 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

Side marker lamp

FRONT FOG LAMP SYSTEM

FRONT FOG LAMP SYSTEM : System Description

INFOID:000000012407991

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.

< SYSTEM DESCRIPTION >





FRONT FOG LAMP SYSTEM : Fail-safe

INFOID:000000012407993

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

Revision: October 2015

< SYSTEM DESCRIPTION >

Control part Front fog lamp

Front fog lamp relay OFF

Fail-safe operation

EXTERIOR LAMP BATTERY SAVER SYSTEM

EXTERIOR LAMP BATTERY SAVER SYSTEM : System Description

INFOID:000000012407994

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 $ON \rightarrow OFF$ 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.

[HALOGEN TYPE]



DIAGNOSIS SYSTEM (BCM) COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:000000013035223

[HALOGEN TYPE]

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
Sustam	Sub system selection item	Diagnosis mode		
System	Sub system selection item	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 systemEngine start system	INTELLIGENT KEY	×	×	×
Combination switch	COMB SW		×	
Body control system	ontrol 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.

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

[HALOGEN TYPE]

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			
	SLEEP>LOCK		While turning BCM status from low power consumption mode to normal mode [Power supply position is OFF (LOCK)]	— B	
	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)	L	
	CRANK>RUN		While turning power supply position from CRANK to RUN	E	
	RUN>URGENT	Power position status of the moment a particular DTC is detected*	While turning power supply position from RUN to ACC (Emergency stop operation)		
	ACC>OFF		While turning power supply position from ACC to OFF (OFF)		
Vehicle Condition	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 posi- tion is OFF (OFF)] to low power consumption mode	I
	LOCK>SLEEP		While turning BCM status from normal mode [Power supply posi- tion 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 → 338 → 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. 			

- *: 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

EXL-127

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< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

[HALOGEN TYPE]

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

INFOID:000000012407997

WORK SUPPORT

Service item	Setting item	Setting			
	MODE 1*2	Normal			
CUSTOM A/LIGHT SET-	MODE 2	More sensitive setting than normal setting (Turns ON earlier than normal operation)			
TING	MODE 3	More sensitive setting than MODE 2 (Turns ON earlier than MODE 2)			
	MODE 4	Less sensitiv	e setting than normal setting (Turns ON later than normal operation.)		
BATTERY SAVER SET	On* ²	With the exte	With the exterior lamp battery saver function		
BATTERT GAVEROET	Off	Without the e	exterior lamp battery saver function		
	MODE 1*2	45 sec.			
	MODE 2	Without the function			
	MODE 3	30 sec.			
ILL DELAY SET*1	MODE 4	60 sec.	Sets delay timer function timer operation time.		
	MODE 5	90 sec.			
	MODE 6	120 sec.			
	MODE 7	150 sec.			
	MODE 8	180 sec.			
	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			
AUTO LIGHT LUGIC SET	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 twilig	ht 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

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

[HALOGEN TYPE]

Monitor item [Unit]	Description	
TURN SIGNAL R [On/Off]		
TURN SIGNAL L [On/Off]		В
TAIL LAMP SW [On/Off]		С
HI BEAM SW [On/Off]		
HEAD LAMP SW1 [On/Off]	Each switch status that BCM judges from the combination switch reading function	D
HEAD LAMP SW2 [On/Off]		E
PASSING SW [On/Off]		
AUTO LIGHT SW* ¹ [On/Off]		F
FR FOG SW ^{*2} [On/Off]		G
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)	Н
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	J
OPTICAL SENSOR [On/Off/NG]	NOTE: This item is indicated, but can not monitored	K
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	X

*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 commu- nication to turn the tail lamp ON
	Off	Stops the tail lamp request signal transmission
	Hi	Transmits the high beam request signal via CAN communication to turn the headlamp (HI)
HEAD LAMP	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 commu- nication to turn the front fog lamp ON
	Off	Stops the front light request signal transmission

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DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

[HALOGEN TYPE]

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:000000012407998

WORK SUPPORT

Service item	Setting item	Setting		
HAZARD ANSWER BACK	Lock Only	With locking only		
	Unlk Only	With unlocking only	Sets the hazard warning lamp answer back function	
	Lock&Unlk*	With locking/unlocking	the key fob.	
	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 RCM detects from the combination switch reading fun	
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
	RH	Outputs the voltage to turn on the right side turn signal lamps.
FLASHER	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) А Diagnosis Description INFOID:000000013035224 AUTO ACTIVE TEST В 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 D Tail lamp Side marker lamp Front fog lamp Ε 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) Н NOTE: When auto active test is performed with hood opened, sprinkle water on windshield beforehand. 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. 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. Κ 5. The oil pressure warning lamp starts blinking when the auto active test starts. After a series of the following operations is repeated 3 times, auto active test is completed. NOTE: EXL 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". Μ 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 \rightarrow 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)	$ON \Leftrightarrow OFF 5$ times
6	Cooling fan	LO for 5 seconds \rightarrow MID for 3 seconds \rightarrow HI for 2 seconds

Revision: October 2015

< SYSTEM DESCRIPTION >

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		YES	BCM signal input circuit	
 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 op- erate?	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 oper-	YES	 Combination meter signal input circuit CAN communication signal between Combination meter and ECM CAN communication signal between ECM and IPDM E/R 	
	ate?	NO	 Magnet clutch Harness or connector between IPDM E/ R and magnet clutch IPDM E/R 	
	Perform auto active test.	YES	 Harness or connector between IPDM E/ R and oil pressure switch Oil pressure switch IPDM E/R 	
Oil pressure warning lamp does not operate	Does the oil pressure warning lamp blink?	NO	 CAN communication signal between IPDM E/R and BCM CAN communication signal between BCM and Combination meter Combination meter 	

< SYSTEM DESCRIPTION >

[HALOGEN TYPE]

Symptom	Inspection contents		Possible cause	
		YES	 ECM signal input circuit CAN communication signal between ECM and IPDM E/R 	
Cooling fan does not operate	Perform auto active test. Does the cooling fan operate?	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:000000013035225

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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.	- 1
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.	G
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 <u>PCS-23, "DTC Index"</u>.

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 SIG- NALS	Description	K
MOTOR FAN REQ [1/2/3/4]	×	Displays the value of the cooling fan speed signal received from ECM via CAN com- munication.	
AC COMP REQ [Off/On]	×	Displays the status of the A/C compressor request signal received from ECM via CAN communication.	EXL
TAIL&CLR REQ [Off/On]	×	Displays the status of the position light request signal received from BCM via CAN communication.	M
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN com- munication.	
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.	Ν
FR FOG REQ [Off/On]	×	Displays the status of the front fog light request signal received from BCM via CAN communication.	0
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.	0
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper stop position signal judged by IPDM E/R.	Ρ
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 com- munication.	
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.	

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< SYSTEM DESCRIPTION >

[HALOGEN TYPE]

Monitor Item [Unit]	MAIN SIG- NALS	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 commu- nication.
CRNRNG LMP REQ [Off/On]		NOTE: The item is indicated, but not monitored.

ACTIVE TEST

Test item

Test item	Operation	Description	
CORNERING LAMP	Off		
	LH	NOIE: The item is indicated, but cannot be tested	
	RH		
HORN	On	Operates horn relay for 20 ms.	
	Off	OFF	
FRONT WIPER	Lo	Operates the front wiper relay.	
	Hi	Operates the front wiper relay and front wiper HI/LO relay.	
	1	OFF	
MOTOR FAN	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.	

