SECTION EXL
EXTERIOR LIGHTING SYSTEM

CONTENTS

XENON TYPE

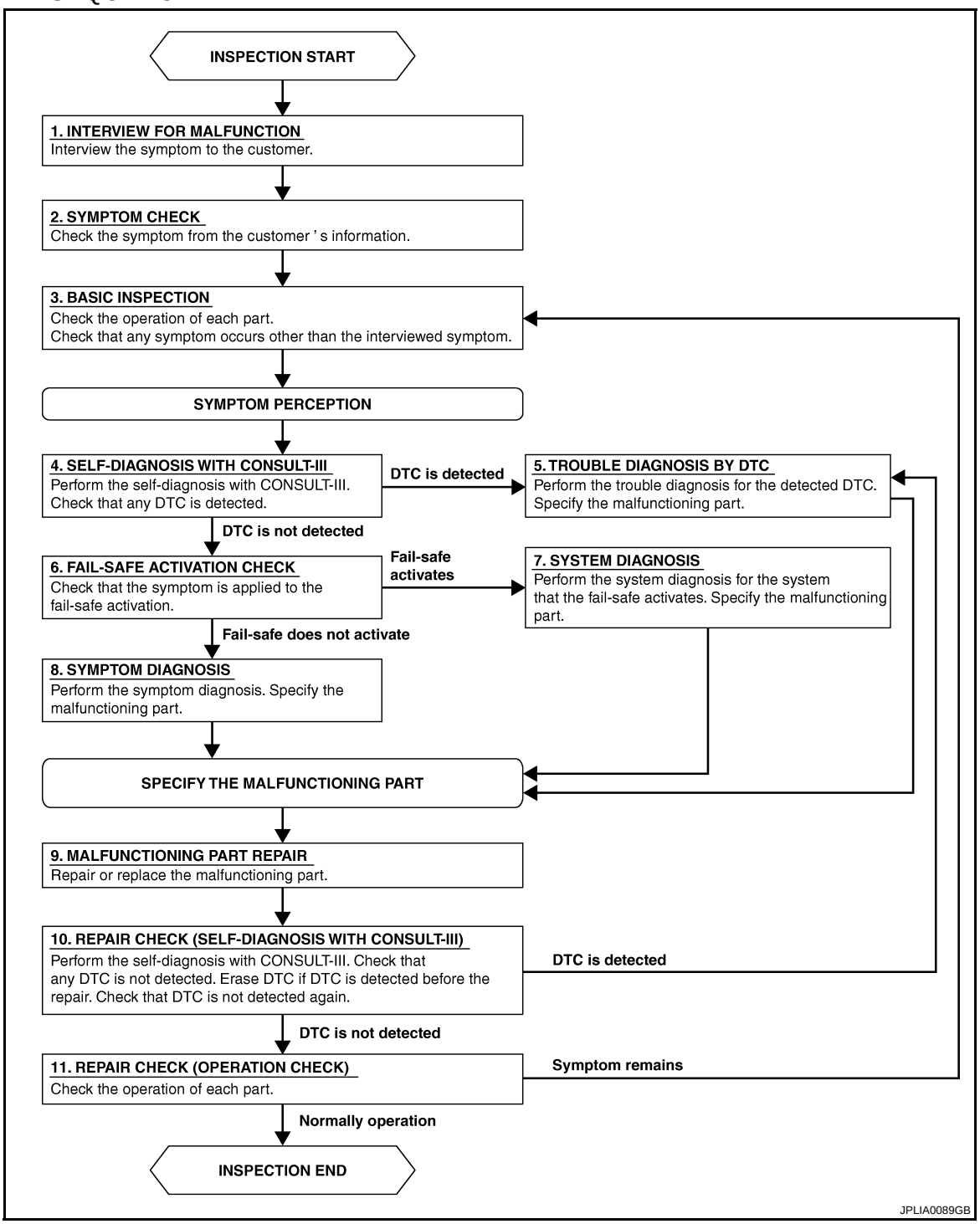
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000000962391

OVERALL SEQUENCE



DETAILED FLOW

1.INTERVIEW FOR MALFUNCTION

Interview the symptom to the customer.

>> GO TO 2.

2.SYMPTOM CHECK

Check the symptom from the customer's information.

>> GO TO 3.

3.BASIC INSPECTION

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

>> GO TO 4.

4.SELF-DIAGNOSIS WITH CONSULT-III

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

Is any DTC detected?

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

5.TROUBLE DIAGNOSIS BY DTC

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

>> GO TO 9.

6.FAIL-SAFE ACTIVATION CHECK

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

Does the fail-safe activate?

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

7.SYSTEM DIAGNOSIS

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

>> GO TO 9.

8.SYMPTOM DIAGNOSIS

Perform the symptom diagnosis. Specify the malfunctioning part.

>> GO TO 9.

9.MALFUNCTION PART REPAIR

Repair or replace the malfunctioning part.

>> GO TO 11.

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

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

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 11.

11. REPAIR CHECK (OPERATION CHECK)

Check the operation of each part.

Does it operate normally?

YES >> INSPECTION END
NO >> GO TO 3.

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description

INFOID:0000000000962392

Perform the levelizer adjustment with CONSULT-III when replacing the height sensor.

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:0000000000962393

1.LEVELIZER ADJUSTMENT

Perform the levelizer adjustment.

>> Refer to EXL-8, "LEVELIZER ADJUSTMENT : Special Repair Requirement".

LEVELIZER ADJUSTMENT

LEVELIZER ADJUSTMENT : Description

INFOID:0000000000962394

Perform the levelizer adjustment when installing, removing, and replacing the height sensor and the suspension components.

LEVELIZER ADJUSTMENT : Special Repair Requirement

INFOID:0000000000962395

1.VEHICLE CONDITION CHECK

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

>> GO TO 2.

2.LEVELIZER ADJUSTMENT

CONSULT-III WORK SUPPORT

1. Select "LEVELIZER ADJUSTMENT" of ADAPTIVE LIGHT work support item.
2. Select "START".
3. When "ADJUSTMENT IS COMPLETED", select "END".

CAUTION:

If "CAN NOT BE TESTED" is indicated, AFS control unit detects that the height sensor signal changes. The levelizer adjustment is cancelled. In this case, turn the ignition switch OFF to prevent the vehicle from the height change. Perform the levelizer adjustment again.

Is the levelizer adjustment completed?

YES >> GO TO 3.
NO >> Perform the levelizer adjustment again.

3.SELF-DIAGNOSIS RESULT CHECK

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

Is any DTC detected?

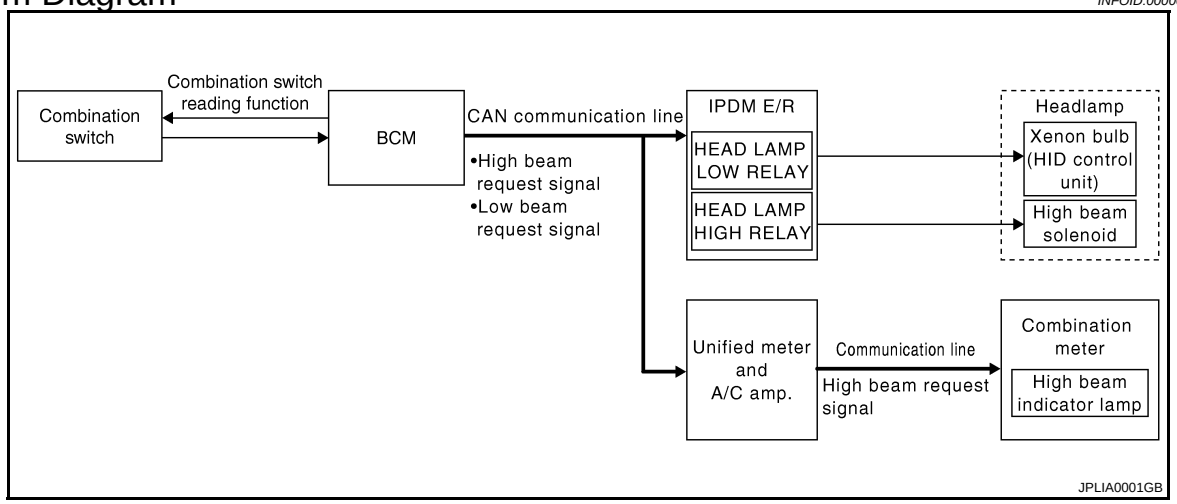
YES >> GO TO 2.
NO >> Levelizer adjustment completed

FUNCTION DIAGNOSIS

HEADLAMP SYSTEM

System Diagram

INFOID:0000000000962396



System Description

INFOID:0000000000962397

OUTLINE

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

HEADLAMP BASIC OPERATION

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

Headlamp ON condition

- Lighting switch 2ND
- Lighting switch PASS
- Lighting switch AUTO, and the auto light function ON judgment (with auto light system)

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

HEADLAMP HI/LO SWITCHING OPERATION

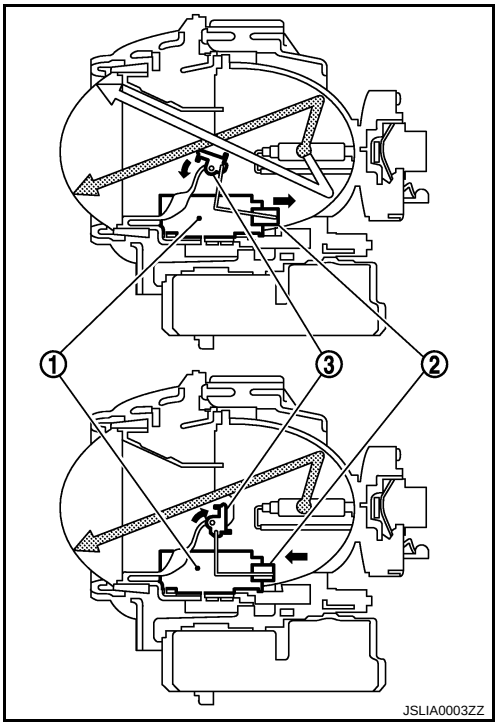
- BCM transmits the high beam request signal to IPDM E/R and the combination meter (through unified meter and A/C amp.) with CAN communication according to the high beam switching condition.

High beam switching condition

- Lighting switch HI with the headlamp ON
- Lighting switch PASS

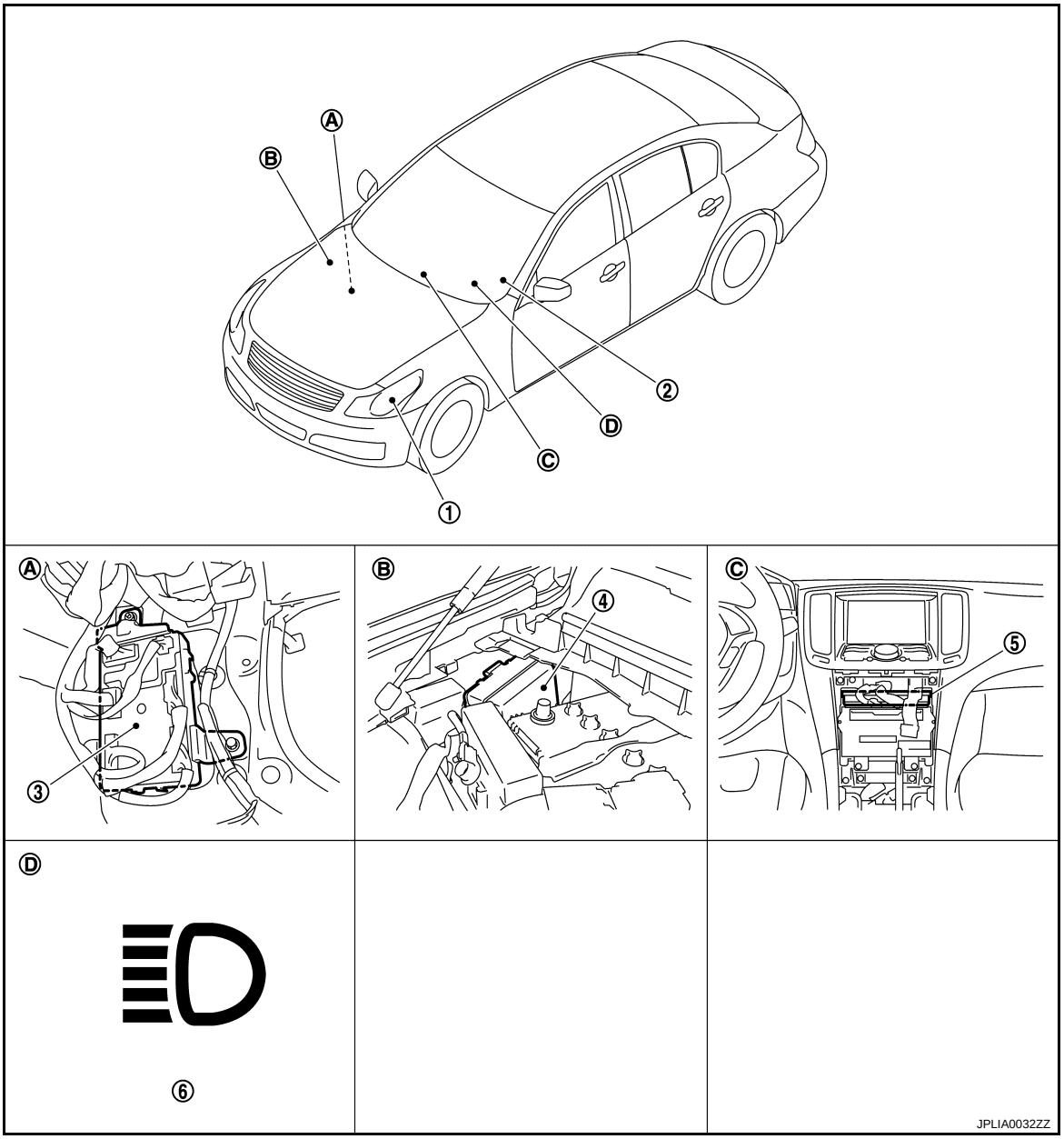
- Combination meter turns the high beam indicator lamp ON according to the high beam request signal.
- IPDM E/R turns the integrated headlamp high relay ON, and turns the headlamp ON according to the high beam request signal.

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



Component Parts Location

INFOID:0000000000962398



1. Headlamp
2. Combination switch
3. BCM
4. IPDM E/R
5. Unified meter and A/C amp.
6. High beam indicator lamp
A. Dash side lower (Passenger side)
B. Engine room dash panel (RH)
C. Behind cluster lid C
D. On the combination meter

Component Description

INFOID:0000000000962399

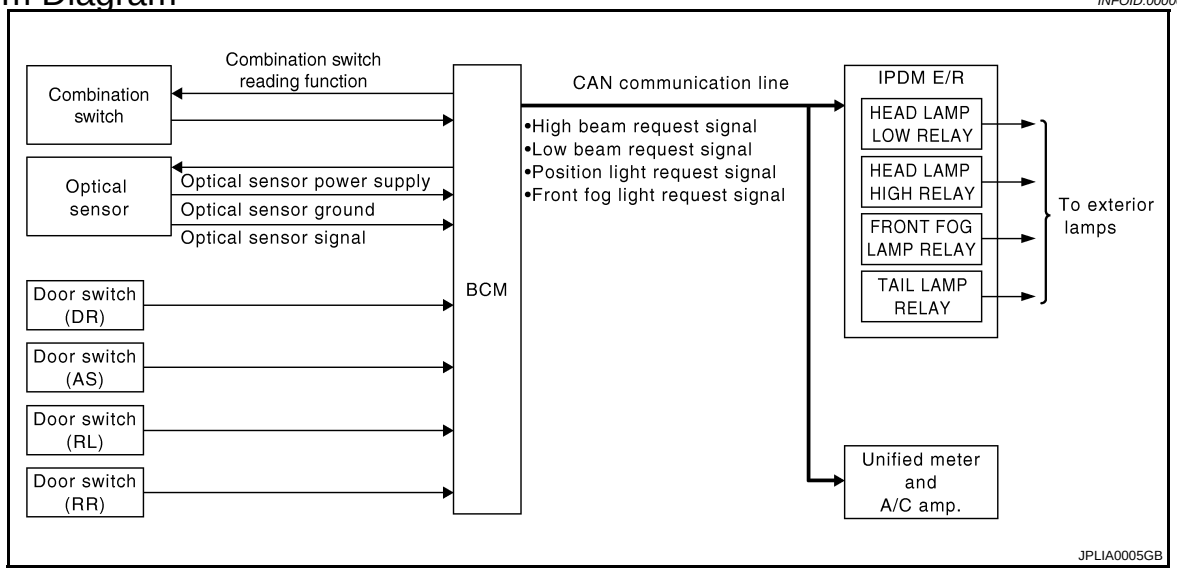
Part	Description
BCM	• Judges each switch condition by the combination switch reading function. • Judges that the headlamp is turned ON according to the vehicle condition. - Requests the headlamp relay (HI/LO) ON to IPDM E/R (with CAN communication). - Requests the high beam indicator lamp ON to the combination meter [with CAN communication (through unified meter and A/C amp.)].
IPDM E/R	Controls the integrated relay, and supplies voltage to the load according to the request from BCM (with CAN communication).

Part		Description
Combination switch (Lighting & turn signal switch)		Refer to BCS-5, "System Diagram".
Combination meter (High beam indicator lamp)		Turns the high beam indicator lamp ON according to the request from BCM [with CAN communication (through unified meter and A/C amp.)].
Headlamp assembly	• HID control unit • Xenon bulb	Refer to EXL-69, "Description".
	High beam solenoid	Refer to EXL-65, "Description".

AUTO LIGHT SYSTEM

System Diagram

INFOID:0000000000962400



System Description

INFOID:0000000000962401

OUTLINE

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

Control by BCM
- Combination switch reading function
- Headlamp control function
- Auto light function
- Delay timer function

Control by IPDM E/R
- Relay control function
- Auto light system has the auto light function and the delay timer function.
- Auto light function turns the exterior lamps* and each illumination ON/OFF automatically according to the outside brightness.
- When auto light system turns the exterior lamps ON with the ignition switch OFF, delay timer function turns the exterior lamps OFF depending on the vehicle condition with the auto light function after a certain period of time.

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

AUTO LIGHT FUNCTION

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

NOTE:
ON/OFF timing differs based on the sensitivity from the setting. The setting can be set by CONSULT-III. Refer to EXL-31, "HEADLAMP : CONSULT-III Function (BCM - HEAD LAMP)".

DELAY TIMER FUNCTION

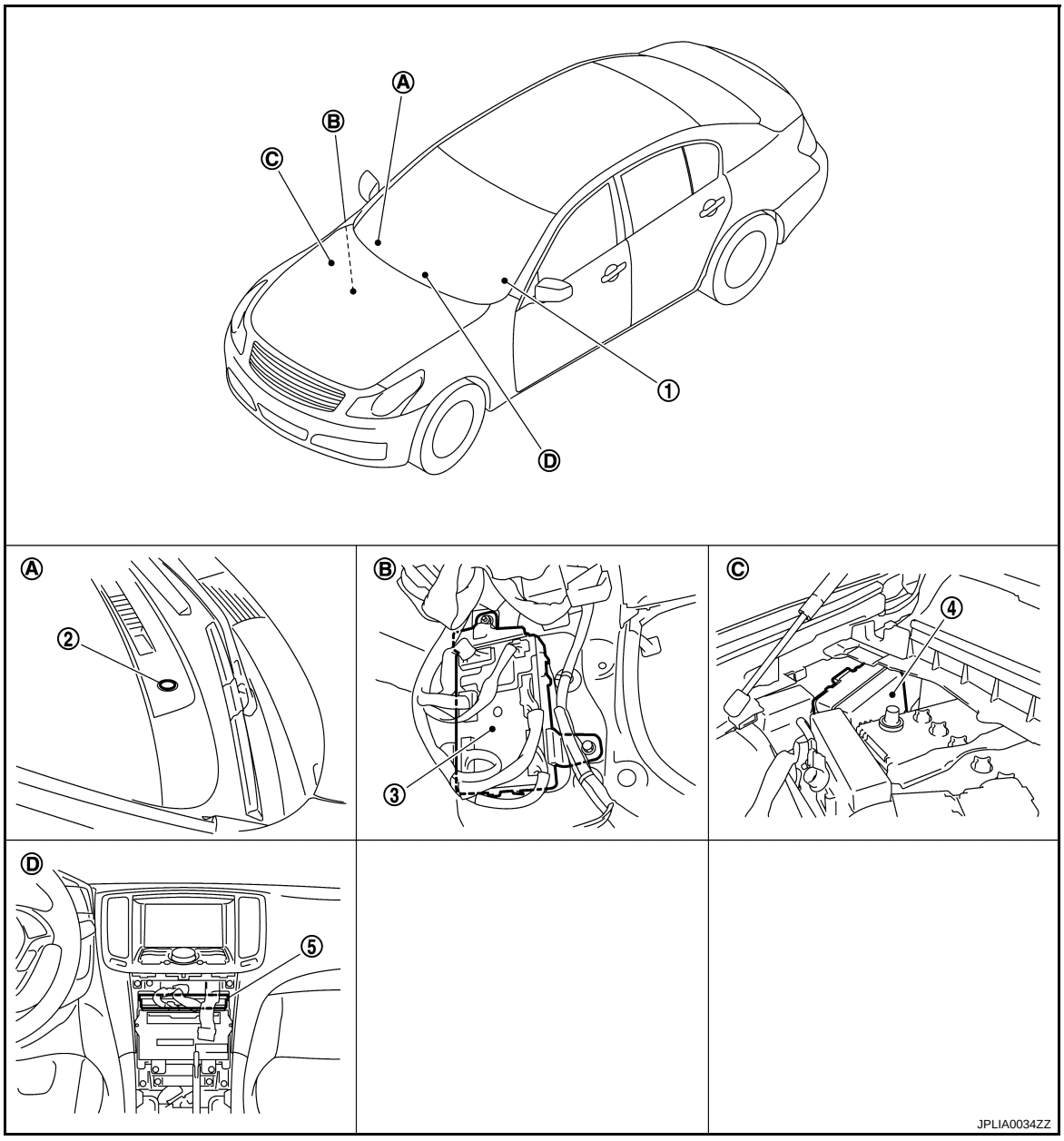
BCM turns the exterior lamp OFF depending on the vehicle condition with the auto light function when the ignition switch is turned OFF.
- Turns the exterior lamp OFF 5 minutes after detecting that any door opens (Door switch ON).
- Turns the exterior lamp OFF a certain period of time* after closing all doors (Door switch ON→OFF).

• Turns the exterior lamp OFF with the ignition switch ACC or the light switch OFF.
*: The preset time is 45 seconds. The timer operating time can be set by CONSULT-III. Refer to EXL-31, "HEADLAMP : CONSULT-III Function (BCM - HEAD LAMP)".

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

Component Parts Location

INFOID:0000000000962402



1. Combination switch
2. Optical sensor
3. BCM
4. IPDM E/R
5. unified meter and A/C amp.
A. Instrument upper panel (RH)
B. Dash side lower (Passenger side)
C. Engine room dash panel (RH)
D. Behind cluster lid C

Component Description

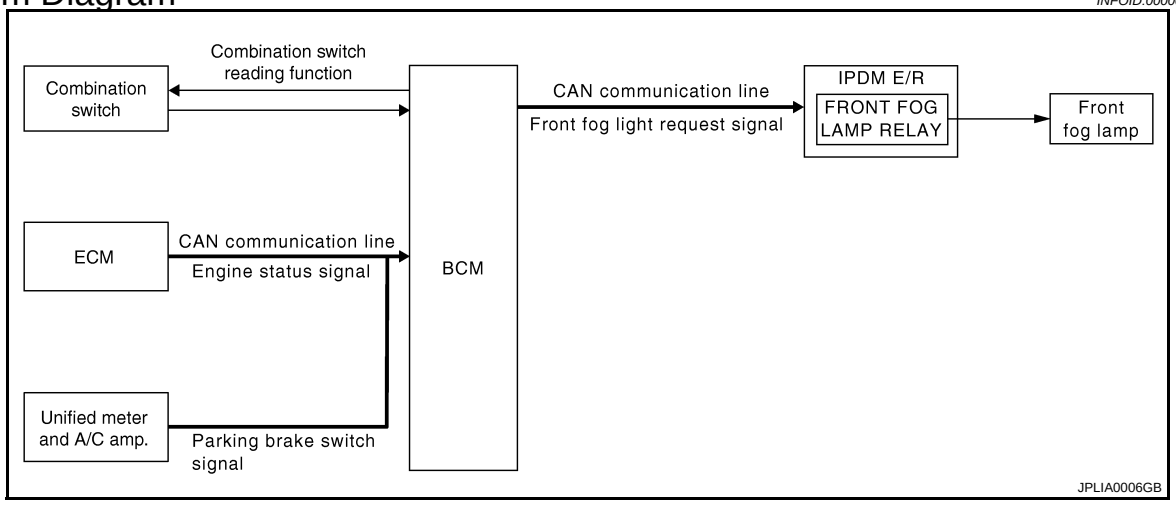
INFOID:0000000000962403

Part	Description
BCM	• Judges each switch condition by the combination switch reading function. • Judges the outside brightness from the optical sensor signal. • Judges the OFF timing according to the vehicle condition. • Judges the ON/OFF status of the exterior lamp and each illumination according to the outside brightness and the vehicle condition. Requests ON/OFF of each relay to IPDM E/R (with CAN communication).
IPDM E/R	Controls the integrated relay, and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-5, "System Diagram".
Optical sensor	Refer to EXL-80, "Description".

DAYTIME RUNNING LIGHT SYSTEM

System Diagram

INFOID:0000000000962404



System Description

INFOID:0000000000962405

OUTLINE

- Turns the front fog lamp ON as the daytime running light.
- Daytime running light is controlled by daytime running light control function and combination switch reading function of BCM, and relay control function of IPDM E/R.

DAYTIME RUNNING LIGHT OPERATION

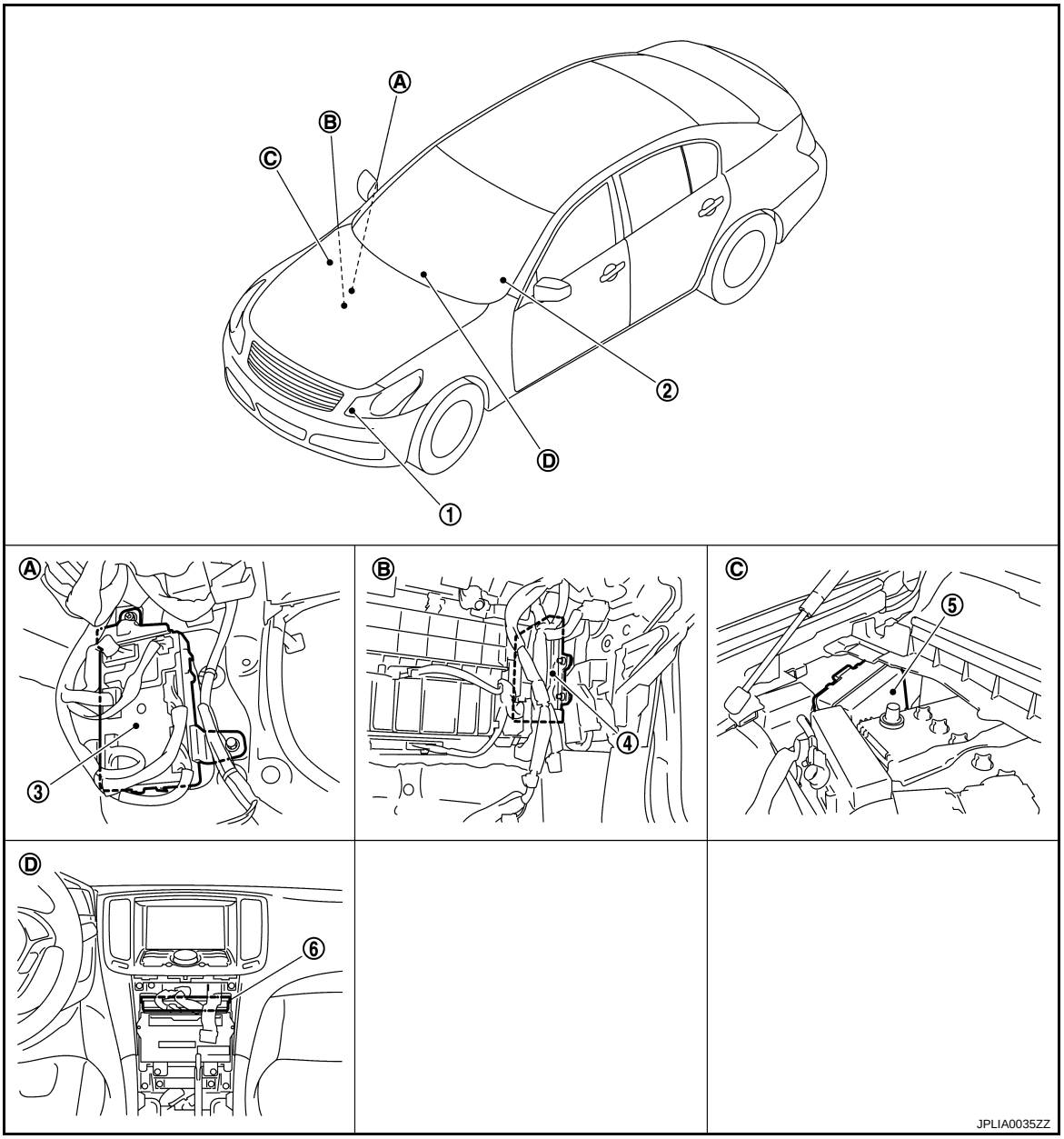
- BCM detects the combination switch condition by the combination switch reading function.
- BCM detects the vehicle condition depending on the following signals.
- Engine condition signal (received from ECM with CAN communication)
- Parking brake switch signal (received from unified meter and A/C amp.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

Daytime running light ON condition
- While the engine running with the parking brake released

Daytime running light OFF condition
- Engine stopped
- Headlamp ON (Passing included)
- IPDM E/R turns the integrated front fog lamp relay ON and turns the front fog lamp ON according to the front fog lamp request signal.

Component Parts Location

INFOID:0000000000962406



1. Daytime running light (Front fog lamp)
2. Combination switch
3. BCM
4. ECM
5. IPDM E/R
6. Unified meter and A/C amp.
A. Dash side lower (Passenger side)
B. Behind glove box
C. Engine room dash panel (RH)
D. Behind cluster lid C

Component Description

INFOID:0000000000962407

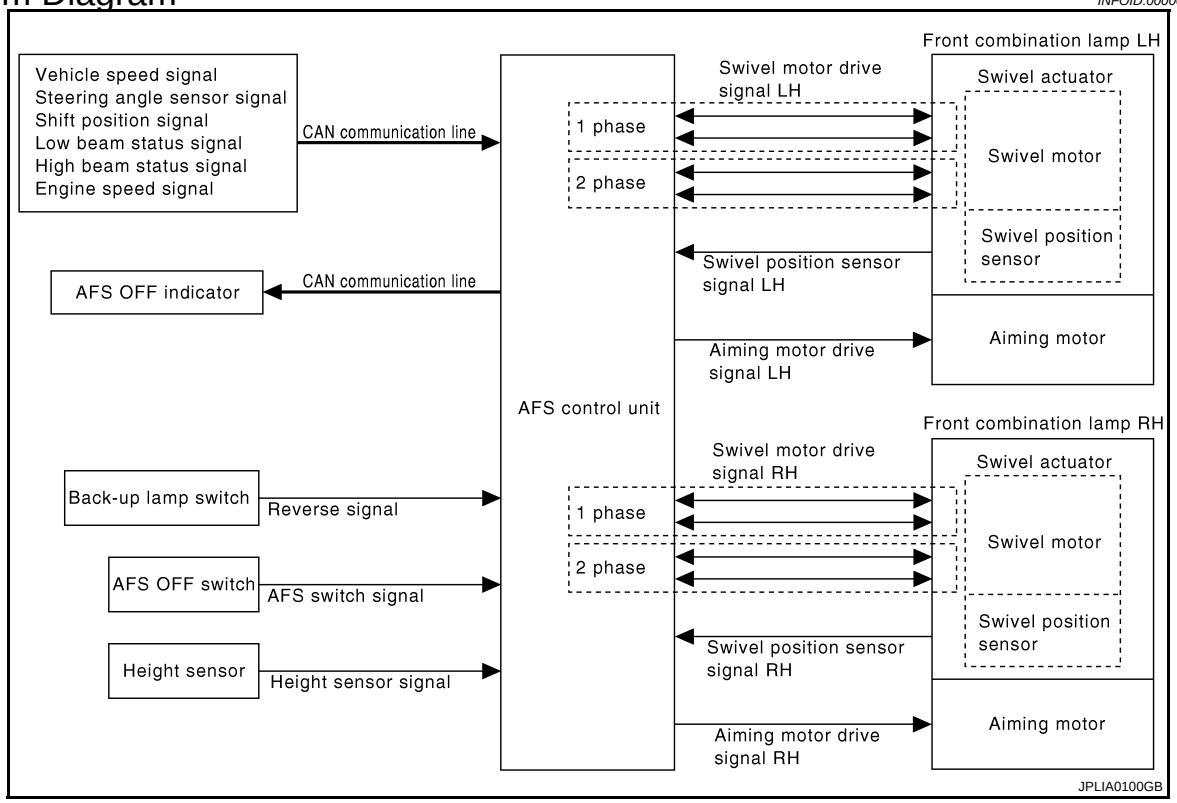
Part	Description
BCM	• Judges each switch condition with the combination switch reading function. • Judges the headlamp ON/OFF status according to the vehicle condition. Requests the front fog lamp relay ON to IPDM E/R (with CAN communication).
IPDM E/R	Controls the integrated relay and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-5, "System Diagram".

Part	Description
ECM	Transmits the engine condition signal to BCM with CAN communication.
Unified meter and A/C amp.	Transmits the parking brake switch signal to BCM with CAN communication.

ACTIVE ADAPTIVE FRONT-LIGHTING SYSTEM

System Diagram

INFOID:0000000000962408



System Description

INFOID:0000000000962409

OUTLINE

- AFS (ACTIVE ADAPTIVE FRONT-LIGHTING SYSTEM) is controlled by AFS control unit.
- AFS has AFS control (swivel control) and the headlamp auto aiming control.
- AFS control swivels the headlamp to the steering direction.
- Headlamp auto aiming control moves the headlamp light axis up/down according to the vehicle height.

AFS (ADAPTIVE FRONT-LIGHTING SYSTEM)

AFS Control Description

- AFS control controls the headlamp (right) only when the steering wheel is turned rightward, and the headlamp (left) only when the steering wheel is turned leftward.
- AFS control unit detects the vehicle condition necessary for AFS control with the following signals.
- AFS switch signal
- Steering angle sensor signal (received from steering angle sensor with CAN communication)
- Engine speed signal (received from ECM with CAN communication)
- Shift position signal (received from TCM with CAN communication)
- Reverse signal (received from back-up lamp switch)
- Low beam status and high beam status (received from IPDM E/R with CAN communication)
- Vehicle speed signal (received from unified meter and A/C amp. with CAN communication)
- When the operation conditions are satisfied, AFS control unit controls the swivel angle depending on the steering angle and the vehicle speed.

AFS operation condition

- Swivel actuator initialization completed
- AFS OFF switch OFF
- Headlamp ON
- While the engine running
- Selector lever position other than "P" or "R" (A/T models)
- Shift knob position other than reverse (M/T models)

- Vehicle speed approximately 25 km/h or more (left swivel only; Right swivel activates regardless of the vehicle speed.)

Swivel Actuator Initialization

• AFS control unit performs the swivel actuator initialization when detecting that the engine starts.
- Swivels the headlamp to the vehicle-center side until it hits the stopper.
- Returns the swivel angle from the stopper. Completes the initialization with regarding the returned position as the swivel angle 0° (straight-forward position).

Swivel Operation

• AFS control unit transmits the drive signal to the swivel actuator when activation conditions are satisfied. And swivels the headlamp.
- The swivel starts after steering approximately 20° or more from straight-forward position.

NOTE:
The steering angle differs between right turn and left turn.

- The swivel angle becomes the maximum angle toward the driving direction if the steering angle is approximately 90° or more depending on the vehicle speed. The swivel angle is maintained by shutting off the drive signal.
- The swivel starts, and returns to the swivel angle 0° (straight-forward position) when the steering is returned to the straight-forward position.
• AFS control unit returns the swivel angle to the straight-forward position, and stops the swivel regardless of the steering angle if the operation condition is not satisfied while the swivel angle is 0°.

AFS OFF Indicator Lamp

• AFS control unit transmits AFS OFF indicator lamp signal to the combination meter (through unified meter & A/C amp.) with CAN communication.
• Combination meter turns AFS OFF indicator lamp ON/OFF/blinking according to AFS OFF indicator lamp signal.
- AFS OFF indicator lamp is turned ON for 1 second for the AFS OFF indicator lamp bulb check when the ignition switch is turned ON. AFS OFF indicator lamp is turned OFF within 1 second when the engine starts.
- AFS OFF indicator lamp is turned OFF when AFS OFF switch is turned ON.
- AFS OFF indicator lamp blinks (1 second each) if AFS control unit detects a specific DTC.

NOTE:
Combination meter blinks AFS OFF indicator lamp (approximately 1 second each) if AFS OFF indicator lamp signal is not received from AFS control unit.

HEADLAMP AUTO AIMING

Headlamp Auto Aiming Control Description

• Headlamp auto aiming control controls the headlamp light axis height appropriately according to the vehicle height.
• AFS control unit detects the vehicle condition necessary for headlamp auto aiming control with the following signals.
- Height sensor signal
- Engine speed signal (received from ECM with CAN communication)
- Low beam status signal and high beam status signal (received from IPDM E/R with CAN communication)
- Vehicle speed signal (received from unified meter and A/C amp. with CAN communication)
• When the operation conditions are satisfied, AFS control unit transmits the aiming motor drive signal for adjusting the headlamp axis height.

Headlamp auto aiming operation condition

- Headlamp ON
- While the engine running
- Vehicle speed (Control mode is switched according to the driving condition.)

Headlamp Auto Aiming Operation

• AFS control unit calculates the vehicle pitch angle from the height sensor signal. AFS control unit judges the angle for adjusting the axis gap from the preset position.

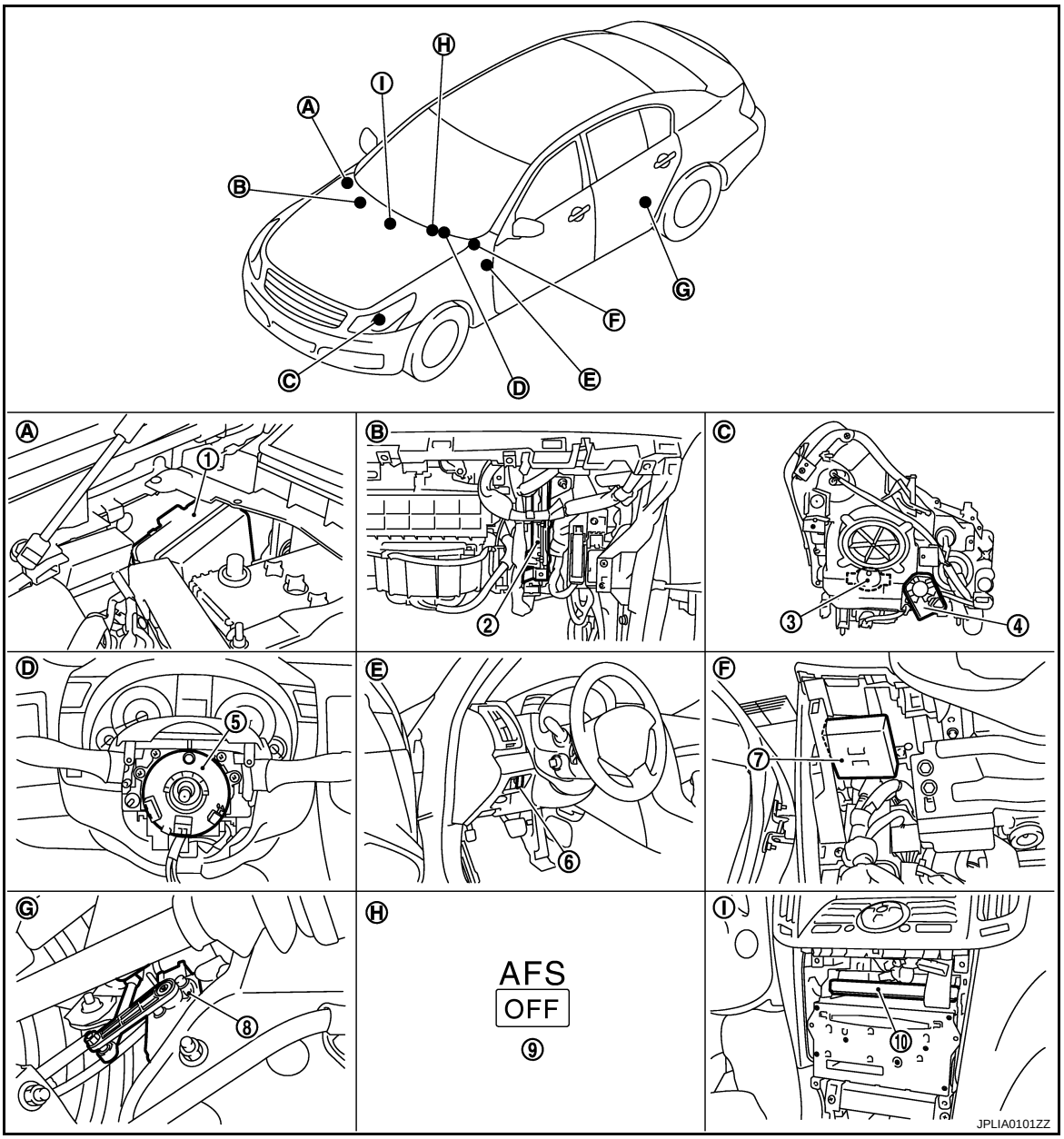
CAUTION:
Adjusted axis position may differ from the preset position although the headlamp auto aiming activates properly if the suspension is replaced or worn.

• AFS control unit controls the headlamp axis by changing the aiming motor drive signal output according to the vehicle-rearward height when detecting the following vehicle condition. Output is maintained if other condition than following is detected.

- Engine starts.
- Headlamp is turned ON.
- Vehicle posture becomes stable after changing the vehicle posture change is detected with the headlamp ON and the vehicle stopped.
- Vehicle speed is maintained with the headlamp ON and the vehicle driven.

Component Parts Location

INFOID:0000000000962410



1. IPDM E/R	2. ECM	3. Swivel actuator
4. Aiming motor	5. Steering angle sensor	6. AFS OFF switch
7. AFS control unit	8. Height sensor	9. AFS OFF indicator lamp
10. Unified meter and A/C amp.		
A. Engine room dash panel (RH)	B. Behind glove box	C. Front combination lamp (back)
D. Steering column cover (inside)	E. Instrument driver lower panel	F. Behind instrument driver lower panel
G. Left rear suspension member	H. Inside the combination meter	I. Behind cluster lid C

Component Description

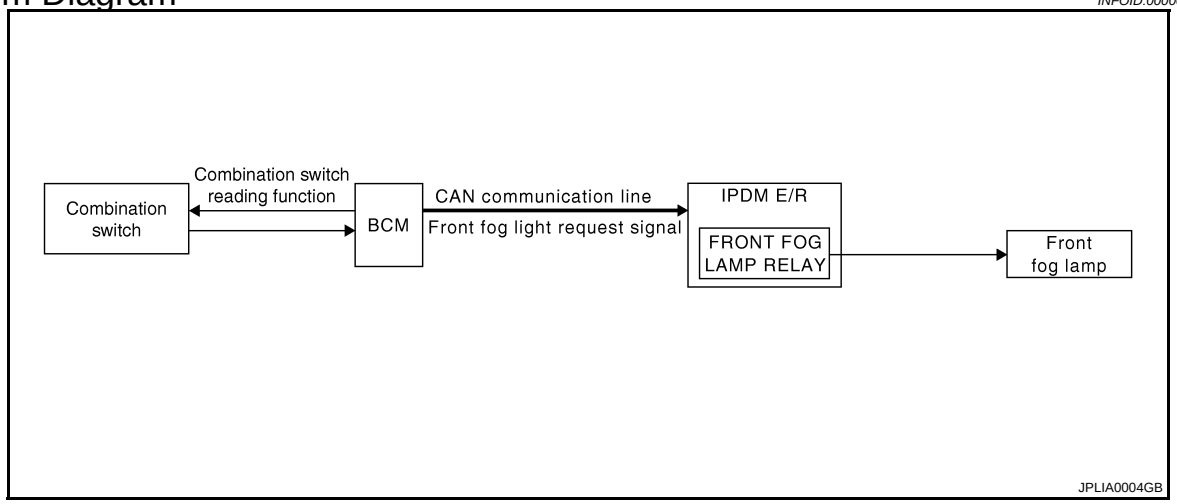
INFOID:0000000000962411

Part	Description
AFS control unit	Refer to EXL-54, "Description".
Swivel actuator	Refer to EXL-42, "Description".
Aiming motor	Refer to EXL-71, "Description".
AFS switch	Inputs AFS switch ON/OFF signal to AFS control unit.
Height sensor	Refer to EXL-47, "Description".
Steering angle sensor	Refer to EXL-57, "Description".
IPDM E/R	Transmits the headlamp (LO) ON signal and the headlamp (HI) ON signal to AFS control unit with CAN communication.
ECM	Transmits the engine speed signal to AFS control unit with CAN communication.
TCM	Refer to EXL-51, "Description".
Unified meter and A/C amp.	Refer to EXL-52, "Description".
Combination meter	Turns AFS OFF indicator lamp ON/OFF/blinking according to AFS control unit request [with CAN communication (through unified meter and A/C amp.)].

FRONT FOG LAMP SYSTEM

System Diagram

INFOID:0000000000962412



System Description

INFOID:0000000000962413

OUTLINE

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

NOTE:

For Canada models, the front fog lamp is turned ON as the daytime running light. Refer to EXL-29, "System Diagram" for the detail.

FRONT FOG LAMP OPERATION

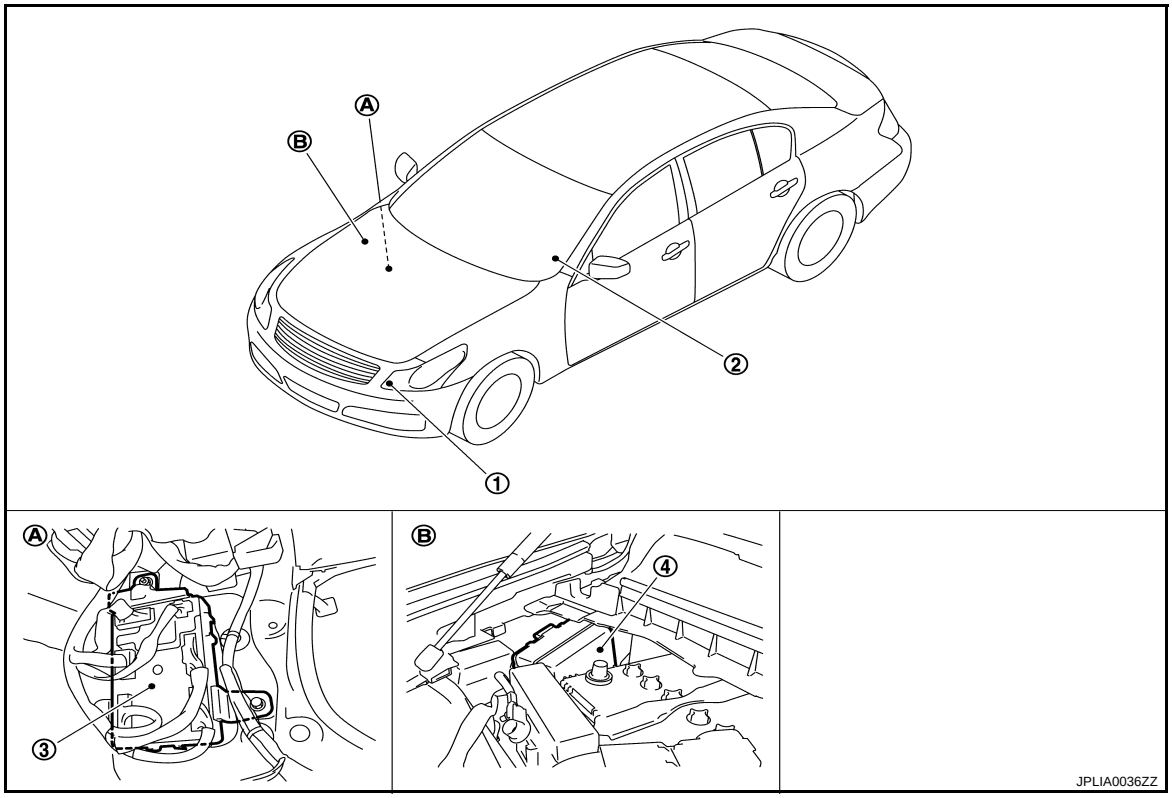
- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the front fog lamp request signal to IPDM E/R with CAN communication according to the front fog lamp ON condition.

