SECTION EXL
EXTERIOR LIGHTING SYSTEM

CONTENTS

PRECAUTION

PRECAUTIONS

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

INFOID:0000000013373440

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the SR 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, it is recommended that all maintenance and repair be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper repair, 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 SR 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 WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery or batteries, and wait at least three minutes before performing any service.**

Precaution for Work

INFOID:0000000012875260

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:

- Water soluble dirt:
- Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
- Then rub with a soft, dry cloth.

- Oily dirt:
- Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
- Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
- Then rub with a soft, dry cloth.

- Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

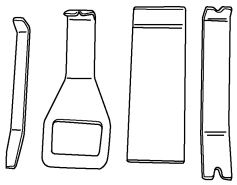
PREPARATION

PREPARATION

Special Service Tool

INFOID:0000000012875261

The actual shape of the tools may differ from those illustrated here.

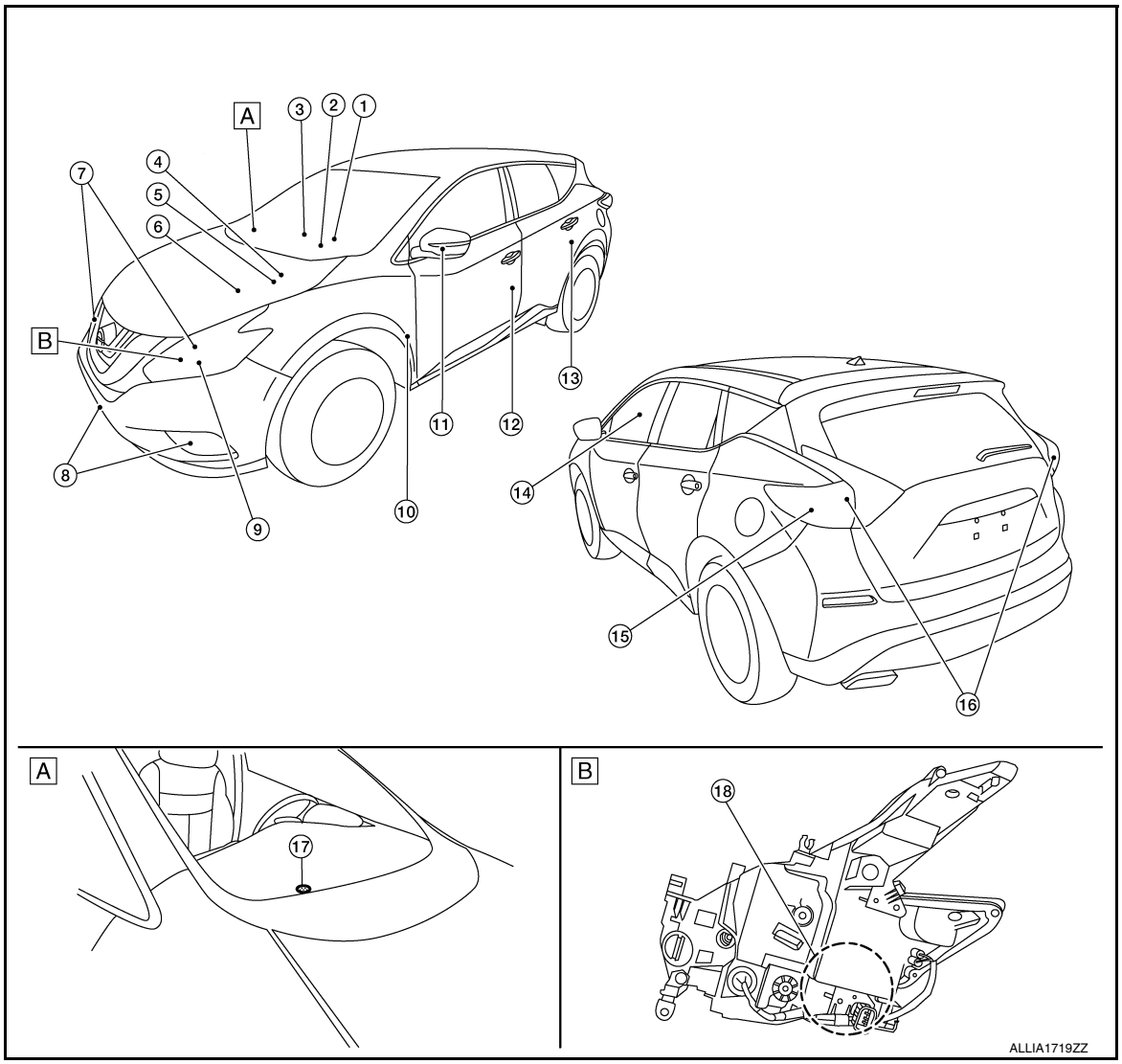
Tool number (TechMate No.) Tool name	Description
— (J-46534) Trim Tool Set  AWJIA0483ZZ	Removing trim components

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000012875262



A. Right hand side of instrument panel B. Front combination lamp (back)

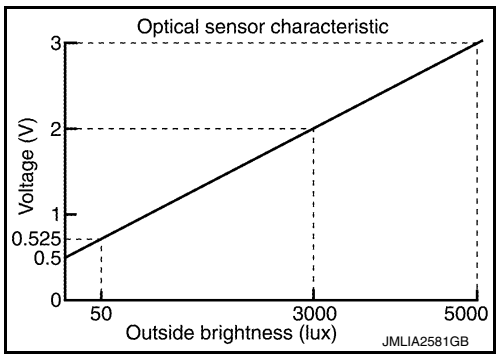
No.	Part	Function
1.	Combination meter	Refer to MWI-9, "METER SYSTEM : System Description".
2.	BCM	• Detects each switch condition by the combination switch reading function. • Judges that the exterior lamps are turned ON according to the vehicle condition. • Requests the headlamp (HI/LO), tail lamp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

No.	Part	Function
3.	Combination switch (Lighting and turn signal switch)	Refer to MWI-5, "METER SYSTEM : Component Parts Location" for detailed installation location.
4.	IPDM E/R	• Supplies voltage to the load according to the request from BCM (via CAN communication). • Refer to PCS-5, "Component Parts Location" for detailed installation location.
5.	Front fog lamp relay	Supplies voltage to front fog lamps when operated by IPDM E/R.
6.	Daytime running lamp relay	Supplies voltage to the daytime running lamps according to request from IPDM E/R. Refer to component below.
7.	Front combination lamps	Refer to EXL-129, "Bulb Specifications".
8.	Front fog lamps	Refer to EXL-129, "Bulb Specifications".
9.	Front turn signal lamp LH	Refer to EXL-129, "Bulb Specifications".
10.	Parking brake switch	Transmits the parking brake switch signal to the combination meter to operate the daytime light system.
11.	Door mirror turn signal LH	Refer to EXL-129, "Bulb Specifications".
12.	Front door switch LH	Transmits the door open signal to the BCM to operate the autolight system. Refer to DLK-22, "Front Door Switch" for front door switch or DLK-22, "Rear Door Switch" for rear door switch.
13.	Rear door switch LH	
14.	Hazard switch	Refer to EXL-9, "Hazard Switch" for detailed installation location.
15.	Rear turn signal lamp LH	Refer to EXL-129, "Bulb Specifications".
16.	Rear combination lamps	Refer to EXL-129, "Bulb Specifications".
17.	Optical sensor	Refer to EXL-9, "Optical Sensor".
18.	LED headlamp control module	LED headlamp control module is integrated into the front combination lamp and turns the LED headlamp ON according to the request from IPDM E/R.

Optical Sensor

INFOID:0000000012875263

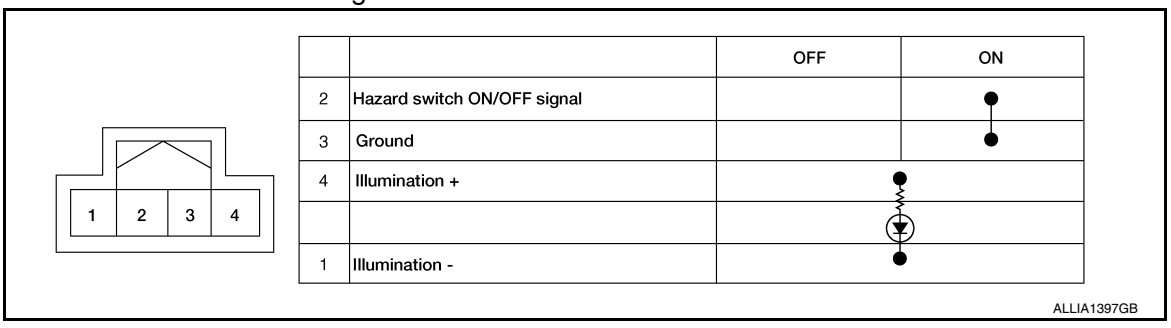
Optical sensor converts the outside brightness (lux) to voltage and transmits the optical sensor signal to BCM.



Hazard Switch

INFOID:0000000012875264

Inputs the hazard switch ON/OFF signal to BCM.



Daytime Running Light Relay

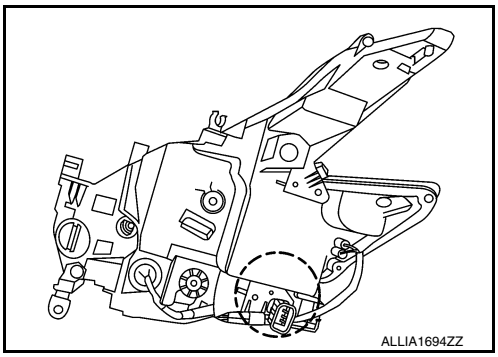
INFOID:0000000012875265

Power is provided to the daytime running light relay according to request from IPDM E/R.

LED Headlamp Control Module

INFOID:0000000012875266

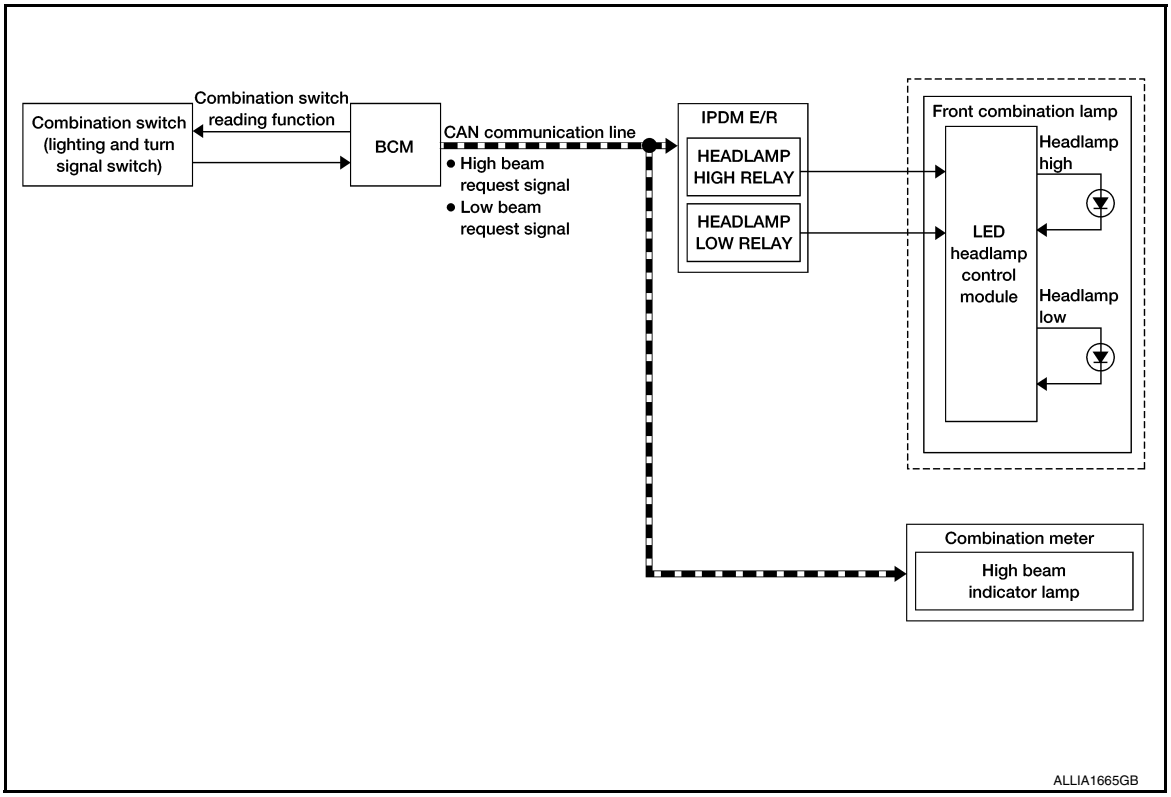
- LED headlamp control module is integrated into the front combination lamp and turns the LED headlamp ON according to the request from IPDM E/R.



SYSTEM
HEADLAMP SYSTEM
HEADLAMP SYSTEM : System Description

INFOID:0000000012875267

SYSTEM DIAGRAM



OUTLINE

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

HEADLAMP (LO) OPERATION

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

Headlamp (LO) ON condition
- Lighting switch 2ND
- Lighting switch AUTO with the ignition switch ON (Only when the illumination judgment by auto light system is ON. For details, refer to EXL-12, "AUTO LIGHT SYSTEM : System Description".)
- Lighting switch PASS

- IPDM E/R turns the integrated headlamp low relay ON according to low beam request signal and supplies power supply to LED headlamp control module.
- LED headlamp control module turns the headlamp (LO) ON according to the power supply from IPDM E/R.

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
- Lighting switch HI with the lighting switch AUTO and ignition switch ON (Only when the illumination judgment by auto light system is ON and the illumination judgment by high beam assist system is ON. For details, refer to EXL-12, "AUTO LIGHT SYSTEM : System Description".)
- 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 according to high beam request signal and supplies power supply to LED headlamp control module.
- LED headlamp control module turns the headlamp (HI) ON according to the power supply from IPDM E/R.

HEADLAMP WARNING OPERATION

Headlamp warning warns the driver that there is a malfunction in LED headlamp system. Refer to MWI-15, "INFORMATION DISPLAY : System Description".

HEADLAMP SYSTEM : Fail-safe

INFOID:0000000012875268

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With BCM

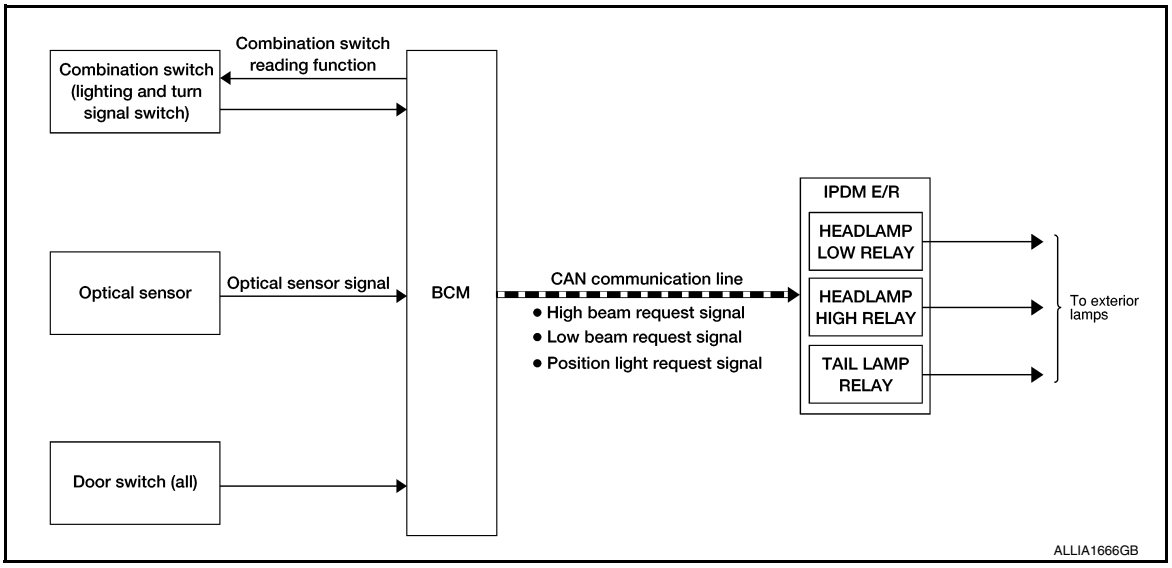
Control part	Fail-safe operation
Headlamp	• Turns ON the headlamp low relay when the ignition switch is turned ON • Turns OFF the headlamp low relay when the ignition switch is turned OFF • Headlamp high relay OFF

AUTO LIGHT SYSTEM

AUTO LIGHT SYSTEM : System Description

INFOID:0000000012875269

SYSTEM DIAGRAM



OUTLINE

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

Control by BCM

- Combination switch (lighting and turn signal switch) reading function
- Headlamp control function
- Auto light function
- Delay timer function
- Auto light adjustment system

Control by IPDM E/R

- Relay control function
- Auto light system has the auto light function and delay timer function.
- Auto light function automatically turns ON/OFF the exterior lamps* and each illumination automatically, depending on the outside brightness.

- When auto light system turns the exterior lamps ON with the ignition switch OFF, delay timer function turns the exterior lamps OFF, depending on the vehicle condition with the auto light function after a certain period of time.

*: Headlamps (LO/HI), parking lamps, side marker lamps and tail lamps. Headlamp HI depends on the combination switch (lighting and turn signal switch) condition.

AUTO LIGHT FUNCTION

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

NOTE:
ON/OFF timing differs based on the sensitivity from the setting. The setting can be set by CONSULT. Refer to BCS-19, "HEADLAMP : CONSULT Function (BCM - HEADLAMP)".

AUTO LIGHT ADJUSTMENT SYSTEM

The auto light adjustment system automatically, dims/brightens the display, according to brightness outside the vehicle, when lighting switch 1ST, lighting switch 2ND or lighting switch AUTO is operated. Refer to INL-8, "ILLUMINATION CONTROL SYSTEM : System Description".

DELAY TIMER FUNCTION

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

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

*: The preset time is 45 seconds. The timer operating time can be set by CONSULT. Refer to BCS-19, "HEADLAMP : CONSULT Function (BCM - HEADLAMP)".

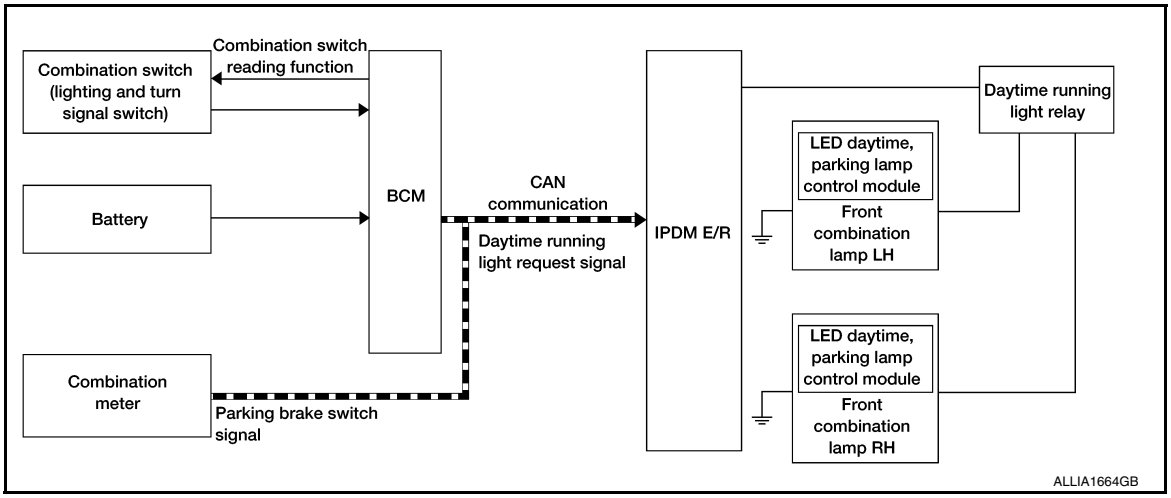
NOTE:
When any position other than the light switch AUTO is set, the auto light system function switches to the exterior lamp battery saver function.

DAYTIME RUNNING LIGHT SYSTEM

DAYTIME RUNNING LIGHT SYSTEM : System Description

INFOID:0000000012875270

SYSTEM DIAGRAM



OUTLINE

- Turns the front combination lamps on through the LED daytime, parking lamp control module as the daytime running light.
- Daytime running light is controlled by daytime running light control function and combination switch (lighting and turn signal switch) reading function of BCM, and relay control function of IPDM E/R.

DAYTIME RUNNING LIGHT OPERATION

- BCM detects the combination switch (lighting and turn signal switch) condition by the combination switch (lighting and turn signal switch) reading function.
- BCM detects the vehicle condition according to ignition switch
- BCM detects the parking brake condition by the parking brake switch signal received from combination meter using CAN communication.
- BCM transmits the daytime running light request signal to IPDM E/R using CAN communication according to the daytime running light ON condition.

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

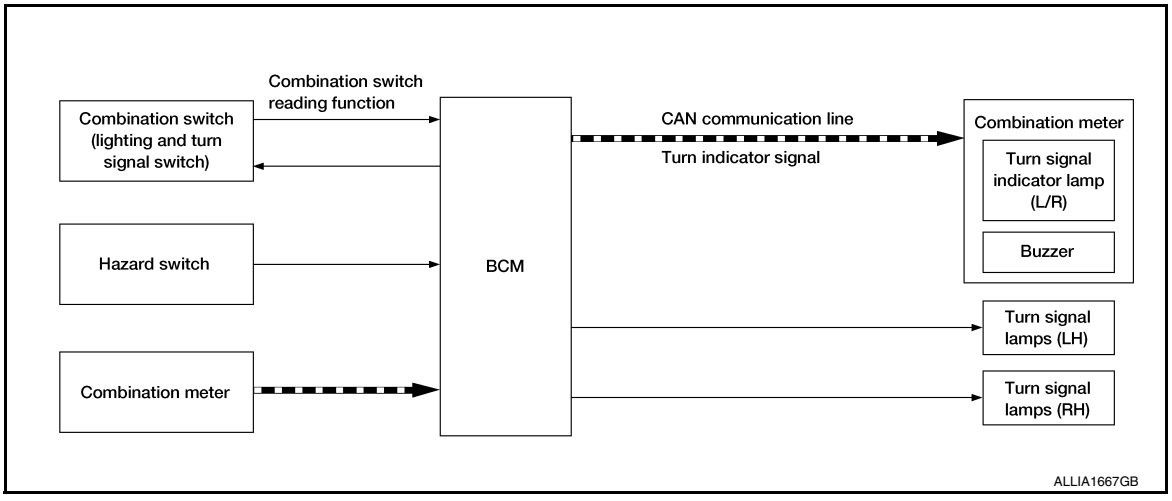
- IPDM E/R controls the daytime running light relay (ground-side) to turn ON according to the daytime running light request signal.
- Power is supplied from the daytime running light relay to front combination lamp RH and LH, and then daytime running lamps are illuminated.

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM : System Description

INFOID:0000000012875271

SYSTEM DIAGRAM



OUTLINE

Turn signal lamp and the hazard warning lamp are controlled by combination switch (lighting and turn signal switch) reading function and the flasher control function of BCM.

TURN SIGNAL LAMP OPERATION

- BCM detects the combination switch (lighting and turn signal switch) condition by the combination switch (lighting and turn signal switch) reading function.
- BCM supplies voltage to the right (left) turn signal lamp circuit when the ignition switch is 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 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 using 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 FLASH FUNCTION

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

HIGH FLASHER OPERATION

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

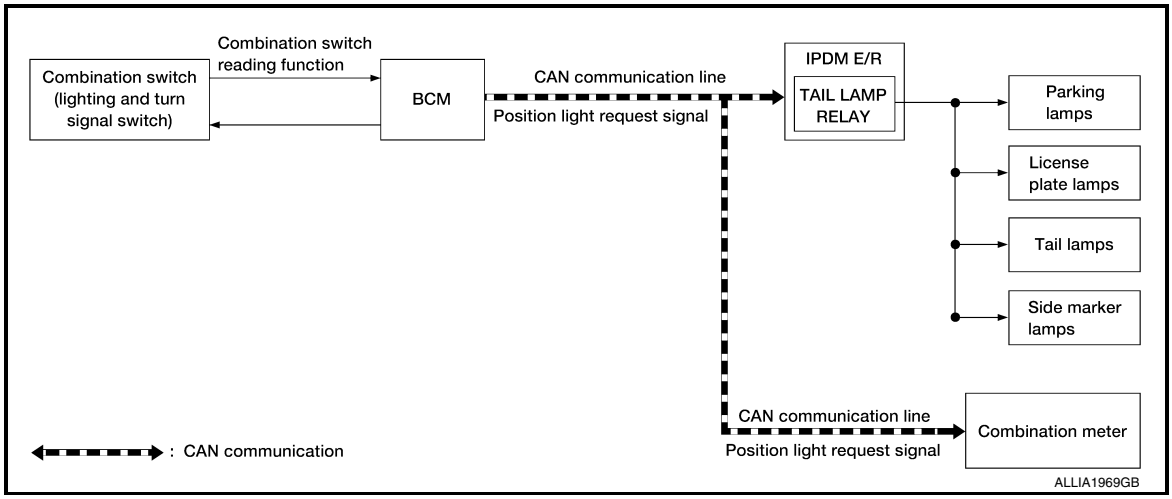
NOTE:
The blinking speed is normal while operating the hazard warning lamp.

PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMP SYSTEM

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

INFOID:0000000012875272

SYSTEM DIAGRAM



OUTLINE

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

PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMPS OPERATION

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

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

- Lighting switch 1ST
- Lighting switch 2ND
- Lighting switch AUTO, and the auto light function ON judgment
- Lighting switch AUTO, with the front fog lamp switch ON and the ignition switch ON

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

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

INFOID:0000000012875273

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With BCM

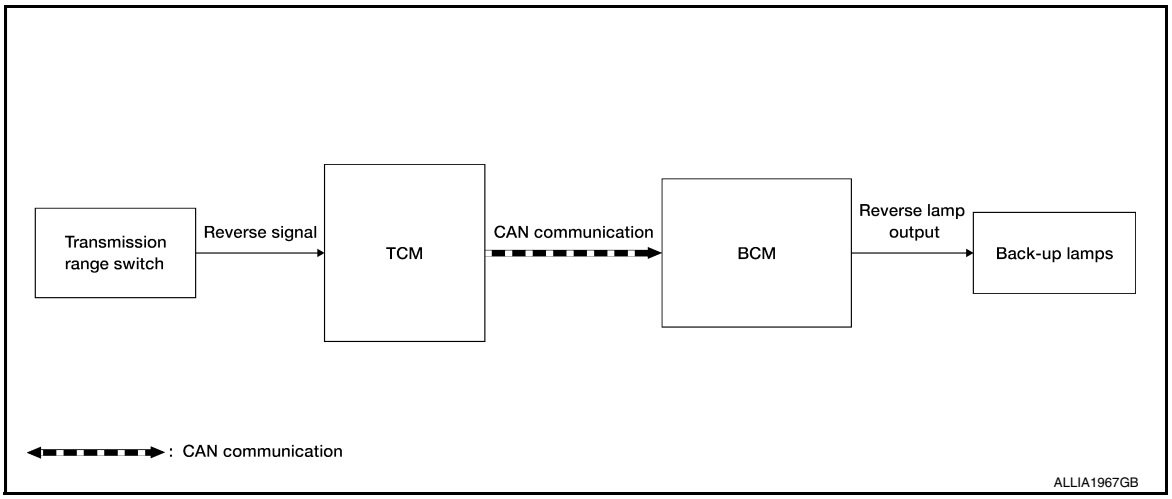
Control part	Fail-safe operation
• Parking lamps • License plate lamps • Illumination • Tail lamps • Side marker lamps	• Turns ON the tail lamp relay when the ignition switch is turned ON • Turns OFF the tail lamp relay when the ignition switch is turned OFF

BACK-UP LAMP SYSTEM

BACK-UP LAMP SYSTEM : System Description

INFOID:0000000012875274

SYSTEM DIAGRAM



OUTLINE

Back-up lamp is controlled by back-up lamp control function of TCM.

BACK-UP LAMP OPERATION

- TCM detects the CVT shift selector position status from transmission range switch.
- TCM sends request signal via CAN communication and turns the back-up lamps on when back-up lamp conditions are satisfied.

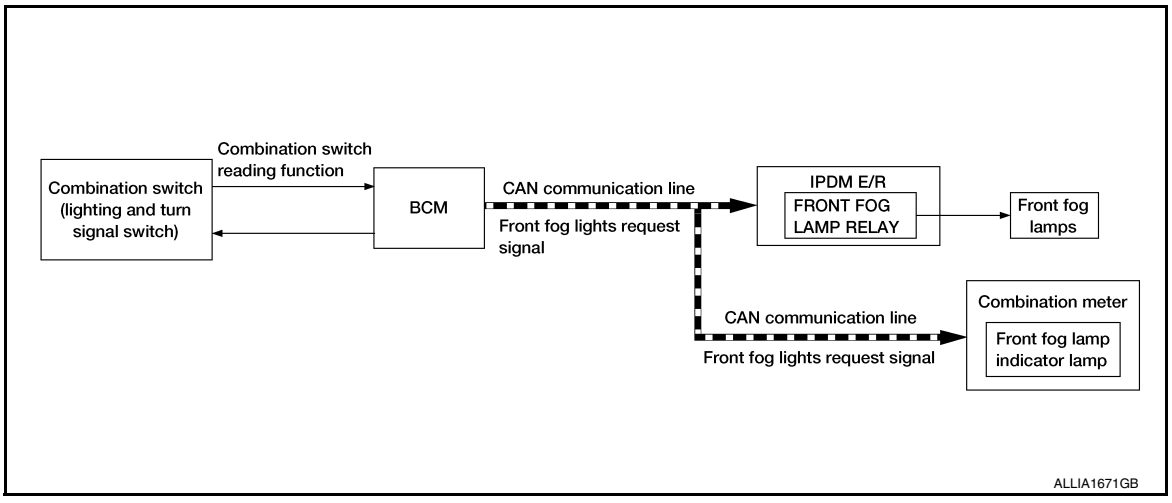
Back-up lamp ON condition:
- Ignition switch ON
- CVT shift selector position R

FRONT FOG LAMP SYSTEM

FRONT FOG LAMP SYSTEM : System Description

INFOID:0000000012875275

SYSTEM DIAGRAM



OUTLINE

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

FRONT FOG LAMP OPERATION

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

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

FRONT FOG LAMP SYSTEM : Fail-Safe

INFOID:0000000012875276

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With BCM

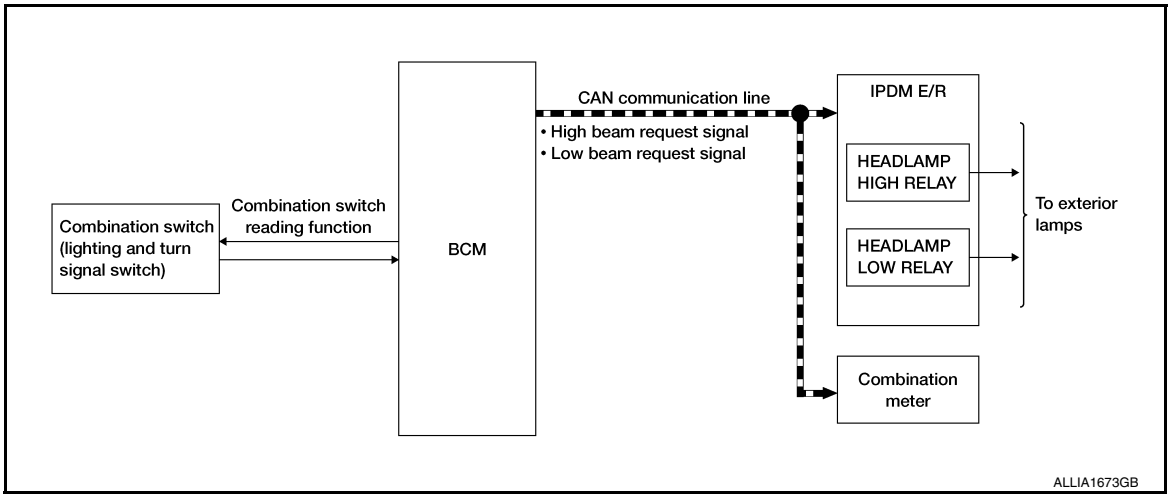
Control part	Fail-safe operation
Front fog lamp	Front fog lamp relay OFF

EXTERIOR LAMP BATTERY SAVER SYSTEM

EXTERIOR LAMP BATTERY SAVER SYSTEM : System Description

INFOID:0000000012875277

SYSTEM DIAGRAM



OUTLINE

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

Control by BCM
- Combination switch (lighting and turn signal switch) reading function
- Exterior lamp battery saver function

Control by IPDM E/R
- Relay control function
- BCM turns the exterior lamp OFF*, according to the vehicle status when ignition switch is turned OFF while exterior lamp is ON, for preventing battery discharge.

*: Headlamp (HI/LO).

EXTERIOR LAMP BATTERY SAVER ACTIVATION

- BCM activates the timer and turns the exterior lamp OFF 45 seconds after the ignition switch is turned from ON→OFF with the exterior lamps ON.
- When in any of following conditions (after the exterior lamp battery saver is activated), exterior lamps can be turned ON:
  - Ignition switch is turned from OFF→ACC/ON
  - Lighting switch is changed

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

INFOID:0000000013379462

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

Direct Diagnostic Mode	Description
ECU Identification	The BCM part number is displayed.
Self Diagnostic Result	The BCM self diagnostic results are displayed.
Data Monitor	The BCM input/output data is displayed in real time.
Active Test	The BCM activates outputs to test components.
Work support	The settings for BCM functions can be changed.
Configuration	• The vehicle specification can be read and saved. • The vehicle specification can be written when replacing BCM.
CAN Diag Support Mntr	The result of transmit/receive diagnosis of CAN communication is displayed.

SYSTEM APPLICATION
BCM can perform the following functions:

System	Sub System	Direct Diagnostic Mode						
		ECU Identification	Self Diagnostic Result	Data Monitor	Active Test	Work support	Configuration	CAN Diag Support Mntr
Door lock	DOOR LOCK		×	×	×	×		
Rear window defogger	REAR DEFOGGER			×	×	×		
Warning chime	BUZZER			×	×			
Interior room lamp timer	INT LAMP			×	×	×		
Exterior lamp	HEADLAMP			×	×	×		
Wiper and washer	WIPER			×	×	×		
Turn signal and hazard warning lamps	FLASHER			×	×	×		
Air conditioner	AIR CONDITIONER			×				
Intelligent Key system	INTELLIGENT KEY		×	×	×	×		
Combination switch	COMB SW			×				
BCM	BCM	×	×			×	×	×
Immobilizer	IMMU		×	×	×			
Interior room lamp battery saver	BATTERY SAVER			×	×			
Back door open	TRUNK			×				
Vehicle security system	THEFT ALM			×	×	×		
RAP system	RETAINED PWR			×				
Signal buffer system	SIGNAL BUFFER			×	×			
TPMS	AIR PRESSURE MONITOR		×	×	×			

FREEZE FRAME DATA (FFD)

The BCM records the following vehicle condition at the time a particular DTC is detected, and displays it on CONSULT.

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

NOTE:
*: Power supply position shifts to “LOCK” from “OFF”, when ignition switch is in the OFF position, selector lever is in the P position, and any of the following conditions are met:
- Closing door
- Opening door
- Door is locked using door request switch
- Door is locked using Intelligent Key

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

HEADLAMP

HEADLAMP : CONSULT Function (BCM - HEADLAMP)

INFOID:0000000013379463

DATA MONITOR

Monitor Item [Unit]	Description
PUSH SW [On/Off]	Indicates condition of push-button ignition switch.
ENGINE STATE [Stop/Stall/Crank/Run]	Indicates engine status received from ECM on CAN communication line.
VEH SPEED 1 [km/h]	Indicates vehicle speed signal received from ABS on CAN communication line.
TURN SIGNAL R [On/Off]	Indicates condition of combination switch.
TURN SIGNAL L [On/Off]	
TAIL LAMP SW [On/Off]	
HI BEAM SW [On/Off]	
HEAD LAMP SW 1 [On/Off]	
HEAD LAMP SW 2 [On/Off]	
PASSING SW [On/Off]	
AUTO LIGHT SW [On/Off]	
FR FOG SW [On/Off]	
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.
DOOR SW-RR [On/Off]	Indicates condition of rear door switch RH.
DOOR SW-RL [On/Off]	Indicates condition of rear door switch LH.
DOOR SW-BK [On/Off]	Indicates condition of back door switch.
OPTI SEN (DTCT) [V]	Indicates outside brightness voltage signal from optical sensor.
OPTI SEN (FILT) [V]	Indicates outside brightness voltage signal from optical sensor filtered by BCM.

ACTIVE TEST

Test Item	Description
FR FOG LAMP	This test is able to check front fog lamp operation [On/Off].
DAYTIME RUNNING LIGHT	This test is able to check daytime running lamp operation [On/Off].
ILL DIM SIGNAL	This test is able to check head lamp illumination dimming operation [On/Off].

WORK SUPPORT

Support Item	Setting	Description
TWILIGHT ON	MODE2*	Auto lamp function ON.
	MODE1	Auto lamp function OFF.
WIPER LINK	MODE4	This mode is not used.
	MODE3*	Wiper link function operates in INT, LOW and HI.
	MODE2	Wiper link function operates in LOW and HI.
	MODE1	Wiper link function OFF.
CUSTOM A/LIGHT SETTING	MODE4	Less sensitive than normal setting (turns ON later).
	MODE3	More sensitive than MODE2.
	MODE2	More sensitive than normal setting (turns ON earlier).
	MODE1*	Normal setting.

Support Item	Setting	Description
ILL DELAY SET	MODE 8	Auto lamp delay timer.
	MODE 7	
	MODE 6	
	MODE 4	
	MODE 5	
	MODE 3	
	MODE 2	
	MODE 1*	

* : Initial setting

FLASHER

FLASHER : CONSULT Function (BCM - FLASHER)

INFOID:0000000013379464

DATA MONITOR

Monitor Item [Unit]	Description
REQ SW -DR [On/Off]	Indicates condition of door request switch LH.
REQ SW -AS [On/Off]	Indicates condition of door request switch RH.
PUSH SW [On/Off]	Indicates condition of push-button ignition switch.
TURN SIGNAL R [On/Off]	Indicates condition of turn signal function of combination switch.
TURN SIGNAL L [On/Off]	
HAZARD SW [On/Off]	Indicates condition of hazard switch.
RKE-LOCK [On/Off]	Indicates condition of lock signal from Intelligent Key.
RKE-UNLOCK [On/Off]	Indicates condition of unlock signal from Intelligent Key.
RKE-PANIC [On/Off]	Indicates condition of panic alarm signal from Intelligent Key.

ACTIVE TEST

Test Item	Description
FLASHER	This test is able to check turn signal lamp operation [Off/LH/RH].

WORK SUPPORT

Support item	Setting	Description
3-TIME FLASHER SETTING	ON*	3-Time flasher setting ON.
	OFF	3-Time flasher setting OFF.

* : Initial setting

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:0000000013379467

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:

- Front wiper (LO, HI)
- Front fog lamps
- Parking lamps
- Side marker lamps
- Tail lamps
- License plate lamps
- Daytime running lamps
- Headlamps (LO, HI)
- A/C compressor
- Cooling fans (LO, HI)

Operation Procedure

CAUTION:

Do not start the engine.

NOTE:

When auto active test is performed with hood opened, sprinkle water on windshield before hand.

NOTE:

- If auto active test mode cannot be actuated, check door switch system. Refer to DLK-202, "Component Function Check".
- When auto active test mode has to be cancelled halfway through test, turn ignition switch OFF.

1. Close the hood and lift the wiper arms from the windshield. (Prevent windshield damage due to wiper operation)
2. Turn ignition switch OFF.
3. Turn the ignition switch ON, and within 20 seconds, press the front door switch LH 10 times. Then turn the ignition switch OFF.
4. Turn the ignition switch ON within 10 seconds. After that the horn sounds once, and the auto active test starts.
5. After a series of the following operations is repeated 3 times, auto active test is completed.

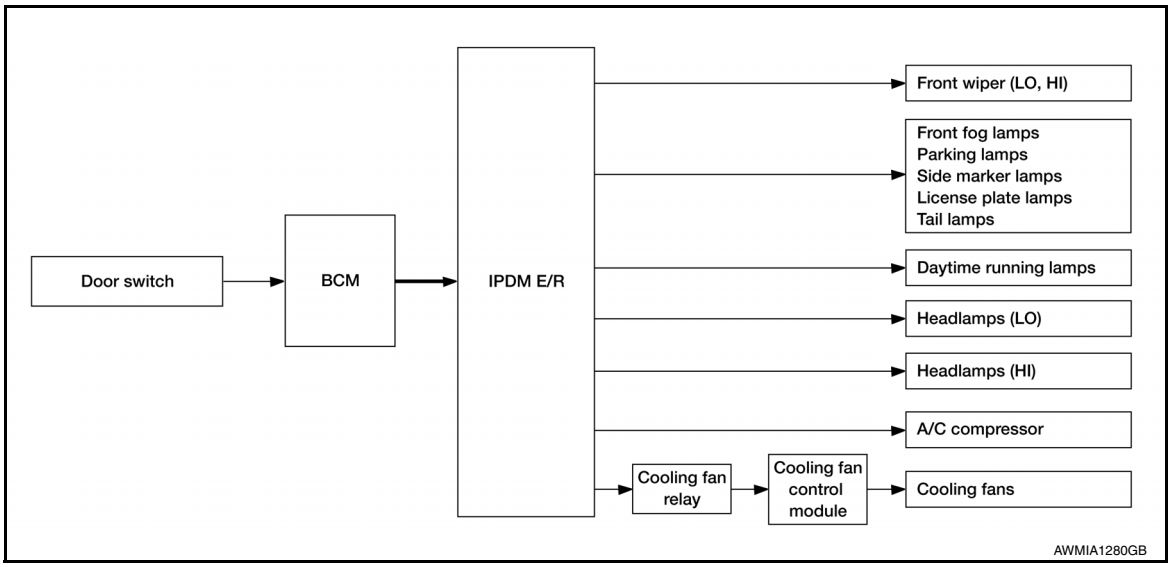
Inspection in Auto Active Test Mode

When auto active test mode is actuated, the following operation sequence is repeated 3 times.

Operation sequence	Inspection Location	Operation
1	Front wiper	LO for 3 seconds → HI for 3 seconds
2	• Front fog lamps • Parking lamps • Side marker lamps • Tail lamps • License plate lamps	10 seconds
3	Daytime running lamps	10 seconds
4	Headlamps	LO ⇔ HI 5 times
5	A/C compressor	ON ⇔ OFF 5 times
6*	Cooling fans	LO for 5 seconds → HI for 5 seconds

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

Concept of auto active test



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

Diagnosis chart in auto active test mode

Symptom	Inspection contents		Possible cause
Any of the following components do not operate • Front fog lamps • Parking lamps • Side marker lamps • License plate lamps • Tail lamps • Daytime running lamps • Headlamp (HI, LO) • Front wiper	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
Cooling fans do not operate	Perform auto active test. Do the cooling fans operate?	YES	• ECM signal input circuit • CAN communication signal between ECM and IPDM E/R
		NO	• Cooling fans • Harness or connectors between cooling fans and cooling fan control module • Cooling fan control module • Harness or connectors between cooling fan relay and cooling fan control module • Cooling fan relay • Harness or connectors between IPDM E/R and cooling fan relay • IPDM E/R

CONSULT Function (IPDM E/R)

INFOID:0000000013379468

CAUTION:

After disconnecting the CONSULT vehicle interface (VI) from the data link connector, the ignition must be cycled OFF → ON (for at least 5 seconds) → OFF. If this step is not performed, the BCM may not go to "sleep mode", potentially causing a discharged battery and a no-start condition.

APPLICATION ITEM

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

Direct Diagnostic Mode	Description
ECU Identification	The IPDM E/R part number is displayed.
Self Diagnostic Result	The IPDM E/R self diagnostic results are displayed.
Data Monitor	The IPDM E/R input/output data is displayed in real time.
Active Test	The IPDM E/R activates outputs to test components.

ECU IDENTIFICATION

The IPDM E/R part number is displayed.

SELF DIAGNOSTIC RESULT

Refer to PCS-21, "DTC Index".

DATA MONITOR

Monitor Item [Unit]	Main Signals	Description
MOTOR FAN REQ [%]	×	Indicates cooling fan speed signal received from ECM on CAN communication line.
AC COMP REQ [On/Off]	×	Indicates A/C compressor request signal received from ECM on CAN communication line.
TAIL&CLR REQ [On/Off]	×	Indicates position light request signal received from BCM on CAN communication line.
HL LO REQ [On/Off]	×	Indicates low beam request signal received from BCM on CAN communication line.
HL HI REQ [On/Off]	×	Indicates high beam request signal received from BCM on CAN communication line.
FR FOG REQ [On/Off]	×	Indicates front fog light request signal received from BCM on CAN communication line.
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Indicates front wiper request signal received from BCM on CAN communication line.
WIP AUTO STOP [STOP P/ACT P]	×	Indicates condition of front wiper auto stop signal.
WIP PROT [Off/BLOCK]	×	Indicates condition of front wiper fail-safe operation.
IGN RLY1 -REQ [On/Off]		Indicates ignition switch ON signal received from BCM on CAN communication line.
IGN RLY [On/Off]	×	Indicates condition of ignition relay.
PUSH SW [On/Off]		Indicates condition of push-button ignition switch.
INTER/NP SW [On/Off]		Indicates condition of CVT shift position.
ST RLY CONT [On/Off]		Indicates starter relay status signal received from BCM on CAN communication line.
IHBT RLY -REQ [On/Off]		Indicates starter control relay signal received from BCM on CAN communication line.
ST/INHI RLY [Off/ ST /INHI]		Indicates condition of starter relay and starter control relay.
DETENT SW [On/Off]		Indicates condition of CVT shift selector (park position switch).
DTRL REQ [Off]		Indicates daytime light request signal received from BCM on CAN communication line.
HOOD SW [On/Off]		Indicates condition of hood switch.
THFT HRN REQ [On/Off]		Indicates theft warning horn request signal received from BCM on CAN communication line.
HORN CHIRP [On/Off]		Indicates horn reminder signal received from BCM on CAN communication line.
HOOD SW 2 [On/Off]		Indicates condition of hood switch 2.

ACTIVE TEST

Test item	Description
HORN	This test is able to check horn operation [On].
FRONT WIPER	This test is able to check wiper motor operation [Hi/Lo/Off].
MOTOR FAN	This test is able to check cooling fan operation [4/3/2/1].
EXTERNAL LAMPS	This test is able to check external lamp operation [Fog/Hi/Lo/Tail/Off].

ECU DIAGNOSIS INFORMATION

BCM, IPDM E/R

List of ECU Reference

INFOID:0000000012875285

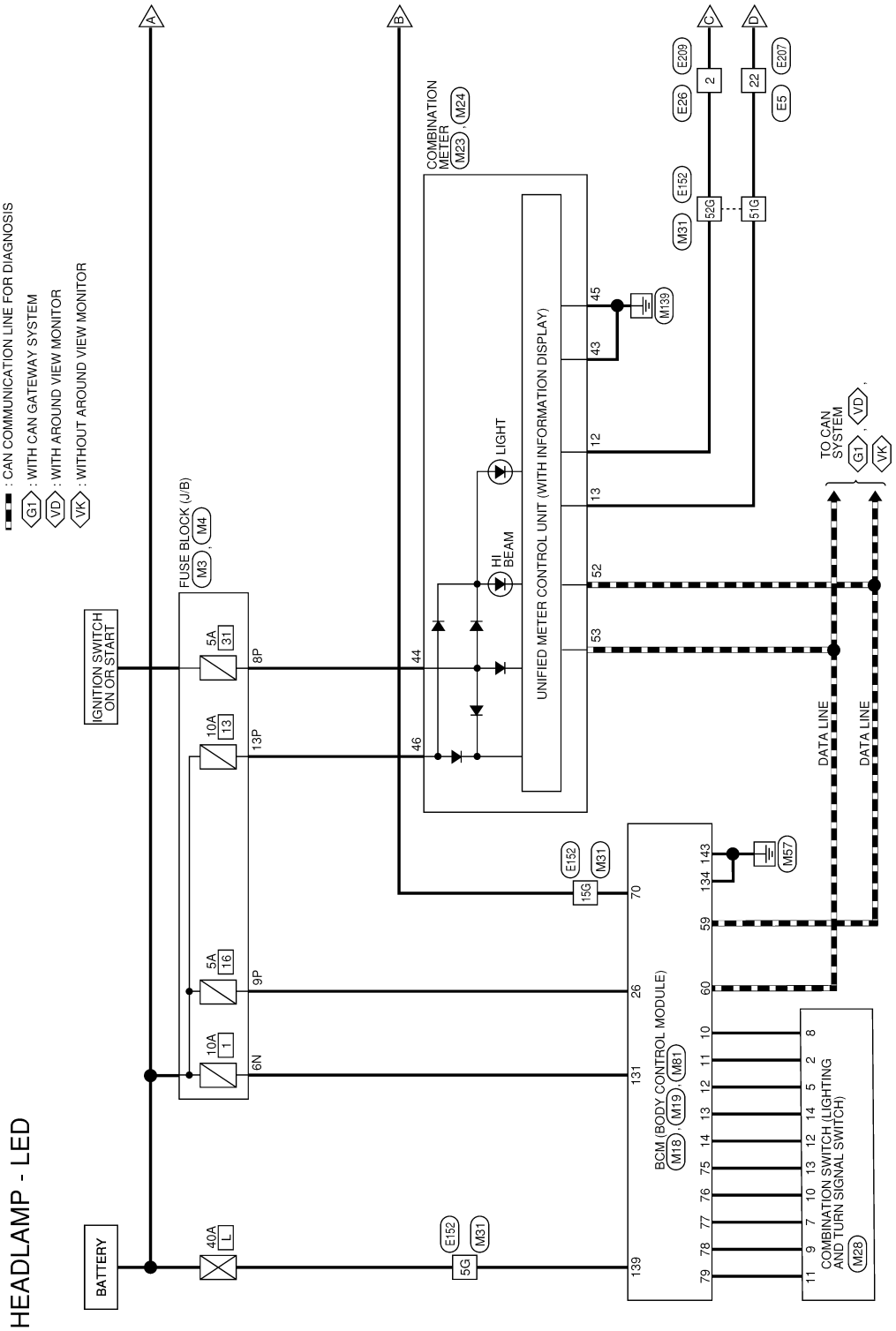
ECU	Reference
BCM	BCS-30, "Reference Value"
	BCS-50, "Fail Safe"
	BCS-51, "DTC Inspection Priority Chart"
	BCS-52, "DTC Index"
IPDM E/R	PCS-13, "Reference Value"
	PCS-20, "Fail Safe"
	PCS-21, "DTC Index"

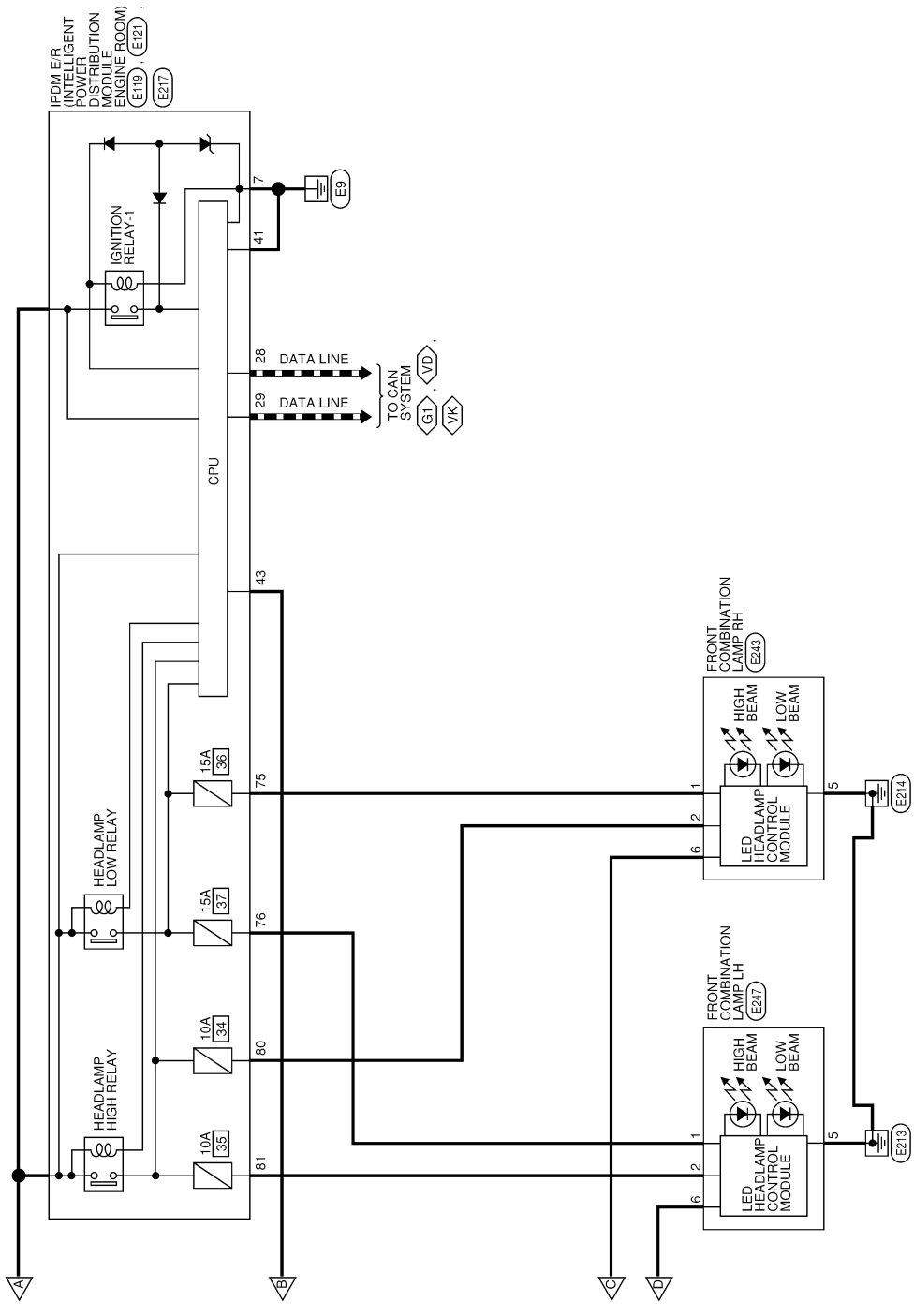
WIRING DIAGRAM

HEADLAMP

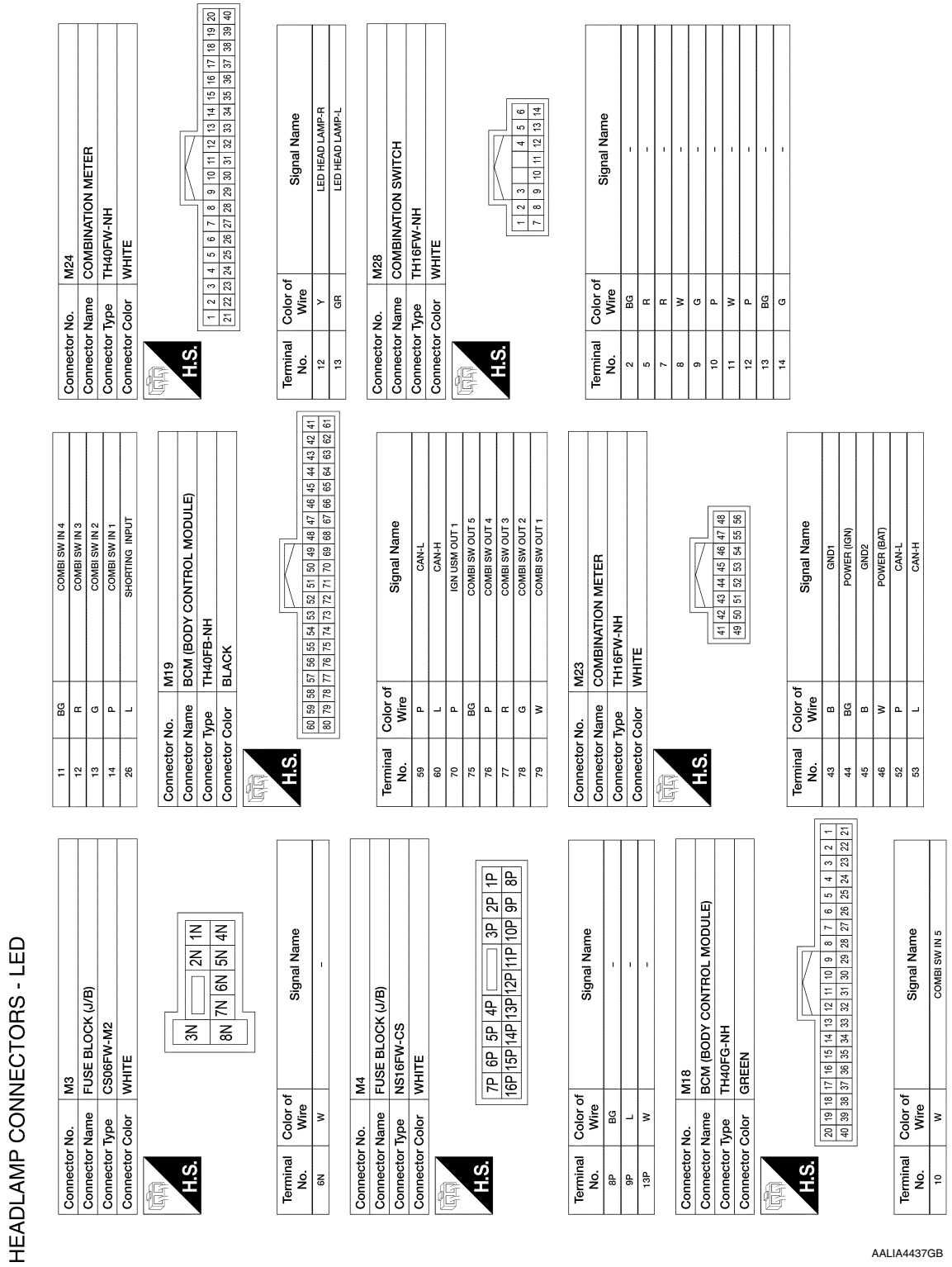
Wiring Diagram

INFOID:0000000012875286




IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E121
E119
E217
IGNITION RELAY-1
7
41
E9
28
DATA LINE
29
DATA LINE
TO CAN SYSTEM
VD
G1
VK
CPU
43
15A 36
75
15A 37
76
10A 34
80
10A 35
81
HEADLAMP LOW RELAY
HEADLAMP HIGH RELAY
FRONT COMBINATION LAMP RH
E243
HIGH BEAM
LOW BEAM
LED HEADLAMP CONTROL MODULE
1
2
6
5
E214
FRONT COMBINATION LAMP LH
E247
HIGH BEAM
LOW BEAM
LED HEADLAMP CONTROL MODULE
1
2
6
5
E213
A
B
C
D
AALWA1499GB

HEADLAMP CONNECTORS - LED



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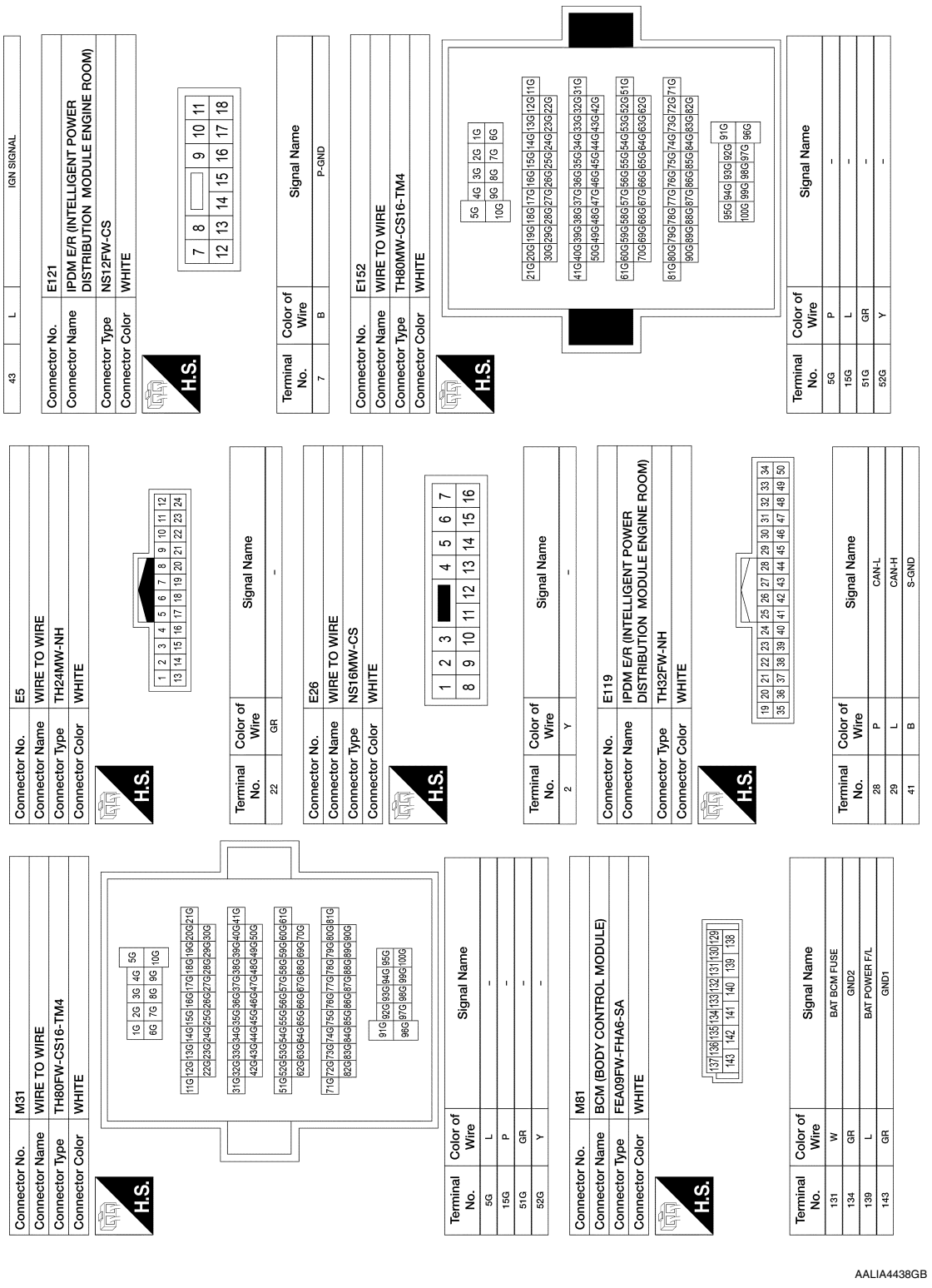

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80	LG	HEADLAMP HI RH (WITH LED HEADLAMPS)
81	G	HEADLAMP HI LH

Connector No.	E243
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	RS08FB-PR
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	SB	–
2	LG	–
5	B	–
6	Y	–

Connector No.	E247
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	RS08FB-PR
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	L	–
2	G	–
5	B	–
6	L/O	–

Connector No.	E207
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
22	L/O	–

Connector No.	E209
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
2	Y	–

Connector No.	E217
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS08FW-CS
Connector Color	WHITE

H.S.