< SYSTEM DESCRIPTION >

[HALOGEN TYPE]

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

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ECU DIAGNOSIS INFORMATION

BCM, IPDM E/R

List of ECU Reference

INFOID:000000012408001

[HALOGEN TYPE]

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

[HALOGEN TYPE]

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WIRING DIAGRAM

EXTERIOR LIGHTING SYSTEM



EXTERIOR LIGHTING SYSTEM

< WIRING DIAGRAM >

[HALOGEN TYPE]





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Revision: October 2015



JRLWF6586GB

EXTERIOR LIGHTING SYSTEM



JRLWF6587GB



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EXTERIOR LIGHTING SYSTEM



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Revision: October 2015



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EXTERIOR LIGHTING SYSTEM

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EXTERIOR LIGHTING SYSTEM

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EXTERIOR LIGHTING SVSTEM 27 Y Instrument and ins	Connector Name HoZADD SWITCH Connector Npee TrodeFW Commetor Npee TrodeFW No Vire 2 R 3 R	Connector No. M59 Connector Name All R & GI JAGNOSIS SENSOR UNIT Connector Name All R & GI JAGNOSIS SENSOR UNIT Connector Type M128 RC C March N22 RC C March Signal Sensor Unit No With No With Signal Name (Specification) No No With (H) Signal Labor March Signal Labor March	

EXTERIOR LIGHTING SYSTEM

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Revision: October 2015

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EXTERIOR LIGHTING SYSTEM Connector No. M122

< BASIC INSPECTION >

BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000012408003

[HALOGEN TYPE]

OVERALL SEQUENCE



DETAILED FLOW

Revision: October 2015

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

1. GET INFORMATION FOR SYMPTOM	Λ
1. Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurs).	A
2. Check operation condition of the function that is malfunctioning.	В
>> GO TO 2.	
2.снеск отс	С
 Check DTC. Perform the following procedure if DTC is detected. Record DTC and freeze frame data (Print them out using CONSULT.) Erase DTC. 	D
 Study the relationship between the cause detected by DTC and the symptom described by the customer. Check related service bulletins for information. 	F
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.	F
J.CONFIRM THE SYMPTOM	0
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.	H
>> GO TO 5.	
4.CONFIRM THE SYMPTOM	I
Try to confirm the symptom described by the customer. Verify relation between the symptom and the condition when the symptom is detected.	1
>> GO TO 6.	J
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 diagnostic order.	K EXI
NOTE:	
 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 	M
If the result of Component Function Check is NG, it is the same as the detection of DTC by DTC CONFIR- MATION PROCEDURE.	Ν
Is DTC detected?	
YES >> GO TO 7.	\bigcirc
6.DETECT MALFUNCTIONING SYSTEM BY SYMPTOM DIAGNOSIS	0
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	Ρ
Is the symptom described?	
YES >> GO TO 7. NO >> Monitor input data from related sensors or check voltage of related module terminals using CON- SULT.	

1.DETECT MALFUNCTIONING PART BY DIAGNOSIS PROCEDURE

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

Inspect according to Diagnosis Procedure of the system.

Is malfunctioning part detected?

YES >> GO TO 8.

NO >> Check according to <u>GI-41, "Intermittent Incident"</u>.

8. REPAIR OR REPLACE THE MALFUNCTIONING PART

- 1. Repair or replace the malfunctioning part.
- 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 >	>					[HALOGEN TYPE]
DTC/CIR	CUIT DI/	AGNOS	IS				
EADLAMP	(HI) CIRC	UIT					
omponent F	unction Che	eck					INFOID:000000012408004
.CHECK HEAD)LAMP (HI) OP	ERATION					
CONSULT AC Select "EXTE With operatin	TIVE TEST ERNAL LAMPS ig the test items	" of IPDM E/R s, check that th	active te	est iten amp (H	n. II) is turned	ON.	
Hi	: Headlamp (H	I) ON					
Off	: Headlamp (H	I) OFF					
NOTE: ON/OFF is re	epeated 1 seco	nd each.					
YES >> Head NO >> Refer	<u>result normal?</u> Ilamp (HI) circu r to <u>EXL-159, "I</u>	it is normal. Diagnosis Pro	<u>cedure"</u> .				
iagnosis Pro	ocedure						INFOID:000000012408005
			CE.				
. Select "EXTE . With operatin	RNAL LAMPS	" of IPDM E/R s, check voltaç	active te ge betwe	est iten en IPD	n.)M E/R harr	ess connector	and ground.
	(+)						Veltere
	IPDM E/R		(-)		Test item	(Approx.)
Conr	nector	Terminal					
RH		89				Hi	Battery voltage
	E345		Gro	ound	EXTERNAL LAMPS	- Oli Hi	Battery voltage
LH		90				Off	
YES >> GO T NO >> GO T CHECK HEAD Turn ignition Disconnect If Check contin	O 2. O 3. DLAMP (HI) OP switch OFF. DM E/R conne uity between IF	EN CIRCUIT ector. PDM E/R harn	ess conn	nector a	and headlar	np high harnes	s connector.
	IPDM E/F	2 -		-	Headlar	np high	- Continuity
C	onnector	Tern	minal	C	onnector	Terminal	
ŇΠ		0	00	1	L320	_	

Is the inspection result normal?

YES >> GO TO 5.

LH

NO >> Repair or replace harness.

E345

E325

90

Existed

1

< DTC/CIRCUIT DIAGNOSIS >

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)		#55	10 Δ		
Headlamp HI (LH)		#54	IUA		

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		Continuity		
Conr	nector	Terminal	Ground	Continuity	
RH	E345	89	Ground	Not existed	
LH	L345	90		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.

${f 5.}$ 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		Continuity	
Coni	nector	Terminal	Ground	Continuity
RH	E326	2	Giouna	Existed
LH	E325			LAISIEU

Is the inspection result normal?

YES >> Replace headlamp (HI) bulb. (Bulb socket is abnormal.)

NO >> Repair or replace harness.