Front fog lamp ON condition

- Front fog lamp switch ON with the headlamp ON (except for the high beam ON)
- IPDM E/R turns the integrated front fog lamp relay ON, and turns the front fog lamp ON according to the front fog lamp request signal.

Component Parts Location

INFOID:0000000000962414



1. Front fog lamp
2. Combination switch
3. BCM
4. IPDM E/R

A. Dash side lower (Passenger side)
B. Engine room dash panel (RH)

Component Description

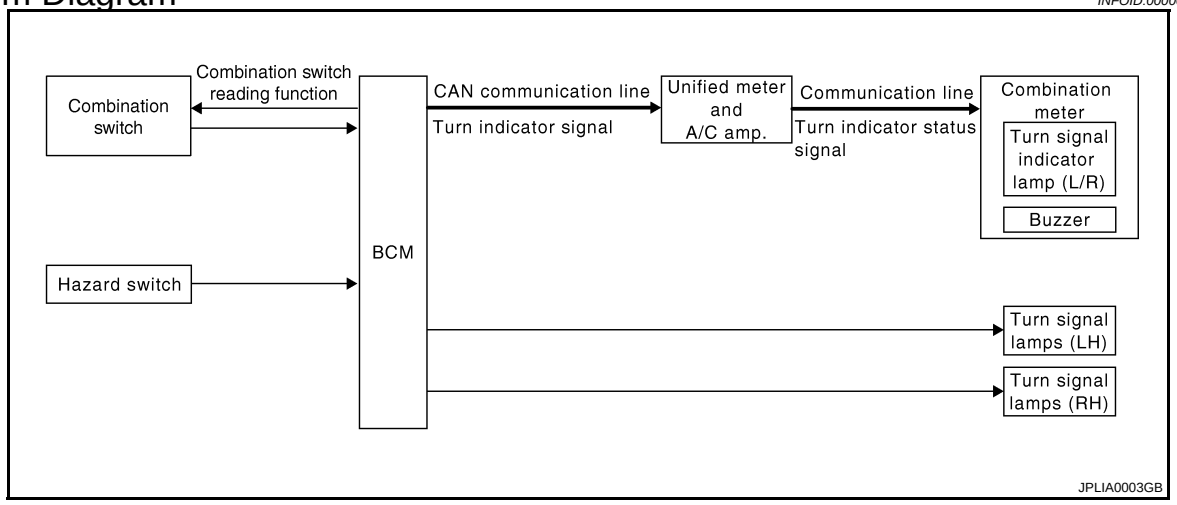
INFOID:0000000000962415

Part	Description
BCM	• Judges each switch condition by the combination switch reading function. • Judges the front fog lamp ON/OFF status according to the vehicle condition. Requests the front fog lamp relay ON to IPDM E/R (with CAN communication).
IPDM E/R	Controls the integrated relay and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-5, "System Diagram".

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

System Diagram

INFOID:0000000000962416



System Description

INFOID:0000000000962417

OUTLINE

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

TURN SIGNAL LAMP OPERATION

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

HAZARD WARNING LAMP OPERATION

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

TURN SIGNAL INDICATOR LAMP AND TURN SIGNAL OPERATION

- BCM transmits the turn signal indicator lamp signal to the combination meter (through unified meter and A/C amp.) with CAN communication while the turn signal lamp and the hazard warning lamp operating.
- Combination meter outputs the turn signal sound with the integrated buzzer while blinking the turn signal indicator lamp according to the turn signal indicator lamp signal.

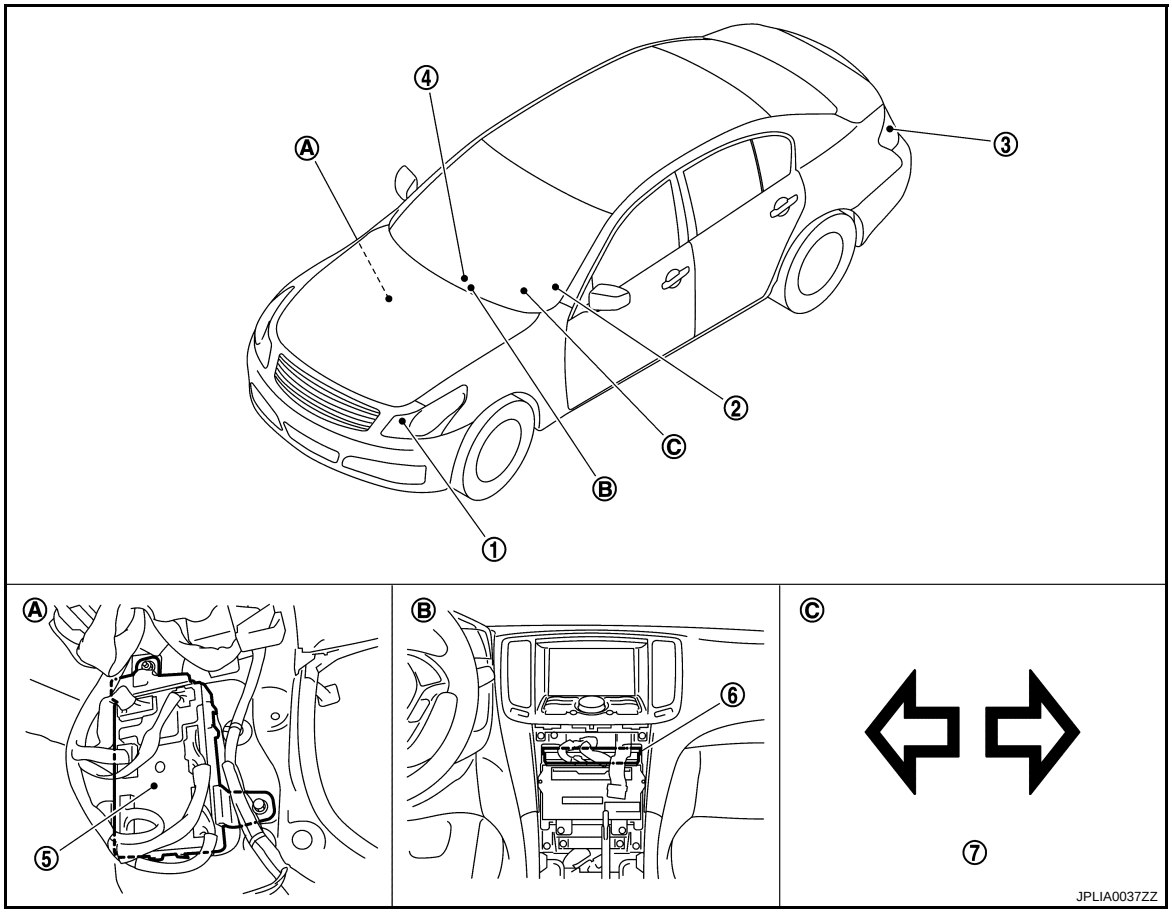
HIGH FLASHER OPERATION (FAIL-SAFE)

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

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

Component Parts Location

INFOID:0000000000962418



1. Front turn signal lamp
2. Combination switch
3. Rear turn signal lamp
4. Hazard warning switch
5. BCM
6. Unified meter and A/C amp.
7. Turn signal indicator lamp

A. Dash side lower (Passenger side)
B. Behind cluster lid C
C. On the combination meter

Component Description

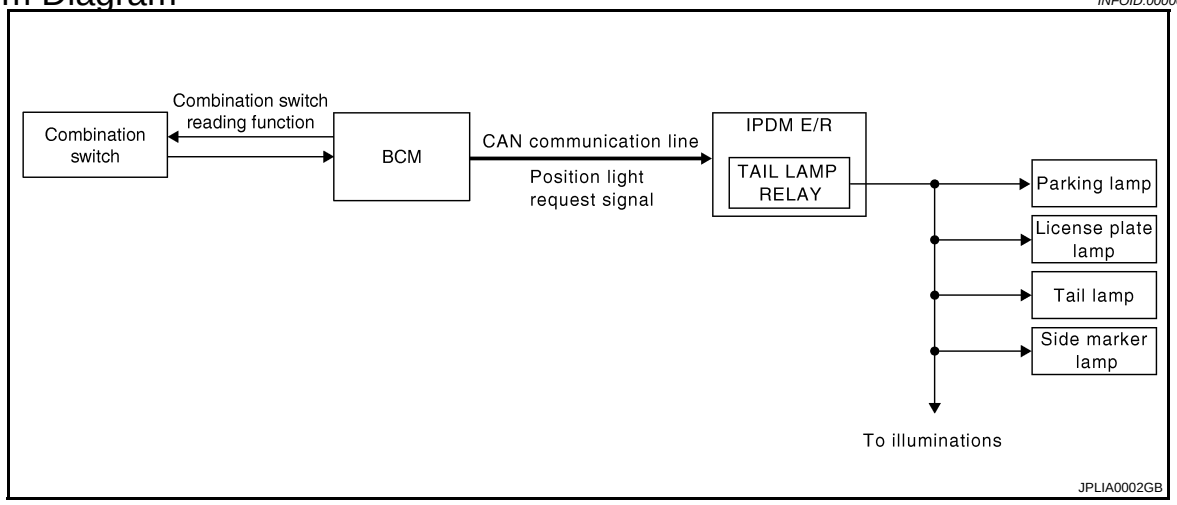
INFOID:0000000000962419

Part	Description
BCM	• Judges each switch condition by the combination switch reading function. • Judges the blinks of the turn signal lamp and the hazard warning lamp from each switch status. The applicable turn signal lamp blinks. Requests the turn signal indicator lamp blink to the combination meter (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-5, "System Diagram".
Hazard switch (Multifunction switch)	Refer to EXL-83, "Description".
Combination meter (Turn signal indicator lamp & buzzer)	Blinks the turn signal indicator lamp and outputs the turn signal operating sound with integrated buzzer according to the request from BCM [with CAN communication (through unified meter and A/C amp.)].

PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

System Diagram

INFOID:0000000000962420



System Description

INFOID:0000000000962421

OUTLINE

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

PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMPS OPERATION

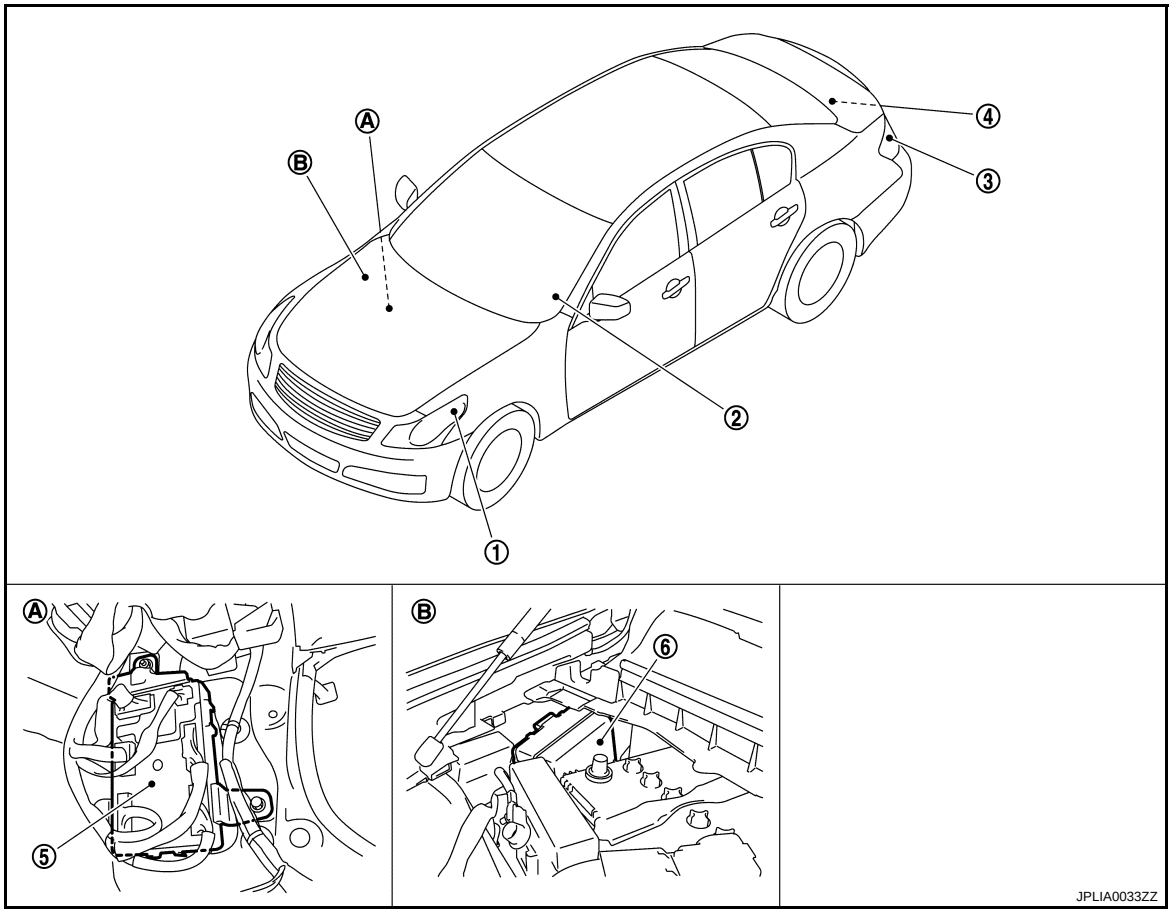
- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the position light request signal to IPDM E/R with CAN communication according to the ON/OFF condition of the parking, license plate, side marker and tail lamps.

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 (with auto light system)

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

Component Parts Location

INFOID:0000000000962422



1. Parking lamp (used with the side marker lamp)
2. Combination switch
3. Tail lamp and side marker lamp
4. License plate lamp
5. BCM
6. IPDM E/R
A. Dash side lower (Passenger side)
B. Engine room dash panel (RH)

Component Description

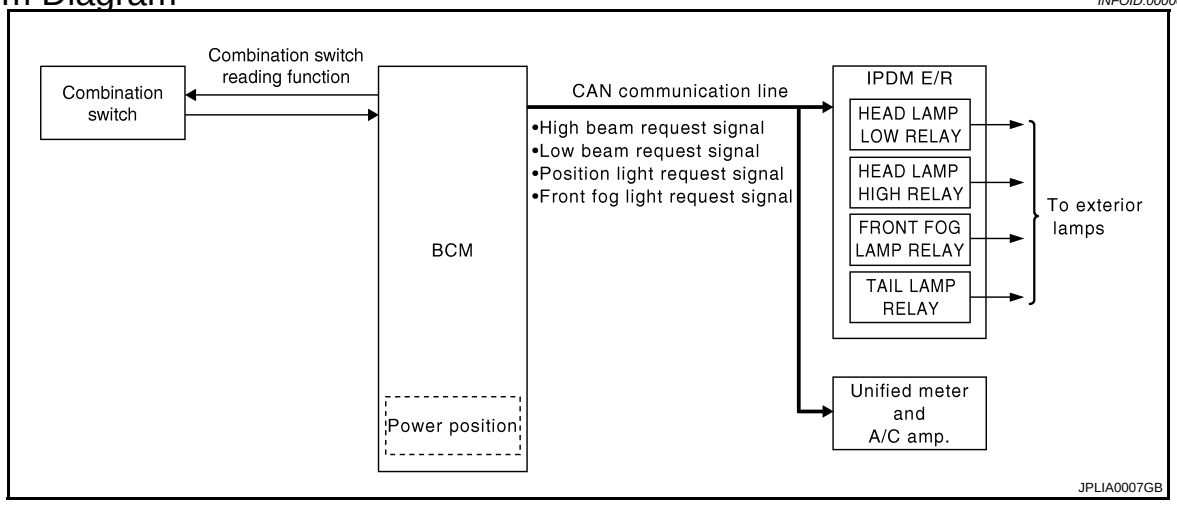
INFOID:0000000000962423

Part	Description
BCM	• Judges each switch condition by the combination switch reading function. • Judges the ON/OFF status of the clearance, license plate, side marker and tail lamps according to the vehicle condition. Requests the tail lamp relay ON to IPDM E/R (with CAN communication).
IPDM E/R	Controls the integrated relay and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-5, "System Diagram".

EXTERIOR LAMP BATTERY SAVER SYSTEM

System Diagram

INFOID:0000000000962424



System Description

INFOID:0000000000962425

OUTLINE

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

Control by BCM

- Combination switch reading function
- Headlamp control function
- Exterior lamp battery saver function

Control by IPDM E/R

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

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

NOTE:

When the lighting switch is turned AUTO, the exterior lamp battery saver switches to the auto light system. Refer to EXL-13, "System Diagram".

EXTERIOR LAMP BATTERY SAVER ACTIVATION

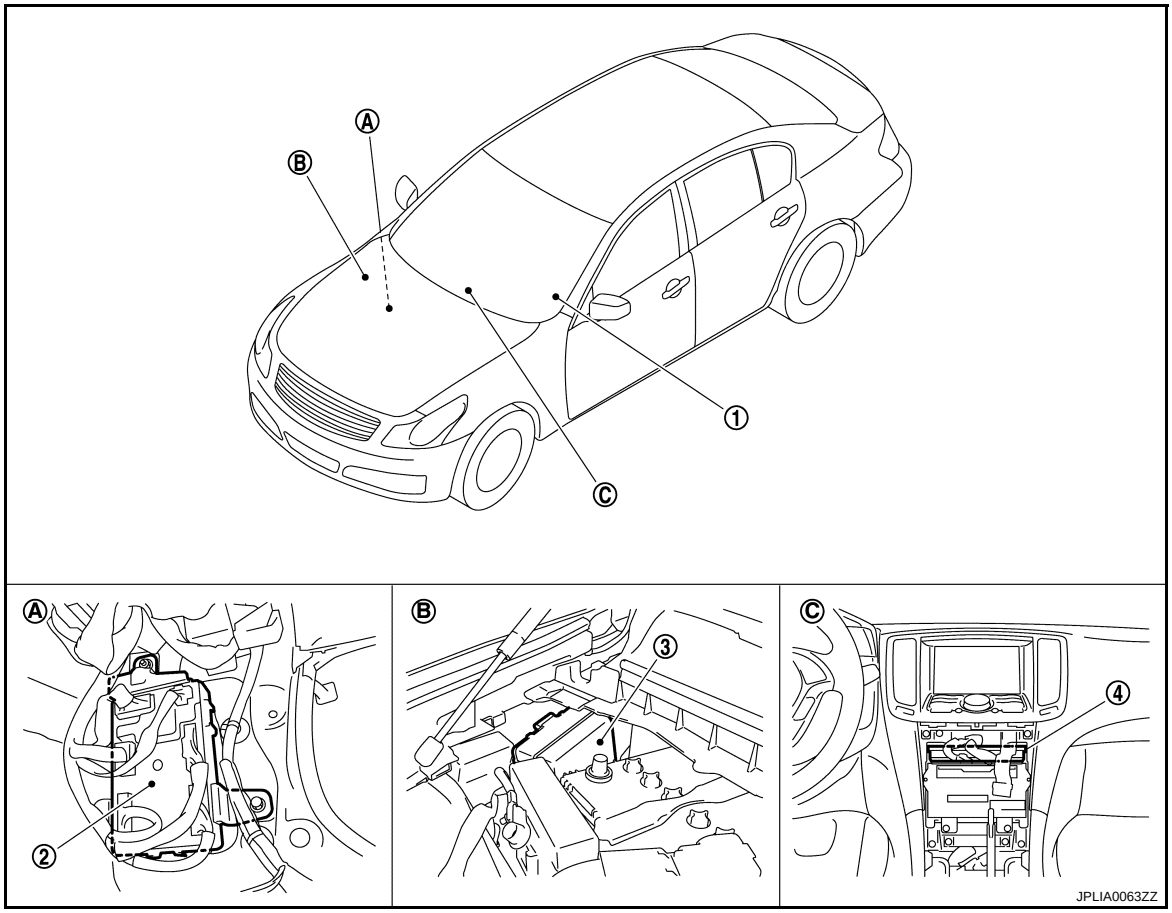
BCM activates the timer and turns the exterior lamp OFF 5 minutes after the ignition switch is turned from ON → OFF with the exterior lamps ON.

NOTE:

- Headlamp control function turns the exterior lamps ON normally when the ignition switch is turned ACC or the engine started (both before and after the exterior lamp battery saver is turned OFF).
- The timer starts at the time that the lighting switch is turned from OFF → 1ST or 2ND with the exterior lamp OFF.

Component Parts Location

INFOID:0000000000962426



1. Combination switch
2. BCM
3. IPDM E/R
4. Unified meter and A/C amp.
A. Dash side lower (Passenger side)
B. Engine room dash panel (RH)
C. Behind cluster lid C

Component Description

INFOID:0000000000962427

Part	Description
BCM	• Judges each switch condition by the combination switch reading function. • Judges the exterior lamp OFF according to the vehicle condition. Requests each relay OFF to IPDM E/R (with CAN communication).
IPDM E/R	Controls the integrated relay according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-5, "System Diagram".

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

INFOID:0000000000962428

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

Diagnosis mode	Function Description
WORK SUPPORT	Changes the setting for each system function.
SELF-DIAG RESULTS	Displays the diagnosis results judged by BCM. Refer to BCS-74, "DTC Index".
CAN DIAG SUPPORT MNTR	Monitors the reception status of CAN communication viewed from BCM.
DATA MONITOR	The BCM input/output signals are displayed.
ACTIVE TEST	The signals used to activate each device are forcibly supplied from BCM.
ECU IDENTIFICATION	The BCM part number is displayed.
CONFIGURATION	This function is not used even though it is displayed.

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

System	Sub system selection item	Diagnosis mode		
		WORK SUPPORT	DATA MONITOR	ACTIVE TEST
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp timer	INT LAMP	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER	×	×	×
Air conditioner*	AIR CONDITONER		×	
Intelligent Key system	INTELLIGENT KEY	×	×	×
Combination switch	COMB SW		×	
BCM	BCM	×		
IVIS - NATS	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Trunk open	TRUNK		×	
Vehicle security system	THEFT ALM	×	×	×
RAP system	RETAINED PWR		×	
Signal buffer system	SIGNAL BUFFER		×	×
TPMS	TPMS (AIR PRESSURE MONITOR)	×	×	×

*: This item is displayed, but is not used.

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

INFOID:0000000000962429

WORK SUPPORT

Service item	Setting item	Setting	
BATTERY SAVER SET	ON*	With the exterior lamp battery saver function	
	OFF	Without the exterior lamp battery saver function	
ILL DELAY SET	MODE 1*	45 sec.	Sets delay timer function timer operation time. (All doors closed)
	MODE 2	Without the function	
	MODE 3	30 sec.	
	MODE 4	60 sec.	
	MODE 5	90 sec.	
	MODE 6	120 sec.	
	MODE 7	150 sec.	
	MODE 8	180 sec.	
CUSTOM A/LIGHT SETTING	MODE 1*	Normal	
	MODE 2	More sensitive setting than normal setting (Turns ON earlier than normal operation.)	
	MODE 3	More sensitive setting than MODE 2 (Turns ON earlier than MODE 2.)	
	MODE 4	Less sensitive setting than normal setting (Turns ON later than normal operation.)	

*: Initial setting

DATA MONITOR

Monitor item [Unit]	Description
PUSH SW [ON/OFF]	The switch status input from push-button ignition switch
ENGINE STATE [STOP/STALL/CRANK/RUN]	The engine status received from ECM with CAN communication
VEH SPEED 1 [km/h]	The value of the vehicle speed received from unified meter and A/C amp. with CAN communication
KEY SW-SLOT [ON/OFF]	Key switch status input from key slot
TURN SIGNAL R [ON/OFF]	Each switch status that BCM judges from the combination switch reading function
TURN SIGNAL L [ON/OFF]	
TAIL LAMP SW [ON/OFF]	
HI BEAM SW [ON/OFF]	
HEAD LAMP SW1 [ON/OFF]	
HEAD LAMP SW2 [ON/OFF]	
PASSING SW [ON/OFF]	
AUTO LIGHT SW [ON/OFF]	
FR FOG SW [ON/OFF]	
RR FOG SW [ON/OFF]	**NOTE:** The item is indicated, but not monitored.

Monitor item [Unit]	Description
DOOR SW-DR [ON/OFF]	The switch status input from front door switch (driver side)
DOOR SW-AS [ON/OFF]	The switch status input from front door switch (passenger side)
DOOR SW-RR [ON/OFF]	The switch status input from rear door switch RH
DOOR SW- RL [ON/OFF]	The switch status input from rear door switch LH
DOOR SW-BK [ON/OFF]	**NOTE:** The item is indicated, but not monitored.
OPTICAL SENSOR [V]	The value of exterior brightness voltage input from the optical sensor

ACTIVE TEST

Test item	Operation	Description
TAIL LAMP	ON	Transmits the position light request signal to IPDM E/R with CAN communication to turn the tail lamp ON.
	OFF	Stops the tail lamp request signal transmission.
HEAD LAMP	HI	Transmits the high beam request signal with CAN communication to turn the headlamp (HI).
	LO	Transmits the low beam request signal with CAN communication to turn the headlamp (LO).
	OFF	Stops the high & low beam request signal transmission.
FR FOG LAMP	ON	Transmits the front fog lights request signal to IPDM E/R with CAN communication to turn the front fog lamp ON.
	OFF	Stops the front fog lights request signal transmission.
RR FOG LAMP	ON	**NOTE:** The item is indicated, but cannot be tested.
	OFF	
DAYTIME RUNNING LIGHT	ON	**NOTE:** The item is indicated, but cannot be tested.
	OFF	
CORNERING LAMP	RH	**NOTE:** The item is indicated, but cannot be tested.
	LH	
	OFF	
ILL DIM SIGNAL	ON	**NOTE:** The item is indicated, but cannot be tested.
	OFF	

FLASHER

FLASHER : CONSULT-III Function (BCM - FLASHER)

INFOID:0000000000962430

WORK SUPPORT

Service item	Setting item	Setting	
HAZARD ANSWER BACK	LOCK ONLY*	With locking only	Sets the hazard warning lamp answer back function when the door is lock/unlock with the request switch or the key fob.
	UNLK ONLY	With unlocking only	
	LOCK/UNLK	With locking/unlocking	
	OFF	Without the function	

*: Initial setting

DATA MONITOR

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

ACTIVE TEST

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

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:0000000000962431

AUTO ACTIVE TEST

Description

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

- Oil pressure warning lamp
- Front wiper (LO, HI)
- Parking lamps
- License plate lamps
- Side maker lamps
- Tail lamps
- Front fog lamps
- Headlamps (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan (cooling fan control module)

Operation Procedure

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

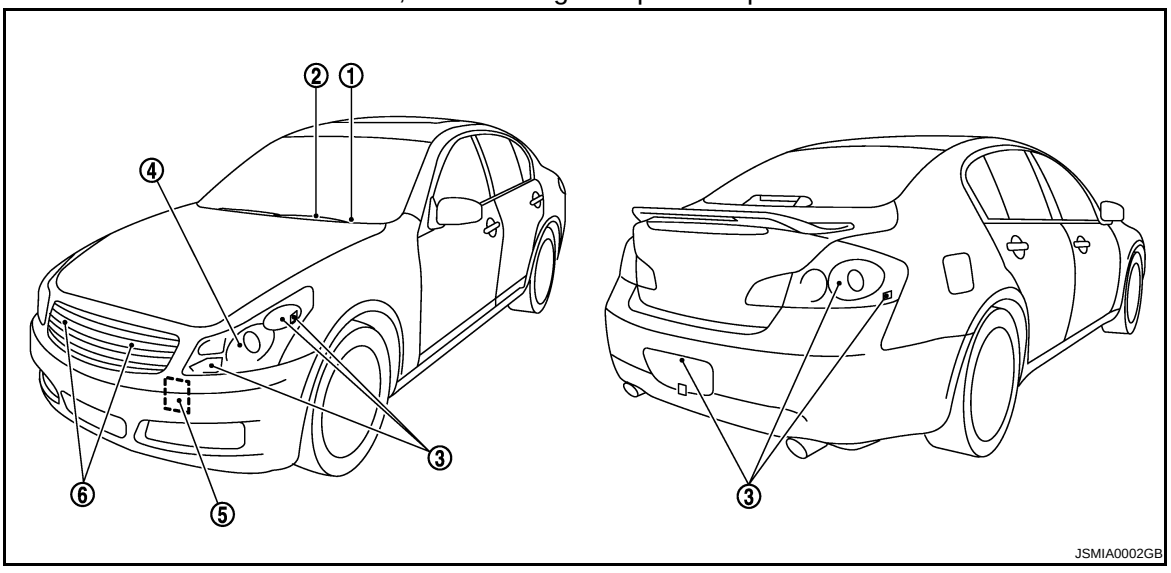
NOTE:
When auto active test mode has to be cancelled halfway through test, turn ignition switch OFF.

CAUTION:

- **If auto active test mode cannot be actuated, check door switch system. Refer to DLK-65, "Component Function Check".**
- **Do not start the engine.**

Inspection in Auto Active Test Mode

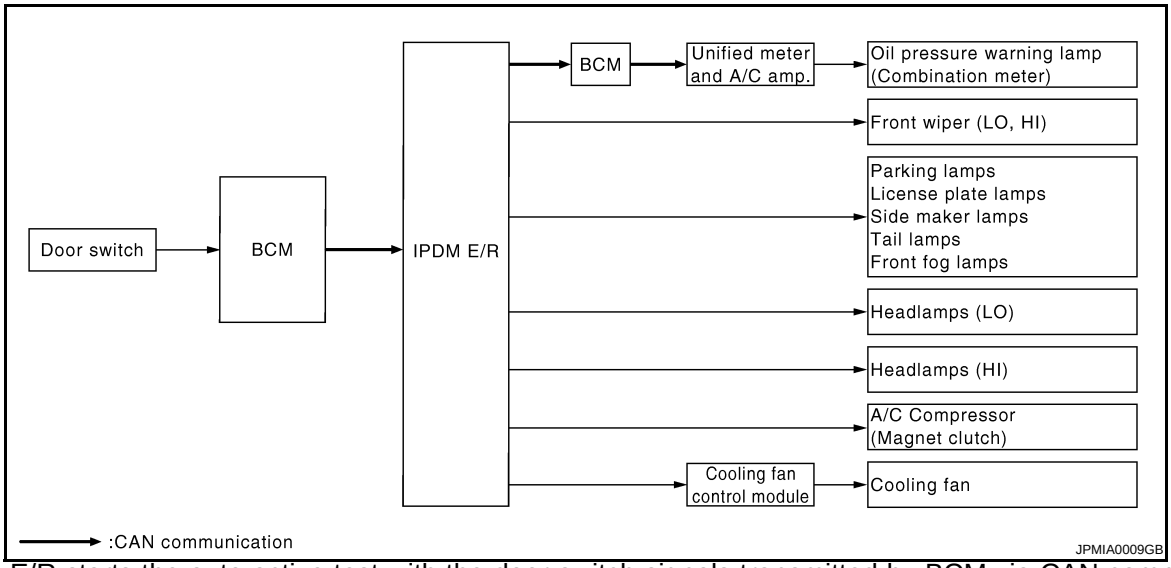
When auto active test mode is actuated, the following 6 steps are repeated 3 times.



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

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

Concept of auto active test



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

Diagnosis chart in auto active test mode

Symptom	Inspection contents		Possible cause
Any of the following components do not operate • Parking lamps • License plate lamps • Side maker lamps • Tail lamps • Front fog 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

Symptom	Inspection contents		Possible cause
A/C compressor does not operate	Perform auto active test. Does the magnet clutch operate?.	YES	• Unified meter and A/C amp. signal input circuit • CAN communication signal between unified meter and A/C amp. and ECM • CAN communication signal between ECM and IPDM E/R
		NO	• Magnet clutch • Harness or connector between IPDM E/R and magnet clutch • IPDM E/R
Oil pressure warning lamp does not operate	Perform auto active test. Does the oil pressure warning lamp blink?	YES	• Harness or connector between IPDM E/R and oil pressure switch • Oil pressure switch • IPDM E/R
		NO	• CAN communication signal between IPDM E/R and BCM • CAN communication signal between BCM and unified meter and A/C amp. • Combination meter
Cooling fan does not operate	Perform auto active test. Does the cooling fan operate?	YES	• ECM signal input circuit • CAN communication signal between ECM and IPDM E/R
		NO	• Cooling fan • Harness or connector between cooling fan and cooling fan control module • Cooling fan control module • Harness or connector between IPDM E/R and cooling fan control module • Cooling fan relay • Harness or connector between IPDM E/R and cooling fan relay • IPDM E/R

CONSULT - III Function (IPDM E/R)

INFOID:0000000000962432

APPLICATION ITEM

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

Diagnosis mode	Description
Ecu Identification	Allows confirmation of IPDM E/R part number.
Self Diagnostic Result	Displays the diagnosis results judged by IPDM E/R.
Data Monitor	Displays the real-time input/output data from IPDM E/R input/output data.
Active Test	IPDM E/R can provide a drive signal to electronic components to check their operations.
CAN Diag Support Monitor	The results of transmit/receive diagnosis of CAN communication can be read.

SELF DIAGNOSTIC

Refer to PCS-31, "DTC Index".

DATA MONITOR

Monitor item

Monitor Item [Unit]	MAIN SIGNALS	Description
RADFAN REQ [%]	×	Displays the value of the cooling fan speed signal received from ECM via CAN communication.
AC COMP REQ [Off/On]	×	Displays the status of the A/C compressor request signal received from ECM via CAN communication.
TAIL&CLR REQ [Off/On]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR FOG REQ [Off/On]	×	Displays the status of the front fog light request signal received from BCM via CAN communication.
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper auto stop signal judged by IPDM E/R.
WIP PROT [Off/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.
IGN RLY1 -REQ [Off/On]		Displays the status of the ignition switch ON signal received from BCM via CAN communication.
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.
PUSH SW [Off/On]		Displays the status of the push-button ignition switch judged by IPDM E/R.
INTER/NP SW [Off/On]		Displays the status of the clutch interlock switch (M/T models) or A/T shift position (A/T models) judged by IPDM E/R.
ST RLY REQ [Off/On]		**NOTE:** The item is indicated, but not used.
ST RLY CONT [Off/On]		Displays the status of the starter relay status signal received from BCM via CAN communication.
IHBT RLY -REQ [Off/On]		Displays the status of the starter control relay signal received from BCM via CAN communication.
ST/INHI RLY [Off/ ST /INHI]		Displays the status of the starter relay and starter control relay judged by IPDM E/R.
DETENT SW [Off/On]		Displays the status of the A/T device (detention switch) judged by IPDM E/R.
S/L RLY -REQ [Off/On]		Displays the status of the steering lock relay request received from BCM via CAN communication.
S/L STATE [LOCK/UNLK/UNKWN]		Displays the status of the steering lock judged by IPDM E/R.
DTRL REQ [Off]		**NOTE:** The item is indicated, but not monitored.
OIL P SW [Open/Close]		Displays the status of the oil pressure switch judged by IPDM E/R.
HOOD SW [Off/On]		Displays the status of the hood switch judged by IPDM E/R.
HL WASHER REQ [Off]		**NOTE:** The item is indicated, but not monitored.
THFT HRN REQ [Off/On]		Displays the status of the theft warning horn request signal received from BCM via CAN communication.

Monitor Item [Unit]	MAIN SIGNALS	Description
HORN CHIRP [Off/On]		Displays the status of the horn reminder signal received from BCM via CAN communication.
CRNRNG LMP REQ [Off]		**NOTE:** The item is indicated, but not monitored.

ACTIVE TEST

Test item

Test item	Operation	Description
CORNERING LAMP	Off	**NOTE:** The item is indicated, but cannot be tested.
	LH	
	RH	
HORN	On	Operates horn relay 1 and horn relay 2 for 20 ms.
FRONT WIPER	Off	OFF
	Lo	Operates the front wiper relay.
	Hi	Operates the front wiper relay and front wiper high relay.
MOTOR FAN	1	OFF
	2	Outputs 50% pulse duty signal (PWM signal) to the cooling fan control module.
	3	Outputs 80% pulse duty signal (PWM signal) to the cooling fan control module.
	4	Outputs 100% pulse duty signal (PWM signal) to the cooling fan control module.
HEAD LAMP WASHER	On	**NOTE:** The item is indicated, but cannot be tested.
EXTERNAL LAMPS	Off	OFF
	TAIL	Operates the tail lamp relay.
	Lo	Operates the headlamp low relay.
	Hi	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.
	Fog	Operates the front fog lamp relay.

DIAGNOSIS SYSTEM (AFS)

CONSULT-III Function (AFS)

INFOID:0000000000962433

APPLICATION ITEM

Diagnostic mode	Description
Work support	Sets each sensor.
Data monitor	Indicates AFS control unit input data in real time.
Active test	Provides the drive signal to the load. Checks operation.

WORK SUPPORT

Service item	Description
ST ANG SEN ADJUSTMENT*	—
LEVELIZER ADJUSTMENT	Adjusts the height sensor signal output value (AFS control unit recognized) in the unloaded vehicle condition.

*: Adjusts the steering angle sensor neutral position on ABS actuator and electrical unit (control unit) side. Refer to XX-XX.

DATA MONITOR

Monitor item [Unit]	Description
STR ANGLS SIG [deg]	The steering angle value judged by the steering angle sensor signal received from the steering angle sensor with CAN communication
VHCL SPD [km/h]	The vehicle speed signal value from the unified meter and A/C amp. with CAN communication
SLCT LVR POSI [P - 1]	The selector lever status judged by the position indicator signal received from TCM with CAN communication
HEAD LAMP [ON/OFF]	The headlamp ON/OFF status judged by the low beam headlamp (ON) signal received from IPDM E/R with CAN communication
AFS SW [ON/OFF]	The switch status input from AFS switch
HI SEN OTP RR [V]	The height sensor signal voltage value input from the height sensor
LEV ACTR VLTG [%]	The ratio value to the battery voltage generated by the levelizer activation signal control value judged by AFS control unit
SWVL SEN RH* [deg]	The head lamp swivel angle value judged by AFS control unit received from the swivel position sensor signal input from the swivel actuator
SWVL SEN LH* [deg]	
SWVL ANGLE RH* [deg]	The swivel angle command value to the swivel motor judged by AFS control unit
SWVL ANGLE LH * [deg]	

*: The swivel angle "0°" (feedback value) of the swivel position sensor signal may differ from the swivel angle "0°" of the swivel motor (AFS control unit command value). This causes that the swivel motor initializes the value based on the step number from the stopper.

ACTIVE TEST

Test item	Operation item	Description
LOW BEAM TEST RIGHT	ORIGIN-FAST	Swivels the right headlamp to the swivel angle 0° in the normal speed.
	PEAK-FAST	Swivels the right headlamp to the swivel angle approximately 20° in the normal speed.
	ORIGIN-SLOW	Swivels the right headlamp to the swivel angle 0° in the speed at the initialization.
	PEAK-SLOW	Swivels the right headlamp to the swivel angle approximately 20° in the speed at the initialization.
LOW BEAM TEST LEFT	ORIGIN-FAST	Swivels the left headlamp to the swivel angle 0° in the normal speed.
	PEAK-FAST	Swivels the left headlamp to the swivel angle approximately 20° in the normal speed.
	ORIGIN-SLOW	Swivels the left headlamp to the swivel angle 0° in the speed at the initialization.
	PEAK-SLOW	Swivels the left headlamp to the swivel angle approximately 20° in the speed at the initialization.
LEVELIZER TEST	ORIGIN	Changes the aiming motor drive signal to approximately 70% of the battery voltage. Moves the headlamp upward and downward.
	PEAK	Changes the aiming motor drive signal to approximately 15% of the battery voltage. Moves the headlamp upward and downward.

NOTE:

FAST operation speed is as three times fast as SLOW.

COMPONENT DIAGNOSIS

B2503, B2504 SWIVEL ACTUATOR

Description

INFOID:0000000000962434

SWIVEL ACTUATOR

The swivel actuator is installed in the headlamp unit. The swivel actuator consists of the swivel motor and the swivel position sensor.

SWIVEL MOTOR

- The swivel motor is the two-phase step motor.
- The swivel motor drives headlamp by exciting the two drive coils according to the drive signal from AFS control unit.
- The rotation direction of the swivel motor is changeable by changing the exciting pattern.

SWIVEL POSITION SENSOR

The swivel position sensor detects the headlamp swivel angle to transmit the swivel position sensor signal to AFS control unit.

DTC Logic

INFOID:0000000000962435

DTC DETECTION LOGIC

- [B2503] Swivel actuator [RH]
- [B2504] Swivel actuator [LH]

DTC detection condition	DTC erase condition	Possible cause
AFS control unit indicates an applicable DTC when detecting any of the following conditions continuously for 2 seconds or more. • AFS control unit-recognized swivel position differs extremely from the swivel position sensor-input value while the swivel operating.* • The swivel position sensor signal does not change even though AFS control unit transmits the swivel motor driving signal while the swivel operating*. • The swivel motor short and open is detected while the swivel operating*. • The swivel position sensor power supply is 6 V or more, or 4 V or less. • The swivel position sensor signal is 0.25 V or less, or 4.75 V or more.	Ignition switch OFF	Swivel position sensor • Swivel position sensor • Harness and connector • AFS control unit Swivel motor • Swivel motor • Harness and connector • AFS control unit

*: Initialization is not included.

DTC CONFIRMATION PROCEDURE

1.DTC ERASE

Erase the DTC memory of AFS with CONSULT-III.

>> GO TO 2.

2.CONFIRMATION DTC SELECTION

Select "B2503" or "B2504" for confirmation.

Which DTC is confirmation?

B2503 >> GO TO 3.
B2504 >> GO TO 4.

3.DTC CONFIRMATION (B2503)

1. Steer to the straight-forward position.
2. Start the engine.
3. Turn AFS OFF switch OFF.
4. Turn the headlamp ON.
5. Shift the selector lever to "N" (A/T models).
6. Shift the shift knob to neutral (M/T models).
7. Steer to the right. (Rotate it once or more.)

8. Perform the self-diagnosis with CONSULT-III.

Is "B2503" detected?

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

4. DTC CONFIRMATION (B2504)

1. Steer to the straight-forward position.
2. Start the engine.
3. Turn AFS OFF switch OFF.
4. Turn the headlamp ON.
5. Drive at 25 km/h or more.
6. Steer to the left. (Rotate it once or more.)
7. Stop the vehicle.
8. Perform the self-diagnosis with CONSULT-III.

Is "B2504" detected?

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

Diagnosis Procedure

INFOID:0000000000962436

1. CHECK SWIVEL POSITION SENSOR SIGNAL INPUT

1. Turn the ignition switch ON.
2. Check the voltage between the AFS control unit harness connector and the ground.

Terminals				Voltage (Approx.)
(+)			(–)	
AFS control unit			Ground	
Connector		Terminal		
RH	M16	9		0.25 - 4.75 V
LH		29		

Is the measurement value within the standard value?

YES >> GO TO 2.
Less than the standard value >>GO TO 6.
Higher than the standard value>>GO TO 9.

2. CHECK SWIVEL MOTOR

Check the swivel motor.EXL-46, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace the front combination lamp.

3. CHECK SWIVEL MOTOR OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect AFS control unit connector and the headlamp swivel actuator connector.
3. Check continuity between the AFS control unit harness connector and the headlamp swivel actuator harness connector.

AFS control unit		Headlamp swivel actuator		Continuity
Connector	Terminal	Connector	Terminal	

RH	M16	11	E29	8	Existed
		13		7	
		32		3	
		34		4	
LH	M16	15	E59	3	
		17		4	
		36		8	
		38		7	

Does continuity exist?

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

4.CHECK SWIVEL MOTOR SHORT CIRCUIT

Check continuity between the AFS control unit harness connector and the ground.

Terminals				Continuity
(+)			(–)	
AFS control unit				
Connector		Terminal		
RH	M16	11	Ground	Not existed
		13		
		32		
		34		
LH	M16	15		
		17		
		36		
		38		

Does continuity exist?

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

5.CHECK SWIVEL MOTOR CIRCUIT VOLTAGE OUTOPUT

1. Connect AFS control unit connector.
2. Turn the ignition switch ON.
3. Check the voltage between the AFS control unit harness connector and the ground.

Terminals				Voltage (Approx.)
(+)			(–)	
AFS control unit				
Connector		Terminal		
RH	M16	11	Ground	9.5 - 11.5 V
		13		
		32		
		34		
LH	M16	15		
		17		
		36		
		38		

Is the measurement value within the standard value?

YES >> Replace the front combination lamp.
NO >> Replace AFS control unit.

6. CHECK SWIVEL POSITION SENSOR SIGNAL OUTPUT

Check the voltage between the AFS control unit harness connector and the ground.

Terminals				Voltage (Approx.)
(+)			(−)	
AFS control unit			Ground	
Connector		Terminal		
RH	M16	4		5 V
LH		24		

Is the measurement value normal?

YES >> GO TO 7.
NO >> GO TO 9.

7. CHECK SWIVEL POSITION SENSOR POWER SUPPLY CIRCUIT INPUT VOLTAGE

1. Turn the ignition switch OFF.
2. Disconnect the headlamp swivel actuator connector.
3. Turn the ignition switch ON.
4. Check the voltage between the headlamp swivel actuator harness connector and the ground.

Terminals				Voltage (Approx.)
(+)			(−)	
Headlamp swivel actuator			Ground	
Connector		Terminal		
RH	E29	2		5 V
LH	E59	2		

Is the measurement value normal?

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

8. CHECK SWIVEL POSITION SENSOR SIGNAL SHORT CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect AFS control unit connector.
3. Check continuity between the AFS control unit harness connector and the headlamp swivel actuator harness connector.

AFS control unit			Headlamp swivel actuator		Continuity
Connector		Terminal	Connector	Terminal	
RH	M16	9	E29	1	Existed
LH		29	E59	1	

Does continuity exist?

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

9. CHECK SWIVEL POSITION SENSOR GROUND CIRCUIT VOLTAGE OUTPUT

Check the voltage between the AFS control unit harness connector and the ground.

Terminals				Voltage (Approx.)
(+)			(–)	
AFS control unit			Ground	
Connector		Terminal		
RH	M16	2		0 V
LH		27		

Is the measurement value normal?

YES >> GO TO 10.
NO >> Replace AFS control unit.

10. CHECK SWIVEL POSITION SENSOR SHORT GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect AFS control unit connector and the headlamp swivel actuator connector.
3. Check continuity between the AFS control unit harness connector and the headlamp swivel actuator harness connector.

AFS control unit			Headlamp swivel actuator		Continuity
Connector		Terminal	Connector	Terminal	
RH	M16	2	E29	6	Existed
LH		27	E59	6	

Does continuity exist?

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

Component Inspection

INFOID:0000000000962437

1. CHECK SWIVEL MOTOR SINGLE PART

1. Disconnect the swivel actuator connector.
2. Check the resistance among each swivel actuator connector terminal.

Swivel actuator		Resistance (Approx.)
Terminal	Terminal	
3	7	7.2 Ω
4	8	7.2 Ω
3	4	10 MΩ or more

Is the measurement value normal?

YES >> Swivel actuator is normal.
NO >> Replace the front combination lamp.

B2514 HEIGHT SENSOR UNUSUAL [RR]

Description

INFOID:0000000000962438

The height sensor is installed to the rear suspension arm. The height sensor detects the suspension arm displacement as the vehicle height change. The height sensor transmits the height sensor signal to AFS control unit.

NOTE:
The sensor angle of the unloaded vehicle position is the reference value.

DTC Logic

INFOID:0000000000962439

DTC DETECTION LOGIC

[B2514] Height sensor unusual [RR]

DTC detection condition	DTC erase condition	Possible cause
An applicable DTC is indicated when any of the following conditions is detected continuously for 2 seconds or more. • The height sensor power supply is 6 V or more, or 4 V or less. • The height sensor signal is 0.25 V or less, or 4.75 V or more.	Ignition switch OFF	Height sensor • Height sensor • Harness and connector • AFS control unit

DTC CONFIRMATION PROCEDURE

1.DTC ERASE

Erase the DTC memory of AFS with CONSULT-III.

>> GO TO 2.

2.DTC CONFIRMATION

1. Start the engine.
2. Turn the headlamp ON.
3. Select the self-diagnosis with CONSULT-III.
4. Check the self-diagnosis result. Refer to EXL-173, "DTC Index".

Is "B2514" detected?

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

Diagnosis Procedure

INFOID:0000000000962440

1.CHECK HEIGHT SENSOR POWER SUPPLY OUTPUT

1. Turn the ignition switch ON.
2. Check the voltage between the AFS control unit harness connector and the ground.

Terminals			Voltage (Approx.)
(+)		(−)	
AFS control unit		Ground	
Connector	Terminal		
M16	6		4 - 6 V

Is the measurement value within the standard value?

YES >> GO TO 2.
NO >> Replace AFS control unit.

2.CHECK HEIGHT SENSOR POWER SUPPLY INPUT

Check the voltage between the AFS control unit harness connector and the ground.

Terminals			Voltage (Approx.)
(+)		(–)	
AFS control unit		Ground	
Connector	Terminal		
M16	28		0.25 - 4.75 V

Is the measurement value within the standard value?

YES >> Replace AFS control unit.
Less than the standard value >>GO TO 3.
Higher than the standard value>>GO TO 6.