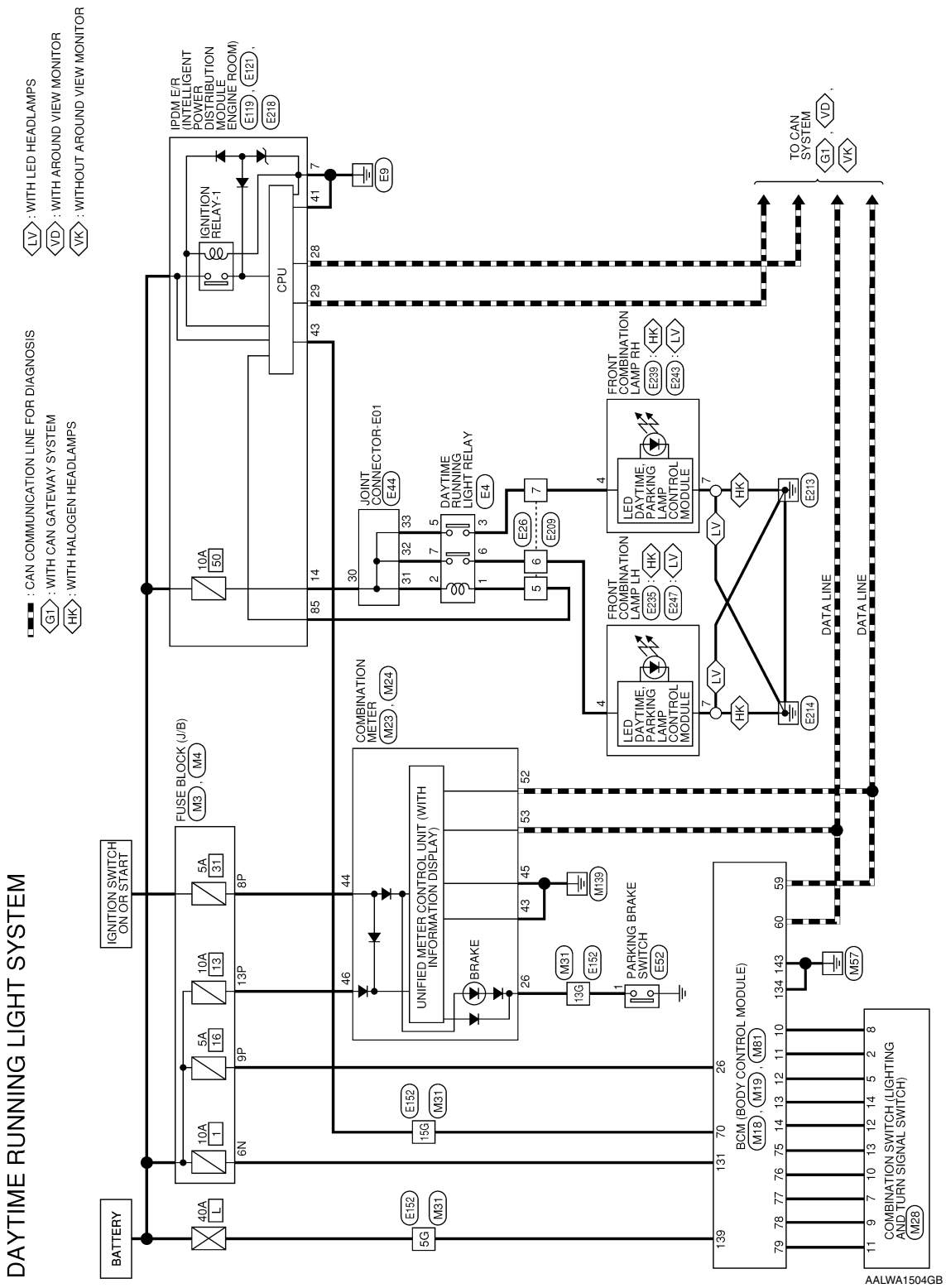
Terminal No.	Color of Wire	Signal Name
75	L/W	HEADLAMP LO RH (WITH HALOGEN HEADLAMPS)
75	SB	HEADLAMP LO RH (WITH LED HEADLAMPS)
76	L	HEADLAMP LO LH
80	G/W	HEADLAMP HI RH (WITH HALOGEN HEADLAMPS)

AALIA4439GB

DAYTIME RUNNING LIGHT SYSTEM

Wiring Diagram

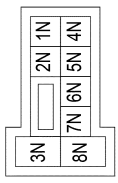
INFOID:0000000012875287



DAYTIME RUNNING LIGHT SYSTEM CONNECTORS

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	CS06FW-M2
Connector Color	WHITE

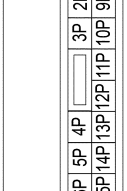
H.S.



Terminal No.	Color of Wire	Signal Name
6N	W	-

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
8P	BG	-
9P	L	-
13P	W	-

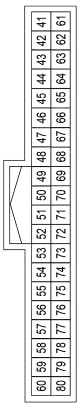
Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH
Connector Color	GREEN

H.S.

Terminal No.	Color of Wire	Signal Name
10	W	COMBI SW IN 5
11	BG	COMBI SW IN 4
12	R	COMBI SW IN 3
13	G	COMBI SW IN 2
14	P	COMBI SW IN 1
26	L	SHORTING INPUT

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH
Connector Color	BLACK

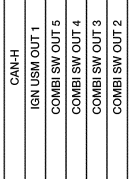
H.S.



Terminal No.	Color of Wire	Signal Name
59	P	CAN-L
60	L	CAN-H
70	P	IGN USM OUT 1
75	BG	COMBI SW OUT 5
76	P	COMBI SW OUT 4
77	R	COMBI SW OUT 3
78	G	COMBI SW OUT 2
79	W	COMBI SW OUT 1

Connector No.	M23
Connector Name	COMBINATION METER
Connector Type	TH16FW-NH
Connector Color	WHITE

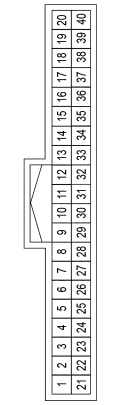
H.S.



Terminal No.	Color of Wire	Signal Name
43	B	GND1
44	BG	POWER (IGN)
45	B	GND2
46	W	POWER (BAT)
52	P	CAN-L
53	L	CAN-H

Connector No.	M24
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH
Connector Color	WHITE

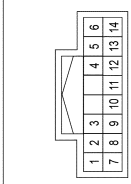
H.S.



Terminal No.	Color of Wire	Signal Name
26	BR	PKB SW

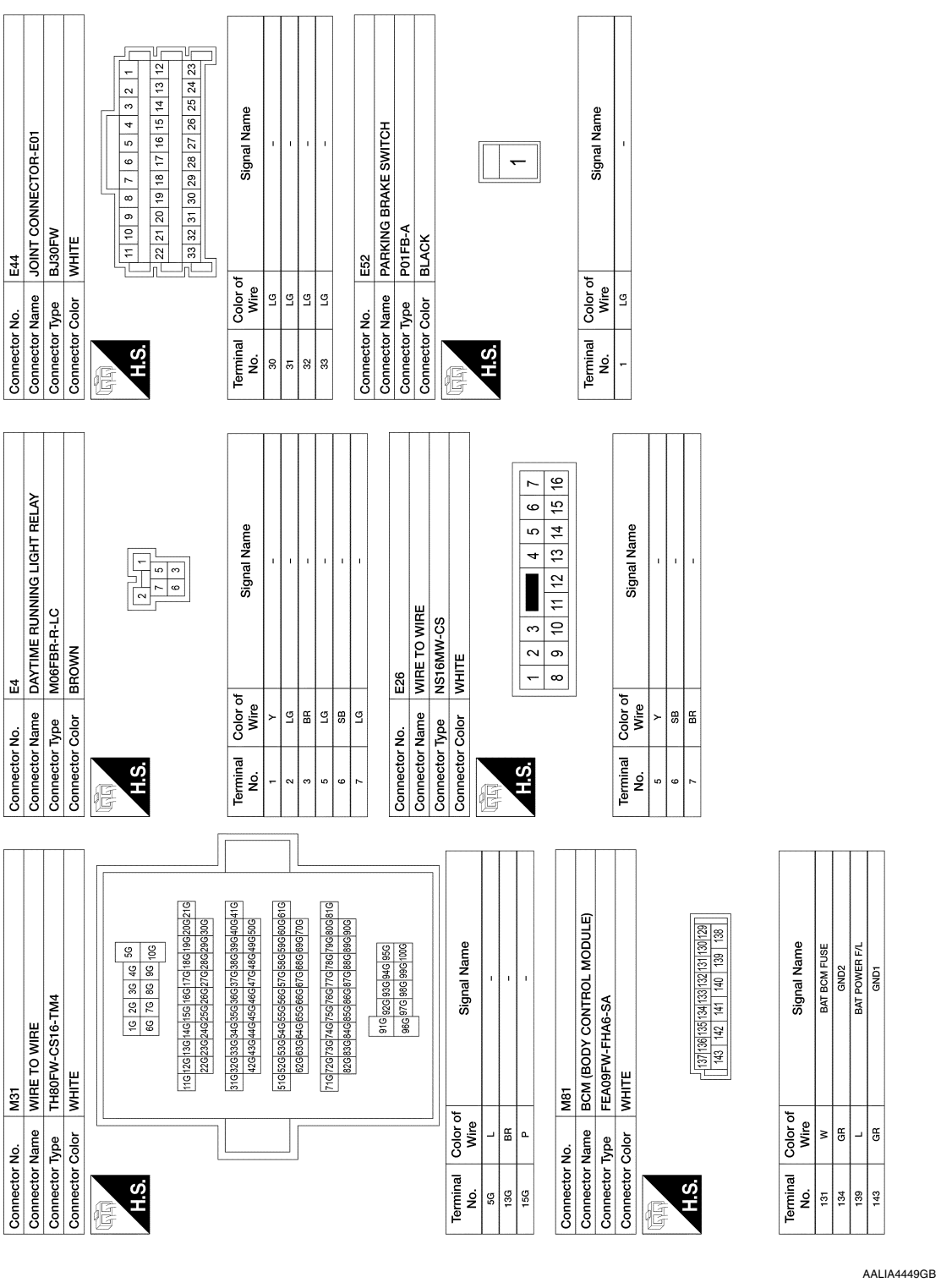
Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH
Connector Color	WHITE

H.S.

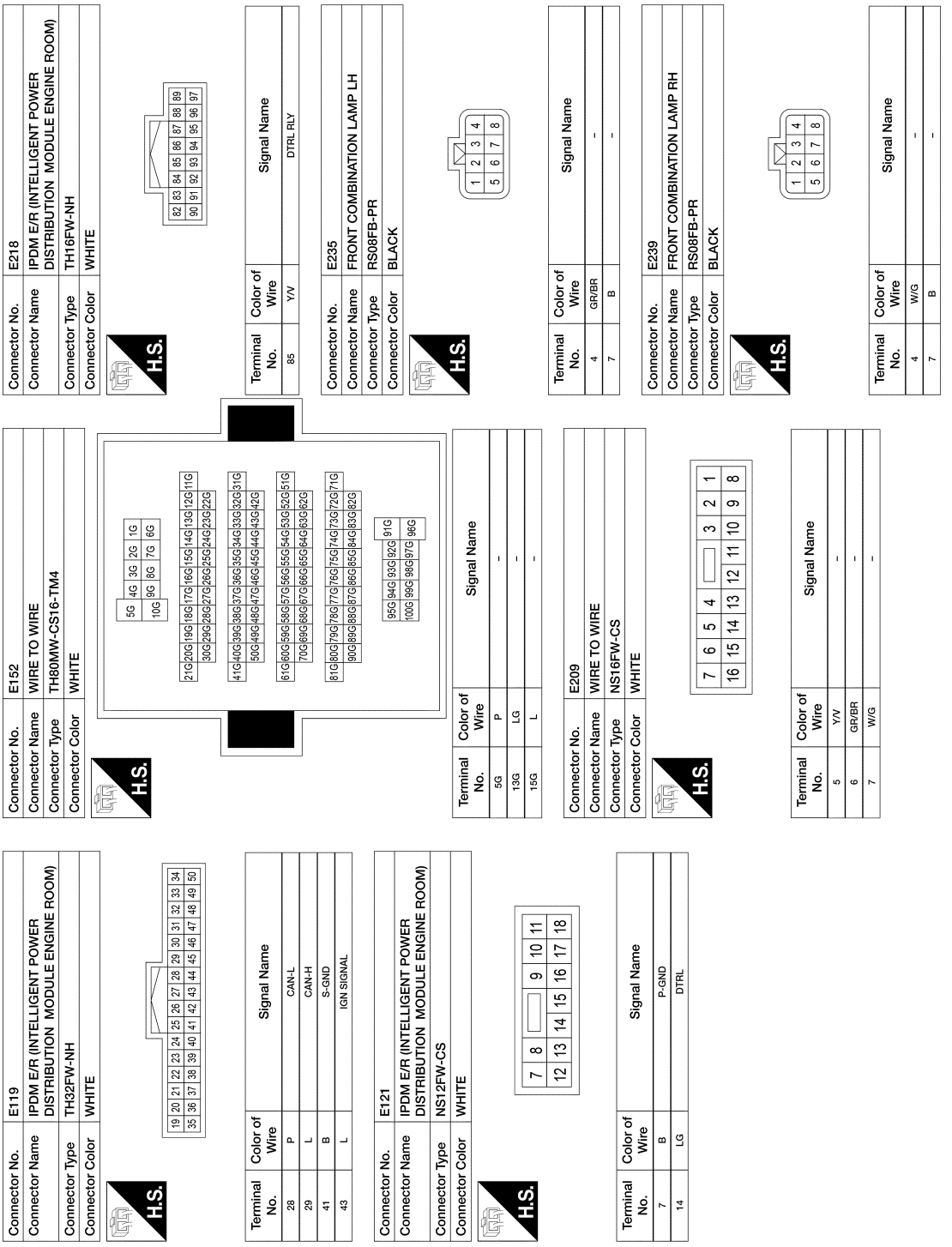


Terminal No.	Color of Wire	Signal Name
2	BG	-
5	R	-
7	R	-
8	W	-
9	G	-
10	P	-
11	W	-
12	P	-
13	BG	-
14	G	-

AALIA4448GB



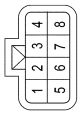
AALIA4449GB



AALIA4450GB

Connector No.	E243
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	RS08FB-PR
Connector Color	BLACK

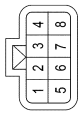
H.S.



Terminal No.	Color of Wire	Signal Name
4	W/G	-
7	B	-

Connector No.	E247
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	RS08FB-PR
Connector Color	BLACK

H.S.



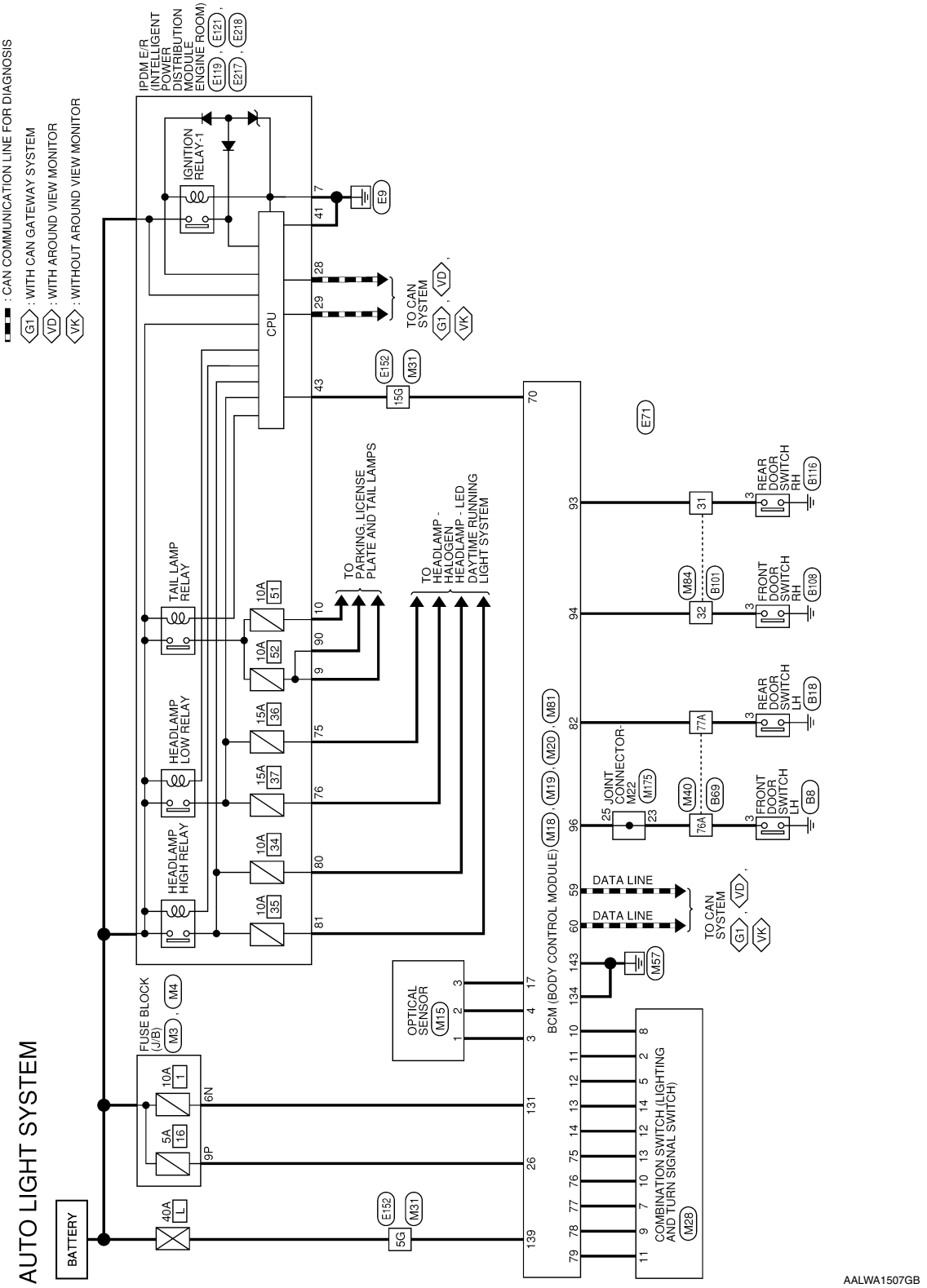
Terminal No.	Color of Wire	Signal Name
4	GR/BR	-
7	B	-

AALIA4451GB

AUTO LIGHT SYSTEM

Wiring Diagram

INFOID:0000000012875288



AUTO LIGHT SYSTEM CONNECTORS

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	CS06FW-M2
Connector Color	WHITE

H.S.

3N		2N	1N
		7N	6N
8N			5N
			4N

Terminal No.	Color of Wire	Signal Name
6N	W	-

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
9P	L	-

Connector No.	M15
Connector Name	OPTICAL SENSOR
Connector Type	TK03FW
Connector Color	WHITE

H.S.

1	2	3

Terminal No.	Color of Wire	Signal Name
1	W	-
2	G	-

3	R	-

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH
Connector Color	GREEN

H.S.

20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21

Terminal No.	Color of Wire	Signal Name
3	W	A/L POWER SUPPLY 5V
4	G	A/L SIGNAL
10	W	COMBI SW IN 5
11	BG	COMBI SW IN 4
12	R	COMBI SW IN 3
13	G	COMBI SW IN 2
14	P	COMBI SW IN 1
17	R	GND RF A/L
26	L	SHORTING INPUT

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH
Connector Color	BLACK

H.S.

60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41
80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61

Terminal No.	Color of Wire	Signal Name
59	P	CAN-L
60	L	CAN-H
70	P	IGN USM OUT 1
75	BG	COMBI SW OUT 5
76	P	COMBI SW OUT 4
77	R	COMBI SW OUT 3
78	G	COMBI SW OUT 2
79	W	COMBI SW OUT 1

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH24FGY-NH
Connector Color	GRAY

H.S.

92	91	90	89	88	87	86	85	84	83	82	81
104	103	102	101	100	99	98	97	96	95	94	93

Terminal No.	Color of Wire	Signal Name
82	W	RL DOOR SW
93	R	RR DOOR SW
94	G	AS DOOR SW
96	BG	DR DOOR SW

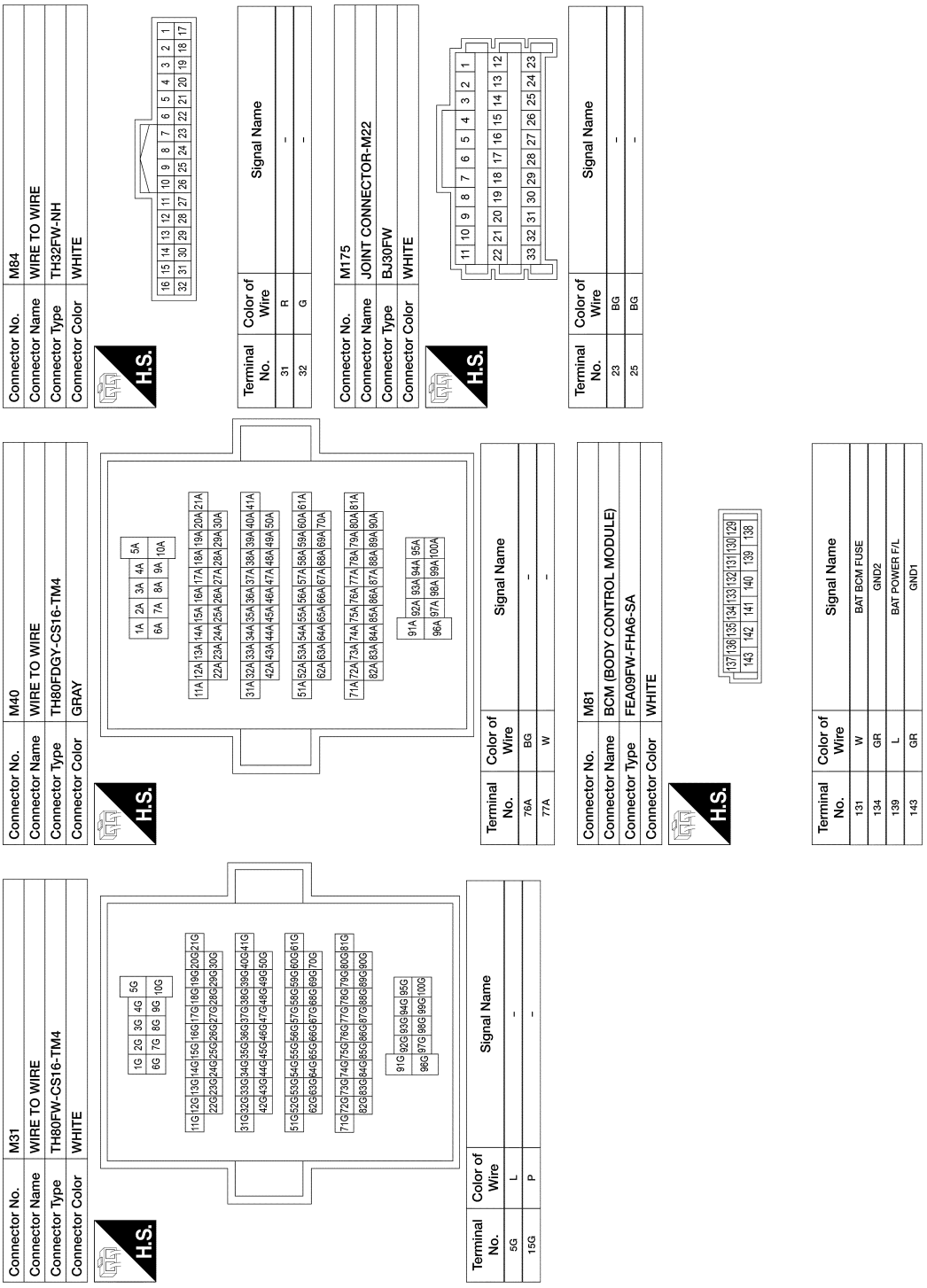
Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH
Connector Color	WHITE

H.S.

1	2	3			4	5	6
7	8	9	10	11	12	13	14

Terminal No.	Color of Wire	Signal Name
2	BG	-
5	R	-
7	R	-
8	W	-
9	G	-
10	P	-
11	W	-
12	P	-
13	BG	-
14	G	-

AALIA4457GB



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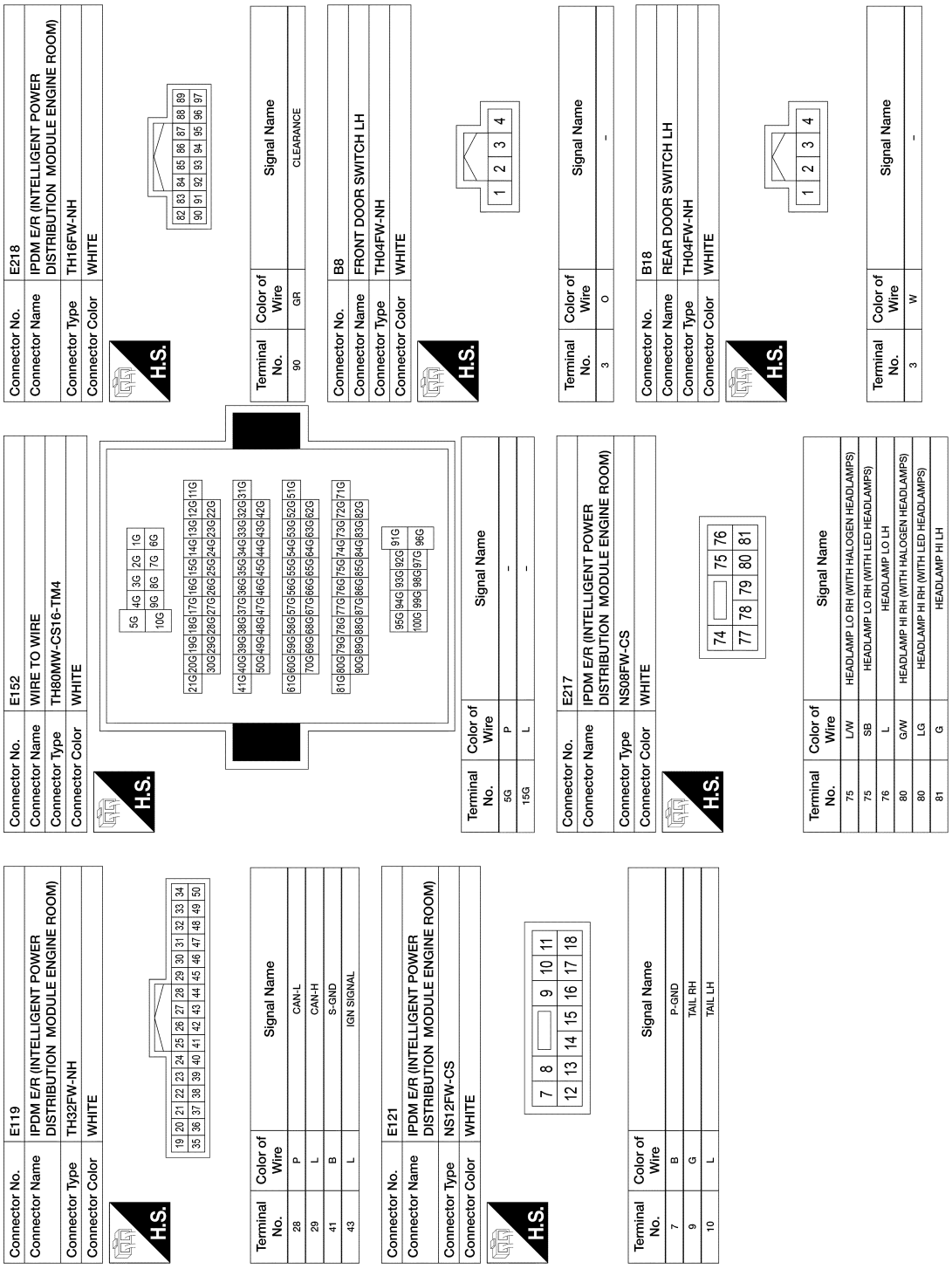

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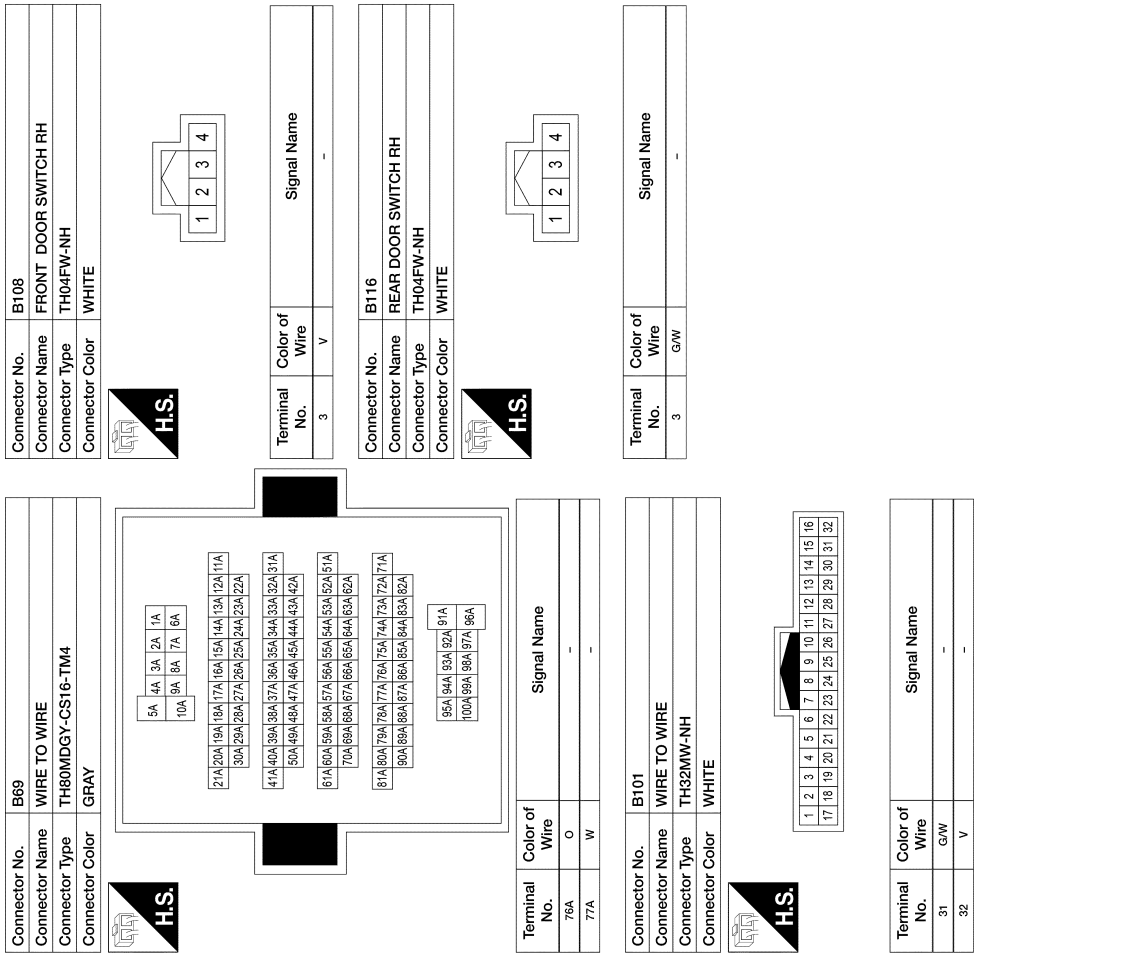
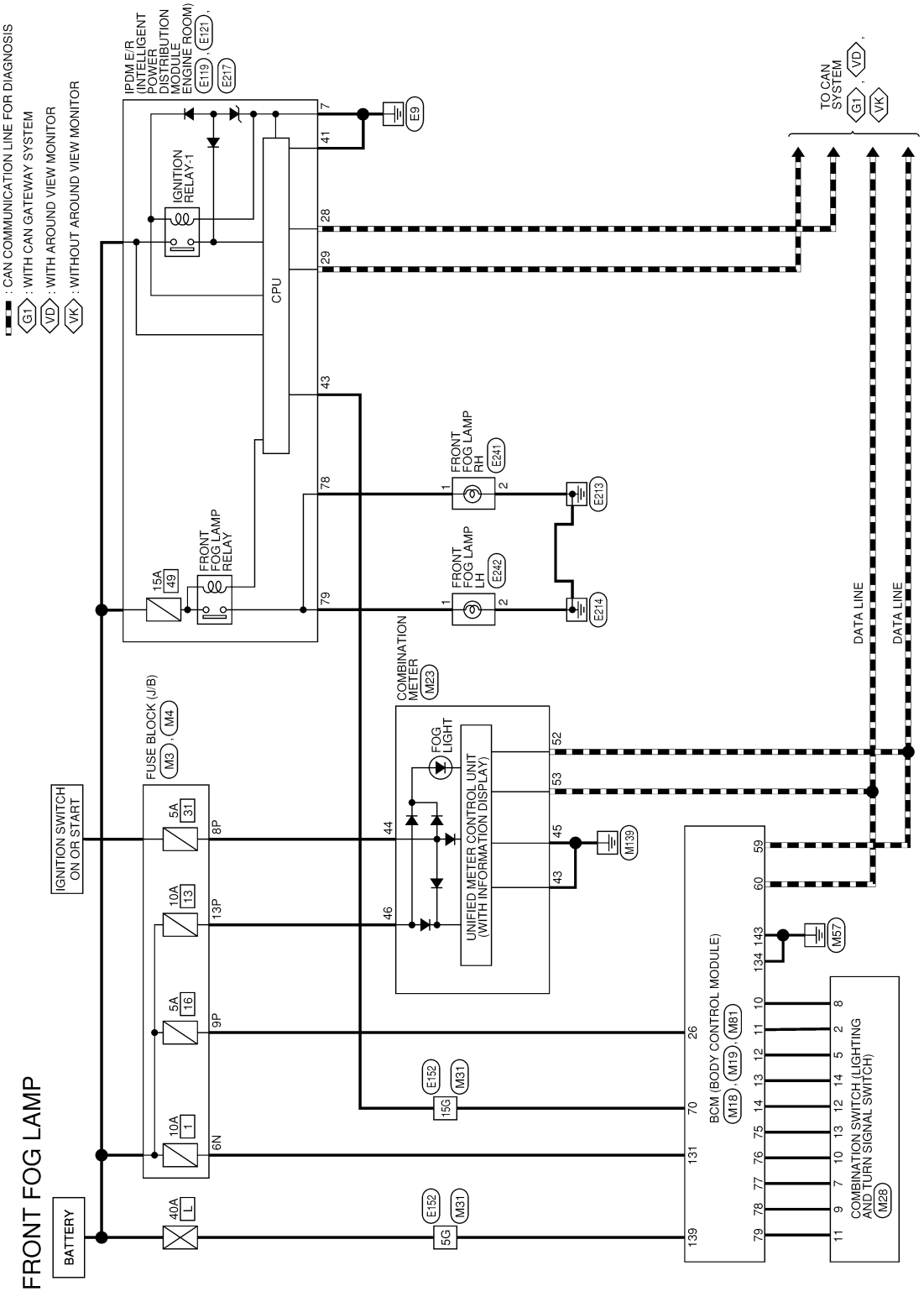


AALIA4460GB

FRONT FOG LAMP SYSTEM

Wiring Diagram

INFOID:0000000012875289

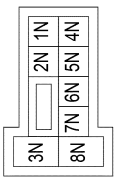


AALWA1502GB

FRONT FOG LAMP CONNECTORS

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	CS06FW-M2
Connector Color	WHITE

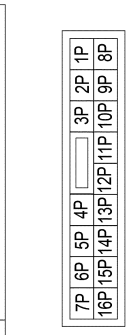
H.S.



Terminal No.	Color of Wire	Signal Name
6N	W	-

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS
Connector Color	WHITE

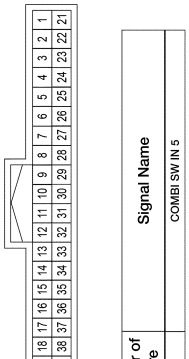
H.S.



Terminal No.	Color of Wire	Signal Name
8P	BG	-
9P	L	-
13P	W	-

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH
Connector Color	GREEN

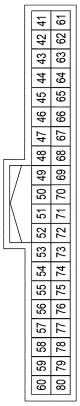
H.S.



Terminal No.	Color of Wire	Signal Name
10	W	COMBI SW IN 5
11	BG	COMBI SW IN 4
12	R	COMBI SW IN 3
13	G	COMBI SW IN 2
14	P	COMBI SW IN 1
26	L	SHORTING INPUT

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH
Connector Color	BLACK

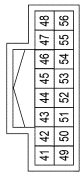
H.S.



Terminal No.	Color of Wire	Signal Name
59	P	CAN-L
60	L	CAN-H
70	P	IGN USM OUT 1
75	BG	COMBI SW OUT 5
76	P	COMBI SW OUT 4
77	R	COMBI SW OUT 3
78	G	COMBI SW OUT 2
79	W	COMBI SW OUT 1

Connector No.	M23
Connector Name	COMBINATION METER
Connector Type	TH16FW-NH
Connector Color	WHITE

H.S.



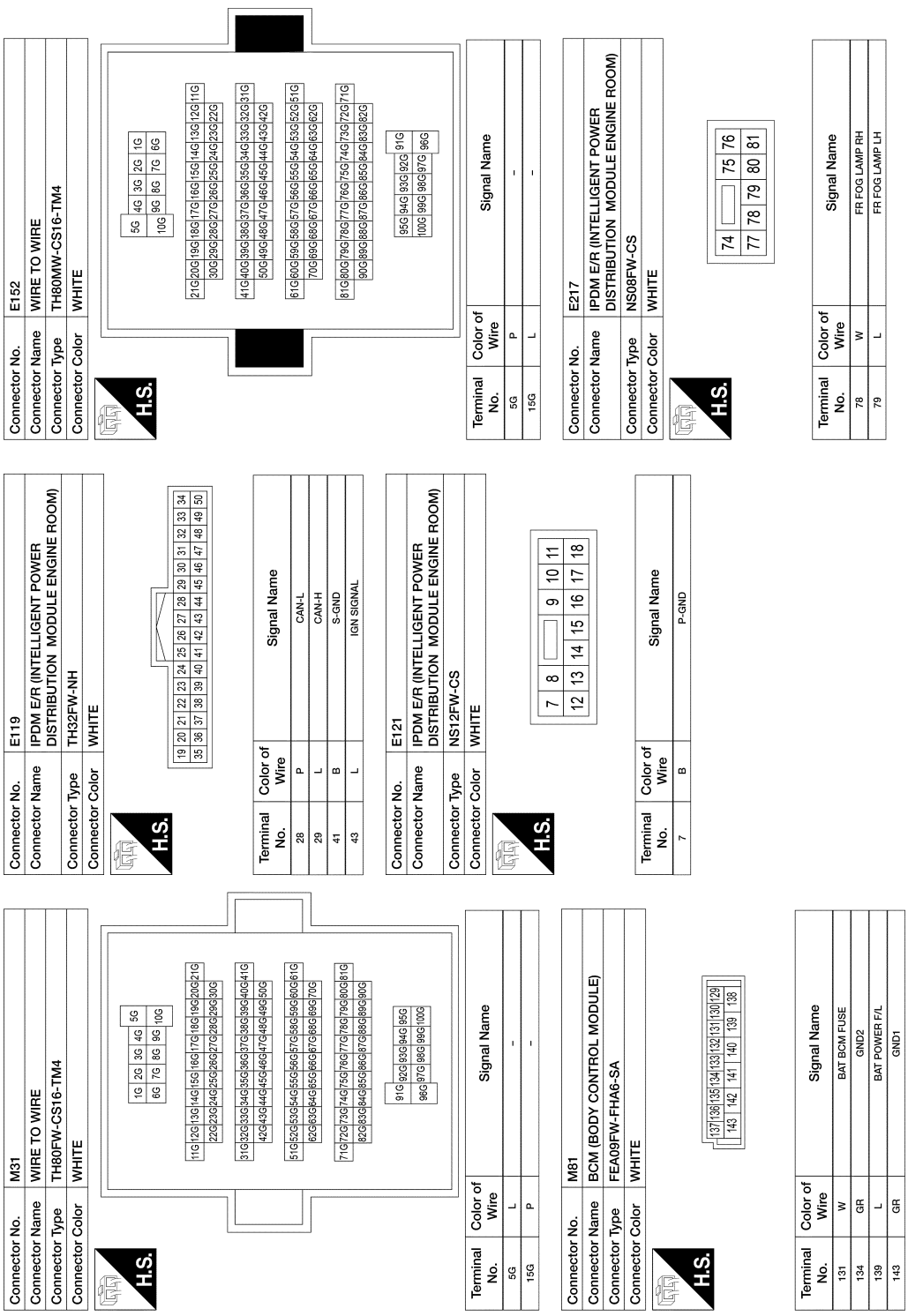
Terminal No.	Color of Wire	Signal Name
43	B	GND1
44	BG	POWER (IGN)
45	B	GND2
46	W	POWER (BAT)
52	P	CAN-L
53	L	CAN-H

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
2	BG	-
5	R	-
7	R	-
8	W	-
9	G	-
10	P	-
11	W	-
12	P	-
13	BG	-
14	G	-

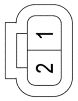
AALIA4444GB



AALIA4445GB

Connector No.	E241
Connector Name	FRONT FOG LAMP RH
Connector Type	FHZ02FB
Connector Color	BLACK

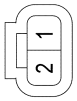
H.S.



Terminal No.	Color of Wire	Signal Name
1	W	-
2	B	-

Connector No.	E242
Connector Name	FRONT FOG LAMP LH
Connector Type	FHZ02FB
Connector Color	BLACK

H.S.



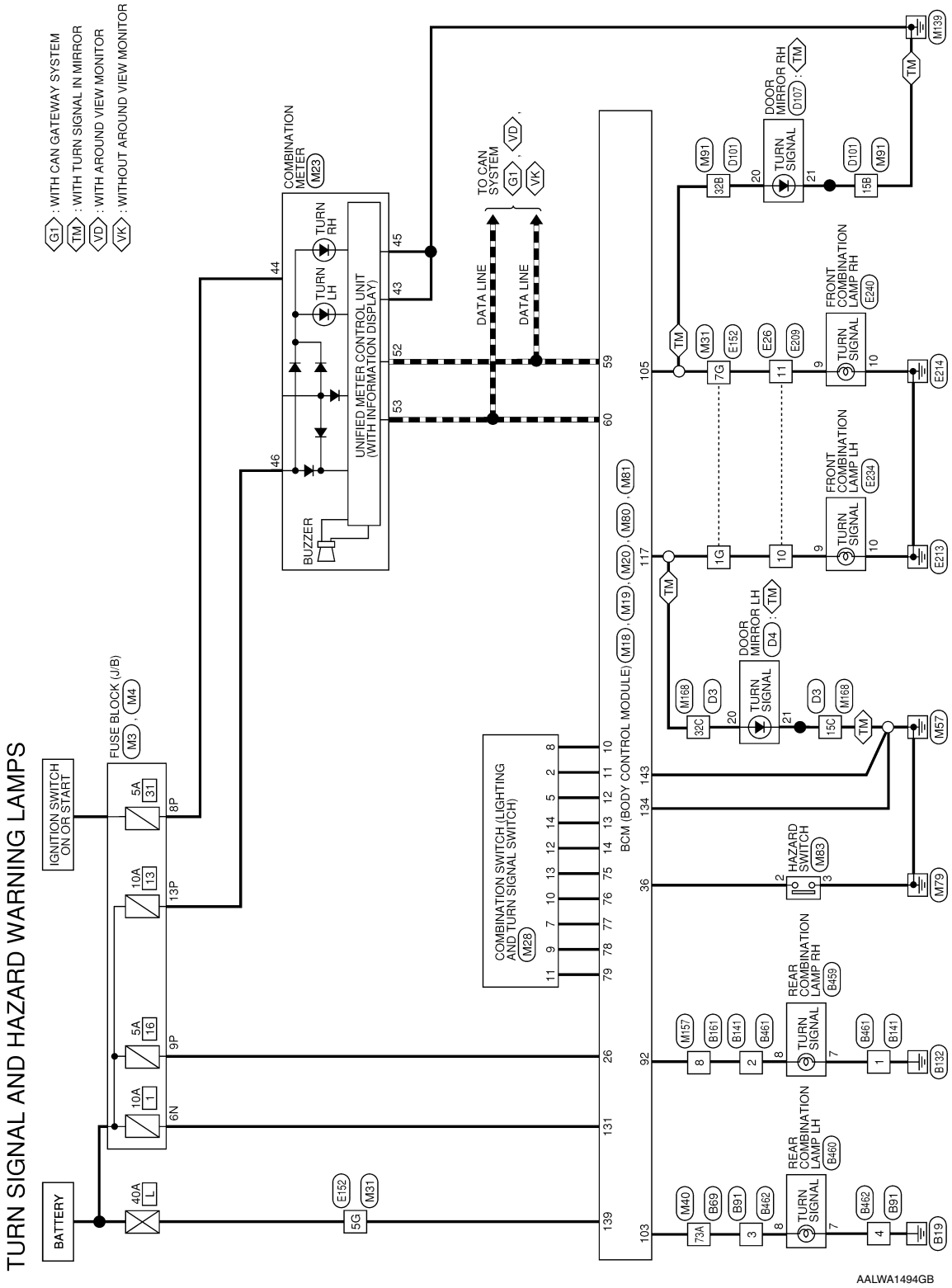
Terminal No.	Color of Wire	Signal Name
1	L	-
2	B	-

AALIA4446GB

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

Wiring Diagram

INFOID:0000000012875290



TURN SIGNAL AND HAZARD WARNING LAMPS CONNECTORS

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	CS06FW-M2
Connector Color	WHITE

H.S.

3N		2N	1N
8N	7N	6N	5N	4N

Terminal No.	Color of Wire	Signal Name
6N	W	-

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
8P	BG	-
9P	L	-
13P	W	-

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH
Connector Color	GREEN

H.S.

20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21

Terminal No.	Color of Wire	Signal Name
10	W	COMBI SW IN 5
11	BG	COMBI SW IN 4
12	R	COMBI SW IN 3
13	G	COMBI SW IN 2
14	P	COMBI SW IN 1
26	L	SHORTING INPUT
36	W	HAZARD SW

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH
Connector Color	BLACK

H.S.

60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41
80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61

Terminal No.	Color of Wire	Signal Name
59	P	CAN-L
60	L	CAN-H
75	BG	COMBI SW OUT 5
76	P	COMBI SW OUT 4
77	R	COMBI SW OUT 3
78	G	COMBI SW OUT 2
79	W	COMBI SW OUT 1

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH24FGY-NH
Connector Color	GRAY

H.S.

92	91	90	89	88	87	86	85	84	83	82	81
104	103	102	101	100	99	98	97	96	95	94	93

Terminal No.	Color of Wire	Signal Name
92	R	RR FLASHER
103	BG	RL FLASHER

Connector No.	M23
Connector Name	COMBINATION METER
Connector Type	TH16FW-NH
Connector Color	WHITE

H.S.

41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56

Terminal No.	Color of Wire	Signal Name
43	B	GND1
44	BG	POWER (IGN)
45	B	GND2
46	W	POWER (BAT)
52	P	CAN-L
53	L	CAN-H

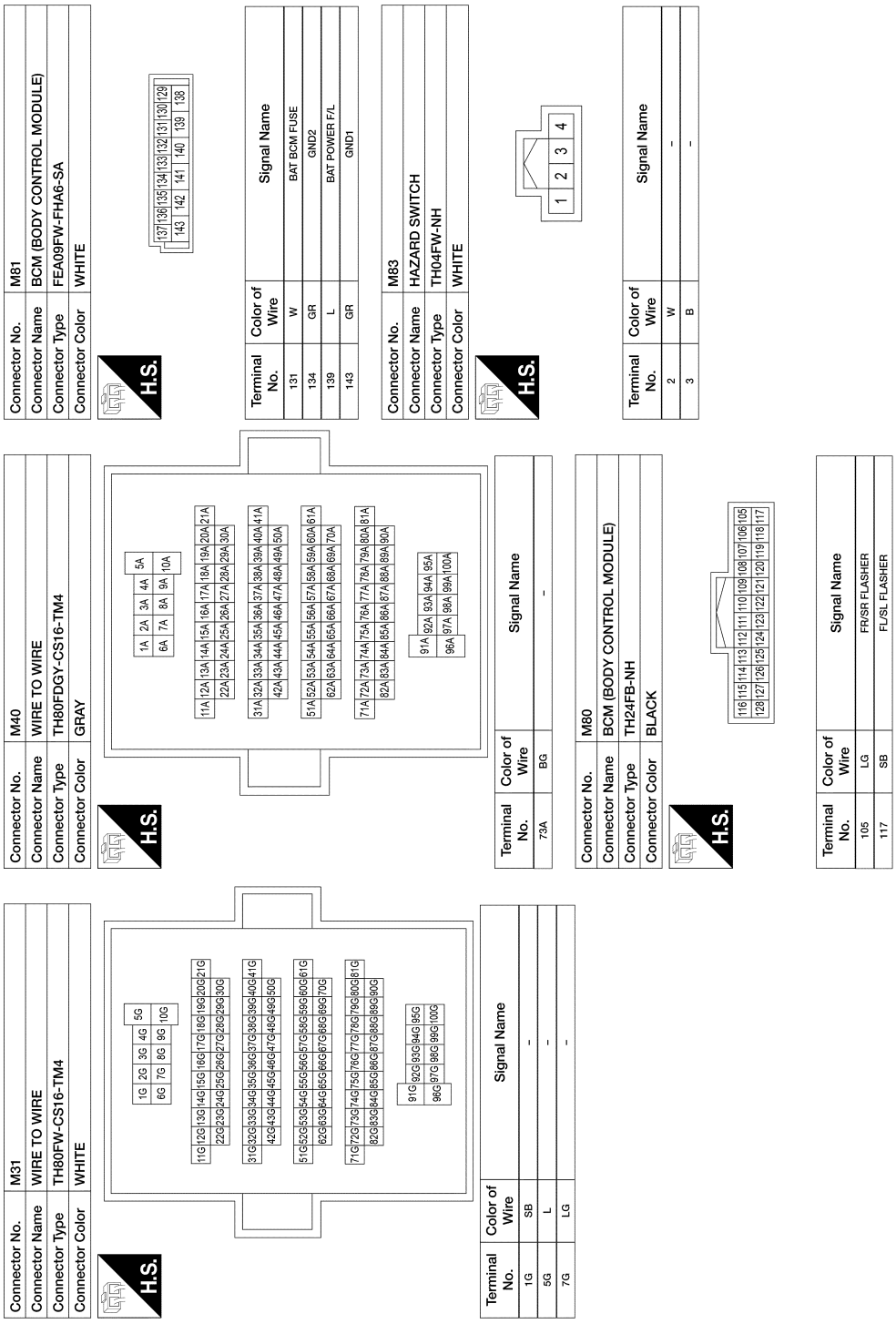
Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH
Connector Color	WHITE

H.S.

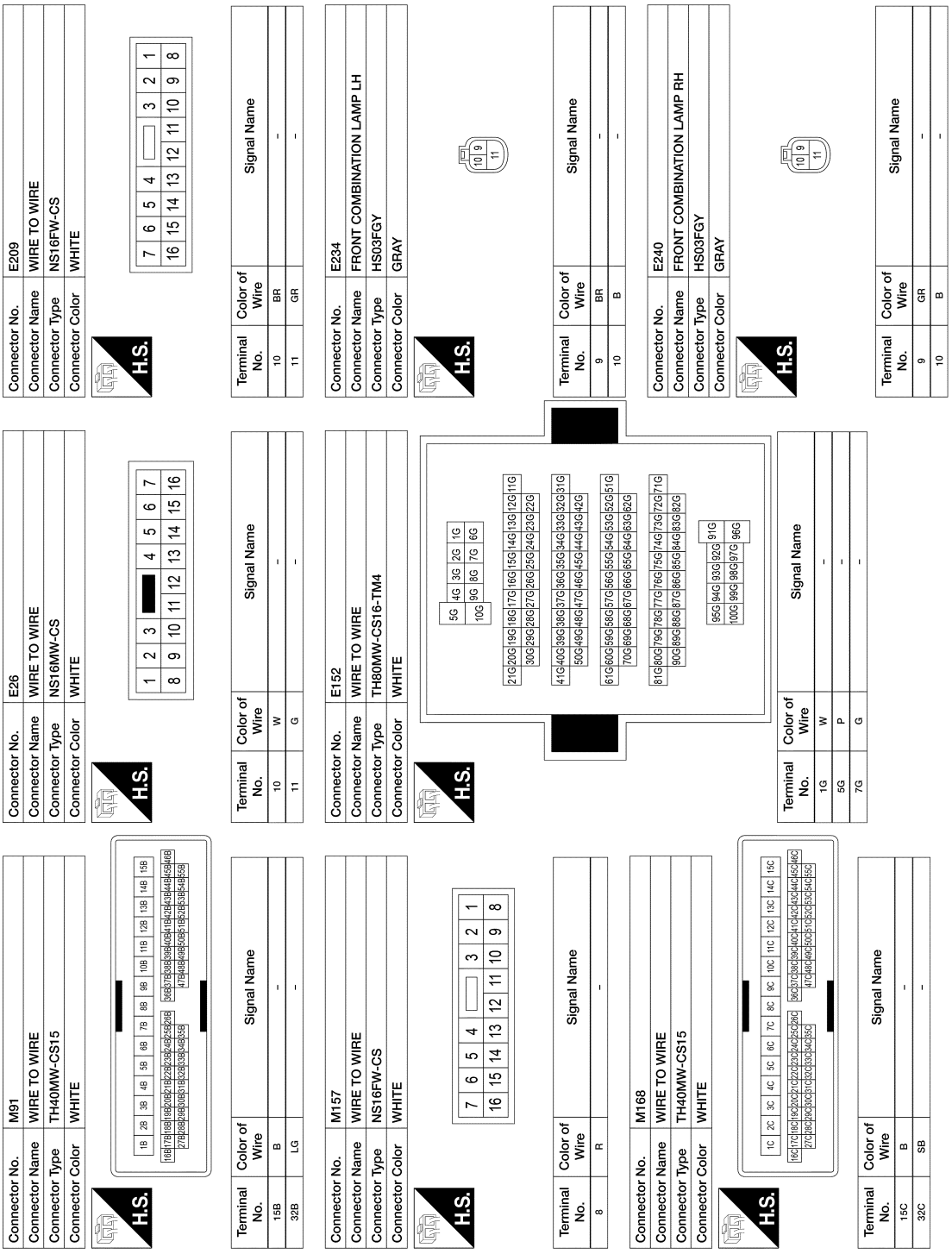
1	2	3		4	5	6
7	8	9	10	11	12	13	14

Terminal No.	Color of Wire	Signal Name
2	BG	-
5	R	-
7	R	-
8	W	-
9	G	-
10	P	-
11	W	-
12	P	-
13	BG	-
14	G	-

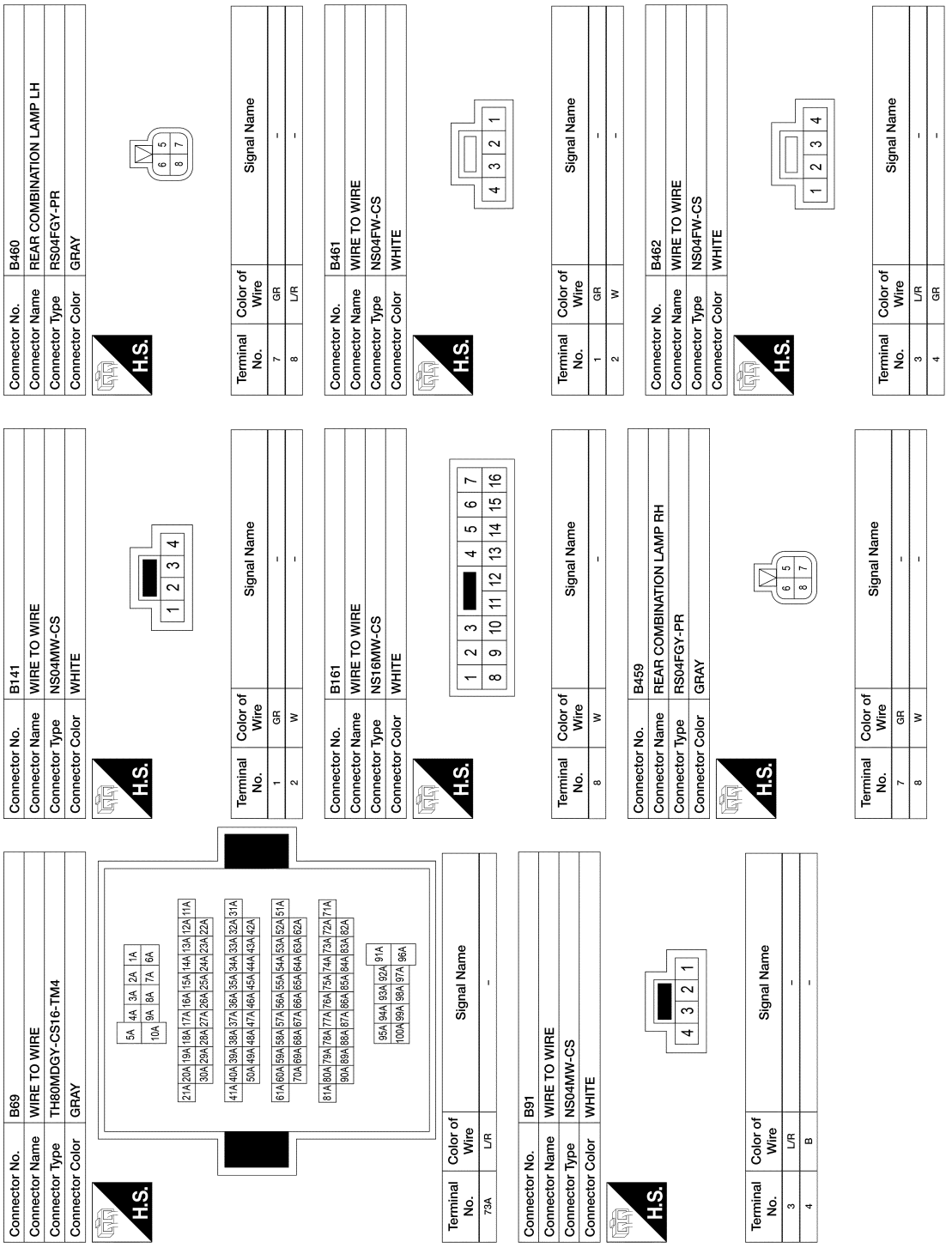
AALIA4425GB



AALIA4426GB



AALIA4427GB



AALIA4428GB

Connector No.	D3
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
15C	B	–
32C	G/O	–

Connector No.	D107
Connector Name	DOOR MIRROR RH
Connector Type	TH24MW-NH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
20	G/O	–
21	B/W	–

Connector No.	D4
Connector Name	DOOR MIRROR LH
Connector Type	TH24MW-NH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
20	G/O	–
21	B/W	–

Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15
Connector Color	WHITE

H.S.

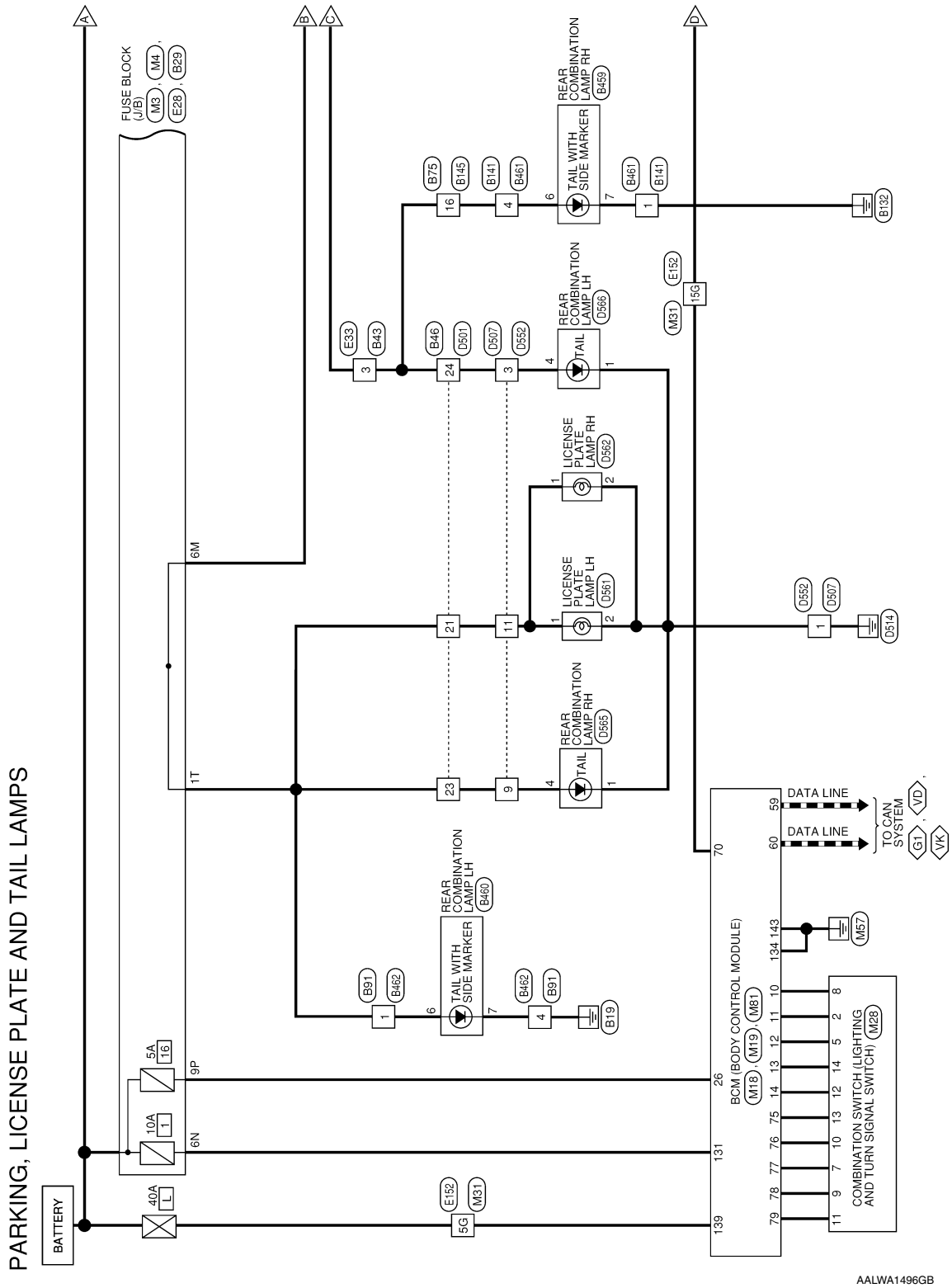
Terminal No.	Color of Wire	Signal Name
15B	B	–
32B	G/O	–

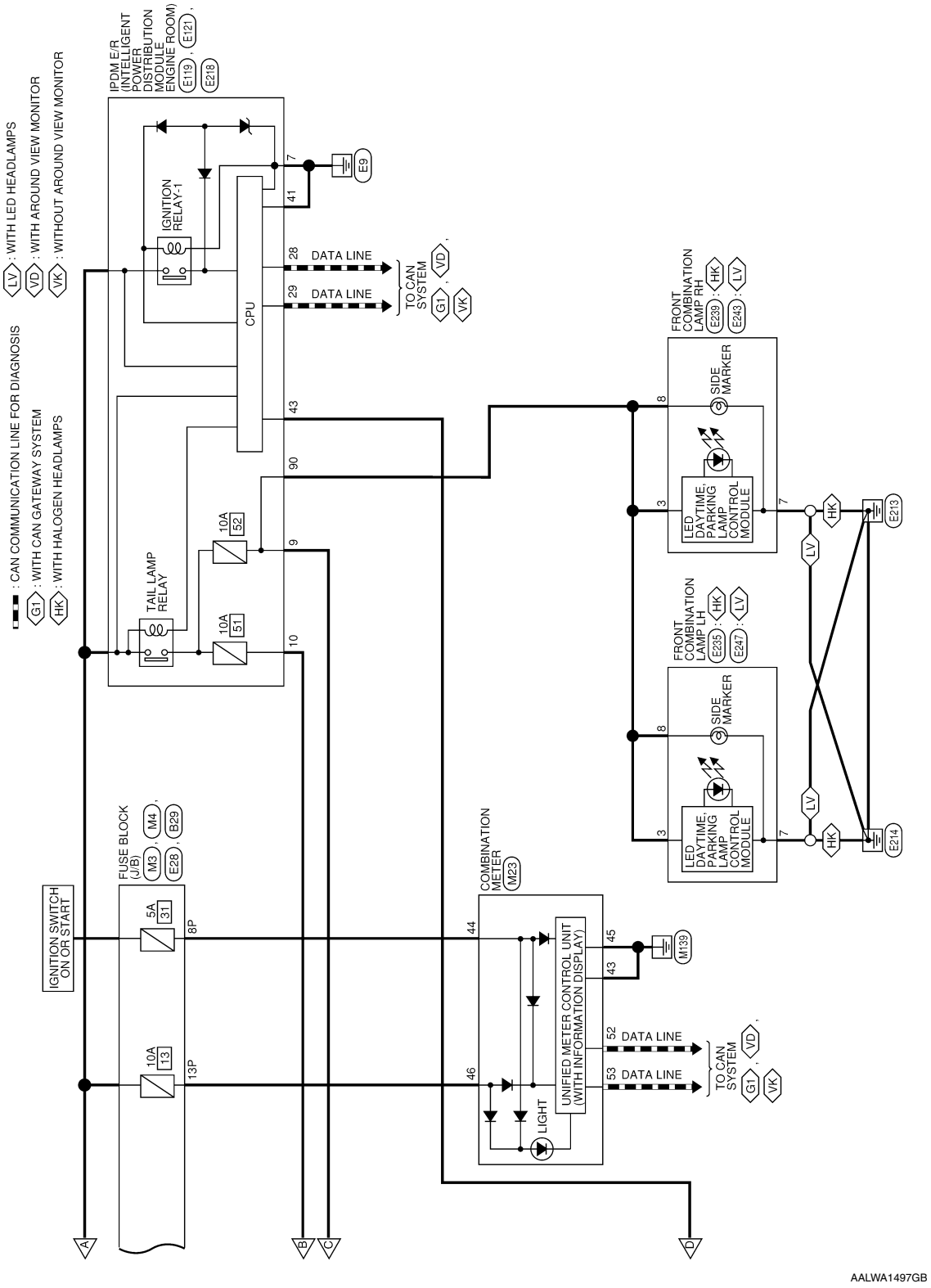
AALIA4429GB

PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

Wiring Diagram

INFOID:0000000012875291




LV : WITH LED HEADLAMPS
VD : WITH AROUND VIEW MONITOR
VK : WITHOUT AROUND VIEW MONITOR
: CAN COMMUNICATION LINE FOR DIAGNOSIS
G1 : WITH CAN GATEWAY SYSTEM
HK : WITH HALOGEN HEADLAMPS
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E119, E121, E218
IGNITION RELAY-1
CPU
TAIL LAMP RELAY
10A 52
10A 51
DATA LINE
TO CAN SYSTEM
E9
FUSE BLOCK (J/B) M3, M4, E28, B29
IGNITION SWITCH ON OR START
5A 31
10A 13
8P
13P
COMBINATION METER M23
UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY)
LIGHT
M139
FRONT COMBINATION LAMP RH E239 : HK E243 : LV
FRONT COMBINATION LAMP LH E235 : HK E247 : LV
SIDE MARKER
LED DAYTIME PARKING LAMP CONTROL MODULE
E213
E214
A
B
C
D
AALWA1497GB

PARKING, LICENSE PLATE AND TAIL LAMPS CONNECTORS

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	CS06FW-M2
Connector Color	WHITE

H.S.