HEADLAMP (LO) CIRCUIT

DTC/CIRCUIT	DIAGNOSIS >												
IEADLAMP	(LO) CIR(CUIT											
component F	unction Che	eck				INFOID:000000012408008							
.CHECK HEAD	LAMP (LO) OF	PERATION											
CONSULT ACT	LIVE TEST												
. Select "EXTE . With operatin	RNAL LAMPS' g the test items	" of IPDM E/R a s, check that th	active test le headlarr	item. p (LO) is turne	d ON.								
Lo	: Headlamp (L	O) ON											
Off	: Headlamp (L	O) OFF											
the inspection r YES >> Head NO >> Refer	esult normal? lamp (LO) is no to EXL-161, "[ormal. Diagnosis Proc	edure".										
iagnosis Pro	cedure					INFOID:000000012408009							
.CHECK HEAD	LAMP (LO) OL	JTPUT VOLTA	GE										
CONSULT ACT	IVE TEST switch OFF.												
Disconnect h	eadlamp low co	 Disconnect neadiamp low connector. Turn ignition switch ON. Select "EXTERNAL LAMPS" of IPDM E/R active test item. With operating the test items, check voltage between IPDM E/R harness connector and ground. 											
Disconnect he Turn ignition s Select "EXTE With operatin	eadlamp low co switch ON. RNAL LAMPS' g the test items	onnector. " of IPDM E/R : s, check voltage	active test e between	item. IPDM E/R har	ness connector a	ind ground.							
Disconnect he Turn ignition s Select "EXTE With operatin	eadlamp low co switch ON. RNAL LAMPS' g the test items (+)	onnector. " of IPDM E/R s, check voltage	active test e between	item. IPDM E/R har	ness connector a	ind ground.							
Disconnect he Turn ignition s Select "EXTE With operatin	eadlamp low co switch ON. RNAL LAMPS' g the test items (+) IPDM E/R	onnector. " of IPDM E/R s, check voltag	active test e between (-)	item. IPDM E/R har	ness connector a	Voltage							
Disconnect he Turn ignition s Select "EXTE With operatin	eadlamp low co switch ON. RNAL LAMPS' g the test items (+) IPDM E/R ector	onnector. " of IPDM E/R s, check voltag	active test e between (-)	item. IPDM E/R har	ness connector a	Voltage (Approx.)							
Disconnect he Turn ignition s Select "EXTE With operatin Conn	eadlamp low co switch ON. RNAL LAMPS' g the test items (+) IPDM E/R ector	onnector. " of IPDM E/R s, check voltage Terminal	active test e between (-)	item. IPDM E/R har	ness connector a	Voltage (Approx.) Battery voltage							
Disconnect he Turn ignition s Select "EXTE With operatin Conn	eadlamp low co switch ON. RNAL LAMPS' g the test items (+) IPDM E/R ector	onnector. " of IPDM E/R s, check voltag Terminal 83	active test e between (-)	item. IPDM E/R har	ness connector a Test item	Voltage (Approx.) Battery voltage 0 V							
Disconnect he Turn ignition s Select "EXTE With operatin Conn	eadlamp low co switch ON. RNAL LAMPS' g the test items (+) IPDM E/R ector E345	onnector. " of IPDM E/R s, check voltage Terminal 83	active test e between (-) Groun	item. IPDM E/R har	Test item	Voltage (Approx.) Battery voltage 0 V Battery voltage							
Disconnect he Turn ignition s Select "EXTE With operatin Conn RH	eadlamp low co switch ON. RNAL LAMPS g the test items (+) IPDM E/R ector E345	onnector. " of IPDM E/R s, check voltag Terminal 83 84	active test e between (-) Groun	item. IPDM E/R har	Test item	Voltage (Approx.) Battery voltage 0 V Battery voltage 0 V							
Disconnect he Turn ignition s Select "EXTE With operatin Conn RH LH	eadlamp low co switch ON. RNAL LAMPS g the test items (+) IPDM E/R ector E345 esult normal?	onnector. " of IPDM E/R s, check voltage Terminal 83 84	active test e between (-) Groun	item. IPDM E/R har	Test item Lo Lo Off Off	Voltage (Approx.) Battery voltage 0 V Battery voltage 0 V							
Disconnect he Turn ignition s Select "EXTE With operatin Conn RH LH LH the inspection r (ES >> GO T	eadlamp low co switch ON. RNAL LAMPS g the test items (+) IPDM E/R ector E345 esult normal? O 2.	onnector. " of IPDM E/R s, check voltage Terminal 83 84	active test e between (-)	item. IPDM E/R har	ness connector a Test item Lo Lo Off Off	Voltage (Approx.) Battery voltage 0 V Battery voltage 0 V							
Disconnect he Turn ignition s Select "EXTE With operatin Conn RH LH LH YES >> GO T NO >> GO T	eadlamp low co switch ON. RNAL LAMPS g the test items (+) IPDM E/R ector E345 <u>esult normal?</u> O 2. O 3.	onnector. " of IPDM E/R s, check voltage Terminal 83 84	active test e between (-) Groun	item. IPDM E/R har	ness connector a Test item Lo Lo Off Off	Voltage (Approx.) Battery voltage 0 V Battery voltage 0 V							
Disconnect he Turn ignition s Select "EXTE With operatin Conn RH LH LH the inspection r YES >> GO T NO >> GO T .CHECK HEAD	eadlamp low co switch ON. RNAL LAMPS g the test items (+) IPDM E/R ector E345 esult normal? O 2. O 3. LAMP (LO) OF	onnector. " of IPDM E/R s, check voltag Terminal 83 84 PEN CIRCUIT	active test e between (-) Groun	item. IPDM E/R har	ness connector a Test item Lo Off Lo Off	Voltage (Approx.) Battery voltage 0 V Battery voltage 0 V							
Disconnect he Turn ignition s Select "EXTE With operatin Conn RH LH the inspection r YES >> GO T YO >> GO T .CHECK HEAD Turn ignition s Disconnect IF Check contine	eadlamp low co switch ON. RNAL LAMPS g the test items (+) IPDM E/R ector E345 C 2. C 2. C 3. LAMP (LO) OF switch OFF. DM E/R conne uity between IF	onnector. " of IPDM E/R s, check voltag Terminal 83 84 PEN CIRCUIT PCTOR: PDM E/R harne	active test e between (-) Groun	item. IPDM E/R har	ness connector a Test item Lo Off Lo Off	voltage (Approx.) Battery voltage 0 V Battery voltage 0 V							
Disconnect he Turn ignition s Select "EXTE With operatin Conn RH LH LH the inspection r YES >> GO T NO >> GO T CHECK HEAD Turn ignition s Disconnect IF Check continu	eadlamp low co switch ON. RNAL LAMPS g the test items (+) IPDM E/R ector E345 0 2. O 3. LAMP (LO) OF switch OFF. 2DM E/R conne uity between IF	onnector. " of IPDM E/R s, check voltag Terminal 83 84 PEN CIRCUIT PCTOR: PDM E/R harne	active test e between (-) Ground	item. IPDM E/R har	ness connector a	voltage (Approx.) Battery voltage 0 V Battery voltage 0 V							
Disconnect he Turn ignition s Select "EXTE With operatin Conn RH LH LH Sthe inspection r YES >> GO T NO >> GO T CHECK HEAD Turn ignition s Disconnect IF Check continu	eadlamp low co switch ON. RNAL LAMPS g the test items (+) IPDM E/R ector E345 esult normal? O 2. O 3. LAMP (LO) OF switch OFF. DM E/R conne uity between IF	onnector. " of IPDM E/R s, check voltag Terminal 83 84 PEN CIRCUIT ctor. DM E/R harne	active test e between (-) Groun	item. IPDM E/R har	mess connector a Test item Lo Lo Coff Lo Off Off Off mp low harness c	Voltage (Approx.) Battery voltage 0 V Battery voltage 0 V							
Disconnect he Turn ignition s Select "EXTE With operatin Conn RH LH LH LH CHECK HEAD Turn ignition s Disconnect IF Check continu	eadlamp low co switch ON. RNAL LAMPS g the test items (+) IPDM E/R ector E345 0 2. 0 3. LAMP (LO) OF switch OFF. 2DM E/R conne uity between IF IPDM E/F.	onnector. " of IPDM E/R s, check voltag Terminal 83 84 PEN CIRCUIT ctor. DM E/R harne	active test e between (-) Ground	item. IPDM E/R har	mess connector a Test item Lo Lo Coff Lo Off Marness connector a Terminal	voltage (Approx.) Battery voltage 0 V Battery voltage 0 V							
Disconnect he Turn ignition s Select "EXTE With operatin Conn RH LH LH LH Check HEAD Turn ignition s Disconnect IF Check continu	eadlamp low co switch ON. RNAL LAMPS g the test items (+) IPDM E/R ector E345 O 2. O 3. LAMP (LO) OF switch OFF. OM E/R conne uity between IF IPDM E/R onnector E345	onnector. " of IPDM E/R s, check voltag Terminal 83 84 PEN CIRCUIT ctor. DM E/R harne Term 83 84	active test e between (-) Ground	item. IPDM E/R har	ness connector a Test item Lo Lo Off Lo Off Off Off Off Terminal I	Voltage (Approx.) Battery voltage 0 V Battery voltage 0 V Battery voltage							

YES >> GO TO 5.

NO >> Repair or replace harness.

3. CHECK HEADLAMP (LO) FUSE

Turn ignition switch OFF. 1.

2. Check that the following fuses are not blown (open).

HEADLAMP (LO) CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[HALOGEN TYPE]

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

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		Continuity		
Conr	nector	Terminal	Ground	Continuity	
RH	E245	83	Ground	Not existed	
LH	E345	84		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.

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			Continuity
Coni	nector	Terminal	Cround	Continuity
RH	E351	2	Giouna	Evisted
LH	E350	2		LAISIEU

Is the inspection result normal?

YES >> Replace headlamp (LO) bulb. (Bulb socket is abnormal.)

NO >> Repair or replace harness.

PARKING LAMP CIRCUIT

< DTC/CIRCUIT DIAGNOS	SIS >		[HALOGEN TYPE]
PARKING LAMP CI	RCUIT		
Component Function	Check		INFOID:000000012408013
1.CHECK PARKING LAMP	OPERATION		
CONSULT ACTIVE TEST 1. Select "EXTERNAL LAN 2. With operating the test i	/IPS" of IPDM E/R active to tems, check that the parkir	est item. ng lamp is turned ON.	
TAIL : Parking I	amp ON		
Off : Parking I	amp OFF		
<u>Is the inspection result norm</u> VES >> Parking lamp ci	<u>al?</u> cuit is pormal		
NO >> Refer to <u>EXL-16</u>	<u>3, "Diagnosis Procedure"</u> .		
Diagnosis Procedure			INFOID:000000012408014
1.CHECK PARKING LAMP	FUSE		
 Turn ignition switch OFF Check that the following 	fuse is not blown (open).		
Unit	Location	Fuse No.	Capacity
Parking lampFront side marker lamp	IPDM E/R	#52	10 A
NO >> GO TO 3. 2.CHECK PARKING LAMP 1. Disconnect the following IPDM E/R Front combination lamp Front side marker lamp 2. Check continuity betwee	9 SHORT CIRCUIT 9 connectors. en IPDM E/R harness conr	nector and ground.	
IPDI	M E/R		Continuity
Connector	Terminal	Ground –	Continuity
E346	91	-	Not existed
<u>s the inspection result norm</u> YES >> Replace fuse. [F NO >> Repair or replac 3. CHECK PARKING LAMP	al? Replace IPDM E/R if the fust harness. And then replace BULB	se blown (open) again.] ce the fuse.	
Check applicable lamp bulb. <u>Is the inspection result norm</u> YES >> GO TO 4. NO >> Replace bulb. 4 CHECK PARKING LAMP	al?		
 CONSULT ACTIVE TEST Disconnect front combin Turn ignition switch ON. 	nation lamp connector.		