3.CHECK HEIGHT SENSOR POWER SUPPLY CIRCUIT OUTPUT VOLTAGE

1. Turn the ignition switch OFF.
2. Disconnect the height sensor connector.
3. Turn the ignition switch ON.
4. Check the voltage between the height sensor harness connector and the ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Height sensor		Ground	
Connector	Terminal		
B32	1		4 - 6 V

Is the measurement value within the standard value?

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

4.CHECK HEIGHT SENSOR SIGNAL OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect AFS control unit connector.
3. Check continuity between the AFS control unit harness connector and the height sensor harness connector.

AFS control unit		Height sensor		Continuity
Connector	Terminal	Connector	Terminal	
M16	28	B32	2	Existed

Does continuity exist?

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

5.CHECK HEIGHT SENSOR SIGNAL SHORT CIRCUIT

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

Terminals			Continuity
(+)		(–)	
Height sensor		Ground	
Connector	Terminal		
B32	2		Not existed

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> Replace the height sensor.

6.CHECK HEIGHT SENSOR GROUND

Check the voltage between the AFS control unit harness connector and the ground.

Terminals			Voltage (Approx.)
(+)		(–)	
AFS control unit		Ground	
Connector	Terminal		
M16	8		0 V

Is the measurement value within the standard value?

YES >> GO TO 7.
NO >> Replace AFS control unit.

7.CHECK HEIGHT SENSOR GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect AFS control unit connector and the height sensor connector.
3. Check continuity between the AFS control unit harness connector and the height sensor harness connector.

AFS control unit		Height sensor		Continuity
Connector	Terminal	Connector	Terminal	
M16	8	B32	3	Existed

Does continuity exist?

YES >> Replace the height sensor.
NO >> Repair the harnesses or connectors.

Component Inspection

INFOID:0000000000962441

1.CHECK HEIGHT SENSOR

1. Start the engine.
2. Turn the light switch 2ND.
3. Select "HI SEN OTP RR" of AFS data monitor item.
4. Remove the height sensor link bracket nut.
5. With moving the sensor lever, check the monitor status.

17-inch wheel models

Sensor angle	LEV ACTR VLTG (Approx.)	Reference value (Approx.)	"HI SEN OTP RR" Standard value (Approx.)
Detection limit (suspension expansion side)	70%	45°	4.5 V
Leveling operation upward edge (unloaded vehicle condition)	70%	0°	2.5 V
Leveling operation downward edge	34.6%	-25°	1.6 V
Detection limit (suspension contraction side)	34.6%	-45°	0.9 V

18-inch wheel models

Sensor angle	LEV ACTR VLTG (Approx.)	Reference value (Approx.)	"HI SEN OTP RR" Standard value (Approx.)
Detection limit (suspension expansion side)	70%	45°	4.5 V
Leveling operation upward edge (unloaded vehicle condition)	70%	0°	2.5 V

Sensor angle	LEV ACTR VLTG (Approx.)	Reference value (Approx.)	"HI SEN OTP RR" Standard value (Approx.)
Leveling operation downward edge	36.2%	-22°	1.7 V
Detection limit (suspension contraction side)	36.2%	-45°	0.9 V

Is the output value normal?

YES >> Height sensor is normal.
NO >> Replace the height sensor.

B2516 SHIFT SIGNAL [P, R]

Description

INFOID:0000000000962442

AFS control unit receives the shift position signal from TCM with CAN communication.

DTC Logic

INFOID:0000000000962443

DTC DETECTION LOGIC

[B2516] Shift signal [P, R]

DTC detection condition	DTC erase condition	Possible causes
The shift position signal is not received.	Ignition switch OFF	• A/T control unit • AFS control unit

DTC CONFIRMATION PROCEDURE

1. DTC ERASE

Erase the DTC memory of AFS with CONSULT-III.

>> GO TO 2.

2. DTC CONFIRMATION

1. Turn ignition ON.
2. Select the self-diagnosis with CONSULT-III.
3. Check the self-diagnosis result. Refer to EXL-173, "DTC Index".

Is “B2516” detected?

YES >> Refer to EXL-51, "Diagnosis Procedure".
NO >> Refer to GI-39, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000000962444

1. TCM SELF-DIAGNOSIS

Check the self-diagnosis result with CONSULT-III. Check that TCM does not detect any DTCs.

Is any DTC detected?

YES >> Check TCM. Refer to TM-180, "Reference Value".
NO >> GO TO 2.

2. DTC ERASE

Erase the DTC memory of AFS with CONSULT-III.

Is the memory erased?

YES >> Inspection end.
NO >> Replace AFS control unit.

B2517 VEHICLE SPEED SIGNAL

Description

INFOID:0000000000962445

AFS control unit receives the vehicle speed signal from the unified meter and A/C amp. with CAN communication.

DTC Logic

INFOID:0000000000962446

DTC DETECTION LOGIC

[B2517] Vehicle speed signal

DTC detection condition	DTC erase condition	Possible causes
The vehicle speed signal is not received.	Ignition switch OFF	• Unified meter and A/C amp. • AFS control unit

DTC CONFIRMATION PROCEDURE

1.DTC ERASE

Erase the DTC memory of AFS with CONSULT-III.

>> GO TO 2.

2.DTC CONFIRMATION

1. Turn ignition ON.
2. Select the self-diagnosis with CONSULT-III.
3. Check the self-diagnosis result. Refer to EXL-173, "DTC Index".

Is “B2517” detected?

YES >> Refer to EXL-52, "Diagnosis Procedure".
NO >> Refer to GI-39, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000000962447

1.UNIFIED METER AND A/C AMP. SELF-DIAGNOSIS

Check the self-diagnosis result with CONSULT-III. Check that the unified meter and A/C amp. does not detect any DTCs.

Is any DTC detected?

YES >> Check the unified meter and A/C amp. Refer to MWI-80, "Reference Value".
NO >> GO TO 2.

2.DTC ERASE

Erase the DTC memory of AFS with CONSULT-III.

Is the memory erased?

YES >> Inspection end.
NO >> Replace AFS control unit.

B2519 LEVELIZER CALIBRATION

Description

INFOID:0000000000962448

AFS control unit transmits the height sensor signal from the height sensor.

DTC Logic

INFOID:0000000000962449

[B2519] Levelizer calibration

DTC detection condition	DTC erase condition	Possible causes
The height sensor adjustment position is not recognized.	When the levelizer adjustment is completed	AFS control unit

Diagnosis Procedure

INFOID:0000000000962450

1.LEVELIZER ADJUSTMENT

Perform the levelizer adjustment.

>> Refer to EXL-8, "LEVELIZER ADJUSTMENT : Special Repair Requirement".

B2521 ECU CIRCUIT

Description

INFOID:0000000000962451

AFS control unit judges the vehicle condition from each signal. AFS control unit controls AFS function and the headlamp aiming.

DTC Logic

INFOID:0000000000962452

DTC DETECTION LOGIC

[B2521] ECU circuit

Error detection condition	DTC erase condition	Possible cause
• AFS control unit indicates an applicable DTC when detecting any of the following conditions continuously for 2 seconds or more. - The swivel position sensor is shorted to the power supply or the ground. - The swivel position sensor signal is shorted to the ground. - The height sensor power supply is shorted to the power supply or the ground. - The height sensor signal is shorted to the ground. • AFS control unit RAM/ROM error	Ignition switch OFF	Swivel position sensor • Swivel position sensor • Harness and connector • AFS control unit Height sensor • Height sensor • Harness and connector • AFS control unit AFS control unit (RAM/ROM) • AFS control unit

DTC CONFIRMATION PROCEDURE

1.DTC ERASE

Erase the DTC memory of AFS with CONSULT-III.

>> GO TO 2.

2.DTC CONFIRMATION PROCEDURE

1. Turn ignition ON.
2. Select the self-diagnosis with CONSULT-III.
3. Check the self-diagnosis result. Refer to EXL-173, "DTC Index".

Is “B2521” detected?

YES >> Refer to EXL-54, "Diagnosis Procedure".
NO >> Refer to GI-39, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000000962453

1.CHECK EACH SENSOR POWER SUPPLY

1. Turn the ignition switch ON.
2. Check the voltage between the AFS control unit harness connector and the ground.

Terminals			Voltage (Approx.)
(+)		(–)	
AFS control unit		Ground	
Connector	Terminal		
M16	4		4 - 6 V
	6		
	24		

Is the measurement value within the standard value?

YES >> GO TO 2.
Less than the standard value >>GO TO 3.
Higher than the standard value>>GO TO 4.

2.CHECK EACH SENSOR SIGNAL

Check the voltage between the AFS control unit harness connector and the ground.

Terminals			Voltage (Approx.)
(+)		(–)	
AFS control unit			
Connector	Terminal		
M16	9	Ground	0.25 - 4.75 V
	28		
	29		

Is the measurement value within the standard value?

YES >> Replace AFS control unit.
Less than the standard value >>GO TO 5.
Higher than the standard value>>GO TO 6.

3.CHECK EACH SENSOR POWER SUPPLY SHORT CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect AFS control unit connector.
3. Check continuity between the AFS control unit harness connector and the ground.

Terminals			Continuity
(+)		(–)	
AFS control unit			
Connector	Terminal		
M16	4	Ground	Not existed
	6		
	24		

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> Replace AFS control unit.

4.CHECK EACH SENOSOR POWER SUPPLY CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect AFS control unit connector.
3. Check the voltage between the AFS control unit harness connector and the ground.

Terminals			Voltage (Approx.)
(+)		(–)	
AFS control unit			
Connector	Terminal		
M16	4	Ground	0 V
	6		
	24		

Is the measurement value normal?

YES >> Replace AFS control unit.
NO >> Repair the harnesses or connectors.

5.CHECK EACH SENSOR SIGNAL SHORT CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect AFS control unit connector.
3. Check continuity between the AFS control unit harness connector and the ground.

Terminals			
(+)		(–)	Continuity
AFS control unit		Ground	
Connector	Terminal		
M16	9		Not existed
	28		
	29		

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> Replace AFS control unit.

6. CHECK EACH SENSOR SIGNAL SHORT CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect AFS control unit connector.
3. Turn the ignition switch ON.
4. Check the voltage between the AFS control unit harness connector and the ground.

Terminals			
(+)		(–)	Voltage (Approx.)
AFS control unit		Ground	
Connector	Terminal		
M16	9		0 V
	28		
	29		

Is the measurement value normal?

YES >> Replace AFS control unit.
NO >> Repair the harnesses or connectors.

C0126 STEERING ANGLE SENSOR SIGNAL

Description

INFOID:0000000000962454

AFS control unit receives the steering angle sensor signal from the steering angle sensor with CAN communication.

DTC Logic

INFOID:0000000000962455

DTC DETECTION LOGIC

[C0126] Steering angle sensor signal

DTC detection condition	DTC erase condition	Possible causes
In any of the following conditions • The steering angle sensor signal is not received. • The steering angle sensor signal error is received. • Out-of-standard signal (-900°- +900°) is received.	The ignition switch OFF	• Steering angle sensor • AFS control unit

DTC CONFIRMATION PROCEDURE

1.DTC ERASE

Erase the DTC memory of AFS with CONSULT-III.

>> GO TO 2.

2.DTC CONFIRMATION

1. Start the engine.
2. Turn the steering wheel to the maximum right/left.
3. Select the self-diagnosis with CONSULT-III.
4. Check the self-diagnosis result. Refer to EXL-173, "DTC Index".

Is “C0126” detected?

YES >> Refer to EXL-57, "Diagnosis Procedure".
NO >> Refer to GI-39, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000000962456

1.ABS ACTUATOR AND ELECTRICAL UNIT (CONTROL UNIT) SELF-DIAGNOSIS

Check the self-diagnosis result with CONSULT-III. Check that ABS actuator and electrical unit (control unit) does not detect any DTCs.

Is any DTC detected?

YES >> Check ABS actuator and electrical unit (control unit).Refer to BRC-77, "Reference Value".
NO >> GO TO 2.

2.DTC ERASE

Erase DTC memory of AFS with CONSULT-III.

Is the memory erased?

YES >> Inspection end.
NO >> Replace AFS control unit.

C0428 STEERING ANGLE SENSOR CALIBRATION

Description

INFOID:0000000000962457

AFS control unit receives the steering angle sensor signal from the steering angle sensor with CAN communication.

DTC Logic

INFOID:0000000000962458

[C0428] Steering angle sensor calibration

DTC detection condition	DTC erase condition	Possible causes
The steering angle sensor neutral position is not recognized.	When the steering angle sensor neutral position registration is completed	Steering angle sensor

Diagnosis Procedure

INFOID:0000000000962459

1.STEERING ANGLE SENSOR NEUTRAL POSITION ADJUSTMENT

Perform the steering angle sensor neutral position adjustment.

CAUTION:

Perform the steering angle sensor neutral position adjustment on VDC side. VDC may activate incorrectly.

>> Refer to BRC-8, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement".

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000000962460

CAN (Controller Area Network) is the serial transmission for real time application. CAN is the multiplex communication for the vehicle with superior data transmission speed and error detection ability. Many electronic control units are equipped on the vehicle. These control units do not operate individually, but associates with other control units by sharing information. In CAN communication, each control unit is connected with two communication lines (CAN-H and CAN-L). Much information is transmitted with fewer communication lines than before. Each control unit transmits/receives data and reads the necessary data only.
CAN Communication Signal Chart. Refer to LAN-28, "CAN Communication Signal Chart".

DTC Logic

INFOID:0000000000962461

DTC DETECTION LOGIC

[U1000] CAN communication circuit

DTC detection condition	DTC erase condition	Possible causes
When AFS control unit does not transmit/receive CAN communication signal continuously for 2 seconds or more	Ignition switch OFF	One or more following items of CAN communication system are error. • Transmission • Reception (ECM) • Reception (Unified meter and A/C amp.) • Reception (TCM) • Reception (Steering angle sensor) • Reception (IPDM E/R)

Diagnosis Procedure

INFOID:0000000000962462

1.PERFORM SELF DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check “Self Diagnostic Result”.

Is “CAN COMM CIRCUIT” displayed?

YES >> Refer to LAN-18, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-39, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000000962463

When DTC U1010 is detected, replace AFS control unit.
during the initial diagnosis of CAN controller of AFS control unit.

POWER SUPPLY AND GROUND CIRCUIT
BCM (BODY CONTROL MODULE)

BCM (BODY CONTROL MODULE) : Diagnosis Procedure

INFOID:0000000000962464

1.CHECK FUSE AND FUSIBLE LINK

Check that the following fuse and fusible link are not blown.

Terminal No.	Signal name	Fuse and fusible link No.
1	Battery power supply	K
11		10

Is the fuse fusing?

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

2.CHECK POWER SUPPLY CIRCUIT

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

Terminals			Voltage (Approx.)
(+)		(–)	
BCM		Ground	
Connector	Terminal		
M118	1		Battery voltage
M119	11		

Is the measurement value normal?

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

3.CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M119	13		Existed

Does continuity exist?

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

BCM (BODY CONTROL MODULE) : Special Repair Requirement

INFOID:0000000000962465

1.REQUIRED WORK WHEN REPLACING BCM

Initialize IVIS by CONSULT-III. For the details of initialization refer to CONSULT-III operation manual NATS-IVIS/NVIS.

>> Work end.

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

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

INFOID:0000000000962466

1.CHECK FUSES AND FUSIBLE LINK

Check that the following IPDM E/R fuses or fusible links are not blown.

Terminal No.	Signal name	Fuses and fusible link No.
1	Battery power supply	C
—		50
		51

Is the fuse fusing?

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

2.CHECK POWER SUPPLY CIRCUIT

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

Terminals			Voltage (Approx.)
(+)		(–)	
IPDM E/R			
Connector	Terminal	Ground	
E4	1		Battery voltage
	2		

Is the measurement value normal?

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

3.CHECK GROUND CIRCUIT

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E5	12		Existed
E6	41		

Does continuity exist?

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

AFS CONTROL UNIT

AFS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000000962467

1.FUSE INSPECTION

Check that the following fuses are not fusing.

Signal name	Connection position	Fuse No.	Capacity
Ignition power supply	FUSE BLOCK (J/B)	3	10 A

Is the fuse fusing?

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

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AFS control unit harness connector.
3. Check voltage between AFS control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
AFS control unit		Ground	
Connector	Terminal		
M16	1		Battery voltage

Is the measurement value normal?

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

3. CHECK GROUND CIRCUIT

Check continuity between AFS control unit harness connectors and ground.

AFS control unit		Ground	Continuity
Connector	Terminal		
M16	25		Existed

Does continuity exist?

YES >> Repair harness or connector.
NO >> Power supply and ground circuit are normal.

EXTERIOR LAMP FUSE

Description

INFOID:0000000000962468

Fuse list

Unit	Location	Fuse No.	Capacity
Headlamp HI (LH)	IPDM E/R	#54	10 A
Headlamp HI (RH)	IPDM E/R	#55	10 A
Headlamp LO (LH)	IPDM E/R	#56	15 A
Headlamp LO (RH)	IPDM E/R	#57	15 A
Front fog lamp	IPDM E/R	#58	15 A
Parking lamp (also used as the front side marker lamp)	IPDM E/R	#52	10 A
• Tail lamp • Rear side marker lamp • License plate lamp • Each illumination	IPDM E/R	#53	10 A
Stop lamp	FUSE BLOCK (J/B)	#7	10 A
Back-up lamp	FUSE BLOCK (J/B)	#4	10 A

Diagnosis Procedure

INFOID:0000000000962469

1.CHECK FUSE

Check that the following fuses are not fusing.

Unit	Location	Fuse No.	Capacity
Headlamp HI (LH)	IPDM E/R	#54	10 A
Headlamp HI (RH)	IPDM E/R	#55	10 A
Headlamp LO (LH)	IPDM E/R	#56	15 A
Headlamp LO (RH)	IPDM E/R	#57	15 A
Front fog lamp	IPDM E/R	#58	15 A
Parking lamp (also used as the front side marker lamp)	IPDM E/R	#52	10 A
• Tail lamp • Rear side marker lamp • License plate lamp • Each illumination	IPDM E/R	#53	10 A
Stop lamp	FUSE BLOCK (J/B)	#7	10 A
Back-up lamp	FUSE BLOCK (J/B)	#4	10 A

Is the fuse fusing?

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

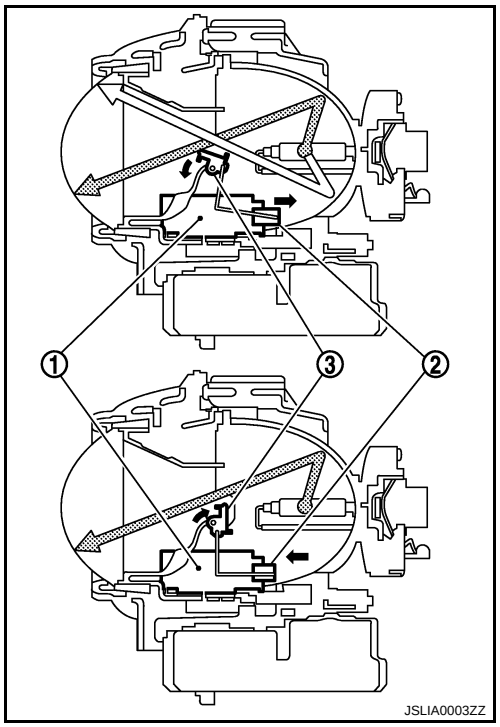
HEADLAMP (HI) CIRCUIT

Description

INFOID:0000000000962470

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

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



Component Function Check

INFOID:0000000000962471

1. CHECK HEADLAMP (HI) OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Start IPDM E/R auto active test. Refer to PCS-10, "Diagnosis Description".
2. Check that the headlamp switches to the high beam.

CONSULT-III ACTIVE TEST
1. Select "EXTERNAL LAMP" of IPDM E/R active test item.
2. With operating the test items, check that the headlamp switches to the high beam.

HI : Headlamp switches to the high beam.
OFF : Headlamp OFF

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

Does the headlamp switch to the high beam?

YES >> Headlamp (HI) circuit is normal.
NO >> Refer to EXL-65, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000000962472

1. CHECK HEADLAMP (HI) OUTPUT VOLTAGE

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

Terminals				Condition	Voltage (Approx.)
(+)			(–)		
IPDM E/R			Ground	External lamp	
Connector		Terminal			
RH	E8	89		HI	Battery voltage
LH		90		OFF	0 V

Is the measurement value normal?

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

2.CHECK HEADLAMP (HI) OPEN CIRCUIT

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

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

Does continuity exist?

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

3.CHECK HEADLAMP (HI) FUSE

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

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

Is the fuse fusing?

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

4.CHECK FRONT COMBINATION LAMP (HI) SHORT CIRCUIT

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

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

Does continuity exist?

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

HEADLAMP (LO) CIRCUIT

Description

INFOID:0000000000962473

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

Component Function Check

INFOID:0000000000962474

1.CHECK HEADLAMP (LO) OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Start IPDM E/R auto active test. Refer to XX-XX auto active test.
2. Check that the headlamp is turned ON.

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

LO : Headlamp ON
OFF : Headlamp OFF

Is the headlamp turned ON?

YES >> Headlamp (LO) is normal.
NO >> Refer to EXL-67, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000000962475

1.CHECK HEADLAMP (LO) OUTPUT VOLTAGE

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

Terminals				Test item	Voltage (Approx.)
(+)			(–)		
IPDM E/R			Ground	External lamp	
Connector		Terminal			
RH	E8	83		LO	Battery voltage
LH		84		OFF	0 V

Is the measurement value normal?

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

2.CHECK HEADLAMP (LO) OPEN CIRCUIT

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

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

RH	E8	83	E28	5	Existed
LH		84	E58	5	

Does continuity exist?

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

3. CHECK HEADLAMP (LO) FUSE

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

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

Is the fuse fusing?

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

4. CHECK HEADLAMP (LO) SHORT CIRCUIT

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

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

Does continuity exist?

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

5. CHECK HEADLAMP GROUND OPEN CIRCUIT

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

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

Does continuity exist?

YES >> Perform the xenon headlamp diagnosis. Refer to EXL-69, "Description".
NO >> Repair the harnesses or connectors.

XENON HEADLAMP

Description

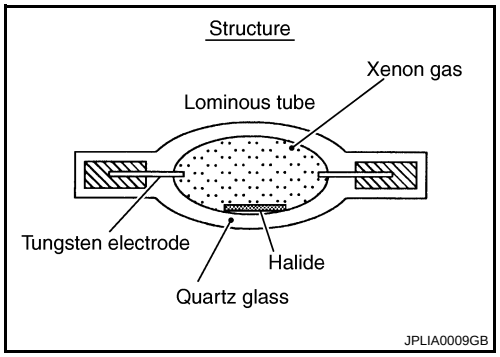
INFOID:0000000000962476

OUTLINE

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

ILLUNMINATION PRINCIPLE

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



NOTE:

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

PRECAUTIONS FOR TROUBLE DIAGNOSIS

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

WARNING:

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

CAUTION:

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

NOTE:

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

Diagnosis Procedure

INFOID:0000000000962477

1. CHECK XENON BULB

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

Is the headlamp turned ON?

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

2. CHECK HID CONTROL UNIT

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

Is the headlamp turned ON?

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

3. CHECK XENON HEADLAMP HOUSING ASSEMBLY

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

Is the headlamp turned ON?

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

HEADLAMP LEVELIZER CIRCUIT

Description

INFOID:0000000000962478

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

Component Function Check

INFOID:0000000000962479

1.CHECK AIMING MOTOR OPERATION

CONSULT-III ACTIVE TEST
1. Start the engine.
2. Turn the lighting switch 2ND.
3. Select “LEVELIZER TEST” of ADAPTIVE LIGHT active test item.
4. With operating the test item, check the operation.

Test item	Light axis angle (Reference value)	10 m (32.8 ft)-forward light axis change reference quantity (Approx.)
LEVELIZER TEST		
ORIGIN	0°	—
PEAK	2.5°	450 mm (17.9 in)

Is the operation normal?

YES >> Headlamp levelizer circuit is normal.
NO >> Refer to EXL-71, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000000962480

1.CHECK AIMING MOTOR DRIVE SIGNAL OUTPUT

CONSULT-III ACTIVE TEST
1. Start the engine.
2. Turn the light switch 2ND.
3. Select “LEVELIZER TEST” of ADAPTIVE LIGHT active test item.
4. With operating the test item, check the voltage between the AFS control unit harness connector and the ground.

Terminals				Test item	Voltage (Approx.)
(+)			(–)		
AFS control unit				LEVELIZER TEST	
Connector		Terminal			
RH	M16	19	Ground	ORIGIN	8.8 V
				PEAK	1.9 V
LH		40		ORIGIN	8.8 V
				PEAK	1.9 V

Is the measurement value normal?

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

2.CHECK AIMING MOTOR DRIVE SIGNAL CIRCUIT INPUT

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

Terminals					Continuity
(+)			(–)		
AFS control unit			Aiming motor		
Connector		Terminal	Connector	Terminal	
RH	M16	19	E26	1	Existed
LH		40	E56	1	

Does continuity exist?

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

3.CHECK AIMING MOTOR DRIVE SIGNAL SHORT CIRCUIT

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

Terminals				Continuity
(+)			(–)	
AFS control unit			Ground	
Connector		Terminal		
RH	M16	19		Not existed
LH		40		

Does continuity exist?

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

FRONT FOG LAMP CIRCUIT

Component Function Check

INFOID:0000000000962481

1.CHECK FRONT FOG LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-10, "Diagnosis Description".
2. Check that the front fog lamp is turned ON.

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

FOG : Front fog lamp ON
OFF : Front fog lamp OFF

Is the front fog lamp turned ON?

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

Diagnosis Procedure

INFOID:0000000000962482

1.CHECK FRONT FOG LAMP FUSE

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

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

Is the fuse fusing?

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

2.CHECK FRONT FOG LAMP SHORT CIRCUIT

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

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E8	86		Not existed
LH		87		

Does continuity exist?

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

3.CHECK FRONT FOG LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

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

4.CHECK FRONT FOG LAMP OUTPUT VOLTAGE

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

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

Terminals				Test item	Voltage (Approx.)
(+)			(–)		
IPDM E/R			Ground	EXTERNAL LAMP	
Connector		Terminal			
RH	E8	86		FOG	Battery voltage
LH		87		OFF	0 V

Is the measurement value normal?

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

5. CHECK FRONT FOG LAMP OPEN CIRCUIT

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

IPDM E/R			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E8	86	E28	1	Existed
LH		87	E58	1	

Does continuity exist?

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

6. CHECK FRONT FOG LAMP GROUND CIRCUIT OPEN CIRCUIT

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

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

Does continuity exist?

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

PARKING LAMP CIRCUIT

Component Function Check

INFOID:0000000000962483

1.CHECK PARKING LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-10, "Diagnosis Description".
2. Check that the parking lamp is turned ON.

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

TAIL : Parking lamp ON
OFF : Parking lamp OFF

Is the parking lamp turned ON?

YES >> Parking lamp circuit is normal.
NO >> Refer to EXL-75, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000000962484

1.CHECK PARKING LAMP FUSE

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

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

Is the fuse fusing?

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

2.CHECK PARKING LAMP SHORT CIRCUIT

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

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

Does continuity exist?

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

3.CHECK PARKING LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

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

4.CHECK PARKING LAMP OUTPUT VOLTAGE

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

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

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

Is the measurement value normal?

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

5. CHECK PARKING LAMP OPEN CIERCUIT

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

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

Does continuity exist?

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

6. CHECK PARKING LAMP GROUND OPEN CIRCUIT

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

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

Does continuity exist?

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

TURN SIGNAL LAMP CIRCUIT

Description

INFOID:0000000000962485

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

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

Component Function Check

INFOID:0000000000962486

1.CHECK TURN SIGNAL LAMP

CONSULT-III ACTIVE TEST
1. Select "FLASHER" of BCM (FLASHER) active test item.
2. With operating the test items, check that the turn signal lamp blinks.

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

Does the turn signal lamp blink?

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

Diagnosis Procedure

INFOID:0000000000962487

1.CHECK TURN SIGNAL LAMP BULB

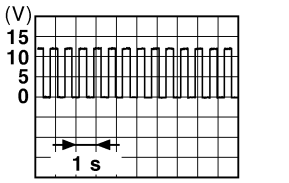
Check the applicable lamp bulb.

Is the bulb normal?

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

2.CHECK TURN SIGNAL LAMP OUTPUT VOLTAGE

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

Terminals				Test item	Voltage (Approx.)
(+)			(–)		
BCM				FLASHER	
Connector		Terminal			
Front RH	M119	17	Ground	LH or RH	 PKID0926E
Front LH		18			
Rear RH	M120	20		OFF	0 V
Rear LH		25			

Is the measurement value normal?

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

3.CHECK TURN SIGNAL LAMP OPEN CIRCUIT

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

BCM			Front combination lamp / Rear combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
Front RH	M119	17	E28	6	Existed
Front LH		18	E58		
Rear RH	M120	20	B67	3	
Rear LH		25	B60		

Does continuity exist?

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

4.CHECK TURN SIGNAL LAMP SHORT CIRCUIT

Check continuity between the BCM harness connector and the ground.

BCM				Continuity
Connector		Terminal		
Front RH	M119	17	Ground	Not existed
Front LH		18		
Rear RH	M120	20		
Rear LH		25		

Does continuity exist?

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

5. CHECK TURN SIGNAL LAMP GROUND OPEN CIRCUIT

Check the voltage between the BCM harness connector and the front combination lamp or the rear combination lamp and the ground.

Front combination lamp / Rear combination lamp			Ground	Continuity
Connector		Terminal		
Front RH	E28	4	Ground	Existed
Front LH	E58	4		
Rear RH	B67	4		
Rear LH	B60	4		

Does continuity exist?

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

OPTICAL SENSOR

Description

INFOID:0000000000962488

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

Component Function Check

INFOID:0000000000962489

1.CHECK OPTICAL SENSOR SIGNAL BY CONSULT-III

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

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

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

Is the item status normal?

YES >> Optical sensor is normal.
NO >> Refer to EXL-80, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000000962490

1.CHECK OPTICAL SENSOR POWER SUPPLY INPUT

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

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

Is the measurement value normal?

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

2.CHECK OPTICAL SENSOR GROUND INPUT

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

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

Is the measurement value normal?

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

3.CHECK OPTICAL SENSOR SIGNAL OUTPUT

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

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
Optical sensor		Ground	Optical sensor	
Connector	Terminal			
M94	2		When illuminating	3.1 V or more *
			When shutting off light	0.6 V or less

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

Is the measurement value normal?

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

4.CHECK OPTICAL SENSOR OPEN CIRCUIT

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

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

Does continuity exist?

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

5.CHECK OPTICAL SENSOR SHORT CIRCUIT

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

Optical sensor		Ground	Continuity
Connector	Terminal		
M94	1		Not existed

Does continuity exist?

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

6.CHECK OPTICAL SENSOR GROUND OPEN CIRCUIT

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

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

Does continuity exist?

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

7.CHECK OPTICAL SENSOR SIGNAL OPEN CIRCUIT

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

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

Does continuity exist?

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

8. CHECK OPTICAL SENSOR SHORT CIRCUIT

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

Optical sensor		Ground	Continuity
Connector	Terminal		
M94	2		Not existed

Does continuity exist?

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

HAZARD SWITCH

Description

INFOID:0000000000962491

Hazard switch is integrated in the multifunction switch. Hazard switch inputs the signals to BCM when pressing the switch.

Component Function Check

INFOID:0000000000962492

1.CHECK HAZARD SWITCH SIGNAL BY CONSULT-III

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

Monitor item	Condition		Monitor status
HAZARD SW	Hazard switch	While pressing the switch	ON
		While not pressing the switch	OFF

Is the item status normal?

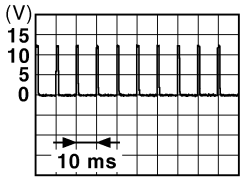
YES >> Hazard switch circuit is normal.
NO >> Refer to EXL-83, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000000962493

1.CHECK HAZARD SWITCH SIGNAL INPUT

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

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
BCM			Hazard switch	
Connector	Terminal			
M122	110	Ground	While pressing the switch	0 V
			While not pressing the switch	

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Is the measurement value normal?

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

2.CHECK HAZARD SWITCH SIGNAL OPEN CIRCUIT

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

Multifunction switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M72	16	M122	110	Existed

Does continuity exist?

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

3. CHECK HAZARD SWITCH SIGNAL SHORT CIRCUIT

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

Multifunction switch		Ground	Continuity
Connector	Terminal		
M72	16		Not existed

Does continuity exist?

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

4. CHECK HAZARD SWITCH GROUND OPEN CIRCUIT

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

Multifunction switch		Ground	Continuity
Connector	Terminal		
M72	1		Existed

Does continuity exist?

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

TAIL LAMP CIRCUIT

Component Function Check

INFOID:0000000000962494

1.CHECK TAIL LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-10, "Diagnosis Description".
2. Check that the tail lamp is turned ON.

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

TAIL : Tail lamp ON
OFF : Tail lamp OFF

Is the tail lamp turned ON?

YES >> Tail lamp circuit is normal.
NO >> Refer to EXL-85, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000000962495

1.CHECK TAIL LAMP FUSE

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

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

Is the fuse fusing?

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

2.CHECK TAIL LAMP OUTPUT VOLTAGE

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

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

Is the measurement value normal?

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

3.CHECK TAIL LAMP OPEN CIRCUIT

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

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

IPDM E/R			Rear combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E5	7	B67	1	Existed
LH			B60	1	

Does continuity exist?

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

4. CHECK TAIL LAMP GROUND OPEN CIRCUIT

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

Rear combination lamp			Ground	Continuity
Connector		Terminal		
RH	B67	4		Existed
LH	B60	4		

Does continuity exist?

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

LICENSE PLATE LAMP CIRCUIT

Component Function Check

INFOID:0000000000962496

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

1.CHECK LICENSE PLATE LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-10, "Diagnosis Description".
2. Check that the license plate lamp is turned ON.

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

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

Is the license plate lamp turned ON?

YES >> License plate lamp circuit is normal.
NO >> Refer to EXL-87, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000000962497

1.CHECK LICENSE PLATE LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

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

2.CHECK LICENSE PLATE LAMP OPEN CIRCUIT

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

IPDM E/R			License plate lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E5	7	B93	1	Existed
LH			B92	1	

Does continuity exist?

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

3.CHECK LICENSE PLATE LAMP GROUND OPEN CIRCUIT

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

License plate lamp			Ground	Continuity
Connector		Terminal		
RH	B93	2		Existed
LH	B92	2		

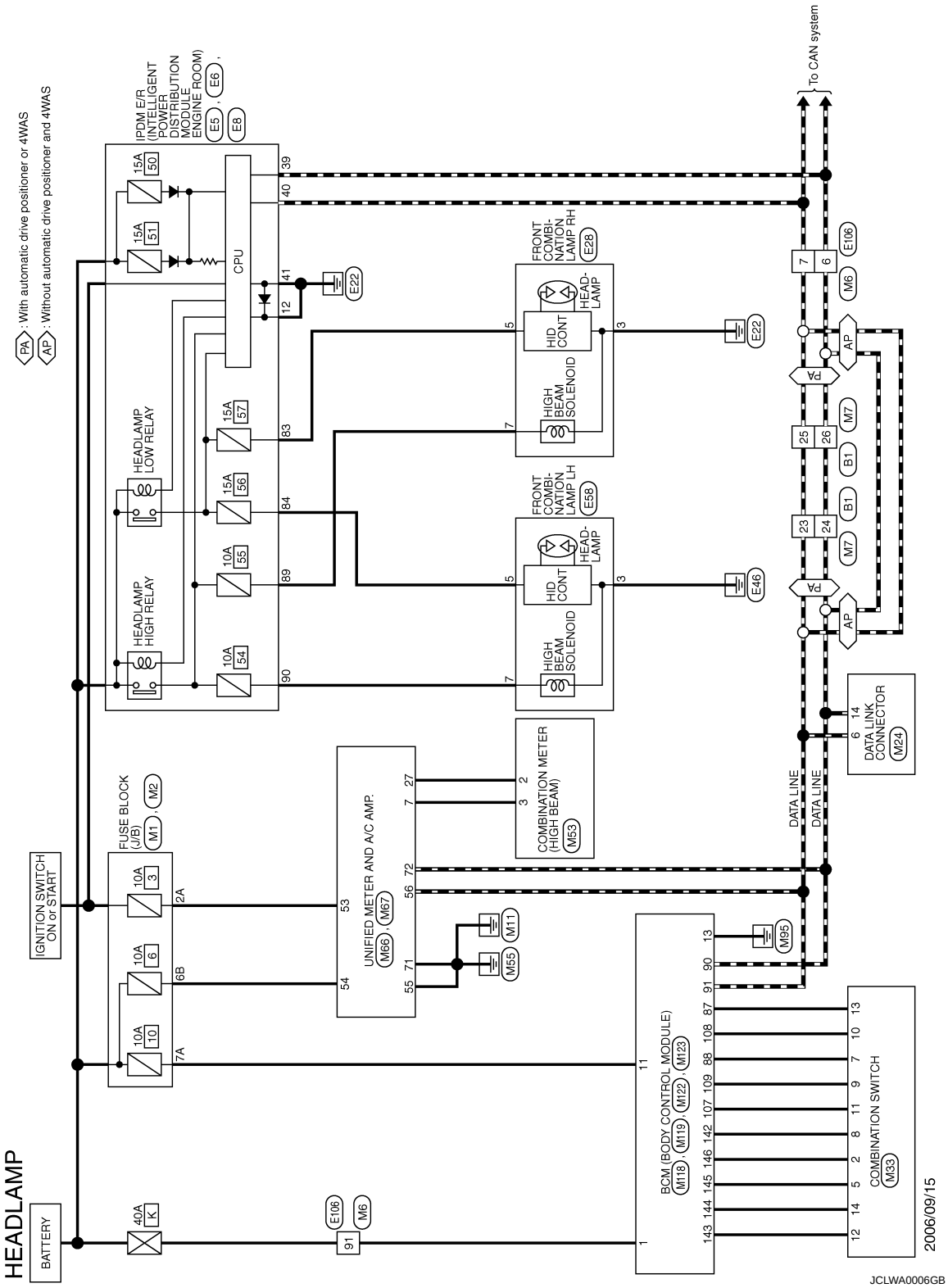
Does continuity exist?

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

HEADLAMP SYSTEM

Wiring Diagram —HEADLAMP—

INFOID:0000000000962498



HEADLAMP

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

Terminal No.	Color of Wire	Signal Name
23	L	–
24	P	–
25	L	–
26	P	–

Connector No.	E5
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-1V

Terminal No.	Color of Wire	Signal Name
12	B/W	–

Connector No.	E6
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH08FW-NH

Terminal No.	Color of Wire	Signal Name
39	P	–
40	L	–
41	B/W	–

Connector No.	E8
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS08FW-CS

Terminal No.	Color of Wire	Signal Name
83	R	–
84	P	–
89	BR	–
90	P	–

Connector No.	E28
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	RS08FB-PR

Terminal No.	Color of Wire	Signal Name
3	B	–
5	R	–
7	BR	–

Connector No.	E58
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	RS08FB-PR

Terminal No.	Color of Wire	Signal Name
3	B/W	–
5	P	–
7	P	–

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

Terminal No.	Color of Wire	Signal Name
6	P	–
7	L	–
91	W	–

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-M2

Terminal No.	Color of Wire	Signal Name
2A	G	–
7A	R	–

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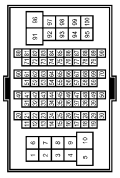
HEADLAMP

Connector No.	M2
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS

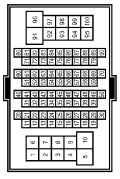
Terminal No.	Color of Wire	Signal Name
6B	Y	–

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



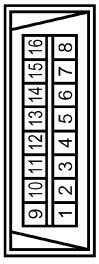
Terminal No.	Color of Wire	Signal Name
6	P	–
7	L	–
91	W	–

Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color of Wire	Signal Name
23	L	–
24	P	–
25	L	–
26	P	–

Connector No.	M24
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



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

Connector No.	M33
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH

Terminal No.	Color of Wire	Signal Name
2	SB	OUTPUT 4
5	L	OUTPUT 3
7	V	INPUT 3
8	O	OUTPUT 5
9	Y	INPUT 2
10	R	INPUT 4
11	LG	INPUT 1
12	P	OUTPUT 1
13	BR	INPUT 5
14	G	OUTPUT 2

Connector No.	M53
Connector Name	COMBINATION METER
Connector Type	SAB40FW

Terminal No.	Color of Wire	Signal Name
2	LG	COMM (METER->AMP.)
3	GR	COMM (AMP->METER)

Connector No.	M66
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH40FW-NH

Terminal No.	Color of Wire	Signal Name
7	GR	COMM (AMP->METER)
27	LG	COMM (METER->AMP.)

Connector No.	M67
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH32FW-NH

Terminal No.	Color of Wire	Signal Name
53	G	IGN
54	Y	BAT
55	B	GND
56	L	CAN-H
71	B	GND
72	P	CAN-L

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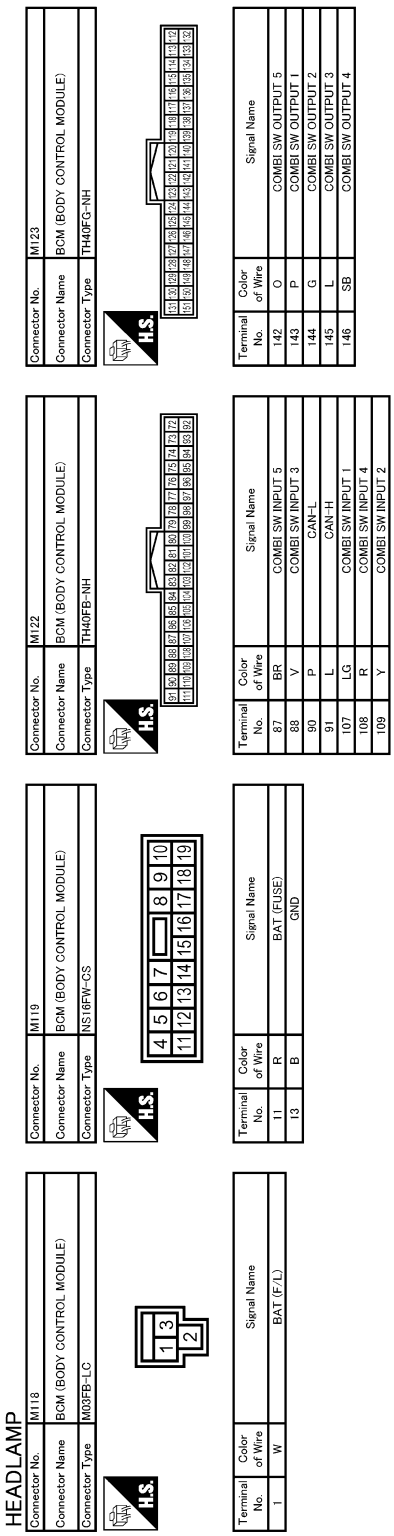

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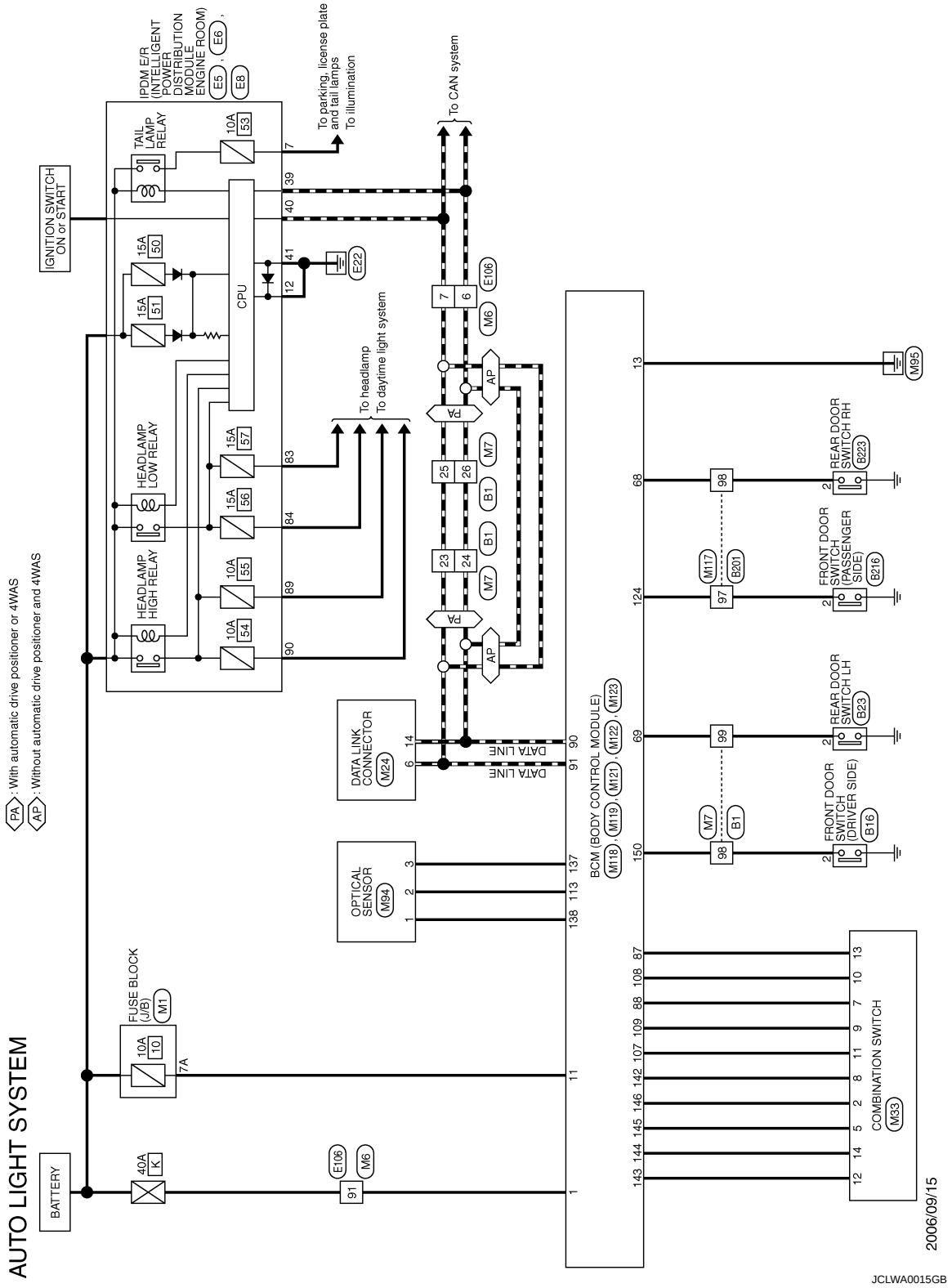
AUTO LIGHT SYSTEM

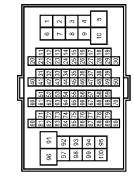
Wiring Diagram —AUTO LIGHT SYSTEM—

INFOID:0000000000962499



AUTO LIGHT SYSTEM

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

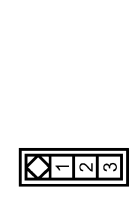


Terminal No.	Color of Wire	Signal Name
23	L	–
24	P	–
25	L	–
26	P	–
98	V	–
99	R	–

Connector No.	B16
Connector Name	FRONT DOOR SWITCH (DRIVER SIDE)
Connector Type	A03FW

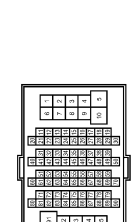
Terminal No.	Color of Wire	Signal Name
2	V	–

Connector No.	B23
Connector Name	REAR DOOR SWITCH LH
Connector Type	A03FW



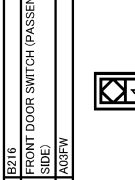
Terminal No.	Color of Wire	Signal Name
2	R	–

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



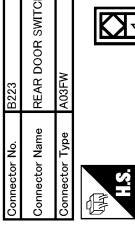
Terminal No.	Color of Wire	Signal Name
97	GR	–
98	BR	–

Connector No.	B216
Connector Name	FRONT DOOR SWITCH (PASSENGER SIDE)
Connector Type	A03FW



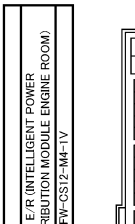
Terminal No.	Color of Wire	Signal Name
2	GR	–

Connector No.	B223
Connector Name	REAR DOOR SWITCH RH
Connector Type	A03FW



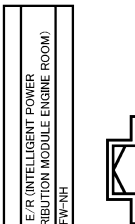
Terminal No.	Color of Wire	Signal Name
2	BR	–

Connector No.	E5
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-1V



Terminal No.	Color of Wire	Signal Name
7	R	–
12	B/W	–

Connector No.	E6
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH08FW-NH



Terminal No.	Color of Wire	Signal Name
39	P	–
40	L	–
41	B/W	–

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AUTO LIGHT SYSTEM

Connector No.	E8
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS08FW-CS

Terminal No.	Color of Wire	Signal Name
83	R	–
84	P	–
89	BR	–
90	P	–

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

Terminal No.	Color of Wire	Signal Name
6	P	–
7	L	–
91	W	–

Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

Terminal No.	Color of Wire	Signal Name
23	L	–
24	P	–
25	L	–
26	P	–
98	GR	–
99	R	–

