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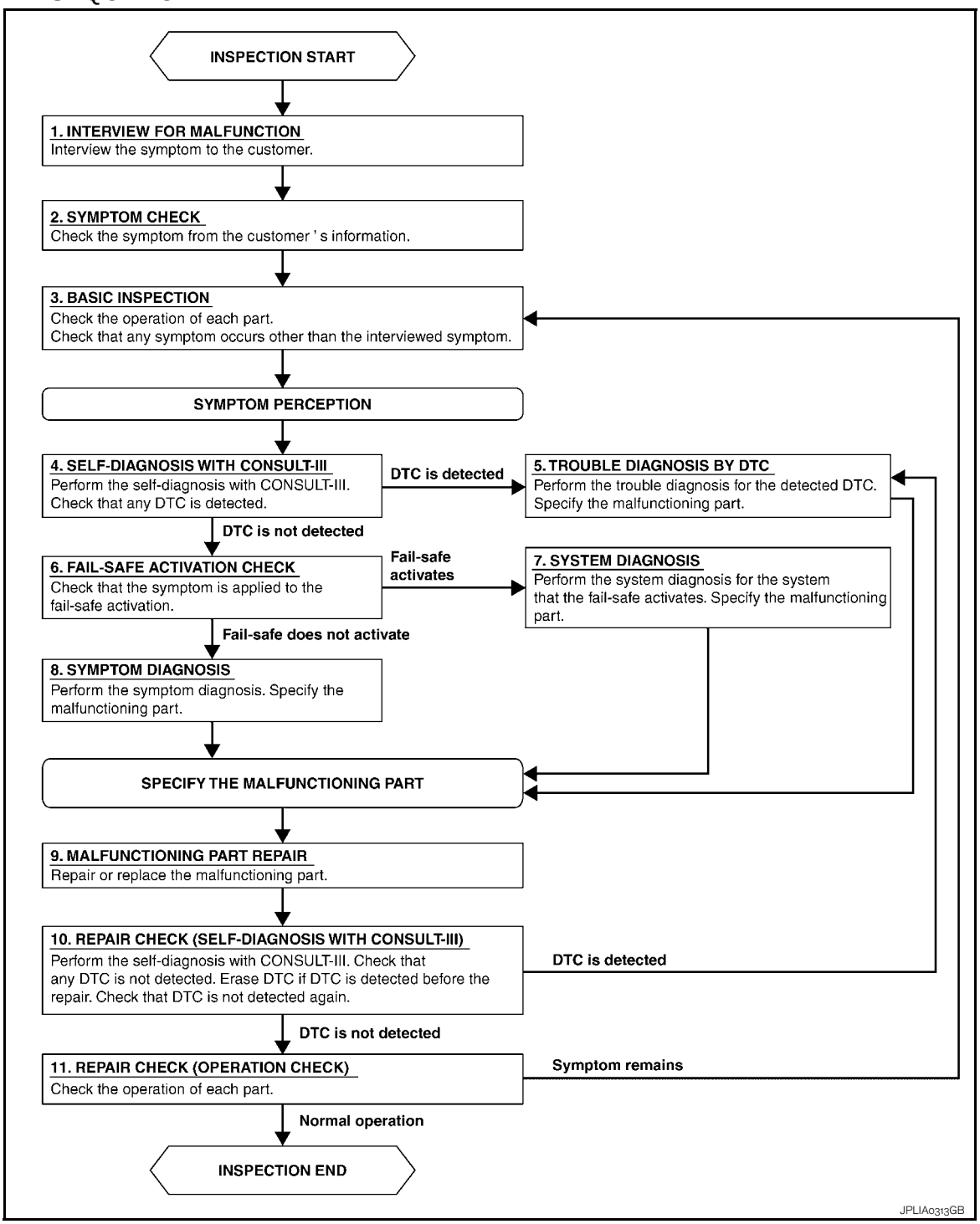
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000001078334

OVERALL SEQUENCE



DETAILED FLOW

1. INTERVIEW FOR MALFUNCTION

Interview the symptom to the customer.

>> GO TO 2.

2.SYMPTOM CHECK

Check the symptom from the customer's information.

>> GO TO 3.

3.BASIC INSPECTION

Check the operation of each part. Check that any symptom occurs other than the interviewed symptom.

>> GO TO 4.

4.SELF-DIAGNOSIS WITH CONSULT-III

Perform the self-diagnosis with CONSULT-III. Check that any DTC is detected.

Is any DTC detected?

YES >> GO TO 5.
NO >> GO TO 6.

5.TROUBLE DIAGNOSIS BY DTC

Perform the trouble diagnosis for the detected DTC. Specify the malfunctioning part.

>> GO TO 9.

6.FAIL-SAFE ACTIVATION CHECK

Check that the symptom is applied to the fail-safe activation.

Does the fail-safe activate?

YES >> GO TO 7.
NO >> GO TO 8.

7.SYSTEM DIAGNOSIS

Perform the system diagnosis for the system that the fail-safe activates. Specify the malfunctioning part.

>> GO TO 9.

8.SYMPTOM DIAGNOSIS

Perform the symptom diagnosis. Specify the malfunctioning part.

>> GO TO 9.

9.MALFUNCTION PART REPAIR

Repair or replace the malfunctioning part.

>> GO TO 10.

10.REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT-III)

Perform the self-diagnosis with CONSULT-III. Check that any DTC is not detected. Erase DTC if DTC is detected before the repair. Check that DTC is not detected again.

Is any DTC detected?

YES >> GO TO 5.
NO >> GO TO 11.

11.REPAIR CHECK (OPERATION CHECK)

Check the operation of each part.

Does it operate normally?

YES >> INSPECTION END

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NO >> GO TO 3.

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INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description

INFOID:0000000000955368

HEADLAMP AIMING CONTROL SYSTEM
Perform the sensor initialize with CONSULT-III when replacing the auto levelizer control unit.

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement (HEADLAMP AIMING CONTROL UNIT)

INFOID:0000000000955369

1.SENSOR INITIALIZE

Perform the sensor initialize.

>> Refer to EXL-10, "SENSOR INITIALIZE : Special Repair Requirement".

SENSOR INITIALIZE

SENSOR INITIALIZE : Description

INFOID:0000000000955370

HEADLAMP AIMING CONTROL SYSTEM
Perform the sensor initialize when installing, removing and replacing the auto levelizer control unit and suspension components.

SENSOR INITIALIZE : Special Repair Requirement

INFOID:0000000000955371

1.VEHICLE CONDITION CHECK

1. Park the vehicle in the straight-forward position.
2. Unload the vehicle (no passenger aboard).

>> GO TO 2.

2.SENSOR INITIALIZE

CONSULT-III WORK SUPPORT
1. Turn the headlamp (LO) ON.
2. Connect the CONSULT-III.
3. Select "SENSOR INITIALIZE" of HEADLAMP LEVELIZER work support item.
4. Select "START".
5. When "INITIALIZE COMPLETE", select "END".

CAUTION:
If "INITIALIZE NOT DONE" is indicated, auto levelizer control unit detects that the sensor lever signal changes. The sensor initialize is cancelled. In this case, turn the ignition switch OFF to prevent the vehicle from the height change. Perform the sensor initialize again.

Is the sensor initialize completed?

YES >> GO TO 3.
NO >> Perform the sensor initialize again.

3.SELF-DIAGNOSIS RESULT CHECK

Perform the self-diagnosis with CONSULT-III. Check that any DTC is not detected.

Is any DTC detected?

YES >> GO TO 2.
NO >> Sensor initialize completed.

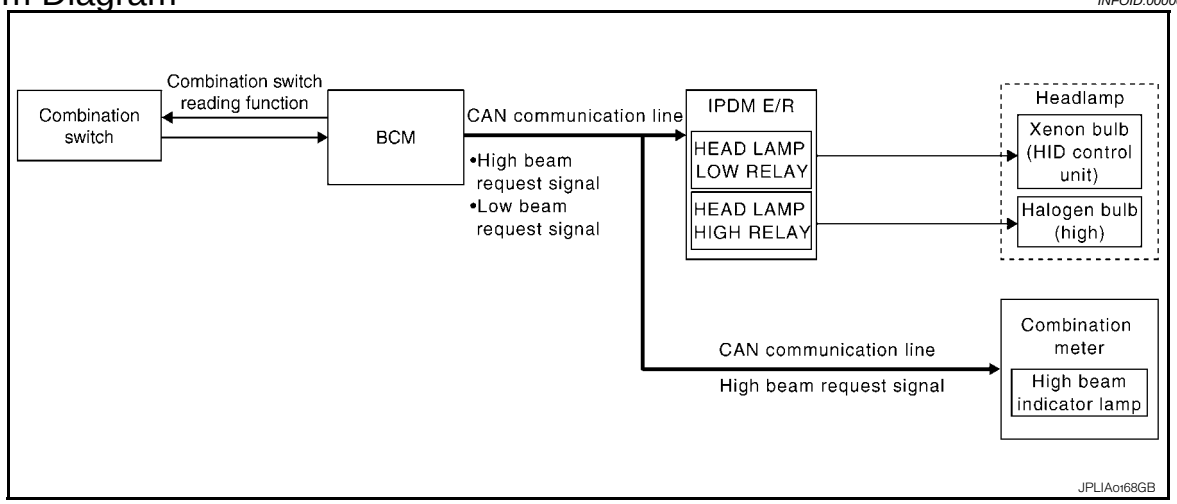
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FUNCTION DIAGNOSIS

HEADLAMP SYSTEM

System Diagram

INFOID:0000000000955372



System Description

INFOID:0000000000955373

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, and the auto light function ON judgment (With auto light system)
- Daytime running light ON judgment (With daytime running light system)

- 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.

FOLLOW ME HOME FUNCTION

When the driver is moving to the house entrance from the own vehicle, headlamp is kept still ON by the follow me home function of BCM.

- When BCM detects the input of lighting switch PASS with all of following condition, it transmits the low beam request signal for a period of time to IPDM E/R through CAN communication.
- IPDM E/R turns the integrated headlamp low relay ON, and turns the headlamp ON according to the low beam request signal.
- Ignition switch OFF
- Lighting switch OFF or AUTO

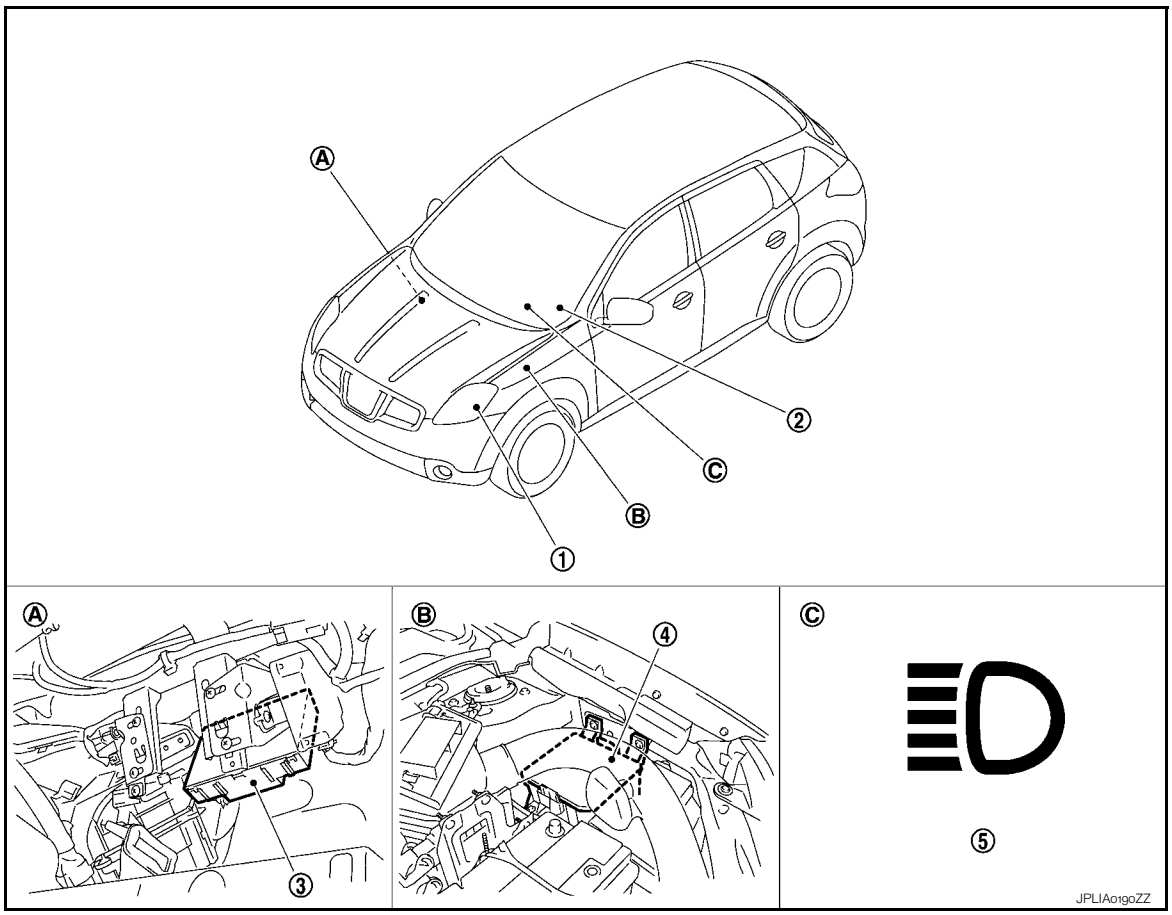
NOTE:

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Follow me home function activating time can be set by CONSULT-III. Refer to EXL-27, "HEADLAMP : CONSULT-III Function (BCM - HEAD LAMP)".

Component Parts Location

INFOID:0000000000955374



1. Headlamp
2. Combination switch
3. BCM
4. IPDM E/R
5. High beam indicator lamp
A. Over the glove box
B. Engine room (left side)
C. On the combination meter

Component Description

INFOID:0000000000955375

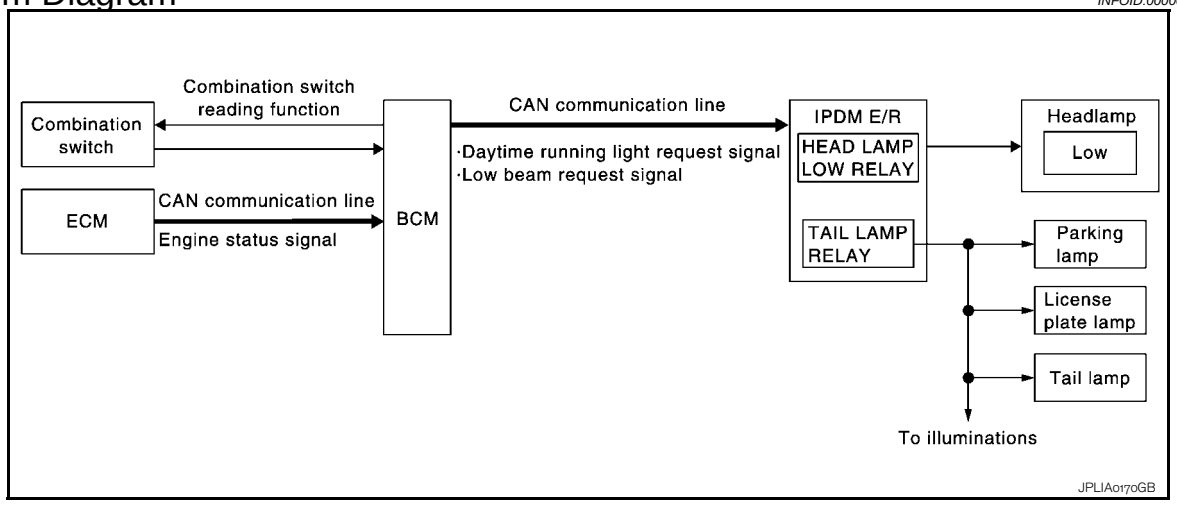
Part		Description
BCM		• Detects each switch condition by the combination switch reading function. • Judges that the headlamp is turned ON according to the vehicle condition. - Requests the headlamp relay (HI/LO) ON to IPDM E/R (with CAN communication). - Requests the high beam indicator lamp ON to the combination meter (with CAN communication).
IPDM E/R		Controls the integrated relay, and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)		Refer to BCS-9, "System Diagram".
Combination meter (High beam indicator lamp)		Turns the high beam indicator lamp ON according to the request from BCM (with CAN communication).
Front combination lamp assembly	• HID control unit • Xenon bulb	Refer to EXL-57, "Description".

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DAYTIME RUNNING LIGHT SYSTEM

System Diagram

INFOID:0000000000969362



System Description

INFOID:0000000000969363

OUTLINE

- Turns the following exterior lamps ON as the daytime running light.
- headlamp (LO)
- Tail lamp, parking lamp and license plate lamp
- Daytime running light is controlled by daytime running light control function and combination switch reading function of BCM, and relay control function of IPDM E/R.

DAYTIME RUNNING LIGHT OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM detects the engine condition by the engine status signal received from ECM with CAN communication.
- BCM transmits the daytime running light request signal and low beam request signal to IPDM E/R with CAN communication according to the daytime running light ON condition.

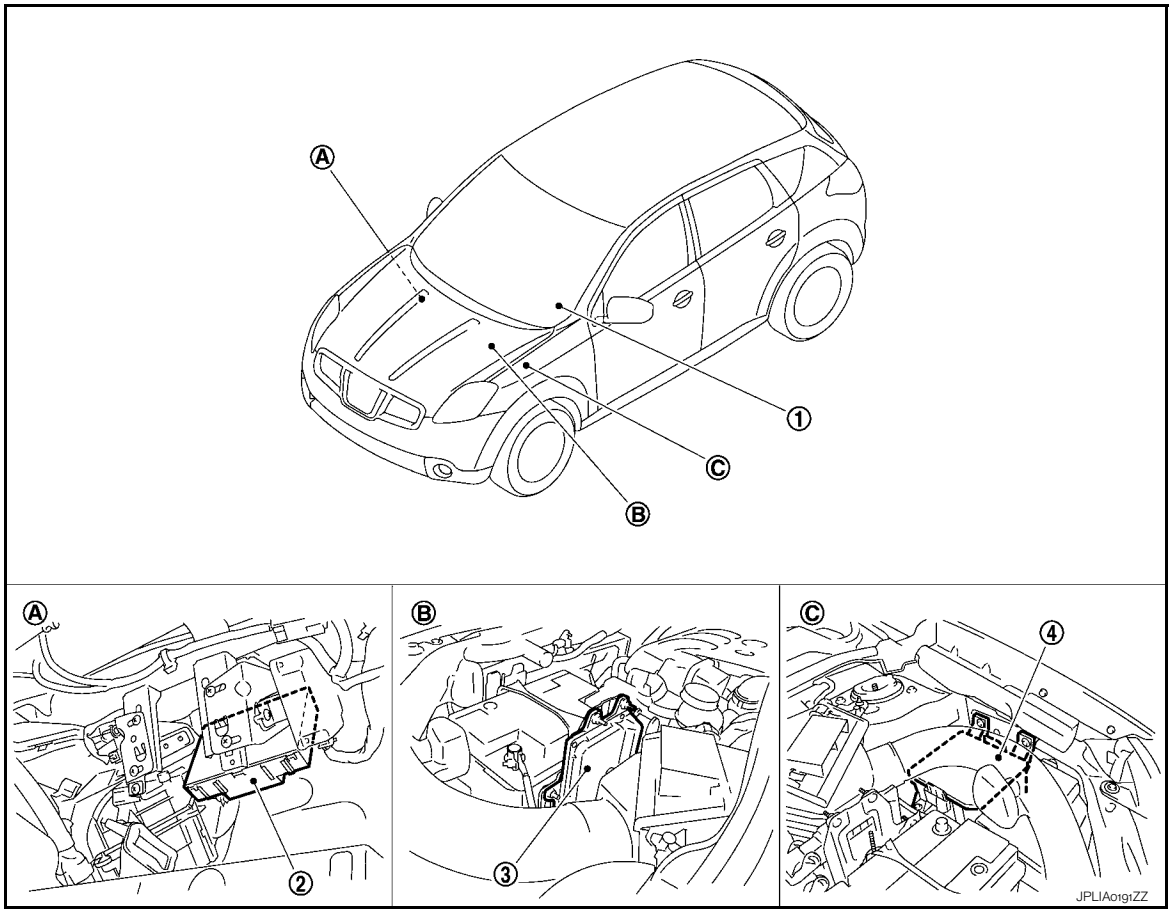
Daytime running light ON condition

- Engine running
- Lighting switch OFF or AUTO
- IPDM E/R turns the integrated headlamp low relay and tail lamp relay ON according to the daytime running light request signal and low beam request signal. And it turns each lamps ON.

Component Parts Location

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1. Combination switch
2. BCM
3. ECM
4. IPDM E/R
A. Over the glove box
B. Engine room (left side)
C. Engine room (left side)

Component Description

INFOID:0000000000969365

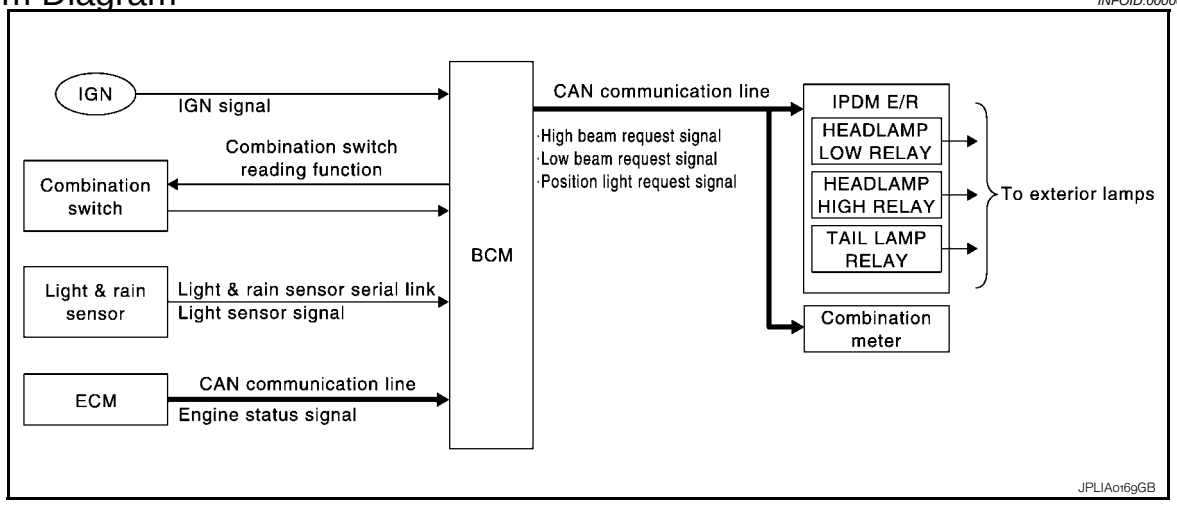
Part	Description
BCM	• Detects each switch condition with the combination switch reading function. • Judges each lamps ON/OFF condition according to the vehicle condition. Requests the each relay ON to IPDM E/R (with CAN communication).
IPDM E/R	Controls the integrated relay and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-9, "System Diagram".
ECM	Transmits the engine status signal to BCM with CAN communication.

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AUTO LIGHT SYSTEM

System Diagram

INFOID:0000000000955376



System Description

INFOID:0000000000955377

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

Control by IPDM E/R
- Relay control function
- Auto light function turns the exterior lamps* ON/OFF automatically according to the outside brightness.
  *: Headlamp (LO/HI), parking lamp, tail lamp (Headlamp HI depends on the combination switch condition.)

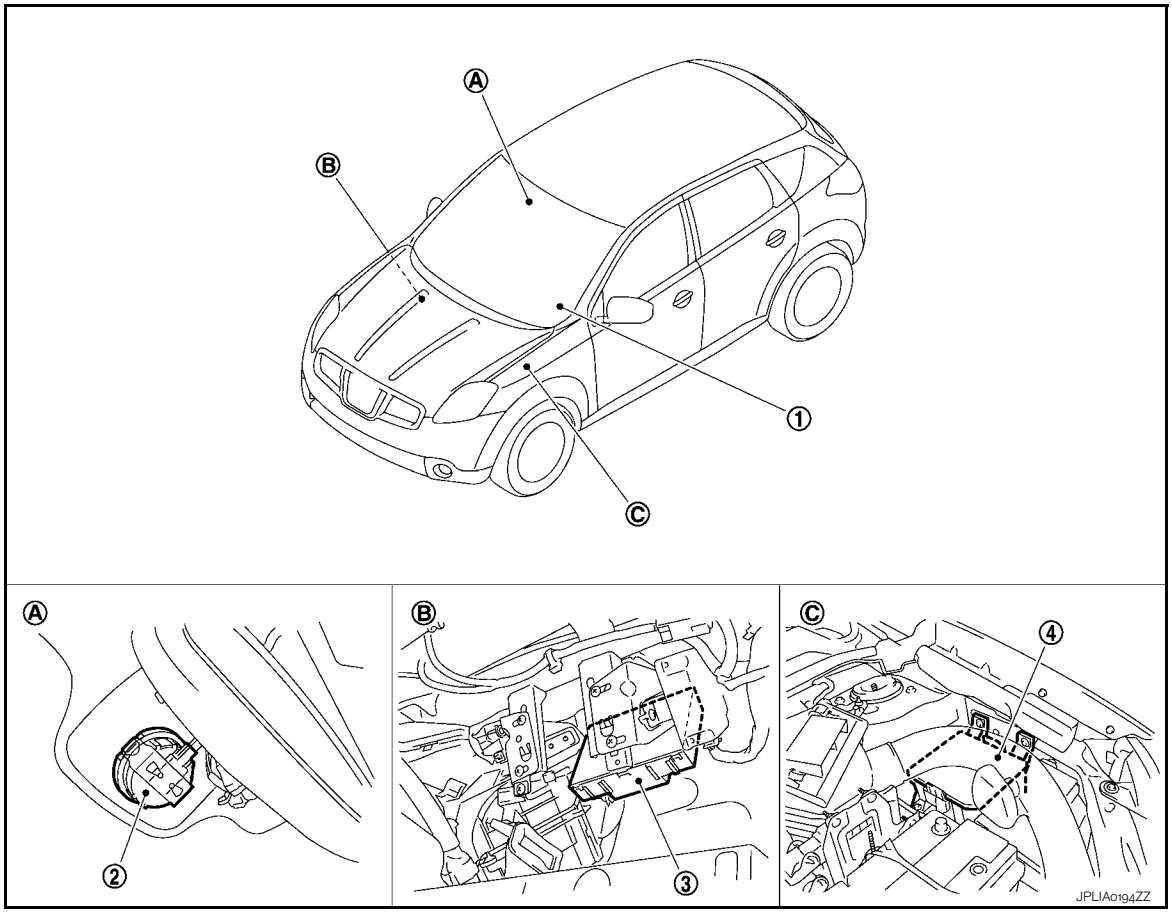
AUTO LIGHT FUNCTION

- BCM detects the combination switch condition with the combination switch reading function.
- BCM detects the engine condition by the engine status signal received from ECM with CAN communication.
- BCM receives the light sensor signal [outside brightness (lux) and the light & rain sensor condition] from light & rain sensor with the light & rain sensor serial link.
- BCM judges ON/OFF condition of the exterior lamps according to the outside brightness and the vehicle condition.
- BCM transmits each request signal to IPDM E/R with CAN communication according to ON/OFF condition by the auto light function.

Component Parts Location

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1. Combination switch
2. Light & rain sensor
3. BCM
4. IPDM E/R
A. Windshield upper
B. Over the glove box
C. Engine room (left side)

Component Description

INFOID:0000000000955379

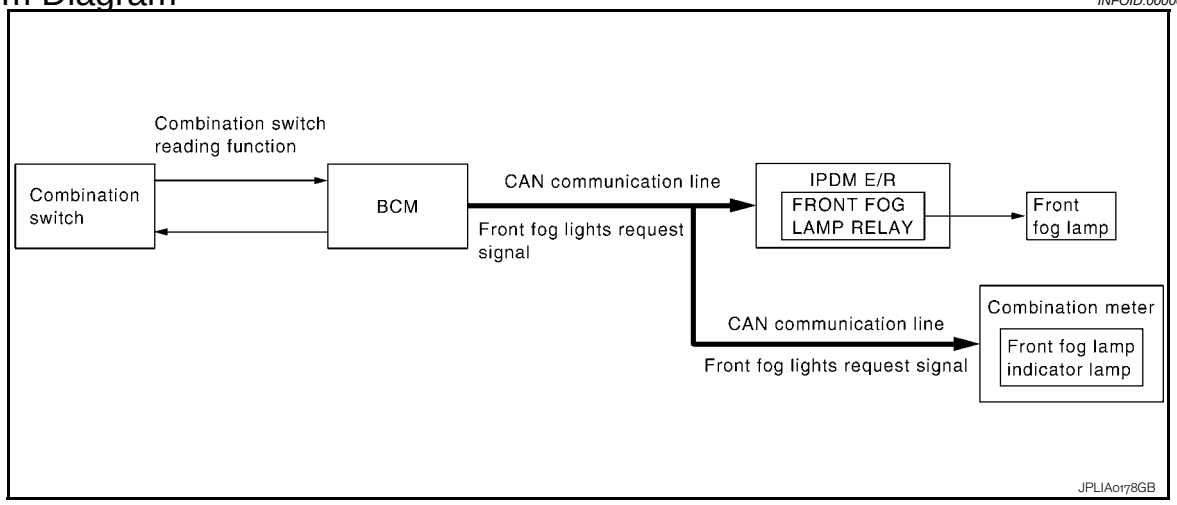
Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Detects the outside brightness from the light & rain sensor by light & rain sensor serial link. • Judges the ON/OFF status of the exterior lamp according to the outside brightness and the vehicle condition. • Requests ON/OFF of each relay to IPDM E/R (with CAN communication).
IPDM E/R	Controls the integrated relay, and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-9, "System Diagram".
Light & rain sensor	Refer to EXL-69, "Description".

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FRONT FOG LAMP SYSTEM

System Diagram

INFOID:0000000000955380



System Description

INFOID:0000000000955381

OUTLINE

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

FRONT FOG LAMP OPERATION

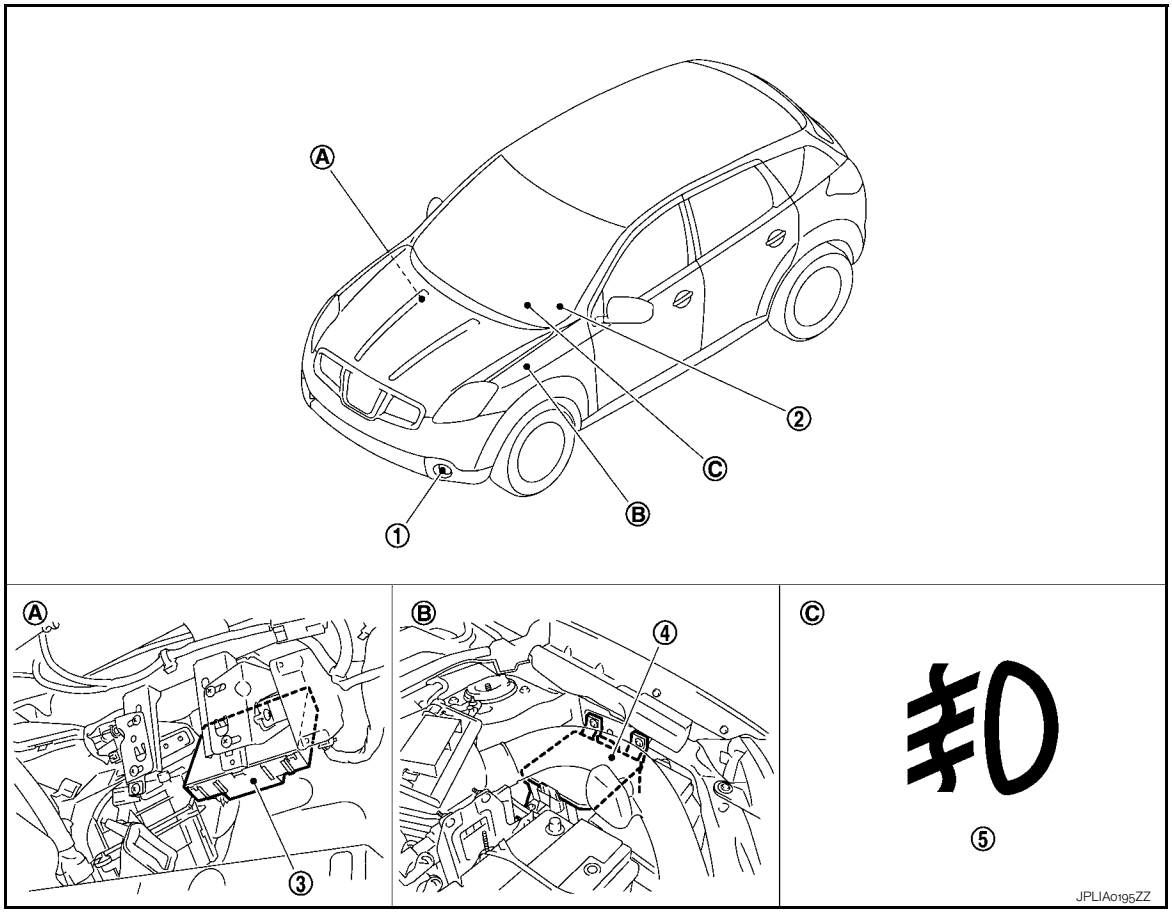
- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the front fog lights request signal to IPDM E/R and the combination meter with CAN communication according to the front fog lamp ON condition.

Front fog lamp ON condition
- Front fog lamp switch ON
- Lighting switch 1ST, 2ND, or AUTO (ignition switch ON)

- IPDM E/R turns the integrated front fog lamp relay ON, and turns the front fog lamp ON according to the front fog lights request signal.
- Combination meter turns the front fog lamp indicator lamp ON according to the front fog lights request signal.

Component Parts Location

INFOID:0000000000955382



1. Front fog lamp
2. Combination switch
3. BCM
4. IPDM E/R
5. Front fog lamp indicator lamp
A. Over the glove box
B. Engine room (left side)
C. On the combination meter

Component Description

INFOID:0000000000955383

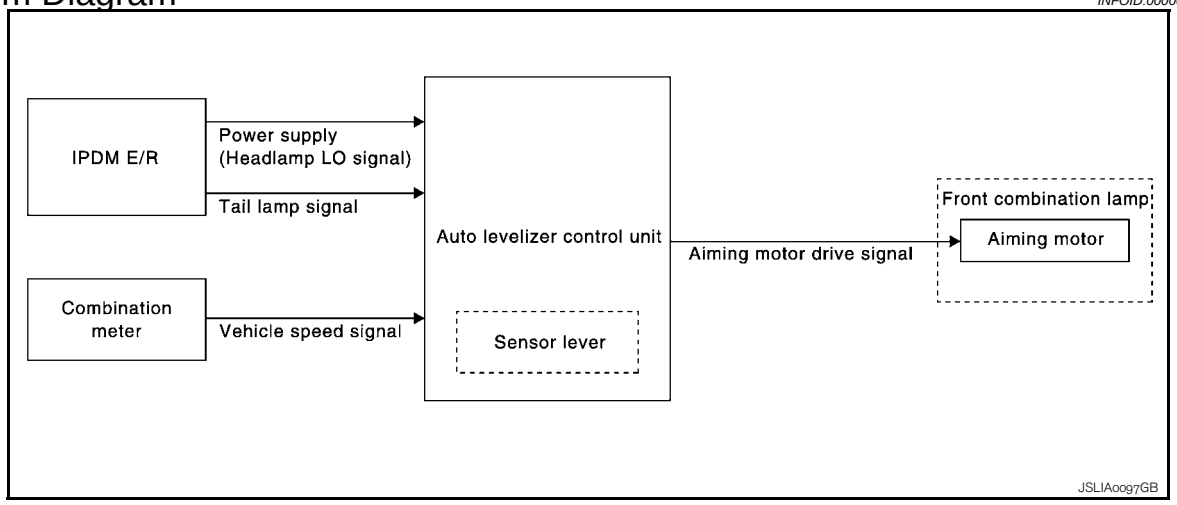
Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges the front fog lamp ON/OFF status according to the vehicle condition. - Requests the front fog lamp relay ON to IPDM E/R (with CAN communication). - Requests the front fog lamp indicator lamp ON to the combination meter (with CAN communication).
IPDM E/R	Controls the integrated relay and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-9, "System Diagram".
Combination meter (Front fog lamp indicator lamp)	Turns the front fog lamp indicator lamp ON according to the request from BCM.

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HEADLAMP AIMING CONTROL SYSTEM (AUTO)

System Diagram

INFOID:0000000000955384



System Description

INFOID:0000000000955385

OUTLINE

- Headlamp aiming control system is controlled by auto levelizer control unit.
- Auto levelizer control unit controls the headlamp light axis height appropriately depending on the vehicle rear height.
- Auto levelizer control unit detects the vehicle condition necessary for the aiming motor control with the following signals.

- Sensor lever signal (detected by the sensor lever)
- Tail lamp signal (inputted from IPDM E/R)
- Vehicle speed signal (8-pulse) (inputted from combination meter)

HEADLAMP AUTO AIMING OPERATION

- Auto levelizer control unit calculates vehicle pitch angle from sensor lever signal and determines the necessary correction to compensate the deviation from standard light axis position.
- Auto levelizer control unit outputs aiming motor drive signal when operating conditions are satisfied.

Operating condition

- Headlamp (LO) ON
- Tail lamp ON

- Auto levelizer control unit changes the aiming motor drive signal when any of the correcting condition is detected. Output is maintained if other condition is detected.

Correcting condition

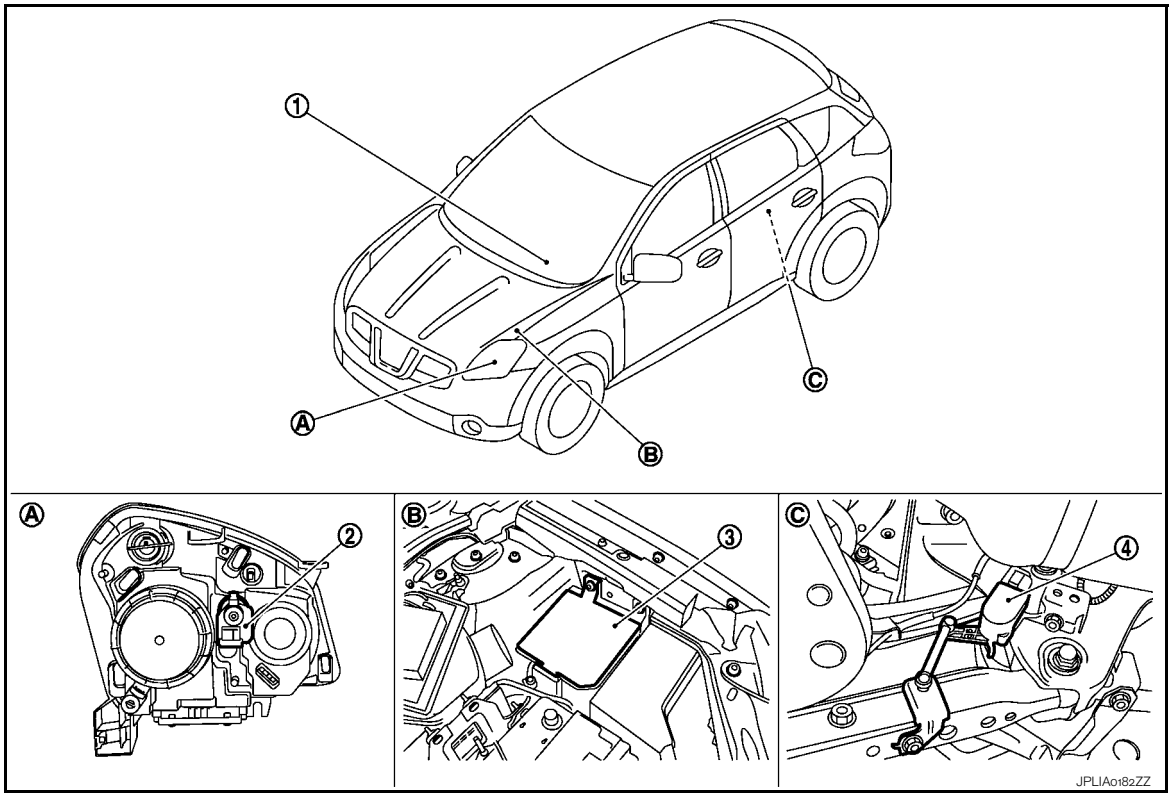
- Headlamp (LO) is turned ON.
- Vehicle posture becomes stable after the vehicle posture change is detected with the headlamp (LO) ON and the vehicle stopped.
- Vehicle speed is maintained with the headlamp (LO) ON and the vehicle driven.

CAUTION:

Adjusted axis position may differ from the preset position although the headlamp auto aiming activates properly when the suspension is replaced or worn.

Component Parts Location

INFOID:0000000000955386



1. Combination meter
2. Aiming motor
3. IPDM E/R
4. Auto levelizer control unit
A. Front combination lamp (back)
B. Engine room (left side)
C. Right rear suspension member

Component Description

INFOID:0000000000955387

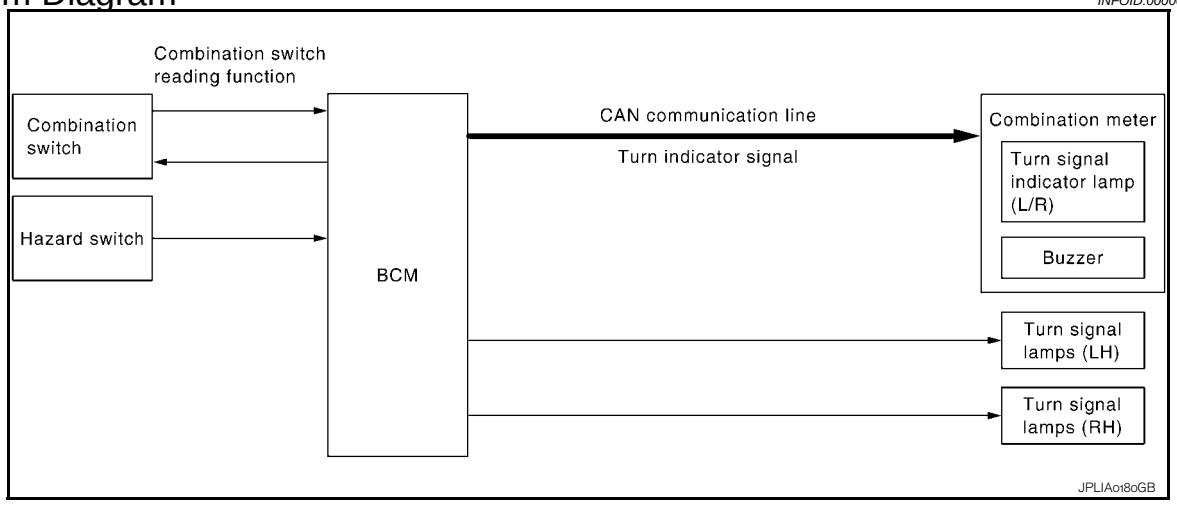
Part	Description
Auto levelizer control unit	Refer to EXL-36, "Description".
Headlamp aiming motor	Refer to EXL-59, "Description".
IPDM E/R	Outputs the tail lamp signal to auto levelizer control unit.
Combination meter	Outputs the vehicle speed signal (8-pulse) to auto levelizer control unit.

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TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

System Diagram

INFOID:0000000000955388



System Description

INFOID:0000000000955389

OUTLINE

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

TURN SIGNAL LAMP OPERATION

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

HAZARD WARNING LAMP OPERATION

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

TURN SIGNAL INDICATOR LAMP AND TURN SIGNAL OPERATION

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

3-TIME FLASHER FUNCTION

By a short touch of the turn signal lever, BCM flashes 3 times the turn signal lamps in the selected direction.

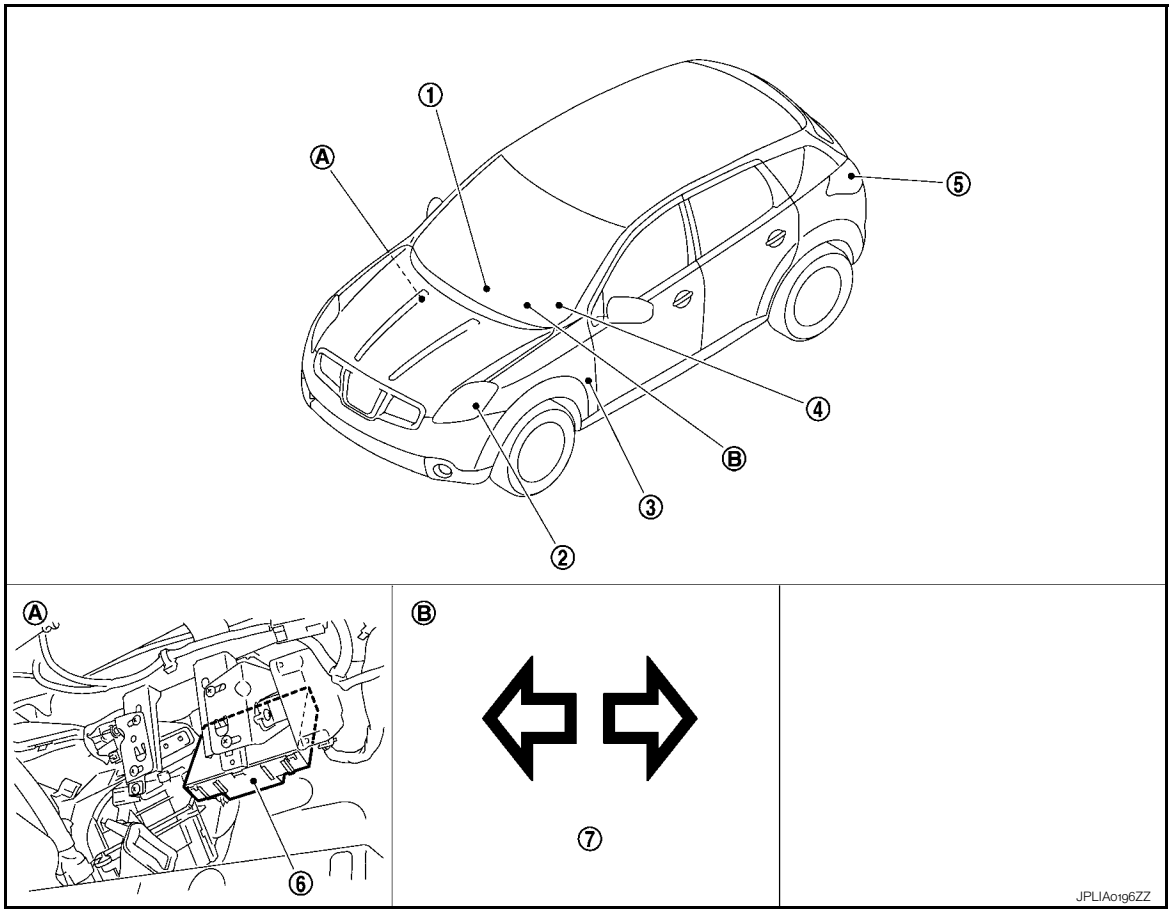
HIGH FLASHER OPERATION (FAIL-SAFE)

- BCM detects the turn signal lamp circuit status from the terminal voltage.
- 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.

Component Parts Location

INFOID:0000000000955390



1. Hazard switch
2. Front turn signal lamp
3. Side turn signal lamp
4. Combination switch
5. Rear turn signal lamp
6. BCM
7. Turn signal indicator lamp
A. Over the glove box
B. On the combination meter

Component Description

INFOID:0000000000955391

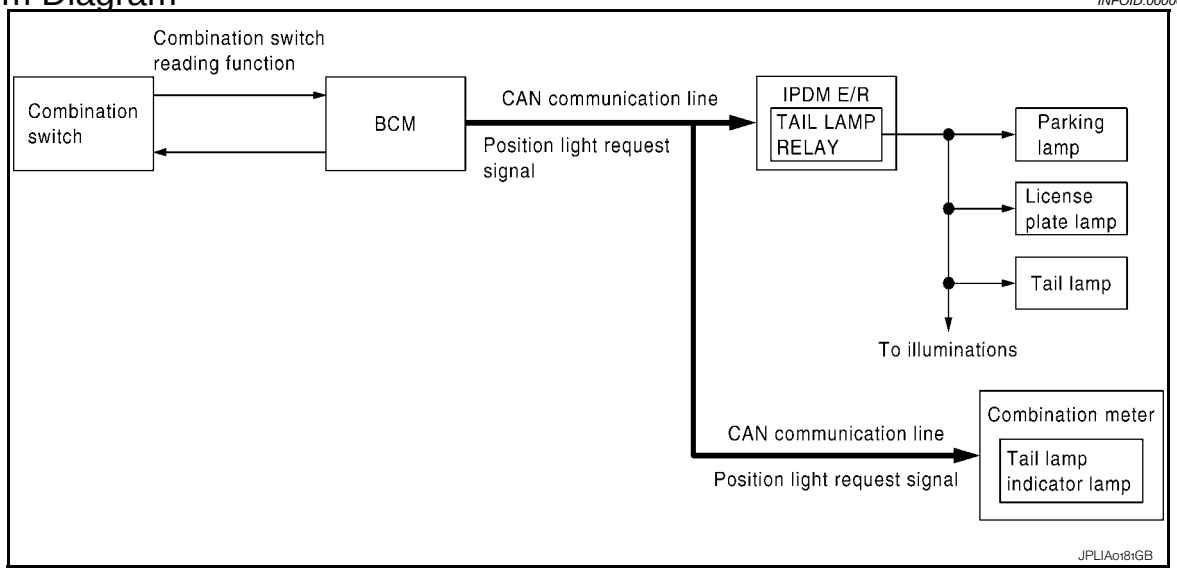
Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges the blinks of the turn signal lamp and the hazard warning lamp from each switch status. The applicable turn signal lamp blinks. • Requests the turn signal indicator lamp blink to the combination meter (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-9, "System Diagram".
Hazard switch	Inputs the hazard switch ON/OFF signal to BCM.
Combination meter (Turn signal indicator lamp & buzzer)	Blinks the turn signal indicator lamp and outputs the turn signal operating sound with integrated buzzer according to the request from BCM (with CAN communication).

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PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

System Diagram

INFOID:0000000000955392



System Description

INFOID:0000000000955393

OUTLINE

Parking, license plate 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 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 with CAN communication according to the ON/OFF condition of the parking, license plate and tail lamps.

Parking, license plate and tail lamps ON condition

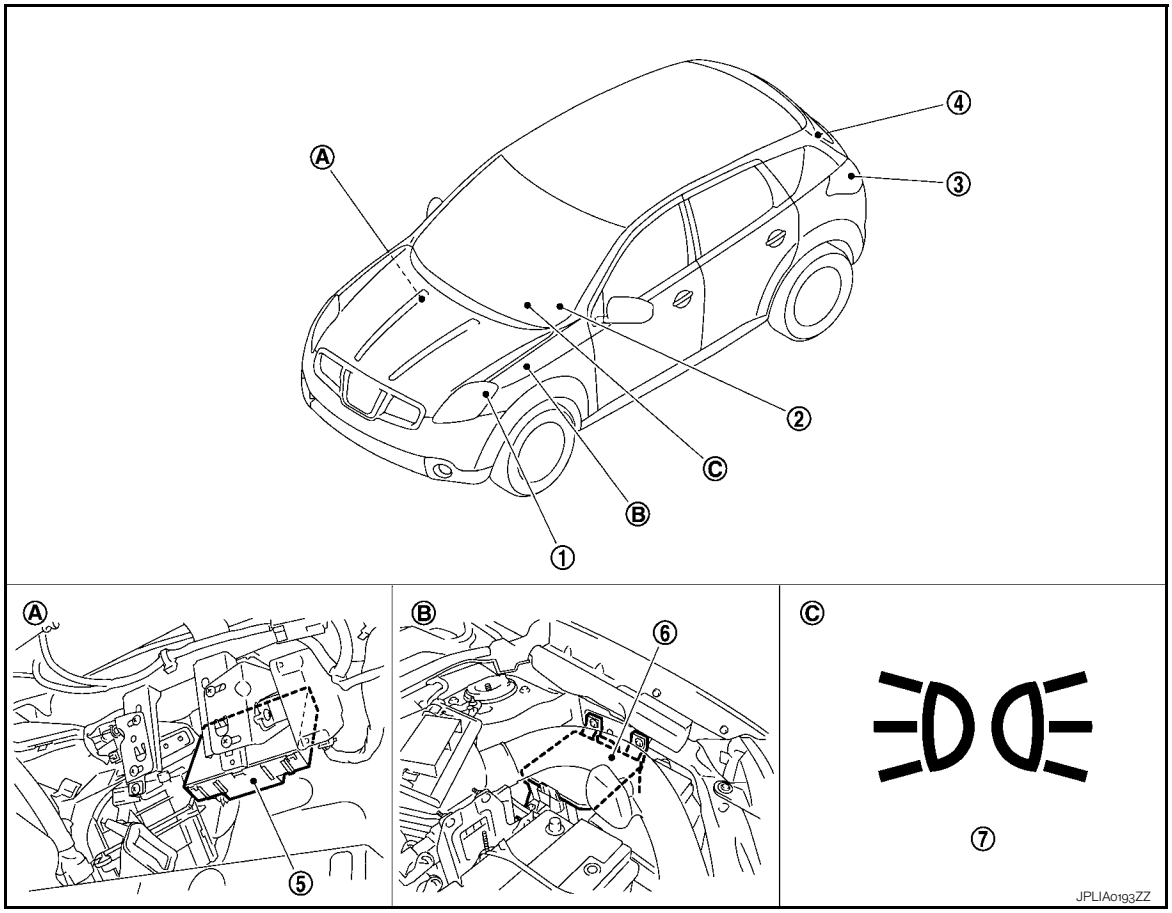
- Lighting switch 1ST
- Lighting switch 2ND
- Lighting switch AUTO, and the auto light function ON judgment (With auto light system)

- IPDM E/R turns the integrated tail lamp relay ON and turns the parking lamp, the license plate 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.

Component Parts Location

INFOID:0000000000955394

A B C D E F G H I J K EXL M N O P
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1. Parking lamp
2. Combination switch
3. Tail lamp
4. License plate lamp
5. BCM
6. IPDM E/R
7. Tail lamp indicator lamp

A. Over the glove box
B. Engine room (left side)
C. On the combination meter

Component Description

INFOID:0000000000955395

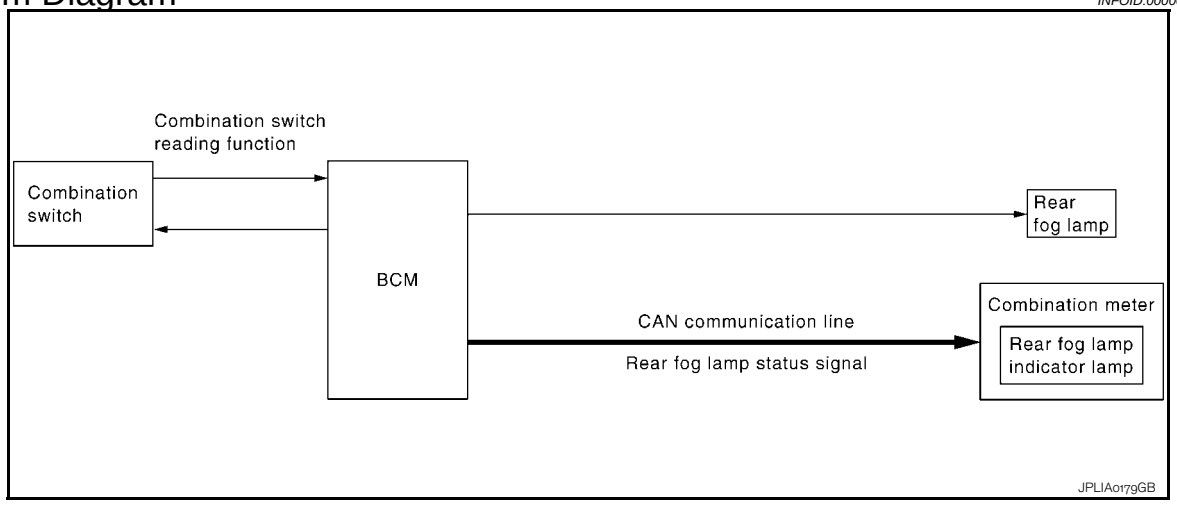
Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges the ON/OFF status of the parking, license plate and tail lamps according to the vehicle condition. - Requests the tail lamp relay ON to IPDM E/R (with CAN communication). - Requests the tail lamp indicator lamp ON to the combination meter (with CAN communication).
IPDM E/R	Controls the integrated relay and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-9, "System Diagram".
Combination meter (Tail lamp indicator lamp)	Turns the tail lamp indicator lamp ON according to the request from BCM (with CAN communication).

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REAR FOG LAMP SYSTEM

System Diagram

INFOID:0000000000955396



System Description

INFOID:0000000000955397

OUTLINE

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

REAR FOG LAMP OPERATION

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

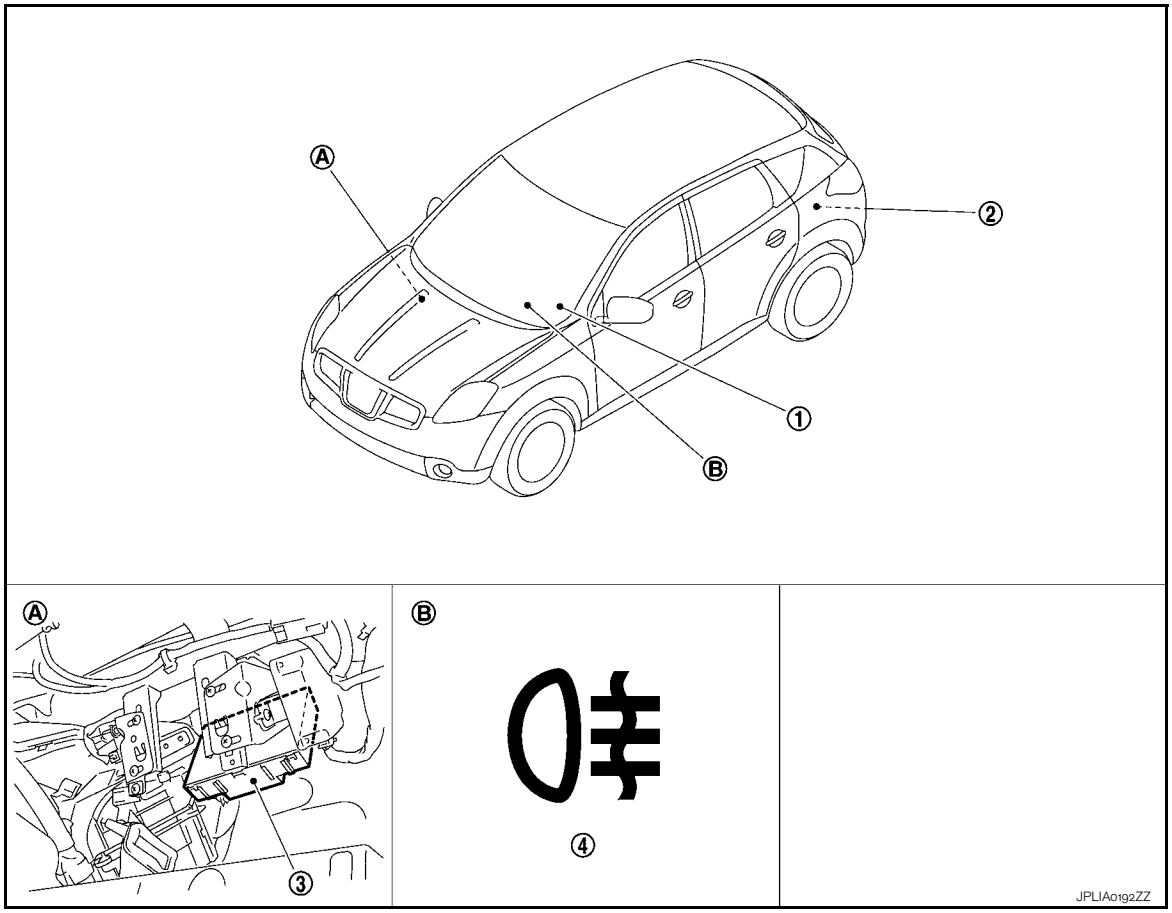
Rear fog lamp ON condition
- Rear fog lamp switch signal is input with front fog lamp ON and rear fog lamp OFF

Rear fog lamp OFF condition
- Rear fog lamp switch signal is input with rear fog lamp ON
- Front fog lamp OFF

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

Component Parts Location

INFOID:0000000000955398



1. Combination switch
2. Rear fog lamp
3. BCM
4. Rear fog lamp indicator lamp
A. Over the glove box
B. On the combination meter

Component Description

INFOID:0000000000955399

Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges that the rear fog lamp is turned ON according to the vehicle status - Supplies voltage to the rear fog lamp - Requests the rear fog lamp indicator lamp ON to the combination meter (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-9, "System Diagram".
Combination meter (Rear fog lamp indicator lamp)	Turns the rear fog lamp indicator lamp ON according to the request from BCM (with CAN communication).

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DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM)

INFOID:0000000001116333

APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
WORK SUPPORT	Changes the setting for each system function.
SELF-DIAG RESULTS	Displays the diagnosis results judged by BCM. Refer to BCS-61, "DTC Index".
CAN DIAG SUPPORT MNTR	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	• Enables to read and save the vehicle specification. • Enables to 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.

System	Sub system selection item	Diagnosis mode		
		WORK SUPPORT	DATA MONITOR	ACTIVE TEST
—	BCM	×		
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp timer	INT LAMP	×	×	×
Remote keyless entry system	MULTI REMOTE ENT	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER		×	×
Air conditioner	AIR CONDITONER		×	
Intelligent Key system	INTELLIGENT KEY		×	
Combination switch	COMB SW		×	
Immobilizer	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Trunk open	TRUNK		×	
Vehicle security system	THEFT ALM	×	×	×
Signal buffer system	SIGNAL BUFFER		×	×
PTC heater system	PTC HEATER		×	×

HEADLAMP

HEADLAMP : CONSULT-III Function (BCM - HEAD LAMP)

INFOID:0000000001026151

WORK SUPPORT

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Service item	Setting item	Setting	
HEAD LIGHT TIMER	MODE 1	10 sec.	Sets follow me home function activating time.
	MODE 2*	30 sec.	

*: Initial setting

DATA MONITOR

Monitor item [Unit]	Description
IGN ON SW [ON/OFF]	Ignition switch (ON) status judged from IGN signal (ignition power supply)
ACC SW [ON/OFF]	Ignition switch (ACC) status judged from ACC signal (ACC power supply)
HI BEAM SW [ON/OFF]	Each switch status that BCM judges from the combination switch reading function
HEAD LAMP SW1 [ON/OFF]	
HEAD LAMP SW2 [ON/OFF]	
TAIL LAMP SW [ON/OFF]	
AUTO LIGHT SW [ON/OFF]	
PASSING SW [ON/OFF]	
FR FOG SW [ON/OFF]	
RR 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 rear door switch RH
DOOR SW- RL [ON/OFF]	The switch status input from rear door switch LH
BACK DOOR SW [ON/OFF]	The switch status input from back door switch
TURN SIGNAL R [ON/OFF]	Each switch status that BCM judges from the combination switch reading function
TURN SIGNAL L [ON/OFF]	
ENGINE RUNNING [ON/OFF]	The engine status received from ECM with CAN communication
PUSH SW [ON/OFF]	Push switch status received from Intelligent Key unit by CAN communication
LIT-SEN FAIL [OK/NOTOK]	• The sensor status received from light & rain sensor with serial link • The serial link condition that BCM judges
AUT LIGHT SYS [ON/OFF]	Auto light system status that BCM judges from the vehicle condition

ACTIVE TEST

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Test item	Operation	Description
TAIL LAMP	ON	Transmits the position light request signal to IPDM E/R with CAN communication to turn the tail lamp ON.
	OFF	Stops the tail lamp request signal transmission.
HEAD LAMP	HI	Transmits the high beam request signal with CAN communication to turn the headlamp (HI).
	LO	Transmits the low beam request signal with CAN communication to turn the headlamp (LO).
	OFF	Stops the high & low beam request signal transmission.
FR FOG LAMP	ON	Transmits the front fog lights request signal to IPDM E/R with CAN communication to turn the front fog lamp ON.
	OFF	Stops the front fog lights request signal transmission.
RR FOG LAMP	ON	• Outputs the voltage to turn the rear fog lamp ON. • Transmits the rear fog lamp status signal to the combination meter with CAN communication to turn the rear fog lamp indicator lamp ON.
	OFF	• Stops the voltage to turn the rear fog lamp OFF. • Stops the rear fog lamp status signal transmission.
DAYTIME RUNNING LIGHT	ON	Transmits the day time running light request signal to IPDM E/R with CAN communication to turn the each lamps ON.
	OFF	Stops the day time running light request signal transmission.

FLASHER

FLASHER : CONSULT-III Function (BCM - FLASHER)

INFOID:0000000001026153

DATA MONITOR

Monitor item [Unit]	Description
IGN ON SW [ON/OFF]	Ignition switch (ON) status judged from IGN signal (ignition power supply)
HAZARD SW [ON/OFF]	The switch status input from the hazard switch
TURN SIGNAL R [ON/OFF]	Each switch condition that BCM judges from the combination switch reading function
TURN SIGNAL L [ON/OFF]	

ACTIVE TEST

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

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DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:0000000001098948

Auto active test

Description

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

- Oil pressure warning lamp
- Rear window defogger
- Front wiper (LO, HI)
- Parking lamps
- License plate lamps
- Tail lamps
- Front fog lamps
- Headlamps (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan (LO, HI)

Operation procedure

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

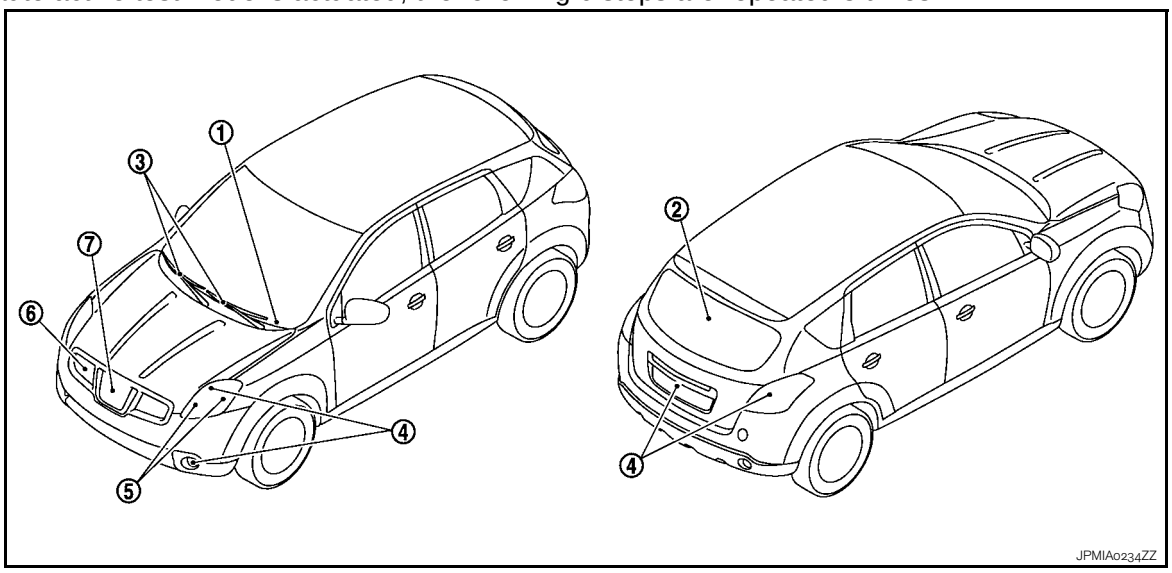
NOTE:
When auto active test mode has to be cancelled halfway through test, turn ignition switch OFF.

CAUTION:

- **If auto active test mode cannot be actuated, check door switch system.**
- **Never start the engine.**

Inspection in auto active test mode

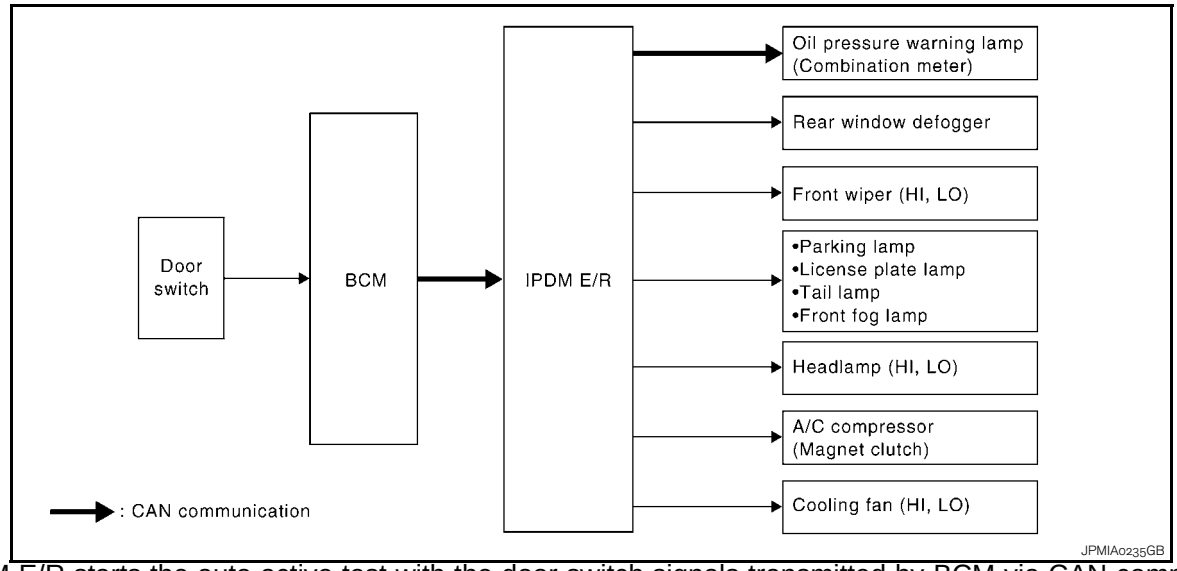
When auto active test mode is actuated, the following 6 steps are repeated 3 times.



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

Concept of auto active test



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

Diagnosis chart in auto active test mode

Symptom	Inspection contents		Possible cause
Rear window defogger does not operate	Perform auto active test. Does the rear window defogger operate?	YES	BCM signal input circuit
		NO	• Rear window defogger • Rear window defogger ground circuit • Harness or connector between IPDM E/R and rear window defogger • IPDM E/R
Any of the following components do not operate • Parking lamps • License plate lamps • Tail lamps • Front fog lamps • Headlamp (HI, LO) • Front wiper (HI, LO)	Perform auto active test. Does the applicable system operate?	YES	BCM signal input circuit
		NO	• Lamp or motor • Lamp or motor ground circuit • Harness or connector between IPDM E/R and applicable system • IPDM E/R

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Symptom	Inspection contents		Possible cause
A/C compressor does not operate	Perform auto active test. Does the magnet clutch operate?	YES	• Communication signal between BCM and auto amp. (with auto A/C) • Communication signal between BCM and heater control panel (without auto A/C, with manual A/C) • BCM • CAN communication signal between BCM and ECM • CAN communication signal between ECM and IPDM E/R
		NO	• Magnet clutch • Harness or connector between IPDM E/R and magnet clutch • IPDM E/R
Oil pressure warning lamp does not operate	Perform auto active test. Does the oil pressure warning lamp blink?	YES	• Harness or connector between IPDM E/R and oil pressure switch • Oil pressure switch • IPDM E/R
		NO	• CAN communication signal between IPDM E/R and BCM • CAN communication signal between BCM and combination meter • Combination meter
Cooling fan does not operate	Perform auto active test. Does the cooling fan operate?	YES	• ECM signal input circuit • CAN communication signal between ECM and IPDM E/R
		NO	• Cooling fan • Cooling fan ground circuit • Harness or connector between IPDM E/R and cooling fan • IPDM E/R • Cooling fan relay-3* • Harness or connector between IPDM E/R and cooling fan relay-3* • Harness or connector between cooling fan and cooling fan relay-3*

NOTE:

*: MR engine and K9K engine models

CONSULT - III Function (IPDM E/R)

INFOID:0000000001098949

APPLICATION ITEM

CONSULT-III 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

Refer to EXL-148, "DTC Index".

DATA MONITOR

Monitor item

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Monitor Item [Unit]	MAIN SIGNALS	Description
MOTOR FAN REQ [1 - 4]	×	Displays the value of the cooling fan speed signal received from ECM via CAN communication.
AC COMP REQ [Off/On]	×	Displays the status of the A/C compressor request signal received from ECM via CAN communication.
TAIL&CLR REQ [Off/On]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR FOG REQ [Off/On]	×	Displays the status of the front fog light request signal received from BCM via CAN communication.
HL WASHER REQ [Off/On]		Displays the status of the headlamp washer 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 auto stop 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.
ST RLY REQ [Off/On]		Displays the status of the ignition and starter request signal received from BCM via CAN communication.
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.
RR DEF REQ [Off/On]	×	Displays the status of the rear defogger request signal received from BCM via CAN communication.
OIL P SW [Open/Close]		Displays the status of the oil pressure switch judged by IPDM E/R.
REV SW [Off/On]		Displays the status of the reverse switch judged by IPDM E/R.
HOOD SW [Off/On]		Displays the status of the hood switch judged by IPDM E/R. **NOTE:** This item is monitored only the vehicle with the Vehicle Security (Theft Warning) system.
THFT HRN REQ [Off/On]		Displays the status of the theft warning horn request signal received from BCM via CAN communication. **NOTE:** This item is monitored only the vehicle with the Vehicle Security (Theft Warning) system.
HORN CHIRP [Off/On]		**NOTE:** This item is indicated, but not monitored.
IGN ON SW [Off/On]		Displays the status of the ignition switch judged by IPDM E/R.

ACTIVE TEST

Test item

Test item	Operation	Description
REAR DEFOGGER	Off	OFF
	On	Operates the rear window defogger relay.
FRONT WIPER	Off	OFF
	Lo	Operates the front wiper relay.
	Hi	Operates the front wiper relay and front wiper high relay.

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Test item	Operation	Description
MOTOR FAN	1	OFF
	2	Operates the cooling fan relay (low operation).
	3	Operates the cooling fan relay (high operation).
	4	
HEAD LAMP WASHER	On	Operates the headlamp washer relay for 1 second.
EXTERNAL LAMPS	Off	OFF
	TAIL	Operates the tail lamp relay.
	Lo	Operates the headlamp low relay.
	Hi	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.
	Fog	Operates the front fog lamp relay.
HORN	On	Operates horn relay for 20 ms.

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DIAGNOSIS SYSTEM (HEADLAMP LEVELIZER)

CONSULT-III Function (HEADLAMP LEVELIZER)

INFOID:0000000000955409

CAUTION:
Headlamp (LO) must be turned ON before connecting CONSULT-III. And then start the diagnosis of the headlamp aiming control system (auto).

APPLICATION ITEM

CONSULT-III performs the following functions via DDL2 communication line with auto levelizer control unit.

Diagnosis mode	Description
ECU IDENTIFICATION	Allows confirmation of auto levelizer control unit part number.
SELF DIAGNOSTIC RESULT	Displays the diagnosis results judged by auto levelizer control unit.
WORK SUPPORT	Performs settings on sensors.
DATA MONITOR	Displays input data for auto levelizer control unit in real time.
ACTIVE TEST	Transmits a drive signal to the load to check their operation.

WORK SUPPORT

Work item	Setting details
SENSOR INITIALIZE	Adjusts sensor lever signal output under unladen conditions.

DATA MONITOR

Monitor item [Unit]	Display item
INT SEN VALUE [%]	Displays the sensor lever angle corresponding to the maximum value of sensor lever angle that is recognized with auto levelizer control unit by ratio.
ACT OUTPUT [%]	Displays the control value of aiming motor drive signal that is calculated by auto levelizer control unit with the ratio corresponding to the control unit power supply.
ACT MEASURED [%]	Displays the measured value of aiming motor drive signal that is output from auto levelizer control unit with the ratio corresponding to the control unit power supply.
VEHICLE SPEED SIGNAL [km/h]	Displays the vehicle speed judged from vehicle speed signal (8-pulse) that is input to auto levelizer control unit.
LIGHT SIGNAL [V]	Displays the status judged from tail lamp signal that is input to auto levelizer control unit.
INT SEN VOLT [V]	Displays the control unit power supply status that is input to auto levelizer control unit.
EXT SEN VOLT [V]	**NOTE:** The item is indicated, but not monitored.
EXT SEN SIG [V]	**NOTE:** The item is indicated, but not monitored.

ACTIVE TEST

Test item	Operation item	Operation status
LAMP TEST	MIN	Moves the light axis to the lowest position.
	MID	Moves the light axis to the initial position.
	MAX	Moves the light axis to the highest position.

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COMPONENT DIAGNOSIS

B2080 ECU TROUBLE

Description

INFOID:0000000001089008

- Auto levelizer control unit is installed in rear suspension arm.
- Auto levelizer control unit detects vehicle rear height.
- Auto levelizer control unit controls headlamp light axis appropriately depending on the vehicle height.

DTC Logic

INFOID:0000000001089009

DTC DETECTION LOGIC
[B2080] ECU TROUBLE

DTC detection condition	DTC erase conditions	Possible causes
Auto levelizer control unit internal malfunction.	Headlamp (LO) OFF	Auto levelizer control unit

Diagnosis Procedure

INFOID:0000000001089010

1.ERASE DTC

1. Turn the headlamp (LO) ON.
2. Connect the CONSULT-III.
3. Erase DTC memory of HEADLAMP LEVELIZER with self-diagnosis of CONSULT-III.

Is the memory erased?

YES >> INSPECTION END
NO >> Replace the auto levelizer control unit.

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B2081 INITIAL NOT DONE

DTC Logic

INFOID:0000000001089011

DTC DETECTION LOGIC

[B2081] INITIAL NOT DONE

DTC detection condition	DTC erase conditions	Possible causes
Sensor initialization is not completed.	When sensor initialization is completed	Auto levelizer control unit

Diagnosis Procedure

INFOID:0000000001089012

1.SENSOR INITIALIZE

Perform the sensor initialize.

>> Refer to EXL-10, "SENSOR INITIALIZE : Special Repair Requirement".

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B2082 SENSOR OUT OF RANGE

DTC Logic

INFOID:0000000001089013

DTC DETECTION LOGIC

[B2082] SENSOR OUT OF RANGE

DTC detection condition	DTC erase conditions	Possible cause
Auto levelizer control unit detects the sensor lever angle 70° or more, or 0°, continually for 20 ms or more.	When sensor lever returns to normal range	Auto levelizer control unit

DTC CONFIRMATION PROCEDURE

1.ERASE DTC

1. Turn the headlamp (LO) ON.
2. Connect the CONSULT-III.
3. Erase DTC memory of HEADLAMP LEVELIZER with self-diagnosis of CONSULT-III.

>> GO TO 2.

2.DTC CONFIRMATION

Perform self-diagnosis of CONSULT-III.

Is B2082 detected?

YES >> Refer to EXL-38, "Diagnosis Procedure".
NO >> Refer to GI-39, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000001089014

1.CHECK SENSOR INITIALIZATION VALUE

1. Turn the headlamp (LO) ON.
2. Connect the CONSULT-III.
3. Select "INT SEN VALUE" of HEADLAMP LEVELIZER data monitor item.
4. Check the monitor status under unladen conditions.

Monitor item	Standard value (Approx.)
INT SEN VALUE	50 %*

*: Sensor initialize position (reference)

Is the measurement value normal?

YES >> Replace the auto levelizer control unit.
NO >> GO TO 2.

2.SENSOR INITIALIZATION

Perform the sensor initialize. Refer to EXL-10, "SENSOR INITIALIZE : Special Repair Requirement".

Is sensor initialize completed?

YES >> GO TO 3.
No >> Replace the auto levelizer control unit.

3.ERASE DTC

Erase DTC memory of headlamp levelizer with self-diagnosis of CONSULT-III.

Is the memory erased?

YES >> INSPECTION END
NO >> Replace the auto levelizer control unit.

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B2083 SEN SIG NOT PLAUSIBLE

DTC Logic

INFOID:0000000001089015

DTC DETECTION LOGIC

[B2083] SEN SIG NOT PLAUSIBLE

DTC detection condition	DTC erase conditions	Possible causes
When vehicle speed is 5 km/h or more, the auto levelizer control unit cannot detect any changes of the sensor lever angle for 5 minutes or more.	Headlamp (LO) OFF	Auto levelizer control unit

DTC CONFIRMATION PROCEDURE

1.ERASE DTC

1. Turn the headlamp (LO) ON.
2. Connect the CONSULT-III.
3. Erase DTC memory of HEADLAMP LEVELIZER with self-diagnosis of CONSULT-III.

>> GO TO 2.

2.DTC CONFIRMATION

1. Start the engine.
2. Drive the vehicle for 5 minutes or more.
3. Perform self-diagnosis of CONSULT-III.

Is B2083 detected?

YES >> Refer to EXL-39, "Diagnosis Procedure".
NO >> Refer to GI-39, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000001089016

1.CHECK AUTO LEVELIZER CONTROL UNIT INSTALLATION CONDITION

Check the mounting part of auto levelizer control unit and its link for looseness and deformation.

Is it properly installed?

YES >> Replace the auto levelizer control unit.
NO >> Install auto levelizer control unit properly.

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B2084 VOLTAGE UNDER LIMIT

DTC Logic

INFOID:0000000001089017

DTC DETECTION LOGIC

[B2084] VOLTAGE UNDER LIMIT

DTC detection condition	DTC erase conditions	Possible causes
The control unit power supply to auto levelizer control unit is 9 V or less for 1.5 seconds or more.	Headlamp (LO) OFF	• Harness or connector • Auto levelizer control unit

DTC CONFIRMATION PROCEDURE

1.ERASE DTC

1. Turn the headlamp (LO) ON.
2. Connect the CONSULT-III.
3. Erase DTC memory of HEADLAMP LEVELIZER with self-diagnosis of CONSULT-III.

>> GO TO 2.

2.DTC CONFIRMATION

Perform self-diagnosis of CONSULT-III.

Is B2084 detected?

YES >> Refer to EXL-40, "Diagnosis Procedure".
NO >> Refer to GI-39, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000001089018

1.CHECK POWER SUPPLY WITH CONSULT-III

1. Turn the headlamp (LO) ON.
2. Connect the CONSULT-III.
3. Select "INT SEN VOLT" of HEADLAMP LEVELIZER data monitor item.
4. Check the monitor status.

Monitor item	Standard value (Approx.)
INT SEN VOLT	Battery voltage

Is the measurement value normal?

YES >> Replace the auto levelizer control unit.
NO >> GO TO 2.

2.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of auto levelizer control unit. Refer to EXL-49, "AUTO LEVELIZER CONTROL UNIT : Diagnosis Procedure".

Is power supply and ground circuit normal?

YES >> Replace the auto levelizer control unit.
NO >> Repair or replace the malfunctioning part.