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.

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PARKING LAMP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

	(+) IPDM E/R		(-)	Test it	em	Voltage (Approx.)
	Connector	Terminal				
рц		01			TAIL	Battery voltage
КП	E246	91	Cround	EXTERNAL	Off	0 V
IЦ	E340	02	Ground	LAMPS	TAIL	Battery voltage
		92			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 comb	ination lamp	Continuity
Conr	nector	Terminal	Connector	Terminal	Continuity
RH	E246	91	E349	1	Evistod
LH	E340	92	E348		Existed

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			Continuity
Con	nector	Terminal	Ground	Continuity
RH	E349	2	Ground	Existed
LH	E348	Σ		LAISted

Is the inspection result normal?

YES >> Check corresponding bulb socket and harness. Repair or replace if necessary.

NO >> Repair or replace harness.

< DTC/CIRCUIT DIAGNOSIS >	[HALOGEN TYPE]
FRONT SIDE MARKER LAMP CIRCUIT	٨
Component Function Check	INFOID:000000012408015
1. CHECK PARKING LAMP OPERATION	В
Check that the parking lamp is turned ON.	
Is the inspection result normal?	
YES >> GO TO 2. NO >> Check parking lamp circuit. Refer to <u>EXL-163</u> , "Component Function Check	<u>"</u> .
2. CHECK FRONT SIDE MARKER LAMP OPERATION	П
 CONSULT ACTIVE TEST Select "EXTERNAL LAMPS" of IPDM E/R active test item. With operating the test items, check that the front side marker lamp is turned ON. 	U
TAIL : Front side marker lamp ON	
Off : Front side marker lamp OFF	F
Is the inspection result normal?	
YES >> Front side marker lamp circuit is normal. NO >> Refer to <u>EXL-165, "Diagnosis Procedure"</u> .	G
Diagnosis Procedure	INFOID:000000012408016
1.CHECK FRONT SIDE MARKER LAMP BULB	Н
Check applicable lamp bulb.	
Is the inspection result normal?	
YES >> GO TO 2.	
2 CHECK EDONT SIDE MARKER I AMR ODEN CIRCUIT	1
	J
 Turn ignition switch OFF. Disconnect IPDM E/R connector and front side marker lamp connector. Check continuity between IPDM E/R harness connector and front side marker lamp 	harness connector.

	IPDM E/R		Front side	marker lamp	Continuity	
Coni	nector	Terminal	Connector	Terminal	Continuity	EXI
RH	E246	91	E321	1	Existed	
LH	∟340	92	E320		LAISted	- M

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			Continuity	
Coni	nector	Terminal	Cround	Continuity	_
RH	E321	0	Ground	Existed	F
LH	E320	2		Existed	

Is the inspection result normal?

YES >> Check corresponding bulb socket and harness. Repair or replace if necessary.

NO >> Repair or replace harness. Ν

Ο

< DTC/CIRCUIT DIAGNOSIS >

TAIL LAMP CIRCUIT

Component Function Check

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 <u>EXL-166</u>, "Diagnosis Procedure".

Diagnosis Procedure

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 lamplicense 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.

IPDI	M E/R		Continuity
Connector	Terminal	Ground	Continuity
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.

INFOID:000000012408017

INFOID:000000012408018

TAIL LAMP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

$\begin{tabular}{ c c c c c c } \hline PDM E/R & (-) & Test item & (A & ($	harness conne Continuity Existed
$\begin{tabular}{ c c c c c c } \hline Connector & Terminal & Connector & TAIL & Batter & TAIL & Batter & TAIL & Batter & TAIL & Batter & Connector result normal? \\ \hline F10 & 7 & Ground & LAMPS & Off & Off & Connector & Connector 5. \\ \hline Sthe inspection result normal? \\ \hline YES &>> GO TO 5. \\ \hline NO &>> Replace IPDM E/R. & CRCUIT & CONNECT & CONNECT & CONNECT & CONNECT & CONNECT & CONNECTOR & CONNE$	Battery voltage 0 V harness conne Continuity Existed
E107GroundEXTERNAL LAMPSTAILBatters the inspection result normal?YES>> GO TO 5.NO>> Replace IPDM E/R.D.CHECK TAIL LAMP OPEN CIRCUIT1.Turn ignition switch OFF.2.Disconnect IPDM E/R connector.3.Check continuity between IPDM E/R harness connector and rear combination lamp harness $\frac{1PDM E/R}{Connector}$ TerminalConnectorTerminalRH LHE107B205 B801S the inspection result normal?YES>> GO TO 6.	Battery volta 0 V harness conne Continuity Existed
Image: state inspection result normal? Off YES >> GO TO 5. NO >> Replace IPDM E/R. D.CHECK TAIL LAMP OPEN CIRCUIT I. Turn ignition switch OFF. 2. Disconnect IPDM E/R connector. 3. Check continuity between IPDM E/R harness connector and rear combination lamp harness Image: state inspection result normal? YES >> GO TO 6.	harness conne Continuity Existed
the inspection result normal? YES >> GO TO 5. NO >> Replace IPDM E/R. • CHECK TAIL LAMP OPEN CIRCUIT Turn ignition switch OFF. Disconnect IPDM E/R connector. Check continuity between IPDM E/R harness connector and rear combination lamp harness IPDM E/R Rear combination lamp Connector Terminal Connector Terminal RH E10 7 LH E10 7 B80 1 E the inspection result normal? YES YES >> GO TO 6.	harness conne Continuity Existed
$\begin{array}{c} \text{Fes} \ >> \text{GO TO 5.} \\ \text{NO} \ >> \text{Replace IPDM E/R.} \\ \text{.CHECK TAIL LAMP OPEN CIRCUIT} \\ \hline \text{Turn ignition switch OFF.} \\ \text{Disconnect IPDM E/R connector.} \\ \text{Check continuity between IPDM E/R harness connector and rear combination lamp harness} \\ \hline \hline & IPDM E/R & Rear combination lamp \\ \hline & IPDM E/R & Rear combination lamp \\ \hline & Connector & Terminal & Connector & Terminal \\ \hline & RH & E10 & 7 & B205 & 1 & E \\ \hline & LH & E10 & 7 & B80 & 1 & E \\ \hline & \text{the inspection result normal?} \\ \hline & Fermiorial is a set of the inspection of the ins$	harness conne Continuity Existed
.CHECK TAIL LAMP OPEN CIRCUIT Turn ignition switch OFF. Disconnect IPDM E/R connector. Check continuity between IPDM E/R harness connector and rear combination lamp harness IPDM E/R Rear combination lamp Connector Terminal Connector Terminal RH E10 LH E10 The inspection result normal? (ES >> GO TO 6.	harness conne Continuity Existed
CORECK TAIL LAMP OPEN CIRCOTT Turn ignition switch OFF. Disconnect IPDM E/R connector. Check continuity between IPDM E/R harness connector and rear combination lamp harness IPDM E/R IPDM E/R Rear combination lamp Connector Connector Terminal Connector Terminal RH E10 7 B205 1 E LH E10 7 B80 1 E the inspection result normal? YES >> GO TO 6. Yes Ye	harness conne Continuity Existed
Turn ignition switch OFF. Disconnect IPDM E/R connector. Check continuity between IPDM E/R harness connector and rear combination lamp harness IPDM E/R Rear combination lamp Competence Connector Terminal Connector Terminal RH E10 7 B205 1 E LH E10 7 B80 1 E the inspection result normal? (ES) >> GO TO 6. Competence Competence Competence	harness conne — Continuity Existed
Disconnection Dim E/R connector. Check continuity between IPDM E/R harness connector and rear combination lamp IPDM E/R Rear combination lamp Connector Connector Terminal Connector Terminal RH E10 7 B205 1 E LH E10 7 B80 1 E the inspection result normal? Connector Connector Connector KH E10 7 B205 1 E	harness conne Continuity Existed
$\begin{tabular}{ c c c c c c } \hline & & & & & & & & & & & & & & & & & & $	Continuity Existed
IPDM E/R Rear combination lamp Connector Terminal Connector Terminal RH E10 7 B205 1 LH E10 7 B80 1 the inspection result normal? (ES >> GO TO 6. Image: Connector instance in the inspection in the inspectinthe inspection in the inspection in	Continuity
Connector Terminal Connector Terminal RH E10 7 B205 1 E LH E10 7 B80 1 E the inspection result normal? (ES >> GO TO 6. F F F	Existed
RH LHE107 $B205$ B801Es the inspection result normal? YES>> GO TO 6. E E	Existed
LH B80 S the inspection result normal? YES >> GO TO 6.	
the inspection result normal? YES >> GO TO 6.	
CHECK TAIL LAMP GROUND OPEN CIRCUIT heck continuity between rear combination lamp harness connector and ground.	
Rear combination lamp	Continuity
Connector Terminal Cround	Continuity
RH B205 3 Ground	Evisted
LH B80	LAISteu
the inspection result normal?	