Connector No.	M24
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW

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

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-M2

Terminal No.	Color of Wire	Signal Name
7A	R	–

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

Terminal No.	Color of Wire	Signal Name
6	P	–
7	L	–
91	W	–

Connector No.	M23
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH

Terminal No.	Color of Wire	Signal Name
2	SB	OUTPUT 4
5	L	OUTPUT 3
7	V	INPUT 3
8	O	OUTPUT 5
9	Y	INPUT 2
10	R	INPUT 4
11	LG	INPUT 1
12	P	OUTPUT 1
13	BR	INPUT 5
14	G	OUTPUT 2

Connector No.	M94
Connector Name	OPTICAL SENSOR
Connector Type	TK03FW

Terminal No.	Color of Wire	Signal Name
1	Y	POWER
2	P	OUTPUT
3	B	GND

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AUTO LIGHT SYSTEM

Connector No.	M117
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

Terminal No.	Color of Wire	Signal Name
97	LG	–
98	BR	–

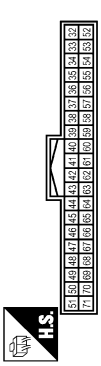
Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC

Terminal No.	Color of Wire	Signal Name
1	W	BAT (F/L)

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name
11	R	BAT (FUSE)
13	B	GND

Connector No.	M121
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FGY-NH



Terminal No.	Color of Wire	Signal Name
68	BR	DOOR SW (RR RH)
69	R	DOOR SW (RR LH)

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

Terminal No.	Color of Wire	Signal Name
87	BR	COMBI SW INPUT 5
88	V	COMBI SW INPUT 3
90	P	CAN-L
91	L	CAN-H
107	LG	COMBI SW INPUT 1
108	R	COMBI SW INPUT 4
109	Y	COMBI SW INPUT 2

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH

Terminal No.	Color of Wire	Signal Name
113	P	AUTO LIGHT SENSOR INPUT
124	LG	DOOR SW (AS)
137	O	SENSOR GND
138	V	AUTO LIGHT SENSOR POER SUPPLY
142	O	COMBI SW OUTPUT 5
143	P	COMBI SW OUTPUT 1
144	G	COMBI SW OUTPUT 2
145	L	COMBI SW OUTPUT 3
146	SB	COMBI SW OUTPUT 4
150	GR	DOOR SW (DR)

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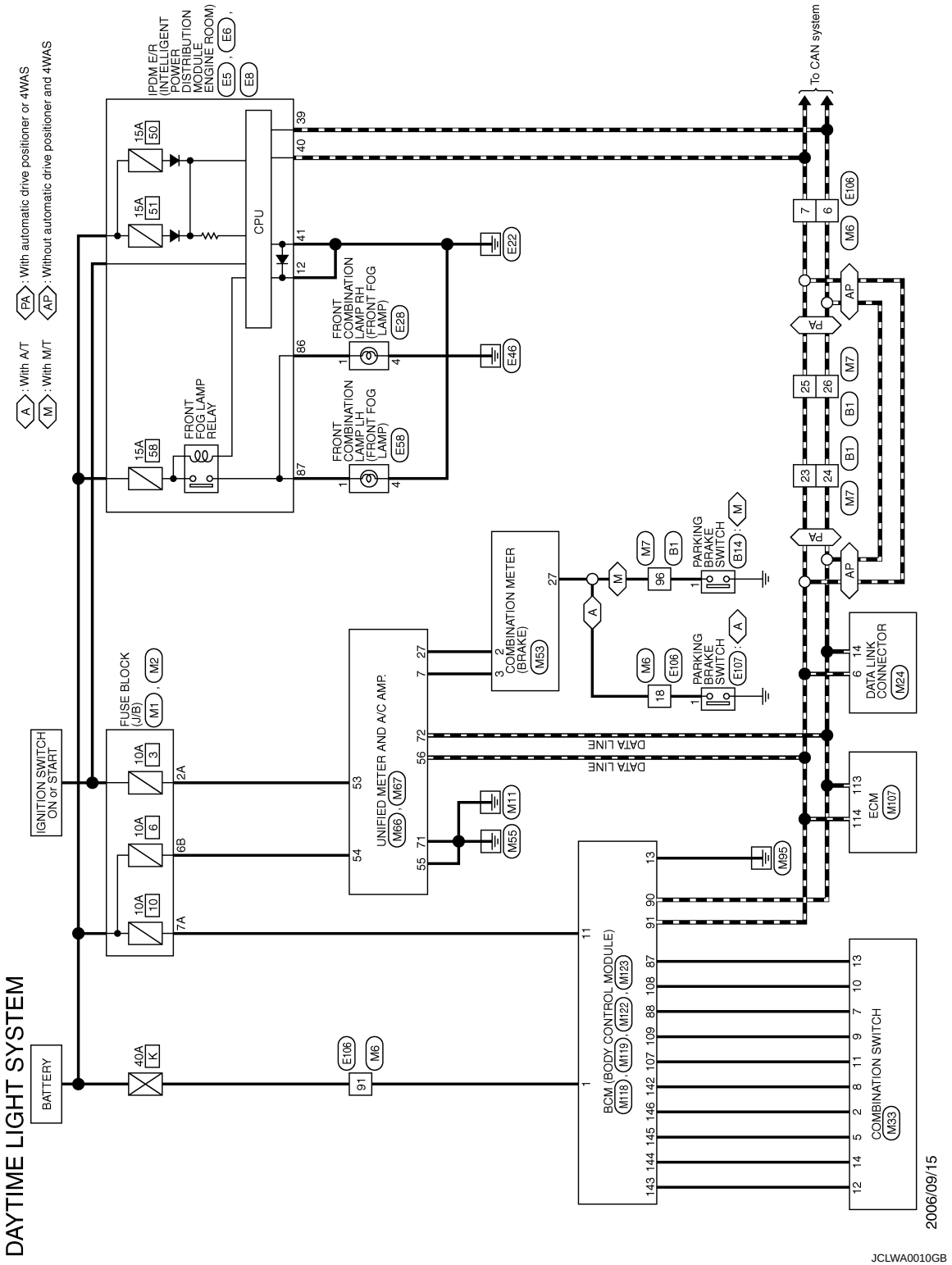
DAYTIME RUNNING LIGHT SYSTEM

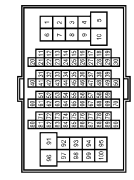
Wiring Diagram —DAYTIME LIGHT SYSTEM—

INFOID:0000000000962500



DAYTIME LIGHT SYSTEM

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

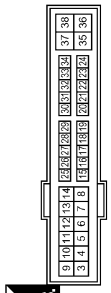


Terminal No.	Color of Wire	Signal Name
23	L	–
24	P	–
25	L	–
26	P	–
96	V	–

Connector No.	B14
Connector Name	PARKING BRAKE SWITCH
Connector Type	P01FB-A

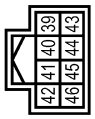
Terminal No.	Color of Wire	Signal Name
1	V	–

Connector No.	E5
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-1V



Terminal No.	Color of Wire	Signal Name
12	B/W	–

Connector No.	E6
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH08FW-NH



Terminal No.	Color of Wire	Signal Name
39	P	–
40	L	–
41	B/W	–

Connector No.	E8
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS08FW-CS

Terminal No.	Color of Wire	Signal Name
86	W	–
87	L	–

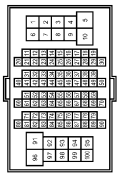
Connector No.	E28
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	RS08FB-PR

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

Connector No.	E58
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	RS08FB-PR

Terminal No.	Color of Wire	Signal Name
1	L	–
4	B/W	–

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color of Wire	Signal Name
6	P	–
7	L	–
18	O	–
91	W	–

JCLWA0011GB

DAYTIME LIGHT SYSTEM

Connector No.	E107
Connector Name	PARKING BRAKE SWITCH (A/T)
Connector Type	TB01FW

H.S.

Terminal No.	Color of Wire	Signal Name
1	O	–

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-M2

H.S.

Terminal No.	Color of Wire	Signal Name
2A	G	–
7A	R	–

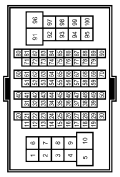
Connector No.	M2
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS

H.S.

Terminal No.	Color of Wire	Signal Name
6B	Y	–

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

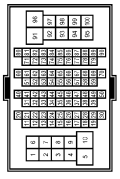
H.S.



Terminal No.	Color of Wire	Signal Name
6	P	–
7	L	–
18	V	–
91	W	–

Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

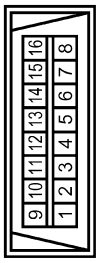
H.S.



Terminal No.	Color of Wire	Signal Name
23	L	–
24	P	–
25	L	–
26	P	–
96	V	–

Connector No.	M24
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW

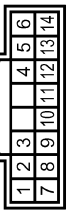
H.S.



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

Connector No.	M23
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH

H.S.



Terminal No.	Color of Wire	Signal Name
2	SB	OUTPUT 4
5	L	OUTPUT 3
7	V	INPUT 3
8	O	OUTPUT 5
9	Y	INPUT 2
10	R	INPUT 4
11	LG	INPUT 1
12	P	OUTPUT 1
13	BR	INPUT 5
14	G	OUTPUT 2

Connector No.	M53
Connector Name	COMBINATION METER
Connector Type	SAB40FW

H.S.

Terminal No.	Color of Wire	Signal Name
2	LG	COMM (METER->AMP.)
3	GR	COMM (AMP->METER)
27	V	PARKING BRAKE SW

JCLWA0012GB

DAYTIME LIGHT SYSTEM

Connector No.	M66
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH40FW-NH

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	33	34	35	36	37	38	39	40

Terminal No.	Color of Wire	Signal Name
7	GR	COMM (AMP.->METER)
27	LG	COMM (METER->AMP.)

Connector No.	M67
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH32FW-NH

H.S.

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

Terminal No.	Color of Wire	Signal Name
53	G	IGN
54	Y	BAT
55	B	GND
56	L	CAN-H
71	B	GND
72	P	CAN-L

Connector No.	M107
Connector Name	ECM
Connector Type	MAA24FGY-MEAB-LH-Z

H.S.

128	124	120	116	112	108	104	100
127	123	119	115	111	107	103	99
126	122	118	114	110	106	102	98
125	121	117	113	109	105	101	97

Terminal No.	Color of Wire	Signal Name
113	P	VHECAN L1
114	L	VHECAN H1

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC

H.S.

1	3
2	

Terminal No.	Color of Wire	Signal Name
1	W	BAT (F/L)

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FW-CS

H.S.

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

Terminal No.	Color of Wire	Signal Name
11	R	BAT (FUSE)
13	B	GND

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

H.S.

91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72
111	110	109	108	107	106	105	104	103	102	101	100	99	98	97	96	95	94	93	92

Terminal No.	Color of Wire	Signal Name
87	BR	COMBI SW INPUT 5
88	V	COMBI SW INPUT 3
90	P	CAN-L
91	L	CAN-H
107	LG	COMBI SW INPUT 1
108	R	COMBI SW INPUT 4
109	Y	COMBI SW INPUT 2

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH

H.S.

131	130	129	128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113	112
151	150	149	148	147	146	145	144	143	142	141	140	139	138	137	136	135	134	133	132

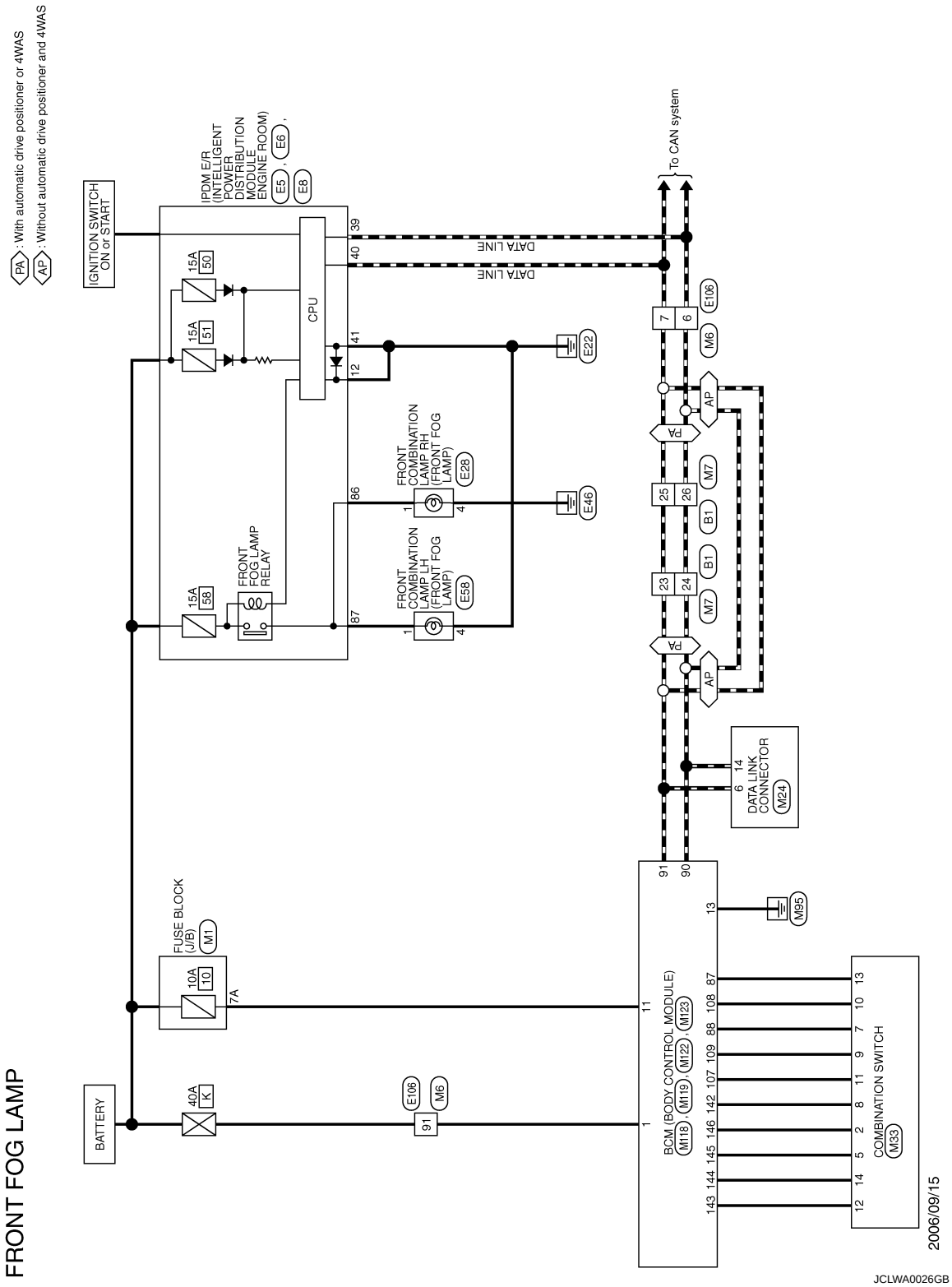
Terminal No.	Color of Wire	Signal Name
142	O	COMBI SW OUTPUT 5
143	P	COMBI SW OUTPUT 1
144	G	COMBI SW OUTPUT 2
145	L	COMBI SW OUTPUT 3
146	SB	COMBI SW OUTPUT 4

JCLWA0013GB

FRONT FOG LAMP SYSTEM

Wiring Diagram —FRONT FOG LAMP—

INFOID:0000000000962501

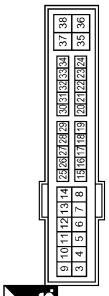


FRONT FOG LAMP

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

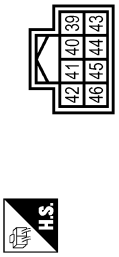
Terminal No.	Color of Wire	Signal Name
23	L	–
24	P	–
25	L	–
26	P	–

Connector No.	E5
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-1V



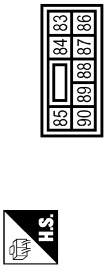
Terminal No.	Color of Wire	Signal Name
12	B/W	–

Connector No.	E6
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH08FW-NH



Terminal No.	Color of Wire	Signal Name
39	P	–
40	L	–
41	B/W	–

Connector No.	E8
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS08FW-CS



Terminal No.	Color of Wire	Signal Name
86	W	–
87	L	–

Connector No.	E28
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	RS08FB-PR

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

Connector No.	E58
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	RS08FB-PR

Terminal No.	Color of Wire	Signal Name
1	L	–
4	B/W	–

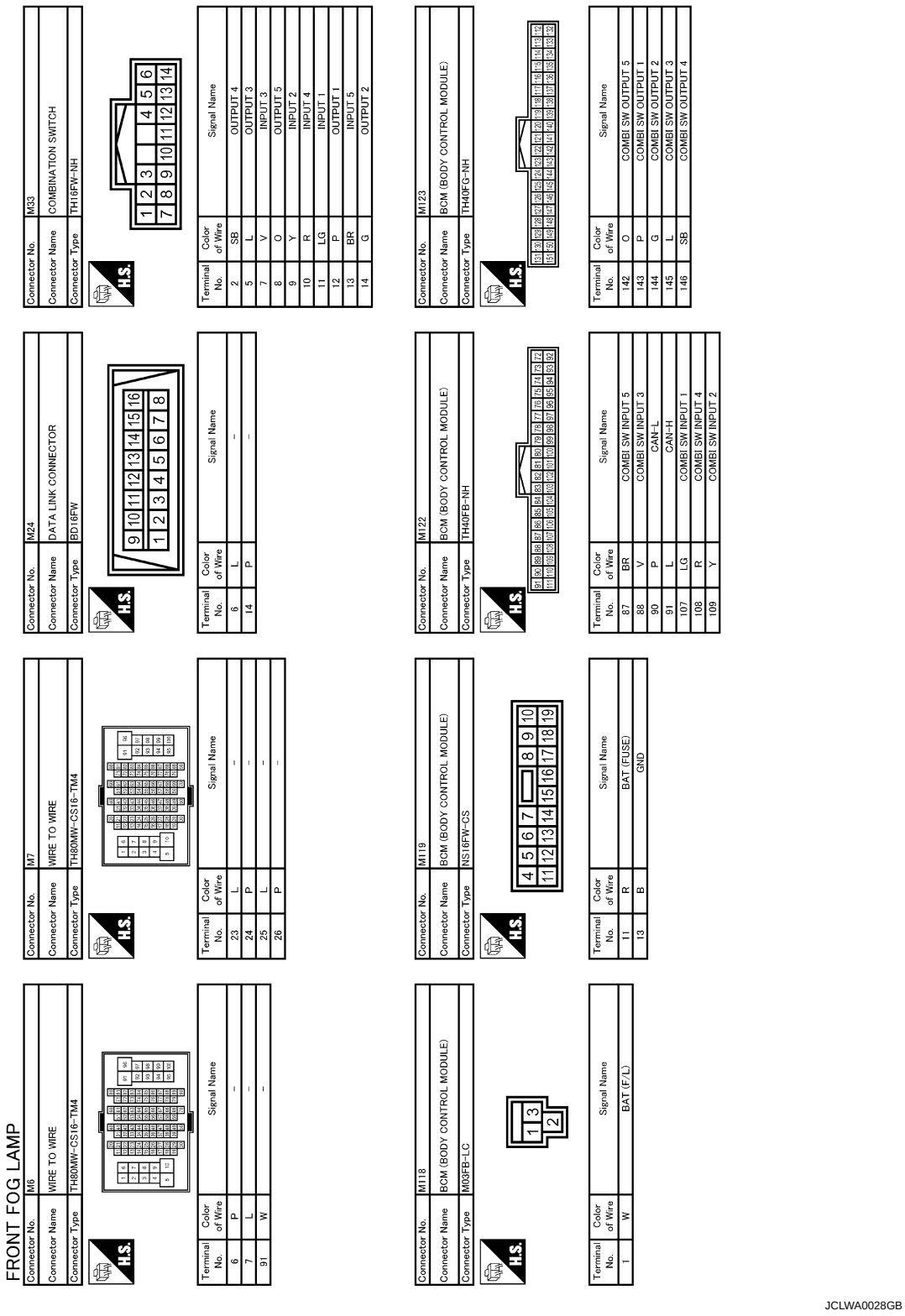
Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

Terminal No.	Color of Wire	Signal Name
6	P	–
7	L	–
91	W	–

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-M2

Terminal No.	Color of Wire	Signal Name
7A	R	–

JCLWA0027GB

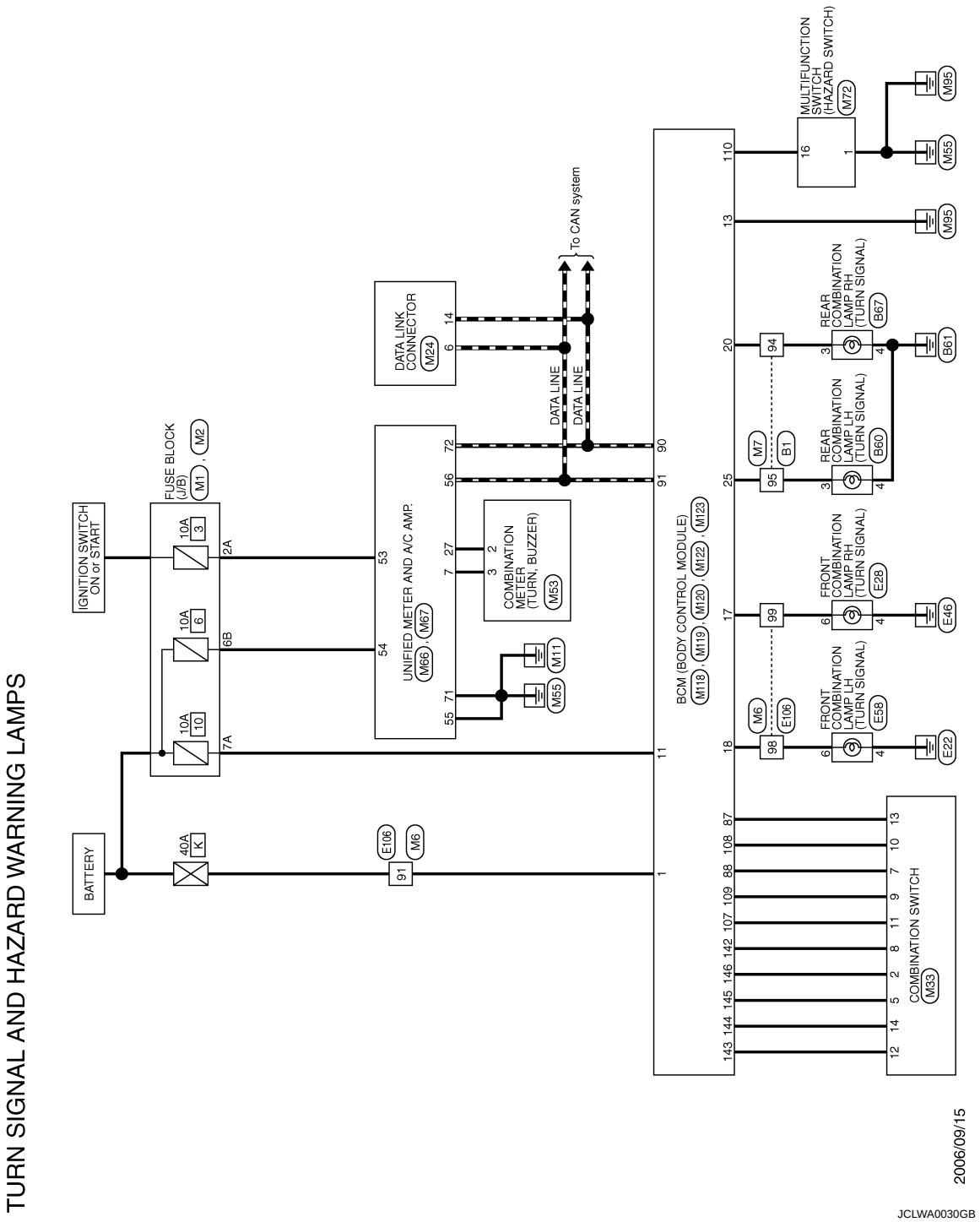


JCLWA0028GB

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

Wiring Diagram —TURN AND HAZARD WARNING LAMPS—

INFOID:0000000000962502



TURN SIGNAL AND HAZARD WARNING LAMPS

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

Terminal No.	Color of Wire	Signal Name
94	V	–
95	SB	–

Connector No.	B60
Connector Name	REAR COMBINATION LAMP LH
Connector Type	NS04FW-CS

Terminal No.	Color of Wire	Signal Name
3	SB	–
4	B	–

Connector No.	B67
Connector Name	REAR COMBINATION LAMP RH
Connector Type	NS04FW-CS

Terminal No.	Color of Wire	Signal Name
3	V	–
4	B	–

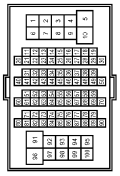
Connector No.	E28
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	RS08FB-PR

Terminal No.	Color of Wire	Signal Name
4	B/W	–
6	V	–

Connector No.	E58
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	RS08FB-PR

Terminal No.	Color of Wire	Signal Name
4	B/W	–
6	GR	–

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color of Wire	Signal Name
91	W	–
98	GR	–
99	V	–

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-M2

Terminal No.	Color of Wire	Signal Name
2A	G	–
7A	R	–

Connector No.	M2
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS

Terminal No.	Color of Wire	Signal Name
6B	Y	–

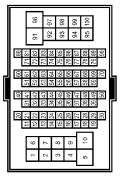
JCLWA0031GB

TURN SIGNAL AND HAZARD WARNING LAMPS

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

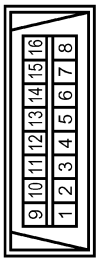
Terminal No.	Color of Wire	Signal Name
91	W	–
98	O	–
99	W	–

Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



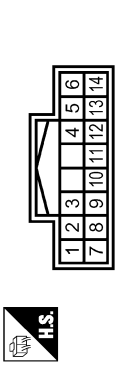
Terminal No.	Color of Wire	Signal Name
94	V	–
95	G	–

Connector No.	M24
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



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

Connector No.	M33
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH



Terminal No.	Color of Wire	Signal Name
2	SB	OUTPUT 4
5	L	OUTPUT 3
7	V	INPUT 3
8	O	OUTPUT 5
9	Y	INPUT 2
10	R	INPUT 4
11	LG	INPUT 1
12	P	OUTPUT 1
13	BR	INPUT 5
14	G	OUTPUT 2

Connector No.	M53
Connector Name	COMBINATION METER
Connector Type	SAB40FW

Terminal No.	Color of Wire	Signal Name
2	LG	COMM (METER->AMP.)
3	GR	COMM (AMP.->METER)

Connector No.	M66
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH40FW-NH

Terminal No.	Color of Wire	Signal Name
7	GR	COMM (AMP.->METER)
27	LG	COMM (METER->AMP.)

Connector No.	M67
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH32FW-NH

Terminal No.	Color of Wire	Signal Name
53	G	IGN
54	Y	BAT
55	B	GND
56	L	CAN-H
71	B	GND
72	P	CAN-L

Connector No.	M72
Connector Name	MULTIFUNCTION SWITCH
Connector Type	TH16FW-NH

Terminal No.	Color of Wire	Signal Name
1	B	GND
16	G	HAZARD ON

JCLWA0032GB

TURN SIGNAL AND HAZARD WARNING LAMPS

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC

H.S.

1 3
2

Terminal No.	Color of Wire	Signal Name
1	W	BAT (F/L)

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FW-CS

H.S.

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

Terminal No.	Color of Wire	Signal Name
11	R	BAT (FUSE)
13	B	GND
17	W	FRONT FLASHER OUTPUT(RIGHT)
18	O	FRONT FLASHER OUTPUT(LEFT)

Connector No.	M120
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS12FW-CS

H.S.

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

Terminal No.	Color of Wire	Signal Name
20	V	REAR FLASHER OUTPUT(RIGHT)
25	G	REAR FLASHER OUTPUT(LEFT)

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

H.S.

91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72
111	110	109	108	107	106	105	104	103	102	101	100	99	98	97	96	95	94	93	92

Terminal No.	Color of Wire	Signal Name
87	BR	COMBI SW INPUT 5
88	V	COMBI SW INPUT 3
90	P	CAN-L
91	L	CAN-H
107	LG	COMBI SW INPUT 1
108	R	COMBI SW INPUT 4
109	Y	COMBI SW INPUT 2
110	G	HAZARD SW

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH

H.S.

63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44
43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24

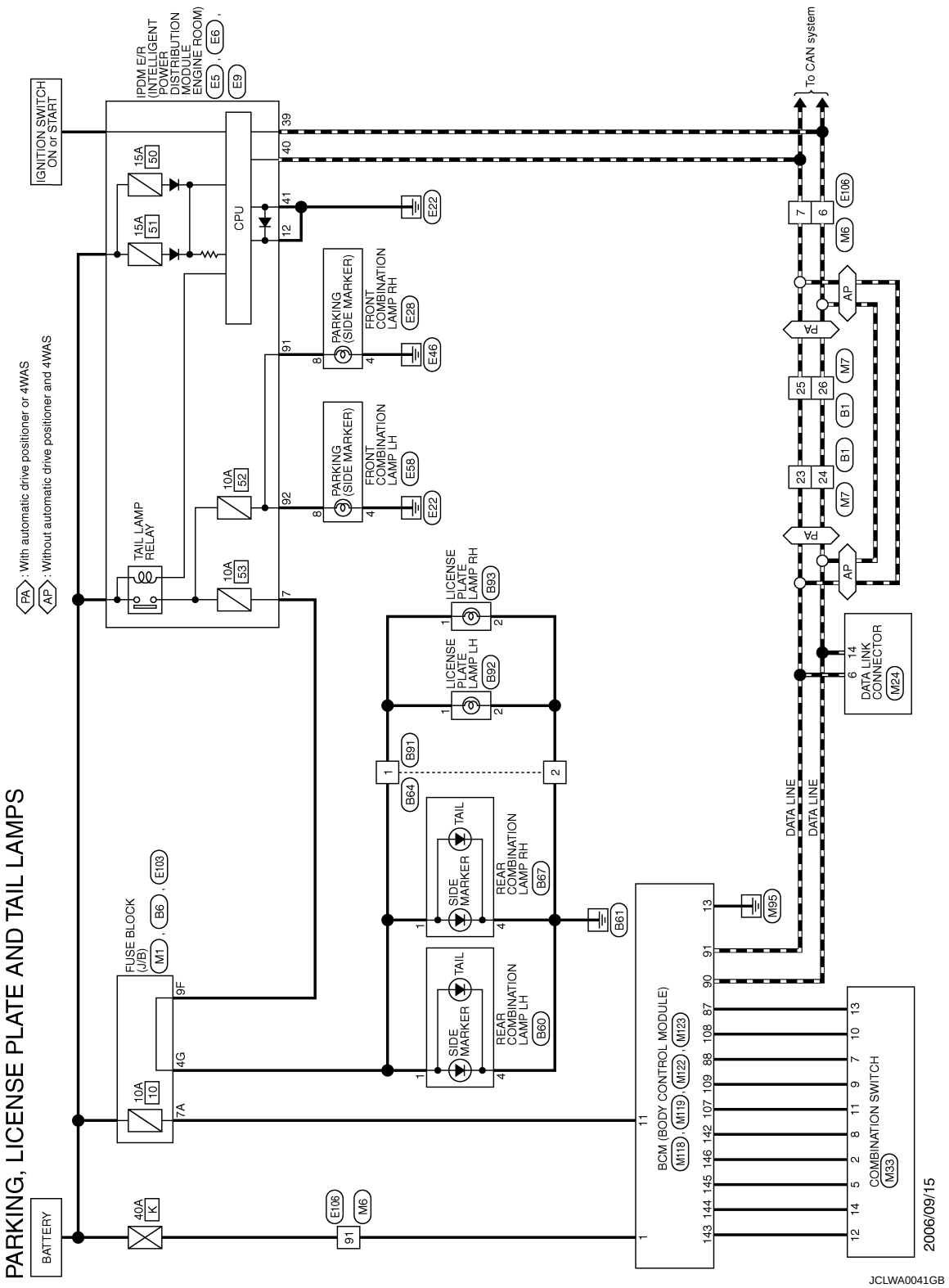
Terminal No.	Color of Wire	Signal Name
142	O	COMBI SW OUTPUT 5
143	P	COMBI SW OUTPUT 1
144	G	COMBI SW OUTPUT 2
145	L	COMBI SW OUTPUT 3
146	SB	COMBI SW OUTPUT 4

JCLWA0033GB

PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

Wiring Diagram —PARKING LICENSE PLATE AND TAIL LAMPS—

INFOID:0000000000962503



PARKING, LICENSE PLATE AND TAIL LAMPS

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

H.S.

Terminal No.	Color of Wire	Signal Name
23	L	–
24	P	–
25	L	–
26	P	–

Connector No.	B6
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS12FBR-CS

H.S.

Terminal No.	Color of Wire	Signal Name
4G	R	–

Connector No.	B60
Connector Name	REAR COMBINATION LAMP LH
Connector Type	NS04FW-CS

H.S.

Terminal No.	Color of Wire	Signal Name
1	R	–
4	B	–

Connector No.	B64
Connector Name	WIRE TO WIRE
Connector Type	RK02FGY

H.S.

Terminal No.	Color of Wire	Signal Name
1	R	–
2	B	–

Connector No.	B67
Connector Name	REAR COMBINATION LAMP RH
Connector Type	NS04FW-CS

H.S.

Terminal No.	Color of Wire	Signal Name
1	R	–
4	B	–

Connector No.	B91
Connector Name	WIRE TO WIRE
Connector Type	RK02MGY

H.S.

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

Connector No.	B92
Connector Name	LICENSE PLATE LAMP LH
Connector Type	RV02FBR

H.S.

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

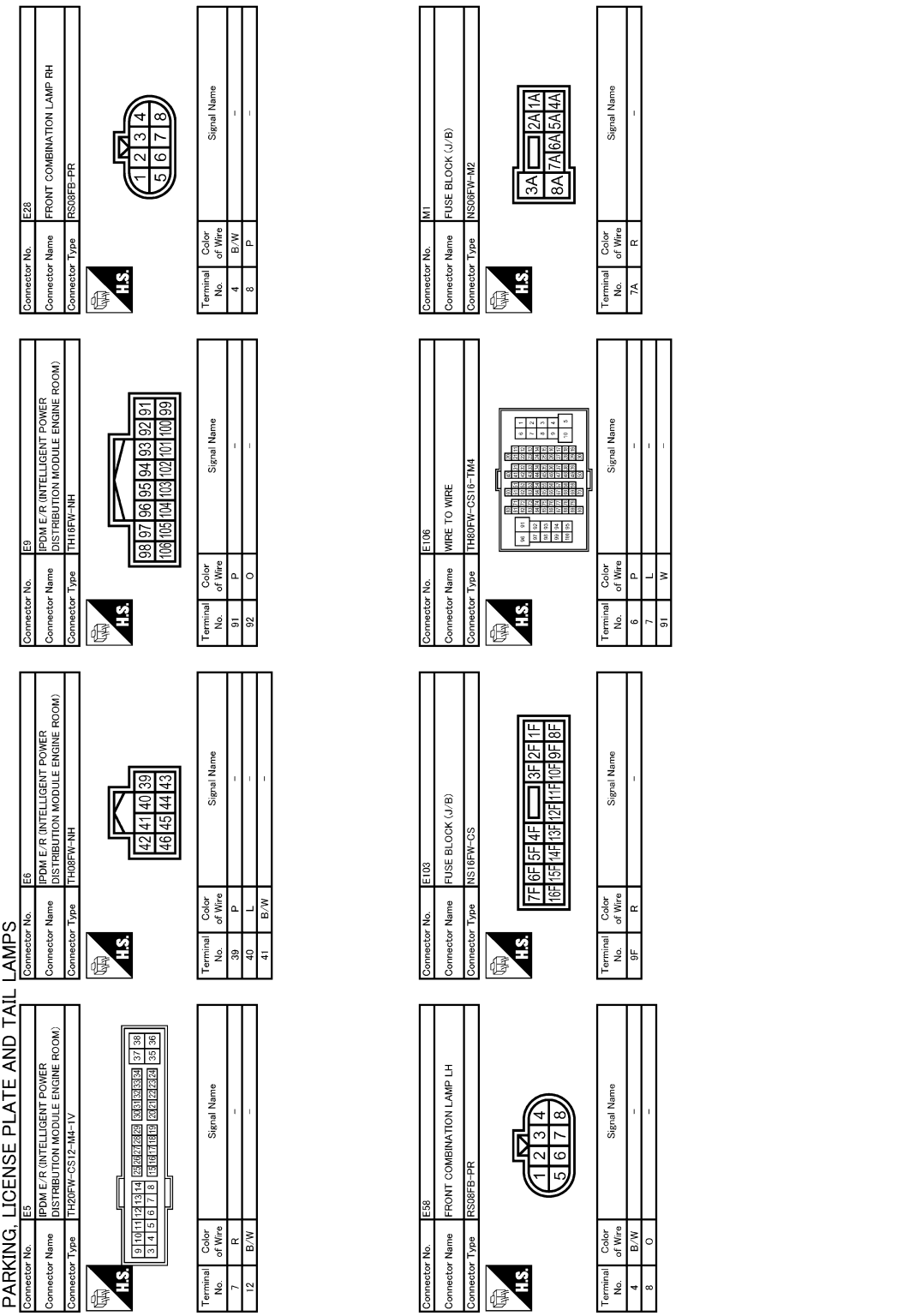
Connector No.	B93
Connector Name	LICENSE PLATE LAMP RH
Connector Type	RV02FBR

H.S.

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

JCLWA0042GB

PARKING, LICENSE PLATE AND TAIL LAMPS



JCLWA0043GB

PARKING, LICENSE PLATE AND TAIL LAMPS

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

Terminal No.	Color of Wire	Signal Name
6	P	–
7	L	–
91	W	–

Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

Terminal No.	Color of Wire	Signal Name
23	L	–
24	P	–
25	L	–
26	P	–

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC

Terminal No.	Color of Wire	Signal Name
1	W	BAT (F/L)

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name
11	R	BAT (FUSE)
13	B	GND

Connector No.	M24
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW

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

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

Terminal No.	Color of Wire	Signal Name
87	BR	COMBI SW INPUT 5
88	V	COMBI SW INPUT 3
90	P	CAN-L
91	L	CAN-H
107	LG	COMBI SW INPUT 1
108	R	COMBI SW INPUT 4
109	Y	COMBI SW INPUT 2

Connector No.	M33
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH

Terminal No.	Color of Wire	Signal Name
2	SB	OUTPUT 4
5	L	OUTPUT 3
7	V	INPUT 3
8	O	OUTPUT 5
9	Y	INPUT 2
10	R	INPUT 4
11	LG	INPUT 1
12	P	OUTPUT 1
13	BR	INPUT 5
14	G	OUTPUT 2

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH

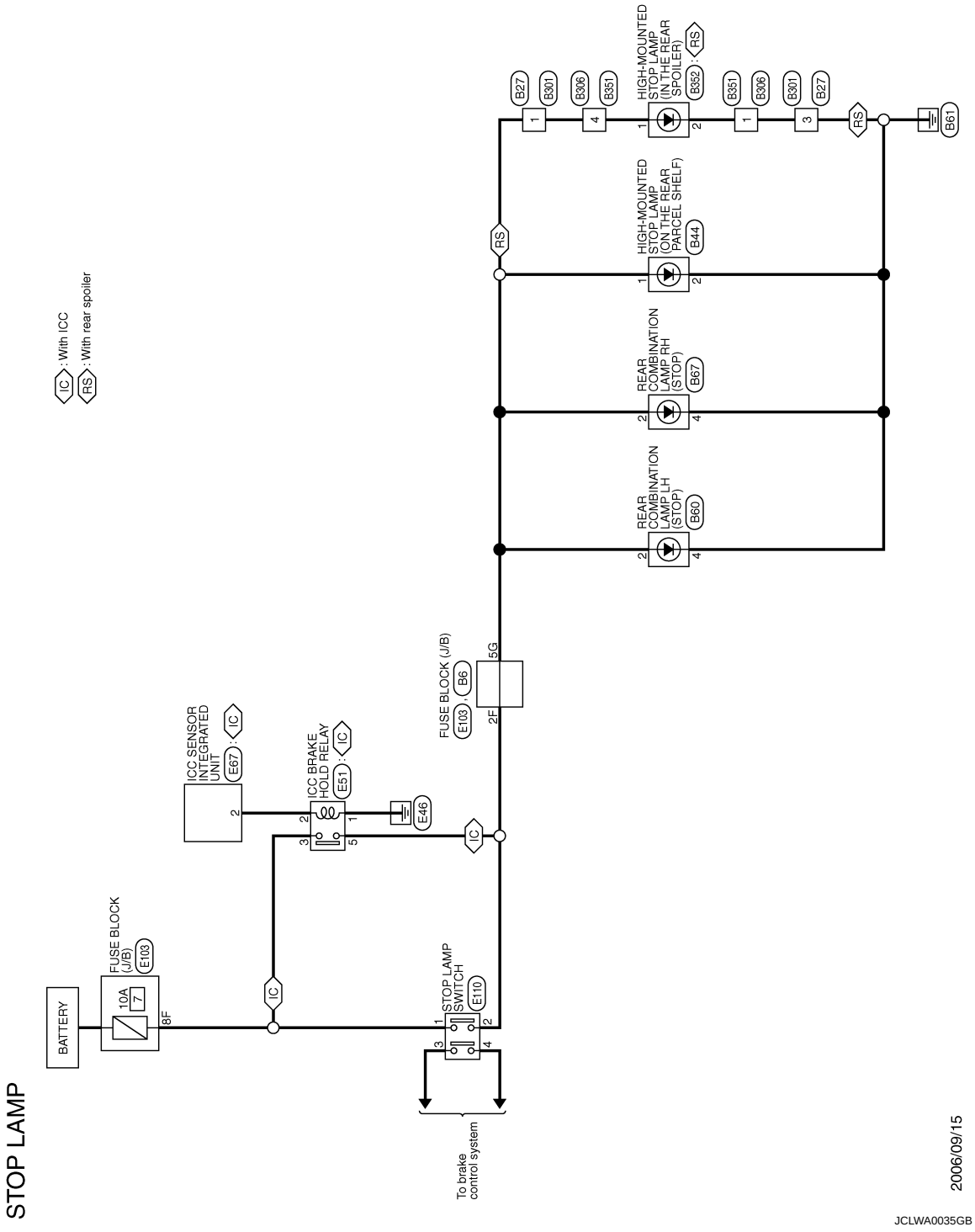
Terminal No.	Color of Wire	Signal Name
142	O	COMBI SW OUTPUT 5
143	P	COMBI SW OUTPUT 1
144	G	COMBI SW OUTPUT 2
145	L	COMBI SW OUTPUT 3
146	SB	COMBI SW OUTPUT 4

JCLWA0044GB

STOP LAMP

Wiring Diagram —STOP LAMP—

INFOID:0000000000962504



STOP LAMP

Connector No.	B6
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS12FBR-CS

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

Connector No.	B67
Connector Name	REAR COMBINATION LAMP RH
Connector Type	NS04FW-CS

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

Connector No.	B27
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS

Terminal No.	Color of Wire	Signal Name
1	LG	–
3	B	–

Connector No.	B301
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name
1	LG	–
3	B	–

Connector No.	B44
Connector Name	HIGH-MOUNTED STOP LAMP(ON THE REAR PARCEL SHELF)
Connector Type	TK02MBR-P

Terminal No.	Color of Wire	Signal Name
1	LG	–
2	B	–

Connector No.	B306
Connector Name	WIRE TO WIRE
Connector Type	TH04MW-NH

Terminal No.	Color of Wire	Signal Name
1	B	–
4	LG	–

Connector No.	B60
Connector Name	REAR COMBINATION LAMP LH
Connector Type	NS04FW-CS

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

Connector No.	B351
Connector Name	WIRE TO WIRE
Connector Type	TH04FW-NH

Terminal No.	Color of Wire	Signal Name
1	B	–
4	LG	–

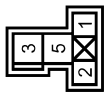
JCLWA0036GB

STOP LAMP

Connector No.	B352
Connector Name	HIGH-MOUNTED STOP LAMP (IN THE REAR SPOILER)
Connector Type	RS02FGY

Terminal No.	Color of Wire	Signal Name
1	LG	–
2	B	–

Connector No.	E51
Connector Name	ICC BRAKE HOLD RELAY
Connector Type	MS02FL-M2

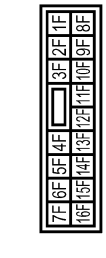


Terminal No.	Color of Wire	Signal Name
1	B	–
2	V	–
3	R	–
5	P	–

Connector No.	E67
Connector Name	ICC SENSOR INTEGRATED UNIT
Connector Type	RS06FB-PR

Terminal No.	Color of Wire	Signal Name
2	V	BRK LMP RLY

Connector No.	E103
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS



Terminal No.	Color of Wire	Signal Name
2F	W	–
8F	L	–

Connector No.	E110
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC

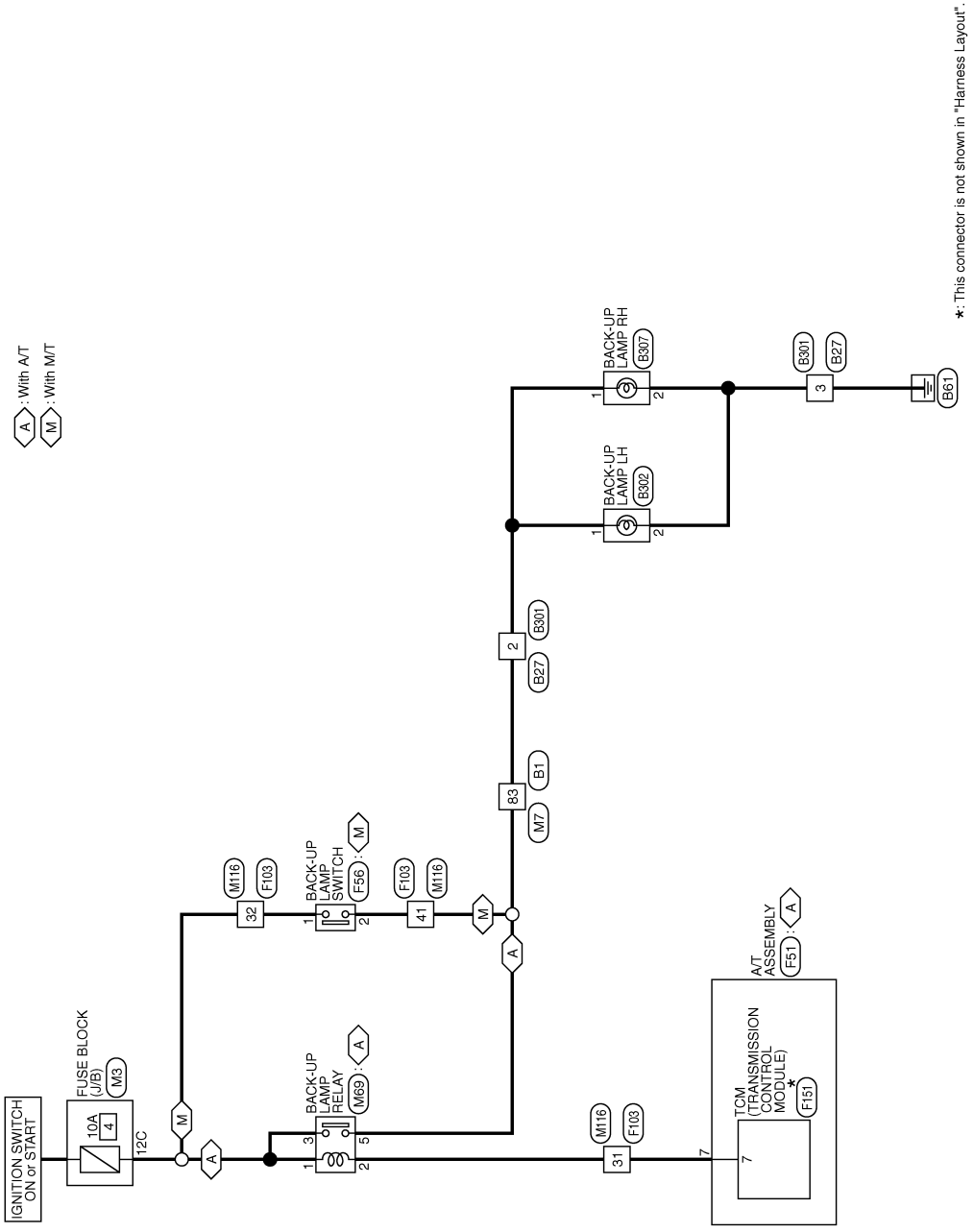
Terminal No.	Color of Wire	Signal Name
1	L	–
2	W	–
3	L	–
4	SB	–

