SECTION INL
INTERIOR LIGHTING SYSTEM

CONTENTS

WITH POWER DOOR LOCKS

WITHOUT POWER DOOR LOCKS

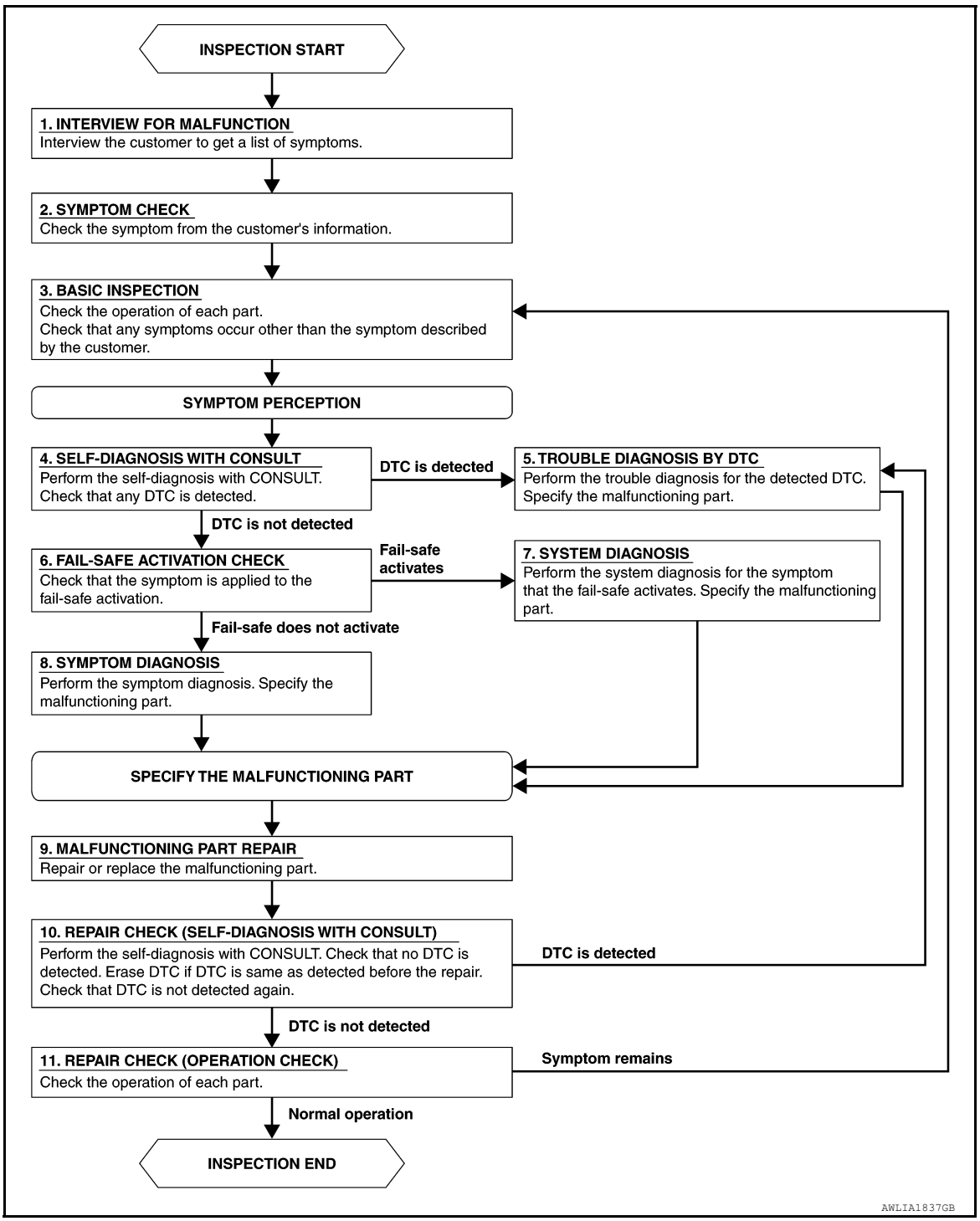
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000009480123

OVERALL SEQUENCE



DETAILED FLOW

1.INTERVIEW FOR MALFUNCTION

Find out what the customer's concerns are.

>> GO TO 2

2.SYMPTOM CHECK

Verify the symptom from the customer's information.

>> GO TO 3

3.BASIC INSPECTION

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

>> GO TO 4

4.SELF-DIAGNOSIS WITH CONSULT

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

Is any DTC detected?

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

5.TROUBLE DIAGNOSIS BY DTC

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

>> GO TO 9

6.FAIL-SAFE ACTIVATION CHECK

Determine if the customer’s concern is related to fail-safe activation.

Does the fail-safe activate?

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

7.SYSTEM DIAGNOSIS

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

>> GO TO 9

8.SYMPTOM DIAGNOSIS

Perform the symptom diagnosis. Specify the malfunctioning part.

>> GO TO 9

9.MALFUNCTION PART REPAIR

Repair or replace the malfunctioning part.

>> GO TO 10

10.REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)

Perform the self-diagnosis with CONSULT. Verify that no DTCs are detected. Erase all DTCs detected prior to the repair. Verify that DTC is not detected again.

Is any DTC detected?

YES >> GO TO 5

NO >> GO TO 11

11. REPAIR CHECK (OPERATION CHECK)

Check the operation of each part.

Does it operate normally?

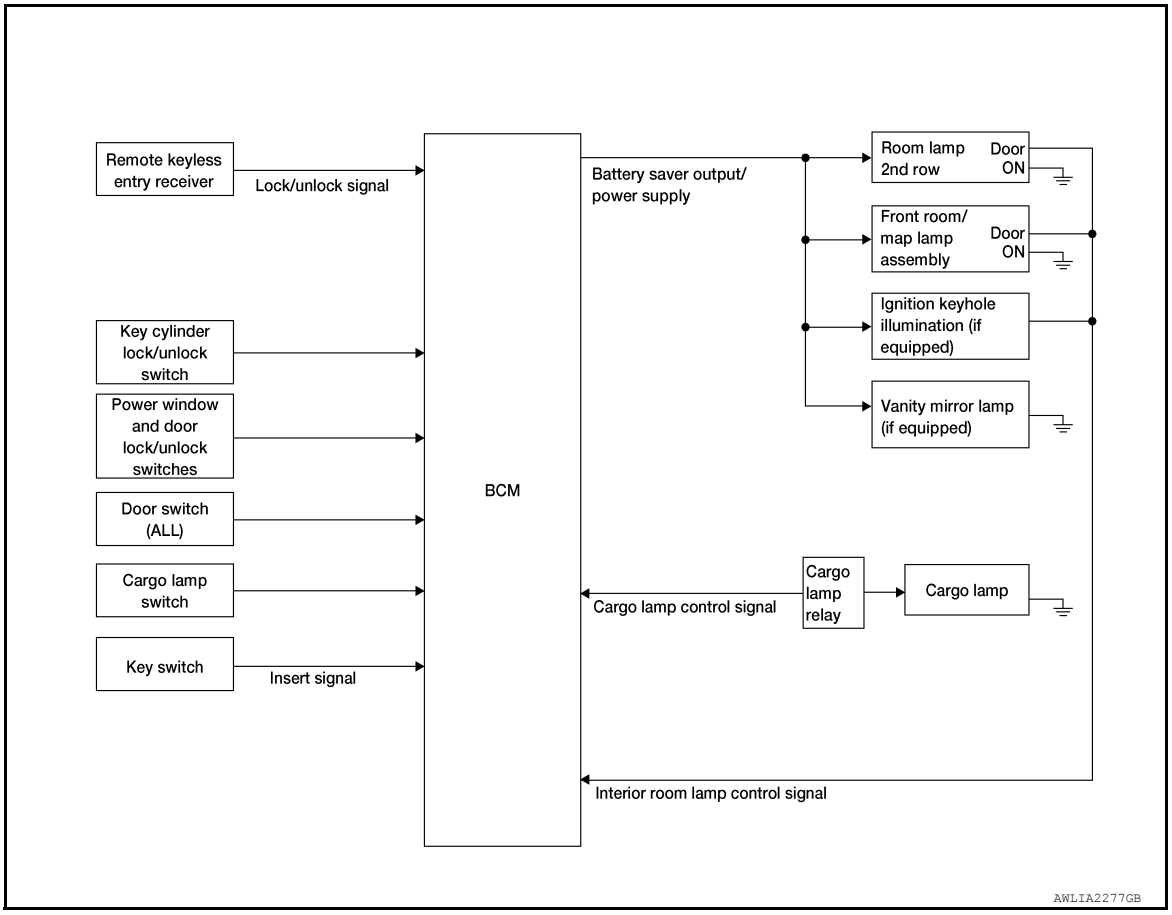
YES >> Inspection End
NO >> GO TO 3

SYSTEM DESCRIPTION

INTERIOR ROOM LAMP CONTROL SYSTEM

System Diagram

INFOID:0000000009480124



System Description

INFOID:0000000009480125

OUTLINE

- Front room/map lamp and room lamp 2nd row are controlled by the interior room lamp timer control function of the BCM.
- Cargo lamp is controlled by the cargo lamp control function of the BCM.

The timer control functions of the BCM activate based on inputs from the remote keyless entry receiver, the key cylinder lock/unlock switch, the door switches, the key switch and the power window and door lock/unlock switches.

ROOM LAMP TIMER OPERATION

When the interior room lamp switch is in the DOOR position and when all conditions below are met, the BCM begins timer control (maximum 30 seconds) for interior room lamp ON/OFF.

- When the front door LH is unlocked [with main power window and door lock/unlock switch, or front door lock assembly LH (key cylinder switch)].
- When a door opens → closes.

Timer control is cancelled under the following conditions.

- When the front door LH is locked [with main power window and door lock/unlock switch, or front door lock assembly LH (key cylinder switch)].
- A door is opened (door switch turns ON).
- The ignition switch is placed the ON position.

Interior lamp operational settings can be changed with the CONSULT.

INTERIOR LAMP BATTERY SAVER CONTROL

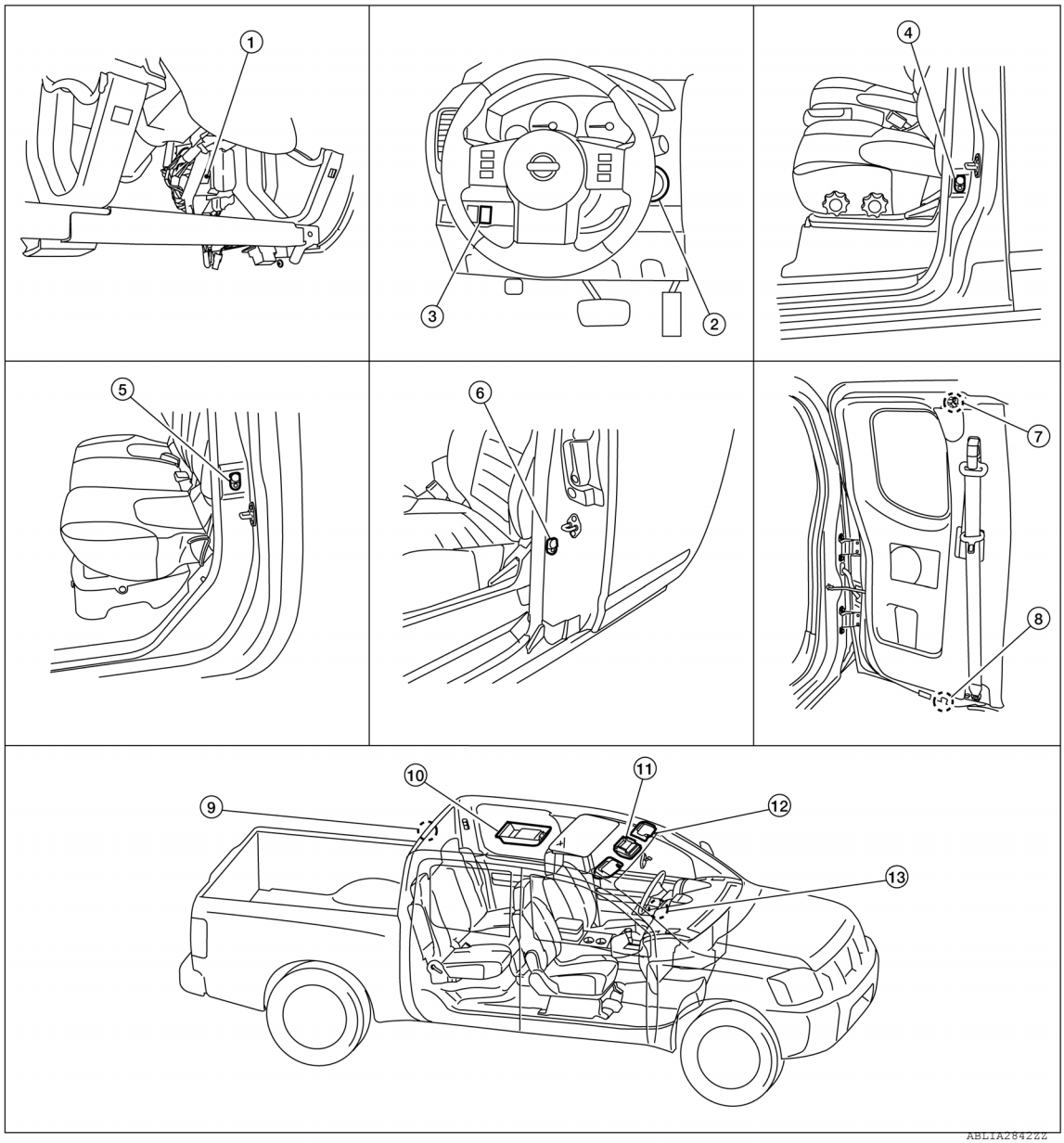
If an interior lamp is left ON and does not turn OFF even when the doors are closed, the BCM turns off power to the interior lamps automatically to save the battery 10 minutes after the ignition switch is turned OFF.
The BCM controls power and ground to all interior lamps.
After the battery saver system turns the lamps OFF, the lamps will illuminate again when

- a signal is received from a main power window and door lock/unlock switch, or when the front door lock assembly LH (key cylinder switch) is locked or unlocked
- a door is opened or closed

The interior lamp battery saver control time period can be changed with the CONSULT.

Component Parts Location

INFOID:0000000009480126



ABLIA2842ZZ

1. BCM M18, M19, M20 (view with lower instrument panel LH removed)
2. Key switch M27
3. Cargo lamp switch M71
4. Front door switch LH B8 (crew cab) Front door switch RH B108 (crew cab)
5. Rear door switch LH B18 (crew cab) Rear door switch RH B116 (crew cab)
6. Front door switch LH D213 (king cab) Front door switch RH D314 (king cab)
7. Rear door switch upper LH D211 (king cab) Rear door switch upper RH D312 (king cab)
8. Rear door switch lower LH D212 (king cab) Rear door switch lower RH D313 (king cab)
9. Cargo lamp B161

10. Room lamp 2nd row R10
11. Front room/map lamp assembly R9
12. Vanity lamp LH B80 (if equipped)
    Vanity lamp RH B81 (if equipped)
13. Ignition keyhole illumination M150 (if equipped)

Component Description

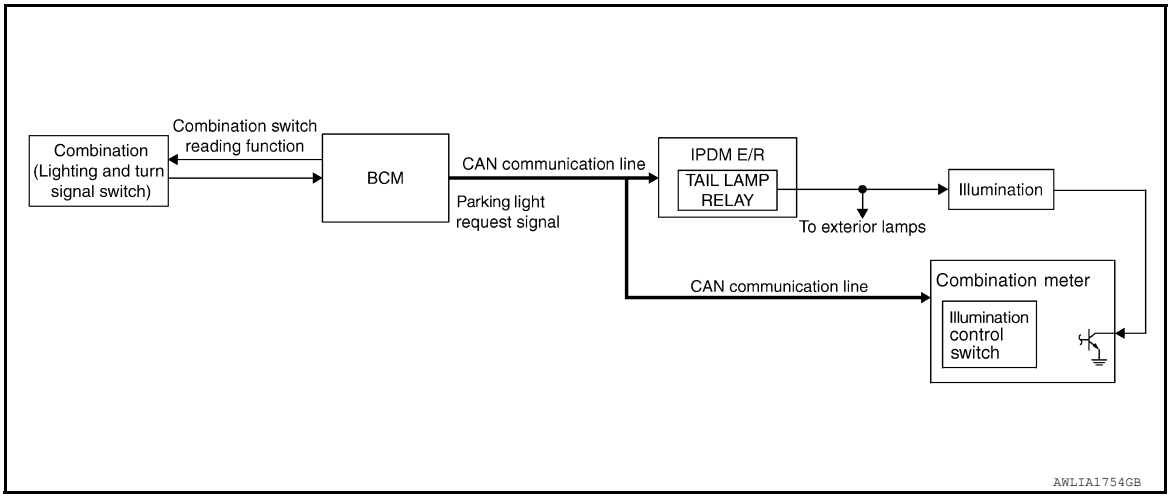
INFOID:0000000009480127

Part name	Description
BCM	Provides power and ground and controls timer functions for the interior room lamps and cargo lamp.
Key switch	Provides key in ignition status to the BCM.
Door switches	Provides door OPEN/CLOSED status to the BCM.
Cargo lamp switch	Provides cargo lamp ON/OFF request to the BCM.
Main power window and door lock/unlock switch	Provides door lock/unlock position switch status to the BCM.
Power window and door lock/unlock switch RH	
Front door lock assembly LH (key cylinder switch)	Provides door lock/unlock status to the BCM.

ILLUMINATION CONTROL SYSTEM

System Diagram

INFOID:0000000009480128



System Description

INFOID:0000000009480129

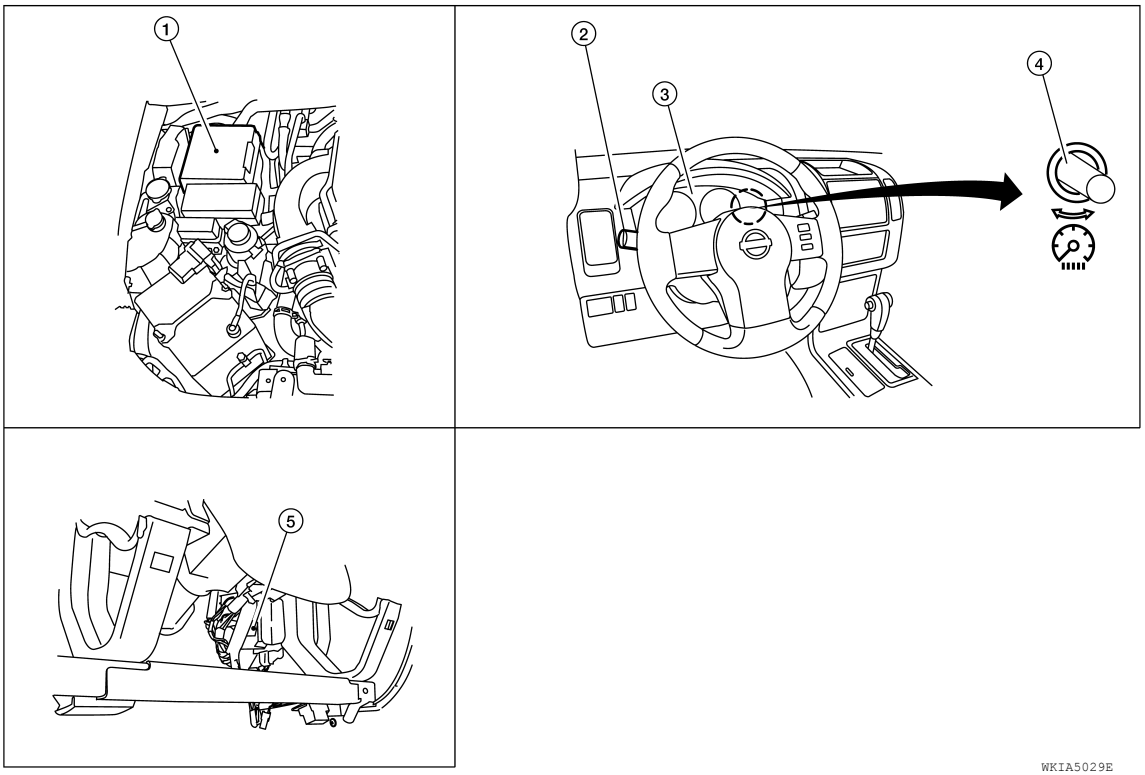
The illumination lamps operation is dependent upon the position of the combination switch (lighting and turn signal switch). When the combination switch (lighting and turn signal switch) is placed in the 1ST or 2ND position (or if the auto light system is activated) the BCM (body control module) receives input requesting the parking lamps to illuminate. This input is communicated to the IPDM E/R (intelligent power distribution module engine room) via the CAN communication lines. The CPU (central processing unit) of the IPDM E/R controls the tail lamp relay coil. When energized, this relay directs power to the parking and illumination lamps, which then illuminate.

BATTERY SAVER CONTROL

When the combination switch (lighting and turn signal switch) is in the 1ST or 2ND position and the ignition switch is turned from ON or ACC to OFF, the battery saver control feature is activated. Under this condition, the illumination lamps remain illuminated for 10 minutes unless the combination switch (lighting and turn signal switch) position is changed. If the combination switch (lighting and turn signal switch) position is changed, then the illumination lamps are turned off after a 30 second delay. When the combination switch (lighting and turn signal switch) is turned from OFF to 1ST or 2ND position (or if auto light system is activated) after illumination lamps have been turned off by the battery saver control, the illumination lamps illuminate again.