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< DTC/CIRCUIT DIAGNOSIS >

LICENSE PLATE LAMP CIRCUIT

Component Function Check

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 la	amp 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

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					
Co	onnector	Terminal	Connector	Terminal	Continuity	
RH	E10	7	D163	1	Eviated	
LH	EIU	I	D162		Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

 ${\it 3.}$ CHECK LICENSE PLATE LAMP GROUND OPEN CIRCUIT

Check continuity between license plate lamp harness connector and ground.

	License plate lan		Continuity	
	Connector	Terminal	Cround	Continuity
RH	D163	0	Ground	Eviated
LH	D162			Existed

Is the inspection result normal?

YES >> Check corresponding bulb socket and harness. Repair or replace if necessary.

NO >> Repair or replace harness.

INFOID:000000012408019

INFOID:000000012408020

TURN SIGNAL LAMP CIRCUIT

[HALOGEN	TYPE]
----------	-------

TURN SIGNAL LAMP CIRCUIT	Δ
Component Function Check	A
1.CHECK TURN SIGNAL LAMP	В
 CONSULT ACTIVE TEST Select "FLASHER" of BCM (FLASHER) active test item. With operating the test items, check that the turn signal lamps is turned ON. 	С
LH : Turn signal lamps (LH) ON RH : Turn signal lamps (RH) ON Off : Turn signal lamps OFF Is the inspection result normal?	D
NO >> Refer to <u>EXL-169, "Diagnosis Procedure"</u> .	
Diagnosis Procedure	F
1.CHECK TURN SIGNAL LAMP	
 CONSULT ACTIVE TEST Select "FLASHER" of BCM (FLASHER) active test item. With operating the test items, check that the turn signal lamps is turned ON. 	G
LH : Turn signal lamps (LH) ON	
RH : Turn signal lamps (RH) ON	
Off : Turn signal lamps OFF	I
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	J
Check the applicable lamp bulb.	Κ
<u>Is the inspection result normal?</u> YES >> GO TO 3. NO >> Replace bulb. 3. CHECK TURN SIGNAL LAMP OUTPUT VOLTAGE	EX
 Turn ignition switch OFF. Disconnect front combination lamp connector, side turn signal lamp connector and rear combination lamp connector. 	M
 Turn ignition switch ON. With operating the turn signal switch, check voltage between BCM harness connector and ground. 	Ν
	0

< DTC/CIRCUIT DIAGNOSIS >

Ρ

TURN SIGNAL LAMP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

(+)					Voltage		
	BCM		(—)	Con	dition	(Approx.)	
	Connector	Terminal					
LH		60			LH	(V) 15 10 5 0 •••••••••••••••••••••••••••••	
	M123		Ground	Turn signal	OFF	0 V	
RH	WI23	61	Ground	switch	RH	(V) 15 10 5 0 •••••••••••••••••••••••••••••	
					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	BCM Front combination lamp			
C	Connector	Terminal	Connector	Terminal	Continuity
RH	M123	61	E349	3	Existed
LH	10125	60	E348	5	

Side turn signal lamp

	Continuity				
Connec	tor	Terminal	Connector	Terminal	Continuity
Passenger side	M102	61	D3	20	Evisted
Driver side	101123	60	D43	20	Existed

Rear turn signal lamp

	BCM Rear combination lamp					
C	Connector	Terminal	Connector	Terminal	Continuity	
RH	M102	61	B205	Δ	Existed	
LH	- WI123	60	B80	- 4	Existed	

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.

TURN SIGNAL LAMP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[HALOGEN TYPE]

^	DCIWI			Continuity
Conn	ector	tor Terminal		
RH	M123	61		Not existed
LH		60		
s the inspection result r	<u>iormal?</u>			
YES-1 >> (When side <u>Installation</u> " YES-2 >> (When lamp nal short ci <u>Installation</u> " NO >> Repair or re D .CHECK TURN SIGN	turn signal lamp d o other than side tui ircuit, and if check place harness. IAL LAMP GROUNI	oes not turn ON) F m signal lamp does result is normal, r D OPEN CIRCUIT	Replace BCM. Refer to s not turn ON) Check ea eplace BCM. Refer to	BCS-99, "Remova ach bulb socket for BCS-99, "Remova
Check continuity betwe	en BCM harness co	onnector and front	combination lamp, door	r mirror or rear con
tion lamp and ground.			•	
Front turn signal lamp				
Fro	ont combination lamp	- · ·		Continuity
	40	Terminal	Ground	
	49	2		Existed
Side turn signal lamp				
	Door mirror			
Connector Termina		Terminal		Continuity
Passenger side	D3	40	Ground	Evista d
Driver side	D43	19		Existed
Rear turn signal lamp				
	ear combination lamp			Continuity
Re	Connector			
Connector		Terminal	Ground	
Re Connector RH B:	205	Terminal 3	Ground —	Existed
Re Connector RH Bi LH B Is the inspection result r	205 180 1ormal?	Terminal 3	Ground	Existed

< DTC/CIRCUIT DIAGNOSIS >

FRONT FOG LAMP CIRCUIT

Component Function Check

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

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.

(+) IPDM E/R		(-) Test		t item	Voltage		
Coni	nector	Terminal	1			(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
PH		86			Fog	Battery voltage	
	F345	87	00	Ground	EXTERNAL	Off	0 V
1.11	Ц		Giodila	LAMPS	Fog	Battery voltage	
		51			Off	0 V	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace IPDM E/R.

 $\mathbf{3}$.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
Coni	nector	Terminal	Connector	Terminal	Continuity
RH	E245	86	E402	1	Existed
LH	E345	87	E331	I	Existed

Is the inspection result normal?

YES >> GO TO 4.

INFOID:000000012408023

INFOID:000000012408024

FRONT FOG LAMP CIRCUIT

< DTC/CIRCUIT	[HALOGEN TYPE]			
NO >> Repa	air or replace harness.			
4.CHECK FROM	NT FOG LAMP GROUND C	RCUIT OPEN CIRC	CUIT	
Check continuity	between front fog lamp har	ness connector and	ground.	
	Front fog lamp			Orationity
	Connector T			Continuity
RH	E402		Ground	Eviated
LH	E331	2		Existed
Is the inspection	result normal?			<u>.</u>
YES >> Refe	r to <u>GI-41, "Intermittent Inci</u>	<u>dent"</u> .		
NO >> Repa	air or replace harness.			

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Revision: October 2015

< DTC/CIRCUIT DIAGNOSIS >

OPTICAL SENSOR

Component Function Check

1. CHECK OPTICAL SENSOR SIGNAL BY CONSULT

CONSULT DATA MONITOR

T. Turn ignition switch ON.

2. Select "OPTISEN (DTCT)" of BCM (HEADLAMP) data monitor item.

3. Turn lighting switch AUTÓ.

4. With the optical sensor illuminating, check the monitor status.

Monitor item	Condition		Voltage (Approx.)
OPTISEN (DTCT)	Ontical sensor	When illuminating	3.1 V or more *
	Optical sensor	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

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.)
Optica	l 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.