3N		2N	1N
		7N	6N	5N	4N
	8N				

Terminal No.	Color of Wire	Signal Name
6N	W	-

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
8P	BG	-
9P	L	-
13P	W	-

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH
Connector Color	GREEN

H.S.

20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21

Terminal No.	Color of Wire	Signal Name
10	W	COMBI SW IN 5
11	BG	COMBI SW IN 4
12	R	COMBI SW IN 3
13	G	COMBI SW IN 2
14	P	COMBI SW IN 1
26	L	SHORTING INPUT

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH
Connector Color	BLACK

H.S.

60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41
80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61

Terminal No.	Color of Wire	Signal Name
59	P	CAN-L
60	L	CAN-H
70	P	IGN USM OUT 1
75	BG	COMBI SW OUT 5
76	P	COMBI SW OUT 4
77	R	COMBI SW OUT 3
78	G	COMBI SW OUT 2
79	W	COMBI SW OUT 1

Connector No.	M23
Connector Name	COMBINATION METER
Connector Type	TH16FW-NH
Connector Color	WHITE

H.S.

41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56

Terminal No.	Color of Wire	Signal Name
43	B	GND1
44	BG	POWER (IGN)
45	B	GND2
46	W	POWER (BAT)
52	P	CAN-L
53	L	CAN-H

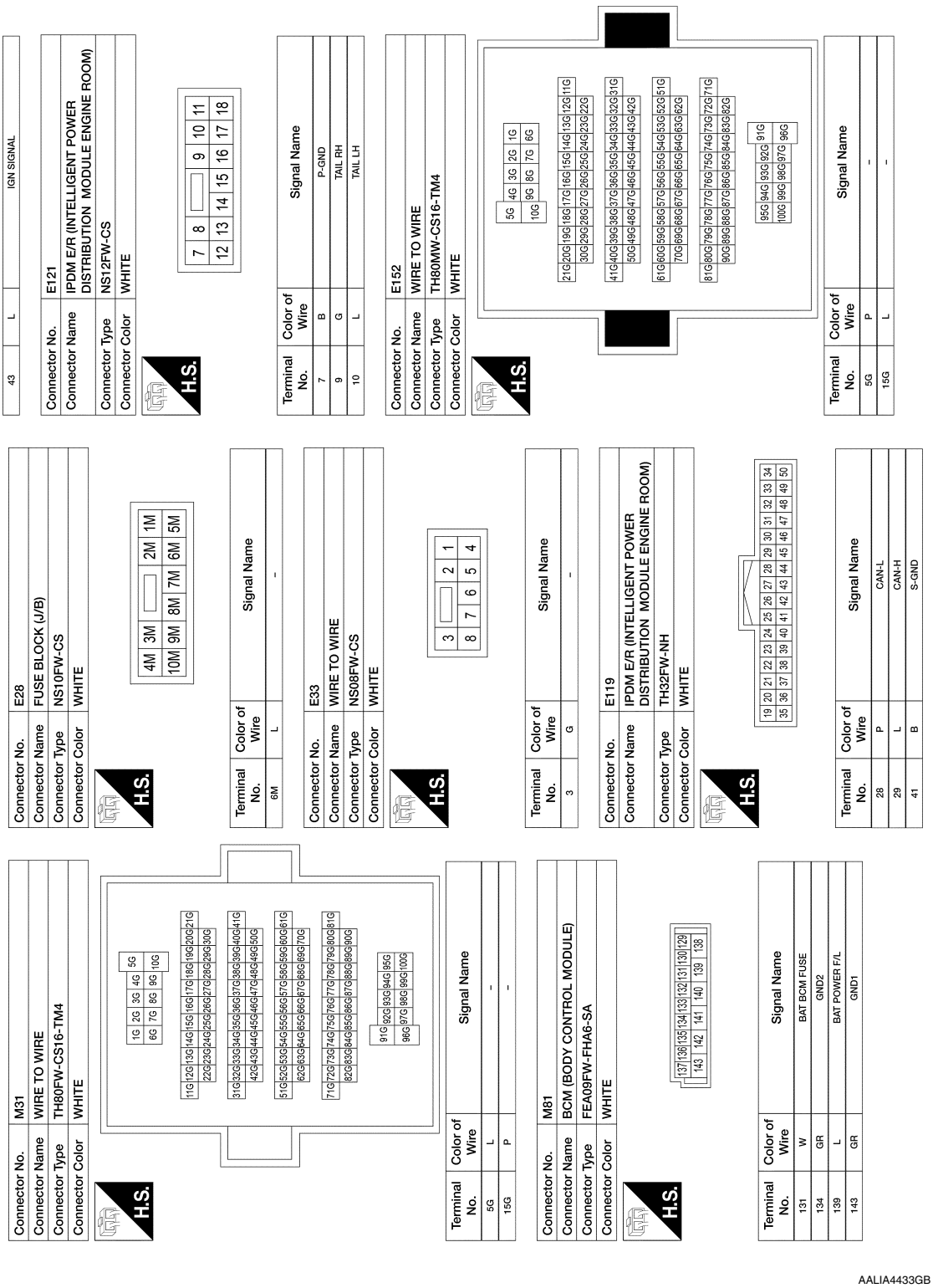
Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH
Connector Color	WHITE

H.S.

1	2	3		4	5	6
7	8	9	10	11	12	13	14

Terminal No.	Color of Wire	Signal Name
2	BG	-
5	R	-
7	R	-
8	W	-
9	G	-
10	P	-
11	W	-
12	P	-
13	BG	-
14	G	-

AALIA4432GB



AALIA4433GB

Connector No.	E218
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH16FW-NH
Connector Color	WHITE

H.S.

82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97

Terminal No.	Color of Wire	Signal Name
90	GR	CLEARANCE

Connector No.	E235
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	RS08FB-PR
Connector Color	BLACK

H.S.

1	2	3	4
5	6	7	8

Terminal No.	Color of Wire	Signal Name
3	O	–
7	B	–
8	P	–

Connector No.	E239
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	RS08FB-PR
Connector Color	BLACK

H.S.

1	2	3	4
5	6	7	8

Terminal No.	Color of Wire	Signal Name
3	GR	–
7	B	–

8	W	–

Connector No.	E243
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	RS08FB-PR
Connector Color	BLACK

H.S.

1	2	3	4
5	6	7	8

Terminal No.	Color of Wire	Signal Name
3	GR	–
7	B	–
8	W	–

Connector No.	E247
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	RS08FB-PR
Connector Color	BLACK

H.S.

1	2	3	4
5	6	7	8

Terminal No.	Color of Wire	Signal Name
3	O	–
7	B	–
8	P	–

Connector No.	B29
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-CS
Connector Color	WHITE

H.S.

2T	1T
6T	5T	4T	3T

Terminal No.	Color of Wire	Signal Name
1T	O	–

Connector No.	B43
Connector Name	WIRE TO WIRE
Connector Type	NS08MW-CS
Connector Color	WHITE

H.S.

1	2	3
4	5	6	7	8

Terminal No.	Color of Wire	Signal Name
3	W	–

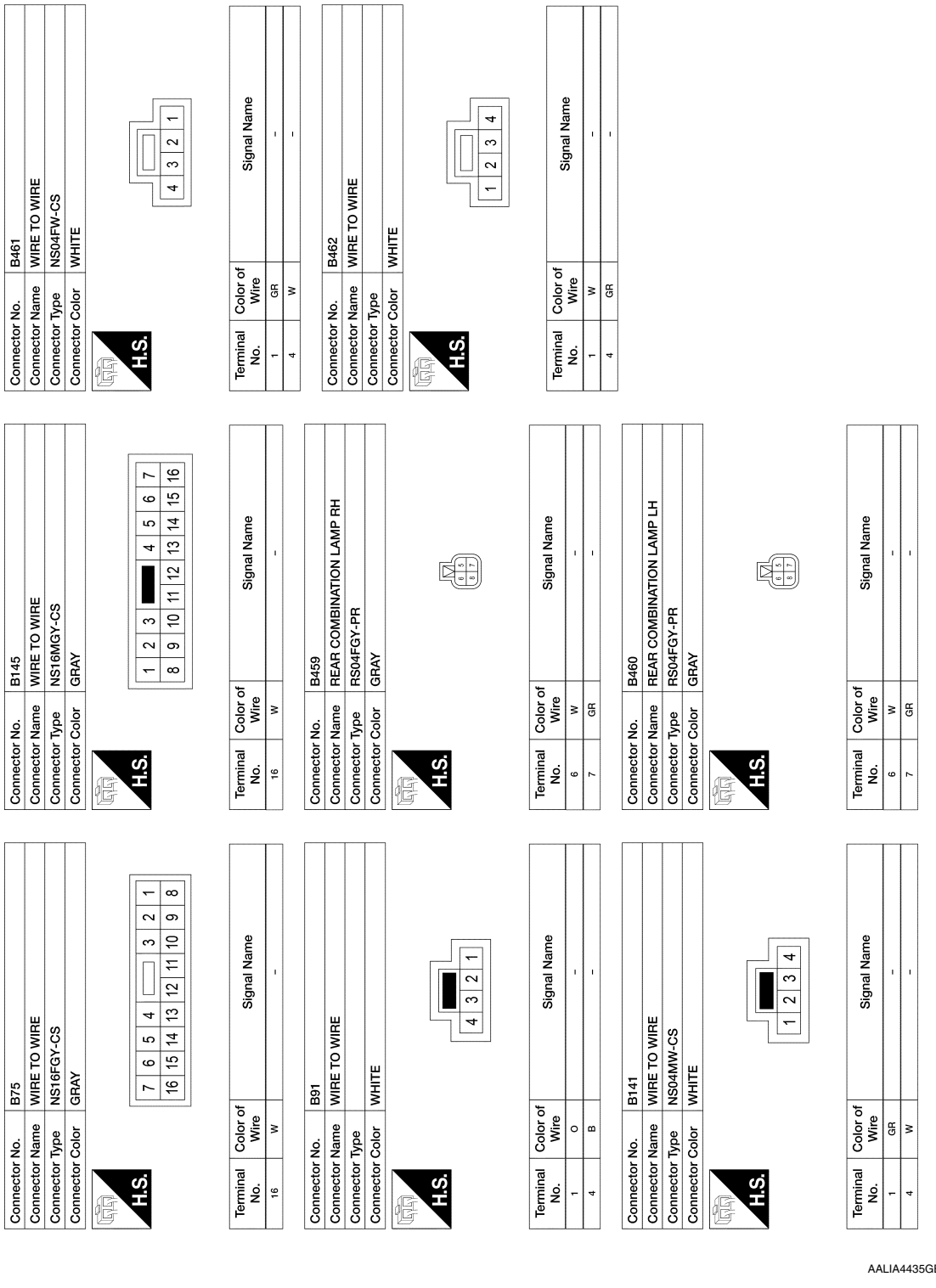
Connector No.	B46
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH
Connector Color	WHITE

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	25	26	27	28	29	30	31	32

Terminal No.	Color of Wire	Signal Name
21	R	–
23	L	–
24	W	–

AALIA4434GB



AALIA4435GB

Connector No.	D501
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH
Connector Color	WHITE

H.S.

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17

Terminal No.	Color of Wire	Signal Name
21	O	-
23	L	-
24	W	-

Connector No.	D507
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	B	-
3	W	-
9	L	-
11	O	-

Connector No.	D552
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH
Connector Color	WHITE

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

1	B	-
3	W	-
9	L	-
11	O	-

Connector No.	D561
Connector Name	LICENSE PLATE LAMP LH
Connector Type	TK02FBR
Connector Color	BROWN

H.S.

2	1

Terminal No.	Color of Wire	Signal Name
1	O	-
2	B	-

Connector No.	D562
Connector Name	LICENSE PLATE LAMP RH
Connector Type	TK02FBR
Connector Color	BROWN

H.S.

2	1

Terminal No.	Color of Wire	Signal Name
1	O	-
2	B	-

Connector No.	D565
Connector Name	REAR COMBINATION LAMP RH
Connector Type	NS04MW-CS
Connector Color	WHITE

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	B	-
4	L	-

Connector No.	D566
Connector Name	REAR COMBINATION LAMP LH
Connector Type	NS04MW-CS
Connector Color	WHITE

H.S.

4	3	2	1

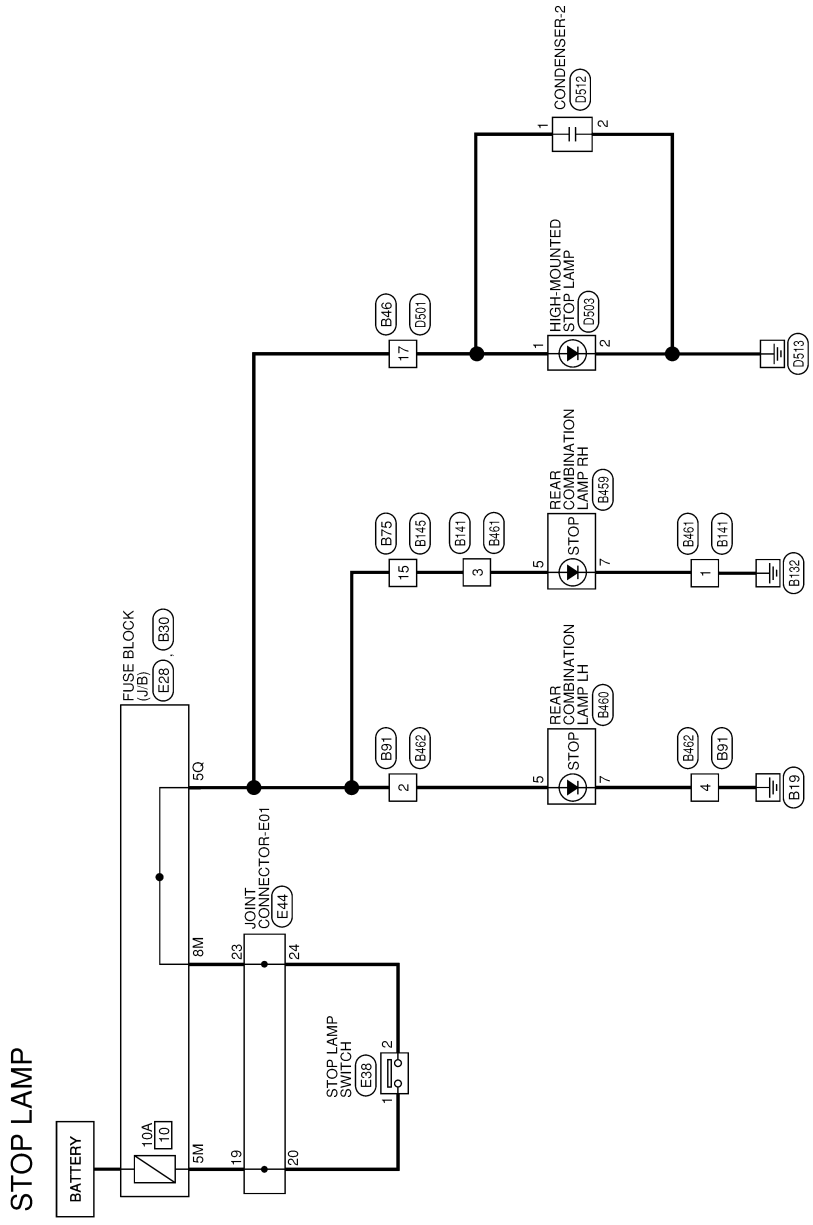
Terminal No.	Color of Wire	Signal Name
1	B	-
4	W	-

AALIA4436GB

STOP LAMP

Wiring Diagram

INFOID:0000000012875292



AALWA1495GB

STOP LAMP CONNECTORS

Connector No.	E28
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS
Connector Color	WHITE

H.S.

4M	3M		2M	1M
10M	9M	8M	7M	6M	5M

Terminal No.	Color of Wire	Signal Name
5M	W	–
8M	P	–

Connector No.	E38
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC
Connector Color	WHITE

H.S.

3	4
1	2

Terminal No.	Color of Wire	Signal Name
1	W	–
2	P	–

Connector No.	E44
Connector Name	JOINT CONNECTOR-E01
Connector Type	BJ30FW
Connector Color	WHITE

H.S.

11	10	9	8	7	6	5	4	3	2	1
22	21	20	19	18	17	16	15	14	13	12
33	32	31	30	29	28	27	26	25	24	23

Terminal No.	Color of Wire	Signal Name
19	W	–
20	W	–
23	P	–
24	P	–

Connector No.	B30
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS08FW-CS
Connector Color	WHITE

H.S.

3Q		2Q	1Q
8Q	7Q	6Q	5Q	4Q

Terminal No.	Color of Wire	Signal Name
5Q	G	–

Connector No.	B46
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH
Connector Color	WHITE

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	25	26	27	28	29	30	31	32

Terminal No.	Color of Wire	Signal Name
17	G	–

Connector No.	B75
Connector Name	WIRE TO WIRE
Connector Type	NS16FGY-CS
Connector Color	GRAY

H.S.

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

Terminal No.	Color of Wire	Signal Name
15	G	–

Connector No.	B91
Connector Name	WIRE TO WIRE
Connector Type	NS04MW-CS
Connector Color	WHITE

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
2	G	–
4	B	–

AALIA4430GB

Connector No.	B141
Connector Name	WIRE TO WIRE
Connector Type	NS04MW-CS
Connector Color	WHITE

H.S.

1	2	3	4

Terminal No.	Color of Wire	Signal Name
1	GR	–
3	G	–

Connector No.	B145
Connector Name	WIRE TO WIRE
Connector Type	NS16MGY-CS
Connector Color	GRAY

H.S.

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

Terminal No.	Color of Wire	Signal Name
15	G	–

Connector No.	B459
Connector Name	REAR COMBINATION LAMP RH
Connector Type	RS04FGY-PR
Connector Color	GRAY

H.S.

6	5
8	7

Terminal No.	Color of Wire	Signal Name
5	G	–
7	GR	–

Connector No.	B460
Connector Name	REAR COMBINATION LAMP LH
Connector Type	RS04FGY-PR
Connector Color	GRAY

H.S.

6	5
8	7

Terminal No.	Color of Wire	Signal Name
5	G	–
7	GR	–

Connector No.	B461
Connector Name	WIRE TO WIRE
Connector Type	NS04FW-CS
Connector Color	WHITE

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	GR	–
3	G	–

Connector No.	B462
Connector Name	WIRE TO WIRE
Connector Type	NS04FW-CS
Connector Color	WHITE

H.S.

1	2	3	4

Terminal No.	Color of Wire	Signal Name
2	G	–
4	GR	–

Connector No.	D501
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH
Connector Color	WHITE

H.S.

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17

Terminal No.	Color of Wire	Signal Name
17	G/W	–

Connector No.	D503
Connector Name	HIGH-MOUNTED STOP LAMP
Connector Type	TK02MBR-P
Connector Color	BROWN

H.S.

2	1

Terminal No.	Color of Wire	Signal Name
1	G/W	–
2	B	–

Connector No.	D512
Connector Name	CONDENSER-2
Connector Type	M02FW-GY-LC
Connector Color	GRAY

H.S.

1
2

Terminal No.	Color of Wire	Signal Name
1	G/W	–
2	B	–

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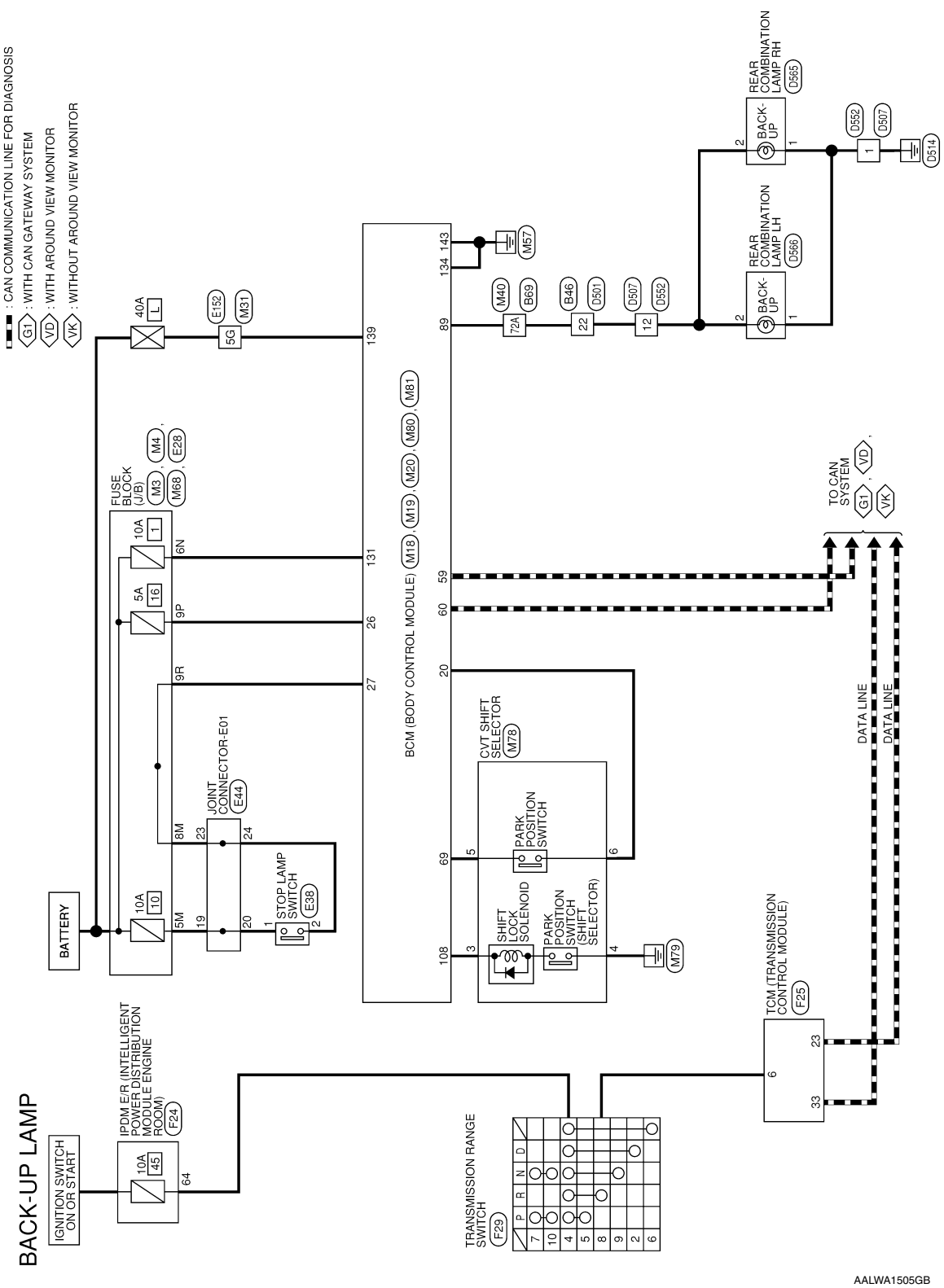
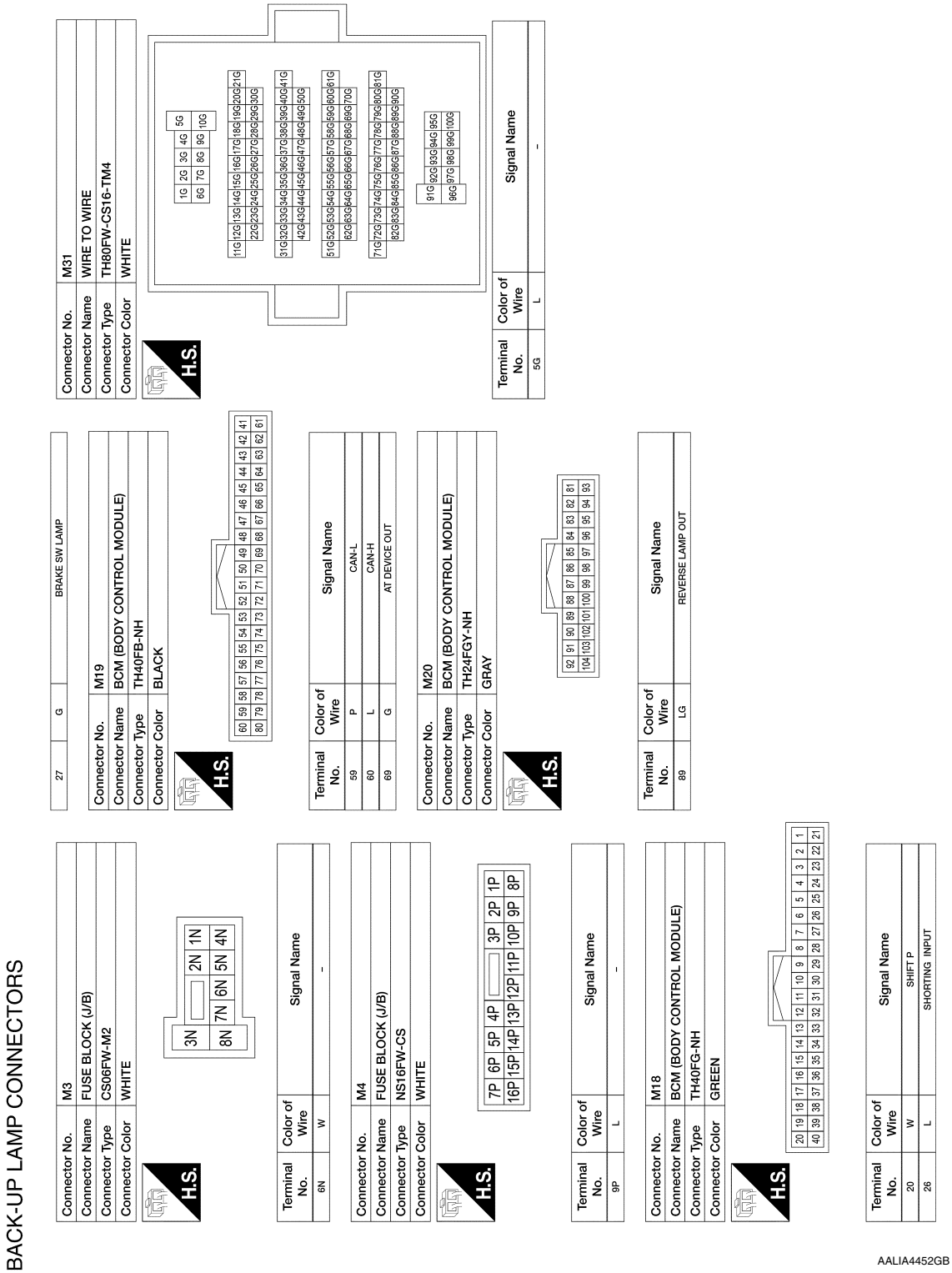
BACK-UP LAMP

Wiring Diagram

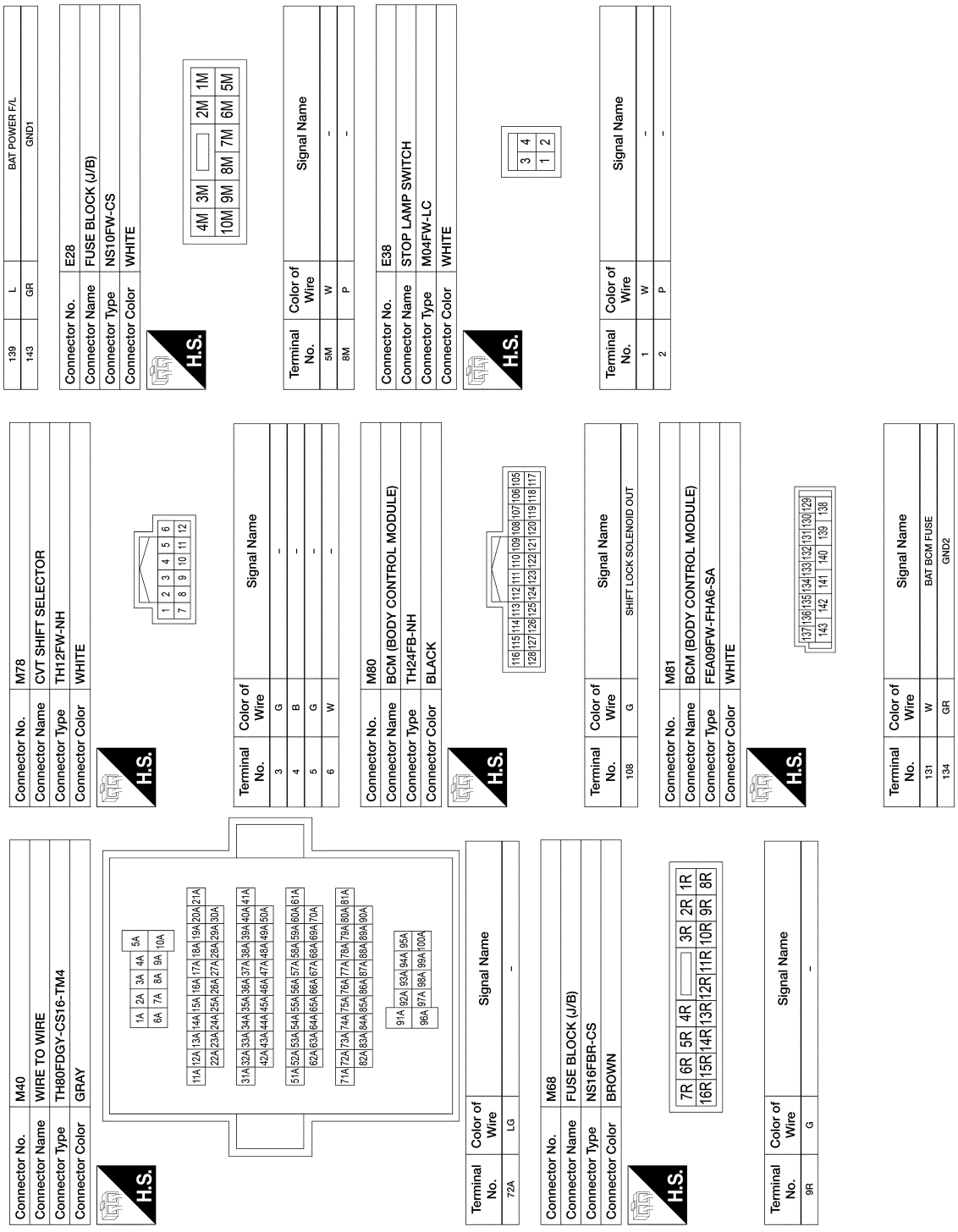
INFOID:0000000012875293



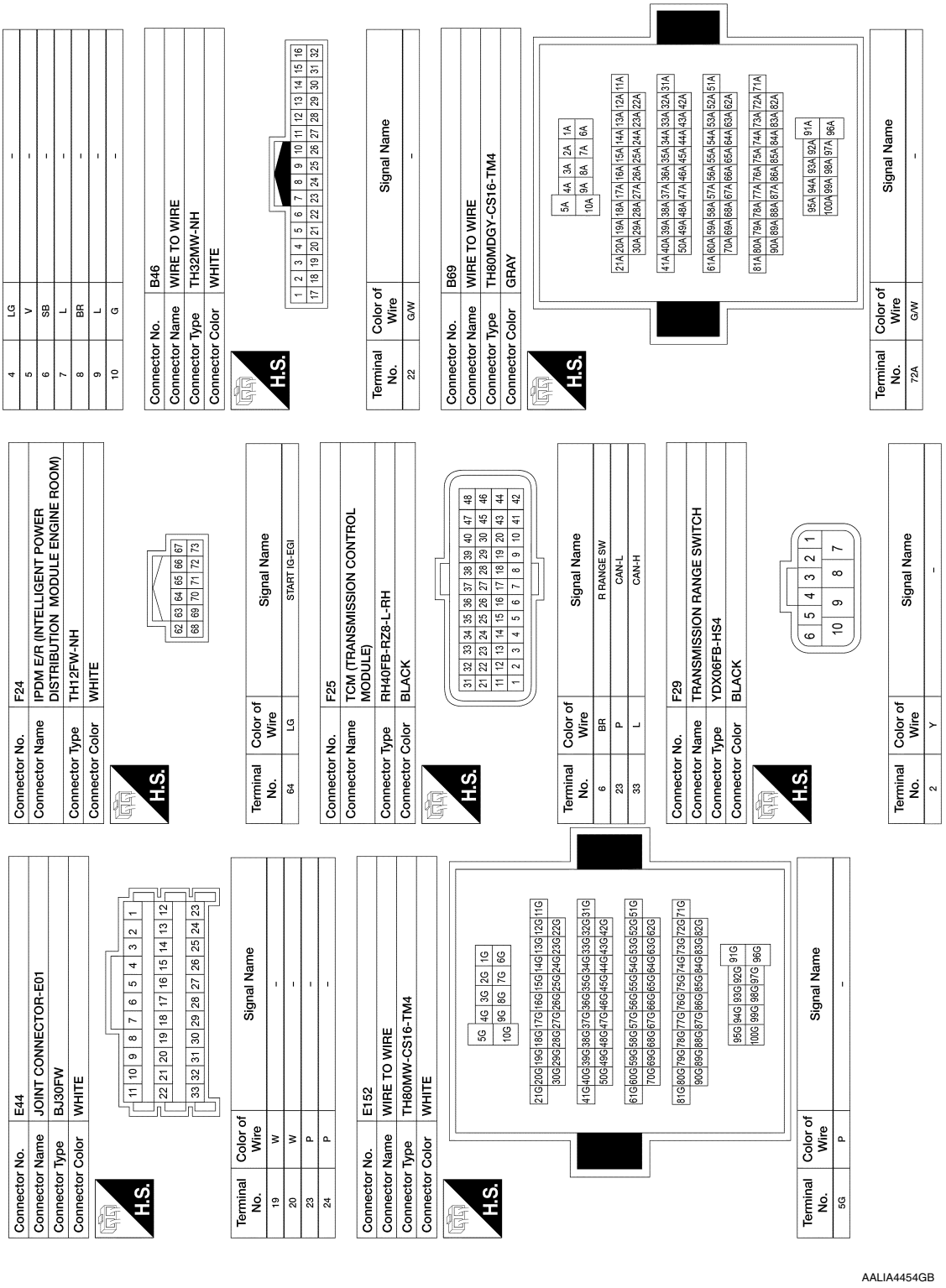
BACK-UP LAMP CONNECTORS



AALIA4452GB



AALIA4453GB



AALIA4454GB

Connector No.	D501
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH
Connector Color	WHITE

H.S.

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17

Terminal No.	Color of Wire	Signal Name
22	G/W	-

Connector No.	D507
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	B	-
12	G/W	-

Connector No.	D552
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH
Connector Color	WHITE

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
1	B	-
12	G/W	-

Connector No.	D565
Connector Name	REAR COMBINATION LAMP RH
Connector Type	NS04MW-CS
Connector Color	WHITE

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	B	-
2	G/W	-

Connector No.	D566
Connector Name	REAR COMBINATION LAMP LH
Connector Type	NS04MW-CS
Connector Color	WHITE

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	B	-
2	G/W	-

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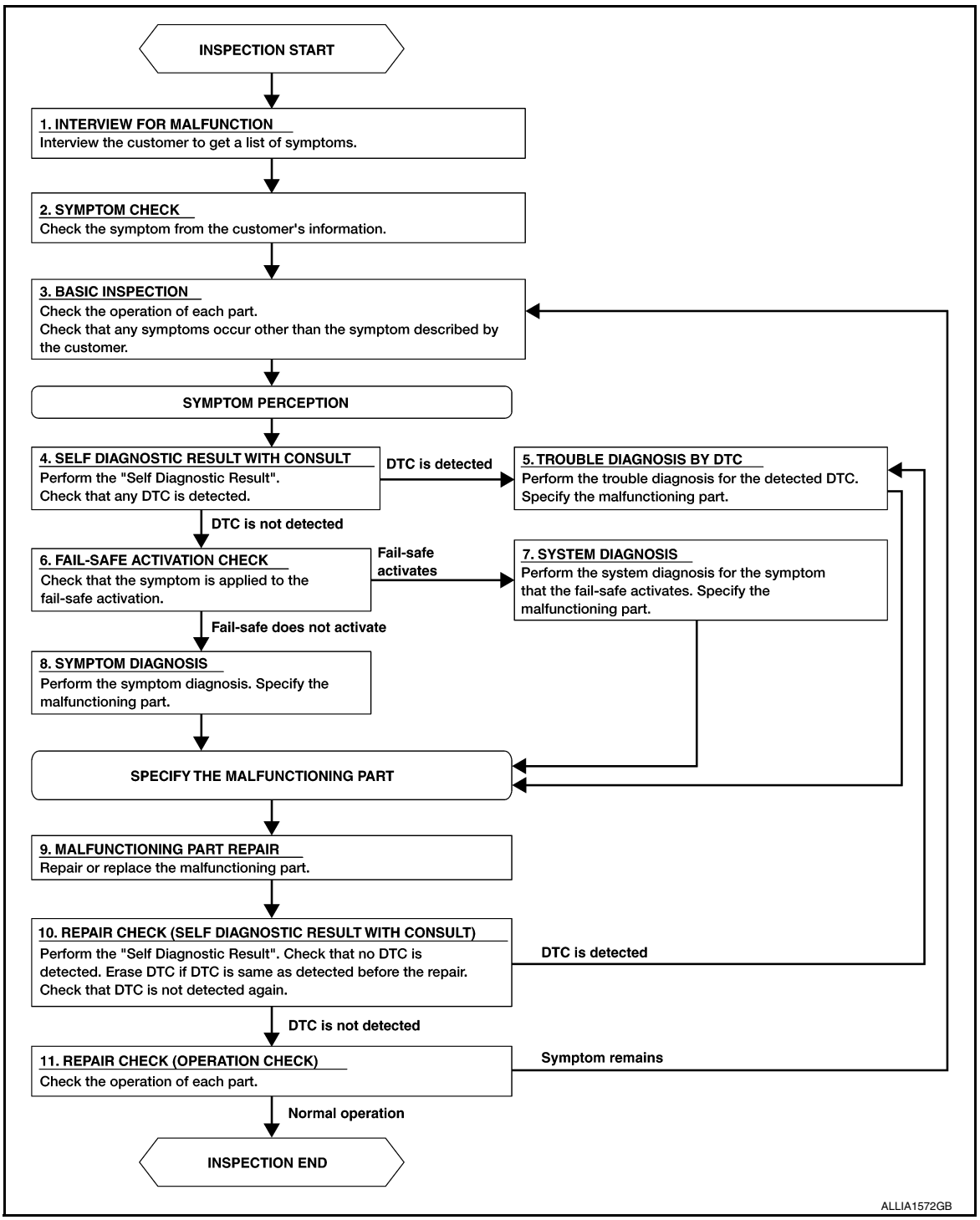
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000012875294

OVERALL SEQUENCE



DETAILED FLOW

1.INTERVIEW FOR MALFUNCTION

Find out what the customer's concerns are.

>> GO TO 2.

2.SYMPTOM CHECK

Verify the symptom from the customer's information.

>> GO TO 3.

3.BASIC INSPECTION

Check the operation of each part. Check any concerns that occur other than those mentioned in the customer interview.

>> GO TO 4.

4.SELF DIAGNOSTIC RESULT WITH CONSULT

Perform the “Self Diagnostic Result”. 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

Determine if the customer's concern is related to 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 in which 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 DIAGNOSTIC RESULT WITH CONSULT)

Perform the “Self Diagnostic Result”. Verify that no DTCs are detected. Erase all DTCs detected prior to the repair. Verify 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.
NO >> GO TO 3.

LED HEADLAMP OPERATION INSPECTION

Work Procedure

INFOID:0000000012875295

1.CHECK START

1. In the cool LED status (wait for more than 10 minutes after turning headlamp OFF), turn ON and turn OFF headlamp several times. Check that headlamp operates normally each time.
2. In the cool LED status, turn headlamp ON, wait until headlamp enters the stable status (approximately 5 minutes after turning headlamp ON) and then check that headlamp operates normally without blinking or flickering.
3. In the warm LED status (turn headlamp ON for more than 15 minutes and wait for 1 minute after turning OFF), turn ON and turn OFF the headlamp several times. Check that headlamp operates normally each time.
4. Turn headlamp ON for approximately 30 minutes and then check that headlamp operates normally without difference in brightness between LH and RH, blinking or flickering.

Is the inspection result normal?

YES >> Inspection End.
NO >> Refer to EXL-98, "Symptom Table".

DTC/CIRCUIT DIAGNOSIS

HEADLAMP (HI) CIRCUIT

Component Function Check

INFOID:0000000012875296

1.CHECK HEADLAMP (HI) OPERATION

With CONSULT
1. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
2. While operating the test items, check that the headlamp (HI) blinks.

Hi : Headlamp (HI) blinks (ON/OFF is repeated 1 second each.)
Off : Headlamp (HI) OFF

Without CONSULT
1. Start IPDM E/R auto active test. Refer to PCS-9, "Diagnosis Description".
2. Check that the headlamp (HI) blinks.

Is the inspection result normal?

YES >> Headlamp (HI) circuit is normal.
NO >> Refer to EXL-72, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875297

1.CHECK HEADLAMP (HI) FUSE

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

Unit	Location	Fuse No.	Capacity
Headlamp HI (RH)	IPDM E/R	34	10A
Headlamp HI (LH)		35	

Is the inspection result normal?

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

2.CHECK HEADLAMP (HI) OUTPUT VOLTAGE

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

+			-	Test item		Voltage
Front combination lamp						
Connector		Terminal				
RH	E243	2	Ground	EXTERNAL LAMPS	Hi	Battery voltage
					Off	0
LH	E247				Hi	Battery voltage
					Off	0

Is the inspection result normal?

YES >> Perform the LED headlamp diagnosis. Refer to EXL-79, "Diagnosis Procedure".
NO >> GO TO 3.

3.CHECK HEADLAMP (HI) POWER SUPPLY CIRCUIT

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

Front combination lamp			IPDM E/R		Continuity
Connector		Terminal	Connector	Terminal	
RH	E243	2	E217	80	Yes
LH	E247			81	

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation".
NO >> Repair or replace harness.

HEADLAMP (LO) CIRCUIT

Component Function Check

INFOID:0000000012875298

1.CHECK HEADLAMP (LO) OPERATION

With CONSULT
1. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
2. While operating the test items, check that the headlamp (LO) is turned ON.

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

Without CONSULT
1. Start IPDM E/R auto active test. Refer to PCS-9, "Diagnosis Description".
2. Check that the headlamp (LO) is turned ON.

Is the inspection result normal?

YES >> Headlamp (LO) circuit is normal.
NO >> Refer to EXL-74, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875299

1.CHECK HEADLAMP (LO) FUSE

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

Unit	Location	Fuse No.	Capacity
Headlamp LO (RH)	IPDM E/R	36	15A
Headlamp LO (LH)		37	

Is the inspection result normal?

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

2.CHECK HEADLAMP (LO) OUTPUT VOLTAGE

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

+			-	Test item		Voltage
Front combination lamp						
Connector		Terminal				
RH	E243	1	Ground	EXTERNAL LAMPS	Lo	Battery voltage
					Off	0
LH	E247				Lo	Battery voltage
					Off	0

Is the inspection result normal?

YES >> Perform the LED headlamp diagnosis. Refer to EXL-79, "Diagnosis Procedure".
NO >> GO TO 3.

3.CHECK HEADLAMP (LO) POWER SUPPLY CIRCUIT

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

Front combination lamp			IPDM E/R		Continuity
Connector		Terminal	Connector	Terminal	
RH	E243	1	E217	75	Yes
LH	E247			76	

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation".
NO >> Repair or replace harness.

DAYTIME RUNNING LIGHT RELAY CIRCUIT

Component Function Check

INFOID:0000000012875300

1.CHECK DAYTIME RUNNING LIGHT OPERATION

CONSULT
1. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
2. While operating the test items, check daytime running light operation.

On : EXTERNAL LAMPS Hi
Off : EXTERNAL LAMPS Off

Is the inspection result normal?

YES >> Daytime running light relay circuit is normal.
NO >> Refer to EXL-76, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875301

Regarding Wiring Diagram information. Refer to EXL-33, "Wiring Diagram".

1.CHECK DAYTIME RUNNING LIGHT RELAY FUSE

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

Unit	Fuse No.	Capacity
Daytime running light relay	50	10A

Is the inspection result normal?

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

2.CHECK DAYTIME RUNNING LIGHT RELAY POWER SUPPLY

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

(+)		(–)	Voltage (Approx.)
Daytime running light relay			
Connector	Terminal		
E4	2	Ground	Battery voltage
	7		
	5		

Is the inspection result normal?

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

3.CHECK DAYTIME RUNNING LIGHT RELAY

Check daytime running light relay. Refer to EXL-77, "Component Inspection".

Is the inspection result normal?

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

4.CHECK DAYTIME RUNNING LIGHT RELAY CONTROL SIGNAL OUTPUT

CONSULT
1. Install daytime running light relay.

2. Turn ignition switch ON.
3. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
4. While operating the test item, check voltage between IPDM E/R harness connector and ground.

(+)		(−)	Test item		Voltage (Approx.)
IPDM E/R					
Connector	Terminal				
E218	85	Ground	EXTERNAL LAMPS	On	0 V
				Off	Battery voltage

Is the inspection result normal?

YES >> Daytime running light relay circuit is OK.
NO-1 (Fixed at 0 V)>>GO TO 5.
NO-2 (Fixed at battery voltage) >>Replace IPDM E/R. Refer to PCS-36, "Removal and Installation".

5. CHECK DAYTIME RUNNING LIGHT RELAY CONTROL SIGNAL (OPEN) CIRCUIT

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

IPDM E/R		Daytime running light relay		Continuity
Connector	Terminal	Connector	Terminal	
E218	85	E4	1	Yes

Is the inspection result normal?

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

6. CHECK DAYTIME RUNNING LIGHT RELAY CONTROL SIGNAL (SHORT) CIRCUIT

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E218	85		No

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation".
NO >> Repair or replace harness.

Component Inspection

INFOID:0000000012875302

1. CHECK DAYTIME RUNNING LIGHT RELAY

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

Daytime running light relay		Condition		Continuity
Terminal				
7	6	Voltage	Apply	Yes
			Not Apply	No
5	3		Apply	Yes
			Not Apply	No

Is the inspection result normal?

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

LED HEADLAMP

Diagnosis Procedure

INFOID:0000000012875303

Regarding Wiring Diagram information. Refer to EXL-28, "Wiring Diagram".

1.CHECK HEADLAMP (LO) GROUND CIRCUIT

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

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E243	5		Yes
LH	E247			

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace harness.

2.CHECK LED HEADLAMP CONTROL MODULE

Install the normal LED headlamp control module to the applicable headlamp. Check that the lighting switch is turned ON. Refer to EXL-10, "LED Headlamp Control Module".

Is the headlamp turned ON?

YES >> Replace LED headlamp control module. Refer to EXL-111, "Removal and Installation".
NO >> GO TO 3.

3.CHECK HEADLAMP

Install the normal headlamp to the applicable headlamp. Check that the headlamp is turned ON. Refer to EXL-79, "Diagnosis Procedure".

Is the headlamp turned ON?

YES >> Replace headlamp. Refer to EXL-111, "Removal and Installation".
NO >> LED headlamp is normal. Check headlamp control system.

PARKING LAMP CIRCUIT

Component Function Check

INFOID:0000000012875304

1.CHECK PARKING LAMP OPERATION

CONSULT
1. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
2. While operating the test items, check that the parking lamp is turned ON.

TAIL : Parking lamp ON
Off : Parking lamp OFF

Is the inspection result normal?

YES >> Parking lamp circuit is normal.
NO >> Refer to EXL-80, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875305

Regarding Wiring Diagram information. Refer to EXL-53, "Wiring Diagram".

1.CHECK PARKING LAMP FUSE

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

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

Is the inspection result normal?

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

2.CHECK PARKING LAMP CIRCUIT

1. Disconnect the following connectors:
- IPDM E/R
- Front combination lamps
- Rear combination lamps
2. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E218	90		No

Is the inspection result normal?

YES >> Replace fuse. (Replace IPDM E/R if blown fuse is found again.)
NO >> Replace the blown fuse after repairing the affected circuit.

3.CHECK PARKING LAMP

Check applicable LED lamp.

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace applicable LED lamp.

4.CHECK PARKING LAMP OUTPUT VOLTAGE

CONSULT
1. Disconnect front combination lamp connector.

2. Turn ignition switch ON.
3. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
4. While operating the test items, check voltage between IPDM E/R harness connector and ground.

(+)		(−)	Test item		Voltage (Approx.)
IPDM E/R					
Connector	Terminal				
E218	90	Ground	EXTERNAL LAMPS	TAIL	Battery voltage
				Off	0 V

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation".

5. CHECK PARKING LAMP POWER SUPPLY CIRCUIT

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

Front combination lamp			IPDM E/R		Continuity
Connector		Terminal	Connector	Terminal	
RH	E243	3	E218	90	Yes
LH	E247				

Is the inspection result normal?

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

6. CHECK PARKING LAMP GROUND CIRCUIT

Check continuity between front combination lamp harness connector and ground.

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E243	7		Yes
LH	E247			

Is the inspection result normal?

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

FRONT SIDE MARKER LAMP CIRCUIT

Component Function Check

INFOID:0000000012875306

1.CHECK PARKING LAMP OPERATION

Check that the parking lamp is turned ON.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Check parking lamp circuit. Refer to EXL-80, "Component Function Check".

2.CHECK FRONT SIDE MARKER LAMP OPERATION

CONSULT
1. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
2. While operating the test items, check that the front side marker lamp is turned ON.

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

Is the inspection result normal?

YES >> Front side marker lamp circuit is normal.
NO >> Refer to EXL-82, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875307

Regarding Wiring Diagram information. Refer to EXL-53, "Wiring Diagram".

1.CHECK FRONT SIDE MARKER LAMP BULB

Check applicable lamp bulb.

Is the inspection result normal?

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

2.CHECK FRONT SIDE MARKER LAMP POWER SUPPLY CIRCUIT

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

Front combination lamp			IPDM E/R		Continuity
Connector		Terminal	Connector	Terminal	
RH	E243	8	E218	90	Yes
LH	E247				

Is the inspection result normal?

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

3.CHECK FRONT SIDE MARKER LAMP GROUND CIRCUIT

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

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E243	7		Yes
LH	E247			

Is the inspection result normal?

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

TAIL LAMP CIRCUIT

Component Function Check

INFOID:0000000012875308

1.CHECK TAIL LAMP OPERATION

CONSULT
1. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
2. While operating the test items, check that the tail lamp is turned ON.

TAIL : Tail Lamp ON
Off : Tail lamp OFF

Is the inspection result normal?

YES >> Tail lamp circuit is normal.
NO >> Refer to EXL-84, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875309

Regarding Wiring Diagram information. Refer to EXL-53, "Wiring Diagram".

1.CHECK PARKING LAMP OPERATION

Check that the parking lamp is turned ON.

Is the inspection result normal?

YES [When tail lamp RH or LH does not turn ON.]>>GO TO 2.
NO >> Check parking lamp circuit. Refer to EXL-80, "Component Function Check".

2.CHECK TAIL LAMP (LH) FUSE

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

Unit	Location	Fuse No.	Capacity
Tail lamp RH	IPDM E/R	52	10A
Tail lamp LH		51	

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace the blown fuse after repairing the affected circuit.

3.CHECK TAIL LAMP OUTPUT VOLTAGE

CONSULT
1. Disconnect rear combination lamp RH or LH connector.
2. Turn ignition switch ON.
3. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
4. While operating the test items, check voltage between applicable rear combination lamp harness connector and ground.

(+)			(–)	Test item		Voltage (Approx.)
Rear combination lamp						
Connector		Terminal				
RH	D565	4	Ground	EXTERNAL LAMPS	TAIL	Battery voltage
					Off	0 V
LH	D566				TAIL	Battery voltage
					Off	0 V

Is the inspection result normal?

YES >> GO TO 6.
NO >> GO TO 4.

4. CHECK TAIL LAMP POWER SUPPLY (SHORT) CIRCUIT

1. Disconnect IPDM E/R connector and rear combination lamp RH or LH connector.
2. Check continuity between IPDM E/R harness connector and ground.

(+)		(–)	Continuity
IPDM E/R			
Connector	Terminal		
E121	9	Ground	No
	10		

Is the inspection result normal?

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

5. CHECK TAIL LAMP POWER SUPPLY (OPEN) CIRCUIT

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

Rear combination lamp			IPDM E/R		Continuity
Connector		Terminal	Connector	Terminal	
RH	B459	6	E121	9	Yes
LH	B460			10	

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation"
NO >> Repair or replace harness.

6. CHECK TAIL LAMP GROUND CIRCUIT

Check continuity between rear combination lamp harness connector and ground.

Rear combination lamp			Ground	Continuity
Connector		Terminal		
RH	B459	7		Yes
LH	B460			

Is the inspection result normal?

YES >> Replace rear combination lamp. Refer to EXL-119, "Removal and Installation".
NO >> Repair or replace harness.

LICENSE PLATE LAMP CIRCUIT

Component Function Check

INFOID:0000000012875310

1.CHECK TAIL LAMP LH OPERATION

Check that the tail lamp LH is turned ON.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Check tail lamp circuit. Refer to EXL-84, "Component Function Check".

2.CHECK LICENSE PLATE LAMP OPERATION

CONSULT
1. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
2. While operating the lighting switch, check that the license plate lamp is turned ON.

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

Is the inspection result normal?

YES >> License plate lamp circuit is normal.
NO >> Refer to EXL-86, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875311

Regarding Wiring Diagram information. Refer to EXL-53, "Wiring Diagram".

1.CHECK LICENSE PLATE LAMP BULB

Check the applicable lamp bulb.

Is the inspection result normal?

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

2.CHECK LICENSE PLATE LAMP POWER SUPPLY CIRCUIT

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

License plate lamp			IPDM E/R		Continuity
Connector		Terminal	Connector	Terminal	
RH	D562	1	E121	10	Yes
LH	D561				

Is the inspection result normal?

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

3.CHECK LICENSE PLATE LAMP GROUND CIRCUIT

Check continuity between license plate lamp harness connector and ground.

License plate lamp			Ground	Continuity
Connector		Terminal		
RH	D562	2		Yes
LH	D561			

Is the inspection result normal?

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

FRONT FOG LAMP CIRCUIT

Component Function Check

INFOID:0000000012875312

1.CHECK FRONT FOG LAMP OPERATION

CONSULT
1. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
2. While 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 inspection result normal?

YES >> Front fog lamp circuit is normal.
NO >> Refer to EXL-88, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875313

Regarding Wiring Diagram information. Refer to EXL-43, "Wiring Diagram".

1.CHECK FRONT FOG LAMP FUSE

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

Unit	Location	Fuse No.	Capacity
Front fog lamp	IPDM E/R	49	15A

Is the inspection result normal?

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

2.CHECK FRONT FOG LAMP OUTPUT VOLTAGE

CONSULT
1. Disconnect front fog lamp connector.
2. Turn ignition switch ON.
3. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
4. While operating the test items, check the voltage between IPDM E/R harness connector and ground.

(+)			(–)	Test item		Voltage (Approx.)
Front fog lamp						
Connector		Terminal				
RH	E241	1	Ground	EXTERNAL LAMPS	Fog	Battery voltage
					Off	0 V
LH	E242				Fog	Battery voltage
					Off	0 V

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 3.

3.CHECK FRONT FOG LAMP POWER SUPPLY (SHORT) CIRCUIT

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E217	78		No
	79		

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness.

4. CHECK FRONT FOG LAMP POWER SUPPLY (OPEN) CIRCUIT

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

Front fog lamp			IPDM E/R		Continuity
Connector		Terminal	Connector	Terminal	
RH	E241	1	E217	78	Yes
LH	E242			79	

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation".
NO >> Repair or replace harness.

5. CHECK FRONT FOG LAMP GROUND CIRCUIT

Check continuity between front fog lamp harness connector and ground.

Front fog lamp			Ground	Continuity
Connector		Terminal		
RH	E241	2		Yes
LH	E242			

Is the inspection result normal?

YES >> Replace bulb. Refer to EXL-129, "Bulb Specifications".
NO >> Repair or replace harness.

TURN SIGNAL LAMP CIRCUIT

Component Function Check

INFOID:0000000012875314

1.CHECK TURN SIGNAL LAMP

CONSULT
1. Select "FLASHER" in “Active Test” mode of “BCM (FLASHER)”.
2. While operating the test items, check that the turn signal lamp blinks.

LH : Turn signal lamp LH blinking
RH : Turn signal lamp RH blinking
OFF : The turn signal lamp OFF

Is the inspection result normal?

YES >> Turn signal lamp circuit is normal.
NO >> Refer to EXL-90, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875315

Regarding Wiring Diagram information, refer to EXL-47, "Wiring Diagram".

1.CHECK TURN SIGNAL LAMP BULB

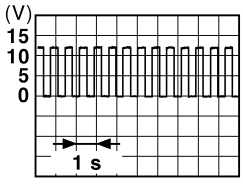
Check the applicable lamp bulb to be sure the proper bulb standard is in use and the bulb is not open.

Is the bulb OK?

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

2.CHECK TURN SIGNAL LAMP OUTPUT VOLTAGE

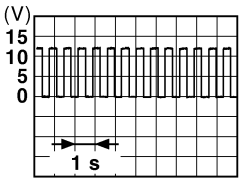
1. Turn ignition switch OFF.
2. Disconnect the front combination lamp connector, door mirror connector and the rear combination lamp connector.
3. Turn ignition switch ON.
4. With turn signal switch operating, check the voltage between the front combination lamp harness connector and ground.

Front combination lamp			(–)	Voltage
Connector		Terminal		
LH	E234	9	Ground	
RH	E240			

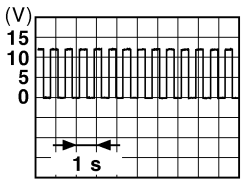
PKID0926E

5. With turn signal switch operating, check the voltage between the door mirror harness connector and ground.

Door mirror		(–)	Voltage
Connector	Terminal		

LH	D4	20	Ground	 PKID0926E
RH	D107			

6. With turn signal switch operating, check the voltage between the rear combination lamp harness connector and ground.

Rear combination lamp			(–)	Voltage
Connector		Terminal		
LH	B460	8	Ground	 PKID0926E
RH	B459			

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 3.

3. CHECK TURN SIGNAL LAMP POWER SUPPLY CIRCUIT

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

Front combination lamp			BCM		Continuity
Connector		Terminal	Connector	Terminal	
LH	E234	9	M80	117	Yes
RH	E240			105	

4. Check continuity between the BCM harness connector and the door mirror connector.

Door mirror lamp			BCM		Continuity
Connector		Terminal	Connector	Terminal	
LH	D4	20	M80	117	Yes
RH	D107			105	

5. Check continuity between the BCM harness connector and the rear combination lamp connector.

Rear combination lamp			BCM		Continuity
Connector		Terminal	Connector	Terminal	
LH	B460	8	M20	103	Yes
RH	B459			92	

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair the harness or connector.

4. CHECK TURN SIGNAL LAMP GROUND CIRCUIT

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

Front combination lamp			—	Continuity
Connector		Terminal		
LH	E234	10	Ground	Yes
RH	E240			

2. Check continuity between the door mirror harness connector and ground.

Door mirror lamp			—	Continuity
Connector		Terminal		
LH	D4	21	Ground	Yes
RH	D107			

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

Rear combination lamp			—	Continuity
Connector		Terminal		
LH	B460	7	Ground	Yes
RH	B459			

Is the inspection result normal?

YES >> Replace the malfunctioning lamp.
NO >> Repair the harness or connector.

OPTICAL SENSOR

Component Function Check

INFOID:0000000012875316

1.CHECK OPTICAL SENSOR SIGNAL BY CONSULT

CONSULT
1. Turn ignition switch ON.
2. Select “HEADLAMP” in “Data Monitor” mode of “BCM”.
3. Turn lighting switch AUTO.
4. With the optical sensor illuminating, check the monitor status.

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

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

Is the inspection result normal?

YES >> Optical sensor is normal.
NO >> Refer to EXL-93, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875317

Regarding Wiring Diagram information. Refer to EXL-38, "Wiring Diagram".

1.CHECK OPTICAL SENSOR POWER SUPPLY INPUT

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

(+)		(–)	Voltage (Approx.)
Optical sensor			
Connector	Terminal		
M15	1	Ground	5 V

Is the inspection result normal?

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

2.CHECK OPTICAL SENSOR GROUND INPUT

Check voltage between optical sensor harness connector and ground.

(+)		(–)	Voltage (Approx.)
Optical sensor			
Connector	Terminal		
M15	3	Ground	0 V

Is the inspection result normal?