Component Parts Location

INFOID:0000000009480130



1. IPDM E/R E122, E124
2. Combination switch (lighting and turn signal switch) M28
3. Combination meter M24
4. Illumination control switch (built into combination meter)
5. BCM M18, M20 (view with lower instrument panel LH removed)

Component Description

INFOID:0000000009480131

Part name	Description
BCM	The BCM monitors the lighting switch position with the combination switch reading function. The BCM requests, via CAN communication, that the IPDM E/R activate the tail lamp relay.
IPDM E/R	The IPDM E/R activates the tail lamp relay based on inputs received from the BCM via the CAN communication network.
Combination meter (illumination control switch)	The illumination control switch is a part of the combination meter. The combination meter controls illumination intensity by varying ground to the illumination lamps based on the illumination control switch position.
Combination switch (lighting and turn signal switch)	The combination switch (lighting and turn signal switch) provides input to the BCM about the lighting switch position.

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

INFOID:0000000010228001

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

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

SYSTEM APPLICATION
BCM can perform the following functions.

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

INT LAMP

INT LAMP : CONSULT Function (BCM - INT LAMP)

INFOID:0000000010228002

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.
KEY ON SW [On/Off]	Indicates condition of key switch.
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.
DOOR SW-RR [On/Off]	Indicates condition of rear door switch RH.
DOOR SW-RL [On/Off]	Indicates condition of rear door switch LH.
KEY CYL LK-SW [On/Off]	Indicates condition of lock signal from door key cylinder switch.
KEY CYL UN-SW [On/Off]	Indicates condition of unlock signal from door key cylinder switch.
CDL LOCK SW [On/Off]	Indicates condition of lock signal from door lock and unlock switch.
CDL UNLOCK SW [On/Off]	Indicates condition of unlock signal from door lock and unlock switch.
KEYLESS LOCK [On/Off]	Indicates condition of lock signal from keyfob.
KEYLESS UNLOCK [On/Off]	Indicates condition of unlock signal from keyfob.

ACTIVE TEST

Test Item	Description
IGN ILLUM	This test is able to check ignition keyhole illumination operation [Off/On].
INT LAMP	This test is able to check interior room lamp operation [Off/On].

WORK SUPPORT

Support Item	Setting		Description
SET I/L D-UNLCK INTCON	Off		Interior room lamp timer function OFF.
	On*		Interior room lamp timer function ON.
ROOM LAMP ON TIME SET	MODE7	0 sec.	Sets the interior room lamp gradual brightening time.
	MODE6	5 sec.	
	MODE5	4 sec.	
	MODE4	3 sec.	
	MODE3	2 sec.	
	MODE2*	1 sec.	
	MODE1	0.5 sec.	
ROOM LAMP OFF TIME SET	MODE7	0 sec.	Sets the interior room lamp gradual dimming time.
	MODE6	5 sec.	
	MODE5	4 sec.	
	MODE4	3 sec.	
	MODE3	2 sec.	
	MODE2*	1 sec.	
	MODE1	0.5 sec.	

* : Initial setting

BATTERY SAVER

BATTERY SAVER : CONSULT Function (BCM - BATTERY SAVER)

INFOID:0000000010228003

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.
KEY ON SW [On/Off]	Indicates condition of key switch.
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.
DOOR SW-RR [On/Off]	Indicates condition of rear door switch RH.
DOOR SW-RL [On/Off]	Indicates condition of rear door switch LH.
KEY CYL LK SW [On/Off]	Indicates condition of lock signal from door key cylinder switch.
KEY CYL UN SW [On/Off]	Indicates condition of unlock signal from door key cylinder switch.
CDL LOCK SW [On/Off]	Indicates condition of lock signal from door lock and unlock switch.
CDL UNLOCK SW [On/Off]	Indicates condition of unlock signal from door lock and unlock switch.
KEYLESS LOCK [On/Off]	Indicates condition of lock signal from keyfob.
KEYLESS UNLOCK [On/Off]	Indicates condition of unlock signal from keyfob.

ACTIVE TEST

Test item	Description
BATTERY SAVER	This test is able to check battery saver operation [Off/On].

WORK SUPPORT

Support Item	Setting		Description
ROOM LAMP TIMER SET	MODE2	60 min	Sets the interior room lamp battery saver timer operating time.
	MODE1*	10 min	

*: Initial setting

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

BCM

BCM : Diagnosis Procedure

INFOID:0000000010228010

Regarding Wiring Diagram information, refer to BCS-43, "Wiring Diagram".

1. CHECK FUSES AND FUSIBLE LINK

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

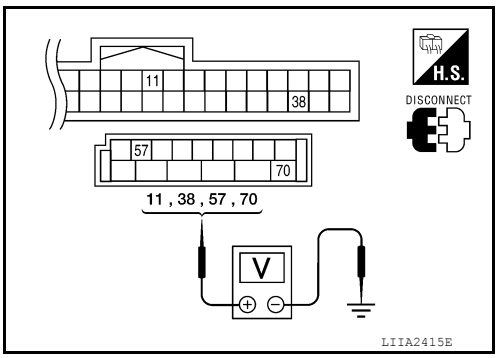
Terminal No.	Signal name	Fuses and fusible link No.
57	Battery power supply	21 (10A)
70		G (50A)
11	Ignition ACC or ON	4 (10A)
38	Ignition ON or START	1 (10A)

Is the fuse blown?

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

2. CHECK POWER SUPPLY CIRCUIT

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



Connector	Terminals (+)	Terminals (-)	Power source	Condition	Voltage (V) (Approx.)
M18	11	Ground	ACC power supply	Ignition switch ACC or ON	Battery voltage
	38	Ground	Ignition power supply	Ignition switch ON or START	Battery voltage
M20	57	Ground	Battery power supply	Ignition switch OFF	Battery voltage
	70	Ground	Battery power supply	Ignition switch OFF	Battery voltage

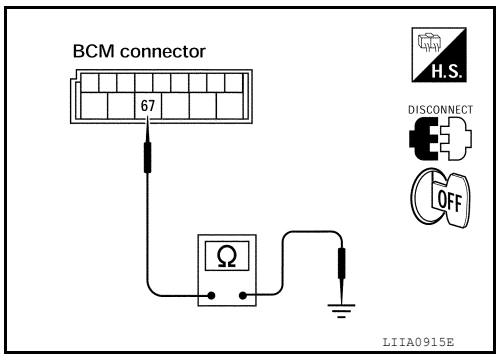
Is the measurement value normal?

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M20	67		Yes



Does continuity exist?

YES >> Inspection End.
NO >> Repair or replace harness.

BATTERY SAVER OUTPUT/POWER SUPPLY CIRCUIT

Description

INFOID:0000000009480136

Provides the battery saver output/power supply. Also cuts the power supply when the interior room lamp battery saver is activating.

Component Function Check

INFOID:0000000009480137

1.CHECK BATTERY SAVER OUTPUT/POWER SUPPLY FUNCTION

WITH CONSULT
1. Turn ignition switch ON.
2. Turn each interior room lamp ON.
- Front room/map lamp assembly
- Vanity lamps (if equipped)
- Room lamp 2nd row
3. Select “BATTERY SAVER” of BCM (BATTERY SAVER) active test item.
4. While operating the test item, check that each interior room lamp turns ON/OFF.

OFF : Interior room lamp OFF
ON : Interior room lamp ON

Is the inspection result normal?

YES >> Battery saver output/power supply circuit is normal.
NO >> Refer to INL-16, "Diagnosis Procedure".

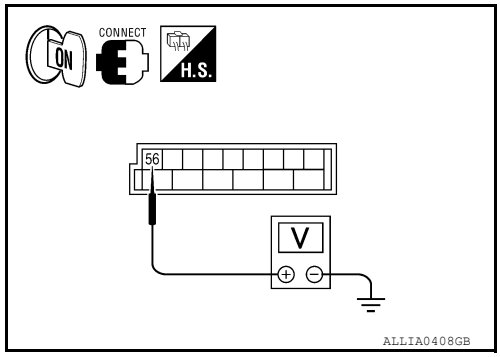
Diagnosis Procedure

INFOID:0000000009480138

Regarding Wiring Diagram information, refer to INL-37, "Wiring Diagram - With Power Door Lock System".

1.CHECK BATTERY SAVER OUTPUT/POWER SUPPLY OUTPUT

WITH CONSULT
1. Turn ignition switch ON.
2. Select “BATTERY SAVER” of BCM (BATTERY SAVER) active test item.
3. While operating the test item, check voltage between BCM connector M20 terminal 56 and ground.



(+)		(-)	Test item	Voltage
Connector	Terminal		BATTERY SAVER	
M20	56	Ground	OFF	0V
			ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 2
NO >> Replace BCM after making sure the battery saver output/power supply circuit is not shorted to voltage. Refer to BCS-49, "Removal and Installation".

2.CHECK BATTERY SAVER OUTPUT/POWER SUPPLY OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the following connectors.
- BCM M20
- Ignition keyhole illumination (if equipped)
- Front room/map lamp assembly
- Vanity lamp LH (if equipped)
- Vanity lamp RH (if equipped)

- Room lamp 2nd row

3. Check continuity between BCM connector M20 terminal 56 and each interior room lamp connector.

BCM		Each interior room lamp			Continuity
Connector	Terminal	Connector		Terminal	
M20	56	Ignition keyhole illumination (if equipped)	M150	1	Yes
		Front room/map lamp assembly	R9	1	
		Vanity lamp LH (if equipped)	B80	1	
		Vanity lamp RH (if equipped)	B81	1	
		Room lamp 2nd row	R10	2	

Is the inspection result normal?

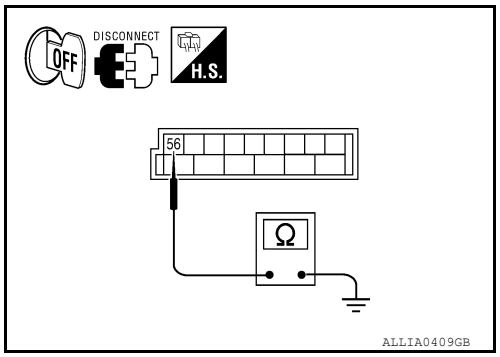
YES >> GO TO 3

NO >> Repair the harness or connectors.

3. CHECK BATTERY SAVER OUTPUT/POWER SUPPLY SHORT CIRCUIT

Check continuity between BCM connector M20 terminal 56 and ground.

Connector	Terminal	—	Continuity
M20	56	Ground	No



Is the inspection result normal?

YES >> Replace the interior room lamp. Refer to INL-63, "Removal and Installation".

NO >> Repair the harness or connectors.

INTERIOR ROOM LAMP CONTROL CIRCUIT

Description

INFOID:0000000009480139

Controls the following interior room lamps (ground side) by PWM signal.
- Front room/map lamp assembly
- Room lamp 2nd row

NOTE:
PWM signal control period is approximately 250 Hz (in the gradual brightening/dimming).

Component Function Check

INFOID:0000000009480140

CAUTION:
Before performing the diagnosis, check that the following is normal.
- **Battery saver output/power supply**
- **Front room/map lamp bulbs (if equipped)**
- **Room lamp 2nd row bulb**

1.CHECK INTERIOR ROOM LAMP CONTROL FUNCTION

WITH CONSULT
1. Switch the front room/map lamp assembly and room lamp 2nd row switches to DOOR.
2. Turn ignition switch ON.
3. Select “INT LAMP” of BCM (INT LAMP) active test item.
4. While operating the test item, check that each interior room lamp turns ON/OFF (gradual brightening/dimming).

ON : Interior room lamp gradual brightening
OFF : Interior room lamp gradual dimming

Is the inspection result normal?

YES >> Interior room lamp control circuit is normal.
NO >> Refer to INL-18, "Diagnosis Procedure".

Diagnosis Procedure

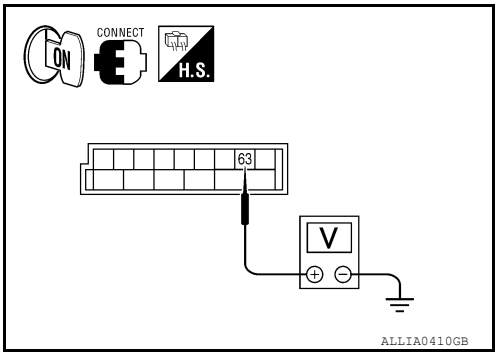
INFOID:0000000009480141

Regarding Wiring Diagram information, refer to INL-37, "Wiring Diagram - With Power Door Lock System".

1.CHECK INTERIOR ROOM LAMP CONTROL OUTPUT

WITH CONSULT
1. Turn ignition switch ON.
2. Select “INT LAMP” of BCM (INT LAMP) active test item.
3. While operating the test item, check voltage between BCM connector M20 terminal 63 and ground.

(+)		(-)	INT LAMP	Voltage
Connector	Terminal			
M20	63	Ground	ON	0V
			OFF	Battery voltage



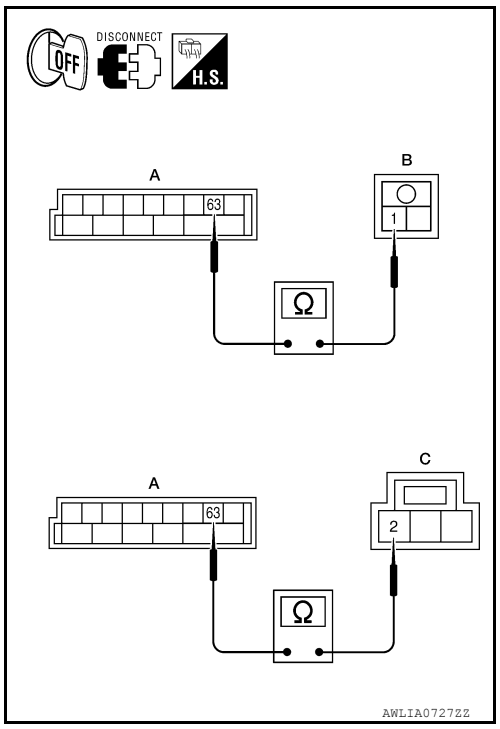
Is the inspection result normal?

YES >> Interior room lamp control circuit is operating normally.
Fixed ON>>GO TO 3
Fixed OFF>> GO TO 2

2.CHECK INTERIOR ROOM LAMP CONTROL OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector M20, room lamp 2nd row connector and front room/map lamp connector.
3. Check continuity between BCM connector M20 (A) terminal 63 and interior room lamp connectors.

Terminal		Terminal			Continuity
Connector	Terminal	Component	Connector	Terminal	
M20 (A)	63	Room lamp 2nd row	R10 (B)	1	Yes
		Front room/map lamp	R9 (C)	2	



Is the inspection result normal?

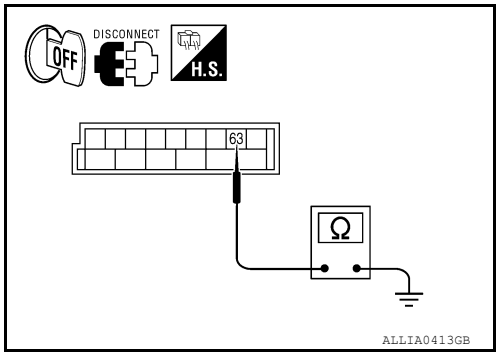
YES >> Check interior room lamp for an open. If OK, replace the BCM. Refer to BCS-49, "Removal and Installation". If NG, replace the interior room lamp. Refer to INL-63, "Removal and Installation".

NO >> Repair the harness or connectors.

3. CHECK INTERIOR ROOM LAMP CONTROL SHORT CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector M20, room lamp 2nd row connector and front room/map lamp connector.
3. Check continuity between BCM connector M20 terminal 63 and ground.

Connector	Terminal	—	Continuity
M20	63	Ground	No



Is the inspection result normal?

YES >> Check interior room lamp for a short circuit. If OK, replace the BCM. Refer to BCS-49, "Removal and Installation". If NG, replace the interior room lamp. Refer to INL-63, "Removal and Installation".

NO >> Repair the harness or connectors.

CARGO LAMP CONTROL CIRCUIT

Description

INFOID:0000000009480142

Controls the cargo lamp relay coil (ground side) to turn the cargo lamp ON and OFF.

Diagnosis Procedure

INFOID:0000000009480143

Regarding Wiring Diagram information, refer to INL-37, "Wiring Diagram - With Power Door Lock System".

CAUTION:
Before performing the diagnosis, check that the following is normal.
- **Fuse**
- **Cargo lamp bulb**

1.CHECK CARGO LAMP OPERATION

Check the cargo lamp operation from the cargo lamp switch, the door switches, and a keyfob (if equipped).

Is the cargo lamp operative from all of the above switches and the keyfob (if equipped)?

YES >> At this time, the cargo lamp operates normally.
NO >>
- Inoperative from all the above switches and the keyfob, GO TO 6
- Inoperative from cargo lamp switch only, GO TO 2
- Inoperative from door switches only, refer to DLK-27, "KING CAB : Description" (king cab), DLK-29, "CREW CAB : Description" (crew cab).
- Inoperative from keyfob only, refer to DLK-51, "Description".
- Fixed ON, GO TO 2

2.CHECK CARGO LAMP SWITCH

Check the cargo lamp switch. Refer to INL-22, "Component Inspection".

Is the inspection result normal?

YES >>
- For inoperative from cargo lamp switch only, GO TO 3
- For fixed ON, GO TO 5

NO >> Replace the cargo lamp switch.

3.CHECK CARGO LAMP SWITCH CIRCUIT OPEN

1. Disconnect BCM connector M18 and cargo lamp switch connector.
2. Check continuity between BCM connector M18 terminal 31 and cargo lamp switch connector M71 terminal 1.

BCM		Cargo lamp switch		Continuity
Connector	Terminal	Connector	Terminal	
M18	31	M71	1	Yes

Is the inspection result normal?

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

4.CHECK CARGO LAMP SWITCH GROUND CIRCUIT

1. Check continuity between cargo lamp switch connector M71 terminal 3 and ground.

Connector	Terminal	—	Continuity
M71	3	Ground	Yes

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-49, "Removal and Installation".
NO >> Repair harness or connectors.

5.CHECK CARGO LAMP SWITCH CIRCUIT SHORT

1. Disconnect BCM connector M18 and cargo lamp switch connector.
2. Check continuity between BCM connector M18 terminal 31 and ground.

Connector	Terminal	—	Continuity
M18	31	Ground	No

Is the inspection result normal?

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

6.CHECK CARGO LAMP RELAY

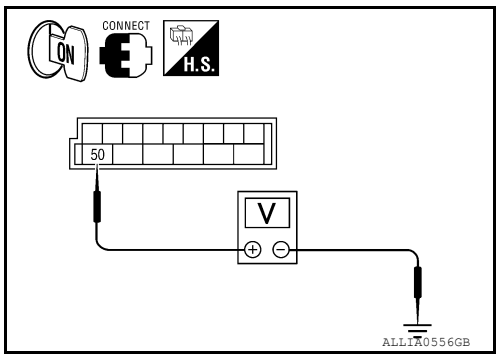
Check the cargo lamp relay. Refer to INL-22, "Component Inspection".

Is the inspection result normal?

YES >> • For fixed OFF, GO TO 7
• For fixed ON, GO TO 13
NO >> Replace the cargo lamp relay.

7.CHECK CARGO LAMP RELAY CONTROL

While operating the cargo lamp switch, check voltage between BCM connector M19 terminal 50 and ground.



Connector	Terminal	—	Cargo lamp switch	Voltage
M19	50	Ground	ON	0V
			OFF	Battery voltage

Is the inspection result normal?

YES >> GO TO 8
NO >> GO TO 11

8.CHECK CARGO LAMP VOLTAGE

1. Disconnect the cargo lamp connector.
2. While operating the cargo lamp switch, check voltage between cargo lamp connector B161 terminal 3 and ground.

Connector	Terminal	—	Cargo lamp switch	Voltage
B161	3	Ground	ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 9
NO >> GO TO 10

9.CHECK CARGO LAMP GROUND CIRCUIT

1. While operating the cargo lamp switch, check voltage between cargo lamp connector B161 terminal 3 and terminal 2.

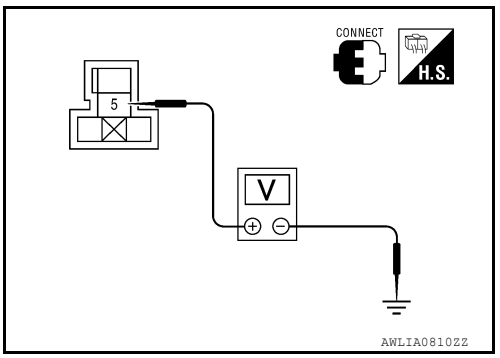
Connector	Terminal (+)	Terminal (-)	Cargo lamp switch	Voltage
B161	3	2	ON	Battery voltage

Is the inspection result normal?

YES >> Replace cargo lamp.
NO >> Repair harness or connectors.

10.CHECK CARGO LAMP RELAY VOLTAGE PART 1

Check voltage between cargo lamp relay connector M165 terminal 5 and ground.



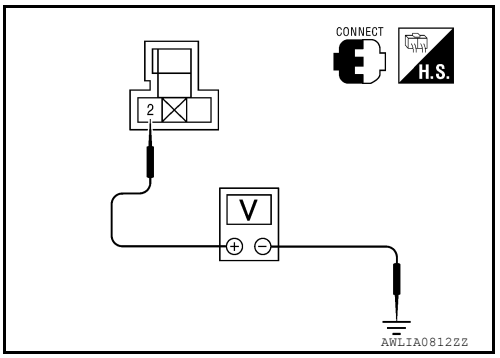
Cargo lamp relay		Ground	Voltage
Connector	Terminal		
M165	5		Battery voltage

Is the inspection result normal?

YES >> Repair harness or connectors between cargo lamp relay and cargo lamp.
NO >> Repair harness or connector between splice and cargo lamp relay.

11. CHECK CARGO LAMP RELAY VOLTAGE PART 2

Check voltage between cargo lamp relay connector M165 terminal 2 and ground.