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B2085 LOWBEAM SIG OPEN LINE

Description

INFOID:0000000001089019

- Auto levelizer control unit inputs tail lamp signal from IPDM E/R.
- Auto levelizer control unit always outputs the voltage to detect the DTC.

DTC Logic

INFOID:0000000001089020

DTC DETECTION LOGIC

[B2085] LOWBEAM SIG OPEN LINE

DTC detection condition	DTC erase conditions	Possible causes
Tail lamp signal is 6 V or less with tail lamp ON, or 2 V or more with tail lamp OFF, for 1.5 seconds or more.	Headlamp (LO) OFF	• Harness or connector • IPDM E/R • Auto levelizer control unit

DTC CONFIRMATION PROCEDURE

1.ERASE DTC

1. Turn the headlamp (LO) ON.
2. Connect the CONSULT-III.
3. Erase DTC memory of HEADLAMP LEVELIZER with self-diagnosis of CONSULT-III.

>> GO TO 2.

2.DTC CONFIRMATION

Perform self-diagnosis of CONSULT-III.

Is B2085 detected?

YES >> Refer to EXL-41, "Diagnosis Procedure".
NO >> Refer to GI-39, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000001089021

1.CHECK TAIL LAMP SIGNAL INPUT WITH CONSULT-III

1. Turn the headlamp (LO) ON.
2. Connect the CONSULT-III.
3. Select "LIGHT SIGNAL" of HEADLAMP LEVELIZER data monitor item.
4. Check the monitor status.

Monitor item	Condition	Standard value (Approx.)
LIGHT SIGNAL	Headlamp (LO) ON	6 V or more

Is the measurement value normal?

YES >> Replace the auto levelizer control unit.
NO >> GO TO 2.

2.CHECK TAIL LAMP SIGNAL INPUT

1. Turn ignition switch OFF.
2. Disconnect the auto levelizer control unit connector.
3. Turn ignition switch ON.
4. With operating the lighting switch, check the voltage between the auto levelizer control unit harness connector and the ground.

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
Auto levelizer control unit		Ground		
Connector	Terminal		Lighting switch	
B43	6		OFF	0 V
			1ST	Battery voltage

Is the measurement value normal?

YES >> Replace the auto levelizer control unit.
NO >> Repair the harnesses between auto levelizer control unit and IPDM E/R.

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B2086 FRQ. OVER LIMIT

Description

INFOID:0000000001089022

Auto levelizer control unit inputs vehicle speed signal (8-pulse) from combination meter.

DTC Logic

INFOID:0000000001089023

DTC DETECTION LOGIC

[B2086] FRQ. OVER LIMIT

DTC detection condition	DTC erase conditions	Possible causes
The vehicle speed is 340 km/h or more for 1.5 seconds or more.	Headlamp (LO) OFF	• Harness or connector • Auto levelizer control unit

DTC CONFIRMATION PROCEDURE

1.ERASE DTC

1. Turn the headlamp (LO) ON.
2. Connect the CONSULT-III.
3. Erase DTC memory of HEADLAMP LEVELIZER with self-diagnosis of CONSULT-III.

>> GO TO 2.

2.DTC CONFIRMATION

1. Start the engine.
2. Drive the vehicle at 40 km/h.
3. Perform self-diagnosis of CONSULT-III.

Is B2086 detected?

YES >> Refer to EXL-43, "Diagnosis Procedure".
NO >> Refer to GI-39, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000001089024

1.CHECK VEHICLE SPEED SIGNAL INPUT WITH CONSULT-III

1. Turn the headlamp (LO) ON.
2. Connect the CONSULT-III.
3. Select "VEHICLE SPEED SIGNAL" of HEADLAMP LEVELIZER data monitor item.
4. While driving at 40 km/h, check the monitor status.

Monitor item	Condition	Standard value (Approx.)
VEHICLE SPEED SIGNAL	While driving at 40 km/h	40 km/h

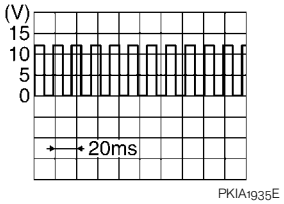
Is the measurement value normal?

YES >> Replace the auto levelizer control unit.
NO >> GO TO 2.

2.CHECK VEHICLE SPEED SIGNAL INPUT

1. Turn ignition switch OFF.
2. Disconnect the auto levelizer control unit connector.
3. Turn ignition switch ON.
4. While driving at 40 km/h, check the voltage between the auto levelizer control unit harness connector and the ground.

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Terminals			Condition	Voltage (Approx.)
(+)		(–)		
Auto levelizer control unit				
Connector	Terminal			
B43	4	Ground	While driving at 40 km/h	

Is the measurement value normal?

YES >> Replace the auto levelizer control unit.
NO >> Repair the harnesses between auto levelizer control unit and combination meter.

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B2087 SHORT TO GROUND

DTC Logic

INFOID:0000000001089025

DTC DETECTION LOGIC

[B2087] SHORT TO GROUND

DTC detection condition	DTC erase conditions	Possible causes
Headlamp levelizer circuit is shorted to the ground for 1.5 seconds or more.	Headlamp (LO) OFF	• Harness or connector • Auto levelizer control unit

DTC CONFIRMATION PROCEDURE

1.ERASE DTC

1. Turn the headlamp (LO) ON.
2. Connect the CONSULT-III.
3. Erase DTC memory of HEADLAMP LEVELIZER with self-diagnosis of CONSULT-III.

>> GO TO 2.

2.DTC CONFIRMATION

Perform self-diagnosis of CONSULT-III.

YES >> Refer to EXL-45, "Diagnosis Procedure".
NO >> Refer to GI-39, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000001089026

1.CHECK HEADLAMP LEVELIZER CIRCUIT OF CONSULT-III

1. Turn the headlamp (LO) ON.
2. Connect the CONSULT-III.
3. Select "ACT MEASURED" and "ACT OUTPUT" of HEADLAMP LEVELIZER data monitor item.
4. Check that ACT MEASURED value is within approximately ± 3% to ACT OUTPUT value.

NOTE:
ACT MEASURED value is approximately 0% when shorted to the ground.

Is the measurement value normal?

YES >> Replace the auto levelizer control unit.
NO >> GO TO 2.

2.HEADLAMP LEVELIZER CIRCUIT INSPECTION

Check the headlamp levelizer circuit for short to ground. Refer to EXL-59, "Component Function Check".

Is the headlamp levelizer circuit normal?

YES >> Replace the auto levelizer control unit.
NO >> Repair or replace the malfunctioning part.

B2088 SHORT TO BATTERY

DTC Logic

INFOID:0000000001089027

DTC DETECTION LOGIC

[B2088] SHORT TO BATTERY

DTC detection condition	DTC erase conditions	Possible causes
Headlamp levelizer circuit is shorted to the battery for 1.5 seconds or more.	Headlamp (LO) OFF	• Harness or connector • Auto levelizer control unit

DTC CONFIRMATION PROCEDURE

1.ERASE DTC

1. Turn the headlamp (LO) ON.
2. Connect the CONSULT-III.
3. Erase DTC memory of HEADLAMP LEVELIZER with self-diagnosis of CONSULT-III.

>> GO TO 2.

2.DTC CONFIRMATION

Perform self-diagnosis of CONSULT-III.

Is B2088 detected?

YES >> Refer to EXL-46, "Diagnosis Procedure".
NO >> Refer to GI-39, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000001089028

1.CHECK HEADLAMP LEVELIZER CIRCUIT OF CONSULT-III

1. Turn the headlamp (LO) ON.
2. Connect the CONSULT-III.
3. Select "ACT MEASURED" and "ACT OUTPUT" of HEADLAMP LEVELIZER data monitor item.
4. Check that ACT MEASURED value is within approximately ± 3% to ACT OUTPUT value.

NOTE:
ACT MEASURED value is approximately 100% when shorted to the battery.

Is the measurement value normal?

YES >> Replace the auto levelizer control unit.
NO >> GO TO 2.

2.HEADLAMP LEVELIZER CIRCUIT INSPECTION

Check the headlamp levelizer circuit for short to battery. Refer to EXL-59, "Component Function Check".

Is the headlamp levelizer circuit normal?

YES >> Replace the auto levelizer control unit.
NO >> Repair or replace the malfunctioning part.

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B2089 NO CAR TYPE SELECTED

DTC Logic

INFOID:0000000001089029

DTC DETECTION LOGIC

[B2089] NO CAR TYPE SELECTED

DTC detection condition	DTC erase conditions	Possible causes
Auto levelizer control unit data malfunction	—	Auto levelizer control unit

Diagnosis Procedure

INFOID:0000000001089030

1.ERASE DTC

1. Turn the headlamp (LO) ON.
2. Connect the CONSULT-III.
3. Erase DTC memory of HEADLAMP LEVELIZER with self-diagnosis of CONSULT-III.

Is the memory erased?

YES >> INSPECTION END
NO >> Replace the auto levelizer control unit.

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POWER SUPPLY AND GROUND CIRCUIT
BCM (BODY CONTROL MODULE)

BCM (BODY CONTROL MODULE) : Diagnosis Procedure

INFOID:0000000001098950

1.CHECK FUSES AND FUSIBLE LINK

Check that the following fuses and fusible link are not fusing.

Terminal No.	Signal name	Fuses and fusible link No.
41	Battery power supply	9
57		J
37	ACC power supply	5
38	Ignition power supply	4

Is the fuse fusing?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit if a fuse or fusible link is blown.
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connectors.
3. Check voltage between BCM harness connector and ground.

Terminals			Ignition switch position		
(+)		(–)			
BCM			OFF	ACC	ON
Connector	Terminal				
M65	37	Ground	Approx. 0 V	Battery voltage	Battery voltage
	38		Approx. 0 V	Approx. 0 V	Battery voltage
M66	41		Battery voltage	Battery voltage	Battery voltage
M67	57				

Is the measurement value normal?

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

3.CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M67	55		Existed

Does continuity exist?

YES >> INSPECTION END
NO >> Repair harness or connector.

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) : Diagnosis Procedure

INFOID:0000000001098951

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1.CHECK FUSIBLE LINK

Check that the following IPDM E/R fusible link is not blown.

Terminal No.	Signal name	Fusible link No.
1	Battery power supply	E
2		C
53		L (except HR engine models)
		M (HR engine models)

Is the fusible link fusing?

YES >> Replace the blown fusible link after repairing the affected circuit if a fusible link is blown.
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check voltage between IPDM E/R harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
IPDM E/R			
Connector	Terminal		
E9	1	Ground	Battery voltage
	2		
E14	53		

Is the measurement value normal?

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

3.CHECK GROUND CIRCUIT

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E10	5		Exist
	6		

Does continuity exist?

YES >> INSPECTION END
NO >> Repair harness or connector.

AUTO LEVELIZER CONTROL UNIT

AUTO LEVELIZER CONTROL UNIT : Diagnosis Procedure

INFOID:0000000000955436

1.CHECK FUSE

Check that the following fuse is fusing.

Signal name	Location	Fuse No.	Capacity
Control unit power supply [Headlamp (LO) signal]	IPDM E/R	#45	15A

Is the fuse fusing?

YES >> Repair the applicable circuit. And then replace the fuse.

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NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect auto levelizer control unit connector.
3. Turn the headlamp (LO) ON.
4. Check voltage between auto levelizer control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Auto levelizer control unit		Ground	
Connector	Terminal		
B43	2		Battery voltage

Is the measurement value normal?

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

3.CHECK GROUND CIRCUIT

Check for continuity between auto levelizer control unit harness connector and ground.

Auto levelizer control unit		Ground	Continuity
Connector	Terminal		
B43	1		Existed

Does continuity exist?

YES >> Power supply and ground circuit are normal.
NO >> Repair the harnesses or connectors.

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EXTERIOR LAMP FUSE

Description

INFOID:0000000000955437

Fuse list

Unit		Location	Fuse No.	Capacity
Headlamp HI (LH)		IPDM E/R	#48	10 A
Headlamp HI (RH)		IPDM E/R	#47	10 A
Headlamp LO (LH)		IPDM E/R	#46	15 A
Headlamp LO (RH)		IPDM E/R	#45	15 A
Front fog lamp		IPDM E/R	#43	15 A
• Parking lamp • Tail lamp • License plate lamp • Each illumination		IPDM E/R	#49	10 A
Stop lamp		FUSE BLOCK (J/B)	#11	10 A
Back-up lamp	M/T models	IPDM E/R	#54	10 A
	CVT models	IPDM E/R	#55	10 A

Diagnosis Procedure

INFOID:0000000000955438

1.CHECK FUSE

Check that the following fuses are not fusing.

Unit		Location	Fuse No.	Capacity
Headlamp HI (LH)		IPDM E/R	#48	10 A
Headlamp HI (RH)		IPDM E/R	#47	10 A
Headlamp LO (LH)		IPDM E/R	#46	15 A
Headlamp LO (RH)		IPDM E/R	#45	15 A
Front fog lamp		IPDM E/R	#43	15 A
• Parking lamp • Tail lamp • License plate lamp • Each illumination		IPDM E/R	#49	10 A
Stop lamp		FUSE BLOCK (J/B)	#11	10 A
Back-up lamp	M/T models	IPDM E/R	#54	10 A
	CVT models	IPDM E/R	#55	10 A

Is the fuse fusing?

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

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HEADLAMP (HI) CIRCUIT

Component Function Check

INFOID:0000000000955440

1.CHECK HEADLAMP (HI) OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Start IPDM E/R auto active test. Refer to PCS-9, "Diagnosis Description".
2. Check that the headlamp switches to the high beam.

CONSULT-III ACTIVE TEST
1. Select "EXTERNAL LAMP" 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 headlamp (HI) turned ON?

YES >> Headlamp (HI) circuit is normal.
NO >> Refer to EXL-52, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000000955441

1.CHECK HEADLAMP (HI) OUTPUT VOLTAGE

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

Terminals				Condition	Voltage (Approx.)
(+)			(–)		
IPDM E/R			Ground	External lamp	
Connector		Terminal			
RH	E13	45		HI	Battery voltage
LH		46		OFF	0 V

Is the measurement value normal?

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

2.CHECK HEADLAMP (HI) OPEN CIRCUIT

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

IPDM E/R			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E13	45	E45	2	Existed
LH		46	E26	2	

Does continuity exist?

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

3. CHECK HEADLAMP (HI) FUSE

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

Unit	Location	Fuse No.	Capacity
Headlamp HI (LH)	IPDM E/R	#48	10 A
Headlamp HI (RH)	IPDM E/R	#47	10 A

Is the fuse fusing?

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

4. CHECK FRONT COMBINATION LAMP (HI) SHORT CIRCUIT

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

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E13	45		Not existed
LH		46		

Does continuity exist?

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

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HEADLAMP (LO) CIRCUIT

Description

INFOID:0000000000955442

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-57, "Description".

Component Function Check

INFOID:0000000000955443

1.CHECK HEADLAMP (LO) OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Start IPDM E/R auto active test. Refer to PCS-9, "Diagnosis Description".
2. Check that the headlamp is turned ON.

CONSULT-III ACTIVE TEST
1. Select "EXTERNAL LAMP" 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 headlamp (LO) turned ON?

YES >> Headlamp (LO) is normal.
NO >> Refer to EXL-54, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000000955444

1.CHECK HEADLAMP (LO) OUTPUT VOLTAGE

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

Terminals				Test item	Voltage (Approx.)
(+)			(–)		
IPDM E/R			Ground	External lamp	
Connector		Terminal			
RH	E12	24		LO	Battery voltage
LH	E13	44		OFF	0 V

Is the measurement value normal?

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

2.CHECK HEADLAMP (LO) OPEN CIRCUIT

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

IPDM E/R		Front combination lamp		Continuity
Connector	Terminal	Connector	Terminal	

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RH	E12	24	E45	1	Existed
LH	E13	44	E26	1	

Does continuity exist?

YES >> Perform the xenon headlamp diagnosis. Refer to EXL-57, "Description".
NO >> Repair the harnesses or connectors.

3. CHECK HEADLAMP (LO) FUSE

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

Unit	Lotion	Fuse No.	Capacity
Headlamp LO (LH)	IPDM E/R	#46	15 A
Headlamp LO (RH)	IPDM E/R	#45	15 A

Is the fuse fusing?

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

4. CHECK HEADLAMP (LO) SHORT CIRCUIT

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

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E12	24		Not existed
LH	E13	44		

Does continuity exist?

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

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HEADLAMP GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000001096672

1.CHECK HEADLAMP GROUND OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the front combination lamp connector.
3. Check continuity between the front combination lamp harness connector and the ground.

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E45	4		Existed
LH	E26	4		

Does continuity exist?

YES >> Headlamp ground circuit is normal.
NO >> Repair the harnesses or connectors.

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XENON HEADLAMP

Description

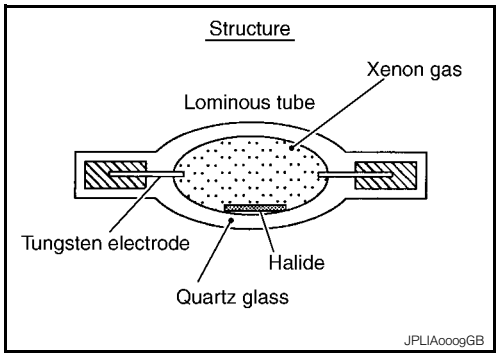
INFOID:0000000000955445

OUTLINE

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

ILLUMINATION PRINCIPLE

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



NOTE:

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

PRECAUTIONS FOR TROUBLE DIAGNOSIS

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

WARNING:

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

CAUTION:

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

NOTE:

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

Diagnosis Procedure

INFOID:0000000000955446

1. CHECK XENON BULB

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

Is the headlamp turned ON?

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

2. CHECK HID CONTROL UNIT

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

Is the headlamp turned ON?

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

3.CHECK XENON HEADLAMP HOUSING ASSEMBLY

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

Is the headlamp turned ON?

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

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HEADLAMP LEVELIZER CIRCUIT

Description

INFOID:0000000000955447

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

Component Function Check

INFOID:0000000000955448

1.CHECK HEADLAMP LEVELIZER OPERATION

CONSULT-III ACTIVE TEST
1. Turn the headlamp (LO) ON.
2. Connect the CONSULT-III.
3. Start the engine.
4. Select “LAMP TEST” of HEADLAMP LEVELIZER active test item.
5. With operating the test item, check the light axis operation.

Test item	Light axis operation
LAMP TEST	
MIN	Moves the light axis to the lowest position.
MID	Moves the light axis to the initial position.
MAX	Moves the light axis to the highest position.

Is the operation normal?

YES >> Headlamp levelizer circuit is normal.
NO >> Refer to EXL-59, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000000955449

1.CHECK AIMING MOTOR DRIVE SIGNAL OUTPUT

CONSULT-III ACTIVE TEST
1. Turn the headlamp (LO) ON.
2. Connect the CONSULT-III.
3. Start the engine.
4. Select “LAMP TEST” of HEADLAMP LEVELIZER active test item.
5. With operating the test items, check the voltage between the auto levelizer control unit harness connector and the ground.

2WD models

Terminals			Test item	Voltage (Approx.)
(+)		(–)		
Auto levelizer control unit		Ground	LAMP TEST	
Connector	Terminal			
B43	7		MIN	1.9 V
			MID	6.3 V
			MAX	9.3 V

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4WD models

Terminals			Test item	Voltage (Approx.)
(+)		(–)		
Auto levelizer control unit		Ground	LAMP TEST	
Connector	Terminal			
B43	7		MIN	1.9 V
			MID	6.3 V
			MAX	10.0 V

Is the measurement value normal?

YES >> GO TO 2.
Fixed at 0 V>>GO TO 3.
Fixed at battery voltage>>GO TO 4.

2.CHECK AIMING MOTOR DRIVE OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect auto levelizer control unit connector and headlamp aiming motor connector.
3. Check continuity between auto levelizer control unit harness connector and the headlamp aiming motor harness connector.

Auto levelizer control unit			headlamp aiming motor		Continuity
Connector		Terminal	Connector	Terminal	
RH	B43	7	E47	2	Existed
LH			E28	2	

Does continuity exist?

YES >> Replace the headlamp aiming motor.
NO >> Repair the harnesses and connectors.

3.CHECK AIMING MOTOR DRIVE SHORT CIRCUIT (SHORT TO GROUND)

1. Turn the ignition switch OFF.
2. Disconnect auto levelizer control unit connector and headlamp aiming motor connector.
3. Check continuity between auto levelizer control unit harness connector and ground.

Terminals			Continuity
(+)		(–)	
Auto levelizer control unit		Ground	
Connector	Terminal		
B43	7		Not existed

Does continuity exist?

YES >> Repair the harness and connectors.
NO >> Replace auto levelizer control unit.

4.CHECK AIMING MOTOR DRIVE SRORT CIRCUIT (SHORT TO BATTERY)

1. Turn the ignition switch OFF.
2. Disconnect auto levelizer control unit connector and headlamp aiming motor connector.
3. Check voltage between auto levelizer control unit harness connector and ground.

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Terminals			Voltage (Approx.)
(+)		(−)	
Auto levelizer control unit		Ground	
Connector	Terminal		
B43	7		0 V

Is the measurement value normal?

YES >> Replace auto levelizer control unit.
NO >> Repair the harness and connectors.

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FRONT FOG LAMP CIRCUIT

Component Function Check

INFOID:0000000000955450

1.CHECK FRONT FOG LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-9, "Diagnosis Description".
2. Check that the front fog lamp is turned ON.

CONSULT-III ACTIVE TEST
1. Select "EXTERNAL LAMP" 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 front fog lamp turned ON?

YES >> Front fog lamp circuit is normal.
NO >> Refer to EXL-62, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000000955451

1.CHECK FRONT FOG LAMP FUSE

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

Unit	Location	Fuse No.	Capacity
Front fog lamp	IPDM E/R	#43	15 A

Is the fuse fusing?

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

2.CHECK FRONT FOG LAMP SHORT CIRCUIT

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

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E13	36		Not existed
LH		43		

Does continuity exist?

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

3.CHECK FRONT FOG LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

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

4.CHECK FRONT FOG LAMP OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST
1. Disconnect the front combination lamp connector.
2. Turn the ignition switch ON.
3. Select "EXTERNAL LAMP" of IPDM E/R active test item.

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

Terminals				Test item	Voltage (Approx.)
(+)			(–)		
IPDM E/R			Ground	EXTERNAL LAMP	
Connector		Terminal			
RH	E13	36		FOG	Battery voltage
LH		43		OFF	0 V

Is the measurement value normal?

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

5. CHECK FRONT FOG LAMP OPEN CIRCUIT

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

IPDM E/R			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E13	36	E48	1	Existed
LH		43	E30	1	

Does continuity exist?

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

6. CHECK FRONT FOG LAMP GROUND CIRCUIT OPEN CIRCUIT

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

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E48	2		Existed
LH	E30	2		

Does continuity exist?

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

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PARKING LAMP CIRCUIT

Component Function Check

INFOID:0000000000955452

1.CHECK PARKING LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-9, "Diagnosis Description".
2. Check that the parking lamp is turned ON.

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

TAIL : Parking lamp ON
OFF : Parking lamp OFF

Is the parking lamp turned ON?

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

Diagnosis Procedure

INFOID:0000000000955453

1.CHECK PARKING LAMP FUSE

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

Unit	Location	Fuse No.	Capacity
Parking lamp	IPDM E/R	#49	10 A

Is the fuse fusing?

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

2.CHECK PARKING LAMP SHORT CIRCUIT

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

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E13	37		Not existed
LH		47		

Does continuity exist?

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

3.CHECK PARKING LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

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

4.CHECK PARKING LAMP OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST
1. Disconnect the front combination lamp connector.
2. Turn the ignition switch ON.
3. Select "EXTERNAL LAMP" of IPDM E/R active test item.

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

Terminals				Test item	Voltage (Approx.)
(+)			(–)		
IPDM E/R			Ground	EXTERNAL LAMP	
Connector		Terminal			
RH	E13	37		TAIL	Battery voltage
LH		47		OFF	0 V

Is the measurement value normal?

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

5. CHECK PARKING LAMP OPEN CIRCUIT

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

IPDM E/R			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E13	37	E43	1	Existed
LH		47	E24	1	

Does continuity exist?

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

6. CHECK PARKING LAMP GROUND OPEN CIRCUIT

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

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E43	2		Existed
LH	E24	2		

Does continuity exist?

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

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TURN SIGNAL LAMP CIRCUIT

Description

INFOID:0000000000955454

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

NOTE:

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

Component Function Check

INFOID:0000000000955455

1.CHECK TURN SIGNAL LAMP

CONSULT-III ACTIVE TEST

1. Select "FLASHER" of BCM (FLASHER) active test item.
2. With operating the test items, check that the turn signal lamp is turned ON.

LH : Turn signal lamp (LH) ON
RH : Turn signal lamp (RH) OFF
OFF : The turn signal lamp OFF

Are the turn signal lamps turned ON?

YES >> Turn signal lamp circuit is normal.
NO >> Refer to EXL-66, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000000955456

1.CHECK TURN SIGNAL LAMP BULB

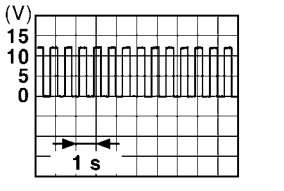
Check the applicable lamp bulb.

Is the bulb normal?

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

2.CHECK TURN SIGNAL LAMP OUTPUT VOLTAGE

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

Terminals				Condition	Voltage (Approx.)
(+)			(–)		
BCM				Turn signal switch	
Connector		Terminal			
RH	M66	48	Ground	LH or RH	
LH		47			
				OFF	0 V

Is the measurement value normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-64, "Exploded View".

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3.CHECK TURN SIGNAL LAMP OPEN CIRCUIT

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

Front turn signal lamp

BCM			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	M66	48	E45	3	Existed
LH		47	E26		

Side turn signal lamp

BCM			Side turn signal lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	M66	48	E40	1	Existed
LH		47	E23		

Rear turn signal lamp

BCM			Rear combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	M66	48	B59	1	Existed
LH		47	B80		

Does continuity exist?

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

4.CHECK TURN SIGNAL LAMP SHORT CIRCUIT

Check continuity between the BCM harness connector and the ground.

BCM			Ground	Continuity
Connector		Terminal		
RH	M66	48		Not existed
LH		47		

Does continuity exist?

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

5.CHECK TURN SIGNAL LAMP GROUND OPEN CIRCUIT

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

Front turn signal lamp

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E45	5		Existed
LH	E26			

Side turn signal lamp

Side turn signal lamp			Ground	Continuity
Connector		Terminal		
RH	E40	2		Existed
LH	E23			

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Rear turn signal lamp

Rear combination lamp			Ground	Continuity
Connector		Terminal		
RH	B59	4		Existed
LH	B80			

Does continuity exist?

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

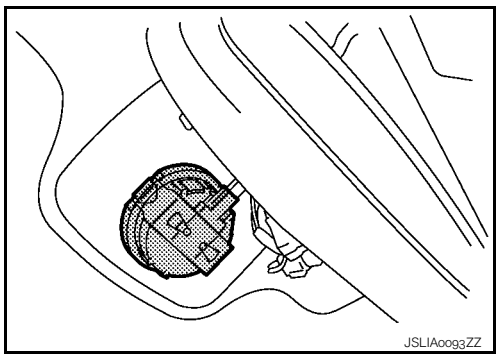
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LIGHT & RAIN SENSOR

Description

INFOID:0000000000955457

- The light & rain sensor detects the outside brightness (lux), a raindrop and sensor conditions. And it transmits the signals to BCM by the light & rain sensor serial link.
- BCM controls each function depending on the signals. And it detects the light & rain sensor serial link error and the light & rain sensor malfunction.



Component Function Check

INFOID:0000000000955458

1.CHECK LIGHT & RAIN SENSOR BY CONSULT-III

CONSULT-III DATA MONITOR
1. Turn the ignition switch ON.
2. Select "LIT-SEN FAIL" of BCM (HEADLAMP) data monitor item.
3. Turn the lighting switch AUTO.
4. Start the engine.
5. Check the monitor status.

Monitor item	Condition	Status
LIT-SEN FAIL	Light & rain sensor is normal	OK
	• Light & rain sensor inside abnormality • Light & rain sensor serial link error	NOTOK

Is it displayed with "OK"?

YES >> Light & rain sensor is normal.
NO >> Refer to EXL-69, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000000955459

1.CHECK LIGHT & RAIN SENSOR POWER SUPPLY OUTPUT

1. Turn the ignition switch OFF.
2. Disconnect the light & rain sensor connector.
3. Check the voltage between the light & rain sensor harness connector and the ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Light & rain sensor		Ground	
Connector	Terminal		
R13	1		12 V

Is the measurement value normal?

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

2.CHECK LIGHT & RAIN SENSOR SIGNAL OUTPUT

Check the voltage between the light & rain sensor harness connector and the ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Light & rain sensor		Ground	
Connector	Terminal		
R13	2		12 V

Is the measurement value normal?

YES >> GO TO 7.
NO >> GO TO 5.

3. CHECK LIGHT & RAIN SENSOR POWER SUPPLY OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between the light & rain sensor harness connector and the BCM harness connector.

Light & rain sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
R13	1	M66	42	Existed

Does continuity exist?

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

4. CHECK LIGHT & RAIN SENSOR POWER SUPPLY SHORT CIRCUIT

Check the continuity between the light & rain sensor harness connector and the ground.

Light & rain sensor		Ground	Continuity
Connector	Terminal		
R13	1		Not existed

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> Replace BCM. Refer to BCS-64, "Exploded View".

5. CHECK LIGHT & RAIN SENSOR SIGNAL OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between the light & rain sensor harness connector and the BCM harness connector.

Light & rain sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
R13	2	M66	17	Existed

Does continuity exist?

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

6. CHECK LIGHT & RAIN SENSOR SIGNAL SHORT CIRCUIT

Check the continuity between the light & rain sensor harness connector and the ground.

Light & rain sensor		Ground	Continuity
Connector	Terminal		
R13	2		Not existed

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> Replace BCM. Refer to BCS-64, "Exploded View".

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7. CHECK LIGHT & RAIN SENSOR GROUND OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Check continuity between the light & rain sensor harness connector and the ground.

Light & rain sensor		Ground	Continuity
Connector	Terminal		
R13	3		Existed

Does continuity exist?

YES >> Replace the light & rain sensor.
NO >> Repair the harnesses or connectors.

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HAZARD SWITCH

Component Function Check

INFOID:0000000000955461

1.CHECK HAZARD SWITCH SIGNAL BY CONSULT-III

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

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

Is the item status normal?

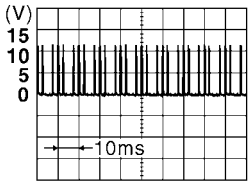
YES >> Hazard switch circuit is normal.
NO >> Refer to EXL-72, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000000955462

1.CHECK HAZARD SWITCH SIGNAL INPUT

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

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
BCM			Hazard switch	
Connector	Terminal			
M65	8	Ground	ON	0 V
			OFF	

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Is the measurement value normal?

YES >> Replace BCM. Refer to BCS-64, "Exploded View".
NO >> GO TO 2.

2.CHECK HAZARD SWITCH SIGNAL OPEN CIRCUIT

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

Hazard switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M45	3	M65	8	Existed

Does continuity exist?

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

3.CHECK HAZARD SWITCH SIGNAL SHORT CIRCUIT

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

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Hazard switch		Ground	Continuity
Connector	Terminal		
M45	3		Not existed

Does continuity exist?

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

4. CHECK HAZARD SWITCH GROUND OPEN CIRCUIT

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

Hazard switch		Ground	Continuity
Connector	Terminal		
M45	2		Existed

Does continuity exist?

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

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TAIL LAMP CIRCUIT

Component Function Check

INFOID:0000000000955463

1.CHECK TAIL LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-9, "Diagnosis Description".
2. Check that the tail lamp is turned ON.

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

TAIL : Tail lamp ON
OFF : Tail lamp OFF

Is the tail lamp turned ON?

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

Diagnosis Procedure

INFOID:0000000000955464

1.CHECK TAIL LAMP FUSE

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

Unit	Location	Fuse No.	Capacity
• Tail lamp • License plate lamp	IPDM E/R	#49	10 A

Is the fuse fusing?

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

2.CHECK TAIL LAMP OUTPUT VOLTAGE

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

Terminals			Test item	Voltage (Approx.)
(+)		(–)		
IPDM E/R		Ground	EXTERNAL LAMP	
Connector	Terminal			
E13	38		TAIL	Battery voltage
			OFF	0 V

Is the measurement value normal?

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

3.CHECK TAIL LAMP OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect IPDM E/R connector.

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

IPDM E/R			Rear combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E13	38	B59	2	Existed
LH			B80	2	

Does continuity exist?

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

4. CHECK TAIL LAMP GROUND OPEN CIRCUIT

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

Rear combination lamp			Ground	Continuity
Connector		Terminal		
RH	B59	4		Existed
LH	B80	4		

Does continuity exist?

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

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LICENSE PLATE LAMP CIRCUIT

Component Function Check

INFOID:0000000000955465

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

1.CHECK LICENSE PLATE LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-9, "Diagnosis Description".
2. Check that the license plate lamp is turned ON.

CONSULT-III ACTIVE TEST
1. Select "EXTERNAL LAMP" of IPDM E/R active test item.
2. With operating the lighting switch, check that the license plate lamp is turned ON.

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

Is the license plate lamp turned ON?

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

Diagnosis Procedure

INFOID:0000000000955466

1.CHECK LICENSE PLATE LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

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

2.CHECK LICENSE PLATE LAMP OPEN CIRCUIT

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

IPDM E/R			License plate lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E13	38	D185	1	Existed
LH			D184	1	

Does continuity exist?

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

3.CHECK LICENSE PLATE LAMP GROUND OPEN CIRCUIT

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

License plate lamp			Ground	Continuity
Connector		Terminal		
RH	D185	2		Existed
LH	D184	2		

Does continuity exist?

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

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REAR FOG LAMP CIRCUIT

Component Function Check

INFOID:0000000000955468

1.CHECK REAR FOG LAMP OPERATION

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

ON : Rear fog lamp ON
OFF : Rear fog lamp OFF

Is rear fog lamp turned ON?

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

Diagnosis Procedure

INFOID:0000000000955469

1.CHECK REAR FOG LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

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

2.CHECK REAR FOG LAMP OUTPUT VOLTAGE

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

Terminals			Test item	Voltage (approx.)
(+)		(–)		
BCM		Ground	RR FOG LAMP	
Connector	Terminal			
M66	49		ON	12 V
			OFF	0 V

Is the measurement value normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-64, "Exploded View".

3.CHECK REAR FOG LAMP OPEN CIRCUIT

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

BCM		Rear fog lamp		Continuity
Connector	Terminal	Connector	Terminal	
M66	49	B90	1	Existed

Does continuity exist?

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

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4.CHECK REAR FOG LAMP SHORT CIRCUIT

Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M66	49		Not existed

Does continuity exist?

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

5.CHECK REAR FOG LAMP GROUND OPEN CIRCUIT

Check continuity between rear fog lamp harness connector and ground.

Rear fog lamp		Ground	Continuity
Connector	Terminal		
B90	2		Existed

Does continuity exist?

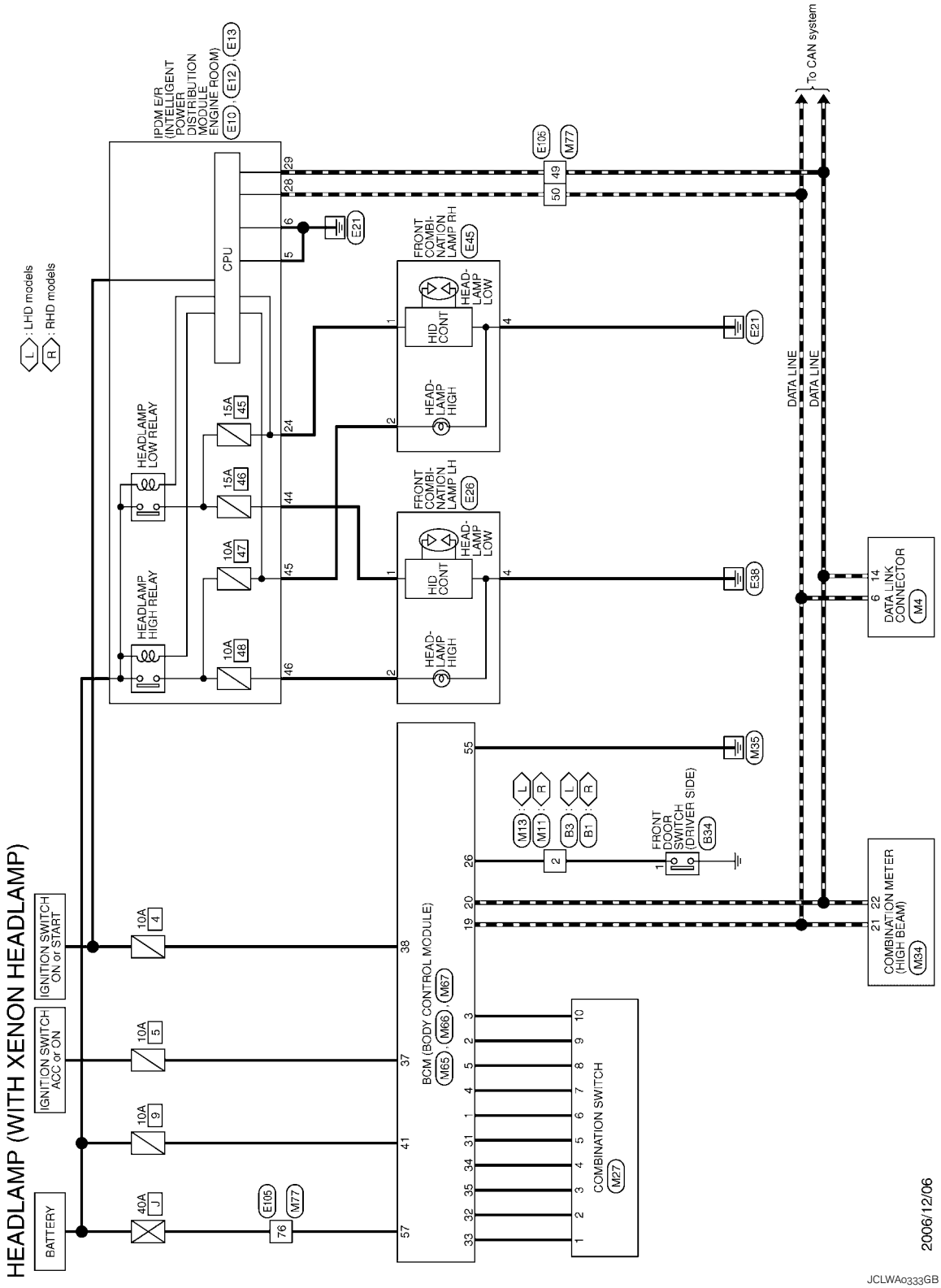
YES >> Replace the rear fog lamp.
NO >> Repair the harnesses or connectors.

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HEADLAMP SYSTEM

Wiring Diagram - HEADLAMP -

INFOID:0000000000977443



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HEADLAMP (WITH XENON HEADLAMP)

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

H.S.

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24

Terminal No.	Color of Wire	Signal Name [Specification]
2	R/W	–[RHD models]

Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

H.S.

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24

Terminal No.	Color of Wire	Signal Name [Specification]
2	R/W	–[LHD models]

Connector No.	B34
Connector Name	FRONT DOOR SWITCH (DRIVER SIDE)
Connector Type	A03FW

H.S.

1
2
3

Terminal No.	Color of Wire	Signal Name [Specification]
1	R/W	–

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

H.S.

5	4	3
8	7	6

Terminal No.	Color of Wire	Signal Name [Specification]
5	B	–
6	B	–

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS

H.S.

25	24	23	22	21
32	31	30	29	28	27	26

Terminal No.	Color of Wire	Signal Name [Specification]
24	R/Y	–
28	L	–
29	P	–

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS16FW-CS

H.S.

39	38	37	36	35	34	33
48	47	46	45	44	43	42	41	40

Terminal No.	Color of Wire	Signal Name [Specification]
44	L	–
45	L/W	–
46	G	–

Connector No.	E26
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	AMP 953600-1

H.S.

5	4	3	2	1

Terminal No.	Color of Wire	Signal Name [Specification]
1	L	–
2	G	–
4	B	–

Connector No.	E45
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	AMP 953600-1

H.S.

5	4	3	2	1

Terminal No.	Color of Wire	Signal Name [Specification]
1	R/Y	–
2	L/W	–
4	B	–

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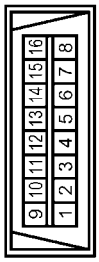
HEADLAMP (WITH XENON HEADLAMP)

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4



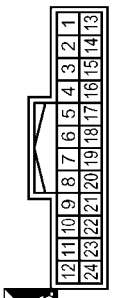
Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
76	Y	–

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



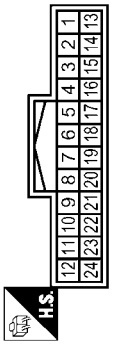
Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH24FW



Terminal No.	Color of Wire	Signal Name [Specification]
2	R	–[RHD models]

Connector No.	M13
Connector Name	WIRE TO WIRE
Connector Type	TH24FW



Terminal No.	Color of Wire	Signal Name [Specification]
2	R	–[LHD models]

Connector No.	M27
Connector Name	COMBINATION SWITCH
Connector Type	TK16FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	INPUT1
2	G	INPUT2
3	L	INPUT3
4	GR	INPUT4
5	BR	INPUT5
6	P	OUTPUT1
7	R	OUTPUT2
8	W	OUTPUT5
9	Y	OUTPUT4
10	LG	OUTPUT3

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	SAB40FW

Terminal No.	Color of Wire	Signal Name [Specification]
21	L	CAN-H
22	P	CAN-L

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB

Terminal No.	Color of Wire	Signal Name [Specification]
1	P	COMBI SW OUTPUT 1
2	Y	COMBI SW OUTPUT 4
3	LG	COMBI SW OUTPUT 3
4	R	COMBI SW OUTPUT 2
5	W	COMBI SW OUTPUT 5
19	L	CAN-H
20	P	CAN-L
26	R	DOOR SW (DR)
31	BR	COMBI SW INPUT 5
32	G	COMBI SW INPUT 2
33	V	COMBI SW INPUT 1
34	GR	COMBI SW INPUT 4
35	L	COMBI SW INPUT 3
37	R	ACC SW
38	W/L	IGN SW

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HEADLAMP (WITH XENON HEADLAMP)

Connector No.	M86
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017

H.S.

52	51	50	49	48	47	46	45	44	43	42	41

Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC083S0017

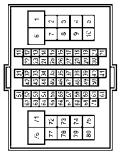
H.S.

60	59	58	57	56	55	54	53

Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-NS16-TM4

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
76	Y	–

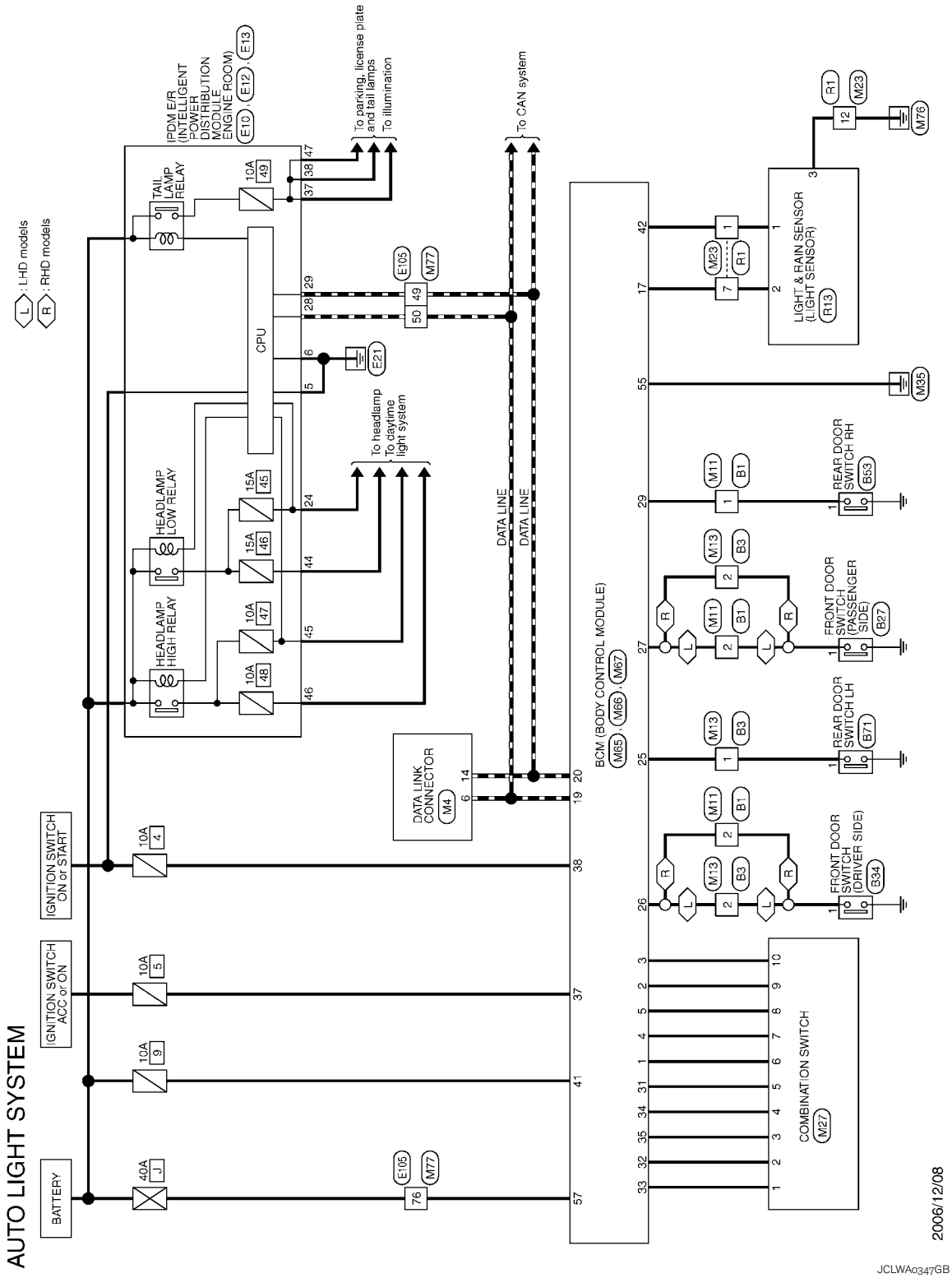
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AUTO LIGHT SYSTEM

Wiring Diagram - AUTO LIGHT SYSTEM -

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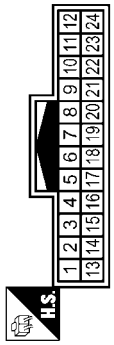


AUTO LIGHT SYSTEM

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–
2	BR	–[LHD models]
2	R/W	–[RHD models]

Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TH24MW



Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–
2	R/W	–[LHD models]
2	BR	–[RHD models]

Connector No.	B27
Connector Name	FRONT DOOR SWITCH (PASSENGER SIDE)
Connector Type	A03FW

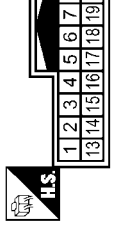
Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	–

Connector No.	B34
Connector Name	FRONT DOOR SWITCH (DRIVER SIDE)
Connector Type	A03FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	R/W	–

Connector No.	B53
Connector Name	REAR DOOR SWITCH RH
Connector Type	A03FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–

Connector No.	B71
Connector Name	REAR DOOR SWITCH LH
Connector Type	A03FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC



Terminal No.	Color of Wire	Signal Name [Specification]
5	B	–
6	B	–

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS

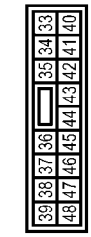
Terminal No.	Color of Wire	Signal Name [Specification]
24	R/Y	–
28	L	–
29	P	–

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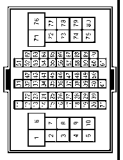
AUTO LIGHT SYSTEM

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS16FW-CS



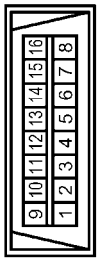
Terminal No.	Color of Wire	Signal Name [Specification]
37	R/W	–
38	R/L	–
44	L	–
45	L/W	–
46	G	–
47	R/L	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4



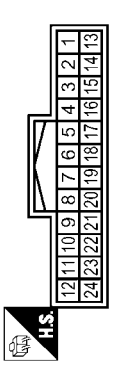
Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
76	Y	–

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



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH24FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–
2	BR	–[LHD models]
2	R	–[RHD models]

Connector No.	M13
Connector Name	WIRE TO WIRE
Connector Type	TH24FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–
2	R	–[LHD models]
2	BR	–[RHD models]

Connector No.	M23
Connector Name	WIRE TO WIRE
Connector Type	TK10FW-NS8

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
7	BR	–
12	B	–

Connector No.	M27
Connector Name	COMBINATION SWITCH
Connector Type	TK16FW

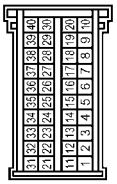
Terminal No.	Color of Wire	Signal Name [Specification]
1	V	INPUT1
2	G	INPUT2
3	L	INPUT3
4	GR	INPUT4
5	BR	INPUT5
6	P	OUTPUT1
7	R	OUTPUT2
8	W	OUTPUT5
9	Y	OUTPUT4
10	LG	OUTPUT3

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AUTO LIGHT SYSTEM

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB



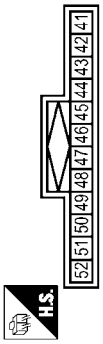
Terminal No.	Color of Wire	Signal Name [Specification]
1	P	COMBI SW OUTPUT 1
2	Y	COMBI SW OUTPUT 4
3	LG	COMBI SW OUTPUT 3
4	R	COMBI SW OUTPUT 2
5	W	COMBI SW OUTPUT 5
17	BR	LIGHT & RAIN SENS
19	L	CAN-H
20	P	CAN-L
25	GR	DOOR SW (RL)
26	R	DOOR SW (DR)
27	BR	DOOR SW (AS)

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
49	P	-
50	L	-
76	Y	-

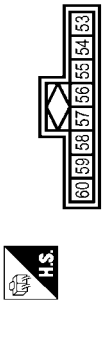
29	LG	DOOR SW (RR)
31	BR	COMBI SW INPUT 5
32	G	COMBI SW INPUT 2
33	V	COMBI SW INPUT 1
34	GR	COMBI SW INPUT 4
35	L	COMBI SW INPUT 3
37	R	ACC SW
38	W/L	IGN SW

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017



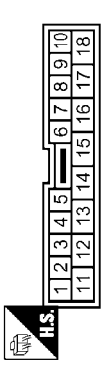
Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)
42	V	ROOM LAMP POWER SUPPLY

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC083S0017



Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	TK10MW-NS8



Terminal No.	Color of Wire	Signal Name [Specification]
1	V	-
7	BR	-
12	B	-

Connector No.	R13
Connector Name	LIGHT & RAIN SENSOR
Connector Type	AMP 968705-1



Terminal No.	Color of Wire	Signal Name [Specification]
1	V	+IG
2	BR	SIG
3	B	GND

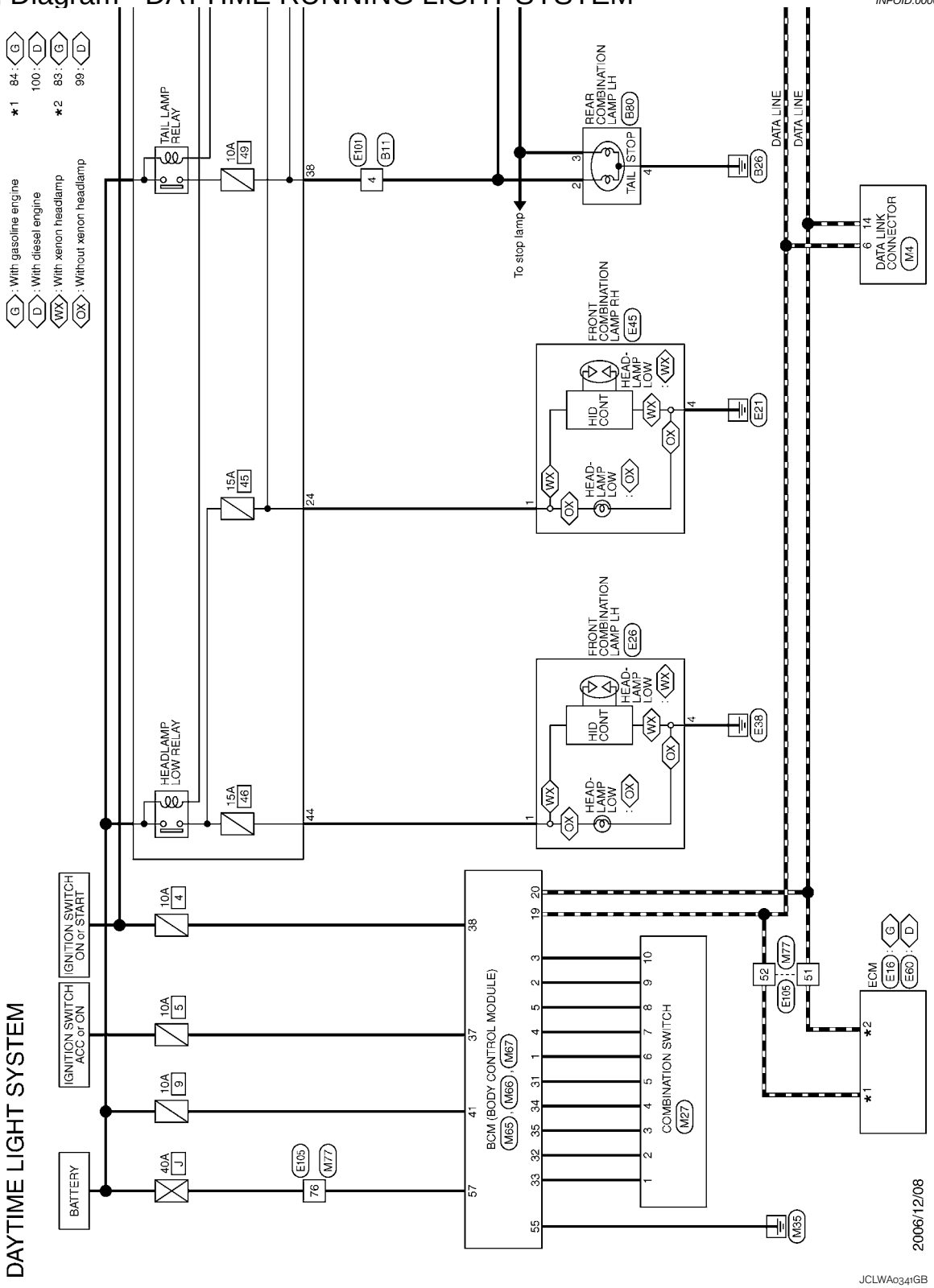
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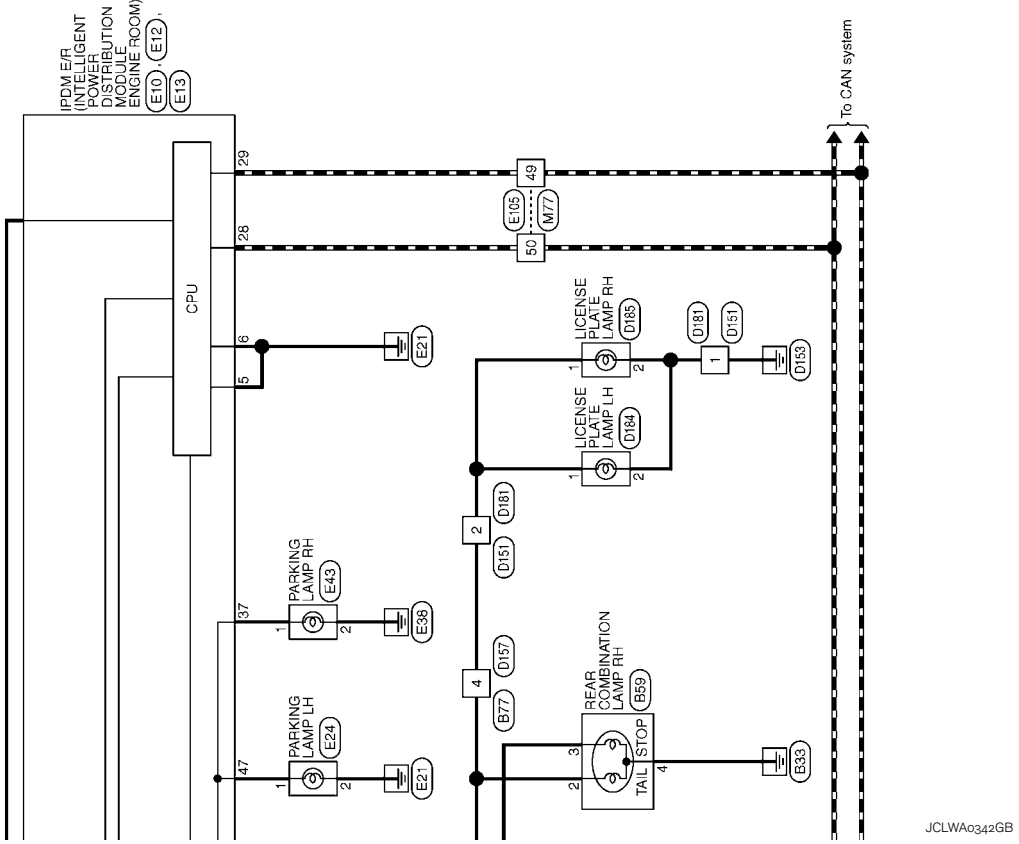
DAYTIME RUNNING LIGHT SYSTEM

Wiring Diagram - DAYTIME RUNNING LIGHT SYSTEM -

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DAYTIME LIGHT SYSTEM

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DAYTIME LIGHT SYSTEM

Connector No.	D185
Connector Name	LICENSE PLATE LAMP RH
Connector Type	TRW 3020423100D

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	R/L	–
2	B	–

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

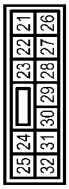
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
5	B	–
6	B	–

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS

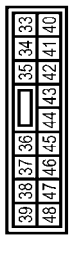
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
24	R/Y	–
28	L	–
29	P	–

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS16FW-CS

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
37	R/W	–
38	R/L	–
44	L	–
47	R/L	–

Connector No.	E16
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
83	P	CAN-L1
84	L	CAN-H1

Connector No.	E24
Connector Name	PARKING LAMP LH
Connector Type	RH02FB

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	R/L	–
2	B	–

Connector No.	E26
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	AMP 953600-1

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	–
4	B	–

Connector No.	E43
Connector Name	PARKING LAMP RH
Connector Type	RH02FB

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
1	R/W	–
2	B	–

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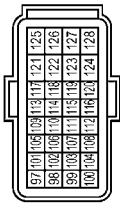
DAYTIME LIGHT SYSTEM

Connector No.	E45
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	AMP 953600-1



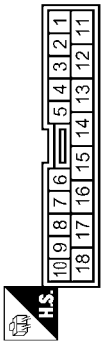
Terminal No.	Color of Wire	Signal Name [Specification]
1	R/Y	-
4	B	-

Connector No.	E60
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH



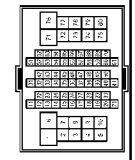
Terminal No.	Color of Wire	Signal Name [Specification]
99	P	MAIN CAN-L (BODY)
100	L	MAIN CAN-H (BODY)

Connector No.	E101
Connector Name	WIRE TO WIRE
Connector Type	TK10FW-NS8



Terminal No.	Color of Wire	Signal Name [Specification]
4	R/L	-

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
49	P	-
50	L	-
51	P	-
52	L	-
76	Y	-

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

Terminal No.	Color of Wire	Signal Name [Specification]
6	L	-
14	P	-

Connector No.	M27
Connector Name	COMBINATION SWITCH
Connector Type	TK16FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	V	INPUT1
2	G	INPUT2
3	L	INPUT3
4	GR	INPUT4
5	BR	INPUT5
6	P	OUTPUT1
7	R	OUTPUT2
8	W	OUTPUT5
9	Y	OUTPUT4
10	LG	OUTPUT3

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB

Terminal No.	Color of Wire	Signal Name [Specification]
1	P	COMBI SW OUTPUT 1
2	Y	COMBI SW OUTPUT 4
3	LG	COMBI SW OUTPUT 3
4	R	COMBI SW OUTPUT 2
5	W	COMBI SW OUTPUT 5
19	L	CAN-H
20	P	CAN-L
31	BR	COMBI SW INPUT 5
32	G	COMBI SW INPUT 2
33	V	COMBI SW INPUT 1
34	GR	COMBI SW INPUT 4
35	L	COMBI SW INPUT 3
37	R	ACC SW
38	W/L	IGN SW

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DAYTIME LIGHT SYSTEM

Connector No.	M86
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017

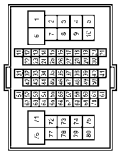
Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC083S0017



Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-NS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
51	P	–
52	L	–
76	Y	–

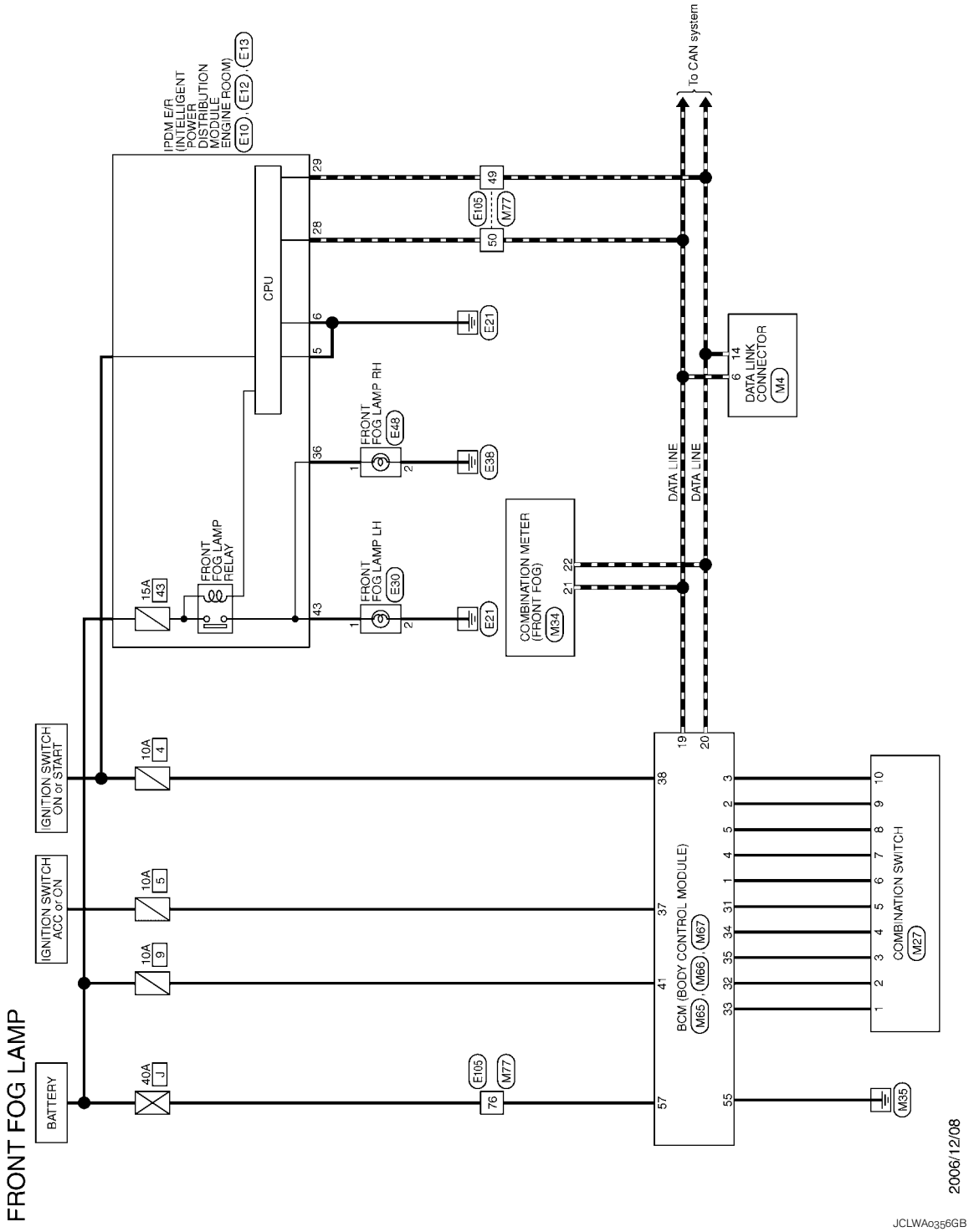
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FRONT FOG LAMP SYSTEM

Wiring Diagram - FRONT FOG LAMP -

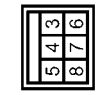
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FRONT FOG LAMP

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
5	B	–
6	B	–

Connector No.	E46
Connector Name	FRONT FOG LAMP RH
Connector Type	FCI 240PC023S4019

H.S.

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

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
28	L	–
29	P	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-NS16-TM4

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
76	Y	–

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS16FW-CS

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
36	W	–
43	W/B	–

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

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	E30
Connector Name	FRONT FOG LAMP LH
Connector Type	FCI 240PC023S4019

H.S.

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

Connector No.	M27
Connector Name	COMBINATION SWITCH
Connector Type	TK16FW

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	INPUT1
2	G	INPUT2
3	L	INPUT3
4	GR	INPUT4
5	BR	INPUT5
6	P	OUTPUT1
7	R	OUTPUT2
8	W	OUTPUT5
9	Y	OUTPUT4
10	LG	OUTPUT3

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FRONT FOG LAMP

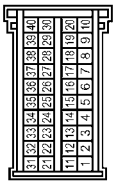
Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	SAB40FW

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
21	L	CAN-H
22	P	CAN-L

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB

H.S.

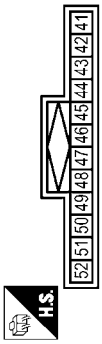


Terminal No.	Color of Wire	Signal Name [Specification]
1	P	COMBI SW OUTPUT 1
2	Y	COMBI SW OUTPUT 4
3	LG	COMBI SW OUTPUT 3
4	R	COMBI SW OUTPUT 2
5	W	COMBI SW OUTPUT 5
19	L	CAN-H
20	P	CAN-L
31	BR	COMBI SW INPUT 5
32	G	COMBI SW INPUT 2
33	V	COMBI SW INPUT 1
34	GR	COMBI SW INPUT 4

35	L	COMBI SW INPUT 3
37	R	ACC SW
38	W/L	IGN SW

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017

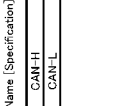
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC063S0017

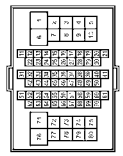
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-NS16-TM4

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
49	P	-
50	L	-
76	Y	-

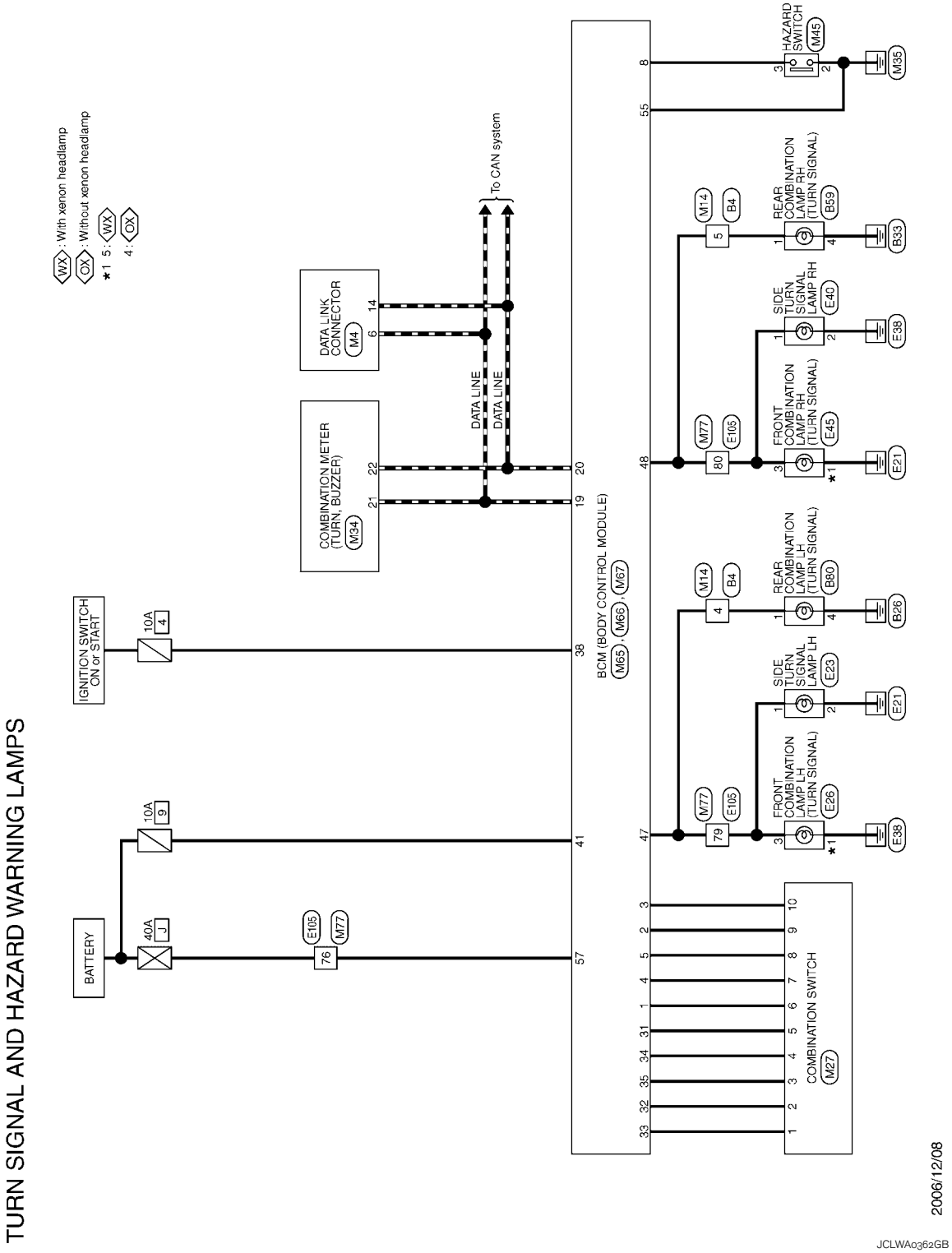
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TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

Wiring Diagram - TURN AND HAZARD WARNING LAMPS -

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TURN SIGNAL AND HAZARD WARNING LAMPS

Connector No.	B4
Connector Name	WIRE TO WIRE
Connector Type	NS08MW-CS

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
4	BR	–
5	G/B	–

Connector No.	B59
Connector Name	REAR COMBINATION LAMP RH
Connector Type	FCI 211PC042S4021

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	G/B	–
4	B	–

Connector No.	B80
Connector Name	REAR COMBINATION LAMP LH
Connector Type	FCI 211PC042S4021

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	–
4	B	–

Connector No.	E23
Connector Name	SIDE TURN SIGNAL LAMP LH
Connector Type	TRW 3020423100D

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	G/Y	–
2	B	–

Connector No.	E26
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	AMP 953600-1

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
3	G/Y	–
4	B	–
5	B	–

Connector No.	E40
Connector Name	SIDE TURN SIGNAL LAMP RH
Connector Type	TRW 3020423100D

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	G/B	–
2	B	–

Connector No.	E45
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	AMP 953600-1

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
3	G/B	–
4	B	–
5	B	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-NS16-TM4

H.S.

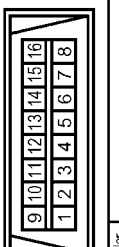
Terminal No.	Color of Wire	Signal Name [Specification]
76	Y	–
79	G/Y	–
80	G/B	–

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TURN SIGNAL AND HAZARD WARNING LAMPS

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



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	-
14	P	-

Connector No.	M14
Connector Name	WIRE TO WIRE
Connector Type	NS06FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
4	BR	-
5	GR	-

Connector No.	M27
Connector Name	COMBINATION SWITCH
Connector Type	TK16FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	V	INPUT1
2	G	INPUT2
3	L	INPUT3
4	GR	INPUT4
5	BR	INPUT6
6	P	OUTPUT1
7	R	OUTPUT2
8	W	OUTPUT5
9	Y	OUTPUT4
10	LG	OUTPUT3

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	SAB40FW

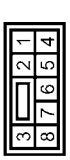


Terminal No.	Color of Wire	Signal Name [Specification]
21	L	CAN-H
22	P	CAN-L

Connector No.	M45
Connector Name	HAZARD SWITCH
Connector Type	CINCH REF 49309EV4M9 (WHITE)

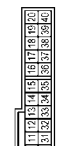
Terminal No.	Color of Wire	Signal Name [Specification]
2	B	-
3	LG	-

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB



Terminal No.	Color of Wire	Signal Name [Specification]
1	P	COMBI SW OUTPUT 1
2	Y	COMBI SW OUTPUT 4
3	LG	COMBI SW OUTPUT 3
4	R	COMBI SW OUTPUT 2
5	W	COMBI SW OUTPUT 5
8	LG	HAZARD SW
19	L	CAN-H
20	P	CAN-L
31	BR	COMBI SW INPUT 5
32	G	COMBI SW INPUT 2
33	V	COMBI SW INPUT 1

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017



Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)
47	G/Y	FLASHER OUTPUT (LEFT)
48	G/B	FLASHER OUTPUT (RIGHT)

Terminal No.	Color of Wire	Signal Name [Specification]
34	GR	COMBI SW INPUT 4
35	L	COMBI SW INPUT 3
38	W/L	IGN SW

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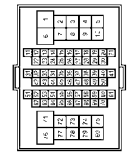
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TURN SIGNAL AND HAZARD WARNING LAMPS

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC083S0017

Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-NS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
76	Y	–
79	BR	–
80	GR	–

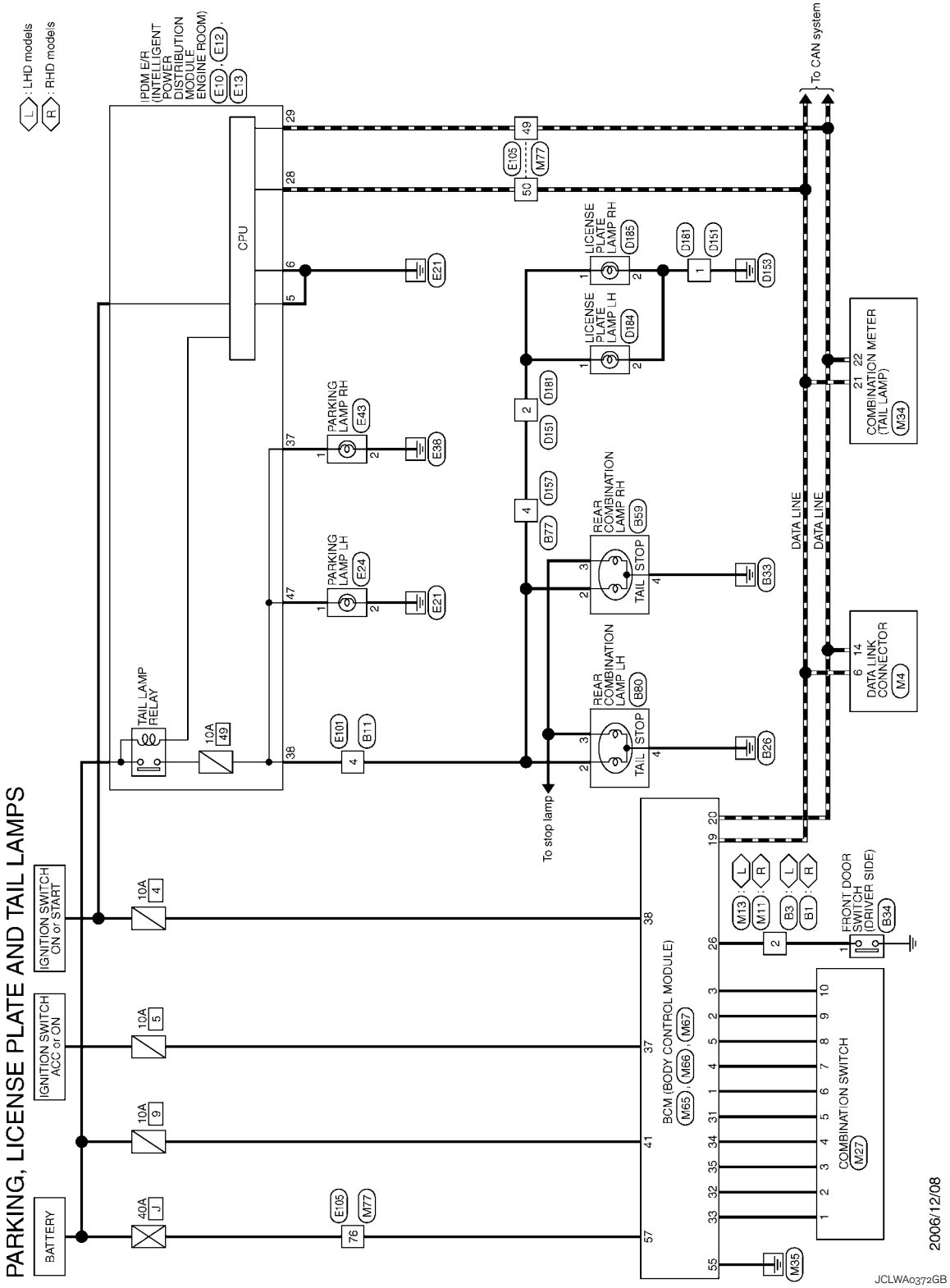
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PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

Wiring Diagram - PARKING, LICENSE PLATE AND TAIL LAMPS -

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PARKING, LICENSE PLATE AND TAIL LAMPS

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

H.S.

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24

Terminal No.	Color of Wire	Signal Name [Specification]
2	R/W	-[RHD models]

Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

H.S.

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24

Terminal No.	Color of Wire	Signal Name [Specification]
2	R/W	-[LHD models]

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TK10MW-NS8

H.S.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18		

Terminal No.	Color of Wire	Signal Name [Specification]
4	R/L	-

Connector No.	B34
Connector Name	FRONT DOOR SWITCH (DRIVER SIDE)
Connector Type	A03FW

H.S.

1
2
3

Terminal No.	Color of Wire	Signal Name [Specification]
1	R/W	-

Connector No.	B59
Connector Name	REAR COMBINATION LAMP RH
Connector Type	FCI 211PC042S4021

H.S.

1	2	3	4

Terminal No.	Color of Wire	Signal Name [Specification]
2	R/L	-
3	R/W	-
4	B	-

Connector No.	B77
Connector Name	WIRE TO WIRE
Connector Type	TH08FW

H.S.

4	3	2	1
8	7	6	5

Terminal No.	Color of Wire	Signal Name [Specification]
4	R/L	-

Connector No.	B80
Connector Name	REAR COMBINATION LAMP LH
Connector Type	FCI 211PC042S4021

H.S.

1	2	3	4

Terminal No.	Color of Wire	Signal Name [Specification]
2	R/L	-
3	R/W	-
4	B	-

Connector No.	D151
Connector Name	WIRE TO WIRE
Connector Type	TH08MW

H.S.