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

3.CHECK OPTICAL SENSOR SIGNAL OUTPUT

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

(+)		(–)	Condition		Voltage (Approx.)
Optical sensor					
Connector	Terminal				
M15	2	Ground	Optical sensor	When illuminating	3.1 V or more *
				When shutting off light	0.6 V or less

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

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace the optical sensor. Refer to EXL-116, "Removal and Installation".

4. CHECK OPTICAL SENSOR (OPEN) CIRCUIT

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

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M15	1	M18	3	Yes

Is the inspection result normal?

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

5. CHECK OPTICAL SENSOR (SHORT) CIRCUIT

Check continuity between optical sensor harness connector and ground.

Optical sensor		Ground	Continuity
Connector	Terminal		
M15	1		No

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-79, "Removal and Installation".
NO >> Repair or replace harness.

6. CHECK OPTICAL SENSOR GROUND CIRCUIT

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

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M15	3	M18	17	Yes

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-79, "Removal and Installation".
NO >> Repair or replace harness.

7. CHECK OPTICAL SENSOR SIGNAL (OPEN) CIRCUIT

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

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M15	2	M18	4	Yes

Is the inspection result normal?

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

8. CHECK OPTICAL SENSOR (SHORT) CIRCUIT

Check continuity between optical sensor harness connector and ground.

Optical sensor		Ground	Continuity
Connector	Terminal		
M15	2		No

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-79, "Removal and Installation".
NO >> Repair or replace harness.

HAZARD SWITCH

Component Function Check

INFOID:0000000012875318

1.CHECK HAZARD SWITCH SIGNAL BY CONSULT

CONSULT
1. Turn ignition switch ON.
2. Select “FLASHER” in “Data Monitor” mode of “BCM”.
3. While operating the hazard switch, check the monitor status.

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

Is the inspection result normal?

YES >> Hazard switch circuit is normal.
NO >> Refer to EXL-96, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875319

Regarding Wiring Diagram information. Refer to EXL-47, "Wiring Diagram".

1.CHECK HAZARD SWITCH SIGNAL INPUT

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

(+)		(–)	Voltage (Approx.)
Hazard switch			
Connector	Terminal		
M83	2	Ground	Battery voltage

Is the inspection result normal?

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

2.CHECK HAZARD SWITCH SIGNAL (OPEN) CIRCUIT

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

Hazard switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M83	2	M18	36	Yes

Is the inspection result normal?

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

3.CHECK HAZARD SWITCH SIGNAL (SHORT) CIRCUIT

Check continuity between hazard switch harness connector and ground.

Hazard switch		Ground	Continuity
Connector	Terminal		
M83	2		No

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-79, "Removal and Installation".
NO >> Repair or replace harness.

4. CHECK HAZARD SWITCH GROUND CIRCUIT

Check continuity between hazard switch harness connector and ground.

Hazard switch		Ground	Continuity
Connector	Terminal		
M83	3		Yes

Is the inspection result normal?

YES >> Replace hazard switch. Refer to EXL-118, "Removal and Installation".
NO >> Repair or replace harness.

SYMPTOM DIAGNOSIS

EXTERIOR LIGHTING SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000012875320

NOTE:
Perform the “Self Diagnostic Result” with CONSULT before the symptom diagnosis. Perform the trouble diagnosis if any DTC is detected.

Symptom		Possible cause	Inspection item
Headlamp (HI) is not turned ON	One side	• Fuse • Headlamp (HI) power supply circuit • Front combination lamp internal circuit - LED (headlamp high) - LED headlamp control module - Harness • IPDM E/R	Headlamp (HI) circuit Refer to EXL-72, "Component Function Check".
	Both sides	**Symptom diagnosis** “BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON” Refer to EXL-102, "Diagnosis Procedure".	
High beam indicator lamp is not turned ON [Headlamp (HI) is turned ON]		Combination meter	• Combination meter “Data Monitor” “HI-BEAM IND” • “BCM (HEAD LAMP) “Active Test” “HEAD LAMP”
Headlamp (LO) is not turned ON	One side	• Fuse • Headlamp (LO) power supply circuit • Front combination lamp internal circuit - LED (headlamp low) - LED headlamp control module - Harness • IPDM E/R	Headlamp (LO) circuit Refer to EXL-74, "Component Function Check".
	Both sides	**Symptom diagnosis** “BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON” Refer to EXL-103, "Diagnosis Procedure".	
Headlamp (HI) and (LO) is not turned ON		• LED headlamp ground circuit • Front combination lamp internal circuit - LED headlamp control module - Harness	LED headlamp Refer to EXL-79, "Diagnosis Procedure".
Headlamp warning remains ON [Headlamp (LO) is turned ON]		• LED headlamp warning signal circuit • Front combination lamp internal circuit - LED headlamp control module - Harness • Combination meter	Headlamp warning Refer to MWI-15, "INFORMATION DISPLAY : System Description".
Each lamp is not turned ON/OFF with lighting switch AUTO		• Combination switch input/output signal circuit • Combination switch • BCM	Combination switch Refer to BCS-77, "Symptom Table".
		• Optical sensor power supply/ground/signal circuit • Optical sensor • BCM	Optical sensor Refer to EXL-93, "Component Function Check".

Symptom	Possible cause	Inspection item
Parking lamp is not turned ON	• Fuse • Parking lamp power supply/ground circuit • Front combination lamp internal circuit - LED (parking lamp) - Control circuit - Harness • IPDM E/R	Parking lamp circuit Refer to EXL-80, "Component Function Check".
Side marker lamp is not turned ON [Parking lamp is turned ON]	Front combination lamp internal circuit • Side marker lamp • Control circuit • Harness	Replace front combination lamp Refer to EXL-111, "Removal and Installation".
Tail lamp is not turned ON	• Fuse • Tail lamp power supply/ground circuit • Rear combination lamp internal circuit - LED (tail lamp) - Harness • IPDM E/R	Tail lamp circuit Refer to EXL-84, "Component Function Check".
License plate lamp is not turned ON [Tail lamp is turned ON]	• License plate lamp power supply/ground circuit • License plate lamp bulb • License plate lamp bulb socket • IPDM E/R	License plate lamp circuit Refer to EXL-86, "Component Function Check".
Parking lamp, license plate lamp, side marker lamp and tail lamp are not turned ON	**Symptom diagnosis** "PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMPS ARE NOT TURNED ON" Refer to EXL-104, "Diagnosis Procedure".	
Position lamp indicator is not turned ON (Parking lamp, license plate lamp, side marker lamp and tail lamp are turned ON)	Combination meter	• Combination meter "Data Monitor" "LIGHT IND" • BCM (HEAD LAMP) "Active Test" "TAIL LAMP"
Daytime running light is not turned ON	• Fuse • Daytime running light relay • Daytime running light relay power supply/control signal circuit • Daytime running light power supply/ground circuit • Front combination lamp internal circuit - LED (daytime running light) - Control circuit - Harness • IPDM E/R • BCM • ECM • Combination meter	• Daytime running light circuit Refer to EXL-76, "Component Function Check". • BCM (HEAD LAMP) "Data Monitor" "ENGINE STATE" • Combination meter "Data Monitor" "PKB SW"

Symptom		Possible cause	Inspection item
Back-up lamp is not turned ON		• Fuse • Back-up lamp relay • Back-up lamp relay power supply/control signal circuit • Back-up lamp power supply/ground circuit • Rear combination lamp internal circuit - Back-up lamp - Harness • Joint connector • TCM	Back-up lamp circuit Refer to EXL-84, "Component Function Check".
Turn signal lamp does not blink	Indicator lamp is normal (Applicable side performs high flasher activation)	• Front turn signal lamp - Front turn signal lamp power supply/ground circuit - Front turn signal lamp • Side turn signal lamp - Side turn signal lamp power supply/ground circuit - Side turn signal lamp • Rear turn signal lamp - Rear turn signal lamp power supply/ground circuit - Bulb (rear turn signal lamp) - Rear turn signal lamp bulb socket/harness	Turn signal lamp circuit Refer to EXL-90, "Component Function Check".
	Indicator lamp is included	• Combination switch input/output signal circuit • Combination switch • BCM	Combination switch Refer to BCS-77, "Symptom Table".
Turn signal indicator lamp does not blink (Turn signal lamp is normal)	One side	Combination meter	—
	Both sides (Always)	• Turn indicator signal • BCM • Combination meter	• Combination meter "Data Monitor" "TURN IND" • BCM (FLASHER) "Active Test" "FLASHER"
	Both sides (Only when activating hazard warning lamp with ignition switch OFF)	• Combination meter power supply/ground circuit • Combination meter	Combination meter Power supply and ground circuit Refer to BCS-72, "Diagnosis Procedure".
• Hazard warning lamp does not activate (Turn signal is normal) • Hazard warning lamp continues activating		• Hazard switch signal/ground circuit • Integral switch (hazard switch) • BCM	Hazard switch Refer to EXL-96, "Component Function Check".
Front fog lamp is not turned ON	One side	• Front fog lamp power supply/ground circuit • Front fog lamp • IPDM E/R	Front fog lamp circuit Refer to EXL-88, "Component Function Check".
	Both sides	**Symptom diagnosis** "BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON" Refer to EXL-105, "Diagnosis Procedure".	
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"

NORMAL OPERATING CONDITION

Description

INFOID:0000000012875321

LED HEADLAMP

- LED brightness and color may slightly change until the temperature becomes stable. This is not a malfunction.
- Illumination time lag may occur between right and left. This is not a malfunction.
- Brightness may be reduced due to aged deterioration of LED.

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 is normal.

BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON

Description

INFOID:0000000012875322

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

Diagnosis Procedure

INFOID:0000000012875323

1.COMBINATION SWITCH INSPECTION

Check combination switch. Refer to BCS-77, "Symptom Table".

Is the inspection result normal?

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

2.CHECK HEADLAMP (HI) REQUEST SIGNAL INPUT

With CONSULT

1. Select “HL HI REQ” in “Data Monitor” mode of “IPDM E/R”.
2. While operating the lighting switch, check the monitor status.

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

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation".
NO >> Replace BCM. Refer to BCS-79, "Removal and Installation".

BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON

Description

INFOID:0000000012875324

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

Diagnosis Procedure

INFOID:0000000012875325

1.CHECK COMBINATION SWITCH

Check combination switch. Refer to BCS-77, "Symptom Table".

Is the inspection result normal?

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

2.CHECK HEADLAMP (LO) REQUEST SIGNAL INPUT

With CONSULT

1. Select “HL LO REQ” in “Data Monitor” mode of “IPDM E/R”.
2. While operating the lighting switch, check the monitor status.

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

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation".
NO >> Replace BCM. Refer to BCS-79, "Removal and Installation".

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

Description

INFOID:0000000012875326

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

Diagnosis Procedure

INFOID:0000000012875327

1.COMBINATION SWITCH INSPECTION

Check combination switch. Refer to BCS-77, "Symptom Table".

Is the combination switch normal?

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

2.CHECK TAIL LAMP RELAY REQUEST SIGNAL INPUT

With CONSULT

1. Select “TAIL & CLR REQ” in “Data Monitor” mode of “IPDM E/R”.
2. While operating the lighting switch, check the monitor status.

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

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation".
NO >> Replace BCM. Refer to BCS-79, "Removal and Installation".

BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

Description

INFOID:0000000012875328

Both side front fog lamps are not turned ON in any condition.

Diagnosis Procedure

INFOID:0000000012875329

1.COMBINATION SWITCH INSPECTION

Check combination switch. Refer to BCS-77, "Symptom Table".

Is the inspection result normal?

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

2.CHECK FRONT FOG LAMP REQUEST SIGNAL INPUT

With CONSULT

1. Select “FR FOG REQ” in “Data Monitor” mode of “IPDM E/R”.
2. While 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 >> Perform the front fog lamp diagnosis. Refer to EXL-88, "Diagnosis Procedure".
NO >> Replace BCM. Refer to BCS-79, "Removal and Installation".

PERIODIC MAINTENANCE

HEADLAMP AIMING ADJUSTMENT

Inspection

INFOID:0000000012875330

PREPARATION BEFORE ADJUSTING

Before performing aiming adjustment, check the following:

- Make sure all tires are inflated to correct pressure.
- Place vehicle and screen on level surface.
- Make sure there is no load in vehicle other than the driver (or equivalent weight placed in driver's position).
- Coolant and engine oil filled to correct level, and fuel tank full.
- Remove cargo and/or luggage to maintain an unloaded vehicle condition.
- Confirm spare tire, jack and tools are properly stowed.
- Carefully wipe off any dirt from headlamp lens.

CAUTION:

Do not use organic solvent (thinner, gasoline etc.)

- Place a driver or equivalent weight of 68.5 kg (150 lb) on the driver seat.
- By hand, bounce the front and rear of the vehicle to settle the suspension and eliminate any static load.
- Place the front tires in the straight ahead position.
- Aim each headlamp individually and ensure other headlamp beam pattern is blocked from screen.

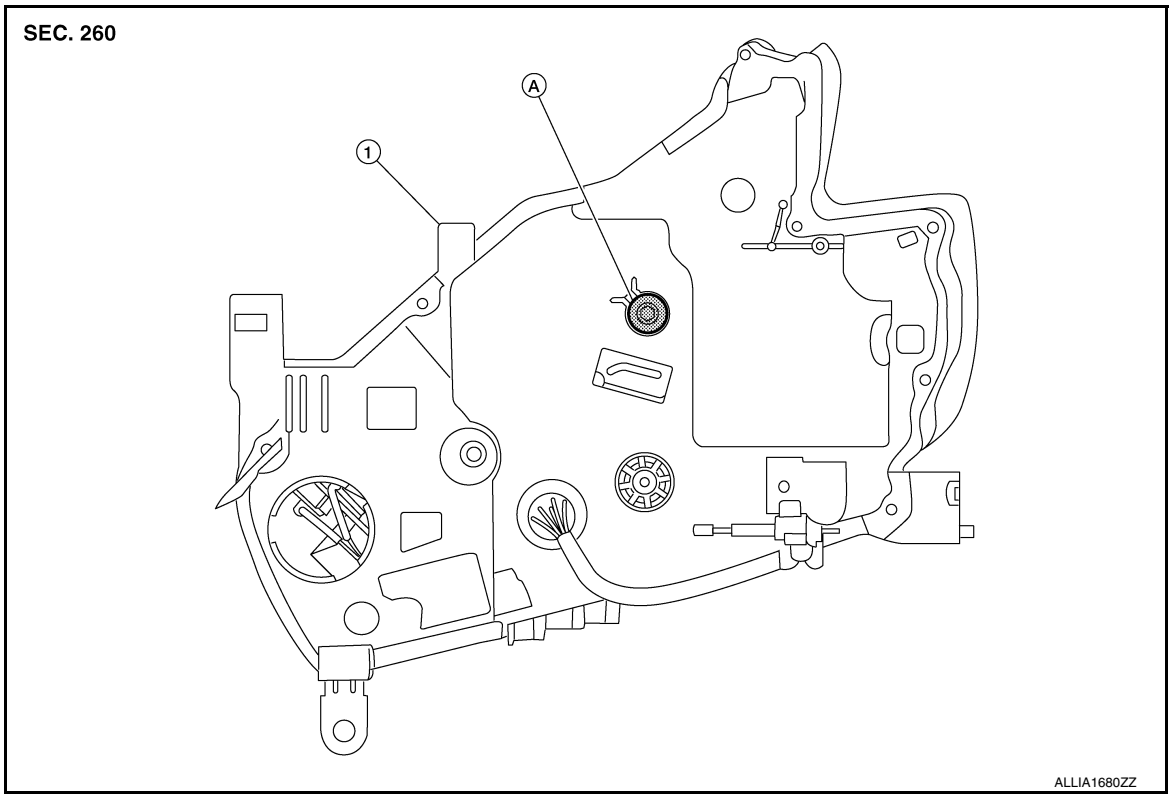
NOTE:

- For headlamp aiming details, refer to regulations in your area.
- By regulation, no means for horizontal aim adjustment is provided from the factory; only vertical aim is adjustable.
- Use adjusting screw to perform aiming adjustment.
- Perform headlamp aiming if:

- The vehicle front body has been repaired;
- The front combination lamp has been removed or replaced;
- Any outfitting has been installed;
- The vehicle’s standard load condition has been substantially increased.

AIMING ADJUSTMENT SCREW

SEC. 260

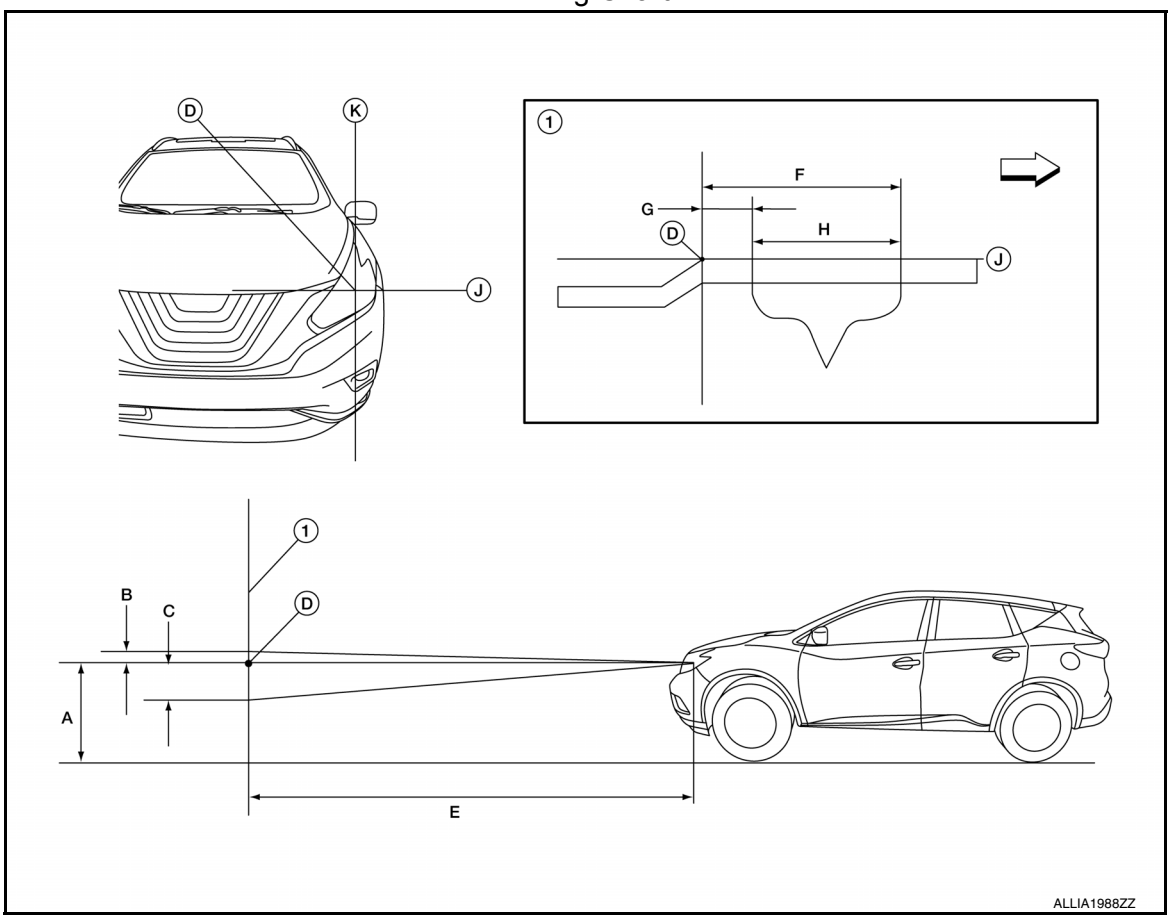


1.	Front combination lamp (view from rear)	A.	Headlamp HI/LO (UP/DOWN) adjustment screw

Aiming Adjustment Procedure

INFOID:0000000012875331

Aiming Chart



1.	Adjustment screen	A.	Distance of horizontal aiming evaluation line from ground	B.	Maximum cutoff line height
C.	Minimum cutoff line height	D.	Center of headlamp bulb	E.	7.6 m (25 ft)
F.	Maximum aim evaluation distance from vertical center on aiming screen 399 mm (15.7 in) [3°R]	G.	Minimum aim evaluation distance from vertical center on aiming screen 133 mm (5.2 in) [1°R]	H.	Aim evaluation area
J.	Horizontal aiming evaluation line	K.	Vertical aiming evaluation line	⇨	Right

B: (Maximum cutoff line height)	**13.3 mm (0.5 in)**	**0.1° up**
C: (Minimum cutoff line height)	**53.2 mm (2.1 in)**	**0.4° down**

LOW BEAM AND HIGH BEAM

NOTE:

- Basic illuminating area for evaluation and/or adjustment should be within range shown on aiming chart.

1. Use adjustment screw to perform aiming adjustment.
   - **Ensure fog lamps are turned off.**
2. Block the opposite headlamp from projecting a beam pattern onto the adjustment screen, using a suitable object. Aim each headlamp individually.
   CAUTION:
   Do not cover the lens surface with tape, etc.
3. Place the screen on the same level and flat surface as the vehicle.
   NOTE:

Surface should be free of any debris that would cause a difference between the headlamp center and the adjustment screen.

4. Face the front of the vehicle to the screen and measure distance between the headlamp center and the screen surface.

Distance between the headlamp center and the screen (E) : 7.6 m (25 ft)

5. Start the engine. Turn the headlamp on.
6. Determine the preferred vertical aim range dimensions, using the aiming chart.
7. Measure the projected beam within the aim evaluation segment on the screen.
8. Adjust the beam pattern of each headlamp until the aim evaluation segment (the area relative to both the highest and lowest cutoff line height) is positioned within the vertical aim range dimensions shown on the aiming chart.

FRONT FOG LAMP AIMING ADJUSTMENT

Aiming Adjustment

INFOID:0000000012875332

PREPARATION BEFORE ADJUSTING

The fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb. Before performing aiming adjustment procedure, check the following:

- Ensure all tires are inflated to correct pressure.
- Place vehicle and screen on level surface.
- Ensure there is no load in vehicle other than the driver (or equivalent weight placed in driver's position).
- Coolant and engine oil filled to correct level, and fuel tank full.
- Remove cargo and/or luggage to maintain an unloaded vehicle condition.
- Confirm spare tire, jack and tools are properly stowed.
- Carefully wipe off any dirt from headlamp lens.

CAUTION:

Do not use organic solvent (thinner, gasoline etc.)

- Place a driver or equivalent weight of 68.5 kg (150 lb) on the driver seat.
- By hand, bounce the front and rear of the vehicle to settle the suspension and eliminate any static load.
- Place the front tires in the straight ahead position.
- Aim each headlamp individually and ensure other headlamp beam pattern is blocked from screen.

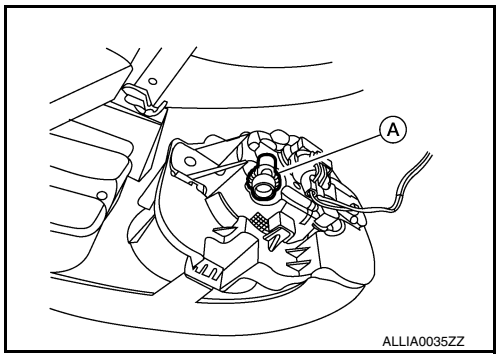
NOTE:

- For fog lamp aiming details, refer to regulations in your area.
- By regulation, no means for horizontal aim adjustment is provided from the factory; only vertical aim is adjustable.
- Use adjusting screw to perform aiming adjustment.
- Perform fog lamp aiming if:

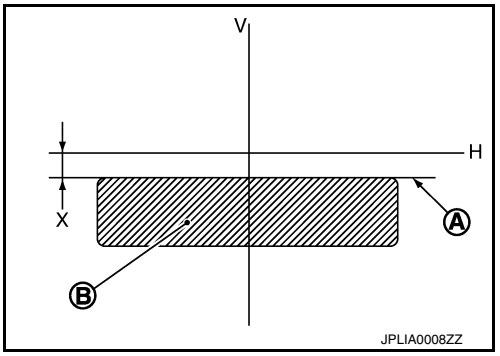
- The vehicle front body has been repaired.
- The front fog lamp has been removed or replaced.
- Any outfitting has been installed.
- The vehicle’s standard load condition has been substantially increased.

Aiming Adjustment Procedure

1. Place the screen.
   NOTE:
   - Stop the vehicle facing the wall.
   - Place the board on a plain road vertically.
2. Face the vehicle with the screen. Maintain 7.62 m (25.0 ft) between the front fog lamp center and the screen.
3. Start the engine. Turn the front fog lamp ON.
   NOTE:
   Shut off the headlamp light with the board to prevent from illuminating the adjustment screen.
   CAUTION:
   Do not cover the lens surface with a tape etc. The lens is made of resin.
4. Adjust aiming by turning the adjusting screw (A).



5. Adjust the cutoff line height (A) with the aiming adjustment screw so that the distance (X) between the horizontal center line of front fog lamp (H) and (A) becomes 100 mm (4 in).



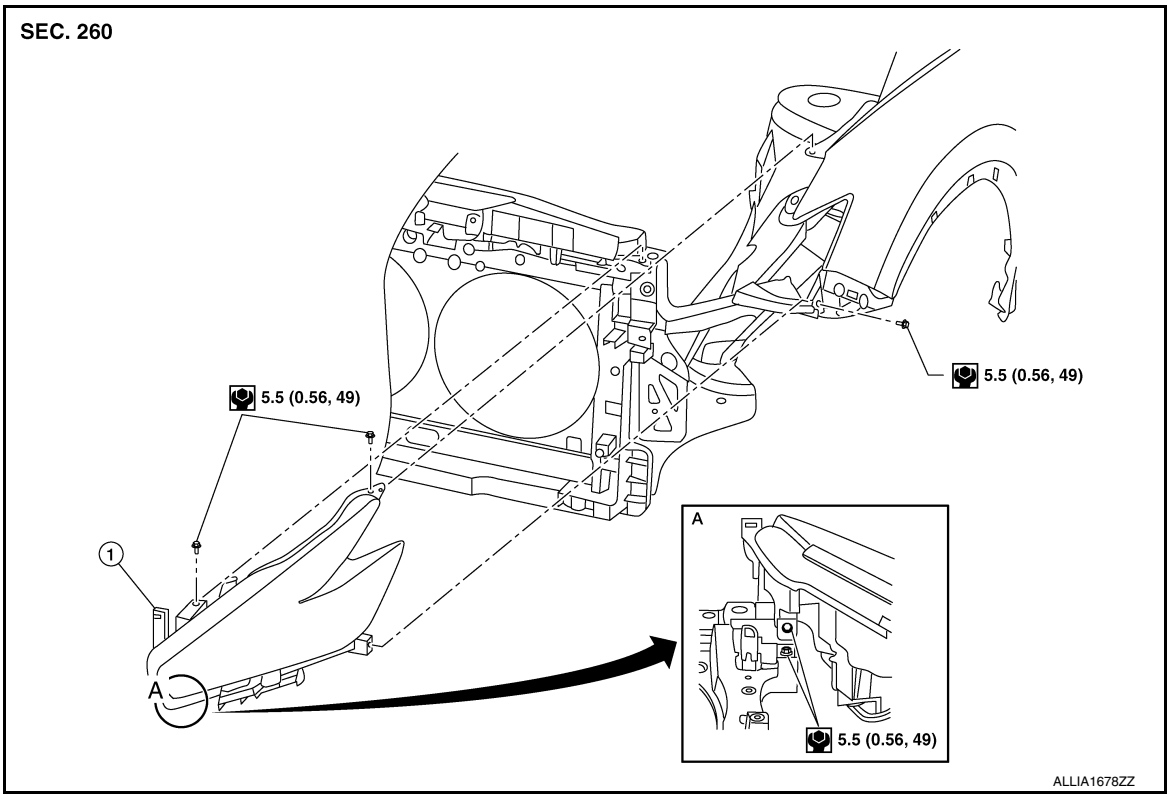
A : Cutoff line
B : High illuminance area
H : Horizontal center line of front fog lamp
V : Vertical center line of front fog lamp
X : Cutoff line height

REMOVAL AND INSTALLATION

FRONT COMBINATION LAMP

Exploded View

INFOID:0000000012875333



1. Front combination lamp

Removal and Installation

INFOID:0000000012875334

REMOVAL

1. Remove front bumper fascia. Refer to EXT-25, "Removal and Installation".
2. Remove front combination lamp bolts.
3. Pull front combination lamp forward.
4. Disconnect harness connectors from front combination lamp and remove.

INSTALLATION

Installation is in the reverse order of removal.

NOTE:

After installation, perform headlamp aiming adjustment. Refer to EXL-106, "Inspection".

Bulb Replacement

INFOID:0000000012875335

HEADLAMP BULB

The headlamp bulb is LED and not serviced separately. Refer to EXL-111, "Removal and Installation".

SIDE MARKER LAMP BULB

Removal

1. Rotate bulb socket counterclockwise and remove from front combination lamp.
2. Remove bulb from bulb socket.

Installation

Installation is in the reverse order of removal.

CAUTION:

After installing bulb, install bulb socket securely for watertightness.

TURN SIGNAL LAMP BULB

Removal

1. Remove front combination lamp. Refer to EXL-111, "Removal and Installation".
2. Rotate bulb socket counterclockwise and remove from front combination lamp.
3. Remove bulb from bulb socket.

Installation

Installation is in the reverse order of removal.

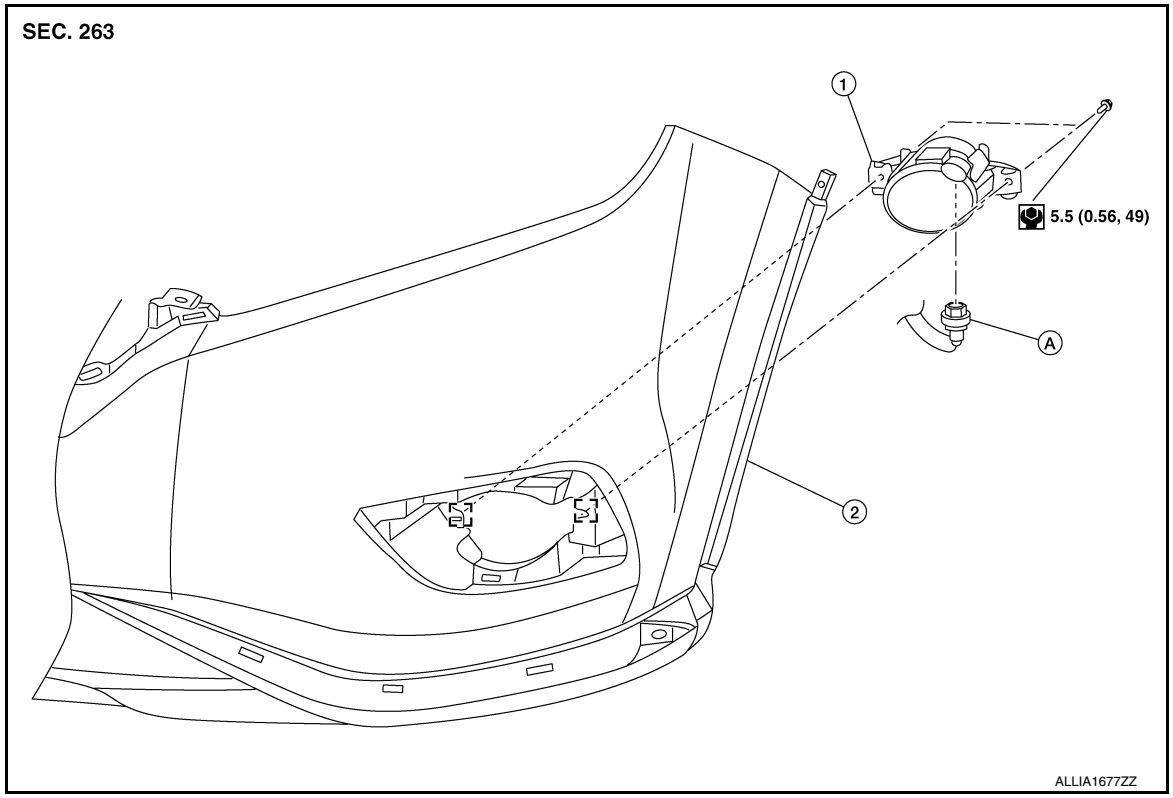
CAUTION:

After installing bulb, install bulb socket securely for watertightness.

FRONT FOG LAMP

Exploded View

INFOID:0000000012875336



1. Front fog lamp
2. Front bumper fascia
A. Front fog lamp harness connector

Metal clip

Removal and Installation

INFOID:0000000012875337

REMOVAL

1. Partially remove front fender protector. Refer to EXT-36, "FENDER PROTECTOR : Exploded View".
2. Disconnect harness connector from front fog lamp.
3. Remove front fog lamp bolts and front fog lamp.

INSTALLATION

Installation is in the reverse order of removal.

NOTE:

After installation, perform front fog lamp aiming adjustment. Refer to EXL-109, "Aiming Adjustment".

Bulb Replacement

INFOID:0000000012875338

WARNING:

Do not touch bulb by hand while it is lit or right after being turned off. Burning may result.

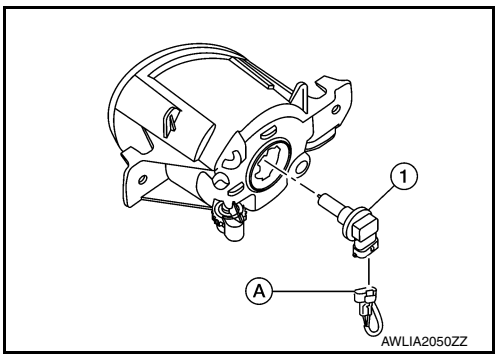
CAUTION:

- **Do not touch glass surface of bulb with bare hands or allow oil or grease to get on it to prevent damage to bulb.**
- **Do not leave bulb out of lamp reflector for a long time because dust, moisture, smoke, etc. may affect performance of lamp. When replacing bulb, be sure to replace it with new one.**

REMOVAL

1. Partially remove front fender protector. Refer to EXT-38, "FRONT OVER FENDER : Removal and Installation".

2. Disconnect harness connector from front fog lamp (A).
3. Rotate bulb (1) counterclockwise and remove.



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Install bulb securely for watertightness.

DOOR MIRROR TURN SIGNAL LAMP

Removal and Installation

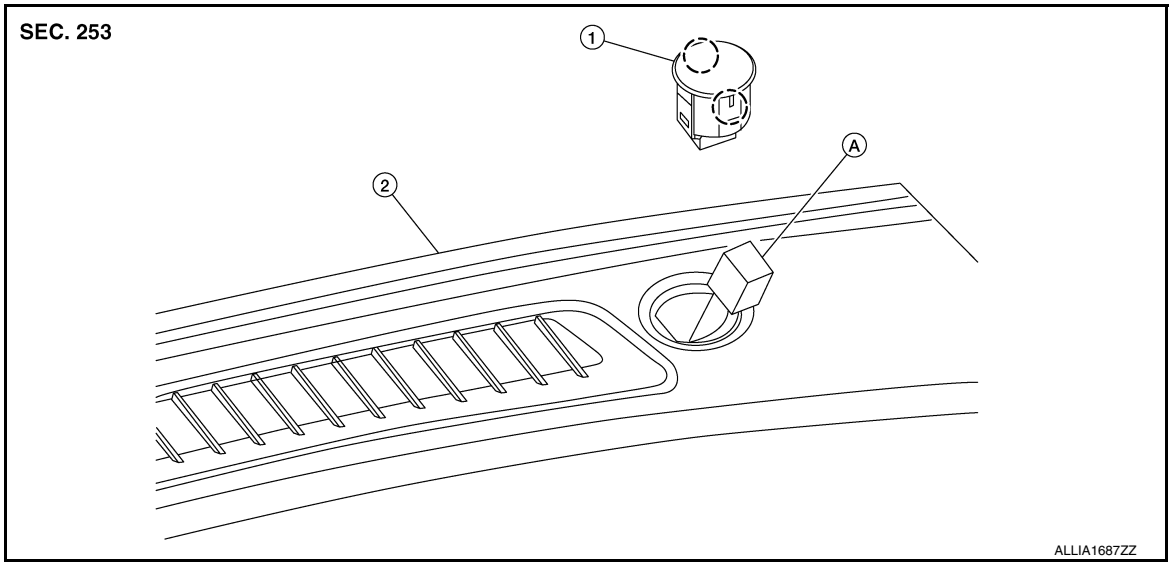
INFOID:0000000012875339

The door mirror turn signal lamp is serviced as part of the door mirror. Refer to MIR-21, "Removal and Installation".

OPTICAL SENSOR

Exploded View

INFOID:0000000012875340



1. Optical sensor
2. Defroster grille
A. Harness connector

◌ Pawl

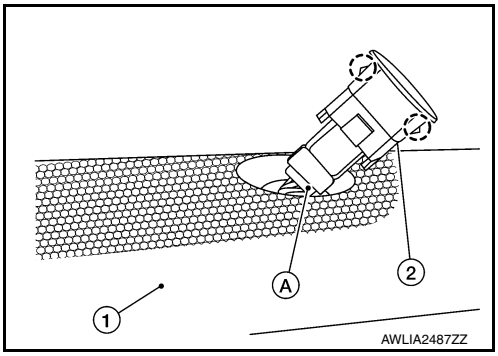
Removal and Installation

INFOID:0000000012875341

REMOVAL

Release pawls and remove optical sensor (2) from defroster grille (1) using a suitable tool.

◌ : Pawl



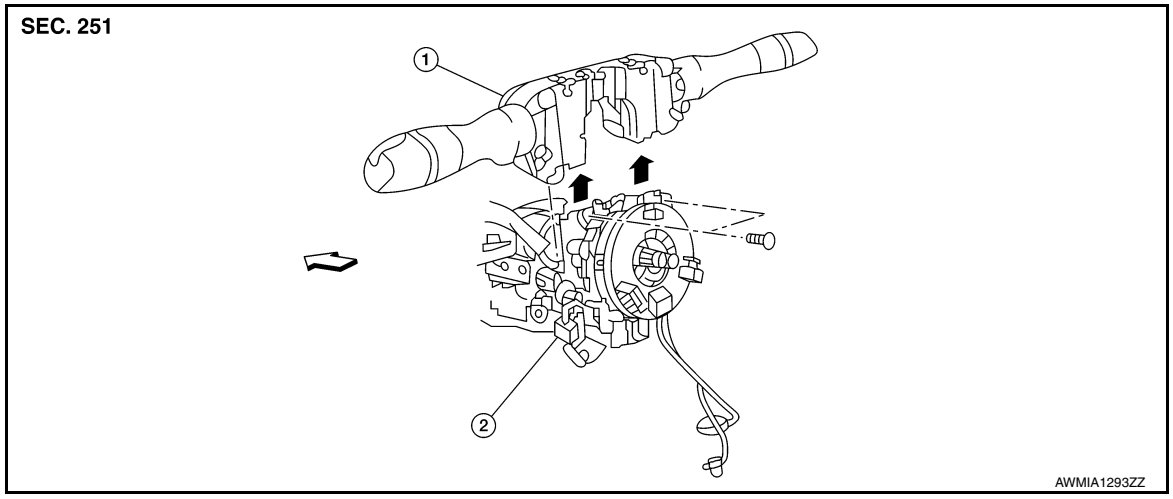
INSTALLATION

Installation is in the reverse order of removal.

LIGHTING & TURN SIGNAL SWITCH

Exploded View

INFOID:0000000012875342



1. Combination switch
2. Combination switch harness connector
⇦ Front

Removal and Installation

INFOID:0000000012875343

REMOVAL

1. Disconnect both the negative and positive battery terminals, then wait at least three minutes. Refer to PG-112, "Exploded View".
2. Remove the steering column covers. Refer to IP-18, "Removal and Installation".
3. Remove the combination switch screws.
4. Disconnect the harness connector from the combination switch and remove.

INSTALLATION

Installation is in the reverse order of removal.

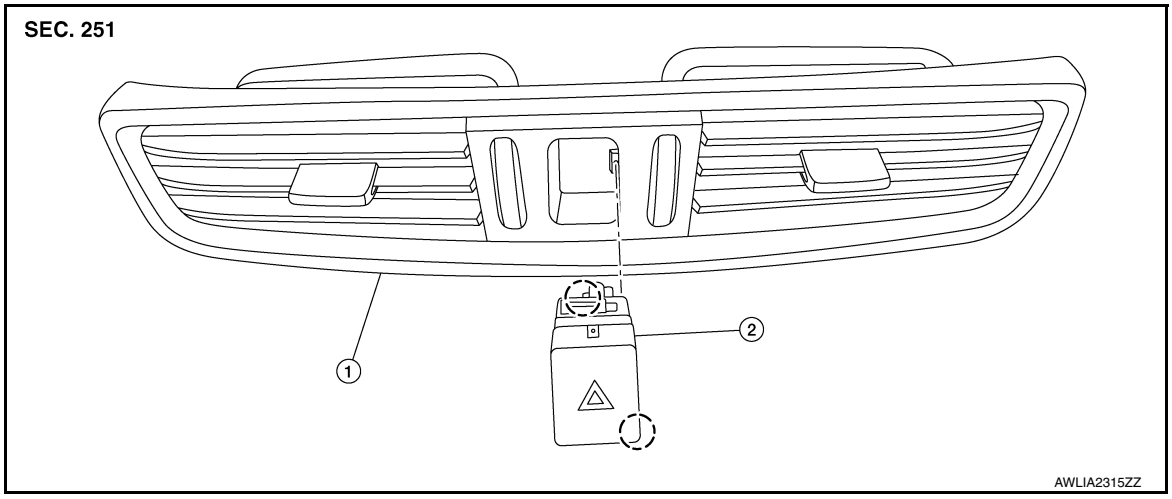
CAUTION:

- **After the work is completed, make sure no system malfunction is detected by air bag warning lamp.**
- **In case a malfunction is detected by the air bag warning lamp, reset with the self-diagnosis function and delete the memory with CONSULT.**
- **If a malfunction is still detected after the above operation, perform self-diagnosis to repair malfunctions. Refer to SRC-17, "SRS Final Check".**

HAZARD SWITCH

Exploded View

INFOID:0000000012875344



1. Center ventilator grille
2. Hazard switch
Pawl

Removal and Installation

INFOID:0000000012875345

REMOVAL

1. Remove center ventilator grille. Refer to VTL-10, "CENTER VENTILATOR DUCT : Removal and Installation".
2. Release pawls and remove hazard switch.

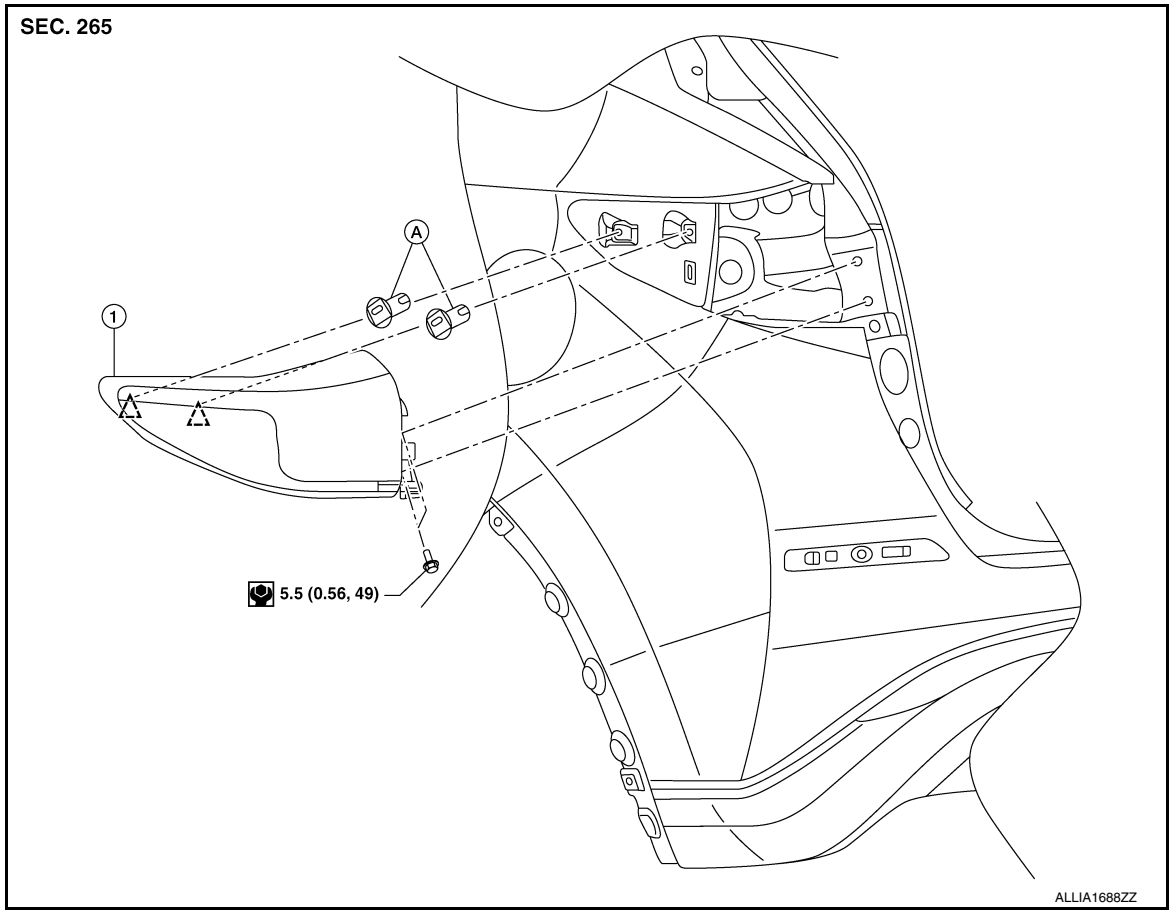
INSTALLATION

Installation is in the reverse order of removal.

REAR COMBINATION LAMP

Exploded View

INFOID:0000000012875346



1. Rear combination lamp
A. Grommet
Clip

Removal and Installation

INFOID:0000000012875347

REMOVAL

1. Remove rear combination lamp side cover.
2. Remove rear combination lamp bolts.
3. Pull rear combination lamp sideward to release clip and locators.
4. Disconnect harness connector from rear combination lamp and remove.

INSTALLATION

Installation is in the reverse order of removal.

Bulb Replacement

INFOID:0000000012875348

WARNING:
Do not touch bulb with bare hand while it is lit or right after being turned off. Burning may result.
CAUTION:
- **Do not touch glass surface of bulb with bare hands or allow oil or grease to get on it to prevent damage to bulb.**
- **Do not leave bulb out of lamp reflector for a long time because dust, moisture smoke, etc. may affect performance of lamp. When replacing bulb, be sure to replace it with new one.**

STOP LAMP BULB

The stop lamp bulb is LED and not serviced separately. Refer to EXL-119, "Removal and Installation".

SIDE MARKER LAMP BULB

Removal

1. Remove rear combination lamp. Refer to EXL-119, "Removal and Installation".
2. Rotate side marker bulb socket counterclockwise and remove.
3. Remove side marker bulb from bulb socket.

Installation

Installation is in the reverse order of removal.

CAUTION:

After installing bulb, install bulb socket securely for watertightness.

TURN SIGNAL LAMP BULB

Removal

1. Remove rear combination lamp. Refer to EXL-119, "Removal and Installation".
2. Rotate turn signal lamp bulb socket counterclockwise and remove.
3. Remove turn signal lamp bulb from bulb socket.

Installation

Installation is in the reverse order of removal.

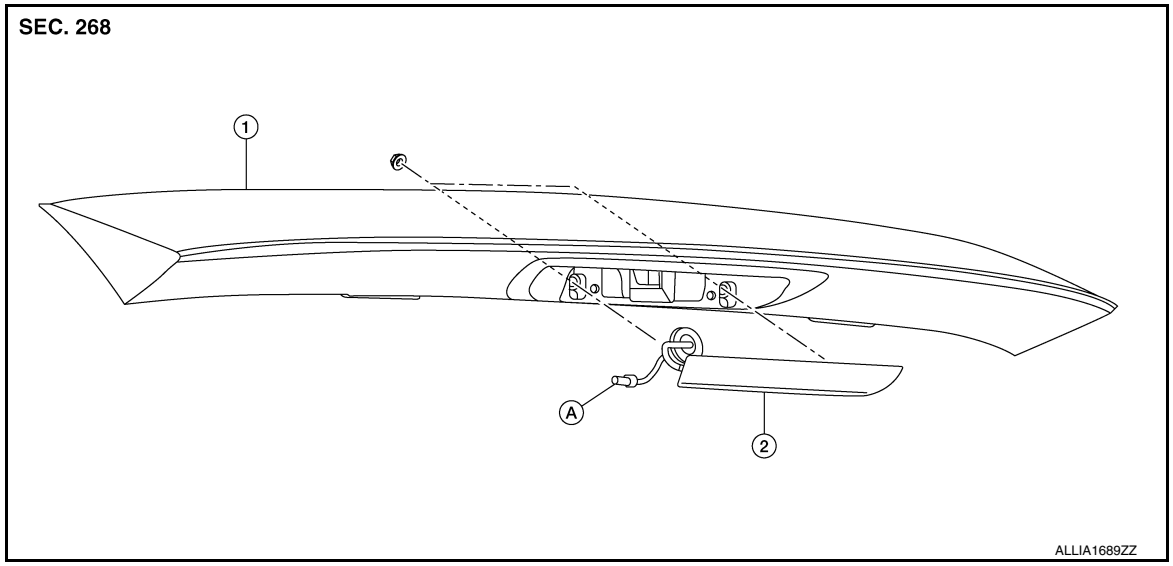
CAUTION:

After installing bulb, install bulb socket securely for watertightness.

HIGH-MOUNTED STOP LAMP

Exploded View

INFOID:0000000012875349



1. Rear spoiler
2. High-mounted stop lamp
A. Harness connector

Removal and Installation

INFOID:0000000012875350

REMOVAL

1. Remove rear spoiler. Refer to EXT-51, "Removal and Installation".
2. Remove nuts and remove high-mounted stop lamp.

INSTALLATION

Installation is in the reverse order of removal.

Bulb Replacement

INFOID:0000000012875351

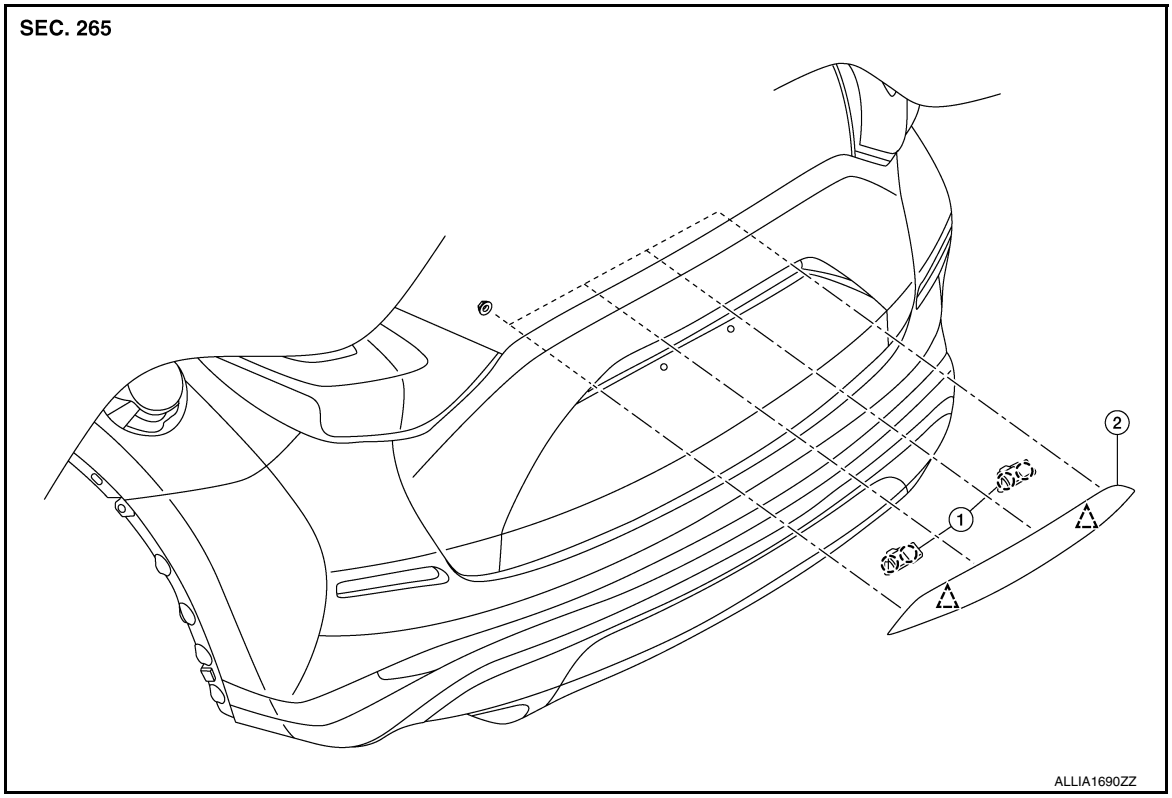
HIGH-MOUNTED STOP LAMP BULB

The high-mounted stop lamp bulb is LED and not serviced separately. Refer to EXL-121, "Removal and Installation".

LICENSE PLATE LAMP

Exploded View

INFOID:0000000012875352



1. License plate lamp
2. Back door outer finisher
Clip
Pawl

Removal and Installation

INFOID:0000000012875353

REMOVAL

1. Remove back door outer finisher. Refer to EXT-53, "Removal and Installation".
2. Disconnect harness connector from license plate lamp.
3. Release pawls and push license plate lamp forward.

INSTALLATION

Installation is in the reverse order of removal.

Bulb Replacement

INFOID:0000000012875354

WARNING:
Do not touch bulb with your hand while it is on or right after being turned off. Burning may result.
CAUTION:
- **Do not touch glass surface of bulb with bare hands or allow oil or grease to get on it to prevent damage to bulb.**
- **Do not leave bulb out of lamp reflector for a long time because dust, moisture smoke, etc. may affect performance of lamp. When replacing bulb, be sure to replace it with new one.**

REMOVAL

1. Remove back door lower finisher. Refer to INT-34, "BACK DOOR LOWER FINISHER : Removal and Installation".
2. Rotate license plate lamp bulb socket counterclockwise and remove.

3. Remove license plate lamp bulb from bulb socket.

INSTALLATION

Installation is in the reverse order of removal.

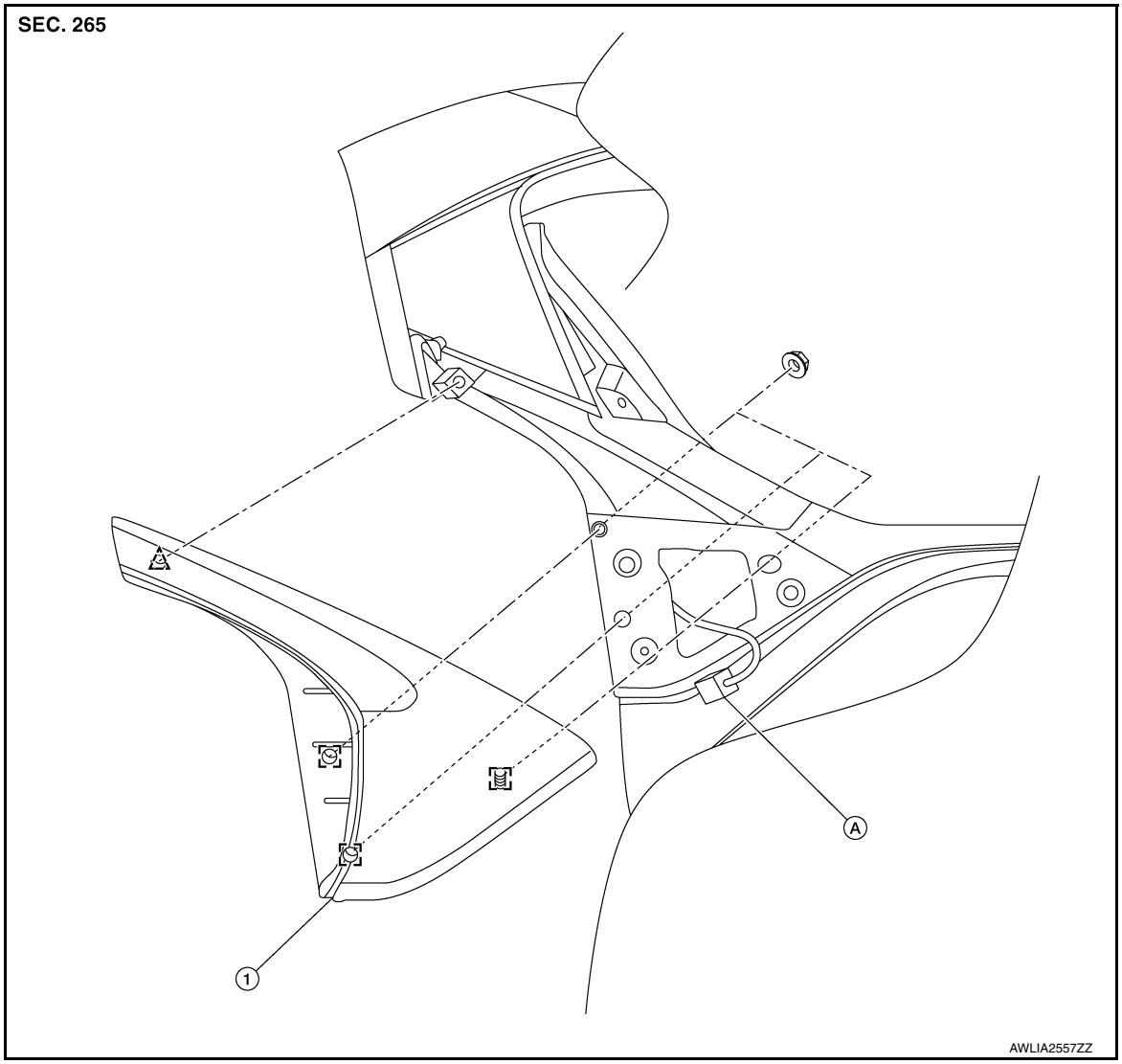
CAUTION:

After installing bulb, install bulb socket securely for watertightness.

BACK-UP LAMP ASSEMBLY

Exploded View

INFOID:0000000012875355



1. Back-up lamp assembly
A. Harness connector
Metal stud
Clip

Removal and Installation

INFOID:0000000012875356

REMOVAL

1. Remove back door lower finisher. Refer to INT-34, "BACK DOOR LOWER FINISHER : Removal and Installation".
2. Remove back-up lamp assembly nuts.
3. Disconnect harness connector, pull back-up lamp assembly rearward and remove.

INSTALLATION

Installation is in the reverse order of removal.

Bulb Replacement

INFOID:0000000012875357

WARNING:

Do not touch bulb with bare hand while it is lit or right after being turned off. Burning may result.

CAUTION:
- **Do not touch glass surface of bulb with bare hands or allow oil or grease to get on it to prevent damage to bulb.**
- **Do not leave bulb out of lamp reflector for a long time because dust, moisture smoke, etc. may affect performance of lamp. When replacing bulb, be sure to replace it with new one.**

REMOVAL

1. Remove back-up lamp assembly. Refer to EXL-124, "Removal and Installation".
2. Rotate back-up lamp bulb socket counterclockwise and remove.
3. Remove back-up lamp bulb from bulb socket.

INSTALLATION

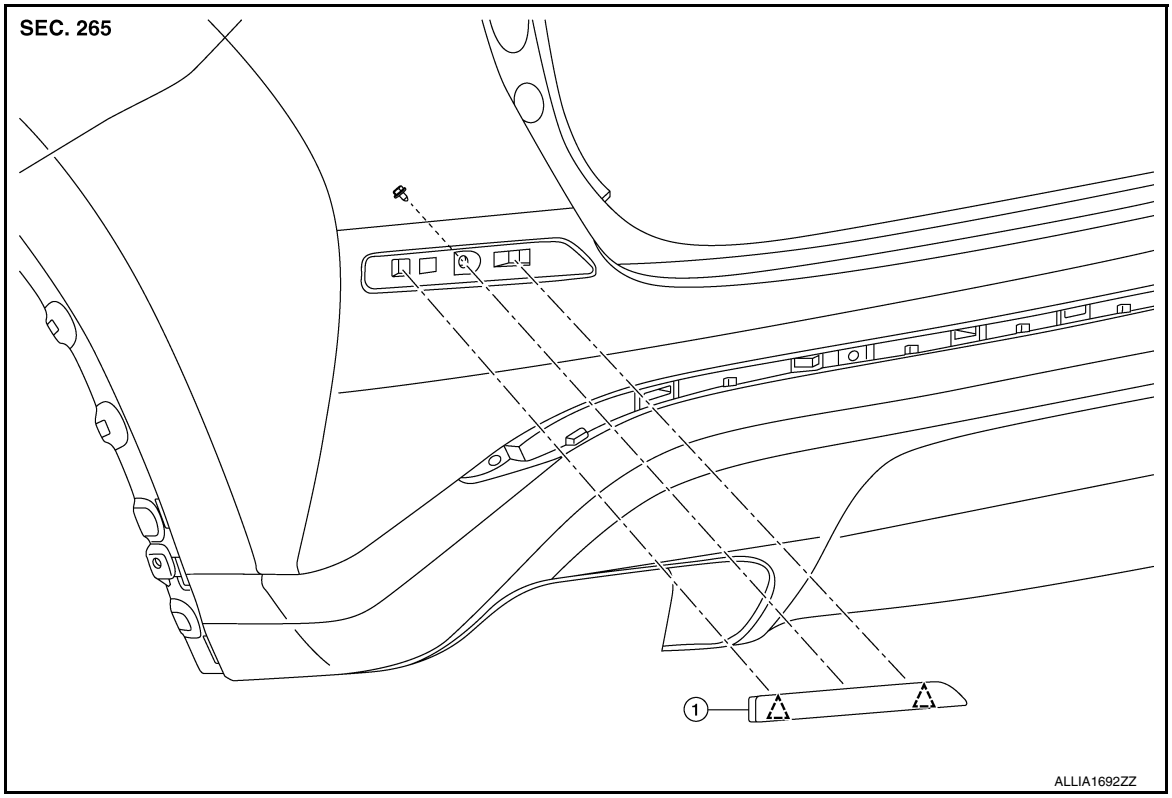
Installation is in the reverse order of removal.

CAUTION:
After installing bulb, install bulb socket securely for watertightness.

REAR REFLEX REFLECTOR

Exploded View

INFOID:0000000012875358



1. Rear reflex reflector
Clip

Removal and Installation

INFOID:0000000012875359

REMOVAL

1. Remove rear bumper fascia. Refer to EXT-27, "Removal and Installation".
2. Remove rear reflex reflector fixing screw and pawls and then remove rear reflex reflector.