Cargo lamp relay		Ground	Voltage
Connector	Terminal		
M165	2		Battery voltage

Is the inspection result normal?

YES >> GO TO 12
NO >> Repair harness or connectors.

12. CHECK CARGO LAMP RELAY CONTROL CIRCUIT OPEN

1. Disconnect BCM connector M19 and cargo lamp relay.
2. Check continuity between BCM connector M19 terminal 50 and cargo lamp relay connector M165 terminal 1.

BCM		Cargo lamp relay		Continuity
Connector	Terminal	Connector	Terminal	
M19	50	M165	1	Yes

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-49, "Removal and Installation".
NO >> Repair harness or connectors.

13. CHECK CARGO LAMP RELAY CONTROL CIRCUIT SHORT

1. Disconnect BCM connector M19 and cargo lamp relay.
2. Check continuity between BCM connector M19 terminal 50 and ground.

Connector	Terminal	—	Continuity
M19	50	Ground	No

Is the inspection result normal?

YES >> Replace BCM after making sure the cargo lamp power supply circuit is not shorted to voltage. Refer to BCS-49, "Removal and Installation".
NO >> Repair harness or connectors.

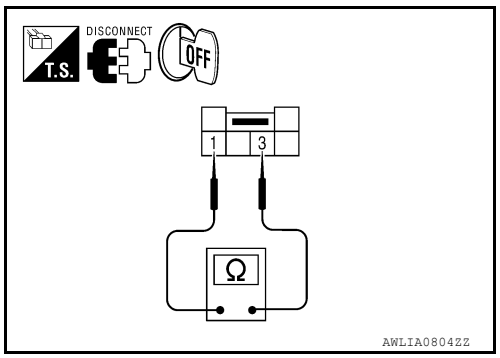
Component Inspection

INFOID:0000000009480144

CARGO LAMP SWITCH

1. CHECK CARGO LAMP SWITCH

1. Turn ignition switch OFF.
2. Disconnect cargo lamp switch connector.
3. Check continuity between cargo lamp switch terminals 1and 3.



Cargo lamp switch	Condition	Continuity
Terminal		
1 – 3	ON	Yes
	OFF	No

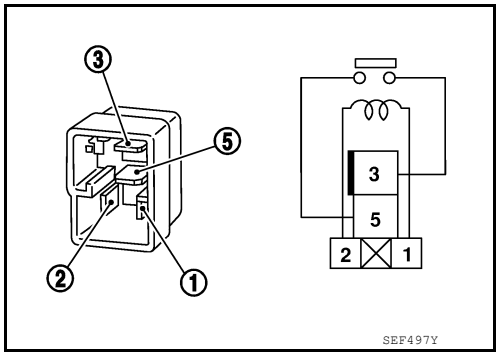
Is the inspection result normal?

YES >> Inspection End
NO >> Replace cargo lamp switch.

CARGO LAMP RELAY

1.CHECK CARGO LAMP RELAY

1. Turn ignition switch OFF.
2. Disconnect cargo lamp relay.
3. Supply power to terminal 2 and ground to terminal 1 of the cargo lamp relay.
4. Check continuity between cargo lamp relay terminals 3 and 5.



Terminal		Condition	Continuity
3	5	Power and ground supplied to terminals 1 and 2	Yes
		No power and ground supplied	No

Is the inspection result normal?

YES >> Inspection End
NO >> Replace cargo lamp relay.

IGNITION KEYHOLE ILLUMINATION CONTROL CIRCUIT

Description

INFOID:0000000009480145

Controls the ignition keyhole illumination (ground side) to turn the ignition keyhole illumination ON and OFF.

Component Function Check

INFOID:0000000009480146

CAUTION:
Before performing the diagnosis, check that the following is normal.
- **Battery saver output/power supply circuit**
- **Ignition keyhole illumination bulb**

1.CHECK IGNITION KEYHOLE ILLUMINATION OPERATION

WITH CONSULT
1. Turn the ignition switch ON.
2. Select “IGN ILLUM” of BCM (INT LAMP) active test item.
3. While operating the test item, check that the ignition keyhole illumination turns ON/OFF

ON : Ignition keyhole illumination ON
OFF : Ignition keyhole illumination OFF

Is the inspection result normal?

YES >> Ignition keyhole illumination circuit is normal.
NO >> Refer to INL-24, "Diagnosis Procedure".

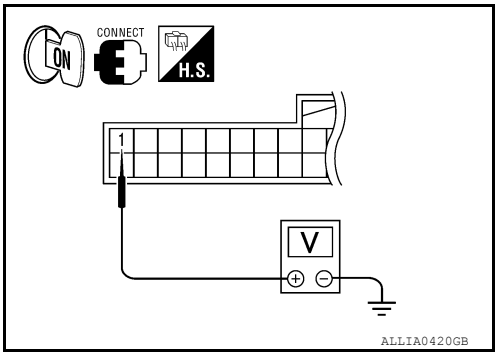
Diagnosis Procedure

INFOID:0000000009480147

Regarding Wiring Diagram information, refer to INL-37, "Wiring Diagram - With Power Door Lock System".

1.CHECK IGNITION KEYHOLE OUTPUT

WITH CONSULT
1. Turn ignition switch ON.
2. Select “IGN ILLUM” of BCM (INT LAMP) active test item.
3. While operating the test item, check voltage between BCM connector M18 terminal 1 and ground.



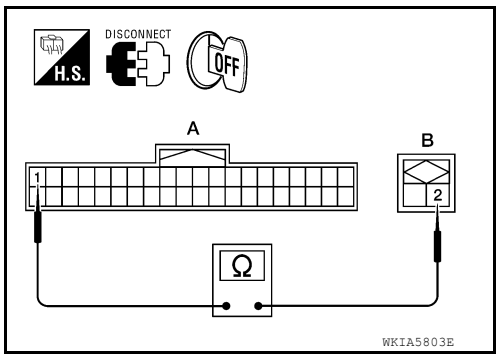
Connector	Terminal	—	IGN ILLUM	Voltage
M18	1	Ground	ON	0V
			OFF	Battery voltage

Is the inspection result normal?

YES >> Ignition keyhole illumination control circuit is operating normally.
Fixed ON>>GO TO 3.
Fixed OFF>> GO TO 2.

2.CHECK IGNITION KEYHOLE ILLUMINATION OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector M18 and ignition keyhole illumination connector.
3. Check continuity between BCM connector M18 (A) terminal 1 and ignition keyhole illumination connector M150 (B) terminal 2.



BCM		Ignition keyhole illumination		Continuity
Connector	Terminal	Connector	Terminal	
M18 (A)	1	M150 (B)	2	Yes

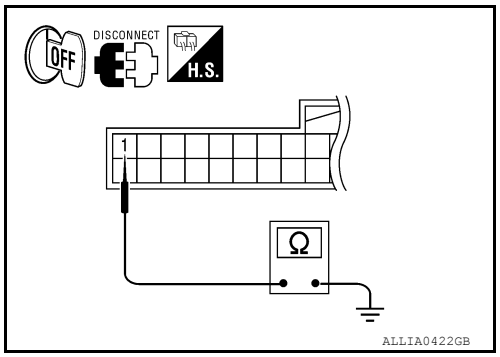
Is the inspection result normal?

YES >> Check the ignition keyhole illumination for an open. If OK, replace the BCM. Refer to BCS-49, "Removal and Installation". If NG, replace ignition keyhole illumination.

NO >> Repair harness or connectors.

3. CHECK IGNITION KEYHOLE ILLUMINATION SHORT CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector M18 and ignition keyhole illumination connector.
3. Check continuity between BCM connector M18 terminal 1 and ground.



Connector	Terminal	—	Continuity
M18	1	Ground	No

Is the inspection result normal?

YES >> Check the ignition keyhole illumination for a short circuit. If OK, replace the BCM. Refer to BCS-49, "Removal and Installation". If NG, replace ignition keyhole illumination.

NO >> Repair harness or connectors.

ECU DIAGNOSIS INFORMATION

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000010228011

NOTE:
The Signal Tech II Tool (J-50190) can be used to perform the following functions. Refer to the Signal Tech II User Guide for additional information.
- Activate and display TPMS transmitter IDs
- Display tire pressure reported by the TPMS transmitter
- Read TPMS DTCs
- Register TPMS transmitter IDs
- Test remote keyless entry keyfob relative signal strength

VALUES ON THE DIAGNOSIS TOOL

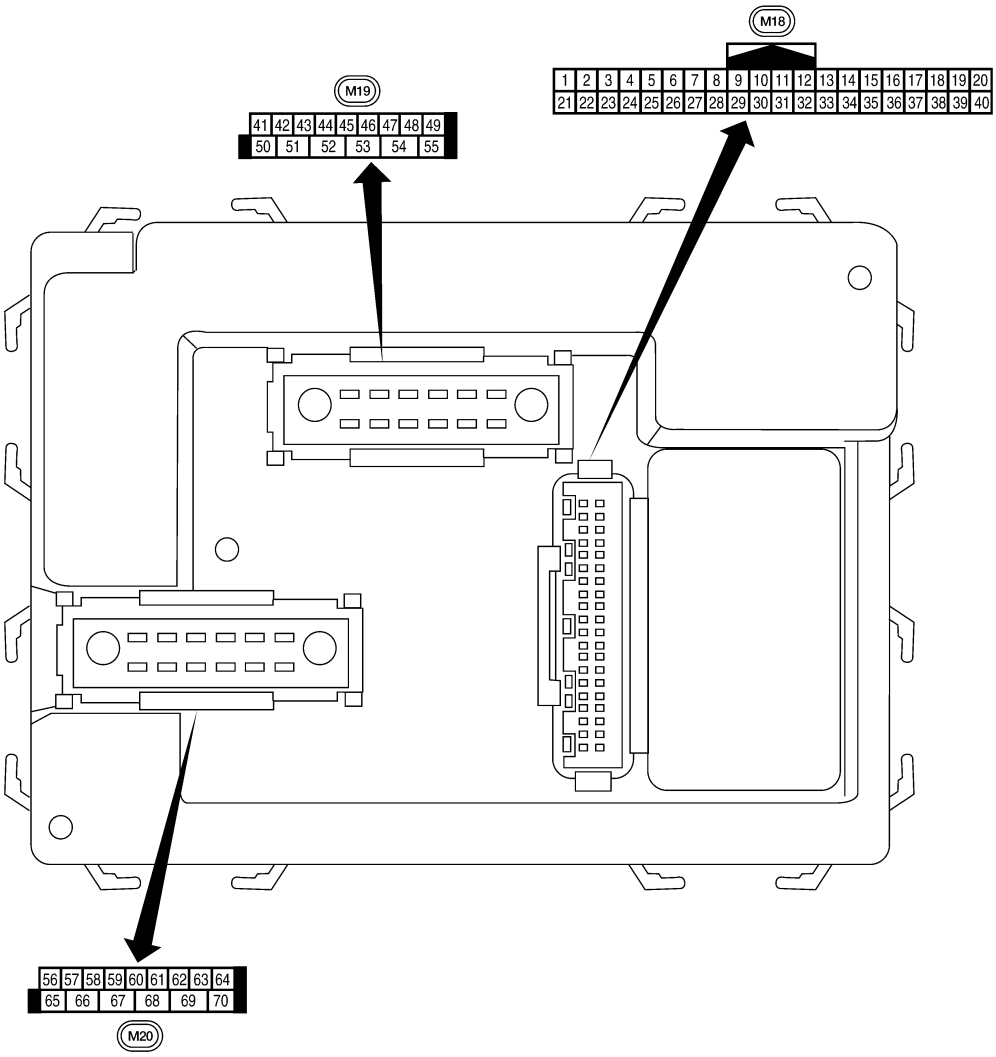
Monitor Item	Condition	Value/Status
ACC ON SW	Ignition switch OFF or ON	Off
	Ignition switch ACC	On
AIR COND SW	A/C switch OFF	Off
	A/C switch ON	On
AIR PRESS FL	Front left tire air pressure value	kPa, kg/cm^2, psi
AIR PRESS FR	Front right tire air pressure value	kPa, kg/cm^2, psi
AIR PRESS RL	Rear left tire air pressure value	kPa, kg/cm^2, psi
AIR PRESS RR	Rear right tire air pressure value	kPa, kg/cm^2, psi
AUTO LIGHT SW	Lighting switch OFF	Off
	Lighting switch AUTO	On
BRAKE SW	Brake pedal released	Off
	Brake pedal applied	On
BUCKLE SW	Seat belt buckle unfastened	Off
	Seat belt buckle fastened	On
BUZZER	Buzzer in combination meter OFF	Off
	Buzzer in combination meter ON	On
CARGO LAMP SW	Cargo lamp switch OFF	Off
	Cargo lamp switch ON	On
CDL LOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the LOCK side	On
CDL UNLOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the UNLOCK side	On
DOOR SW-AS	Front door RH closed	Off
	Front door RH opened	On
DOOR SW-DR	Front door LH closed	Off
	Front door LH opened	On
DOOR SW-RL	Rear door LH closed	Off
	Rear door LH opened	On
DOOR SW-RR	Rear door RH closed	Off
	Rear door RH opened	On

Monitor Item	Condition	Value/Status
FAN ON SIG	Blower motor fan switch OFF	Off
	Blower motor fan switch ON	On
FR FOG SW	Front fog lamp switch OFF	Off
	Front fog lamp switch ON	On
FR WASHER SW	Front washer switch OFF	Off
	Front washer switch ON	On
FR WIPER LOW	Front wiper switch OFF	Off
	Front wiper switch LO	On
FR WIPER HI	Front wiper switch OFF	Off
	Front wiper switch HI	On
FR WIPER INT	Front wiper switch OFF	Off
	Front wiper switch INT	On
FR WIPER STOP	Any position other than front wiper stop position	Off
	Front wiper stop position	On
HAZARD SW	When hazard switch is not pressed	Off
	When hazard switch is pressed	On
HEAD LAMP SW 1	Headlamp switch OFF	Off
	Headlamp switch 1st	On
HEAD LAMP SW 2	Headlamp switch OFF	Off
	Headlamp switch 1st	On
HI BEAM SW	High beam switch OFF	Off
	High beam switch HI	On
ID REGST FL1	ID registration of front left tire incomplete	YET
	ID registration of front left tire complete	DONE
ID REGST FR1	ID registration of front right tire incomplete	YET
	ID registration of front right tire complete	DONE
ID REGST RL1	ID registration of rear left tire incomplete	YET
	ID registration of rear left tire complete	DONE
ID REGST RR1	ID registration of rear right tire incomplete	YET
	ID registration of rear right tire complete	DONE
IGN ON SW	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
IGN SW CAN	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7
KEY CYL LK-SW	Door key cylinder LOCK position	Off
	Door key cylinder other than LOCK position	On
KEY CYL UN-SW	Door key cylinder UNLOCK position	Off
	Door key cylinder other than UNLOCK position	On
KEY ON SW	Mechanical key is removed from key cylinder	Off
	Mechanical key is inserted to key cylinder	On
KEYLESS LOCK	LOCK button of key fob is not pressed	Off
	LOCK button of key fob is pressed	On

Monitor Item	Condition	Value/Status
KEYLESS PANIC	PANIC button of key fob is not pressed	Off
	PANIC button of key fob is pressed	On
KEYLESS UNLOCK	UNLOCK button of key fob is not pressed	Off
	UNLOCK button of key fob is pressed	On
LIGHT SW 1ST	Lighting switch OFF	Off
	Lighting switch 1st	On
OIL PRESS SW	• Ignition switch OFF or ACC • Engine running	Off
	Ignition switch ON	On
OPTICAL SENSOR	Bright outside of the vehicle	Close to 5V
	Dark outside of the vehicle	Close to 0V
PASSING SW	Other than lighting switch PASS	Off
	Lighting switch PASS	On
REAR DEF SW	Rear window defogger switch OFF	Off
	Rear window defogger switch ON	On
TURN SIGNAL L	Turn signal switch OFF	Off
	Turn signal switch LH	On
TURN SIGNAL R	Turn signal switch OFF	Off
	Turn signal switch RH	On
VEHICLE SPEED	While driving	Equivalent to speedometer reading
WARNING LAMP	Low tire pressure warning lamp in combination meter OFF	Off
	Low tire pressure warning lamp in combination meter ON	On

Terminal Layout

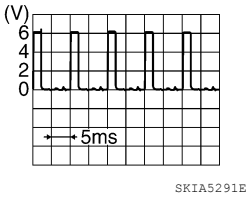
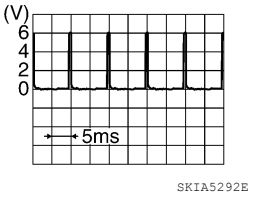
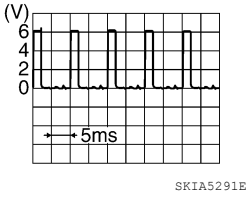
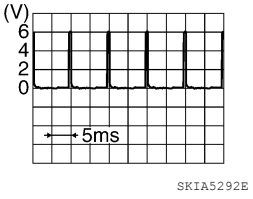
INFOID:0000000010228012

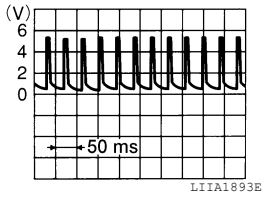
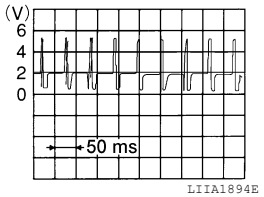
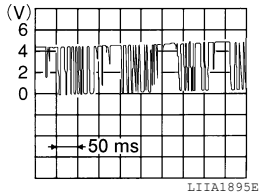


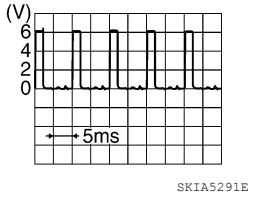
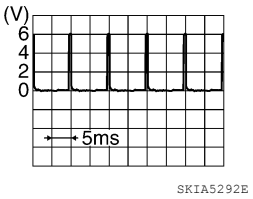
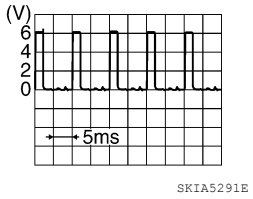
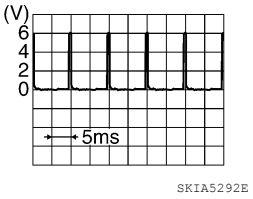
LIIA2443E

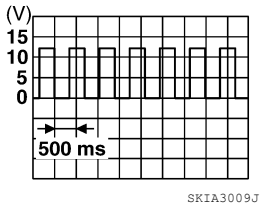
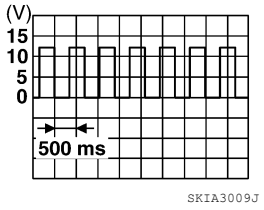
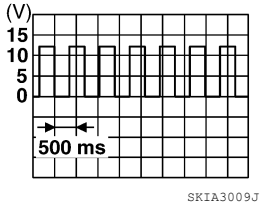
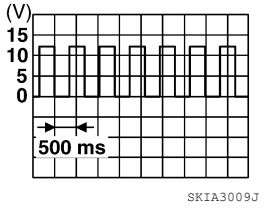
Physical Values

INFOID:0000000010228013

Terminal	Wire color	Item	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
1	BR	Ignition keyhole illumination	Output	OFF	Door is locked (SW OFF)	Battery voltage
					Door is unlocked (SW ON)	0V
2	P	Combination switch input 5	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
3	SB	Combination switch input 4	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
4	V	Combination switch input 3	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
5	L	Combination switch input 2	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
6	R	Combination switch input 1				
7	GR	Front door lock assembly LH (key cylinder switch) unlock	Input	OFF	ON (open, 2nd turn)	Momentary 1.5V
					OFF (closed)	0V
8	SB	Front door lock assembly LH (key cylinder switch) lock	Input		On (open)	Momentary 1.5V
					OFF (closed)	0V
9	LG	Brake sw	Input	OFF	OFF (brake pedal is not depressed)	0V
					ON (brake pedal is depressed)	Battery voltage
11	G/B	Ignition switch (ACC or ON)	Input	ACC or ON	Ignition switch ACC or ON	Battery voltage
12	LG	Front door switch RH (All)	Input	OFF	ON (open)	0V
		Rear door switch upper RH (King Cab)			OFF (closed)	Battery voltage
		Rear door switch lower RH (King Cab)				

Terminal	Wire color	Item	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
13	L	Rear door switch RH (Crew Cab)	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
15	W	Tire pressure warning check connector	Input	OFF	—	5V
18	BR	Remote keyless entry receiver and optical sensor (Ground)	Output	OFF	—	0V
19	V	Remote keyless entry receiver (power supply)	Output	OFF	Ignition switch OFF	
20	G	Remote keyless entry receiver signal (Signal)	Input	OFF	Stand-by (keyfob buttons released)	
					When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed)	
21	GR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move.
23	G	Security indicator lamp	Output	OFF	Goes OFF → illuminates (Every 2.4 seconds)	Battery voltage → 0V
25	BR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move.
27	W	Compressor ON signal	Input	ON	A/C switch OFF	5V
					A/C switch ON	0V
28	R	Front blower monitor	Input	ON	Front blower motor OFF	Battery voltage
					Front blower motor ON	0V
29	G	Hazard switch	Input	OFF	ON	0V
					OFF	5V
31	GR	Cargo lamp switch	Input	OFF	ON	0V
					OFF	Battery voltage

Terminal	Wire color	Item	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
32	BG	Combination switch output 5	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	
33	GR	Combination switch output 4	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	
34	G	Combination switch output 3	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	
35	BR	Combination switch output 2	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	
36	LG	Combination switch output 1				
37	B	Key switch	Input	OFF	Key inserted	Battery voltage
					Key removed	0V
38	W/R	Ignition switch (ON)	Input	ON	—	Battery voltage
39	L	CAN-H	—	—	—	—
40	P	CAN-L	—	—	—	—
41	Y	Rear window defogger switch	Input	ON	Rear window defogger switch ON	0V
					Rear window defogger switch OFF	5V
45	V	Lock switch	Input	OFF	ON (lock)	0V
					OFF	Battery voltage
46	LG	Unlock switch	Input	OFF	ON (unlock)	0V
					OFF	Battery voltage
47	GR	Front door switch LH (All)	Input	OFF	ON (open)	0V
		Rear door switch upper LH (King Cab)			OFF (closed)	Battery voltage
		Rear door switch lower LH (King Cab)				

Terminal	Wire color	Item	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
48	P	Rear door switch LH (Crew Cab)	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
50	P	Cargo lamp	Output	OFF	Any door open (ON)	0V
					All doors closed (OFF)	Battery voltage
51	BG	Trailer turn signal (right)	Output	ON	Turn right ON	
52	LG	Trailer turn signal (left)	Output	ON	Turn left ON	
56	R/Y	Battery saver output	Output	OFF	10 minutes after ignition switch is turned OFF	0V
				ON	—	Battery voltage
57	R/Y	Battery power supply	Input	—	—	Battery voltage
58	W	Optical sensor	Input	ON	When optical sensor is illuminated	3.1V or more
					When optical sensor is not illuminated	0.6V or less
59	GR	Front door lock assembly LH (unlock)	Output	OFF	OFF (neutral)	0V
					ON (unlock)	Battery voltage
60	LG	Turn signal (left)	Output	ON	Turn left ON	
61	G	Turn signal (right)	Output	ON	Turn right ON	
63	BR	Interior room/map lamp	Output	OFF	Any door switch: ON (open)	0V
					Any door switch: OFF (closed)	Battery voltage
65	V	All door lock actuators (lock)	Output	OFF	OFF (neutral)	0V
					ON (lock)	Battery voltage

Terminal	Wire color	Item	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
66	L	Front door lock actuator RH, rear door lock actuators LH/RH (unlock)	Output	OFF	OFF (neutral)	0V
					ON (unlock)	Battery voltage
67	B	Ground	Input	ON	—	0V
68[1]	O	Power window power supply (RAP)	Output	—	Ignition switch ON	Battery voltage
					Within 45 seconds after ignition switch OFF	Battery voltage
					More than 45 seconds after ignition switch OFF	0V
					When front door LH or RH is open or power window timer operates	0V
68[2]	SB	Power window power supply (RAP)	Output	—	Ignition switch ON	Battery voltage
					Within 45 seconds after ignition switch OFF	Battery voltage
					More than 45 seconds after ignition switch OFF	0V
					When front door LH or RH is open or power window timer operates	0V
69	P	Power window power supply (BAT)	Output	OFF	—	Battery voltage
70	W	Battery power supply	Input	OFF	—	Battery voltage

1: King cab

2: Crew cab

Fail Safe

INFOID:0000000010228014

Fail-safe index

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

Display contents of CONSULT	Fail-safe	Cancellation
U1000: CAN COMM CIRCUIT	Inhibit engine cranking	When the BCM re-establishes communication with the other modules.