(Ontica	+)	(_)	Voltage
Connector	Connector Terminal		(Approx.)
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.

INFOID:000000012408025

INFOID:000000012408026

OPTICAL SENSOR

< DTC/CIRCUIT DIAGNOSIS >

			Condition		Voltage
Optical	sensor	(-)		Condition	
Connector	Ierminai			When illuminating	3 1 V or more
M17	2	Ground	Optical sensor	When shutting off light	
Illuminate the o	ptical sensor. Th	ne value may	be less than th	e standard if brightness	s is weak.
the inspection i	<u>result normal?</u>	,		0	
/ES >> GO T	07.				
NO >> Repla	ace the optical s	ensor.			
CHECK OPTIC	CAL SENSOR C	PEN CIRCU	T		
Turn ignition	switch OFF.	nnector and F	RCM connector		
Check contin	uity between op	tical sensor h	arness connec	tor and BCM harness co	onnector.
Or	otical sensor			BCM	Continuity
Connector	Termir	nal	Connector	Terminal	,
M17	1		M121	17	Existed
	CAL SENSOR S		JIT	ad against d	
CHECK OPTIC	CAL SENSOR S between optical	HORT CIRCI sensor harne	JIT ss connector a	nd ground.	
CHECK OPTIC neck continuity	CAL SENSOR S between optical Optical sensor	HORT CIRCI sensor harne	JIT ss connector a	nd ground. Ground	Continuity
CHECK OPTIC heck continuity Connector M17	CAL SENSOR S between optical Optical sensor	HORT CIRCI sensor harne Terminal	JIT ss connector a	nd ground. Ground	Continuity Not existed
CONNECTOR CONNECTOR M17 the inspection r	CAL SENSOR S between optical Optical sensor	HORT CIRCU sensor harne Terminal	JIT ss connector a	nd ground. Ground	Continuity Not existed
CONNECTOR CONNECTOR CONNECTOR M17 the inspection r (ES >> Repla	CAL SENSOR S between optical Optical sensor result normal? ace BCM. Refer	HORT CIRCI sensor harne Terminal 1 to <u>BCS-99, "I</u>	JIT ss connector a	nd ground. Ground	Continuity Not existed
CONNECTOR CONNECTOR CONNECTOR M17 the inspection r YES >> Repla NO >> Repa	CAL SENSOR S between optical Optical sensor <u>result normal?</u> ace BCM. Refer ir or replace har	HORT CIRCU sensor harne Terminal 1 to <u>BCS-99, "I</u> mess.	JIT ss connector a Removal and Ir	nd ground. Ground	Continuity Not existed
Connector M17 Connector M17 the inspection r YES >> Repla NO >> Repa	CAL SENSOR S between optical Optical sensor esult normal? ace BCM. Refer ir or replace har CAL SENSOR G	HORT CIRCU sensor harne Terminal 1 to <u>BCS-99, "I</u> ness. GROUND OPE	JIT ss connector a Removal and Ir	nd ground. Ground	Continuity Not existed
Connector Connector M17 Connector M17 Connector M17 Connector M17 Connector M17 Connector M17 Connector M17 Connector M17 Connector M17 Connector M17 Connector M17 Connector M17 Connector M17 Connector M17 Connector M17 Connector M17 Connector M17 Connector M17 Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector Connector	CAL SENSOR S between optical Optical sensor <u>esult normal?</u> ace BCM. Refer ir or replace har CAL SENSOR G switch OFF. ptical sensor co uity between op	HORT CIRCU sensor harne Terminal 1 to <u>BCS-99, "I</u> ness. GROUND OPP nnector and E tical sensor h	UIT ss connector a Removal and Ir EN CIRCUIT BCM connector arness connector	nd ground. Ground Istallation". tor and BCM harness co	Continuity Not existed
CONNECTOR CONNECTOR M17 Connector M17 the inspection I YES >> Repla NO >> Repla NO >> Repla CHECK OPTIC Turn ignition Disconnect o Check contin	CAL SENSOR S between optical Optical sensor <u>result normal?</u> ace BCM. Refer ir or replace har CAL SENSOR G switch OFF. ptical sensor co uity between op	HORT CIRCU sensor harne Terminal 1 to <u>BCS-99, "I</u> ness. GROUND OPE nnector and E tical sensor h	JIT SS connector a CREWING AND IN SCM connector arness connector	nd ground. Ground Installation". tor and BCM harness co	Continuity Not existed
CONNECTOR CONNECTOR CONNECTOR M17 CONNECTOR CONNECTOR CONNECTOR CONNECTOR CONNECTOR	CAL SENSOR S between optical Optical sensor result normal? ace BCM. Refer ir or replace har CAL SENSOR G switch OFF. ptical sensor co uity between op otical sensor	HORT CIRCU sensor harnes Terminal 1 to <u>BCS-99, "I</u> ness. BROUND OPP nnector and E tical sensor h	JIT SS connector a Removal and Ir EN CIRCUIT Connector Connector	rd ground. Ground Installation". tor and BCM harness co	Continuity Not existed onnector.
CHECK OPTIC eck continuity Connector M17 the inspection r ES >> Repla O >> Repa CHECK OPTIC Turn ignition = Disconnect o Check contin Or Connector M17	CAL SENSOR S between optical Optical sensor result normal? ace BCM. Refer ir or replace har CAL SENSOR G switch OFF. ptical sensor co uity between op	HORT CIRCU sensor harned Terminal 1 to <u>BCS-99, "I</u> mess. GROUND OPE nnector and E tical sensor h	JIT SS connector a Removal and Ir EN CIRCUIT Connector arness connec Connector M121	Ind ground. Ground Installation". Terminal Installation Installatio	Continuity Not existed onnector. Continuity Existed
Connector CONNECK OPTIC Connector M17 the inspection I (ES >> Repla NO >> Repa .CHECK OPTIC Turn ignition = Disconnect o Check contin Op Connector M17 the inspection r	CAL SENSOR S between optical Optical sensor <u>result normal?</u> ace BCM. Refer ir or replace har CAL SENSOR G switch OFF. ptical sensor co uity between op otical sensor <u>Termi</u> 3 <u>result normal?</u>	HORT CIRCI sensor harnes Terminal 1 to <u>BCS-99, "I</u> ness. BROUND OPE nnector and E tical sensor h	JIT SS connector a Connector SCM connector Connector M121	nd ground. Ground Installation". tor and BCM harness co	Continuity Not existed onnector. Continuity Existed
CONNECTOR CONNECTOR CONNECTOR M17 the inspection I YES >> Repla CHECK OPTIC Turn ignition = Disconnect o Check contin Op Connector M17 the inspection I YES >> Repla	CAL SENSOR S between optical Optical sensor result normal? ace BCM. Refer ir or replace har CAL SENSOR G switch OFF. ptical sensor co uity between op otical sensor result normal? ace BCM. Refer	HORT CIRCI sensor harnes Terminal 1 to <u>BCS-99, "I</u> mess. BROUND OPE nnector and E tical sensor h	JIT SS connector a Connector Connector M121 Removal and Ir	nd ground. Ground Stallation". tor and BCM harness co BCM Terminal 18	Continuity Not existed onnector. Continuity Existed
Connector M17 the inspection I (ES >> Repla NO >> Repla CHECK OPTIC Turn ignition 5 Disconnect o Check contin Op Connector M17 the inspection I (ES >> Repla Op Connector M17 the inspection I (ES >> Repla Op Connector M17 Connector M17 Connector M17 Connector	CAL SENSOR S between optical Optical sensor CAL SENSOR G ace BCM. Refer ir or replace har CAL SENSOR G switch OFF. ptical sensor co uity between op otical sensor CAL SENSOR G switch OFF. ptical sensor co uity between op otical sensor	HORT CIRCU sensor harned Terminal 1 to <u>BCS-99, "I</u> ness. GROUND OPP nnector and E tical sensor h nal to <u>BCS-99, "I</u> ness.	JIT SS connector a Connector Connector Connector M121 CIRCUIT	nd ground. Ground Installation". Terminal 18 Installation".	Continuity Not existed onnector. Continuity Existed

3. Check continuity between optical sensor harness connector and BCM harness connector.

OPTICAL SENSOR

< DTC/CIRCUIT DIAGNOSIS >

Optica	lsensor	B	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
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.