INSTALLATION

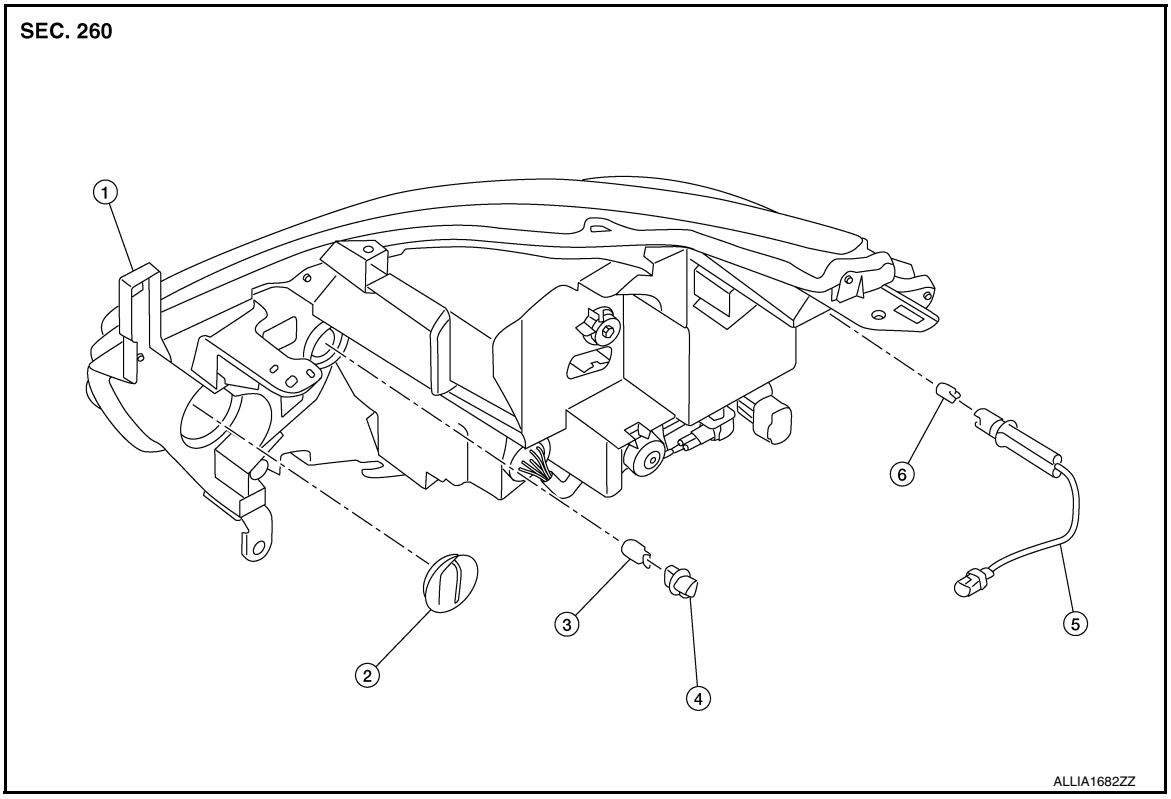
Installation is in the reverse order of removal.

UNIT DISASSEMBLY AND ASSEMBLY

FRONT COMBINATION LAMP

Exploded View

INFOID:0000000012875360



1. Front combination lamp
2. Front combination lamp cover
3. Turn signal lamp bulb
4. Turn signal lamp bulb socket
5. Side marker lamp bulb harness
6. Side marker bulb

Disassembly and Assembly

INFOID:0000000012875361

DISASSEMBLY

1. Remove front combination lamp. Refer to EXL-111, "Removal and Installation".
2. Rotate turn signal lamp bulb socket counterclockwise and remove.
3. Remove turn signal lamp bulb from bulb socket.
4. Rotate side marker lamp bulb socket counterclockwise and remove.
5. Remove side marker lamp bulb from bulb socket.

ASSEMBLY

Assembly is in the reverse order of disassembly.

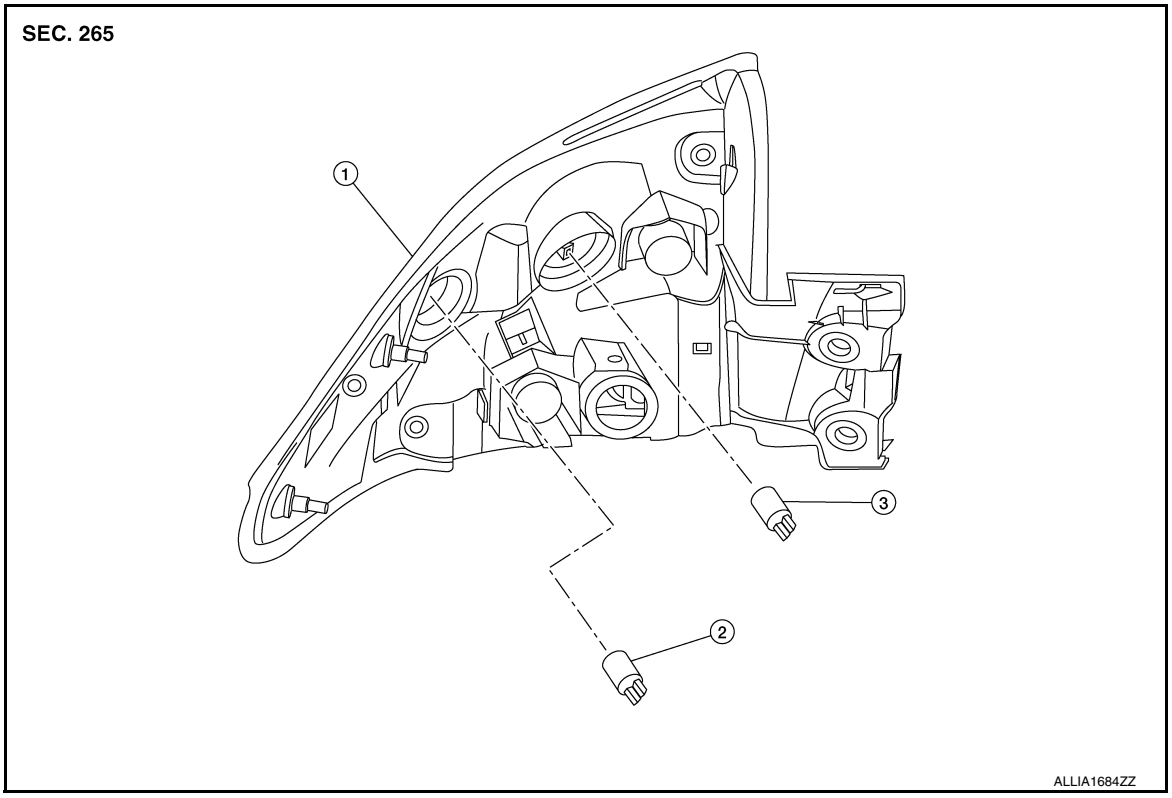
CAUTION:

During assembly, be sure to install bulb sockets securely to ensure watertightness.

REAR COMBINATION LAMP

Exploded View

INFOID:0000000012875362



1. Rear combination lamp
2. Side marker lamp bulb
3. Turn signal lamp bulb

Disassembly and Assembly

INFOID:0000000012875363

DISASSEMBLY

1. Remove rear combination lamp. Refer to EXL-119, "Removal and Installation".
2. Rotate side marker lamp bulb socket counterclockwise and remove.
3. Remove side marker lamp bulb from bulb socket.
4. Rotate turn signal lamp bulb socket counterclockwise and remove.
5. Remove turn signal lamp bulb from bulb socket.

ASSEMBLY

Assembly is in the reverse order of disassembly.

CAUTION:

During assembly, be sure to install bulb sockets securely to ensure watertightness.

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Bulb Specifications

INFOID:0000000012875364

Item		Type	Wattage (W)
Front combination lamp	High beam	LED	—
	Low beam		—
	Turn signal lamp	7444NA	28/8
	Side marker lamp	W5W	5
	Daytime running lamp	LED	—
Front fog lamp (if equipped)		H11	55
Door mirror turn signal lamp		LED	—
Rear combination lamp	Stop lamp	LED	—
	Side marker lamp	W5W	5
	Turn signal lamp	WY21W	21
Back-up lamp		921	16
License plate lamp		W5W	5
High-mounted stop lamp		LED	—

*: Always check with the Parts Department for the latest parts info.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000013373984

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the SR 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, it is recommended that all maintenance and repair be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper repair, 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 SR 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 WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery or batteries, and wait at least three minutes before performing any service.**

Precaution for Work

INFOID:0000000012875366

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:

- Water soluble dirt:
- Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
- Then rub with a soft, dry cloth.

- Oily dirt:
- Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
- Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
- Then rub with a soft, dry cloth.

- Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

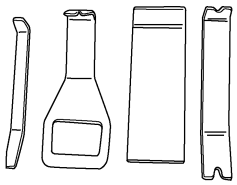
PREPARATION

PREPARATION

Special Service Tool

INFOID:0000000012875367

The actual shape of the tools may differ from those illustrated here.

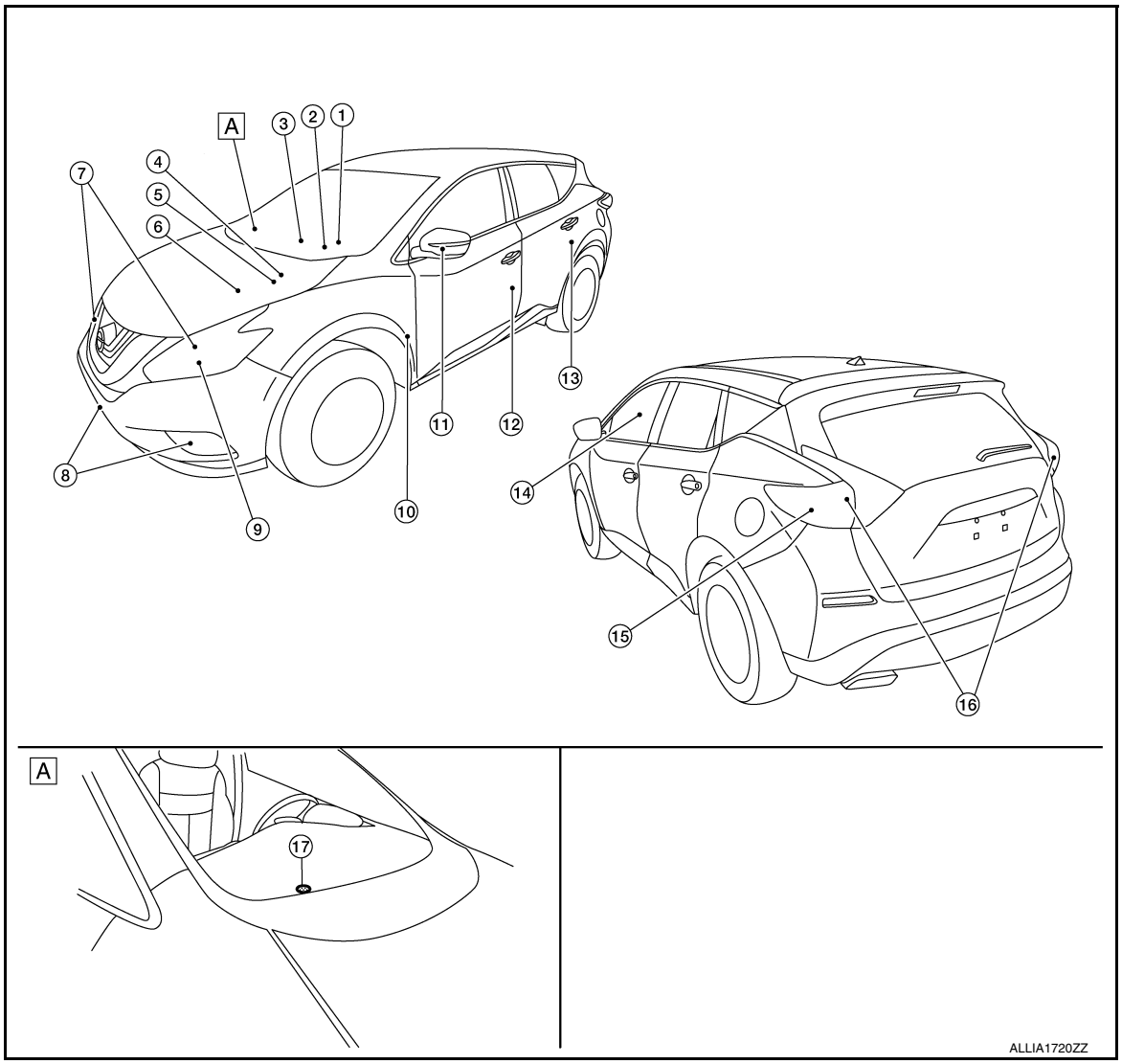
Tool number (TechMate No.) Tool name	Description
— (J-46534) Trim Tool Set  AWJIA0483ZZ	Removing trim components

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000012875368



A. Right hand side of instrument panel

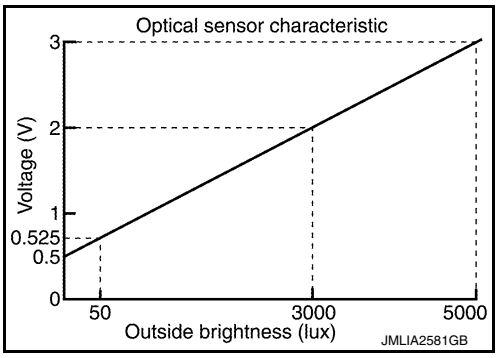
No.	Part	Function
1.	Combination meter	Refer to MWI-7, "METER SYSTEM : Combination Meter".
2.	BCM	• Detects each switch condition by the combination switch reading function. • Judges that the exterior lamps are turned ON according to the vehicle condition. • Requests the headlamp (HI/LO), tail lamp and front fog lamp ON to IPDM E/R (via CAN communication). • Requests high beam indicator lamp ON to the combination meter (via CAN communication). • Judges the outside brightness from the optical sensor signal. • Judges the ON/OFF timing according to the vehicle condition. • Judges the ON/OFF status of the exterior lamp according to the outside brightness and the vehicle condition. • Refer to BCS-4, "BODY CONTROL SYSTEM : Component Parts Location" for detailed installation location.

No.	Part	Function
3.	Combination switch (Lighting and turn signal switch)	Refer to MWI-5, "METER SYSTEM : Component Parts Location" for detailed installation location.
4.	IPDM E/R	• Supplies voltage to the load according to the request from BCM (via CAN communication). • Refer to PCS-5, "Component Parts Location" for detailed installation location.
5.	Front fog lamp relay	Supplies voltage to front fog lamps when operated by IPDM E/R.
6.	Daytime running lamp relay	Supplies voltage to the daytime running lamps according to request from IPDM E/R. Refer to EXL-133, "Daytime Running Light Relay".
7.	Front combination lamps	Refer to EXL-248, "Bulb Specifications".
8.	Front fog lamps	Refer to EXL-248, "Bulb Specifications".
9.	Front turn signal lamp LH	Refer to EXL-248, "Bulb Specifications".
10.	Parking brake switch	Transmits the parking brake switch signal to the combination meter to operate the daytime light system.
11.	Door mirror turn signal LH	Refer to EXL-248, "Bulb Specifications".
12.	Front door switch LH	Transmits the door open signal to the BCM to operate the autolight system. Refer to DLK-22, "Front Door Switch" for front door switch or DLK-22, "Rear Door Switch" for rear door switch.
13.	Rear door switch LH	
14.	Hazard switch	Refer to EXL-133, "Hazard Switch".
15.	Rear turn signal lamp LH	Refer to EXL-248, "Bulb Specifications".
16.	Rear combination lamps	Refer to EXL-248, "Bulb Specifications".
17.	Optical sensor	Refer to EXL-133, "Optical Sensor".

Optical Sensor

INFOID:0000000012875369

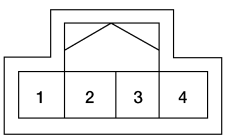
Optical sensor converts the outside brightness (lux) to voltage and transmits the optical sensor signal to BCM.



Hazard Switch

INFOID:0000000012875370

Inputs the hazard switch ON/OFF signal to BCM.



		OFF	ON
2	Hazard switch ON/OFF signal		●
3	Ground		●
4	Illumination +	●	
		●	
1	Illumination -	●	

ALLIA1397GB

Daytime Running Light Relay

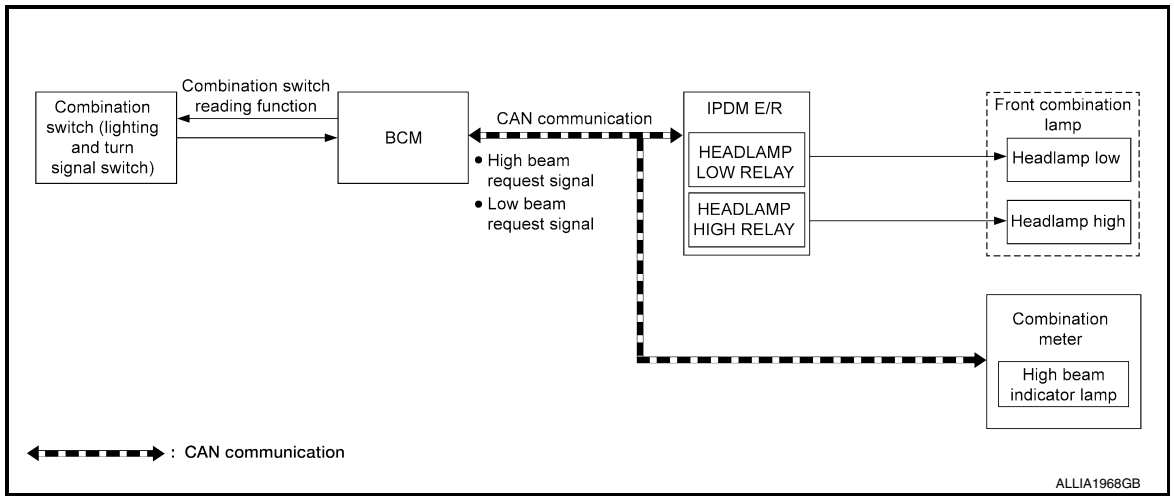
INFOID:0000000012875371

Power is provided to the daytime running light relay according to request from IPDM E/R.

SYSTEM
HEADLAMP SYSTEM
HEADLAMP SYSTEM : System Description

INFOID:0000000012875372

SYSTEM DIAGRAM



OUTLINE

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

HEADLAMP (LO) OPERATION

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

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

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

HEADLAMP (HI) OPERATION

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

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

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

HEADLAMP SYSTEM : Fail-safe

INFOID:0000000012875373

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With BCM

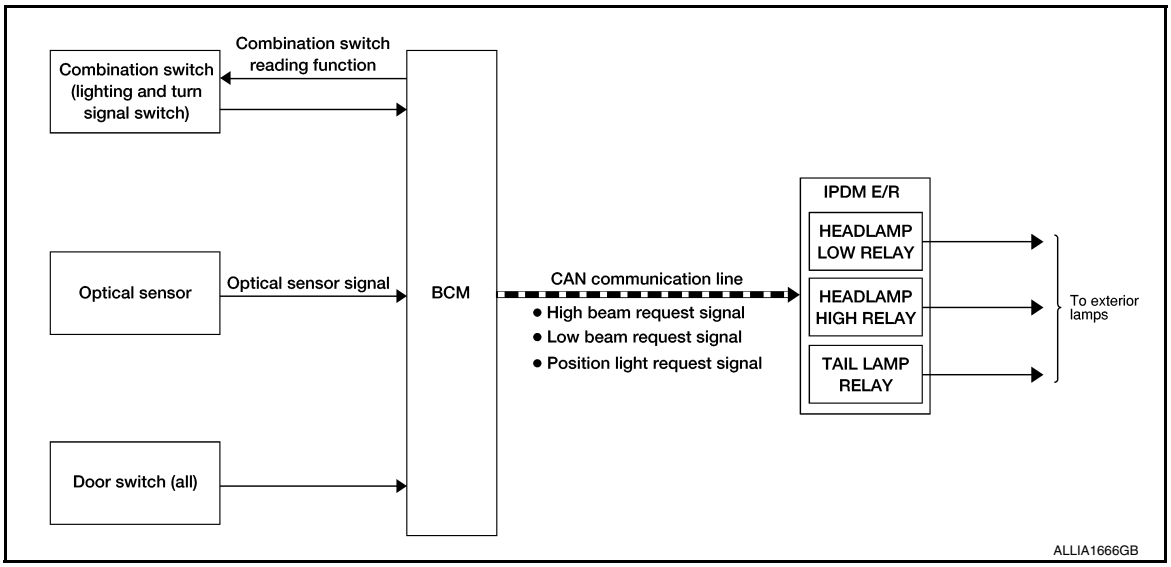
Control part	Fail-safe operation
Headlamp	• Turns ON the headlamp low relay when the ignition switch is turned ON • Turns OFF the headlamp low relay when the ignition switch is turned OFF • Headlamp high relay OFF

AUTO LIGHT SYSTEM

AUTO LIGHT SYSTEM : System Description

INFOID:0000000012875374

SYSTEM DIAGRAM



OUTLINE

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

Control by BCM
- Combination switch (lighting and turn signal switch) reading function
- Headlamp control function
- Auto light function
- Delay timer function
- Auto light adjustment system

Control by IPDM E/R
- Relay control function

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

*: Headlamps (LO/HI), parking lamps, side marker lamps and tail lamps. Headlamp HI depends on the combination switch (lighting and turn signal switch) condition.

AUTO LIGHT FUNCTION

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

NOTE:
ON/OFF timing differs based on the sensitivity from the setting. The setting can be set by CONSULT. Refer to BCS-19, "HEADLAMP : CONSULT Function (BCM - HEADLAMP)".

AUTO LIGHT ADJUSTMENT SYSTEM

The auto light adjustment system automatically, dims/brightens the display, according to brightness outside the vehicle, when lighting switch 1ST, lighting switch 2ND or lighting switch AUTO is operated. Refer to INL-8, "ILLUMINATION CONTROL SYSTEM : System Description".

DELAY TIMER FUNCTION

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

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

*: The preset time is 45 seconds. The timer operating time can be set by CONSULT. Refer to BCS-19, "HEADLAMP : CONSULT Function (BCM - HEADLAMP)".

NOTE:

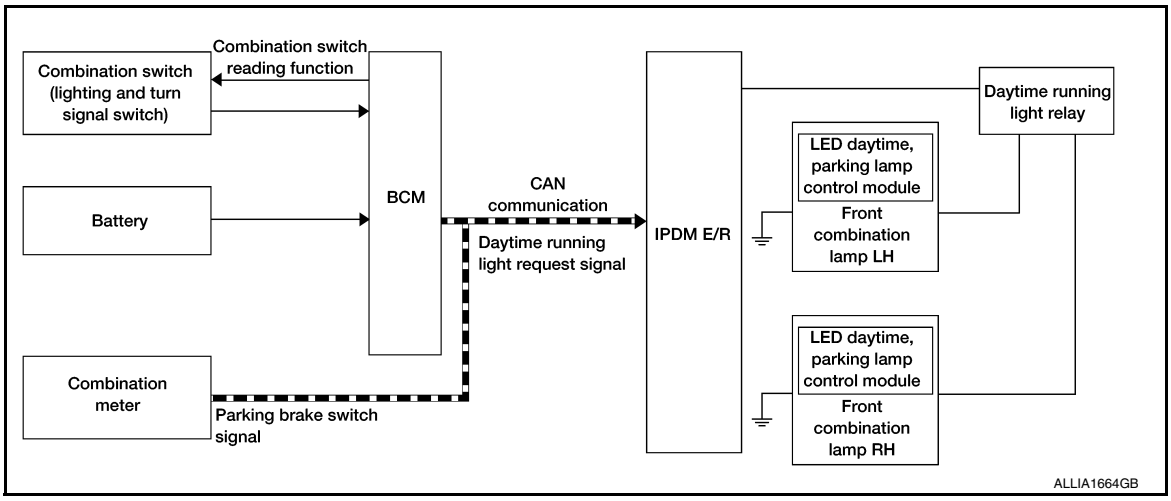
When any position other than the light switch AUTO is set, the auto light system function switches to the exterior lamp battery saver function.

DAYTIME RUNNING LIGHT SYSTEM

DAYTIME RUNNING LIGHT SYSTEM : System Description

INFOID:0000000012875375

SYSTEM DIAGRAM



OUTLINE

- Turns the front combination lamps on through the LED daytime, parking lamp control module as the daytime running light.
- Daytime running light is controlled by daytime running light control function and combination switch (lighting and turn signal switch) reading function of BCM, and relay control function of IPDM E/R.

DAYTIME RUNNING LIGHT OPERATION

- BCM detects the combination switch (lighting and turn signal switch) condition by the combination switch (lighting and turn signal switch) reading function.
- BCM detects the vehicle condition according to ignition switch
- BCM detects the parking brake condition by the parking brake switch signal received from combination meter using CAN communication.
- BCM transmits the daytime running light request signal to IPDM E/R using CAN communication according to the daytime running light ON condition.

Daytime running light ON condition:

- Vehicle condition READY
- Lighting switch OFF or 1ST
- Lighting switch AUTO, and the auto light function OFF judgment
- Parking brake switch OFF

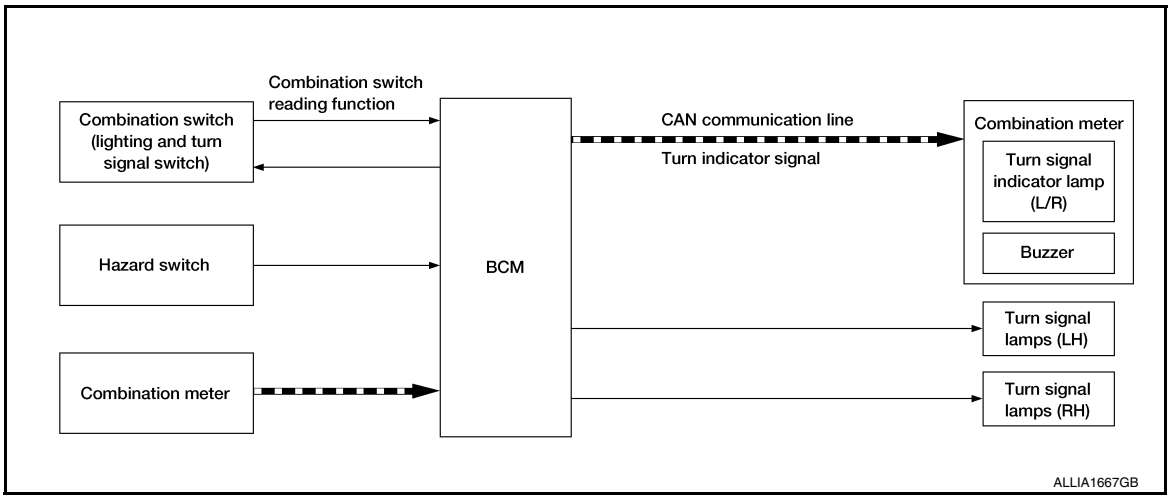
- IPDM E/R controls the daytime running light relay (ground-side) to turn ON according to the daytime running light request signal.
- Power is supplied from the daytime running light relay to front combination lamp RH and LH, and then daytime running lamps are illuminated.

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM : System Description

INFOID:0000000012875376

SYSTEM DIAGRAM



OUTLINE

Turn signal lamp and the hazard warning lamp are controlled by combination switch (lighting and turn signal switch) reading function and the flasher control function of BCM.

TURN SIGNAL LAMP OPERATION

- BCM detects the combination switch (lighting and turn signal switch) condition by the combination switch (lighting and turn signal switch) reading function.
- BCM supplies voltage to the right (left) turn signal lamp circuit when the ignition switch is 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 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 using 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 FLASH FUNCTION

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

HIGH FLASHER OPERATION

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

NOTE:

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

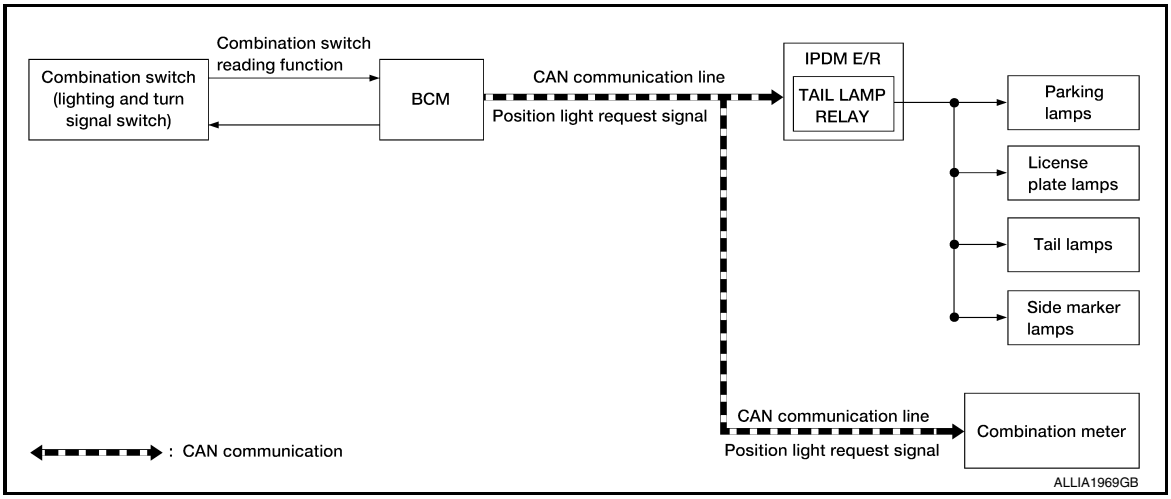
PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMP SYSTEM

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

scription

INFOID:0000000012875377

SYSTEM DIAGRAM



OUTLINE

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

PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMPS OPERATION

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

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

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

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

INFOID:0000000012875378

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With BCM

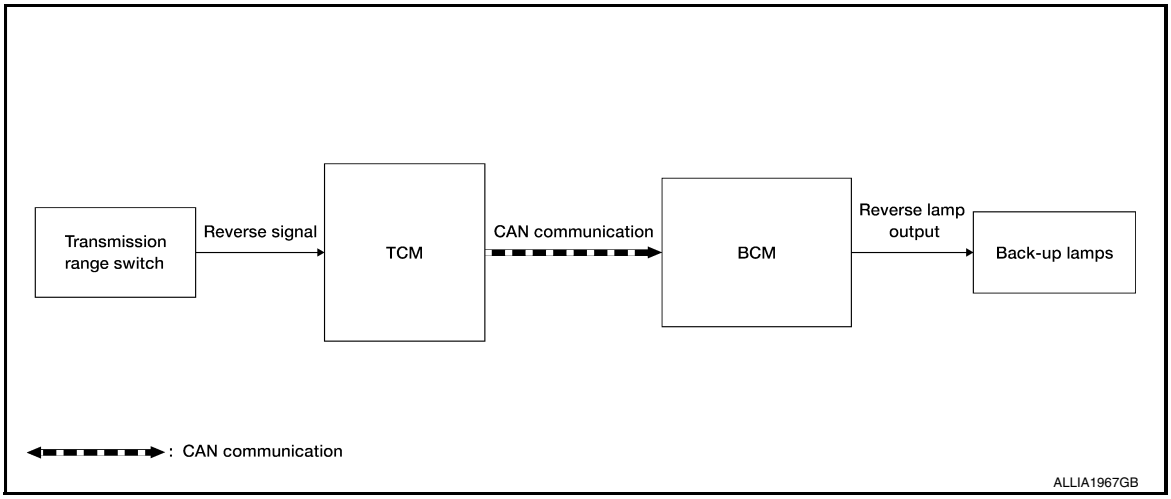
Control part	Fail-safe operation
• Parking lamps • License plate lamps • Illumination • Tail lamps • Side marker lamps	• Turns ON the tail lamp relay when the ignition switch is turned ON • Turns OFF the tail lamp relay when the ignition switch is turned OFF

BACK-UP LAMP SYSTEM

BACK-UP LAMP SYSTEM : System Description

INFOID:0000000012875379

SYSTEM DIAGRAM



OUTLINE

Back-up lamp is controlled by back-up lamp control function of TCM.

BACK-UP LAMP OPERATION

- TCM detects the CVT shift selector position status from transmission range switch.
- TCM sends request signal via CAN communication and turns the back-up lamps on when back-up lamp conditions are satisfied.

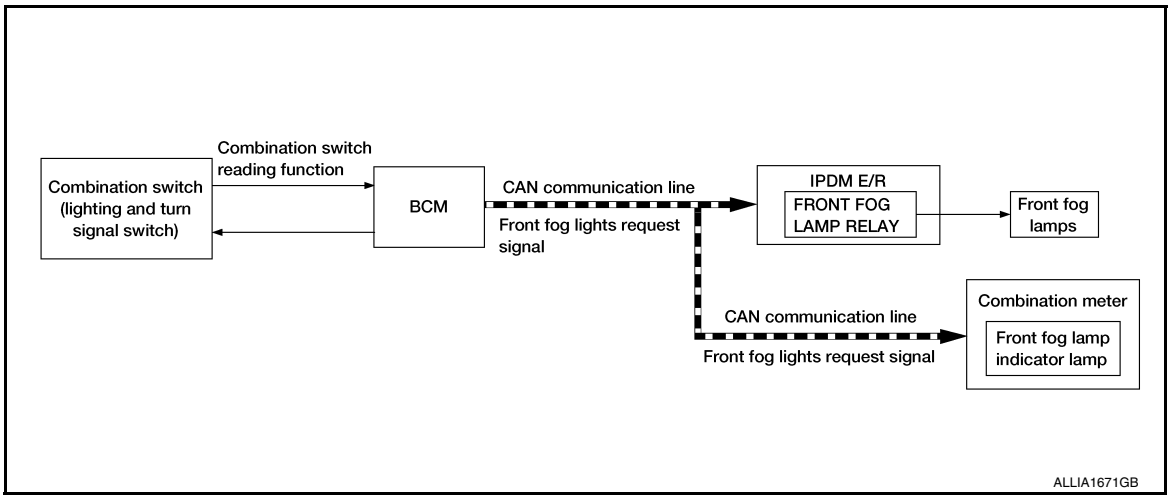
Back-up lamp ON condition:
- Ignition switch ON
- CVT shift selector position R

FRONT FOG LAMP SYSTEM

FRONT FOG LAMP SYSTEM : System Description

INFOID:0000000012875380

SYSTEM DIAGRAM



OUTLINE

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

FRONT FOG LAMP OPERATION

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

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

FRONT FOG LAMP SYSTEM : Fail-Safe

INFOID:0000000012875381

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With BCM

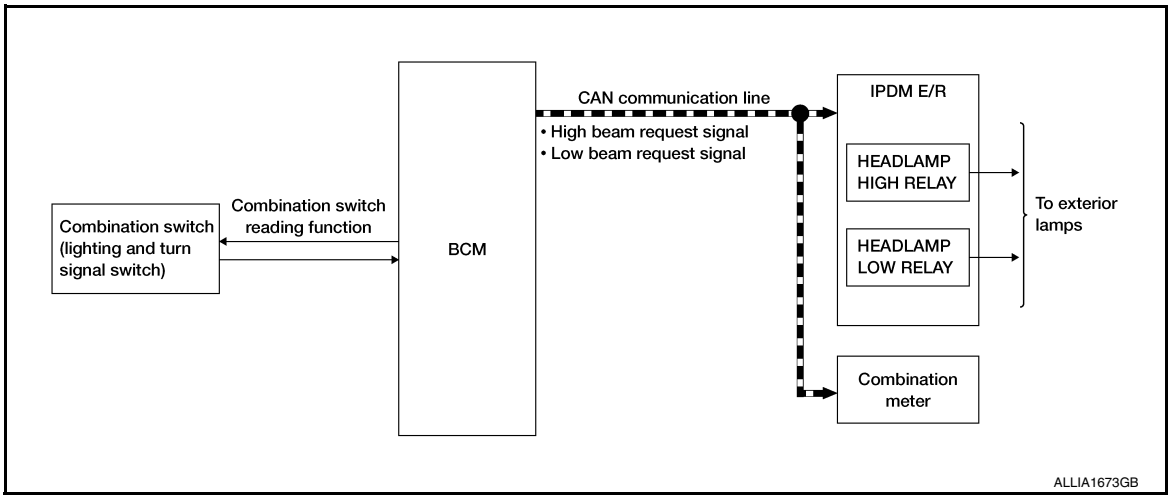
Control part	Fail-safe operation
Front fog lamp	Front fog lamp relay OFF

EXTERIOR LAMP BATTERY SAVER SYSTEM

EXTERIOR LAMP BATTERY SAVER SYSTEM : System Description

INFOID:0000000012875382

SYSTEM DIAGRAM



OUTLINE

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

Control by BCM
- Combination switch (lighting and turn signal switch) reading function
- Exterior lamp battery saver function

Control by IPDM E/R
- Relay control function
• BCM turns the exterior lamp OFF*, according to the vehicle status when ignition switch is turned OFF while exterior lamp is ON, for preventing battery discharge.

*: Headlamp (HI/LO).

EXTERIOR LAMP BATTERY SAVER ACTIVATION

• BCM activates the timer and turns the exterior lamp OFF 45 seconds after the ignition switch is turned from ON→OFF with the exterior lamps ON.
• When in any of following conditions (after the exterior lamp battery saver is activated), exterior lamps can be turned ON:
- Ignition switch is turned from OFF→ACC/ON
- Lighting switch is changed

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

INFOID:0000000013385260

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

Direct Diagnostic Mode	Description
ECU Identification	The BCM part number is displayed.
Self Diagnostic Result	The BCM self diagnostic results are displayed.
Data Monitor	The BCM input/output data is displayed in real time.
Active Test	The BCM activates outputs to test components.
Work support	The settings for BCM functions can be changed.
Configuration	• The vehicle specification can be read and saved. • The vehicle specification can be written when replacing BCM.
CAN Diag Support Mntr	The result of transmit/receive diagnosis of CAN communication is displayed.

SYSTEM APPLICATION
BCM can perform the following functions:

System	Sub System	Direct Diagnostic Mode						
		ECU Identification	Self Diagnostic Result	Data Monitor	Active Test	Work support	Configuration	CAN Diag Support Mntr
Door lock	DOOR LOCK		×	×	×	×		
Rear window defogger	REAR DEFOGGER			×	×	×		
Warning chime	BUZZER			×	×			
Interior room lamp timer	INT LAMP			×	×	×		
Exterior lamp	HEADLAMP			×	×	×		
Wiper and washer	WIPER			×	×	×		
Turn signal and hazard warning lamps	FLASHER			×	×	×		
Air conditioner	AIR CONDITIONER			×				
Intelligent Key system	INTELLIGENT KEY		×	×	×	×		
Combination switch	COMB SW			×				
BCM	BCM	×	×			×	×	×
Immobilizer	IMMU		×	×	×			
Interior room lamp battery saver	BATTERY SAVER			×	×			
Back door open	TRUNK			×				
Vehicle security system	THEFT ALM			×	×	×		
RAP system	RETAINED PWR			×				
Signal buffer system	SIGNAL BUFFER			×	×			
TPMS	AIR PRESSURE MONITOR		×	×	×			

FREEZE FRAME DATA (FFD)

The BCM records the following vehicle condition at the time a particular DTC is detected, and displays it on CONSULT.

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

NOTE:
*: Power supply position shifts to “LOCK” from “OFF”, when ignition switch is in the OFF position, selector lever is in the P position, and any of the following conditions are met:
- Closing door
- Opening door
- Door is locked using door request switch
- Door is locked using Intelligent Key

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

HEADLAMP

HEADLAMP : CONSULT Function (BCM - HEADLAMP)

INFOID:0000000013385261

DATA MONITOR

Monitor Item [Unit]	Description
PUSH SW [On/Off]	Indicates condition of push-button ignition switch.
ENGINE STATE [Stop/Stall/Crank/Run]	Indicates engine status received from ECM on CAN communication line.
VEH SPEED 1 [km/h]	Indicates vehicle speed signal received from ABS on CAN communication line.
TURN SIGNAL R [On/Off]	Indicates condition of combination switch.
TURN SIGNAL L [On/Off]	
TAIL LAMP SW [On/Off]	
HI BEAM SW [On/Off]	
HEAD LAMP SW 1 [On/Off]	
HEAD LAMP SW 2 [On/Off]	
PASSING SW [On/Off]	
AUTO LIGHT SW [On/Off]	
FR FOG SW [On/Off]	
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.
DOOR SW-RR [On/Off]	Indicates condition of rear door switch RH.
DOOR SW-RL [On/Off]	Indicates condition of rear door switch LH.
DOOR SW-BK [On/Off]	Indicates condition of back door switch.
OPTI SEN (DTCT) [V]	Indicates outside brightness voltage signal from optical sensor.
OPTI SEN (FILT) [V]	Indicates outside brightness voltage signal from optical sensor filtered by BCM.

ACTIVE TEST

Test Item	Description
FR FOG LAMP	This test is able to check front fog lamp operation [On/Off].
DAYTIME RUNNING LIGHT	This test is able to check daytime running lamp operation [On/Off].
ILL DIM SIGNAL	This test is able to check head lamp illumination dimming operation [On/Off].

WORK SUPPORT

Support Item	Setting	Description
TWILIGHT ON	MODE2*	Auto lamp function ON.
	MODE1	Auto lamp function OFF.
WIPER LINK	MODE4	This mode is not used.
	MODE3*	Wiper link function operates in INT, LOW and HI.
	MODE2	Wiper link function operates in LOW and HI.
	MODE1	Wiper link function OFF.
CUSTOM A/LIGHT SETTING	MODE4	Less sensitive than normal setting (turns ON later).
	MODE3	More sensitive than MODE2.
	MODE2	More sensitive than normal setting (turns ON earlier).
	MODE1*	Normal setting.

Support Item	Setting	Description
ILL DELAY SET	MODE 8	Auto lamp delay timer.
	MODE 7	
	MODE 6	
	MODE 4	
	MODE 5	
	MODE 3	
	MODE 2	
	MODE 1*	

* : Initial setting

FLASHER

FLASHER : CONSULT Function (BCM - FLASHER)

INFOID:0000000013385579

DATA MONITOR

Monitor Item [Unit]	Description
REQ SW -DR [On/Off]	Indicates condition of door request switch LH.
REQ SW -AS [On/Off]	Indicates condition of door request switch RH.
PUSH SW [On/Off]	Indicates condition of push-button ignition switch.
TURN SIGNAL R [On/Off]	Indicates condition of turn signal function of combination switch.
TURN SIGNAL L [On/Off]	
HAZARD SW [On/Off]	Indicates condition of hazard switch.
RKE-LOCK [On/Off]	Indicates condition of lock signal from Intelligent Key.
RKE-UNLOCK [On/Off]	Indicates condition of unlock signal from Intelligent Key.
RKE-PANIC [On/Off]	Indicates condition of panic alarm signal from Intelligent Key.

ACTIVE TEST

Test Item	Description
FLASHER	This test is able to check turn signal lamp operation [Off/LH/RH].

WORK SUPPORT

Support item	Setting	Description
3-TIME FLASHER SETTING	ON*	3-Time flasher setting ON.
	OFF	3-Time flasher setting OFF.

* : Initial setting

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:0000000013385585

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:

- Front wiper (LO, HI)
- Front fog lamps
- Parking lamps
- Side marker lamps
- Tail lamps
- License plate lamps
- Daytime running lamps
- Headlamps (LO, HI)
- A/C compressor
- Cooling fans (LO, HI)

Operation Procedure

CAUTION:

Do not start the engine.

NOTE:

When auto active test is performed with hood opened, sprinkle water on windshield before hand.

NOTE:

- If auto active test mode cannot be actuated, check door switch system. Refer to DLK-202, "Component Function Check".
- When auto active test mode has to be cancelled halfway through test, turn ignition switch OFF.

1. Close the hood and lift the wiper arms from the windshield. (Prevent windshield damage due to wiper operation)
2. Turn ignition switch OFF.
3. Turn the ignition switch ON, and within 20 seconds, press the front door switch LH 10 times. Then turn the ignition switch OFF.
4. Turn the ignition switch ON within 10 seconds. After that the horn sounds once, and the auto active test starts.
5. After a series of the following operations is repeated 3 times, auto active test is completed.

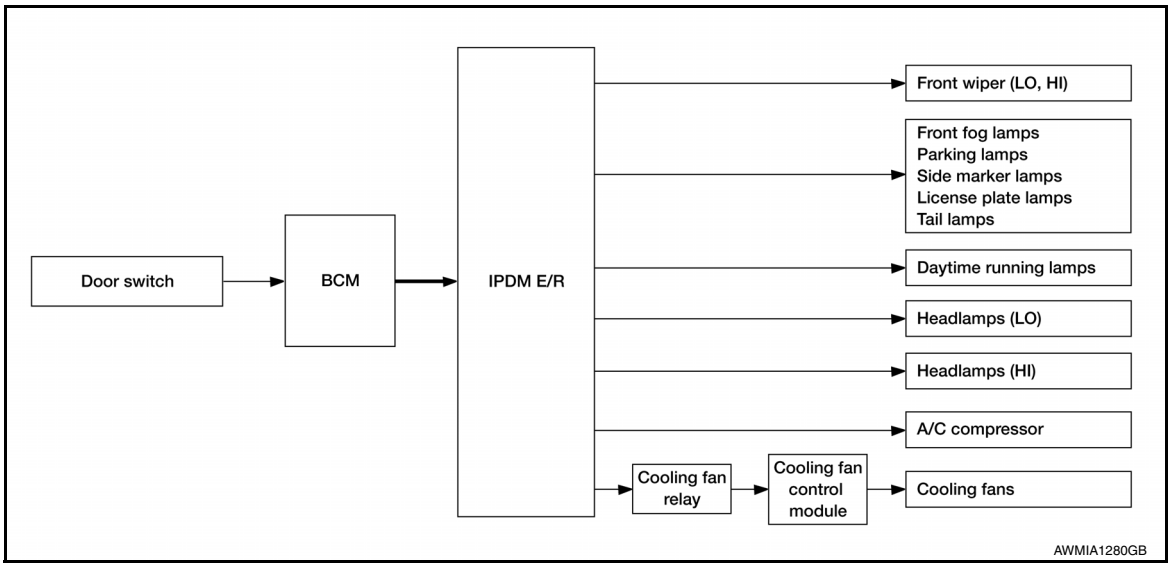
Inspection in Auto Active Test Mode

When auto active test mode is actuated, the following operation sequence is repeated 3 times.

Operation sequence	Inspection Location	Operation
1	Front wiper	LO for 3 seconds → HI for 3 seconds
2	• Front fog lamps • Parking lamps • Side marker lamps • Tail lamps • License plate lamps	10 seconds
3	Daytime running lamps	10 seconds
4	Headlamps	LO ⇔ HI 5 times
5	A/C compressor	ON ⇔ OFF 5 times
6*	Cooling fans	LO for 5 seconds → HI for 5 seconds

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

Concept of auto active test



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

Diagnosis chart in auto active test mode

Symptom	Inspection contents		Possible cause
Any of the following components do not operate • Front fog lamps • Parking lamps • Side marker lamps • License plate lamps • Tail lamps • Daytime running lamps • Headlamp (HI, LO) • Front wiper	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
Cooling fans do not operate	Perform auto active test. Do the cooling fans operate?	YES	• ECM signal input circuit • CAN communication signal between ECM and IPDM E/R
		NO	• Cooling fans • Harness or connectors between cooling fans and cooling fan control module • Cooling fan control module • Harness or connectors between cooling fan relay and cooling fan control module • Cooling fan relay • Harness or connectors between IPDM E/R and cooling fan relay • IPDM E/R

CONSULT Function (IPDM E/R)

INFOID:0000000013385586

CAUTION:

After disconnecting the CONSULT vehicle interface (VI) from the data link connector, the ignition must be cycled OFF → ON (for at least 5 seconds) → OFF. If this step is not performed, the BCM may not go to "sleep mode", potentially causing a discharged battery and a no-start condition.

APPLICATION ITEM

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

Direct Diagnostic Mode	Description
ECU Identification	The IPDM E/R part number is displayed.
Self Diagnostic Result	The IPDM E/R self diagnostic results are displayed.
Data Monitor	The IPDM E/R input/output data is displayed in real time.
Active Test	The IPDM E/R activates outputs to test components.

ECU IDENTIFICATION

The IPDM E/R part number is displayed.

SELF DIAGNOSTIC RESULT

Refer to PCS-21, "DTC Index".

DATA MONITOR

Monitor Item [Unit]	Main Signals	Description
MOTOR FAN REQ [%]	×	Indicates cooling fan speed signal received from ECM on CAN communication line.
AC COMP REQ [On/Off]	×	Indicates A/C compressor request signal received from ECM on CAN communication line.
TAIL&CLR REQ [On/Off]	×	Indicates position light request signal received from BCM on CAN communication line.
HL LO REQ [On/Off]	×	Indicates low beam request signal received from BCM on CAN communication line.
HL HI REQ [On/Off]	×	Indicates high beam request signal received from BCM on CAN communication line.
FR FOG REQ [On/Off]	×	Indicates front fog light request signal received from BCM on CAN communication line.
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Indicates front wiper request signal received from BCM on CAN communication line.
WIP AUTO STOP [STOP P/ACT P]	×	Indicates condition of front wiper auto stop signal.
WIP PROT [Off/BLOCK]	×	Indicates condition of front wiper fail-safe operation.
IGN RLY1 -REQ [On/Off]		Indicates ignition switch ON signal received from BCM on CAN communication line.
IGN RLY [On/Off]	×	Indicates condition of ignition relay.
PUSH SW [On/Off]		Indicates condition of push-button ignition switch.
INTER/NP SW [On/Off]		Indicates condition of CVT shift position.
ST RLY CONT [On/Off]		Indicates starter relay status signal received from BCM on CAN communication line.
IHBT RLY -REQ [On/Off]		Indicates starter control relay signal received from BCM on CAN communication line.
ST/INHI RLY [Off/ ST /INHI]		Indicates condition of starter relay and starter control relay.
DETENT SW [On/Off]		Indicates condition of CVT shift selector (park position switch).
DTRL REQ [Off]		Indicates daytime light request signal received from BCM on CAN communication line.
HOOD SW [On/Off]		Indicates condition of hood switch.
THFT HRN REQ [On/Off]		Indicates theft warning horn request signal received from BCM on CAN communication line.
HORN CHIRP [On/Off]		Indicates horn reminder signal received from BCM on CAN communication line.
HOOD SW 2 [On/Off]		Indicates condition of hood switch 2.

ACTIVE TEST

Test item	Description
HORN	This test is able to check horn operation [On].
FRONT WIPER	This test is able to check wiper motor operation [Hi/Lo/Off].
MOTOR FAN	This test is able to check cooling fan operation [4/3/2/1].
EXTERNAL LAMPS	This test is able to check external lamp operation [Fog/Hi/Lo/Tail/Off].

ECU DIAGNOSIS INFORMATION

BCM, IPDM E/R

List of ECU Reference

INFOID:0000000012875388

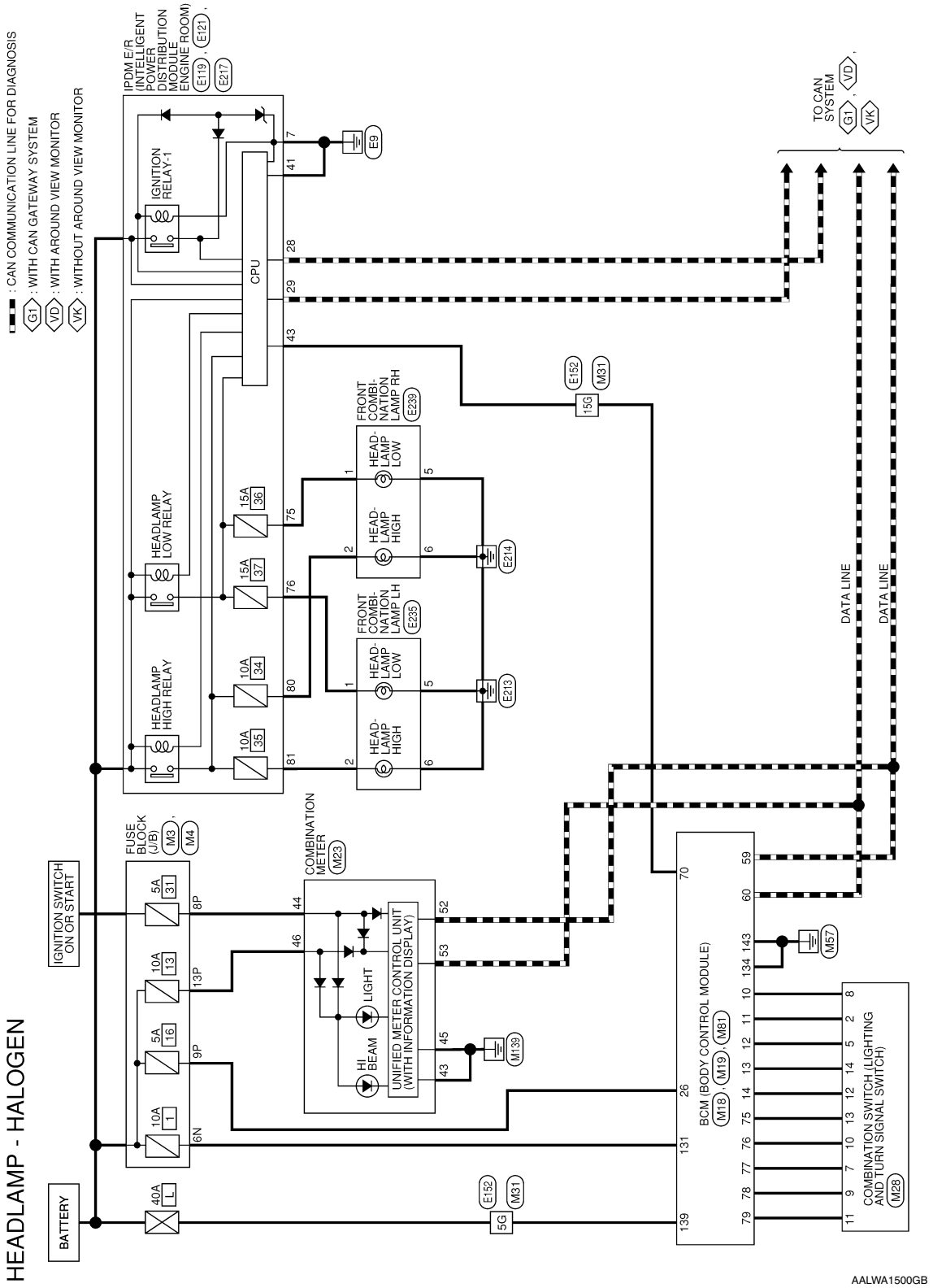
ECU	Reference
BCM	BCS-30, "Reference Value"
	BCS-50, "Fail Safe"
	BCS-51, "DTC Inspection Priority Chart"
	BCS-52, "DTC Index"
IPDM E/R	PCS-13, "Reference Value"
	PCS-20, "Fail Safe"
	PCS-21, "DTC Index"

WIRING DIAGRAM

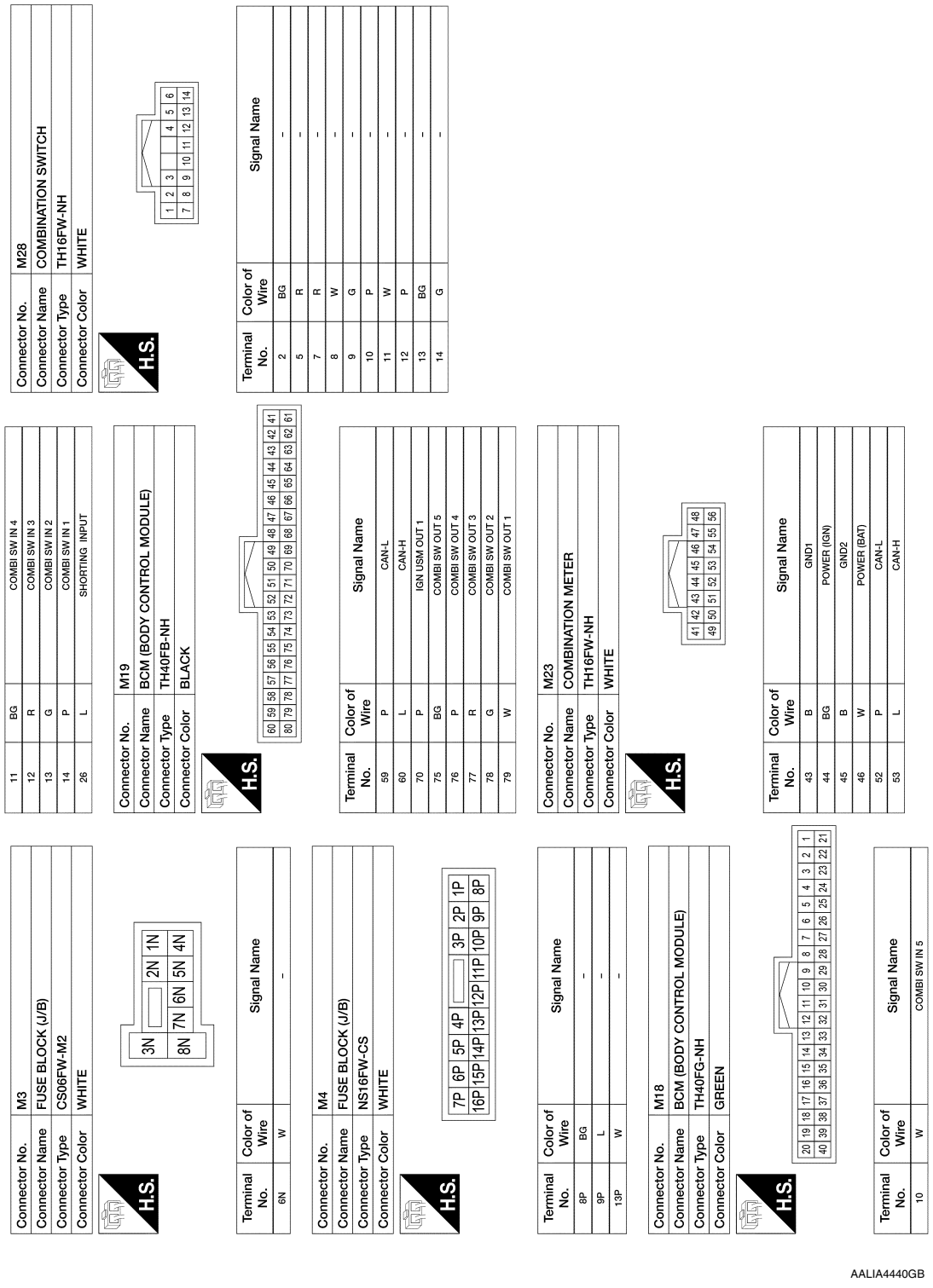
HEADLAMP

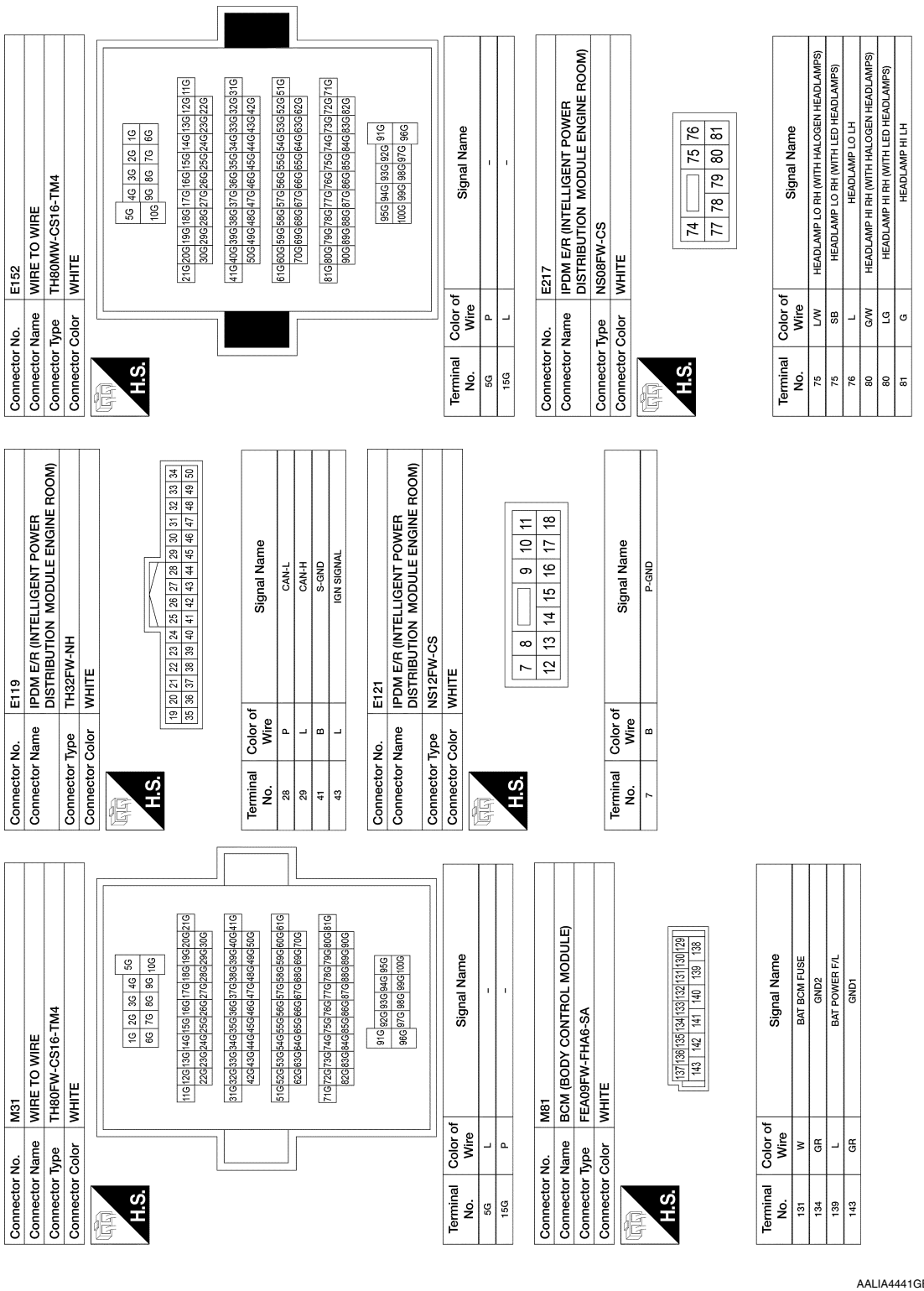
Wiring Diagram

INFOID:0000000012875389



HEADLAMP CONNECTORS - HALOGEN





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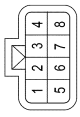
Connector No.	E235
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	RS08FB-PR
Connector Color	BLACK

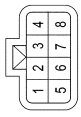
H.S.



Terminal No.	Color of Wire	Signal Name
1	L	–
2	G	–
5	B	–
6	B	–

Connector No.	E239
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	RS08FB-PR
Connector Color	BLACK

H.S.