DTC Inspection Priority Chart

INFOID:0000000010228015

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

Priority	DTC
1	• U1000: CAN COMM CIRCUIT
2	• B2190: NATS ANTENNA AMP • B2191: DIFFERENCE OF KEY • B2192: ID DISCORD BCM-ECM • B2193: CHAIN OF BCM-ECM

Priority	DTC
3	• C1729: VHCL SPEED SIG ERR • C1735: IGNITION SIGNAL
4	• 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

DTC Index

INFOID:0000000010228016

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	Low tire pressure warning lamp ON	Reference page
No DTC is detected. further testing may be required.	—	—	—
U1000: CAN COMM CIRCUIT	—	—	BCS-26
B2190: NATS ANTTENA AMP	—	—	SEC-18
B2191: DIFFERENCE OF KEY	—	—	SEC-21
B2192: ID DISCORD BCM-ECM	—	—	SEC-22
B2193: CHAIN OF BCM-ECM	—	—	SEC-24
C1708: [NO DATA] FL	—	X	WT-15
C1709: [NO DATA] FR	—	X	WT-15
C1710: [NO DATA] RR	—	X	WT-15
C1711: [NO DATA] RL	—	X	WT-15
C1712: [CHECKSUM ERR] FL	—	X	WT-17
C1713: [CHECKSUM ERR] FR	—	X	WT-17
C1714: [CHECKSUM ERR] RR	—	X	WT-17
C1715: [CHECKSUM ERR] RL	—	X	WT-17

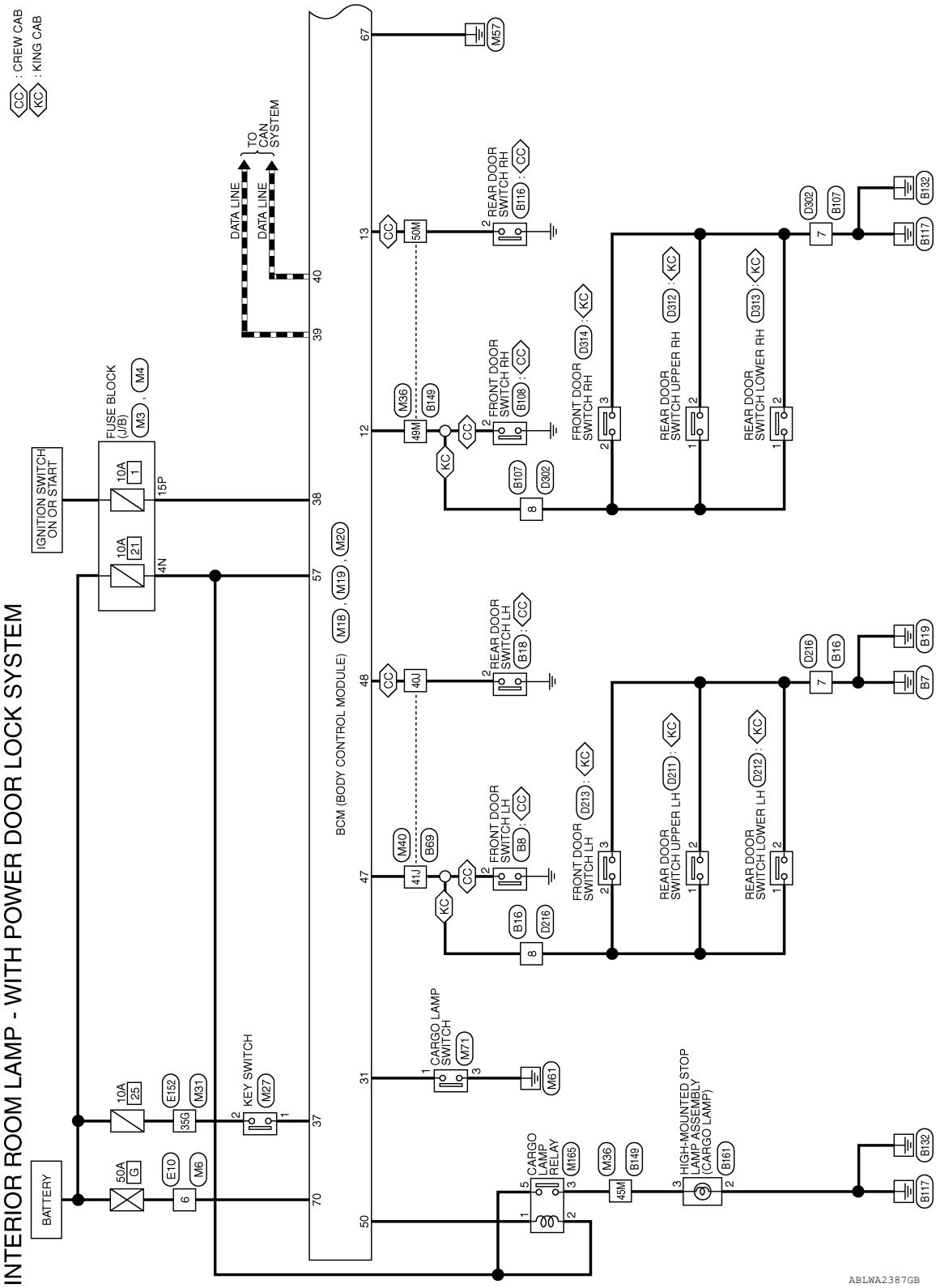
CONSULT display	Fail-safe	Low tire pressure warning lamp ON	Reference page
C1716: [PRESSDATA ERR] FL	—	X	WT-19
C1717: [PRESSDATA ERR] FR	—	X	WT-19
C1718: [PRESSDATA ERR] RR	—	X	WT-19
C1719: [PRESSDATA ERR] RL	—	X	WT-19
C1720: [CODE ERR] FL	—	X	WT-17
C1721: [CODE ERR] FR	—	X	WT-17
C1722: [CODE ERR] RR	—	X	WT-17
C1723: [CODE ERR] RL	—	X	WT-17
C1724: [BATT VOLT LOW] FL	—	X	WT-17
C1725: [BATT VOLT LOW] FR	—	X	WT-17
C1726: [BATT VOLT LOW] RR	—	X	WT-17
C1727: [BATT VOLT LOW] RL	—	X	WT-17
C1729: VHCL SPEED SIG ERR	—	X	WT-21
C1735: IGNITION SIGNAL	—	X	WT-22

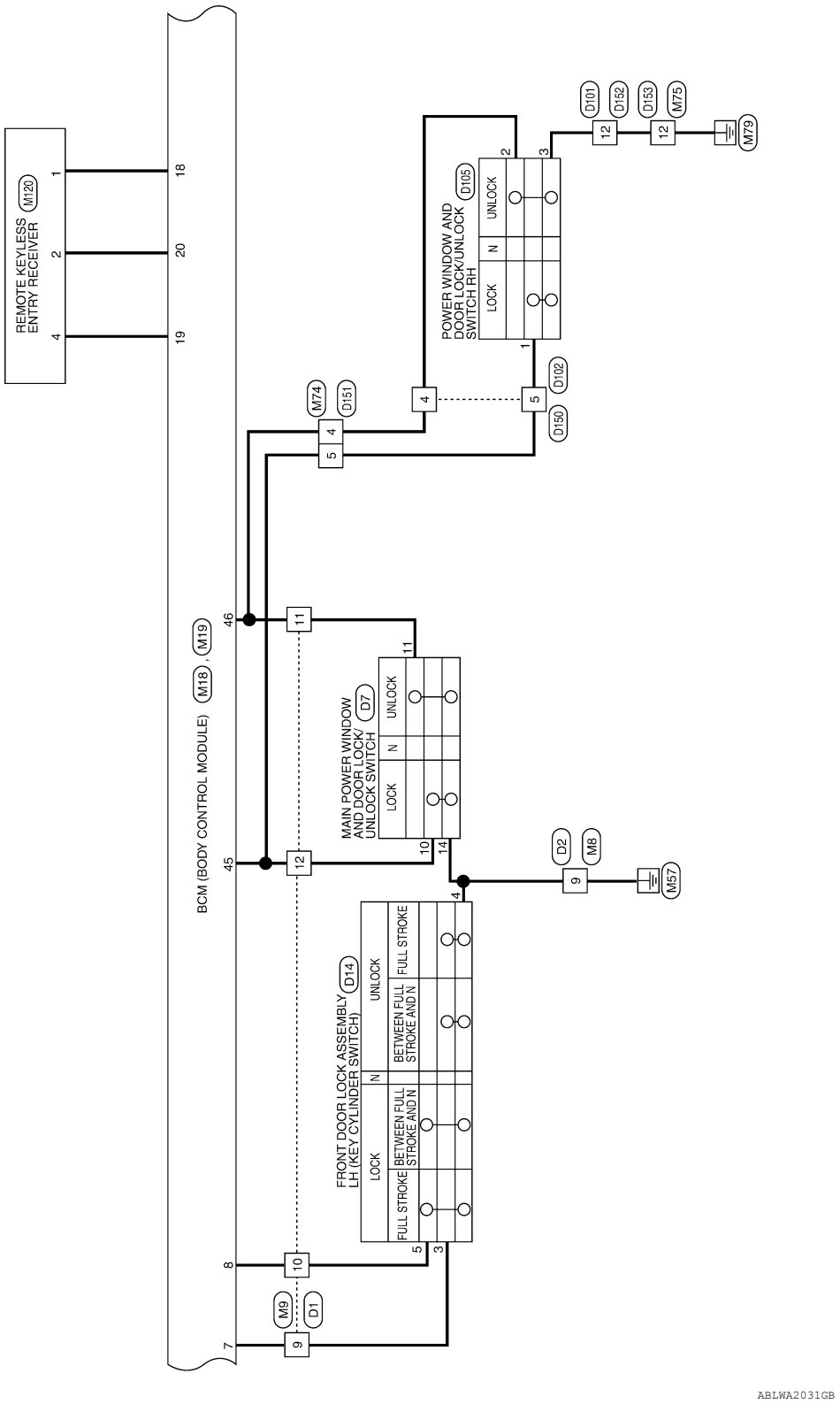
WIRING DIAGRAM

INTERIOR ROOM LAMP

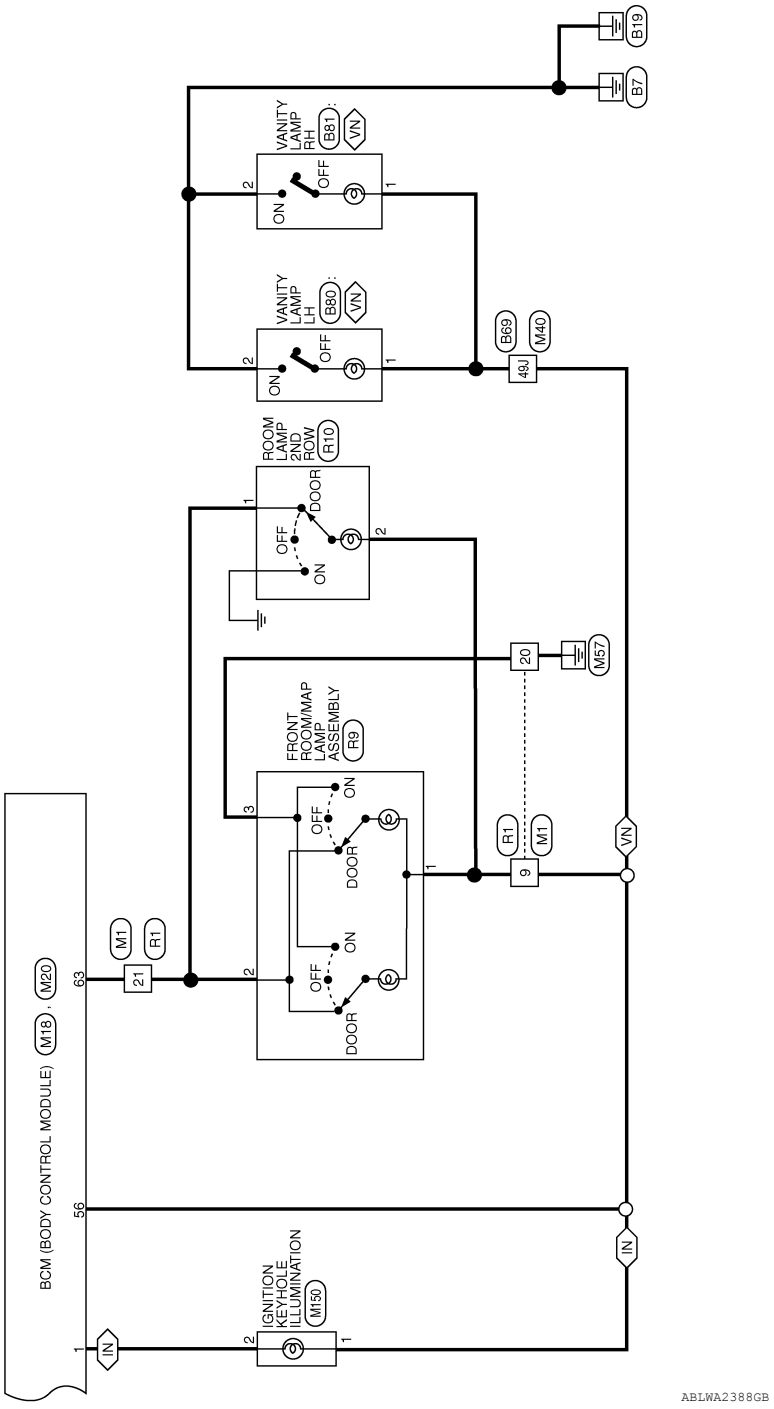
Wiring Diagram - With Power Door Lock System

INFOID:0000000009480154




REMOTE KEYLESS ENTRY RECEIVER M120
1
2
4
18
20
19
BCM (BODY CONTROL MODULE) M18, M19
46
45
8
7
11
12
10
9
M9
D1
M74
D151
4
5
D101
D152
D153
M75
12
12
M79
POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH D105
LOCK
N
UNLOCK
2
3
1
D102
D150
MAIN POWER WINDOW AND DOOR LOCK/ UNLOCK SWITCH D7
LOCK
N
UNLOCK
11
10
14
D2
M8
9
M57
FRONT DOOR LOCK ASSEMBLY LH (KEY CYLINDER SWITCH) D14
LOCK
FULL STROKE
BETWEEN FULL STROKE AND N
N
UNLOCK
BETWEEN FULL STROKE AND N
FULL STROKE
5
3
ABLWA2031GB

IN : WITH IGNITION KEYHOLE ILLUMINATION
VN : WITH VANITY LAMPS



ABLWA2388GB

INTERIOR ROOM LAMP CONNECTORS - WITH POWER DOOR LOCK SYSTEM

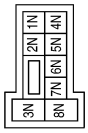
Connector No.	M1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
9	R/Y	–
20	B	–
21	BR	–

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

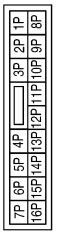
H.S.



Terminal No.	Color of Wire	Signal Name
4N	R/Y	–

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
15P	W/R	–

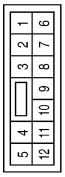
Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
6	W	–

Connector No.	M8
Connector Name	WIRE TO WIRE
Connector Color	BROWN

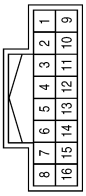
H.S.



Terminal No.	Color of Wire	Signal Name
9	B	–

Connector No.	M9
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
9	GR	–
10	SB	–
11	LG	–
12	V	–

ABLIA0683GB

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	BR	KEY RING OUTPUT
7	GR	KEY CYLINDER UNLOCK SW
8	SB	KEY CYLINDER LOCK SW
12	LG	DOOR SW (AS)
13	L	DOOR SW (RR)

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
45	V	CDL LOCK SW
46	LG	CDL UNLOCK SW
47	GR	DOOR SW (DR)
48	P	DOOR SW (RL)
50	P	CARGO LAMP OUTPUT

Terminal No.	Color of Wire	Signal Name
18	BR	KEYLESS & AUTO LIGHT SENSOR GND
19	V	KEYLESS TUNER POWER SUPPLY OUTPUT
20	G	KEYLESS TUNER SIGNAL
31	GR	CARGO LAMP SW
37	B	KEY SW
38	W/R	IGN SW
39	L	CAN-H
40	P	CAN-L

Connector No.	M27
Connector Name	KEY SWITCH
Connector Color	WHITE

H.S.

2	1

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

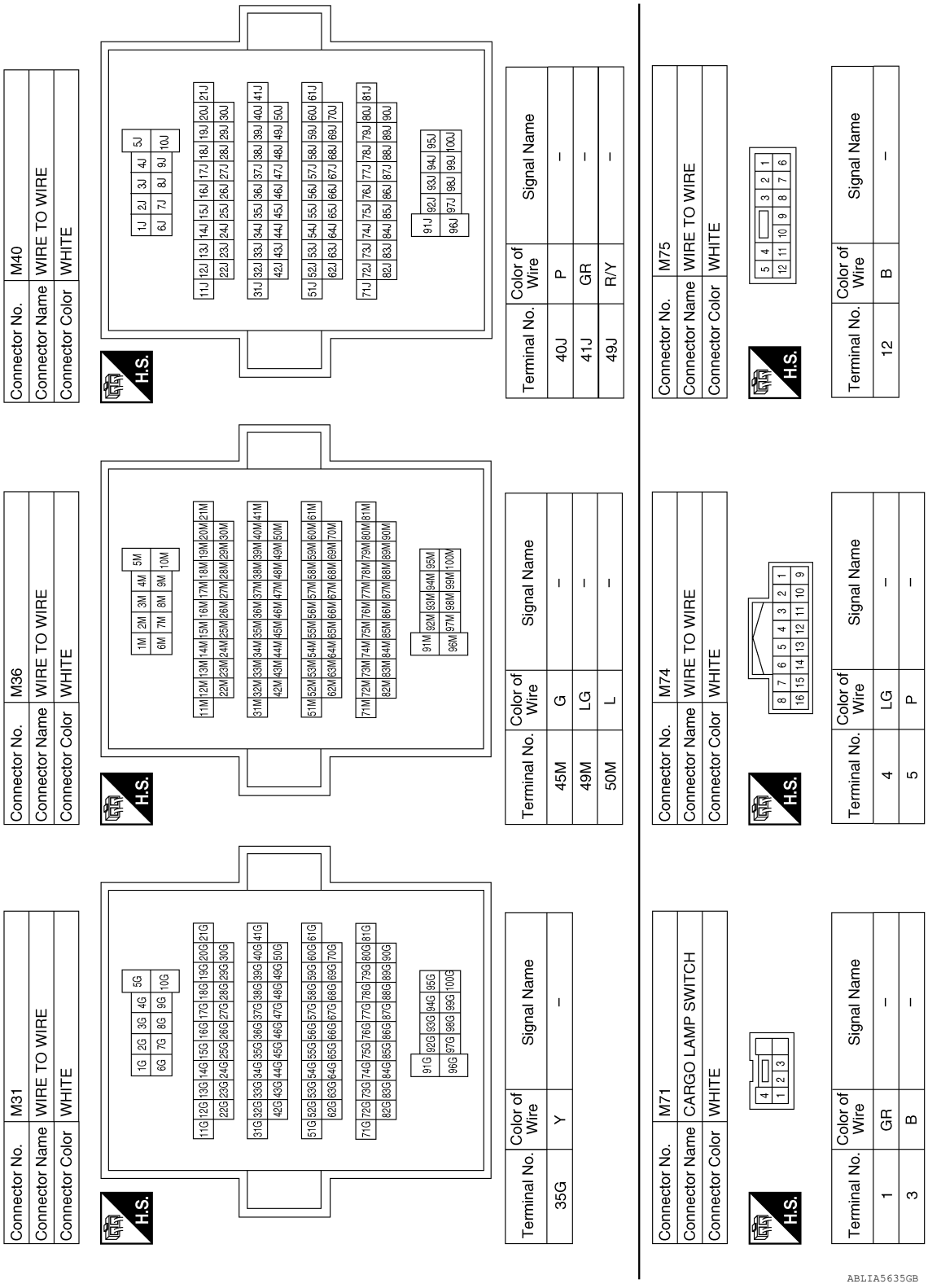
Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK

H.S.