1	2	3	4
5	6	7	8

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	-
2	R/L	-

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PARKING, LICENSE PLATE AND TAIL LAMPS

Connector No.	D157
Connector Name	WIRE TO WIRE
Connector Type	TH08MW

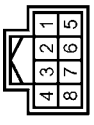
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
4	R/L	-

Connector No.	D181
Connector Name	WIRE TO WIRE
Connector Type	TH08FW

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
1	B	-
2	R/L	-

Connector No.	D184
Connector Name	LICENSE PLATE LAMP LH
Connector Type	TRW 302042310OD

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
1	R/L	-
2	B	-

Connector No.	D185
Connector Name	LICENSE PLATE LAMP RH
Connector Type	TRW 302042310OD

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
1	R/L	-
2	B	-

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
5	B	-
6	B	-

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
28	L	-
29	P	-

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS16FW-CS

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
37	R/W	-
38	R/L	-
47	R/L	-

Connector No.	E24
Connector Name	PARKING LAMP LH
Connector Type	RH02FB

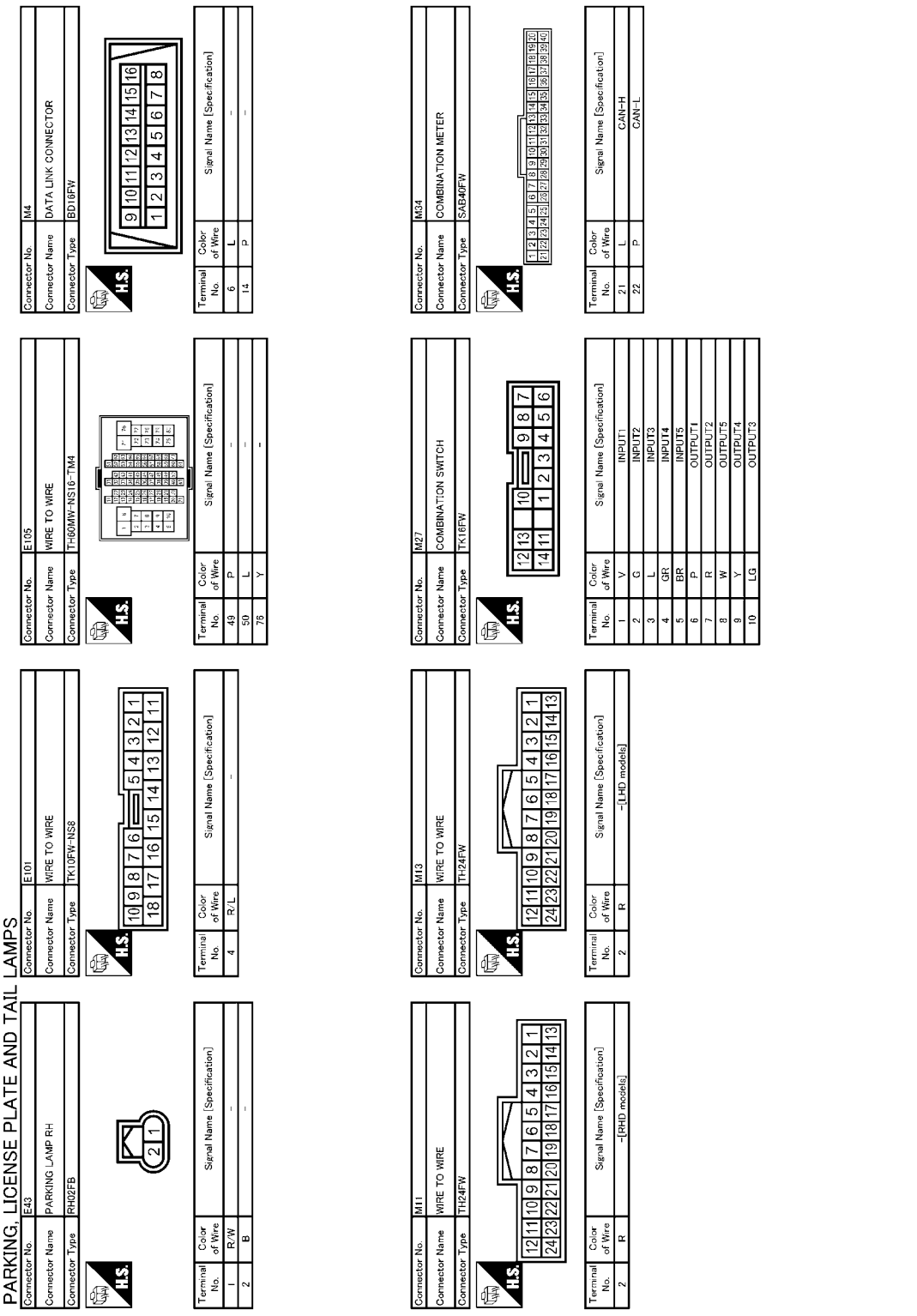
H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	R/L	-
2	B	-

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PARKING, LICENSE PLATE AND TAIL LAMPS

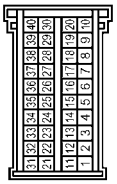


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PARKING, LICENSE PLATE AND TAIL LAMPS

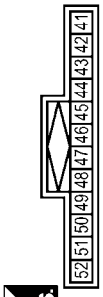
34	GR	COMBI SW INPUT 4	
35	L	COMBI SW INPUT 3	
37	R	ACC SW	
38	W/L	IGN SW	

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB



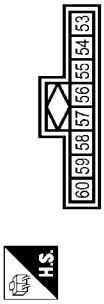
Terminal No.	Color of Wire	Signal Name [Specification]
1	P	COMBI SW OUTPUT 1
2	Y	COMBI SW OUTPUT 4
3	LG	COMBI SW OUTPUT 3
4	R	COMBI SW OUTPUT 2
5	W	COMBI SW OUTPUT 5
19	L	CAN-H
20	P	CAN-L
26	R	DOOR SW (DR)
31	BR	COMBI SW INPUT 5
32	G	COMBI SW INPUT 2
33	V	COMBI SW INPUT 1

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017



Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC083S0017



Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
49	P	-
50	L	-
76	Y	-

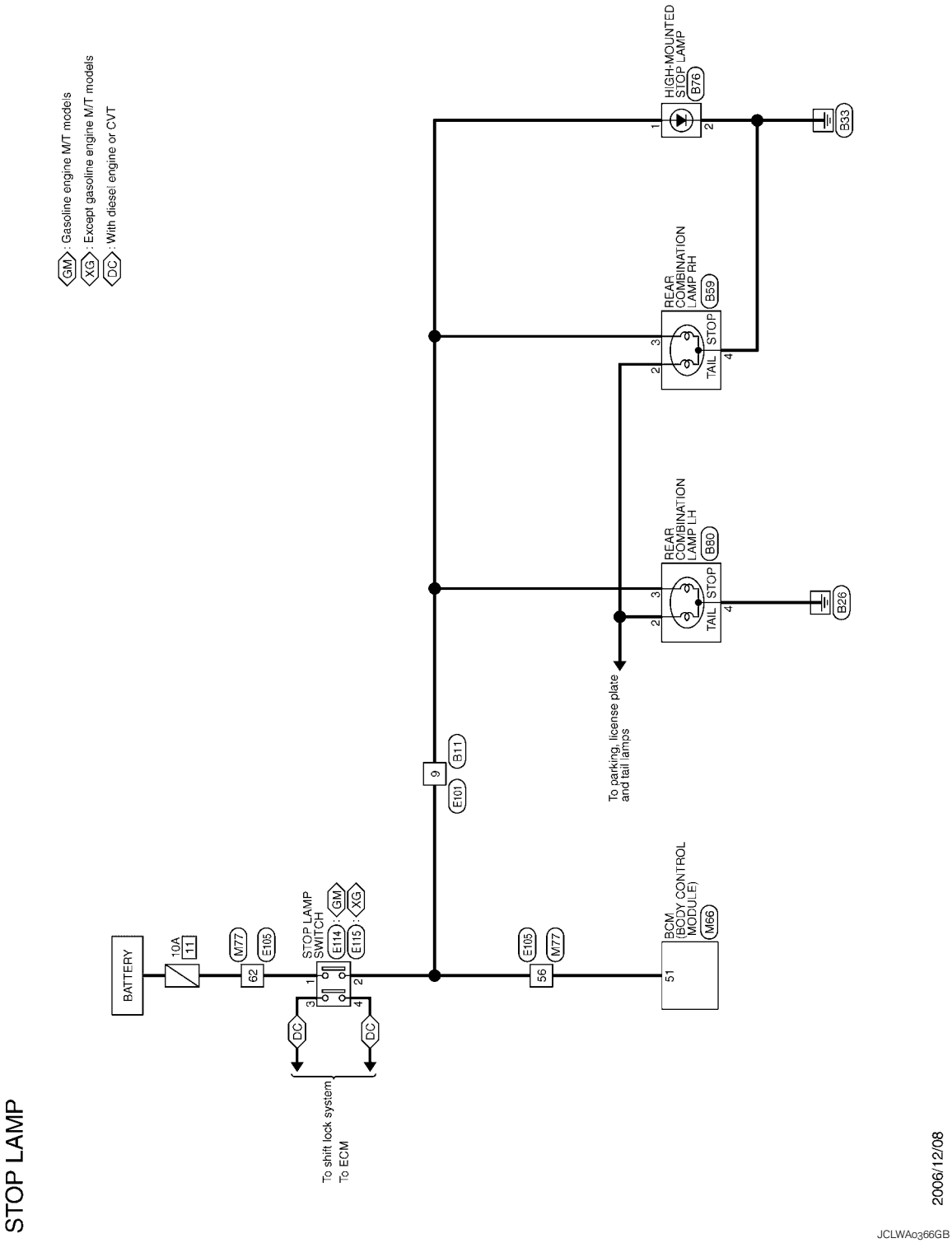
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STOP LAMP

Wiring Diagram - STOP LAMP -

INFOID:0000000000977448



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STOP LAMP

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TK10MW-NS8

Terminal No.	Color of Wire	Signal Name [Specification]
9	R/W	-

Connector No.	E101
Connector Name	WIRE TO WIRE
Connector Type	TK10FW-NS8

Terminal No.	Color of Wire	Signal Name [Specification]
9	R/W	-

Connector No.	B59
Connector Name	REAR COMBINATION LAMP RH
Connector Type	FCI 211PC042S4021

Terminal No.	Color of Wire	Signal Name [Specification]
2	R/L	-
3	R/W	-
4	B	-

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
56	R/W	-
62	V	-

Connector No.	B76
Connector Name	HIGH-MOUNTED STOP LAMP
Connector Type	SICMA 11 770297543

Terminal No.	Color of Wire	Signal Name [Specification]
1	R/W	-
2	B	-

Connector No.	E114
Connector Name	STOP LAMP SWITCH
Connector Type	M02FB

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	-
2	R/W	-

Connector No.	B80
Connector Name	REAR COMBINATION LAMP LH
Connector Type	FCI 211PC042S4021

Terminal No.	Color of Wire	Signal Name [Specification]
2	R/L	-
3	R/W	-
4	B	-

Connector No.	E115
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC

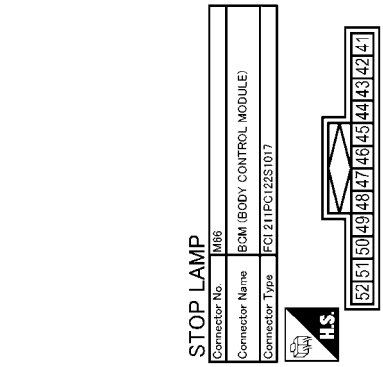
Terminal No.	Color of Wire	Signal Name [Specification]
1	V	-
2	R/W	-
3	G	-[With CVT]
3	O	-[With diesel engine]
4	B	-[With CVT]
4	W/L	-[With diesel engine]

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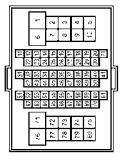
STOP LAMP

Connector No.	M86
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017



Terminal No.	Color of Wire	Signal Name [Specification]
51	R/W	STOP LAMP SW [With Intelligent Key]
51	R	STOP LAMP SW [Without Intelligent Key]

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-NS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
56	R	- [Except RHD models with Intelligent Key]
56	R/W	- [RHD models with Intelligent Key]
62	V	-

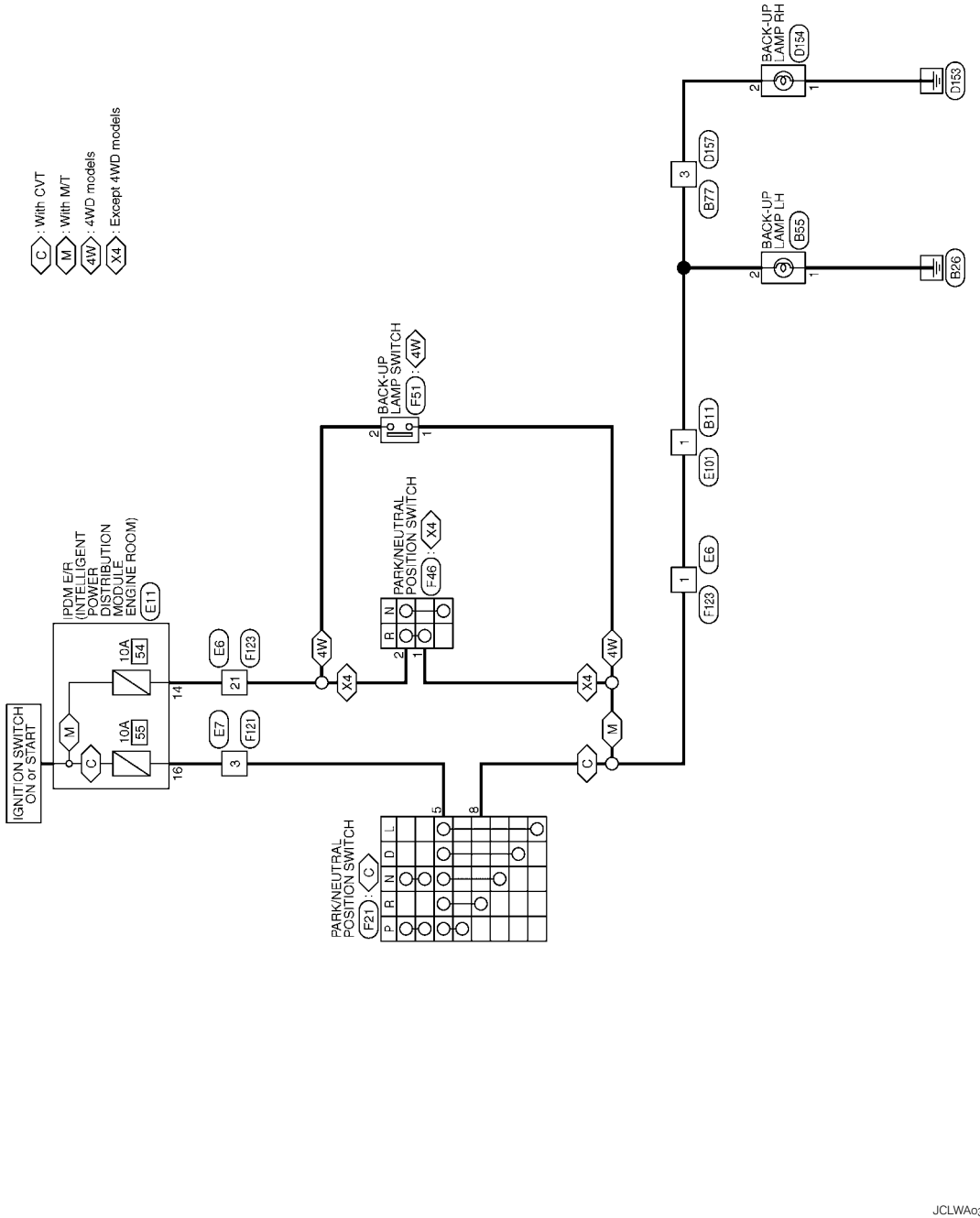
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BACK-UP LAMP

Wiring Diagram - BACK-UP LAMP -

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BACK-UP LAMP

2006/12/08

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BACK−UP LAMP

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TK10MW-NS8

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y/G	–

Connector No.	B55
Connector Name	BACK−UP LAMP LH
Connector Type	FCI 211PC022S9049

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	Y/G	–

Connector No.	B77
Connector Name	WIRE TO WIRE
Connector Type	TH08FW

Terminal No.	Color of Wire	Signal Name [Specification]
3	Y/G	–

Connector No.	D154
Connector Name	BACK−UP LAMP RH
Connector Type	FCI 211PC022S9049

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	Y/G	–

Connector No.	D157
Connector Name	WIRE TO WIRE
Connector Type	TH08MW

Terminal No.	Color of Wire	Signal Name [Specification]
3	Y/G	–

Connector No.	E6
Connector Name	WIRE TO WIRE
Connector Type	TK24MW-1V

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y/G	–
21	R/B	–

Connector No.	E7
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
3	Y/R	–

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FBR-CS

Terminal No.	Color of Wire	Signal Name [Specification]
14	R/B	–
16	Y/R	–

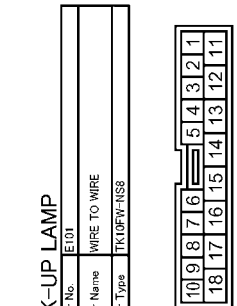
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BACK–UP LAMP

Connector No.	E101
Connector Name	WIRE TO WIRE
Connector Type	TK10FW-NS8

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
1	Y/G	–

Connector No.	F21
Connector Name	PARK/NEUTRAL POSITION SWITCH
Connector Type	RK08FG

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
5	Y/R	–
8	Y/G	–

Connector No.	F46
Connector Name	PARK/NEUTRAL POSITION SWITCH
Connector Type	FEA03FG

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y/G	–
2	R/B	–

Connector No.	F51
Connector Name	BACK-UP LAMP SWITCH
Connector Type	RK02FB

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
1	Y/G	–
2	R/B	–

Connector No.	F121
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
3	Y/R	–

Connector No.	F123
Connector Name	WIRE TO WIRE
Connector Type	TK24FW-1V

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y/G	–
21	R/B	–

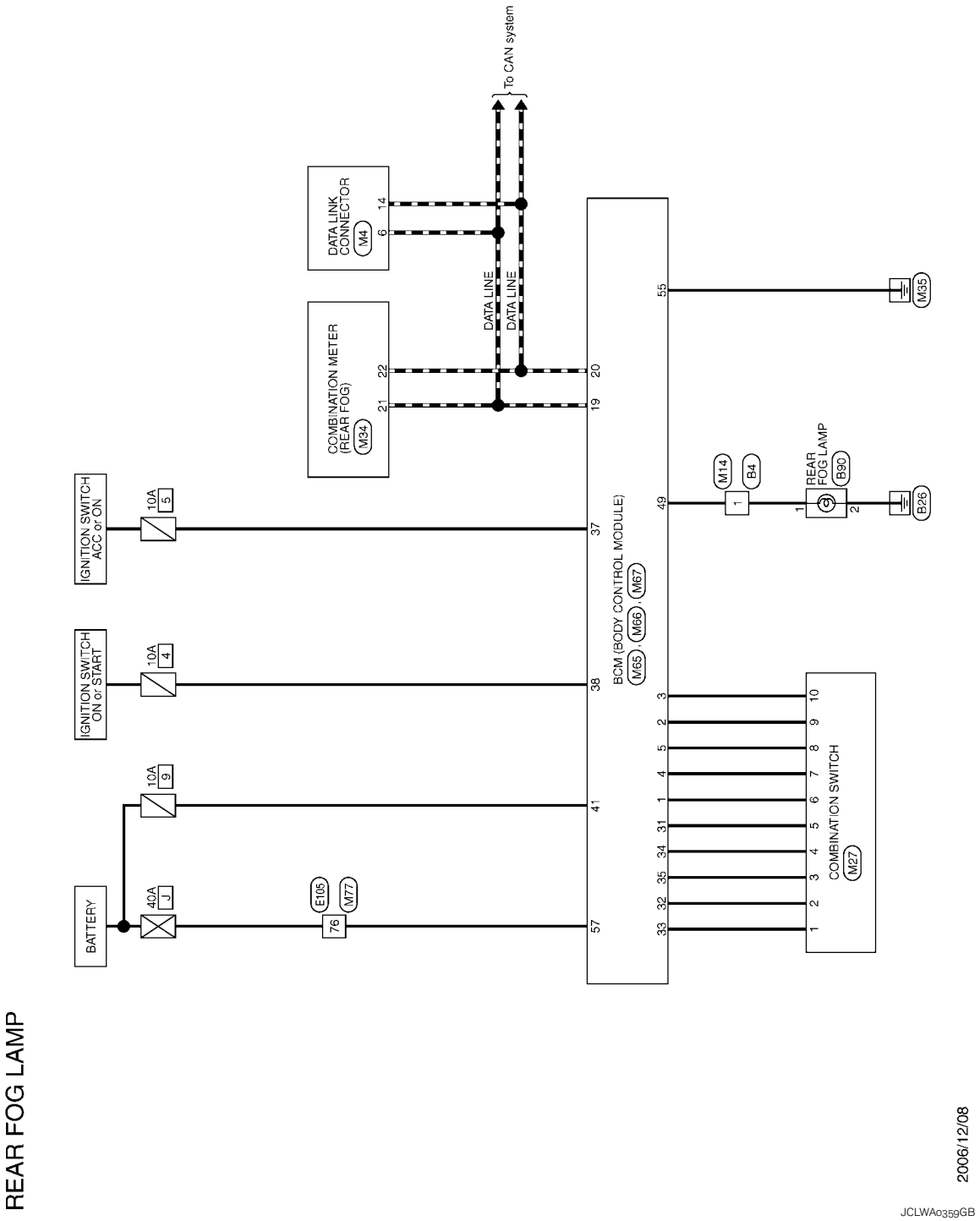
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REAR FOG LAMP SYSTEM

Wiring Diagram - REAR FOG LAMP -

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REAR FOG LAMP

Connector No.	B4
Connector Name	WIRE TO WIRE
Connector Type	NS08MW-CS

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	–

Connector No.	B90
Connector Name	REAR FOG LAMP
Connector Type	FEA02FB

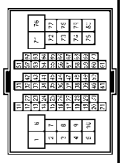
H.S.



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

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-NS16-TM4

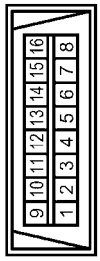
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
76	Y	–

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

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M14
Connector Name	WIRE TO WIRE
Connector Type	NS08FW-CS

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	–

Connector No.	M27
Connector Name	COMBINATION SWITCH
Connector Type	TK16FW

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	INPUT1
2	G	INPUT2
3	L	INPUT3
4	GR	INPUT4
5	BR	INPUT5
6	P	OUTPUT1
7	R	OUTPUT2
8	W	OUTPUT5
9	Y	OUTPUT4
10	LG	OUTPUT3

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	SAB40FW

H.S.

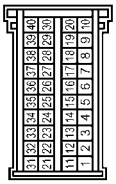
Terminal No.	Color of Wire	Signal Name [Specification]
21	L	CAN-H
22	P	CAN-L

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REAR FOG LAMP

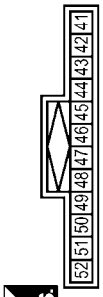
Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB



Terminal No.	Color of Wire	Signal Name [Specification]
1	P	COMBI SW OUTPUT 1
2	Y	COMBI SW OUTPUT 4
3	LG	COMBI SW OUTPUT 3
4	R	COMBI SW OUTPUT 2
5	W	COMBI SW OUTPUT 5
19	L	CAN-H
20	P	CAN-L
31	BR	COMBI SW INPUT 5
32	G	COMBI SW INPUT 2
33	V	COMBI SW INPUT 1
34	GR	COMBI SW INPUT 4

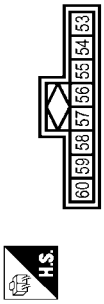
35	L	COMBI SW INPUT 3
37	R	ACC SW
38	W/L	IGN SW

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017



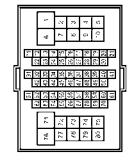
Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)
49	Y	REAR FOG LAMP

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC083S0017



Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-NS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
76	Y	-

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ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000001116323

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition		Value/Status
ACC ON SW	Ignition switch OFF		OFF
	Ignition switch ACC or ON		ON
AIR COND SW	A/C switch OFF		OFF
	A/C switch ON		ON
AUT LIGHT SYS	Outside of the room is dark		OFF
	Outside of the room is bright		ON
AUTO LIGHT SW	Lighting switch OFF		OFF
	Lighting switch AUTO		ON
BACK DOOR SW	Back door closed		OFF
	Back door opened		ON
BATTERY VOLT **NOTE:** Diesel engine models only	Ignition switch ON		Approximately the same as power supply voltage
BUCKLE SW	Driver's seat belt unfastened		OFF
	Driver's seat belt fastened		ON
CDL LOCK SW	Door lock/unlock switch does not operate		OFF
	Press door lock/unlock switch to the LOCK side		ON
CDL UNLOCK SW	Door lock/unlock switch does not operate		OFF
	Press door lock/unlock switch to the UNLOCK side		ON
DOOR SW-AS	Passenger door closed		OFF
	Passenger door opened		ON
DOOR SW-DR	Driver door closed		OFF
	Driver door opened		ON
DOOR SW-RL	Rear LH door closed		OFF
	Rear LH door opened		ON
DOOR SW-RR	Rear RH door closed		OFF
	Rear RH door opened		ON
ELEC PWR CUT **NOTE:** Diesel engine models only	Engine running	Fan switch ON (when engine coolant is cool) **NOTE:** Depending on the ambient temperature, battery voltage, etc.	OFF
		The current status maintained with the signal from ECM received.	FREEZ
		• Fan switch OFF • Fan switch ON after engine warming UP **NOTE:** Depending on the engine coolant temperature, ambient temperature, battery voltage, etc.	INHBT

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Monitor Item	Condition	Value/Status
ENG COOLNT T **NOTE:** Diesel engine models only	Engine running	Approximately the same as water temperature gauge reading
ENGINE RPM **NOTE:** Diesel engine models only	Engine running	Approximately the same as tachometer reading
ENGINE RUN	Engine stopped	OFF
	Engine running	ON
ENGINE STATUS **NOTE:** Diesel engine models only	Engine stopped	STOP
	While the engine stalls	STALL
	Engine running	RUN
	At engine cranking	CRA
FAN ON SIG	Fan switch OFF	OFF
	Fan switch ON	ON
FR FOG SW	Front fog lamp switch OFF	OFF
	Front fog lamp switch ON	ON
FR WASHER SW	Front washer switch OFF	OFF
	Front washer switch ON	ON
FR WIPER LOW	Front wiper switch OFF	OFF
	Front wiper switch LO	ON
FR WIPER HI	Front wiper switch OFF	OFF
	Front wiper switch HI	ON
FR WIPER INT	Front wiper switch OFF	OFF
	Front wiper switch INT	ON
FR WIPER STOP	Any position other than front wiper stop position	OFF
	Front wiper stop position	ON
HAZARD SW	When hazard switch is not pressed	OFF
	When hazard switch is pressed	ON
HEAD LAMP SW 1	Lighting switch OFF	OFF
	Lighting switch 2ND	ON
HEAD LAMP SW 2	Lighting switch OFF	OFF
	Lighting switch 2ND	ON
HI BEAM SW	Lighting switch OFF	OFF
	Lighting switch HI	ON
HOOD SW	Close the hood **NOTE:** Vehicles without theft warning system are OFF-fixed	OFF
	Open the hood	ON
H/L WASH SW	**NOTE:** The item is indicated, but not monitored	OFF
IGN ON SW	Ignition switch OFF or ACC	OFF
	Ignition switch ON	ON
IGN SW CAN	Ignition switch OFF or ACC	OFF
	Ignition switch ON	ON
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7

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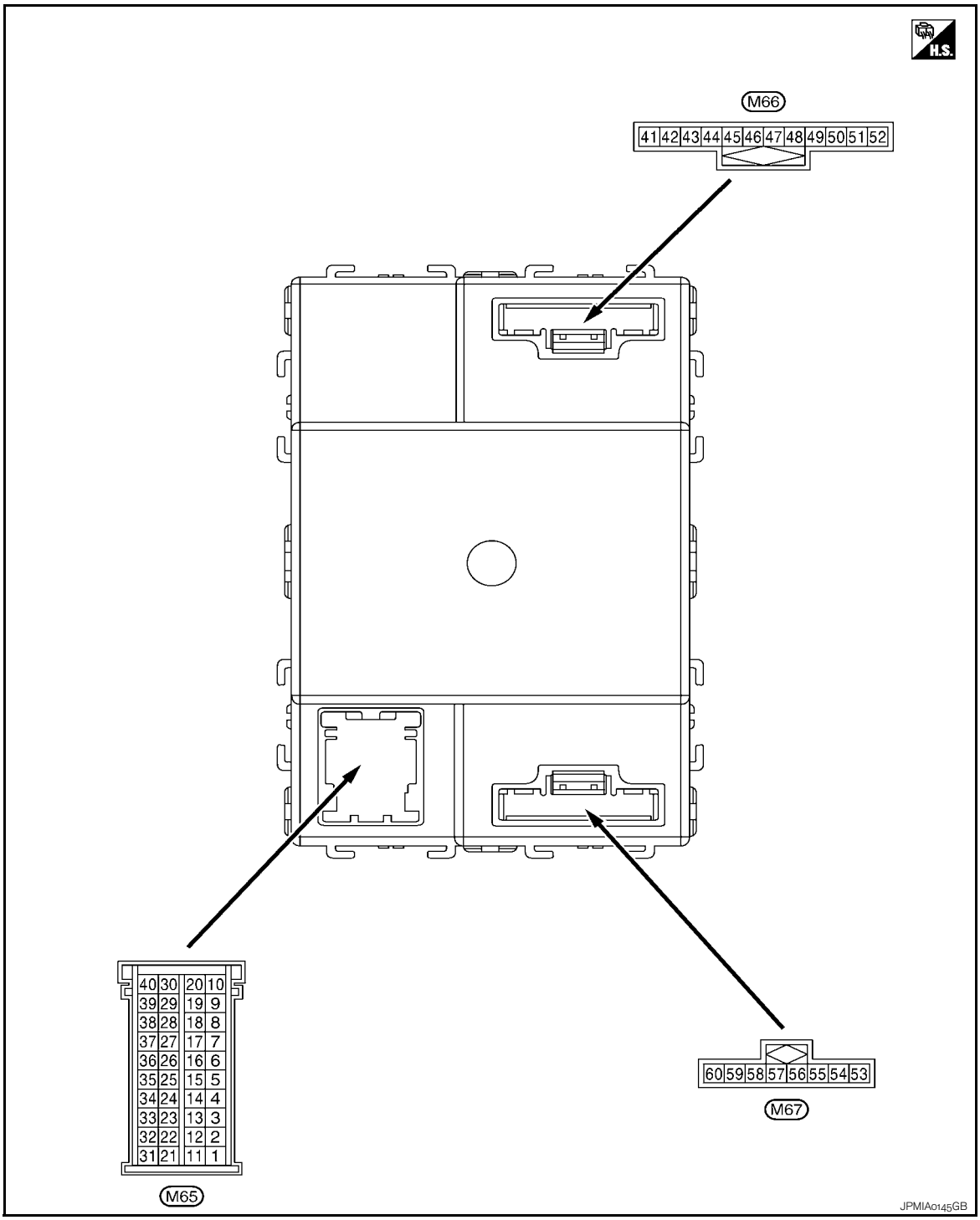
Monitor Item	Condition	Value/Status
I-KEY LOCK	LOCK button of Intelligent Key is not pressed	OFF
	LOCK button of Intelligent Key is pressed	ON
I-KEY UNLOCK	UNLOCK button of Intelligent Key is not pressed	OFF
	UNLOCK button of Intelligent Key is pressed	ON
KEY ON SW	Mechanical key is removed from key cylinder	OFF
	Mechanical key is inserted to key cylinder	ON
KEYLESS LOCK	LOCK button of key fob is not pressed	OFF
	LOCK button of key fob is pressed	ON
KEYLESS UNLOCK	UNLOCK button of key fob is not pressed	OFF
	UNLOCK button of key fob is pressed	ON
LIT-SEN FAIL	Light & rain sensor is in normal condition	OK
	Light & rain sensor is with internal error	NOTOK
OIL PRESS SW	• Ignition switch OFF or ACC • Engine running	OFF
	Ignition switch ON	ON
OUT SIDE TEMP **NOTE:** Diesel engine models	Ignition switch ON	Approximately the same as outside air temperature
PASSING SW	Other than lighting switch PASS	OFF
	Lighting switch PASS	ON
PUSH SW	Return to ignition switch to LOCK position	OFF
	Press ignition switch	ON
REAR DEF SW	Rear window defogger switch OFF	OFF
	Rear window defogger switch ON	ON
RKE LOCK AND UN-LOCK	**NOTE:** The item is indicated, but not monitored	OFF
		ON
RR FOG SW	Rear fog lamp switch OFF	OFF
	Rear fog lamp switch ON	ON
RR WASHER SW	Rear washer switch OFF	OFF
	Rear washer switch ON	ON
RR WIPER INT	Rear wiper switch OFF	OFF
	Rear wiper switch INT	ON
RR WIPER ON	Rear wiper switch OFF	OFF
	Rear wiper switch ON	ON
RR WIPER STOP	Rear wiper stop position	OFF
	Other than rear wiper stop position	ON
SHOCK SENSOR	Ignition switch ON	NOMAL
	After the reception of air bag deployment signal from air bag diagnosis sensor unit	OFF
	During the reception of air bag deployment signal from air bag diagnosis sensor unit	ON
TAIL LAMP SW	Lighting switch OFF	OFF
	Lighting switch 1ST	ON
TRNK OPNR SW	When back door opener switch is not pressed	OFF
	When back door opener switch is pressed	ON

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Monitor Item	Condition	Value/Status
TURN SIGNAL L	Turn signal switch OFF	OFF
	Turn signal switch LH	ON
TURN SIGNAL R	Turn signal switch OFF	OFF
	Turn signal switch RH	ON
UNLOCK WITH DR	**NOTE:** The item is indicated, but not monitored	OFF
		ON
UNLOCK SHOCK	Other than the following	OFF
	During the unlock operation interlocked with air bag	ON
VEHICLE SPEED	While driving	Equivalent to speedometer reading

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TERMINAL LAYOUT

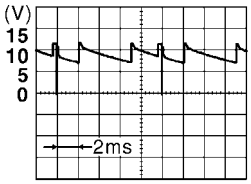
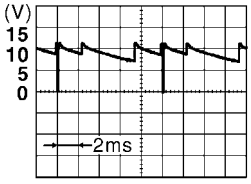
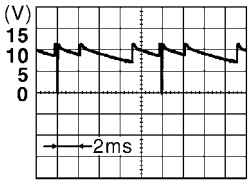
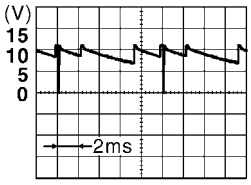


PHYSICAL VALUES

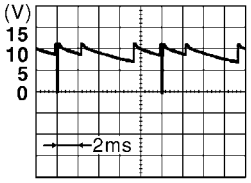
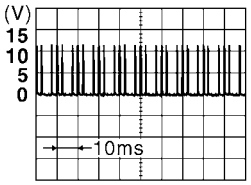
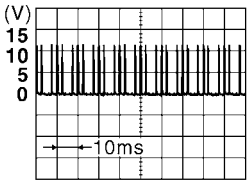
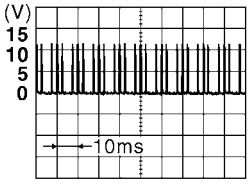
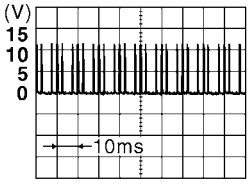
CAUTION:

- **Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF is not to be fluctuated by being overloaded.**
- **Turn wiper intermittent dial position to 4 except when checking waveform or voltage of wiper intermittent dial position. Wiper intermittent dial position can be confirmed on CONSULT -III. Refer to BCS-26, "COMB SW : CONSULT-III Function (BCM - COMB SW)".**
- **BCM reads the status of the combination switch at 10 ms internal normally. Refer to BCS-7, "System Description".**

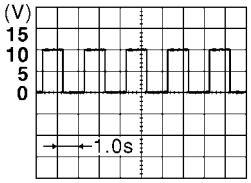
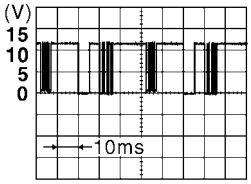
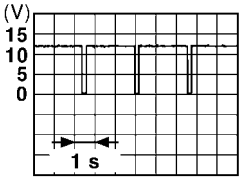
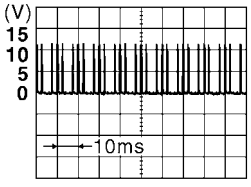
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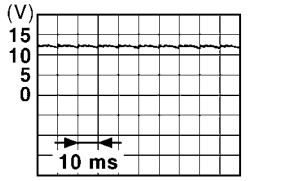
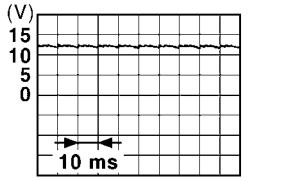
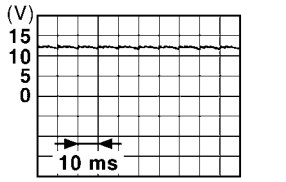
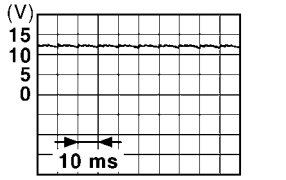
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
+	–					
1 (P)	Ground	Combination switch OUTPUT 1	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front wiper switch HI (Wiper intermittent dial 4)	 JPMIA0160GB 9.1 V
					Rear wiper switch INT (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3 • Wiper intermittent dial 6 • Wiper intermittent dial 7	
2 (Y)	Ground	Combination switch OUTPUT 4	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Lighting switch 2ND	 JPMIA0163GB 9.3 V
					Lighting switch PASS	
					Front fog lamp switch ON	
					Turn signal switch LH	
3 (LG)	Ground	Combination switch OUTPUT 3	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Lighting switch AUTO	 JPMIA0162GB 9.3 V
					Rear fog lamp switch OFF	
					Front wiper switch MIST	
					Front wiper switch INT	
					Front wiper switch LO	
4 (R)	Ground	Combination switch OUTPUT 2	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front washer switch ON (Wiper intermittent dial 4)	 JPMIA0161GB 9.1 V
					Rear wiper switch ON (Wiper intermittent dial 4)	
					Rear washer switch ON (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	

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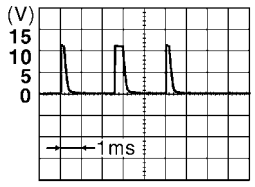
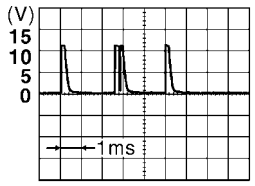
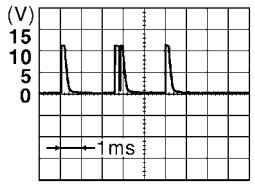
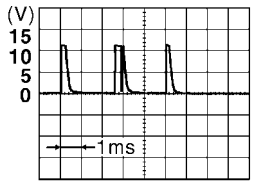
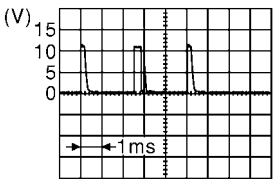
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
5 (W)	Ground	Combination switch OUTPUT 5	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Lighting switch 1ST	 JPMIA0164GB 9.1 V
					Lighting switch 2ND	
					Lighting switch HI	
					Turn signal switch RH	
7 (P)	Ground	Door lock/unlock switch (Lock)	Output	Door lock/unlock switch	Not pressed	 JPMIA0154GB 1.2 V
					Pressed to the lock side	0 V
8 (LG)	Ground	Hazard switch	Output	Hazard switch	Not pressed	 JPMIA0154GB 1.3 V
					Pressed	0 V
9 (BR)	Ground	Door lock/unlock switch (Unlock)	Output	Door lock/unlock switch	Not pressed	 JPMIA0154GB 1.2 V
					Pressed to the unlock side	0 V
12 (P)	Ground	Back door opener switch	Output	Back door opener switch	Not pressed	 JPMIA0154GB 1.2 V
					Pressed	0 V

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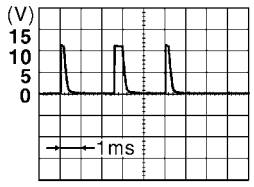
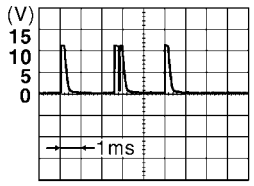
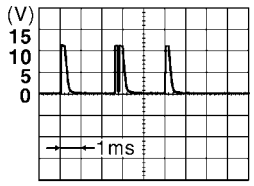
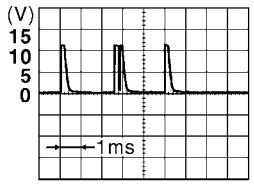
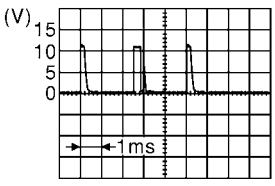
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
13 (R)	Ground	Shock detect sensor	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON		 JPMIA0155GB 6.0 V
14 (L/R)	Ground	A/C switch	Output	A/C switch	Not pressed	Battery voltage
					Pressed	0 V
15 (LG/B)	Ground	Fan switch	Output	Fan switch	Not pressed	Battery voltage
					Pressed	0 V
16 (GR)	Ground	Alarm link	Input	—		—
17 (BR)	Ground	Light & rain sensor serial link	Output	Ignition switch OFF or ACC		Battery voltage
				Ignition switch ON		 JPMIA0156GB 8.7 V
18 (SB)	Ground	Security indicator	Output	Security indicator	ON	0 V
					Blinking	 JPMIA0014GB 10.3 V
					OFF	Battery voltage
19 (L)	—	CAN-H	Input/ Output	—		—
20 (P)	—	CAN-L	Input/ Output	—		—
21 (SB)	Ground	Rear window defogger switch	Output	Rear window defogger switch	Not pressed	 JPMIA0154GB 1.1 V
					While pressing	0 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
24 (GR)	Ground	Door lock status indicator	Output	Door lock status indicator	ON	Battery voltage
					OFF	0 V
25 (GR)	Ground	Rear door switch LH	Input	Rear door switch LH	OFF (When rear door LH closed)	 PKIDo924E 11.2 V
					ON (When rear door LH opened)	0 V
26 (R)	Ground	Driver door switch	Input	Driver door switch	OFF (When driver door closed)	 PKIDo924E 11.2 V
					ON (When driver door opened)	0 V
27 (BR)	Ground	Passenger door switch	Input	Passenger door switch	OFF (When passenger door closed)	 PKIDo924E 11.2 V
					ON (When passenger door opened)	0 V
28 (G)	Ground	Back door switch	Input	Back door switch	OFF (When back door closed)	Battery voltage
					ON (When back door opened)	0 V
29 (LG)	Ground	Rear door switch RH	Input	Rear door switch RH	OFF (When rear door RH closed)	 PKIDo924E 11.2 V
					ON (When rear door RH opened)	0 V
30 (SB)	Ground	Audio link	Output	—	—	—

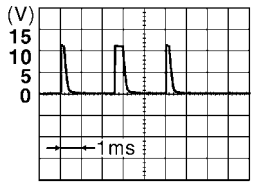
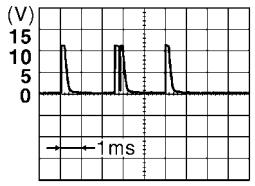
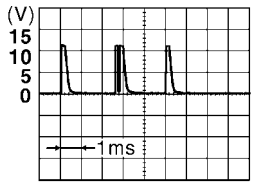
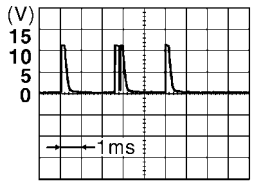
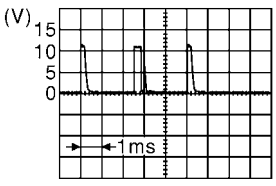
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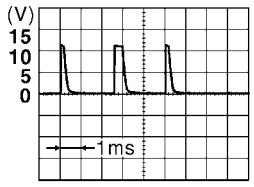
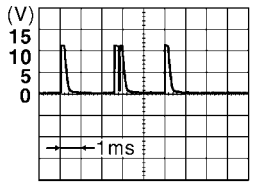
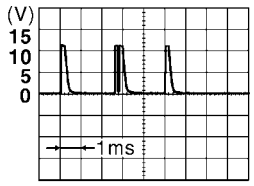
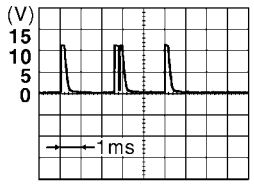
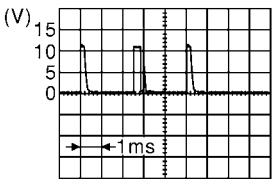
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
31 (BR)	Ground	Combination switch INPUT 5	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0165GB 1.3 V
					Front fog lamp switch ON (Wiper intermittent dial 4)	 JPMIA0167GB 1.3 V
					Rear fog lamp switch ON (Wiper intermittent dial 4)	 JPMIA0168GB 1.3 V
					Rear wiper switch ON (Wiper intermittent dial 4)	 JPMIA0169GB 1.3 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 6 • Wiper intermittent dial 7	 JPMIA0196GB 1.3 V

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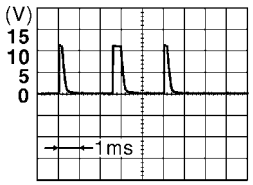
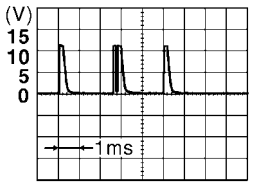
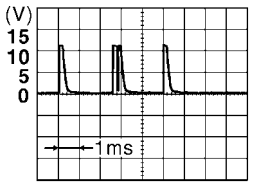
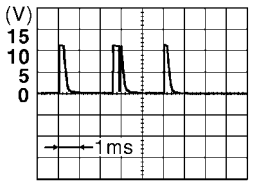
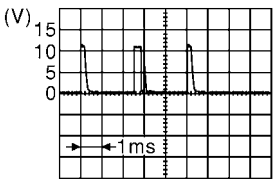
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
32 (G)	Ground	Combination switch INPUT 2	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	 JPMIA0165GB 1.4 V
					Lighting switch PASS	 JPMIA0167GB 1.3 V
					Lighting switch 2ND	 JPMIA0166GB 1.3 V
					Front wiper switch INT	 JPMIA0168GB 1.3 V
					Front wiper switch HI	 JPMIA0196GB 1.3 V

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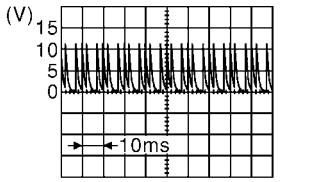
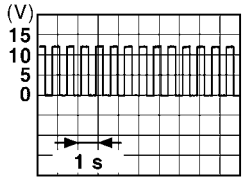
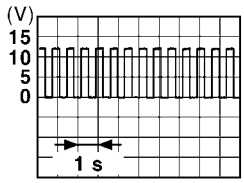
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
33 (V)	Ground	Combination switch INPUT 1	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	 JPMIA0165GB 1.4 V
					Turn signal switch LH	 JPMIA0167GB 1.3 V
					Turn signal switch RH	 JPMIA0166GB 1.3 V
					Front wiper switch LO	 JPMIA0168GB 1.3 V
					Front washer switch ON	 JPMIA0196GB 1.3 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
34 (GR)	Ground	Combination switch INPUT 4	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0165GB 1.4 V
					Lighting switch AUTO (Wiper intermittent dial 4)	 JPMIA0167GB 1.3 V
					Lighting switch 1ST (Wiper intermittent dial 4)	 JPMIA0166GB 1.3 V
					Rear wiper INT (Wiper intermittent dial 4)	 JPMIA0167GB 1.3 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 6	 JPMIA0196GB 1.3 V

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Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
35 (L)	Ground	Combination switch INPUT 3	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0165GB 1.4 V
					Lighting switch HI (Wiper intermittent dial 4)	 JPMIA0166GB 1.3 V
					Lighting switch 2ND (Wiper intermittent dial 4)	 JPMIA0167GB 1.3 V
					Rear wiper switch ON	 JPMIA0169GB 1.3 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3	 JPMIA0196GB 1.3 V
36 (V)	Ground	Key switch	Output	Insert mechanical key into ignition key cylinder		Battery voltage
				Remove mechanical key from ignition key cylinder		0 V
37 (R)	Ground	ACC power supply	Output	Ignition switch OFF		0 V
				Ignition switch ACC or ON		Battery voltage
38 (W/L)	Ground	Ignition power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage

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Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
39 (P)	Ground	NATS antenna amp.	Input/ Output	Insert mechanical key into ignition key cylinder		Just after Insert mechanical key into ignition key cylinder. Pointer of tester should move
40 (LG)	Ground	NATS antenna amp.	Input/ Output	Insert mechanical key into ignition key cylinder		Just after Insert mechanical key into ignition key cylinder. Pointer of tester should move
41 (V)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
42 (V)	Ground	Interior room lamp power supply	Output	After passing the interior room lamp battery saver operation time		0 V
				Any other time after passing the interior room lamp battery saver operation time		Battery voltage
43 (L)	Ground	Rear wiper motor	Output	Rear wiper switch OFF		0 V
				Rear wiper switch ON		Battery voltage
44 (L/W)	Ground	Rear wiper auto stop	Output	Ignition switch ON	Rear wiper stop position	0 V
					Any position other than rear wiper stop position	 JPMIA0197GB
45 (GR)	Ground	Back door lock actuator	Output	Back door opener switch	Pressed	Battery voltage (300ms)
					Not pressed	0 V
47 (G/Y)	Ground	Turn signal LH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	 PKIDog26E 6.5 V
48 (G/B)	Ground	Turn signal RH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	 PKIDog26E 6.5 V
49 (Y)	Ground	Rear fog lamp	Output	Lighting switch 1ST and front fog lamp switch ON	Rear fog lamp switch OFF	0 V
					Rear fog lamp switch ON	Battery voltage
51 (R/W)*1 (R)*2	Ground	Stop lamp switch	Output	Depress the brake pedal		Battery voltage
				Release the brake pedal		0 V

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Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
52 (R)	Ground	Room lamp timer control	Output	Interior room lamp	OFF	Battery voltage
					ON	0 V
53 (L)	Ground	Power window power supply	Output	Ignition switch	OFF or ACC	0 V
					ON	Battery voltage
54 (O)	Ground	Door unlock (All)	Output	Door lock/unlock switch	Pressed to the unlock side	Battery voltage
					Pressed to the lock side	0 V
55 (B)	Ground	Ground	—	Ignition switch ON		0 V
56 (Y)*1 (SB)*2	Ground	Door lock (All)	Output	Door lock/unlock switch	Pressed to the unlock side	0 V
					Pressed to the lock side	Battery voltage
57 (Y)	Ground	Battery power supply	Output	Ignition switch OFF		Battery voltage
58 (P)	Ground	Power window power supply	Output	Ignition switch OFF		Battery voltage
59 (BR)	Ground	Super lock	Output	When lock button of key fob or Intelligent Key is not pressed		0 V
				When lock button of key fob or Intelligent Key is pressed		Battery voltage
60 (GR)	Ground	Driver door unlock	Output	Door lock/unlock switch	Pressed to the unlock side	Battery voltage
					Pressed to the lock side	0 V

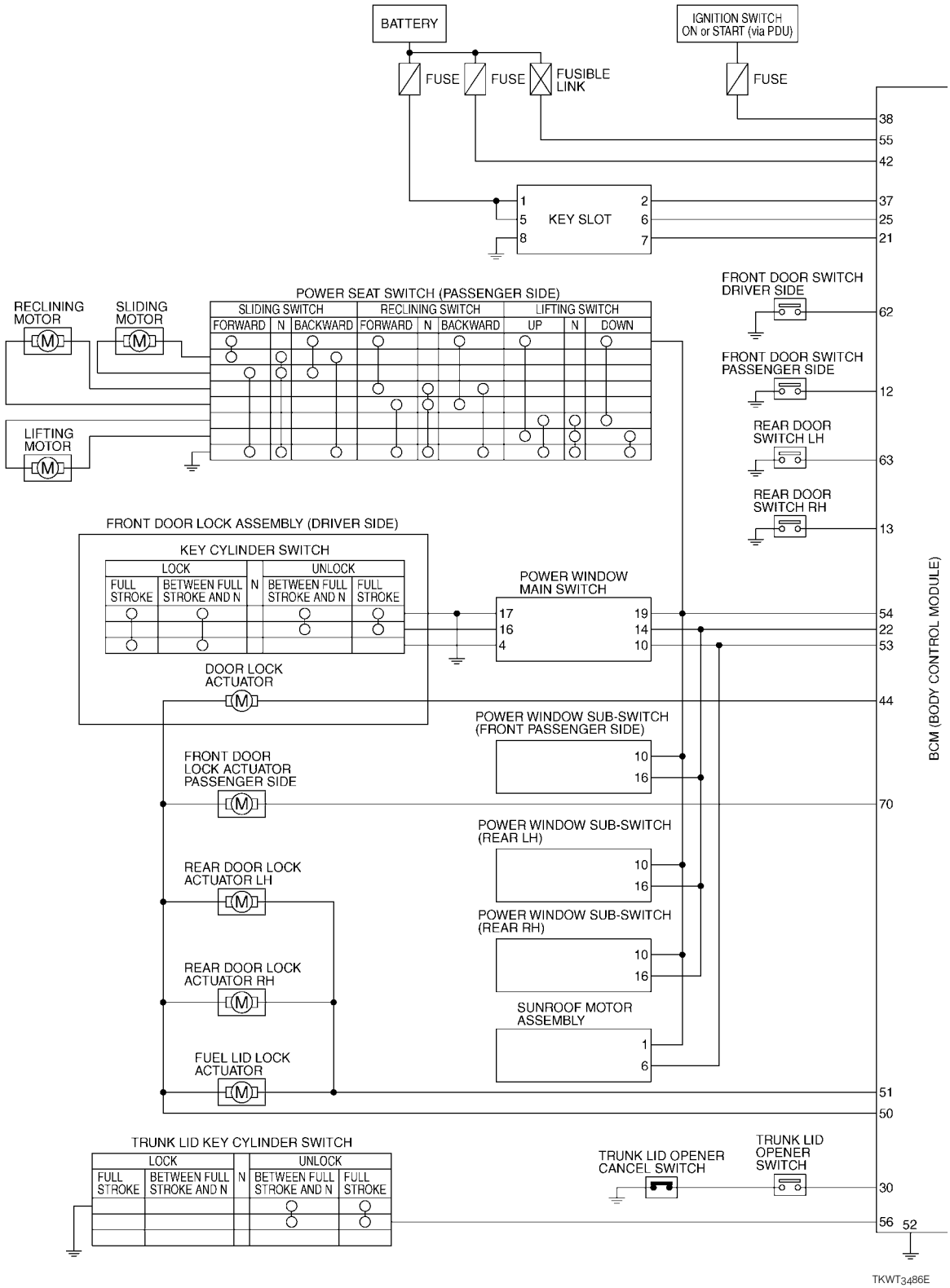
*1: With Intelligent Key system

*2: Without Intelligent Key system

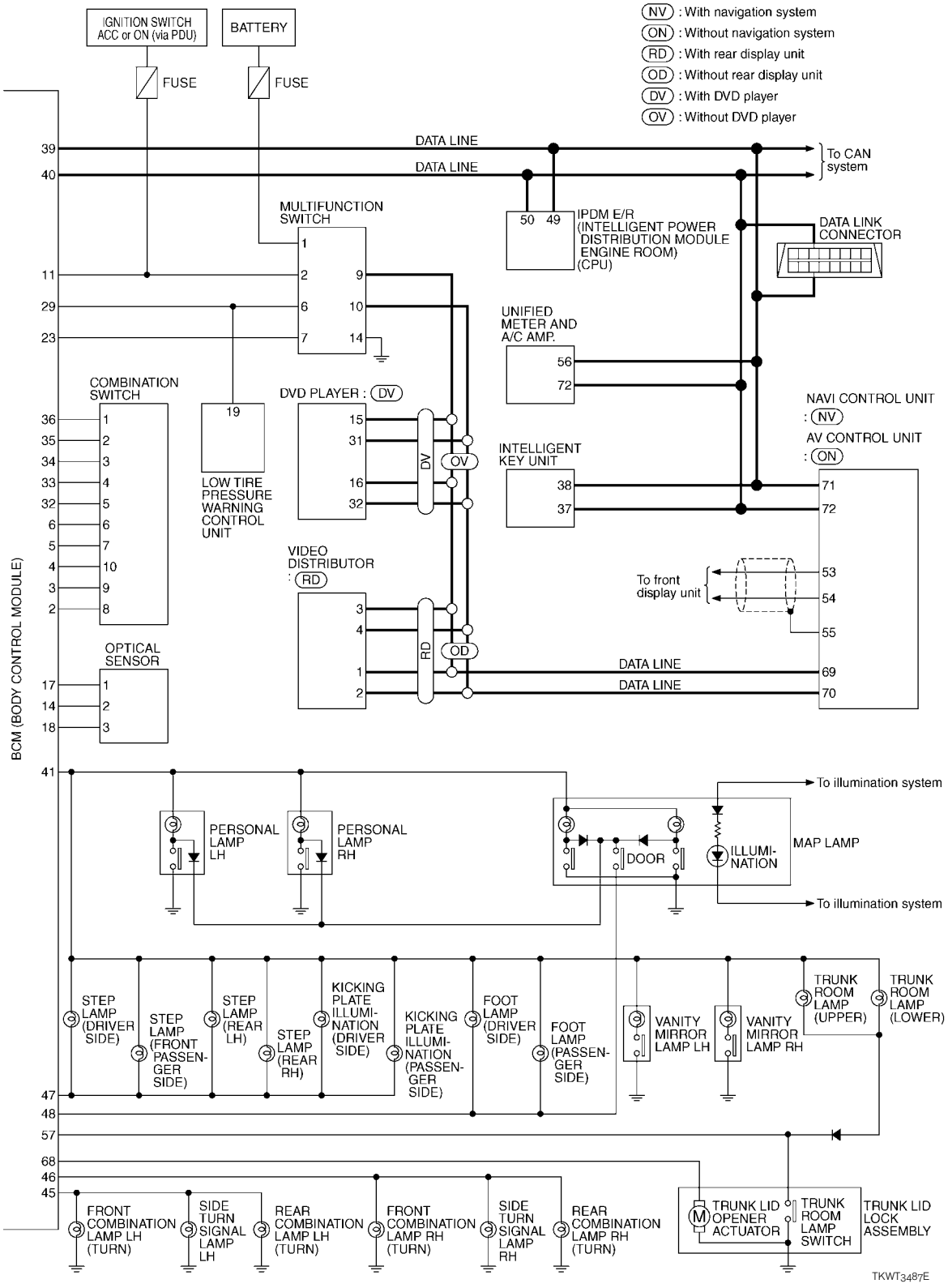
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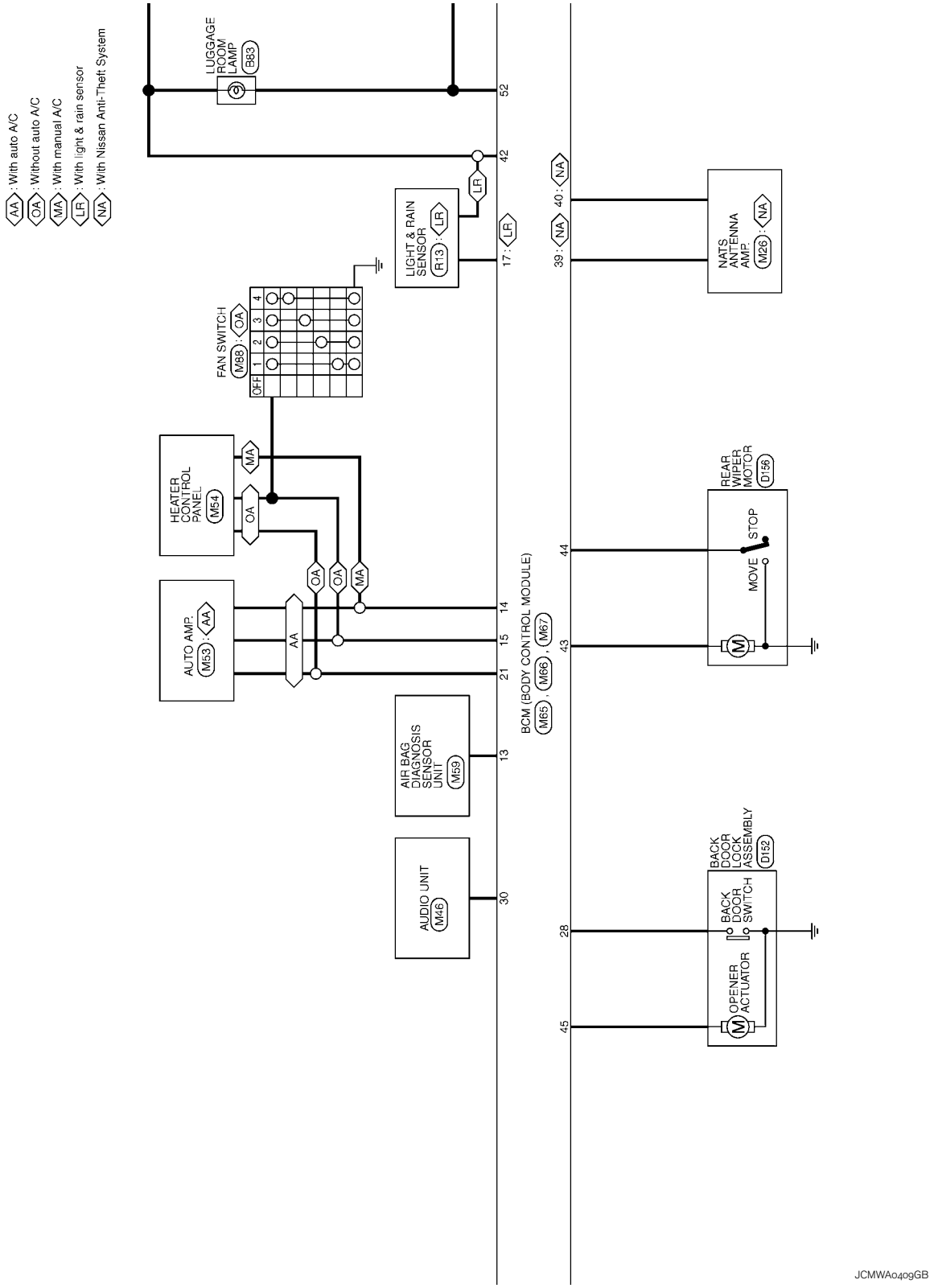
Wiring Diagram - BCM -

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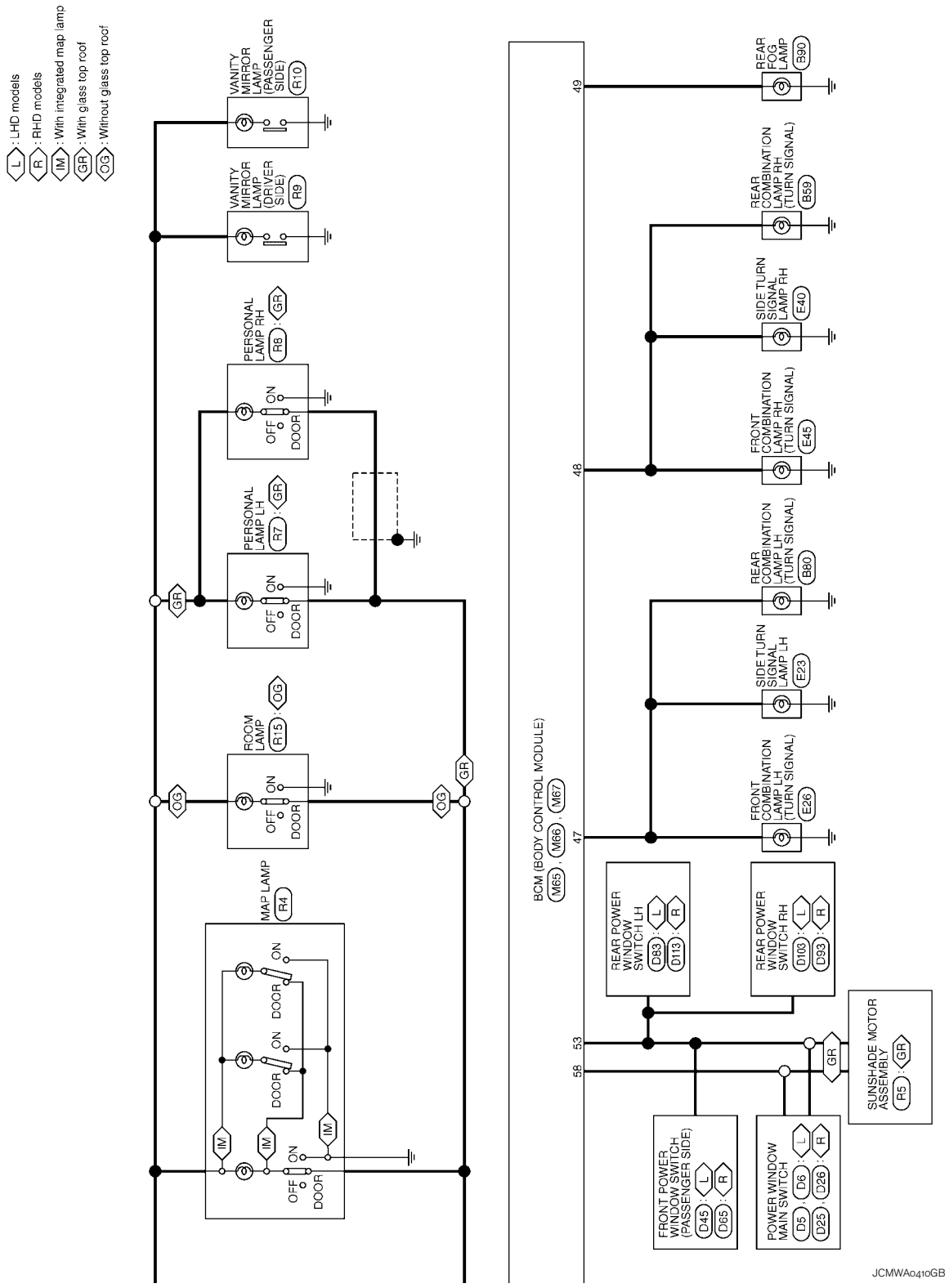


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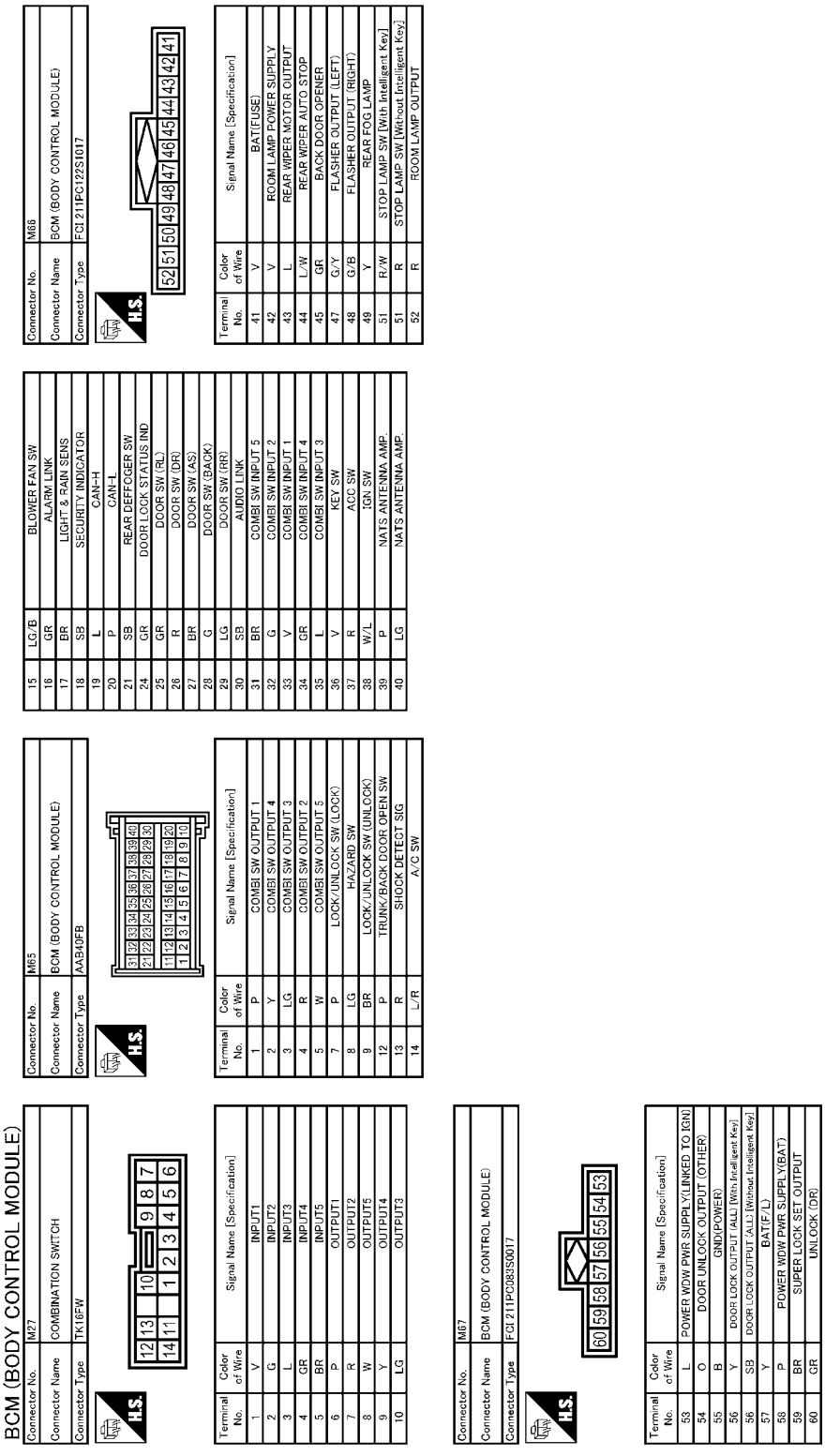

NV : With navigation system
ON : Without navigation system
RD : With rear display unit
OD : Without rear display unit
DV : With DVD player
OV : Without DVD player
IGNITION SWITCH ACC or ON (via PDU)
BATTERY
FUSE
FUSE
DATA LINE
DATA LINE
To CAN system
MULTIFUNCTION SWITCH
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (CPU)
DATA LINK CONNECTOR
UNIFIED METER AND A/C AMP.
COMBINATION SWITCH
DVD PLAYER : DV
LOW TIRE PRESSURE WARNING CONTROL UNIT
INTELLIGENT KEY UNIT
NAVI CONTROL UNIT : NV
AV CONTROL UNIT : ON
VIDEO DISTRIBUTOR : RD
To front display unit
OPTICAL SENSOR
BCM (BODY CONTROL MODULE)
PERSONAL LAMP LH
PERSONAL LAMP RH
DOOR
ILLUMI-NATION
MAP LAMP
To illumination system
To illumination system
STEP LAMP (DRIVER SIDE)
STEP LAMP (FRONT PASSEN-GER SIDE)
STEP LAMP (REAR LH)
STEP LAMP (REAR RH)
KICKING PLATE ILLUMI-NATION (DRIVER SIDE)
KICKING PLATE ILLUMI-NATION (PASSEN-GER SIDE)
FOOT LAMP (DRIVER SIDE)
FOOT LAMP (PASSEN-GER SIDE)
VANITY MIRROR LAMP LH
VANITY MIRROR LAMP RH
TRUNK ROOM LAMP (UPPER)
TRUNK ROOM LAMP (LOWER)
FRONT COMBINATION LAMP LH (TURN)
SIDE TURN SIGNAL LAMP LH
REAR COMBINATION LAMP LH (TURN)
FRONT COMBINATION LAMP RH (TURN)
SIDE TURN SIGNAL LAMP RH
REAR COMBINATION LAMP RH (TURN)
TRUNK LID OPENER ACTUATOR
TRUNK ROOM LAMP SWITCH
TRUNK LID LOCK ASSEMBLY
TKWT3487E



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JCMWA0411GB

Fail Safe

INFOID:0000000001116325

Fail-safe index

BCM performs fail-safe control when any DTC listed below is detected.

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Display contents of CONSULT	Fail-safe	Cancellation
B2190: NATS ANTENNA AMP	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2191: DIFFERENCE OF KEY	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2192: ID DISCORD BCM-ECM	Fuel cut (ECM)	Erase DTC
B2193: CHAIN OF BCM-ECM	Fuel cut (ECM)	Erase DTC
B2194: DISCORD BCM-I-KEY	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2195: ANTI SCANNING	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2196: DONGLE NG	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC

REAR WIPER CONTROL

BCM detects a rear wiper stopping position according to a rear wiper auto stop signal.
When a rear wiper auto stop signal is in the condition listed below, BCM stops power supply to rear wiper after rear wiper is activated for five seconds.

Ignition switch	Rear wiper switch	Auto stop signal
ON	OFF	Rear wiper stop position signal cannot be input 5 seconds.
	ON	The signal does not change for 5 seconds.

NOTE:
The above operation is repeated when operating the rear wiper switch one minute after the stop of the rear wiper caused by Fail-safe.

TURN SIGNAL LAMP CONTROL

BCM detects the turn signal lamp circuit status from the terminal voltage.
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 activating the hazard warning lamp.

LIGHT & RAIN SENSOR MALFUNCTION DETECTION FUNCTION

BCM controls the following items when LIGHT & RAIN sensor has a malfunction.

Auto Light Control
Headlamp is turned ON.

Front Wiper Control
The condition just before the activation of Fail-safe is maintained until the front wiper switch is turned OFF.

DTC Inspection Priority Chart

INFOID:0000000001116326

Priority	DTC
1	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	• B2190: NATS ANTENNA AMP • B2191: DIFFERNCE OF KEY • B2192: ID DISCORD BCM-ECM • B2193: CHAIN OF BCM-ECM • B2194: DISCORD BCM-I-KEY • B2195: ANTI SCANNING • B2196: DONGLE NG

DTC Index

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NOTE:

Details of time display

- CRNT: Displays when there is a malfunction now or after returning to the normal condition until turning ignition switch OFF → ON again.
- PAST: Displays when there is a malfunction that is detected in the past and stored.
- 1 - 39: Displayed if any previous malfunction is present when current condition is normal. It increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. The counter remains at 39 even if the number of cycles exceeds it. It is counted from 1 again when turning ignition switch OFF → ON after returning to the normal condition if the malfunction is detected again.

CONSULT display	TIME		Fail-safe	Refer to
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	0	1 - 39	—	BCS-32
U1010: CONTROL UNIT (CAN)	0	1 - 39	—	BCS-33
B2190: NATS ANTENNA AMP	CRNT	PAST	×	• With Intelligent Key system SEC-33 • Without Intelligent Key system SEC-174
B2191: DIFFERENCE OF KEY	CRNT	PAST	×	• With Intelligent Key system SEC-35 • Without Intelligent Key system SEC-176
B2192: ID DISCORD BCM-ECM	CRNT	PAST	×	• With Intelligent Key system SEC-36 • Without Intelligent Key system SEC-177
B2193: CHAIN OF BCM-ECM	CRNT	PAST	×	• With Intelligent Key system SEC-38 • Without Intelligent Key system SEC-178
B2194: DISCORD BCM-I-KEY	CRNT	PAST	×	SEC-39
B2195: ANTI SCANNING	CRNT	PAST	×	• With Intelligent Key system SEC-179 • Without Intelligent Key system SEC-179
B2196: DONGLE NG	CRNT	PAST	×	• With Intelligent Key system SEC-41 • Without Intelligent Key system SEC-180

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IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

Reference Value

INFOID:0000000001098957

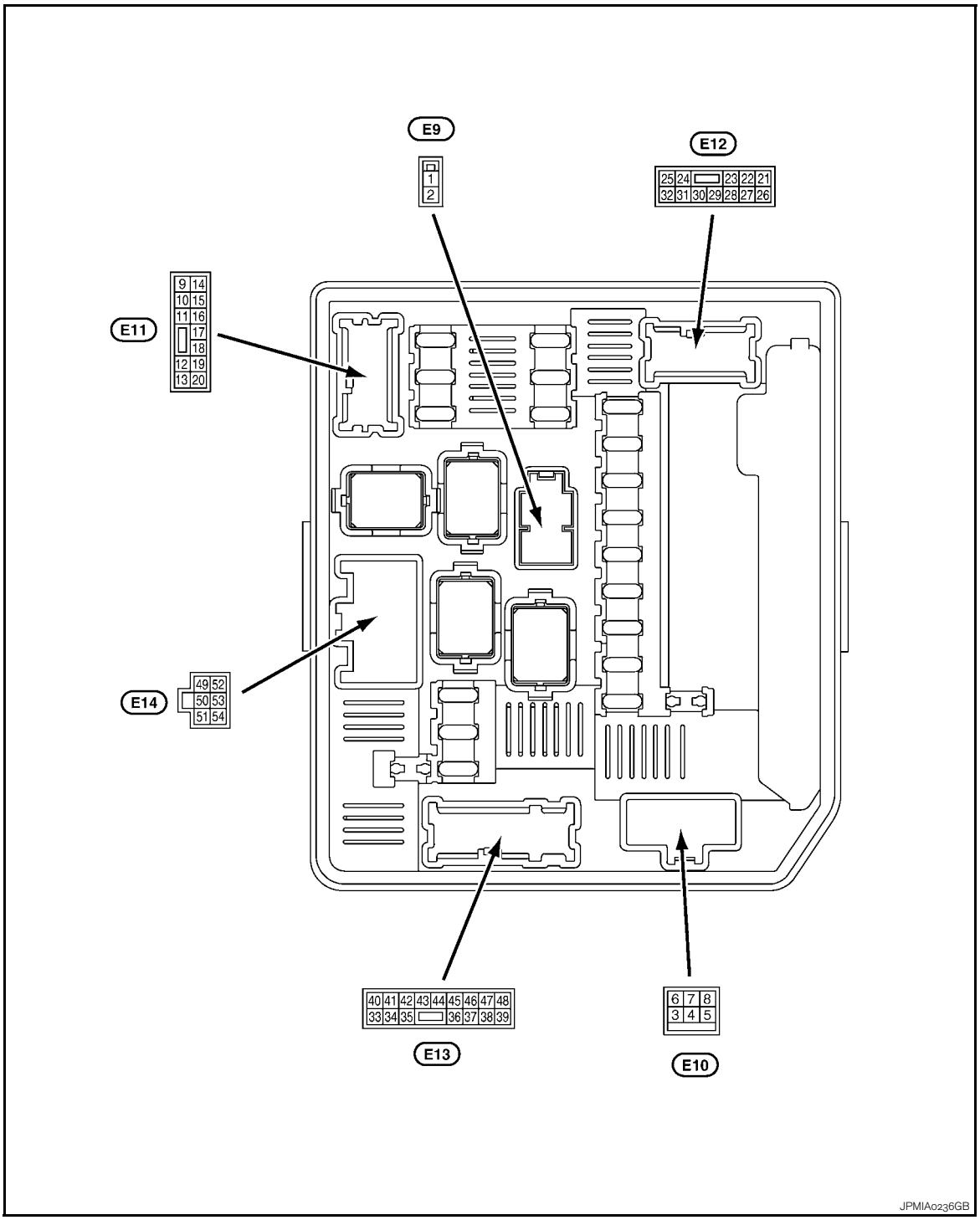
VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition		Value/Status
MOTOR FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	1 - 3
AC COMP REQ	Engine running	A/C switch OFF	Off
		A/C switch ON (Compressor is operating)	On
TAIL&CLR REQ	Lighting switch OFF		Off
	Lighting switch 1ST, 2ND or AUTO (Light is illuminated)		On
HL LO REQ	Lighting switch OFF		Off
	Lighting switch 2ND or AUTO (Light is illuminated)		On
HL HI REQ	Lighting switch OFF		Off
	Lighting switch HI (Light is illuminated)		On
FR FOG REQ	Lighting switch 2ND or AUTO (Light is illuminated)	Front fog lamp switch OFF	Off
		Front fog lamp switch ON	On
HL WASHER REQ	Ignition switch ON, and low beam headlamp is ON	Front washer switch OFF	Off
		Front washer switch ON (When headlamp washer is operating)	On
FR WIP REQ	Ignition switch ON	Front wiper switch OFF	STOP
		Front wiper switch INT	1LOW
		Front wiper switch LO	Low
		Front wiper switch HI	Hi
WIP AUTO STOP	Ignition switch ON	Front wiper stop position	STOP P
		Any position other than front wiper stop position	ACT P
WIP PROT	Ignition switch ON	Front wiper operates normally	Off
		Front wiper stops at fail-safe operation	BLOCK
ST RLY REQ **NOTE:** Vehicle without Intelligent Key system indicates only “ON”, and it does not change.	When Intelligent Key is outside the vehicle, and the push switch is pushed		Off
	When Intelligent Key is inside the vehicle, and the push switch is pushed		On
IGN RLY	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
RR DEF REQ	Ignition switch ON	Rear window defogger switch OFF	Off
		Rear window defogger switch ON (Rear window defogger is operating)	On
OIL P SW	Ignition switch OFF, ACC or engine running		Open
	Ignition switch ON		Close

Monitor Item	Condition	Value/Status
REV SW	Except selector lever R position	Off
	Selector lever R position	On
HOOD SW **NOTE:** This item is monitored only on the vehicle with the Vehicle Security (Theft Warning) system.	Close the hood	Off
	Open the hood	On
THFT HRN REQ **NOTE:** This item is monitored only on the vehicle with the Vehicle Security (Theft Warning) system.	Not operation	Off
	Horn is activated with Vehicle Security (Theft Warning) system.	On
HORN CHIRP	**NOTE:** This item is indicated, but not monitored.	Off
IGN ON SW	Ignition switch OFF or ACC	Off
	Ignition switch ON	On

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TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
		Signal name	Input/ Output		
+	–				
1 (G)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
2 (R)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
5 (B)	Ground	Ground	—	Ignition switch ON	0 V

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Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
6 (B)	Ground	Ground	—	Ignition switch ON		0 V
7 (Y)	Ground	Front wiper LO	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch LO	Battery voltage
8 (Y/R)	Ground	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch HI	Battery voltage
9 (G)	Ground	ECM relay power supply	Output	Ignition switch ON		Battery voltage
10*1 (L/R)	Ground	ECM relay power supply	Output	Ignition switch ON		Battery voltage
11*2 (O)	Ground	PTC heater 1 relay control	Output	PTC heater OFF		Battery voltage
				PTC heater ON		0 V
12*2 (G/Y)	Ground	PTC heater 2 relay control	Output	PTC heater OFF		Battery voltage
				PTC heater ON		0 V
14 (R/B)	Ground	Ignition power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
15 (Y/L)*1 (B/R)*2	Ground	ECM relay control	Input	• Engine running • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		0 - 1.0 V*1
						0.6 V*2
				Ignition switch OFF or ACC (More than a few seconds after turning ignition switch OFF)		Battery voltage
16*3 (Y/R)	Ground	Ignition relay power supply	Output	Ignition switch ON		Battery voltage
				Ignition switch OFF or ACC		0 V
19*1 (R/O)	Ground	Ignition relay power supply	Output	Ignition switch ON		Battery voltage
				Ignition switch OFF or ACC		0 V
21*4 (GR)	Ground	Hood switch	Input	Close the hood		Battery voltage
				Open the hood		0 V
22 (Y/G)	Ground	Reverse switch	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON	• Selector lever “R” (Except M/T models) • M/T control lever “R” (M/T models)	Battery voltage
					• Selector lever in any position other than “R” (Except M/T models) • M/T control lever in any position other than “R” (M/T models)	0 V
23 (Y/B)	Ground	A/C relay power supply	Output	Engine stopped		0 V
				Engine running	A/C switch OFF	0 V
					A/C switch ON (A/C compressor is operating)	Battery voltage
24 (R/Y)	Ground	Headlamp LO (RH)	Output	Lighting switch OFF		0 V
				Lighting switch 2ND		Battery voltage

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Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
25*1 (G/L)	Ground	ETC relay control	Input	Ignition switch OFF or ACC		Battery voltage
				Ignition switch ON		0 - 1.0 V
26 (O)	Ground	Front wiper auto stop	Input	Ignition switch ON	Front wiper stop position	0 V
					Any position other than front wiper stop position	Battery voltage
27 (W)	Ground	Oil pressure switch	Input	Engine stopped		0 V
				Engine running		Battery voltage
28 (L)	—	CAN-H	Input/ Output	—		—
29 (P)	—	CAN-L	Input/ Output	—		—
30*4 (L)	Ground	Horn relay control	Output	The horn is not activated		Battery voltage
				The horn is activated		0 V
31 (R)	Ground	Headlamp LO (sensor)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 2ND	Battery voltage
32*1 (R/Y)	Ground	ETC relay power supply	Output	Ignition switch ON		Battery voltage
33*1 (B/O)	Ground	Fuel pump relay control	Input	• Engine running • Ignition switch ON (For 1 second after turning ignition switch ON)		0 - 1.0 V
				Ignition switch ON (More than 1 second after turning ignition switch ON)		Battery voltage
34 (R/B)	Ground	Starter relay power supply	Input	Ignition switch ON (Except M/T models)	Selector lever “P” or “N”	0 V
					Selector lever in any position other than “P” or “N”	Battery voltage
				Ignition switch ON (M/T models)		
35 (W/L)	Ground	Ignition switch ON	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
36 (W)	Ground	Front fog lamp (RH)	Output	Lighting switch 1ST	Front fog lamp switch ON	Battery voltage
					Front fog lamp switch OFF	0 V
37 (R/W)	Ground	Parking lamp (RH)	Output	Lighting switch 1ST		Battery voltage
				Lighting switch OFF		0 V
38 (R/L)	Ground	Tail, license plate lamps and illuminations	Output	Lighting switch 1ST		Battery voltage
				Lighting switch OFF		0 V
39 (GR)	Ground	Headlamp washer relay control	Output	Ignition switch ON	When headlamp washer is operating	0 V
					When headlamp washer is not operating	Battery voltage
40*1 (BR/Y)*5 (SB)*6	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
41 (P)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage

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Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
42*1 (B/Y)	Ground	Fuel pump relay power supply	Output	• Ignition switch OFF or ACC • Approximately 1 second or more after turning the ignition switch ON		0 V
				• Approximately 1 second after turning the ignition switch ON • Engine running		Battery voltage
43 (W/B)	Ground	Front fog lamp (LH)	Output	Lighting switch 1ST	Front fog lamp switch ON	Battery voltage
					Front fog lamp switch OFF	0 V
44 (L)	Ground	Headlamp LO (LH)	Output	Lighting switch OFF		0 V
				Lighting switch 2ND		Battery voltage
45 (L/W)	Ground	Headlamp HI (RH)	Output	• Lighting switch 2ND and HI • lighting switch PASS		Battery voltage
				Lighting switch OFF		0 V
46 (G)	Ground	Headlamp HI (LH)	Output	• Lighting switch 2ND and HI • Lighting switch PASS		Battery voltage
				Lighting switch OFF		0 V
47 (R/L)	Ground	Parking lamp (LH)	Output	Lighting switch 1ST		Battery voltage
				Lighting switch OFF		0 V
48*7 (Y)	Ground	Cooling fan relay-3 control	Output	When cooling fan does HI operation		0 V
				When cooling fan does OFF or LO operation		Battery voltage
49 (B)	Ground	Rear window defogger relay power supply	Output	Ignition switch ON	Rear window defogger switch ON	Battery voltage
					Rear window defogger switch OFF	0 V
50 (B/R)	Ground	Starter relay power supply	Output	When engine is clanking		Battery voltage
				When engine is not clanking		0 V
51 (P)	Ground	Ignition switch START	Input	Ignition switch START		Battery voltage
				Ignition switch OFF, ACC or ON		0 V
52 (W)	Ground	Cooling fan relay-1 power supply	Output	When cooling fan does LO or HI operation		Battery voltage
				When cooling fan does OFF operation		0 V
53 (W/B)	Ground	Battery power supply (Cooling fan relay)	Input	Ignition switch OFF		Battery voltage
54*5 (R)	Ground	Cooling fan relay-2 power supply	Input	When cooling fan does HI operation		Battery voltage
				When cooling fan does OFF or LO operation		0 V

*1: HR engine and MR engine models

*2: K9K engine models

*3: Except M/T models only

*4: With vehicle security (theft warning) system

*5: HR engine models

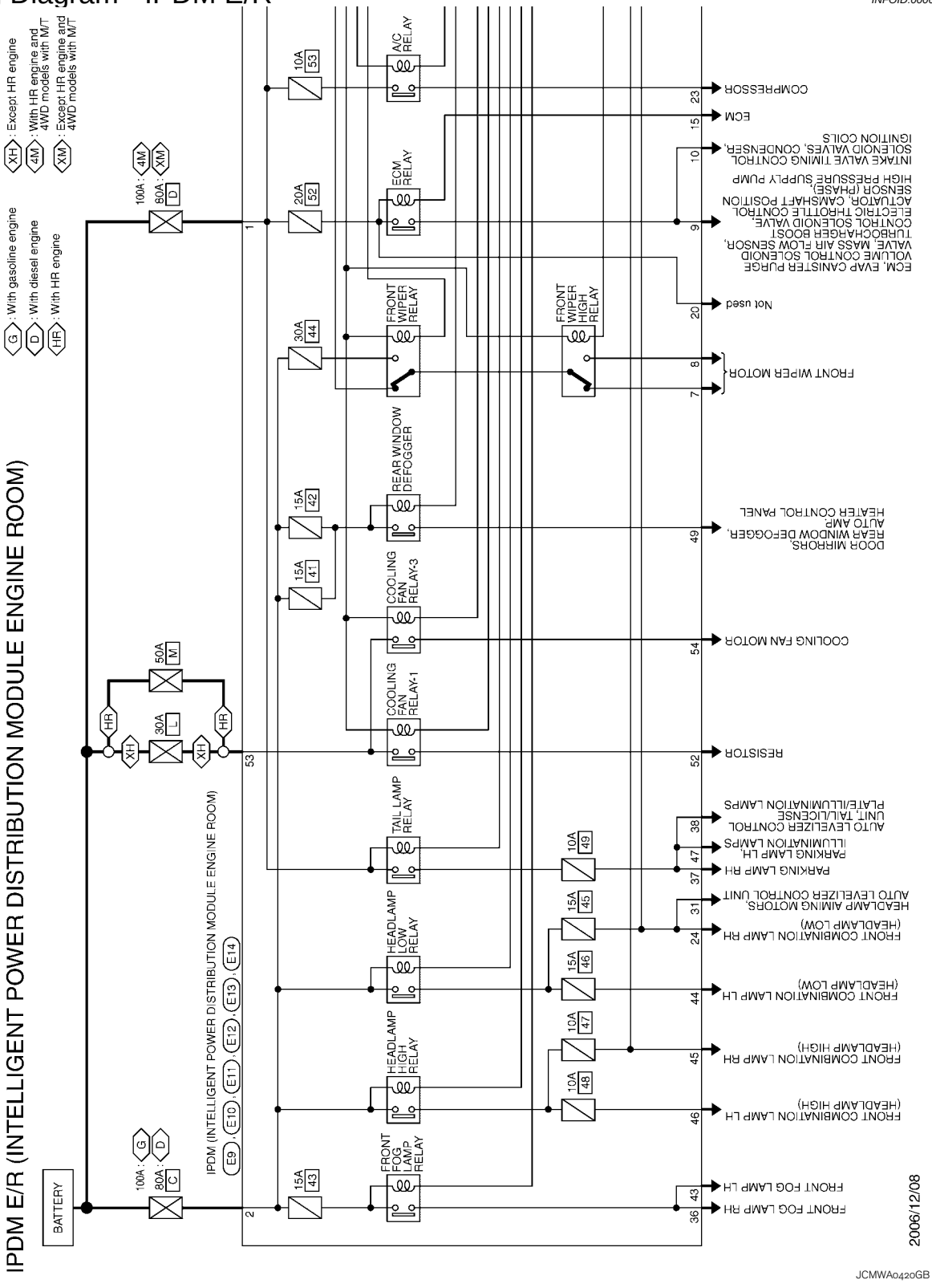
*6: MR engine models

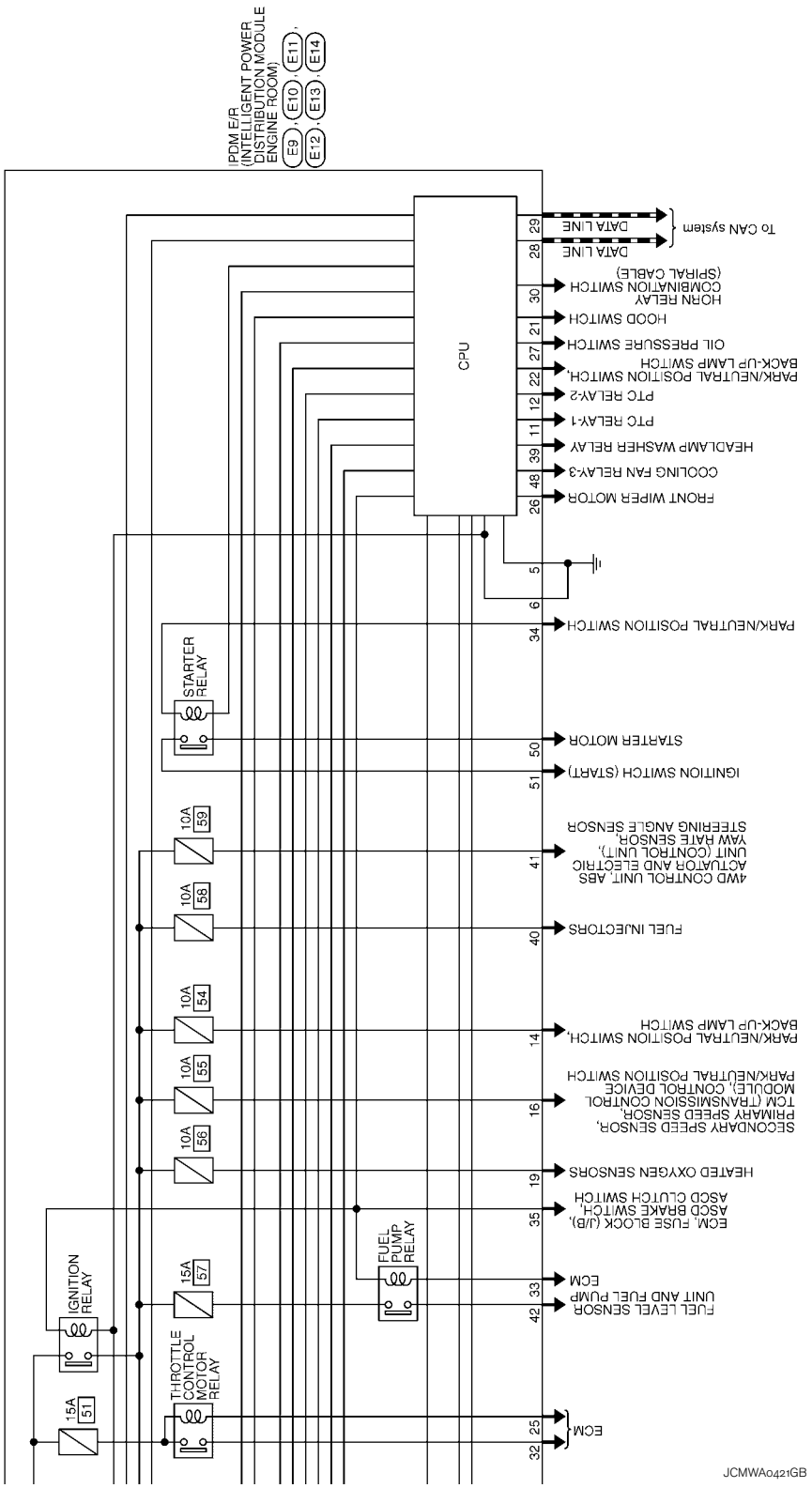
*7: MR engine and K9K engine models

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Wiring Diagram - IPDM E/R -

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IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

Connector No.	E9
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	L02FB-MC

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	-
2	R	-

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
5	B	-
6	B	-
7	Y	-
8	V/R	-

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FBR-CS

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
9	G	-
10	L/R	-
11	O	-
12	G/Y	-
14	R/B	-
15	Y/L	-[With gasoline engine]
15	B/R	-[With diesel engine]
16	Y/R	-
19	R/O	-
20	-	-

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS

H.S.