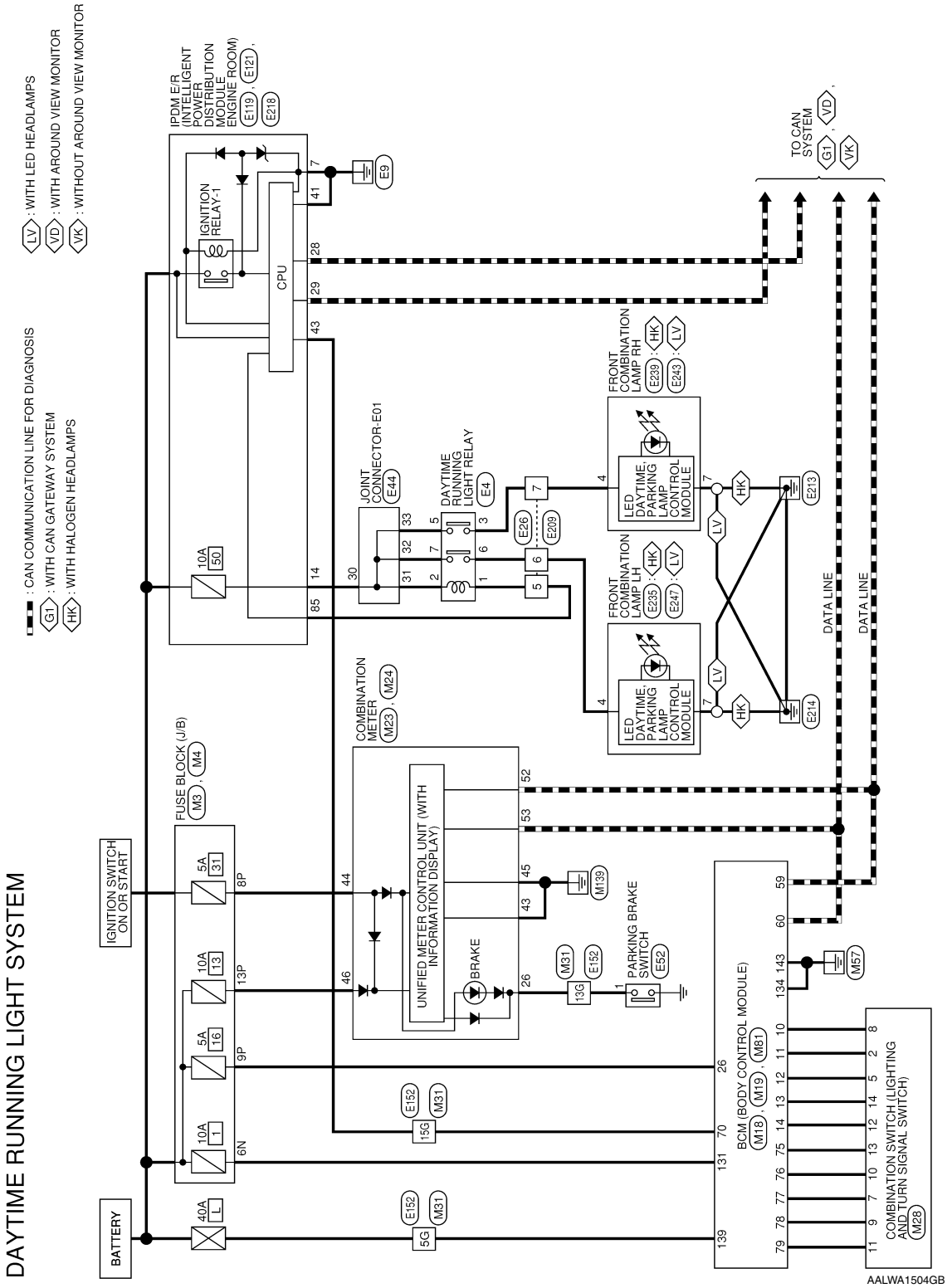
Terminal No.	Color of Wire	Signal Name
1	L/W	–
2	G/W	–
5	B	–
6	B	–

AALIA4442GB

DAYTIME RUNNING LIGHT SYSTEM

Wiring Diagram

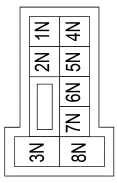
INFOID:0000000013364371



DAYTIME RUNNING LIGHT SYSTEM CONNECTORS

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	CS06FW-M2
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
6N	W	-

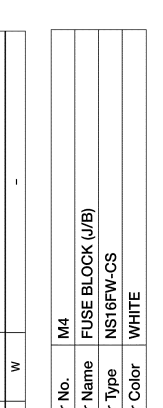
Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
8P	BG	-
9P	L	-
13P	W	-

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH
Connector Color	GREEN

H.S.



Terminal No.	Color of Wire	Signal Name
10	W	COMBI SW IN 5
11	BG	COMBI SW IN 4
12	R	COMBI SW IN 3
13	G	COMBI SW IN 2
14	P	COMBI SW IN 1
26	L	SHORTING INPUT

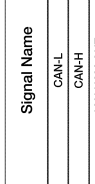
Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
59	P	CAN-L
60	L	CAN-H
70	P	IGN USM OUT 1
75	BG	COMBI SW OUT 5
76	P	COMBI SW OUT 4
77	R	COMBI SW OUT 3
78	G	COMBI SW OUT 2
79	W	COMBI SW OUT 1

Connector No.	M23
Connector Name	COMBINATION METER
Connector Type	TH16FW-NH
Connector Color	WHITE

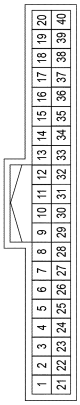
H.S.



Terminal No.	Color of Wire	Signal Name
43	B	GND1
44	BG	POWER (IGN)
45	B	GND2
46	W	POWER (BAT)
52	P	CAN-L
53	L	CAN-H

Connector No.	M24
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH
Connector Color	WHITE

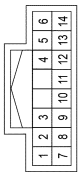
H.S.



Terminal No.	Color of Wire	Signal Name
26	BR	PKB SW

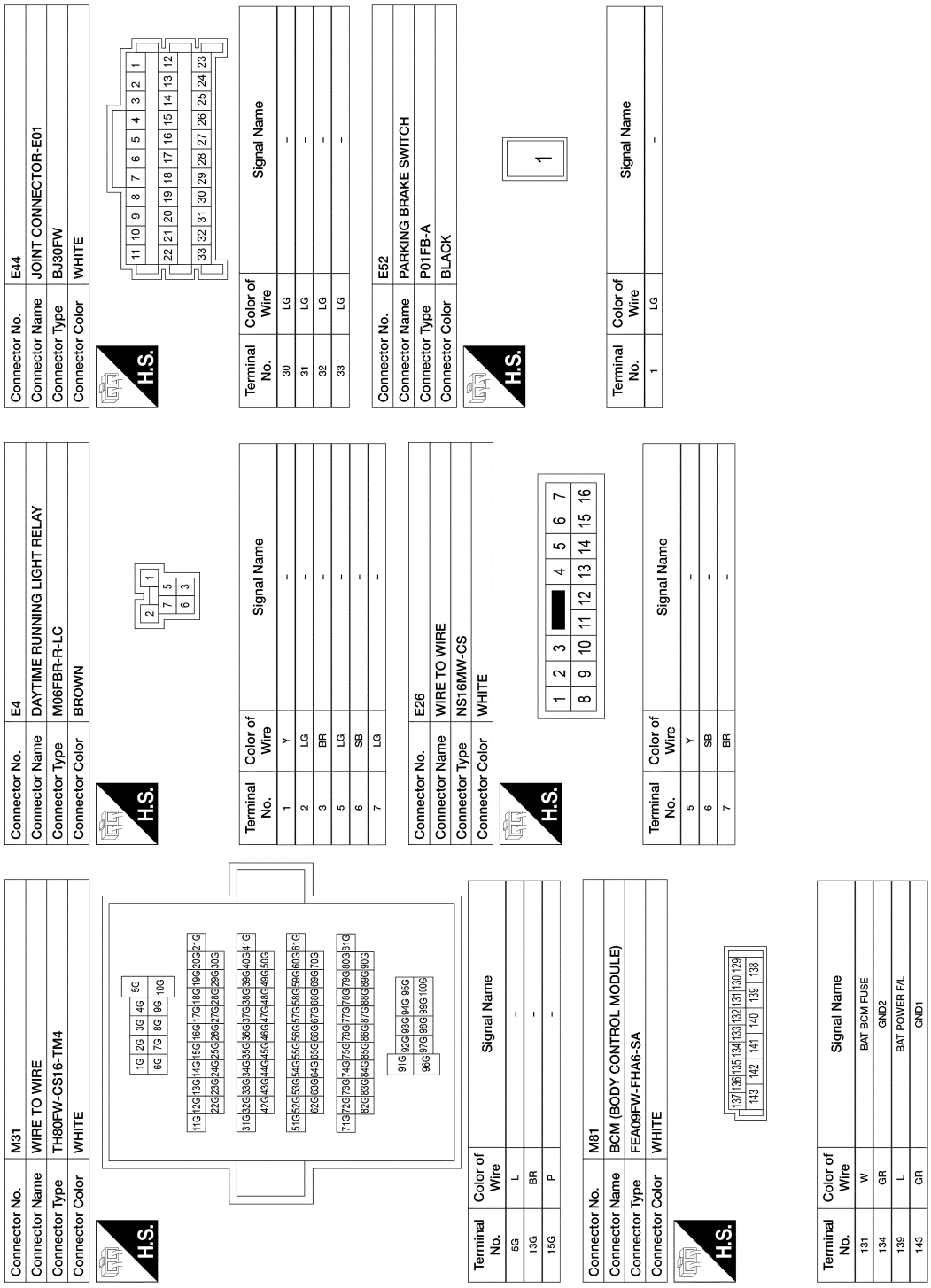
Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH
Connector Color	WHITE

H.S.

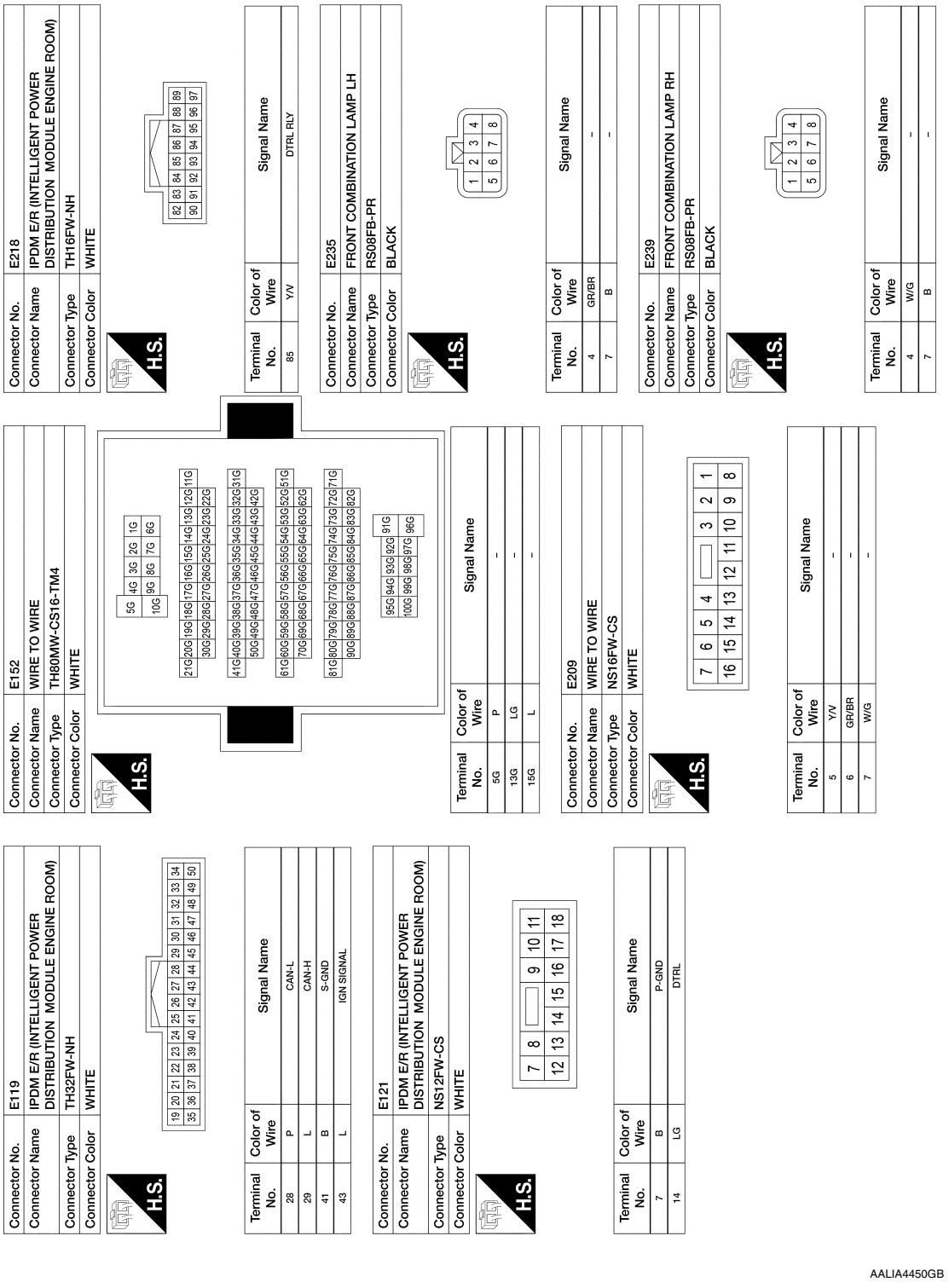


Terminal No.	Color of Wire	Signal Name
2	BG	-
5	R	-
7	R	-
8	W	-
9	G	-
10	P	-
11	W	-
12	P	-
13	BG	-
14	G	-

AALIA4448GB



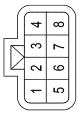
AALIA4449GB



AALIA4450GB

Connector No.	E243
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	RS08FB-PR
Connector Color	BLACK

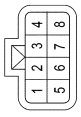
H.S.



Terminal No.	Color of Wire	Signal Name
4	W/G	–
7	B	–

Connector No.	E247
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	RS08FB-PR
Connector Color	BLACK

H.S.



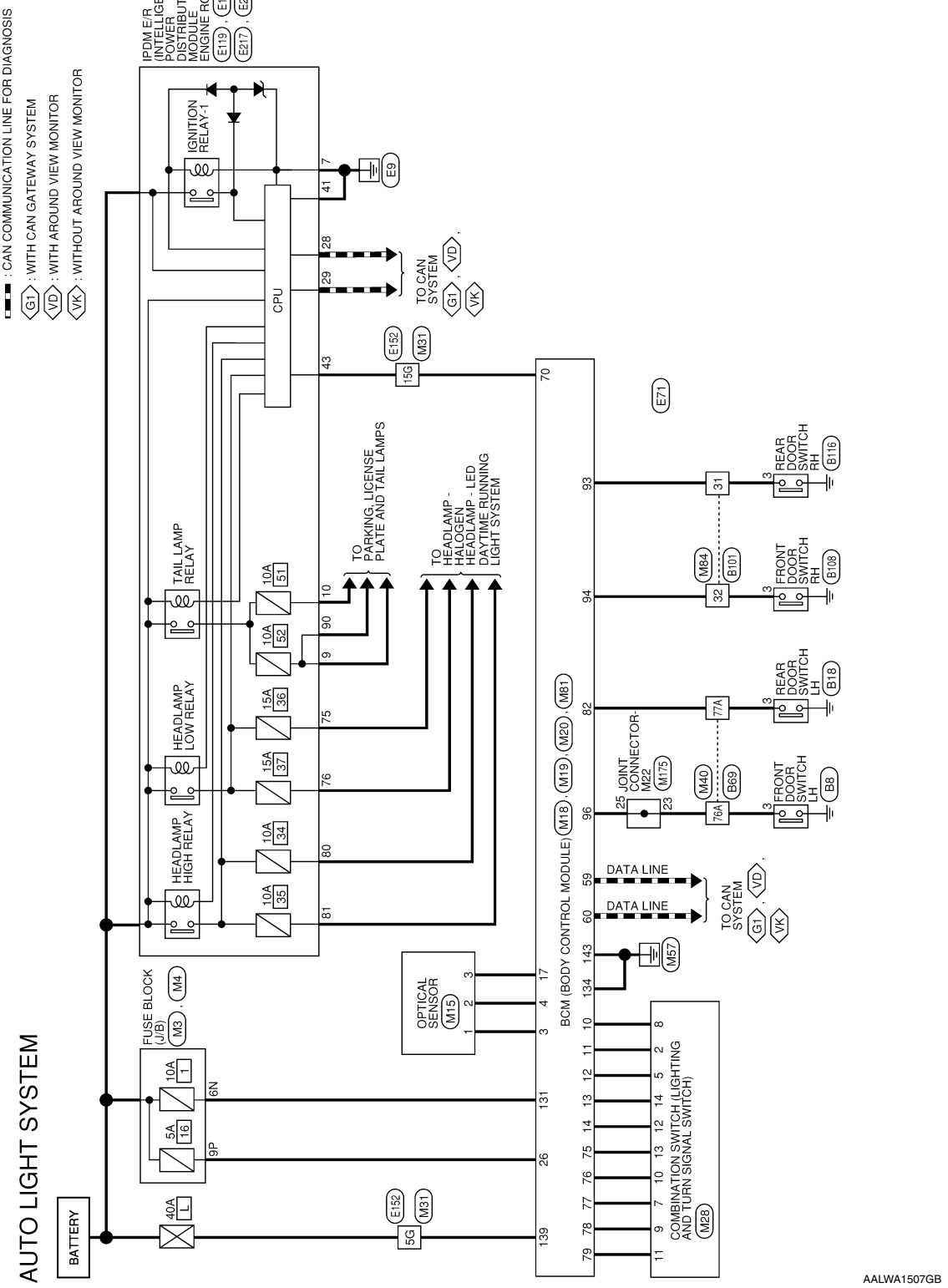
Terminal No.	Color of Wire	Signal Name
4	GR/BR	–
7	B	–

AALIA4451GB

AUTO LIGHT SYSTEM

Wiring Diagram

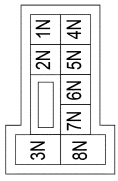
INFOID:0000000013364372



AUTO LIGHT SYSTEM CONNECTORS

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	CS06FW-M2
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
6N	W	-

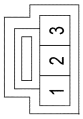
Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
9P	L	-

Connector No.	M15
Connector Name	OPTICAL SENSOR
Connector Type	TK03FW
Connector Color	WHITE

H.S.

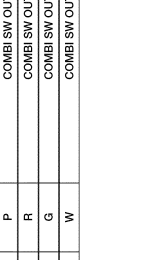


Terminal No.	Color of Wire	Signal Name
1	W	-
2	G	-

3	R	-

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH
Connector Color	GREEN

H.S.



Terminal No.	Color of Wire	Signal Name
3	W	A/L POWER SUPPLY 5V
4	G	A/L SIGNAL
10	W	COMBI SW IN 5
11	BG	COMBI SW IN 4
12	R	COMBI SW IN 3
13	G	COMBI SW IN 2
14	P	COMBI SW IN 1
17	R	GND RF A/L
26	L	SHORTING INPUT

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
59	P	CAN-L
60	L	CAN-H
70	P	IGN USM OUT 1
75	BG	COMBI SW OUT 5
76	P	COMBI SW OUT 4
77	R	COMBI SW OUT 3
78	G	COMBI SW OUT 2
79	W	COMBI SW OUT 1

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH24FGY-NH
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
82	W	RL DOOR SW
93	R	RR DOOR SW
94	G	AS DOOR SW
96	BG	DR DOOR SW

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
2	BG	-
5	R	-
7	R	-
8	W	-
9	G	-
10	P	-
11	W	-
12	P	-
13	BG	-
14	G	-

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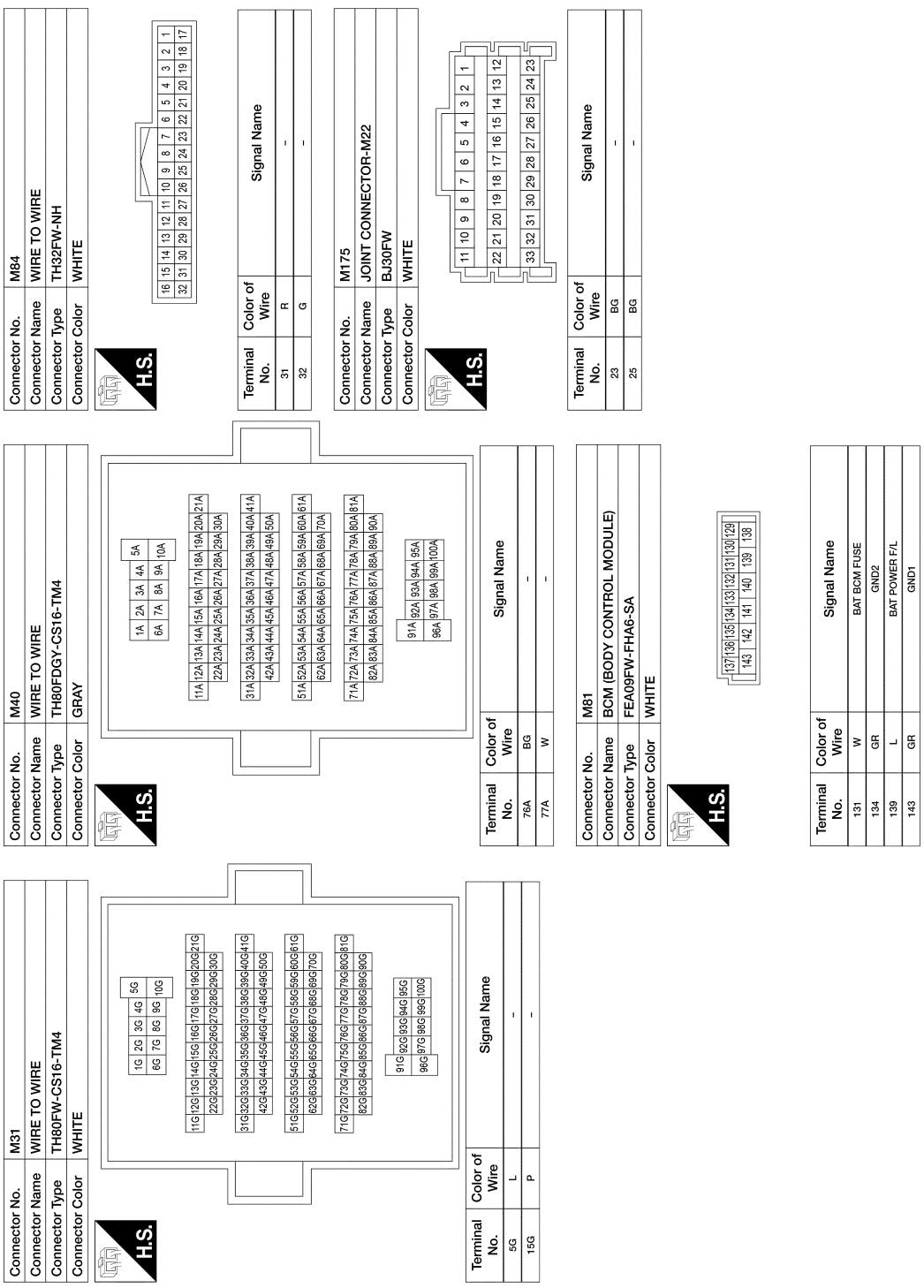

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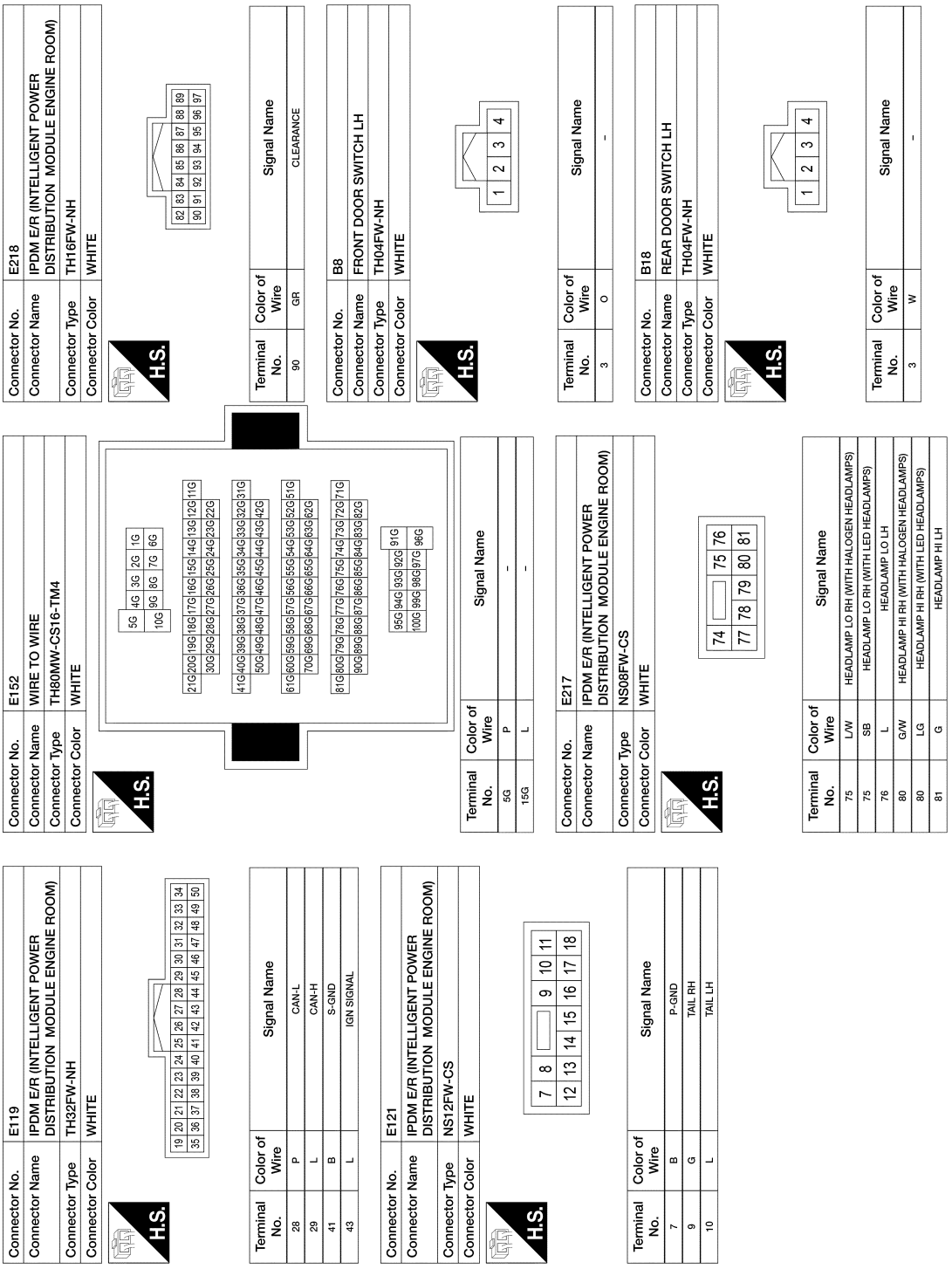

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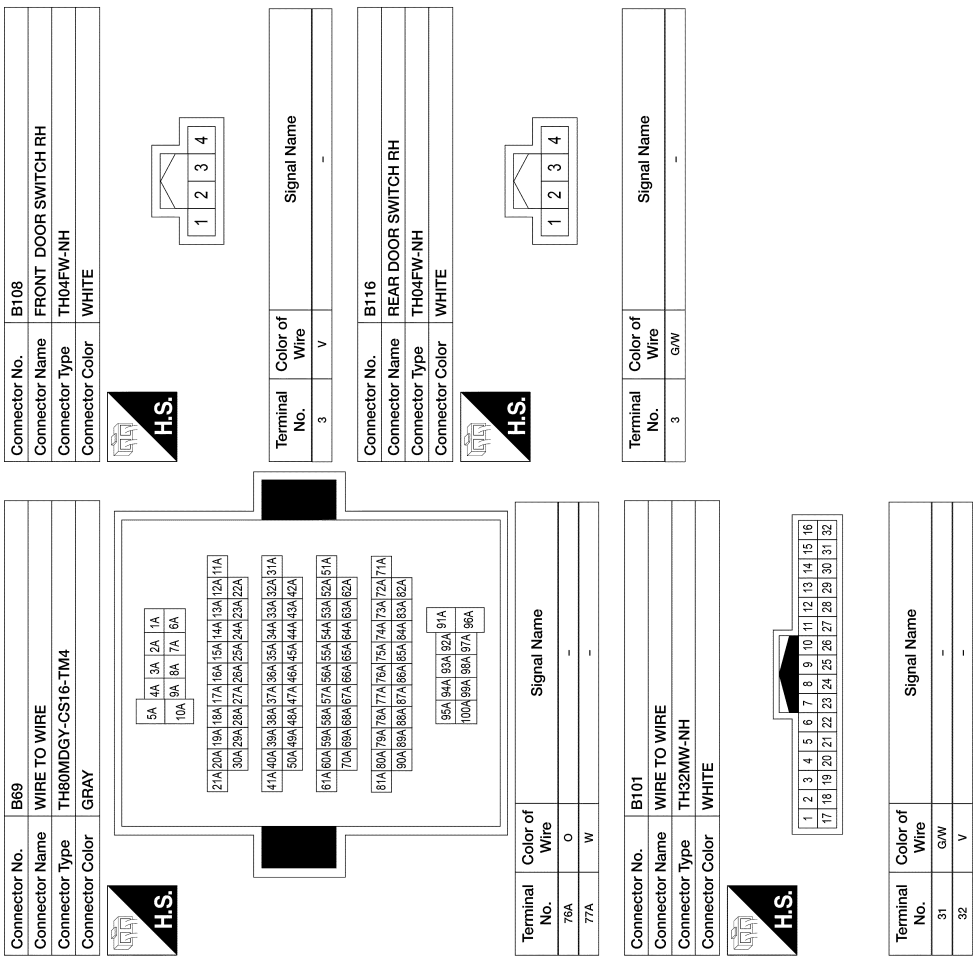
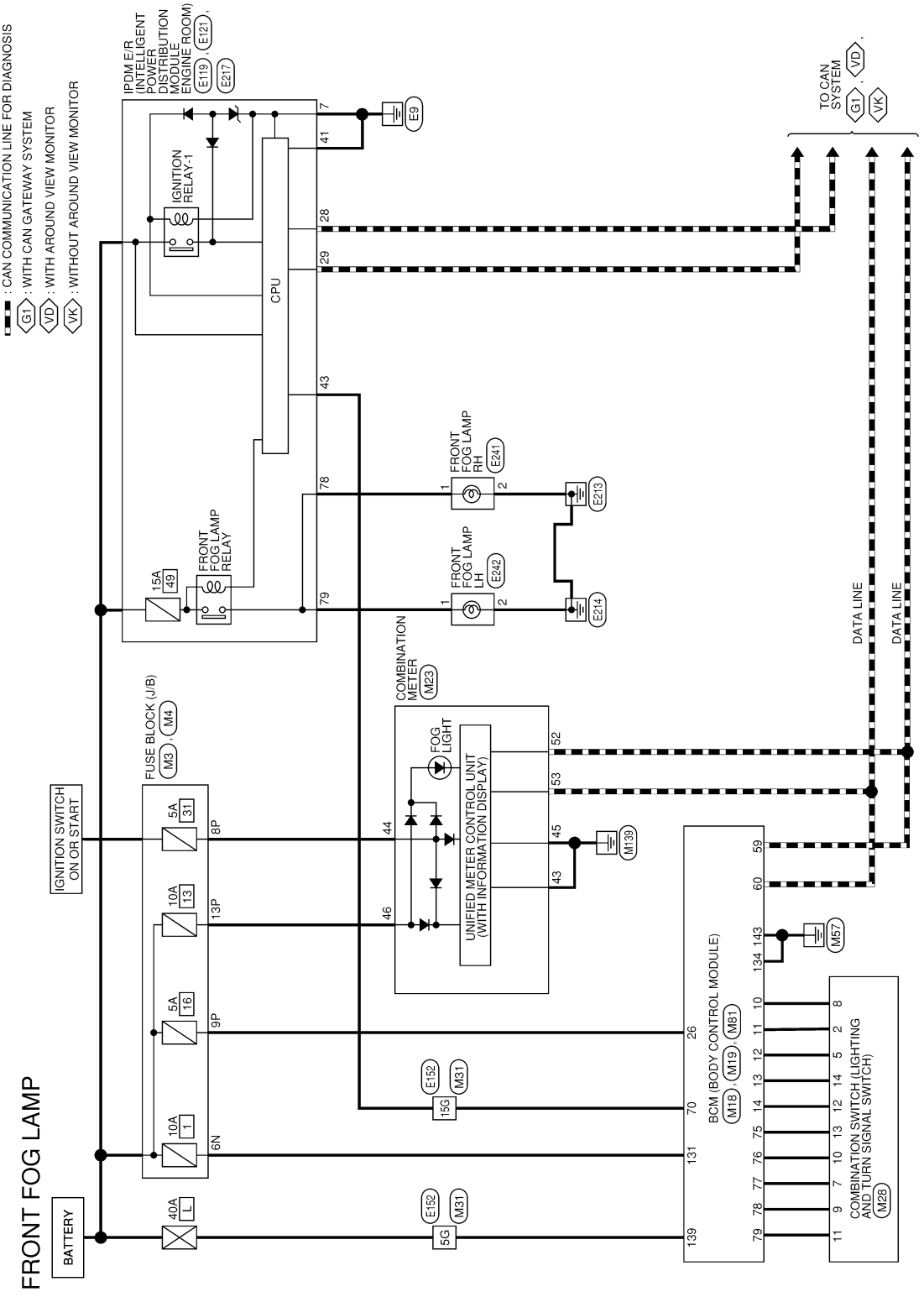


AALIA4460GB

FRONT FOG LAMP SYSTEM

Wiring Diagram

INFOID:0000000013364373



AALWA1502GB

FRONT FOG LAMP CONNECTORS

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	CS06FW-M2
Connector Color	WHITE

H.S.

3N		2N	1N
		7N	6N	5N	4N
8N			

Terminal No.	Color of Wire	Signal Name
6N	W	-

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
8P	BG	-
9P	L	-
13P	W	-

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH
Connector Color	GREEN

H.S.

20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21

Terminal No.	Color of Wire	Signal Name
10	W	COMBI SW IN 5
11	BG	COMBI SW IN 4
12	R	COMBI SW IN 3
13	G	COMBI SW IN 2
14	P	COMBI SW IN 1
26	L	SHORTING INPUT

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH
Connector Color	BLACK

H.S.

60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41
80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61

Terminal No.	Color of Wire	Signal Name
59	P	CAN-L
60	L	CAN-H
70	P	IGN USM OUT 1
75	BG	COMBI SW OUT 5
76	P	COMBI SW OUT 4
77	R	COMBI SW OUT 3
78	G	COMBI SW OUT 2
79	W	COMBI SW OUT 1

Connector No.	M23
Connector Name	COMBINATION METER
Connector Type	TH16FW-NH
Connector Color	WHITE

H.S.

41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56

Terminal No.	Color of Wire	Signal Name
43	B	GND1
44	BG	POWER (IGN)
45	B	GND2
46	W	POWER (BAT)
52	P	CAN-L
53	L	CAN-H

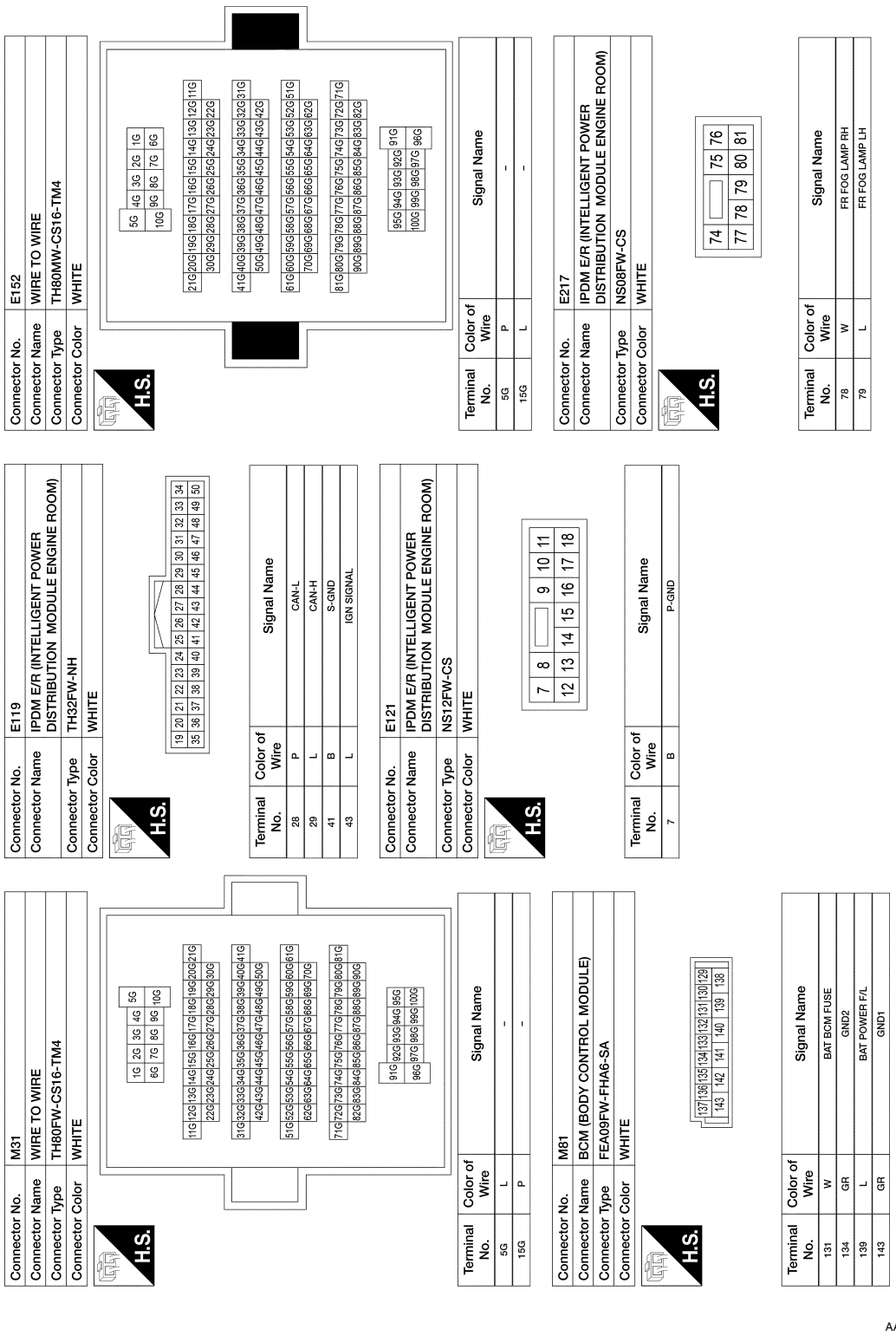
Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH
Connector Color	WHITE

H.S.

1	2	3		4	5	6
7	8	9	10	11	12	13	14

Terminal No.	Color of Wire	Signal Name
2	BG	-
5	R	-
7	R	-
8	W	-
9	G	-
10	P	-
11	W	-
12	P	-
13	BG	-
14	G	-

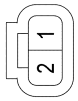
AALIA4444GB



AALIA4445GB

Connector No.	E241
Connector Name	FRONT FOG LAMP RH
Connector Type	FHZ02FB
Connector Color	BLACK

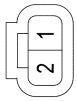
H.S.



Terminal No.	Color of Wire	Signal Name
1	W	-
2	B	-

Connector No.	E242
Connector Name	FRONT FOG LAMP LH
Connector Type	FHZ02FB
Connector Color	BLACK

H.S.



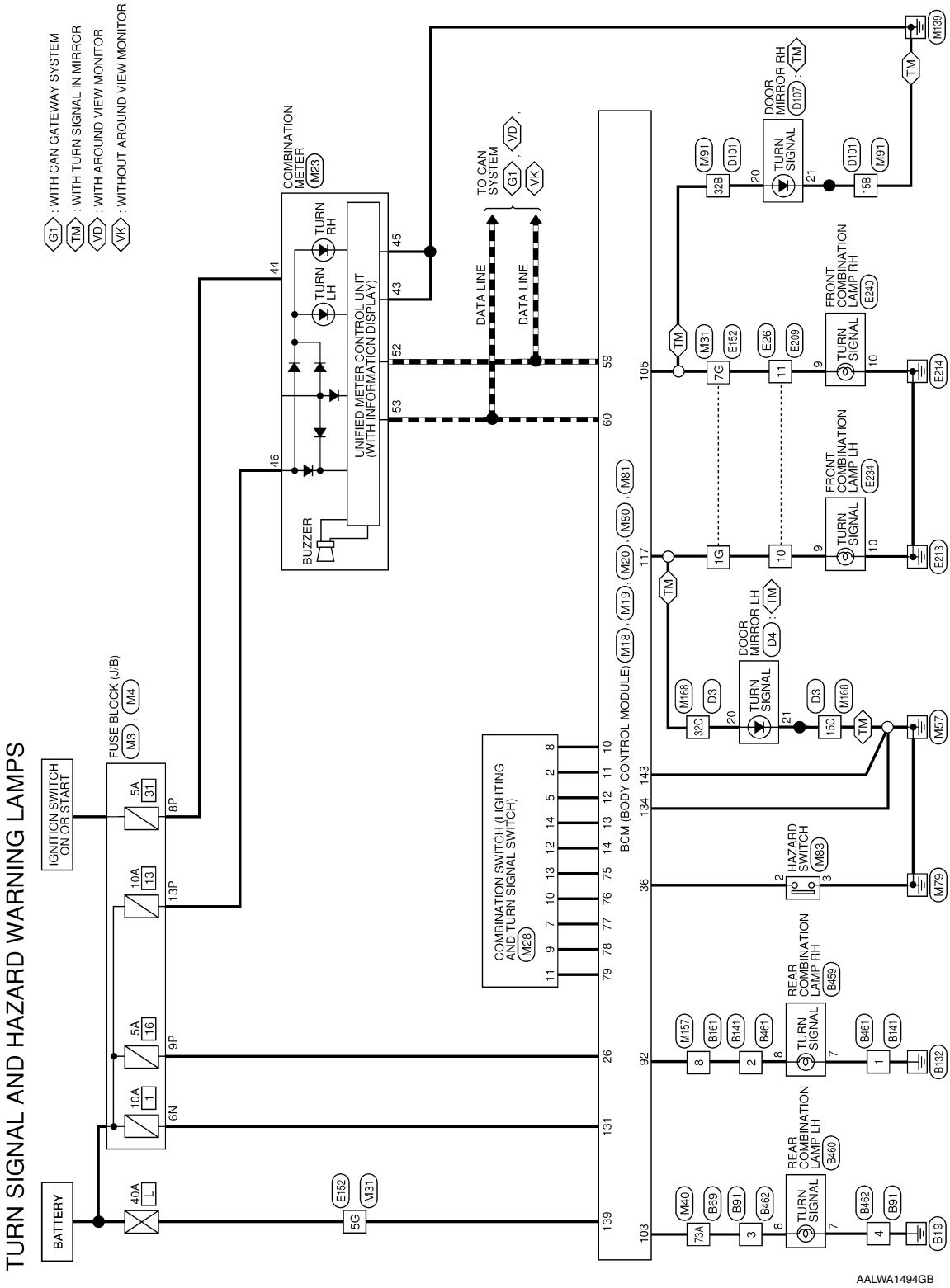
Terminal No.	Color of Wire	Signal Name
1	L	-
2	B	-

AALIA4446GB

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

Wiring Diagram

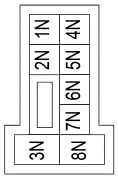
INFOID:0000000013364374



TURN SIGNAL AND HAZARD WARNING LAMPS CONNECTORS

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	CS06FW-M2
Connector Color	WHITE

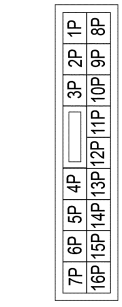
H.S.



Terminal No.	Color of Wire	Signal Name
6N	W	-

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS
Connector Color	WHITE

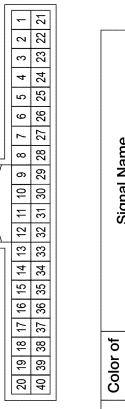
H.S.



Terminal No.	Color of Wire	Signal Name
8P	BG	-
9P	L	-
13P	W	-

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH
Connector Color	GREEN

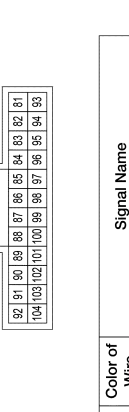
H.S.



Terminal No.	Color of Wire	Signal Name
10	W	COMBI SW IN 5
11	BG	COMBI SW IN 4
12	R	COMBI SW IN 3
13	G	COMBI SW IN 2
14	P	COMBI SW IN 1
26	L	SHORTING INPUT
36	W	HAZARD SW

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH
Connector Color	BLACK

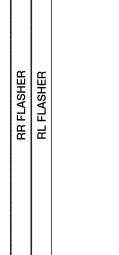
H.S.



Terminal No.	Color of Wire	Signal Name
59	P	CAN-L
60	L	CAN-H
75	BG	COMBI SW OUT 5
76	P	COMBI SW OUT 4
77	R	COMBI SW OUT 3
78	G	COMBI SW OUT 2
79	W	COMBI SW OUT 1

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH24FGY-NH
Connector Color	GRAY

H.S.



Terminal No.	Color of Wire	Signal Name
92	R	RR FLASHER
103	BG	RL FLASHER

Connector No.	M23
Connector Name	COMBINATION METER
Connector Type	TH16FW-NH
Connector Color	WHITE

H.S.

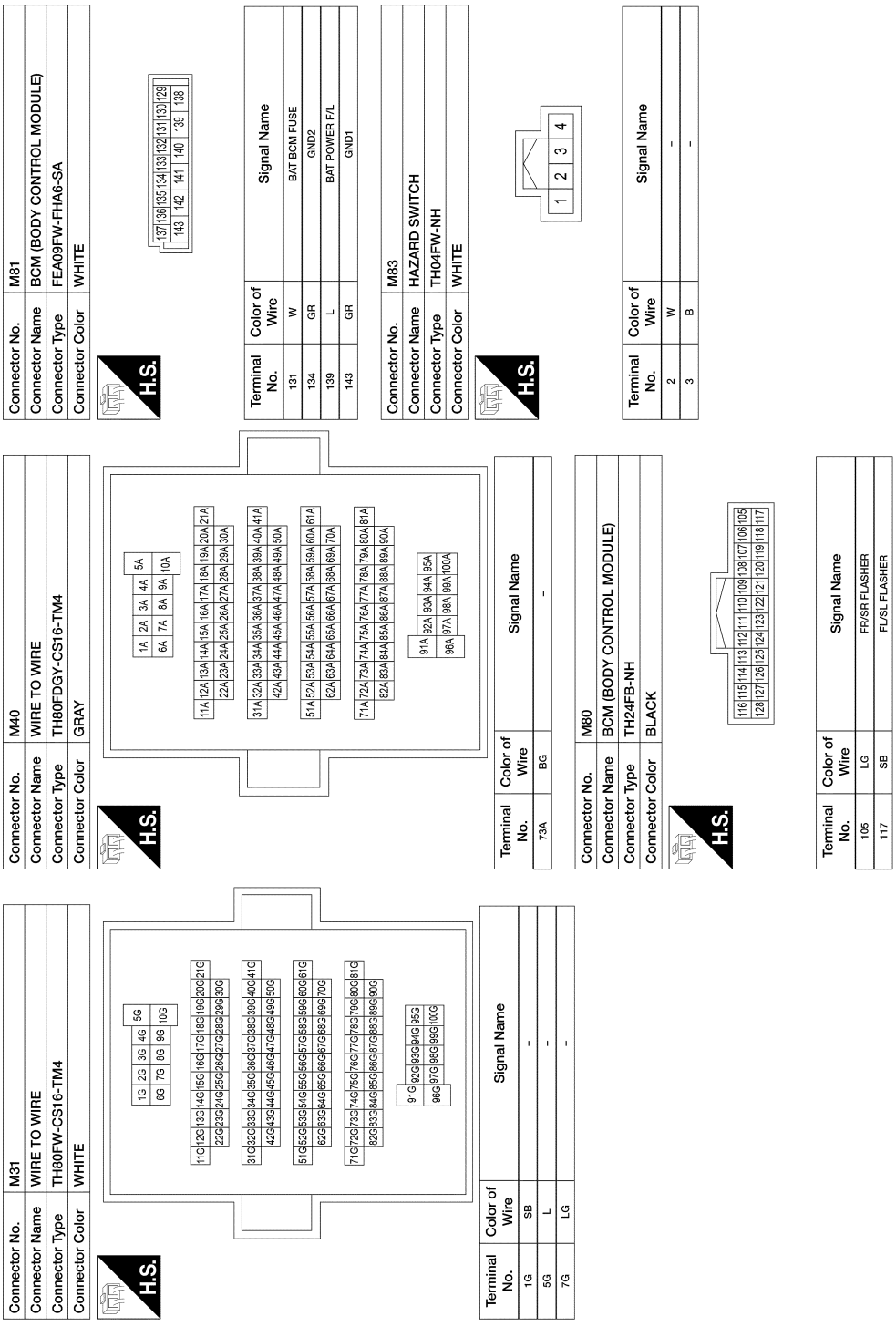
Terminal No.	Color of Wire	Signal Name
43	B	GND1
44	BG	POWER (IGN)
45	B	GND2
46	W	POWER (BAT)
52	P	CAN-L
53	L	CAN-H

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH
Connector Color	WHITE

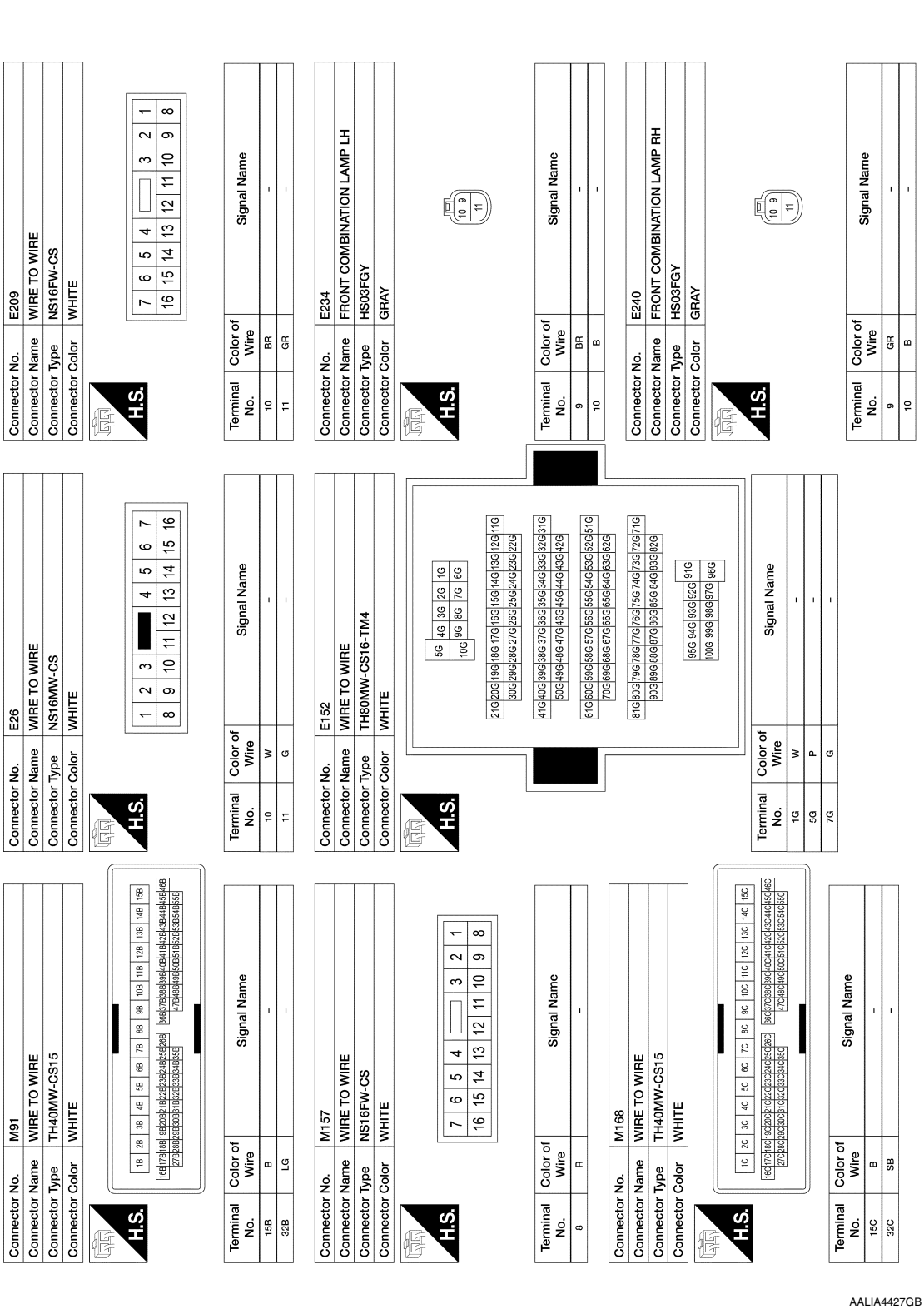
H.S.

Terminal No.	Color of Wire	Signal Name
2	BG	-
5	R	-
7	R	-
8	W	-
9	G	-
10	P	-
11	W	-
12	P	-
13	BG	-
14	G	-

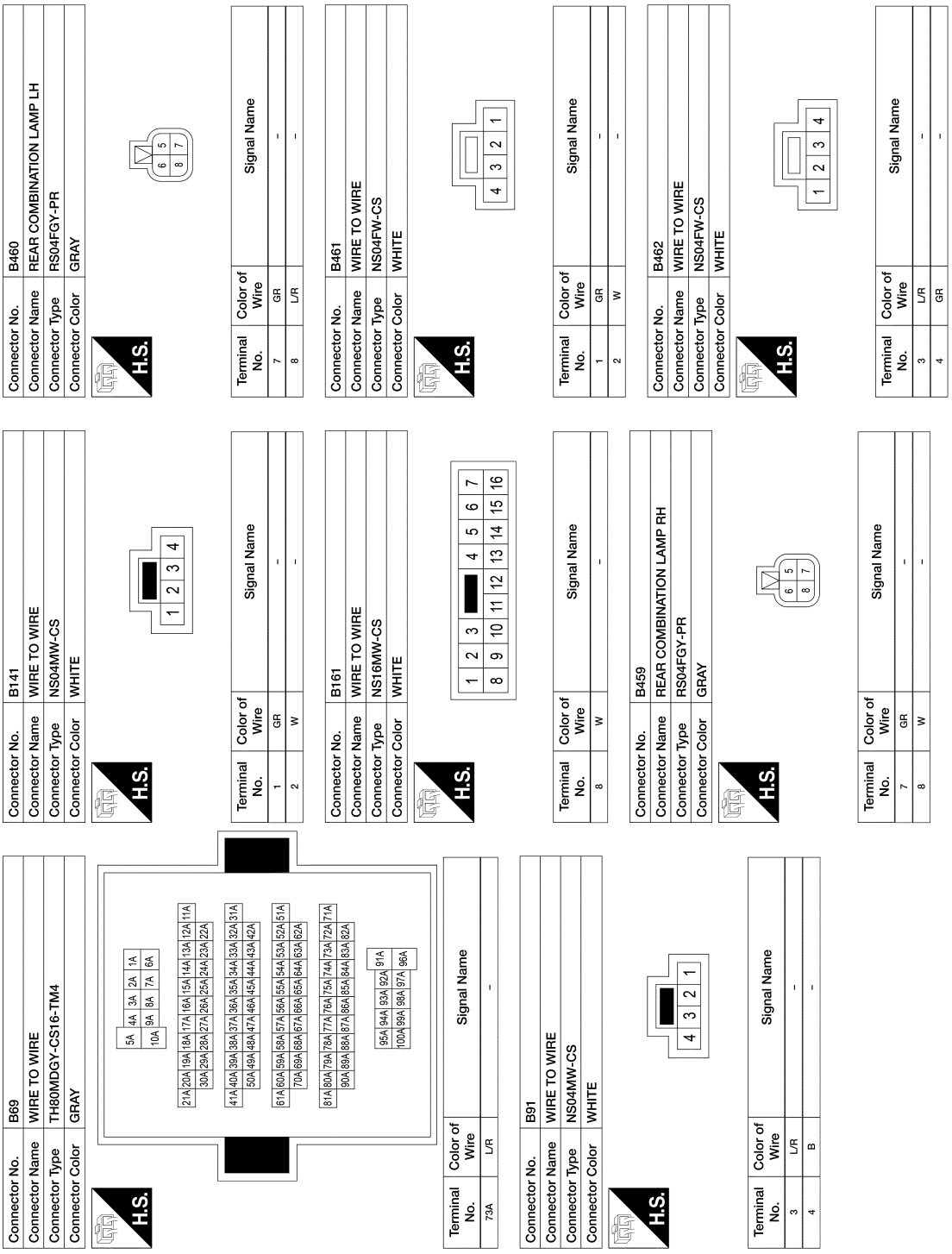
AALIA4425GB



AALIA4426GB



AALIA4427GB



AALIA4428GB

Connector No.	D3
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15
Connector Color	WHITE

H.S.

15C	14C	13C	12C	11C	10C	9C	8C	7C	6C	5C	4C	3C	2C	1C

46	45	44	43	42	41	40	39	38	37	36	35	34	33	32

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17

Terminal No.	Color of Wire	Signal Name
15C	B	-
32C	G/O	-

Connector No.	D4
Connector Name	DOOR MIRROR LH
Connector Type	TH24MW-NH
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
20	G/O	-
21	B/W	-

Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15
Connector Color	WHITE

H.S.

15B	14B	13B	12B	11B	10B	9B	8B	7B	6B	5B	4B	3B	2B	1B

40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20

19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Terminal No.	Color of Wire	Signal Name
15B	B	-
32B	G/O	-

Connector No.	D107
Connector Name	DOOR MIRROR RH
Connector Type	TH24MW-NH
Connector Color	WHITE

H.S.

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

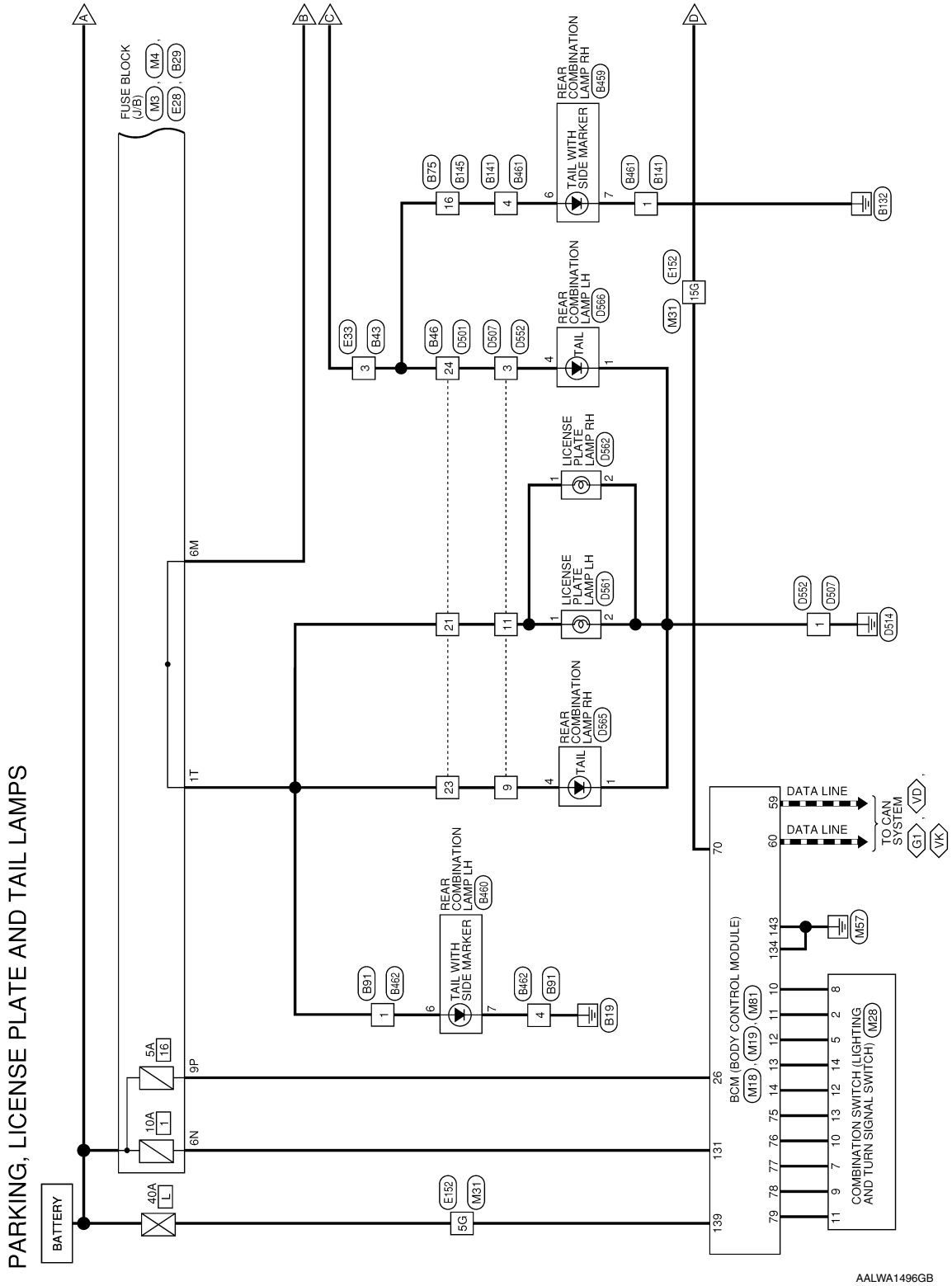
Terminal No.	Color of Wire	Signal Name
20	G/O	-
21	B/W	-

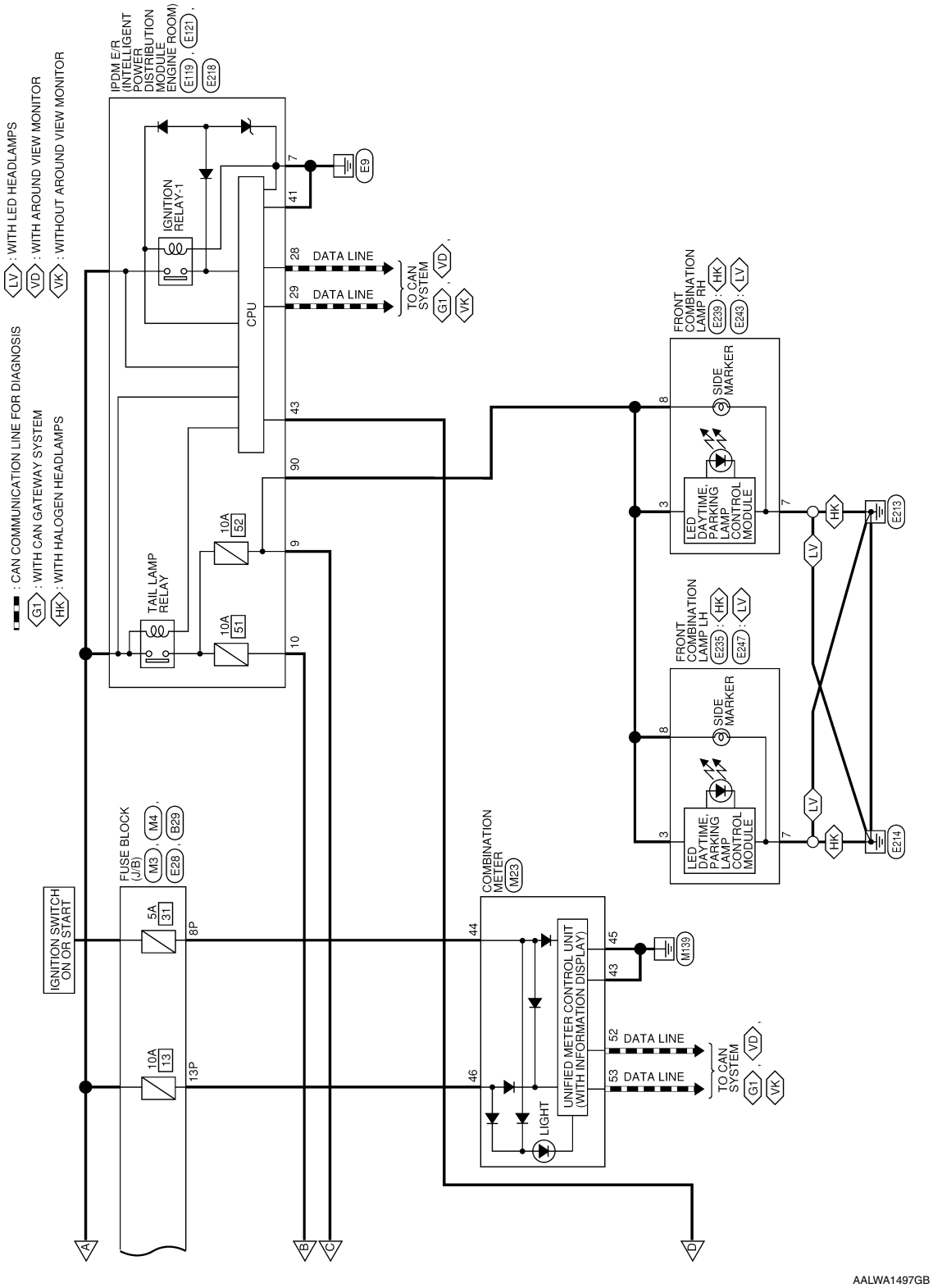
AALIA4429GB

PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

Wiring Diagram

INFOID:0000000013364375

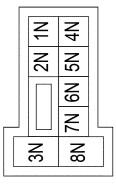



: CAN COMMUNICATION LINE FOR DIAGNOSIS
G1 : WITH CAN GATEWAY SYSTEM
HK : WITH HALOGEN HEADLAMPS
LV : WITH LED HEADLAMPS
VD : WITH AROUND VIEW MONITOR
VK : WITHOUT AROUND VIEW MONITOR
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E119, E121, E218
IGNITION RELAY-1
CPU
TAIL LAMP RELAY
10A 52
10A 51
DATA LINE
TO CAN SYSTEM VD, G1, VK
E9
FRONT COMBINATION LAMP RH E239 : HK E243 : LV
FRONT COMBINATION LAMP LH E235 : HK E247 : LV
SIDE MARKER
LED DAYTIME PARKING LAMP CONTROL MODULE
E213
E214
IGNITION SWITCH ON OR START
FUSE BLOCK (J/B) M3, M4, B29, E28
5A 31
10A 13
8P
13P
COMBINATION METER M23
UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY)
LIGHT
M139
A
B
C
D
AALWA1497GB

PARKING, LICENSE PLATE AND TAIL LAMPS CONNECTORS

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	CS06FW-M2
Connector Color	WHITE

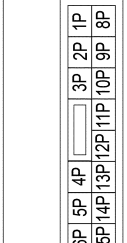
H.S.