56	57	58	59	60	61	62	63	64
65	66	67	68	69	70			

Terminal No.	Color of Wire	Signal Name
56	R/Y	BATTERY SAVER OUTPUT
57	R/Y	BAT (FUSE)
63	BR	ROOM LAMP OUTPUT
67	B	GND (POWER)
70	W	BAT (F/L)

ABLIA5634GB


Connector No. M40
Connector Name WIRE TO WIRE
Connector Color WHITE
H.S.
Terminal No. Color of Wire Signal Name
40J P –
41J GR –
49J R/Y –
Connector No. M36
Connector Name WIRE TO WIRE
Connector Color WHITE
H.S.
Terminal No. Color of Wire Signal Name
45M G –
49M LG –
50M L –
Connector No. M31
Connector Name WIRE TO WIRE
Connector Color WHITE
H.S.
Terminal No. Color of Wire Signal Name
35G Y –
Connector No. M75
Connector Name WIRE TO WIRE
Connector Color WHITE
H.S.
Terminal No. Color of Wire Signal Name
12 B –
Connector No. M74
Connector Name WIRE TO WIRE
Connector Color WHITE
H.S.
Terminal No. Color of Wire Signal Name
4 LG –
5 P –
Connector No. M71
Connector Name CARGO LAMP SWITCH
Connector Color WHITE
H.S.
Terminal No. Color of Wire Signal Name
1 GR –
3 B –
ABLIA5635GB

Connector No.	M165
Connector Name	CARGO LAMP RELAY
Connector Color	BLUE

H.S.

Terminal No.	Color of Wire	Signal Name
1	P	–
2	R/Y	–
3	G	–
5	R/Y	–

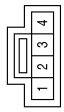
Connector No.	M150
Connector Name	IGNITION KEYHOLE ILLUMINATION
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	R/Y	–
2	BR	–

Connector No.	M120
Connector Name	REMOTE KEYLESS ENTRY RECEIVER
Connector Color	WHITE

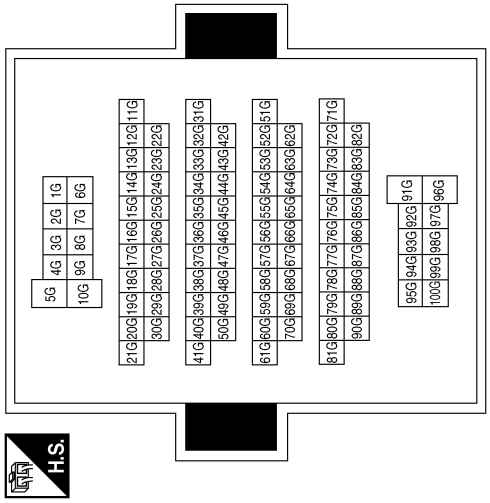
H.S.



Terminal No.	Color of Wire	Signal Name
1	BR	–
2	G	–
4	V	–

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
35G	Y	–

Connector No.	E10
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
6	W	–

ABLIA5636GB

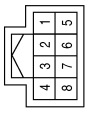
Connector No.	B8
Connector Name	FRONT DOOR SWITCH LH (CREW CAB)
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
2	GR	–

Connector No.	B16
Connector Name	WIRE TO WIRE
Connector Color	WHITE

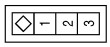
H.S.



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

Connector No.	B18
Connector Name	REAR DOOR SWITCH LH
Connector Color	WHITE

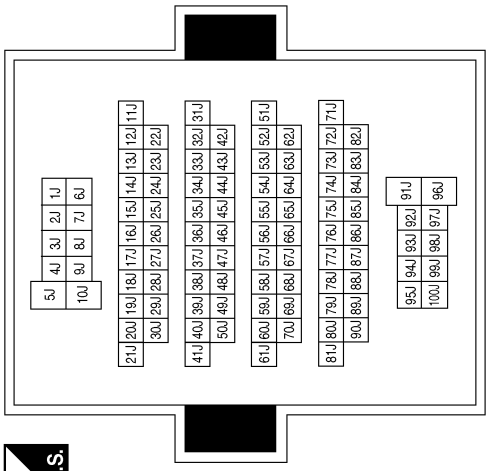
H.S.



Terminal No.	Color of Wire	Signal Name
2	P	–

Connector No.	B69
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
40J	P	–
41J	GR	–
49J	R/Y	–

Connector No.	B80
Connector Name	VANITY LAMP LH
Connector Color	WHITE

H.S.

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

ABLIA5637GB

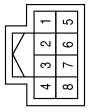
Connector No.	B81
Connector Name	VANITY LAMP RH
Connector Color	WHITE

H.S.

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

Connector No.	B107
Connector Name	WIRE TO WIRE
Connector Color	WHITE

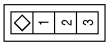
H.S.



Terminal No.	Color of Wire	Signal Name
7	B	–
8	LG	–

Connector No.	B108
Connector Name	FRONT DOOR SWITCH RH (CREW CAB)
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
2	LG	–

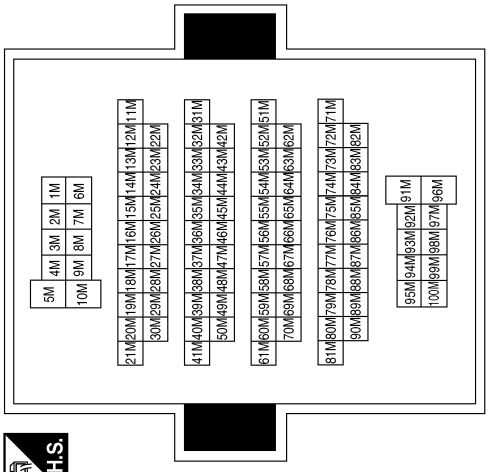
Connector No.	B116
Connector Name	REAR DOOR SWITCH RH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
2	L	–

Connector No.	B149
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

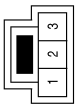


Terminal No.	Color of Wire	Signal Name
45M	G	–
49M	LG	–
50M	L	–

ABLIA5638GB

Connector No.	B161
Connector Name	HIGH-MOUNTED STOP LAMP ASSEMBLY
Connector Color	WHITE

H.S.



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

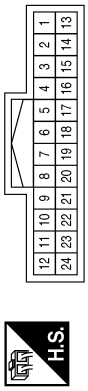
Connector No.	R10
Connector Name	ROOM LAMP 2ND ROW
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	BR	–
2	R/Y	–

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

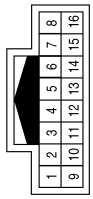
H.S.



Terminal No.	Color of Wire	Signal Name
9	R/Y	–
20	B	–
21	BR	–

Connector No.	D1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

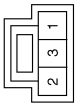
H.S.



Terminal No.	Color of Wire	Signal Name
9	R/W	–
10	SB	–
11	W	–
12	LG	–

Connector No.	R9
Connector Name	FRONT ROOM/MAP LAMP ASSEMBLY
Connector Color	WHITE

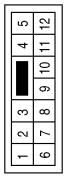
H.S.



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

Connector No.	D2
Connector Name	WIRE TO WIRE
Connector Color	BROWN

H.S.



Terminal No.	Color of Wire	Signal Name
9	B	–

ABLIA5639GB

Connector No.	D7
Connector Name	MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
10	LG	–
11	W	–
14	B	–

Connector No.	D14
Connector Name	FRONT DOOR LOCK ASSEMBLY LH
Connector Color	GRAY

H.S.

6	5	4	3	2	1

Terminal No.	Color of Wire	Signal Name
3	R/W	–
4	B	–
5	SB	–

Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
12	B	–

Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
4	W	–
5	LG	–

Connector No.	D105
Connector Name	POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH
Connector Color	WHITE

H.S.

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

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

Connector No.	D150
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
4	LG	– (WITH KING CAB)
4	P	– (WITH CREW CAB)
5	P	– (WITH KING CAB)
5	W	– (WITH CREW CAB)

ABLIA5640GB

Connector No.	D153
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
12	B	–

Connector No.	D152
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
12	B	–

Connector No.	D151
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
4	LG	– (WITH KING CAB)
4	P	– (WITH CREW CAB)
5	P	– (WITH KING CAB)
5	W	– (WITH CREW CAB)

Connector No.	D213
Connector Name	FRONT DOOR SWITCH LH (KING CAB)
Connector Color	WHITE

H.S.

1
2
3

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

Connector No.	D212
Connector Name	REAR DOOR SWITCH LOWER LH
Connector Color	BLACK

H.S.

2	1

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

Connector No.	D211
Connector Name	REAR DOOR SWITCH UPPER LH
Connector Color	BLACK

H.S.

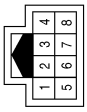
2	1

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

ABLIA5641GB

Connector No.	D216
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
7	B	–
8	LG	–

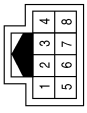
Connector No.	D313
Connector Name	REAR DOOR SWITCH LOWER RH
Connector Color	BLACK

H.S.

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

Connector No.	D302
Connector Name	WIRE TO WIRE
Connector Color	WHITE

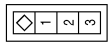
H.S.



Terminal No.	Color of Wire	Signal Name
7	B	–
8	LG	–

Connector No.	D314
Connector Name	FRONT DOOR SWITCH RH (KING CAB)
Connector Color	WHITE

H.S.



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

Connector No.	D312
Connector Name	REAR DOOR SWITCH UPPER RH
Connector Color	BLACK

H.S.

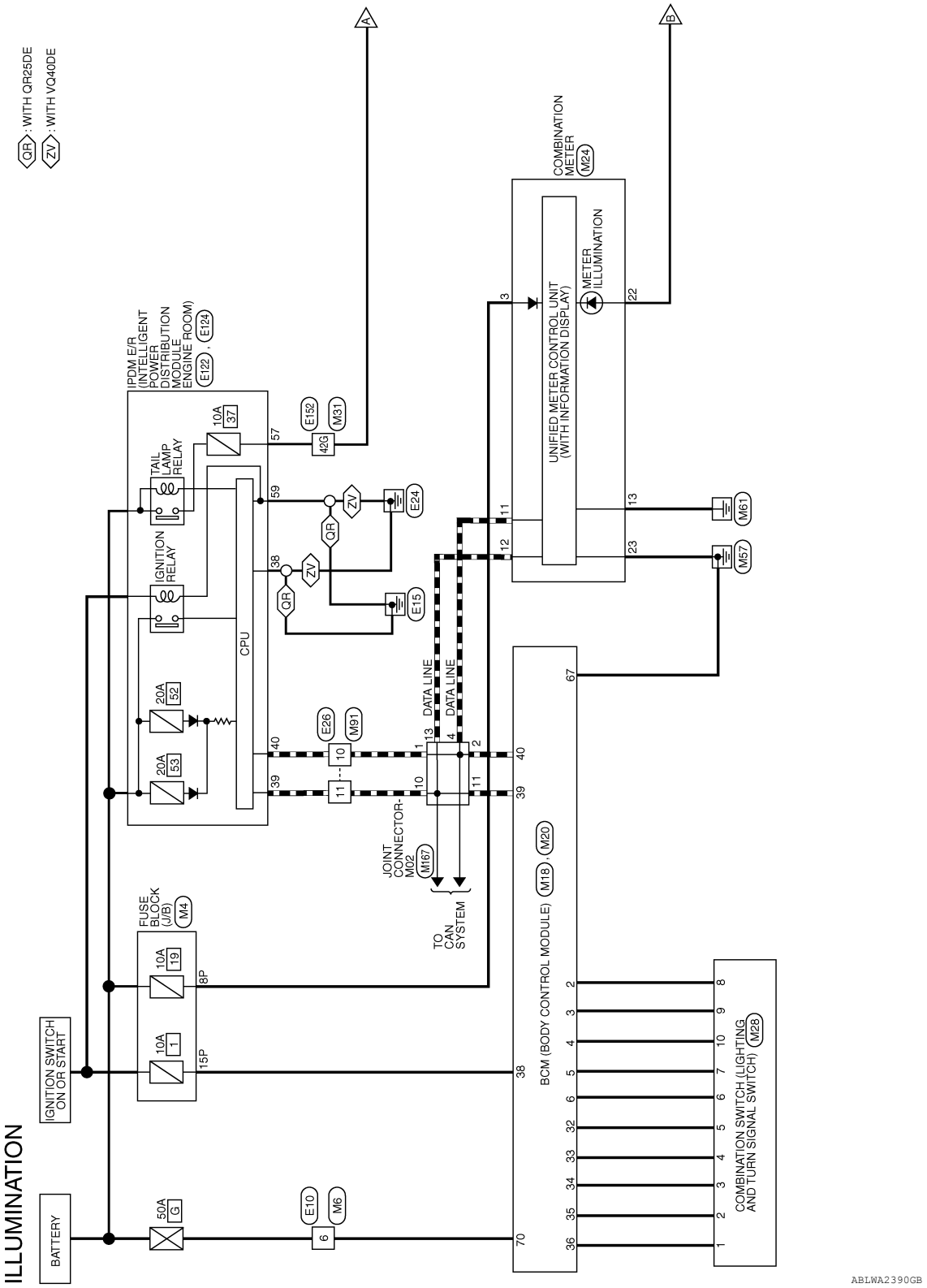
Terminal No.	Color of Wire	Signal Name
1	L	–
2	B	–

ABLIA5642GB

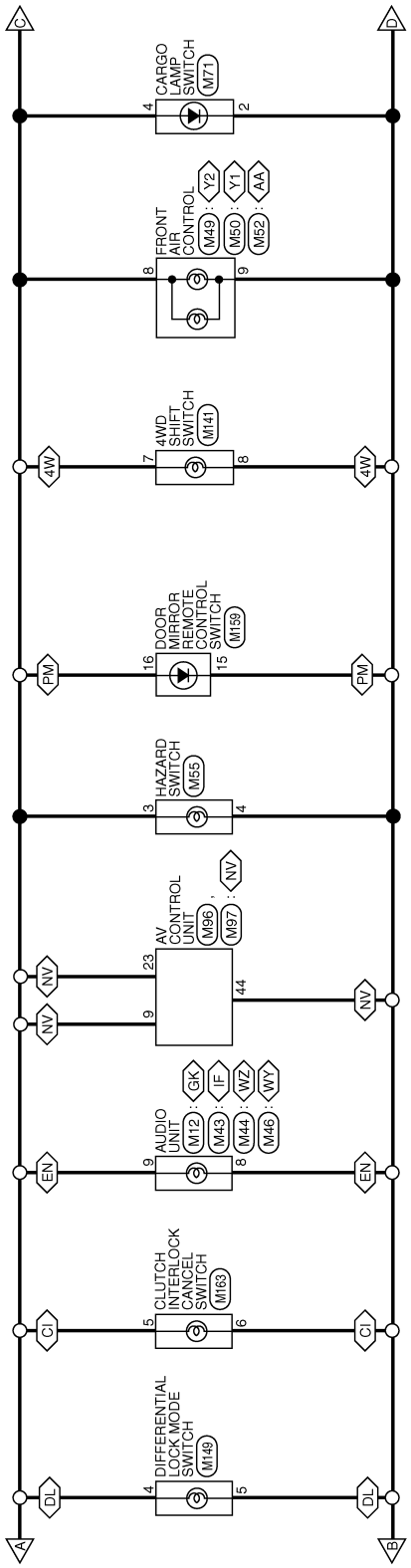
ILLUMINATION

Wiring Diagram

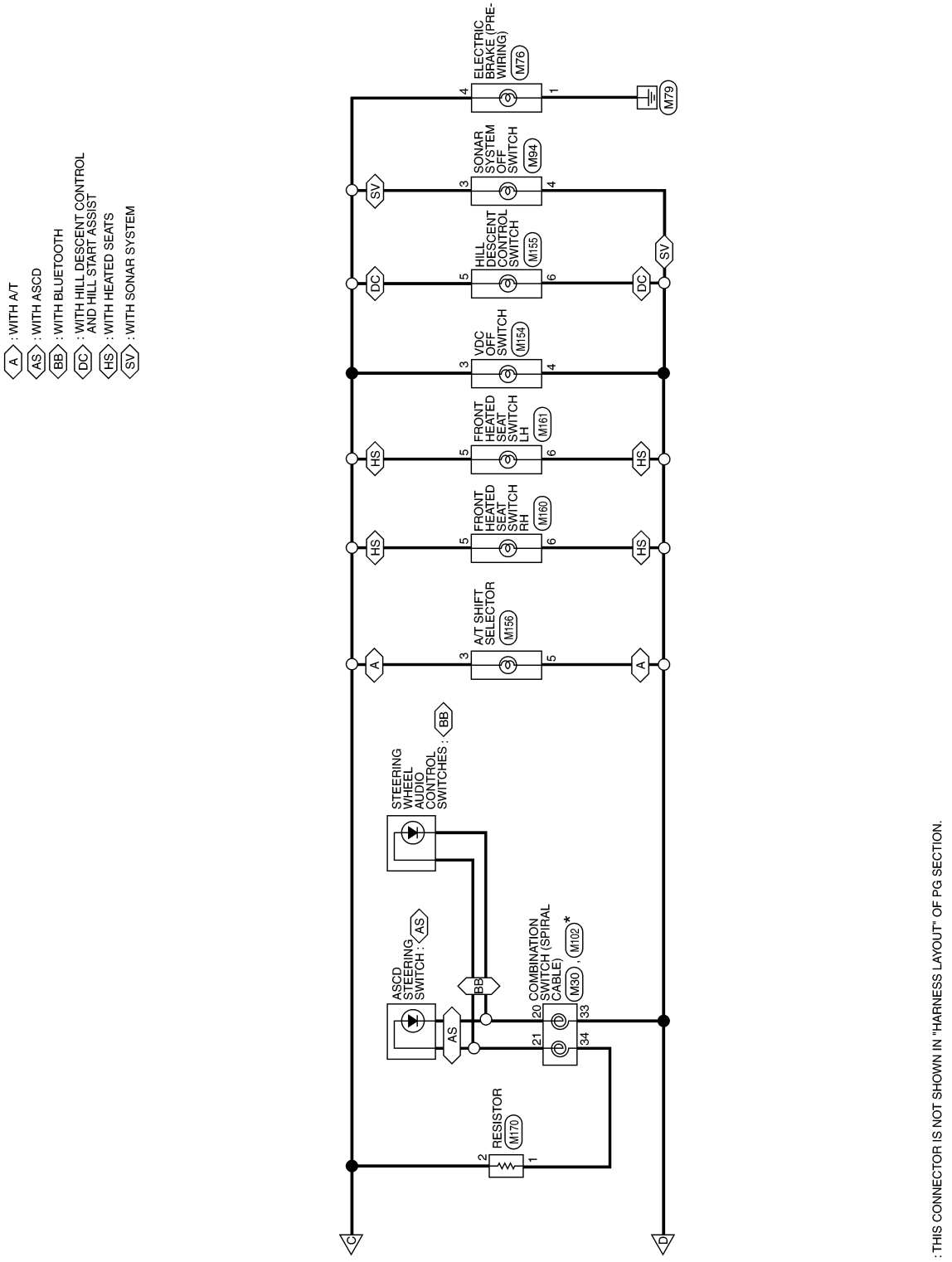
INFOID:0000000009480155



4W : WITH 4-WHEEL DRIVE
AA : WITH AUTO A/C
BA : WITH BASE AUDIO SYSTEM
CI : WITH CLUTCH INTERLOCK CANCEL SWITCH
DL : WITH ELECTRONIC LOCKING REAR DIFFERENTIAL
EN : WITHOUT NAVI
GK : WITH BASE AUDIO SYSTEM FOR MEXICO
IF : WITH BASE AUDIO SYSTEM EXCEPT FOR MEXICO
NV : WITH NAVI
PM : WITH POWER OUTSIDE MIRRORS
WY : WITH DISPLAY AUDIO AND AMPLIFIER
WZ : WITH DISPLAY AUDIO WITHOUT AMPLIFIER
Y1 : MANUAL WITH TYPE 1
Y2 : MANUAL WITH TYPE 2



ABLWA2399GB


A : WITH A/T
AS : WITH ASCD
BB : WITH BLUETOOTH
DC : WITH HILL DESCENT CONTROL AND HILL START ASSIST
HS : WITH HEATED SEATS
SV : WITH SONAR SYSTEM
ELECTRIC BRAKE (PRE-WIRING) M76
M79
SONAR SYSTEM OFF SWITCH M94
HILL DESCENT CONTROL SWITCH M155
VDC OFF SWITCH M154
FRONT HEATED SEAT SWITCH LH M161
FRONT HEATED SEAT SWITCH RH M160
A/T SHIFT SELECTOR M156
STEERING WHEEL AUDIO CONTROL SWITCHES : BB
ASCD STEERING SWITCH : AS
COMBINATION SWITCH (SPIRAL CABLE) M30, M102*
RESISTOR M170
C
D
* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.
ABLWA2030GB

ILLUMINATION CONNECTORS

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
8P	R/Y	–
15P	W/R	–

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

3	2	1
6	5	4

Terminal No.	Color of Wire	Signal Name
6	W	–

Connector No.	M12
Connector Name	AUDIO UNIT (BASE AUDIO SYSTEM - FOR MEXICO)
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
8	GR	ILL CONT
9	R	LIGHT SW

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
2	P	INPUT 5
3	SB	INPUT 4
4	V	INPUT 3
5	L	INPUT 2
6	R	INPUT 1
32	BG	OUTPUT 5
33	GR	OUTPUT 4
34	G	OUTPUT 3
35	BR	OUTPUT 2
36	LG	OUTPUT 1
38	W/R	IGN SW
39	L	CAN-H
40	P	CAN-L

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK

H.S.