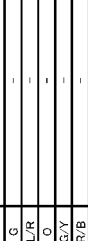


Terminal No.	Color of Wire	Signal Name [Specification]
21	GR	-
22	Y/G	-
23	Y/B	-
24	R/Y	-
25	G/L	-
26	O	-
27	W	-
28	L	-
29	P	-
30	L	-
31	R	-

Terminal No.	Color of Wire	Signal Name [Specification]
32	R/Y	-

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS16FW-CS

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
33	B/O	-
34	R/B	-
35	W/L	-
36	W	-
37	R/W	-
38	R/L	-
39	GR	-
40	SB	-[With MR engine]
40	BR/Y	-[With HR engine]
41	P	-
42	B/Y	-
43	W/B	-
44	L	-
45	L/W	-
46	G	-
47	R/L	-
48	Y	-

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IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

Connector No.	E14
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	Y2K 7283-5591-40-F



Terminal No.	Color of Wire	Signal Name [Specification]
49	B	-
50	B/R	-
51	P	-
52	W	-
53	W/B	-
54	R	-

JCMWA0423GB

Fail Safe

INFOID:0000000001098959

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 ECM

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Control part	Fail-safe in operation
Cooling fan	• The cooling fan relay-2*1 or the cooling fan relay-3*2 turns ON when the ignition switch is turned ON • Turns off the fan motor low relay when the ignition switch is turned OFF
A/C compressor	A/C relay OFF

*1: HR engine models

*2: MR engine and K9K engine models

If no CAN communication is available with BCM

Control part	Fail-safe in operation
Headlamp	• The headlamp low relay turns ON when the ignition switch is turned ON • The headlamp low relay turns OFF when the ignition switch is turned OFF • Headlamp high relay OFF
• Parking lamps • License plate lamps • Tail lamps • Illuminations	• The tail lamp relay turns ON when the ignition switch is turned ON • The tail lamp relay turns OFF when the ignition switch is turned OFF
Front wiper	• The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed. • The front wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the INT mode and the front wiper motor is operating.
Front fog lamps	Front fog lamp relay OFF
Starter motor	Inhibit relay OFF
Rear window defogger	Rear window defogger relay OFF
Headlamp washer	Headlamp washer relay OFF
PTC heater	PTC heater relay OFF

Ignition relay malfunction detection function

- IPDM E/R monitors the voltage at the contact circuit and excitation coil circuit of the ignition relay inside it.
- IPDM E/R judges the ignition relay error if the voltage differs between the contact circuit and the excitation coil circuit.
- If the ignition relay cannot turn OFF due to contact seizure, it activates the tail lamp relay for 10 minutes to alert the user to the ignition relay malfunction when the ignition switch is turned OFF.

DTC	Ignition switch	Ignition relay	Tail lamp relay
—	ON	ON	—
—	OFF	OFF	—
B2098: IGN RLY ON	OFF	ON	ON (10 minutes)
B2099: IGN RLY OFF	ON	OFF	—

NOTE:

The tail lamp relay is turned OFF when the ignition switch is turned ON.

Front wiper control

IPDM E/R detects the front wiper stop position with the front wiper auto stop signal.
When the front wiper auto stop signal is in the conditions listed below, IPDM E/R repeats a front wiper 10 seconds operation and 20 seconds stop five times.

Ignition switch	Front wiper switch	Front wiper auto stop signal
ON	OFF	The front wiper auto stop signal (stop position) cannot be input for 10 seconds.
	ON	The front wiper auto stop signal does not change for 10 seconds.

NOTE:

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This operation status can be confirmed on the IPDM E/R “Data Monitor” that displays “BLOCK” for the item “WIP PROT” while the wiper is stopped.

DTC Index

INFOID:0000000001098960

CONSULT display	Fail-safe	Timing[NOTE]		Reference page
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	×	CRNT	PAST	PCS-14
B2098: IGN RELAY ON	×	CRNT	PAST	PCS-15
B2099: IGN RELAY OFF	—	CRNT	PAST	PCS-16
B2100: EEPROM	—	CRNT	PAST	PCS-17

NOTE:

The details of time display are as follows.

- CRNT: The malfunctions that are detected now.
- PAST: The number is indicated when it is normal at present and a malfunction was detected in the past.

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AUTO LEVELIZER CONTROL UNIT

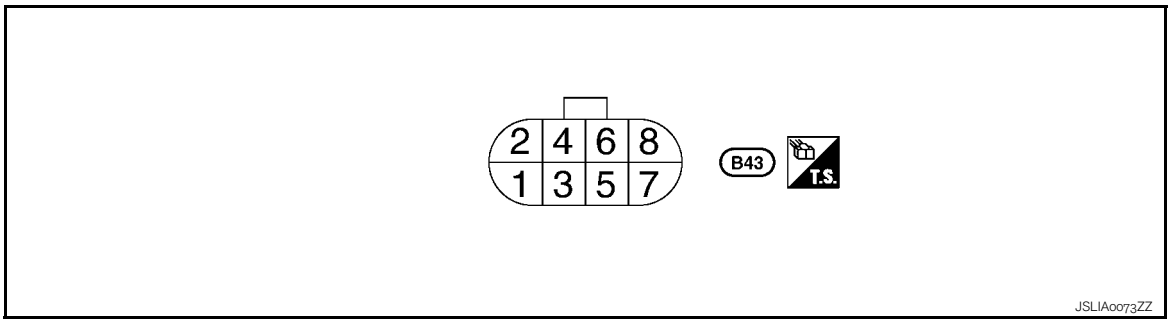
Reference Value

INFOID:0000000000955487

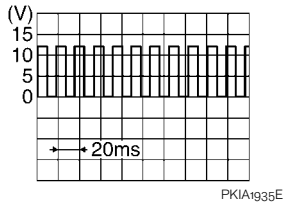
VALUES ON THE DIAGNOSIS TOOL

Monitor item	Operating condition		Display item (Approx.)
INT SEN VALUE	Rear vehicle height	Detection upper limit	0 %
		Detection lower limit	100 %
ACT OUTPUT	Headlamp light axis	Control upper limit	19.9 %
		Control lower limit	73.8 %
ACT MEASURED	Headlamp light axis	Detection upper limit	19.9 %
		Detection lower limit	73.8 %
VEHICLE SPEED SIGNAL	Vehicle running at approx. 40 km/h		40 km/h
LIGHT SIGNAL	Headlamp (LO) ON		Battery voltage
INT SEN VOLT	Headlamp (LO) ON		Battery voltage
EXT SEN VOLT	—		—
EXT SEN SIG	—		—

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Operating condition		Standard (Approx.)
+	–	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	—		0 V
2 (R)	Ground	Control unit power supply [Headlamp (LO) signal]	Input	Headlamp (LO)	ON	Battery voltage
					OFF	0 V
4 (Y)	Ground	Vehicle speed signal (8-pulse)	Input	Vehicle running at approx. 40 km/h		
5 (O)	Ground	K-LINE	—	—		—
6 (R/L)	Ground	Tail lamp signal	Input	Headlamp (LO) and tail lamp ON		Battery voltage

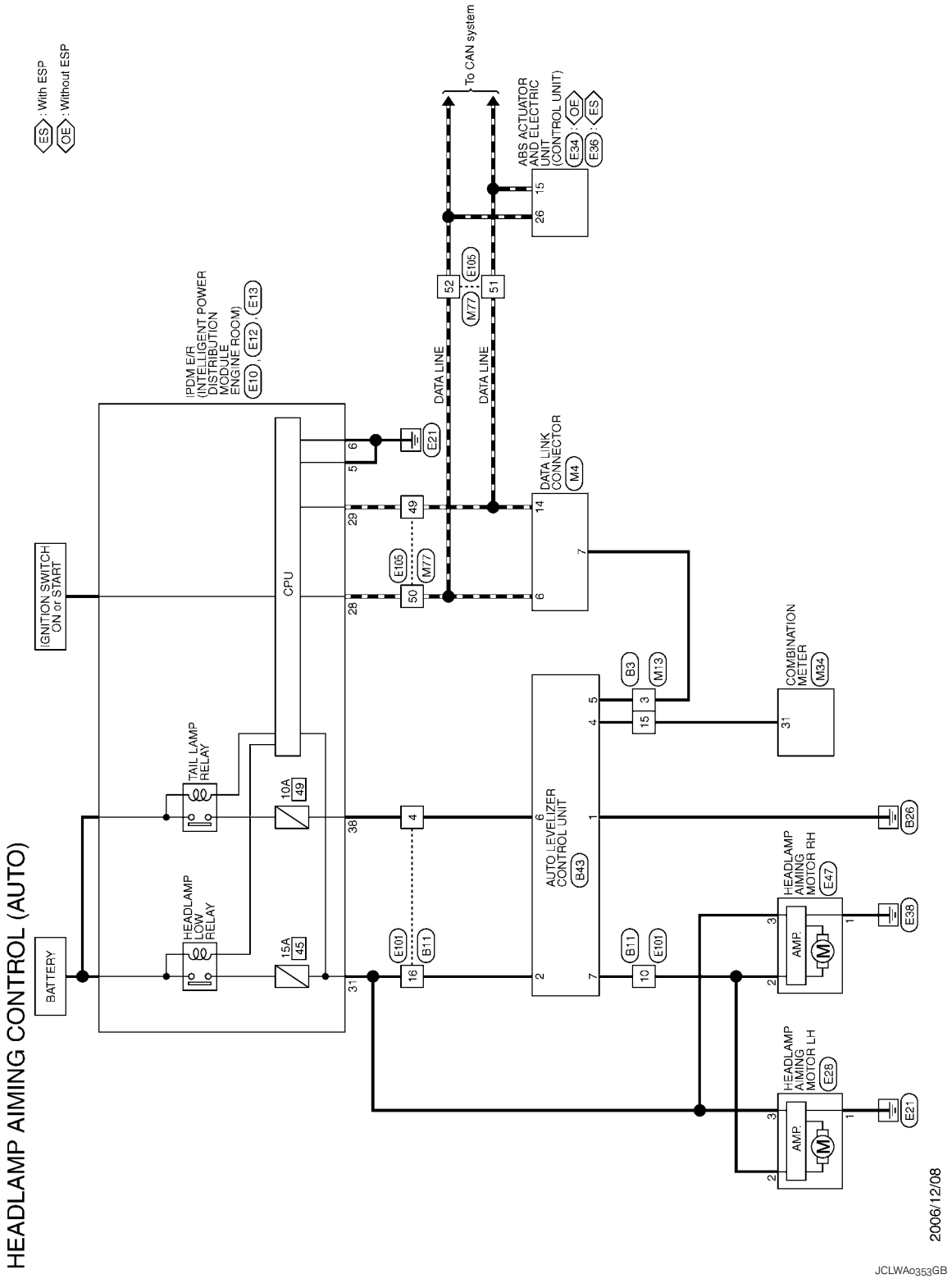
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Terminal No. (Wire color)		Description		Operating condition		Standard (Approx.)
+	–	Signal name	Input/ Output			
7 (V)	Ground	Headlamp aiming motor drive signal	Output	Headlamp aiming	Under unladen conditions	2.5 V
					At aiming operation lower limit	9.2 V

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Wiring Diagram - HEADLAMP AIMING CONTROL SYSTEM (AUTO) -

INFOID:0000000000955488



HEADLAMP AIMING CONTROL (AUTO)

Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

Terminal No.	Color of Wire	Signal Name [Specification]
3	O	-
15	Y	-

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TK10MW-NS8



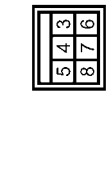
Terminal No.	Color of Wire	Signal Name [Specification]
4	R/L	-
10	V	-
16	R	-

Connector No.	B43
Connector Name	AUTO LEVELIZER CONTROL UNIT
Connector Type	AMP 1394416-1



Terminal No.	Color of Wire	Signal Name [Specification]
1	B	GND
2	R	USUP
4	Y	FIN(SP-dF)
5	O	K-LINE
6	R/L	A/D
7	V	PWM

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC



Terminal No.	Color of Wire	Signal Name [Specification]
5	B	-
6	B	-

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
28	L	-
29	P	-
31	R	-

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
38	R/L	-

Connector No.	E28
Connector Name	HEADLAMP AIMING MOTOR LH
Connector Type	FCI211PC033S0003

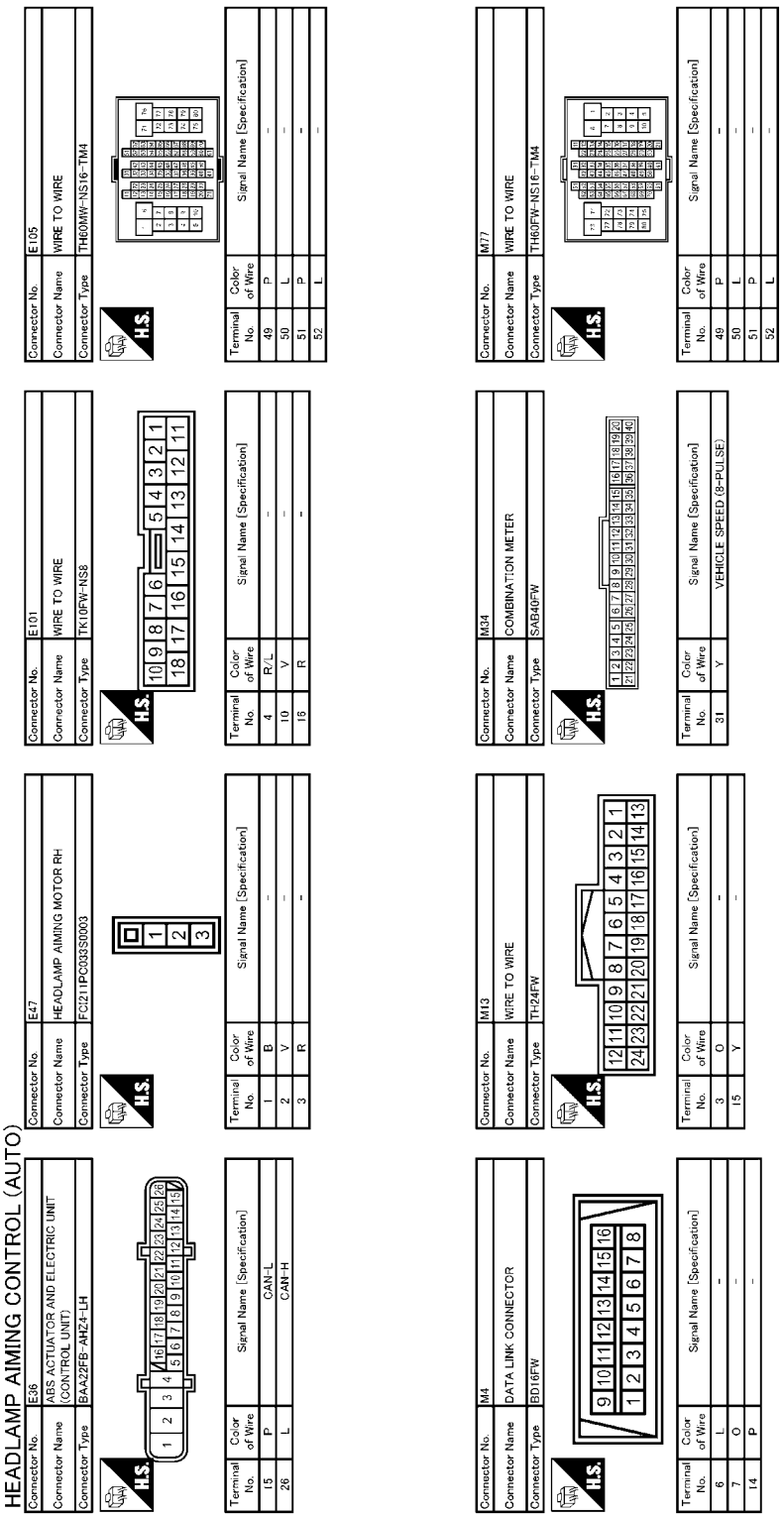
Terminal No.	Color of Wire	Signal Name [Specification]
1	B	-
2	V	-
3	R	-

Connector No.	E34
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	BAA22FB-AHZ4-LH

Terminal No.	Color of Wire	Signal Name [Specification]
15	P	CAN-L
26	L	CAN-H

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JCLWA0355GB

Fail Safe

INFOID:0000000000955489

DTC	Fail-safe	Cancellation
B2080: ECU TROUBLE	Fix aiming motor drive signal to approximately 0 V	Headlamp (LO) OFF
B2081: INITIAL NOT DONE	Fix with the light axis facing downward	When sensor initialization is completed

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DTC	Fail-safe		Cancellation
B2082: SENSOR OUT OF RANGE	After engine start (Less than 5 seconds after ignition switch ON and vehicle speed less than 4 km/h)	Fix with the light axis facing downward	When sensor signal returns to normal range
	While driving (5 seconds or more after ignition switch ON or vehicle speed 4 km/h or more)	Maintain the light axis at the time of DTC detection	
B2083: SEN SIG NOT PLAUSIBLE	• Maintain the aiming motor drive signal output at the time of DTC detection • Maintain the light axis at the time of DTC detection		Headlamp (LO) OFF
B2084: VOLTAGE UNDER LIMIT	After engine start (Less than 5 seconds after ignition switch ON and vehicle speed less than 4 km/h)	Fix with the light axis facing downward	Headlamp (LO) OFF
	While driving (5 seconds or more after ignition switch ON or vehicle speed 4 km/h or more)	Maintain the light axis at the time of DTC detection	
B2085: LOWBEAM SIG OPEN LINE	After engine start (Less than 5 seconds after ignition switch ON and vehicle speed less than 4 km/h)	Fix with the light axis facing downward	Headlamp (LO) OFF
	While driving (5 seconds or more after ignition switch ON or vehicle speed 4 km/h or more)	Maintain the light axis at the time of DTC detection	
B2086: FRQ. OVER LIMIT	After engine start (Less than 5 seconds after ignition switch ON and vehicle speed less than 4 km/h)	Fix with the light axis facing downward	Headlamp (LO) OFF
	While driving (5 seconds or more after ignition switch ON or vehicle speed 4 km/h or more)	Maintain the light axis at the time of DTC detection	
B2087: SHORT TO GROUND	Maintain the light axis at the time of DTC detection		Headlamp (LO) OFF
B2088: SHORT TO BATTERY	Maintain the light axis at the time of DTC detection		Headlamp (LO) OFF
B2089: NO CAR TYPE SELECTED	Fix aiming motor drive signal output to approximately 0 V		When writing of sensor data is completed

DTC Inspection Priority Chart

INFOID:0000000001102042

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	DTC
1	• B2080: ECU TROUBLE • B2089: NO CAR TYPE SELECTED
2	• B2081: INITIAL NOT DONE
3	• B2082: SENSOR OUT OF RANGE • B2083: SEN SIG NOT PLAUSIBLE • B2084: VOLTAGE UNDER LIMIT • B2085: LOWBEAM SIG OPEN LINE • B2086: FRQ. OVER LIMIT • B2087: SHORT TO GROUND • B2088: SHORT TO BATTERY

DTC Index

INFOID:0000000000955491

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DTC	Fail-safe	Reference
B2080: ECU TROUBLE	×	EXL-36, "Description"
B2081: INITIAL NOT DONE	×	EXL-37, "DTC Logic"
B2082: SENSOR OUT OF RANGE	×	EXL-38, "DTC Logic"
B2083: SEN SIG NOT PLAUSIBLE	×	EXL-39, "DTC Logic"
B2084: VOLTAGE UNDER LIMIT	×	EXL-40, "DTC Logic"
B2085: LOWBEAM SIG OPEN LINE	×	EXL-41, "Description"
B2086: FRQ. OVER LIMIT	×	EXL-43, "Description"
B2087: SHORT TO GROUND	×	EXL-45, "DTC Logic"
B2088: SHORT TO BATTERY	×	EXL-46, "DTC Logic"
B2089: NO CAR TYPE SELECTED	×	EXL-47, "DTC Logic"

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SYMPTOM DIAGNOSIS

EXTERIOR LIGHTING SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000000955492

CAUTION:
Perform the self-diagnosis with CONSULT-III 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 the front combination lamp • Front combination lamp (headlamp housing assembly) • IPDM E/R	Headlamp (HI) circuit Refer to EXL-52.
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON" Refer to EXL-160.	
Headlamp (HI) is not turned OFF.	When ignition switch is turned ON.		
	When ignition switch is turned OFF.	IPDM E/R	—
High beam indicator lamp is not turned ON. [The headlamp (HI) is turned ON.]		Combination meter	• Combination meter Data monitor "HI-BEAM IND" • BCM (HEAD LAMP) Active test "HEADLAMP"
Headlamp (LO) is not turned ON.	One side	• Fuse • Xenon bulb (LO) • Harness between IPDM E/R and the front combination lamp • Front combination lamp (xenon headlamp) • IPDM E/R	Headlamp (LO) circuit Refer to EXL-54.
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON" Refer to EXL-161.	
Headlamp (LO) is not turned OFF.	When ignition switch is turned ON.		
	When ignition switch is turned OFF.	IPDM E/R	—
Headlamp HI and LO are not turned ON.		• Harness between front combination lamp and the ground • Front combination lamp (headlamp housing assembly)	Headlamp ground circuit Refer to EXL-56.
Each lamps are not turned ON/OFF with the lighting switch AUTO.		• Combination switch • Harness between the combination switch and BCM • BCM	Combination switch Refer toBCS-63.
		• Light & rain sensor • Harness between the light & rain sensor and BCM • BCM	Light & rain sensor Refer to EXL-69.
Front fog lamp is not turned ON.	One side	• Front fog lamp bulb • Harness between IPDM E/R and the front fog lamp • Front fog lamp • IPDM E/R	Front fog lamp circuit Refer to EXL-62.
	Both sides	**Symptom diagnosis** "BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON" Refer to EXL-163.	
Front fog lamp is not turned ON.			

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Symptom		Possible cause	Inspection item
Front fog lamp indicator lamp is not turned ON. (Front fog lamp is turned ON.)		Combination meter	• Combination meter Data monitor "FR FOG IND" • BCM (HEAD LAMP) Active test "FR FOG LAMP"
Parking lamp is not turned ON.		• Parking lamp bulb • Harness between IPDM E/R and the front combination lamp • Front combination lamp • IPDM E/R	Parking lamp circuit Refer to EXL-64.
Tail lamp is not turned ON.		• Tail lamp bulb • Harness between IPDM E/R and the rear combination lamp • Rear combination lamp	Tail lamp circuit Refer to EXL-74.
License plate lamp is not turned ON.		• License plate lamp bulb • Harness between IPDM E/R and the license plate lamp • License plate lamp	License plate lamp circuit Refer to EXL-76.
Tail lamp and the license plate lamp are not turned ON.		• Fuse • Harness between IPDM E/R and the rear combination lamp • IPDM E/R	Tail lamp circuit Refer to EXL-74.
• Parking lamp, the tail lamp and the license plate lamp are not turned ON. • Parking lamp, the tail lamp and the license plate lamp are not turned OFF. (Each illumination is turned ON/OFF.)		**Symptom diagnosis** "PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON" Refer to EXL-162.	
Tail lamp indicator is not turned ON. (Parking/tail lamps are turned ON.)		Combination meter	• Combination meter Data monitor "LIGHT IND" • BCM (HEAD LAMP) Active test "TAIL LAMP"
Turn signal lamp does not blink.	Indicator lamp is normal. (Applicable side performs the high flasher activation.)	• Harness between BCM and each turn signal lamp • Turn signal lamp bulb	Turn signal circuit Refer to EXL-66.
	Indicator lamp is included.	• Combination switch • Harness between the combination switch and BCM • BCM	Combination switch Refer toBCS-63.
Turn signal indicator lamp does not blink. (Turn signal indicator lamp is normal.)	One side	Combination meter	—
	Both sides (Always)	• Turn signal indicator lamp signal - BCM • Combination meter	• Combination meter Data monitor "TURN IND" • BCM (FLASHER) Active test "FLASHER"
	Both sides (Only when activating hazard warning lamp with the ignition switch OFF)	• Combination meter power supply and the ground circuit • Combination meter	Combination meter Power supply and the ground circuit Refer to MWI-28.
• Hazard warning lamp does not activate. • Hazard warning lamp continues activating. (Turn signal is normal.)		• Hazard switch • Harness between the hazard switch and BCM • BCM	Hazard switch Refer to EXL-72.

Symptom		Possible cause	Inspection item
Rear fog lamp is not turned ON.	Rear fog lamp indicator lamp is normal.	• Harness between BCM and rear fog lamp • Rear fog lamp bulb • BCM	Rear fog lamp circuit Refer to EXL-77.
	Rear fog lamp indicator lamp is included.	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-63.
Rear fog lamp indicator lamp does not turn on. (Rear fog lamp turns ON)		• Rear fog lamp status signal - BCM • Combination meter	• Combination meter Data monitor "REAR FOG IND" • BCM (HEAD LAMP) Active test "RR FOG LAMP"
Headlamp auto aiming does not activate.		• Harness between auto levelizer control unit and aiming motor. • Front combination lamp (Aiming motor) • Auto levelizer control unit	Aiming motor Refer to EXL-59.

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NORMAL OPERATING CONDITION

Description

INFOID:0000000000955493

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 the control difference. This is normal.

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BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON

Description

INFOID:0000000000955494

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

Diagnosis Procedure

INFOID:0000000000955495

1.COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-63, "Symptom Table".

Is the combination switch normal?

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

2.CHECK HEADLAMP (HI) REQUEST SIGNAL INPUT

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

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

Is the item status normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-64, "Exploded View".

3.HEADLAMP (HI) CIRCUIT INSPECTION

Check the headlamp (HI) circuit. Refer to EXL-52, "Component Function Check".

Is the headlamp (HI) circuit normal?

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

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BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON

Description

INFOID:0000000000955496

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

Diagnosis Procedure

INFOID:0000000000955497

1.CHECK COMBINATION SWITCH

Check the combination switch. Refer to BCS-63, "Symptom Table".

Is the combination switch normal?

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

2.CHECK HEADLAMP (LO) REQUEST SIGNAL INPUT

CONSULT-III DATA MONITOR

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

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

Is the item status normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-64, "Exploded View".

3.HEADLAMP (LO) CIRCUIT INSPECTION

Check the headlamp (LO) circuit. Refer to EXL-54, "Component Function Check".

Is the headlamp (LO) circuit normal?

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

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PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON

Description

INFOID:0000000000955498

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

Diagnosis Procedure

INFOID:0000000000955499

1.CHECK FUSE

Check that the following fuse is fusing.

Unit	Location	Fuse No.	Capacity
• Parking lamp • Tail lamp • License plate lamp	IPDM E/R	#49	10 A

Is the fuse fusing?

YES >> Repair the applicable circuit. And then replace the fuse.
NO >> GO TO 2.

2.COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-63, "Symptom Table".

Is the combination switch normal?

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

3.CHECK TAIL LAMP RELAY REQUEST SIGNAL INPUT

CONSULT-III DATA MONITOR

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

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

Is the item status normal?

YES >> GO TO 4.
NO >> Replace BCM. Refer to BCS-64, "Exploded View".

4.TAIL LAMP CIRCUIT INSPECTION

Check the tail lamp circuit. Refer to EXL-74, "Component Function Check".

Is the tail lamp circuit normal?

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

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BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

Description

INFOID:0000000000955500

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

Diagnosis Procedure

INFOID:0000000000955501

1.CHECK FUSE

Check that the following fuse is fusing.

Unit	Location	Fuse No.	Capacity
Front fog lamp	IPDM E/R	#43	15 A

Is the fuse fusing?

YES >> Repair the applicable circuit. And then replace the fuse.
NO >> GO TO 2.

2.COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-63, "Symptom Table".

Is the combination switch normal?

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

3.CHECK FRONT FOG LAMP REQUEST SIGNAL INPUT

CONSULT-III DATA MONITOR

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

Monitor item	Condition		Monitor status
FR FOG REQ	Front fog lamp switch (With lighting switch 1ST)	ON	ON
		OFF	OFF

Is the item status normal?

YES >> GO TO 4.
NO >> Replace BCM. Refer to BCS-64, "Exploded View".

4.FRONT FOG LAMP CIRCUIT INSPECTION

Check the front fog lamp circuit. Refer to EXL-62, "Component Function Check".

Is the front fog lamp circuit normal?

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

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PRECAUTION

PRECAUTIONS

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

INFOID:0000000001078108

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 SRC and SB section of this Service Manual.

WARNING:

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

Precautions For Xenon Headlamp Service

INFOID:0000000001078109

WARNING:

Comply with the following warnings to prevent any serious accident.

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

CAUTION:

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

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

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ON-VEHICLE MAINTENANCE

HEADLAMP AIMING ADJUSTMENT

Description

INFOID:0000000000955508

PREPARATION BEFORE ADJUSTING

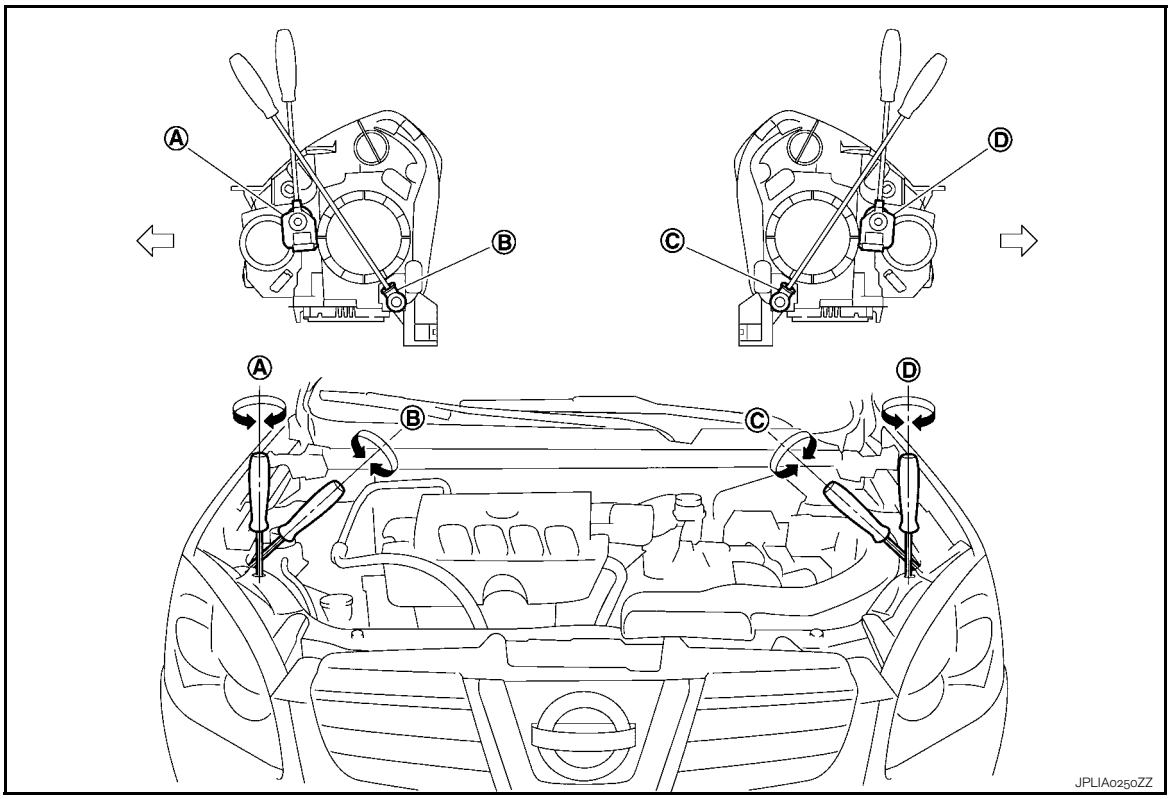
NOTE:

- 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 (UP/DOWN) adjustment screw
B. Headlamp RH (INSIDE/OUTSIDE) adjustment screw
C. Headlamp LH (INSIDE/OUTSIDE) adjustment screw
D. Headlamp LH (UP/DOWN) adjustment screw

⇦: Vehicle center

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Adjustment screw		Screw driver rotation	Facing direction
A	Headlamp RH (UP/DOWN)	Clockwise	UP
		Counterclockwise	DOWN
B	Headlamp RH (INSIDE/OUTSIDE)	Clockwise	INSIDE
		Counterclockwise	OUTSIDE
C	Headlamp LH (INSIDE/OUTSIDE)	Clockwise	INSIDE
		Counterclockwise	OUTSIDE
D	Headlamp LH (UP/DOWN)	Clockwise	UP
		Counterclockwise	DOWN

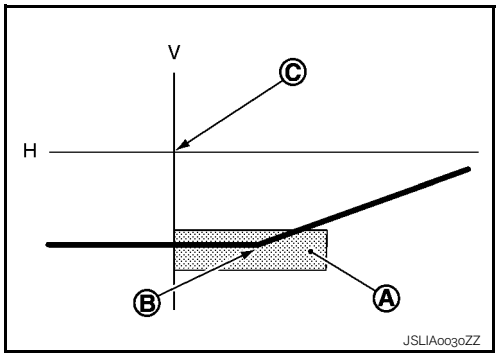
LHD

LHD : Aiming Adjustment Procedure

INFOID:0000000001102296

1. Place the screen.
   NOTE:
   - Stop the vehicle at the perpendicular angle to the wall.
   - Set the screen perpendicularly to the ground.
2. Face the vehicle squarely toward the screen and make the distance between the headlamp center and the screen 10 m (32.8 ft).
3. Start the engine and illuminate the headlamp (LO).
   NOTE:
   Block light from the headlamp that is not being adjusted with a thick fabric or another object, so that it does not reach the adjustment screen.
   CAUTION:
   Never cover lens surface with tape, etc. because it is made from plastic.
4. Use the aiming adjustment screw to adjust the elbow point projected by the low beams on the screen, so that it is within the aiming adjustment area.

Low beam distribution on the screen

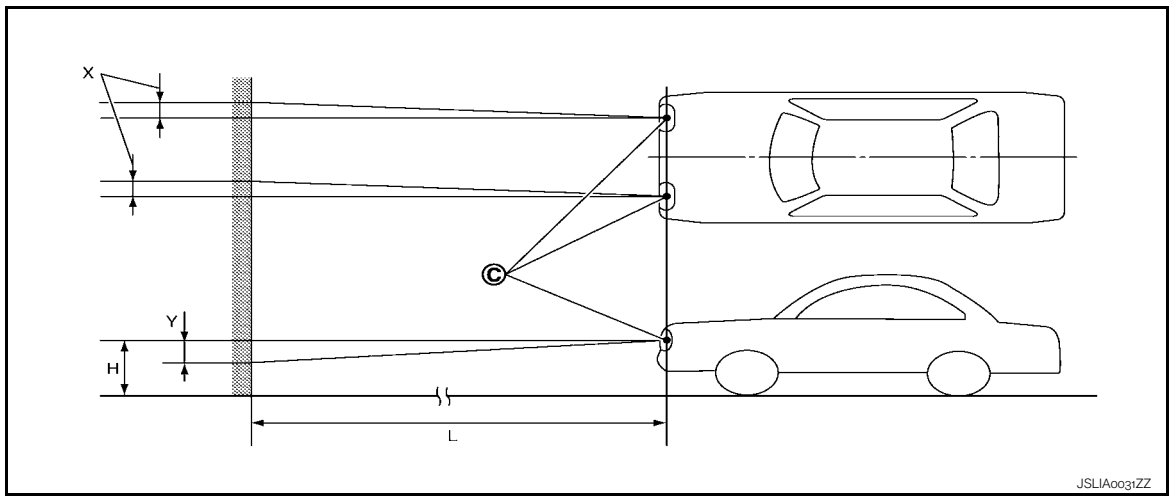


A. Aiming adjustment area
B. Elbow point
C. Headlamp center
H. Horizontal center line of headlamp
V. Vertical center line of headlamp

Unit: mm (in)

Aiming adjustment area	
Vertical direction (Y) (Lower side from headlamp center height)	Lateral direction (X) (Right side from headlamp centerline)
100 – 124 (3.94 – 4.88)	Within 120 (4.72)

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C. Vertical center line of headlamp
H. Horizontal center line of headlamp
L. Distance from headlamp center to screen
X. Aiming adjustment area (lateral)
Y. Aiming adjustment area (Vertical)

Distance from headlamp center to screen (L) : 10 m (32.8 ft)

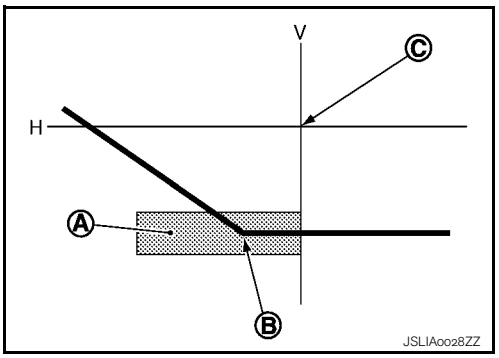
RHD

RHD : Aiming Adjustment Procedure

INFOID:0000000001102297

1. Place the screen.
   NOTE:
   • Stop the vehicle at the perpendicular angle to the wall.
   • Set the screen perpendicularly to the ground.
2. Face the vehicle squarely toward the screen and make the distance between the headlamp center and the screen 10 m (32.8 ft).
3. Start the engine and illuminate the headlamp (LO).
   NOTE:
   Block light from the headlamp that is not being adjusted with a thick fabric or another object, so that it does not reach the adjustment screen.
   CAUTION:
   Never cover lens surface with tape, etc. because it is made from plastic.
4. Use the aiming adjustment screw to adjust the elbow point projected by the low beams on the screen, so that it is within the aiming adjustment area.

Low beam distribution on the screen



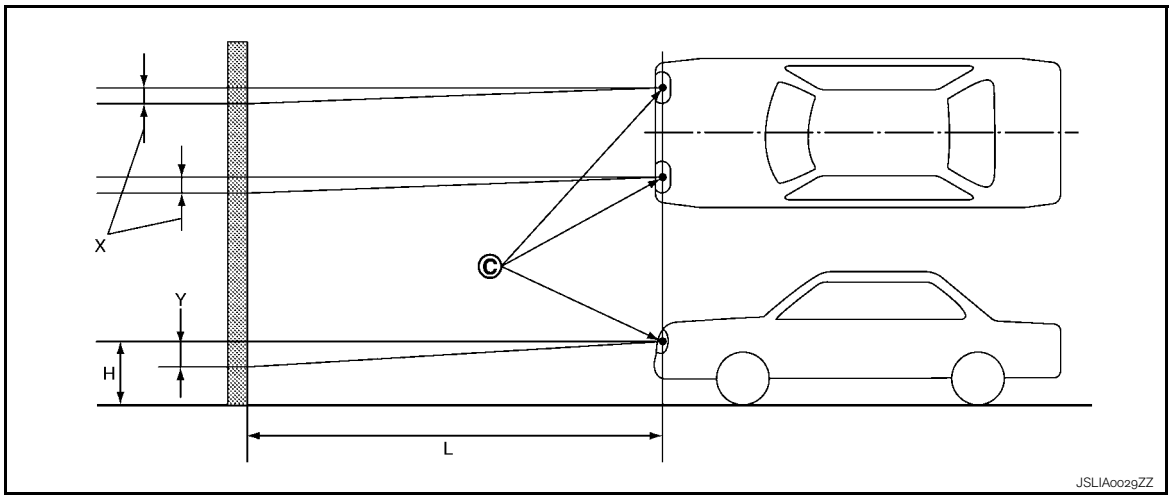
A. Aiming adjustment area
B. Elbow point
C. Headlamp center

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H. Horizontal center line of headlamp
V. Vertical center line of headlamp

Unit: mm (in)

Aiming adjustment area	
Vertical direction (Y) (Lower side from headlamp center height)	Lateral direction (X) (Left side from headlamp centerline)
100 – 124 (3.94 – 4.88)	Within 120 (4.72)



C. Vertical center line of headlamp
H. Horizontal center line of headlamp
L. Distance from headlamp center to screen
X. Aiming adjustment area (lateral)
Y. Aiming adjustment area (Vertical)

Distance from headlamp center to screen (L) : 10 m (32.8 ft)

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FRONT FOG LAMP AIMING ADJUSTMENT

Description

INFOID:0000000000978377

PREPARATION BEFORE ADJUSTING

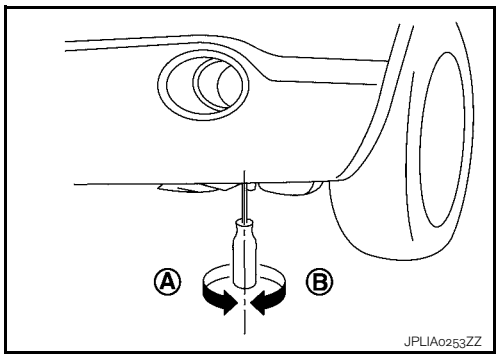
NOTE:
- For details, refer to the regulations in your own country.
- Perform aiming if the vehicle front body has been repaired and/or the headlamp assembly has been replaced.

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

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

A: UP
B: DOWN



Aiming Adjustment Procedure

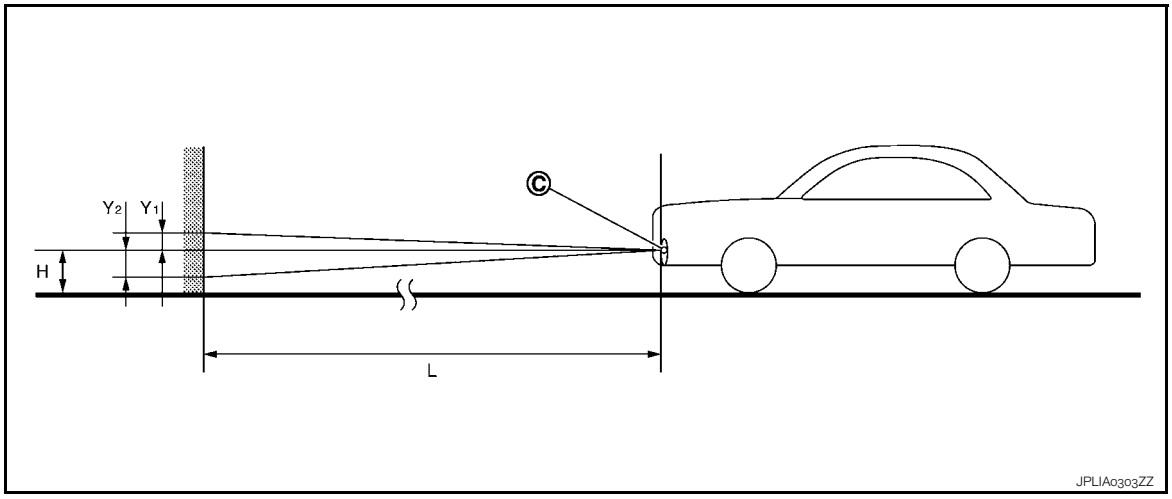
INFOID:0000000001102303

1. Place the screen.
   NOTE:
   - Stop the vehicle at the perpendicular angle to the wall.
   - Set the screen perpendicularly to the ground.
2. Face the vehicle squarely toward the screen and make the distance between the front fog lamp center and the screen 10 m (32.8 ft).
3. Start the engine and illuminate the front fog lamp.
   NOTE:
   Block light from the front fog lamp that is not being adjusted with a thick fabric or another object, so that it does not reach the adjustment screen.
   CAUTION:
   Never cover lens surface with tape, etc. because it is made from plastic.
4. Use the aiming adjustment screw to adjust the elbow point projected by the front fog lights on the screen, so that it is within the aiming adjustment area.

Unit: mm (in)

Aiming adjustment area	
Vertical direction (Y_1) (Upper side from headlamp center height)	Vertical direction (Y_2) (Lower side from headlamp center height)
100 (3.94)	200 (7.87)

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C. Vertical center line of front fog lamp
H. Horizontal center line of front fog lamp
L. Distance from front fog lamp center to screen
Y1. Aiming adjustment area (Upper)
Y2. Aiming adjustment area (Lower)

Distance from headlamp center to screen (L) : 10 m (32.8 ft)

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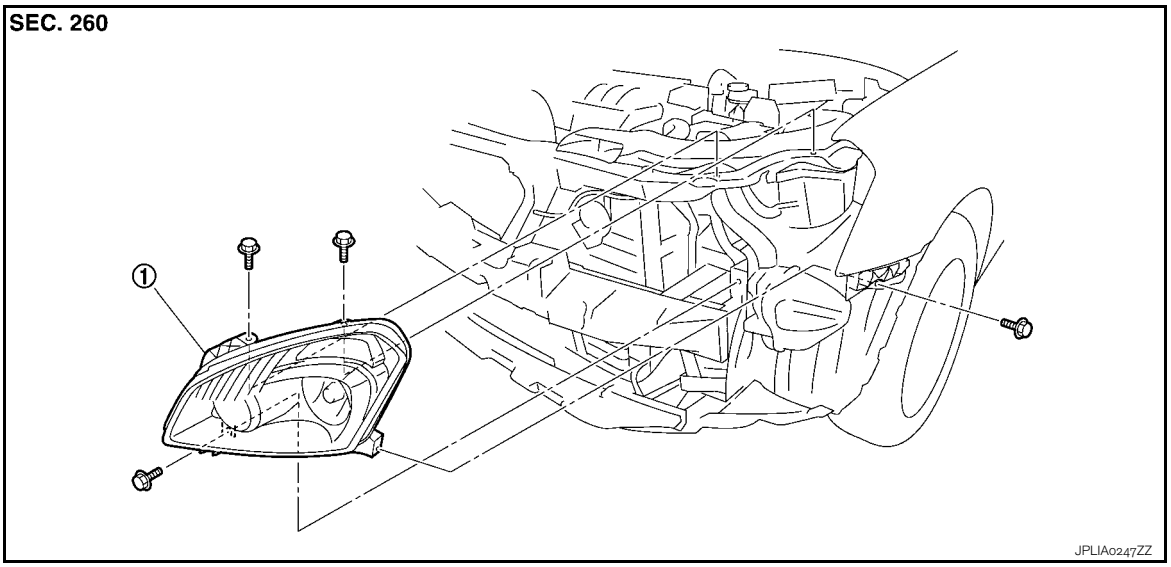
ON-VEHICLE REPAIR

FRONT COMBINATION LAMP

Exploded View

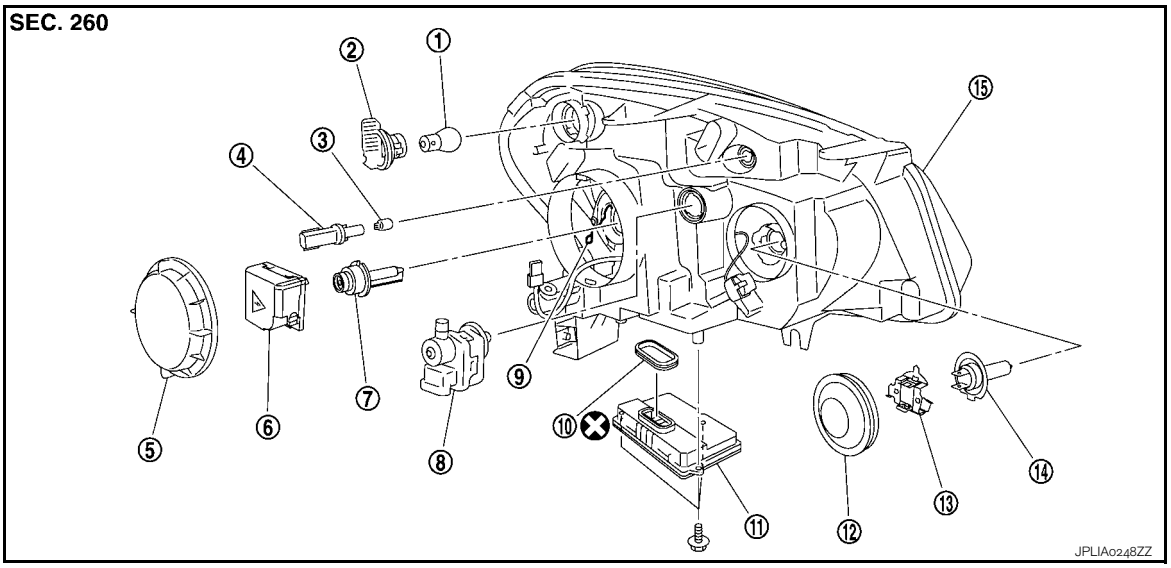
INFOID:0000000000955504

REMOVAL



1. Front combination lamp

DISASSEMBLY



1. Front turn signal lamp bulb
2. Front turn signal lamp bulb socket
3. Parking lamp bulb
4. Parking lamp bulb socket
5. Resin cap
6. Xenon bulb socket
7. Xenon bulb (LO)
8. Headlamp aiming motor
9. Retaining spring
10. Seal packing
11. HID control unit
12. Back cover
13. Retaining plate
14. Halogen bulb (HI)
15. Headlamp housing assembly

Refer to GI-4, "Components" for symbols not described above.

Removal and Installation

INFOID:0000000000955505

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REMOVAL

CAUTION:

Disconnect the battery negative terminal or the fuse.

1. Remove front bumper fascia. Refer to EXT-11, "Exploded View".
2. Remove the headlamp mounting bolts.
3. Pull out the headlamp assembly forward the vehicle.
4. Disconnect the connector before removing the headlamp assembly.

INSTALLATION

Install in the reverse order of removal.

NOTE:

After installation, perform aiming adjustment. Refer to EXL-165, "Description".

Replacement

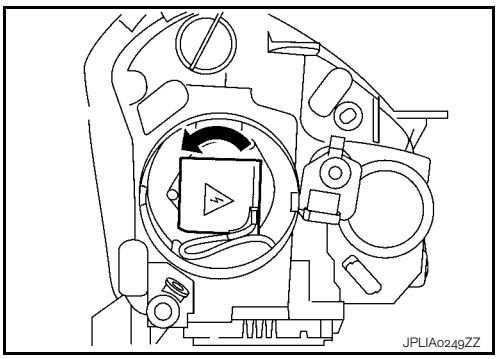
INFOID:0000000000955506

CAUTION:

- **Disconnect the battery negative terminal or the fuse.**
- **After installing the bulb, install the resin cap and the bulb socket securely for watertightness.**

HEADLAMP BULB (LO)

1. Remove the air duct (when replace a left). Keep a service area.
2. Rotate the resin cap counterclockwise and unlock it.
3. Rotate the bulb socket counterclockwise and unlock it.
4. Remove the retaining spring lock. Remove the bulb from the headlamp.
   CAUTION:
   Never break the xenon bulb ceramic tube when replacing the bulb.



HEADLAMP BULB (HI)

1. Remove the air duct (when replace a left). Keep a service area.
2. Rotate the back cover counterclockwise and unlock it.
3. Rotate the retaining plate counterclockwise and unlock it.
4. Remove the bulb from the headlamp.

PARKING LAMP BULB

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

FRONT TURN SIGNAL LAMP BULB

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

Disassembly and Assembly

INFOID:0000000000955507

DISASSEMBLY

1. Rotate the resin cap counterclockwise and unlock it.
2. Rotate the terminal which connect to a socket.
3. Rotate the xenon bulb socket counterclockwise and unlock it.
4. Remove the retaining spring lock. Remove the xenon bulb.
5. Remove the HID control unit installation screw.
6. Remove the screw. Disconnect the connector from HID control unit.

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7. Rotate the back cover. Rotate the halogen bulb socket.
8. Remove the retaining plate counterclockwise and unlock it. Remove halogen bulb.
9. Rotate the parking lamp bulb socket clockwise and unlock it.
10. Remove the bulb from the parking lamp bulb socket.
11. Rotate the front turn signal lamp bulb socket counterclockwise and unlock it.
12. Remove the bulb from the front turn signal lamp bulb socket.

ASSEMBLY

Assemble in the reverse order of disassembly.

CAUTION:

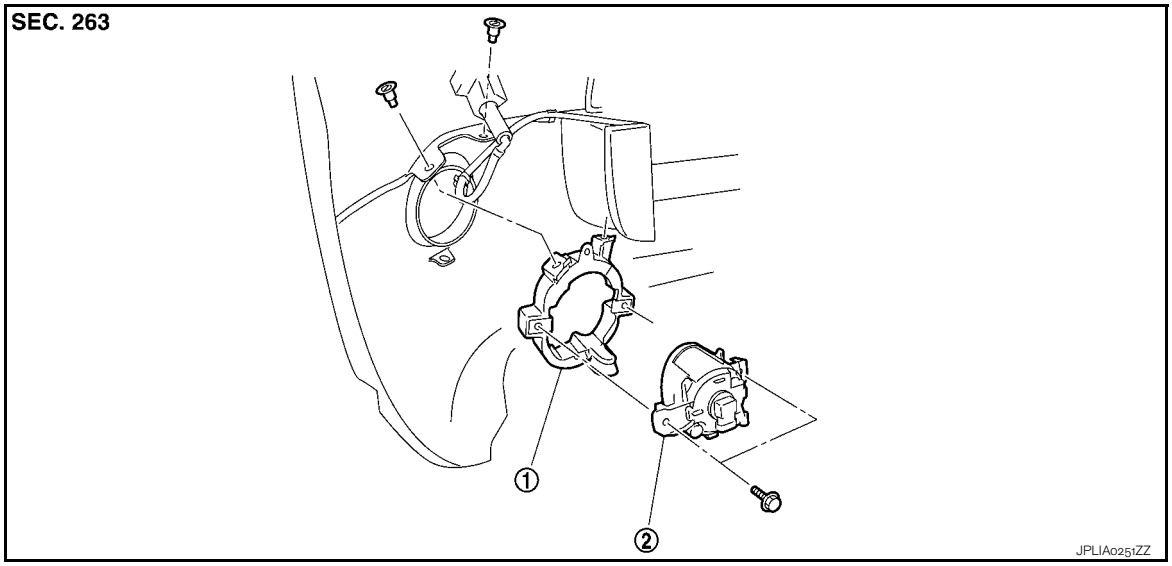
- **Install HID control unit securely.**
- **After installing the bulb, install the resin cap and the bulb socket securely for watertightness.**

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FRONT FOG LAMP

Exploded View

INFOID:0000000000955509



1. Front fog lamp bracket
2. Front fog lamp

Removal and Installation

INFOID:0000000000978091

REMOVAL

1. Remove the inner fender protector. Keep a service area. Refer to EXT-21, "Exploded View".
2. Remove the front fog lamp connector.
3. Remove the screw. Remove the front fog lamp.
4. Remove the clip. Remove the front fog lamp bracket.

INSTALLATION

Installation is the reverse order of removal.

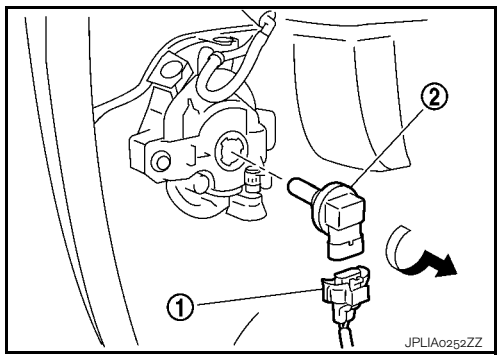
Replacement

INFOID:0000000000978092

CAUTION:

Disconnect the battery negative terminal or the fuse.

1. Remove the fender protector. Keep the service area.
2. Remove the front fog lamp bulb connector (1).
3. Rotate the bulb (2) counterclockwise and unlock it.



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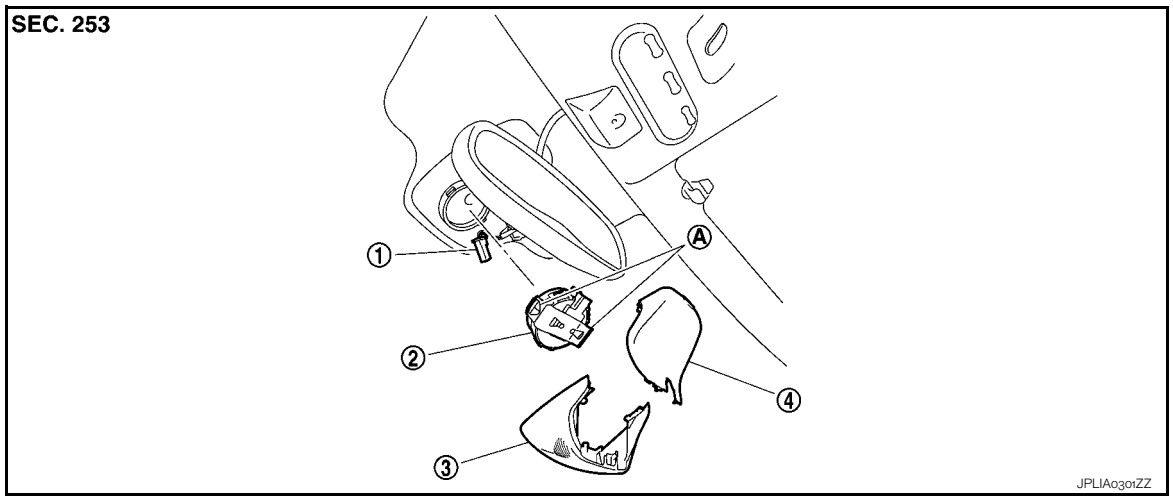
LIGHT & RAIN SENSOR

Exploded View

INFOID:0000000000955511

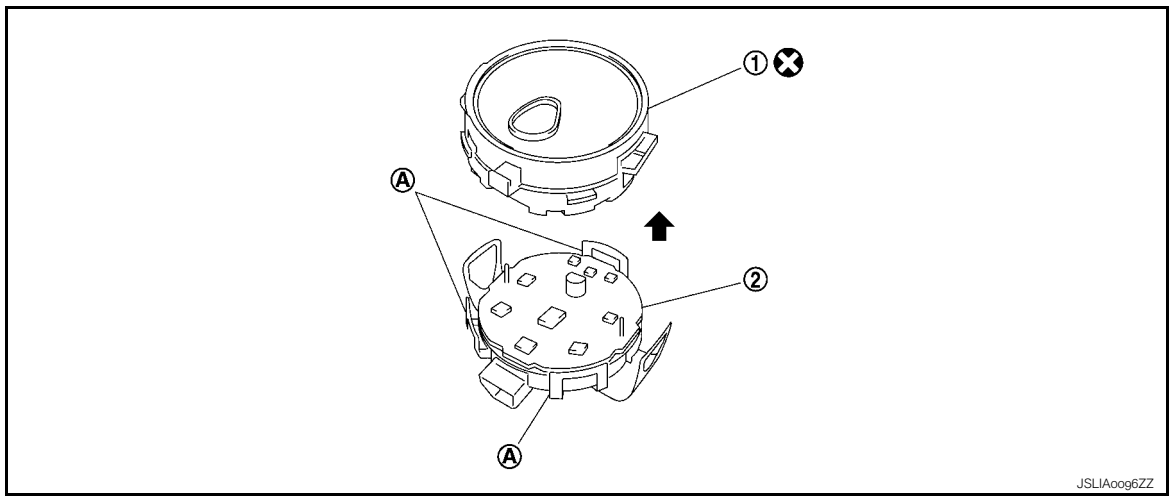
CAUTION:
- **When the light & rain sensor is removed from windshield, gel/adhesive part of housing should not be re-used.**
- **When re-using the light & rain sensor (i.e. after windshield replacement), replace the light & rain sensor housing.**

REMOVAL



1. Light & rain sensor connector
2. Light & rain senor
3. Inside mirror cover (lower)
4. Inside mirror cover (upper)
A. Metal spring clip

DISASSEMBLY



1. Light & rain senor housing
2. Light & rain senor
A. Pawl

Refer to GI-4, "Components" for symbols not described above.

CAUTION:
Never touch the electronic circuit board.

Removal and Installation

INFOID:0000000000955512

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CAUTION:
- **When the light & rain sensor is removed from windshield, gel/adhesive part of housing should not be re-used.**
- **When re-using the light & rain sensor (i.e. after windshield replacement), replace the light & rain sensor housing.**

REMOVAL

1. Remove the inside mirror cover (upper and lower). Refer to MIR-37, "Exploded View".
2. Disengage the both sides of metal spring clips, and remove the light & rain sensor from the windshield.
3. Disconnect light & rain sensor connector.

NOTE:
When replacing the light & rain sensor housing;
Disengage the pawls, and remove the light & rain sensor housing from the light & rain sensor.

CAUTION:
Never touch the electronic circuit board.

INSTALLATION

Install in the reverse order of removal.

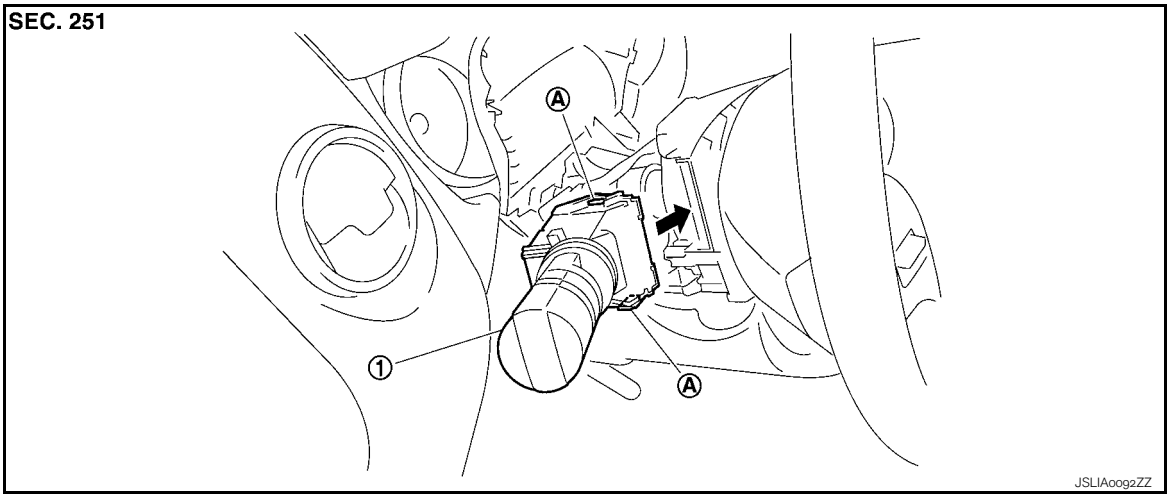
CAUTION:
- **Surface of windshield should be cleaned.**
- **Never touch gel/adhesive of new part.**

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LIGHTING & TURN SIGNAL SWITCH

Exploded View

INFOID:0000000000955513



1. Light & turn signal switch
A. Pawl

Removal and Installation

INFOID:0000000001082266

REMOVAL

1. Remove steering column cover. Refer to IP-11, "Exploded View".
2. While pressing pawls, pull the light & turn signal switch. And disconnect from the switch base.

INSTALLATION

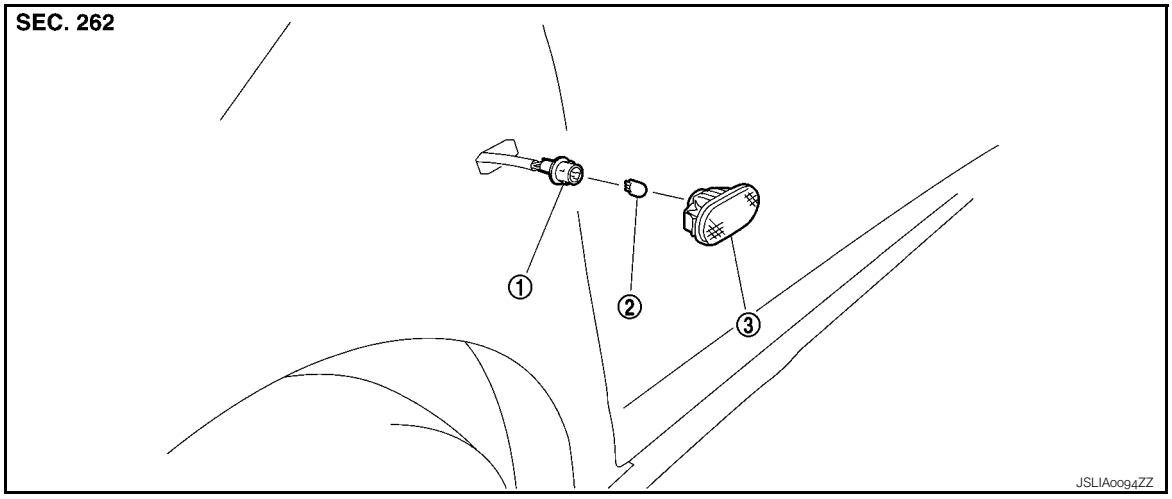
Installation is the reverse order of removal.

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SIDE TURN SIGNAL LAMP

Exploded View

INFOID:0000000000955514



1. Side turn signal lamp bulb socket
2. Side turn signal lamp bulb
3. Side turn signal lamp housing

Removal and Installation

INFOID:0000000000955515

CAUTION:
Disconnect battery negative terminal or remove the fuse.

REMOVAL

1. Insert a spatula or the similar tool under the side turn signal lamp. While pushing the pawl of the lamp, pull off the lamp from the vehicle.
2. Disconnect side turn signal lamp connector.
   NOTE:
   Support side turn signal lamp harness with tape so that it won't fall into the front fender.

INSTALLATION

Install in the reverse order of removal.

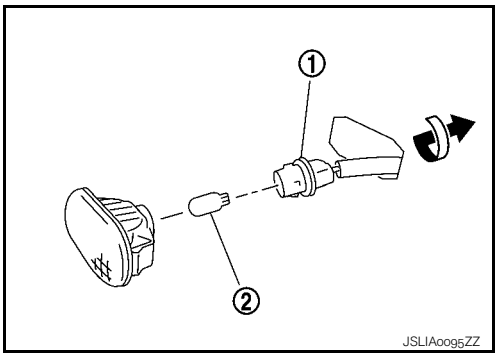
Replacement

INFOID:0000000000955516

CAUTION:
Disconnect battery negative terminal or remove the fuse.

SIDE TURN SIGNAL LAMP BULB

1. Remove the side turn signal lamp.
2. Rotate the bulb socket (1) counterclockwise and unlock it.
   NOTE:
   Support the vehicle-side harness of the side turn signal lamp with tape so that it does not drop inside the front fender.
3. Remove the bulb (2) from the bulb socket.

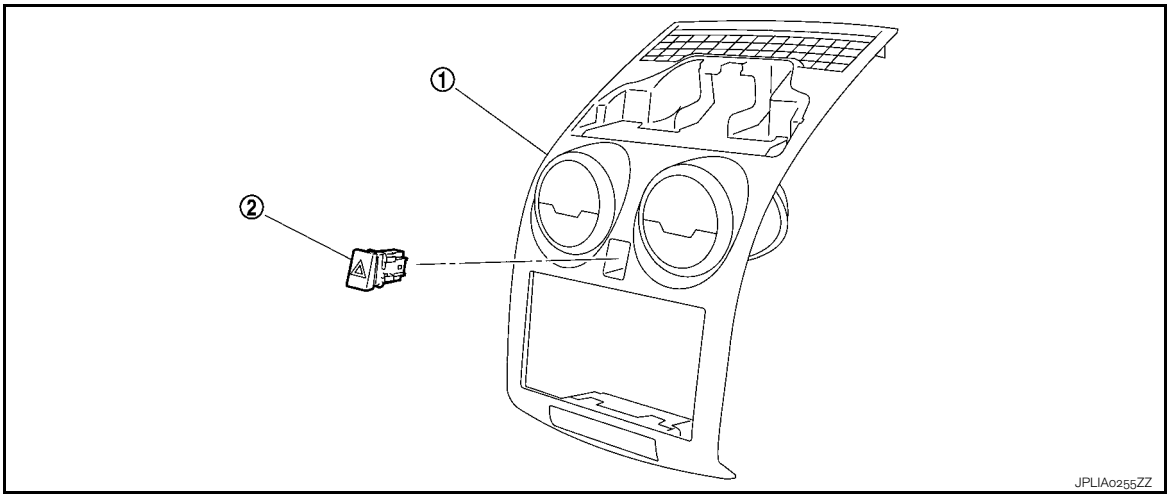


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HAZARD SWITCH

Exploded View

INFOID:0000000000955517



1. Cluster lid C
2. Hazard switch

Removal and Installation

INFOID:0000000000978418

REMOVAL

1. Remove the cluster lid C. Refer to IP-11, "Exploded View".
2. Widen the pawl. Remove hazard switch.

INSTALLATION

Install in the reverse order of removal.

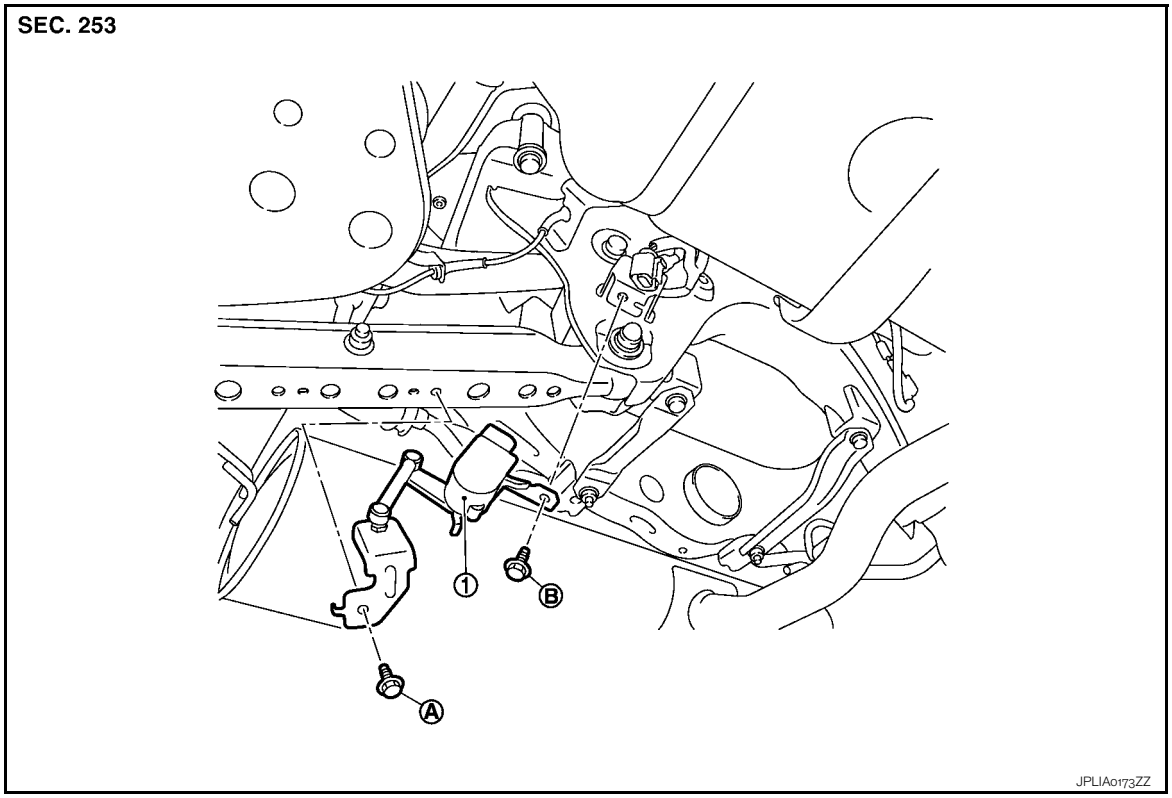
A B C D E F G H I J K EXL M N O P
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AUTO LEVELIZER CONTROL UNIT

Exploded View

INFOID:0000000000955518

SEC. 253



1. Auto levelizer control unit

A. Sensor lever link bracket bolt B. Auto levelizer control unit mounting bolt

Removal and Installation

INFOID:0000000000955519

Removal

1. Remove auto levelizer control unit mounting bolt.
2. Remove sensor lever link bracket bolt.
3. Disconnect auto levelizer control unit connector.
4. Remove auto levelizer control unit.

Installation

Install in the reverse order of removal.

CAUTION:

Be sure to perform sensor initialization if auto levelizer control unit is removed. Refer to EXL-10, "SENSOR INITIALIZE : Special Repair Requirement".