Optica	sensor		Continuity
Connector	Terminal	Ground	Continuity
M17	2		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to <u>BCS-99, "Removal and Installation"</u>.

NO >> Repair or replace harness.

HAZARD SWITCH

[HALOGEN TYPE]

HAZARD SWITCH	4			
Component Functio	n Check			INFOID:000000012408027
1 .check hazard sw	ITCH SIGNAL BY (CONSULT		
CONSULT DATA MON 1. Turn ignition switch (2. Select "HAZARD SW 3. With operating the ha	ITOR)N. /" of BCM (FLASHE azard switch, check	R) data monitor i the monitor statu	tem. Is.	
Monitor item		Condition		Monitor status
			ON	On
HAZARD SW	Hazard switch		OFF	Off
YES >> Hazard switc NO >> Refer to EXL Diagnosis Procedur	h circuit is normal. <u>-177, "Diagnosis Pr</u> e	<u>ocedure"</u> .		INFOID:000000012408028
 CHECK HAZARD SW Turn ignition switch C Disconnect hazard sy Check voltage between 	ITCH SIGNAL INPU)FF. witch connector. en hazard switch co	JT onnector and gro	und.	
	(+)			
Ha	zard switch		(-)	Voltage (Approx.)
Connector	Termina	al		
s the inspection result no YES >> GO TO 4. NO >> GO TO 2. CHECK HAZARD SW	<u>rmal?</u> ITCH SIGNAL OPE			
Disconnect BCM con Check continuity bety	nector. veen hazard switch	harness connec	tor and BCM harness	s connector.
Hazard s	witch		BCM	Continuity
Connector	Terminal	Connector	Terminal	
s the inspection result no YES >> GO TO 3. NO >> Repair or rep CHECK HAZARD SW	<u>prmal?</u> lace harness. ITCH SIGNAL SHC		29	Existed
Check continuity betweer	hazard switch har	ness connector a	nd ground.	
Haz	ard switch		Ground	Continuity
M45	2		Ground	Not existed
s the inspection result no	prmal?			

< DTC/CIRCUIT DIAGNOSIS >

>> Replace BCM. Refer to BCS-99, "Removal and Installation". YES

NO >> Repair or replace harness.

< DTC/CIRCUIT DIAGNOSIS >

4. CHECK HAZARD SWITCH GROUND OPEN CIRCUIT

Check continuity between hazard switch harness connector and ground.

Hazard	d switch		Continuity
Connector Terminal		Ground	Continuity
M45 1			Existed

Is the inspection result normal?

YES >> Replace hazard switch.

NO >> Repair or replace harness.

EXTERIOR LIGHTING SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS > SYMPTOM DIAGNOSIS EXTERIOR LIGHTING SYSTEM SYMPTOMS

Symptom Table

INFOID:000000012408029

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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 <u>EXL-159, "Component</u> <u>Function Check"</u> .	
	Both sides	Symptom diagnosis "BOTH SIDE HEADLAMPS (HI) A Refer to <u>EXL-182, "Diagnosis Proc</u>	RE NOT TURNED ON"	
High beam indicator lamp [Headlamp (HI) is turned (is not turned ON. DN.]	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 <u>EXL-161, "Component</u> <u>Function Check"</u> .	
	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 <u>BCS-97, "Symptom Table"</u> .	
		 Optical sensor Harness between optical sensor and BCM BCM 	Optical sensor Refer to <u>EXL-174, "Component</u> <u>Function Check"</u> .	
Parking lamp is not turned ON.		 Fuse Parking lamp bulb Harness between IPDM E/R and front combination lamp Harness between front combi- nation lamp and ground IPDM E/R 	Parking lamp circuit Refer to <u>EXL-163, "Component</u> <u>Function Check"</u> .	
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 <u>EXL-165, "Component</u> <u>Function Check"</u> .	

[HALOGEN TYPE]

EXTERIOR LIGHTING SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[HALOGEN TYPE]

Symp	otom	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 combi- nation lamp and ground IPDM E/R 	Tail lamp circuit Refer to <u>EXL-166, "Component</u> <u>Function Check"</u> .
License plate lamp is not t	urned 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 <u>EXL-168. "Component</u> <u>Function Check"</u> .
Parking lamp, side marker cense plate lamp are not to	lamp, tail lamp and li- urned ON.	Symptom diagnosis "PARKING, SIDE MARKER, LICEN NOT TURNED ON" Refer to <u>EXL-184, "Diagnosis Proc</u>	NSE PLATE AND TAIL LAMPS ARE
Tail lamp indicator is not tu (Exterior lamps are turned	rned ON. ON.)	Combination meter	 Combination meter Data monitor "LIGHT IND" BCM (HEADLAMP) Active test "TAIL LAMP"
Turn signal lamp does not	Indicator lamp is nor- mal. (Applicable side per- forms high flasher acti- vation.)	 Turn signal lamp bulb Door mirror Harness between BCM and each turn signal lamp Harness between each turn sig- nal lamp and ground 	Turn signal lamp circuit Refer to <u>EXL-169, "Component</u> <u>Function Check"</u> .
	Indicator lamp is includ- ed.	 Combination switch Harness between combination switch and BCM BCM 	Combination switch Refer to <u>BCS-97, "Symptom Table"</u> .
	One side	Combination meter	—
Turn signal indicator lamp does not blink.	Both sides (Always)	 Turn signal indicator lamp signal BCM Combination meter 	 Combination meter Data monitor "TURN IND" BCM (FLASHER) Active test "FLASHER"
(Turn signal lamp is nor- mal.)	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 <u>MWI-77, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u> .
 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 <u>EXL-177, "Component</u> <u>Function Check"</u> .
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 <u>EXL-172, "Component</u> <u>Function Check"</u> .
	Both sides	Symptom diagnosis "BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON" Refer to EXL-185, "Description".	
< SYMPTOM DIAGNOSIS > NORMAL OPERATING CONDITION

Description

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.

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INFOID:000000012408031

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BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON

< SYMPTOM DIAGNOSIS >

BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON

Description

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

Diagnosis Procedure

1.COMBINATION SWITCH INSPECTION

Check combination switch. Refer to <u>BCS-97, "Symptom Table"</u>.

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
	Lighting switch	HI or PASS	On
	(2ND)	LO	Off

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace BCM. Refer to <u>BCS-99</u>. "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 <u>GI-41, "Intermittent Incident"</u>.

NO >> Repair or replace the malfunctioning part.

[HALOGEN TYPE]

INFOID:000000012408034

BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON AGNOSIS > [HALOGEN TYPE]

<	SYMPTON	M DIAGNOS	S >

BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON

Description			INFOID:000000012408036	A
Both side headlamps (LO) a Diagnosis Procedure	re not turned ON in ar	y condition.	INFOID:000000012408037	В
1.CHECK COMBINATION	SWITCH			С
Check combination switch. I Is the inspection result norm YES >> GO TO 2.	Refer to <u>BCS-97, "Sym</u> al? a the malfunctioning p	iptom Table".		D
2.CHECK HEADLAMP (LC)) REQUEST SIGNAL	INPUT		E
 CONSULT DATA MONIT Select "HL LO REQ" of With operating the lightight 	DR IPDM E/R data monito ng switch, check the m	r item. nonitor status.		F
Monitor item		Condition	Monitor status	
HL LO REQ	Lighting switch	2ND	On	G
		OFF	Off	
Is the inspection result normYES>> GO TO 3.NO>> Replace BCM. I 3. HEADLAMP (LO) CIRCL	<u>ial?</u> Refer to <u>BCS-99, "Ren</u> IIT INSPECTION	noval and Installation".		Н
Check headlamp (LO) circui	t. Refer to <u>EXL-161, "(</u>	Component Function Check".		1
Is the inspection result normYES>> Refer to GI-41.NO>> Repair or replace	al? "Intermittent Incident". the malfunctioning p	art.		J
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PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMPS ARE NOT TURNED ON

< SYMPTOM DIAGNOSIS >

[HALOGEN TYPE]

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

Description

INFOID:000000012408038

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

Diagnosis Procedure

INFOID:000000012408039

1. COMBINATION SWITCH INSPECTION

Check combination switch. Refer to <u>BCS-97, "Symptom Table"</u>.