56	57	58	59	60	61	62	63	64
65	66	67	68	69	70			

Terminal No.	Color of Wire	Signal Name
67	B	GND (POWER)
70	W	BAT (F/L)

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE

H.S.

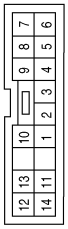
20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21

Terminal No.	Color of Wire	Signal Name
3	R/Y	BATTERY
11	P	CAN-L
12	L	CAN-H
13	GR	GROUND
22	BR	ILLUMINATION CONTROL
23	B	POWER GND

ABLIA5647GB

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE

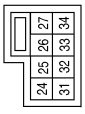
H.S.



Terminal No.	Color of Wire	Signal Name
1	LG	–
2	BR	–
3	G	–
4	GR	–
5	BG	–
6	R	–
7	L	–
8	P	–
9	SB	–
10	V	–

Connector No.	M30
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	GRAY

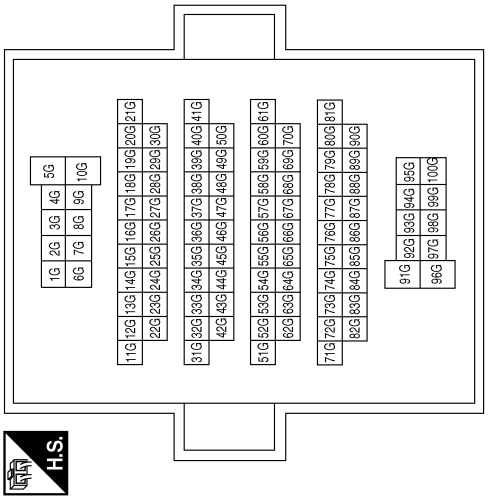
H.S.



Terminal No.	Color of Wire	Signal Name
33	V	–
34	LG	–

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
42G	R	–

Connector No.	M43
Connector Name	AUDIO UNIT (BASE AUDIO SYSTEM - EXCEPT FOR MEXICO)
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
8	GR	ILL CONT
9	R	LIGHT SW

Connector No.	M44
Connector Name	AUDIO UNIT (WITH DISPLAY AUDIO WITHOUT AMPLIFIER)
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
8	GR	ILL (-)
9	R	ILL (+)

Connector No.	M46
Connector Name	AUDIO UNIT (WITH DISPLAY AUDIO WITH AMPLIFIER)
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
8	GR	ILL (-)
9	R	ILL (+)

ABLIA5648GB

Connector No.	M52
Connector Name	FRONT AIR CONTROL (WITH AUTO A/C)
Connector Color	BLACK

H.S.

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

Terminal No.	Color of Wire	Signal Name
8	G	ILLUM+
9	BR	ILLUM-

Connector No.	M50
Connector Name	FRONT AIR CONTROL (MANUAL WITH TYPE 1)
Connector Color	BLACK

H.S.

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

Terminal No.	Color of Wire	Signal Name
8	G	ILLUM+
9	BR	ILLUM-

Connector No.	M49
Connector Name	FRONT AIR CONTROL (MANUAL WITH TYPE 2)
Connector Color	BLACK

H.S.

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

Terminal No.	Color of Wire	Signal Name
8	G	ILLUM+
9	BR	ILLUM-

Connector No.	M76
Connector Name	ELECTRIC BRAKE (PRE-WIRING)
Connector Color	WHITE

H.S.

2		6
1	3	4	5

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

Connector No.	M71
Connector Name	CARGO LAMP SWITCH
Connector Color	WHITE

H.S.

4	
1	2	3

Terminal No.	Color of Wire	Signal Name
2	P	–
4	V	–

Connector No.	M55
Connector Name	HAZARD SWITCH
Connector Color	WHITE

H.S.

	4
3	1	2

Terminal No.	Color of Wire	Signal Name
3	R	–
4	BR	–

ABLIA5691GB

Connector No.	M91
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
10	P	–
11	L	–

Connector No.	M94
Connector Name	SONAR SYSTEM OFF SWITCH
Connector Color	GRAY

H.S.

6	5	4	3	2	1

Terminal No.	Color of Wire	Signal Name
3	R	–
4	BR	–

Connector No.	M96
Connector Name	AV CONTROL UNIT
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
9	R	LIGHT SW

Connector No.	M97
Connector Name	AV CONTROL UNIT
Connector Color	WHITE

H.S.

32	31	30	29	28	27	26	25	24	23	22	21
44	43	42	41	40	39	38	37	36	35	34	33

Terminal No.	Color of Wire	Signal Name
23	P	MR OUTPUT
44	GR	ILL CONT

Connector No.	M102
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	GRAY

H.S.

14	15	16	17	18	19	20	21

Terminal No.	Color of Wire	Signal Name
20	W	–
21	R	–

Connector No.	M141
Connector Name	4WD SHIFT SWITCH
Connector Color	GRAY

H.S.

1	2	3	4	5	6	7	8

Terminal No.	Color of Wire	Signal Name
7	R	–
8	BR	–

ABLIA5669GB

Connector No.	M155
Connector Name	HILL DESCENT CONTROL SWITCH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
5	R	–
6	BR	–

Connector No.	M154
Connector Name	VDC OFF SWITCH
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
3	R	–
4	BR	–

Connector No.	M149
Connector Name	DIFFERENTIAL LOCK MODE SWITCH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
4	R	–
5	BR	–

Connector No.	M160
Connector Name	FRONT HEATED SEAT SWITCH RH
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
5	SB	–
6	BG	–

Connector No.	M159
Connector Name	DOOR MIRROR REMOTE CONTROL SWITCH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
15	BR	–
16	R	–

Connector No.	M156
Connector Name	A/T SHIFT SELECTOR
Connector Color	WHITE

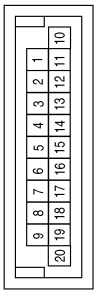
H.S.

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

ABLIA5649GB

Connector No.	M167
Connector Name	JOINT CONNECTOR-M02
Connector Color	BLUE

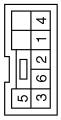
H.S.



Terminal No.	Color of Wire	Signal Name
1	P	–
2	P	–
4	P	–
10	L	–
11	L	–
13	L	–

Connector No.	M163
Connector Name	CLUTCH INTERLOCK CANCEL SWITCH
Connector Color	WHITE

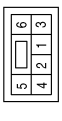
H.S.



Terminal No.	Color of Wire	Signal Name
5	R	–
6	BR	–

Connector No.	M161
Connector Name	FRONT HEATED SEAT SWITCH LH
Connector Color	WHITE

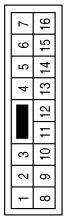
H.S.



Terminal No.	Color of Wire	Signal Name
5	R	–
6	BR	–

Connector No.	E26
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
10	P	–
11	L	–

Connector No.	E10
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
6	W	–

Connector No.	M170
Connector Name	RESISTOR
Connector Color	BLACK

H.S.

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

ABLIA5692GB

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

21G	20G	19G	18G	17G	16G	15G	14G	13G	12G	11G
	30G	29G	28G	27G	26G	25G	24G	23G	22G	

41G	40G	39G	38G	37G	36G	35G	34G	33G	32G	31G
	50G	49G	48G	47G	46G	45G	44G	43G	42G	

61G	60G	59G	58G	57G	56G	55G	54G	53G	52G	51G
	70G	69G	68G	67G	66G	65G	64G	63G	62G	

81G	80G	79G	78G	77G	76G	75G	74G	73G	72G	71G
	90G	89G	88G	87G	86G	85G	84G	83G	82G	

95G	94G	93G	92G	91G
100G	99G	98G	97G	96G

Terminal No.	Color of Wire	Signal Name
42G	R	–

Connector No.	E124
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BLACK

H.S.

59	58	57
62	61	60

Terminal No.	Color of Wire	Signal Name
57	GR	TAIL LAMP
59	B	GND (POWER)

Connector No.	E122
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE

H.S.

42	41	40	39	38	37
48	47	46	45	44	43

Terminal No.	Color of Wire	Signal Name
38	B	GND (SIGNAL)
39	L	CAN-H
40	P	CAN-L

ABLIA5650GB

SYMPTOM DIAGNOSIS

INTERIOR LIGHTING SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000009480156

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

Symptom	Possible cause	Inspection item
All of the following lamps do not turn ON • Front room/map lamp assembly • Room lamp 2nd row • Vanity mirror lamps (if equipped) • Ignition keyhole illumination (if equipped)	• Harness between BCM and each interior room lamp • Harness between BCM and each door switch • BCM	Battery saver output/power supply circuit Refer to INL-16.
Some or all of the following interior room lamps do not turn ON/OFF • Front room/map lamp assembly • Room lamp 2nd row	• Harness between BCM and each interior room lamp • BCM	Interior room lamp control circuit Refer to INL-18.
Cargo lamp does not turn ON/OFF	• Harness between fuse block (J/B) and cargo lamp relay • Harness between cargo lamp relay and cargo lamp • Harness between BCM and cargo lamp relay • BCM	Cargo lamp control circuit Refer to INL-20.
Ignition keyhole illumination does not turn ON/OFF	• Harness between BCM and ignition keyhole illumination • BCM	Ignition keyhole illumination circuit Refer to INL-24
Interior room lamp timer does not activate. (It turns ON/ OFF when the door opens/closes.)	—	Check the interior room lamp setting. Refer to INL-12, "INT LAMP : CONSULT Function (BCM - INT LAMP)".
Interior room lamp battery saver does not activate.	—	Check the interior room lamp battery saver setting. Refer to BCS-22, "BATTERY SAVER : CONSULT Function (BCM - BATTERY SAVER)".

PRECAUTION

PRECAUTIONS

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

INFOID:0000000010118811

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 SR and SB section of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, 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 SR section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

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

Precaution for Work

INFOID:0000000009480158

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

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

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

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

PREPARATION

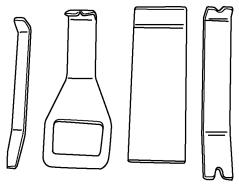
PREPARATION

Special Service Tool

INFOID:0000000009480159

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

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



AWJIA0483ZZ

REMOVAL AND INSTALLATION

INTERIOR ROOM LAMP

Removal and Installation

INFOID:0000000009480160

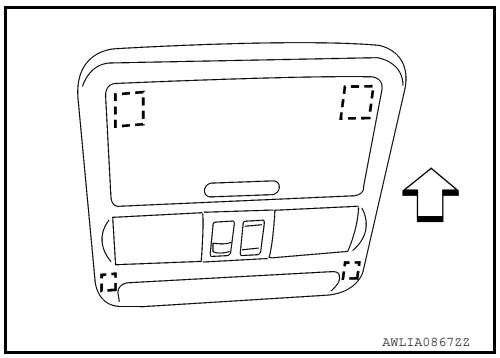
FRONT ROOM/MAP LAMP ASSEMBLY

Removal

The front room/map lamp assembly is replaced as part of the roof console. Refer to INT-25, "Removal and Installation".

⇦: Front

⬚: Metal clip



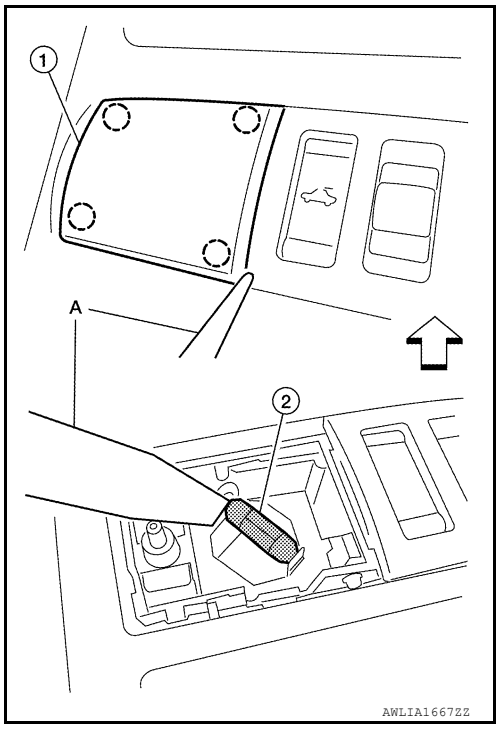
Installation

Installation is in the reverse order of removal.

Bulb or Lens Replacement

1. Using a suitable tool (A), remove the front room/map lamp RH and/or LH lenses (1) as necessary.
   ⇦: Front
   ◌: Pawl
2. Release one side of the bulb (2) from the tab using a suitable tool, then pull straight downward to remove.

Front room/ map lamp assembly bulb	**: 12V - 8W**

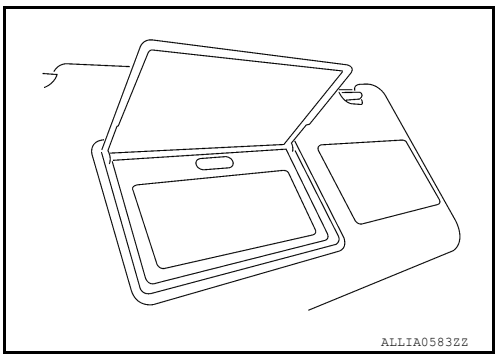


3. Install the new bulb into the socket tabs.
4. Install the front room/map lamp lens(es).

VANITY LAMP

Removal

The vanity lamp is replaced as part of the sun visor assembly. Refer to INT-25, "Removal and Installation".



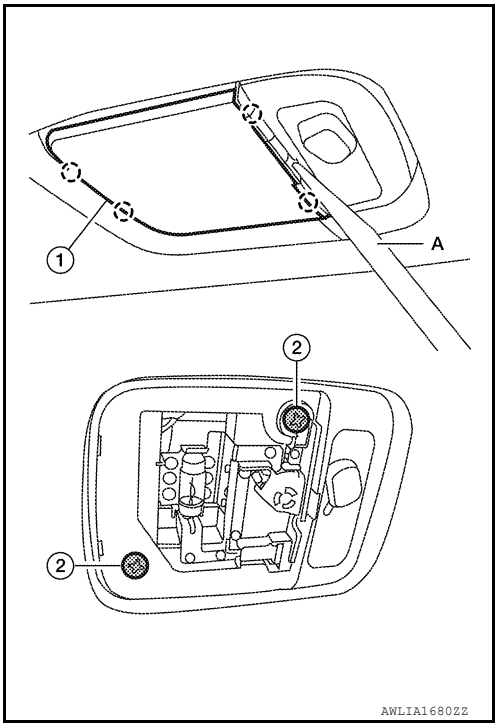
Installation
Installation is in the reverse order of removal.

Bulb Replacement
The vanity mirror lamp bulb is replaced as part of the sun visor assembly. Refer to INT-25, "Removal and Installation".

ROOM LAMP 2ND ROW

Removal

1. Using a suitable tool (A), release the pawls and remove the room lamp lens (1).
   ◌: Pawl
2. Remove room lamp screws (2).
3. Disconnect the harness connector from the room lamp and remove.

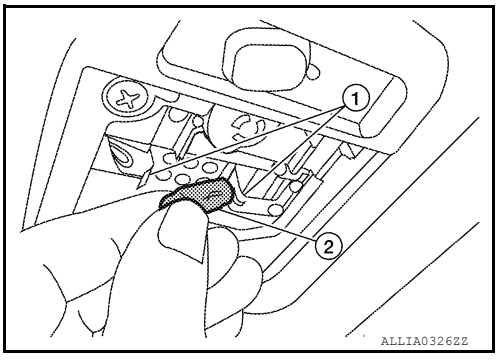


Installation
Installation is in the reverse order of removal.

Bulb or Lens Replacement

1. Using a suitable tool, release the pawls and remove the room lamp lens.
2. Release the room lamp bulb retainers (1), then pull bulb (2) straight out to remove.
3. Install the bulb (2) securely into the room lamp bulb retainers (1).

Room lamp bulb : 12V - 8W



4. Install the room lamp lens.

ILLUMINATION

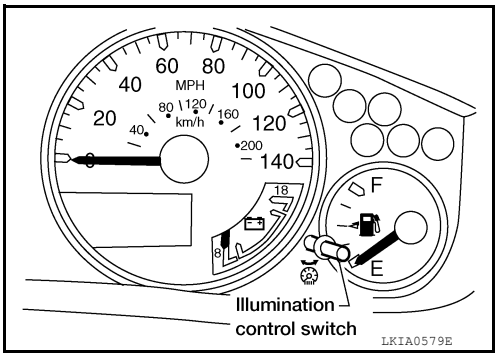
Removal and Installation

INFOID:0000000009480161

ILLUMINATION CONTROL SWITCH

Removal

The illumination control switch is replaced as a part of the combination meter. Refer to MWI-90, "Removal and Installation".



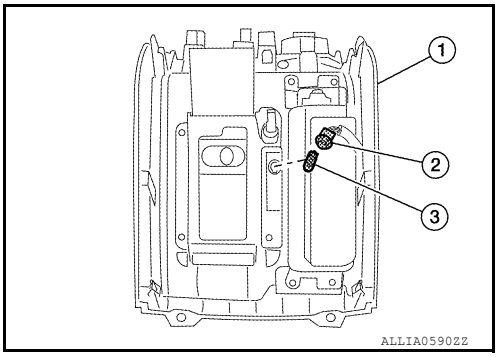
Installation

Installation is in the reverse order of removal.

SHIFT SELECTOR FINISHER LAMP

Removal

1. Remove shift selector finisher from center console. Refer to IP-25, "Removal and Installation".
2. Rotate shift selector finisher lamp socket (2) with bulb (3) counterclockwise, then pull away from finisher (1).



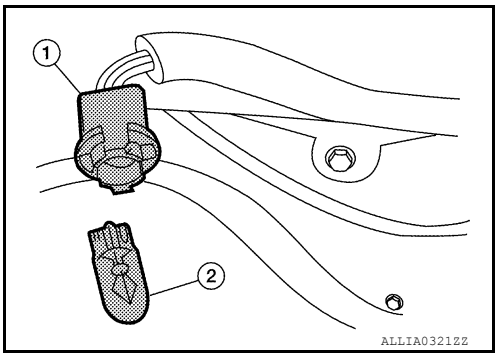
Installation

Installation is in the reverse order of removal.

Bulb Replacement

1. Remove shift selector finisher from center console. Refer to IP-25, "Removal and Installation".
2. Remove shift selector finisher lamp socket (1), then pull bulb (2) straight out away from socket.
3. Install the bulb (2) into the shift selector finisher socket (1).

AT finisher lamp bulb : 12V - 3W



4. Install shift selector finisher in center console. Refer to IP-25, "Removal and Installation".

SERVICE DATA AND SPECIFICATIONS (SDS)

BULB SPECIFICATIONS

Bulb Specifications

INFOID:0000000009480162

Item	Wattage (W)*
Front room/map lamp	8
Vanity lamp	–
Room lamp 2nd row	8
Shift selector finisher lamp	3

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

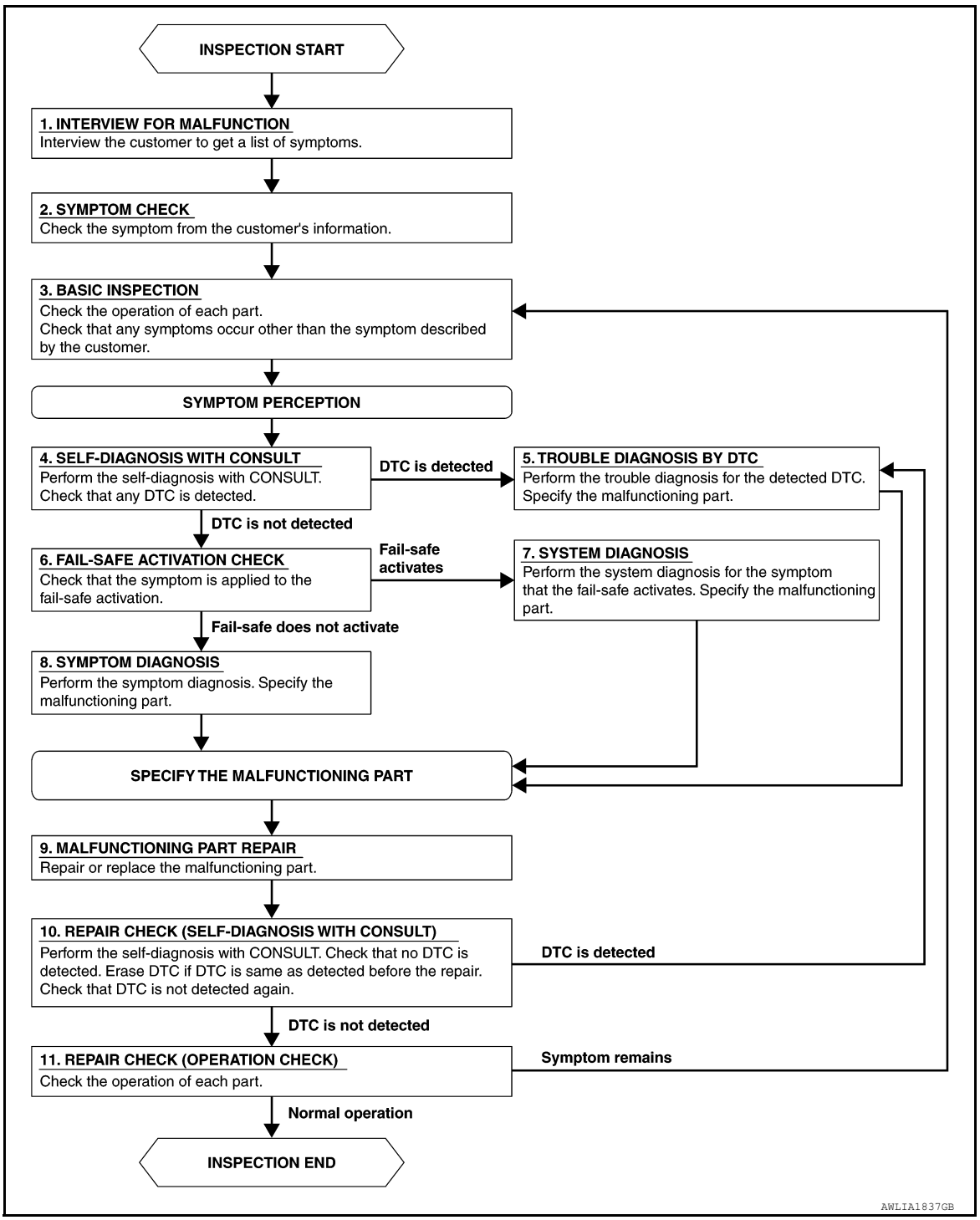
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000009480163

OVERALL SEQUENCE



DETAILED FLOW

1.INTERVIEW FOR MALFUNCTION

Find out what the customer's concerns are.