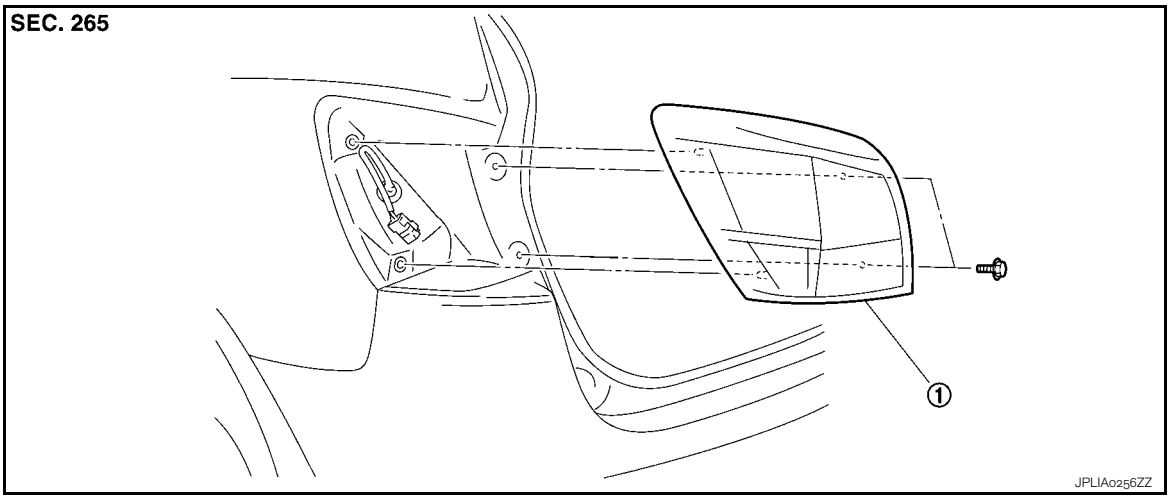
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REAR COMBINATION LAMP

Exploded View

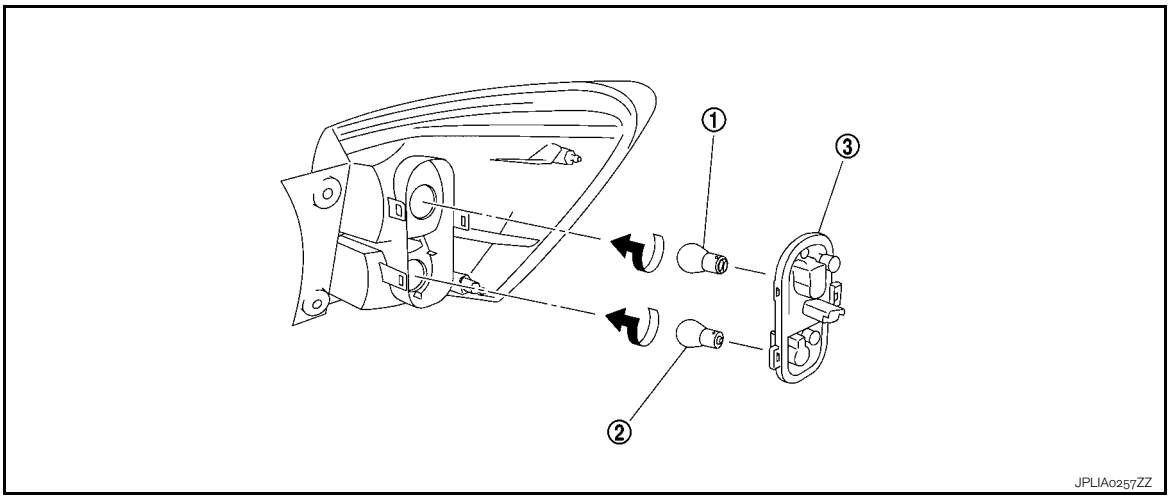
INFOID:0000000000955520

REMOVAL



1. Rear combination lamp

DISASSEMBLY



1. Tail lamp bulb
2. Rear turn signal lamp bulb
3. Bulb cover

Removal and Installation

INFOID:0000000000955521

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

1. Remove rear combination lamp mounting bolts.
2. Pull the rear combination lamp toward rear of the vehicle. Remove the rear combination lamp.
3. Disconnect rear combination lamp connector.

INSTALLATION

Install in the reverse order of removal.

Replacement

INFOID:0000000000955522

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CAUTION:
Disconnect the battery negative terminal or the fuse.

TAIL LAMP BULB

1. Remove the rear combination lamp.
2. Remove the bulb cover.
3. Turn the tail lamp bulb counterclockwise, and remove it.

REAR TURN SIGNAL LAMP BULB

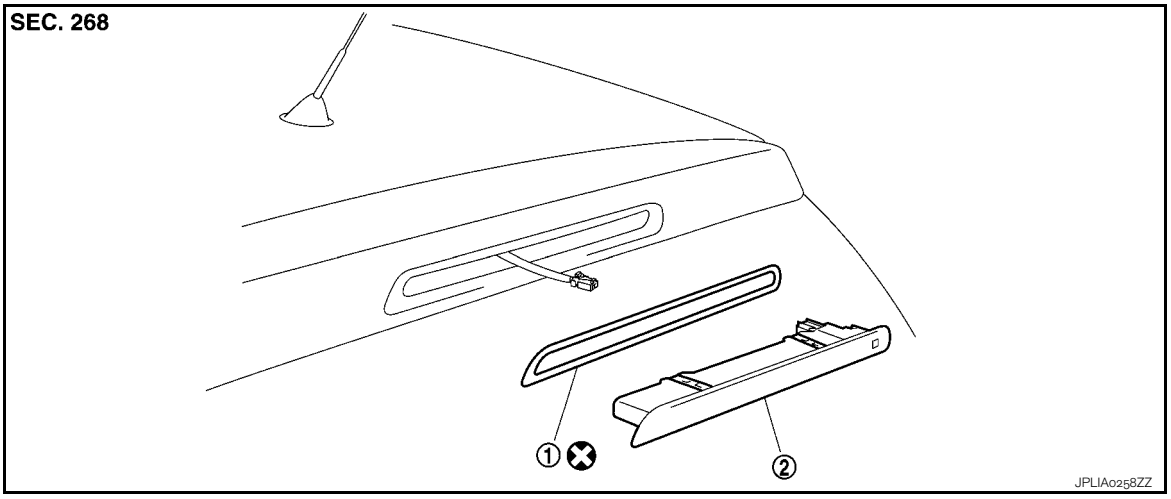
1. Remove the rear combination lamp.
2. Remove the bulb cover.
3. Turn the rear turn signal lamp bulb counterclockwise, and remove it.

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HIGH-MOUNTED STOP LAMP

Exploded View

INFOID:0000000000955523



1. Seal packing
2. High-mounted stop lamp

Refer to GI-4, "Components" for symbols not described above.

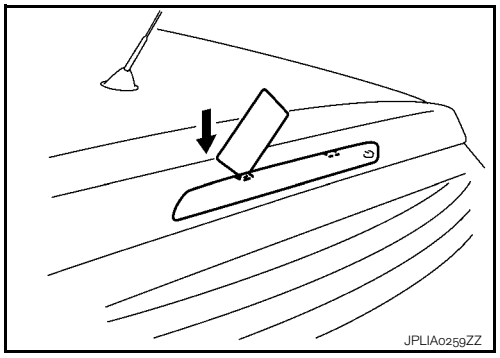
Removal and Installation

INFOID:0000000000955524

CAUTION:
Disconnect battery negative terminal or remove the fuse.

REMOVAL

1. Insert a cards upper the high-mounted stop lamp. While pushing the metal clip of the lamp, pull off the lamp from the vehicle.
2. Disconnect the high-mounted stop lamp connector.
3. Remove the rear washer tube.

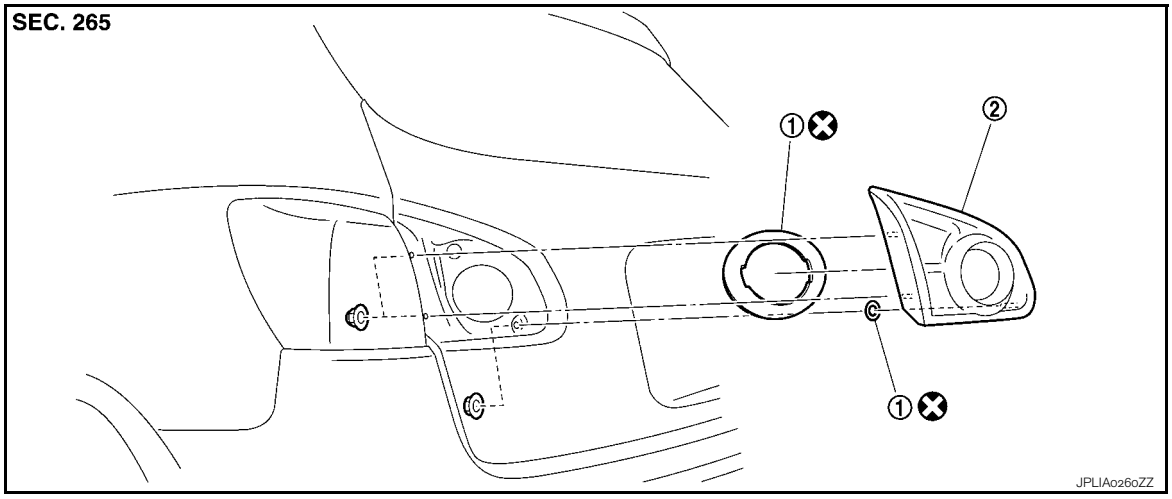


INSTALLATION
Install in the reverse order of removal.

BACK-UP LAMP

Exploded View

INFOID:0000000000955527



1. Seal packing
2. Back-up lamp

Refer to GI-4, "Components" for symbols not described above.

Removal and Installation

INFOID:0000000000955528

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

1. Remove back door trim finisher lower. Refer to INT-26, "Exploded View".
2. Disconnect back-up lamp connector.
3. Remove back-up lamp mounting nuts. And then remove back-up lamp.

INSTALLATION

Install in the reverse order of removal.

CAUTION:
Seal packing cannot be reused.

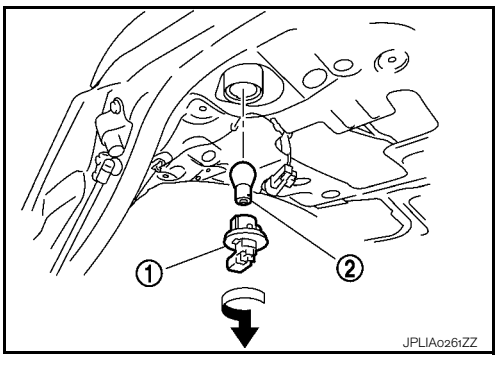
Replacement

INFOID:0000000000955529

CAUTION:
Disconnect the battery negative terminal or the fuse.

BACK-UP LAMP BULB

1. Remove back door trim finisher lower. Refer to INT-26, "Exploded View".
2. Disconnect the back-up lamp connector.
3. Turn the bulb socket (1) counterclockwise and unlock it.
4. Remove the bulb (2) from the socket.

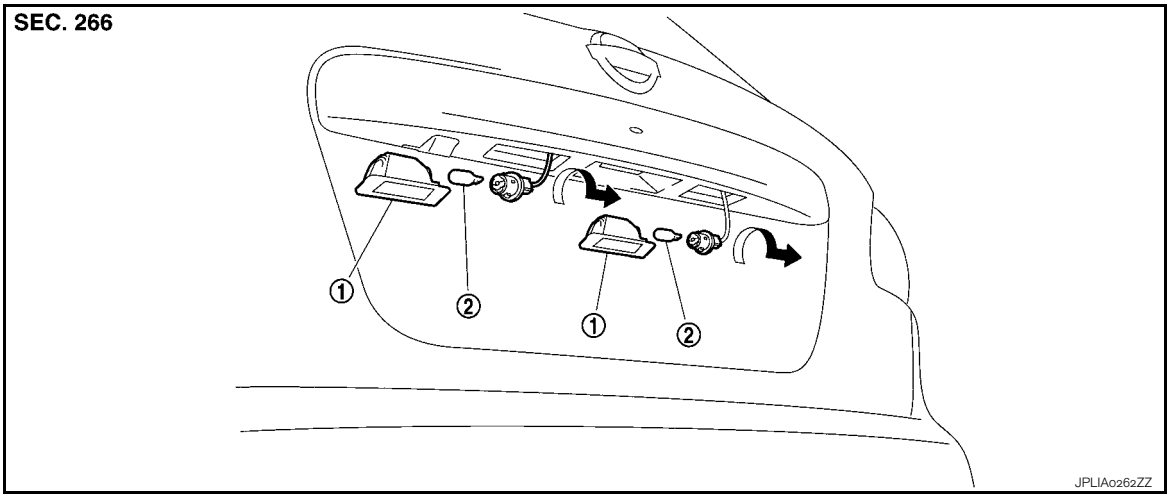


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LICENSE PLATE LAMP

Exploded View

INFOID:0000000000955530



1. License plate lamp housing
2. License plate lamp bulb

Removal and Installation

INFOID:0000000000955531

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

1. While pressing the license plate lamp to direction right side, pull it to direction outside and then remove it.
2. Disconnect the connector.

INSTALLATION

Install in the reverse order of removal.

Replacement

INFOID:0000000000955532

CAUTION:
Disconnect the battery negative terminal or the fuse.

LICENSE PLATE LAMP BULB

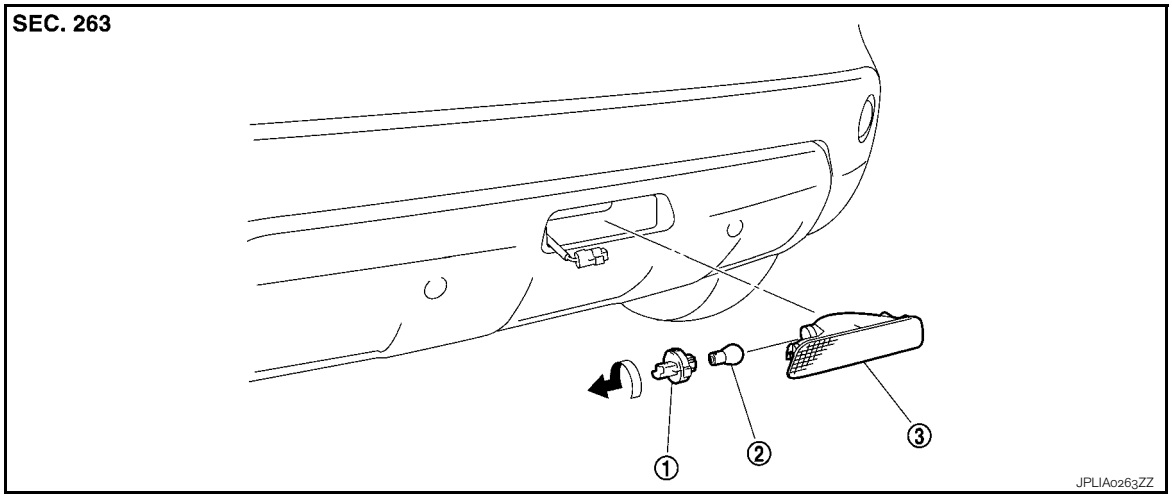
1. Remove license plate lamp.
2. Turn the bulb socket counterclockwise and unlock it.
3. Remove the bulb from the socket.

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REAR FOG LAMP

Exploded View

INFOID:0000000000955533



1. Rear fog lamp bulb socket
2. Rear fog lamp bulb
3. Rear fog lamp housing

Removal and Installation

INFOID:0000000000955534

CAUTION:
Disconnect battery negative terminal or remove the fuse.

REMOVAL

1. Insert any appropriate tool into the gap between the rear fog lamp housing. And pull off the rear fog lamp from the vehicle.
2. Disconnect rear fog lamp connector.

INSTALLATION

Installation is the reverse order of removal.

Replacement

INFOID:0000000000955535

CAUTION:
Disconnect battery negative terminal or remove the fuse.

REAR FOG LAMP BULB

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

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SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Bulb Specifications

INFOID:0000000000955536

Item		Type	Wattage (W)
Front combination lamp	Headlamp (LO)	D2R (XENON)	35
	Headlamp (HI)	H7	55
	Front turn signal lamp	WY21W (Amber)	21
	Parking lamp	W5W	5
Front fog lamp		HB4	51
Side turn signal lamp		W5W	5
Rear combination lamp	Stop lamp/Tail lamp	W21/5W	21/5
	Rear turn signal lamp	W21W	21
Back-up lamp		W16W	18
License plate lamp		W5W	5
High-mounted stop lamp		LED	—
Rear fog lamp		W21W	21

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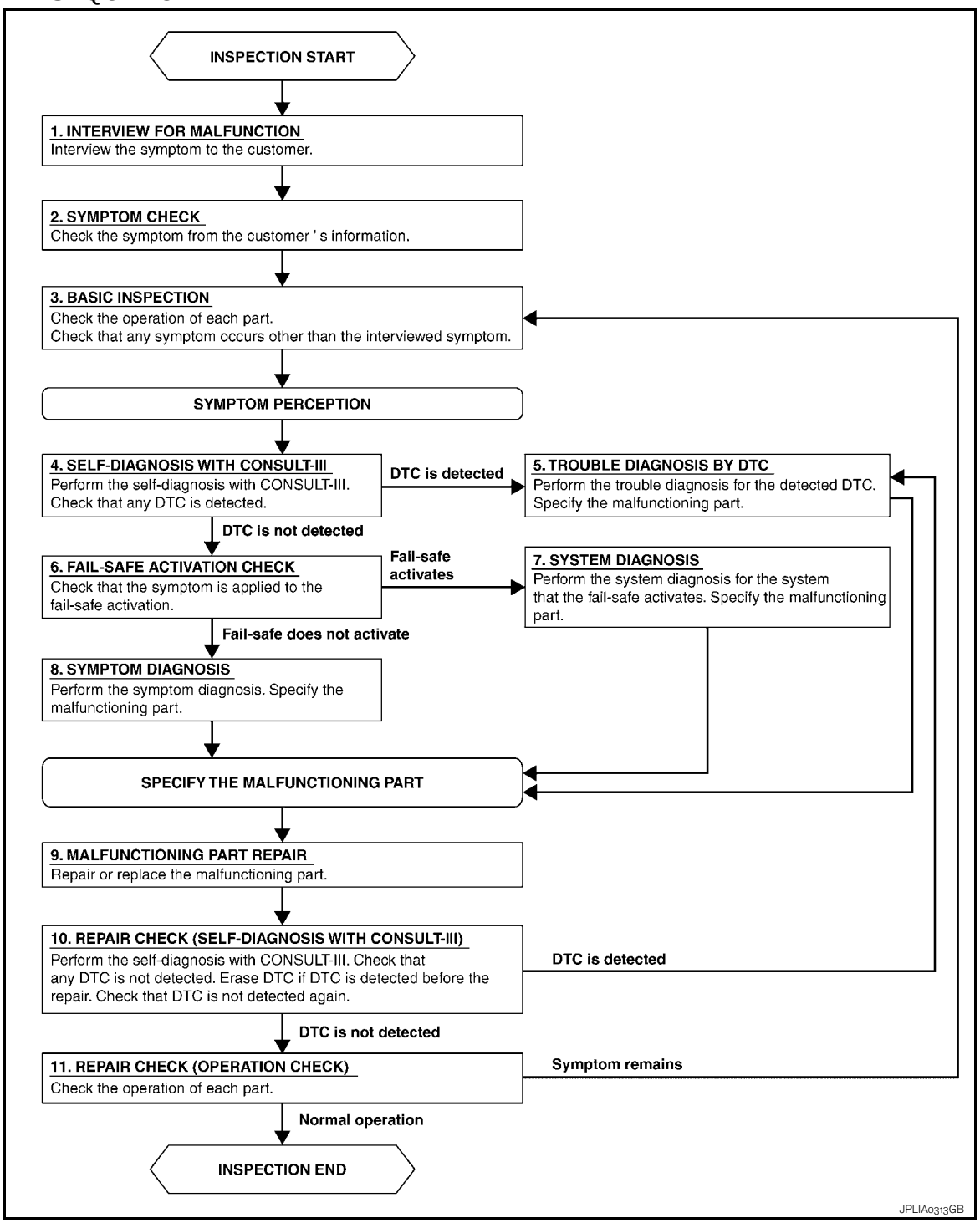
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000001078333

OVERALL SEQUENCE



DETAILED FLOW

1.INTERVIEW FOR MALFUNCTION

Interview the symptom to the customer.

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>> GO TO 2.

2.SYMPTOM CHECK

Check the symptom from the customer's information.

>> GO TO 3.

3.BASIC INSPECTION

Check the operation of each part. Check that any symptom occurs other than the interviewed symptom.

>> GO TO 4.

4.SELF-DIAGNOSIS WITH CONSULT-III

Perform the self-diagnosis with CONSULT-III. Check that any DTC is detected.

Is any DTC detected?

YES >> GO TO 5.
NO >> GO TO 6.

5.TROUBLE DIAGNOSIS BY DTC

Perform the trouble diagnosis for the detected DTC. Specify the malfunctioning part.

>> GO TO 9.

6.FAIL-SAFE ACTIVATION CHECK

Check that the symptom is applied to the fail-safe activation.

Does the fail-safe activate?

YES >> GO TO 7.
NO >> GO TO 8.

7.SYSTEM DIAGNOSIS

Perform the system diagnosis for the system that the fail-safe activates. Specify the malfunctioning part.

>> GO TO 9.

8.SYMPTOM DIAGNOSIS

Perform the symptom diagnosis. Specify the malfunctioning part.

>> GO TO 9.

9.MALFUNCTION PART REPAIR

Repair or replace the malfunctioning part.

>> GO TO 10.

10.REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT-III)

Perform the self-diagnosis with CONSULT-III. Check that any DTC is not detected. Erase DTC if DTC is detected before the repair. Check that DTC is not detected again.

Is any DTC detected?

YES >> GO TO 5.
NO >> GO TO 11.

11.REPAIR CHECK (OPERATION CHECK)

Check the operation of each part.

Does it operate normally?

YES >> INSPECTION END

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NO >> GO TO 3.

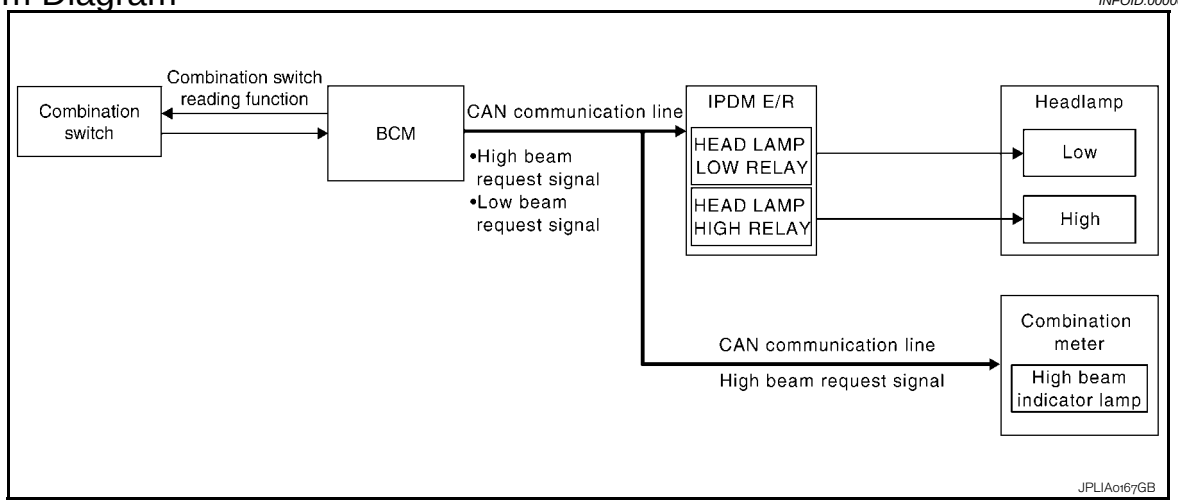
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FUNCTION DIAGNOSIS

HEADLAMP SYSTEM

System Diagram

INFOID:0000000001026113



System Description

INFOID:0000000001089299

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, and the auto light function ON judgment (With auto light system)
- Daytime running light ON judgment (With daytime running light system)

- 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.

FOLLOW ME HOME FUNCTION

When the driver is moving to the house entrance from the own vehicle, headlamp is kept still ON by the follow me home function of BCM.

- When BCM detects the input of lighting switch PASS with all of following condition, it transmits the low beam request signal for a period of time to IPDM E/R through CAN communication.
- IPDM E/R turns the integrated headlamp low relay ON, and turns the headlamp ON according to the low beam request signal.
- Ignition switch OFF
- Lighting switch OFF or AUTO

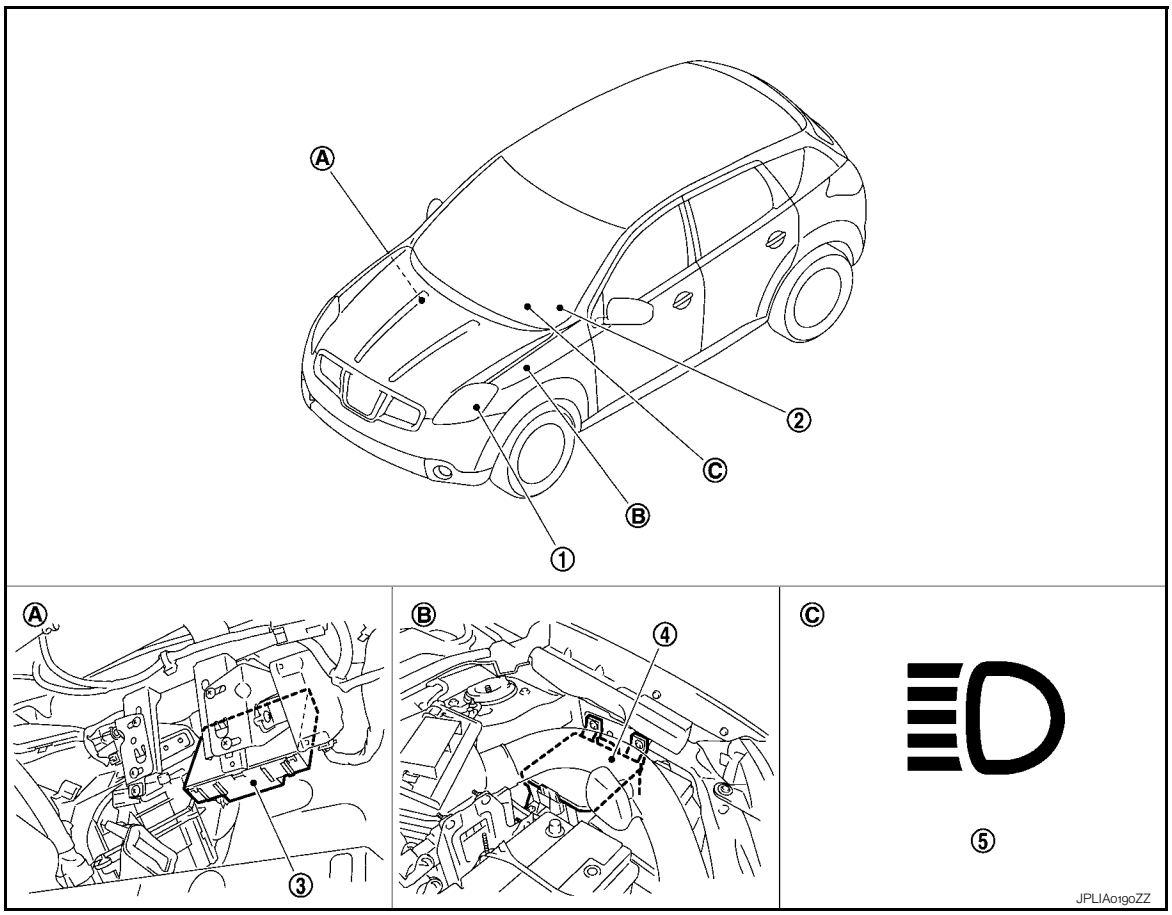
NOTE:

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Follow me home function activating time can be set by CONSULT-III. Refer to EXL-27, "HEADLAMP : CONSULT-III Function (BCM - HEAD LAMP)".

Component Parts Location

INFOID:0000000001060451



1. Headlamp
2. Combination switch
3. BCM
4. IPDM E/R
5. High beam indicator lamp
A. Over the glove box
B. Engine room (left side)
C. On the combination meter

Component Description

INFOID:0000000001026116

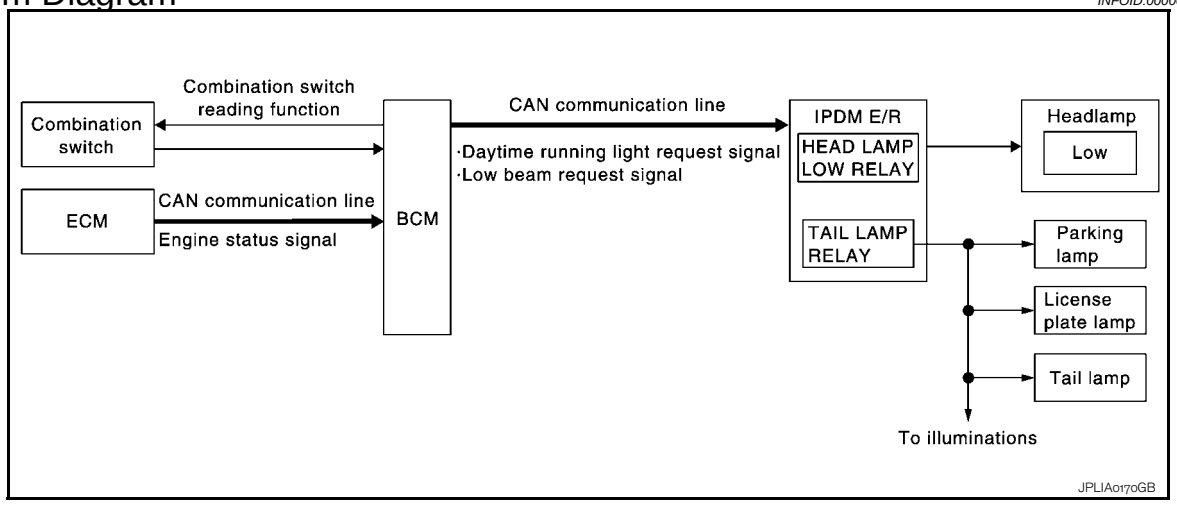
Part	Description
BCM	• Judges each switch condition by the combination switch reading function. • Judges that the headlamp is turned ON according to the vehicle condition. - Requests the headlamp relay (HI/LO) ON to IPDM E/R (with CAN communication). - Requests the high beam indicator lamp ON to the combination meter (with CAN communication).
IPDM E/R	Controls the integrated relay, and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-9, "System Diagram".
Combination meter (High beam indicator lamp)	Turns the high beam indicator lamp ON according to the request from BCM (with CAN communication).

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DAYTIME RUNNING LIGHT SYSTEM

System Diagram

INFOID:0000000001099320



System Description

INFOID:0000000001099321

OUTLINE

- Turns the following exterior lamps ON as the daytime running light.
- headlamp (LO)
- Tail lamp, parking lamp and license plate lamp
- Daytime running light is controlled by daytime running light control function and combination switch reading function of BCM, and relay control function of IPDM E/R.

DAYTIME RUNNING LIGHT OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM detects the engine condition by the engine status signal received from ECM with CAN communication.
- BCM transmits the daytime running light request signal and low beam request signal to IPDM E/R with CAN communication according to the daytime running light ON condition.

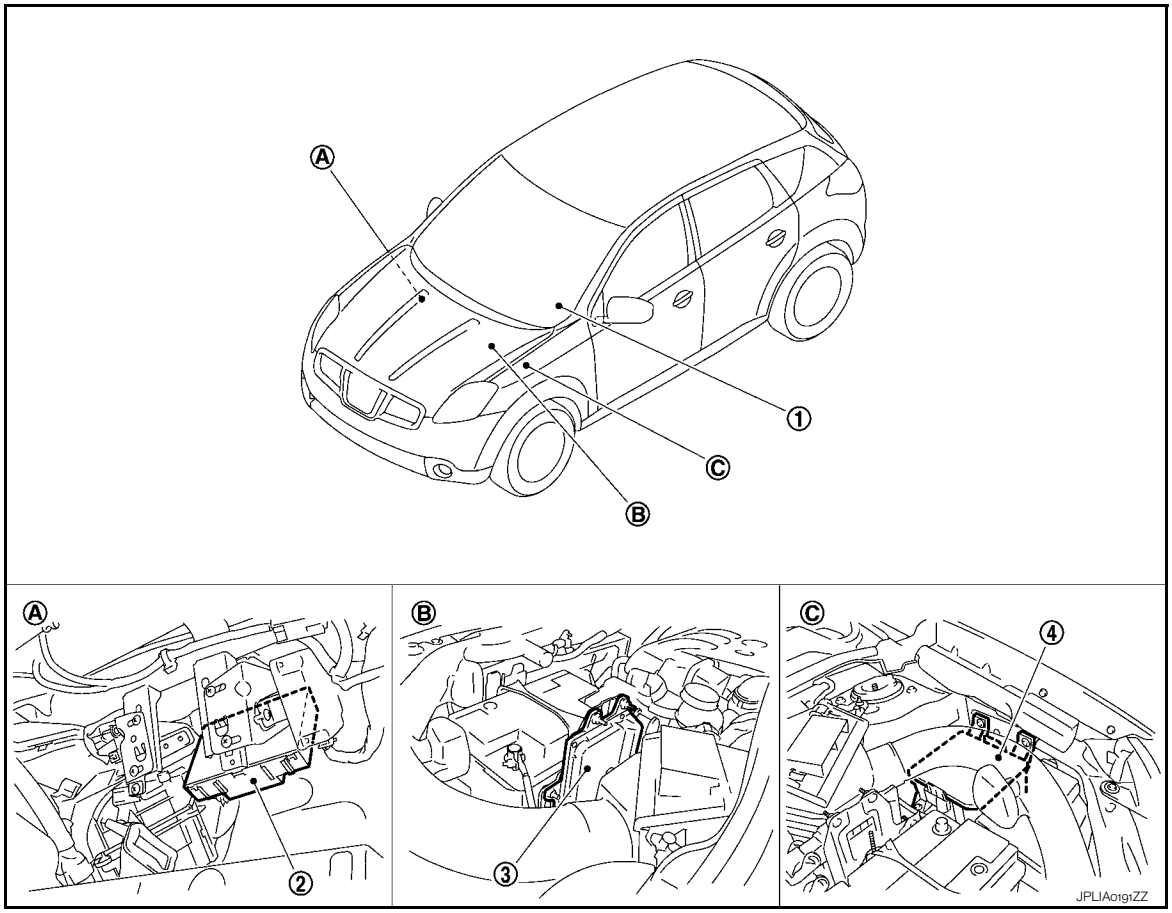
Daytime running light ON condition

- Engine running
- Lighting switch OFF or AUTO
- IPDM E/R turns the integrated headlamp low relay and tail lamp relay ON according to the daytime running light request signal and low beam request signal. And it turns each lamps ON.

Component Parts Location

INFOID:0000000001099322

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1. Combination switch
2. BCM
3. ECM
4. IPDM E/R
A. Over the glove box
B. Engine room (left side)
C. Engine room (left side)

Component Description

INFOID:0000000001099323

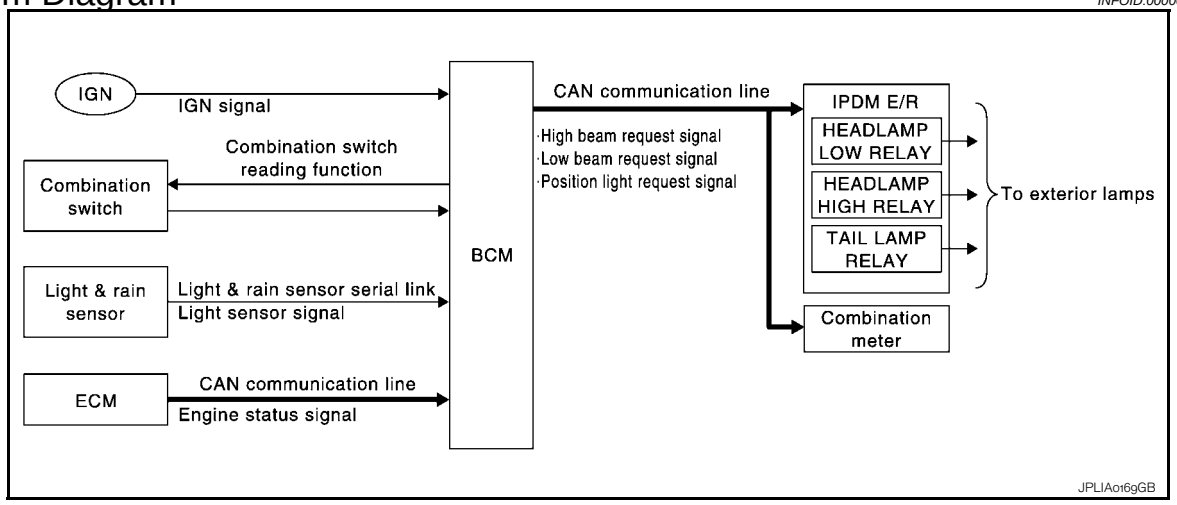
Part	Description
BCM	• Detects each switch condition with the combination switch reading function. • Judges each lamps ON/OFF condition according to the vehicle condition. Requests the each relay ON to IPDM E/R (with CAN communication).
IPDM E/R	Controls the integrated relay and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-9, "System Diagram".
ECM	Transmits the engine status signal to BCM with CAN communication.

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AUTO LIGHT SYSTEM

System Diagram

INFOID:0000000001099324



System Description

INFOID:0000000001099325

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

Control by IPDM E/R
- Relay control function
- Auto light function turns the exterior lamps* ON/OFF automatically according to the outside brightness.
  *: Headlamp (LO/HI), parking lamp, tail lamp (Headlamp HI depends on the combination switch condition.)

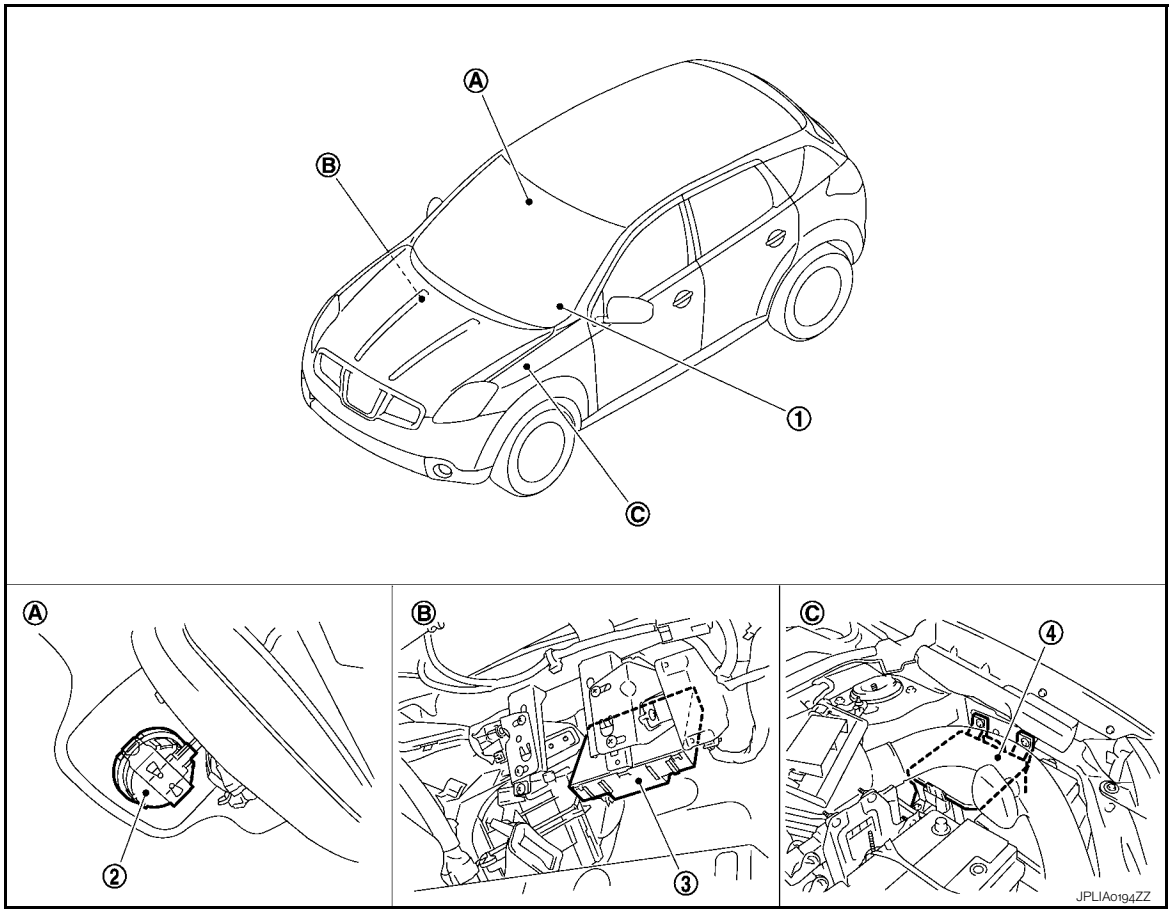
AUTO LIGHT FUNCTION

- BCM detects the combination switch condition with the combination switch reading function.
- BCM detects the engine condition by the engine status signal received from ECM with CAN communication.
- BCM receives the light sensor signal [outside brightness (lux) and the light & rain sensor condition] from light & rain sensor with the light & rain sensor serial link.
- BCM judges ON/OFF condition of the exterior lamps according to the outside brightness and the vehicle condition.
- BCM transmits each request signal to IPDM E/R with CAN communication according to ON/OFF condition by the auto light function.

Component Parts Location

INFOID:0000000001099326

A B C D E F G H I J K EXL M N O P
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1. Combination switch
2. Light & rain sensor
3. BCM
4. IPDM E/R
A. Windshield upper
B. Over the glove box
C. Engine room (left side)

Component Description

INFOID:0000000001099327

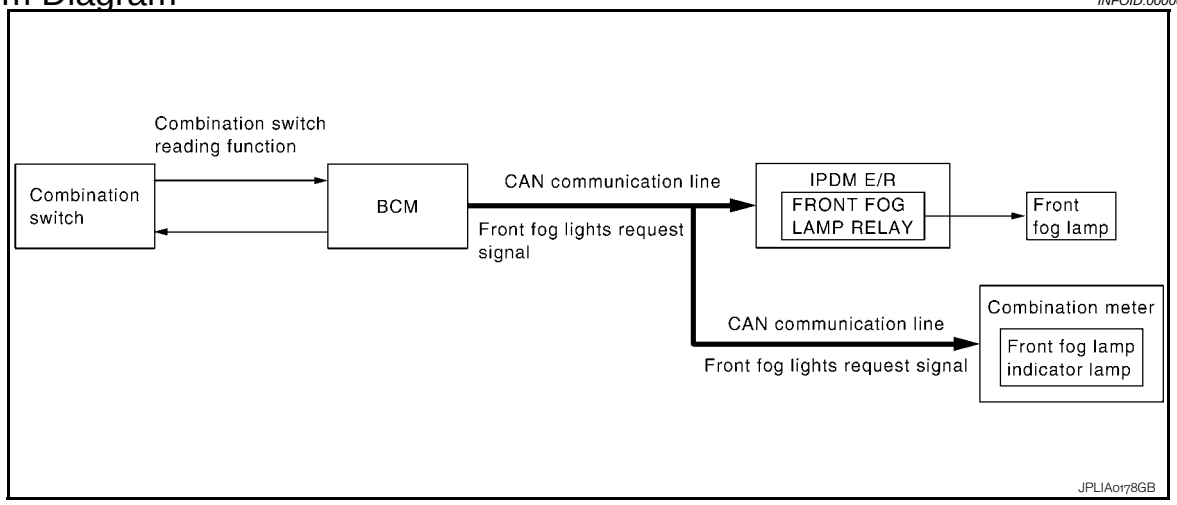
Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Detects the outside brightness from the light & rain sensor by light & rain sensor serial link. • Judges the ON/OFF status of the exterior lamp according to the outside brightness and the vehicle condition. • Requests ON/OFF of each relay to IPDM E/R (with CAN communication).
IPDM E/R	Controls the integrated relay, and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-9, "System Diagram".
Light & rain sensor	Refer to EXL-228, "Description".

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FRONT FOG LAMP SYSTEM

System Diagram

INFOID:0000000001099328



System Description

INFOID:0000000001099329

OUTLINE

Front fog lamp is controlled by combination switch reading function and 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 lights request signal to IPDM E/R and the combination meter with CAN communication according to the front fog lamp ON condition.

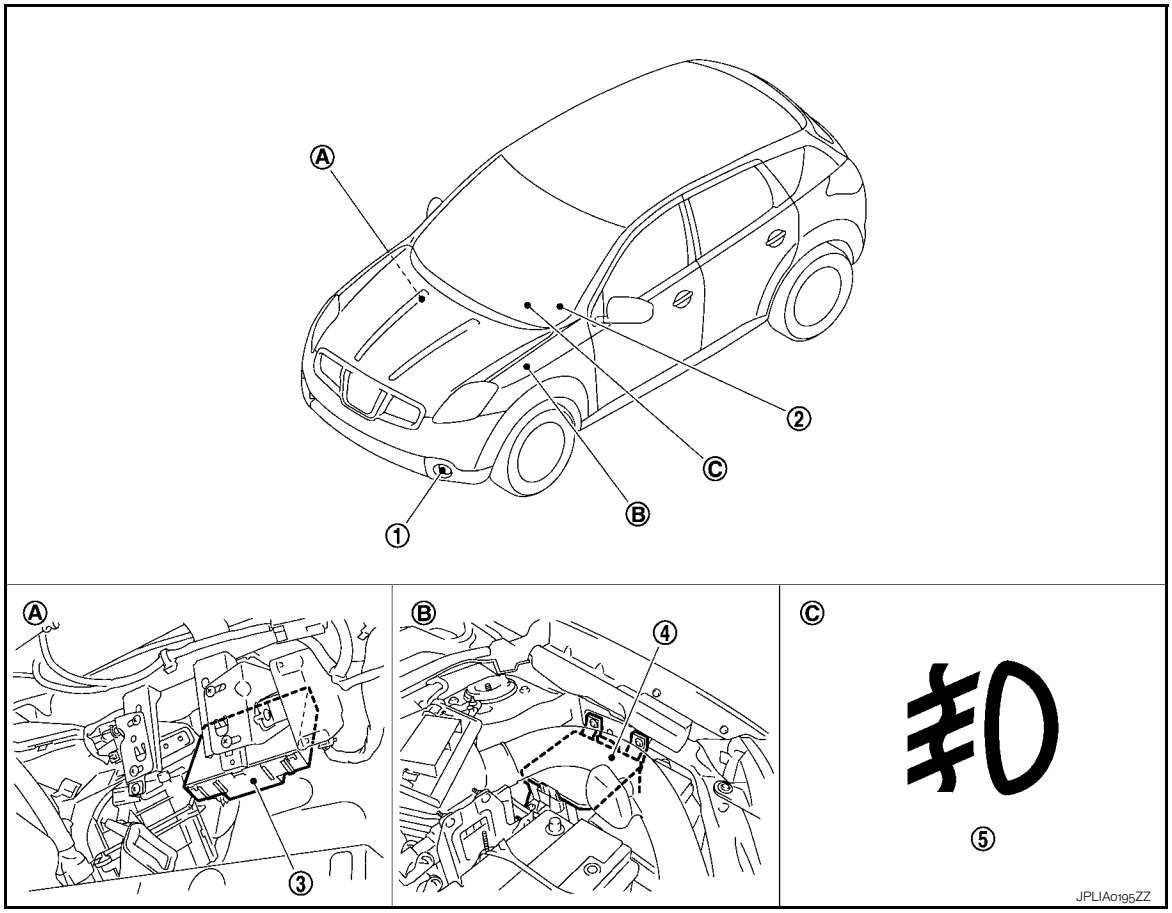
Front fog lamp ON condition
- Front fog lamp switch ON
- Lighting switch 1ST, 2ND, or AUTO (ignition switch ON)

- IPDM E/R turns the integrated front fog lamp relay ON, and turns the front fog lamp ON according to the front fog lights request signal.
- Combination meter turns the front fog lamp indicator lamp ON according to the front fog lights request signal.

Component Parts Location

INFOID:0000000001099330

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1. Front fog lamp
2. Combination switch
3. BCM
4. IPDM E/R
5. Front fog lamp indicator lamp
A. Over the glove box
B. Engine room (left side)
C. On the combination meter

Component Description

INFOID:0000000001099331

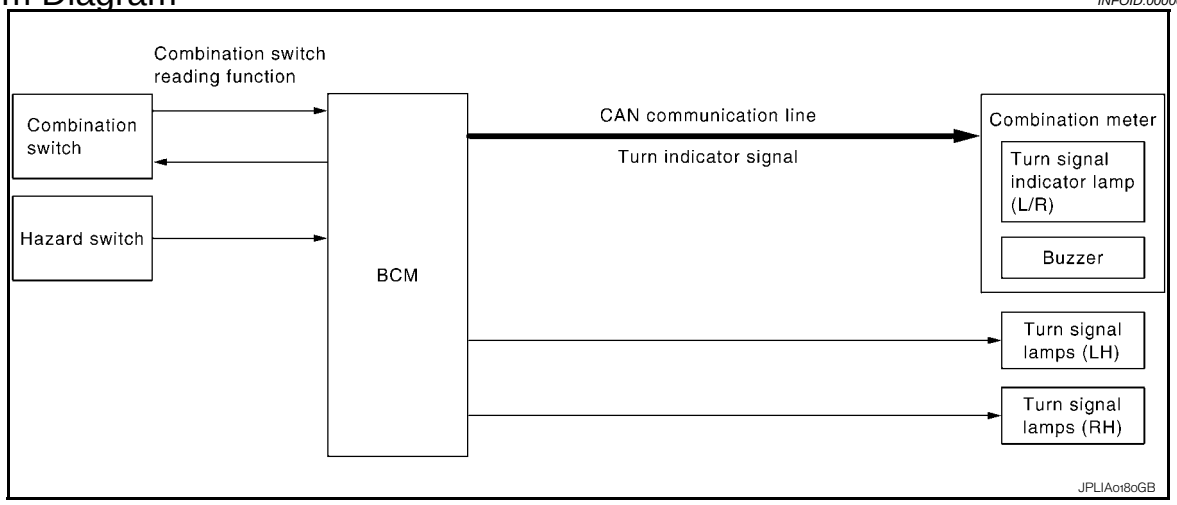
Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges the front fog lamp ON/OFF status according to the vehicle condition. - Requests the front fog lamp relay ON to IPDM E/R (with CAN communication). - Requests the front fog lamp indicator lamp ON to the combination meter (with CAN communication).
IPDM E/R	Controls the integrated relay and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-9, "System Diagram".
Combination meter (Front fog lamp indicator lamp)	Turns the front fog lamp indicator lamp ON according to the request from BCM.

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TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

System Diagram

INFOID:0000000001099332



System Description

INFOID:0000000001099333

OUTLINE

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

TURN SIGNAL LAMP OPERATION

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

HAZARD WARNING LAMP OPERATION

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

TURN SIGNAL INDICATOR LAMP AND TURN SIGNAL OPERATION

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

3-TIME FLASHER FUNCTION

By a short touch of the turn signal lever, BCM flashes 3 times the turn signal lamps in the selected direction.

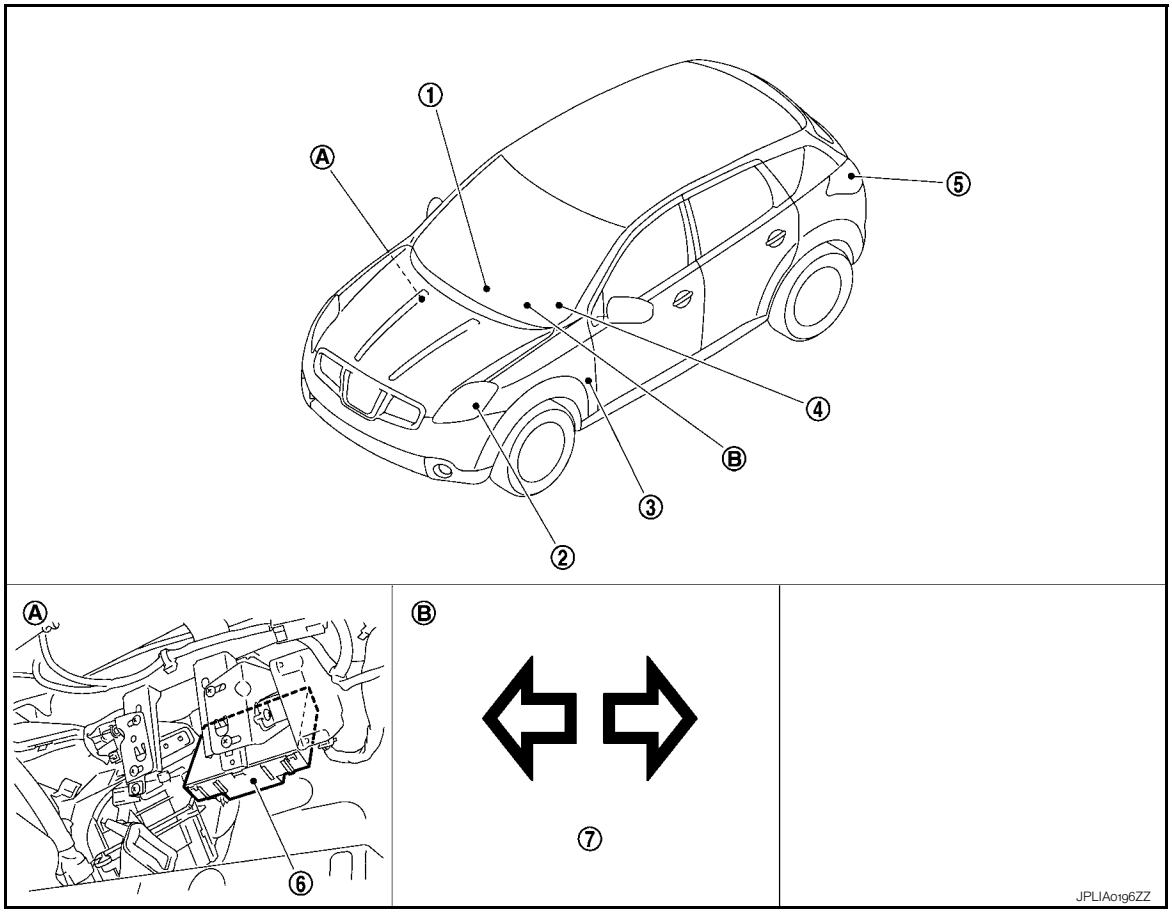
HIGH FLASHER OPERATION (FAIL-SAFE)

- BCM detects the turn signal lamp circuit status from the terminal voltage.
- 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.

Component Parts Location

INFOID:0000000001099334



1. Hazard switch
2. Front turn signal lamp
3. Side turn signal lamp
4. Combination switch
5. Rear turn signal lamp
6. BCM
7. Turn signal indicator lamp

A. Over the glove box
B. On the combination meter

Component Description

INFOID:0000000001099335

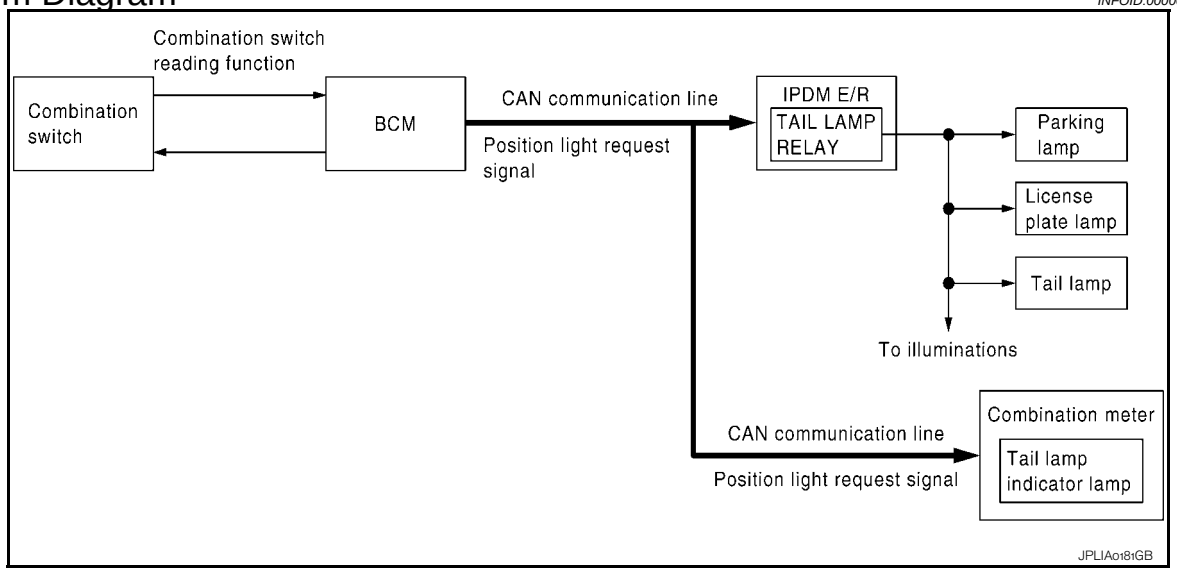
Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges the blinks of the turn signal lamp and the hazard warning lamp from each switch status. The applicable turn signal lamp blinks. • Requests the turn signal indicator lamp blink to the combination meter (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-9, "System Diagram".
Hazard switch	Inputs the hazard switch ON/OFF signal to BCM.
Combination meter (Turn signal indicator lamp & buzzer)	Blinks the turn signal indicator lamp and outputs the turn signal operating sound with integrated buzzer according to the request from BCM (with CAN communication).

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PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

System Diagram

INFOID:0000000001099336



System Description

INFOID:0000000001099337

OUTLINE

Parking, license plate 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 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 with CAN communication according to the ON/OFF condition of the parking, license plate and tail lamps.

Parking, license plate and tail lamps ON condition

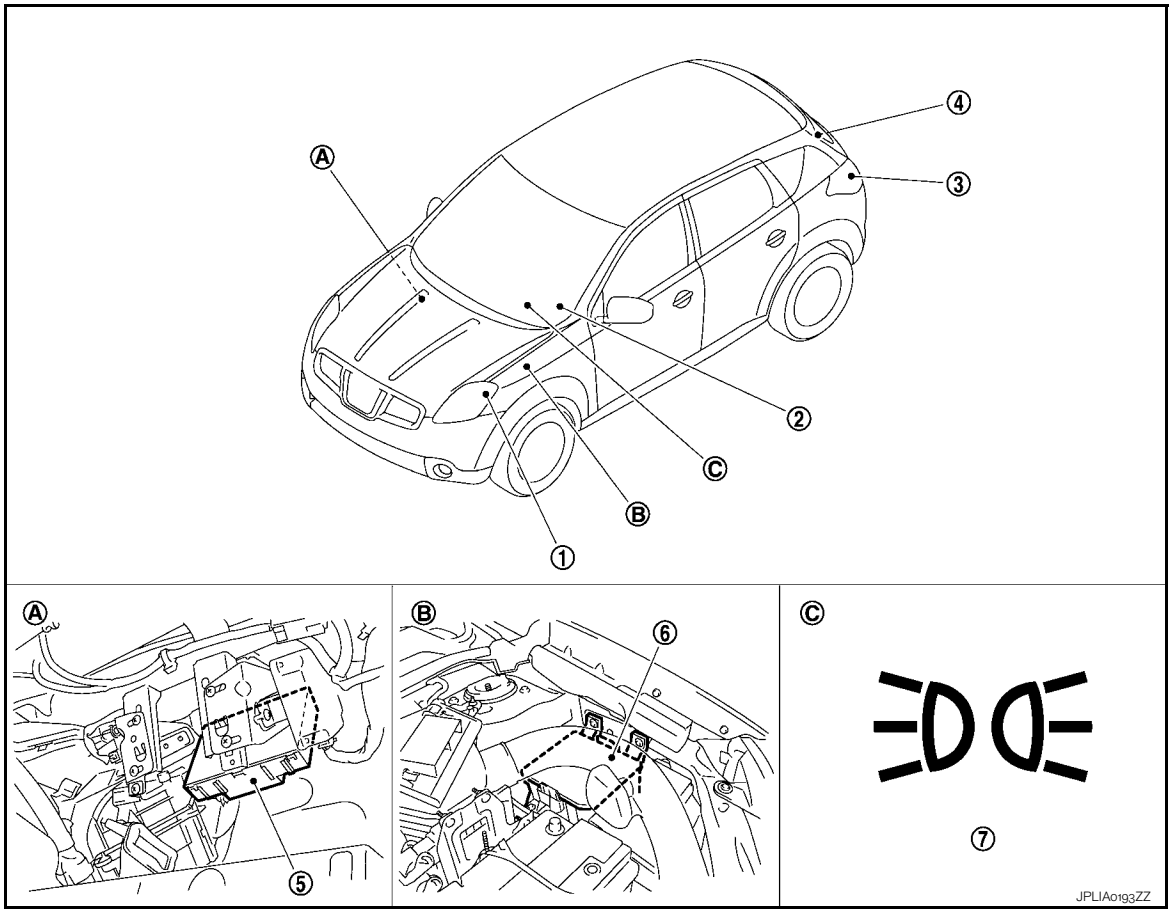
- Lighting switch 1ST
- Lighting switch 2ND
- Lighting switch AUTO, and the auto light function ON judgment (With auto light system)

- IPDM E/R turns the integrated tail lamp relay ON and turns the parking lamp, the license plate 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.

Component Parts Location

INFOID:0000000001099338

A B C D E F G H I J K EXL M N O P
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1. Parking lamp
2. Combination switch
3. Tail lamp
4. License plate lamp
5. BCM
6. IPDM E/R
7. Tail lamp indicator lamp
A. Over the glove box
B. Engine room (left side)
C. On the combination meter

Component Description

INFOID:0000000001099339

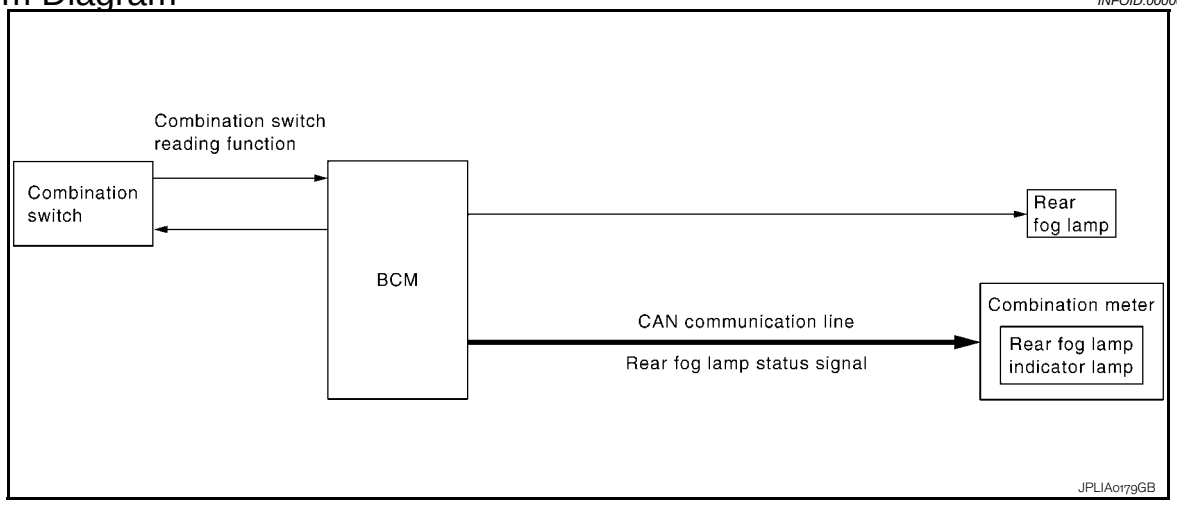
Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges the ON/OFF status of the parking, license plate and tail lamps according to the vehicle condition. - Requests the tail lamp relay ON to IPDM E/R (with CAN communication). - Requests the tail lamp indicator lamp ON to the combination meter (with CAN communication).
IPDM E/R	Controls the integrated relay and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-9, "System Diagram".
Combination meter (Tail lamp indicator lamp)	Turns the tail lamp indicator lamp ON according to the request from BCM (with CAN communication).

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REAR FOG LAMP SYSTEM

System Diagram

INFOID:0000000001099341



System Description

INFOID:0000000001099342

OUTLINE

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

REAR FOG LAMP OPERATION

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

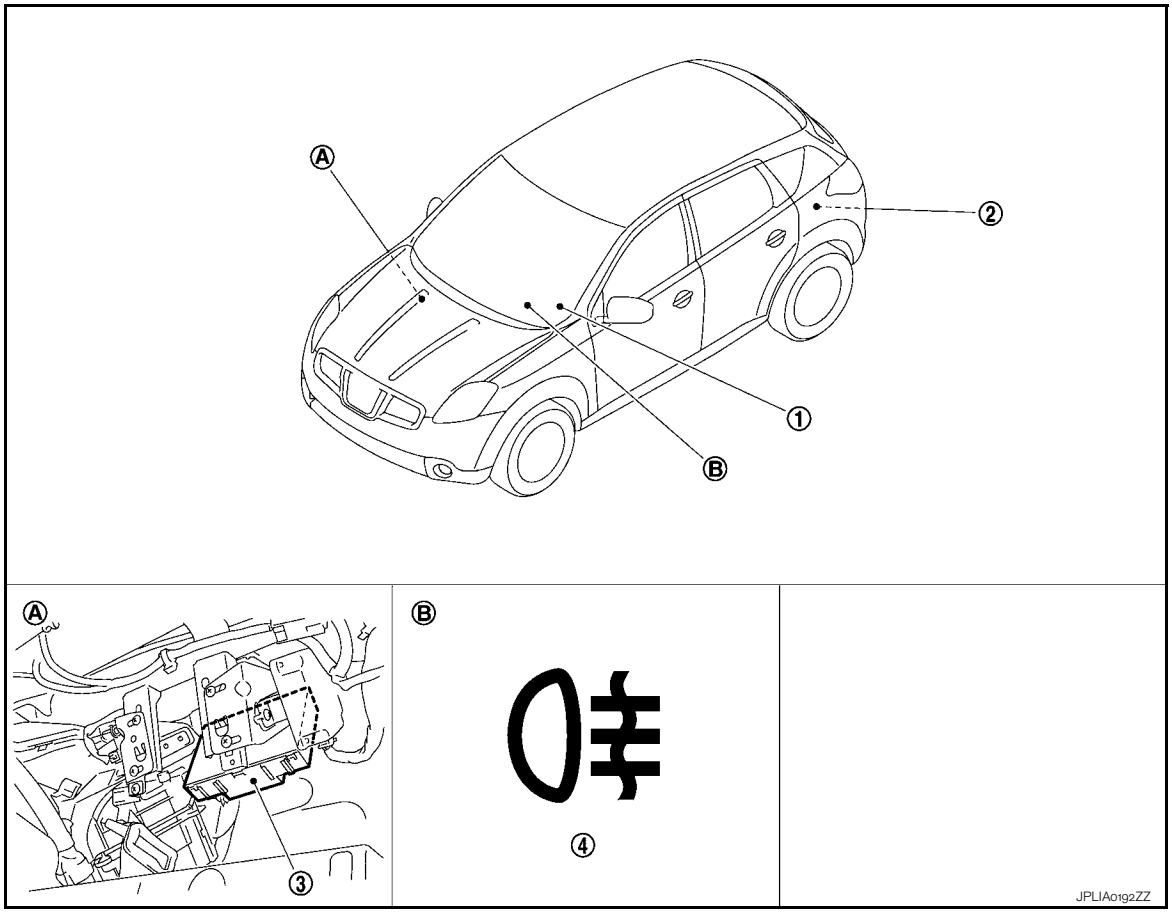
Rear fog lamp ON condition
- Rear fog lamp switch signal is input with front fog lamp ON and rear fog lamp OFF

Rear fog lamp OFF condition
- Rear fog lamp switch signal is input with rear fog lamp ON
- Front fog lamp OFF

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

Component Parts Location

INFOID:0000000001099343



1. Combination switch
2. Rear fog lamp
3. BCM
4. Rear fog lamp indicator lamp
A. Over the glove box
B. On the combination meter

Component Description

INFOID:0000000001099344

Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges that the rear fog lamp is turned ON according to the vehicle status - Supplies voltage to the rear fog lamp - Requests the rear fog lamp indicator lamp ON to the combination meter (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-9, "System Diagram".
Combination meter (Rear fog lamp indicator lamp)	Turns the rear fog lamp indicator lamp ON according to the request from BCM (with CAN communication).

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DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM)

INFOID:0000000001116334

APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
WORK SUPPORT	Changes the setting for each system function.
SELF-DIAG RESULTS	Displays the diagnosis results judged by BCM. Refer to BCS-61, "DTC Index".
CAN DIAG SUPPORT MNTR	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	• Enables to read and save the vehicle specification. • Enables to 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.

System	Sub system selection item	Diagnosis mode		
		WORK SUPPORT	DATA MONITOR	ACTIVE TEST
—	BCM	×		
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp timer	INT LAMP	×	×	×
Remote keyless entry system	MULTI REMOTE ENT	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER		×	×
Air conditioner	AIR CONDITONER		×	
Intelligent Key system	INTELLIGENT KEY		×	
Combination switch	COMB SW		×	
Immobilizer	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Trunk open	TRUNK		×	
Vehicle security system	THEFT ALM	×	×	×
Signal buffer system	SIGNAL BUFFER		×	×
PTC heater system	PTC HEATER		×	×

HEADLAMP

HEADLAMP : CONSULT-III Function (BCM - HEAD LAMP)

INFOID:0000000001099346

WORK SUPPORT

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Service item	Setting item	Setting	
HEAD LIGHT TIMER	MODE 1	10 sec.	Sets follow me home function activating time.
	MODE 2*	30 sec.	

*: Initial setting

DATA MONITOR

Monitor item [Unit]	Description
IGN ON SW [ON/OFF]	Ignition switch (ON) status judged from IGN signal (ignition power supply)
ACC SW [ON/OFF]	Ignition switch (ACC) status judged from ACC signal (ACC power supply)
HI BEAM SW [ON/OFF]	Each switch status that BCM judges from the combination switch reading function
HEAD LAMP SW1 [ON/OFF]	
HEAD LAMP SW2 [ON/OFF]	
TAIL LAMP SW [ON/OFF]	
AUTO LIGHT SW [ON/OFF]	
PASSING SW [ON/OFF]	
FR FOG SW [ON/OFF]	
RR 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 rear door switch RH
DOOR SW- RL [ON/OFF]	The switch status input from rear door switch LH
BACK DOOR SW [ON/OFF]	The switch status input from back door switch
TURN SIGNAL R [ON/OFF]	Each switch status that BCM judges from the combination switch reading function
TURN SIGNAL L [ON/OFF]	
ENGINE RUNNING [ON/OFF]	The engine status received from ECM with CAN communication
PUSH SW [ON/OFF]	Push switch status received from Intelligent Key unit by CAN communication
LIT-SEN FAIL [OK/NOTOK]	• The sensor status received from light & rain sensor with serial link • The serial link condition that BCM judges
AUT LIGHT SYS [ON/OFF]	Auto light system status that BCM judges from the vehicle condition

ACTIVE TEST

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Test item	Operation	Description
TAIL LAMP	ON	Transmits the position light request signal to IPDM E/R with CAN communication to turn the tail lamp ON.
	OFF	Stops the tail lamp request signal transmission.
HEAD LAMP	HI	Transmits the high beam request signal with CAN communication to turn the headlamp (HI).
	LO	Transmits the low beam request signal with CAN communication to turn the headlamp (LO).
	OFF	Stops the high & low beam request signal transmission.
FR FOG LAMP	ON	Transmits the front fog lights request signal to IPDM E/R with CAN communication to turn the front fog lamp ON.
	OFF	Stops the front fog lights request signal transmission.
RR FOG LAMP	ON	• Outputs the voltage to turn the rear fog lamp ON. • Transmits the rear fog lamp status signal to the combination meter with CAN communication to turn the rear fog lamp indicator lamp ON.
	OFF	• Stops the voltage to turn the rear fog lamp OFF. • Stops the rear fog lamp status signal transmission.
DAYTIME RUNNING LIGHT	ON	Transmits the day time running light request signal to IPDM E/R with CAN communication to turn the each lamps ON.
	OFF	Stops the day time running light request signal transmission.

FLASHER

FLASHER : CONSULT-III Function (BCM - FLASHER)

INFOID:0000000001099347

DATA MONITOR

Monitor item [Unit]	Description
IGN ON SW [ON/OFF]	Ignition switch (ON) status judged from IGN signal (ignition power supply)
HAZARD SW [ON/OFF]	The switch status input from the hazard switch
TURN SIGNAL R [ON/OFF]	Each switch condition that BCM judges from the combination switch reading function
TURN SIGNAL L [ON/OFF]	

ACTIVE TEST

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

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:0000000001099348

Auto active test

Description

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

- Oil pressure warning lamp
- Rear window defogger
- Front wiper (LO, HI)
- Parking lamps
- License plate lamps
- Tail lamps
- Front fog lamps
- Headlamps (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan (LO, HI)

Operation procedure

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

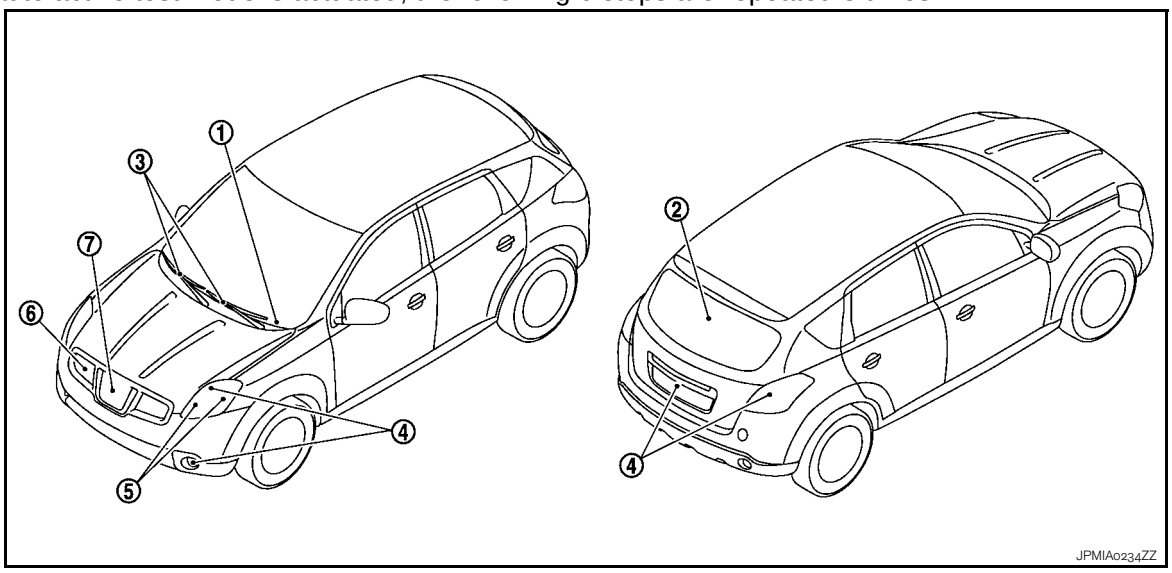
NOTE:
When auto active test mode has to be cancelled halfway through test, turn ignition switch OFF.

CAUTION:

- **If auto active test mode cannot be actuated, check door switch system.**
- **Never start the engine.**

Inspection in auto active test mode

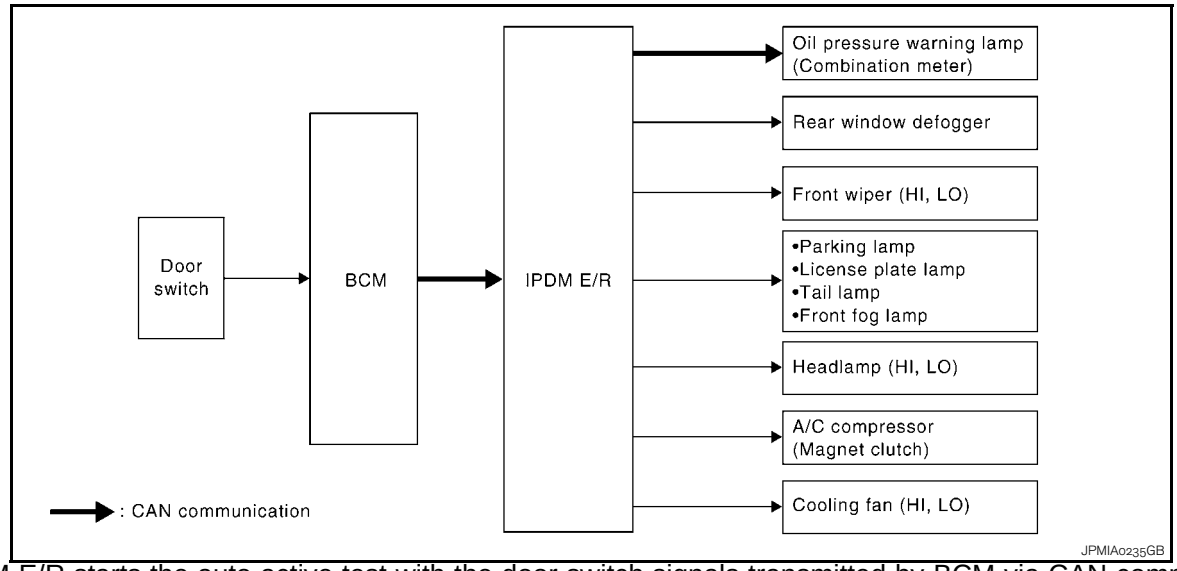
When auto active test mode is actuated, the following 6 steps are repeated 3 times.



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

Concept of auto active test



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

Diagnosis chart in auto active test mode

Symptom	Inspection contents		Possible cause
Rear window defogger does not operate	Perform auto active test. Does the rear window defogger operate?	YES	BCM signal input circuit
		NO	• Rear window defogger • Rear window defogger ground circuit • Harness or connector between IPDM E/R and rear window defogger • IPDM E/R
Any of the following components do not operate • Parking lamps • License plate lamps • Tail lamps • Front fog lamps • Headlamp (HI, LO) • Front wiper (HI, LO)	Perform auto active test. Does the applicable system operate?	YES	BCM signal input circuit
		NO	• Lamp or motor • Lamp or motor ground circuit • Harness or connector between IPDM E/R and applicable system • IPDM E/R

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Symptom	Inspection contents		Possible cause
A/C compressor does not operate	Perform auto active test. Does the magnet clutch operate?	YES	• Communication signal between BCM and auto amp. (with auto A/C) • Communication signal between BCM and heater control panel (without auto A/C, with manual A/C) • BCM • CAN communication signal between BCM and ECM • CAN communication signal between ECM and IPDM E/R
		NO	• Magnet clutch • Harness or connector between IPDM E/R and magnet clutch • IPDM E/R
Oil pressure warning lamp does not operate	Perform auto active test. Does the oil pressure warning lamp blink?	YES	• Harness or connector between IPDM E/R and oil pressure switch • Oil pressure switch • IPDM E/R
		NO	• CAN communication signal between IPDM E/R and BCM • CAN communication signal between BCM and combination meter • Combination meter
Cooling fan does not operate	Perform auto active test. Does the cooling fan operate?	YES	• ECM signal input circuit • CAN communication signal between ECM and IPDM E/R
		NO	• Cooling fan • Cooling fan ground circuit • Harness or connector between IPDM E/R and cooling fan • IPDM E/R • Cooling fan relay-3* • Harness or connector between IPDM E/R and cooling fan relay-3* • Harness or connector between cooling fan and cooling fan relay-3*

NOTE:

*: MR engine and K9K engine models

CONSULT - III Function (IPDM E/R)

INFOID:0000000001099349

APPLICATION ITEM

CONSULT-III 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

Refer to EXL-310, "DTC Index".

DATA MONITOR

Monitor item

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Monitor Item [Unit]	MAIN SIGNALS	Description
MOTOR FAN REQ [1 - 4]	×	Displays the value of the cooling fan speed signal received from ECM via CAN communication.
AC COMP REQ [Off/On]	×	Displays the status of the A/C compressor request signal received from ECM via CAN communication.
TAIL&CLR REQ [Off/On]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR FOG REQ [Off/On]	×	Displays the status of the front fog light request signal received from BCM via CAN communication.
HL WASHER REQ [Off/On]		Displays the status of the headlamp washer 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 auto stop 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.
ST RLY REQ [Off/On]		Displays the status of the ignition and starter request signal received from BCM via CAN communication.
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.
RR DEF REQ [Off/On]	×	Displays the status of the rear defogger request signal received from BCM via CAN communication.
OIL P SW [Open/Close]		Displays the status of the oil pressure switch judged by IPDM E/R.
REV SW [Off/On]		Displays the status of the reverse switch judged by IPDM E/R.
HOOD SW [Off/On]		Displays the status of the hood switch judged by IPDM E/R. **NOTE:** This item is monitored only the vehicle with the Vehicle Security (Theft Warning) system.
THFT HRN REQ [Off/On]		Displays the status of the theft warning horn request signal received from BCM via CAN communication. **NOTE:** This item is monitored only the vehicle with the Vehicle Security (Theft Warning) system.
HORN CHIRP [Off/On]		**NOTE:** This item is indicated, but not monitored.
IGN ON SW [Off/On]		Displays the status of the ignition switch judged by IPDM E/R.

ACTIVE TEST

Test item

Test item	Operation	Description
REAR DEFOGGER	Off	OFF
	On	Operates the rear window defogger relay.
FRONT WIPER	Off	OFF
	Lo	Operates the front wiper relay.
	Hi	Operates the front wiper relay and front wiper high relay.

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Test item	Operation	Description
MOTOR FAN	1	OFF
	2	Operates the cooling fan relay (low operation).
	3	Operates the cooling fan relay (high operation).
	4	
HEAD LAMP WASHER	On	Operates the headlamp washer relay for 1 second.
EXTERNAL LAMPS	Off	OFF
	TAIL	Operates the tail lamp relay.
	Lo	Operates the headlamp low relay.
	Hi	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.
	Fog	Operates the front fog lamp relay.
HORN	On	Operates horn relay for 20 ms.

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COMPONENT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

BCM (BODY CONTROL MODULE)

BCM (BODY CONTROL MODULE) : Diagnosis Procedure

INFOID:0000000001099350

1.CHECK FUSES AND FUSIBLE LINK

Check that the following fuses and fusible link are not fusing.

Terminal No.	Signal name	Fuses and fusible link No.
41	Battery power supply	9
57		J
37	ACC power supply	5
38	Ignition power supply	4

Is the fuse fusing?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit if a fuse or fusible link is blown.
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connectors.
3. Check voltage between BCM harness connector and ground.

Terminals			Ignition switch position		
(+)		(–)			
BCM			OFF	ACC	ON
Connector	Terminal				
M65	37	Ground	Approx. 0 V	Battery voltage	Battery voltage
	38		Approx. 0 V	Approx. 0 V	Battery voltage
M66	41		Battery voltage	Battery voltage	Battery voltage
M67	57				

Is the measurement value normal?

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

3.CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M67	55		Existed

Does continuity exist?

YES >> INSPECTION END
NO >> Repair harness or connector.

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) : Di-

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agnosis Procedure

INFOID:0000000001099351

1.CHECK FUSIBLE LINK

Check that the following IPDM E/R fusible link is not blown.

Terminal No.	Signal name	Fusible link No.
1	Battery power supply	E
2		C
53		L (except HR engine models)
		M (HR engine models)

Is the fusible link fusing?

YES >> Replace the blown fusible link after repairing the affected circuit if a fusible link is blown.
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check voltage between IPDM E/R harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
IPDM E/R			
Connector	Terminal	Ground	
E9	1		Battery voltage
	2		
E14	53		

Is the measurement value normal?

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

3.CHECK GROUND CIRCUIT

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E10	5		Exist
	6		

Does continuity exist?

YES >> INSPECTION END
NO >> Repair harness or connector.

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EXTERIOR LAMP FUSE

Description

INFOID:0000000001099352

Fuse list

Unit		Location	Fuse No.	Capacity
Headlamp HI (LH)		IPDM E/R	#48	10 A
Headlamp HI (RH)		IPDM E/R	#47	10 A
Headlamp LO (LH)		IPDM E/R	#46	15 A
Headlamp LO (RH)		IPDM E/R	#45	15 A
Front fog lamp		IPDM E/R	#43	15 A
• Parking lamp • Tail lamp • License plate lamp • Each illumination		IPDM E/R	#49	10 A
Stop lamp		FUSE BLOCK (J/B)	#11	10 A
Back-up lamp	M/T models	IPDM E/R	#54	10 A
	CVT models	IPDM E/R	#55	10 A

Diagnosis Procedure

INFOID:0000000001099353

1.CHECK FUSE

Check that the following fuses are not fusing.