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
	Lighting switch	1ST	On
TAIL & ULR REQ		OFF	Off

Is the inspection result normal?

YES >> Replace IPDM E/R.

NO >> Replace BCM. Refer to <u>BCS-99, "Removal and Installation"</u>.

BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

< SYMPTOM DIAGNOSIS >

BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

Description

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

Diagnosis Procedure

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				Continuity	
Connec	Connector		Terminal	Cround	Continuity	
RH	F245	Ground		Net evicted		
LH	E345	87	,		Not existed	
the inspection result no	rmal?					
YES >> Replace fuse. NO >> Repair or repl	. [Replace IPDM E/F lace harness. And th	R if the fuse hen replace	e blown (o e the fuse.	pen) again.]		
COMBINATION SWIT	CH INSPECTION					
heck combination switch	n. Refer to <u>BCS-97,</u>	"Symptom	Table".			
the inspection result no	rmal?					
YES >> GO TO 4.	less the medius stics	in a sout				
NO >> Repair or repi	ace the malfunction	ing part.				
CHECK FRONT FOG	LAMP REQUEST S	IGNAL INF	νUT			
CONSULT DATA MONI Select "FR FOG REQ With operating the fro	ITOR ² of IPDM E/R data ont fog lamp switch,	monitor ite	em. monitor st	atus.		
Monitor item		Condi	tion		Monitor status	
	Front fog lamp swit	ch	ON		On	
FR FUG REQ	(With lighting switc)	h 2ND)			0"	

Is the item status normal?

YES >> GO TO 5.

NO >> Replace BCM. Refer to <u>BCS-99</u>, "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 <u>GI-41, "Intermittent Incident"</u>.

NO >> Repair or replace the malfunctioning part.

[HALOGEN TYPE]

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INFOID:000000012408041

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< PERIODIC MAINTENANCE >

INFOID:000000012408042

PERIODIC MAINTENANCE HEADLAMP AIMING ADJUSTMENT

Description

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
^	Headlamp BH (UD/DOM/N)	Clockwise	UP
~		Counterclockwise	DOWN

HEADLAMP AIMING ADJUSTMENT

< PERIODIC MAINTENANCE >

[HALOGEN TYPE]

INFOID:000000012408043

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

Aiming Adjustment Procedure

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) \pm 350 \pm 175 mm (13.78 \pm 6.89 in)

Low beam distribution on the screen



 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)	EXL
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)	M



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

< PERIODIC MAINTENANCE >

FRONT FOG LAMP AIMING ADJUSTMENT

Description

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.





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).



INFOID:000000012408045

FRONT FOG LAMP AIMING ADJUSTMENT

< PERIODIC MAINTENANCE >

[HALOGEN TYPE]

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



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REMOVAL AND INSTALLATION FRONT COMBINATION LAMP

Exploded View

REMOVAL

INFOID:000000012408046



- Front combination lamp 1.

DISASSEMBLY



- 1. Front combination lamp housing assembly
- 4. Halogen bulb (LO)
- 7. Bumper bracket

- 2. Front side marker lamp bulb
- 5. Halogen bulb (HI)
- 8. Front turn signal lamp/parking lamp 9. Back cover bulb
- 3. Front side marker lamp bulb socket
- 6. Front turn signal lamp/parking lamp bulb socket

FRONT COMBINATION LAMP

< REMOVAL AND INSTALLATION >	[HALOGEN ITPE]
Removal and Installation	INFOID:000000012408047
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	
CAUTION:	
After installation, perform aiming adjustment. Refer to <u>EXL-186, "Description"</u> .	
Replacement	INFOID:000000012408048
CAUTION:	
 Disconnect the battery negative terminal or the fuse. After installing the bulb install the resin can and the bulb socket securely for 	watertightness
 Never touch the glass of bulb directly by hand. Keep grease and other oily mail 	atters 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 ato 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 build socket from the front combination lamp housing assembly	
FRONT TURN SIGNAL LAMP/PARKING LAMP BULB	
 Rotate the bulb socket counterclockwise and unlock it. Remove the bulb from the bulb socket 	
RONT SIDE MARKER LAWF BULB A Retate the hulb socket counterclockwise and unlock it	
 Remove the bulb from the bulb socket. 	
Disassembly and Assembly	
	INFOID:000000012408049
DISASSEMBLY	
1. Rotate the halogen bulb (LO) socket counterclockwise and unlock it.	
2. Remove halogen bulb (LO) socket from the front combination lamp assembly.	
 A 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.

Revision: October 2015

EXL-191

CAUTION:

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

FRONT FOG LAMP

Exploded View

INFOID:000000012408050

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FRONT FOG LAMP

< REMOVAL AND INSTALLATION >

2. Disconnect front fog lamp bulb connector (1).

3. Rotate the bulb (2) counterclockwise and unlock it.

[HALOGEN TYPE]



OPTICAL SENSOR

< REMOVAL AND INSTALLATION >

OPTICAL SENSOR

Exploded View

INFOID:000000012408053

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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.

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LIGHTING & TURN SIGNAL SWITCH

Exploded View

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

HAZARD SWITCH

< REMOVAL AND INSTALLATION >

HAZARD SWITCH

Exploded View

INFOID:000000012408056

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SIDE TURN SIGNAL LAMP

Exploded View

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

REAR COMBINATION LAMP

< REMOVAL AND INSTALLATION >

REAR COMBINATION LAMP

Exploded View

REMOVAL

INFOID:000000012408059

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DISASSEMBLY



- 1. Rear combination lamp housing assembly
- Rear turn signal lamp bulb 3. Bulb socket assembly

4. Tail lamp/stop lamp bulb

Removal and Installation

CAUTION:

Disconnect the battery negative terminal or the fuse. REMOVAL

2.

REAR COMBINATION LAMP

< REMOVAL AND INSTALLATION >

- 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:000000012408061

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

REMOVAL

INFOID:000000012408062

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1. Back-up lamp assembly

♀ : N·m (kg-m, in-lb)

DISASSEMBLY



Removal and Installation

CAUTION:

Disconnect the battery negative terminal or the fuse. REMOVAL

BACK-UP LAMP

< REMOVAL AND INSTALLATION >

- 1. Remove touch sensor (with automatic back door). Refer to <u>DLK-476, "TOUCH SENSOR : Removal and</u> <u>Installation"</u>.
- 2. Remove back door lower finisher. Refer to <u>INT-48</u>, "BACK DOOR LOWER FINISHER : Removal and <u>Installation</u>".
- 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:000000012408064

[HALOGEN TYPE]

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 <u>INT-48. "BACK DOOR LOWER FINISHER : Removal and</u> <u>Installation"</u>.
- 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

< REMOVAL AND INSTALLATION >

HIGH-MOUNTED STOP LAMP

Exploded View

INFOID:000000012408065

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- 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.

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[HALOGEN TYPE]

LICENSE PLATE LAMP

Exploded View

INFOID:000000012408067



3.

- License plate lamp bulb socket 1.
- 4 Back door finisher
- $(\overline{})$: Clip
- 八:Pawl

Removal and Installation

CAUTION:

Disconnect the battery negative terminal or the fuse.

REMOVAL

- 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

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.
- Rotate license plate lamp bulb socket counterclockwise and unlock it.
- Remove license plate lamp bulb from license plate lamp bulb socket. 4.

EXL-204

INFOID:000000012408069

REFLEX REFLECTOR

< REMOVAL AND INSTALLATION >

REFLEX REFLECTOR

Exploded View



[HALOGEN TYPE]



1. Reflex reflector

∠___ : Pawl

Removal and Installation

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.

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< SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS) SERVICE DATA AND SPECIFICATIONS (SDS)

Bulb Specifications

INFOID:000000012408072

[HALOGEN TYPE]

Item		Туре	Wattage (W)
	Headlamp (HI)	HB3 (Halogen)	60
	Headlamp (LO)	H11 (Halogen)	55
Front combination lamp	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	_