>> GO TO 2

2.SYMPTOM CHECK

Verify the symptom from the customer's information.

>> GO TO 3

3.BASIC INSPECTION

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

>> GO TO 4

4.SELF-DIAGNOSIS WITH CONSULT

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

Is any DTC detected?

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

5.TROUBLE DIAGNOSIS BY DTC

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

>> GO TO 9

6.FAIL-SAFE ACTIVATION CHECK

Determine if the customer’s concern is related to fail-safe activation.

Does the fail-safe activate?

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

7.SYSTEM DIAGNOSIS

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

>> GO TO 9

8.SYMPTOM DIAGNOSIS

Perform the symptom diagnosis. Specify the malfunctioning part.

>> GO TO 9

9.MALFUNCTION PART REPAIR

Repair or replace the malfunctioning part.

>> GO TO 10

10.REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)

Perform the self-diagnosis with CONSULT. Verify that no DTCs are detected. Erase all DTCs detected prior to the repair. Verify that DTC is not detected again.

Is any DTC detected?

YES >> GO TO 5

NO >> GO TO 11

11. REPAIR CHECK (OPERATION CHECK)

Check the operation of each part.

Does it operate normally?

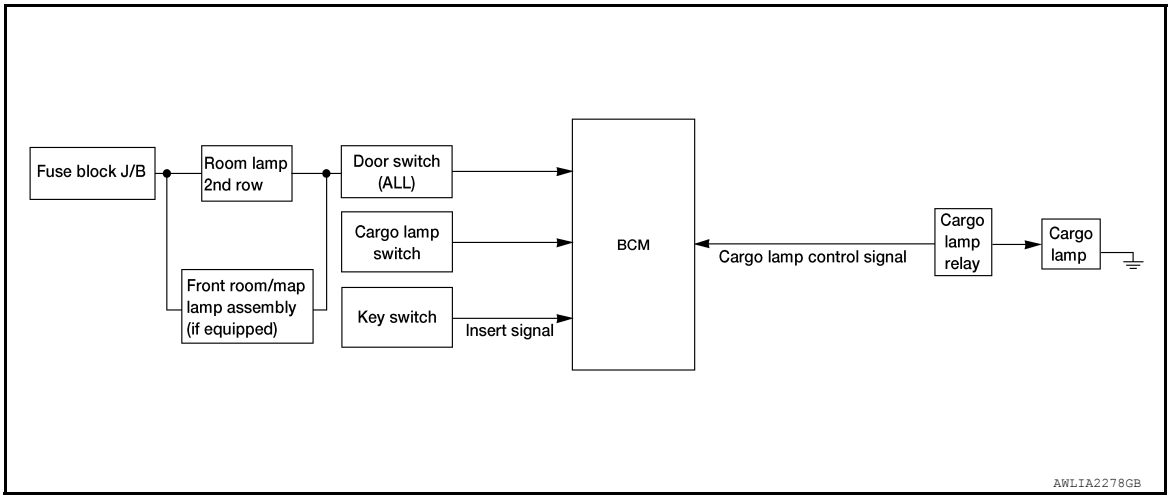
YES >> Inspection End
NO >> GO TO 3

SYSTEM DESCRIPTION

INTERIOR ROOM LAMP

System Diagram

INFOID:0000000009480164



System Description

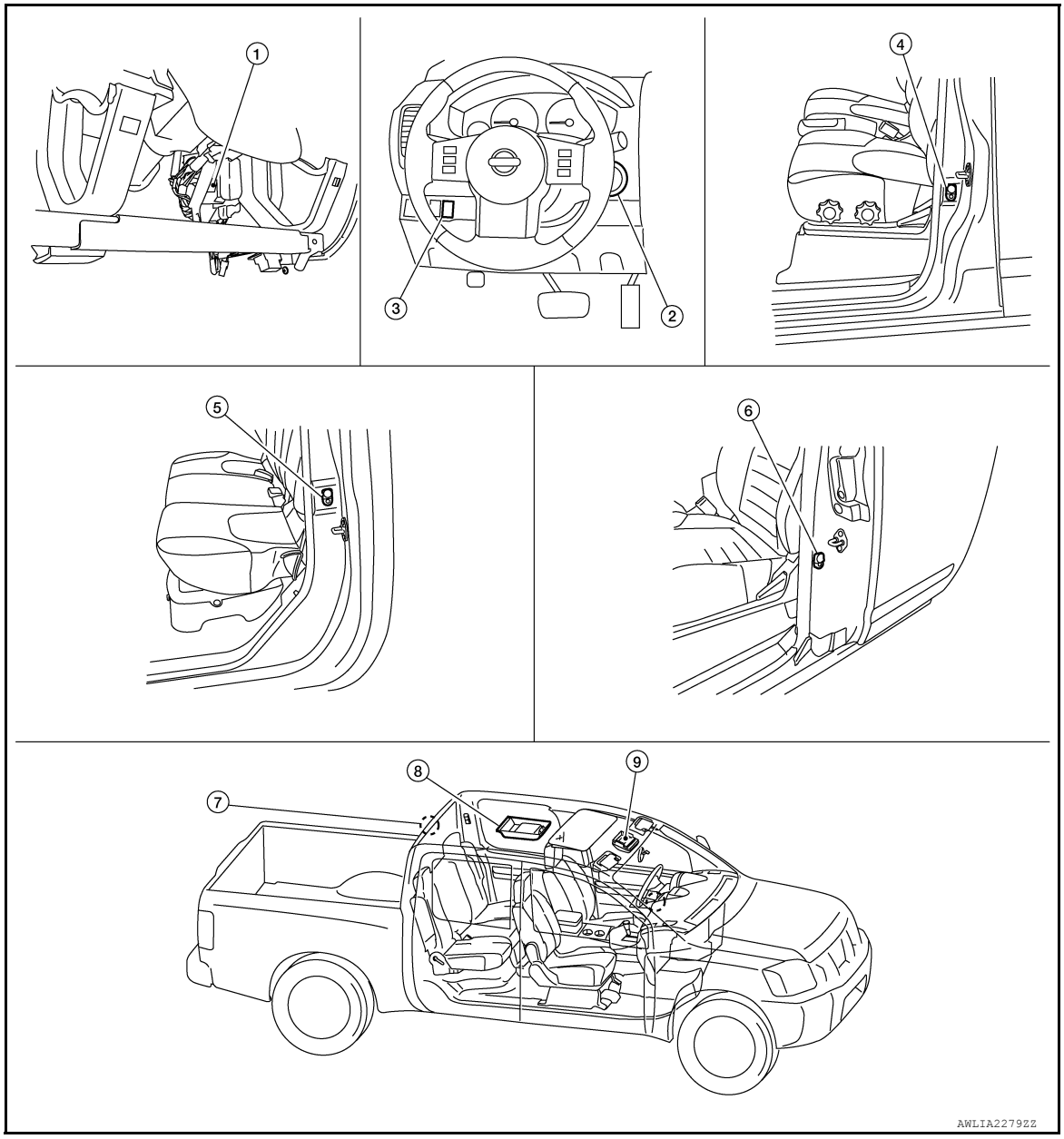
INFOID:0000000009480165

OUTLINE

- Room lamp 2nd row and front room/map lamp (if equipped) are powered by fuse block (J/B) fuse number 21 (10A). When the lamp is set to the DOOR position, ground is provided through the door switches.
- Cargo lamp is controlled by the cargo lamp control function of the BCM.

Component Parts Location

INFOID:0000000009480166



1. BCM M18, M19, M20 (view with lower instrument panel LH removed)
2. Key switch M27
3. Cargo lamp switch M71
4. Front door switch LH B8 (crew cab) Front door switch RH B108 (crew cab)
5. Rear door switch LH B18 (crew cab) Rear door switch RH B116 (crew cab)
6. Front door switch LH D213 (king cab) Front door switch RH D314 (king cab)
7. Cargo lamp B161
8. Room lamp 2nd row R10
9. Front room/map lamp assembly R9 (if equipped)

Component Description

INFOID:0000000009480167

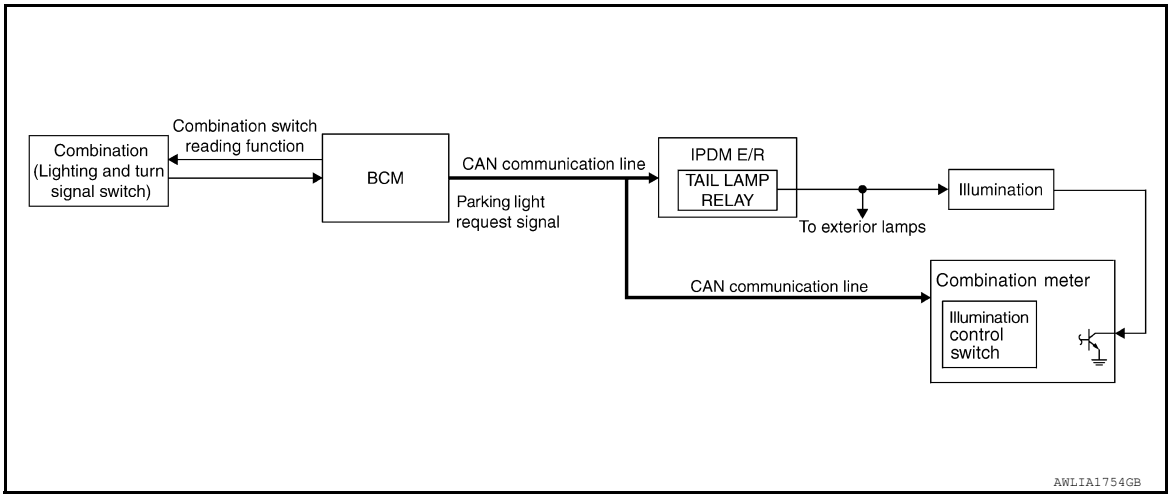
Part name	Description
BCM	Provides ground for the cargo lamp relay.
Key switch	Provides key in ignition status to the BCM.

Door switches	Provides door OPEN/CLOSED status to the BCM. Provides ground for the room lamp 2nd row.
Cargo lamp switch	Provides cargo lamp ON/OFF request to the BCM.

ILLUMINATION CONTROL SYSTEM

System Diagram

INFOID:0000000009480168



System Description

INFOID:0000000009480169

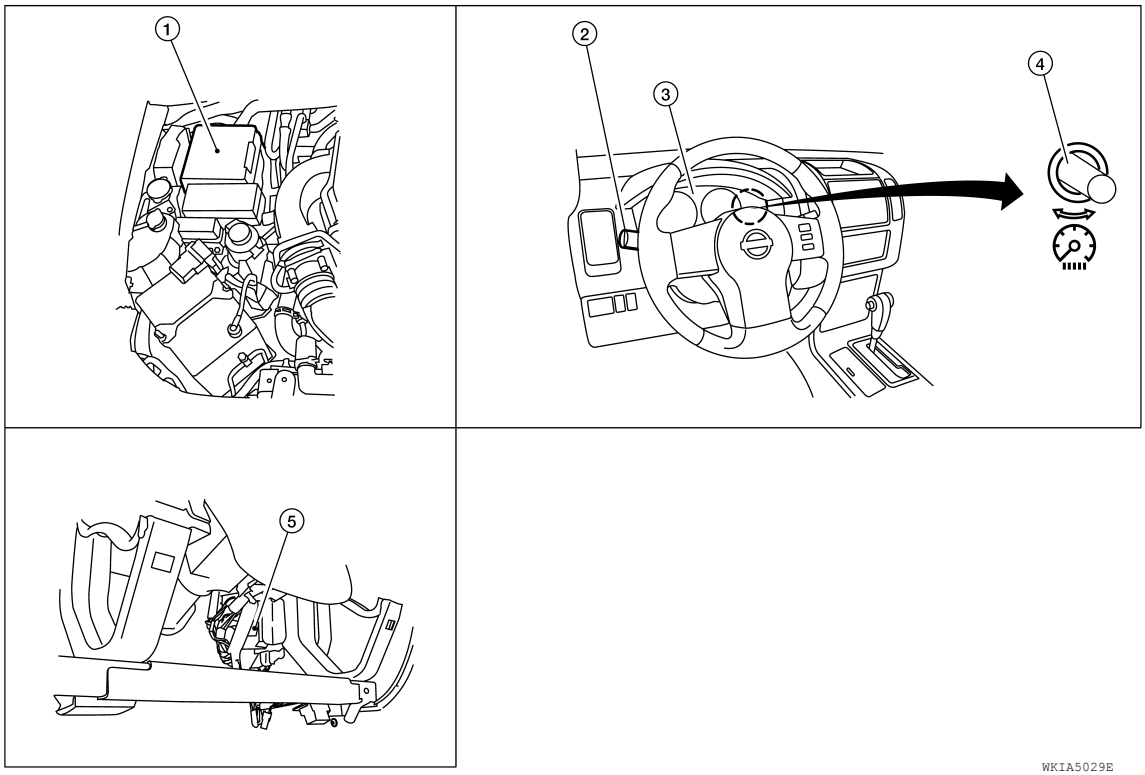
The illumination lamps operation is dependent upon the position of the combination switch (lighting and turn signal switch). When the combination switch (lighting and turn signal switch) is placed in the 1ST or 2ND position (or if the auto light system is activated) the BCM (body control module) receives input requesting the parking lamps to illuminate. This input is communicated to the IPDM E/R (intelligent power distribution module engine room) via the CAN communication lines. The CPU (central processing unit) of the IPDM E/R controls the tail lamp relay coil. When energized, this relay directs power to the parking and illumination lamps, which then illuminate.

BATTERY SAVER CONTROL

When the combination switch (lighting and turn signal switch) is in the 1ST or 2ND position and the ignition switch is turned from ON or ACC to OFF, the battery saver control feature is activated. Under this condition, the illumination lamps remain illuminated for 10 minutes unless the combination switch (lighting and turn signal switch) position is changed. If the combination switch (lighting and turn signal switch) position is changed, then the illumination lamps are turned off after a 30 second delay. When the combination switch (lighting and turn signal switch) is turned from OFF to 1ST or 2ND position (or if auto light system is activated) after illumination lamps have been turned off by the battery saver control, the illumination lamps illuminate again.

Component Parts Location

INFOID:0000000009480170



1. IPDM E/R E122, E124
2. Combination switch (lighting and turn signal switch) M28
3. Combination meter M24
4. Illumination control switch (built into combination meter)
5. BCM M18, M20 (view with lower instrument panel LH removed)

Component Description

INFOID:0000000009480171

Part name	Description
BCM	The BCM monitors the lighting switch position with the combination switch reading function. The BCM requests, via CAN communication, that the IPDM E/R activate the tail lamp relay.
IPDM E/R	The IPDM E/R activates the tail lamp relay based on inputs received from the BCM via the CAN communication network.
Combination meter (illumination control switch)	The illumination control switch is a part of the combination meter. The combination meter controls illumination intensity by varying ground to the illumination lamps based on the illumination control switch position.
Combination switch (lighting and turn signal switch)	The combination switch (lighting and turn signal switch) provides input to the BCM about the lighting switch position.

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

INFOID:0000000010229282

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

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

SYSTEM APPLICATION
BCM can perform the following functions.

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

INT LAMP

INT LAMP : CONSULT Function (BCM - INT LAMP)

INFOID:0000000010229283

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.
KEY ON SW [On/Off]	Indicates condition of key switch.
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.
DOOR SW-RR [On/Off]	Indicates condition of rear door switch RH.
DOOR SW-RL [On/Off]	Indicates condition of rear door switch LH.
KEY CYL LK-SW [On/Off]	Indicates condition of lock signal from door key cylinder switch.
KEY CYL UN-SW [On/Off]	Indicates condition of unlock signal from door key cylinder switch.
CDL LOCK SW [On/Off]	Indicates condition of lock signal from door lock and unlock switch.
CDL UNLOCK SW [On/Off]	Indicates condition of unlock signal from door lock and unlock switch.
KEYLESS LOCK [On/Off]	Indicates condition of lock signal from keyfob.
KEYLESS UNLOCK [On/Off]	Indicates condition of unlock signal from keyfob.

ACTIVE TEST

Test Item	Description
IGN ILLUM	This test is able to check ignition keyhole illumination operation [Off/On].
INT LAMP	This test is able to check interior room lamp operation [Off/On].

WORK SUPPORT

Support Item	Setting		Description
SET I/L D-UNLCK INTCON	Off		Interior room lamp timer function OFF.
	On*		Interior room lamp timer function ON.
ROOM LAMP ON TIME SET	MODE7	0 sec.	Sets the interior room lamp gradual brightening time.
	MODE6	5 sec.	
	MODE5	4 sec.	
	MODE4	3 sec.	
	MODE3	2 sec.	
	MODE2*	1 sec.	
	MODE1	0.5 sec.	
ROOM LAMP OFF TIME SET	MODE7	0 sec.	Sets the interior room lamp gradual dimming time.
	MODE6	5 sec.	
	MODE5	4 sec.	
	MODE4	3 sec.	
	MODE3	2 sec.	
	MODE2*	1 sec.	
	MODE1	0.5 sec.	

* : Initial setting

DTC/CIRCUIT DIAGNOSIS

INTERIOR ROOM LAMP

Diagnosis Procedure

INFOID:0000000009480174

Regarding Wiring Diagram information, refer to INL-95, "Wiring Diagram - Without Power Door Lock System".

CAUTION:
Before performing the diagnosis, check that the following is normal.
- **Fuse**
- **Interior room lamp bulbs**

1.CHECK INTERIOR ROOM LAMP POWER SUPPLY

Check voltage between interior room lamp connectors and ground.

Component	(+)		(-)	Voltage
	Connector	Terminal		
Room lamp 2nd row	R10	2	Ground	Battery voltage
Front room/map lamp	R9	1		

Is the inspection result normal?

YES >> GO TO 2
NO >> Repair the harness or connectors.

2.CHECK INTERIOR ROOM LAMP GROUND

1. Turn ignition switch OFF.
2. Disconnect BCM connectors M18, M19, room lamp 2nd row connector R10 and front room/map lamp connector R9.
3. Check continuity between interior room lamp connectors and ground while opening/closing the door.

Component	(+)		(-)	Door states	Continuity
	Connector	Terminal			
Room lamp 2nd row	R10	1	Ground	Open	Yes
				Closed	No
Front room/map lamp	R9	2		Open	Yes
				Closed	No

Is the inspection result normal?

YES >> Replace the interior room lamp. Refer to INL-63, "Removal and Installation".
NO >> GO TO 3

3.CHECK DOOR SWITCHES

Check the door switches. Refer to INL-79, "Component Inspection (Door Switch)".

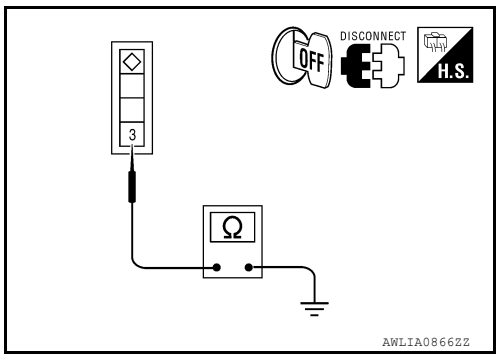
Is the inspection result normal?

YES >> • Crew cab models, repair the harness or connectors between the interior room lamp and the door switches.
• King cab models, GO TO 4
NO >> Replace the door switch.

4.CHECK DOOR SWITCH GROUND (KING CAB)

Check continuity between door switch connectors and ground.

Component	(+)		(-)	Continuity
	Connector	Terminal		
Front door switch LH	D213	3	Ground	Yes
Front door switch RH	D314	3		



Is the inspection result normal?

YES >> Repair the harness or connectors between the interior room lamp and the door switches.

NO >> Repair the harness or connectors between the door switch and ground.