Unit		Location	Fuse No.	Capacity
Headlamp HI (LH)		IPDM E/R	#48	10 A
Headlamp HI (RH)		IPDM E/R	#47	10 A
Headlamp LO (LH)		IPDM E/R	#46	15 A
Headlamp LO (RH)		IPDM E/R	#45	15 A
Front fog lamp		IPDM E/R	#43	15 A
• Parking lamp • Tail lamp • License plate lamp • Each illumination		IPDM E/R	#49	10 A
Stop lamp		FUSE BLOCK (J/B)	#11	10 A
Back-up lamp	M/T models	IPDM E/R	#54	10 A
	CVT models	IPDM E/R	#55	10 A

Is the fuse fusing?

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

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HEADLAMP (HI) CIRCUIT

Component Function Check

INFOID:0000000001099354

1.CHECK HEADLAMP (HI) OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Start IPDM E/R auto active test. Refer to PCS-9, "Diagnosis Description".
2. Check that the headlamp switches to the high beam.

CONSULT-III ACTIVE TEST
1. Select "EXTERNAL LAMP" 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 headlamp (HI) turned ON?

YES >> Headlamp (HI) circuit is normal.
NO >> Refer to EXL-216, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001099355

1.CHECK HEADLAMP (HI) OUTPUT VOLTAGE

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

Terminals				Condition	Voltage (Approx.)
(+)			(–)		
IPDM E/R			Ground	External lamp	
Connector		Terminal			
RH	E13	45		HI	Battery voltage
LH		46		OFF	0 V

Is the measurement value normal?

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

2.CHECK HEADLAMP (HI) OPEN CIRCUIT

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

IPDM E/R			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E13	45	E45	2	Existed
LH		46	E26	2	

Does continuity exist?

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

3. CHECK HEADLAMP (HI) FUSE

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

Unit	Location	Fuse No.	Capacity
Headlamp HI (LH)	IPDM E/R	#48	10 A
Headlamp HI (RH)	IPDM E/R	#47	10 A

Is the fuse fusing?

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

4. CHECK FRONT COMBINATION LAMP (HI) SHORT CIRCUIT

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

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E13	45		Not existed
LH		46		

Does continuity exist?

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

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HEADLAMP (LO) CIRCUIT

Component Function Check

INFOID:0000000001099356

1.CHECK HEADLAMP (LO) OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Start IPDM E/R auto active test. Refer to PCS-9, "Diagnosis Description".
2. Check that the headlamp is turned ON.

CONSULT-III ACTIVE TEST
1. Select "EXTERNAL LAMP" 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 headlamp (LO) turned ON?

YES >> Headlamp (LO) is normal.
NO >> Refer to EXL-218, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001097284

1.CHECK HEADLAMP (LO) OUTPUT VOLTAGE

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

Terminals				Test item	Voltage (Approx.)
(+)			(–)		
IPDM E/R			Ground	External lamp	
Connector		Terminal			
RH	E12	24		LO	Battery voltage
LH	E13	44		OFF	0 V

Is the measurement value normal?

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

2.CHECK HEADLAMP (LO) OPEN CIRCUIT

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

IPDM E/R			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E12	24	E45	1	Existed
LH	E13	44	E26	1	

Does continuity exist?

YES >> Replace the front combination lamp (headlamp housing assembly).
NO >> Repair the harnesses or connectors.

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3.CHECK HEADLAMP (LO) FUSE

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

Unit	Lotion	Fuse No.	Capacity
Headlamp LO (LH)	IPDM E/R	#45	15 A
Headlamp LO (RH)	IPDM E/R	#46	15 A

Is the fuse fusing?

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

4.CHECK HEADLAMP (LO) SHORT CIRCUIT

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

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E12	24		Not existed
LH	E13	44		

Does continuity exist?

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

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HEADLAMP GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000001099357

1.CHECK HEADLAMP GROUND OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the front combination lamp connector.
3. Check continuity between the front combination lamp harness connector and the ground.

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E45	4		Existed
LH	E26	4		

Does continuity exist?

YES >> Headlamp ground circuit is normal.
NO >> Repair the harnesses or connectors.

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FRONT FOG LAMP CIRCUIT

Component Function Check

INFOID:0000000001099358

1.CHECK FRONT FOG LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-9, "Diagnosis Description".
2. Check that the front fog lamp is turned ON.

CONSULT-III ACTIVE TEST
1. Select "EXTERNAL LAMP" 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 front fog lamp turned ON?

YES >> Front fog lamp circuit is normal.
NO >> Refer to EXL-221, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001099359

1.CHECK FRONT FOG LAMP FUSE

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

Unit	Location	Fuse No.	Capacity
Front fog lamp	IPDM E/R	#43	15 A

Is the fuse fusing?

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

2.CHECK FRONT FOG LAMP SHORT CIRCUIT

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

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E13	36		Not existed
LH		43		

Does continuity exist?

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

3.CHECK FRONT FOG LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

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

4.CHECK FRONT FOG LAMP OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST
1. Disconnect the front combination lamp connector.
2. Turn the ignition switch ON.
3. Select "EXTERNAL LAMP" of IPDM E/R active test item.

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

Terminals				Test item	Voltage (Approx.)
(+)			(–)		
IPDM E/R			Ground	EXTERNAL LAMP	
Connector		Terminal			
RH	E13	36		FOG	Battery voltage
LH		43		OFF	0 V

Is the measurement value normal?

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

5.CHECK FRONT FOG LAMP OPEN CIRCUIT

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

IPDM E/R			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E13	36	E48	1	Existed
LH		43	E30	1	

Does continuity exist?

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

6.CHECK FRONT FOG LAMP GROUND CIRCUIT OPEN CIRCUIT

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

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E48	2		Existed
LH	E30	2		

Does continuity exist?

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

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PARKING LAMP CIRCUIT

Component Function Check

INFOID:0000000001099360

1.CHECK PARKING LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-9, "Diagnosis Description".
2. Check that the parking lamp is turned ON.

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

TAIL : Parking lamp ON
OFF : Parking lamp OFF

Is the parking lamp turned ON?

YES >> Parking lamp circuit is normal.
NO >> Refer to EXL-223, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001099361

1.CHECK PARKING LAMP FUSE

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

Unit	Location	Fuse No.	Capacity
Parking lamp	IPDM E/R	#49	10 A

Is the fuse fusing?

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

2.CHECK PARKING LAMP SHORT CIRCUIT

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

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E13	37		Not existed
LH		47		

Does continuity exist?

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

3.CHECK PARKING LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

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

4.CHECK PARKING LAMP OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST
1. Disconnect the front combination lamp connector.
2. Turn the ignition switch ON.
3. Select "EXTERNAL LAMP" of IPDM E/R active test item.

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

Terminals				Test item	Voltage (Approx.)
(+)			(–)		
IPDM E/R			Ground	EXTERNAL LAMP	
Connector		Terminal			
RH	E13	37		TAIL	Battery voltage
LH		47		OFF	0 V

Is the measurement value normal?

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

5.CHECK PARKING LAMP OPEN CIRCUIT

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

IPDM E/R			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E13	37	E43	1	Existed
LH		47	E24	1	

Does continuity exist?

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

6.CHECK PARKING LAMP GROUND OPEN CIRCUIT

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

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E43	2		Existed
LH	E24	2		

Does continuity exist?

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

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TURN SIGNAL LAMP CIRCUIT

Description

INFOID:0000000001099362

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

NOTE:
The turn signal lamp blinks at normal speed when using the hazard warning lamp.

Component Function Check

INFOID:0000000001099363

1.CHECK TURN SIGNAL LAMP

CONSULT-III ACTIVE TEST

1. Select "FLASHER" of BCM (FLASHER) active test item.
2. With operating the test items, check that the turn signal lamp is turned ON.

LH : Turn signal lamp (LH) ON
RH : Turn signal lamp (RH) OFF
OFF : The turn signal lamp OFF

Are the turn signal lamps turned ON?

YES >> Turn signal lamp circuit is normal.
NO >> Refer to EXL-225, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001089304

1.CHECK TURN SIGNAL LAMP BULB

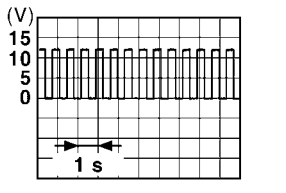
Check the applicable lamp bulb.

Is the bulb normal?

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

2.CHECK TURN SIGNAL LAMP OUTPUT VOLTAGE

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

Terminals				Condition	Voltage (Approx.)
(+)			(–)		
BCM				Turn signal switch	
Connector		Terminal			
RH	M66	48	Ground	LH or RH	
LH		47			
				OFF	0 V

Is the measurement value normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-64, "Exploded View".

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3.CHECK TURN SIGNAL LAMP OPEN CIRCUIT

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

Front turn signal lamp

BCM			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	M66	48	E45	3	Existed
LH		47	E26		

Side turn signal lamp

BCM			Side turn signal lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	M66	48	E40	1	Existed
LH		47	E23		

Rear turn signal lamp

BCM			Rear combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	M66	48	B59	1	Existed
LH		47	B80		

Does continuity exist?

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

4.CHECK TURN SIGNAL LAMP SHORT CIRCUIT

Check continuity between the BCM harness connector and the ground.

BCM			Ground	Continuity
Connector		Terminal		
RH	M66	48		Not existed
LH		47		

Does continuity exist?

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

5.CHECK TURN SIGNAL LAMP GROUND OPEN CIRCUIT

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

Front turn signal lamp

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E45	4		Existed
LH	E26			

Side turn signal lamp

Side turn signal lamp			Ground	Continuity
Connector		Terminal		
RH	E40	2		Existed
LH	E23			

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Rear turn signal lamp

Rear combination lamp			Ground	Continuity
Connector		Terminal		
RH	B59	4		Existed
LH	B80			

Does continuity exist?

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

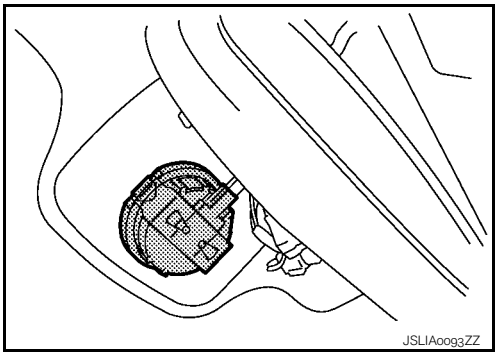
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LIGHT & RAIN SENSOR

Description

INFOID:0000000001099364

- The light & rain sensor detects the outside brightness (lux), a rain-drop and sensor conditions. And it transmits the signals to BCM by the light & rain sensor serial link.
- BCM controls each function depending on the signals. And it detects the light & rain sensor serial link error and the light & rain sensor malfunction.



Component Function Check

INFOID:0000000001099365

1.CHECK LIGHT & RAIN SENSOR BY CONSULT-III

CONSULT-III DATA MONITOR
1. Turn the ignition switch ON.
2. Select "LIT-SEN FAIL" of BCM (HEADLAMP) data monitor item.
3. Turn the lighting switch AUTO.
4. Start the engine.
5. Check the monitor status.

Monitor item	Condition	Status
LIT-SEN FAIL	Light & rain sensor is normal	OK
	• Light & rain sensor inside abnormality • Light & rain sensor serial link error	NOTOK

Is it displayed with "OK"?

YES >> Light & rain sensor is normal.
NO >> Refer to EXL-228, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001099366

1.CHECK LIGHT & RAIN SENSOR POWER SUPPLY OUTPUT

1. Turn the ignition switch OFF.
2. Disconnect the light & rain sensor connector.
3. Check the voltage between the light & rain sensor harness connector and the ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Light & rain sensor		Ground	
Connector	Terminal		
R13	1		12 V

Is the measurement value normal?

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

2.CHECK LIGHT & RAIN SENSOR SIGNAL OUTPUT

Check the voltage between the light & rain sensor harness connector and the ground.

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Terminals			Voltage (Approx.)
(+)		(–)	
Light & rain sensor		Ground	
Connector	Terminal		
R13	2		12 V

Is the measurement value normal?

YES >> GO TO 7.
NO >> GO TO 5.

3. CHECK LIGHT & RAIN SENSOR POWER SUPPLY OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between the light & rain sensor harness connector and the BCM harness connector.

Light & rain sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
R13	1	M66	42	Existed

Does continuity exist?

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

4. CHECK LIGHT & RAIN SENSOR POWER SUPPLY SHORT CIRCUIT

Check the continuity between the light & rain sensor harness connector and the ground.

Light & rain sensor		Ground	Continuity
Connector	Terminal		
R13	1		Not existed

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> Replace BCM. Refer to BCS-64, "Exploded View".

5. CHECK LIGHT & RAIN SENSOR SIGNAL OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between the light & rain sensor harness connector and the BCM harness connector.

Light & rain sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
R13	2	M66	17	Existed

Does continuity exist?

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

6. CHECK LIGHT & RAIN SENSOR SIGNAL SHORT CIRCUIT

Check the continuity between the light & rain sensor harness connector and the ground.

Light & rain sensor		Ground	Continuity
Connector	Terminal		
R13	2		Not existed

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> Replace BCM. Refer to BCS-64, "Exploded View".

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7.CHECK LIGHT & RAIN SENSOR GROUND OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Check continuity between the light & rain sensor harness connector and the ground.

Light & rain sensor		Ground	Continuity
Connector	Terminal		
R13	3		Existed

Does continuity exist?

YES >> Replace the light & rain sensor.
NO >> Repair the harnesses or connectors.

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HAZARD SWITCH

Component Function Check

INFOID:0000000001099367

1.CHECK HAZARD SWITCH SIGNAL BY CONSULT-III

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

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

Is the item status normal?

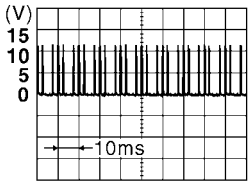
YES >> Hazard switch circuit is normal.
NO >> Refer to EXL-231, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001099368

1.CHECK HAZARD SWITCH SIGNAL INPUT

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

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
BCM			Hazard switch	
Connector	Terminal			
M65	8	Ground	ON	0 V
			OFF	

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Is the measurement value normal?

YES >> Replace BCM. Refer to BCS-64, "Exploded View".
NO >> GO TO 2.

2.CHECK HAZARD SWITCH SIGNAL OPEN CIRCUIT

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

Hazard switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M45	3	M65	8	Existed

Does continuity exist?

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

3.CHECK HAZARD SWITCH SIGNAL SHORT CIRCUIT

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

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Hazard switch		Ground	Continuity
Connector	Terminal		
M45	3		Not existed

Does continuity exist?

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

4. CHECK HAZARD SWITCH GROUND OPEN CIRCUIT

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

Hazard switch		Ground	Continuity
Connector	Terminal		
M45	2		Existed

Does continuity exist?

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

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TAIL LAMP CIRCUIT

Component Function Check

INFOID:0000000001099369

1.CHECK TAIL LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-9, "Diagnosis Description".
2. Check that the tail lamp is turned ON.

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

TAIL : Tail lamp ON
OFF : Tail lamp OFF

Is the tail lamp turned ON?

YES >> Tail lamp circuit is normal.
NO >> Refer to EXL-233, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001099370

1.CHECK TAIL LAMP FUSE

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

Unit	Location	Fuse No.	Capacity
• Tail lamp • License plate lamp	IPDM E/R	#49	10 A

Is the fuse fusing?

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

2.CHECK TAIL LAMP OUTPUT VOLTAGE

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

Terminals			Test item	Voltage (Approx.)
(+)		(–)		
IPDM E/R		Ground	EXTERNAL LAMP	
Connector	Terminal			
E13	38		TAIL	Battery voltage
			OFF	0 V

Is the measurement value normal?

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

3.CHECK TAIL LAMP OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect IPDM E/R connector.

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

IPDM E/R			Rear combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E13	38	B59	2	Existed
LH			B80	2	

Does continuity exist?

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

4. CHECK TAIL LAMP GROUND OPEN CIRCUIT

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

Rear combination lamp			Ground	Continuity
Connector		Terminal		
RH	B59	4		Existed
LH	B80	4		

Does continuity exist?

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

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LICENSE PLATE LAMP CIRCUIT

Component Function Check

INFOID:0000000001099371

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

1.CHECK LICENSE PLATE LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-9, "Diagnosis Description".
2. Check that the license plate lamp is turned ON.

CONSULT-III ACTIVE TEST
1. Select "EXTERNAL LAMP" of IPDM E/R active test item.
2. With operating the lighting switch, check that the license plate lamp is turned ON.

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

Is the license plate lamp turned ON?

YES >> License plate lamp circuit is normal.
NO >> Refer to EXL-235, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001099372

1.CHECK LICENSE PLATE LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

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

2.CHECK LICENSE PLATE LAMP OPEN CIRCUIT

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

IPDM E/R			License plate lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E13	38	D185	1	Existed
LH			D184	1	

Does continuity exist?

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

3.CHECK LICENSE PLATE LAMP GROUND OPEN CIRCUIT

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

License plate lamp			Ground	Continuity
Connector		Terminal		
RH	D185	2		Existed
LH	D184	2		

Does continuity exist?

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

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REAR FOG LAMP CIRCUIT

Component Function Check

INFOID:0000000001099373

1.CHECK REAR FOG LAMP OPERATION

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

ON : Rear fog lamp ON
OFF : Rear fog lamp OFF

Is rear fog lamp turned ON?

YES >> Rear fog lamp circuit is normal.
NO >> Refer to EXL-236, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001099374

1.CHECK REAR FOG LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

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

2.CHECK REAR FOG LAMP OUTPUT VOLTAGE

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

Terminals			Test item	Voltage (approx.)
(+)		(−)		
BCM		Ground	RR FOG LAMP	
Connector	Terminal			
M66	49		ON	12 V
			OFF	0 V

Is the measurement value normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-64, "Exploded View".

3.CHECK REAR FOG LAMP OPEN CIRCUIT

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

BCM		Rear fog lamp		Continuity
Connector	Terminal	Connector	Terminal	
M66	49	B90	1	Existed

Does continuity exist?

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

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4.CHECK REAR FOG LAMP SHORT CIRCUIT

Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M66	49		Not existed

Does continuity exist?

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

5.CHECK REAR FOG LAMP GROUND OPEN CIRCUIT

Check continuity between rear fog lamp harness connector and ground.

Rear fog lamp		Ground	Continuity
Connector	Terminal		
B90	2		Existed

Does continuity exist?

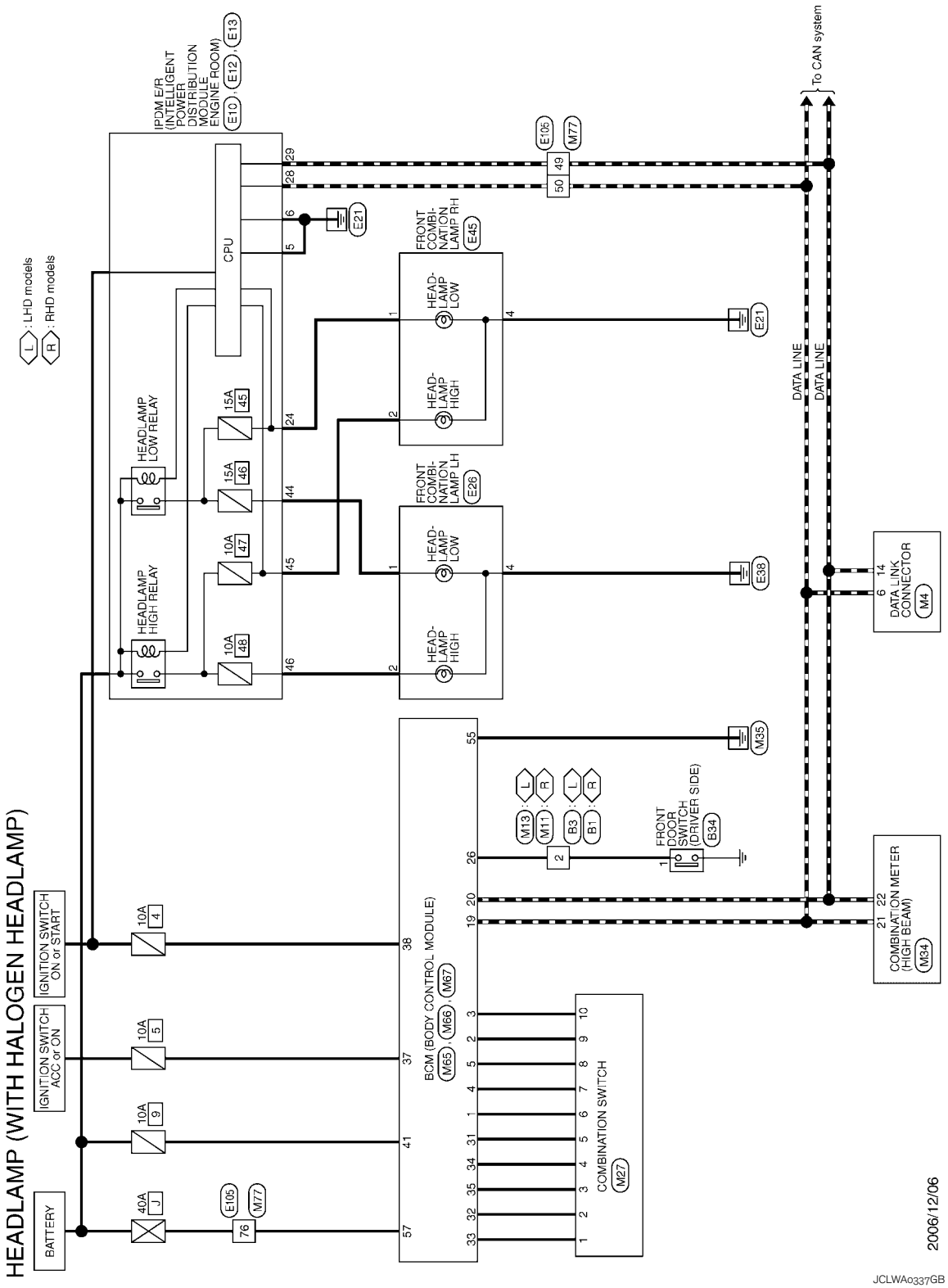
YES >> Replace the rear fog lamp.
NO >> Repair the harnesses or connectors.

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HEADLAMP SYSTEM

Wiring Diagram - HEADLAMP -

INFOID:0000000001026223



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HEADLAMP (WITH HALOGEN HEADLAMP)

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

H.S.

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24

Terminal No.	Color of Wire	Signal Name [Specification]
2	R/W	–[RHD models]

Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

H.S.

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24

Terminal No.	Color of Wire	Signal Name [Specification]
2	R/W	–[LHD models]

Connector No.	B34
Connector Name	FRONT DOOR SWITCH (DRIVER SIDE)
Connector Type	A03FW

H.S.

1
2
3

Terminal No.	Color of Wire	Signal Name [Specification]
1	R/W	–

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

H.S.

5	4	3
8	7	6

Terminal No.	Color of Wire	Signal Name [Specification]
5	B	–
6	B	–

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS

H.S.

25	24	23	22	21
32	31	30	29	28	27	26

Terminal No.	Color of Wire	Signal Name [Specification]
24	R/Y	–
28	L	–
29	P	–

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS16FW-CS

H.S.

39	38	37	36	35	34	33
48	47	46	45	44	43	42	41	40

Terminal No.	Color of Wire	Signal Name [Specification]
44	L	–
45	L/W	–
46	G	–

Connector No.	E26
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	AMP 953600-1

H.S.

5	4	3	2	1

Terminal No.	Color of Wire	Signal Name [Specification]
1	L	–
2	G	–
4	B	–

Connector No.	E45
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	AMP 953600-1

H.S.

5	4	3	2	1

Terminal No.	Color of Wire	Signal Name [Specification]
1	R/Y	–
2	L/W	–
4	B	–

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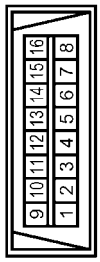
HEADLAMP (WITH HALOGEN HEADLAMP)

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
76	Y	–

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

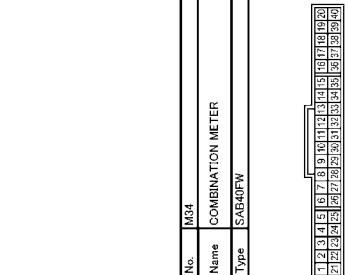


Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M27
Connector Name	COMBINATION SWITCH
Connector Type	TK16FW

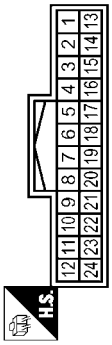
Terminal No.	Color of Wire	Signal Name [Specification]
1	V	INPUT1
2	G	INPUT2
3	L	INPUT3
4	GR	INPUT4
5	BR	INPUT5
6	P	OUTPUT1
7	R	OUTPUT2
8	W	OUTPUT5
9	Y	OUTPUT4
10	LG	OUTPUT3

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	SAB40FW



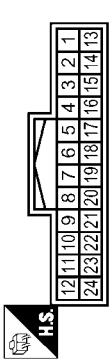
Terminal No.	Color of Wire	Signal Name [Specification]
21	L	CAN-H
22	P	CAN-L

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH24FW



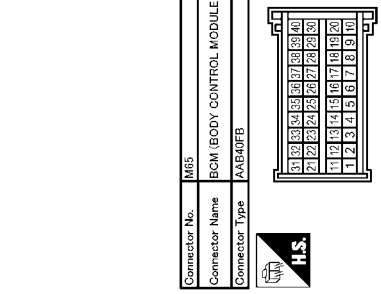
Terminal No.	Color of Wire	Signal Name [Specification]
2	R	–[RHD models]

Connector No.	M13
Connector Name	WIRE TO WIRE
Connector Type	TH24FW



Terminal No.	Color of Wire	Signal Name [Specification]
2	R	–[LHD models]

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB



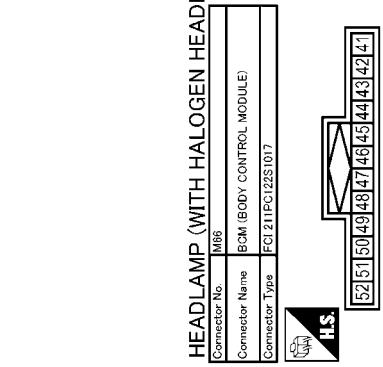
Terminal No.	Color of Wire	Signal Name [Specification]
1	P	COMBI SW OUTPUT 1
2	Y	COMBI SW OUTPUT 4
3	LG	COMBI SW OUTPUT 3
4	R	COMBI SW OUTPUT 2
5	W	COMBI SW OUTPUT 5
19	L	CAN-H
20	P	CAN-L
26	R	DOOR SW (DR)
31	BR	COMBI SW INPUT 5
32	G	COMBI SW INPUT 2
33	V	COMBI SW INPUT 1
34	GR	COMBI SW INPUT 4
35	L	COMBI SW INPUT 3
37	R	ACC SW
38	W/L	IGN SW

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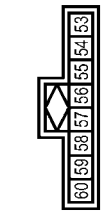
HEADLAMP (WITH HALOGEN HEADLAMP)

Connector No.	M86
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017



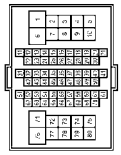
Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC083S0017



Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-NS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
76	Y	–

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HEADLAMP AIMING CONTROL SYSTEM (MANUAL)

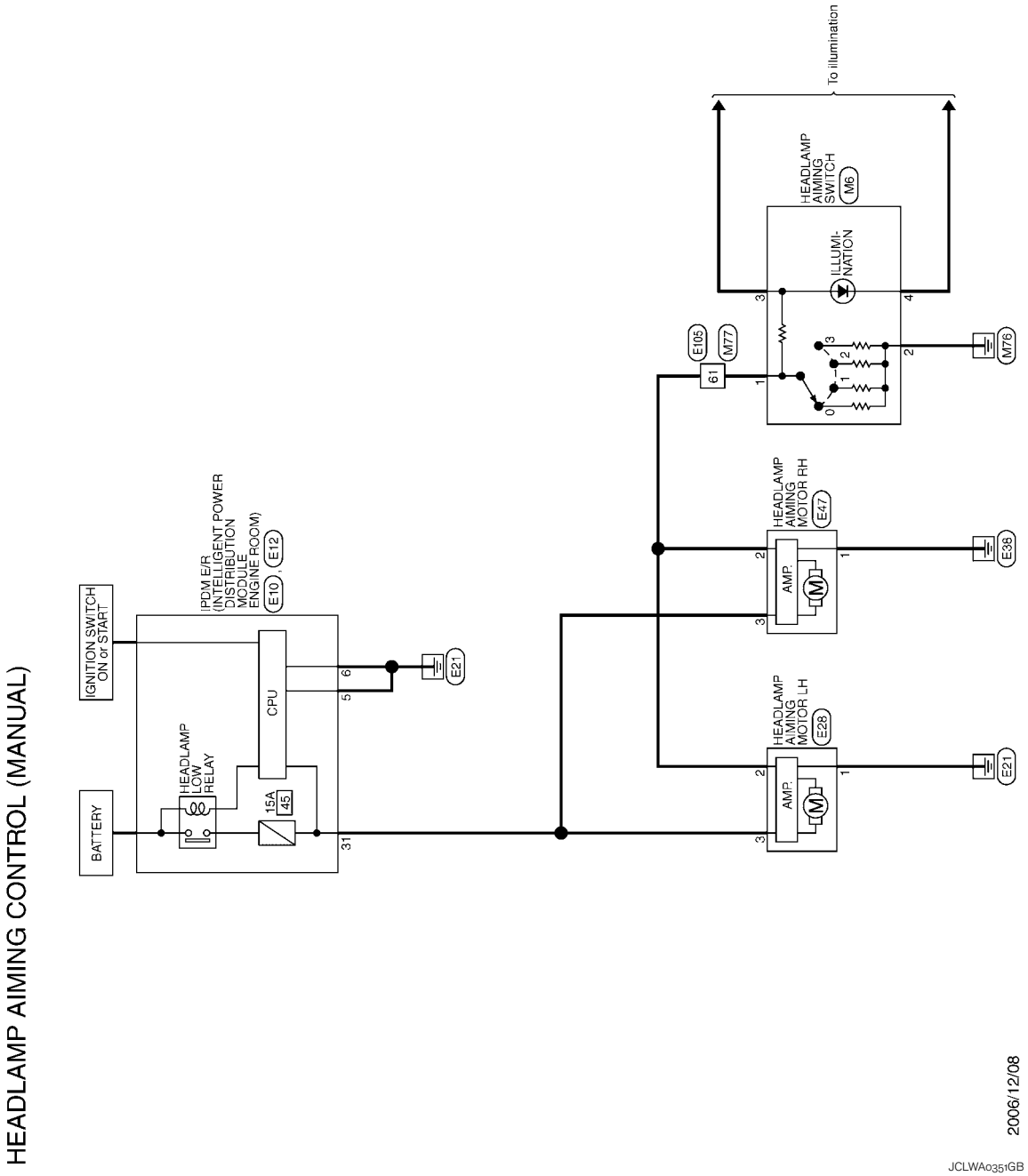
Description

INFOID:0000000001026199

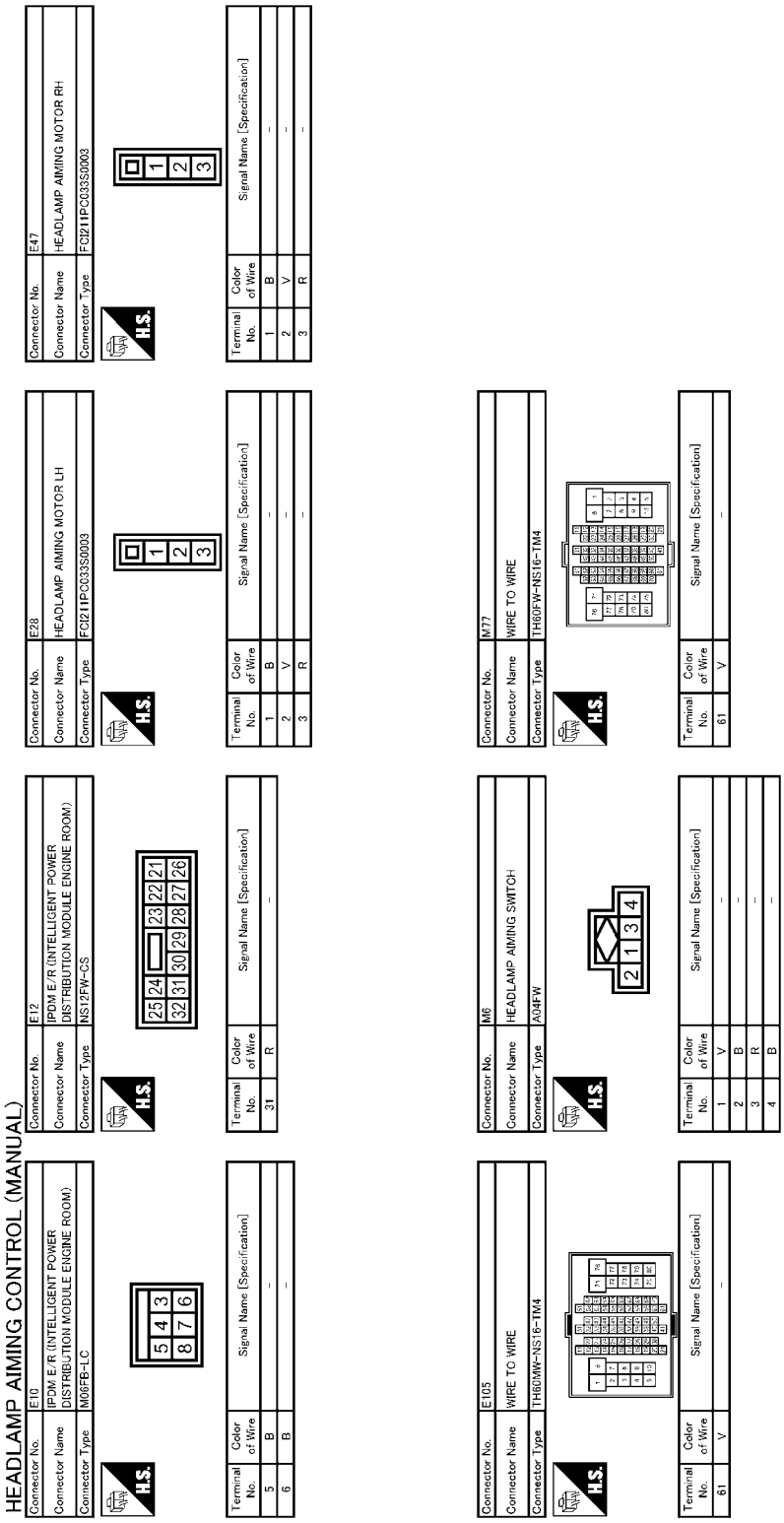
The headlamp levelizer adjusts the headlamp light axis upward and downward with the aiming motor integrated in the front combination lamp.

Wiring Diagram - HEADLAMP AIMING CONTROL SYSTEM (MANUAL) -

INFOID:0000000001078331



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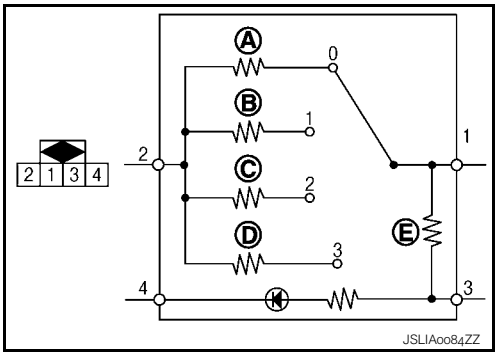
Component Inspection

INFOID:0000000001026664

1. CHECK HEADLAMP AIMING SWITCH

1. Remove the headlamp aiming switch.

2. Check the resistance among each headlamp aiming switch terminal.



Headlamp aiming switch		Condition	Resistance (Approx.)
Terminal		Switch position	
1	2	0	A: 160 Ω
		1	B: 374 Ω
		2	C: 576 Ω
		3	D: 931 Ω
	3	—	E: 390 Ω

Is the measurement value normal?

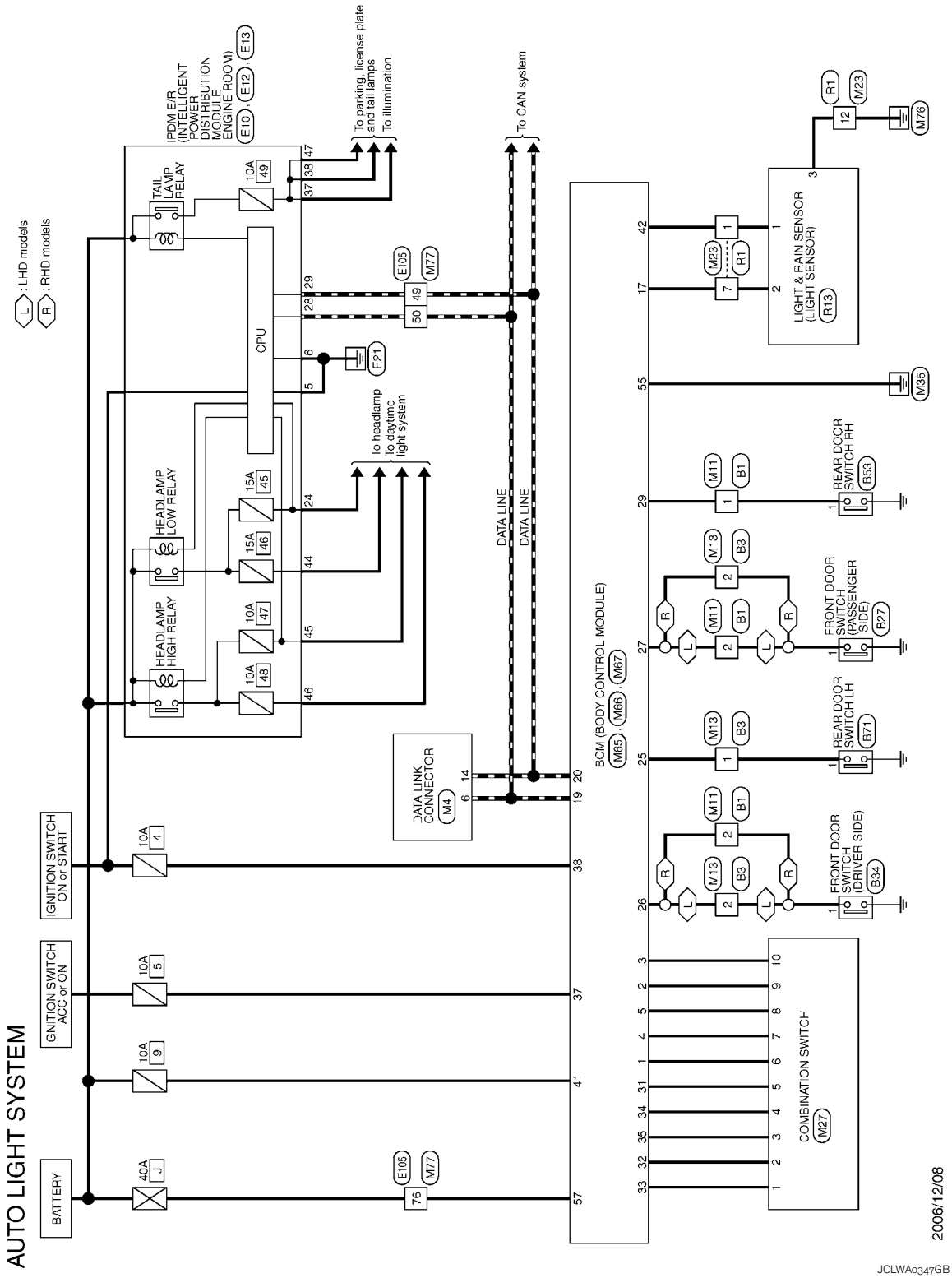
YES >> Headlamp aiming switch is normal.
NO >> Replace the headlamp aiming switch.

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AUTO LIGHT SYSTEM

Wiring Diagram - AUTO LIGHT SYSTEM -

INFOID:0000000001089308



AUTO LIGHT SYSTEM

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

H.S.

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	-
2	BR	-[LHD models]
2	R/W	-[RHD models]

Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

H.S.

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24

Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	-
2	R/W	-[LHD models]
2	BR	-[RHD models]

Connector No.	B27
Connector Name	FRONT DOOR SWITCH (PASSENGER SIDE)
Connector Type	A03FW

H.S.

1
2
3

Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	-

Connector No.	B34
Connector Name	FRONT DOOR SWITCH (DRIVER SIDE)
Connector Type	A03FW

H.S.

1
2
3

Terminal No.	Color of Wire	Signal Name [Specification]
1	R/W	-

Connector No.	B53
Connector Name	REAR DOOR SWITCH RH
Connector Type	A03FW

H.S.

1
2
3

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	-

Connector No.	B71
Connector Name	REAR DOOR SWITCH LH
Connector Type	A03FW

H.S.

1
2
3

Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	-

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

H.S.

5	4	3
8	7	6

Terminal No.	Color of Wire	Signal Name [Specification]
5	B	-
6	B	-

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS

H.S.

25	24		23	22	21
32	31	30	29	28	27	26

Terminal No.	Color of Wire	Signal Name [Specification]
24	R/Y	-
28	L	-
29	P	-

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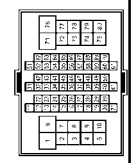
AUTO LIGHT SYSTEM

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS16FW-CS



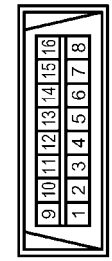
Terminal No.	Color of Wire	Signal Name [Specification]
37	R/W	–
38	R/L	–
44	L	–
45	L/W	–
46	G	–
47	R/L	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4



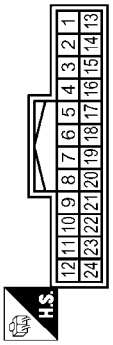
Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
76	Y	–

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



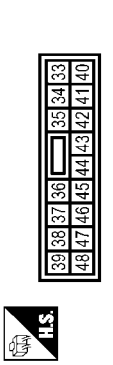
Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH24FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–
2	BR	–[LHD models]
2	R	–[RHD models]

Connector No.	M13
Connector Name	WIRE TO WIRE
Connector Type	TH24FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–
2	R	–[LHD models]
2	BR	–[RHD models]

Connector No.	M23
Connector Name	WIRE TO WIRE
Connector Type	TK10FW-NS8

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
7	BR	–
12	B	–

Connector No.	M27
Connector Name	COMBINATION SWITCH
Connector Type	TK16FW

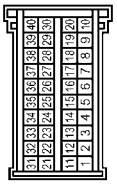
Terminal No.	Color of Wire	Signal Name [Specification]
1	V	INPUT1
2	G	INPUT2
3	L	INPUT3
4	GR	INPUT4
5	BR	INPUT5
6	P	OUTPUT1
7	R	OUTPUT2
8	W	OUTPUT5
9	Y	OUTPUT4
10	LG	OUTPUT3

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AUTO LIGHT SYSTEM

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB



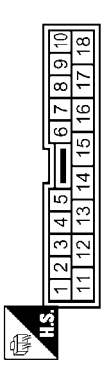
Terminal No.	Color of Wire	Signal Name [Specification]
1	P	COMBI SW OUTPUT 1
2	Y	COMBI SW OUTPUT 4
3	LG	COMBI SW OUTPUT 3
4	R	COMBI SW OUTPUT 2
5	W	COMBI SW OUTPUT 5
17	BR	LIGHT & RAIN SENS
19	L	CAN-H
20	P	CAN-L
25	GR	DOOR SW (RL)
26	R	DOOR SW (DR)
27	BR	DOOR SW (AS)

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
49	P	-
50	L	-
76	Y	-

29	LG	DOOR SW (RR)
31	BR	COMBI SW INPUT 5
32	G	COMBI SW INPUT 2
33	V	COMBI SW INPUT 1
34	GR	COMBI SW INPUT 4
35	L	COMBI SW INPUT 3
37	R	ACC SW
38	W/L	IGN SW

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	TK10MW-NS8



Terminal No.	Color of Wire	Signal Name [Specification]
1	V	-
7	BR	-
12	B	-

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017



Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)
42	V	ROOM LAMP POWER SUPPLY

Connector No.	R13
Connector Name	LIGHT & RAIN SENSOR
Connector Type	AMP 968705-1

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	+IG
2	BR	SIG
3	B	GND

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC083S0017

Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

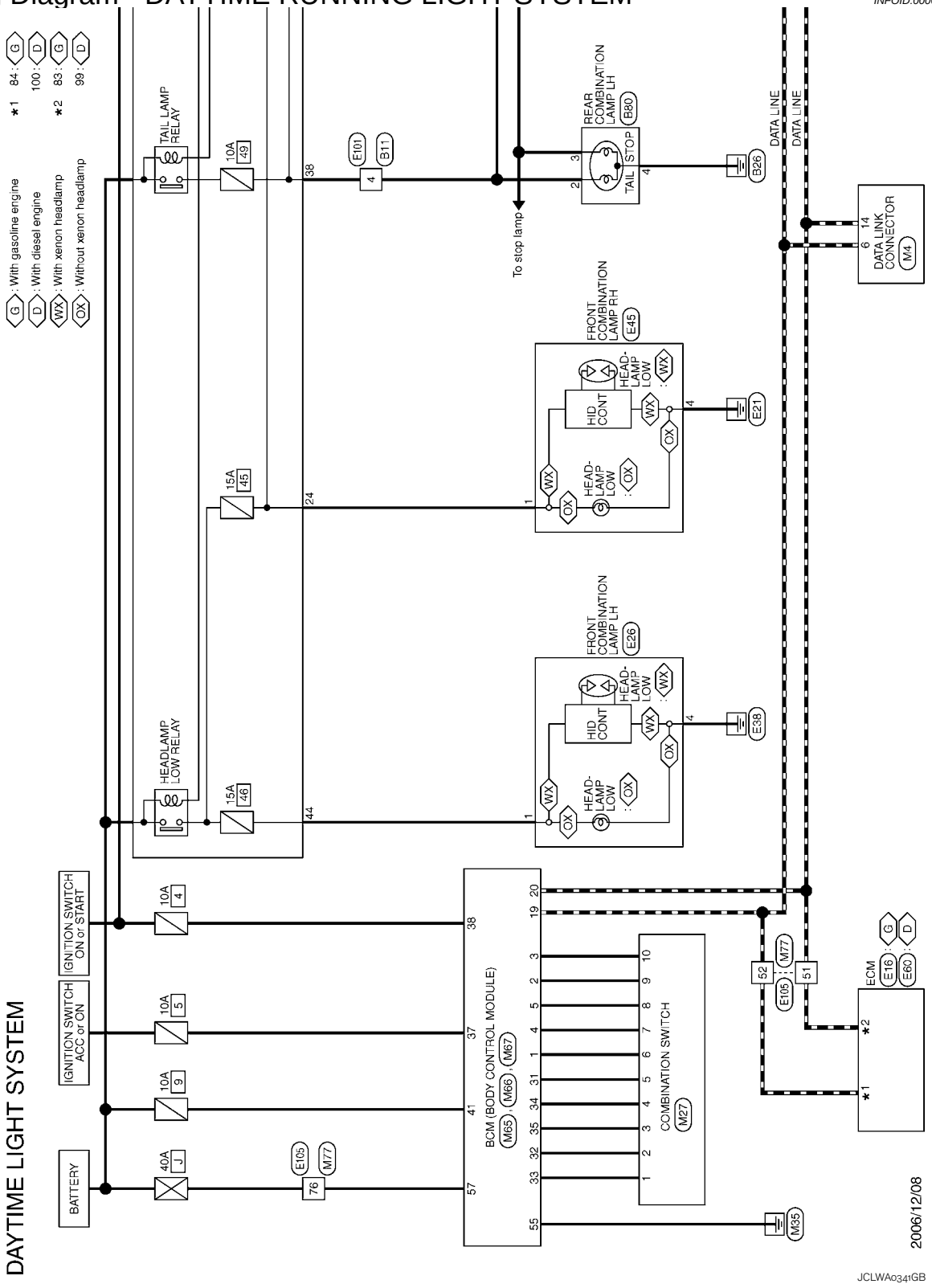
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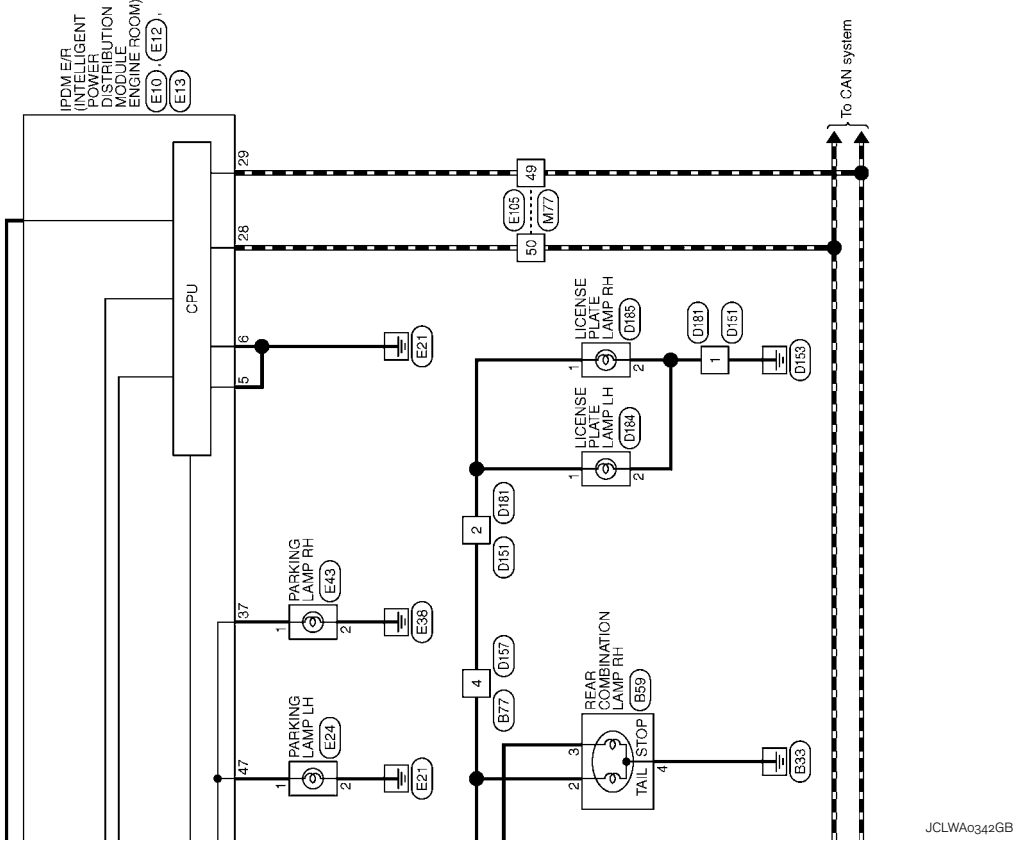
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DAYTIME RUNNING LIGHT SYSTEM

Wiring Diagram - DAYTIME RUNNING LIGHT SYSTEM -

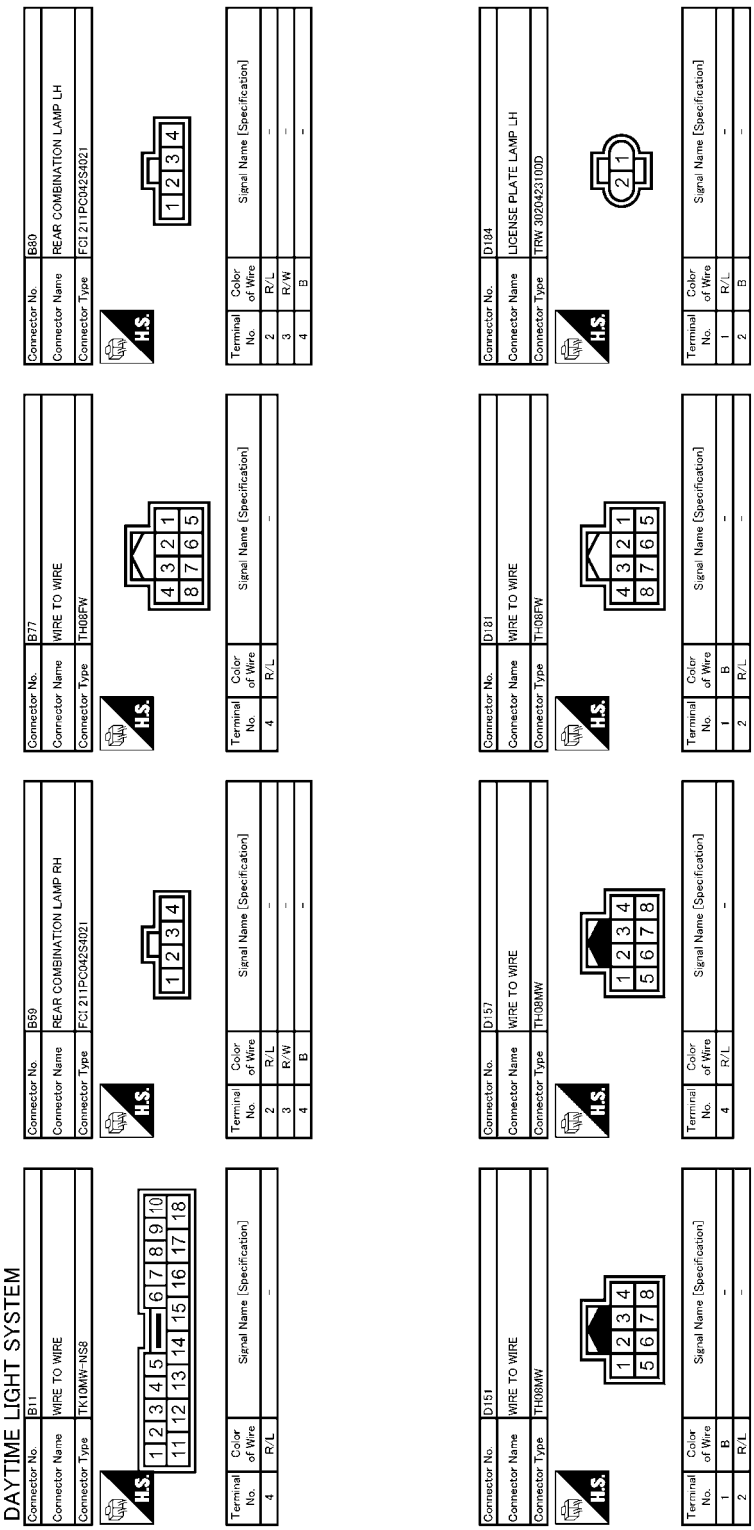
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DAYTIME LIGHT SYSTEM



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DAYTIME LIGHT SYSTEM

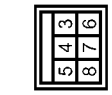
Connector No.	D185
Connector Name	LICENSE PLATE LAMP RH
Connector Type	TRW 3020423100D

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	R/L	–
2	B	–

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
5	B	–
6	B	–

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS

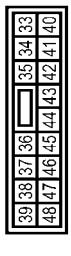
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
24	R/Y	–
28	L	–
29	P	–

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS16FW-CS

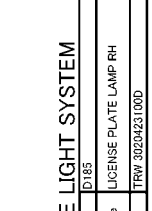
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
37	R/W	–
38	R/L	–
44	L	–
47	R/L	–

Connector No.	E16
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
83	P	CAN-L1
84	L	CAN-H1

Connector No.	E24
Connector Name	PARKING LAMP LH
Connector Type	RH02FB

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	R/L	–
2	B	–

Connector No.	E26
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	AMP 953600-1

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	–
4	B	–

Connector No.	E43
Connector Name	PARKING LAMP RH
Connector Type	RH02FB

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
1	R/W	–
2	B	–

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DAYTIME LIGHT SYSTEM

Connector No.	E45
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	AMP 953600-1

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	R/Y	–
4	B	–

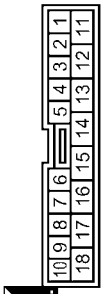
Connector No.	E60
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
99	P	MAIN CAN-L (BODY)
100	L	MAIN CAN-H (BODY)

Connector No.	E101
Connector Name	WIRE TO WIRE
Connector Type	TK10FW-NS8

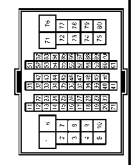
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
4	R/L	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4

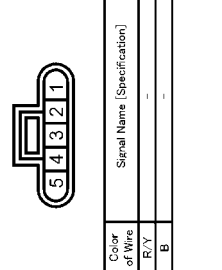
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
51	P	–
52	L	–
76	Y	–

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

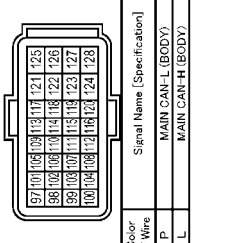
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M27
Connector Name	COMBINATION SWITCH
Connector Type	TK16FW

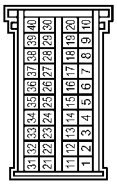
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
1	V	INPUT1
2	G	INPUT2
3	L	INPUT3
4	GR	INPUT4
5	BR	INPUT5
6	P	OUTPUT1
7	R	OUTPUT2
8	W	OUTPUT5
9	Y	OUTPUT4
10	LG	OUTPUT3

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
1	P	COMBI SW OUTPUT 1
2	Y	COMBI SW OUTPUT 4
3	LG	COMBI SW OUTPUT 3
4	R	COMBI SW OUTPUT 2
5	W	COMBI SW OUTPUT 5
19	L	CAN-H
20	P	CAN-L
31	BR	COMBI SW INPUT 5
32	G	COMBI SW INPUT 2
33	V	COMBI SW INPUT 1
34	GR	COMBI SW INPUT 4
35	L	COMBI SW INPUT 3
37	R	ACC SW
38	W/L	IGN SW

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DAYTIME LIGHT SYSTEM

Connector No.	M86
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017

H.S.

52	51	50	49	48	47	46	45	44	43	42	41

Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC083S0017

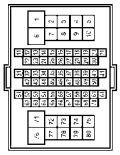
H.S.

60	59	58	57	56	55	54	53

Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-NS16-TM4

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
51	P	–
52	L	–
76	Y	–

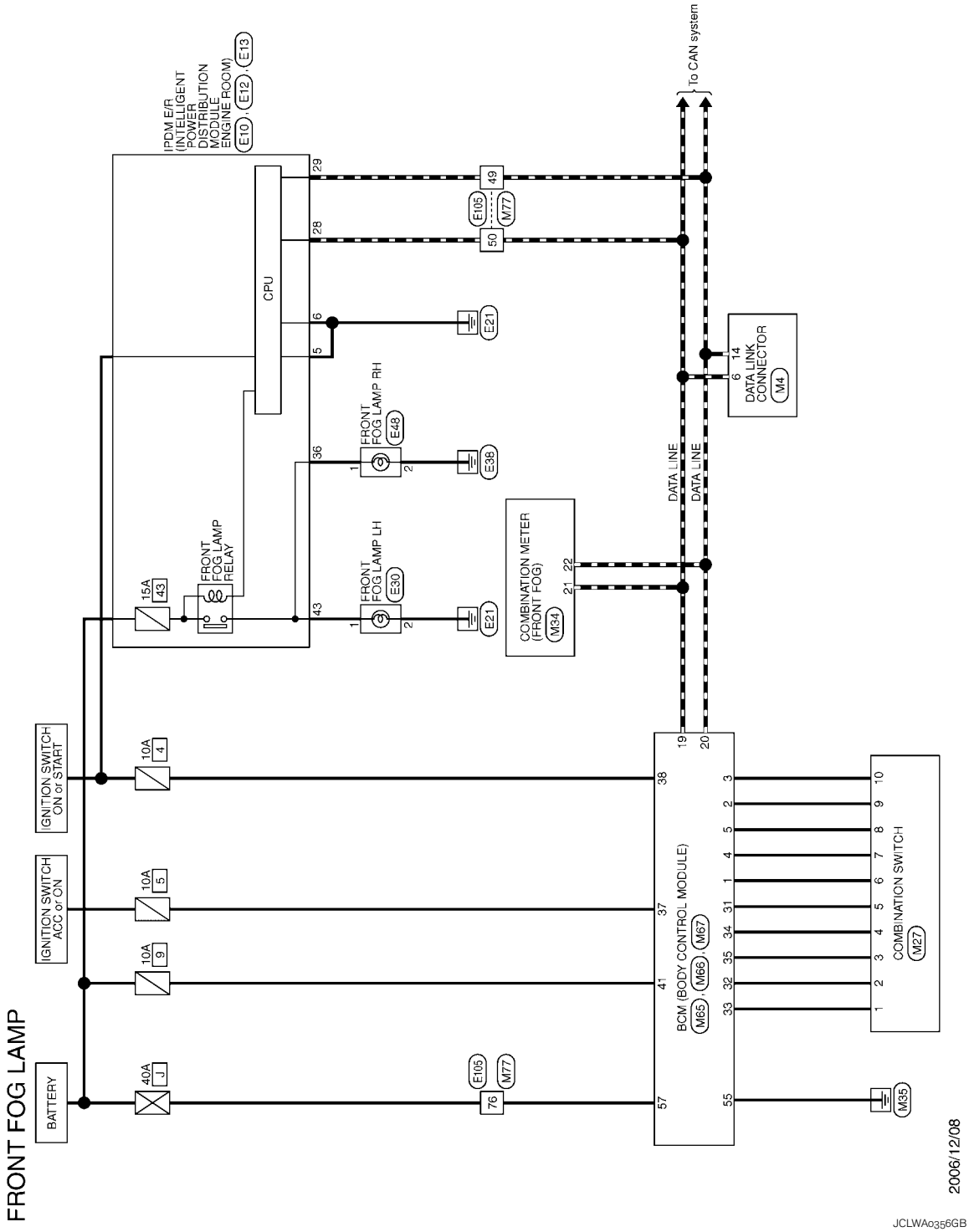
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FRONT FOG LAMP SYSTEM

Wiring Diagram - FRONT FOG LAMP -

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FRONT FOG LAMP

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
5	B	–
6	B	–

Connector No.	E46
Connector Name	FRONT FOG LAMP RH
Connector Type	FCI 240PC023S4019

H.S.

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

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS

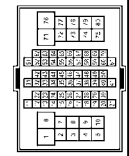
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
28	L	–
29	P	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-NS16-TM4

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
76	Y	–

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS16FW-CS

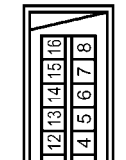
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
36	W	–
43	W/B	–

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

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	E30
Connector Name	FRONT FOG LAMP LH
Connector Type	FCI 240PC023S4019

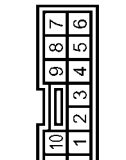
H.S.



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

Connector No.	M27
Connector Name	COMBINATION SWITCH
Connector Type	TK16FW

H.S.



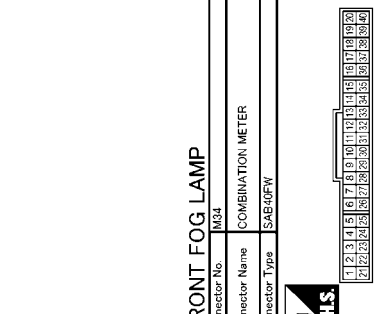
Terminal No.	Color of Wire	Signal Name [Specification]
1	V	INPUT1
2	G	INPUT2
3	L	INPUT3
4	GR	INPUT4
5	BR	INPUT5
6	P	OUTPUT1
7	R	OUTPUT2
8	W	OUTPUT5
9	Y	OUTPUT4
10	LG	OUTPUT3

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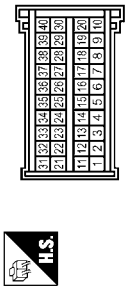
FRONT FOG LAMP

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	SAB40FW



Terminal No.	Color of Wire	Signal Name [Specification]
21	L	CAN-H
22	P	CAN-L

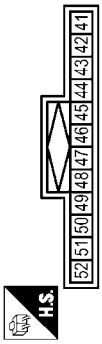
Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB



Terminal No.	Color of Wire	Signal Name [Specification]
1	P	COMBI SW OUTPUT 1
2	Y	COMBI SW OUTPUT 4
3	LG	COMBI SW OUTPUT 3
4	R	COMBI SW OUTPUT 2
5	W	COMBI SW OUTPUT 5
19	L	CAN-H
20	P	CAN-L
31	BR	COMBI SW INPUT 5
32	G	COMBI SW INPUT 2
33	V	COMBI SW INPUT 1
34	GR	COMBI SW INPUT 4

35	L	COMBI SW INPUT 3
37	R	ACC SW
38	W/L	IGN SW

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017



Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC063S0017

Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
49	P	-
50	L	-
76	Y	-

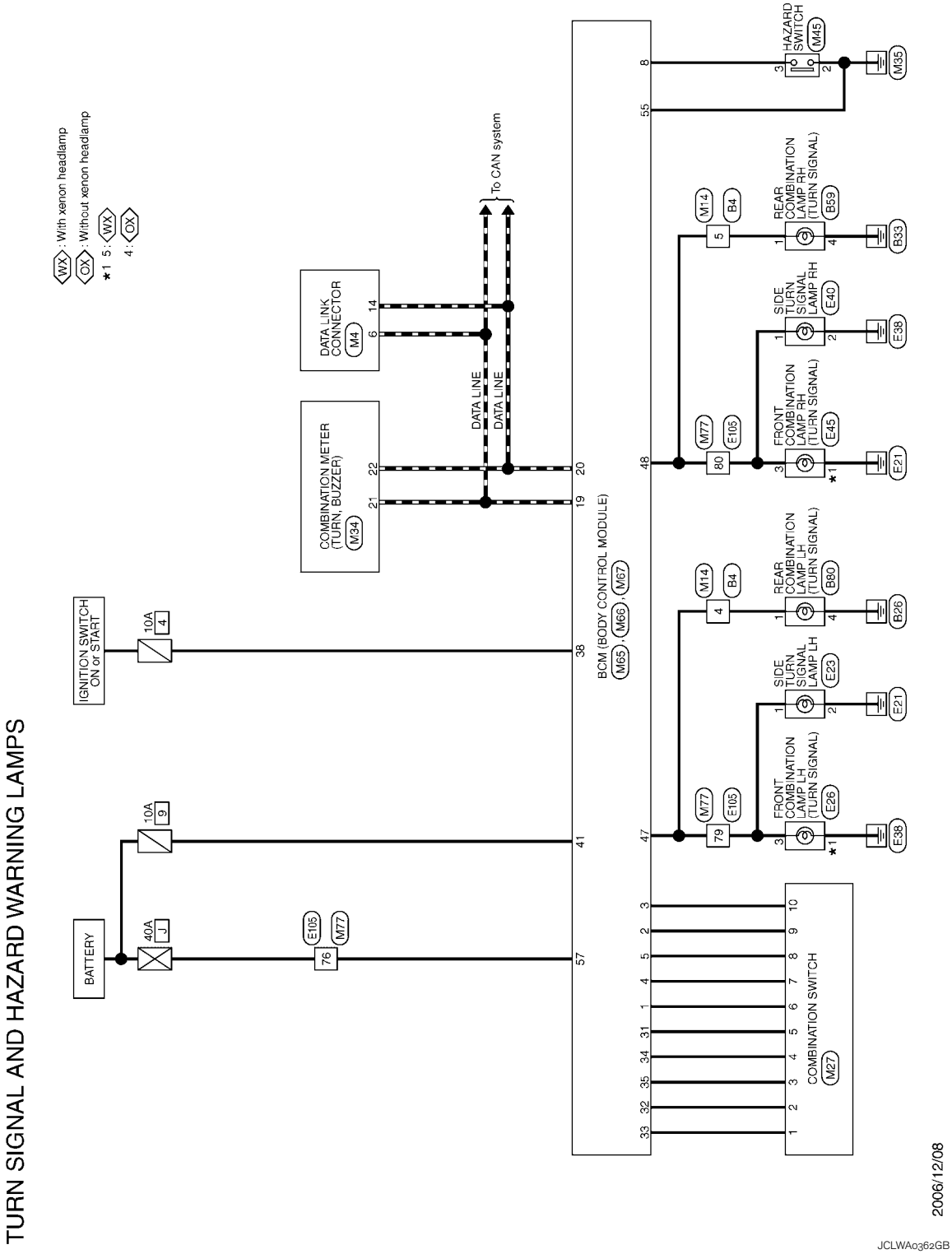
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TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

Wiring Diagram - TURN AND HAZARD WARNING LAMPS -

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TURN SIGNAL AND HAZARD WARNING LAMPS

Connector No.	B4
Connector Name	WIRE TO WIRE
Connector Type	NS08MW-CS

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
4	BR	–
5	G/B	–

Connector No.	E26
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	AMP 953600-1

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
3	G/Y	–
4	B	–
5	B	–

Connector No.	B59
Connector Name	REAR COMBINATION LAMP RH
Connector Type	FCI 211PC042S4021

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	G/B	–
4	B	–

Connector No.	E40
Connector Name	SIDE TURN SIGNAL LAMP RH
Connector Type	TRW 3020423100D

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	G/B	–
2	B	–

Connector No.	B80
Connector Name	REAR COMBINATION LAMP LH
Connector Type	FCI 211PC042S4021

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	–
4	B	–

Connector No.	E23
Connector Name	SIDE TURN SIGNAL LAMP LH
Connector Type	TRW 3020423100D

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	G/Y	–
2	B	–

Connector No.	E45
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	AMP 953600-1

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
3	G/B	–
4	B	–
5	B	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-NS16-TM4

H.S.

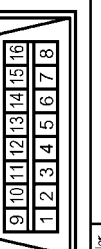
Terminal No.	Color of Wire	Signal Name [Specification]
76	Y	–
79	G/Y	–
80	G/B	–

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TURN SIGNAL AND HAZARD WARNING LAMPS

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



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	-
14	P	-

Connector No.	M14
Connector Name	WIRE TO WIRE
Connector Type	NS06FW-CS



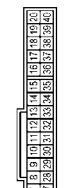
Terminal No.	Color of Wire	Signal Name [Specification]
4	BR	-
5	GR	-

Connector No.	M27
Connector Name	COMBINATION SWITCH
Connector Type	TK16FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	V	INPUT1
2	G	INPUT2
3	L	INPUT3
4	GR	INPUT4
5	BR	INPUT5
6	P	OUTPUT1
7	R	OUTPUT2
8	W	OUTPUT5
9	Y	OUTPUT4
10	LG	OUTPUT3

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	SAB40FW



Terminal No.	Color of Wire	Signal Name [Specification]
21	L	CAN-H
22	P	CAN-L

Connector No.	M45
Connector Name	HAZARD SWITCH
Connector Type	CINCH REF 49309EV4M9 (WHITE)

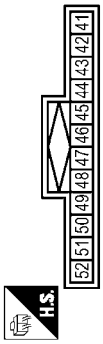
Terminal No.	Color of Wire	Signal Name [Specification]
2	B	-
3	LG	-

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB



Terminal No.	Color of Wire	Signal Name [Specification]
1	P	COMBI SW OUTPUT 1
2	Y	COMBI SW OUTPUT 4
3	LG	COMBI SW OUTPUT 3
4	R	COMBI SW OUTPUT 2
5	W	COMBI SW OUTPUT 5
8	LG	HAZARD SW
19	L	CAN-H
20	P	CAN-L
31	BR	COMBI SW INPUT 5
32	G	COMBI SW INPUT 2
33	V	COMBI SW INPUT 1

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017



Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)
47	G/Y	FLASHER OUTPUT (LEFT)
48	G/B	FLASHER OUTPUT (RIGHT)

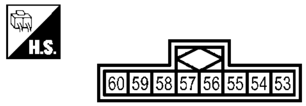
Terminal No.	Color of Wire	Signal Name [Specification]
34	GR	COMBI SW INPUT 4
35	L	COMBI SW INPUT 3
38	W/L	IGN SW

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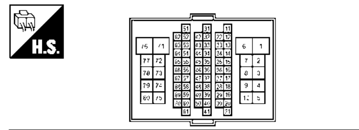
TURN SIGNAL AND HAZARD WARNING LAMPS

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC083S0017



Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-NS16-TM4



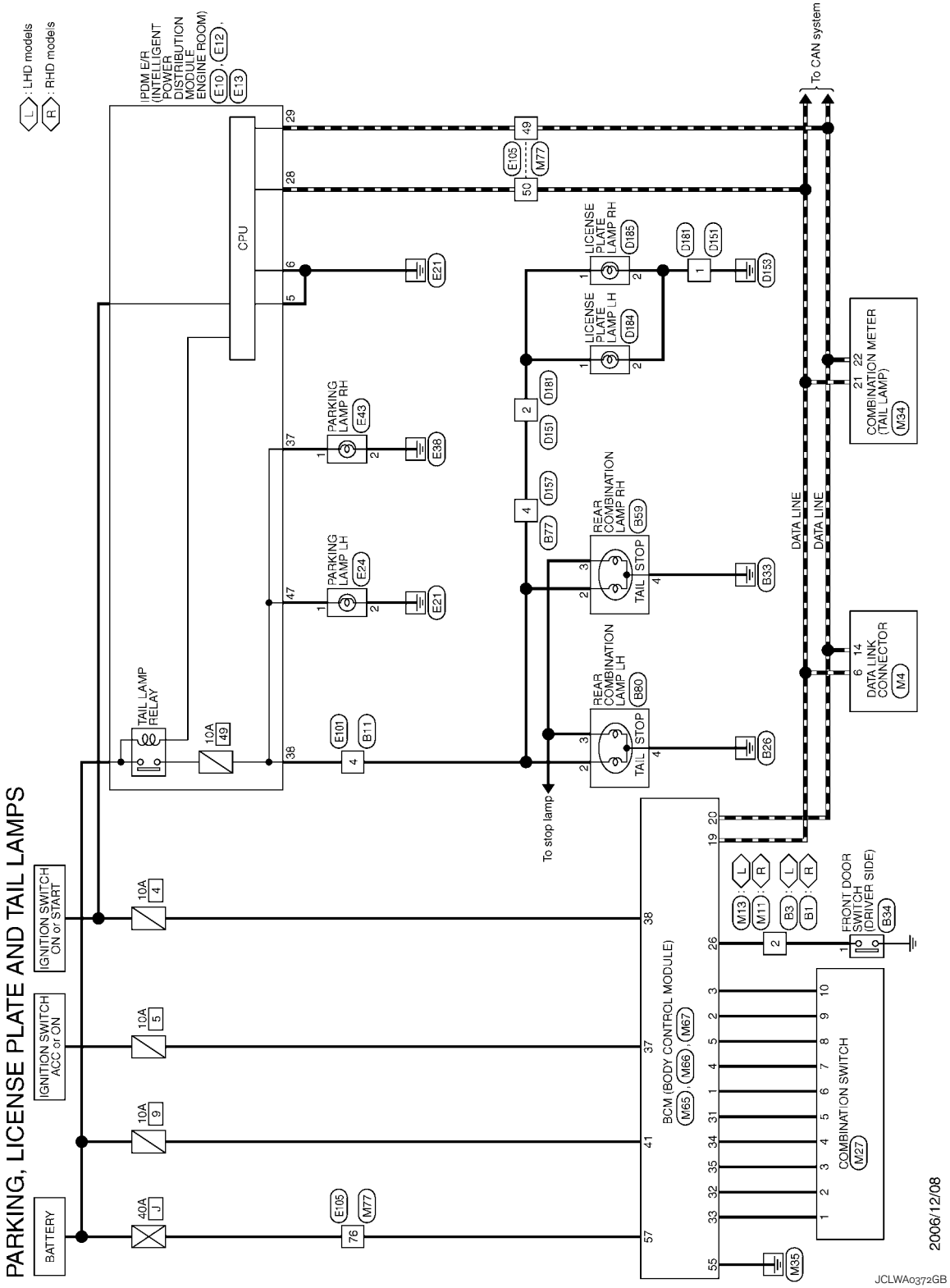
Terminal No.	Color of Wire	Signal Name [Specification]
76	Y	–
79	BR	–
80	GR	–

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PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

Wiring Diagram - PARKING, LICENSE PLATE AND TAIL LAMPS -

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PARKING, LICENSE PLATE AND TAIL LAMPS

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

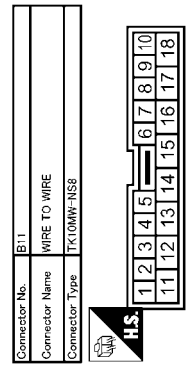
Terminal No.	Color of Wire	Signal Name [Specification]
2	R/W	–[RHD models]

Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TH24MW



Terminal No.	Color of Wire	Signal Name [Specification]
2	R/W	–[LHD models]

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TK10MW-NS8



Terminal No.	Color of Wire	Signal Name [Specification]
4	R/L	–

Connector No.	B34
Connector Name	FRONT DOOR SWITCH (DRIVER SIDE)
Connector Type	A03FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	R/W	–

Connector No.	B59
Connector Name	REAR COMBINATION LAMP RH
Connector Type	FCI 211PC042S4021

Terminal No.	Color of Wire	Signal Name [Specification]
2	R/L	–
3	R/W	–
4	B	–

Connector No.	B77
Connector Name	WIRE TO WIRE
Connector Type	TH08FW

Terminal No.	Color of Wire	Signal Name [Specification]
4	R/L	–

Connector No.	B80
Connector Name	REAR COMBINATION LAMP LH
Connector Type	FCI 211PC042S4021

Terminal No.	Color of Wire	Signal Name [Specification]
2	R/L	–
3	R/W	–
4	B	–

Connector No.	D151
Connector Name	WIRE TO WIRE
Connector Type	TH08MW

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	R/L	–

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PARKING, LICENSE PLATE AND TAIL LAMPS

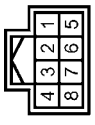
Connector No.	D157
Connector Name	WIRE TO WIRE
Connector Type	TH08MW

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
4	R/L	-

Connector No.	D181
Connector Name	WIRE TO WIRE
Connector Type	TH08FW

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
1	B	-
2	R/L	-

Connector No.	D184
Connector Name	LICENSE PLATE LAMP LH
Connector Type	TRW 302042310OD

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
1	R/L	-
2	B	-

Connector No.	D185
Connector Name	LICENSE PLATE LAMP RH
Connector Type	TRW 302042310OD

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
1	R/L	-
2	B	-

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
5	B	-
6	B	-

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
28	L	-
29	P	-

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS16FW-CS

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
37	R/W	-
38	R/L	-
47	R/L	-

Connector No.	E24
Connector Name	PARKING LAMP LH
Connector Type	RH02FB

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	R/L	-
2	B	-

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PARKING, LICENSE PLATE AND TAIL LAMPS

Connector No.	E43
Connector Name	PARKING LAMP RH
Connector Type	RH02FB

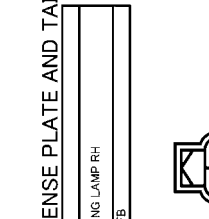
Terminal No.	Color of Wire	Signal Name [Specification]
1	R/W	–
2	B	–

Connector No.	E101
Connector Name	WIRE TO WIRE
Connector Type	TK10FW-NS8



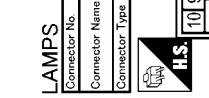
Terminal No.	Color of Wire	Signal Name [Specification]
4	R/L	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH24FW



Terminal No.	Color of Wire	Signal Name [Specification]
2	R	–[RHD models]

Connector No.	M13
Connector Name	WIRE TO WIRE
Connector Type	TH24FW



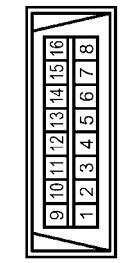
Terminal No.	Color of Wire	Signal Name [Specification]
2	R	–[LHD models]

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
76	Y	–

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



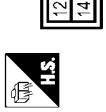
Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M27
Connector Name	COMBINATION SWITCH
Connector Type	TK16FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	V	INPUT1
2	G	INPUT2
3	L	INPUT3
4	GR	INPUT4
5	BR	INPUT5
6	P	OUTPUT1
7	R	OUTPUT2
8	W	OUTPUT5
9	Y	OUTPUT4
10	LG	OUTPUT3

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	SAB40FW



Terminal No.	Color of Wire	Signal Name [Specification]
21	L	CAN-H
22	P	CAN-L

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PARKING, LICENSE PLATE AND TAIL LAMPS

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB

Terminal No.	Color of Wire	Signal Name [Specification]
1	P	COMBI SW OUTPUT 1
2	Y	COMBI SW OUTPUT 4
3	LG	COMBI SW OUTPUT 3
4	R	COMBI SW OUTPUT 2
5	W	COMBI SW OUTPUT 5
19	L	CAN-H
20	P	CAN-L
26	R	DOOR SW (DR)
31	BR	COMBI SW INPUT 5
32	G	COMBI SW INPUT 2
33	V	COMBI SW INPUT 1
34	GR	COMBI SW INPUT 4
35	L	COMBI SW INPUT 3
37	R	ACC SW
38	W/L	IGN SW

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017

Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC083S0017

Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
49	P	-
50	L	-
76	Y	-

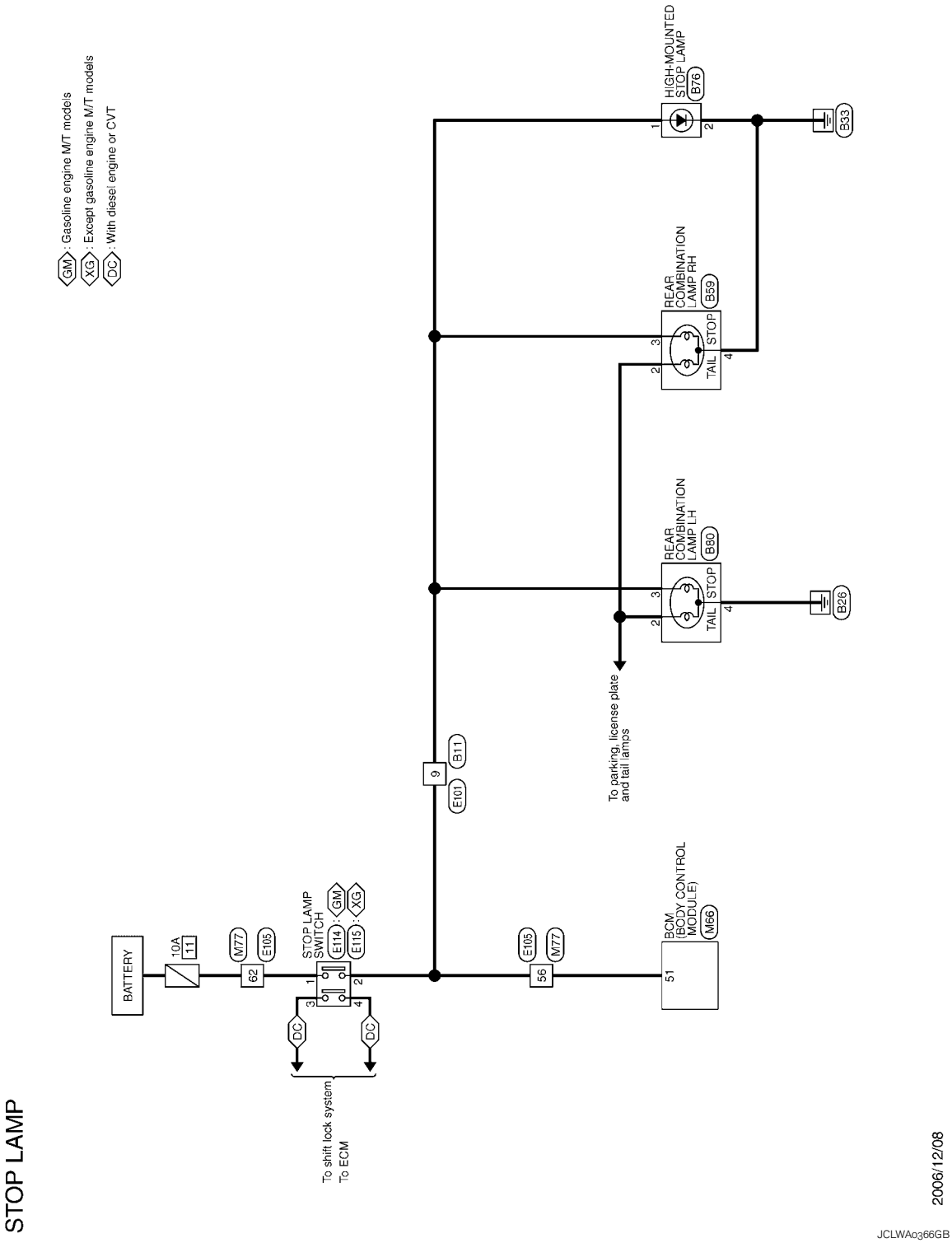
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STOP LAMP

Wiring Diagram - STOP LAMP -

INFOID:0000000001026233



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STOP LAMP

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TK10MW-NS8

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
9	R/W	-

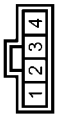
Connector No.	E101
Connector Name	WIRE TO WIRE
Connector Type	TK10FW-NS8

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
9	R/W	-

Connector No.	B59
Connector Name	REAR COMBINATION LAMP RH
Connector Type	FCI 211PC042S4021

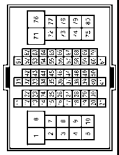
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
2	R/L	-
3	R/W	-
4	B	-

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
56	R/W	-
62	V	-

Connector No.	B76
Connector Name	HIGH-MOUNTED STOP LAMP
Connector Type	SICMA 11 770297543

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
1	R/W	-
2	B	-

Connector No.	E114
Connector Name	STOP LAMP SWITCH
Connector Type	M02FB

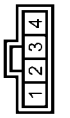
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
1	V	-
2	R/W	-

Connector No.	B80
Connector Name	REAR COMBINATION LAMP LH
Connector Type	FCI 211PC042S4021

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
2	R/L	-
3	R/W	-
4	B	-

Connector No.	E115
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC

H.S.