JCLWA0037GB

BACK-UP LAMP

Wiring Diagram —BACK-UP LAMP—

INFOID:0000000000962505



BACK-UP LAMP

2006/09/15

JCLWA0038GB

BACK−UP LAMP

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW−CS16−TM4

Terminal No.	Color of Wire	Signal Name
83	O	–

Connector No.	B27
Connector Name	WIRE TO WIRE
Connector Type	NS16MW−CS

Terminal No.	Color of Wire	Signal Name
2	O	–
3	B	–

Connector No.	B301
Connector Name	WIRE TO WIRE
Connector Type	NS16FW−CS

Terminal No.	Color of Wire	Signal Name
2	O	–
3	B	–

Connector No.	B302
Connector Name	BACK−UP LAMP LH
Connector Type	NS02FW−CS

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

Connector No.	B307
Connector Name	BACK−UP LAMP RH
Connector Type	NS02FW−CS

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

Connector No.	F51
Connector Name	A/T ASSEMBLY
Connector Type	RK10FG−DGY

Terminal No.	Color of Wire	Signal Name
7	R	–

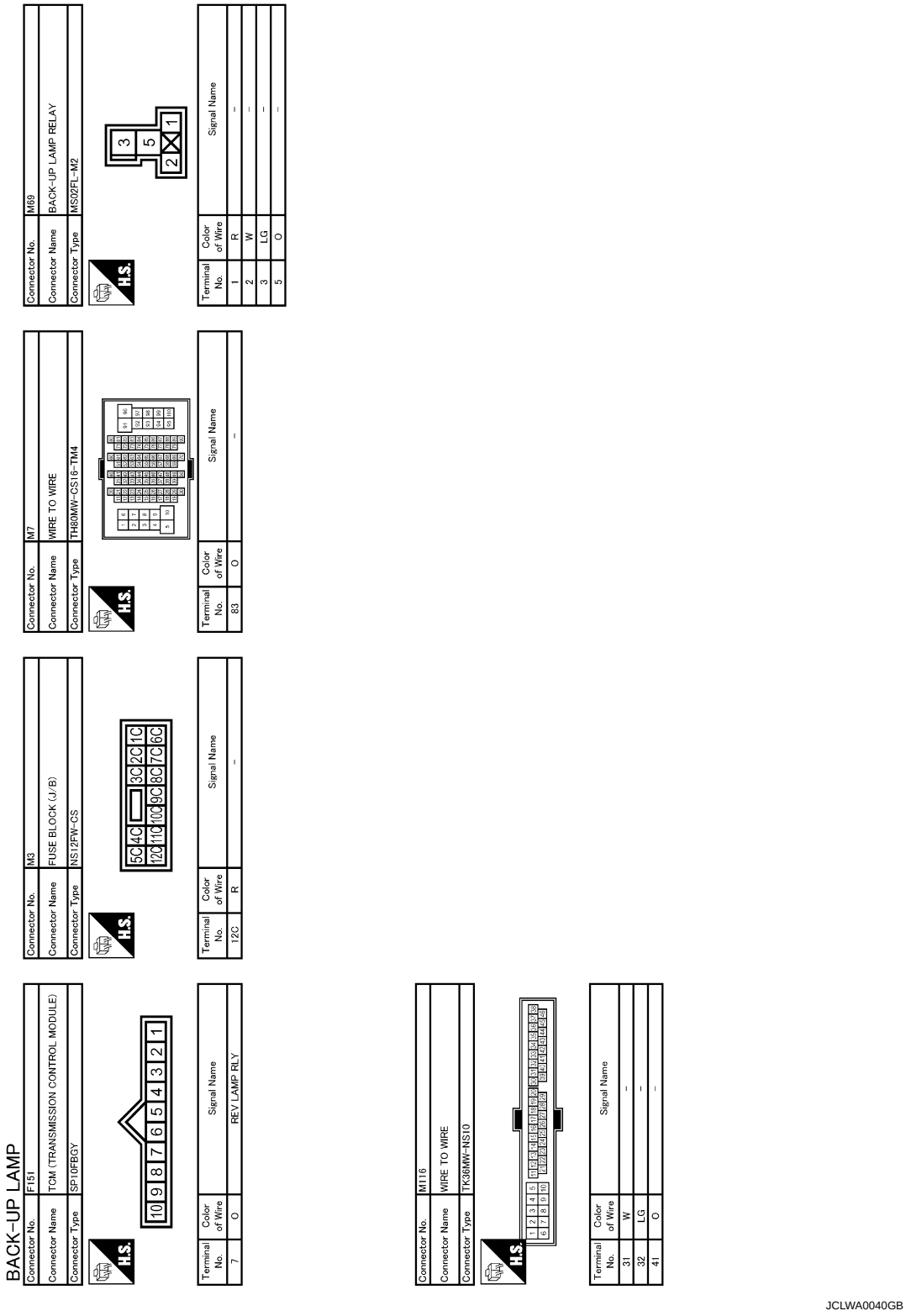
Connector No.	F56
Connector Name	BACK−UP LAMP SWITCH
Connector Type	RK02FB

Terminal No.	Color of Wire	Signal Name
1	R	–
2	O	–

Connector No.	F103
Connector Name	WIRE TO WIRE
Connector Type	TK36FW−NS10

Terminal No.	Color of Wire	Signal Name
31	R	–
32	R	–
41	O	–

JCLWA0039GB



JCLWA0040GB

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000000962506

VALUES ON THE DIAGNOSIS TOOL

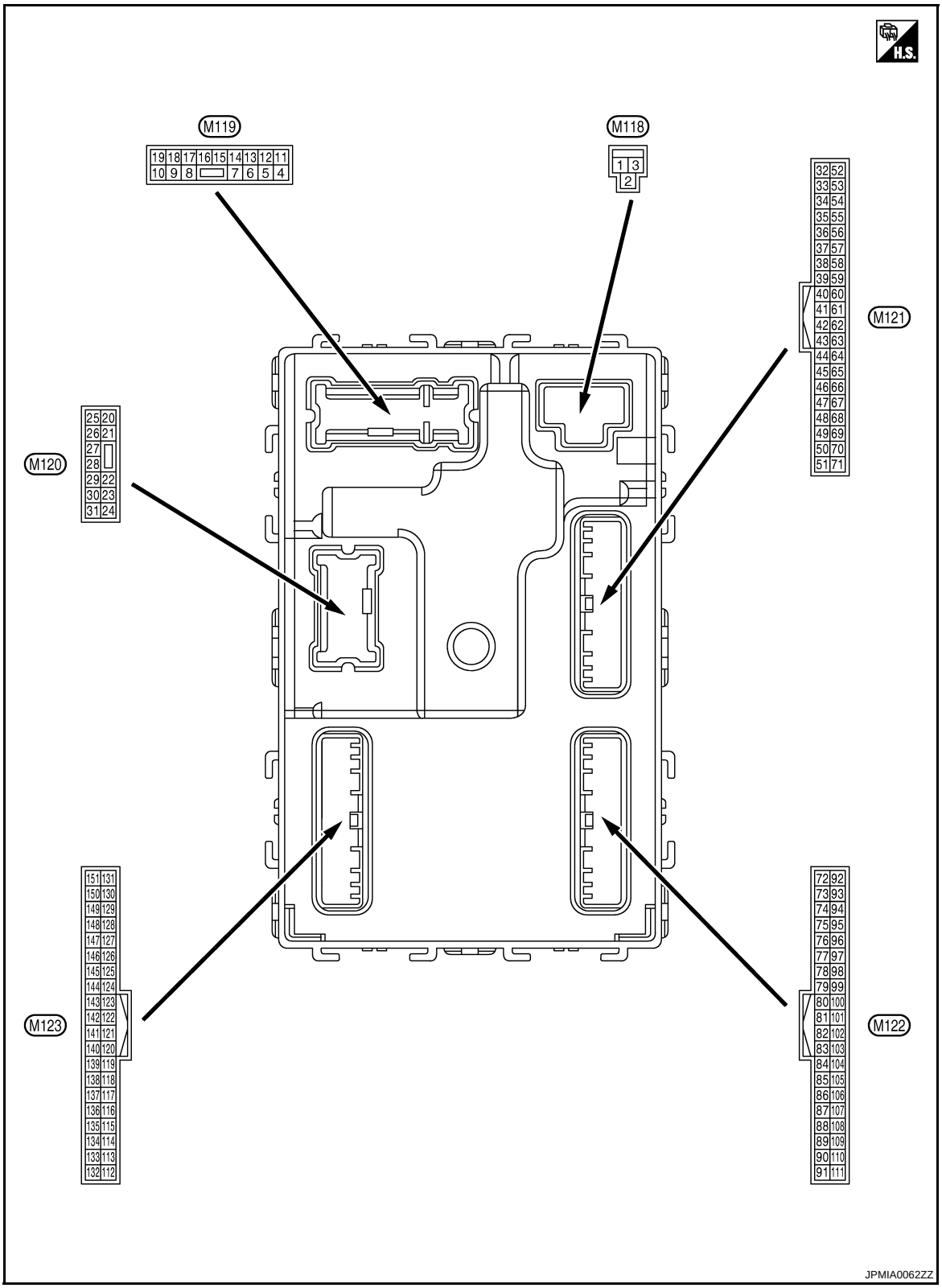
Monitor Item	Condition	Value/Status
FR WIPER HI	Other than front wiper switch HI	OFF
	Front wiper switch HI	ON
FR WIPER LOW	Other than front wiper switch LO	OFF
	Front wiper switch LO	ON
FR WASHER SW	Front washer switch OFF	OFF
	Front washer switch ON	ON
FR WIPER INT	Other than front wiper switch INT	OFF
	Front wiper switch INT	ON
FR WIPER STOP	Front wiper is not in STOP position	OFF
	Front wiper is in STOP position	ON
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	Wiper intermittent dial position
TURN SIGNAL R	Other than turn signal switch RH	OFF
	Turn signal switch RH	ON
TURN SIGNAL L	Other than turn signal switch LH	OFF
	Turn signal switch LH	ON
TAIL LAMP SW	Other than lighting switch 1ST and 2ND	OFF
	Lighting switch 1ST or 2ND	ON
HI BEAM SW	Other than lighting switch HI	OFF
	Lighting switch HI	ON
HEAD LAMP SW 1	Other than lighting switch 2ND	OFF
	Lighting switch 2ND	ON
HEAD LAMP SW 2	Other than lighting switch 2ND	OFF
	Lighting switch 2ND	ON
PASSING SW	Other than lighting switch PASS	OFF
	Lighting switch PASS	ON
AUTO LIGHT SW	Other than lighting switch AUTO	OFF
	Lighting switch AUTO	ON
FR FOG SW	Front fog lamp switch OFF	OFF
	Front fog lamp switch ON	ON
RR FOG SW	**NOTE:** The item is indicated, but not monitored.	OFF
DOOR SW-DR	Driver door closed	OFF
	Driver door opened	ON
DOOR SW-AS	Passenger door closed	OFF
	Passenger door opened	ON
DOOR SW-RR	Rear RH door closed	OFF
	Rear RH door opened	ON

Monitor Item	Condition	Value/Status
DOOR SW-RL	Rear LH door closed	OFF
	Rear LH door opened	ON
DOOR SW-BK	**NOTE:** The item is indicated, but not monitored.	OFF
CDL LOCK SW	Other than power door lock switch LOCK	OFF
	Power door lock switch LOCK	ON
CDL UNLOCK SW	Other than power door lock switch UNLOCK	OFF
	Power door lock switch UNLOCK	ON
KEY CYL LK-SW	Other than driver door key cylinder LOCK position	OFF
	Driver door key cylinder LOCK position	ON
KEY CYL UN-SW	Other than driver door key cylinder UNLOCK position	OFF
	Driver door key cylinder UNLOCK position	ON
KEY CYL SW-TR	**NOTE:** The item is indicated, but not monitored.	OFF
HAZARD SW	Hazard switch is not pressed	OFF
	Hazard switch is pressed	ON
REAR DEF SW	**NOTE:** The item is indicated, but not monitored.	OFF
H/L WASH SW	**NOTE:** The item is indicated, but not monitored.	OFF
TR CANCEL SW	Trunk lid opener cancel switch OFF	OFF
	Trunk lid opener cancel switch ON	ON
TR/BD OPEN SW	Trunk lid opener switch OFF	OFF
	While the trunk lid opener switch is turned ON	ON
TRNK/HAT MNTR	Trunk lid closed	OFF
	Trunk lid opened	ON
RKE-LOCK	LOCK button of Intelligent Key is not pressed	OFF
	LOCK button of Intelligent Key is pressed	ON
RKE-UNLOCK	UNLOCK button of Intelligent Key is not pressed	OFF
	UNLOCK button of Intelligent Key is pressed	ON
RKE-TR/BD	TRUNK OPEN button of Intelligent Key is not pressed	OFF
	TRUNK OPEN button of Intelligent Key is pressed	ON
RKE-PANIC	PANIC button of Intelligent Key is not pressed	OFF
	PANIC button of Intelligent Key is pressed	ON
RKE-P/W OPEN	UNLOCK button of Intelligent Key is not pressed	OFF
	UNLOCK button of Intelligent Key is pressed and held	ON
RKE-MODE CHG	LOCK/UNLOCK button of Intelligent Key is not pressed and held simultaneously	OFF
	LOCK/UNLOCK button of Intelligent Key is pressed and held simultaneously	ON
OPTICAL SENSOR	Outside of the vehicle bright	Close to 5 V
	Outside of the vehicle dark	Close to 0 V
REQ SW-DR	Driver door request switch is not pressed	OFF
	Driver door request switch is pressed	ON
REQ SW-AS	Passenger door request switch is not pressed	OFF
	Passenger door request switch is pressed	ON

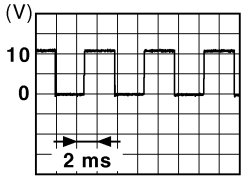
Monitor Item	Condition	Value/Status
REQ SW-BD/TR	Trunk request switch is not pressed	OFF
	Trunk request switch is pressed	ON
PUSH SW	Push-button ignition switch (push switch) is not pressed	OFF
	Push-button ignition switch (push switch) is pressed	ON
IGN RLY2 -F/B	Ignition switch in OFF or ACC position	OFF
	Ignition switch in ON position	ON
ACC RLY -F/B	Ignition switch in OFF position	OFF
	Ignition switch in ACC or ON position	ON
CLUCH SW	The clutch pedal is not depressed	OFF
	The clutch pedal is depressed	ON
BRAKE SW 1	The brake pedal is not depressed	ON
	The brake pedal is depressed	OFF
DETE/CANCL SW	Selector lever in P position	OFF
	Selector lever in any position other than P	ON
SFT PN/N SW	Selector lever in any position other than P and N	OFF
	Selector lever in P or N position	ON
S/L -LOCK	Steering is locked	OFF
	Steering is unlocked	ON
S/L -UNLOCK	Steering is unlocked	OFF
	Steering is locked	ON
S/L RELAY-F/B	Ignition switch is OFF or ACC position	OFF
	Ignition switch is ON position	ON
UNLK SEN-DR	Driver door is unlocked	OFF
	Driver door is locked	ON
PUSH SW -IPDM	Push-button ignition switch (push-switch) is not pressed	OFF
	Push-button ignition switch (push-switch) is pressed	ON
IGN RLY1 -F/B	Ignition switch is OFF or ACC position	OFF
	Ignition switch is ON position	ON
DETE SW -IPDM	Selector lever in P position	OFF
	Selector lever in any position other than P	ON
SFT PN -IPDM	Selector lever in any position other than P and N	OFF
	Selector lever in P or N position	ON
SFT P -MET	Selector lever in any position other than P	OFF
	Selector lever in P position	ON
SFT N -MET	Selector lever in any position other than N	OFF
	Selector lever in N position	ON
ENGINE STATE	Engine stopped	STOP
	While the engine stalls	STALL
	At engine cranking	CRANK
	Engine running	RUN
S/L LOCK-IPDM	Steering is locked	OFF
	Steering is unlocked	ON
S/L UNLK-IPDM	Steering is unlocked	OFF
	Steering is locked	ON

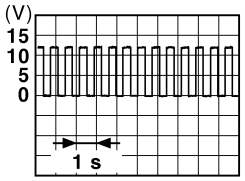
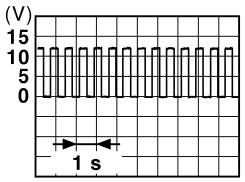
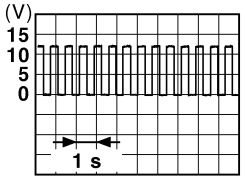
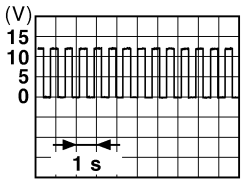
Monitor Item	Condition	Value/Status
S/L RELAY-REQ	Ignition switch in OFF or ACC position	OFF
	Ignition switch in ON position	ON
VEH SPEED 1	While driving	Equivalent to speedometer reading
VEH SPEED 2	While driving	Equivalent to speedometer reading
DOOR STAT-DR	Driver door is locked	LOCK
	Wait with selective UNLOCK operation (5 seconds)	READY
	Driver door is unlocked	UNLK
DOOR STAT-AS	Passenger door is locked	LOCK
	Wait with selective UNLOCK operation (5 seconds)	READY
	Passenger door is unlocked	UNLK
ID OK FLAG	Ignition switch in ACC or ON position	RESET
	Ignition switch in OFF position	SET
PRMT ENG STRT	The engine start is prohibited	RESET
	The engine start is permitted	SET
PRMT RKE STRT	**NOTE:** The item is indicated, but not monitored.	RESET
KEY SW -SLOT	Intelligent Key is not inserted into key slot	OFF
	Intelligent Key is inserted into key slot	ON
RKE OPE COUN1	During the operation of Intelligent Key	Operation frequency of Intelligent Key
RKE OPE COUN2	**NOTE:** The item is indicated, but not monitored.	—
AIR PRESS FL	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of front LH tire
AIR PRESS FR	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of front RH tire
AIR PRESS RR	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of rear RH tire
AIR PRESS RL	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of rear LH tire
ID REGST FL1	ID of front LH tire transmitter is registered	DONE
	ID of front LH tire transmitter is not registered	YET
ID REGST FR1	ID of front RH tire transmitter is registered	DONE
	ID of front RH tire transmitter is not registered	YET
ID REGST RR1	ID of rear RH tire transmitter is registered	DONE
	ID of rear RH tire transmitter is not registered	YET
ID REGST RL1	ID of rear LH tire transmitter is registered	DONE
	ID of rear LH tire transmitter is not registered	YET
WARNING LAMP	Tire pressure indicator OFF	OFF
	Tire pressure indicator ON	ON
BUZZER	Tire pressure warning alarm is not sounding	OFF
	Tire pressure warning alarm is sounding	ON

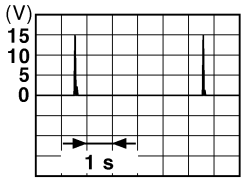
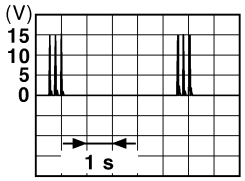
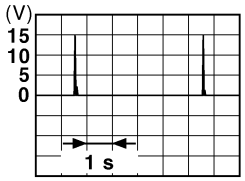
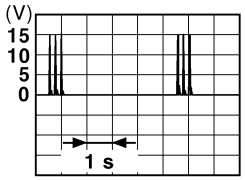
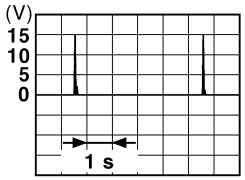
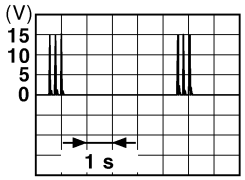
TERMINAL LAYOUT

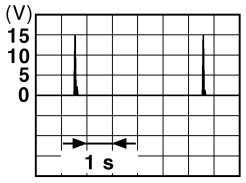
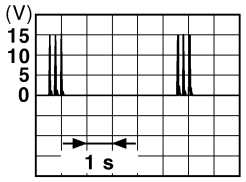
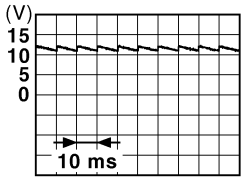
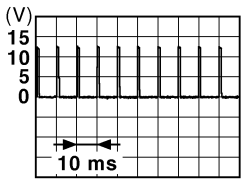


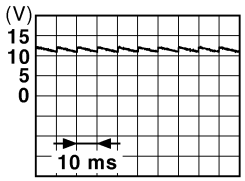
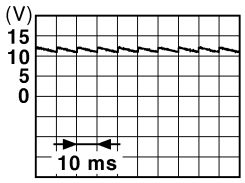
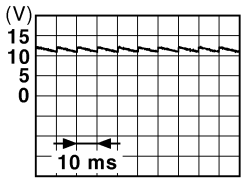
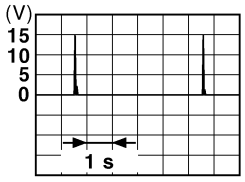
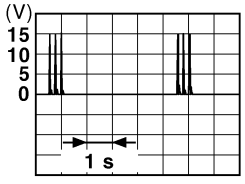
PHYSICAL VALUES

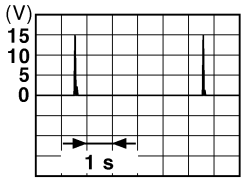
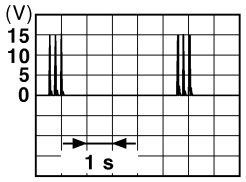
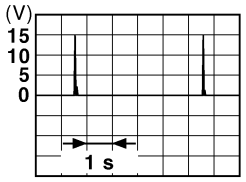
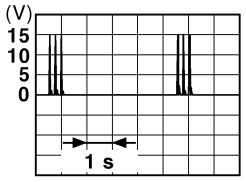
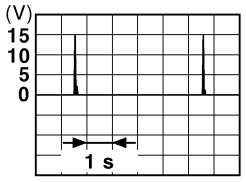
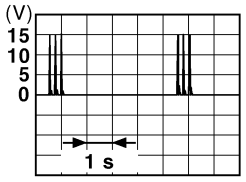
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
1 (W)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
2 (Y)	Ground	P/W power supply (BAT)	Output	Ignition switch OFF		Battery voltage
3 (O)	Ground	P/W power supply (RAP)	Output	Ignition switch ON		Battery voltage
4 (LG)	Ground	Interior room lamp power supply	Output	After passing the interior room lamp battery saver operation time		0 V
				Any other time after passing the interior room lamp battery saver operation time		Battery voltage
5 (V)	Ground	Passenger door UNLOCK	Output	Passenger door	UNLOCK (Actuator is activated)	Battery voltage
					Other than UNLOCK (Actuator is not activated)	0 V
7 (Y)	Ground	Step lamp	Output	Step lamp	ON	0 V
					OFF	Battery voltage
8 (V)	Ground	All doors, fuel lid LOCK	Output	All doors, fuel lid	LOCK (Actuator is activated)	Battery voltage
					Other than LOCK (Actuator is not activated)	0 V
9 (G)	Ground	Driver door, fuel lid UNLOCK	Output	Driver door, fuel lid	UNLOCK (Actuator is activated)	Battery voltage
					Other than UNLOCK (Actuator is not activated)	0 V
10 (BR)	Ground	Rear RH door and rear LH door UNLOCK	Output	Rear RH door and rear LH door	UNLOCK (Actuator is activated)	Battery voltage
					Other than UNLOCK (Actuator is not activated)	0 V
11 (R)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
13 (B)	Ground	Ground	—	Ignition switch ON		0 V
14 (W)	Ground	Push-button ignition switch illumination ground	Output	Tail lamp	OFF	0 V
					ON	**NOTE:** When the illumination brightening/dimming level is in the neutral position  JSNIA0010GB
15 (Y)	Ground	ACC indicator lamp	Output	Ignition switch	OFF	Battery voltage
					ACC or ON	0 V

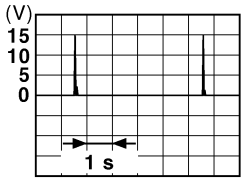
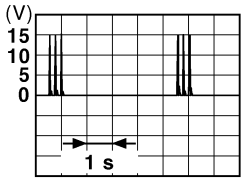
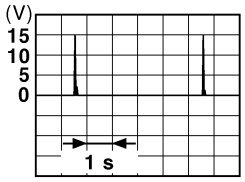
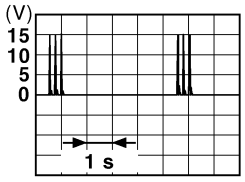
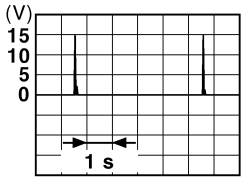
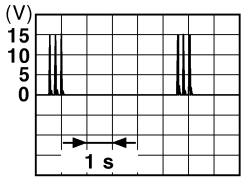
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
17 (W)	Ground	Turn signal (front RH)	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	 PKID0926E 6.5 V
18 (O)	Ground	Turn signal (front LH)	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	 PKID0926E 6.5 V
19 (V)	Ground	Room lamp timer control	Output	Interior room lamp	OFF	Battery voltage
					ON	0 V
20 (V)	Ground	Turn signal (rear RH)	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	 PKID0926E 6.5 V
23 (G)	Ground	Trunk lid opening.	Output	Trunk lid	Open (Trunk lid opener actuator is activated)	Battery voltage
					Close (Trunk lid opener actuator is not activated)	0 V
25 (G)	Ground	Turn signal (rear LH)	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	 PKID0926E 6.5 V
30 (R)	Ground	Trunk room lamp	Output	Trunk room lamp	ON	0 V
					OFF	Battery voltage

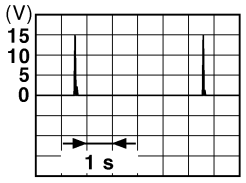
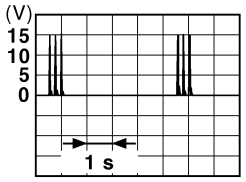
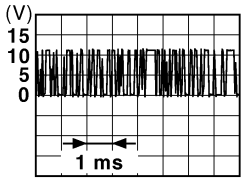
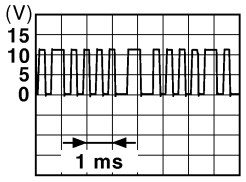
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
34 (SB)	Ground	Trunk room antenna 1 (-)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB
35 (V)	Ground	Trunk room antenna 1 (+)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB
38 (B)	Ground	Rear bumper antenna (-)	Output	When the trunk lid request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB

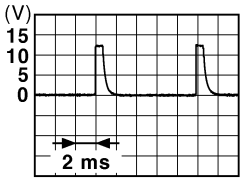
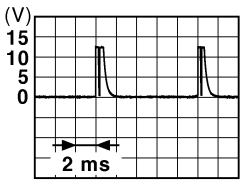
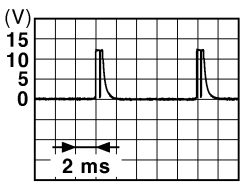
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
39 (W)	Ground	Rear bumper antenna (+)	Output	When the trunk lid request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB
47 (Y)	Ground	Ignition relay (IPDM E/R) control	Output	Ignition switch	OFF or ACC	Battery voltage
					ON	0 V
50 (R)	Ground	Trunk room lamp switch	Input	Trunk room lamp switch	OFF (Trunk is closed)	 JPMIA0011GB 11.8 V
					ON (Trunk is open)	0 V
52 (SB)	Ground	Starter relay control	Output	Ignition switch OFF (M/T models)	When the clutch pedal is depressed	Battery voltage
					When the clutch pedal is not depressed	0 V
				Ignition switch ON (A/T models)	When selector lever is in P or N position and the brake is depressed	Battery voltage
					When selector lever is in P or N position and the brake is not depressed	0 V
61 (W)	Ground	Trunk request switch	Input	Trunk request switch	ON (Pressed)	0 V
					OFF (Not pressed)	 JPMIA0016GB 1.0 V
64 (V)	Ground	Request switch buzzer	Output	Request switch buzzer	Sounding	0 V
					Not sounding	Battery voltage

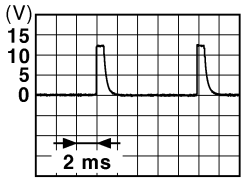
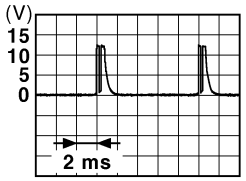
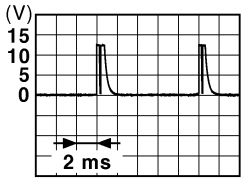
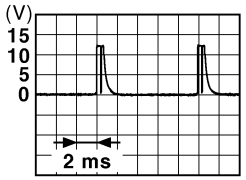
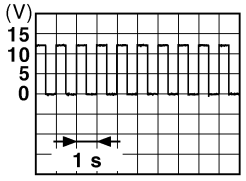
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
67 (GR)	Ground	Trunk lid opener switch	Input	Trunk lid opener switch	Pressed	0 V
					Not pressed	 JPMIA0011GB 11.8 V
68 (BR)	Ground	Rear RH door switch	Input	Rear RH door switch	OFF (When rear RH door closes)	 JPMIA0011GB 11.8 V
					ON (When rear RH door opens)	0 V
69 (R)	Ground	Rear LH door switch	Input	Rear LH door switch	OFF (When rear LH door closes)	 JPMIA0011GB 11.8 V
					ON (When rear LH door opens)	0 V
72 (R)	Ground	Room antenna 2 (-) (center console)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB

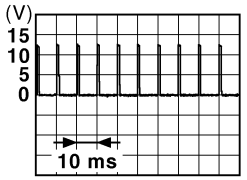
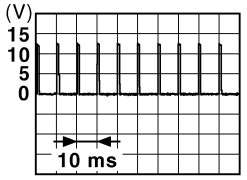
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
73 (G)	Ground	Room antenna 2 (+) (center console)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB
74 (SB)	Ground	Passenger door antenna (-)	Output	When the passenger door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB
75 (BR)	Ground	Passenger door antenna (+)	Output	When the passenger door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB

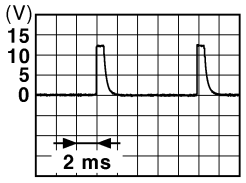
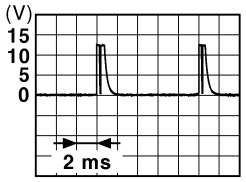
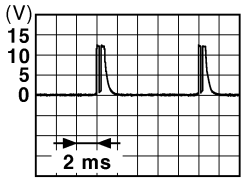
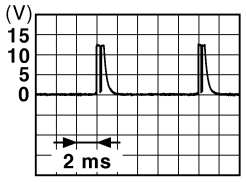
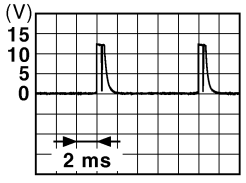
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
76 (V)	Ground	Driver door antenna (-)	Output	When the driver door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB
77 (LG)	Ground	Driver door antenna (+)	Output	When the driver door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB
78 (Y)	Ground	Room antenna (-) (instrument panel)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB

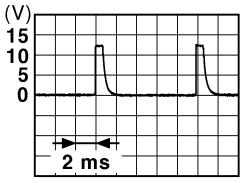
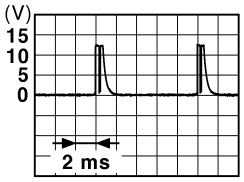
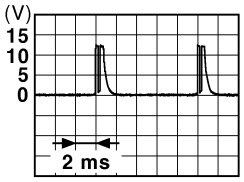
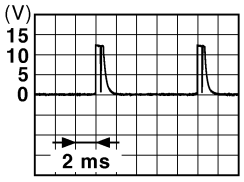
Terminal No. (Wire color) +	Terminal No. (Wire color) –	Description: Signal name	Description: Input/ Output	Condition		Value (Approx.)
79 (BR)	Ground	Room antenna (+) (instrument panel)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB
80 (GR)	Ground	NATS antenna amp (built in key slot)	Input/ Output	During waiting	Ignition switch is pressed while inserting the Intelligent Key into the key slot.	Just after pressing ignition switch. Pointer of tester should move.
81 (W)	Ground	NATS antenna amp (built in key slot)	Input/ Output	During waiting	Ignition switch is pressed while inserting the Intelligent Key into the key slot.	Just after pressing ignition switch. Pointer of tester should move.
82 (R)	Ground	Ignition relay (relay box) control	Output	Ignition switch	OFF or ACC	0 V
					ON	Battery voltage
83 (Y)	Ground	Remote keyless entry receiver signal	Input/ Output	During waiting		 JMKIA0064GB
				When operating either button on Intelligent Key		 JMKIA0065GB

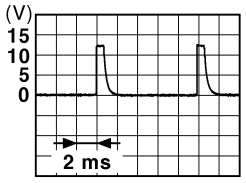
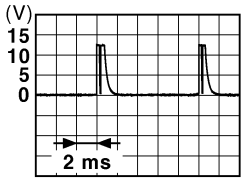
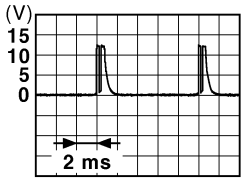
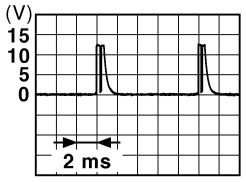
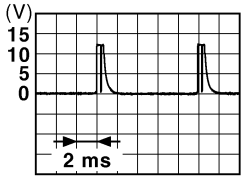
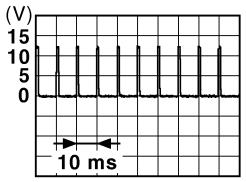
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
87 (BR)	Ground	Combination switch INPUT 5	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0041GB 1.4 V
					Front fog lamp switch ON (Wiper intermittent dial 4)	 JPMIA0037GB 1.3 V
					Any of the conditions below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 6 • Wiper intermittent dial 7	 JPMIA0040GB 1.3 V

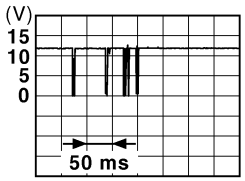
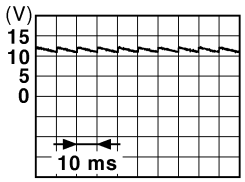
Terminal No. (Wire color) +	Terminal No. (Wire color) –	Description Signal name	Description Input/ Output	Condition		Value (Approx.)
88 (V)	Ground	Combination switch INPUT 3	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0041GB 1.4 V
					Lighting switch HI (Wiper intermittent dial 4)	 JPMIA0036GB 1.3 V
					Lighting switch 2ND (Wiper intermittent dial 4)	 JPMIA0037GB 1.3 V
					Any of the conditions below with all switches OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3	 JPMIA0040GB 1.3 V
89 (BR)	Ground	Push-button ignition switch (push switch)	Input	Push-button ignition switch (push switch)	Pressed	0 V
					Not pressed	Battery voltage
90 (P)	Ground	CAN - L	Input/ Output	—		—
91 (L)	Ground	CAN - H	Input/ Output	—		—
92 (LG)	Ground	Key slot illumination	Output	Key slot illumination	OFF	0 V
					Blinking	 JPMIA0015GB 6.5 V
					ON	Battery voltage

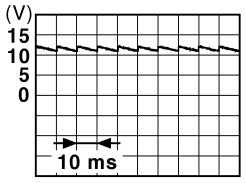
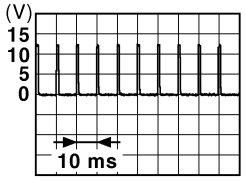
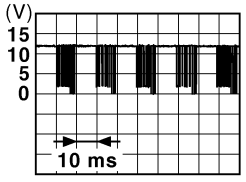
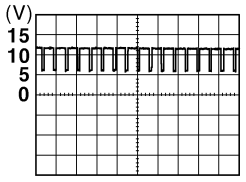
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
93 (V)	Ground	ON indicator lamp	Output	Ignition switch	OFF or ACC	0 V
					ON	Battery voltage
95 (O)	Ground	ACC relay control	Output	Ignition switch	OFF	0 V
					ACC or ON	Battery voltage
96 (GR)	Ground	A/T device (detention switch) power supply	Output	—		Battery voltage
97 (L)	Ground	Steering lock condition No. 1	Input	Steering lock	LOCK status	0 V
					UNLOCK status	Battery voltage
98 (P)	Ground	Steering lock condition No. 2	Input	Steering lock	LOCK status	Battery voltage
					UNLOCK status	0 V
99 (R)	Ground	Selector lever P position switch	Input	Selector lever	P position	0 V
					Any position other than P	Battery voltage
100 (G)	Ground	Passenger door request switch	Input	Passenger door request switch	ON (Pressed)	0 V
					OFF (Not pressed)	 JPMIA0016GB 1.0 V
101 (SB)	Ground	Driver door request switch	Input	Driver door request switch	ON (Pressed)	0 V
					OFF (Not pressed)	 JPMIA0016GB 1.0 V
102 (O)	Ground	Blower fan motor relay control	Output	Ignition switch	OFF or ACC	0 V
					ON	Battery voltage
103 (LG)	Ground	Remote keyless entry receiver power supply	Output	Ignition switch OFF		Battery voltage
106 (W)	Ground	Steering wheel lock unit power supply	Output	Ignition switch	OFF or ACC	Battery voltage
					ON	0 V

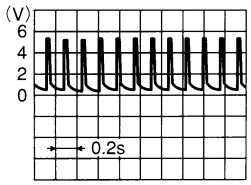
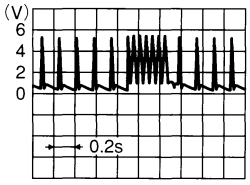
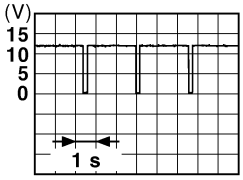
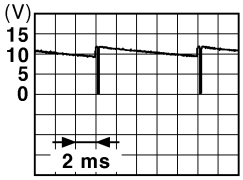
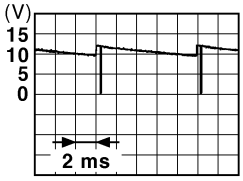
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
107 (LG)	Ground	Combination switch INPUT 1	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	 JPMIA0041GB 1.4 V
					Turn signal switch LH	 JPMIA0037GB 1.3 V
					Turn signal switch RH	 JPMIA0036GB 1.3 V
					Front wiper switch LO	 JPMIA0038GB 1.3 V
					Front washer switch ON	 JPMIA0039GB 1.3 V

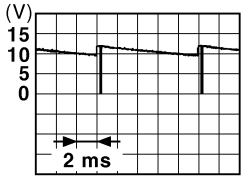
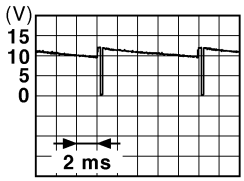
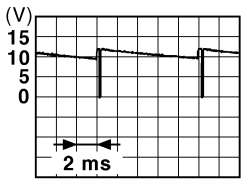
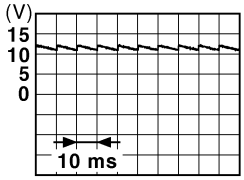
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
108 (R)	Ground	Combination switch INPUT 4	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0041GB 1.4 V
					Lighting switch AUTO (Wiper intermittent dial 4)	 JPMIA0038GB 1.3 V
					Lighting switch 1ST (Wiper intermittent dial 4)	 JPMIA0036GB 1.3 V
					Any of the conditions below with all switches OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	 JPMIA0039GB 1.3 V

Terminal No. (Wire color) +	Terminal No. (Wire color) –	Description Signal name	Description Input/ Output	Condition		Value (Approx.)
109 (Y)	Ground	Combination switch INPUT 2	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	 JPMIA0041GB 1.4 V
					Lighting switch PASS	 JPMIA0037GB 1.3 V
					Lighting switch 2ND	 JPMIA0036GB 1.3 V
					Front wiper switch INT	 JPMIA0038GB 1.3 V
					Front wiper switch HI	 JPMIA0040GB 1.3 V
110 (G)	Ground	Hazard switch	Input	Hazard switch	Pressed	0 V
					Not pressed	 JPMIA0012GB 1.1 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
111 (Y)	Ground	Steering lock unit communication	Input/ Output	Steering lock	LOCK status	Battery voltage
					LOCK or UNLOCK	 JMKIA0066GB
					For 15 seconds after UNLOCK	Battery voltage
					15 seconds or later after UNLOCK	0 V
113 (P)	Ground	Optical sensor signal	Input	Ignition switch ON	When bright outside of the vehicle	Close to 5 V
					When dark outside of the vehicle	Close to 0 V
114 (R)	Ground	Clutch interlock switch	Input	Clutch interlock switch	OFF (Clutch pedal is not depressed)	0 V
					ON (Clutch pedal is depressed)	Battery voltage
116 (SB)	Ground	Stop lamp switch 1	Input	—		Battery voltage
118 (P)	Ground	Stop lamp switch 2	Input	Stop lamp switch	OFF (Brake pedal is not depressed)	0 V
					ON (Brake pedal is depressed)	Battery voltage
				ICC brake hold relay (With ICC)	OFF	0 V
					ON	Battery voltage
119 (SB)	Ground	Front door lock assembly driver side (unlock sensor)	Input	Driver door	LOCK status	 JPMIA0011GB 11.8 V
					UNLOCK status	0 V
121 (R)	Ground	Key slot switch	Input	When Intelligent Key is inserted into key slot		Battery voltage
				When Intelligent Key is not inserted into key slot		0 V
122 (V)	Ground	ACC feedback signal	Input	Ignition switch	OFF	0 V
					ACC or ON	Battery voltage
123 (W)	Ground	IGN feedback signal	Input	Ignition switch	OFF or ACC	0 V
					ON	Battery voltage

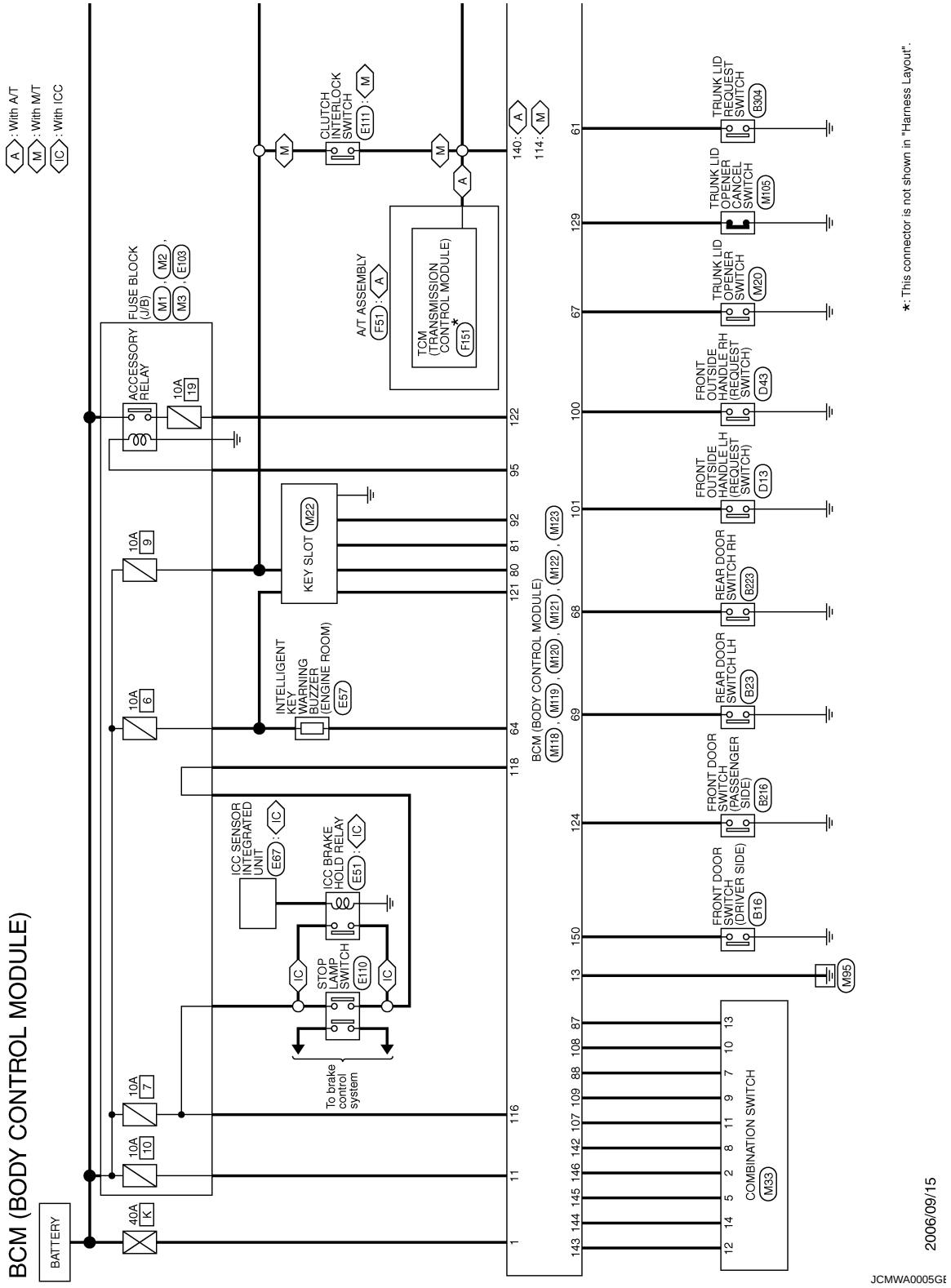
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
124 (LG)	Ground	Passenger door switch	Input	Passenger door switch	OFF (When passenger door closes)	 JPMIA0011GB 11.8 V
					ON (When passenger door opens)	0 V
129 (O)	Ground	Trunk lid opener cancel switch	Input	Trunk lid opener cancel switch	CANCEL	 JPMIA0012GB 1.1 V
					ON	0 V
132 (V)	Ground	Power window switch communication	Input/ Output	Ignition switch ON		 JPMIA0013GB 10.2 V
				Ignition switch OFF or ACC		0 V
133 (W)	Ground	Push-button ignition switch illumination	Output	Push-button ignition switch illumination	ON (When tail lamps OFF)	5.5 V
					ON (When tail lamps ON)	**NOTE:** The pulse width of this wave is varied by the illumination brightening/dimming level.  JPMIA0159GB
					OFF	0 V
134 (GR)	Ground	LOCK indicator lamp	Output	LOCK indicator lamp	ON	0 V
					OFF	Battery voltage
137 (O)	Ground	Receiver and sensor ground	Input	Ignition switch ON		0 V
138 (V)	Ground	Receiver and sensor power supply output	Output	Ignition switch	OFF	0 V
					ACC or ON	5.0 V

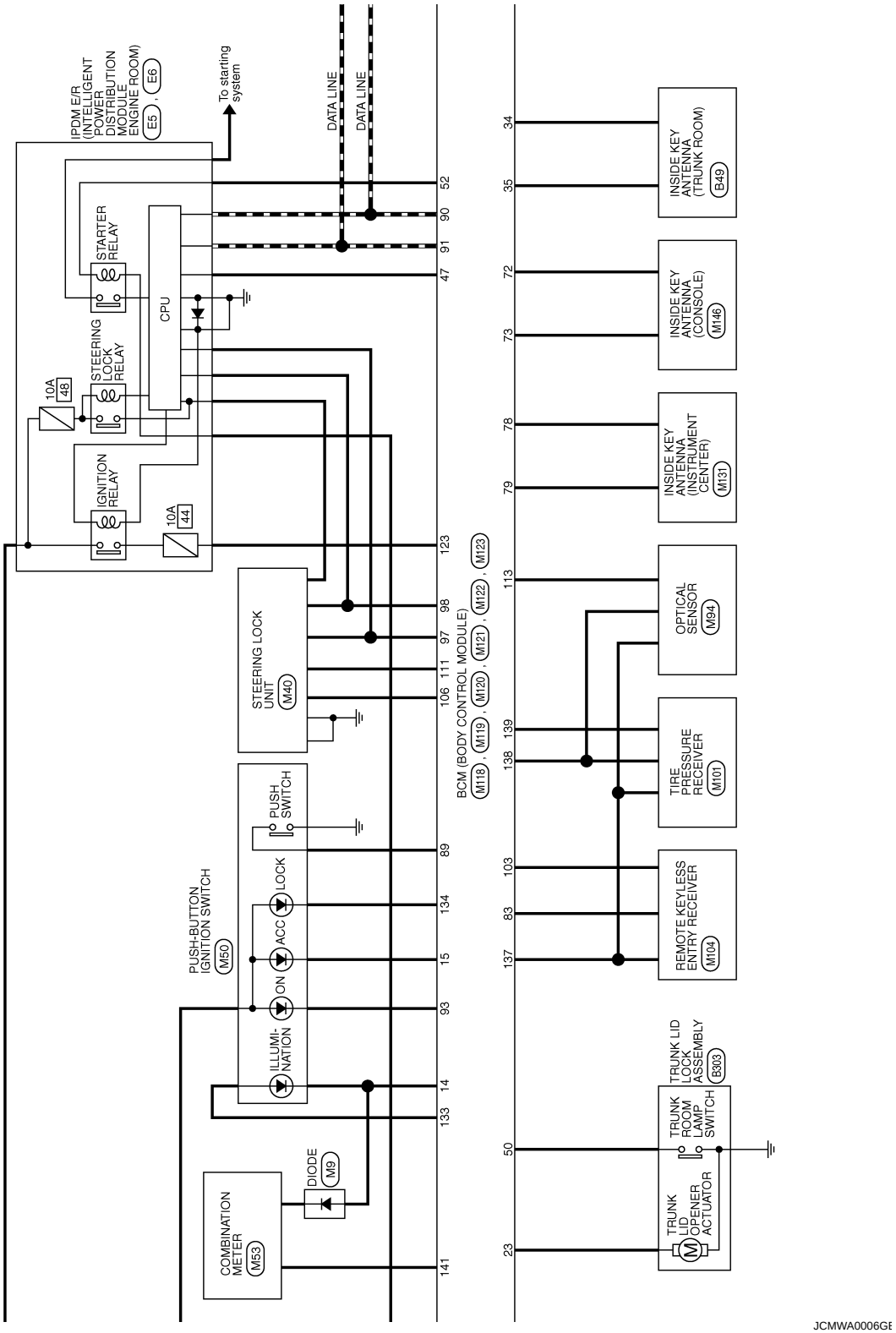
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
139 (L)	Ground	Tire pressure receiver signal	Input/ Output	Ignition switch ON	Standby state	 OCC3881D
					When receiving the signal from the transmitter	 OCC3880D
140 (GR)	Ground	Selector lever P/N position signal	Input	Selector lever	P or N position	12.0 V
					Except P and N positions	0 V
141 (G)	Ground	Security indicator signal	Output	Security indicator	ON	0 V
					Blinking	 JPMIA0014GB 11.3 V
					OFF	Battery voltage
142 (O)	Ground	Combination switch OUTPUT 5	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Lighting switch 1ST	 JPMIA0031GB 10.7 V
					Lighting switch HI	
					Lighting switch 2ND	
					Turn signal switch RH	
143 (P)	Ground	Combination switch OUTPUT 1	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front wiper switch HI (Wiper intermittent dial 4)	 JPMIA0032GB 10.7 V
					Any of the conditions below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3 • Wiper intermittent dial 6 • Wiper intermittent dial 7	