Terminal No.	Color of Wire	Signal Name
6N	W	-

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS
Connector Color	WHITE

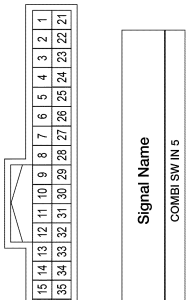
H.S.



Terminal No.	Color of Wire	Signal Name
8P	BG	-
9P	L	-
13P	W	-

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH
Connector Color	GREEN

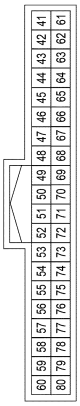
H.S.



Terminal No.	Color of Wire	Signal Name
10	W	COMBI SW IN 5
11	BG	COMBI SW IN 4
12	R	COMBI SW IN 3
13	G	COMBI SW IN 2
14	P	COMBI SW IN 1
26	L	SHORTING INPUT

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH
Connector Color	BLACK

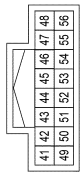
H.S.



Terminal No.	Color of Wire	Signal Name
59	P	CAN-L
60	L	CAN-H
70	P	IGN USM OUT 1
75	BG	COMBI SW OUT 5
76	P	COMBI SW OUT 4
77	R	COMBI SW OUT 3
78	G	COMBI SW OUT 2
79	W	COMBI SW OUT 1

Connector No.	M23
Connector Name	COMBINATION METER
Connector Type	TH16FW-NH
Connector Color	WHITE

H.S.



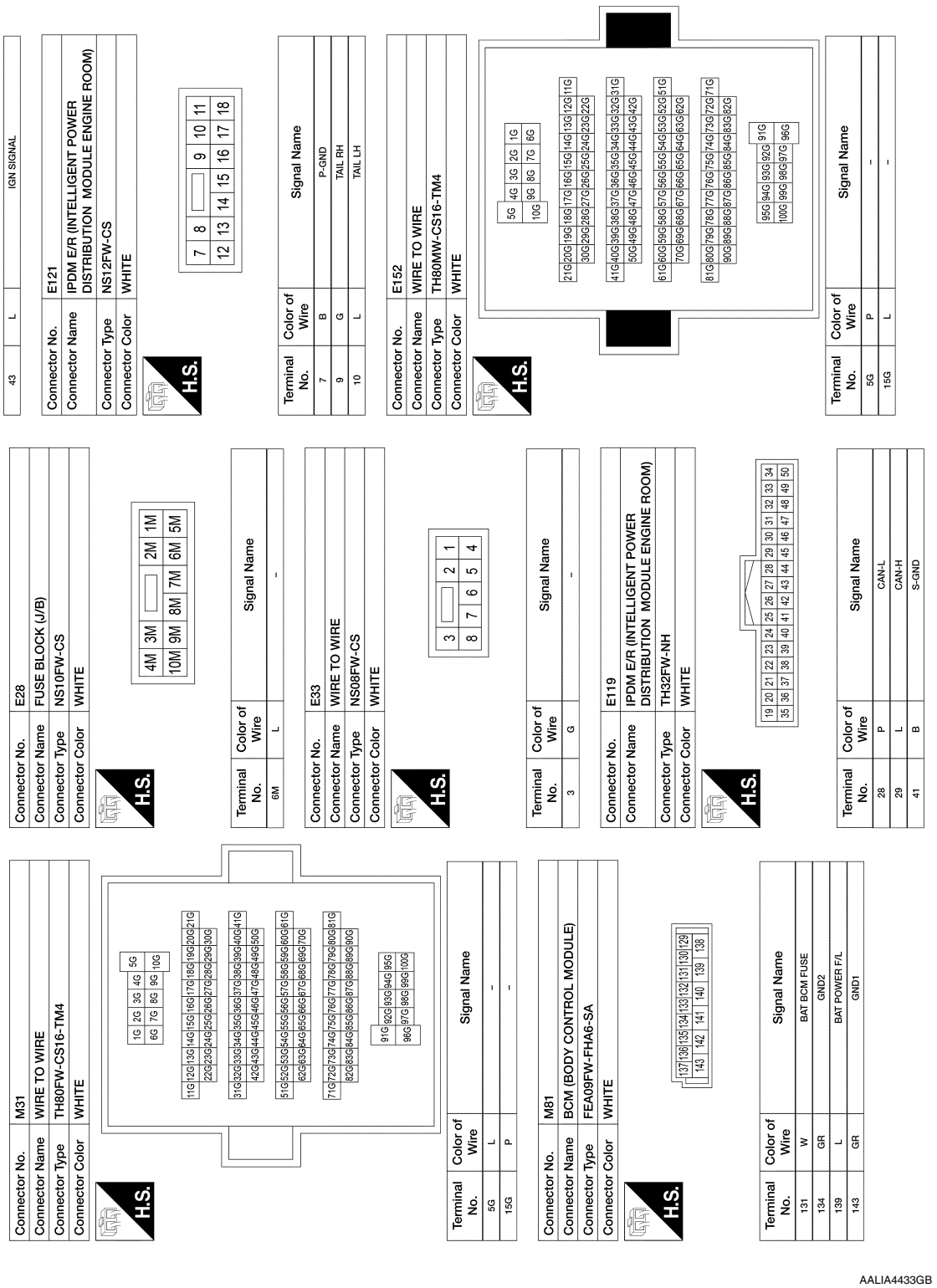
Terminal No.	Color of Wire	Signal Name
43	B	GND1
44	BG	POWER (IGN)
45	B	GND2
46	W	POWER (BAT)
52	P	CAN-L
53	L	CAN-H

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
2	BG	-
5	R	-
7	R	-
8	W	-
9	G	-
10	P	-
11	W	-
12	P	-
13	BG	-
14	G	-

AALIA4432GB



AALIA4433GB

Connector No.	E218
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH16FW-NH
Connector Color	WHITE

H.S.

82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97

Terminal No.	Color of Wire	Signal Name
90	GR	CLEARANCE

Connector No.	E235
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	RS08FB-PR
Connector Color	BLACK

H.S.

1	2	3	4
5	6	7	8

Terminal No.	Color of Wire	Signal Name
3	O	–
7	B	–
8	P	–

Connector No.	E239
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	RS08FB-PR
Connector Color	BLACK

H.S.

1	2	3	4
5	6	7	8

Terminal No.	Color of Wire	Signal Name
3	GR	–
7	B	–

8	W	–

Connector No.	E243
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	RS08FB-PR
Connector Color	BLACK

H.S.

1	2	3	4
5	6	7	8

Terminal No.	Color of Wire	Signal Name
3	GR	–
7	B	–
8	W	–

Connector No.	E247
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	RS08FB-PR
Connector Color	BLACK

H.S.

1	2	3	4
5	6	7	8

Terminal No.	Color of Wire	Signal Name
3	O	–
7	B	–
8	P	–

Connector No.	B29
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-CS
Connector Color	WHITE

H.S.

2T		1T
6T	5T	4T	3T

Terminal No.	Color of Wire	Signal Name
1T	O	–

Connector No.	B43
Connector Name	WIRE TO WIRE
Connector Type	NS08MW-CS
Connector Color	WHITE

H.S.

1	2		3
4	5	6	7	8

Terminal No.	Color of Wire	Signal Name
3	W	–

Connector No.	B46
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH
Connector Color	WHITE

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	25	26	27	28	29	30	31	32

Terminal No.	Color of Wire	Signal Name
21	R	–
23	L	–
24	W	–

AALIA4434GB

Connector No.	B461
Connector Name	WIRE TO WIRE
Connector Type	NS04FW-CS
Connector Color	WHITE

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	GR	–
4	W	–

Connector No.	B462
Connector Name	WIRE TO WIRE
Connector Type	
Connector Color	WHITE

H.S.

1	2	3	4

Terminal No.	Color of Wire	Signal Name
1	W	–
4	GR	–

Connector No.	B145
Connector Name	WIRE TO WIRE
Connector Type	NS16MGY-CS
Connector Color	GRAY

H.S.

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

Terminal No.	Color of Wire	Signal Name
16	W	–

Connector No.	B459
Connector Name	REAR COMBINATION LAMP RH
Connector Type	RS04FGY-PR
Connector Color	GRAY

H.S.

6	5
8	7

Terminal No.	Color of Wire	Signal Name
6	W	–
7	GR	–

Connector No.	B460
Connector Name	REAR COMBINATION LAMP LH
Connector Type	RS04FGY-PR
Connector Color	GRAY

H.S.

6	5
8	7

Terminal No.	Color of Wire	Signal Name
6	W	–
7	GR	–

Connector No.	B75
Connector Name	WIRE TO WIRE
Connector Type	NS16FGY-CS
Connector Color	GRAY

H.S.

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

Terminal No.	Color of Wire	Signal Name
16	W	–

Connector No.	B91
Connector Name	WIRE TO WIRE
Connector Type	
Connector Color	WHITE

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	O	–
4	B	–

Connector No.	B141
Connector Name	WIRE TO WIRE
Connector Type	NS04MW-CS
Connector Color	WHITE

H.S.

1	2	3	4

Terminal No.	Color of Wire	Signal Name
1	GR	–
4	W	–

AALIA4435GB

Connector No.	D501
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH
Connector Color	WHITE

H.S.

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17

Terminal No.	Color of Wire	Signal Name
21	O	-
23	L	-
24	W	-

Connector No.	D507
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	B	-
3	W	-
9	L	-
11	O	-

Connector No.	D552
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH
Connector Color	WHITE

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
1	B	-
3	W	-
9	L	-
11	O	-

Connector No.	D561
Connector Name	LICENSE PLATE LAMP LH
Connector Type	TK02FBR
Connector Color	BROWN

H.S.

2	1

Terminal No.	Color of Wire	Signal Name
1	O	-
2	B	-

Connector No.	D562
Connector Name	LICENSE PLATE LAMP RH
Connector Type	TK02FBR
Connector Color	BROWN

H.S.

2	1

Terminal No.	Color of Wire	Signal Name
1	O	-
2	B	-

Connector No.	D565
Connector Name	REAR COMBINATION LAMP RH
Connector Type	NS04MW-CS
Connector Color	WHITE

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	B	-
4	L	-

Connector No.	D566
Connector Name	REAR COMBINATION LAMP LH
Connector Type	NS04MW-CS
Connector Color	WHITE

H.S.

4	3	2	1

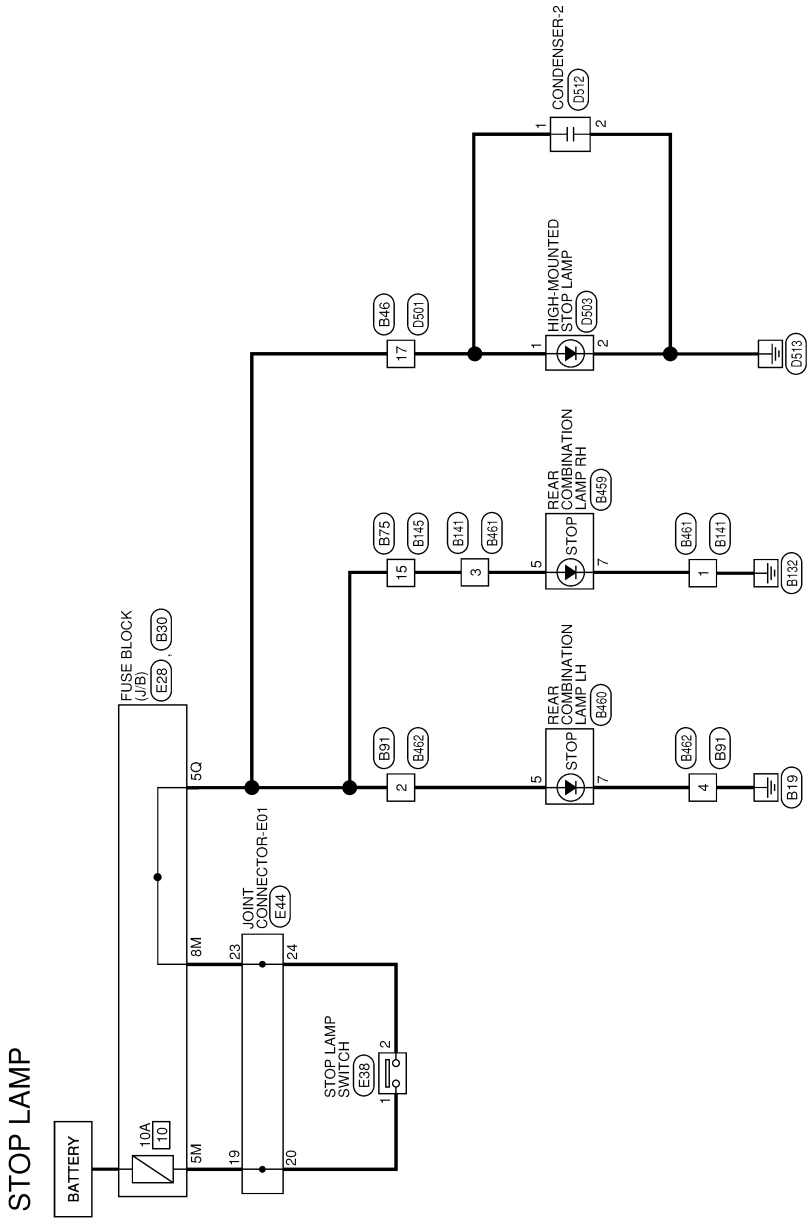
Terminal No.	Color of Wire	Signal Name
1	B	-
4	W	-

AALIA4436GB

STOP LAMP

Wiring Diagram

INFOID:0000000013364376



AALWA1495GB

STOP LAMP CONNECTORS

Connector No.	E28
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS
Connector Color	WHITE

H.S.

4M	3M		2M	1M
10M	9M	8M	7M	6M	5M

Terminal No.	Color of Wire	Signal Name
5M	W	-
8M	P	-

Connector No.	E38
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC
Connector Color	WHITE

H.S.

3	4
1	2

Terminal No.	Color of Wire	Signal Name
1	W	-
2	P	-

Connector No.	E44
Connector Name	JOINT CONNECTOR-E01
Connector Type	BJ30FW
Connector Color	WHITE

H.S.

11	10	9	8	7	6	5	4	3	2	1
22	21	20	19	18	17	16	15	14	13	12
33	32	31	30	29	28	27	26	25	24	23

Terminal No.	Color of Wire	Signal Name
19	W	-
20	W	-
23	P	-
24	P	-

Connector No.	B30
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS08FW-CS
Connector Color	WHITE

H.S.

3Q		2Q	1Q
8Q	7Q	6Q	5Q	4Q

Terminal No.	Color of Wire	Signal Name
5Q	G	-

Connector No.	B46
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH
Connector Color	WHITE

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	25	26	27	28	29	30	31	32

Terminal No.	Color of Wire	Signal Name
17	G	-

Connector No.	B75
Connector Name	WIRE TO WIRE
Connector Type	NS16FGY-CS
Connector Color	GRAY

H.S.

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

Terminal No.	Color of Wire	Signal Name
15	G	-

Connector No.	B91
Connector Name	WIRE TO WIRE
Connector Type	NS04MW-CS
Connector Color	WHITE

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
2	G	-
4	B	-

AALIA4430GB

Connector No.	B141
Connector Name	WIRE TO WIRE
Connector Type	NS04MW-CS
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	GR	–
3	G	–

Connector No.	B145
Connector Name	WIRE TO WIRE
Connector Type	NS16MGY-CS
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
15	G	–

Connector No.	B459
Connector Name	REAR COMBINATION LAMP RH
Connector Type	RS04FGY-PR
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
5	G	–
7	GR	–

Connector No.	B460
Connector Name	REAR COMBINATION LAMP LH
Connector Type	RS04FGY-PR
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
5	G	–
7	GR	–

Connector No.	B461
Connector Name	WIRE TO WIRE
Connector Type	NS04FW-CS
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	GR	–
3	G	–

Connector No.	B462
Connector Name	WIRE TO WIRE
Connector Type	NS04FW-CS
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
2	G	–
4	GR	–

Connector No.	D501
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
17	G/W	–

Connector No.	D503
Connector Name	HIGH-MOUNTED STOP LAMP
Connector Type	TK02MBR-P
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
1	G/W	–
2	B	–

Connector No.	D512
Connector Name	CONDENSER-2
Connector Type	M02FW-GY-LC
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
1	G/W	–
2	B	–

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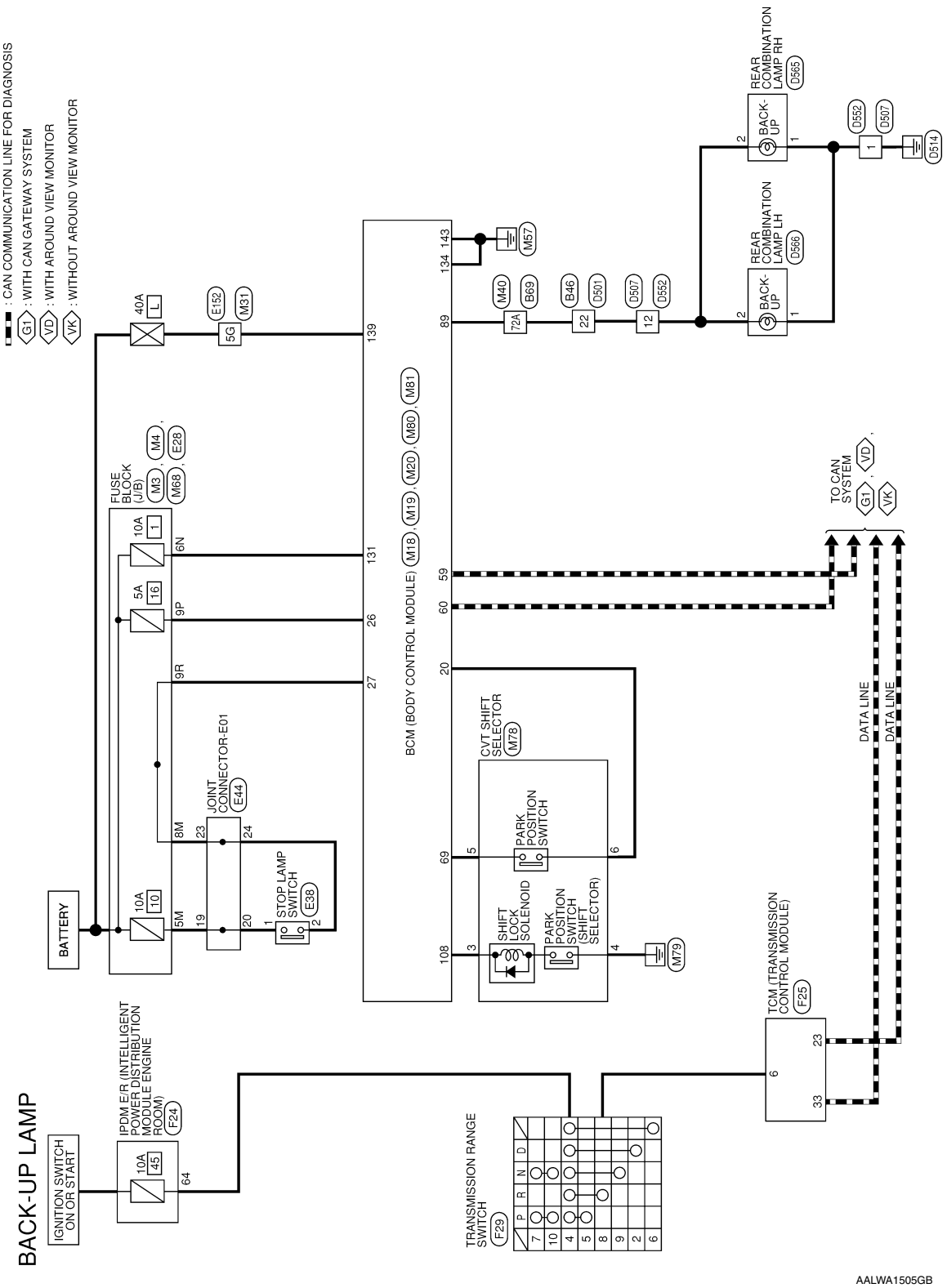
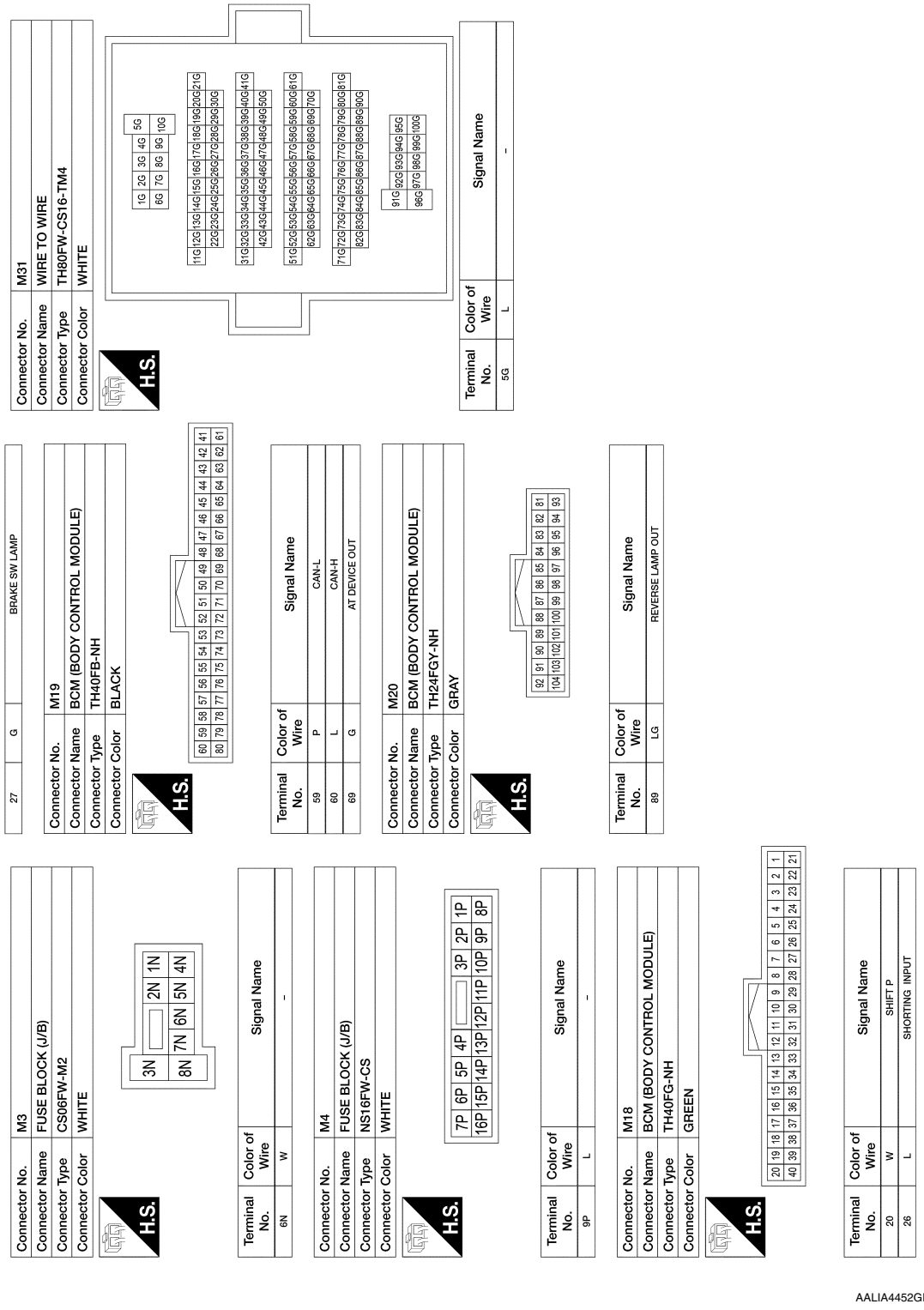
BACK-UP LAMP

Wiring Diagram

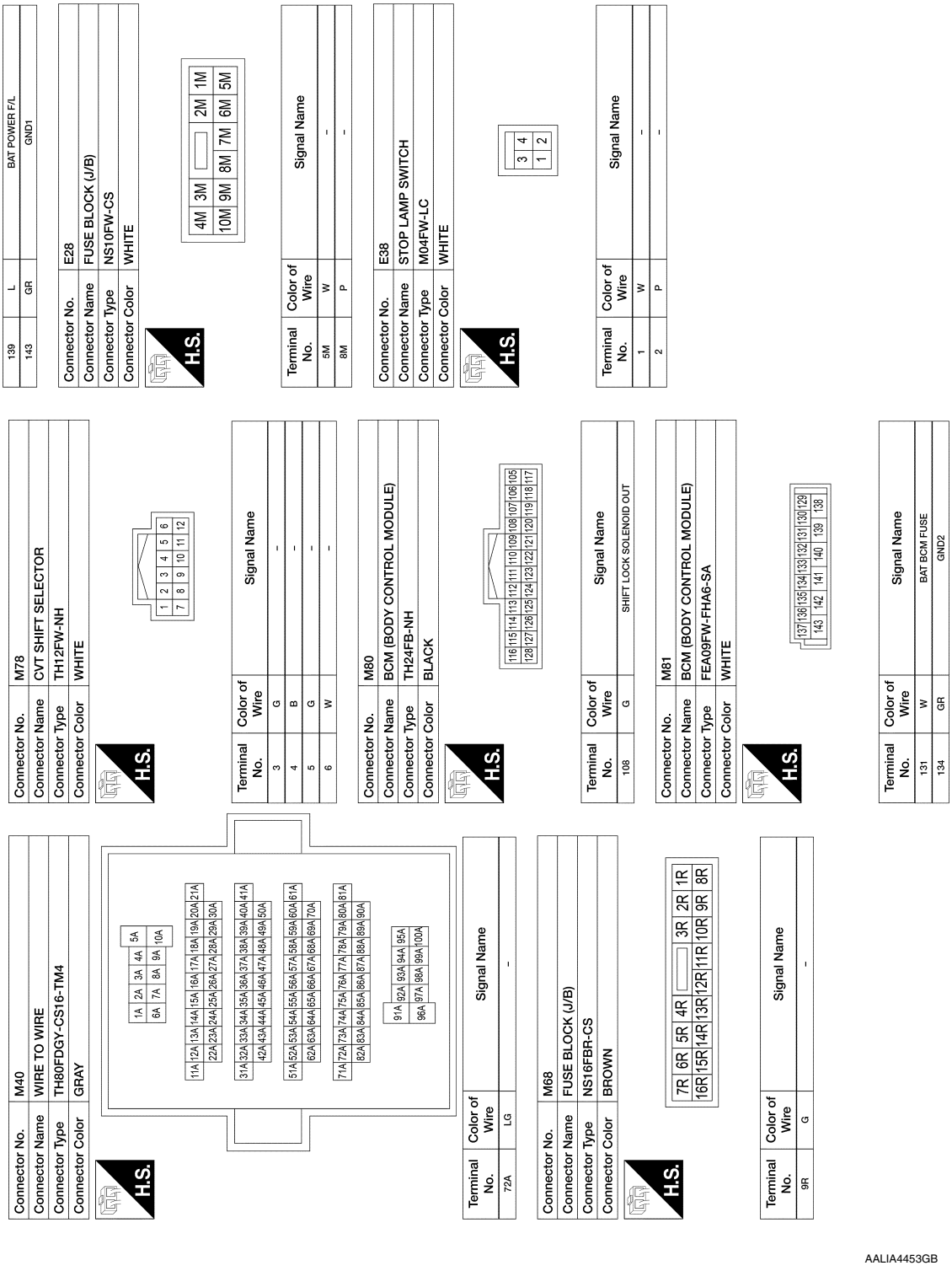
INFOID:0000000013364377



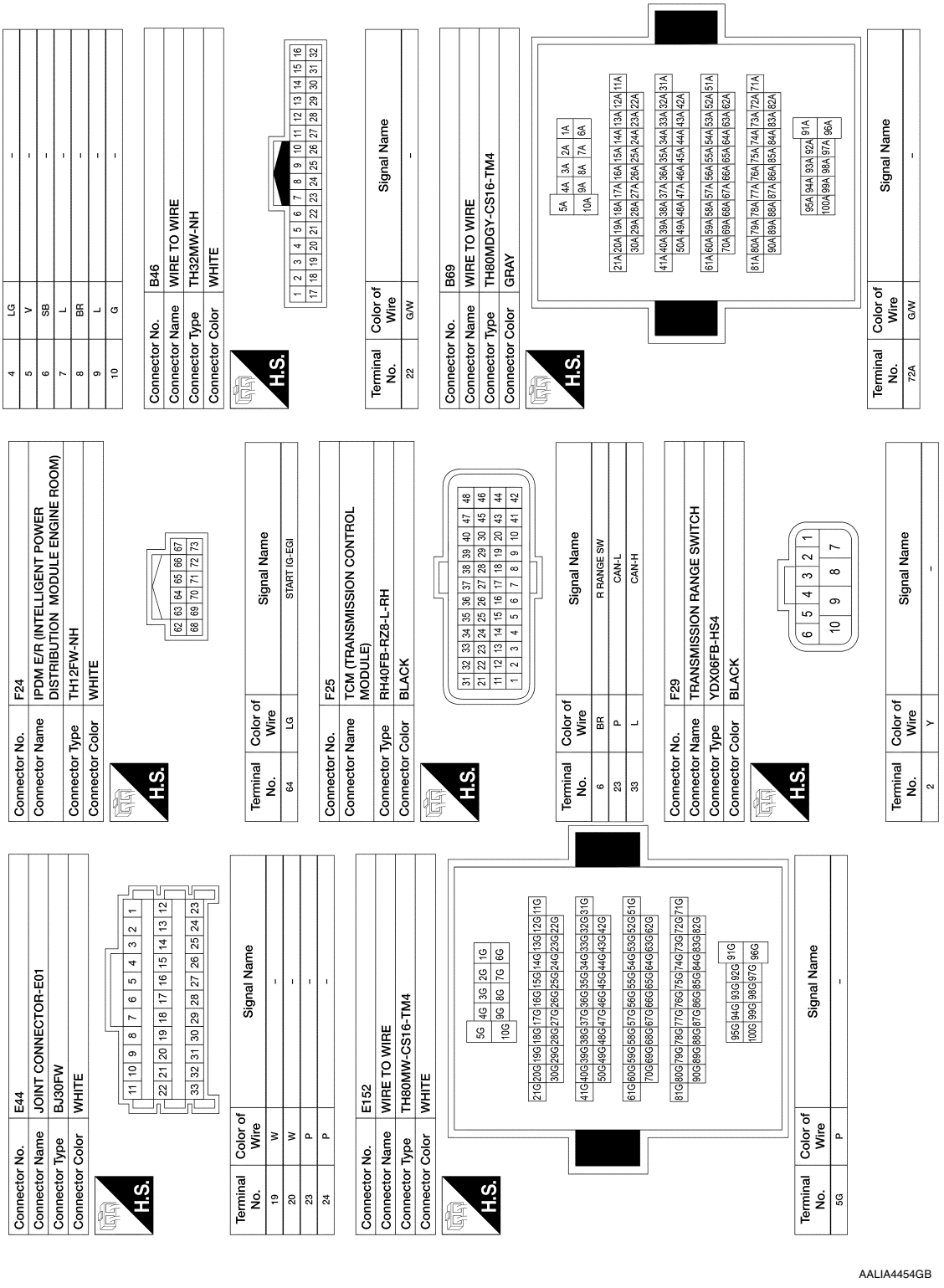
BACK-UP LAMP CONNECTORS



AALIA4452GB



AALIA4453GB



AALIA4454GB

Connector No.	D501
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH
Connector Color	WHITE

H.S.

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17

Terminal No.	Color of Wire	Signal Name
22	G/W	-

Connector No.	D507
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	B	-
12	G/W	-

Connector No.	D552
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH
Connector Color	WHITE

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
1	B	-
12	G/W	-

Connector No.	D565
Connector Name	REAR COMBINATION LAMP RH
Connector Type	NS04MW-CS
Connector Color	WHITE

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	B	-
2	G/W	-

Connector No.	D566
Connector Name	REAR COMBINATION LAMP LH
Connector Type	NS04MW-CS
Connector Color	WHITE

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	B	-
2	G/W	-

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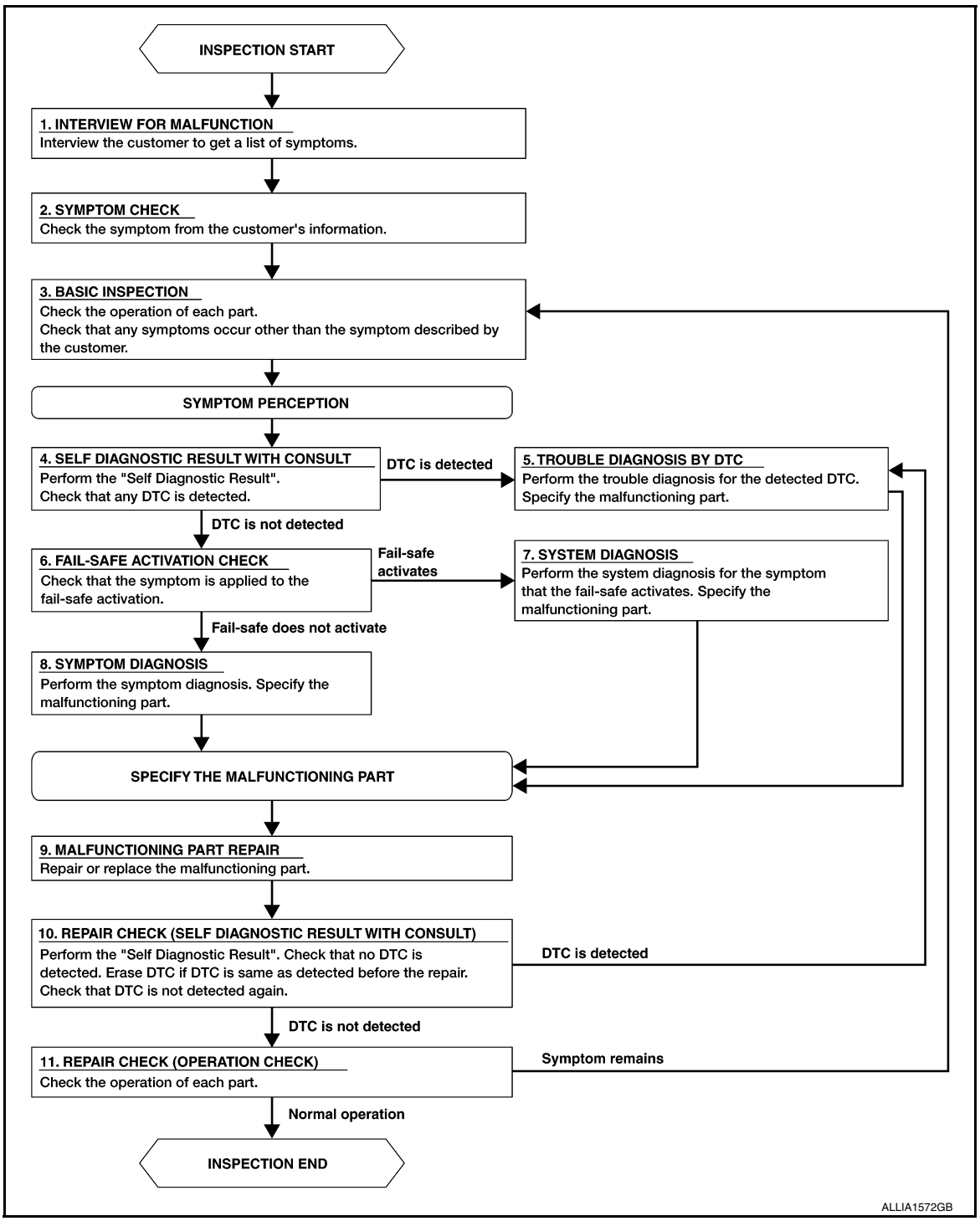
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000012875397

OVERALL SEQUENCE



DETAILED FLOW

1.INTERVIEW FOR MALFUNCTION

Find out what the customer's concerns are.

>> GO TO 2.

2.SYMPTOM CHECK

Verify the symptom from the customer's information.

>> GO TO 3.

3.BASIC INSPECTION

Check the operation of each part. Check any concerns that occur other than those mentioned in the customer interview.

>> GO TO 4.

4.SELF DIAGNOSTIC RESULT WITH CONSULT

Perform the “Self Diagnostic Result”. 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

Determine if the customer's concern is related to 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 in which 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 DIAGNOSTIC RESULT WITH CONSULT)

Perform the “Self Diagnostic Result”. Verify that no DTCs are detected. Erase all DTCs detected prior to the repair. Verify 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.
NO >> GO TO 3.

DTC/CIRCUIT DIAGNOSIS

HEADLAMP (HI) CIRCUIT

Component Function Check

INFOID:0000000012875398

1.CHECK HEADLAMP (HI) OPERATION

With CONSULT
1. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
2. While operating the test items, check that the headlamp (HI) blinks.

Hi : Headlamp (HI) blinks (ON/OFF is repeated 1 second each.)
Off : Headlamp (HI) OFF

Without CONSULT
1. Start IPDM E/R auto active test. Refer to PCS-9, "Diagnosis Description".
2. Check that the headlamp (HI) blinks.

Is the inspection result normal?

YES >> Headlamp (HI) circuit is normal.
NO >> Refer to EXL-192, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875399

1.CHECK HEADLAMP (HI) FUSE

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

Unit	Location	Fuse No.	Capacity
Headlamp HI (RH)	IPDM E/R	34	10A
Headlamp HI (LH)		35	

Is the inspection result normal?

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

2.CHECK HEADLAMP (HI) OUTPUT VOLTAGE

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

+			-	Test item		Voltage
Front combination lamp						
Connector		Terminal				
RH	E239	2	Ground	EXTERNAL LAMPS	Hi	Battery voltage
					Off	0
LH	E235				Hi	Battery voltage
					Off	0

Is the inspection result normal?

YES >> Replace the headlamp bulb. Refer to EXL-248, "Bulb Specifications".
NO >> GO TO 3.

3.CHECK HEADLAMP (HI) POWER SUPPLY CIRCUIT

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

Front combination lamp			IPDM E/R		Continuity
Connector		Terminal	Connector	Terminal	
RH	E239	2	E217	80	Yes
LH	E235			81	

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation".
NO >> Repair or replace harness.

HEADLAMP (LO) CIRCUIT

Component Function Check

INFOID:0000000012875400

1.CHECK HEADLAMP (LO) OPERATION

With CONSULT
1. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
2. While operating the test items, check that the headlamp (LO) is turned ON.

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

Without CONSULT
1. Start IPDM E/R auto active test. Refer to PCS-9, "Diagnosis Description".
2. Check that the headlamp (LO) is turned ON.

Is the inspection result normal?

YES >> Headlamp (LO) circuit is normal.
NO >> Refer to EXL-194, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875401

1.CHECK HEADLAMP (LO) FUSE

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

Unit	Location	Fuse No.	Capacity
Headlamp LO (RH)	IPDM E/R	36	15A
Headlamp LO (LH)		37	

Is the inspection result normal?

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

2.CHECK HEADLAMP (LO) OUTPUT VOLTAGE

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

+			-	Test item		Voltage
Front combination lamp						
Connector		Terminal				
RH	E239	1	Ground	EXTERNAL LAMPS	Lo	Battery voltage
					Off	0
LH	E235				Lo	Battery voltage
					Off	0

Is the inspection result normal?

YES >> Replace headlamp bulb. Refer to EXL-248, "Bulb Specifications".
NO >> GO TO 3.

3.CHECK HEADLAMP (LO) POWER SUPPLY CIRCUIT

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

Front combination lamp			IPDM E/R		Continuity
Connector		Terminal	Connector	Terminal	
RH	E239	1	E217	75	Yes
LH	E235			76	

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation".
NO >> Repair or replace harness.

DAYTIME RUNNING LIGHT RELAY CIRCUIT

Component Function Check

INFOID:0000000012875402

1.CHECK DAYTIME RUNNING LIGHT OPERATION

CONSULT
1. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
2. While operating the test items, check daytime running light operation.

On : EXTERNAL LAMPS Hi
Off : EXTERNAL LAMPS Off

Is the inspection result normal?

YES >> Daytime running light relay circuit is normal.
NO >> Refer to EXL-196, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875403

Regarding Wiring Diagram information. Refer to EXL-154, "Wiring Diagram".

1.CHECK DAYTIME RUNNING LIGHT RELAY FUSE

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

Unit	Fuse No.	Capacity
Daytime running light relay	50	10A

Is the inspection result normal?

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

2.CHECK DAYTIME RUNNING LIGHT RELAY POWER SUPPLY

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

(+)		(–)	Voltage (Approx.)
Daytime running light relay			
Connector	Terminal		
E4	2	Ground	Battery voltage
	7		
	5		

Is the inspection result normal?

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

3.CHECK DAYTIME RUNNING LIGHT RELAY

Check daytime running light relay. Refer to EXL-197, "Component Inspection".

Is the inspection result normal?

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

4.CHECK DAYTIME RUNNING LIGHT RELAY CONTROL SIGNAL OUTPUT

CONSULT
1. Install daytime running light relay.

2. Turn ignition switch ON.
3. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
4. While operating the test item, check voltage between IPDM E/R harness connector and ground.

(+)		(−)	Test item		Voltage (Approx.)
IPDM E/R					
Connector	Terminal				
E218	85	Ground	EXTERNAL LAMPS	On	0 V
				Off	Battery voltage

Is the inspection result normal?

YES >> Daytime running light relay circuit is OK.
NO-1 (Fixed at 0 V)>>GO TO 5.
NO-2 (Fixed at battery voltage) >>Replace IPDM E/R. Refer to PCS-36, "Removal and Installation".

5. CHECK DAYTIME RUNNING LIGHT RELAY CONTROL SIGNAL (OPEN) CIRCUIT

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

IPDM E/R		Daytime running light relay		Continuity
Connector	Terminal	Connector	Terminal	
E218	85	E4	1	Yes

Is the inspection result normal?

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

6. CHECK DAYTIME RUNNING LIGHT RELAY CONTROL SIGNAL (SHORT) CIRCUIT

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E218	85		No

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation".
NO >> Repair or replace harness.

Component Inspection

INFOID:0000000012875404

1. CHECK DAYTIME RUNNING LIGHT RELAY

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

Daytime running light relay		Condition		Continuity
Terminal				
7	6	Voltage	Apply	Yes
			Not Apply	No
5	3		Apply	Yes
			Not Apply	No

Is the inspection result normal?

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

PARKING LAMP CIRCUIT

Component Function Check

INFOID:0000000012875405

1.CHECK PARKING LAMP OPERATION

CONSULT
1. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
2. While operating the test items, check that the parking lamp is turned ON.

TAIL : Parking lamp ON
Off : Parking lamp OFF

Is the inspection result normal?

YES >> Parking lamp circuit is normal.
NO >> Refer to EXL-199, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875406

Regarding Wiring Diagram information. Refer to EXL-174, "Wiring Diagram".

1.CHECK PARKING LAMP FUSE

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

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

Is the inspection result normal?

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

2.CHECK PARKING LAMP CIRCUIT

1. Disconnect the following connectors:
- IPDM E/R
- Front combination lamps
- Rear combination lamps
2. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E218	90		No

Is the inspection result normal?

YES >> Replace fuse. (Replace IPDM E/R if blown fuse is found again.)
NO >> Replace the blown fuse after repairing the affected circuit.

3.CHECK PARKING LAMP

Check applicable LED lamp.

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace applicable LED lamp.

4.CHECK PARKING LAMP OUTPUT VOLTAGE

CONSULT
1. Disconnect front combination lamp connector.

2. Turn ignition switch ON.
3. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
4. While operating the test items, check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Test item		Voltage (Approx.)
IPDM E/R					
Connector	Terminal				
E218	90	Ground	EXTERNAL LAMPS	TAIL	Battery voltage
				Off	0 V

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation".

5. CHECK PARKING LAMP POWER SUPPLY CIRCUIT

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

Front combination lamp			IPDM E/R		Continuity
Connector		Terminal	Connector	Terminal	
RH	E239	3	E218	90	Yes
LH	E235				

Is the inspection result normal?

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

6. CHECK PARKING LAMP GROUND CIRCUIT

Check continuity between front combination lamp harness connector and ground.

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E239	7		Yes
LH	E235			

Is the inspection result normal?

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

FRONT SIDE MARKER LAMP CIRCUIT

Component Function Check

INFOID:0000000012875407

1.CHECK PARKING LAMP OPERATION

Check that the parking lamp is turned ON.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Check parking lamp circuit. Refer to EXL-199, "Component Function Check".

2.CHECK FRONT SIDE MARKER LAMP OPERATION

CONSULT
1. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
2. While operating the test items, check that the front side marker lamp is turned ON.

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

Is the inspection result normal?

YES >> Front side marker lamp circuit is normal.
NO >> Refer to EXL-201, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875408

Regarding Wiring Diagram information. Refer to EXL-168, "Wiring Diagram".

1.CHECK FRONT SIDE MARKER LAMP BULB

Check applicable lamp bulb.

Is the inspection result normal?

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

2.CHECK FRONT SIDE MARKER LAMP POWER SUPPLY CIRCUIT

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

Front combination lamp			IPDM E/R		Continuity
Connector		Terminal	Connector	Terminal	
RH	E239	8	E218	90	Yes
LH	E235				

Is the inspection result normal?

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

3.CHECK FRONT SIDE MARKER LAMP GROUND CIRCUIT

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

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E239	7		Yes
LH	E235			

Is the inspection result normal?

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

TAIL LAMP CIRCUIT

Component Function Check

INFOID:0000000012875409

1.CHECK TAIL LAMP OPERATION

CONSULT
1. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
2. While operating the test items, check that the tail lamp is turned ON.

TAIL : Tail Lamp ON
Off : Tail lamp OFF

Is the inspection result normal?

YES >> Tail lamp circuit is normal.
NO >> Refer to EXL-203, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875410

Regarding Wiring Diagram information. Refer to EXL-174, "Wiring Diagram".

1.CHECK PARKING LAMP OPERATION

Check that the parking lamp is turned ON.

Is the inspection result normal?

YES [When tail lamp RH or LH does not turn ON.]>>GO TO 2.
NO >> Check parking lamp circuit. Refer to EXL-199, "Component Function Check".

2.CHECK TAIL LAMP (LH) FUSE

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

Unit	Location	Fuse No.	Capacity
Tail lamp RH	IPDM E/R	52	10A
Tail lamp LH		51	

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace the blown fuse after repairing the affected circuit.

3.CHECK TAIL LAMP OUTPUT VOLTAGE

CONSULT
1. Disconnect rear combination lamp RH or LH connector.
2. Turn ignition switch ON.
3. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
4. While operating the test items, check voltage between applicable rear combination lamp harness connector and ground.

(+)			(–)	Test item		Voltage (Approx.)
Rear combination lamp						
Connector		Terminal				
RH	D565	4	Ground	EXTERNAL LAMPS	TAIL	Battery voltage
					Off	0 V
LH	D566				TAIL	Battery voltage
					Off	0 V

Is the inspection result normal?

YES >> GO TO 6.
NO >> GO TO 4.

4. CHECK TAIL LAMP POWER SUPPLY (SHORT) CIRCUIT

1. Disconnect IPDM E/R connector and rear combination lamp RH or LH connector.
2. Check continuity between IPDM E/R harness connector and ground.

(+)		(–)	Continuity
IPDM E/R			
Connector	Terminal		
E121	9	Ground	No
	10		

Is the inspection result normal?

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

5. CHECK TAIL LAMP POWER SUPPLY (OPEN) CIRCUIT

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

Rear combination lamp			IPDM E/R		Continuity
Connector		Terminal	Connector	Terminal	
RH	B459	6	E121	9	Yes
LH	B460			10	

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation"
NO >> Repair or replace harness.

6. CHECK TAIL LAMP GROUND CIRCUIT

Check continuity between rear combination lamp harness connector and ground.

Rear combination lamp			Ground	Continuity
Connector		Terminal		
RH	B459	7		Yes
LH	B460			

Is the inspection result normal?

YES >> Replace rear combination lamp. Refer to EXL-238, "Removal and Installation".
NO >> Repair or replace harness.

LICENSE PLATE LAMP CIRCUIT

Component Function Check

INFOID:0000000012875411

1.CHECK TAIL LAMP LH OPERATION

Check that the tail lamp LH is turned ON.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Check tail lamp circuit. Refer to EXL-203, "Component Function Check".

2.CHECK LICENSE PLATE LAMP OPERATION

CONSULT
1. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
2. While operating the lighting switch, check that the license plate lamp is turned ON.

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

Is the inspection result normal?

YES >> License plate lamp circuit is normal.
NO >> Refer to EXL-205, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875412

Regarding Wiring Diagram information. Refer to EXL-174, "Wiring Diagram".

1.CHECK LICENSE PLATE LAMP BULB

Check the applicable lamp bulb.

Is the inspection result normal?

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

2.CHECK LICENSE PLATE LAMP POWER SUPPLY CIRCUIT

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

License plate lamp			IPDM E/R		Continuity
Connector		Terminal	Connector	Terminal	
RH	D562	1	E121	10	Yes
LH	D561				

Is the inspection result normal?

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

3.CHECK LICENSE PLATE LAMP GROUND CIRCUIT

Check continuity between license plate lamp harness connector and ground.

License plate lamp			Ground	Continuity
Connector		Terminal		
RH	D562	2		Yes
LH	D561			

Is the inspection result normal?

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

FRONT FOG LAMP CIRCUIT

Component Function Check

INFOID:0000000012875413

1.CHECK FRONT FOG LAMP OPERATION

CONSULT
1. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
2. While 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 inspection result normal?

YES >> Front fog lamp circuit is normal.
NO >> Refer to EXL-207, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875414

Regarding Wiring Diagram information. Refer to EXL-164, "Wiring Diagram".

1.CHECK FRONT FOG LAMP FUSE

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

Unit	Location	Fuse No.	Capacity
Front fog lamp	IPDM E/R	49	15A

Is the inspection result normal?

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

2.CHECK FRONT FOG LAMP OUTPUT VOLTAGE

CONSULT
1. Disconnect front fog lamp connector.
2. Turn ignition switch ON.
3. Select “EXTERNAL LAMPS” in “Active Test” mode of “IPDM E/R”.
4. While operating the test items, check the voltage between IPDM E/R harness connector and ground.

(+)			(–)	Test item		Voltage (Approx.)
Front fog lamp						
Connector		Terminal				
RH	E241	1	Ground	EXTERNAL LAMPS	Fog	Battery voltage
					Off	0 V
LH	E242				Fog	Battery voltage
					Off	0 V

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 3.

3.CHECK FRONT FOG LAMP POWER SUPPLY (SHORT) CIRCUIT

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E217	78		No
	79		

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness.

4. CHECK FRONT FOG LAMP POWER SUPPLY (OPEN) CIRCUIT

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

Front fog lamp			IPDM E/R		Continuity
Connector		Terminal	Connector	Terminal	
RH	E241	1	E217	78	Yes
LH	E242			79	

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation".
NO >> Repair or replace harness.

5. CHECK FRONT FOG LAMP GROUND CIRCUIT

Check continuity between front fog lamp harness connector and ground.

Front fog lamp			Ground	Continuity
Connector		Terminal		
RH	E241	2		Yes
LH	E242			

Is the inspection result normal?

YES >> Replace bulb. Refer to EXL-129, "Bulb Specifications".
NO >> Repair or replace harness.

TURN SIGNAL LAMP CIRCUIT

Component Function Check

INFOID:0000000012875415

1.CHECK TURN SIGNAL LAMP

CONSULT
1. Select "FLASHER" in “Active Test” mode of “BCM (FLASHER)”.
2. While operating the test items, check that the turn signal lamp blinks.

LH : Turn signal lamp LH blinking
RH : Turn signal lamp RH blinking
OFF : The turn signal lamp OFF

Is the inspection result normal?

YES >> Turn signal lamp circuit is normal.
NO >> Refer to EXL-209, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875416

Regarding Wiring Diagram information, refer to EXL-168, "Wiring Diagram".

1.CHECK TURN SIGNAL LAMP BULB

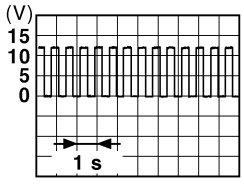
Check the applicable lamp bulb to be sure the proper bulb standard is in use and the bulb is not open.

Is the bulb OK?

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

2.CHECK TURN SIGNAL LAMP OUTPUT VOLTAGE

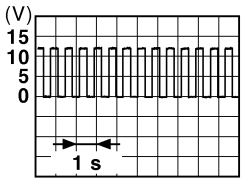
1. Turn ignition switch OFF.
2. Disconnect the front combination lamp connector, door mirror connector and the rear combination lamp connector.
3. Turn ignition switch ON.
4. With turn signal switch operating, check the voltage between the front combination lamp harness connector and ground.

Front combination lamp			(–)	Voltage
Connector		Terminal		
LH	E234	9	Ground	
RH	E240			

PKID0926E

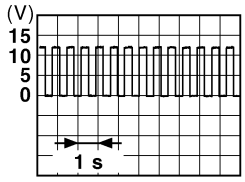
5. With turn signal switch operating, check the voltage between the door mirror harness connector and ground.

Door mirror		(–)	Voltage
Connector	Terminal		

LH	D4	20	Ground	
RH	D107			

PKID0926E

6. With turn signal switch operating, check the voltage between the rear combination lamp harness connector and ground.

Rear combination lamp			(−)	Voltage
Connector		Terminal		
LH	B460	8	Ground	
RH	B459			

PKID0926E

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 3.

3. CHECK TURN SIGNAL LAMP POWER SUPPLY CIRCUIT

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

Front combination lamp			BCM		Continuity
Connector		Terminal	Connector	Terminal	
LH	E234	9	M80	117	Yes
RH	E240			105	

4. Check continuity between the BCM harness connector and the door mirror connector.

Door mirror lamp			BCM		Continuity
Connector		Terminal	Connector	Terminal	
LH	D4	20	M80	117	Yes
RH	D107			105	

5. Check continuity between the BCM harness connector and the rear combination lamp connector.

Rear combination lamp			BCM		Continuity
Connector		Terminal	Connector	Terminal	
LH	B460	8	M20	103	Yes
RH	B459			92	

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair the harness or connector.

4. CHECK TURN SIGNAL LAMP GROUND CIRCUIT

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

Front combination lamp			—	Continuity
Connector		Terminal		
LH	E234	10	Ground	Yes
RH	E240			

2. Check continuity between the door mirror harness connector and ground.

Door mirror lamp			—	Continuity
Connector		Terminal		
LH	D4	21	Ground	Yes
RH	D107			

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

Rear combination lamp			—	Continuity
Connector		Terminal		
LH	B460	7	Ground	Yes
RH	B459			

Is the inspection result normal?

YES >> Replace the malfunctioning lamp.
NO >> Repair the harness or connector.

OPTICAL SENSOR

Component Function Check

INFOID:0000000012875417

1.CHECK OPTICAL SENSOR SIGNAL BY CONSULT

CONSULT
1. Turn ignition switch ON.
2. Select “HEADLAMP” in “Data Monitor” mode of “BCM”.
3. Turn lighting switch AUTO.
4. With the optical sensor illuminating, check the monitor status.

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

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

Is the inspection result normal?

YES >> Optical sensor is normal.
NO >> Refer to EXL-212, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875418

Regarding Wiring Diagram information. Refer to EXL-159, "Wiring Diagram".

1.CHECK OPTICAL SENSOR POWER SUPPLY INPUT

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

(+)		(−)	Voltage (Approx.)
Optical sensor			
Connector	Terminal		
M15	1	Ground	5 V

Is the inspection result normal?

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

2.CHECK OPTICAL SENSOR GROUND INPUT

Check voltage between optical sensor harness connector and ground.

(+)		(−)	Voltage (Approx.)
Optical sensor			
Connector	Terminal		
M15	3	Ground	0 V

Is the inspection result normal?

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

3.CHECK OPTICAL SENSOR SIGNAL OUTPUT

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

(+)		(–)	Condition		Voltage (Approx.)
Optical sensor					
Connector	Terminal				
M15	2	Ground	Optical sensor	When illuminating	3.1 V or more *
				When shutting off light	0.6 V or less

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

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace the optical sensor. Refer to EXL-235, "Removal and Installation".

4. CHECK OPTICAL SENSOR (OPEN) CIRCUIT

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

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M15	1	M18	3	Yes

Is the inspection result normal?

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

5. CHECK OPTICAL SENSOR (SHORT) CIRCUIT

Check continuity between optical sensor harness connector and ground.

Optical sensor		Ground	Continuity
Connector	Terminal		
M15	1		No

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-79, "Removal and Installation".
NO >> Repair or replace harness.

6. CHECK OPTICAL SENSOR GROUND CIRCUIT

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

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M15	3	M18	17	Yes

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-79, "Removal and Installation".
NO >> Repair or replace harness.

7. CHECK OPTICAL SENSOR SIGNAL (OPEN) CIRCUIT

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

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M15	2	M18	4	Yes

Is the inspection result normal?

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

8. CHECK OPTICAL SENSOR (SHORT) CIRCUIT

Check continuity between optical sensor harness connector and ground.

Optical sensor		Ground	Continuity
Connector	Terminal		
M15	2		No

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-79, "Removal and Installation".
NO >> Repair or replace harness.

HAZARD SWITCH

Component Function Check

INFOID:0000000012875419

1.CHECK HAZARD SWITCH SIGNAL BY CONSULT

CONSULT
1. Turn ignition switch ON.
2. Select “FLASHER” in “Data Monitor” mode of “BCM”.
3. While operating the hazard switch, check the monitor status.

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

Is the inspection result normal?

YES >> Hazard switch circuit is normal.
NO >> Refer to EXL-215, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012875420

Regarding Wiring Diagram information. Refer to EXL-168, "Wiring Diagram".

1.CHECK HAZARD SWITCH SIGNAL INPUT

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

(+)		(–)	Voltage (Approx.)
Hazard switch			
Connector	Terminal		
M83	2	Ground	Battery voltage

Is the inspection result normal?

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

2.CHECK HAZARD SWITCH SIGNAL (OPEN) CIRCUIT

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

Hazard switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M83	2	M18	36	Yes

Is the inspection result normal?

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

3.CHECK HAZARD SWITCH SIGNAL (SHORT) CIRCUIT

Check continuity between hazard switch harness connector and ground.

Hazard switch		Ground	Continuity
Connector	Terminal		
M83	2		No

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-79, "Removal and Installation".
NO >> Repair or replace harness.

4. CHECK HAZARD SWITCH GROUND CIRCUIT

Check continuity between hazard switch harness connector and ground.

Hazard switch		Ground	Continuity
Connector	Terminal		
M83	3		Yes

Is the inspection result normal?

YES >> Replace hazard switch. Refer to EXL-237, "Removal and Installation".
NO >> Repair or replace harness.

SYMPTOM DIAGNOSIS

EXTERIOR LIGHTING SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000012875421

NOTE:
Perform the “Self Diagnostic Result” with CONSULT before the symptom diagnosis. Perform the trouble diagnosis if any DTC is detected.

Symptom		Possible cause	Inspection item
Headlamp (HI) is not turned ON.	One side	• Fuse • Halogen bulb (HI) • Harness between IPDM E/R and headlamp (HI) • Harness between headlamp (HI) and ground • IPDM E/R	Headlamp (HI) circuit Refer to EXL-192, "Component Function Check".
		• Harness between IPDM E/R and daytime running light relay • Daytime running light relay • IPDM E/R	Daytime running light relay circuit Refer to EXL-196, "Component Function Check".
	Both sides	**Symptom diagnosis** “BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON” Refer to EXL-221, "Diagnosis Procedure".	
High beam indicator lamp is not turned ON. [Headlamp (HI) is turned ON.]		Combination meter	• Combination meter “Data Monitor” “HI-BEAM IND” • BCM (HEAD LAMP) “Active Test” “HEADLAMP”
Headlamp (LO) is not turned ON.	One side	• Fuse • Halogen bulb (LO) • Harness between IPDM E/R and headlamp lamp (LO) • Harness between headlamp (LO) and ground • IPDM E/R	Headlamp (LO) circuit Refer to EXL-194, "Component Function Check".
	Both sides	**Symptom diagnosis** “BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON” Refer to EXL-222, "Diagnosis Procedure".	
Each lamp is not turned ON/OFF with lighting switch AUTO.		• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-77, "Symptom Table".
		• Optical sensor • Harness between optical sensor and BCM • BCM	Optical sensor Refer to EXL-212, "Component Function Check".
Daytime running light is not turned ON. [Headlamp (HI) is turned ON.]		• Fuse • Harness between IPDM E/R and daytime running light relay • Daytime running light relay • IPDM E/R • BCM • ECM • Combination meter	• Daytime running light relay circuit Refer to EXL-196, "Component Function Check". • BCM (HEADLAMP) “Data Monitor”“ENGINE STATE” • Combination meter “Data Monitor” “PKB SW” • BCM (HEADLAMP) “Active Test” “DAYTIME RUNNING LIGHT”

Symptom		Possible cause	Inspection item
Parking lamp is not turned ON.		• Fuse • Parking lamp LED • Harness between IPDM E/R and front combination lamp • IPDM E/R	Parking lamp circuit Refer to EXL-199, "Component Function Check".
Front side marker lamp is not turned ON.		• Front side marker lamp bulb • Harness between IPDM E/R and front side marker lamp • Harness between front side marker lamp and ground • IPDM E/R	Front side marker lamp circuit Refer to EXL-201, "Component Function Check".
Tail lamp (Rear side marker lamp) is not turned ON.		• Fuse • Tail lamp LED • Harness between IPDM E/R and rear combination lamp • Harness between and rear combination lamp and ground	Tail lamp circuit Refer to EXL-203, "Component Function Check".
License plate lamp is not turned ON.		• License plate lamp bulb • Harness between IPDM E/R and license plate lamp • Harness between license plate lamp and ground	License plate lamp circuit Refer to EXL-205, "Component Function Check".
Parking lamp, side marker lamp, tail lamp and license plate lamp are not turned ON.		**Symptom diagnosis** "PARKING, SIDE MARKER, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON" Refer to EXL-223, "Diagnosis Procedure".	
Tail lamp indicator is not turned ON. (Exterior lamps are turned ON.)		Combination meter	• Combination meter "Data Monitor" "LIGHT IND" • BCM (HEADLAMP) "Active Test" "TAIL LAMP"
Turn signal lamp does not blink.	Indicator lamp is normal. (Applicable side performs high flasher activation.)	• Turn signal lamp bulb • Door mirror • Harness between BCM and each turn signal lamp • Harness between each turn signal lamp and ground	Turn signal lamp circuit Refer to EXL-209, "Component Function Check".
	Indicator lamp is included.	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-77, "Symptom Table".
Turn signal indicator lamp does not blink. (Turn signal lamp is normal.)	One side	Combination meter	—
	Both sides (Always)	• Turn signal indicator lamp signal • BCM • Combination meter	• Combination meter "Data Monitor" "TURN IND" • BCM (FLASHER) "Active Test" "FLASHER"
	Both sides (Only when activating hazard warning lamp with ignition switch OFF)	• Combination meter power supply and ground circuit • Combination meter	Combination meter Power supply and ground circuit Refer to MWI-53, "COMBINATION METER : Diagnosis Procedure".
• Hazard warning lamp does not activate. • Hazard warning lamp continues activating. (Turn signal is normal.)		• Hazard switch • Harness between hazard switch and BCM • Harness between hazard switch and ground • BCM	Hazard switch circuit Refer to EXL-215, "Component Function Check".