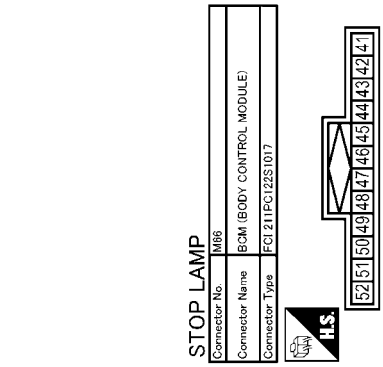
Terminal No.	Color of Wire	Signal Name [Specification]
1	V	-
2	R/W	-
3	G	-[With CVT]
3	O	-[With diesel engine]
4	B	-[With CVT]
4	W/L	-[With diesel engine]

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STOP LAMP

Connector No.	M86
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017



Terminal No.	Color of Wire	Signal Name [Specification]
51	R/W	STOP LAMP SW [With Intelligent Key]
51	R	STOP LAMP SW [Without Intelligent Key]

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-NS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
56	R	- [Except RHD models with Intelligent Key]
56	R/W	- [RHD models with Intelligent Key]
62	V	-

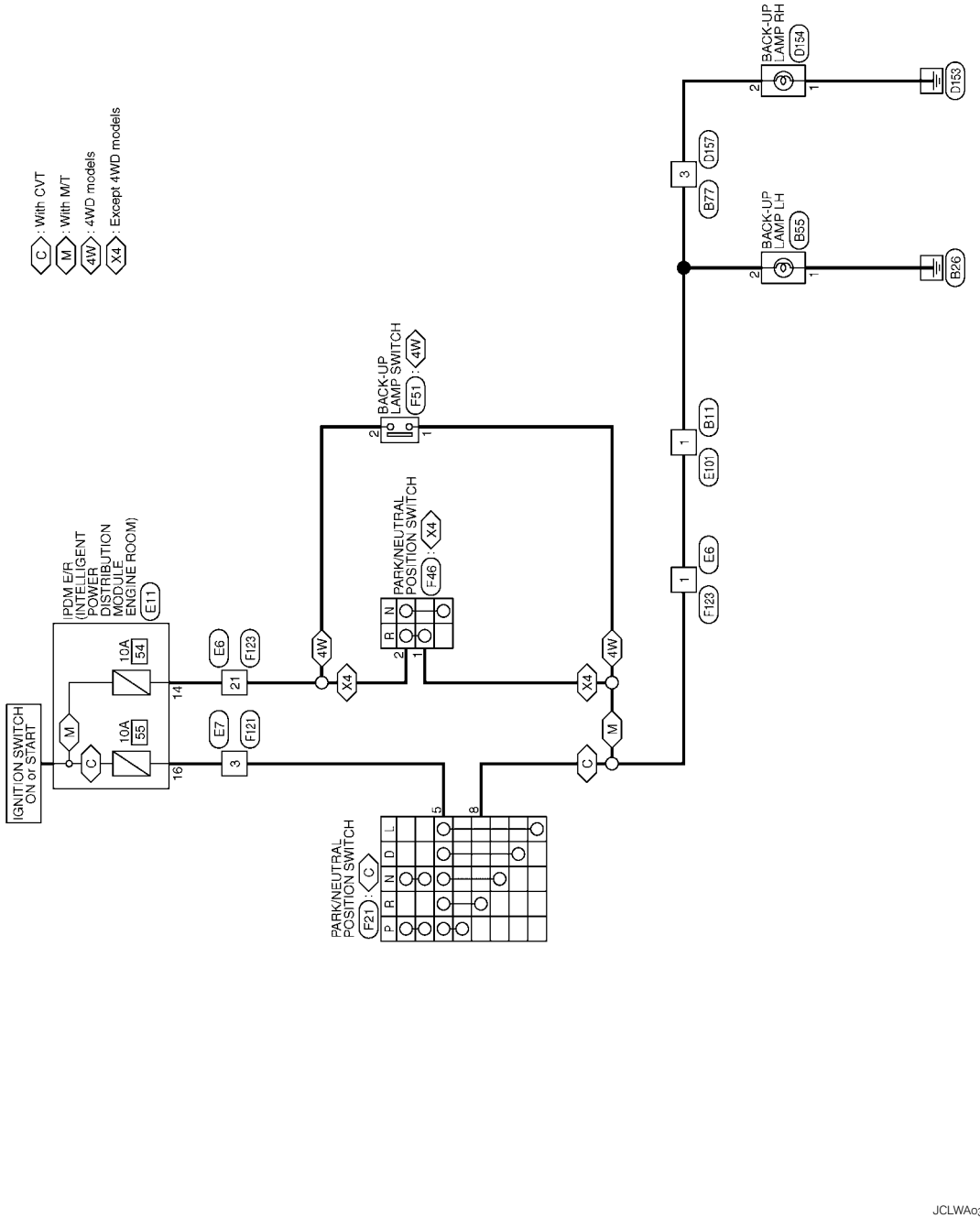
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BACK-UP LAMP

Wiring Diagram - BACK-UP LAMP -

INFOID:0000000001026235



BACK-UP LAMP

2006/12/08

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BACK−UP LAMP

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TK10MW-NS8

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y/G	–

Connector No.	B55
Connector Name	BACK−UP LAMP LH
Connector Type	FCI 211PC022S9049



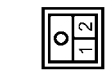
Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	Y/G	–

Connector No.	B77
Connector Name	WIRE TO WIRE
Connector Type	TH08FW



Terminal No.	Color of Wire	Signal Name [Specification]
3	Y/G	–

Connector No.	D154
Connector Name	BACK−UP LAMP RH
Connector Type	FCI 211PC022S9049



Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	Y/G	–

Connector No.	D157
Connector Name	WIRE TO WIRE
Connector Type	TH08MW

Terminal No.	Color of Wire	Signal Name [Specification]
3	Y/G	–

Connector No.	E6
Connector Name	WIRE TO WIRE
Connector Type	TK24MW-1V

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y/G	–
21	R/B	–

Connector No.	E7
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS

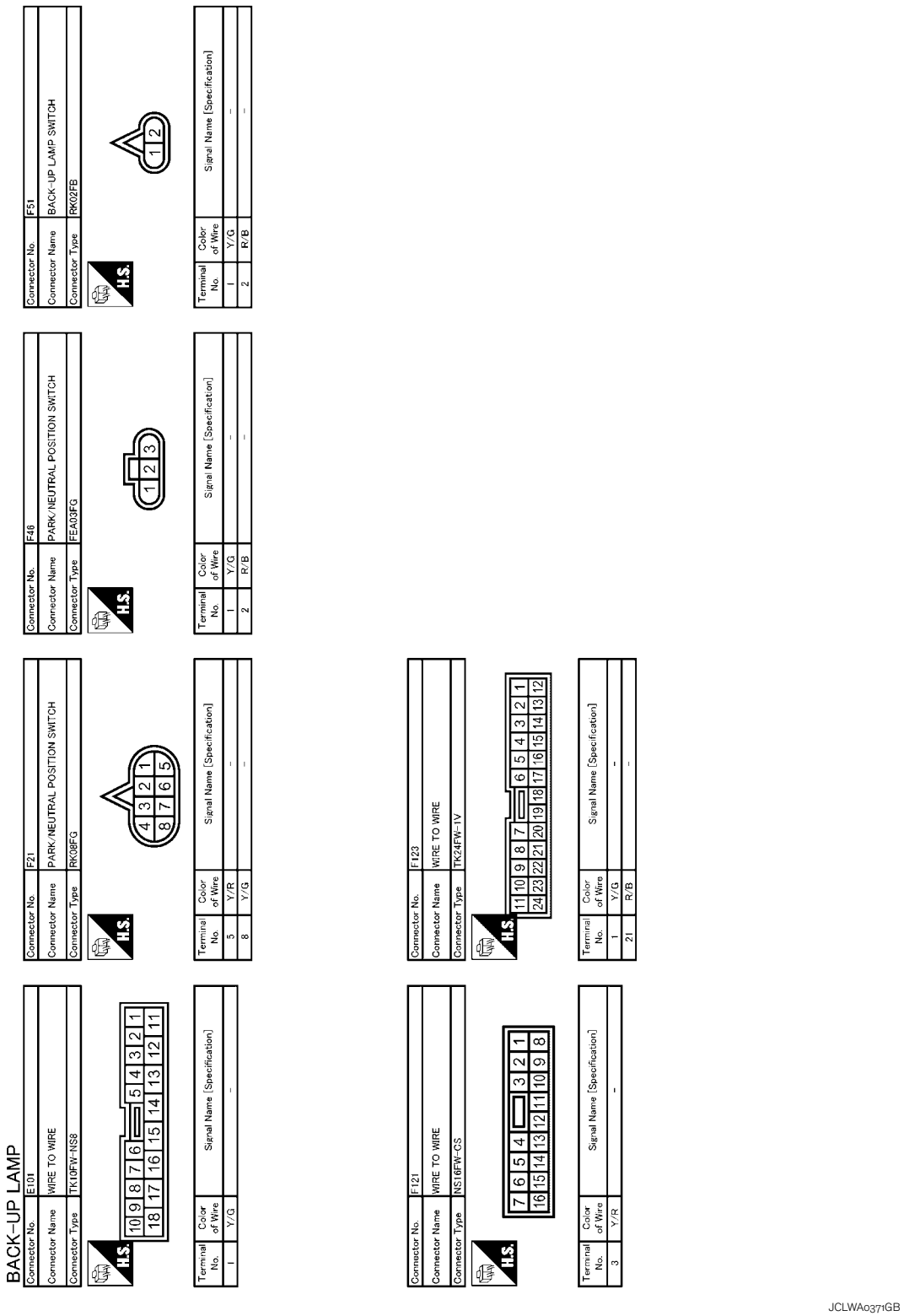
Terminal No.	Color of Wire	Signal Name [Specification]
3	Y/R	–

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FBR-CS

Terminal No.	Color of Wire	Signal Name [Specification]
14	R/B	–
16	Y/R	–

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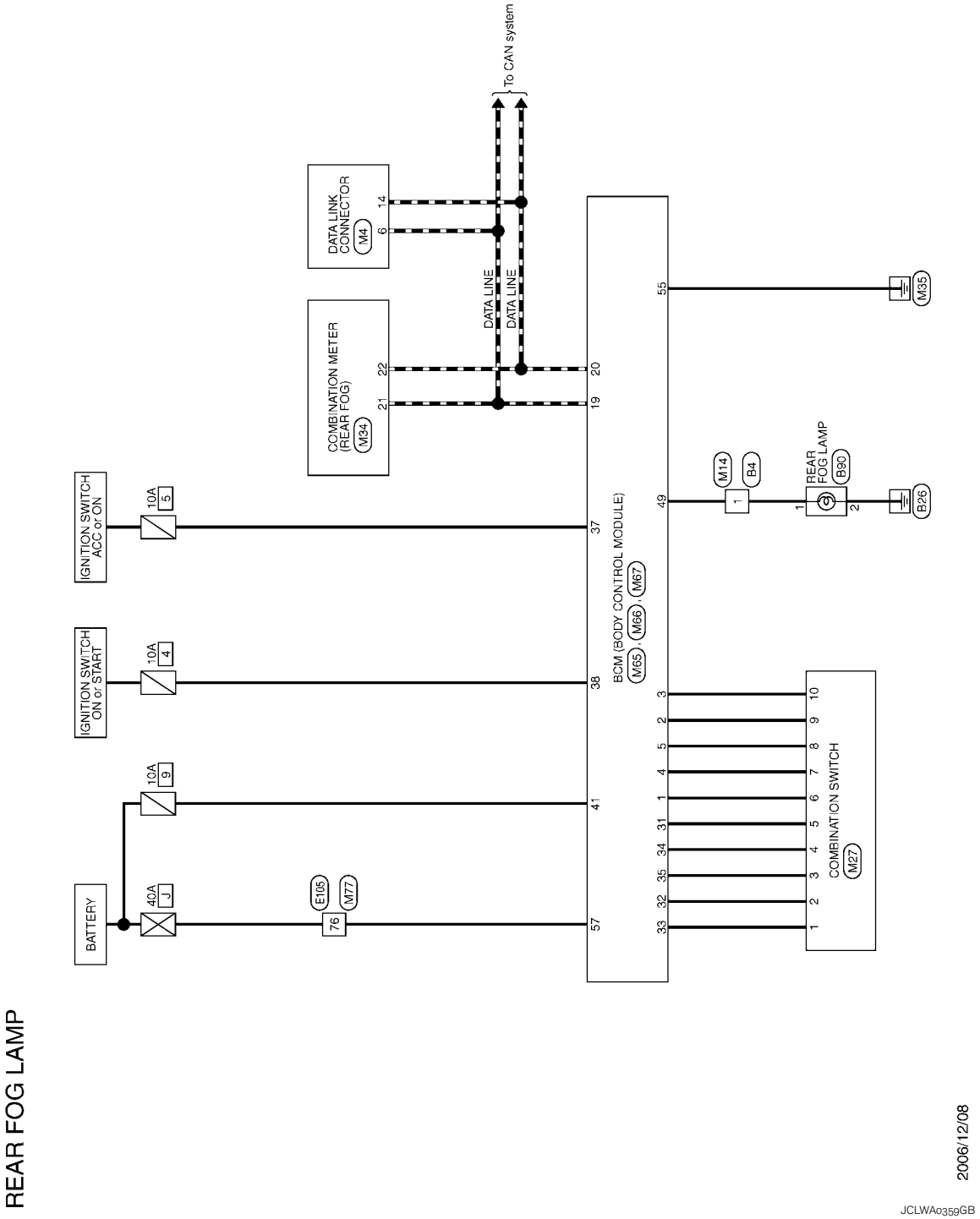
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REAR FOG LAMP SYSTEM

Wiring Diagram - REAR FOG LAMP -

INFOID:0000000001026237



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REAR FOG LAMP

Connector No.	B4
Connector Name	WIRE TO WIRE
Connector Type	NS08MW-CS

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	–

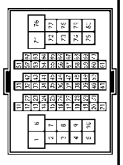
Connector No.	B90
Connector Name	REAR FOG LAMP
Connector Type	FEA02FB

H.S.

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

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-NS16-TM4

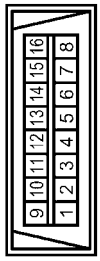
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
76	Y	–

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

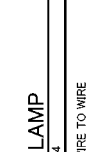
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M14
Connector Name	WIRE TO WIRE
Connector Type	NS08FW-CS

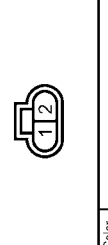
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	–

Connector No.	M27
Connector Name	COMBINATION SWITCH
Connector Type	TK16FW

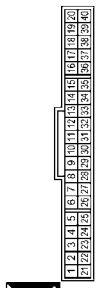
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
1	V	INPUT1
2	G	INPUT2
3	L	INPUT3
4	GR	INPUT4
5	BR	INPUT5
6	P	OUTPUT1
7	R	OUTPUT2
8	W	OUTPUT5
9	Y	OUTPUT4
10	LG	OUTPUT3

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	SAB40FW

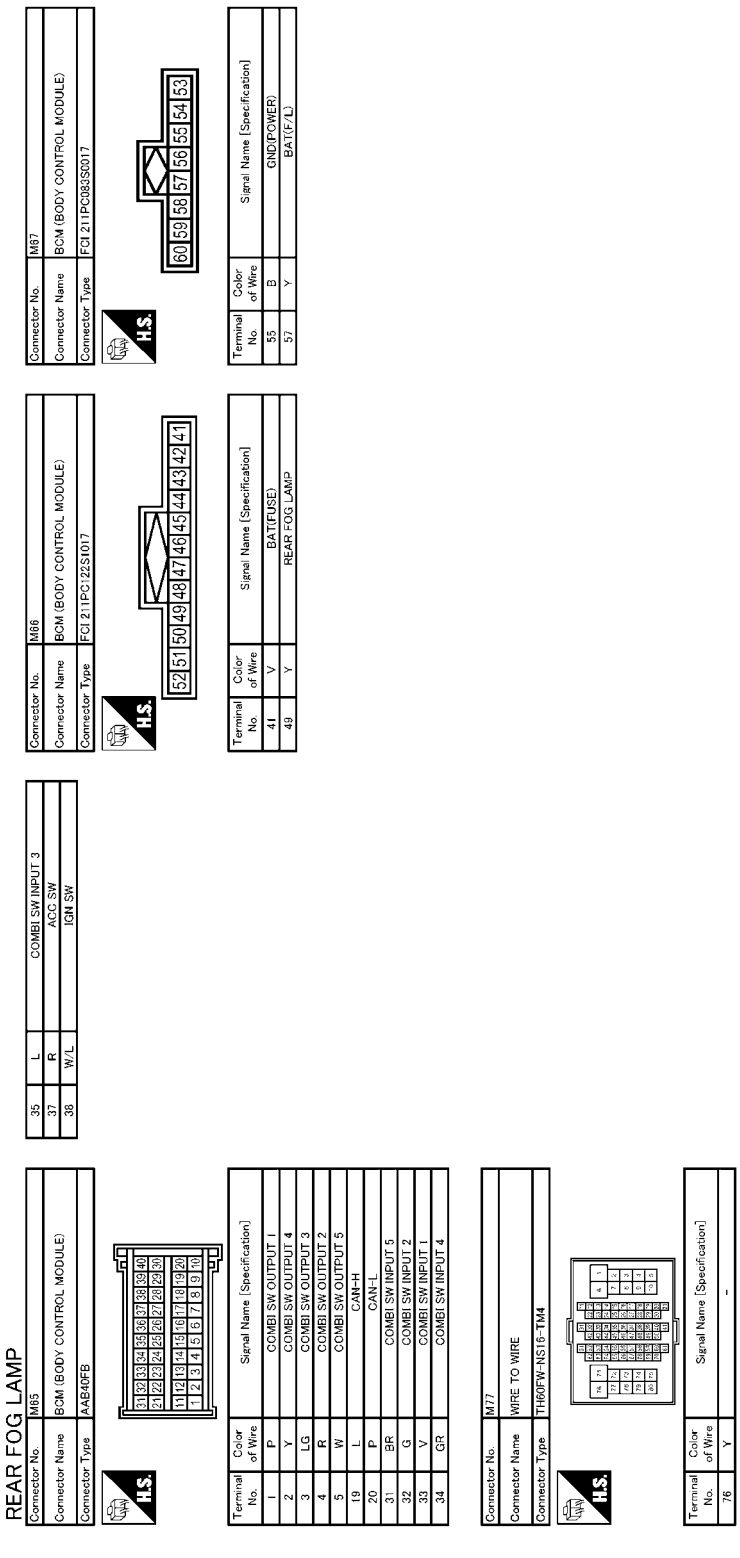
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
21	L	CAN-H
22	P	CAN-L

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A B C D E F G H I J K EXL M N O P
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ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000001116328

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition		Value/Status
ACC ON SW	Ignition switch OFF		OFF
	Ignition switch ACC or ON		ON
AIR COND SW	A/C switch OFF		OFF
	A/C switch ON		ON
AUT LIGHT SYS	Outside of the room is dark		OFF
	Outside of the room is bright		ON
AUTO LIGHT SW	Lighting switch OFF		OFF
	Lighting switch AUTO		ON
BACK DOOR SW	Back door closed		OFF
	Back door opened		ON
BATTERY VOLT **NOTE:** Diesel engine models only	Ignition switch ON		Approximately the same as power supply voltage
BUCKLE SW	Driver's seat belt unfastened		OFF
	Driver's seat belt fastened		ON
CDL LOCK SW	Door lock/unlock switch does not operate		OFF
	Press door lock/unlock switch to the LOCK side		ON
CDL UNLOCK SW	Door lock/unlock switch does not operate		OFF
	Press door lock/unlock switch to the UNLOCK side		ON
DOOR SW-AS	Passenger door closed		OFF
	Passenger door opened		ON
DOOR SW-DR	Driver door closed		OFF
	Driver door opened		ON
DOOR SW-RL	Rear LH door closed		OFF
	Rear LH door opened		ON
DOOR SW-RR	Rear RH door closed		OFF
	Rear RH door opened		ON
ELEC PWR CUT **NOTE:** Diesel engine models only	Engine running	Fan switch ON (when engine coolant is cool) **NOTE:** Depending on the ambient temperature, battery voltage, etc.	OFF
		The current status maintained with the signal from ECM received.	FREEZ
		• Fan switch OFF • Fan switch ON after engine warming UP **NOTE:** Depending on the engine coolant temperature, ambient temperature, battery voltage, etc.	INHBT

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Monitor Item	Condition	Value/Status
ENG COOLNT T **NOTE:** Diesel engine models only	Engine running	Approximately the same as water temperature gauge reading
ENGINE RPM **NOTE:** Diesel engine models only	Engine running	Approximately the same as tachometer reading
ENGINE RUN	Engine stopped	OFF
	Engine running	ON
ENGINE STATUS **NOTE:** Diesel engine models only	Engine stopped	STOP
	While the engine stalls	STALL
	Engine running	RUN
	At engine cranking	CRA
FAN ON SIG	Fan switch OFF	OFF
	Fan switch ON	ON
FR FOG SW	Front fog lamp switch OFF	OFF
	Front fog lamp switch ON	ON
FR WASHER SW	Front washer switch OFF	OFF
	Front washer switch ON	ON
FR WIPER LOW	Front wiper switch OFF	OFF
	Front wiper switch LO	ON
FR WIPER HI	Front wiper switch OFF	OFF
	Front wiper switch HI	ON
FR WIPER INT	Front wiper switch OFF	OFF
	Front wiper switch INT	ON
FR WIPER STOP	Any position other than front wiper stop position	OFF
	Front wiper stop position	ON
HAZARD SW	When hazard switch is not pressed	OFF
	When hazard switch is pressed	ON
HEAD LAMP SW 1	Lighting switch OFF	OFF
	Lighting switch 2ND	ON
HEAD LAMP SW 2	Lighting switch OFF	OFF
	Lighting switch 2ND	ON
HI BEAM SW	Lighting switch OFF	OFF
	Lighting switch HI	ON
HOOD SW	Close the hood **NOTE:** Vehicles without theft warning system are OFF-fixed	OFF
	Open the hood	ON
H/L WASH SW	**NOTE:** The item is indicated, but not monitored	OFF
IGN ON SW	Ignition switch OFF or ACC	OFF
	Ignition switch ON	ON
IGN SW CAN	Ignition switch OFF or ACC	OFF
	Ignition switch ON	ON
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7

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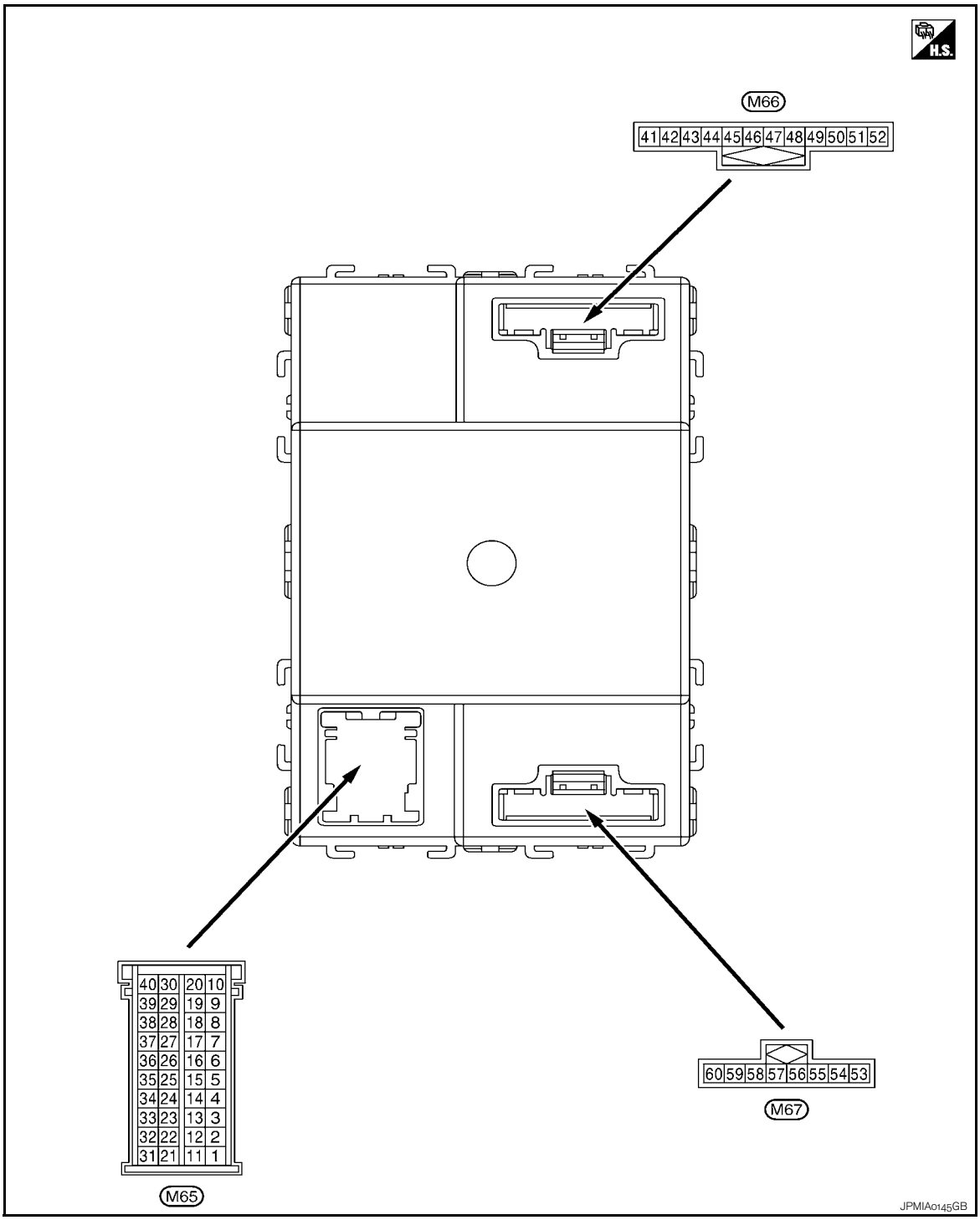
Monitor Item	Condition	Value/Status
I-KEY LOCK	LOCK button of Intelligent Key is not pressed	OFF
	LOCK button of Intelligent Key is pressed	ON
I-KEY UNLOCK	UNLOCK button of Intelligent Key is not pressed	OFF
	UNLOCK button of Intelligent Key is pressed	ON
KEY ON SW	Mechanical key is removed from key cylinder	OFF
	Mechanical key is inserted to key cylinder	ON
KEYLESS LOCK	LOCK button of key fob is not pressed	OFF
	LOCK button of key fob is pressed	ON
KEYLESS UNLOCK	UNLOCK button of key fob is not pressed	OFF
	UNLOCK button of key fob is pressed	ON
LIT-SEN FAIL	Light & rain sensor is in normal condition	OK
	Light & rain sensor is with internal error	NOTOK
OIL PRESS SW	• Ignition switch OFF or ACC • Engine running	OFF
	Ignition switch ON	ON
OUT SIDE TEMP **NOTE:** Diesel engine models	Ignition switch ON	Approximately the same as outside air temperature
PASSING SW	Other than lighting switch PASS	OFF
	Lighting switch PASS	ON
PUSH SW	Return to ignition switch to LOCK position	OFF
	Press ignition switch	ON
REAR DEF SW	Rear window defogger switch OFF	OFF
	Rear window defogger switch ON	ON
RKE LOCK AND UN-LOCK	**NOTE:** The item is indicated, but not monitored	OFF
		ON
RR FOG SW	Rear fog lamp switch OFF	OFF
	Rear fog lamp switch ON	ON
RR WASHER SW	Rear washer switch OFF	OFF
	Rear washer switch ON	ON
RR WIPER INT	Rear wiper switch OFF	OFF
	Rear wiper switch INT	ON
RR WIPER ON	Rear wiper switch OFF	OFF
	Rear wiper switch ON	ON
RR WIPER STOP	Rear wiper stop position	OFF
	Other than rear wiper stop position	ON
SHOCK SENSOR	Ignition switch ON	NOMAL
	After the reception of air bag deployment signal from air bag diagnosis sensor unit	OFF
	During the reception of air bag deployment signal from air bag diagnosis sensor unit	ON
TAIL LAMP SW	Lighting switch OFF	OFF
	Lighting switch 1ST	ON
TRNK OPNR SW	When back door opener switch is not pressed	OFF
	When back door opener switch is pressed	ON

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Monitor Item	Condition	Value/Status
TURN SIGNAL L	Turn signal switch OFF	OFF
	Turn signal switch LH	ON
TURN SIGNAL R	Turn signal switch OFF	OFF
	Turn signal switch RH	ON
UNLOCK WITH DR	**NOTE:** The item is indicated, but not monitored	OFF
		ON
UNLOCK SHOCK	Other than the following	OFF
	During the unlock operation interlocked with air bag	ON
VEHICLE SPEED	While driving	Equivalent to speedometer reading

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TERMINAL LAYOUT

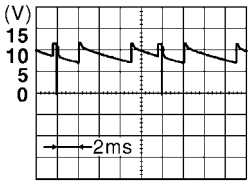
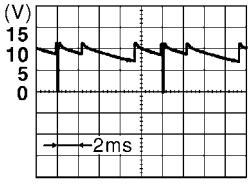
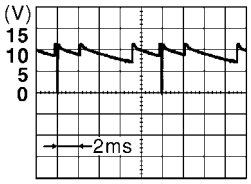
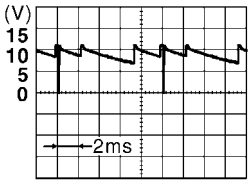


PHYSICAL VALUES

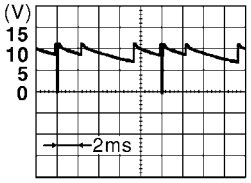
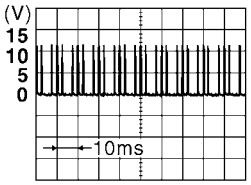
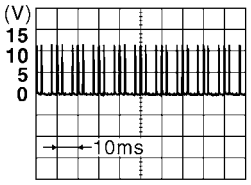
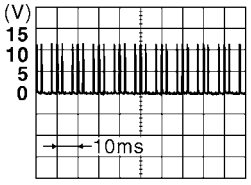
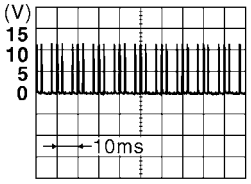
CAUTION:

- **Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF is not to be fluctuated by being overloaded.**
- **Turn wiper intermittent dial position to 4 except when checking waveform or voltage of wiper intermittent dial position. Wiper intermittent dial position can be confirmed on CONSULT -III. Refer to BCS-26, "COMB SW : CONSULT-III Function (BCM - COMB SW)".**
- **BCM reads the status of the combination switch at 10 ms internal normally. Refer to BCS-7, "System Description".**

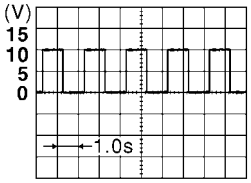
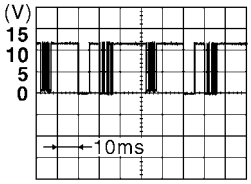
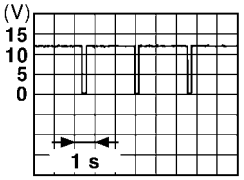
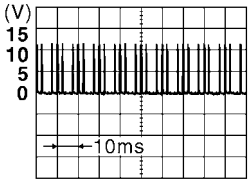
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Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
+	–					
1 (P)	Ground	Combination switch OUTPUT 1	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front wiper switch HI (Wiper intermittent dial 4)	 JPMIA0160GB 9.1 V
					Rear wiper switch INT (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3 • Wiper intermittent dial 6 • Wiper intermittent dial 7	
2 (Y)	Ground	Combination switch OUTPUT 4	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Lighting switch 2ND	 JPMIA0163GB 9.3 V
					Lighting switch PASS	
					Front fog lamp switch ON	
					Turn signal switch LH	
3 (LG)	Ground	Combination switch OUTPUT 3	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Lighting switch AUTO	 JPMIA0162GB 9.3 V
					Rear fog lamp switch OFF	
					Front wiper switch MIST	
					Front wiper switch INT	
					Front wiper switch LO	
4 (R)	Ground	Combination switch OUTPUT 2	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front washer switch ON (Wiper intermittent dial 4)	 JPMIA0161GB 9.1 V
					Rear wiper switch ON (Wiper intermittent dial 4)	
					Rear washer switch ON (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	

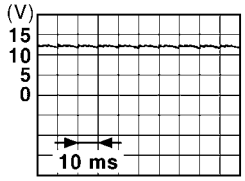
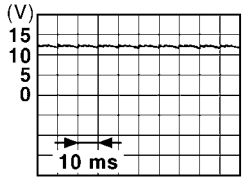
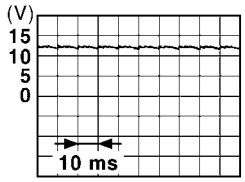
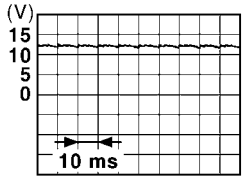
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Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
5 (W)	Ground	Combination switch OUTPUT 5	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Lighting switch 1ST	 JPMIA0164GB 9.1 V
					Lighting switch 2ND	
					Lighting switch HI	
					Turn signal switch RH	
7 (P)	Ground	Door lock/unlock switch (Lock)	Output	Door lock/unlock switch	Not pressed	 JPMIA0154GB 1.2 V
					Pressed to the lock side	0 V
8 (LG)	Ground	Hazard switch	Output	Hazard switch	Not pressed	 JPMIA0154GB 1.3 V
					Pressed	0 V
9 (BR)	Ground	Door lock/unlock switch (Unlock)	Output	Door lock/unlock switch	Not pressed	 JPMIA0154GB 1.2 V
					Pressed to the unlock side	0 V
12 (P)	Ground	Back door opener switch	Output	Back door opener switch	Not pressed	 JPMIA0154GB 1.2 V
					Pressed	0 V

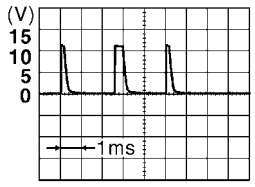
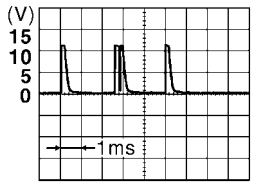
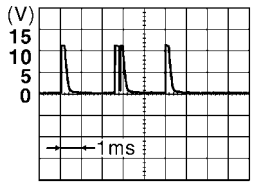
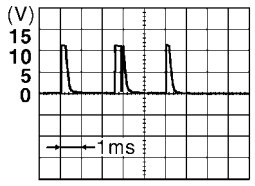
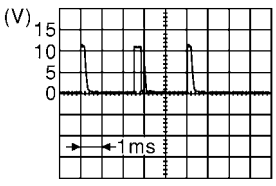
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Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
13 (R)	Ground	Shock detect sensor	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON		 JPMIA0155GB 6.0 V
14 (L/R)	Ground	A/C switch	Output	A/C switch	Not pressed	Battery voltage
					Pressed	0 V
15 (LG/B)	Ground	Fan switch	Output	Fan switch	Not pressed	Battery voltage
					Pressed	0 V
16 (GR)	Ground	Alarm link	Input	—		—
17 (BR)	Ground	Light & rain sensor serial link	Output	Ignition switch OFF or ACC		Battery voltage
				Ignition switch ON		 JPMIA0156GB 8.7 V
18 (SB)	Ground	Security indicator	Output	Security indicator	ON	0 V
					Blinking	 JPMIA0014GB 10.3 V
					OFF	Battery voltage
19 (L)	—	CAN-H	Input/ Output	—		—
20 (P)	—	CAN-L	Input/ Output	—		—
21 (SB)	Ground	Rear window defogger switch	Output	Rear window defogger switch	Not pressed	 JPMIA0154GB 1.1 V
					While pressing	0 V

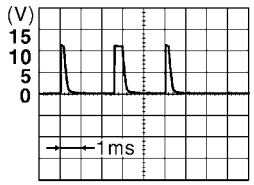
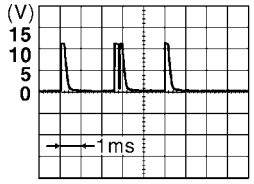
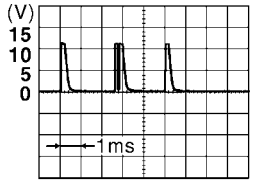
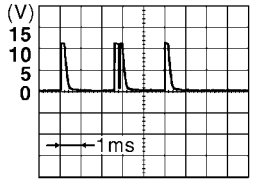
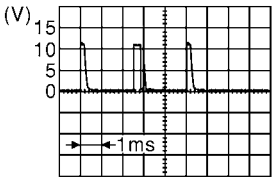
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Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
24 (GR)	Ground	Door lock status indicator	Output	Door lock status indicator	ON	Battery voltage
					OFF	0 V
25 (GR)	Ground	Rear door switch LH	Input	Rear door switch LH	OFF (When rear door LH closed)	 PKIDo924E 11.2 V
					ON (When rear door LH opened)	0 V
26 (R)	Ground	Driver door switch	Input	Driver door switch	OFF (When driver door closed)	 PKIDo924E 11.2 V
					ON (When driver door opened)	0 V
27 (BR)	Ground	Passenger door switch	Input	Passenger door switch	OFF (When passenger door closed)	 PKIDo924E 11.2 V
					ON (When passenger door opened)	0 V
28 (G)	Ground	Back door switch	Input	Back door switch	OFF (When back door closed)	Battery voltage
					ON (When back door opened)	0 V
29 (LG)	Ground	Rear door switch RH	Input	Rear door switch RH	OFF (When rear door RH closed)	 PKIDo924E 11.2 V
					ON (When rear door RH opened)	0 V
30 (SB)	Ground	Audio link	Output	—	—	—

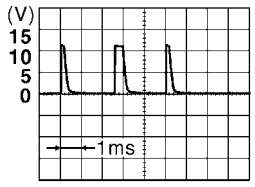
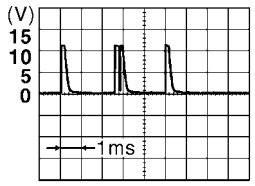
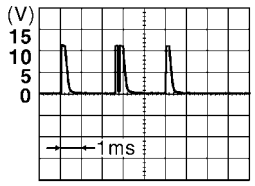
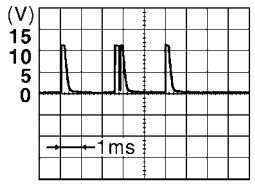
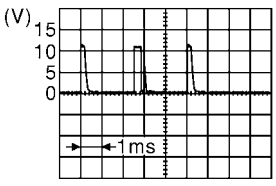
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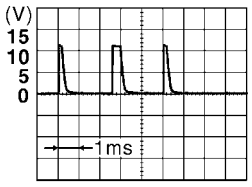
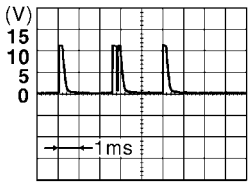
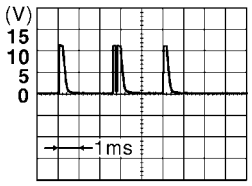
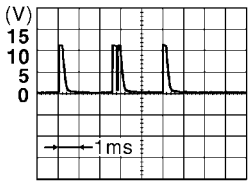
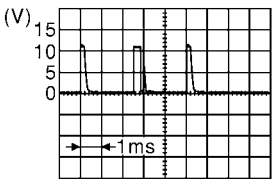
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
31 (BR)	Ground	Combination switch INPUT 5	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0165GB 1.3 V
					Front fog lamp switch ON (Wiper intermittent dial 4)	 JPMIA0167GB 1.3 V
					Rear fog lamp switch ON (Wiper intermittent dial 4)	 JPMIA0168GB 1.3 V
					Rear wiper switch ON (Wiper intermittent dial 4)	 JPMIA0169GB 1.3 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 6 • Wiper intermittent dial 7	 JPMIA0196GB 1.3 V

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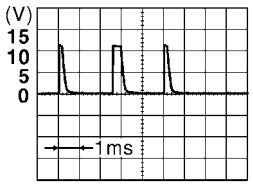
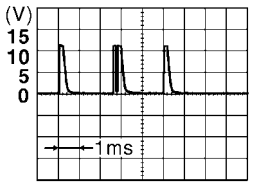
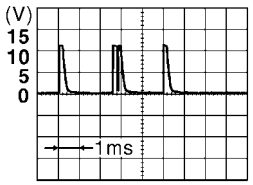
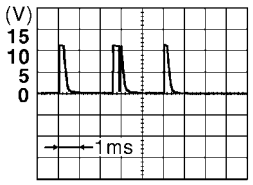
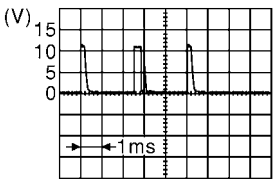
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
32 (G)	Ground	Combination switch INPUT 2	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	 JPMIA0165GB 1.4 V
					Lighting switch PASS	 JPMIA0167GB 1.3 V
					Lighting switch 2ND	 JPMIA0166GB 1.3 V
					Front wiper switch INT	 JPMIA0168GB 1.3 V
					Front wiper switch HI	 JPMIA0196GB 1.3 V

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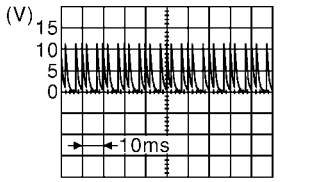
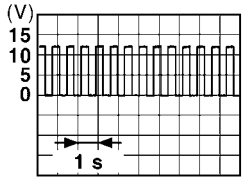
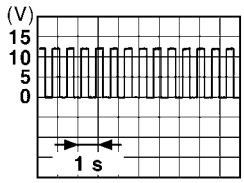
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
33 (V)	Ground	Combination switch INPUT 1	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	 JPMIA0165GB 1.4 V
					Turn signal switch LH	 JPMIA0167GB 1.3 V
					Turn signal switch RH	 JPMIA0166GB 1.3 V
					Front wiper switch LO	 JPMIA0168GB 1.3 V
					Front washer switch ON	 JPMIA0196GB 1.3 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
34 (GR)	Ground	Combination switch INPUT 4	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0165GB 1.4 V
					Lighting switch AUTO (Wiper intermittent dial 4)	 JPMIA0167GB 1.3 V
					Lighting switch 1ST (Wiper intermittent dial 4)	 JPMIA0166GB 1.3 V
					Rear wiper INT (Wiper intermittent dial 4)	 JPMIA0167GB 1.3 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 6	 JPMIA0196GB 1.3 V

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Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
35 (L)	Ground	Combination switch INPUT 3	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0165GB 1.4 V
					Lighting switch HI (Wiper intermittent dial 4)	 JPMIA0166GB 1.3 V
					Lighting switch 2ND (Wiper intermittent dial 4)	 JPMIA0167GB 1.3 V
					Rear wiper switch ON	 JPMIA0169GB 1.3 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3	 JPMIA0196GB 1.3 V
36 (V)	Ground	Key switch	Output	Insert mechanical key into ignition key cylinder		Battery voltage
				Remove mechanical key from ignition key cylinder		0 V
37 (R)	Ground	ACC power supply	Output	Ignition switch OFF		0 V
				Ignition switch ACC or ON		Battery voltage
38 (W/L)	Ground	Ignition power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage

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Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
39 (P)	Ground	NATS antenna amp.	Input/ Output	Insert mechanical key into ignition key cylinder		Just after Insert mechanical key into ignition key cylinder. Pointer of tester should move
40 (LG)	Ground	NATS antenna amp.	Input/ Output	Insert mechanical key into ignition key cylinder		Just after Insert mechanical key into ignition key cylinder. Pointer of tester should move
41 (V)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
42 (V)	Ground	Interior room lamp power supply	Output	After passing the interior room lamp battery saver operation time		0 V
				Any other time after passing the interior room lamp battery saver operation time		Battery voltage
43 (L)	Ground	Rear wiper motor	Output	Rear wiper switch OFF		0 V
				Rear wiper switch ON		Battery voltage
44 (L/W)	Ground	Rear wiper auto stop	Output	Ignition switch ON	Rear wiper stop position	0 V
					Any position other than rear wiper stop position	 JPMIA0197GB
45 (GR)	Ground	Back door lock actuator	Output	Back door opener switch	Pressed	Battery voltage (300ms)
					Not pressed	0 V
47 (G/Y)	Ground	Turn signal LH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	 PKIDog26E 6.5 V
48 (G/B)	Ground	Turn signal RH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	 PKIDog26E 6.5 V
49 (Y)	Ground	Rear fog lamp	Output	Lighting switch 1ST and front fog lamp switch ON	Rear fog lamp switch OFF	0 V
					Rear fog lamp switch ON	Battery voltage
51 (R/W)*1 (R)*2	Ground	Stop lamp switch	Output	Depress the brake pedal		Battery voltage
				Release the brake pedal		0 V

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Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
52 (R)	Ground	Room lamp timer control	Output	Interior room lamp	OFF	Battery voltage
					ON	0 V
53 (L)	Ground	Power window power supply	Output	Ignition switch	OFF or ACC	0 V
					ON	Battery voltage
54 (O)	Ground	Door unlock (All)	Output	Door lock/unlock switch	Pressed to the unlock side	Battery voltage
					Pressed to the lock side	0 V
55 (B)	Ground	Ground	—	Ignition switch ON		0 V
56 (Y)*1 (SB)*2	Ground	Door lock (All)	Output	Door lock/unlock switch	Pressed to the unlock side	0 V
					Pressed to the lock side	Battery voltage
57 (Y)	Ground	Battery power supply	Output	Ignition switch OFF		Battery voltage
58 (P)	Ground	Power window power supply	Output	Ignition switch OFF		Battery voltage
59 (BR)	Ground	Super lock	Output	When lock button of key fob or Intelligent Key is not pressed		0 V
				When lock button of key fob or Intelligent Key is pressed		Battery voltage
60 (GR)	Ground	Driver door unlock	Output	Door lock/unlock switch	Pressed to the unlock side	Battery voltage
					Pressed to the lock side	0 V

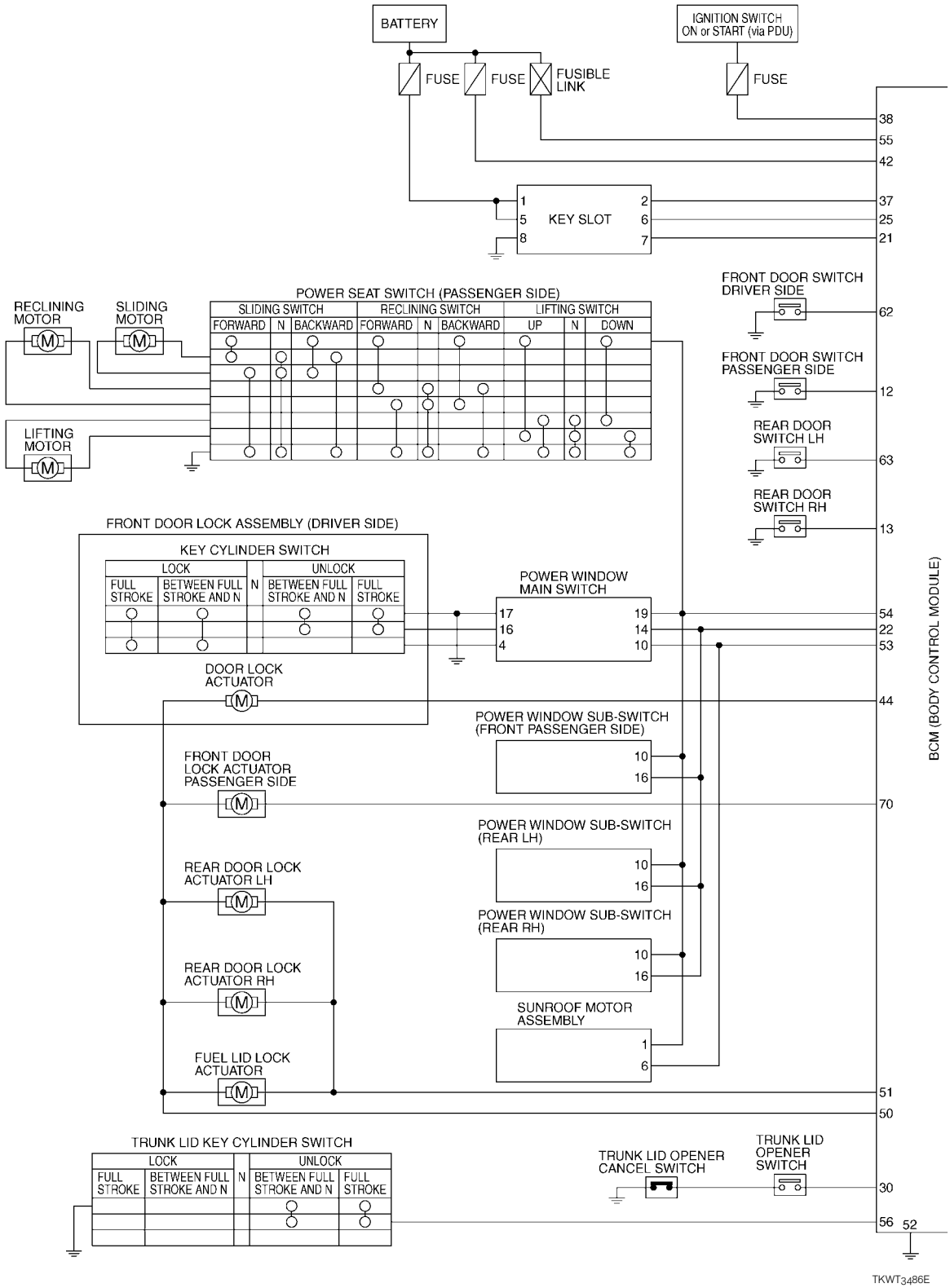
*1: With Intelligent Key system

*2: Without Intelligent Key system

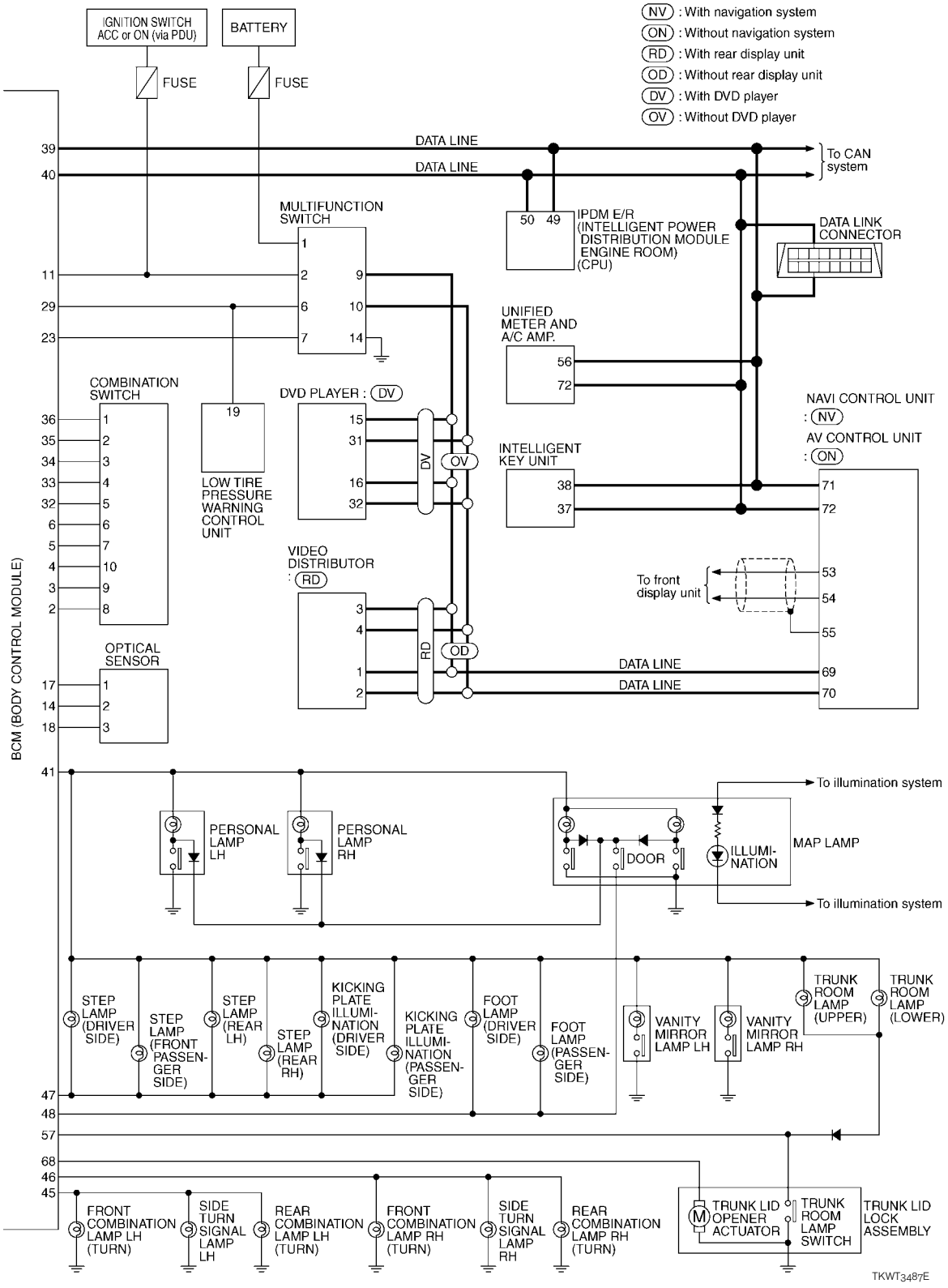
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Wiring Diagram - BCM -

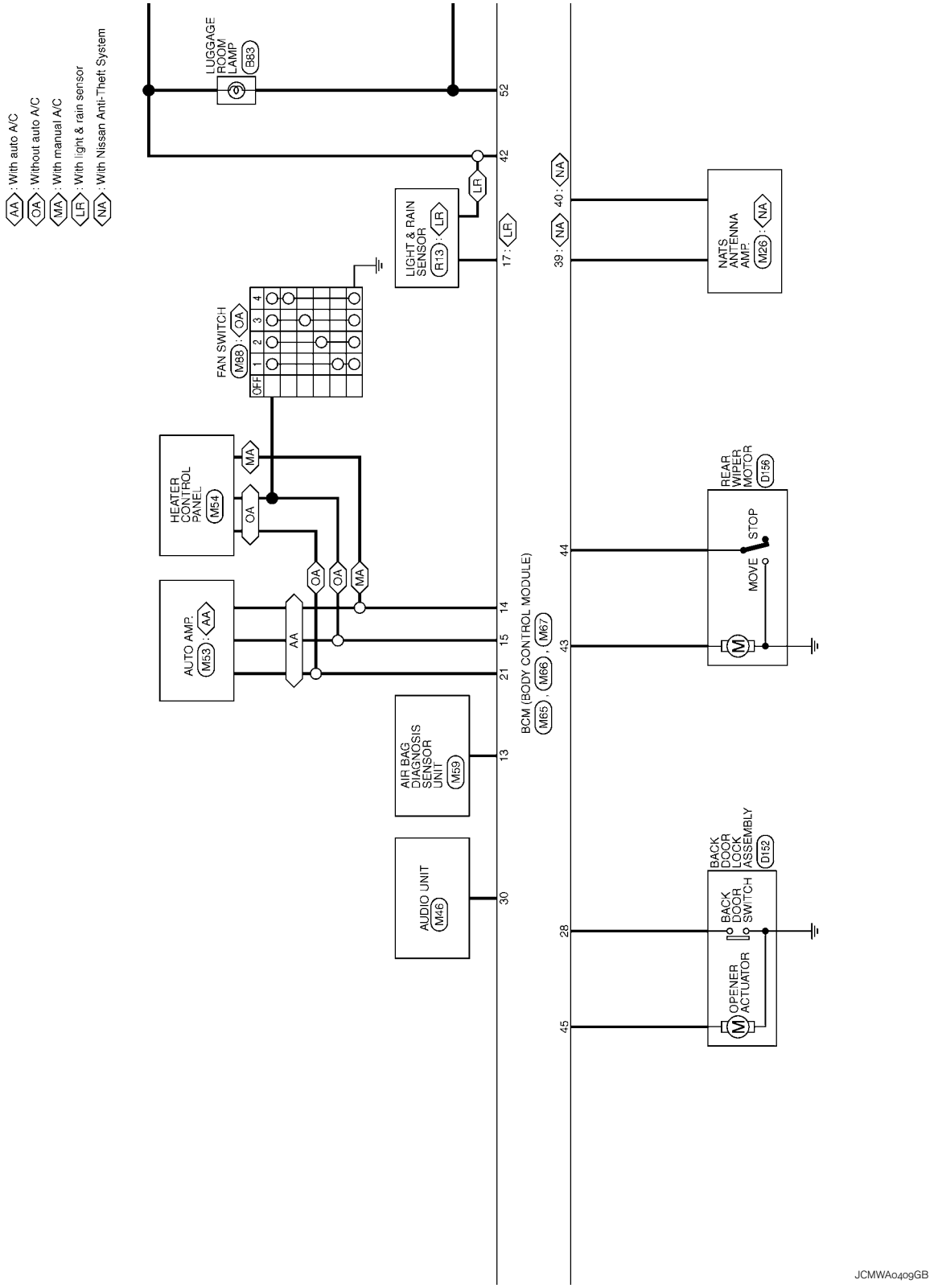
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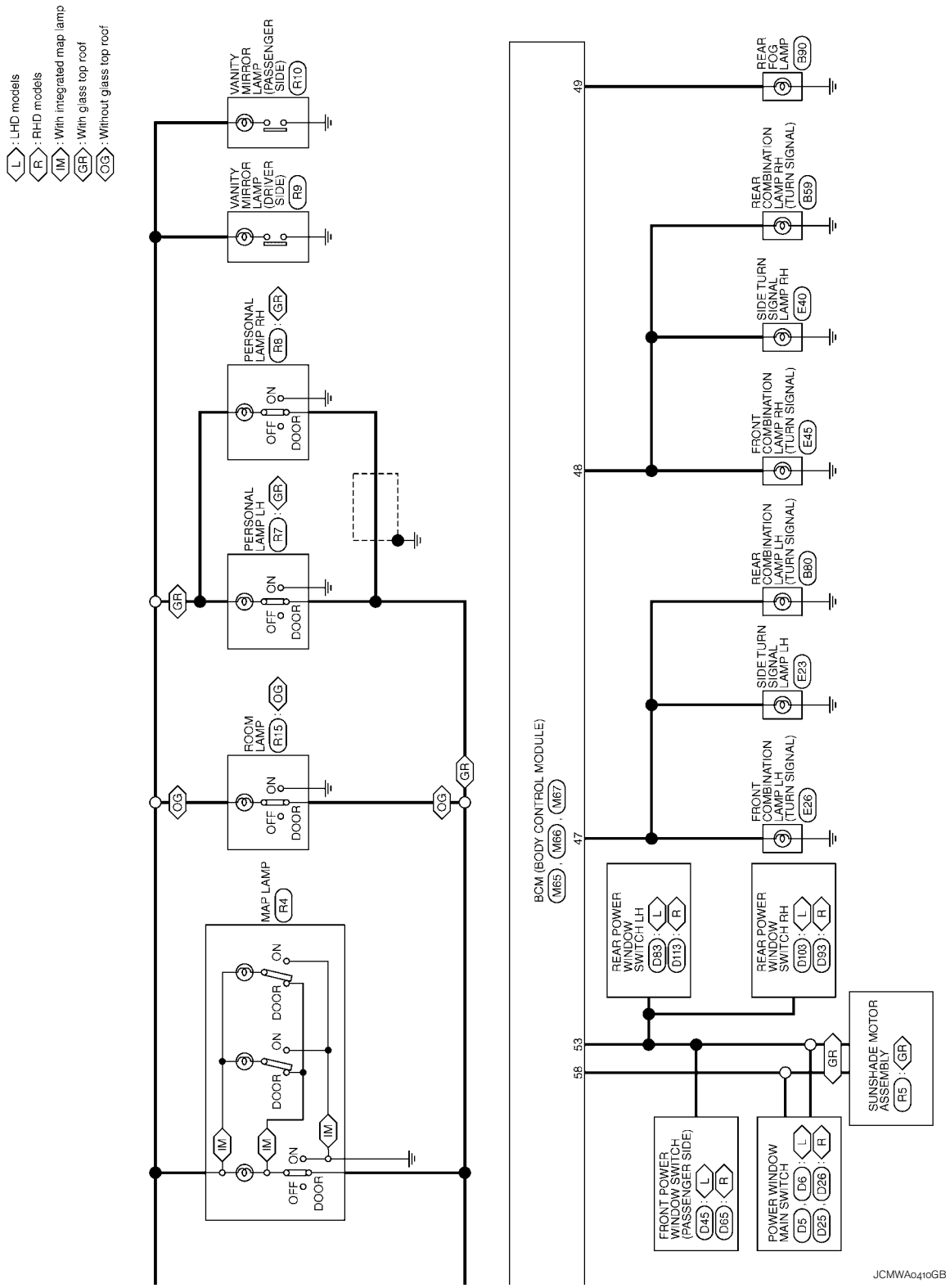
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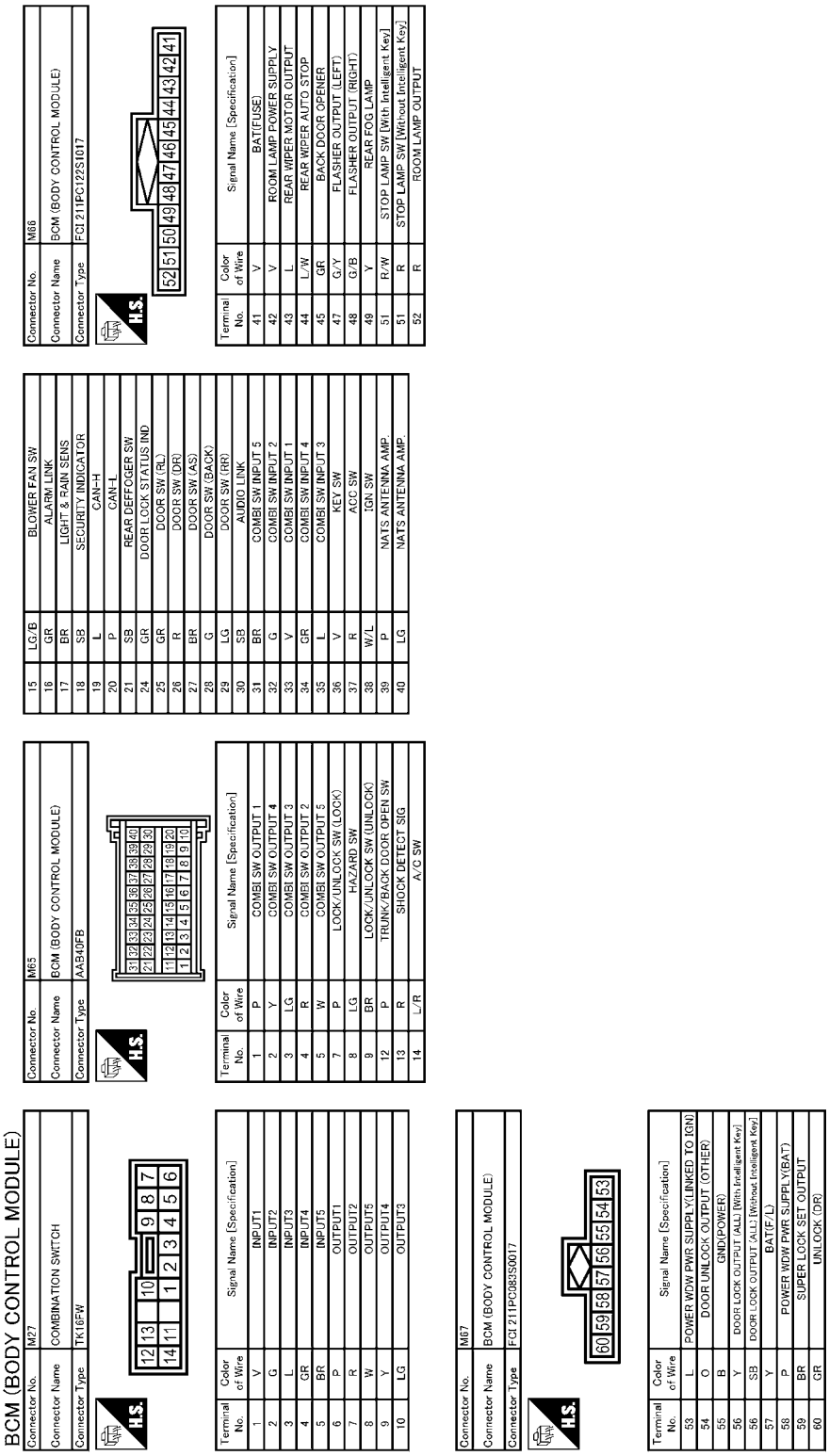


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L : LHD models
R : RHD models
IM : With integrated map lamp
GR : With glass top roof
OG : Without glass top roof
VANITY MIRROR LAMP (PASSENGER SIDE) R10
VANITY MIRROR LAMP (DRIVER SIDE) R9
PERSONAL LAMP RH R8 : GR
PERSONAL LAMP LH R7 : GR
ROOM LAMP R15 : OG
MAP LAMP R4
OFF ON DOOR
BCM (BODY CONTROL MODULE) M65 M66 M67
49
48
47
53
58
REAR FOG LAMP B90
REAR COMBINATION LAMP RH (TURN SIGNAL) B59
SIDE TURN SIGNAL LAMP RH E40
FRONT COMBINATION LAMP RH (TURN SIGNAL) E45
REAR COMBINATION LAMP LH (TURN SIGNAL) B80
SIDE TURN SIGNAL LAMP LH E23
FRONT COMBINATION LAMP LH (TURN SIGNAL) E26
REAR POWER WINDOW SWITCH LH D83 : L D113 : R
REAR POWER WINDOW SWITCH RH D103 : L D93 : R
SUNSHADE MOTOR ASSEMBLY R5 : GR
FRONT POWER WINDOW SWITCH (PASSENGER SIDE) D45 : L D65 : R
POWER WINDOW MAIN SWITCH D5 D6 : L D25 D26 : R
JCMWA0410GB



JCMWA0411GB

Fail Safe

INFOID:0000000001116330

Fail-safe index

BCM performs fail-safe control when any DTC listed below is detected.

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Display contents of CONSULT	Fail-safe	Cancellation
B2190: NATS ANTENNA AMP	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2191: DIFFERENCE OF KEY	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2192: ID DISCORD BCM-ECM	Fuel cut (ECM)	Erase DTC
B2193: CHAIN OF BCM-ECM	Fuel cut (ECM)	Erase DTC
B2194: DISCORD BCM-I-KEY	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2195: ANTI SCANNING	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2196: DONGLE NG	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC

REAR WIPER CONTROL

BCM detects a rear wiper stopping position according to a rear wiper auto stop signal.
When a rear wiper auto stop signal is in the condition listed below, BCM stops power supply to rear wiper after rear wiper is activated for five seconds.

Ignition switch	Rear wiper switch	Auto stop signal
ON	OFF	Rear wiper stop position signal cannot be input 5 seconds.
	ON	The signal does not change for 5 seconds.

NOTE:
The above operation is repeated when operating the rear wiper switch one minute after the stop of the rear wiper caused by Fail-safe.

TURN SIGNAL LAMP CONTROL

BCM detects the turn signal lamp circuit status from the terminal voltage.
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 activating the hazard warning lamp.

LIGHT & RAIN SENSOR MALFUNCTION DETECTION FUNCTION

BCM controls the following items when LIGHT & RAIN sensor has a malfunction.

Auto Light Control
Headlamp is turned ON.

Front Wiper Control
The condition just before the activation of Fail-safe is maintained until the front wiper switch is turned OFF.

DTC Inspection Priority Chart

INFOID:0000000001116331

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Priority	DTC
1	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	• B2190: NATS ANTENNA AMP • B2191: DIFFERNCE OF KEY • B2192: ID DISCORD BCM-ECM • B2193: CHAIN OF BCM-ECM • B2194: DISCORD BCM-I-KEY • B2195: ANTI SCANNING • B2196: DONGLE NG

DTC Index

INFOID:0000000001116332

NOTE:

Details of time display

- CRNT: Displays when there is a malfunction now or after returning to the normal condition until turning ignition switch OFF → ON again.
- PAST: Displays when there is a malfunction that is detected in the past and stored.
- 1 - 39: Displayed if any previous malfunction is present when current condition is normal. It increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. The counter remains at 39 even if the number of cycles exceeds it. It is counted from 1 again when turning ignition switch OFF → ON after returning to the normal condition if the malfunction is detected again.

CONSULT display	TIME		Fail-safe	Refer to
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	0	1 - 39	—	BCS-32
U1010: CONTROL UNIT (CAN)	0	1 - 39	—	BCS-33
B2190: NATS ANTENNA AMP	CRNT	PAST	×	• With Intelligent Key system SEC-33 • Without Intelligent Key system SEC-174
B2191: DIFFERENCE OF KEY	CRNT	PAST	×	• With Intelligent Key system SEC-35 • Without Intelligent Key system SEC-176
B2192: ID DISCORD BCM-ECM	CRNT	PAST	×	• With Intelligent Key system SEC-36 • Without Intelligent Key system SEC-177
B2193: CHAIN OF BCM-ECM	CRNT	PAST	×	• With Intelligent Key system SEC-38 • Without Intelligent Key system SEC-178
B2194: DISCORD BCM-I-KEY	CRNT	PAST	×	SEC-39
B2195: ANTI SCANNING	CRNT	PAST	×	• With Intelligent Key system SEC-179 • Without Intelligent Key system SEC-179
B2196: DONGLE NG	CRNT	PAST	×	• With Intelligent Key system SEC-41 • Without Intelligent Key system SEC-180

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IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

Reference Value

INFOID:0000000001099380

VALUES ON THE DIAGNOSIS TOOL

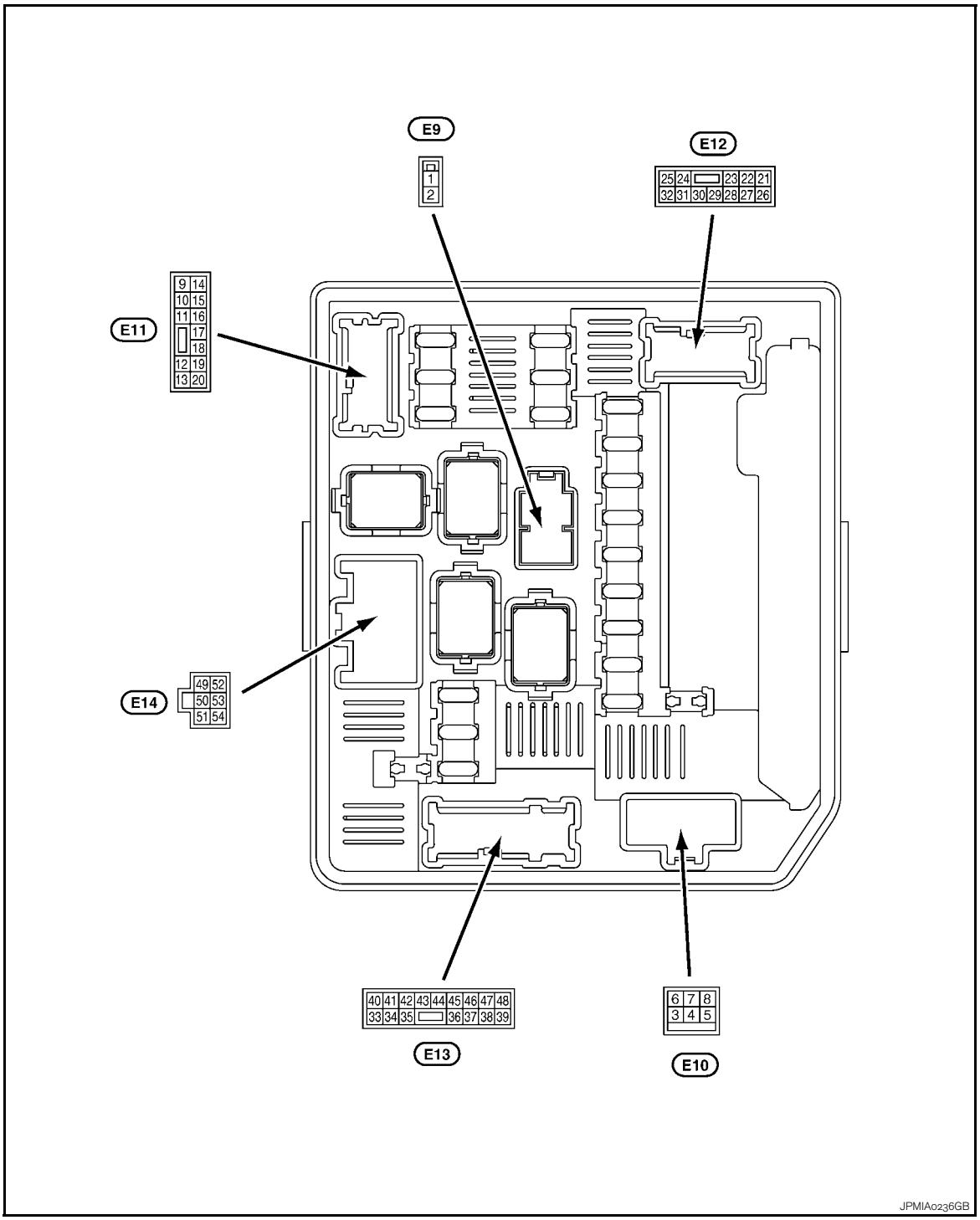
Monitor Item	Condition		Value/Status
MOTOR FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	1 - 3
AC COMP REQ	Engine running	A/C switch OFF	Off
		A/C switch ON (Compressor is operating)	On
TAIL&CLR REQ	Lighting switch OFF		Off
	Lighting switch 1ST, 2ND or AUTO (Light is illuminated)		On
HL LO REQ	Lighting switch OFF		Off
	Lighting switch 2ND or AUTO (Light is illuminated)		On
HL HI REQ	Lighting switch OFF		Off
	Lighting switch HI (Light is illuminated)		On
FR FOG REQ	Lighting switch 2ND or AUTO (Light is illuminated)	Front fog lamp switch OFF	Off
		Front fog lamp switch ON	On
HL WASHER REQ	Ignition switch ON, and low beam headlamp is ON	Front washer switch OFF	Off
		Front washer switch ON (When headlamp washer is operating)	On
FR WIP REQ	Ignition switch ON	Front wiper switch OFF	STOP
		Front wiper switch INT	1LOW
		Front wiper switch LO	Low
		Front wiper switch HI	Hi
WIP AUTO STOP	Ignition switch ON	Front wiper stop position	STOP P
		Any position other than front wiper stop position	ACT P
WIP PROT	Ignition switch ON	Front wiper operates normally	Off
		Front wiper stops at fail-safe operation	BLOCK
ST RLY REQ **NOTE:** Vehicle without Intelligent Key system indicates only “ON”, and it does not change.	When Intelligent Key is outside the vehicle, and the push switch is pushed		Off
	When Intelligent Key is inside the vehicle, and the push switch is pushed		On
IGN RLY	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
RR DEF REQ	Ignition switch ON	Rear window defogger switch OFF	Off
		Rear window defogger switch ON (Rear window defogger is operating)	On
OIL P SW	Ignition switch OFF, ACC or engine running		Open
	Ignition switch ON		Close

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Monitor Item	Condition	Value/Status
REV SW	Except selector lever R position	Off
	Selector lever R position	On
HOOD SW **NOTE:** This item is monitored only on the vehicle with the Vehicle Security (Theft Warning) system.	Close the hood	Off
	Open the hood	On
THFT HRN REQ **NOTE:** This item is monitored only on the vehicle with the Vehicle Security (Theft Warning) system.	Not operation	Off
	Horn is activated with Vehicle Security (Theft Warning) system.	On
HORN CHIRP	**NOTE:** This item is indicated, but not monitored.	Off
IGN ON SW	Ignition switch OFF or ACC	Off
	Ignition switch ON	On

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TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
		Signal name	Input/ Output		
+	–				
1 (G)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
2 (R)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
5 (B)	Ground	Ground	—	Ignition switch ON	0 V

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Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
6 (B)	Ground	Ground	—	Ignition switch ON		0 V
7 (Y)	Ground	Front wiper LO	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch LO	Battery voltage
8 (Y/R)	Ground	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch HI	Battery voltage
9 (G)	Ground	ECM relay power supply	Output	Ignition switch ON		Battery voltage
10*1 (L/R)	Ground	ECM relay power supply	Output	Ignition switch ON		Battery voltage
11*2 (O)	Ground	PTC heater 1 relay control	Output	PTC heater OFF		Battery voltage
				PTC heater ON		0 V
12*2 (G/Y)	Ground	PTC heater 2 relay control	Output	PTC heater OFF		Battery voltage
				PTC heater ON		0 V
14 (R/B)	Ground	Ignition power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
15 (Y/L)*1 (B/R)*2	Ground	ECM relay control	Input	• Engine running • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		0 - 1.0 V*1
						0.6 V*2
				Ignition switch OFF or ACC (More than a few seconds after turning ignition switch OFF)		Battery voltage
16*3 (Y/R)	Ground	Ignition relay power supply	Output	Ignition switch ON		Battery voltage
				Ignition switch OFF or ACC		0 V
19*1 (R/O)	Ground	Ignition relay power supply	Output	Ignition switch ON		Battery voltage
				Ignition switch OFF or ACC		0 V
21*4 (GR)	Ground	Hood switch	Input	Close the hood		Battery voltage
				Open the hood		0 V
22 (Y/G)	Ground	Reverse switch	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON	• Selector lever “R” (Except M/T models) • M/T control lever “R” (M/T models)	Battery voltage
					• Selector lever in any position other than “R” (Except M/T models) • M/T control lever in any position other than “R” (M/T models)	0 V
23 (Y/B)	Ground	A/C relay power supply	Output	Engine stopped		0 V
				Engine running	A/C switch OFF	0 V
					A/C switch ON (A/C compressor is operating)	Battery voltage
24 (R/Y)	Ground	Headlamp LO (RH)	Output	Lighting switch OFF		0 V
				Lighting switch 2ND		Battery voltage

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Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
25*1 (G/L)	Ground	ETC relay control	Input	Ignition switch OFF or ACC		Battery voltage
				Ignition switch ON		0 - 1.0 V
26 (O)	Ground	Front wiper auto stop	Input	Ignition switch ON	Front wiper stop position	0 V
					Any position other than front wiper stop position	Battery voltage
27 (W)	Ground	Oil pressure switch	Input	Engine stopped		0 V
				Engine running		Battery voltage
28 (L)	—	CAN-H	Input/ Output	—		—
29 (P)	—	CAN-L	Input/ Output	—		—
30*4 (L)	Ground	Horn relay control	Output	The horn is not activated		Battery voltage
				The horn is activated		0 V
31 (R)	Ground	Headlamp LO (sensor)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 2ND	Battery voltage
32*1 (R/Y)	Ground	ETC relay power supply	Output	Ignition switch ON		Battery voltage
33*1 (B/O)	Ground	Fuel pump relay control	Input	• Engine running • Ignition switch ON (For 1 second after turning ignition switch ON)		0 - 1.0 V
				Ignition switch ON (More than 1 second after turning ignition switch ON)		Battery voltage
34 (R/B)	Ground	Starter relay power supply	Input	Ignition switch ON (Except M/T models)	Selector lever “P” or “N”	0 V
					Selector lever in any position other than “P” or “N”	Battery voltage
				Ignition switch ON (M/T models)		
35 (W/L)	Ground	Ignition switch ON	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
36 (W)	Ground	Front fog lamp (RH)	Output	Lighting switch 1ST	Front fog lamp switch ON	Battery voltage
					Front fog lamp switch OFF	0 V
37 (R/W)	Ground	Parking lamp (RH)	Output	Lighting switch 1ST		Battery voltage
				Lighting switch OFF		0 V
38 (R/L)	Ground	Tail, license plate lamps and illuminations	Output	Lighting switch 1ST		Battery voltage
				Lighting switch OFF		0 V
39 (GR)	Ground	Headlamp washer relay control	Output	Ignition switch ON	When headlamp washer is operating	0 V
					When headlamp washer is not operating	Battery voltage
40*1 (BR/Y)*5 (SB)*6	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
41 (P)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage