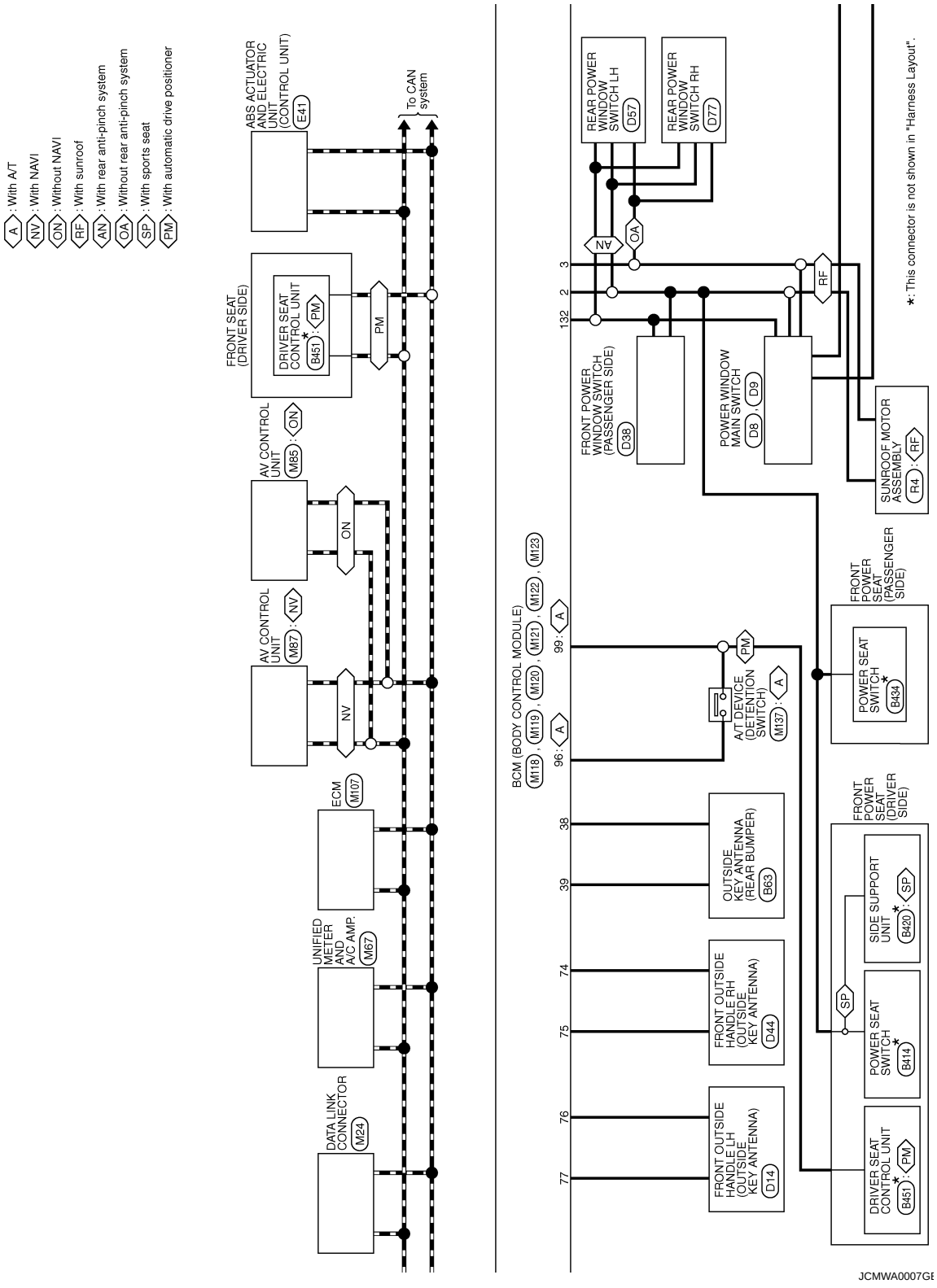
Terminal No. (Wire color) +	Terminal No. (Wire color) –	Description: Signal name	Description: Input/ Output	Condition		Value (Approx.)
144 (G)	Ground	Combination switch OUTPUT 2	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front washer switch ON (Wiper intermittent dial 4)	 JPMIA0033GB 10.7 V
					Any of the conditions below with all switches OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	
145 (L)	Ground	Combination switch OUTPUT 3	Output	Combination switch (Wiper intermittent dial 4)	All switches OFF	0 V
					Front wiper switch INT	 JPMIA0034GB 10.7 V
					Front wiper switch LO	
					Lighting switch AUTO	
146 (SB)	Ground	Combination switch OUTPUT 4	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Front fog lamp switch ON	 JPMIA0035GB 10.7 V
					Lighting switch 2ND	
					Lighting switch PASS	
					Turn signal switch LH	
149 (W)	Ground	Tire pressure warning check switch	Input	—		5 V
150 (GR)	Ground	Driver door switch	Input	Driver door switch	OFF (When driver door closes)	 JPMIA0011GB 11.8 V
					ON (When driver door opens)	0 V
151 (G)	Ground	Rear window defogger relay	Output	Rear window defogger	Active	0 V
					Not activated	Battery voltage

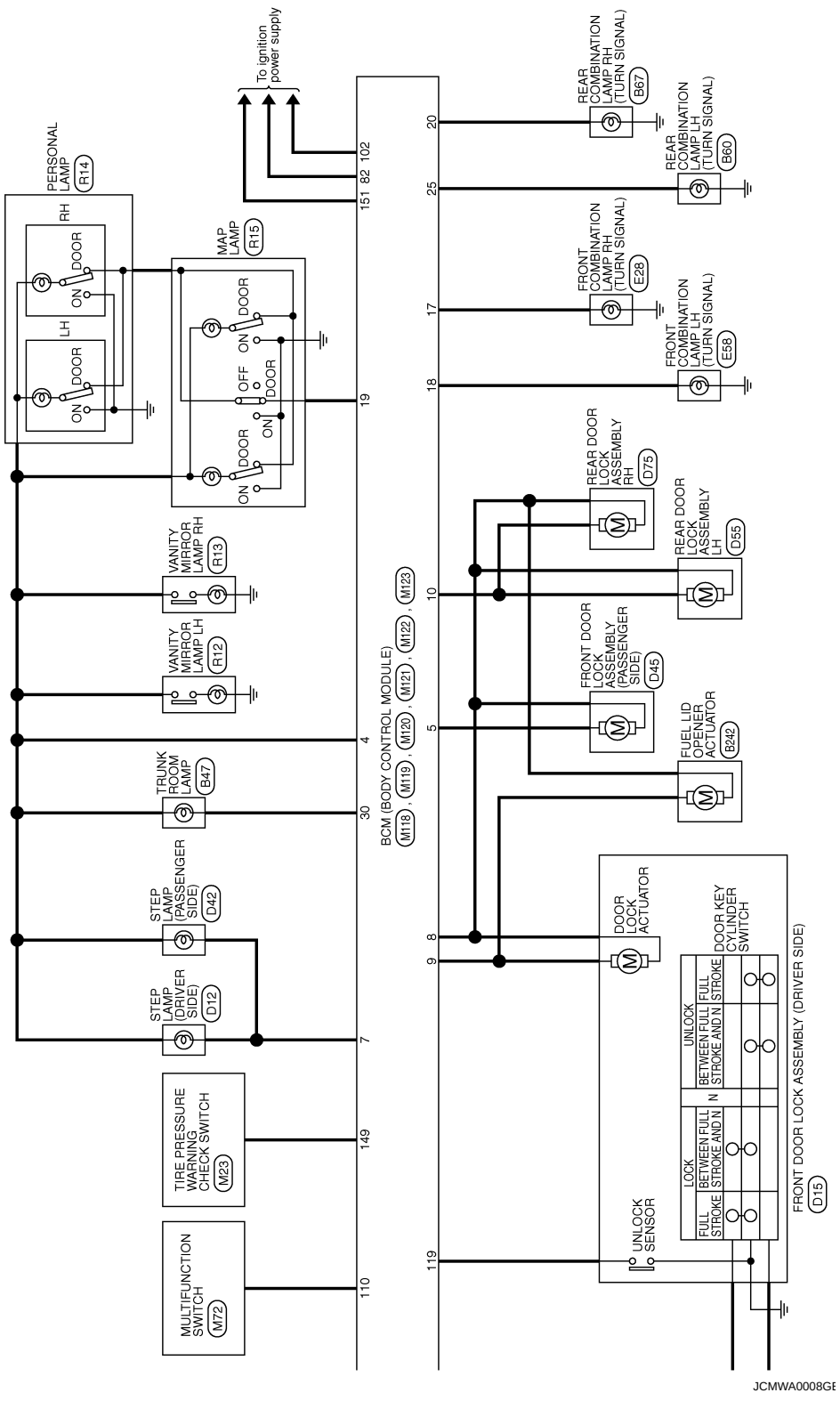
Wiring Diagram — BCM —

INFOID:0000000000962507



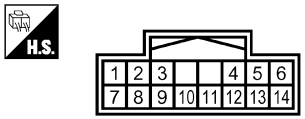

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E5 , E6
To starting system
DATA LINE
DATA LINE
STARTER RELAY
CPU
STEERING LOCK RELAY
10A 48
IGNITION RELAY
10A 44
STEERING LOCK UNIT M40
PUSH SWITCH
PUSH-BUTTON IGNITION SWITCH M50
LOCK
ACC
ON
ILLUMI-NATION
DIODE M9
COMBINATION METER M53
BCM (BODY CONTROL MODULE) M118 , M119 , M120 , M121 , M122 , M123
52
90
91
47
123
98
97
111
106
89
134
15
93
14
133
141
34
35
72
73
78
79
113
139
138
103
83
137
50
23
INSIDE KEY ANTENNA (TRUNK ROOM) B49
INSIDE KEY ANTENNA (CONSOLE) M146
INSIDE KEY ANTENNA (INSTRUMENT CENTER) M131
OPTICAL SENSOR M94
TIRE PRESSURE RECEIVER M101
REMOTE KEYLESS ENTRY RECEIVER M104
TRUNK LID LOCK ASSEMBLY B303
TRUNK ROOM LAMP SWITCH
TRUNK LID OPENER ACTUATOR
JCMWA0006GE


A : With A/T
NV : With NAVI
ON : Without NAVI
RF : With sunroof
AN : With rear anti-pinch system
OA : Without rear anti-pinch system
SP : With sports seat
PM : With automatic drive positioner
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) E41
To CAN system
FRONT SEAT (DRIVER SIDE)
DRIVER SEAT CONTROL UNIT B451 *: PM
PM
AV CONTROL UNIT M85 : ON
ON
AV CONTROL UNIT M87 : NV
NV
ECM M107
UNIFIED METER AND A/C AMP. M67
DATA LINK CONNECTOR M24
REAR POWER WINDOW SWITCH LH D57
REAR POWER WINDOW SWITCH RH D77
AN
OA
RF
3
2
132
FRONT POWER WINDOW SWITCH (PASSENGER SIDE) D38
POWER WINDOW MAIN SWITCH D8 , D9
SUNROOF MOTOR ASSEMBLY R4 : RF
*: This connector is not shown in "Harness Layout".
BCM (BODY CONTROL MODULE) M18 , M19 , M120 , M121 , M122 , M123
96 : A
99 : A
A/T DEVICE (DETENTION SWITCH) M137 : A
PM
FRONT POWER SEAT (PASSENGER SIDE)
POWER SEAT SWITCH * B434
38
39
74
75
76
77
OUTSIDE KEY ANTENNA (REAR BUMPER) B63
FRONT OUTSIDE HANDLE RH (OUTSIDE KEY ANTENNA) D44
FRONT OUTSIDE HANDLE LH (OUTSIDE KEY ANTENNA) D14
FRONT POWER SEAT (DRIVER SIDE)
SP
SIDE SUPPORT UNIT * B420 : SP
POWER SEAT SWITCH * B414
DRIVER SEAT CONTROL UNIT * B451 : PM
JCMWA0007GB


To ignition power supply
PERSONAL LAMP R14
RH DOOR ON
LH DOOR ON
MAP LAMP R15
DOOR ON
OFF
DOOR
DOOR ON
DOOR ON
VANITY MIRROR LAMP RH R13
VANITY MIRROR LAMP LH R12
TRUNK ROOM LAMP B47
STEP LAMP (PASSENGER SIDE) D42
STEP LAMP (DRIVER SIDE) D12
TIRE PRESSURE WARNING CHECK SWITCH M23
MULTIFUNCTION SWITCH M72
BCM (BODY CONTROL MODULE) (M118), (M119), (M120), (M121), (M122), (M123)
REAR COMBINATION LAMP RH (TURN SIGNAL) B67
REAR COMBINATION LAMP LH (TURN SIGNAL) B60
FRONT COMBINATION LAMP RH (TURN SIGNAL) E28
FRONT COMBINATION LAMP LH (TURN SIGNAL) E58
REAR DOOR LOCK ASSEMBLY RH D75
REAR DOOR LOCK ASSEMBLY LH D55
FRONT DOOR LOCK ASSEMBLY (PASSENGER SIDE) D45
FUEL LID OPENER ACTUATOR B242
DOOR LOCK ACTUATOR
DOOR KEY CYLINDER SWITCH
UNLOCK
BETWEEN FULL STROKE AND N
FULL STROKE
LOCK
N
UNLOCK SENSOR
FRONT DOOR LOCK ASSEMBLY (DRIVER SIDE) D15
102
82
151
20
25
17
18
19
4
30
10
5
7
149
110
8
9
119
JCMWA0008GE

BCM (BODY CONTROL MODULE)

Connector No.	M33
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH

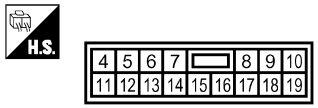


Terminal No.	Color of Wire	Signal Name
2	SB	OUTPUT 4
5	L	OUTPUT 3
7	V	INPUT 3
8	O	OUTPUT 5
9	Y	INPUT 2
10	R	INPUT 4
11	LG	INPUT 1
12	P	OUTPUT 1
13	BR	INPUT 5
14	G	OUTPUT 2

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC

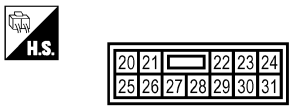
Terminal No.	Color of Wire	Signal Name
1	W	BAT (F/L)
2	Y	POWER WINDOW POWER SUPPLY(BAT)
3	O	POWER WINDOW POWER SUPPLY(RAP)

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FW-CS



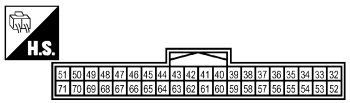
Terminal No.	Color of Wire	Signal Name
4	LG	BAT SAVER OUTPUT
5	V	DOOR UNLOCK OUTPUT (AS)
7	Y	STEP LAMP OUTPUT
8	V	DOOR LOCK OUTPUT (ALL)
9	G	DOOR UNLOCK OUTPUT (DR)
10	BR	DOOR UNLOCK OUTPUT (RR)
11	R	BAT (FUSE)
13	B	GND
14	W	RING/SW LED GND
15	Y	ACC LED
17	W	FRONT FLASHER OUTPUT(RIGHT)
18	O	FRONT FLASHER OUTPUT(LEFT)
19	V	ROOM LAMP OUTPUT
69	R	DOOR SW (RR LH)

Connector No.	M120
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS12FW-CS



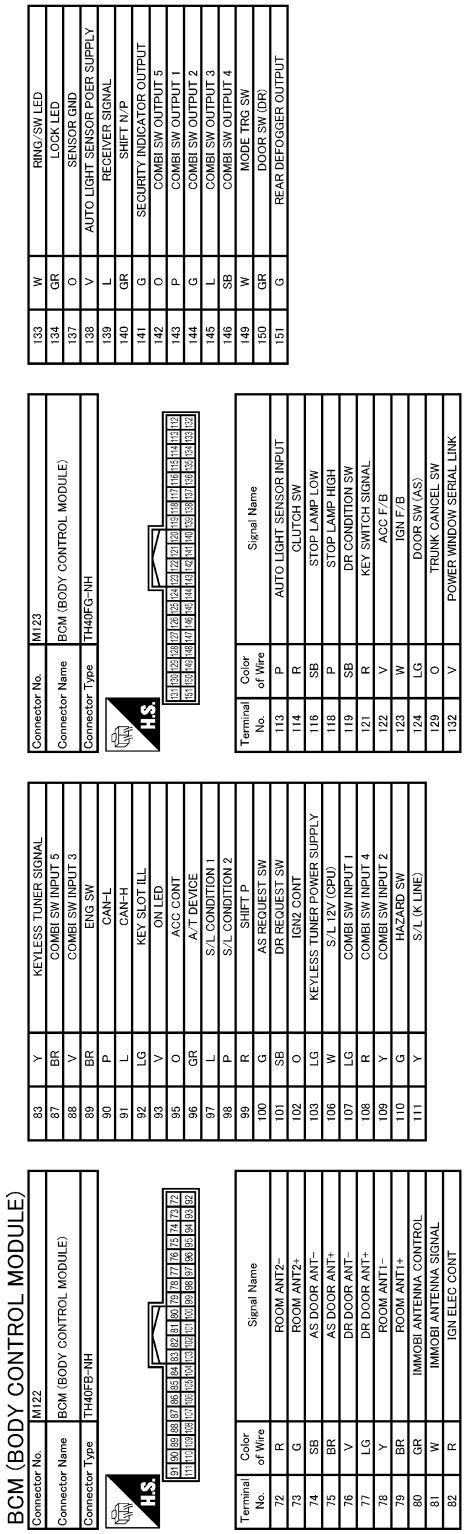
Terminal No.	Color of Wire	Signal Name
20	V	REAR FLASHER OUTPUT(RIGHT)
23	G	TRUNK OPENER OUTPUT
25	G	REAR FLASHER OUTPUT(LEFT)
30	R	TRUNK LAMP OUTPUT

Connector No.	M121
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FGY-NH



Terminal No.	Color of Wire	Signal Name
34	SB	TRUNK ANT1-
35	V	TRUNK ANT1+
38	B	BACK ANT-
39	W	BACK ANT+
47	Y	ING USM CONT1
50	R	TRUNK SW
52	SB	ST CONT USM
61	W	TRUNK REQUEST SW
64	V	BUZZER
67	GR	INTERIOR TRUNK SW
68	BR	DOOR SW (RR RH)

JCMWA0009GE



JCMWA0010GE

Fail Safe

INFOID:0000000000962508

Display contents of CONSULT	Fail-safe	Cancellation
B2013: ID DISCORD BCM-S/L	Inhibit engine cranking	Erase DTC
B2014: CHAIN OF S/L-BCM	Inhibit engine cranking	Erase DTC
B2190: NATS ANTTENA AMP	Inhibit engine cranking	Erase DTC

Display contents of CONSULT	Fail-safe	Cancellation
B2191: DIFFERENCE OF KEY	Inhibit engine cranking	Erase DTC
B2192: ID DISCORD BCM-ECM	Inhibit engine cranking	Erase DTC
B2193: CHAIN OF BCM-ECM	Inhibit engine cranking	Erase DTC
B2557: VEHICLE SPEED	Inhibit steering lock	When normal vehicle speed signals have been received from ABS actuator and electric unit (control unit) for 500 ms
B2560: STARTER CONT RELAY	Inhibit engine cranking	500 ms after the following CAN signal communication status has become consistent • Starter control relay signal • Starter relay status signal
B2563: HI VOLTAGE	• Inhibit engine cranking • Inhibit steering lock	500 ms after the power supply voltage decreases to less than 18 V
B2601: SHIFT POSITION	Inhibit steering lock	500 ms after the following signal reception status becomes consistent • Selector lever P position switch signal • P range signal (CAN)
B2602: SHIFT POSITION	Inhibit steering lock	5 seconds after the following BCM recognition conditions are fulfilled • Ignition switch is in the ON position • Selector lever P position switch signal: Except P position (battery voltage) • Vehicle speed: 4 /h or more
B2603: SHIFT POSI STATUS	Inhibit steering lock	500 ms after the following BCM recognition conditions are fulfilled • Ignition switch is in the ON position • Selector lever P position switch signal: Except P position (battery voltage) • Selector lever P/N position signal: Except P and N positions (0 V)
B2604: PNP SW	Inhibit steering lock	500 ms after any of the following BCM recognition conditions is fulfilled • Status 1 - Ignition switch is in the ON position - Selector lever P/N position signal: P and N position (battery voltage) - P range signal or N range signal (CAN): ON • Status 2 - Ignition switch is in the ON position - Selector lever P/N position signal: Except P and N positions (0 V) - P range signal and N range signal (CAN): OFF
B2605: PNP SW	Inhibit steering lock	500 ms after any of the following BCM recognition conditions is fulfilled • Ignition switch is in the ON position - Power position: IGN - Selector lever P/N position signal: Except P and N positions (0 V) - Interlock/PNP switch signal (CAN): OFF • Status 2 - Ignition switch is in the ON position - Selector lever P/N position signal: P or N position (battery voltage) - PNP switch signal (CAN): ON
B2606: S/L RELAY	Inhibit engine cranking	500 ms after the following CAN signal communication status has become consistent • Steering lock relay signal (Request signal) • Steering lock relay signal (Condition signal)
B2607: S/L RELAY	Inhibit engine cranking	500 ms after the following CAN signal communication status has become consistent • Steering lock relay signal (Request signal) • Steering lock relay signal (Condition signal)

Display contents of CONSULT	Fail-safe	Cancellation
B2608: STARTER RELAY	Inhibit engine cranking	500 ms after the following signal communication status becomes consistent • Starter motor relay control signal • Starter relay status signal (CAN)
B2609: S/L STATUS	• Inhibit engine cranking • Inhibit steering lock	When the following steering lock conditions agree • BCM steering lock control status • Steering lock condition No. 1 signal status • Steering lock condition No. 2 signal status
B260A: IGNITION RELAY	Inhibit engine cranking	500 ms after the following conditions are fulfilled • IGN relay (IPDM E/R) control signal: OFF (Battery voltage) • Ignition ON signal (CAN to IPDM E/R): OFF (Request signal) • Ignition ON signal (CAN from IPDM E/R): OFF (Condition signal)
B260F: ENG STATE SIG LOST	Maintains the power supply position attained at the time of DTC detection	When any of the following conditions is fulfilled • Power position changes to ACC • Receives engine status signal (CAN)
B2612: S/L STATUS	• Inhibit engine cranking • Inhibit steering lock	When any of the following conditions is fulfilled • Steering lock unit status signal (CAN) is received normally • The BCM steering lock control status matches the steering lock status recognized by the steering lock unit status signal (CAN from IPDM E/R)
B2617: STARTER RELAY CIRC	Inhibit engine cranking	1 second after the starter motor relay control inside BCM becomes normal
B2618: BCM	Inhibit engine cranking	1 second after the ignition relay (IPDM E/R) control inside BCM becomes normal
B2619: BCM	Inhibit engine cranking	1 second after the steering lock unit power supply output control inside BCM becomes normal
B261E: VEHICLE TYPE	Inhibit engine cranking	BCM initialization
B26E1: ENG STATE NO RECIV	Inhibit engine cranking	When any of the following conditions is fulfilled • Power position changes to ACC • Receives engine status signal (CAN)

DTC Inspection Priority Chart

INFOID:0000000000962509

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

Priority	DTC
1	• B2562: LOW VOLTAGE • B2563: HI VOLTAGE
2	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
3	• B2190: NATS ANTTENA AMP • B2191: DIFFERENCE OF KEY • B2192: ID DISCORD BCM-ECM • B2193: CHAIN OF BCM-ECM

Priority	DTC
4	• B2013: ID DISCORD BCM-S/L • B2014: CHAIN OF S/L-BCM • B2553: IGNITION RELAY • B2555: STOP LAMP • B2556: PUSH-BTN IGN SW • B2557: VEHICLE SPEED • B2560: STARTER CONT RELAY • B2601: SHIFT POSITION • B2602: SHIFT POSITION • B2603: SHIFT POSI STATUS • B2604: PNP SW • B2605: PNP SW • B2606: S/L RELAY • B2607: S/L RELAY • B2608: STARTER RELAY • B2609: S/L STATUS • B260A: IGNITION RELAY • B260B: STEERING LOCK UNIT • B260C: STEERING LOCK UNIT • B260D: STEERING LOCK UNIT • B260F: ENG STATE SIG LOST • B2611: ACC RELAY • B2612: S/L STATUS • B2614: ACC RELAY CIRC • B2615: BLOWER RELAY CIRC • B2616: IGN RELAY CIRC • B2617: STARTER RELAY CIRC • B2618: BCM • B2619: BCM • B261A: PUSH-BTN IGN SW • B261E: VEHICLE TYPE • B26E1: ENG STATE NO RECIV • C1729: VHCL SPEED SIG ERR • U0415: VEHICLE SPEED SIG
5	• C1704: LOW PRESSURE FL • C1705: LOW PRESSURE FR • C1706: LOW PRESSURE RR • C1707: LOW PRESSURE RL • C1708: [NO DATA] FL • C1709: [NO DATA] FR • C1710: [NO DATA] RR • C1711: [NO DATA] RL • C1712: [CHECKSUM ERR] FL • C1713: [CHECKSUM ERR] FR • C1714: [CHECKSUM ERR] RR • C1715: [CHECKSUM ERR] RL • C1716: [PRESSDATA ERR] FL • C1717: [PRESSDATA ERR] FR • C1718: [PRESSDATA ERR] RR • C1719: [PRESSDATA ERR] RL • C1720: [CODE ERR] FL • C1721: [CODE ERR] FR • C1722: [CODE ERR] RR • C1723: [CODE ERR] RL • C1724: [BATT VOLT LOW] FL • C1725: [BATT VOLT LOW] FR • C1726: [BATT VOLT LOW] RR • C1727: [BATT VOLT LOW] RL • C1734: CONTROL UNIT
6	• B2621: INSIDE ANTENNA • B2622: INSIDE ANTENNA • B2623: INSIDE ANTENNA

DTC Index

INFOID:0000000000962510

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

CONSULT display	Fail-safe	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	—	—	—	BCS-33
U1010: CONTROL UNIT (CAN)	—	—	—	BCS-34
U0415: VEHICLE SPEED SIG	—	—	—	BCS-35
B2013: ID DISCORD BCM-S/L	×	—	—	SEC-43
B2014: CHAIN OF S/L-BCM	×	—	—	SEC-44
B2190: NATS ANTTENA AMP	×	—	—	SEC-37
B2191: DIFFERENCE OF KEY	×	—	—	SEC-40
B2192: ID DISCORD BCM-ECM	×	—	—	SEC-41
B2193: CHAIN OF BCM-ECM	×	—	—	SEC-42
B2553: IGNITION RELAY	—	—	—	PCS-48
B2555: STOP LAMP	—	—	—	SEC-47
B2556: PUSH-BTN IGN SW	—	×	—	SEC-49
B2557: VEHICLE SPEED	×	×	—	SEC-51
B2560: STARTER CONT RELAY	×	×	—	SEC-52
B2562: LOW VOLTAGE	—	—	—	BCS-36
B2563: HI VOLTAGE	×	×	—	BCS-37
B2601: SHIFT POSITION	×	×	—	SEC-53
B2602: SHIFT POSITION	×	×	—	SEC-56
B2603: SHIFT POSI STATUS	×	×	—	SEC-58
B2604: PNP SW	×	×	—	SEC-61
B2605: PNP SW	×	×	—	SEC-63
B2606: S/L RELAY	×	×	—	SEC-65
B2607: S/L RELAY	×	×	—	SEC-66
B2608: STARTER RELAY	×	×	—	SEC-68
B2609: S/L STATUS	×	×	—	SEC-70
B260A: IGNITION RELAY	×	×	—	PCS-50
B260B: STEERING LOCK VNIT	—	×	—	SEC-74
B260C: STEERING LOCK VNIT	—	×	—	SEC-75
B260D: STEERING LOCK VNIT	—	×	—	SEC-76
B260F: ENG STATE SIG LOST	×	×	—	SEC-77
B2611: ACC RELAY	—	—	—	PCS-52
B2612: S/L STATUS	×	×	—	SEC-79
B2614: ACC RELAY CIRC	—	×	—	PCS-54
B2615: BLOWER RELAY CIRC	—	×	—	PCS-57

CONSULT display	Fail-safe	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
B2616: IGN RELAY CIRC	—	×	—	PCS-60
B2617: STARTER RELAY CIRC	×	×	—	SEC-83
B2618: BCM	×	×	—	PCS-63
B2619: BCM	×	×	—	SEC-85
B261A: PUSH-BTN IGN SW	—	×	—	SEC-86
B261E: VEHICLE TYPE	×	× (Turn ON for 15 seconds)	—	SEC-88
B2621: INSIDE ANTENNA	—	—	—	DLK-58
B2622: INSIDE ANTENNA	—	—	—	DLK-60
B2623: INSIDE ANTENNA	—	—	—	DLK-62
B26E1: ENG STATE NO RES	×	×	—	SEC-78
C1704: LOW PRESSURE FL	—	—	×	WT-14
C1705: LOW PRESSURE FR	—	—	×	WT-14
C1706: LOW PRESSURE RR	—	—	×	WT-14
C1707: LOW PRESSURE RL	—	—	×	WT-14
C1708: [NO DATA] FL	—	—	×	WT-16
C1709: [NO DATA] FR	—	—	×	WT-16
C1710: [NO DATA] RR	—	—	×	WT-16
C1711: [NO DATA] RL	—	—	×	WT-16
C1712: [CHECKSUM ERR] FL	—	—	×	WT-19
C1713: [CHECKSUM ERR] FR	—	—	×	WT-19
C1714: [CHECKSUM ERR] RR	—	—	×	WT-19
C1715: [CHECKSUM ERR] RL	—	—	×	WT-19
C1716: [PRESSDATA ERR] FL	—	—	×	WT-22
C1717: [PRESSDATA ERR] FR	—	—	×	WT-22
C1718: [PRESSDATA ERR] RR	—	—	×	WT-22
C1719: [PRESSDATA ERR] RL	—	—	×	WT-22
C1720: [CODE ERR] FL	—	—	×	WT-24
C1721: [CODE ERR] FR	—	—	×	WT-24
C1722: [CODE ERR] RR	—	—	×	WT-24
C1723: [CODE ERR] RL	—	—	×	WT-24
C1724: [BATT VOLT LOW] FL	—	—	×	WT-27
C1725: [BATT VOLT LOW] FR	—	—	×	WT-27
C1726: [BATT VOLT LOW] RR	—	—	×	WT-27
C1727: [BATT VOLT LOW] RL	—	—	×	WT-27
C1729: VHCL SPEED SIG ERR	—	—	×	WT-30
C1734: CONTROL UNIT	—	—	×	WT-31

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

Reference Value

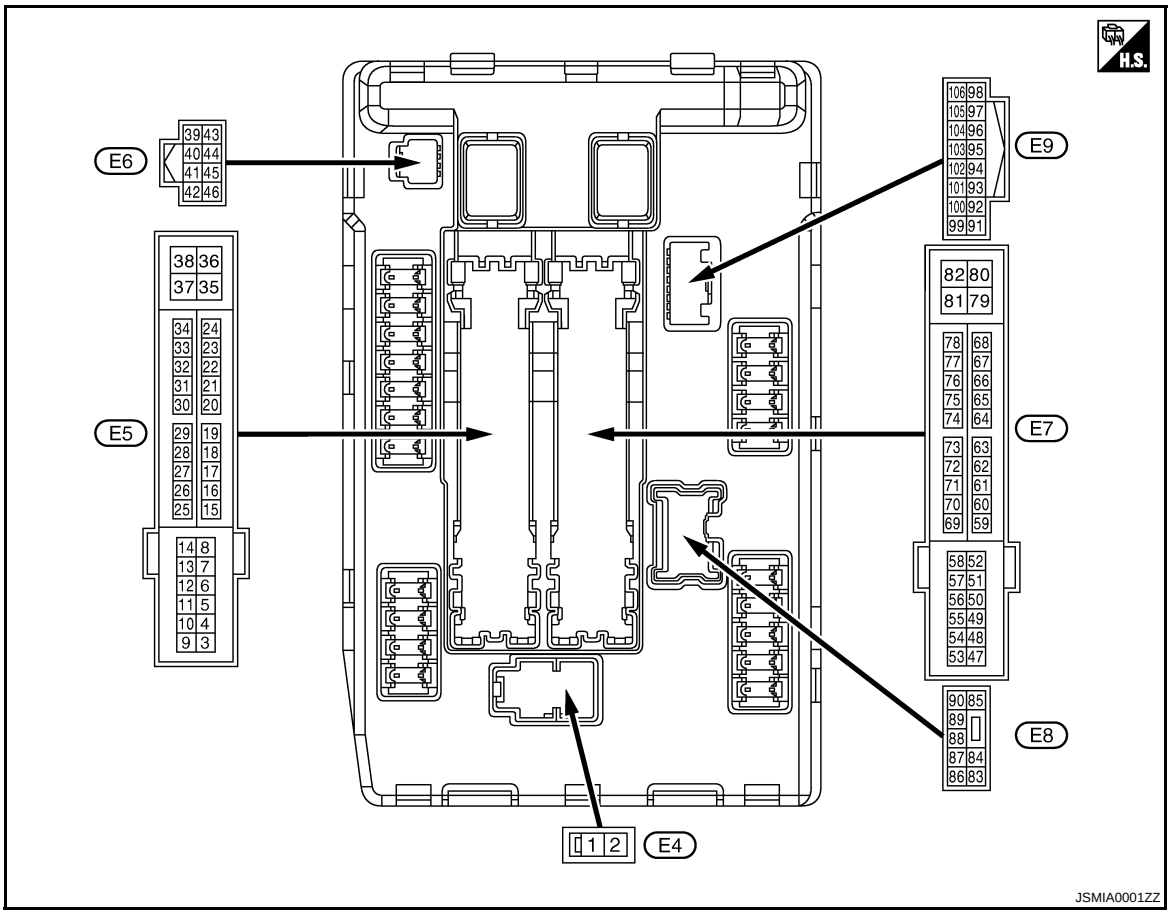
INFOID:0000000000962511

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition		Value/Status
RADFAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	0 - 100 %
AC COMP REQ	Engine running	A/C switch OFF	Off
		A/C switch ON (Compressor is operating)	On
TAIL&CLR REQ	Lighting switch OFF		Off
	Lighting switch 1ST, 2ND, HI or AUTO (Light is illuminated)		On
HL LO REQ	Lighting switch OFF		Off
	Lighting switch 2ND HI or AUTO (Light is illuminated)		On
HL HI REQ	Lighting switch OFF		Off
	Lighting switch HI		On
FR FOG REQ	Lighting switch 2ND or AUTO (Light is illuminated)	Front fog lamp switch OFF	Off
		• Front fog lamp switch ON • Daytime running light activated (Only for Canada)	On
FR WIP REQ	Ignition switch ON	Front wiper switch OFF	STOP
		Front wiper switch INT	1LOW
		Front wiper switch LO	Low
		Front wiper switch HI	Hi
WIP AUTO STOP	Ignition switch ON	Front wiper stop position	STOP P
		Any position other than front wiper stop position	ACT P
WIP PROT	Ignition switch ON	Front wiper operates normally	Off
		Front wiper stops at fail-safe operation	BLOCK
IGN RLY1 -REQ	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
IGN RLY	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
PUSH SW	Release the push-button ignition switch		Off
	Press the push-button ignition switch		On
INTER/NP SW	Ignition switch ON	A/T selector lever in any position other than P or N (A/T models)	Off
		Release clutch pedal (M/T models)	
	Ignition switch ON	A/T selector lever in P or N position (A/T models)	On
		Depress clutch pedal (M/T models)	
ST RLY REQ	Ignition switch ON		Off
	At engine cranking		On

Monitor Item	Condition		Value/Status
ST RLY CONT	Ignition switch ON		Off
	At engine cranking		On
IHBT RLY -REQ	Ignition switch ON		Off
	At engine cranking		On
ST/INHI RLY	Ignition switch ON		Off
	At engine cranking		ST →INHI
	The status of starter relay or starter control relay cannot be recognized by the battery voltage malfunction, etc. when the starter relay is ON and the starter control relay is OFF		UNKWN
DETENT SW	Ignition switch ON	• Press the selector button with A/T selector lever in P position • A/T selector lever in any position other than P	Off
	Release the A/T selector button with A/T selector lever in P position **NOTE:** The lever is fixed ON for M/T		On
S/L RLY -REQ	None of the conditions below are present		Off
	• Open the driver door after the ignition switch is turned OFF (for a few seconds) • Press the push-button ignition switch when the steering lock is activated • Depress the clutch pedal when the steering lock is activated		On
S/L STATE	Steering lock is activated		LOCK
	Steering lock is deactivated		UNLK
	[DTC B210A] is detected		UNKWN
DTRL REQ	**NOTE:** The item is indicated, but not monitored.		Off
OIL P SW	Ignition switch OFF, ACC or engine running		Open
	Ignition switch ON		Close
HOOD SW	Close the hood		Off
	Open the hood		On
HL WASHER REQ	**NOTE:** The item is indicated, but not monitored.		Off
THFT HRN REQ	Not operation		Off
	• Panic alarm is activated • Horn is activated with VEHICLE SECURITY (THEFT WARNING) SYSTEM		On
HORN CHIRP	Not operating		Off
	Door locking with Intelligent Key (horn chirp mode)		On
CRNRNG LMP REQ	**NOTE:** The item is indicated, but not monitored.		Off

TERMINAL LAYOUT

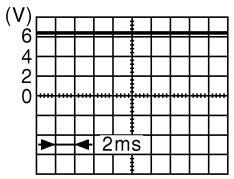
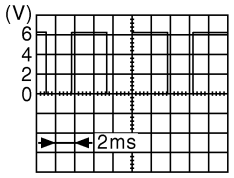
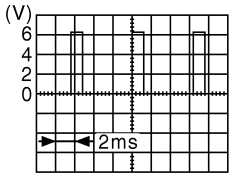


PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
+	–					
1 (W)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
2 (L)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
4 (V)	Ground	Front wiper LO	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch LO	Battery voltage
5 (L)	Ground	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch HI	Battery voltage
7 (R)	Ground	Tail, license plate lamps & interior lamps	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 1ST	Battery voltage
11 (BR)	Ground	Steering lock unit power supply	Output	Ignition switch OFF	A few seconds after opening the driver door	Battery voltage
				Ignition switch LOCK	Press the push-button ignition switch	Battery voltage
				Ignition switch ACC or ON		0 V
12 (B/W)	Ground	Ground	—	Ignition switch ON		0 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
13 (Y)	Ground	Fuel pump power supply	Output	Approximately 1 second or more after turning the ignition switch ON		0 V
				• Approximately 1 second after turning the ignition switch ON • Engine running		Battery voltage
16 (LG)	Ground	Front wiper auto stop	Input	Ignition switch ON	Front wiper stop position	0 V
					Any position other than front wiper stop position	Battery voltage
19 (W)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
25 (G)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
26*1 (R)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
27 (O)	Ground	Ignition relay monitor	Input	Ignition switch OFF or ACC		Battery voltage
				Ignition switch ON		0 V
28 (L)	Ground	Push-button ignition switch	Input	Press the push-button ignition switch		0 V
				Release the push-button ignition switch		Battery voltage
30 (GR)	Ground	Starter relay control	Input	A/T models	A/T selector lever in any position other than P or N (ignition switch ON)	0 V
					A/T selector lever P or N (ignition switch ON)	Battery voltage
				M/T models	Release the clutch pedal	0 V
					Depress the clutch pedal	Battery voltage
32 (L)	Ground	Steering lock unit condition-1	Input	Steering lock is activated		0 V
				Steering lock is deactivated		Battery voltage
33 (P)	Ground	Steering lock unit condition-2	Input	Steering lock is activated		Battery voltage
				Steering lock is deactivated		0 V
36 (G)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
39 (P)	—	CAN - L	Input/ Output	—		—
40 (L)	—	CAN - H	Input/ Output	—		—
41 (B/W)	Ground	Ground	—	Ignition switch ON		0 V
42 (Y)	Ground	Cooling fan relay control	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON		0.7 V
43 (SB)	Ground	A/T device (Detention switch)	Input	Ignition switch ON	Press the A/T selector button (A/T selector lever P)	Battery voltage
					• A/T selector lever in any position other than P • Release the A/T selector button (A/T selector lever P)	0 V
44 (W)	Ground	Horn relay control	Input	The horn is deactivated		Battery voltage
				The horn is activated		0 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
45 (G)	Ground	Anti theft horn relay control	Input	The horn is deactivated		Battery voltage
				The horn is activated		0 V
46 (BR)	Ground	Starter relay control	Input	A/T models	A/T selector lever in any position other than P or N (ignition switch ON)	0 V
					A/T selector lever P or N (ignition switch ON)	Battery voltage
				M/T models	Release the clutch pedal	0 V
					Depress the clutch pedal	Battery voltage
48 (L)	Ground	A/C relay power supply	Output	Engine running	A/C switch OFF	0 V
					A/C switch ON (A/C compressor is operating)	Battery voltage
49 (R)	Ground	ECM relay power supply	Output	Ignition switch OFF (For a few seconds after turning ignition switch OFF)		0 V
				• Ignition switch ON • Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		Battery voltage
51 (G)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
53 (W)	Ground	ECM relay power supply	Output	Ignition switch OFF (For a few seconds after turning ignition switch OFF)		0 V
				• Ignition switch ON • Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		Battery voltage
54 (R)	Ground	Throttle control motor relay power supply	Output	Ignition switch OFF (For a few seconds after turning ignition switch OFF)		0 V
				• Ignition switch ON • Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		Battery voltage
55 (BR)	Ground	ECM power supply	Output	Ignition switch OFF		Battery voltage
56 (V)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
57 (R)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
58 (Y)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
69 (W)	Ground	ECM relay control	Output	Ignition switch OFF (For a few seconds after turning ignition switch OFF)		Battery voltage
				• Ignition switch ON • Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 - 1.5 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
+	–					
70 (O)	Ground	Throttle control motor relay control	Output	Ignition switch ON → OFF		0 -1.0 V ↓ Battery voltage ↓ 0 V
				Ignition switch ON		0 - 1.0 V
73*2 (P)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
74 (G)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
75 (Y)	Ground	Oil pressure switch	Input	Ignition switch ON	Engine stopped	0 V
					Engine running	Battery voltage
76 (V)	Ground	Power generation command signal	Output	Ignition switch ON		 JPMIA0001GB 6.3 V
				40% is set on “ACTIVE TEST”, “ALTERNATOR DUTY” of “ENGINE”		 JPMIA0002GB 3.8 V
				80% is set on “ACTIVE TEST”, “ALTERNATOR DUTY” of “ENGINE”		 JPMIA0003GB 1.4 V
77 (L)	Ground	Fuel pump relay control	Output	• Approximately 1 second after turning the ignition switch ON • Engine running		0 - 1.0 V
				Approximately 1 second or more after turning the ignition switch ON		Battery voltage
80 (W)	Ground	Starter motor	Output	At engine cranking		Battery voltage
83 (R)	Ground	Headlamp LO (RH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 2ND	Battery voltage
84 (P)	Ground	Headlamp LO (LH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 2ND	Battery voltage

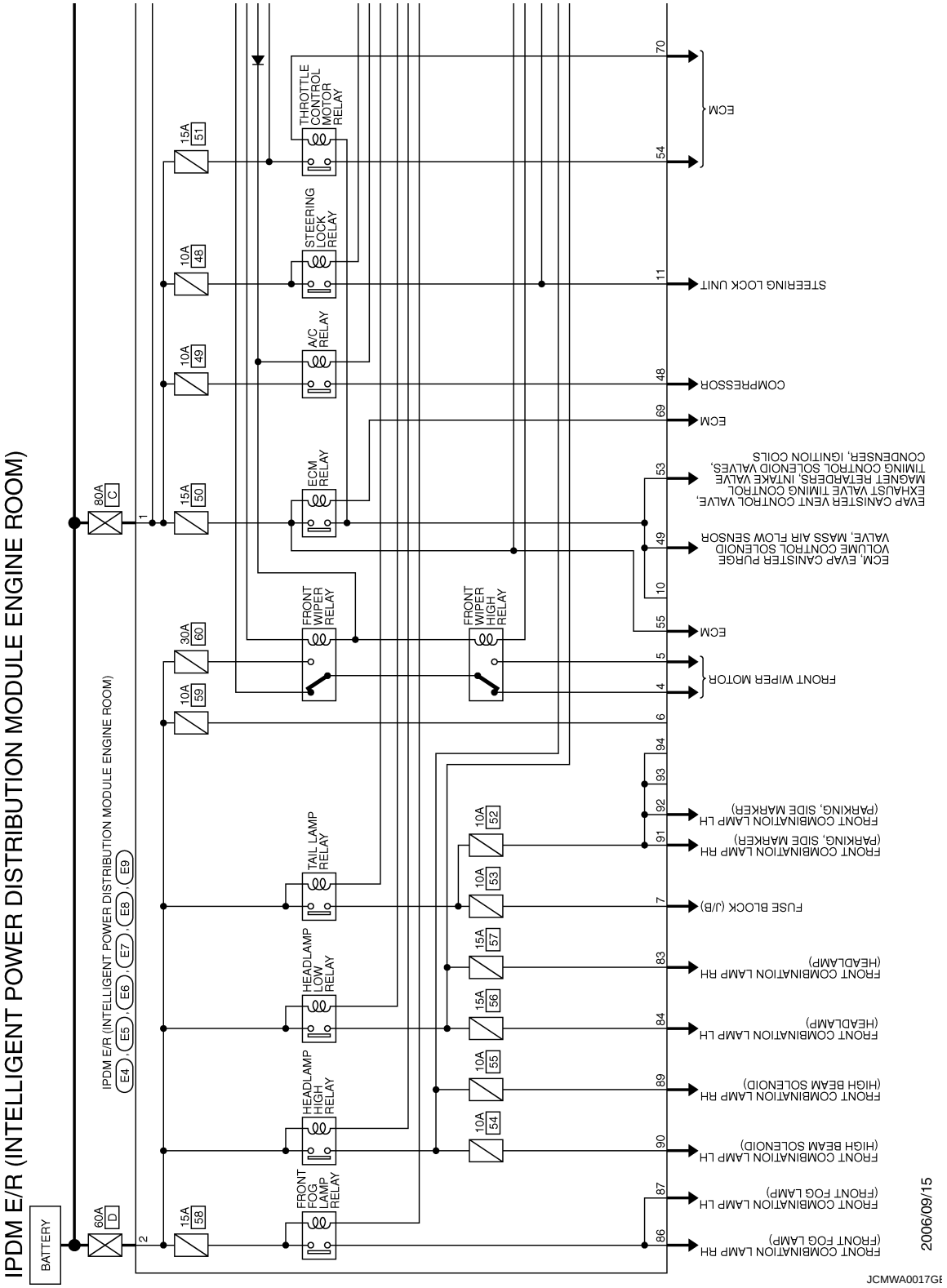
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
86 (W)	Ground	Front fog lamp (RH)	Output	Lighting switch 2ND	• Front fog lamp switch ON • Daytime running light activated (Only for Canada)	Battery voltage
					Front fog lamp switch OFF	0 V
87 (L)	Ground	Front fog lamp (LH)	Output	Lighting switch 2ND	• Front fog lamp switch ON • Daytime running light activated (Only for Canada)	Battery voltage
					Front fog lamp switch OFF	0 V
88 (G)	Ground	Washer pump power supply	Output	Ignition switch ON		Battery voltage
89 (BR)	Ground	Headlamp HI (RH)	Output	Ignition switch ON	• Lighting switch HI • Lighting switch PASS	Battery voltage
					Lighting switch OFF	0 V
90 (P)	Ground	Headlamp HI (LH)	Output	Ignition switch ON	• Lighting switch HI • Lighting switch PASS	Battery voltage
					Lighting switch OFF	0 V
91 (P)	Ground	Parking lamp (RH)	Output	Ignition switch ON	Lighting switch 1ST	Battery voltage
					Lighting switch OFF	0 V
92 (O)	Ground	Parking lamp (LH)	Output	Ignition switch ON	Lighting switch 1ST	Battery voltage
					Lighting switch OFF	0 V
97 (V)	Ground	Cooling fan control	Output	Engine idling		0 - 5 V
104 (LG)	Ground	Hood switch	Input	Close the hood		Battery voltage
				Open the hood		0 V