Symptom		Possible cause	Inspection item
Front fog lamp is not turned ON.	One side	• Front fog lamp bulb • Harness between IPDM E/R and front fog lamp • Harness between front fog lamp and ground • IPDM E/R	Front fog lamp circuit Refer to EXL-207, "Component Function Check".
	Both sides	**Symptom diagnosis** “BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON” Refer to EXL-224, "Diagnosis Procedure".	

NORMAL OPERATING CONDITION

Description

INFOID:0000000012875422

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 is normal.

BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON

Description

INFOID:0000000012875423

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

Diagnosis Procedure

INFOID:0000000012875424

1.COMBINATION SWITCH INSPECTION

Check combination switch. Refer to BCS-77, "Symptom Table".

Is the inspection result normal?

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

2.CHECK HEADLAMP (HI) REQUEST SIGNAL INPUT

CONSULT DATA MONITOR
1. Select “HL HI REQ” in “Data Monitor” mode of “IPDM E/R”.
2. While operating the lighting switch, check the monitor status.

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

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-79, "Removal and Installation".

3.HEADLAMP (HI) CIRCUIT INSPECTION

Check headlamp (HI) circuit. Refer to EXL-192, "Component Function Check".

Is the inspection result normal?

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

BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON

Description

INFOID:0000000012875425

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

Diagnosis Procedure

INFOID:0000000012875426

1.CHECK COMBINATION SWITCH

Check combination switch. Refer to BCS-77, "Symptom Table".

Is the inspection result normal?

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

2.CHECK HEADLAMP (LO) REQUEST SIGNAL INPUT

CONSULT DATA MONITOR
1. Select “HL LO REQ” in “Data Monitor” mode of “IPDM E/R”.
2. While operating the lighting switch, check the monitor status.

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

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-79, "Removal and Installation".

3.HEADLAMP (LO) CIRCUIT INSPECTION

Check headlamp (LO) circuit. Refer to EXL-194, "Component Function Check".

Is the inspection result normal?

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

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

Description

INFOID:0000000012875427

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

Diagnosis Procedure

INFOID:0000000012875428

1.COMBINATION SWITCH INSPECTION

Check combination switch. Refer to BCS-77, "Symptom Table".

Is the combination switch normal?

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

2.CHECK TAIL LAMP RELAY REQUEST SIGNAL INPUT

CONSULT DATA MONITOR
1. Select “TAIL & CLR REQ” in “Data Monitor” mode of “IPDM E/R”.
2. While operating the lighting switch, check the monitor status.

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

Is the inspection result normal?

YES >> Replace IPDM E/R.
NO >> Replace BCM. Refer to BCS-79, "Removal and Installation".

BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

Description

INFOID:0000000012875429

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

Diagnosis Procedure

INFOID:0000000012875430

1.CHECK FRONT FOG LAMP FUSE

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

Unit	Location	Fuse No.	Capacity
Front fog lamp	IPDM E/R	49	15A

Is the inspection result normal?

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

2.CHECK FRONT FOG LAMP SHORT CIRCUIT

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

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E217	78		No
LH		79		

Is the inspection result normal?

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

3.COMBINATION SWITCH INSPECTION

Check combination switch. Refer to BCS-77, "Symptom Table".

Is the inspection result normal?

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

4.CHECK FRONT FOG LAMP REQUEST SIGNAL INPUT

CONSULT DATA MONITOR
1. Select “FR FOG REQ” in “Data Monitor” mode of “IPDM E/R”.
2. While operating the front fog lamp switch, check the monitor status.

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

Is the item status normal?

YES >> GO TO 5.
NO >> Replace BCM. Refer to BCS-79, "Removal and Installation".

5.FRONT FOG LAMP CIRCUIT INSPECTION

Check the front fog lamp circuit. Refer to EXL-207, "Component Function Check".

Is the inspection result normal?

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

PERIODIC MAINTENANCE

HEADLAMP AIMING ADJUSTMENT

Inspection

INFOID:0000000012875431

PREPARATION BEFORE ADJUSTING

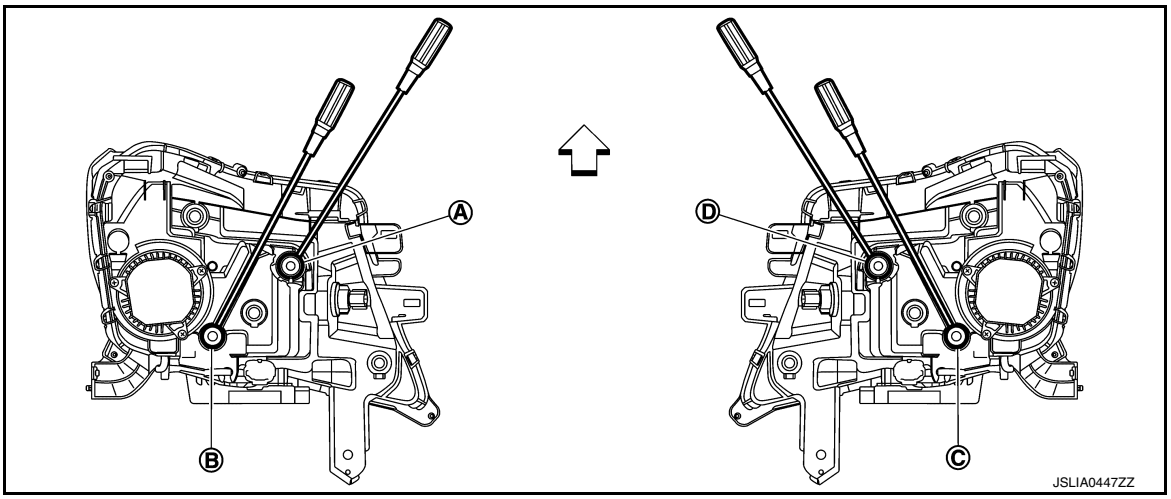
Before performing aiming adjustment, check the following:
- Make sure all tires are inflated to correct pressure.
- Place vehicle and screen on level surface.
- Make sure there is no load in vehicle other than the driver (or equivalent weight placed in driver's position).
- Coolant and engine oil filled to correct level, and fuel tank full.
- Remove cargo and/or luggage to maintain an unloaded vehicle condition.
- Confirm spare tire, jack and tools are properly stowed.
- Carefully wipe off any dirt from headlamp lens.

CAUTION:

Do not use organic solvent (thinner, gasoline etc.)
- Place a driver or equivalent weight of 68.5 kg (150 lb) on the driver seat.
- By hand, bounce the front and rear of the vehicle to settle the suspension and eliminate any static load.
- Place the front tires in the straight ahead position.
- Aim each headlamp individually and ensure other headlamp beam pattern is blocked from screen.

NOTE:
- For headlamp aiming details, refer to regulations in your area.
- By regulation, no means for horizontal aim adjustment is provided from the factory; only vertical aim is adjustable.
- Use adjusting screw to perform aiming adjustment.
- Perform headlamp aiming if:
- The vehicle front body has been repaired;
- The front combination lamp has been removed or replaced;
- Any outfitting has been installed;
- The vehicle’s standard load condition has been substantially increased.

AIMING ADJUSTMENT SCREW

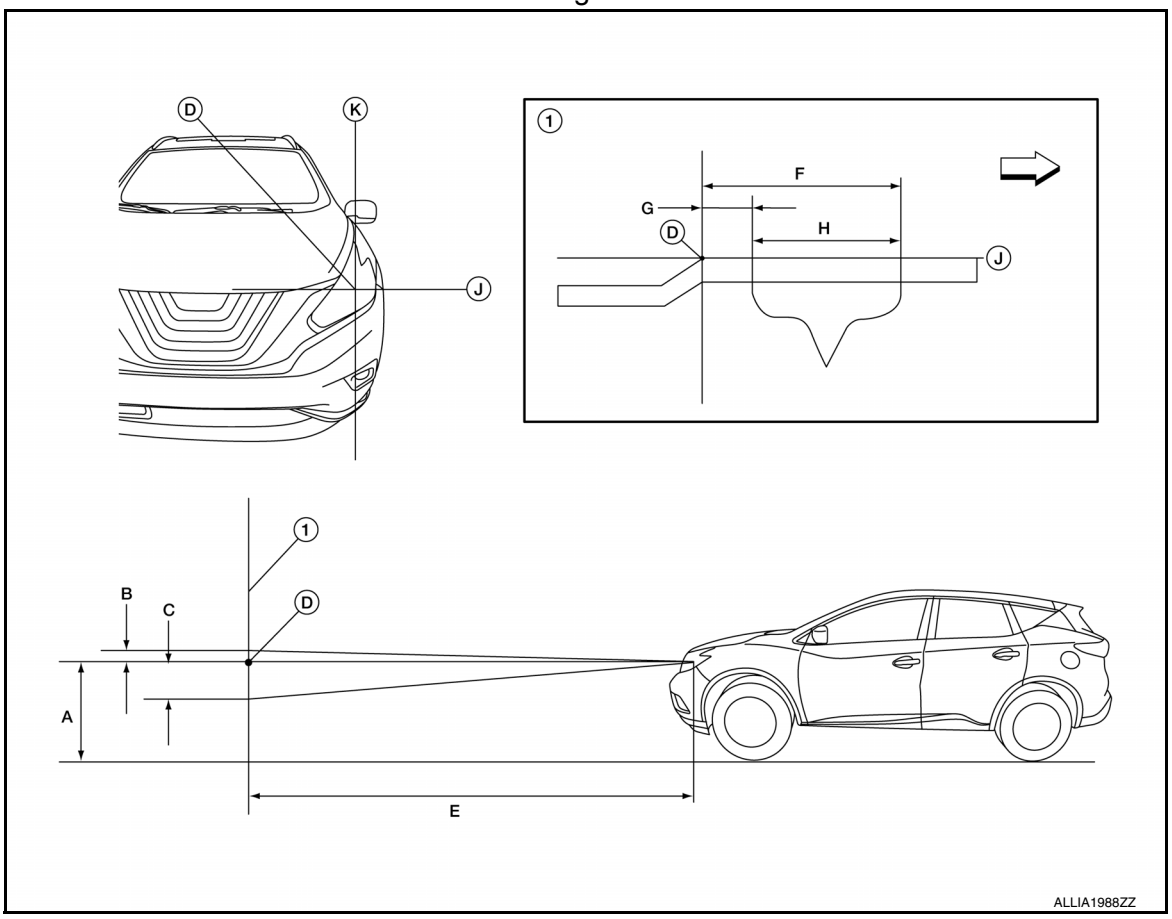


A. Headlamp LH (INSIDE/OUTSIDE) adjustment screw
B. Headlamp LH (UP/DOWN) adjustment screw
C. Headlamp RH (UP/DOWN) adjustment screw
D. Headlamp RH (INSIDE/OUTSIDE) adjustment screw
⇦ : Vehicle front

Aiming Adjustment Procedure

INFOID:0000000012875432

Aiming Chart



1.	Adjustment screen	A.	Distance of horizontal aiming evaluation line from ground	B.	Maximum cutoff line height
C.	Minimum cutoff line height	D.	Center of headlamp bulb	E.	7.6 m (25 ft)
F.	Maximum aim evaluation distance from vertical center on aiming screen 399 mm (15.7 in) [3°R]	G.	Minimum aim evaluation distance from vertical center on aiming screen 133 mm (5.2 in) [1°R]	H.	Aim evaluation area
J.	Horizontal aiming evaluation line	K.	Vertical aiming evaluation line	⇨	Right

B: (Maximum cutoff line height)	**13.3 mm (0.5 in)**	**0.1° up**
C: (Minimum cutoff line height)	**53.2 mm (2.1 in)**	**0.4° down**

LOW BEAM AND HIGH BEAM

NOTE:

- Basic illuminating area for evaluation and/or adjustment should be within range shown on aiming chart.

1. Use adjustment screw to perform aiming adjustment.
   - **Ensure fog lamps are turned off.**
2. Block the opposite headlamp from projecting a beam pattern onto the adjustment screen, using a suitable object. Aim each headlamp individually.
   CAUTION:
   Do not cover the lens surface with tape, etc.
3. Place the screen on the same level and flat surface as the vehicle.
   NOTE:
   Surface should be free of any debris that would cause a difference between the headlamp center and the adjustment screen.

4. Face the front of the vehicle to the screen and measure distance between the headlamp center and the screen surface.

Distance between the headlamp center and the screen (E) : 7.6 m (25 ft)

5. Start the engine. Turn the headlamp on.
6. Determine the preferred vertical aim range dimensions, using the aiming chart.
7. Measure the projected beam within the aim evaluation segment on the screen.
8. Adjust the beam pattern of each headlamp until the aim evaluation segment (the area relative to both the highest and lowest cutoff line height) is positioned within the vertical aim range dimensions shown on the aiming chart.

FRONT FOG LAMP AIMING ADJUSTMENT

Aiming Adjustment

INFOID:0000000012875433

PREPARATION BEFORE ADJUSTING

The fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb. Before performing aiming adjustment procedure, check the following:

- Ensure all tires are inflated to correct pressure.
- Place vehicle and screen on level surface.
- Ensure there is no load in vehicle other than the driver (or equivalent weight placed in driver's position).
- Coolant and engine oil filled to correct level, and fuel tank full.
- Remove cargo and/or luggage to maintain an unloaded vehicle condition.
- Confirm spare tire, jack and tools are properly stowed.
- Carefully wipe off any dirt from headlamp lens.

  CAUTION:

  Do not use organic solvent (thinner, gasoline etc.)
- Place a driver or equivalent weight of 68.5 kg (150 lb) on the driver seat.
- By hand, bounce the front and rear of the vehicle to settle the suspension and eliminate any static load.
- Place the front tires in the straight ahead position.
- Aim each headlamp individually and ensure other headlamp beam pattern is blocked from screen.

NOTE:

- For fog lamp aiming details, refer to regulations in your area.
- By regulation, no means for horizontal aim adjustment is provided from the factory; only vertical aim is adjustable.
- Use adjusting screw to perform aiming adjustment.
- Perform fog lamp aiming if:

- The vehicle front body has been repaired.
- The front fog lamp has been removed or replaced.
- Any outfitting has been installed.
- The vehicle’s standard load condition has been substantially increased.

Aiming Adjustment Procedure

1. Place the screen.

   NOTE:

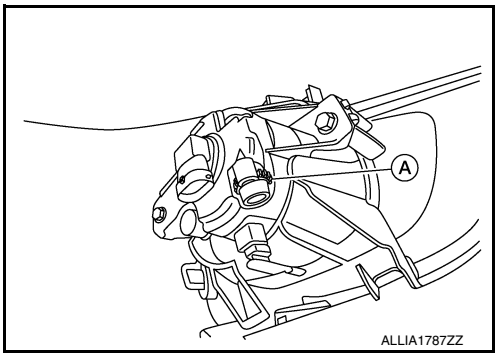
   - Stop the vehicle facing the wall.
   - Place the board on a plain road vertically.
2. Face the vehicle with the screen. Maintain 10 m (33 ft) between the front fog lamp center and the screen.
3. Start the engine. Turn the front fog lamp ON.

   NOTE:

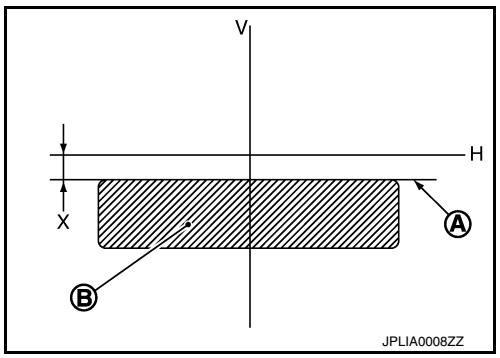
   Shut off the headlamp light with the board to prevent from illuminating the adjustment screen.

   CAUTION:

   Do not cover the lens surface with a tape etc. The lens is made of resin.
4. Adjust aiming by turning the adjusting screw (A).



5. Adjust the cutoff line height (A) with the aiming adjustment screw so that the distance (X) between the horizontal center line of front fog lamp (H) and (A) becomes 150 mm (5.90 in).



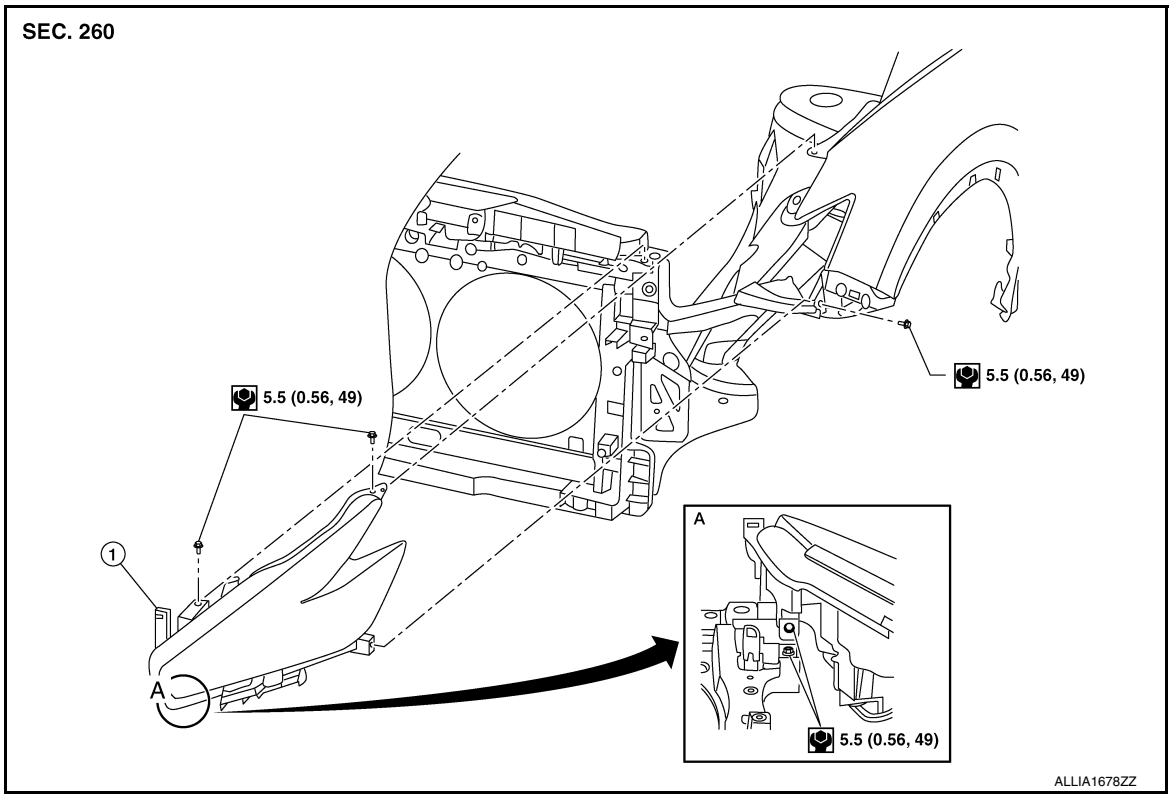
(A) : Cutoff line
(B) : High illuminance area
(H) : Horizontal center line of front fog lamp
(V) : Vertical center line of front fog lamp
(X) : Cutoff line height

REMOVAL AND INSTALLATION

FRONT COMBINATION LAMP

Exploded View

INFOID:0000000012875434



1. Front combination lamp

Removal and Installation

INFOID:0000000012875435

REMOVAL

1. Remove front bumper fascia. Refer to EXT-25, "Removal and Installation".
2. Remove front combination lamp bolts.
3. Pull front combination lamp forward.
4. Disconnect harness connectors from front combination lamp and remove.

INSTALLATION

Installation is in the reverse order of removal.

NOTE:

After installation, perform headlamp aiming adjustment. Refer to EXL-225, "Inspection".

Bulb Replacement

INFOID:0000000012875436

WARNING:

Do not touch bulb by hand while it is lit or right after being turned off. Burning may result.

CAUTION:

- **Do not touch glass surface of bulb with bare hands or allow oil or grease to get on it to prevent damage to bulb.**
- **Do not leave bulb out of lamp reflector for a long time because dust, moisture smoke, etc. may affect performance of lamp. When replacing bulb, be sure to replace it with new one.**

HEADLAMP (LOW BEAM) BULB

Removal

1. Rotate bulb counterclockwise and remove from front combination lamp.
2. Disconnect harness connector from bulb and remove.

Installation

Installation is in the reverse order of removal.

CAUTION:

After installing bulb, install bulb socket securely for watertightness.

HEADLAMP (HIGH BEAM) BULB

Removal

1. Remove plastic cover.
2. Rotate bulb counterclockwise and remove from front combination lamp.
3. Disconnect harness connector from bulb and remove.

Installation

Installation is in the reverse order of removal.

CAUTION:

After installing bulb, install bulb socket securely for watertightness.

SIDE MARKER LAMP BULB

Removal

1. Rotate bulb counterclockwise and remove from front combination lamp.
2. Remove bulb from bulb socket.

Installation

Installation is in the reverse order of removal.

CAUTION:

After installing bulb, install bulb socket securely for watertightness.

TURN SIGNAL LAMP BULB

Removal

1. Rotate bulb socket counterclockwise and remove from front combination lamp.
2. Remove bulb from bulb socket.

Installation

Installation is in the reverse order of removal.

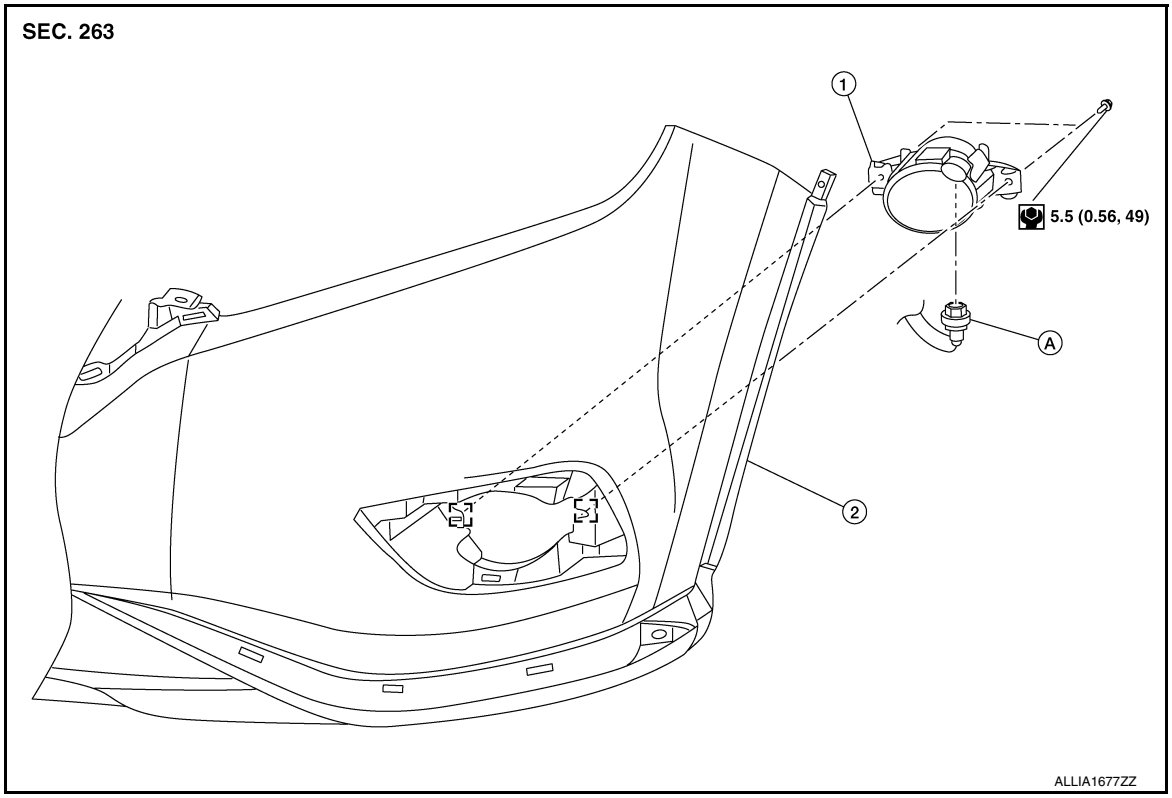
CAUTION:

After installing bulb, install bulb socket securely for watertightness.

FRONT FOG LAMP

Exploded View

INFOID:0000000012875437



1. Front fog lamp
2. Front bumper fascia
A. Front fog lamp harness connector

Metal clip

Removal and Installation

INFOID:0000000012875438

REMOVAL

1. Partially remove front fender protector. Refer to EXT-36, "FENDER PROTECTOR : Exploded View".
2. Disconnect harness connector from front fog lamp.
3. Remove front fog lamp bolts and front fog lamp.

INSTALLATION

Installation is in the reverse order of removal.

NOTE:

After installation, perform front fog lamp aiming adjustment. Refer to EXL-109, "Aiming Adjustment".

Bulb Replacement

INFOID:0000000012875439

WARNING:

Do not touch bulb by hand while it is lit or right after being turned off. Burning may result.

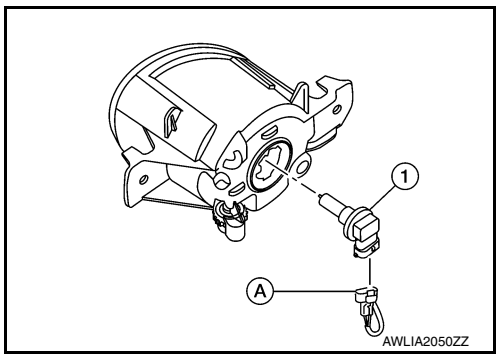
CAUTION:

- **Do not touch glass surface of bulb with bare hands or allow oil or grease to get on it to prevent damage to bulb.**
- **Do not leave bulb out of lamp reflector for a long time because dust, moisture, smoke, etc. may affect performance of lamp. When replacing bulb, be sure to replace it with new one.**

REMOVAL

1. Partially remove front fender protector. Refer to EXT-38, "FRONT OVER FENDER : Removal and Installation".

2. Disconnect harness connector from front fog lamp (A).
3. Rotate bulb (1) counterclockwise and remove.



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Install bulb securely for watertightness.

DOOR MIRROR TURN SIGNAL LAMP

Removal and Installation

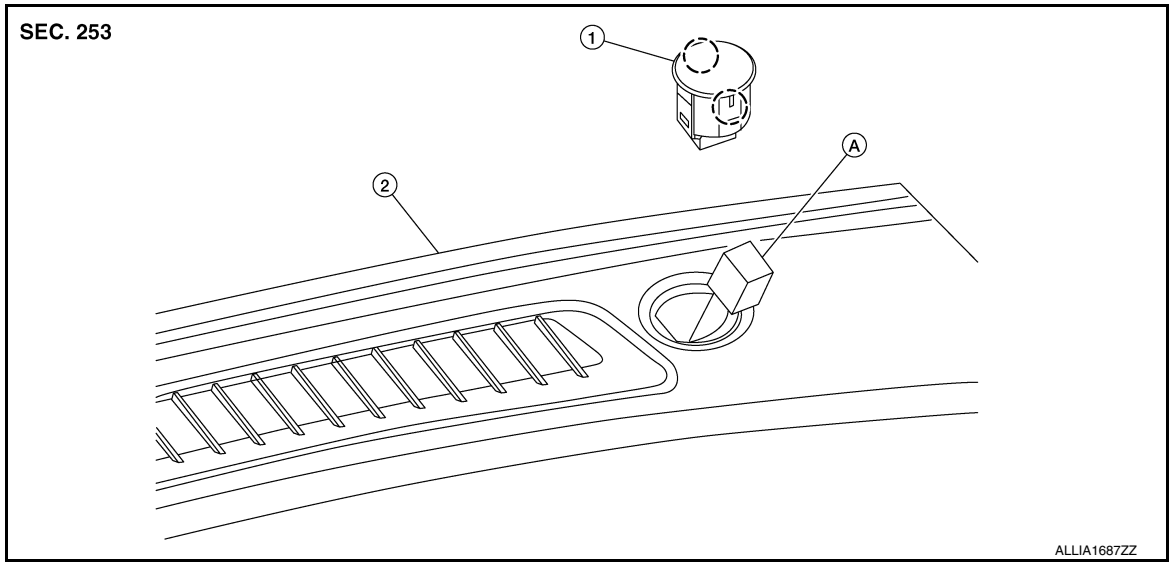
INFOID:0000000012875440

The door mirror turn signal lamp is serviced as part of the door mirror. Refer to MIR-21, "Removal and Installation".

OPTICAL SENSOR

Exploded View

INFOID:0000000012875441



1. Optical sensor
2. Defroster grille
A. Harness connector

◌ Pawl

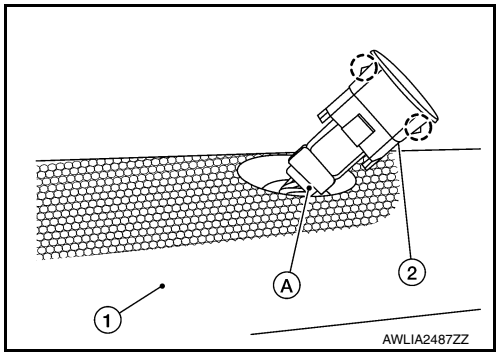
Removal and Installation

INFOID:0000000012875442

REMOVAL

Release pawls and remove the optical sensor (2) from defroster grille (1) using a suitable tool.

◌: Pawl



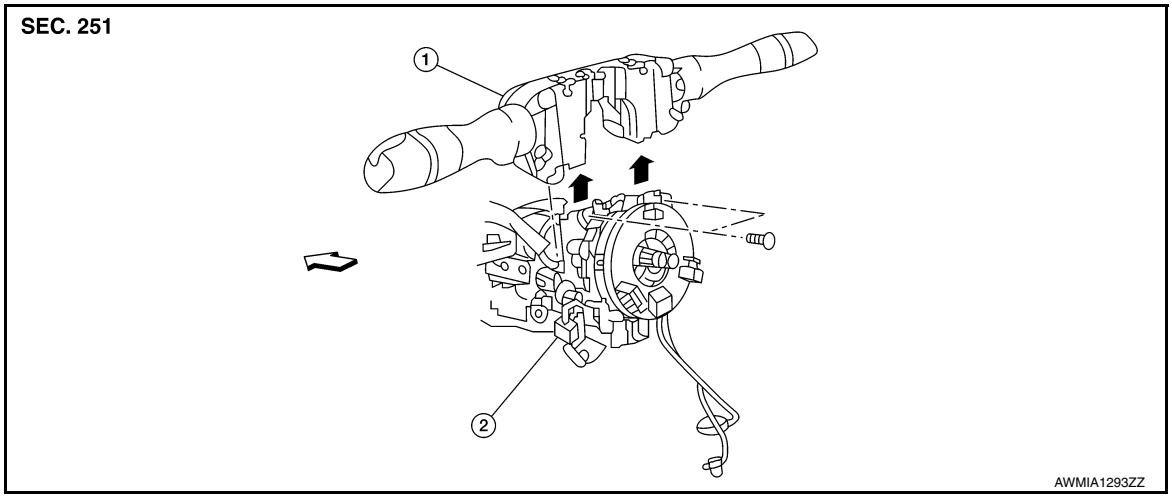
INSTALLATION

Installation is in the reverse order of removal.

LIGHTING & TURN SIGNAL SWITCH

Exploded View

INFOID:0000000012875443



1. Combination switch
2. Combination switch harness connector
⇦ Front

Removal and Installation

INFOID:0000000012875444

REMOVAL

1. Disconnect both the negative and positive battery terminals, then wait at least three minutes. Refer to PG-112, "Exploded View".
2. Remove the steering column covers. Refer to IP-18, "Removal and Installation".
3. Remove the combination switch screws.
4. Disconnect the harness connector from the combination switch and remove.

INSTALLATION

Installation is in the reverse order of removal.

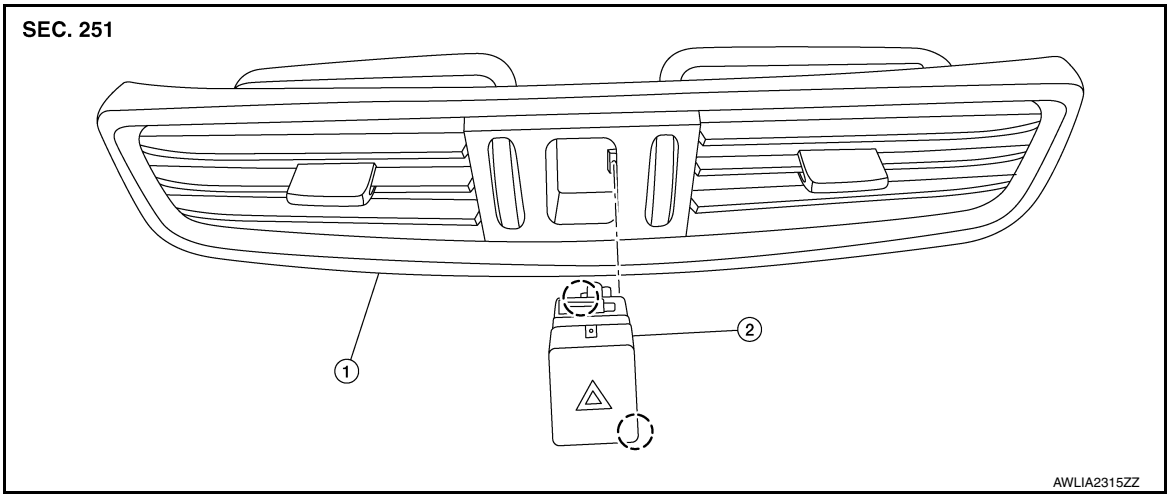
CAUTION:

- **After the work is completed, make sure no system malfunction is detected by air bag warning lamp.**
- **In case a malfunction is detected by the air bag warning lamp, reset with the self-diagnosis function and delete the memory with CONSULT.**
- **If a malfunction is still detected after the above operation, perform self-diagnosis to repair malfunctions. Refer to SRC-17, "SRS Final Check".**

HAZARD SWITCH

Exploded View

INFOID:0000000012875445



1. Center ventilator grille
2. Hazard switch
Pawl

Removal and Installation

INFOID:0000000012875446

REMOVAL

1. Remove center ventilator grille. Refer to VTL-10, "CENTER VENTILATOR DUCT : Removal and Installation".
2. Release pawls and remove hazard switch.

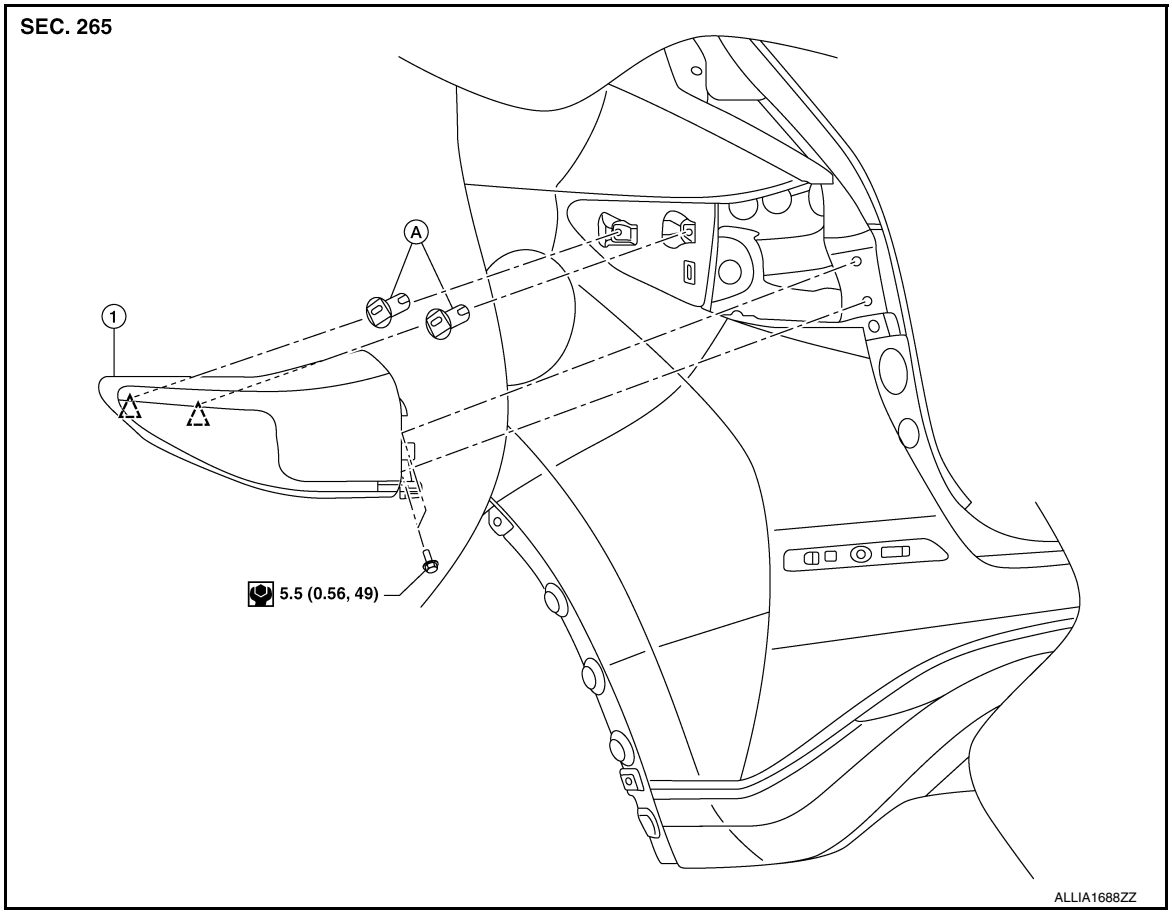
INSTALLATION

Installation is in the reverse order of removal.

REAR COMBINATION LAMP

Exploded View

INFOID:0000000012875447



1. Rear combination lamp
A. Grommet
Clip

Removal and Installation

INFOID:0000000012875448

REMOVAL

1. Remove rear combination lamp side cover.
2. Remove rear combination lamp bolts.
3. Pull rear combination lamp sideward to release clip and locators.
4. Disconnect harness connector from rear combination lamp and remove.

INSTALLATION

Installation is in the reverse order of removal.

Bulb Replacement

INFOID:0000000012875449

WARNING:

Do not touch bulb with bare hand while it is lit or right after being turned off. Burning may result.

CAUTION:

- **Do not touch glass surface of bulb with bare hands or allow oil or grease to get on it to prevent damage to bulb.**
- **Do not leave bulb out of lamp reflector for a long time because dust, moisture smoke, etc. may affect performance of lamp. When replacing bulb, be sure to replace it with new one.**

STOP LAMP BULB

The stop lamp bulb is LED and not serviced separately. Refer to EXL-119, "Removal and Installation".

SIDE MARKER LAMP BULB

Removal

1. Remove rear combination lamp. Refer to EXL-119, "Removal and Installation".
2. Rotate side marker bulb socket counterclockwise and remove.
3. Remove side marker bulb from bulb socket.

Installation

Installation is in the reverse order of removal.

CAUTION:

After installing bulb, install bulb socket securely for watertightness.

TURN SIGNAL LAMP BULB

Removal

1. Remove rear combination lamp. Refer to EXL-119, "Removal and Installation".
2. Rotate turn signal lamp bulb socket counterclockwise and remove.
3. Remove turn signal lamp bulb from bulb socket.

Installation

Installation is in the reverse order of removal.

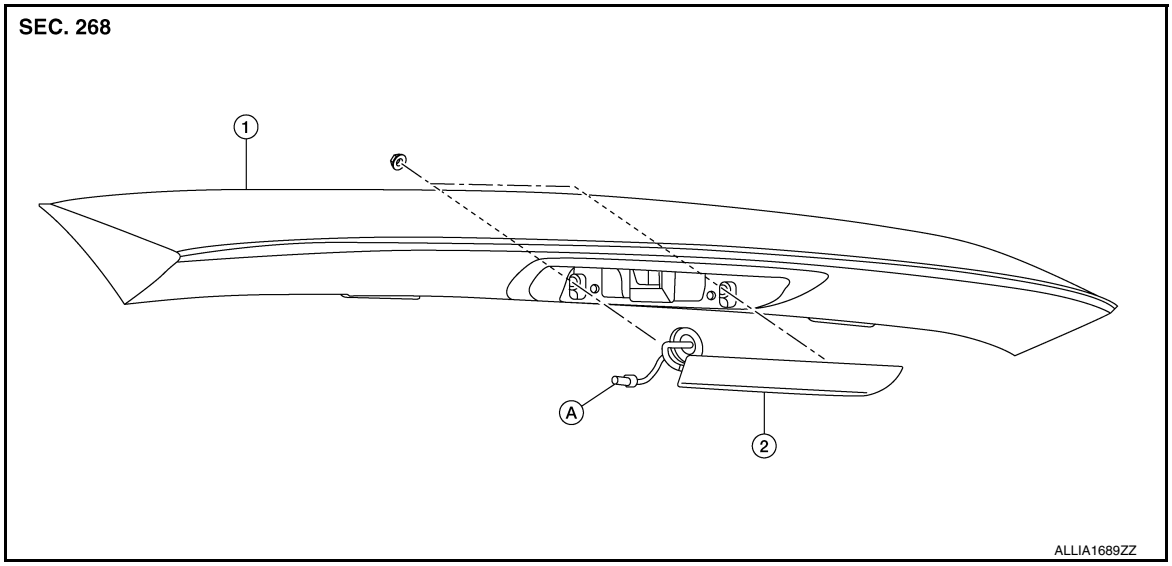
CAUTION:

After installing bulb, install bulb socket securely for watertightness.

HIGH-MOUNTED STOP LAMP

Exploded View

INFOID:0000000012875450



1. Rear spoiler
2. High-mounted stop lamp
A. Harness connector

Removal and Installation

INFOID:0000000012875451

REMOVAL

1. Remove rear spoiler. Refer to EXT-51, "Removal and Installation".
2. Remove nuts and remove high-mounted stop lamp.

INSTALLATION

Installation is in the reverse order of removal.

Bulb Replacement

INFOID:0000000012875452

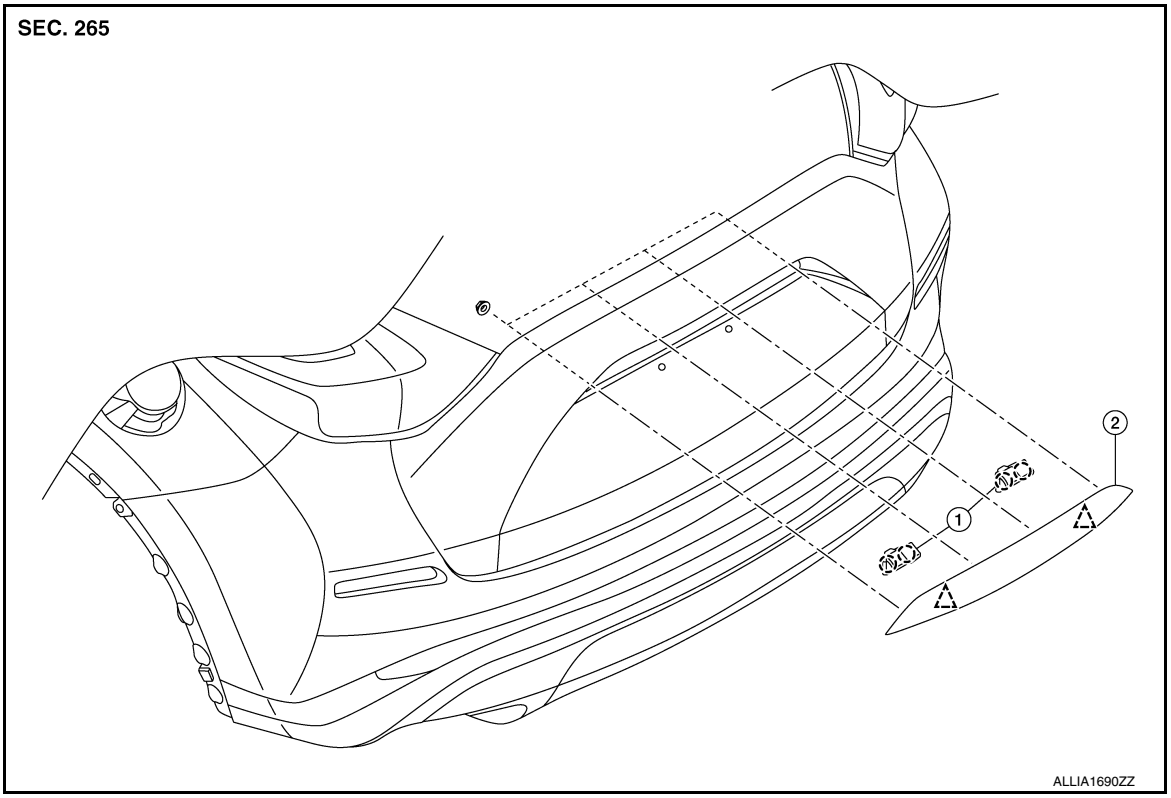
HIGH-MOUNTED STOP LAMP BULB

The high-mounted stop lamp bulb is LED and not serviced separately. Refer to EXL-121, "Removal and Installation".

LICENSE PLATE LAMP

Exploded View

INFOID:0000000012875453



1. License plate lamp
2. Back door outer finisher
Clip
Pawl

Removal and Installation

INFOID:0000000012875454

REMOVAL

1. Remove back door outer finisher. Refer to EXT-53, "Removal and Installation".
2. Disconnect harness connector from license plate lamp.
3. Release pawls and push license plate lamp forward.

INSTALLATION

Installation is in the reverse order of removal.

Bulb Replacement

INFOID:0000000012875455

WARNING:
Do not touch bulb with your hand while it is on or right after being turned off. Burning may result.
CAUTION:
- **Do not touch glass surface of bulb with bare hands or allow oil or grease to get on it to prevent damage to bulb.**
- **Do not leave bulb out of lamp reflector for a long time because dust, moisture smoke, etc. may affect performance of lamp. When replacing bulb, be sure to replace it with new one.**

REMOVAL

1. Remove back door lower finisher. Refer to INT-34, "BACK DOOR LOWER FINISHER : Removal and Installation".
2. Rotate license plate lamp bulb socket counterclockwise and remove.

3. Remove license plate lamp bulb from bulb socket.

INSTALLATION

Installation is in the reverse order of removal.

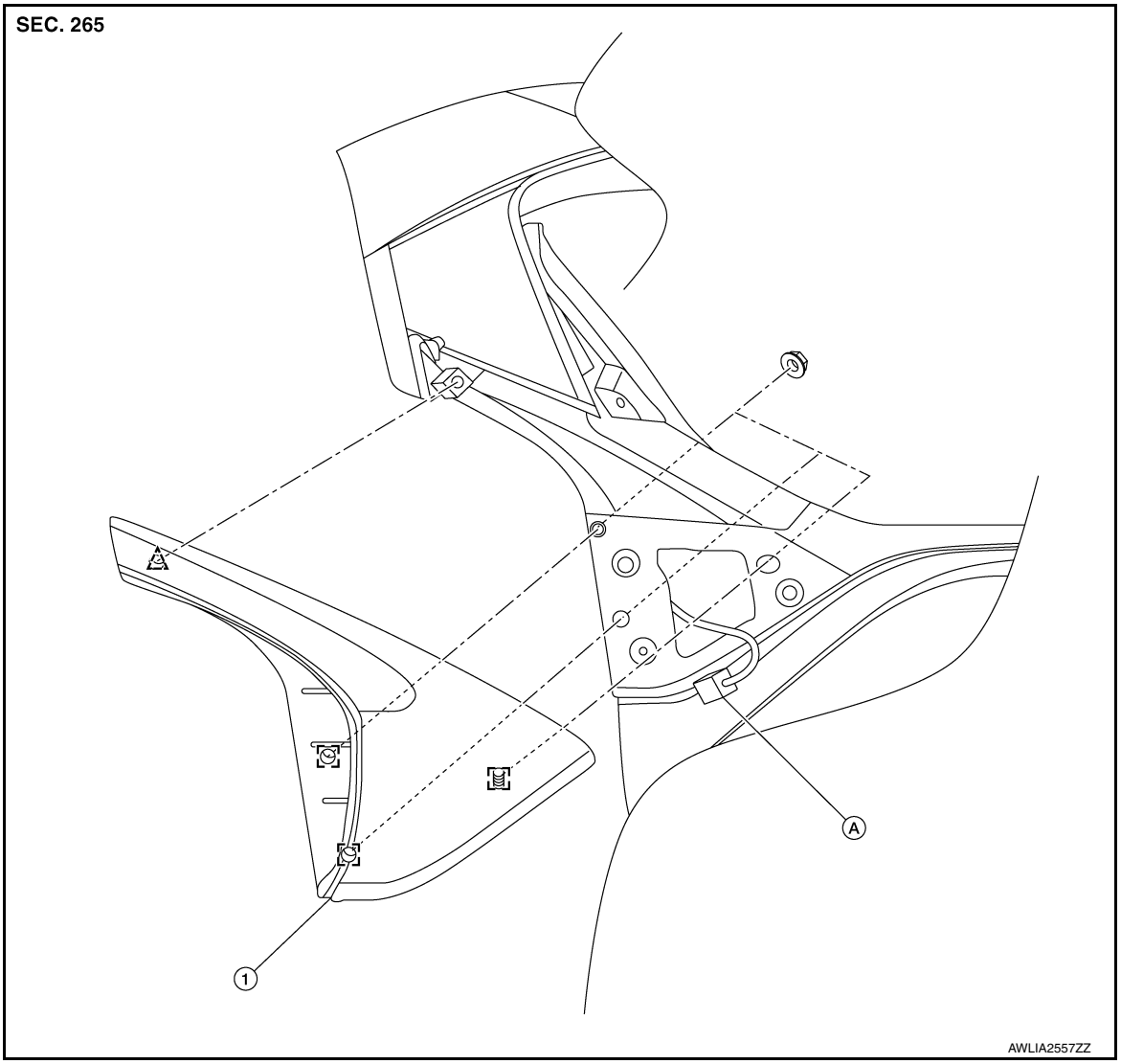
CAUTION:

After installing bulb, install bulb socket securely for watertightness.

BACK-UP LAMP ASSEMBLY

Exploded View

INFOID:0000000012875456



1. Back-up lamp assembly
A. Harness connector
Metal stud
Clip

Removal and Installation

INFOID:0000000012875457

REMOVAL

1. Remove back door lower finisher. Refer to INT-34, "BACK DOOR LOWER FINISHER : Removal and Installation".
2. Remove back-up lamp assembly nuts.
3. Disconnect harness connector, pull back-up lamp assembly rearward and remove.

INSTALLATION

Installation is in the reverse order of removal.

Bulb Replacement

INFOID:0000000012875458

WARNING:

Do not touch bulb with bare hand while it is lit or right after being turned off. Burning may result.

CAUTION:
- **Do not touch glass surface of bulb with bare hands or allow oil or grease to get on it to prevent damage to bulb.**
- **Do not leave bulb out of lamp reflector for a long time because dust, moisture smoke, etc. may affect performance of lamp. When replacing bulb, be sure to replace it with new one.**

REMOVAL

1. Remove back-up lamp assembly. Refer to EXL-124, "Removal and Installation".
2. Rotate back-up lamp bulb socket counterclockwise and remove.
3. Remove back-up lamp bulb from bulb socket.

INSTALLATION

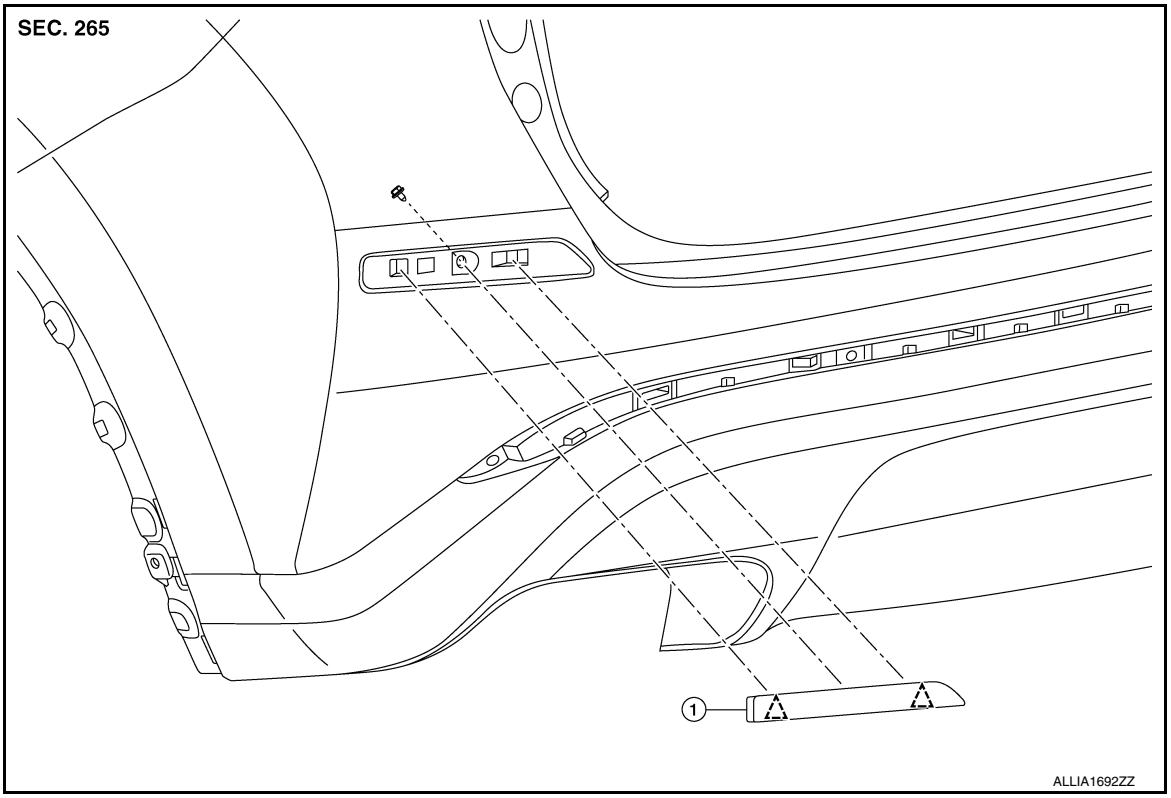
Installation is in the reverse order of removal.

CAUTION:
After installing bulb, install bulb socket securely for watertightness.

REFLEX REFLECTOR

Exploded View

INFOID:0000000012875459



1. Rear reflex reflector
Clip

Removal and Installation

INFOID:0000000012875460

REMOVAL

1. Remove rear bumper fascia. Refer to EXT-27, "Removal and Installation".
2. Remove rear reflex reflector fixing screw and pawls and then remove rear reflex reflector.

INSTALLATION

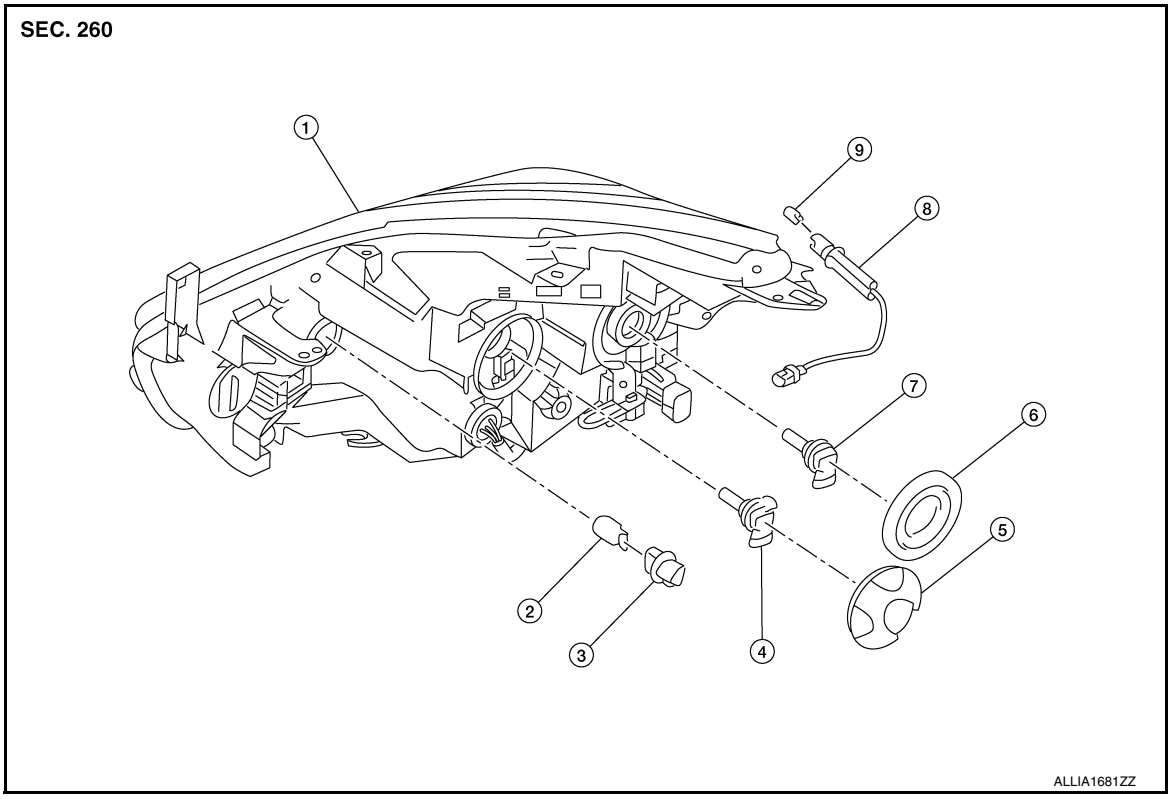
Installation is in the reverse order of removal.

UNIT DISASSEMBLY AND ASSEMBLY

FRONT COMBINATION LAMP

Exploded View

INFOID:0000000012875461



1. Front combination lamp
2. Turn signal lamp bulb
3. Turn signal lamp bulb socket
4. High beam lamp bulb
5. High beam lamp bulb cover
6. Low beam lamp bulb grommet
7. Low beam lamp bulb
8. Side marker lamp bulb harness
9. Side marker lamp bulb

Disassembly and Assembly

INFOID:0000000012875462

DISASSEMBLY

1. Remove front combination lamp. Refer to EXL-230, "Removal and Installation".
2. Rotate headlamp (low beam) bulb counterclockwise and remove.
3. Disconnect harness connector from headlamp (low beam) bulb.
4. Remove plastic cover.
5. Rotate headlamp (high beam) bulb counterclockwise and remove.
6. Disconnect harness connector from headlamp (high beam) bulb.
7. Rotate side marker lamp bulb socket counterclockwise and remove.
8. Remove side marker lamp bulb from bulb socket.
9. Rotate turn signal lamp bulb socket counterclockwise and remove.
10. Remove turn signal lamp bulb from bulb socket.

ASSEMBLY

Assembly is in the reverse order of disassembly.

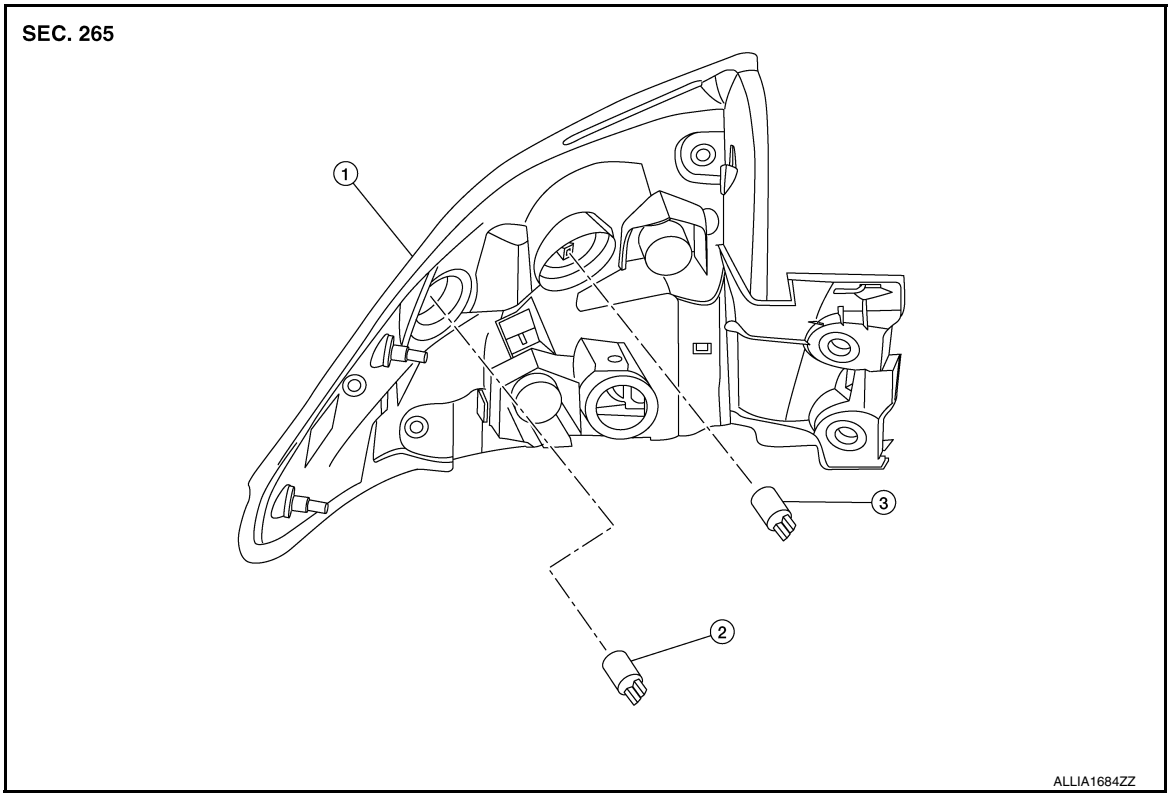
CAUTION:

During assembly, be sure to install bulb sockets securely to ensure watertightness.

REAR COMBINATION LAMP

Exploded View

INFOID:0000000012875463



1. Rear combination lamp
2. Turn signal lamp bulb
3. Side marker lamp bulb

Disassembly and Assembly

INFOID:0000000012875464

DISASSEMBLY

1. Remove rear combination lamp. Refer to EXL-238, "Removal and Installation".
2. Rotate side marker lamp bulb socket counterclockwise and remove.
3. Remove side marker bulb from bulb socket.
4. Rotate turn signal lamp bulb socket counterclockwise and remove.
5. Remove turn signal lamp bulb from bulb socket.

ASSEMBLY

Assembly is in the reverse order of disassembly.

CAUTION:

During assembly, be sure to install bulb sockets securely to ensure watertightness.

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Bulb Specifications

INFOID:0000000012875465

Item		Type	Wattage (W)
Front combination lamp	High beam	H9	65
	Low beam	H11	55
	Turn signal lamp	7444NA	28/8
	Side marker lamp	WY21W	5
	Daytime running lamp	LED	—
Front fog lamp (if equipped)		H11	55
Door mirror turn signal lamp		LED	—
Rear combination lamp	Stop lamp	LED	—
	Side marker lamp	W5W	5
	Turn signal lamp	WY21W	21
Back-up lamp		921	16
License plate lamp		W5W	5
High-mounted stop lamp		LED	—

*: Always check with the Parts Department for the latest parts info.