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Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
42*1 (B/Y)	Ground	Fuel pump relay power supply	Output	• Ignition switch OFF or ACC • Approximately 1 second or more after turning the ignition switch ON		0 V
				• Approximately 1 second after turning the ignition switch ON • Engine running		Battery voltage
43 (W/B)	Ground	Front fog lamp (LH)	Output	Lighting switch 1ST	Front fog lamp switch ON	Battery voltage
					Front fog lamp switch OFF	0 V
44 (L)	Ground	Headlamp LO (LH)	Output	Lighting switch OFF		0 V
				Lighting switch 2ND		Battery voltage
45 (L/W)	Ground	Headlamp HI (RH)	Output	• Lighting switch 2ND and HI • lighting switch PASS		Battery voltage
				Lighting switch OFF		0 V
46 (G)	Ground	Headlamp HI (LH)	Output	• Lighting switch 2ND and HI • Lighting switch PASS		Battery voltage
				Lighting switch OFF		0 V
47 (R/L)	Ground	Parking lamp (LH)	Output	Lighting switch 1ST		Battery voltage
				Lighting switch OFF		0 V
48*7 (Y)	Ground	Cooling fan relay-3 control	Output	When cooling fan does HI operation		0 V
				When cooling fan does OFF or LO operation		Battery voltage
49 (B)	Ground	Rear window defogger relay power supply	Output	Ignition switch ON	Rear window defogger switch ON	Battery voltage
					Rear window defogger switch OFF	0 V
50 (B/R)	Ground	Starter relay power supply	Output	When engine is clanking		Battery voltage
				When engine is not clanking		0 V
51 (P)	Ground	Ignition switch START	Input	Ignition switch START		Battery voltage
				Ignition switch OFF, ACC or ON		0 V
52 (W)	Ground	Cooling fan relay-1 power supply	Output	When cooling fan does LO or HI operation		Battery voltage
				When cooling fan does OFF operation		0 V
53 (W/B)	Ground	Battery power supply (Cooling fan relay)	Input	Ignition switch OFF		Battery voltage
54*5 (R)	Ground	Cooling fan relay-2 power supply	Input	When cooling fan does HI operation		Battery voltage
				When cooling fan does OFF or LO operation		0 V

*1: HR engine and MR engine models

*2: K9K engine models

*3: Except M/T models only

*4: With vehicle security (theft warning) system

*5: HR engine models

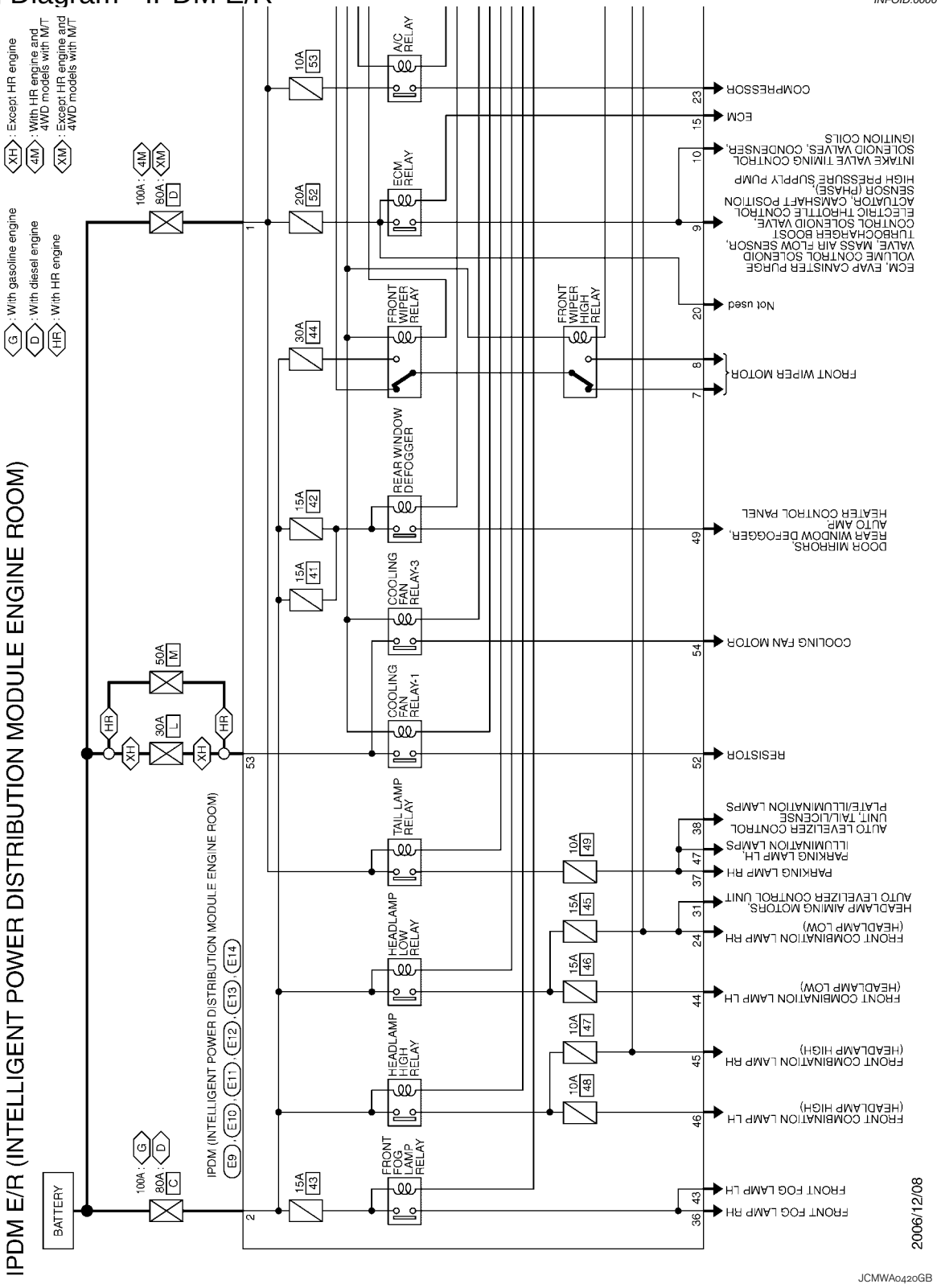
*6: MR engine models

*7: MR engine and K9K engine models

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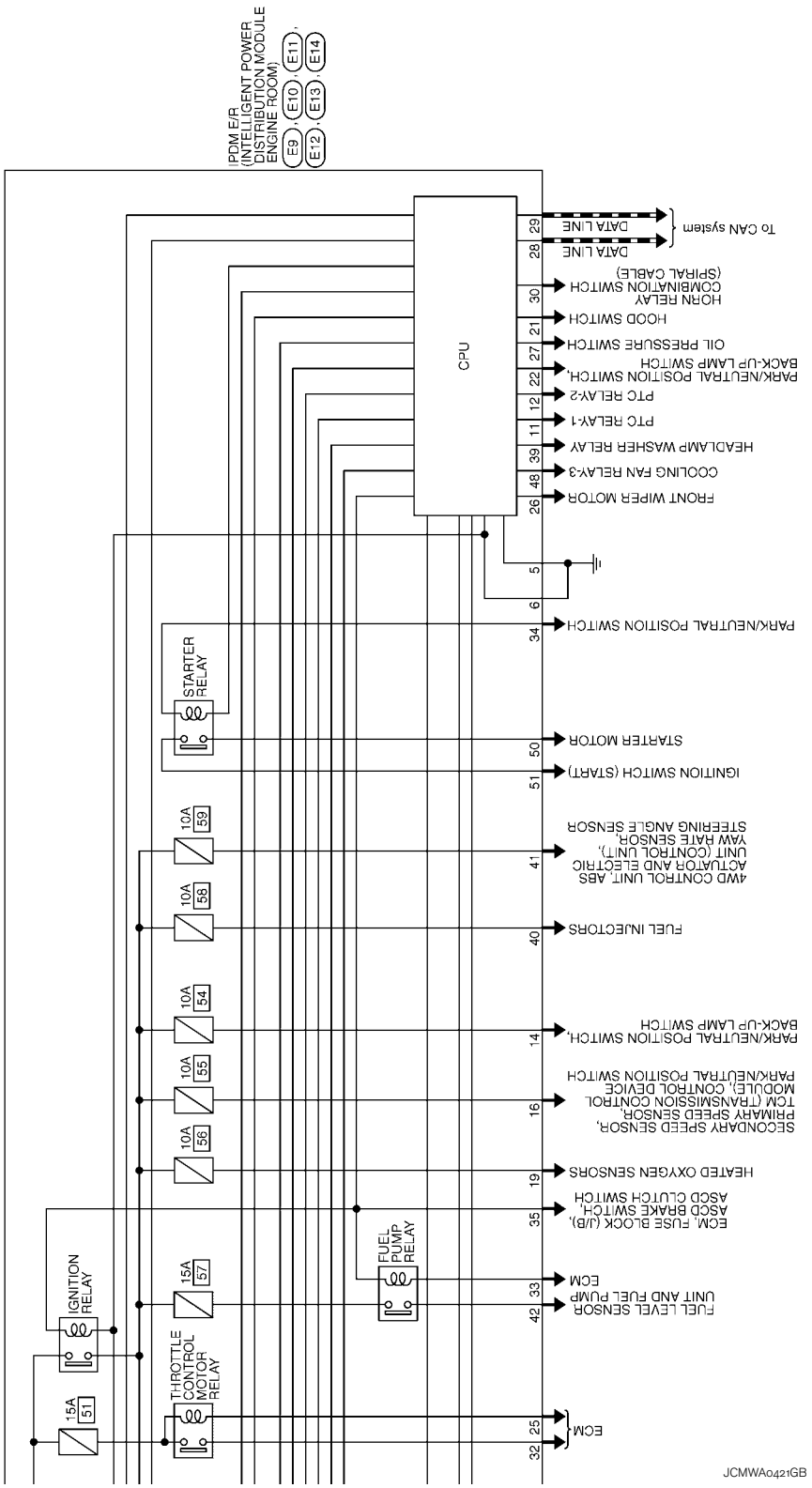
Wiring Diagram - IPDM E/R -

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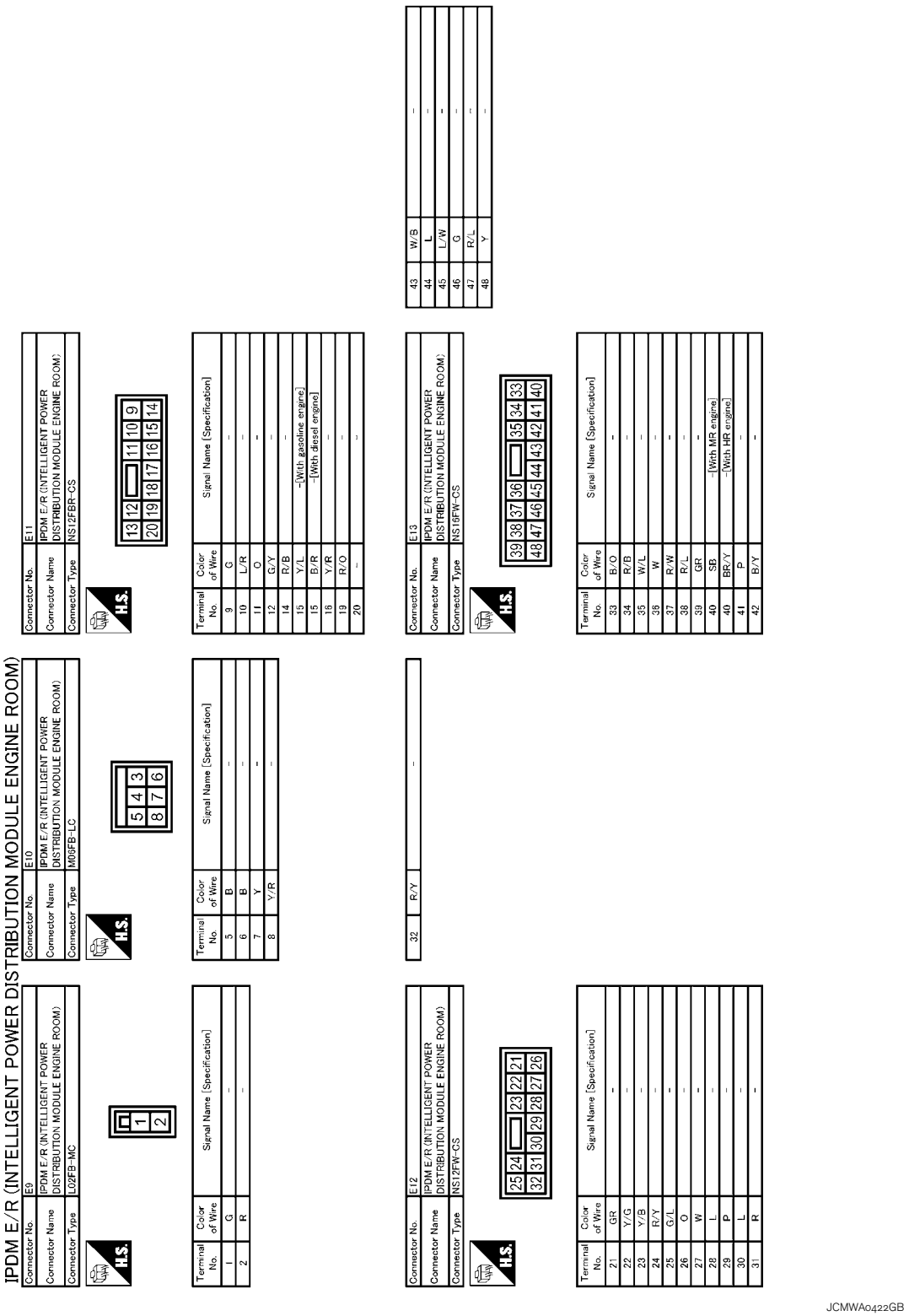


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JCMWA0422GB

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IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

Connector No.	E14
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	Y2K 7283-5591-40-F



Terminal No.	Color of Wire	Signal Name [Specification]
49	B	-
50	B/R	-
51	P	-
52	W	-
53	W/B	-
54	R	-

JCMWA0423GB

Fail Safe

INFOID:0000000001099382

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 ECM

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Control part	Fail-safe in operation
Cooling fan	• The cooling fan relay-2*1 or the cooling fan relay-3*2 turns ON when the ignition switch is turned ON • Turns off the fan motor low relay when the ignition switch is turned OFF
A/C compressor	A/C relay OFF

*1: HR engine models

*2: MR engine and K9K engine models

If no CAN communication is available with BCM

Control part	Fail-safe in operation
Headlamp	• The headlamp low relay turns ON when the ignition switch is turned ON • The headlamp low relay turns OFF when the ignition switch is turned OFF • Headlamp high relay OFF
• Parking lamps • License plate lamps • Tail lamps • Illuminations	• The tail lamp relay turns ON when the ignition switch is turned ON • The tail lamp relay turns OFF when the ignition switch is turned OFF
Front wiper	• The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed. • The front wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the INT mode and the front wiper motor is operating.
Front fog lamps	Front fog lamp relay OFF
Starter motor	Inhibit relay OFF
Rear window defogger	Rear window defogger relay OFF
Headlamp washer	Headlamp washer relay OFF
PTC heater	PTC heater relay OFF

Ignition relay malfunction detection function

- IPDM E/R monitors the voltage at the contact circuit and excitation coil circuit of the ignition relay inside it.
- IPDM E/R judges the ignition relay error if the voltage differs between the contact circuit and the excitation coil circuit.
- If the ignition relay cannot turn OFF due to contact seizure, it activates the tail lamp relay for 10 minutes to alert the user to the ignition relay malfunction when the ignition switch is turned OFF.

DTC	Ignition switch	Ignition relay	Tail lamp relay
—	ON	ON	—
—	OFF	OFF	—
B2098: IGN RLY ON	OFF	ON	ON (10 minutes)
B2099: IGN RLY OFF	ON	OFF	—

NOTE:

The tail lamp relay is turned OFF when the ignition switch is turned ON.

Front wiper control

IPDM E/R detects the front wiper stop position with the front wiper auto stop signal.
When the front wiper auto stop signal is in the conditions listed below, IPDM E/R repeats a front wiper 10 seconds operation and 20 seconds stop five times.

Ignition switch	Front wiper switch	Front wiper auto stop signal
ON	OFF	The front wiper auto stop signal (stop position) cannot be input for 10 seconds.
	ON	The front wiper auto stop signal does not change for 10 seconds.

NOTE:

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This operation status can be confirmed on the IPDM E/R “Data Monitor” that displays “BLOCK” for the item “WIP PROT” while the wiper is stopped.

DTC Index

INFOID:0000000001099383

CONSULT display	Fail-safe	Timing[NOTE]		Reference page
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	×	CRNT	PAST	PCS-14
B2098: IGN RELAY ON	×	CRNT	PAST	PCS-15
B2099: IGN RELAY OFF	—	CRNT	PAST	PCS-16
B2100: EEPROM	—	CRNT	PAST	PCS-17

NOTE:

The details of time display are as follows.

- CRNT: The malfunctions that are detected now.
- PAST: The number is indicated when it is normal at present and a malfunction was detected in the past.

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SYMPTOM DIAGNOSIS

EXTERIOR LIGHTING SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000001089312

CAUTION:
Perform the self-diagnosis with CONSULT-III 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 the front combination lamp • Front combination lamp (headlamp housing assembly) • IPDM E/R	Headlamp (HI) circuit Refer to EXL-216.
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON" Refer to EXL-315.	
Headlamp (HI) is not turned OFF.	When ignition switch is turned ON.		
	When ignition switch is turned OFF.	IPDM E/R	—
High beam indicator lamp is not turned ON. [The headlamp (HI) is turned ON.]		Combination meter	• Combination meter Data monitor "HI-BEAM IND" • BCM (HEAD LAMP) Active test "HEADLAMP"
Headlamp (LO) is not turned ON.	One side	• Fuse • Halogen bulb (LO) • Harness between IPDM E/R and the front combination lamp • Front combination lamp (headlamp housing assembly) • IPDM E/R	Headlamp (LO) circuit Refer to EXL-218.
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON" Refer to EXL-316.	
Headlamp (LO) is not turned OFF.	When ignition switch is turned ON.		
	When ignition switch is turned OFF.	IPDM E/R	—
Headlamp HI and LO are not turned ON.		• Harness between front combination lamp and the ground • Front combination lamp (headlamp housing assembly)	Headlamp ground circuit Refer to EXL-220.
Each lamps are not turned ON/OFF with the lighting switch AUTO.		• Combination switch • Harness between the combination switch and BCM • BCM	Combination switch Refer to BCS-63.
		• Light & rain sensor • Harness between the light & rain sensor and BCM • BCM	Light & rain sensor Refer to EXL-228.
Front fog lamp is not turned ON.	One side	• Front fog lamp bulb • Harness between IPDM E/R and the front fog lamp • Front fog lamp • IPDM E/R	Front fog lamp circuit Refer to EXL-221.
	Both sides	**Symptom diagnosis** "BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON" Refer to EXL-318.	
Front fog lamp is not turned ON.			

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Symptom		Possible cause	Inspection item
Front fog lamp indicator lamp is not turned ON. (Front fog lamp is turned ON.)		Combination meter	• Combination meter Data monitor "FR FOG IND" • BCM (HEAD LAMP) Active test "FR FOG LAMP"
Parking lamp is not turned ON.		• Parking lamp bulb • Harness between IPDM E/R and the front combination lamp • Front combination lamp • IPDM E/R	Parking lamp circuit Refer to EXL-223.
Tail lamp is not turned ON.		• Tail lamp bulb • Harness between IPDM E/R and the rear combination lamp • Rear combination lamp	Tail lamp circuit Refer to EXL-233.
License plate lamp is not turned ON.		• License plate lamp bulb • Harness between IPDM E/R and the license plate lamp • License plate lamp	License plate lamp circuit Refer to EXL-235.
Tail lamp and the license plate lamp are not turned ON.		• Fuse • Harness between IPDM E/R and the rear combination lamp • IPDM E/R	Tail lamp circuit Refer to EXL-233.
• Parking lamp, the tail lamp and the license plate lamp are not turned ON. • Parking lamp, the tail lamp and the license plate lamp are not turned OFF. (Each illumination is turned ON/OFF.)		**Symptom diagnosis** "PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON" Refer to EXL-317.	
Tail lamp indicator is not turned ON. (Parking/tail lamps are turned ON.)		Combination meter	• Combination meter Data monitor "LIGHT IND" • BCM (HEAD LAMP) Active test "TAIL LAMP"
Turn signal lamp does not blink.	Indicator lamp is normal. (Applicable side performs the high flasher activation.)	• Harness between BCM and each turn signal lamp • Turn signal lamp bulb	Turn signal circuit Refer to EXL-225.
	Indicator lamp is included.	• Combination switch • Harness between the combination switch and BCM • BCM	Combination switch Refer to BCS-63.
Turn signal indicator lamp does not blink. (Turn signal indicator lamp is normal.)	One side	Combination meter	—
	Both sides (Always)	• Turn signal indicator lamp signal - BCM • Combination meter	• Combination meter Data monitor "TURN IND" • BCM (FLASHER) Active test "FLASHER"
	Both sides (Only when activating hazard warning lamp with the ignition switch OFF)	• Combination meter power supply and the ground circuit • Combination meter	Combination meter Power supply and the ground circuit Refer to MWI-28.
• Hazard warning lamp does not activate. • Hazard warning lamp continues activating. (Turn signal is normal.)		• Hazard switch • Harness between the hazard switch and BCM • BCM	Hazard switch Refer to EXL-231.

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Symptom		Possible cause	Inspection item
Rear fog lamp is not turned ON.	Rear fog lamp indicator lamp is normal.	• Harness between BCM and rear fog lamp • Rear fog lamp bulb • BCM	Rear fog lamp circuit Refer to EXL-236.
	Rear fog lamp indicator lamp is included.	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-63.
Rear fog lamp indicator lamp does not turn on. (Rear fog lamp turns ON)		• Rear fog lamp status signal - BCM • Combination meter	• Combination meter Data monitor "REAR FOG IND" • BCM (HEAD LAMP) Active test "RR FOG LAMP"

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NORMAL OPERATING CONDITION

Description

INFOID:0000000001026263

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 the control difference. This is normal.

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BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON

Description

INFOID:0000000001099384

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

Diagnosis Procedure

INFOID:0000000001099385

1.COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-63, "Symptom Table".

Is the combination switch normal?

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

2.CHECK HEADLAMP (HI) REQUEST SIGNAL INPUT

CONSULT-III DATA MONITOR

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

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

Is the item status normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-64, "Exploded View".

3.HEADLAMP (HI) CIRCUIT INSPECTION

Check the headlamp (HI) circuit. Refer to EXL-216, "Component Function Check".

Is the headlamp (HI) circuit normal?

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

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BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON

Description

INFOID:0000000001099386

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

Diagnosis Procedure

INFOID:0000000001099387

1.CHECK COMBINATION SWITCH

Check the combination switch. Refer to BCS-63, "Symptom Table".

Is the combination switch normal?

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

2.CHECK HEADLAMP (LO) REQUEST SIGNAL INPUT

CONSULT-III DATA MONITOR

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

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

Is the item status normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-64, "Exploded View".

3.HEADLAMP (LO) CIRCUIT INSPECTION

Check the headlamp (LO) circuit. Refer to EXL-218, "Component Function Check".

Is the headlamp (LO) circuit normal?

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

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PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON

Description

INFOID:0000000001099388

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

Diagnosis Procedure

INFOID:0000000001099389

1.CHECK FUSE

Check that the following fuse is fusing.

Unit	Location	Fuse No.	Capacity
• Parking lamp • Tail lamp • License plate lamp	IPDM E/R	#49	10 A

Is the fuse fusing?

YES >> Repair the applicable circuit. And then replace the fuse.
NO >> GO TO 2.

2.COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-63, "Symptom Table".

Is the combination switch normal?

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

3.CHECK TAIL LAMP RELAY REQUEST SIGNAL INPUT

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

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

Is the item status normal?

YES >> GO TO 4.
NO >> Replace BCM. Refer to BCS-64, "Exploded View".

4.TAIL LAMP CIRCUIT INSPECTION

Check the tail lamp circuit. Refer to EXL-233, "Component Function Check".

Is the tail lamp circuit normal?

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

BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

Description

INFOID:0000000001099390

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

Diagnosis Procedure

INFOID:0000000001099391

1.CHECK FUSE

Check that the following fuse is fusing.

Unit	Location	Fuse No.	Capacity
Front fog lamp	IPDM E/R	#43	15 A

Is the fuse fusing?

YES >> Repair the applicable circuit. And then replace the fuse.
NO >> GO TO 2.

2.COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-63, "Symptom Table".

Is the combination switch normal?

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

3.CHECK FRONT FOG LAMP REQUEST SIGNAL INPUT

CONSULT-III DATA MONITOR

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

Monitor item	Condition		Monitor status
FR FOG REQ	Front fog lamp switch (With lighting switch 1ST)	ON	ON
		OFF	OFF

Is the item status normal?

YES >> GO TO 4.
NO >> Replace BCM. Refer to BCS-64, "Exploded View".

4.FRONT FOG LAMP CIRCUIT INSPECTION

Check the front fog lamp circuit. Refer to EXL-221, "Component Function Check".

Is the front fog lamp circuit normal?

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

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PRECAUTION

PRECAUTIONS

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

INFOID:0000000001078107

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 SRC and SB section of this Service Manual.

WARNING:

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

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ON-VEHICLE MAINTENANCE

HEADLAMP AIMING ADJUSTMENT

Description

INFOID:0000000001026278

PREPARATION BEFORE ADJUSTING

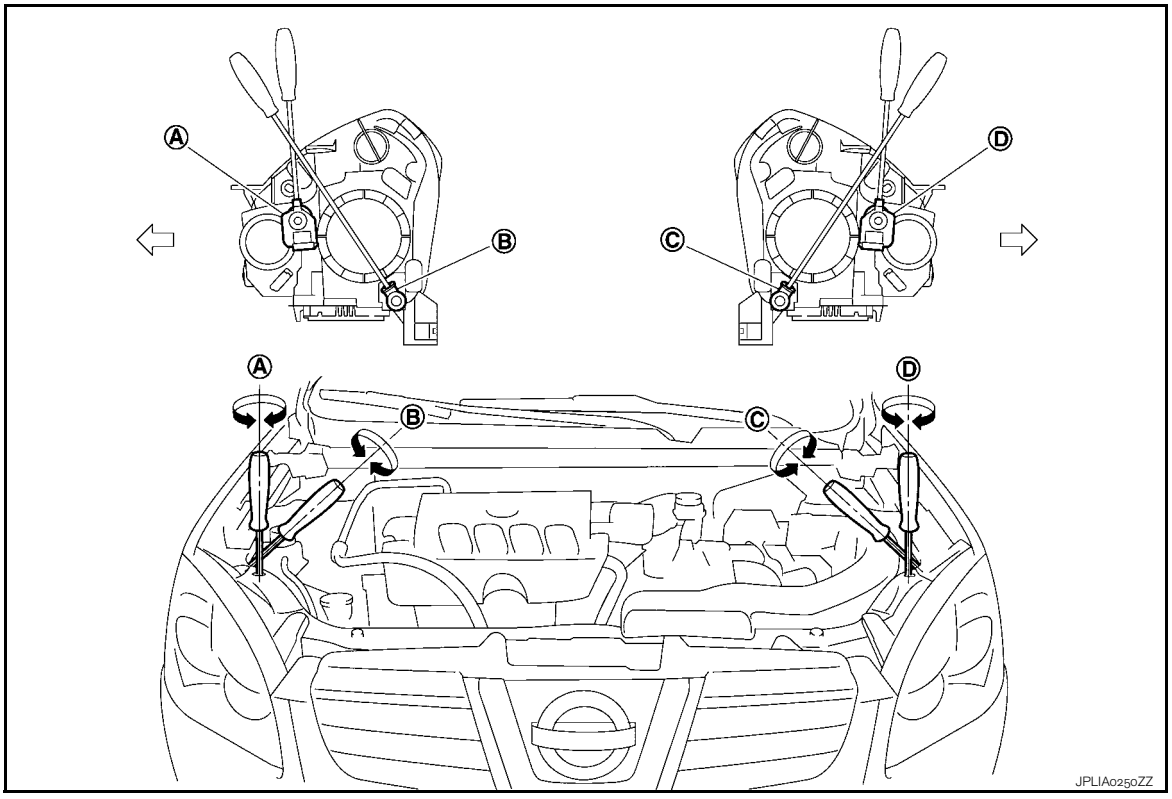
NOTE:

- 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.
- Headlamp aiming switch sets to “0”.

AIMING ADJUSTMENT SCREW



A. Headlamp RH (UP/DOWN) adjustment screw
B. Headlamp RH (INSIDE/OUTSIDE) adjustment screw
C. Headlamp LH (INSIDE/OUTSIDE) adjustment screw
D. Headlamp LH (UP/DOWN) adjustment screw
⇦: Vehicle center

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Adjustment screw		Screw driver rotation	Facing direction
A	Headlamp RH (UP/DOWN)	Clockwise	UP
		Counterclockwise	DOWN
B	Headlamp RH (INSIDE/OUTSIDE)	Clockwise	INSIDE
		Counterclockwise	OUTSIDE
C	Headlamp LH (INSIDE/OUTSIDE)	Clockwise	INSIDE
		Counterclockwise	OUTSIDE
D	Headlamp LH (UP/DOWN)	Clockwise	UP
		Counterclockwise	DOWN

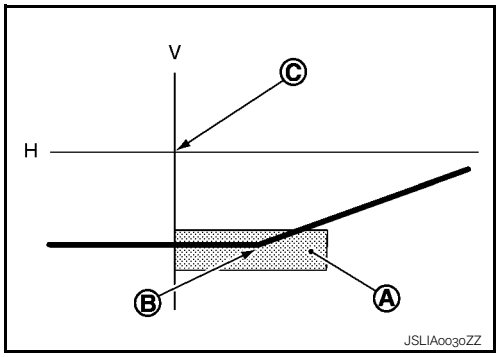
LHD

LHD : Aiming Adjustment Procedure

INFOID:0000000001102325

1. Place the screen.
   NOTE:
   - Stop the vehicle at the perpendicular angle to the wall.
   - Set the screen perpendicularly to the ground.
2. Face the vehicle squarely toward the screen and make the distance between the headlamp center and the screen 10 m (32.8 ft).
3. Start the engine and illuminate the headlamp (LO).
   NOTE:
   Block light from the headlamp that is not being adjusted with a thick fabric or another object, so that it does not reach the adjustment screen.
   CAUTION:
   Never cover lens surface with tape, etc. because it is made from plastic.
4. Use the aiming adjustment screw to adjust the elbow point projected by the low beams on the screen, so that it is within the aiming adjustment area.

Low beam distribution on the screen

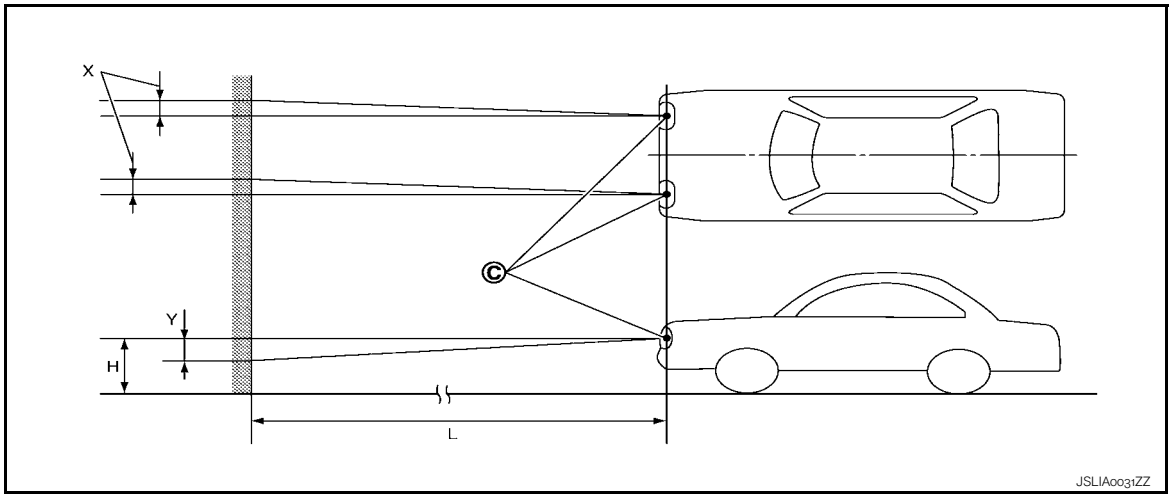


A. Aiming adjustment area
B. Elbow point
C. Headlamp center
H. Horizontal center line of headlamp
V. Vertical center line of headlamp

Unit: mm (in)

Aiming adjustment area	
Vertical direction (Y) (Lower side from headlamp center height)	Lateral direction (X) (Right side from headlamp centerline)
100 – 124 (3.94 – 4.88)	Within 120 (4.72)

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C. Vertical center line of headlamp
H. Horizontal center line of headlamp
L. Distance from headlamp center to screen
X. Aiming adjustment area (lateral)
Y. Aiming adjustment area (Vertical)

Distance from headlamp center to screen (L) : 10 m (32.8 ft)

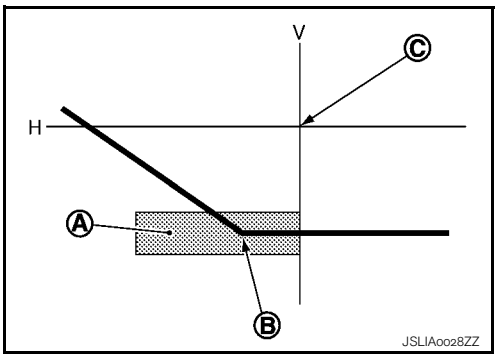
RHD

RHD : Aiming Adjustment Procedure

INFOID:0000000001102326

1. Place the screen.
   NOTE:
   • Stop the vehicle at the perpendicular angle to the wall.
   • Set the screen perpendicularly to the ground.
2. Face the vehicle squarely toward the screen and make the distance between the headlamp center and the screen 10 m (32.8 ft).
3. Start the engine and illuminate the headlamp (LO).
   NOTE:
   Block light from the headlamp that is not being adjusted with a thick fabric or another object, so that it does not reach the adjustment screen.
   CAUTION:
   Never cover lens surface with tape, etc. because it is made from plastic.
4. Use the aiming adjustment screw to adjust the elbow point projected by the low beams on the screen, so that it is within the aiming adjustment area.

Low beam distribution on the screen



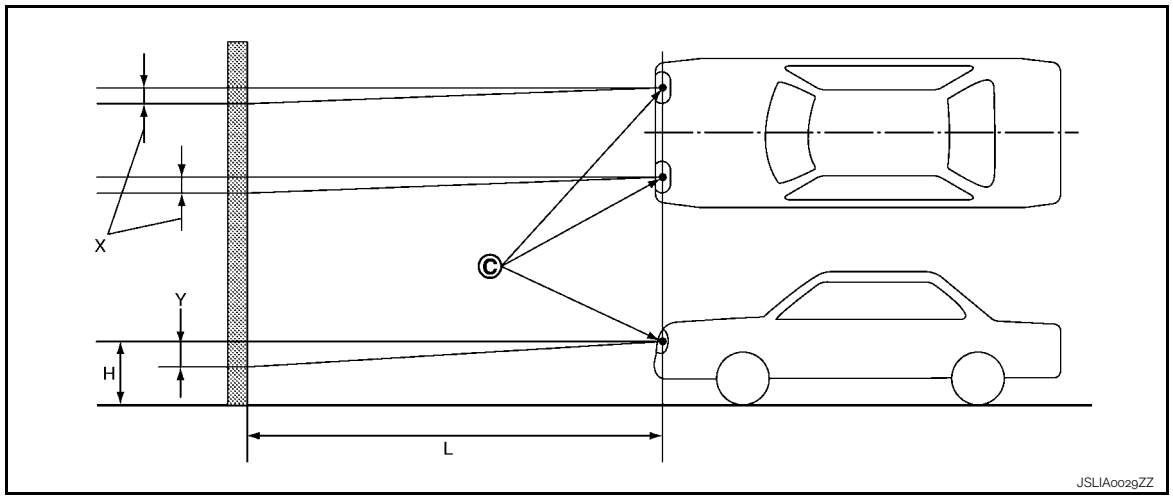
A. Aiming adjustment area
B. Elbow point
C. Headlamp center

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H. Horizontal center line of headlamp
V. Vertical center line of headlamp

Unit: mm (in)

Aiming adjustment area	
Vertical direction (Y) (Lower side from headlamp center height)	Lateral direction (X) (Left side from headlamp centerline)
100 – 124 (3.94 – 4.88)	Within 120 (4.72)



C. Vertical center line of headlamp
H. Horizontal center line of headlamp
L. Distance from headlamp center to screen
X. Aiming adjustment area (lateral)
Y. Aiming adjustment area (Vertical)

Distance from headlamp center to screen (L) : 10 m (32.8 ft)

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FRONT FOG LAMP AIMING ADJUSTMENT

Description

INFOID:0000000001102323

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.

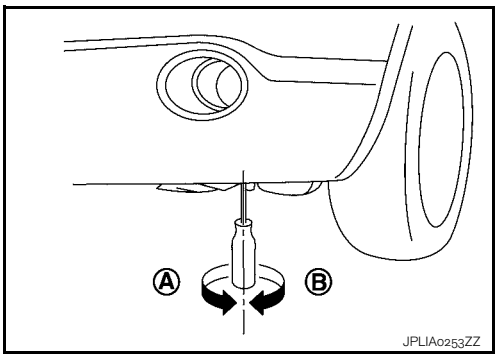
- Adjust the tire pressure to the specification.
- Fill with fuel, engine coolant and each oil.
- Maintain the unloaded vehicle condition. (Remove luggage from the passenger compartment and the luggage room.)
  NOTE:
  Do not remove the temporary tire, jack and on-vehicle tool.
- Wipe out dirt on the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

AIMING ADJUSTMENT SCREW

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

A: UP

B: DOWN



Aiming Adjustment Procedure

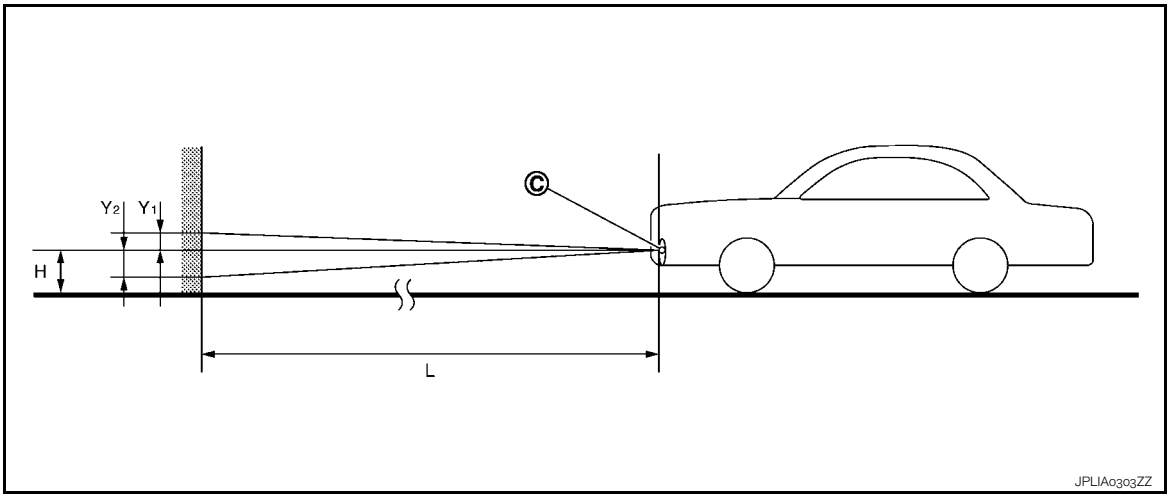
INFOID:0000000001102324

1. Place the screen.
   NOTE:
   - Stop the vehicle at the perpendicular angle to the wall.
   - Set the screen perpendicularly to the ground.
2. Face the vehicle squarely toward the screen and make the distance between the front fog lamp center and the screen 10 m (32.8 ft).
3. Start the engine and illuminate the front fog lamp.
   NOTE:
   Block light from the front fog lamp that is not being adjusted with a thick fabric or another object, so that it does not reach the adjustment screen.
   CAUTION:
   Never cover lens surface with tape, etc. because it is made from plastic.
4. Use the aiming adjustment screw to adjust the elbow point projected by the front fog lights on the screen, so that it is within the aiming adjustment area.

Unit: mm (in)

Aiming adjustment area	
Vertical direction (Y_1) (Upper side from headlamp center height)	Vertical direction (Y_2) (Lower side from headlamp center height)
100 (3.94)	200 (7.87)

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C. Vertical center line of front fog lamp
H. Horizontal center line of front fog lamp
L. Distance from front fog lamp center to screen
Y1. Aiming adjustment area (Upper)
Y2. Aiming adjustment area (Lower)

Distance from headlamp center to screen (L) : 10 m (32.8 ft)

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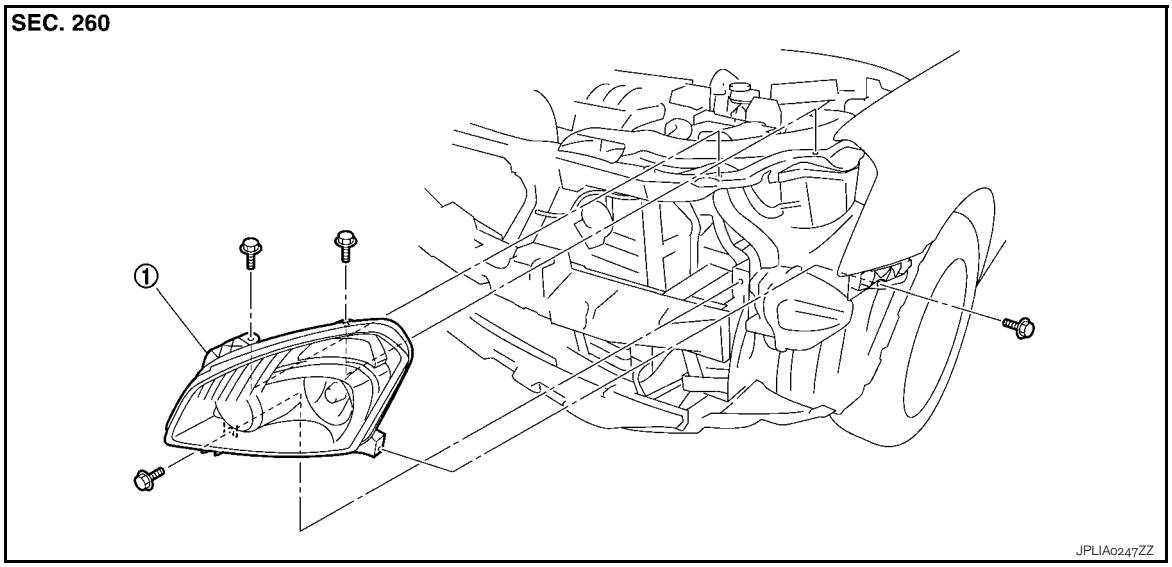
ON-VEHICLE REPAIR

FRONT COMBINATION LAMP

Exploded View

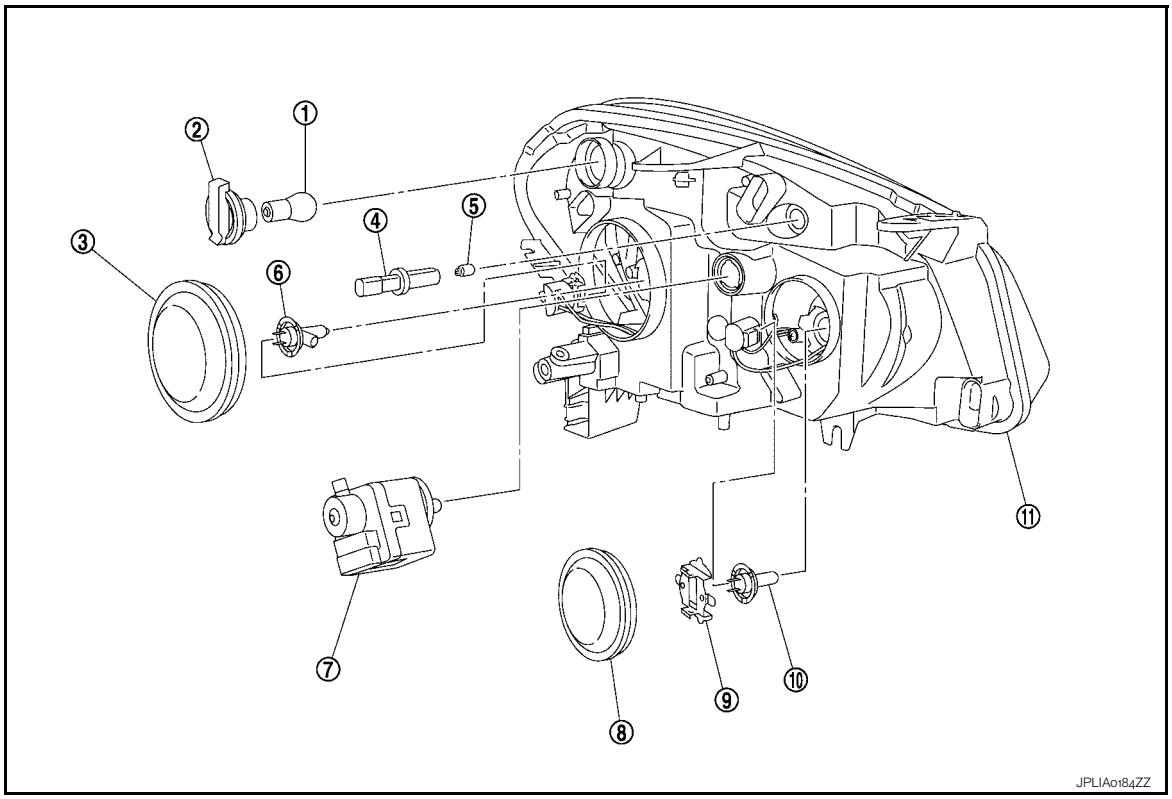
INFOID:0000000001026274

REMOVAL



1. Front combination lamp

DISASSEMBLY



1. Front turn signal lamp bulb
2. Front turn signal lamp bulb socket
3. Resin cap
4. Parking lamp bulb socket
5. Parking lamp bulb
6. Halogen bulb (LO)

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7. Aiming motor
8. Back cover
9. Retaining plate
10. Halogen bulb (HI)
11. Headlamp housing assembly

Removal and Installation

INFOID:0000000001026275

REMOVAL

CAUTION:

Disconnect the battery negative terminal or the fuse.

1. Remove front bumper fascia. Refer to EXT-11, "Exploded View".
2. Remove the headlamp mounting bolts.
3. Pull out the headlamp assembly forward the vehicle.
4. Disconnect the connector before removing the headlamp assembly.

INSTALLATION

Install in the reverse order of removal.

NOTE:

After installation, perform aiming adjustment. Refer to EXL-320, "Description".

Replacement

INFOID:0000000001026276

CAUTION:

- **Disconnect the battery negative terminal or the fuse.**
- **After installing the bulb, install the resin cap and the bulb socket securely for watertightness.**

HEADLAMP BULB (LO)

1. Remove the air duct (when replace a left). Keep a service area.
2. Rotate the resin cap counterclockwise and unlock it.
3. Disconnect the bulb socket.
4. Remove the retaining spring lock. Remove the bulb from the headlamp.

HEADLAMP BULB (HI)

1. Remove the air duct (when replace a left). Keep a service area.
2. Rotate the back cover counterclockwise and unlock it.
3. Rotate the retaining plate counterclockwise and unlock it.
4. Remove the bulb from the headlamp.

PARKING LAMP BULB

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

FRONT TURN SIGNAL LAMP BULB

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

Disassembly and Assembly

INFOID:0000000001026277

DISASSEMBLY

1. Rotate the resin cap counterclockwise and unlock it.
2. Rotate the terminal which connect to a socket.
3. Rotate the halogen bulb (LO) socket.
4. Remove the retaining spring lock. Remove the halogen bulb (LO).
5. Rotate the back cover. Rotate the halogen bulb (HI) socket.
6. Remove the retaining plate counterclockwise and unlock it. Remove halogen bulb (HI).
7. Rotate the parking lamp bulb socket clockwise and unlock it.
8. Remove the bulb from the parking lamp bulb socket.
9. Rotate the front turn signal lamp bulb socket counterclockwise and unlock it.

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10. Remove the bulb from the front turn signal lamp bulb socket.

ASSEMBLY

Assemble in the reverse order of disassembly.

CAUTION:

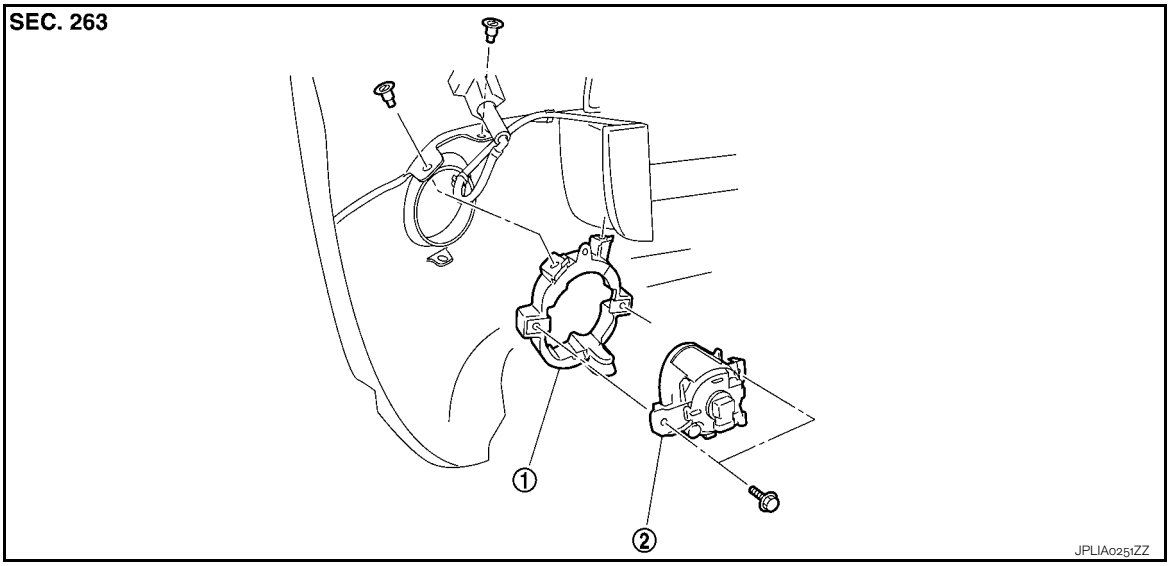
- **After installing the bulb, install the resin cap and the bulb socket securely for watertightness.**

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FRONT FOG LAMP

Exploded View

INFOID:0000000001099392



1. Front fog lamp bracket
2. Front fog lamp

Removal and Installation

INFOID:0000000001099393

REMOVAL

1. Remove the inner fender protector. Keep a service area. Refer to EXT-21, "Exploded View".
2. Remove the front fog lamp connector.
3. Remove the screw. Remove the front fog lamp.
4. Remove the clip. Remove the front fog lamp bracket.

INSTALLATION

Installation is the reverse order of removal.

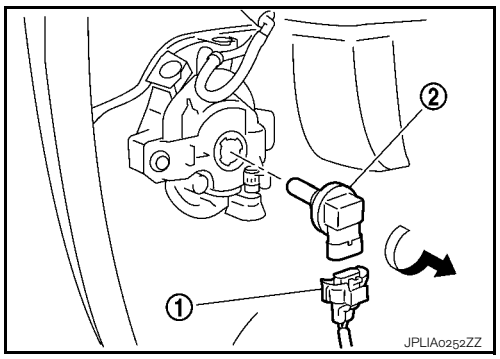
Replacement

INFOID:0000000001099394

CAUTION:

Disconnect the battery negative terminal or the fuse.

1. Remove the fender protector. Keep the service area.
2. Remove the front fog lamp bulb connector (1).
3. Rotate the bulb (2) counterclockwise and unlock it.



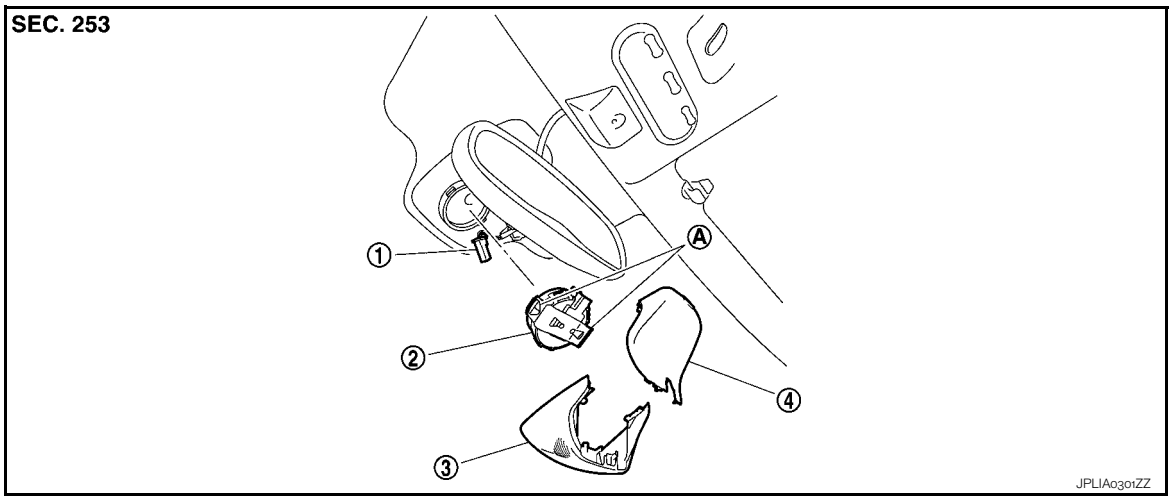
LIGHT & RAIN SENSOR

Exploded View

INFOID:0000000001099396

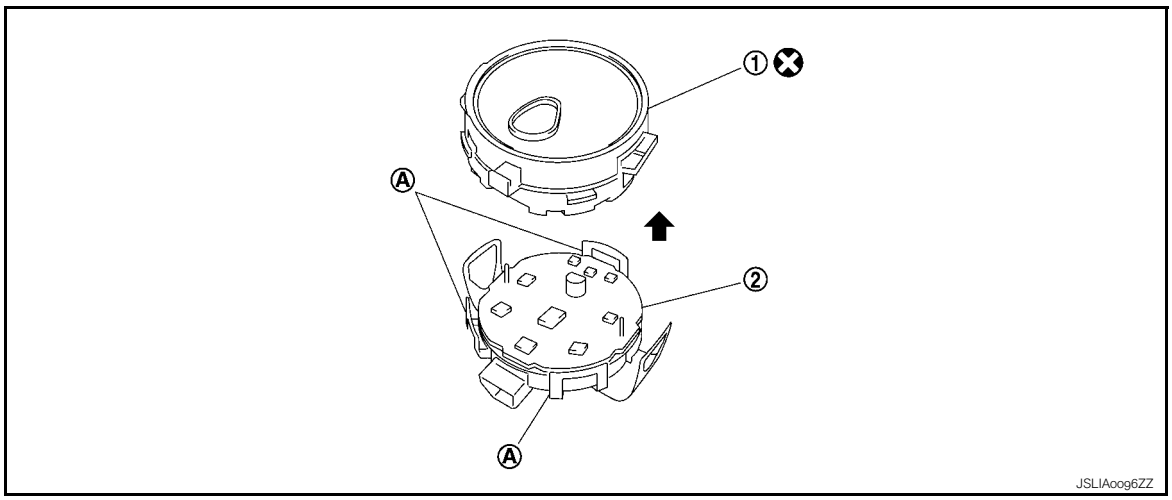
CAUTION:
- **When the light & rain sensor is removed from windshield, gel/adhesive part of housing should not be re-used.**
- **When re-using the light & rain sensor (i.e. after windshield replacement), replace the light & rain sensor housing.**

REMOVAL



1. Light & rain sensor connector
2. Light & rain senor
3. Inside mirror cover (lower)
4. Inside mirror cover (upper)
A. Metal spring clip

DISASSEMBLY



1. Light & rain senor housing
2. Light & rain senor
A. Pawl

Refer to GI-4, "Components" for symbols not described above.

CAUTION:
Never touch the electronic circuit board.

Removal and Installation

INFOID:0000000001099397

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CAUTION:
- **When the light & rain sensor is removed from windshield, gel/adhesive part of housing should not be re-used.**
- **When re-using the light & rain sensor (i.e. after windshield replacement), replace the light & rain sensor housing.**

REMOVAL

1. Remove the inside mirror cover (upper and lower). Refer to MIR-37, "Exploded View".
2. Disengage the both sides of metal spring clips, and remove the light & rain sensor from the windshield.
3. Disconnect light & rain sensor connector.

NOTE:
When replacing the light & rain sensor housing;
Disengage the pawls, and remove the light & rain sensor housing from the light & rain sensor.

CAUTION:
Never touch the electronic circuit board.

INSTALLATION

Install in the reverse order of removal.

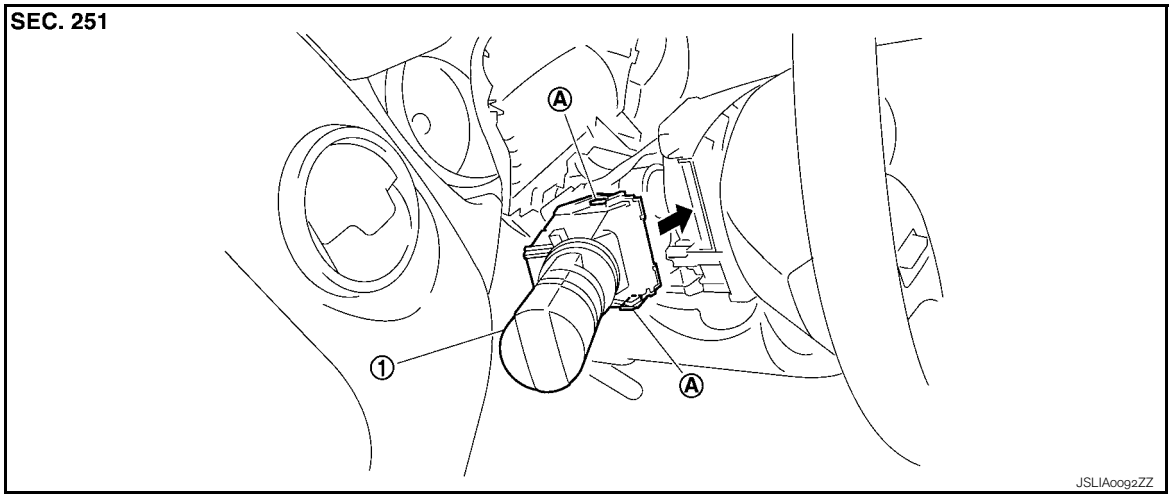
CAUTION:
- **Surface of windshield should be cleaned.**
- **Never touch gel/adhesive of new part.**

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LIGHTING & TURN SIGNAL SWITCH

Exploded View

INFOID:0000000001099398



1. Light & turn signal switch
A. Pawl

Removal and Installation

INFOID:0000000001099399

REMOVAL

1. Remove steering column cover. Refer to IP-11, "Exploded View".
2. While pressing pawls, pull the light & turn signal switch. And disconnect from the switch base.

INSTALLATION

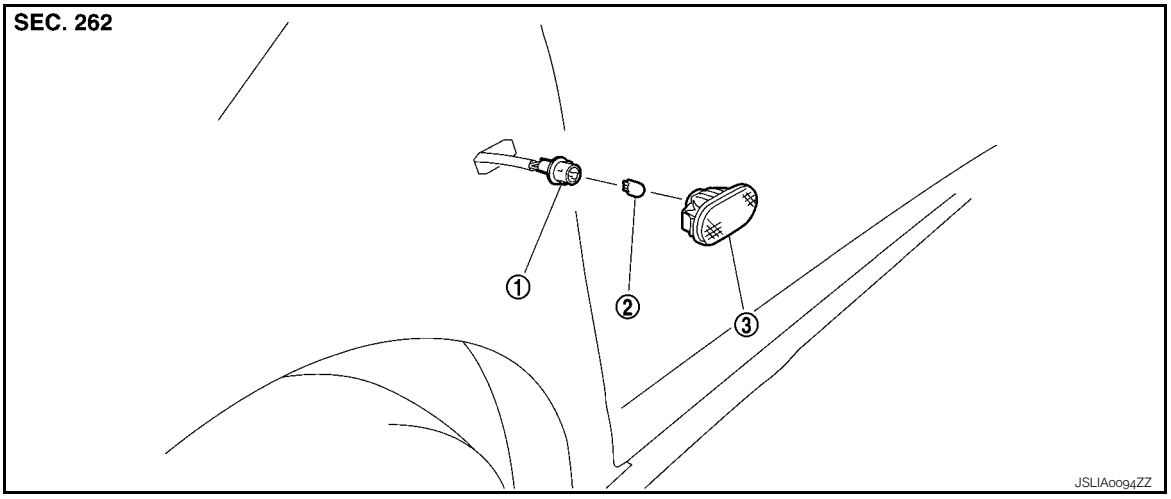
Installation is the reverse order of removal.

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SIDE TURN SIGNAL LAMP

Exploded View

INFOID:0000000001099400



1. Side turn signal lamp bulb socket
2. Side turn signal lamp bulb
3. Side turn signal lamp housing

Removal and Installation

INFOID:0000000001099401

CAUTION:
Disconnect battery negative terminal or remove the fuse.

REMOVAL

1. Insert a spatula or the similar tool under the side turn signal lamp. While pushing the pawl of the lamp, pull off the lamp from the vehicle.
2. Disconnect side turn signal lamp connector.
   NOTE:
   Support side turn signal lamp harness with tape so that it won't fall into the front fender.

INSTALLATION

Install in the reverse order of removal.

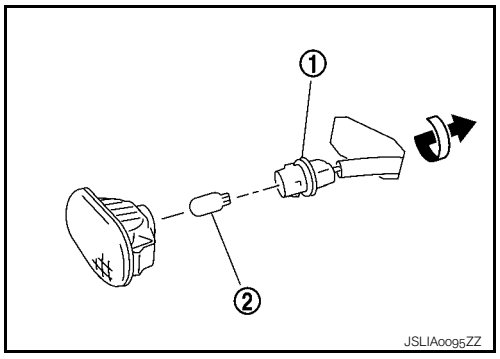
Replacement

INFOID:0000000001099402

CAUTION:
Disconnect battery negative terminal or remove the fuse.

SIDE TURN SIGNAL LAMP BULB

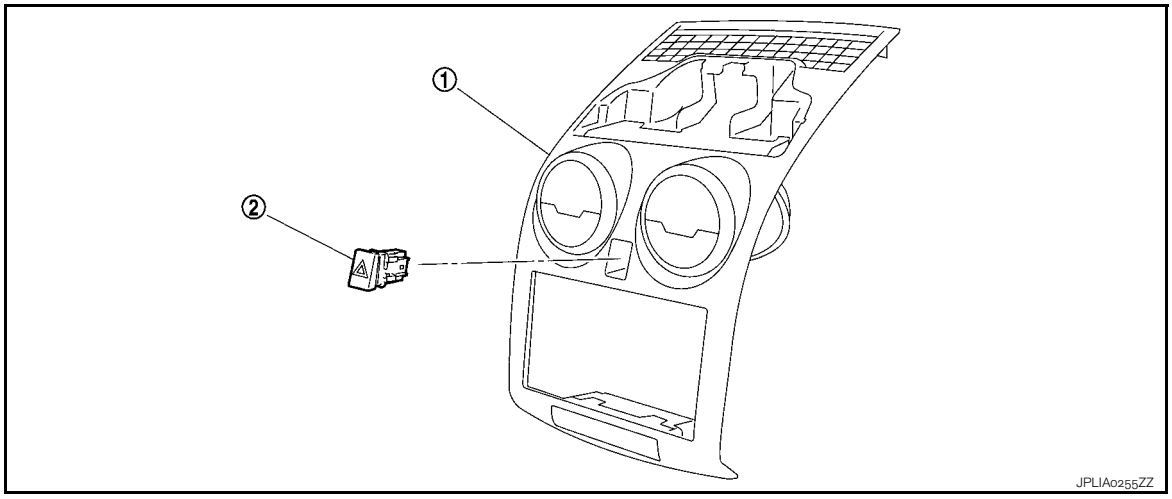
1. Remove the side turn signal lamp.
2. Rotate the bulb socket (1) counterclockwise and unlock it.
   NOTE:
   Support the vehicle-side harness of the side turn signal lamp with tape so that it does not drop inside the front fender.
3. Remove the bulb (2) from the bulb socket.



HAZARD SWITCH

Exploded View

INFOID:0000000001099403



1. Cluster lid C
2. Hazard switch

Removal and Installation

INFOID:0000000001099404

REMOVAL

1. Remove the cluster lid C. Refer to IP-11, "Exploded View".
2. Widen the pawl. Remove hazard switch.

INSTALLATION

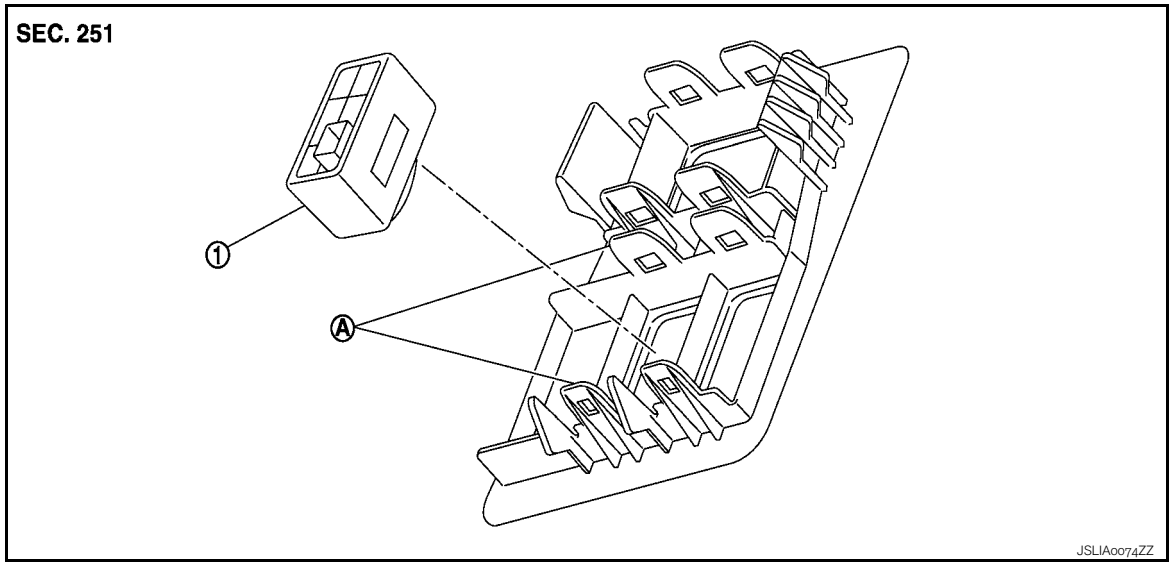
Install in the reverse order of removal.

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HEADLAMP AIMING SWITCH

Exploded View

INFOID:0000000001026294



1. Headlamp aiming switch
A. Pawls

Removal and Installation

INFOID:0000000001026295

Removal

1. Remove the switch holder. Refer to IP-11, "Exploded View".
2. Widen the pawl. Remove headlamp aiming switch.

Installation

Install in the reverse order of removal.

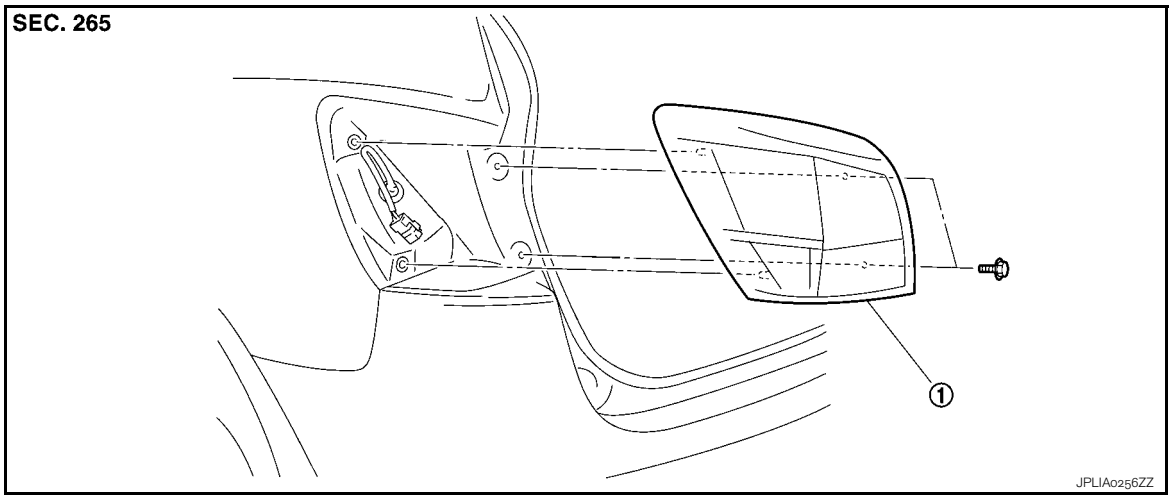
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REAR COMBINATION LAMP

Exploded View

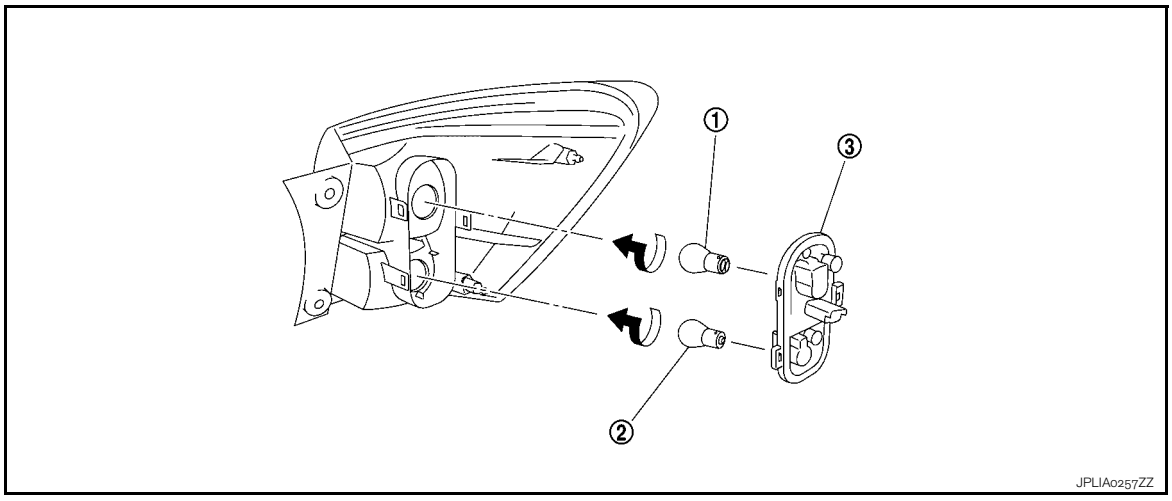
INFOID:0000000001099405

REMOVAL



1. Rear combination lamp

DISASSEMBLY



1. Tail lamp bulb
2. Rear turn signal lamp bulb
3. Bulb cover

Removal and Installation

INFOID:0000000001099406

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

1. Remove rear combination lamp mounting bolts.
2. Pull the rear combination lamp toward rear of the vehicle. Remove the rear combination lamp.
3. Disconnect rear combination lamp connector.

INSTALLATION

Install in the reverse order of removal.

Replacement

INFOID:0000000001099407

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CAUTION:
Disconnect the battery negative terminal or the fuse.

TAIL LAMP BULB

1. Remove the rear combination lamp.
2. Remove the bulb cover.
3. Turn the tail lamp bulb counterclockwise, and remove it.

REAR TURN SIGNAL LAMP BULB

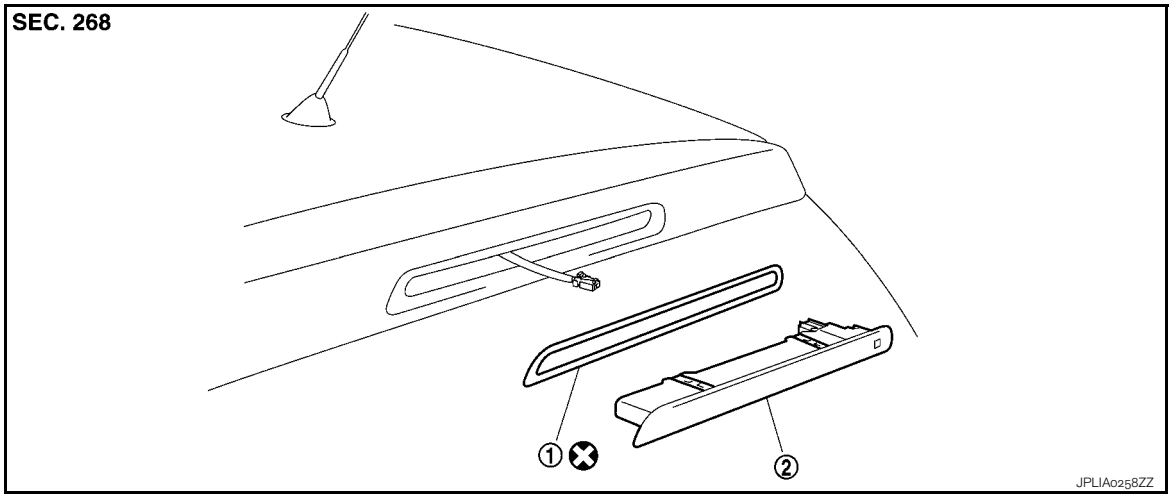
1. Remove the rear combination lamp.
2. Remove the bulb cover.
3. Turn the rear turn signal lamp bulb counterclockwise, and remove it.

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HIGH-MOUNTED STOP LAMP

Exploded View

INFOID:0000000001099408



1. Seal packing
2. High-mounted stop lamp

Refer to GI-4, "Components" for symbols not described above.

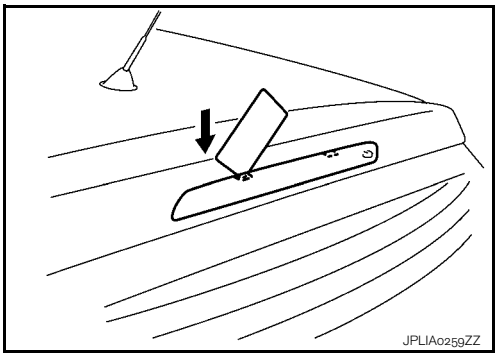
Removal and Installation

INFOID:0000000001099409

CAUTION:
Disconnect battery negative terminal or remove the fuse.

REMOVAL

1. Insert a cards upper the high-mounted stop lamp. While pushing the metal clip of the lamp, pull off the lamp from the vehicle.
2. Disconnect the high-mounted stop lamp connector.
3. Remove the rear washer tube.



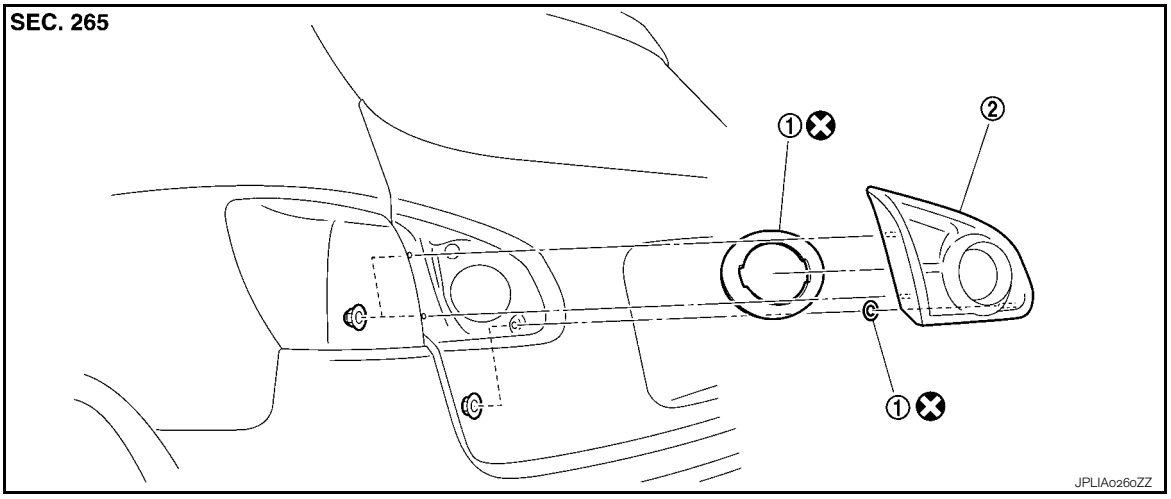
INSTALLATION
Install in the reverse order of removal.

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BACK-UP LAMP

Exploded View

INFOID:0000000001099410



1. Seal packing
2. Back-up lamp

Refer to GI-4, "Components" for symbols not described above.

Removal and Installation

INFOID:0000000001099411

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

1. Remove back door trim finisher lower. Refer to INT-26, "Exploded View".
2. Disconnect back-up lamp connector.
3. Remove back-up lamp mounting nuts. And then remove back-up lamp.

INSTALLATION

Install in the reverse order of removal.

CAUTION:
Seal packing cannot be reused.

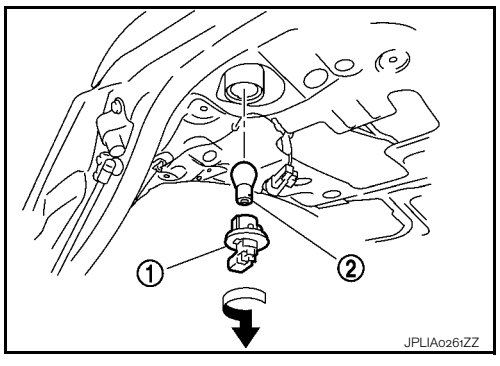
Replacement

INFOID:0000000001099412

CAUTION:
Disconnect the battery negative terminal or the fuse.

BACK-UP LAMP BULB

1. Remove back door trim finisher lower. Refer to INT-26, "Exploded View".
2. Disconnect the back-up lamp connector.
3. Turn the bulb socket (1) counterclockwise and unlock it.
4. Remove the bulb (2) from the socket.

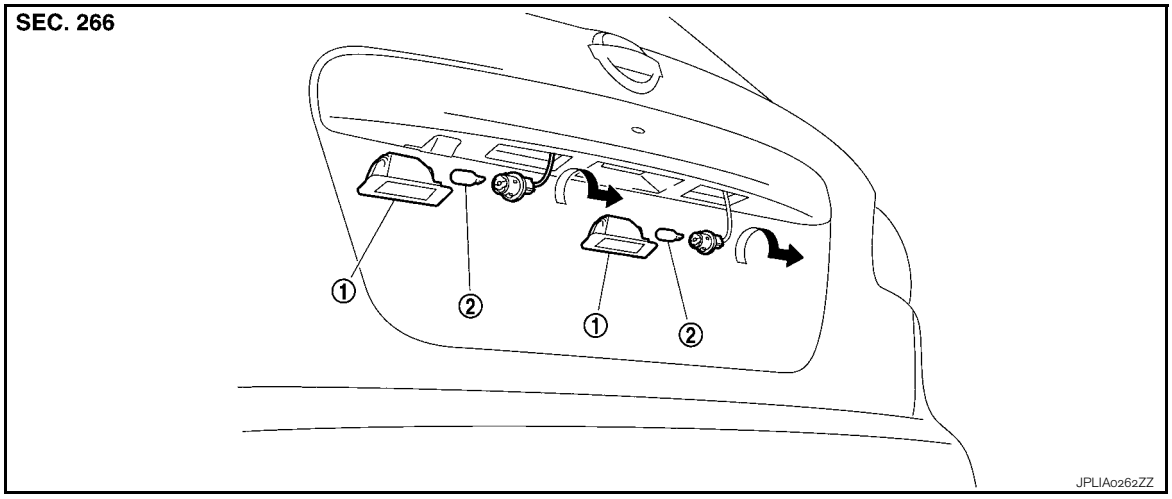


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LICENSE PLATE LAMP

Exploded View

INFOID:0000000001099413



1. License plate lamp housing
2. License plate lamp bulb

Removal and Installation

INFOID:0000000001099414

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

1. While pressing the license plate lamp to direction right side, pull it to direction outside and then remove it.
2. Disconnect the connector.

INSTALLATION

Install in the reverse order of removal.

Replacement

INFOID:0000000001099415

CAUTION:
Disconnect the battery negative terminal or the fuse.

LICENSE PLATE LAMP BULB

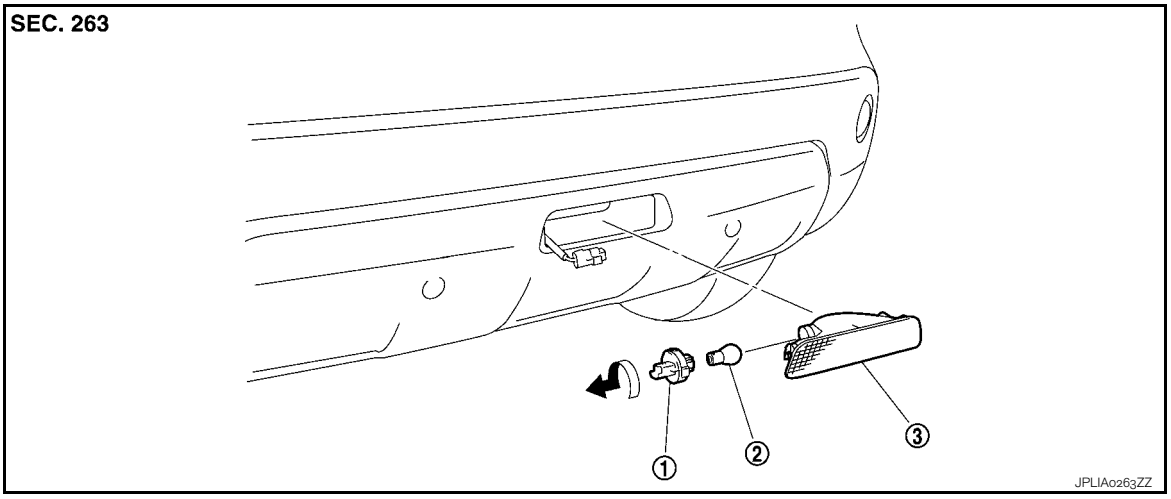
1. Remove license plate lamp.
2. Turn the bulb socket counterclockwise and unlock it.
3. Remove the bulb from the socket.

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REAR FOG LAMP

Exploded View

INFOID:0000000001099416



1. Rear fog lamp bulb socket
2. Rear fog lamp bulb
3. Rear fog lamp housing

Removal and Installation

INFOID:0000000001099417

CAUTION:
Disconnect battery negative terminal or remove the fuse.

REMOVAL

1. Insert any appropriate tool into the gap between the rear fog lamp housing. And pull off the rear fog lamp from the vehicle.
2. Disconnect rear fog lamp connector.

INSTALLATION

Installation is the reverse order of removal.

Replacement

INFOID:0000000001099418

CAUTION:
Disconnect battery negative terminal or remove the fuse.

REAR FOG LAMP BULB

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

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SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Bulb Specifications

INFOID:0000000001026312

Item		Type	Wattage (W)
Front combination lamp	Headlamp (LO)	H7	55
	Headlamp (HI)	H7	55
	Front turn signal lamp	WY21W (Amber)	21
	Parking lamp	W5W	5
Front fog lamp		HB4	51
Side turn signal lamp		W5W	5
Rear combination lamp	Stop lamp/Tail lamp	W21/5W	21/5
	Rear turn signal lamp	W21W	21
Back-up lamp		W16W	18
License plate lamp		W5W	5
High-mounted stop lamp		LED	—
Rear fog lamp		W21W	21

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