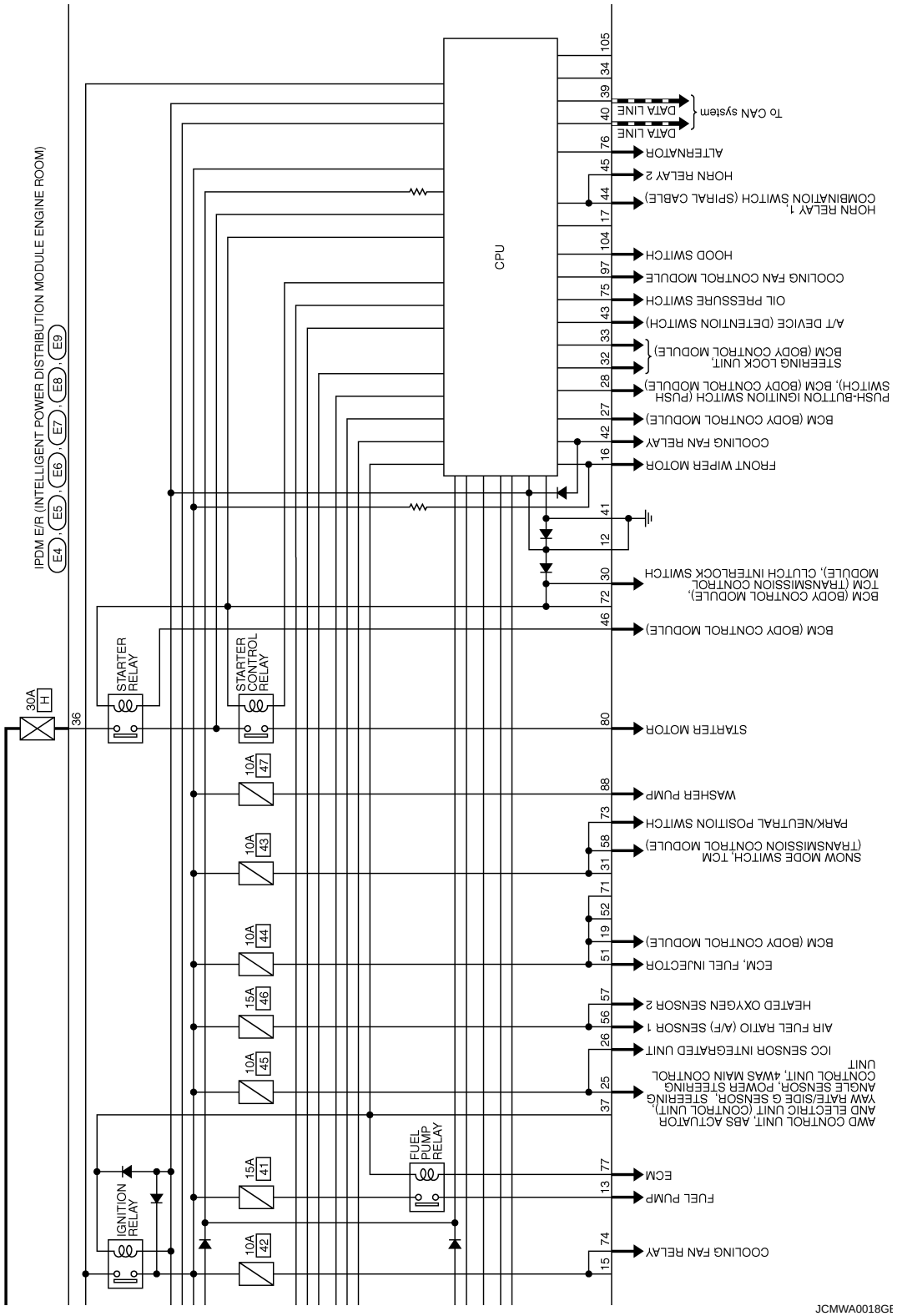
*1: Only for the models with ICC system

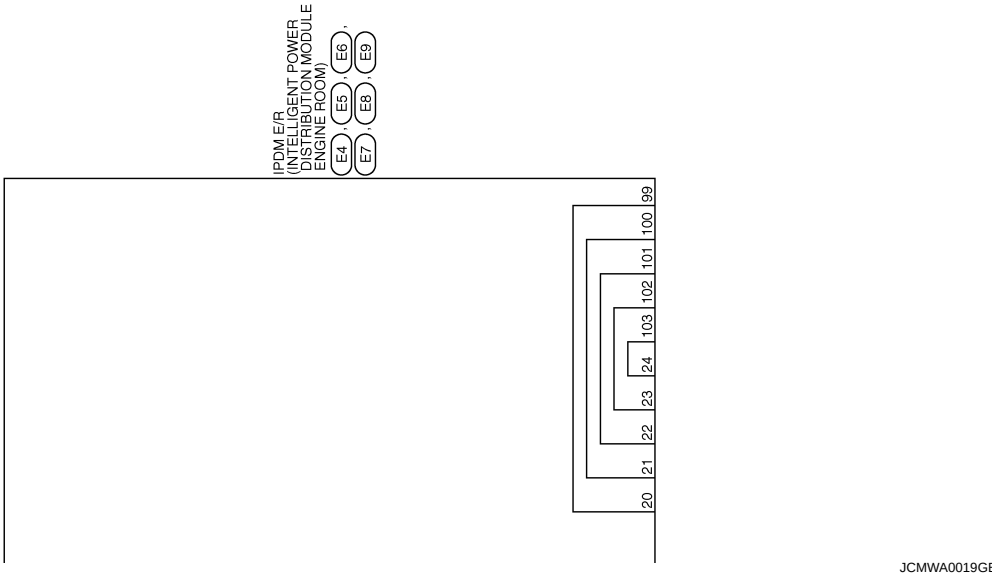
*2: M/T models only

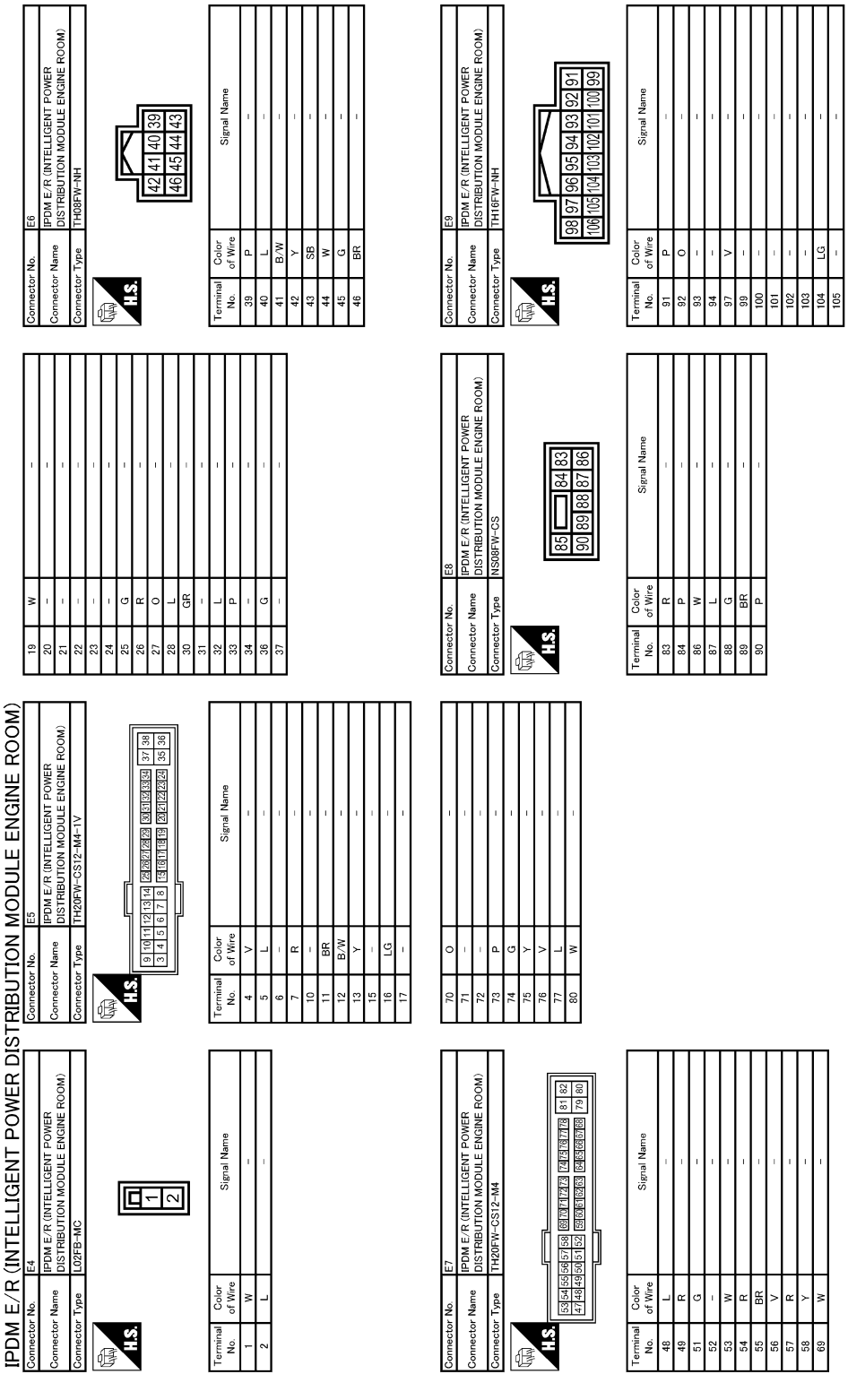
Wiring Diagram — IPDM E/R —

INFOID:0000000000962512




IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E4, E5, E6, E7, E8, E9
CPU
105
34
39
40
76
45
44
17
104
97
75
43
33
32
28
27
42
16
41
12
30
72
46
80
88
73
58
31
71
52
19
51
57
56
26
25
37
77
13
74
15
36
30A H
STARTER RELAY
STARTER CONTROL RELAY
10A 47
10A 43
10A 44
15A 46
10A 45
15A 41
10A 42
IGNITION RELAY
FUEL PUMP RELAY
To CAN system
DATA LINE
DATA LINE
ALTERNATOR
HORN RELAY 2
HORN RELAY 1, COMBINATION SWITCH (SPIRAL CABLE)
HOOD SWITCH
COOLING FAN CONTROL MODULE
OIL PRESSURE SWITCH
A/T DEVICE (DETENTION SWITCH)
STEERING LOCK UNIT, BCM (BODY CONTROL MODULE)
PUSH-BUTTON IGNITION SWITCH (PUSH SWITCH), BCM (BODY CONTROL MODULE)
BCM (BODY CONTROL MODULE)
COOLING FAN RELAY
FRONT WIPER MOTOR
BCM (BODY CONTROL MODULE), TCM (TRANSMISSION CONTROL MODULE), CLUTCH INTERLOCK SWITCH
BCM (BODY CONTROL MODULE)
STARTER MOTOR
WASHER PUMP
PARK/NEUTRAL POSITION SWITCH
SNOW MODE SWITCH, TCM (TRANSMISSION CONTROL MODULE)
BCM (BODY CONTROL MODULE)
ECM, FUEL INJECTOR
HEATED OXYGEN SENSOR 2
AIR FUEL RATIO (A/F) SENSOR 1
ICC SENSOR INTEGRATED UNIT
AWD CONTROL UNIT, ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT), YAW RATE/SIDE G SENSOR, STEERING ANGLE SENSOR, POWER STEERING CONTROL UNIT, 4WAS MAIN CONTROL UNIT
ECM
FUEL PUMP
COOLING FAN RELAY
JCMWA0018GB


IPDM E/R
(INTELLIGENT POWER
DISTRIBUTION MODULE
ENGINE ROOM)
E4
E5
E6
E7
E8
E9
99
100
101
102
103
24
23
22
21
20
JCMWA0019GB



JCMWA0020GE

Fail Safe

INFOID:0000000000962513

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With ECM

Control part	Fail-safe operation
Cooling fan	• Outputs the pulse duty signal (PWM signal) 100% when the ignition switch is turned ON • Outputs the pulse duty signal (PWM signal) 0% when the ignition switch is turned OFF
A/C compressor	A/C relay OFF
Alternator	Outputs the power generation command signal (PWM signal) 0%

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
• Parking lamps • License plate lamps • Side maker lamps • Illuminations • Tail 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
Front wiper	• The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed. • The wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the INT mode and the front wiper motor is operating.
Front fog lamps	Front fog lamp relay OFF
Horn	Horn OFF
Ignition relay	The status just before activation of fail-safe is maintained.
Starter motor	Starter control relay OFF
Steering lock unit	Steering lock relay OFF

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

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

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

NOTE:

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

FRONT WIPER CONTROL

IPDM E/R detects front wiper stop position by a front wiper auto stop signal.
When a front wiper auto stop signal is in the conditions listed below, IPDM E/R stops power supply to wiper after repeating a front wiper 10 second activation and 20 second stop five times.

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

NOTE:

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

STARTER MOTOR PROTECTION FUNCTION

IPDM E/R turns OFF the starter control relay to protect the starter motor when the starter control relay remains active for 90 seconds.

DTC Index

INFOID:0000000000962514

CONSULT display	Fail-safe	TIME[NOTE]		Refer to
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	×	CRNT	1 –39[*1]	PCS-15
			CRNT[*2]	
B2098: IGN RELAY ON	×	CRNT	1 – 39	PCS-16
B2099: IGN RELAY OFF	—	CRNT	1 – 39	PCS-17
B2108: STRG LCK RELAY ON	—	CRNT	1 – 39	SEC-89
B2109: STRG LCK RELAY OFF	—	CRNT	1 – 39	SEC-90
B210A: STRG LCK STATE SW	—	CRNT	1 – 39	SEC-91
B210B: START CONT RLY ON	—	CRNT	1 – 39	SEC-95
B210C: START CONT RLY OFF	—	CRNT	1 – 39	SEC-96
B210D: STARTER RELAY ON	—	CRNT	1 – 39	SEC-97
B210E: STARTER RELAY OFF	—	CRNT	1 – 39	SEC-98
B210F: INTRLCK/PNP SW ON	—	CRNT	1 – 39	SEC-100
B2110: INTRLCK/PNP SW OFF	—	CRNT	1 – 39	SEC-104

*1: Only for the models with AFS

*2: Only for the models without AFS (The display is fixed to CRNT until the self-diagnosis results are erased when the malfunctions were found in the past.)

NOTE:

The details of TIME display are as follows.

- CRNT: The malfunctions that are detected now
- 1 - 39: The number is indicated when it is normal at present and a malfunction was detected in the past. It increases like 0 → 1 → 2 · · · 38 → 39 after returning to the normal condition whenever IGN OFF → ON. It is fixed to 39 until the self-diagnosis results are erased if it is over 39. It returns to 0 when a malfunction is detected again in the process.

AFS CONTROL UNIT

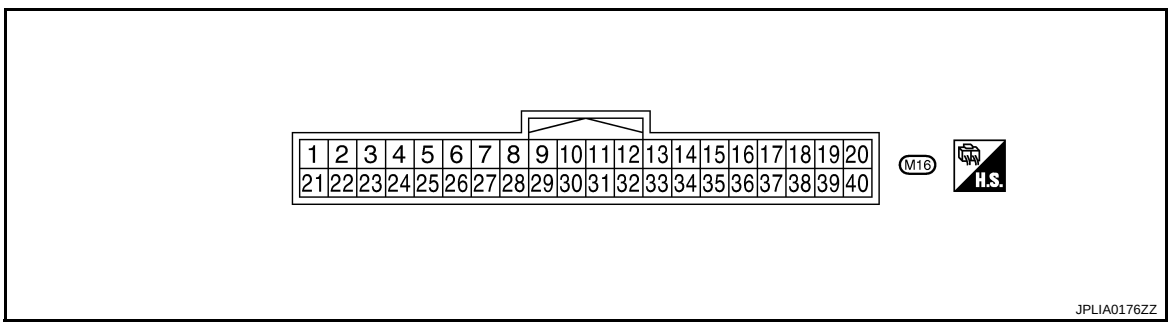
Reference Value

INFOID:0000000000962515

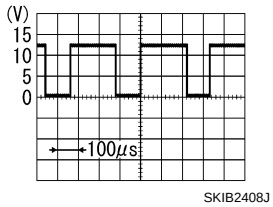
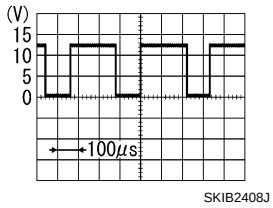
VALUES ON THE DIAGNOSIS TOOL

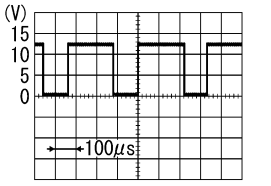
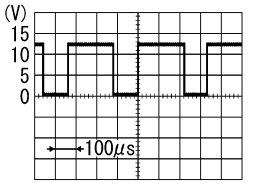
Monitor Item	Condition		Value/Status
STR ANGLE SIG	Steering	Straight-forward	Approx. 0°
		Steering	Approx. -900° - +900°
VHCL SPD	Driving at 40 km/h		40 km/h
SLCT LVR POSI	Selector lever operation		P - 1
HEAD LAMP	Light switch	2ND	ON
		Other than 2ND	OFF
AFS switch	AFS switch	ON	ON
		OFF	OFF
HI SEN OTP RR	Vehicle rear height (17-inch wheel models)	Unloaded vehicle condition	Approx. 2.5 V
		Low (Leveling operation downward edge)	Approx. 1.6 V
	Vehicle rear height (18-inch wheel models)	Unloaded vehicle condition	Approx. 2.5 V
		Low (Leveling operation downward edge)	Approx. 1.7 V
LEV ACTR VLTG	Headlamp leveling (17-inch wheel models)	Unloaded vehicle condition	Approx. 70.0%
		Low (Leveling operation downward edge)	Approx. 34.6%
	Headlamp leveling (18-inch wheel models)	Unloaded vehicle condition	Approx. 70.0%
		Low (Leveling operation downward edge)	Approx. 36.2%
SWVL SEN RH	Right headlamp swivel activation	Standard position	Approx. 0°
		Activation	Positive degree (+°)
SWVL SEN LH	Left headlamp swivel activation	Standard position	Approx. 0°
		Activation	Positive degree (+°)
SWVL ANGLE RH	Right headlamp swivel activation	Standard position	Approx. 0°
		Activation	Positive degree (+°)
SWVL ANGLE LH	Left headlamp swivel activation	Standard position	Approx. 0°
		Activation	Positive degree (+°)

TERMINAL LAYOUT



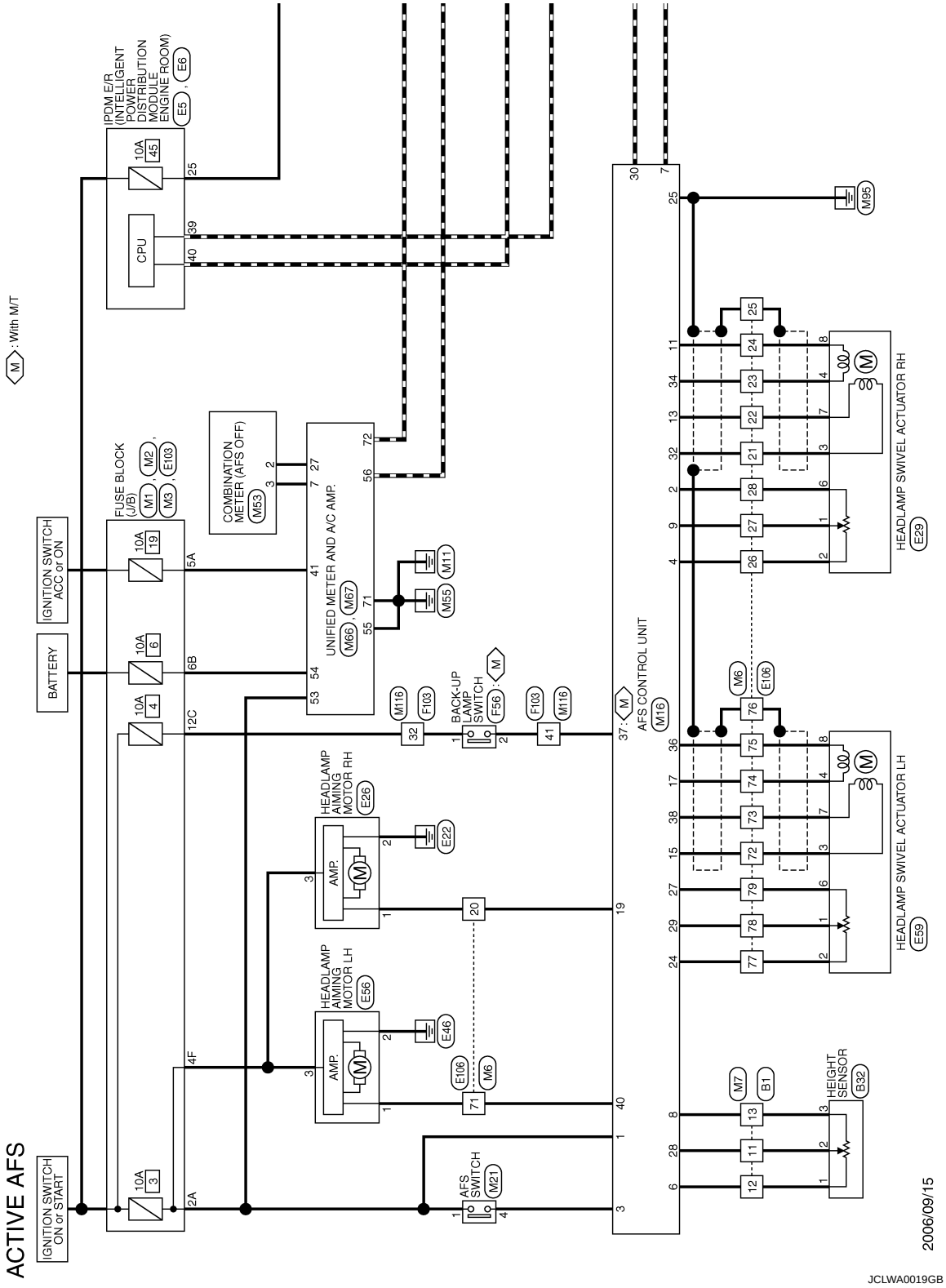
PHYSICAL VALUES

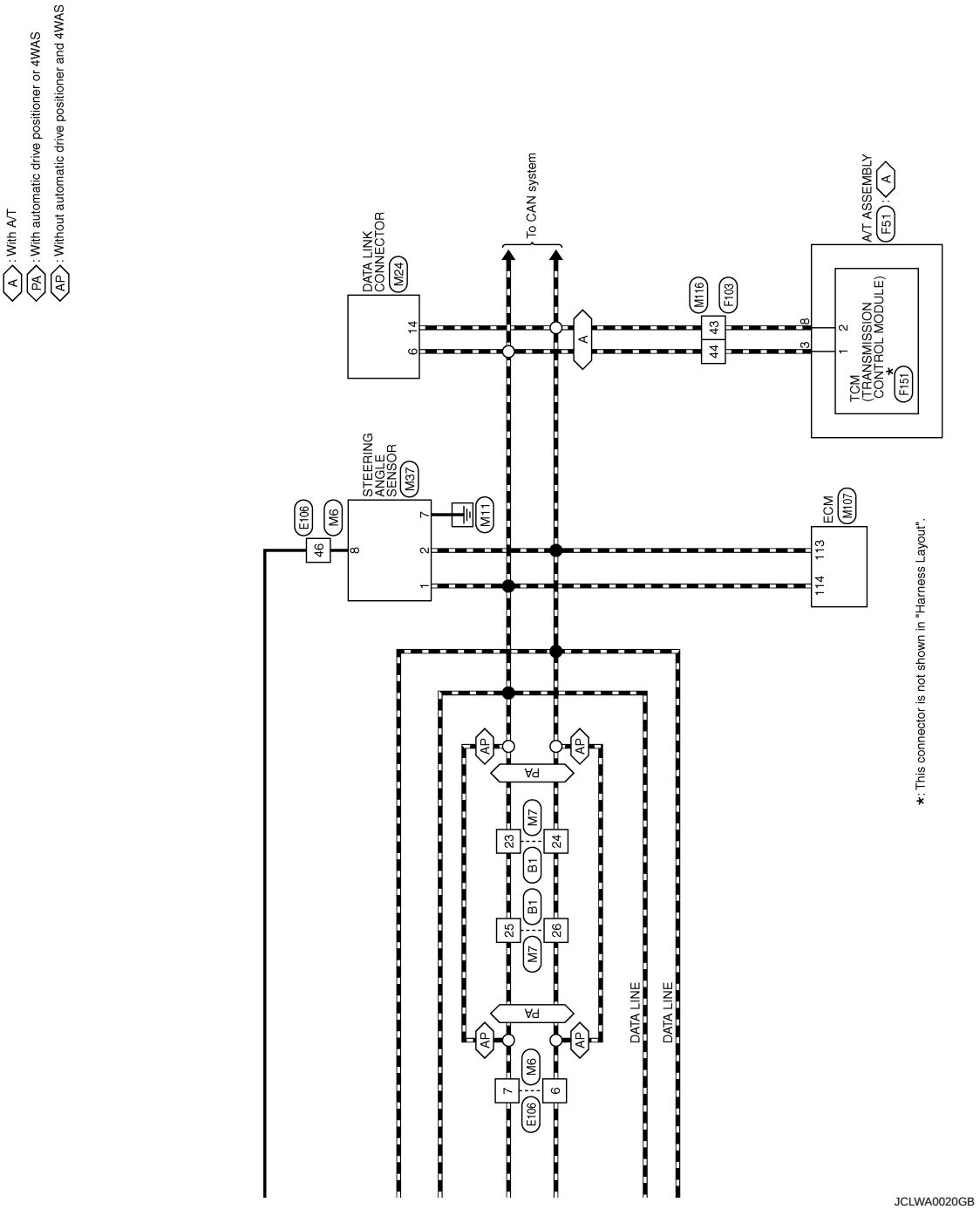
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ output			
1 (Y)	Ground	Ignition power supply	Input	The ignition switch ON		Battery voltage
2 (LG)	Ground	Right swivel position sensor ground	Input	The ignition switch ON		0 V
3 (GR)	Ground	AFS switch signal	Input	AFS switch	ON	0 V
					OFF	Battery voltage
4 (Y)	Ground	Right swivel position sensor power supply	Output	The ignition switch ON		5 V
6 (W)	Ground	Height sensor power supply	Output	The ignition switch ON		5 V
7 (P)	Ground	CAN-L	Input/ output	—		—
8 (B)	Ground	Height sensor ground	Input	The ignition switch ON		0 V
9 (GR)	Ground	Right swivel position sensor signal	Output	Right headlamp swivel angle	0°	1.0 V
					20°	2.8 V
11 (R)	Ground	Right swivel motor 1-phase (–)	Output	Right headlamp swivel	Activation	Reference waveform  SKIB2408J 8 - 12 V
13 (B)	Ground	Right swivel motor 2-phase (–)	Output	Right headlamp swivel	Stopped	9.5 - 11.5 V
15 (G)	Ground	Left swivel motor 1-phase (+)	Output	Left headlamp swivel	Activation	Reference waveform  SKIB2408J 8 - 12 V
17 (W)	Ground	Left swivel motor 2-phase (+)	Output	Left headlamp swivel	Stopped	9.5 - 11.5 V
19 (SB)	Ground	Right levelizer signal	Output	Right headlamp leveling (17-inch wheel models)	Unloaded vehicle condition	8.8 V
					Leveling operation downward edge	4.3 V
				Right headlamp leveling (18-inch wheel models)	Unloaded vehicle condition	8.8 V
					Leveling operation downward edge	4.5 V
24 (V)	Ground	Left swivel position sensor power supply	Output	The ignition switch ON		5 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ output			
25 (B)	Ground	Ground	—	The ignition switch ON		0 V
27 (BR)	Ground	Left swivel position sensor ground	Input	The ignition switch ON		0 V
28 (SB)	Ground	Height sensor signal	Output	Vehicle rear height	Unloaded vehicle condition	2.5 V
					Low (Leveling operation downward edge)	1.4 V
29 (O)	Ground	Left swivel position sensor signal	Output	Left headlamp swivel angle	0°	1.0 V
					20°	2.8 V
30 (L)	Ground	CAN-H	Input/ output	—		—
32 (G)	Ground	Right swivel motor 2-phase (+)	Output	Right headlamp swivel	Activation	Reference waveform  SKIB2408J 8 - 12 V
34 (W)	Ground	Right swivel motor 1-phase (+)	Output	Right headlamp swivel	Stopped	9.5 - 11.5 V
36 (R)	Ground	Left swivel motor 2-phase (-)	Output	Left headlamp swivel	Activation	Reference waveform  SKIB2408J 8 - 12 V
37 (O)	Ground	Reverse signal	Input	Back-up lamp switch	ON	Battery voltage
					OFF	0 V
38 (B)	Ground	Left swivel motor 1-phase (-)	Output	Left headlamp swivel	Stopped	9.5 - 11.5 V
40 (O)	Ground	Left levelizer signal	Output	Left headlamp leveling (17-inch wheel models)	Unloaded vehicle condition	8.8 V
					Leveling operation downward edge	4.3 V
				Left headlamp leveling (18-inch wheel models)	Unloaded vehicle condition	8.8 V
					Leveling operation downward edge	4.5 V

Wiring Diagram –ACTIVE AFS–

INFOID:0000000000962516




A : With A/T
PA : With automatic drive positioner or 4WAS
AP : Without automatic drive positioner and 4WAS
DATA LINK CONNECTOR
M24
To CAN system
A/T ASSEMBLY
F51
A
M116
F103
TCM (TRANSMISSION CONTROL MODULE)
F151
STEERING ANGLE SENSOR
M37
E106
M6
M11
ECM
M107
DATA LINE
DATA LINE
*: This connector is not shown in "Harness Layout".
JCLWA0020GB

ACTIVE AFS

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

Terminal No.	Color of Wire	Signal Name
11	SB	–
12	V	–
13	GR	–
23	L	–
24	P	–
25	L	–
26	P	–

Connector No.	E26
Connector Name	HEADLAMP AIMING MOTOR RH
Connector Type	HS03FGY

Terminal No.	Color of Wire	Signal Name
1	SB	–
2	B	–
3	G	–

Connector No.	B32
Connector Name	HEIGHT SENSOR
Connector Type	RH03FB

Terminal No.	Color of Wire	Signal Name
1	V	–
2	SB	–
3	GR	–

Connector No.	E29
Connector Name	HEADLAMP SWIVEL ACTUATOR RH
Connector Type	RS08FGY-PR

Terminal No.	Color of Wire	Signal Name
1	LG	–
2	Y	–
3	W	–
4	G	–
6	W	–
7	B	–
8	R	–

Connector No.	E5
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-1V

Terminal No.	Color of Wire	Signal Name
25	G	–

Connector No.	E56
Connector Name	HEADLAMP AIMING MOTOR LH
Connector Type	HS03FGY

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

Connector No.	E6
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH08FW-NH

Terminal No.	Color of Wire	Signal Name
39	P	–
40	L	–

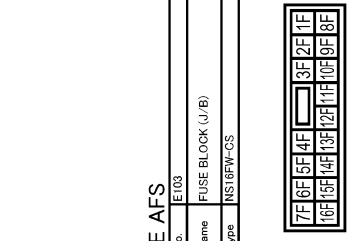
Connector No.	E59
Connector Name	HEADLAMP SWIVEL ACTUATOR LH
Connector Type	RS08FGY-PR

Terminal No.	Color of Wire	Signal Name
1	BR	–
2	V	–
3	W	–
4	R	–
6	O	–
7	B	–
8	G	–

JCLWA0021GB

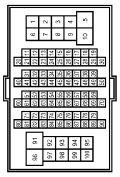
ACTIVE AFS

Connector No.	E103
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS



Terminal No.	Color of Wire	Signal Name
4F	G	–

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color of Wire	Signal Name
6	P	–
7	L	–
20	SB	–
21	W	–
22	B	–
23	G	–
24	R	–
25	SHIELD	–
26	Y	–
27	LG	–
28	W	–
46	LG	–
71	O	–
72	W	–
73	B	–
74	R	–
75	G	–
76	SHIELD	–
77	V	–
78	BR	–
79	O	–

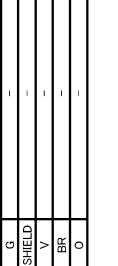
Connector No.	F56
Connector Name	BACK-UP LAMP SWITCH
Connector Type	RK02FB

Terminal No.	Color of Wire	Signal Name
1	R	–
2	O	–

Connector No.	F103
Connector Name	WIRE TO WIRE
Connector Type	TK36FW-NS10

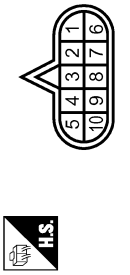
Terminal No.	Color of Wire	Signal Name
32	R	–
41	O	–
43	P	–
44	L	–

Connector No.	F151
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Type	SP10FBGY



Terminal No.	Color of Wire	Signal Name
1	BR	CAN-H
2	L/Y	CAN-L

Connector No.	F51
Connector Name	A/T ASSEMBLY
Connector Type	RK10FG-DGY



Terminal No.	Color of Wire	Signal Name
3	L	–
8	P	–

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-M2

Terminal No.	Color of Wire	Signal Name
2A	G	–
5A	V	–

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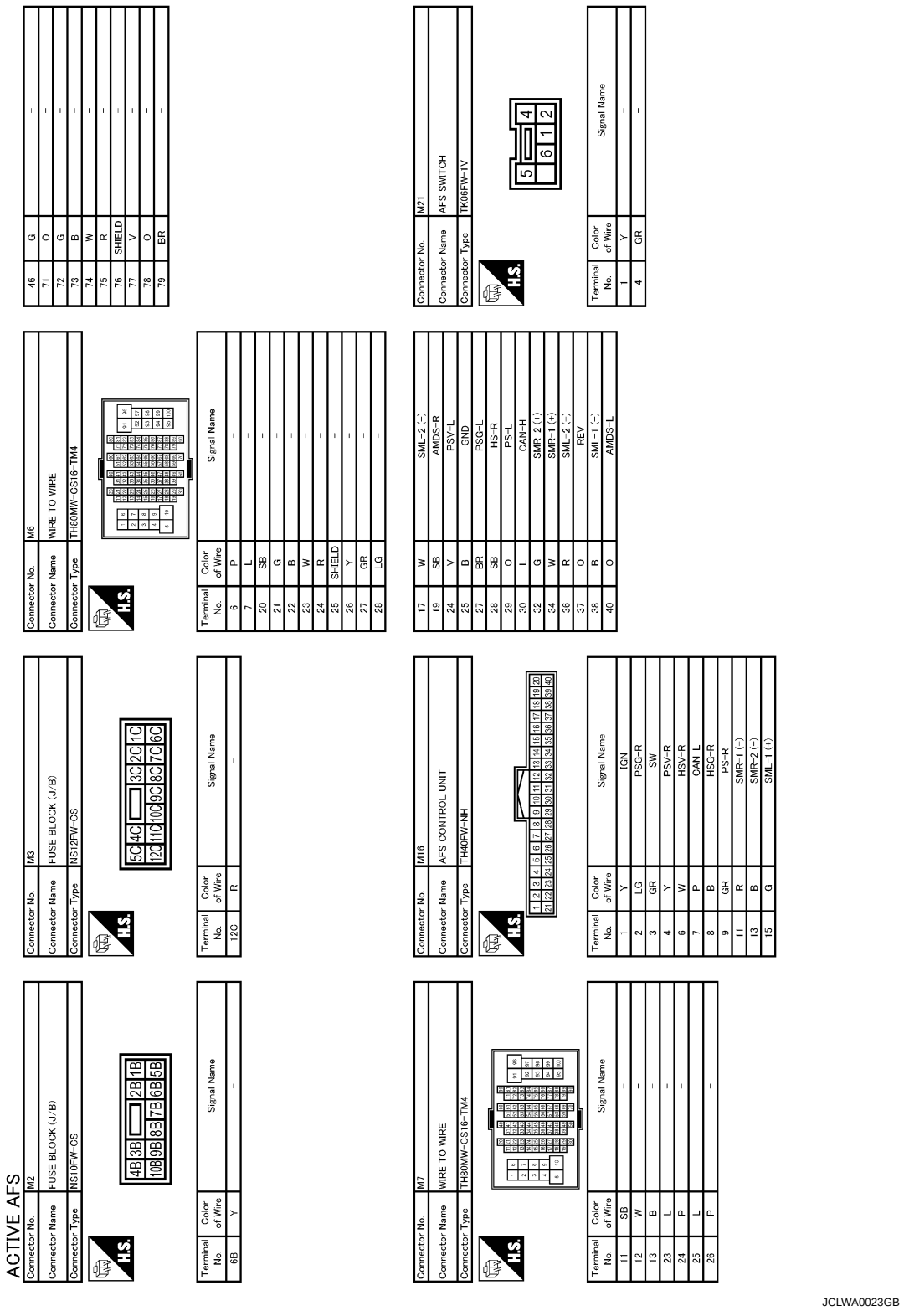
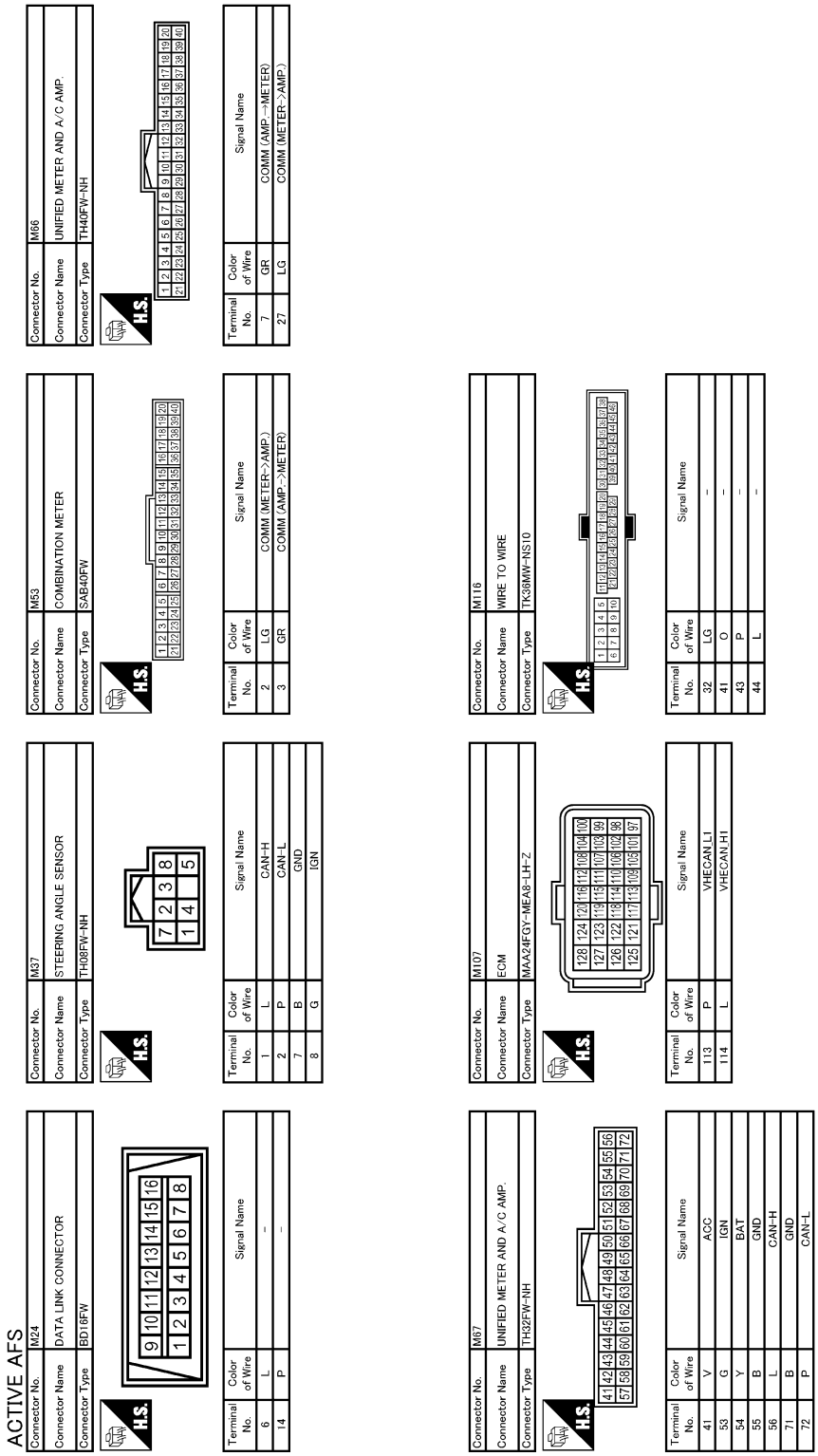


JCLWA0023GB



JCLWA0024GB

Fail Safe

INFOID:0000000000962517

CONSULT indication	Fail-safe	AFS OFF indicator lamp	Cancellation
CAN COMM CIRCUIT [U1000]	• Right and left swivel motors stop at the position when DTC is detected. • Right and left aiming motors stop at the position when DTC is detected.	Blinks 1 second each.	The ignition switch OFF
CONTROL UNIT (CAN) [U1010]	• Right and left swivel motors stop at the position when DTC is detected. • Right and left aiming motors stop at the position when DTC is detected.	Blinks 1 second each.	The ignition switch OFF
SWIVEL ACTUATOR [RH, LH] [B2503, B2504]	• Right and left swivel motors stop at the position when DTC is detected. • The signal, approximately 2 V decreased from the levelizer signal when DTC detected, is output.	Blinks 1 second each.	The ignition switch OFF
HI SEN UNUSUAL [RR] [B2514]	• Right and left aiming motors stop at the position when DTC is detected.	—	The ignition switch OFF
ST ANG SEN SIG [C0126]	• Right and left swivel motor swivel angle returns to 0° and fixed.	Blinks 1 second each.	The ignition switch OFF
SHIFT SIG [P, R] [B2516]	• Right and left swivel motor swivel angle returns to 0° and fixed.	Blinks 1 second each.	The ignition switch OFF
VEHICLE SPEED SIG [B2517]	• Right and left swivel motor swivel angle returns to 0° and fixed. • Right and left aiming motors stop at the position when DTC is detected.	Blinks 1 second each.	The ignition switch OFF
LEVELIZER CALIB [B2519]	• Right and left aiming motors stop at the position when DTC is detected.	—	When the levelizer adjustment is completed.
ST ANGLE SEN CALIB [C0428]	• Right and left swivel motor swivel angle returns to 0° and fixed.	Blinks 1 second each.	When the steering angle sensor neutral position registration is competed
ECU CIRC [B2521]	• Right and left swivel motors stop at the position when DTC is detected. • Right and left aiming motors stop at the position when DTC is detected.	Blinks 1 second each.	The ignition switch OFF

DTC Inspection Priority Chart

INFOID:0000000000962518

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

NOTE:

- **If DTC U1000 is displayed with other DTC, first perform the trouble diagnosis for DTC U1000.**
- **If DTC U1010 is displayed with other DTC, first perform the trouble diagnosis for DTC U1010.**

Priority	Detected items (DTC)
1	• U1000 CAN COMM CIRCUIT • U1010 CONTROPL UNIT (CAN)
2	• B2519 LEVELIZER CALIB • B2521 ECU CIRC • C0428 ST ANG SEN CALIB
3	• B2503 SWIVEL ACTUATOR [RH] • B2504 SWIVEL ACTUATOR [LH] • B2514 HI SEN UNUSUAL [RR] • B2516 SHIFT SIG [P, R] • B2517 VEHICLE SPEED SIG • C0126 ST ANG SEN SIG

DTC Index

INFOID:0000000000962519

CONSULT indication	Fail-safe	AFS OFF indicator lamp	Reference
U1000: CAN COMM CIRCUIT	×	×	EXL-59, "Description"
U1010: CONTROL UNIT (CAN)	×	×	EXL-60, "Description"
B2503, B2504: SWIVEL ACTUATOR [RH, LH]	×	×	EXL-42, "Description"
B2514: HI SEN UNUSUAL [RR]	×		EXL-47, "Description"
B2516: SHIFT SIG [P, R]	×	×	EXL-51, "Description"
B2517: VEHICLE SPEED SIG	×	×	EXL-52, "Description"
B2519: LEVELIZER CALIB	×		EXL-53, "Description"
B2521: ECU CIRC	×	×	EXL-54, "Description"
C0126: ST ANG SEN SIG	×	×	EXL-57, "Description"
C0428: ST ANGLE SEN CALIB	×	×	EXL-58, "Description"

SYMPTOM DIAGNOSIS

EXTERIOR LIGHTING SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000000962520

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

Symptom		Possible cause	Inspection item
Headlamp does not switch to the high beam.	One side	• Fuse • Harness between IPDM E/R and the front combination lamp • Front combination lamp (High beam solenoid) • IPDM E/R	Headlamp (HI) circuit Refer to EXL-65.
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS DO NOT SWITCH TO HIGH BEAM" Refer to EXL-179.	
High beam indicator lamp is not turned ON. (Headlamp switches to the high beam.)		• Combination meter • Unified meter and A/C amp.	• Unified meter and A/C amp. Data monitor "HI-BEAM IND" • BCM (HEAD LAMP) Active test "HEADLAMP"
Headlamp does not switch to the low beam.	One side	Front combination lamp (High beam solenoid)	—
	Both sides	• Combination switch • Harness between the combination switch and BCM • BCM	Combination switch Refer to BCS-77.
		High beam request signal • BCM • IPDM E/R	IPDM E/R Data monitor "HL HI REQ"
		IPDM E/R	—
Headlamp is not turned ON.	One side	• Fuse • Xenon bulb • Harness between IPDM E/R and the front combination lamp • Front combination lamp (xenon headlamp) • IPDM E/R	Headlamp (LO) circuit Refer to EXL-67.
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON" Refer to EXL-179.	
Headlamp is not turned OFF.	When the ignition switch is turned ON		
	The ignition switch is turned OFF (After activating the battery saver).	IPDM E/R	—
Headlamp is not turned ON/OFF with the lighting switch AUTO.		• Combination switch • Harness between the combination switch and BCM • BCM	Combination switch Refer to BCS-77.
		• Optical sensor • Harness between the optical sensor and BCM • BCM	Optical sensor Refer to EXL-80.

Symptom		Possible cause	Inspection item
Front fog lamp is not turned ON.	One side	• Front fog lamp bulb • Harness between IPDM E/R and the front combination lamp • Front combination lamp • IPDM E/R	Front fog lamp circuit Refer to EXL-73.
	Both side	**Symptom diagnosis** "BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON" Refer to EXL-182.	
Front fog lamp is not turned ON.			
Parking lamp is not turned ON.		• Fuse • Parking lamp bulb • Harness between IPDM E/R and the front combination lamp • Front combination lamp • IPDM E/R	Parking lamp circuit Refer to EXL-75.
Tail lamp is not turned ON.		• Harness between IPDM E/R and the rear combination lamp • Rear combination lamp	Tail lamp circuit Refer to EXL-85.
License plate lamp is not turned ON.		• Harness between IPDM E/R and the license plate lamp • License plate lamp	License plate lamp circuit Refer to EXL-87.
Tail lamp and the license plate lamp are not turned ON.		• Fuse • Harness between IPDM E/R and the rear combination lamp • IPDM E/R	Tail lamp circuit Refer to EXL-85.
• Parking lamp, the tail lamp and the license plate lamp are not turned ON. • Parking lamp, the tail lamp and the license plate lamp are not turned OFF. (Each illumination is turned ON/OFF.)		**Symptom diagnosis** "PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON" Refer to EXL-181.	
Turn signal lamp does not blink.	Indicator lamp is normal. (The applicable side performs the high flasher activation.)	• Harness between BCM and each turn signal lamp • Turn signal lamp bulb	Turn signal circuit Refer to EXL-77.
	Indicator lamp is included	• Combination switch • Harness between the combination switch and BCM • BCM	Combination switch Refer to BCS-77.
Turn signal indicator lamp does not blink. (The turn signal indicator lamp is normal.)	One side	Combination meter	—
	Both sides (Always)	• Turn signal indicator lamp signal - Unified meter and A/C amp. - BCM • Combination meter	• Unified meter and A/C amp. Data monitor "TURN IND" • BCM (FLASHER) Active test "FLASHER"
	Both sides (Only when activating the hazard warning lamp with the ignition switch OFF)	• The combination meter power supply and the ground circuit • Combination meter	Combination meter Power supply and the ground circuit Refer to MWI-49.
• Hazard warning lamp does not activate. • Hazard warning lamp continues activating. (Turn signal is normal.)		• Hazard switch • Harness between the hazard switch and BCM • BCM	Hazard switch Refer to EXL-83.

Symptom	Possible cause	Inspection item
Headlamp auto aiming does not activate. (AFS is normal.)	• Harness between AFS control unit and aiming motor • Front combination lamp (Aiming motor) • AFS control unit	Aiming motor Refer to EXL-71.
AFS OFF indicator lamp is not turned ON.	• AFS OFF indicator lamp signal - Unified meter and A/C amp. - AFS control unit • Combination meter	Unified meter and A/C amp. Data monitor "AFS OFF IND"

NORMAL OPERATING CONDITION

Description

INFOID:0000000000962521

XENON HEADLAMP

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

AUTO LIGHT SYSTEM

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

BOTH SIDE HEADLAMPS DO NOT SWITCH TO HIGH BEAM

Description

INFOID:0000000000962522

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

Diagnosis Procedure

INFOID:0000000000962523

1.COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-77.

Is the combination switch normal?

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

2.CHECK HEDLAMP (HI) REQUEST SIGNAL INPUT

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

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

Is the item status normal?

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

3.HEADLAMP (HI) CIRCUIT INSPECTION

Check the headlamp (HI) circuit. Refer to EXL-65.

Is the headlamp (HI) circuit normal?

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

BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON

Description

INFOID:0000000000962524

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

Diagnosis Procedure

INFOID:0000000000962525

1.CHECK COMBINATION SWITCH

Check the combination switch. Refer to BCS-77.

Is the combination switch normal?

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

2.CHECK HEADLAMP (LO) REQUEST SIGNAL INPUT

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

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

Is the item status normal?

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

3.HEADLAMP (LO) CIRCUIT INSPECTION

Check the headlamp (LO) circuit. Refer to EXL-67.

Is the headlamp (LO) circuit normal?

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

PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON

Description

INFOID:0000000000962526

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

Diagnosis Procedure

INFOID:0000000000962527

1.COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-77.

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-III DATA MONITOR

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

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

Is the item status normal?

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

3.TAIL LAMP CIRCUIT INSPECTION

Check the tail lamp circuit. Refer to EXL-85.

Is the tail lamp circuit normal?

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

BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

Description

INFOID:0000000000962528

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

Diagnosis Procedure

INFOID:0000000000962529

1.COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-77.

Is the combination switch normal?

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

2.CHECK FRONT FOG LAMP REQUEST SIGNAL INPUT

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

Monitor item	Condition		Monitor status
FR FOG REQ	Front fog lamp switch (Lighting switch 2ND)	ON	ON
		OFF	OFF

Is the item status normal?

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

3.FRONT FOG LAMP CIRCUIT INSPECTION

Check the front fog lamp circuit. Refer to EXL-73.

Is the front fog lamp circuit normal?

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

PRECAUTION

PRECAUTIONS

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

INFOID:0000000000962530

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SRS and SB section of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SRS section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

Precautions For Xenon Headlamp Service

INFOID:0000000000962531

WARNING:

Comply with the following warnings to prevent any serious accident.

- **Disconnect the battery cable (negative terminal) or the power supply fuse before installing, removing, or touching the xenon headlamp (bulb included). The xenon headlamp contains high-voltage generated parts.**
- **Never work with wet hands.**
- **Check the xenon headlamp ON-OFF status after assembling it to the vehicle. Never turn the xenon headlamp ON in other conditions. Connect the power supply to the vehicle-side connector. (Turning it ON outside the lamp case may cause fire or visual impairments.)**
- **Never touch the bulb glass immediately after turning it OFF. It is extremely hot.**

CAUTION:

Comply with the following cautions to prevent any error and malfunction.

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

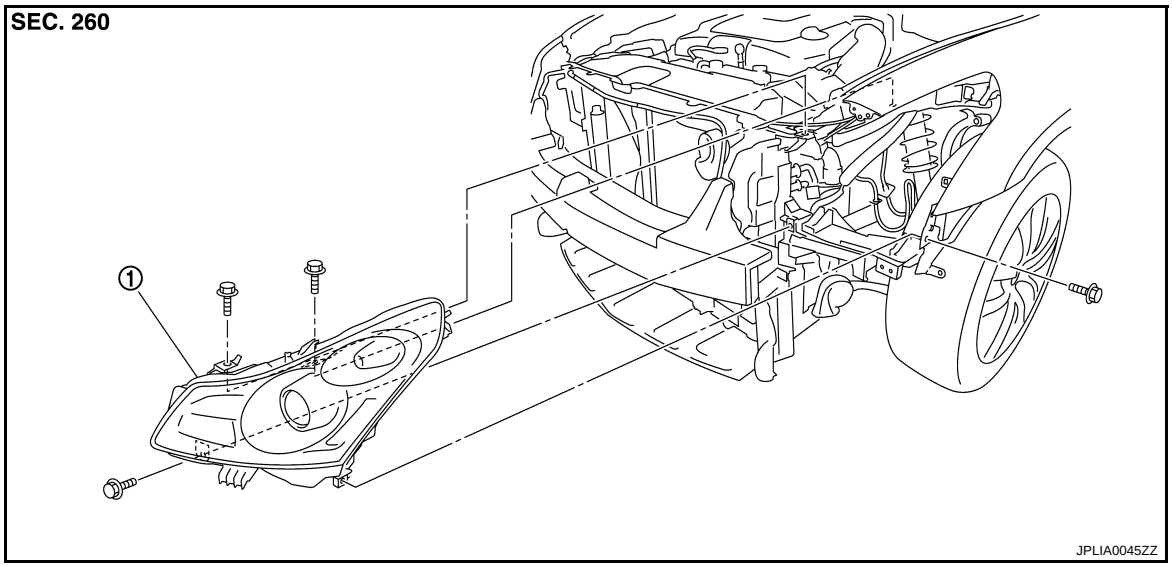
ON-VEHICLE REPAIR

FRONT COMBINATION LAMP

Exploded View

INFOID:0000000000962532

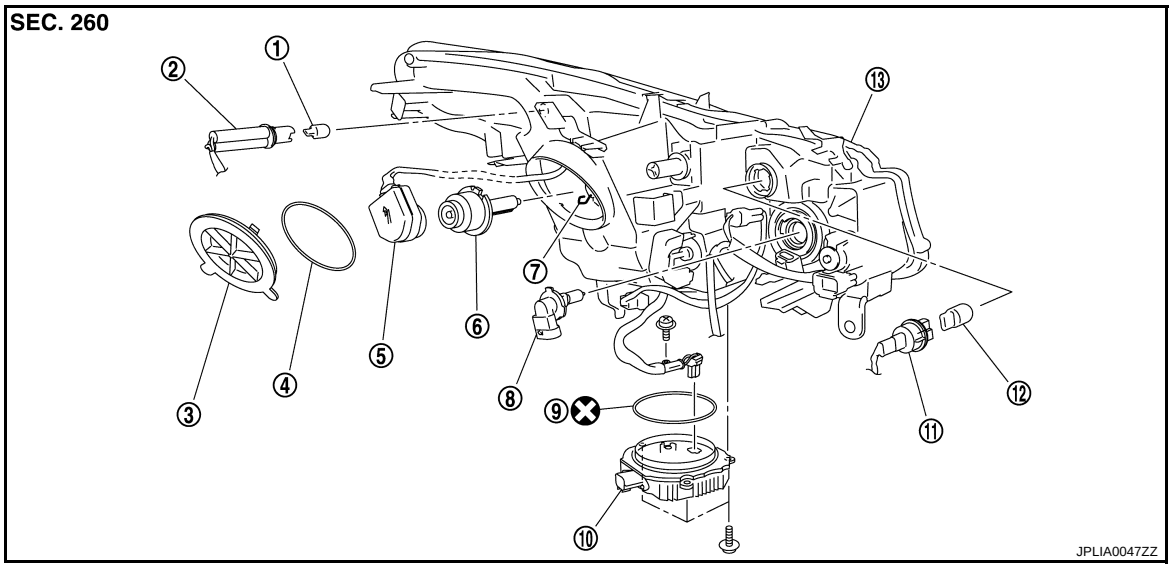
REMOVAL



1. Front combination lamp

DISASSEMBLY

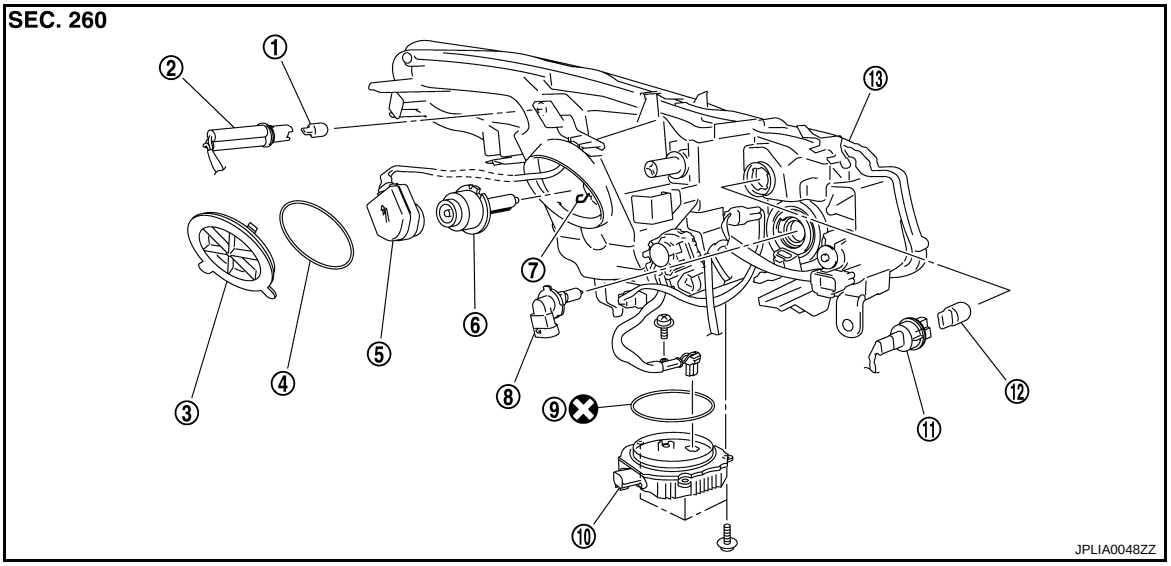
Without AFS



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

Refer to GI-3, "Contents" for symbols not described above.

With AFS



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

Refer to GI-3, "Contents" for symbols not described above.

Removal and Installation

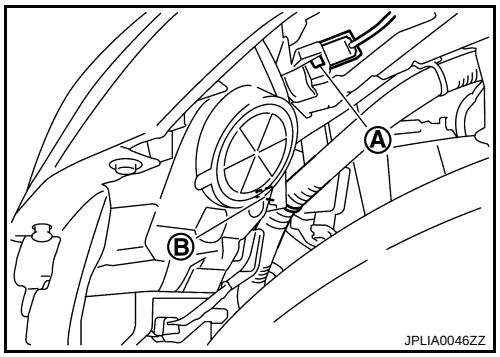
INFOID:0000000000962533

REMOVAL

CAUTION:

Disconnect the battery negative terminal or the fuse.

1. Remove front bumper fascia. Refer to EXT-10, "Exploded View".
2. Remove the headlamp mounting bolts.
3. Remove the pawl (A) and the harness clip (B).
4. Pull out the headlamp assembly forward the vehicle.
5. Disconnect the connector before removing the headlamp assembly.



INSTALLATION

Install in the reverse order of removal.

NOTE:

After installation, perform aiming adjustment. Refer to EXL-186, "Adjustment".

Replacement

INFOID:0000000000962534

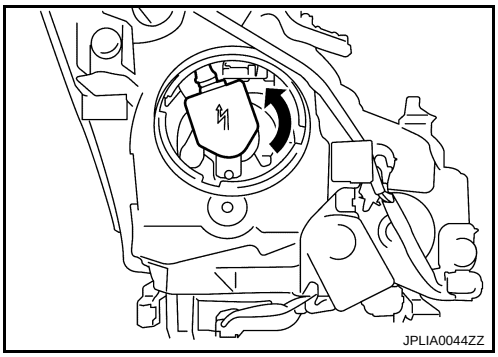
CAUTION:

- **Disconnect the battery negative terminal or the fuse.**
- **After installing the bulb, install the resin cap and the bulb socket securely for watertightness.**

HEADLAMP BULB

1. Remove the fender protector. Keep a service area.

2. Rotate the resin cap counterclockwise and unlock it.
3. Rotate the bulb socket counterclockwise and unlock it.
4. Remove the retaining spring lock. Remove the bulb from the headlamp.
   CAUTION:
   Never break the xenon bulb ceramic tube when replacing the bulb.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PARKING LAMP BULB

1. Remove the fender protector. Keep a service area.
2. Rotate the bulb socket counterclockwise and unlock it.
3. Remove the bulb from the bulb socket.

FRONT TURN SIGNAL LAMP BULB

1. Remove the air cleaner case.
2. Rotate the bulb socket counterclockwise and unlock it.
3. Remove the bulb from the bulb socket.

FRONT FOG LAMP BULB

1. Remove the air cleaner case.
2. Remove the front fog lamp bulb connector.
3. Rotate the bulb socket counterclockwise and unlock it.

Disassembly and Assembly

INFOID:0000000000962535

DISASSEMBLY

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

ASSEMBLY

Assemble in the reverse order of disassembly.

CAUTION:

- **Install HID control unit securely.**
- **After installing the bulb, install the resin cap and the bulb socket securely for watertightness.**

Adjustment

INFOID:0000000000962536

PREPARATION BEFORE ADJUSTING

NOTE:

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

Before performing aiming adjustment, check the following.

- Adjust the tire pressure to the specification.
- Fill with gasoline, engine coolant and each oil.
- Maintain the unloaded vehicle condition. (Remove luggage from the passenger compartment and the trunk room.)

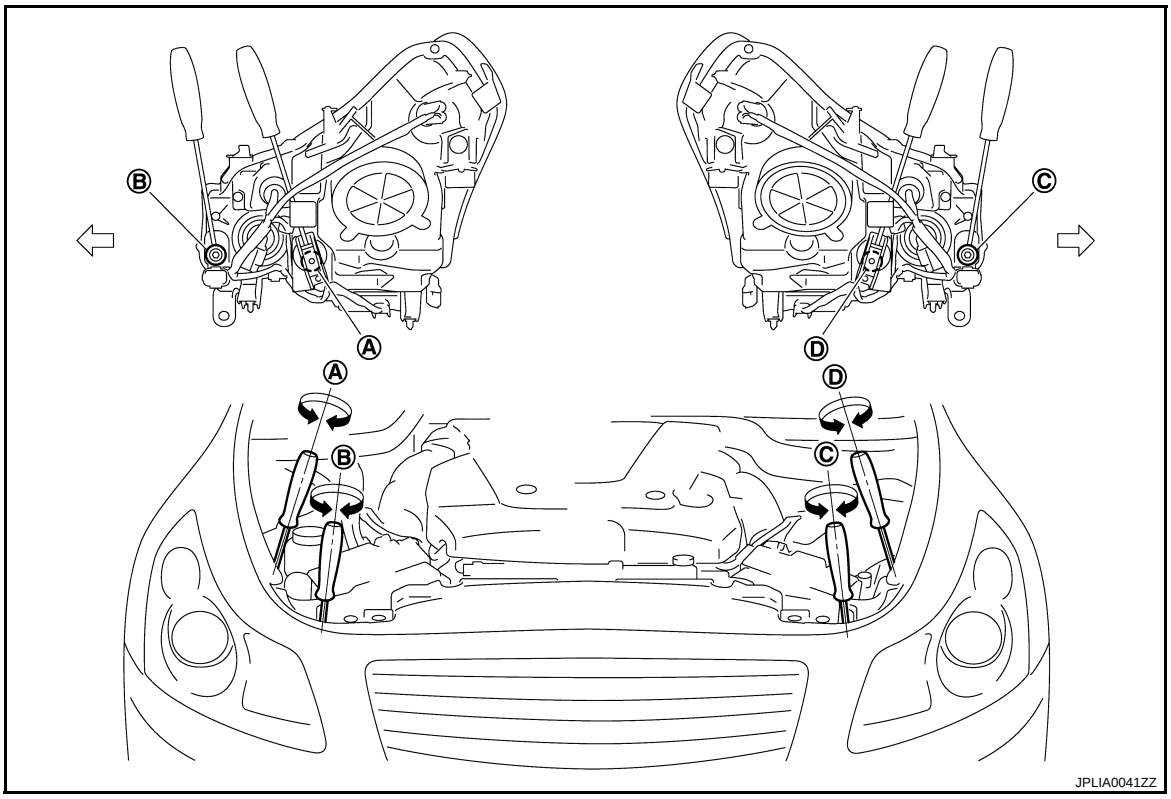
  NOTE:

  Do not remove the temporary tire, jack and on-vehicle tool.
- Wipe out dirt on the headlamp.

  CAUTION:

  Never use organic solvent (thinner, gasoline etc.)
- Ride alone on the driver seat.

AIMING ADJUSTMENT SCREW



A. Headlamp (RH) adjustment screw
B. Front fog lamp (RH) adjustment screw
C. Front fog lamp (LH) adjustment screw
D. Headlamp (LH) adjustment screw
⇦: Vehicle center

NOTE:

The figure is the vehicle without AFS. Each adjustment screw is applied to the vehicle with AFS.

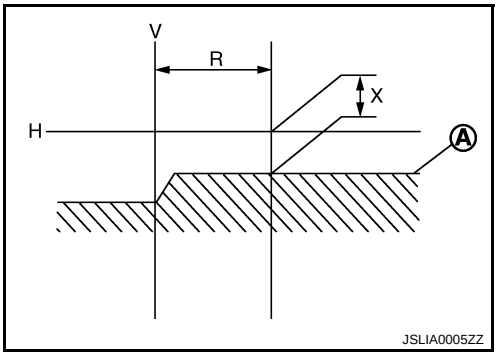
Adjustment screw		Screw driver rotation	Facing direction
A	Headlamp (RH)	Clockwise	UP
		Counterclockwise	DOWN
B	Front fog lamp (RH)	Clockwise	UP
		Counterclockwise	DOWN
C	Front fog lamp (LH)	Clockwise	UP
		Counterclockwise	DOWN
D	Headlamp (LH)	Clockwise	UP
		Counterclockwise	DOWN

AIMING ADJUSTMENT PROCEDURE (HEADLAMP)

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

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

Low beam distribution on the screen

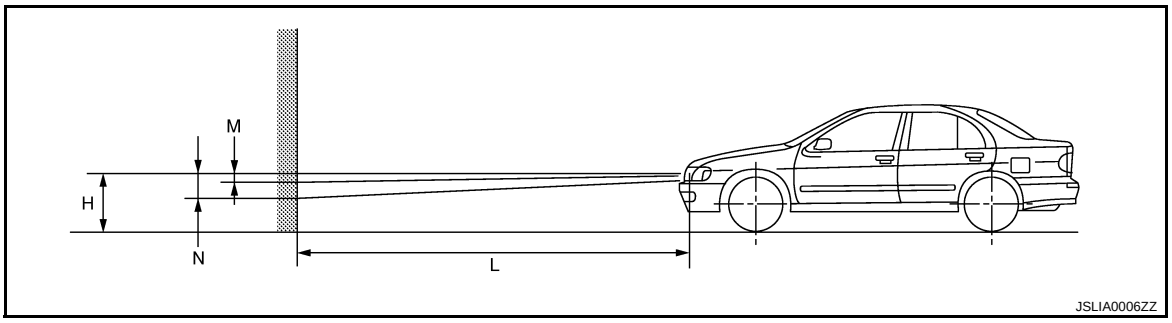


5. Adjust the cutoff line height (X) with the aiming adjustment screw so as to enter in the adjustment range (M–N) according to the horizontal center line of headlamp (H).

unit: mm (in)

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

Side view



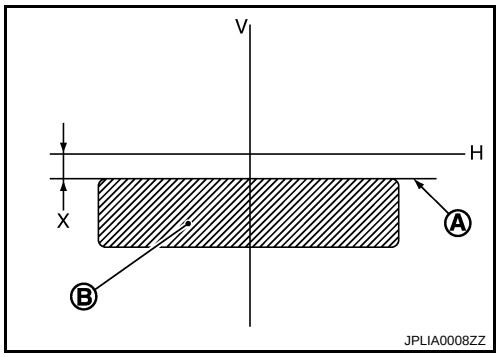
Distance between the headlamp center and the screen (L) : **10 m (32.81 ft)**

AIMING ADJUSTMENT PROCEDURE (FRONT FOG LAMP)

1. Place the screen.
   NOTE:
   - Stop the vehicle facing the wall.
   - Place the board on a plain road vertically.

2. Face the vehicle with the screen. Maintain 10 m (32.8 ft) between the front fog lamp center and the screen.
3. Start the engine. Turn the front fog lamp ON.
   NOTE:
   Shut off the headlamp light with the board to prevent from illuminating the adjustment screen.
   CAUTION:
   Never cover the lens surface with a tape etc. The lens is made of resin.
4. Adjust the cutoff line height (A) with the aiming adjustment screw so that the distance (X) between the horizontal center line of front fog lamp (H) and (A) becomes 200 mm (7.87 in).

Front fog lamp light distribution on the screen



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

FRONT FOG LAMP

Exploded View

INFOID:0000000000962537

The front fog lamp is integrated in the front combination lamp. Refer to EXL-184, "Exploded View".

Adjustment

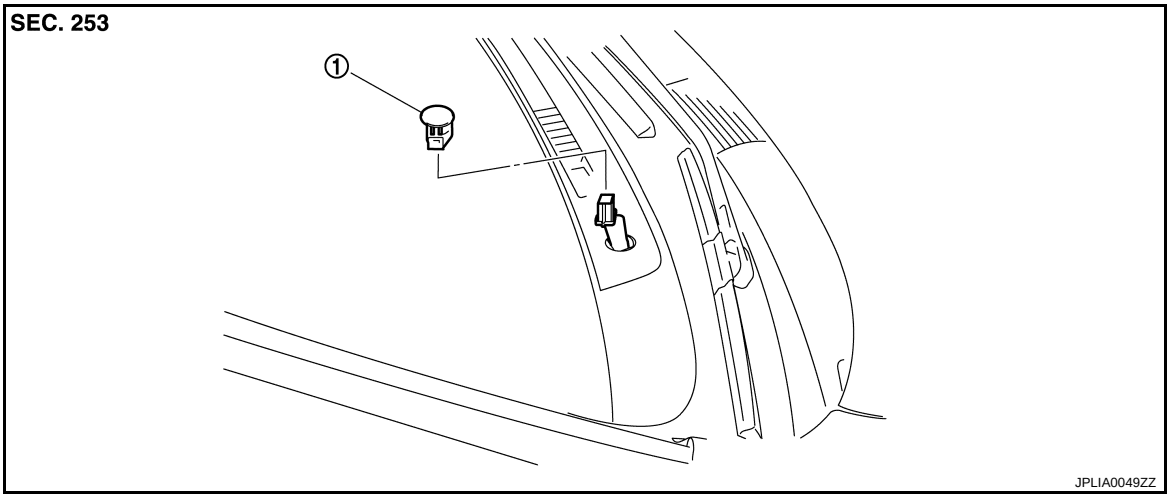
INFOID:0000000000962538

The front fog lamp is integrated in the front combination lamp. Refer to EXL-186, "Adjustment".

OPTICAL SENSOR

Exploded View

INFOID:0000000000962539



1. Optical sensor

Removal and Installation

INFOID:0000000000962540

REMOVAL

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

INSTALLATION

Install in the reverse order of removal.

LIGHTING AND TURN SIGNAL SWITCH

Exploded View

INFOID:0000000000962541

Lighting and turn signal switch is integrated in the combination switch. BCS-80, "Exploded View".

HAZARD SWITCH

Exploded View

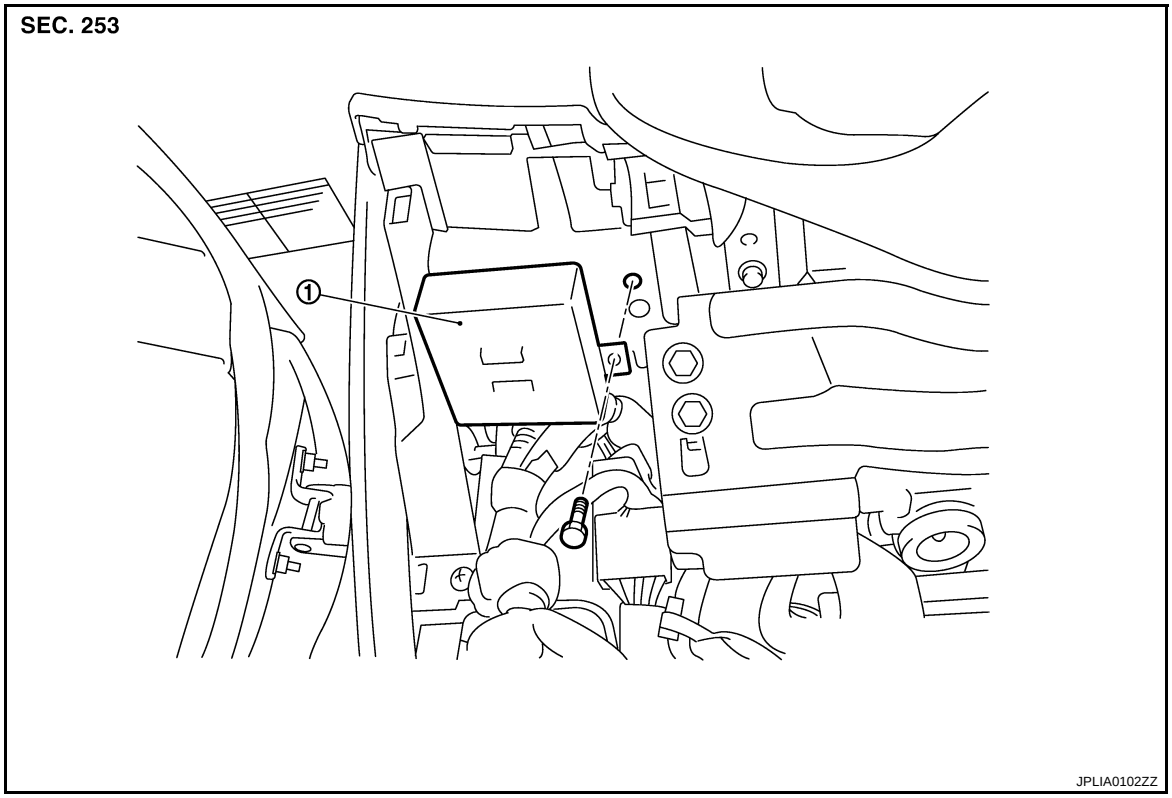
INFOID:0000000000962542

The hazard warning switch is integrated in the multifunction switch. Refer to AV-119, "Exploded View".

AFS CONTROL UNIT

Exploded View

INFOID:0000000000962543



1. AFS control unit

Removal and Installation

INFOID:0000000000962544

REMOVAL

1. Remove the instrument driver lower panel. Refer to IP-11, "Exploded View".
2. Remove the instrument finisher A. Refer to IP-11, "Exploded View".
3. Remove AFS control unit mounting bolt.
4. Disconnect AFS control unit connector.
5. Remove AFS control unit.

INSTALLATION

Install in the reverse order of removal.

STEERING ANGLE SENSOR

Removal and Installation

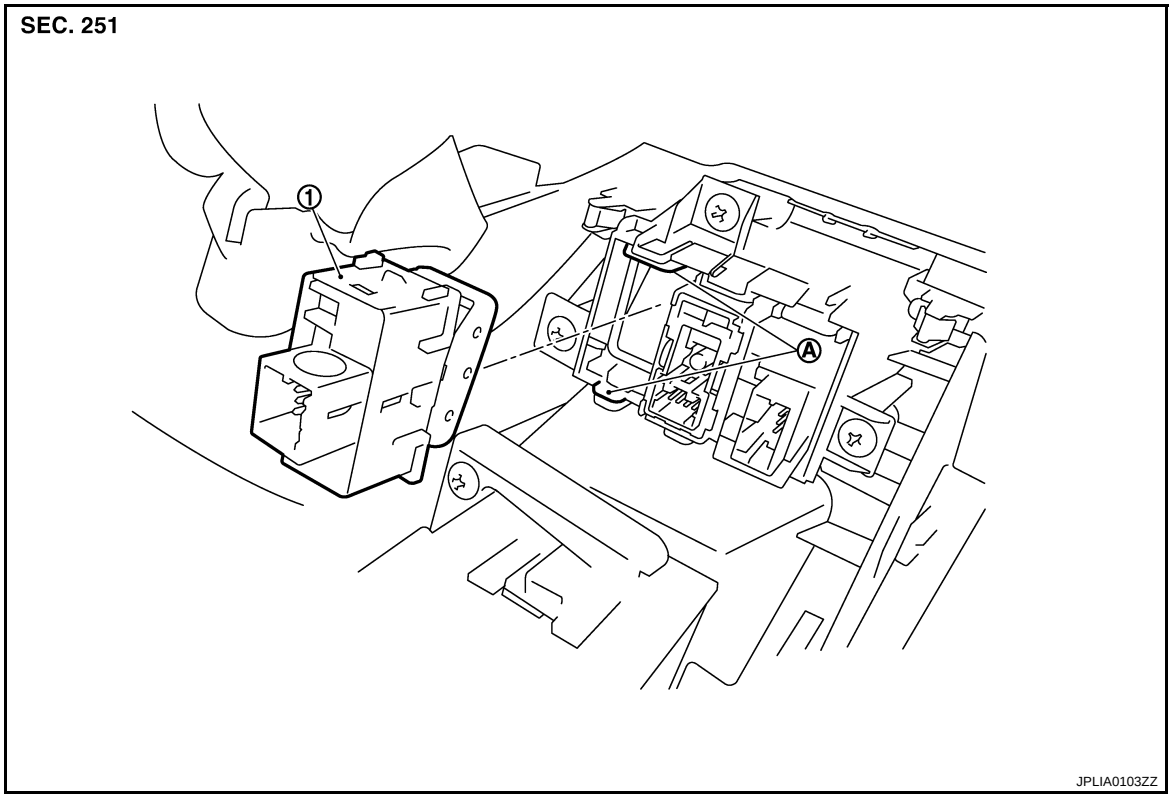
INFOID:0000000000962545

Refer to SR-7, "Removal and Installation".

AFS SWITCH

Exploded View

INFOID:0000000000962546



1. AFS switch

A Pawls

Removal and Installation

INFOID:0000000000962547

REMOVAL

1. Remove the instrument driver lower panel. Refer to IP-11, "Exploded View".
2. Widen the pawl. And then remove AFS switch.

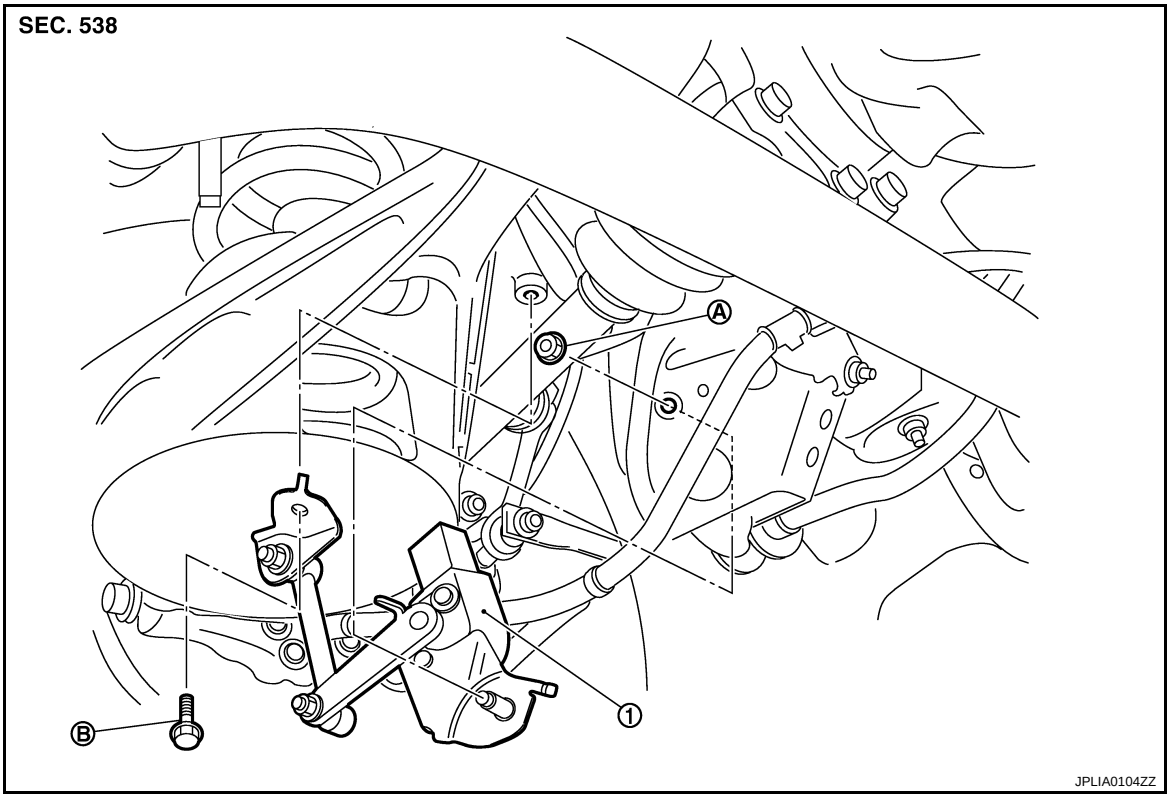
INSTALLATION

Install in the reverse order of removal.

HEIGHT SENSOR

Exploded View

INFOID:0000000000962548



1. Height sensor

A Height sensor mounting nut

B. Height sensor lever link bracket mounting bolt

Removal and Installation

INFOID:0000000000962549

REMOVAL

1. Remove the height sensor mounting nut.
2. Remove the height sensor lever link bracket mounting bolt.
3. Disconnect the height sensor connector.
4. Disconnect the height sensor.

INSTALLATION

Install in the reverse order of removal.

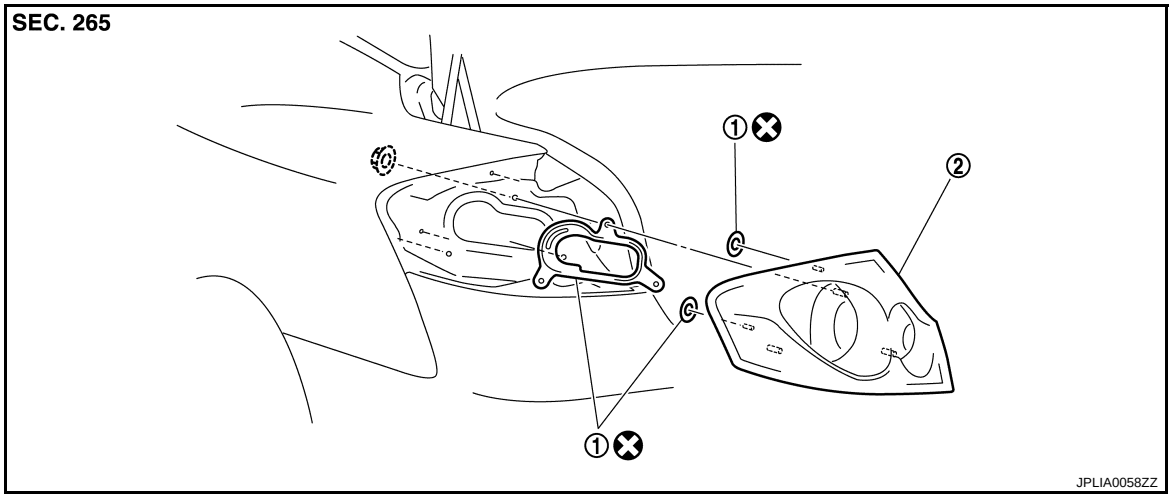
CAUTION:

Perform the levelizer adjustment when removing the height sensor. Refer to EXL-8, "LEVELIZER ADJUSTMENT : Special Repair Requirement".

REAR COMBINATION LAMP

Exploded View

INFOID:0000000000962550



1. Seal packing
2. Rear combination lamp

Refer to GI-3, "Contents" for symbols in the figure.

Removal and Installation

INFOID:0000000000962551

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

1. Remove trunk side finisher. Refer to INT-26, "Exploded View".
2. Disconnect rear combination lamp connector.
3. Remove rear combination lamp mounting nuts.
4. Pull the rear combination lamp toward rear of the vehicle. Remove the rear combination lamp.

INSTALLATION

Install in the reverse order of removal.

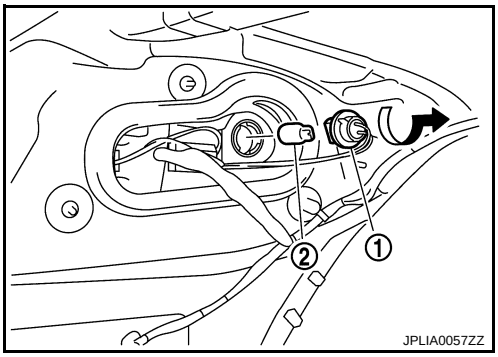
Replacement

INFOID:0000000000962552

REAR TURN SIGNAL LAMP BULB

CAUTION:
Disconnect the battery negative terminal or the fuse.

1. Remove trunk side finisher. Refer to INT-26, "Exploded View".
2. Turn the rear turn signal lamp bulb socket (1) counterclockwise and unlock it.
3. Remove the bulb (2) from the socket.

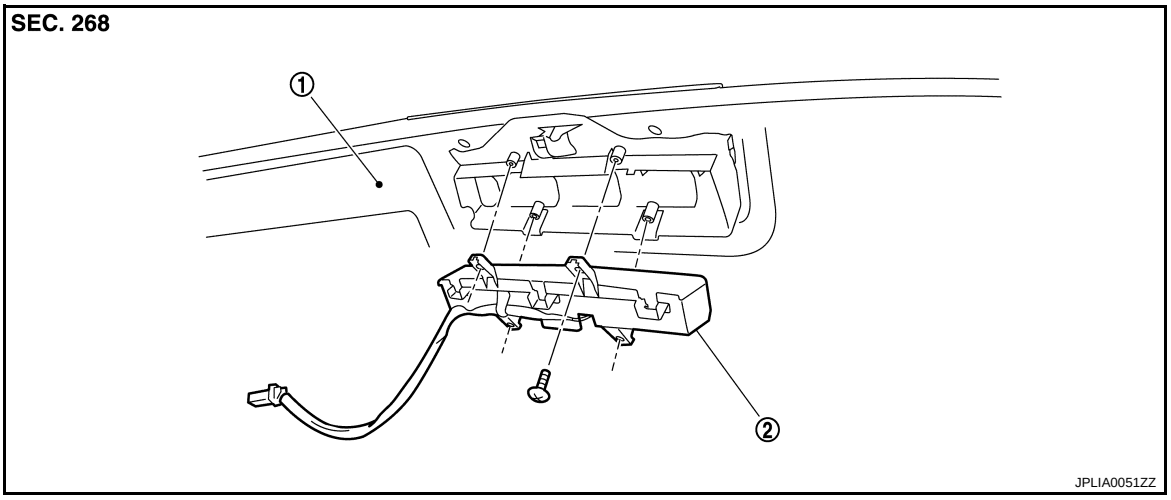


HIGH-MOUNTED STOP LAMP

WITHOUT REAR SPOILER

WITHOUT REAR SPOILER : Exploded View

INFOID:0000000000962553



1. Rear parcel shelf finisher
2. High-mounted stop lamp

WITHOUT REAR SPOILER : Removal and Installation

INFOID:0000000000962554

REMOVAL

1. Remove rear parcel shelf finisher. Refer to INT-18, "Exploded View".
2. Remove screws and remove high-mounted stop lamp from rear parcel shelf finisher.

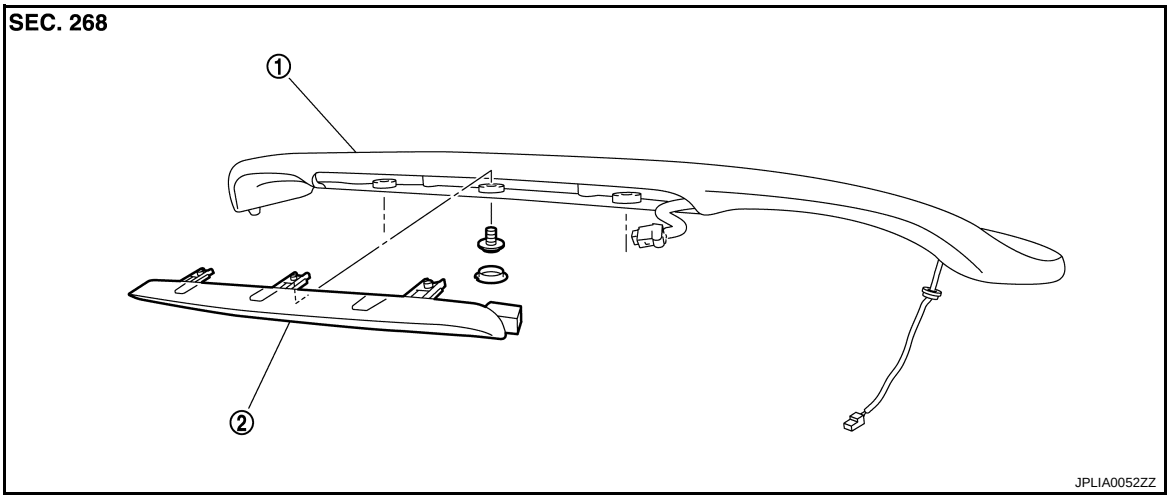
INSTALLATION

Install in the reverse order of removal.

WITH REAR SPOILER

WITH REAR SPOILER : Exploded View

INFOID:0000000000962555



1. Rear spoiler
2. High-mounted stop lamp

WITH REAR SPOILER : Removal and Installation

INFOID:0000000000962556

REMOVAL

1. Remove rear spoiler. Refer to EXT-37, "Exploded View".
2. Remove the cap. Remove the high-mounted stop lamp mounting screw.
3. Remove the high-mounted stop lamp from rear spoiler. And then disconnect the connector.

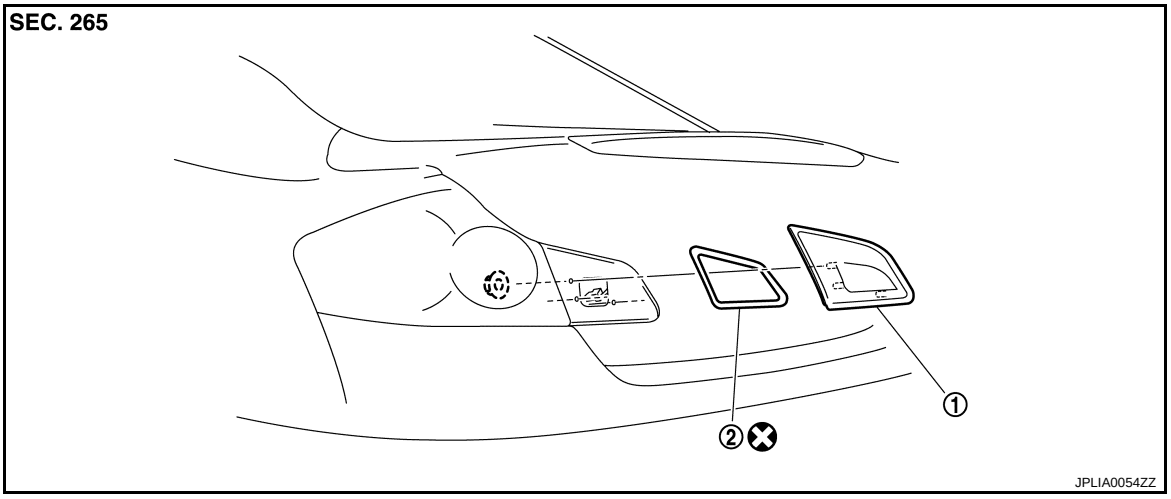
INSTALLATION

Install in the reverse order of removal.

BACK-UP LAMP

Exploded View

INFOID:0000000000962557



1. Back-up lamp
2. Seal packing

Refer to GI-XX for symbols in the figure.

Removal and Installation

INFOID:0000000000962558

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

1. Remove trunk lid finisher inner. Refer to EXT-35, "Exploded View".
2. Disconnect back-up lamp connector.
3. Remove back-up lamp mounting nuts. And then remove back-up lamp.

INSTALLATION

Install in the reverse order of removal.

CAUTION:
Seal packing cannot be reused.

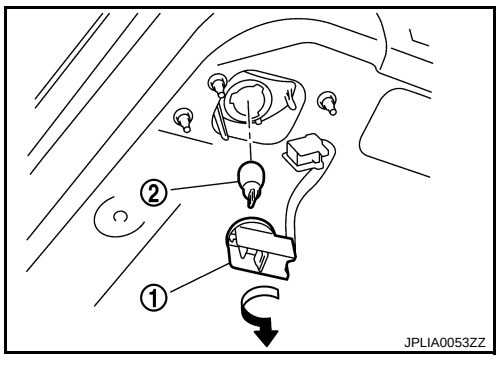
Replacement

INFOID:0000000000962559

CAUTION:
Disconnect the battery negative terminal or the fuse.

BACK-UP LAMP BULB

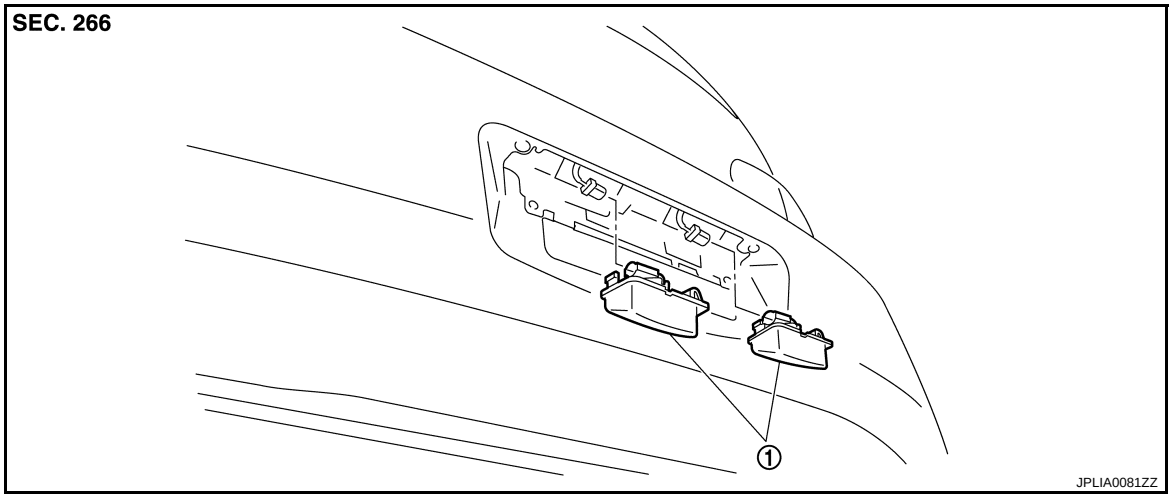
1. Remove trunk lid finisher inner. Refer to EXT-35, "Exploded View".
2. Disconnect the back-up lamp connector.
3. Turn the bulb socket (1) counterclockwise and unlock it.
4. Remove the bulb (2) from the socket.



LICENSE PLATE LAMP

Exploded View

INFOID:0000000000962560



1. License plate lamp

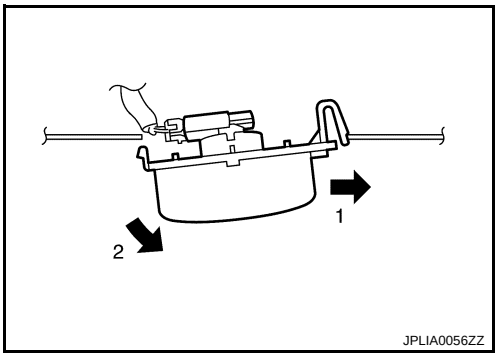
Removal and Installation

INFOID:0000000000962561

CAUTION:
Disconnect the battery negative terminal or the fuse.

REMOVAL

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



INSTALLATION

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

Replacement

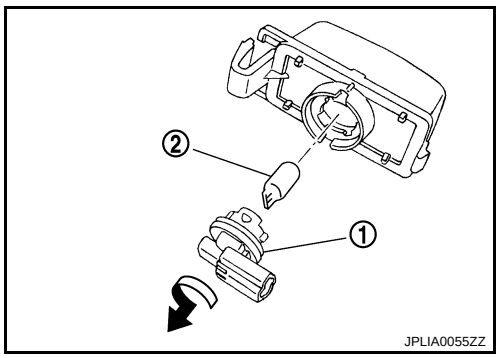
INFOID:0000000000962562

CAUTION:
Disconnect the battery negative terminal or the fuse.

LICENSE PLATE LAMP BULB

1. Remove license plate lamp.

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



SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Bulb Specifications

INFOID:0000000000962563

Item		Type	Wattage (W)
Front combination lamp	Headlamp (HI/LO)	D2S (XENON)	35
	Front turn signal lamp	WY21W (Amber)	21
	Parking lamp (With front side marker lamp)	WY5W (Amber)	5
	Front fog lamp	HB4	51
Rear combination lamp	Stop lamp/Tail lamp	LED	—
	Rear turn signal lamp	W21W	21
	Rear side marker lamp	LED	—
Back-up lamp		W16W	18
License plate lamp		W5W	5
High-mounted stop lamp		LED	—