Component Inspection (Door Switch)

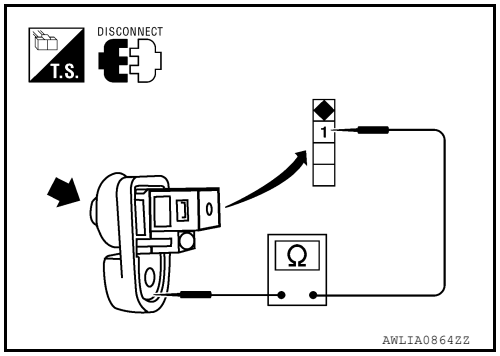
INFOID:0000000009480175

CREW CAB

1.CHECK DOOR SWITCHES

1. Disconnect door switch.
2. Check continuity between door switch terminal 1 and ground.

	Terminal	Condition	Continuity
Door switch	1 – Ground	Open	Yes
		Closed	No



Is the inspection result normal?

YES >> Inspection End

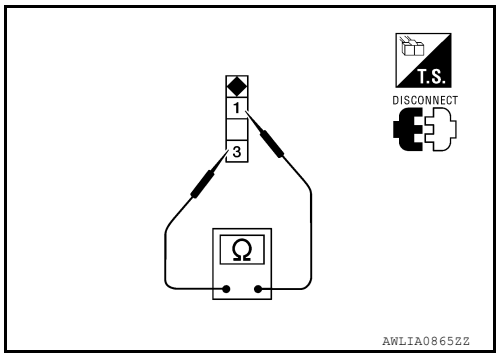
NO >> Replace door switch.

KING CAB

1.CHECK DOOR SWITCHES

1. Disconnect door switch.
2. Check continuity between door switch terminals 1 and 3.

Item	Terminal	Condition	Continuity
Door switches	1 – 3	Open	Yes
		Closed	No



Is the inspection result normal?

YES >> Inspection End

NO >> Replace door switch.

CARGO LAMP CONTROL CIRCUIT

Description

INFOID:0000000009480176

Controls the cargo lamp relay coil (ground side) to turn the cargo lamp ON and OFF.

Diagnosis Procedure

INFOID:0000000009480177

Regarding Wiring Diagram information, refer to INL-95, "Wiring Diagram - Without Power Door Lock System".

CAUTION:
Before performing the diagnosis, check that the following is normal.
- **Fuse**
- **Cargo lamp bulb**

1. CHECK CARGO LAMP OPERATION

Check the cargo lamp operation from the cargo lamp switch, the door switches, and a keyfob (if equipped).

Is the cargo lamp operative from all of the above switches and the keyfob (if equipped)?

YES >> At this time, the cargo lamp operates normally.
NO >>
- Inoperative from all the above switches and the keyfob, GO TO 6
- Inoperative from cargo lamp switch only, GO TO 2
- Inoperative from door switches only, refer to DLK-27, "KING CAB : Description" (king cab), DLK-29, "CREW CAB : Description" (crew cab).
- Inoperative from keyfob only, refer to DLK-51, "Description".
- Fixed ON, GO TO 2

2. CHECK CARGO LAMP SWITCH

Check the cargo lamp switch. Refer to INL-82, "Component Inspection".

Is the inspection result normal?

YES >>
- For inoperative from cargo lamp switch only, GO TO 3
- For fixed ON, GO TO 5

NO >> Replace the cargo lamp switch.

3. CHECK CARGO LAMP SWITCH CIRCUIT OPEN

1. Disconnect BCM connector M18 and cargo lamp switch connector.
2. Check continuity between BCM connector M18 terminal 31 and cargo lamp switch connector M71 terminal 1.

BCM		Cargo lamp switch		Continuity
Connector	Terminal	Connector	Terminal	
M18	31	M71	1	Yes

Is the inspection result normal?

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

4. CHECK CARGO LAMP SWITCH GROUND CIRCUIT

1. Check continuity between cargo lamp switch connector M71 terminal 3 and ground.

Connector	Terminal	—	Continuity
M71	3	Ground	Yes

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-49, "Removal and Installation".
NO >> Repair harness or connectors.

5.CHECK CARGO LAMP SWITCH CIRCUIT SHORT

1. Disconnect BCM connector M18 and cargo lamp switch connector.
2. Check continuity between BCM connector M18 terminal 31 and ground.

Connector	Terminal	—	Continuity
M18	31	Ground	No

Is the inspection result normal?

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

6.CHECK CARGO LAMP RELAY

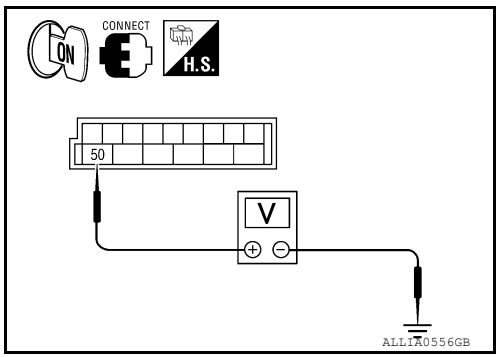
Check the cargo lamp relay. Refer to INL-82, "Component Inspection".

Is the inspection result normal?

YES >> • For fixed OFF, GO TO 7
• For fixed ON, GO TO 13
NO >> Replace the cargo lamp relay.

7.CHECK CARGO LAMP RELAY CONTROL

While operating the cargo lamp switch, check voltage between BCM connector M19 terminal 50 and ground.



Connector	Terminal	—	Cargo lamp switch	Voltage
M19	50	Ground	ON	0V
			OFF	Battery voltage

Is the inspection result normal?

YES >> GO TO 8
NO >> GO TO 11

8.CHECK CARGO LAMP VOLTAGE

1. Disconnect the cargo lamp connector.
2. While operating the cargo lamp switch, check voltage between cargo lamp connector B161 terminal 3 and ground.

Connector	Terminal	—	Cargo lamp switch	Voltage
B161	3	Ground	ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 9
NO >> GO TO 10

9.CHECK CARGO LAMP GROUND CIRCUIT

1. While operating the cargo lamp switch, check voltage between cargo lamp connector B161 terminal 3 and terminal 2.

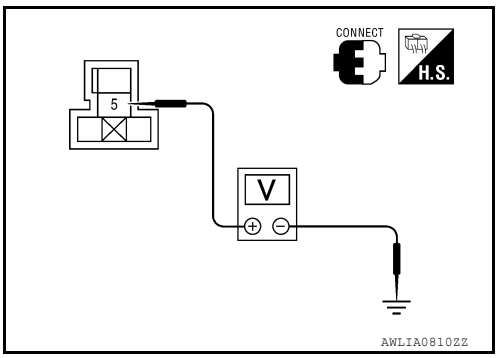
Connector	Terminal (+)	Terminal (-)	Cargo lamp switch	Voltage
B161	3	2	ON	Battery voltage

Is the inspection result normal?

YES >> Replace cargo lamp.
NO >> Repair harness or connectors.

10.CHECK CARGO LAMP RELAY VOLTAGE PART 1

Check voltage between cargo lamp relay connector M165 terminal 5 and ground.



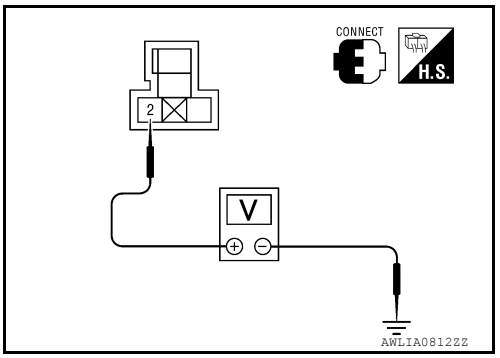
Cargo lamp relay		Ground	Voltage
Connector	Terminal		
M165	5		Battery voltage

Is the inspection result normal?

YES >> Repair harness or connectors between cargo lamp relay and cargo lamp.
NO >> Repair harness or connector between splice and cargo lamp relay.

11. CHECK CARGO LAMP RELAY VOLTAGE PART 2

Check voltage between cargo lamp relay connector M165 terminal 2 and ground.



Cargo lamp relay		Ground	Voltage
Connector	Terminal		
M165	2		Battery voltage

Is the inspection result normal?

YES >> GO TO 12
NO >> Repair harness or connectors.

12. CHECK CARGO LAMP RELAY CONTROL CIRCUIT OPEN

1. Disconnect BCM connector M19 and cargo lamp relay.
2. Check continuity between BCM connector M19 terminal 50 and cargo lamp relay connector M165 terminal 1.

BCM		Cargo lamp relay		Continuity
Connector	Terminal	Connector	Terminal	
M19	50	M165	1	Yes

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-49, "Removal and Installation".
NO >> Repair harness or connectors.

13. CHECK CARGO LAMP RELAY CONTROL CIRCUIT SHORT

1. Disconnect BCM connector M19 and cargo lamp relay.
2. Check continuity between BCM connector M19 terminal 50 and ground.

Connector	Terminal	—	Continuity
M19	50	Ground	No

Is the inspection result normal?

YES >> Replace BCM after making sure the cargo lamp power supply circuit is not shorted to voltage. Refer to BCS-49, "Removal and Installation".
NO >> Repair harness or connectors.

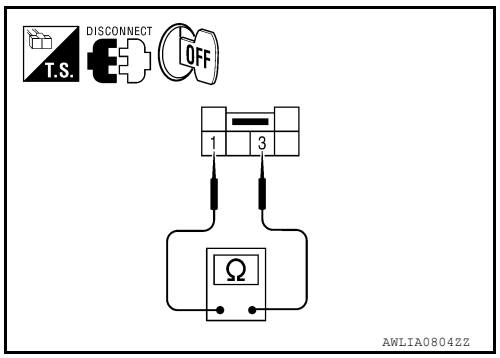
Component Inspection

INFOID:0000000009480178

CARGO LAMP SWITCH

1. CHECK CARGO LAMP SWITCH

1. Turn ignition switch OFF.
2. Disconnect cargo lamp switch connector.
3. Check continuity between cargo lamp switch terminals 1and 3.



Cargo lamp switch	Condition	Continuity
Terminal		
1 – 3	ON	Yes
	OFF	No

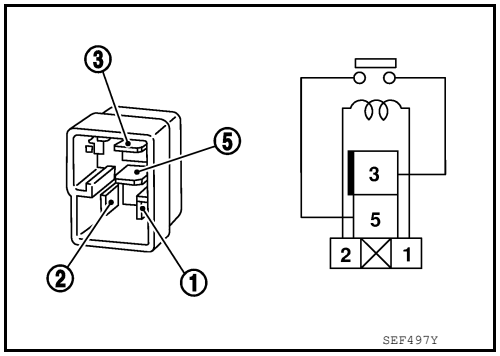
Is the inspection result normal?

YES >> Inspection End
NO >> Replace cargo lamp switch.

CARGO LAMP RELAY

1.CHECK CARGO LAMP RELAY

1. Turn ignition switch OFF.
2. Disconnect cargo lamp relay.
3. Supply power to terminal 2 and ground to terminal 1 of the cargo lamp relay.
4. Check continuity between cargo lamp relay terminals 3 and 5.



Terminal		Condition	Continuity
3	5	Power and ground supplied to terminals 1 and 2	Yes
		No power and ground supplied	No

Is the inspection result normal?

YES >> Inspection End
NO >> Replace cargo lamp relay.

ECU DIAGNOSIS INFORMATION

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000010229407

NOTE:
The Signal Tech II Tool (J-50190) can be used to perform the following functions. Refer to the Signal Tech II User Guide for additional information.
- Activate and display TPMS transmitter IDs
- Display tire pressure reported by the TPMS transmitter
- Read TPMS DTCs
- Register TPMS transmitter IDs
- Test remote keyless entry keyfob relative signal strength

VALUES ON THE DIAGNOSIS TOOL

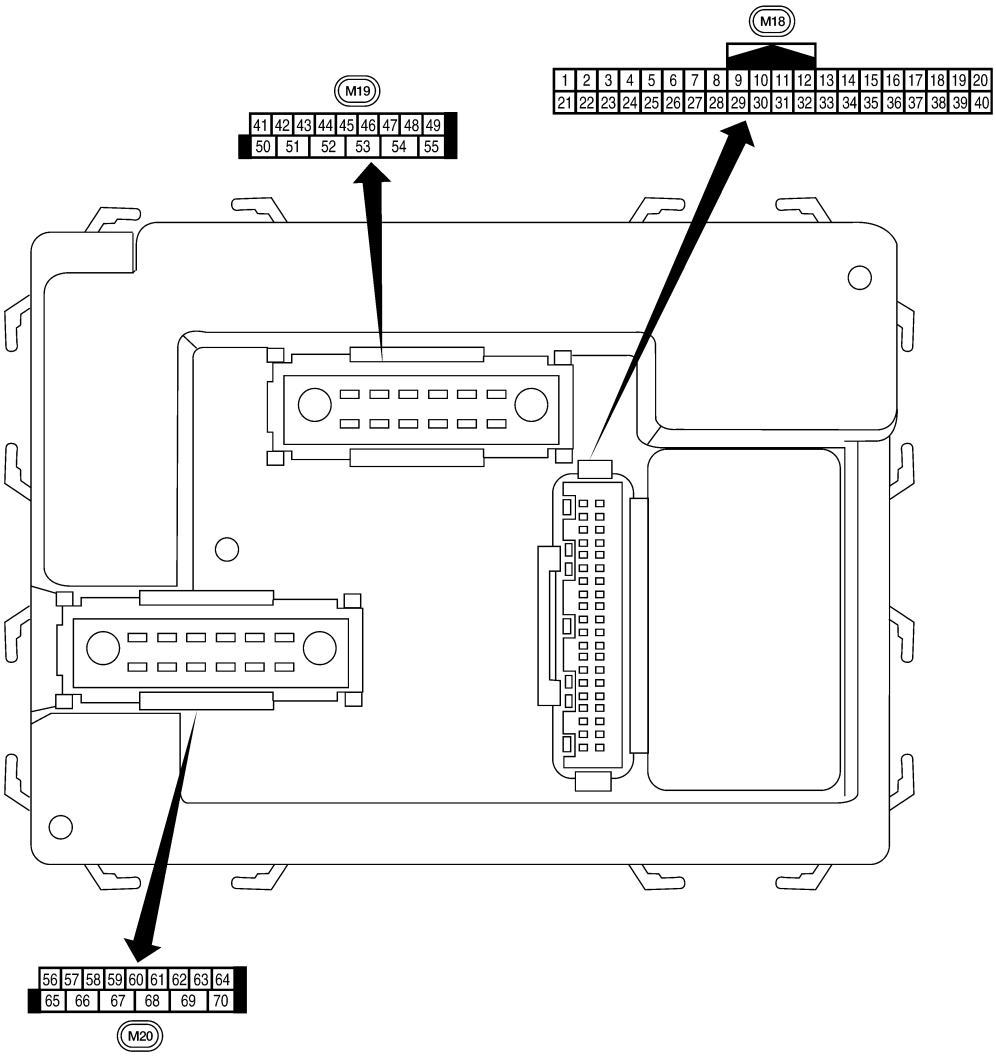
Monitor Item	Condition	Value/Status
ACC ON SW	Ignition switch OFF or ON	Off
	Ignition switch ACC	On
AIR COND SW	A/C switch OFF	Off
	A/C switch ON	On
AIR PRESS FL	Front left tire air pressure value	kPa, kg/cm^2, psi
AIR PRESS FR	Front right tire air pressure value	kPa, kg/cm^2, psi
AIR PRESS RL	Rear left tire air pressure value	kPa, kg/cm^2, psi
AIR PRESS RR	Rear right tire air pressure value	kPa, kg/cm^2, psi
AUTO LIGHT SW	Lighting switch OFF	Off
	Lighting switch AUTO	On
BRAKE SW	Brake pedal released	Off
	Brake pedal applied	On
BUCKLE SW	Seat belt buckle unfastened	Off
	Seat belt buckle fastened	On
BUZZER	Buzzer in combination meter OFF	Off
	Buzzer in combination meter ON	On
CARGO LAMP SW	Cargo lamp switch OFF	Off
	Cargo lamp switch ON	On
CDL LOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the LOCK side	On
CDL UNLOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the UNLOCK side	On
DOOR SW-AS	Front door RH closed	Off
	Front door RH opened	On
DOOR SW-DR	Front door LH closed	Off
	Front door LH opened	On
DOOR SW-RL	Rear door LH closed	Off
	Rear door LH opened	On
DOOR SW-RR	Rear door RH closed	Off
	Rear door RH opened	On

Monitor Item	Condition	Value/Status
FAN ON SIG	Blower motor fan switch OFF	Off
	Blower motor fan switch ON	On
FR FOG SW	Front fog lamp switch OFF	Off
	Front fog lamp switch ON	On
FR WASHER SW	Front washer switch OFF	Off
	Front washer switch ON	On
FR WIPER LOW	Front wiper switch OFF	Off
	Front wiper switch LO	On
FR WIPER HI	Front wiper switch OFF	Off
	Front wiper switch HI	On
FR WIPER INT	Front wiper switch OFF	Off
	Front wiper switch INT	On
FR WIPER STOP	Any position other than front wiper stop position	Off
	Front wiper stop position	On
HAZARD SW	When hazard switch is not pressed	Off
	When hazard switch is pressed	On
HEAD LAMP SW 1	Headlamp switch OFF	Off
	Headlamp switch 1st	On
HEAD LAMP SW 2	Headlamp switch OFF	Off
	Headlamp switch 1st	On
HI BEAM SW	High beam switch OFF	Off
	High beam switch HI	On
ID REGST FL1	ID registration of front left tire incomplete	YET
	ID registration of front left tire complete	DONE
ID REGST FR1	ID registration of front right tire incomplete	YET
	ID registration of front right tire complete	DONE
ID REGST RL1	ID registration of rear left tire incomplete	YET
	ID registration of rear left tire complete	DONE
ID REGST RR1	ID registration of rear right tire incomplete	YET
	ID registration of rear right tire complete	DONE
IGN ON SW	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
IGN SW CAN	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7
KEY CYL LK-SW	Door key cylinder LOCK position	Off
	Door key cylinder other than LOCK position	On
KEY CYL UN-SW	Door key cylinder UNLOCK position	Off
	Door key cylinder other than UNLOCK position	On
KEY ON SW	Mechanical key is removed from key cylinder	Off
	Mechanical key is inserted to key cylinder	On
KEYLESS LOCK	LOCK button of key fob is not pressed	Off
	LOCK button of key fob is pressed	On

Monitor Item	Condition	Value/Status
KEYLESS PANIC	PANIC button of key fob is not pressed	Off
	PANIC button of key fob is pressed	On
KEYLESS UNLOCK	UNLOCK button of key fob is not pressed	Off
	UNLOCK button of key fob is pressed	On
LIGHT SW 1ST	Lighting switch OFF	Off
	Lighting switch 1st	On
OIL PRESS SW	• Ignition switch OFF or ACC • Engine running	Off
	Ignition switch ON	On
OPTICAL SENSOR	Bright outside of the vehicle	Close to 5V
	Dark outside of the vehicle	Close to 0V
PASSING SW	Other than lighting switch PASS	Off
	Lighting switch PASS	On
REAR DEF SW	Rear window defogger switch OFF	Off
	Rear window defogger switch ON	On
TURN SIGNAL L	Turn signal switch OFF	Off
	Turn signal switch LH	On
TURN SIGNAL R	Turn signal switch OFF	Off
	Turn signal switch RH	On
VEHICLE SPEED	While driving	Equivalent to speedometer reading
WARNING LAMP	Low tire pressure warning lamp in combination meter OFF	Off
	Low tire pressure warning lamp in combination meter ON	On

Terminal Layout

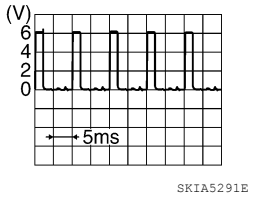
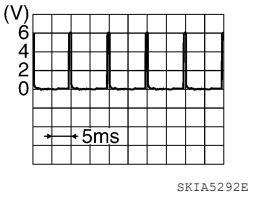
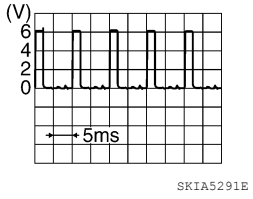
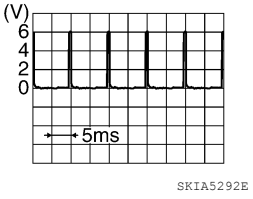
INFOID:0000000010229408

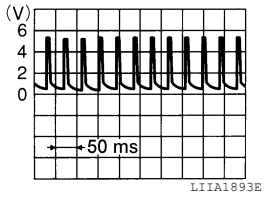
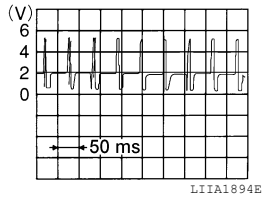
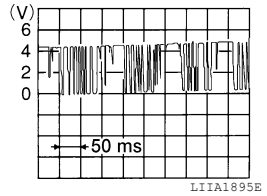


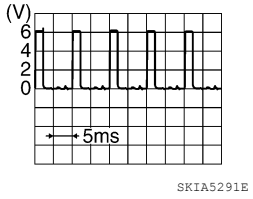
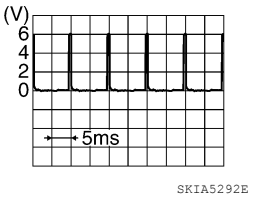
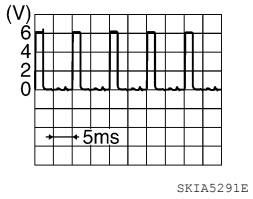
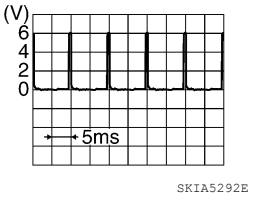
LIIA2443E

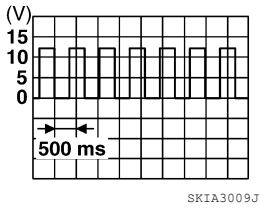
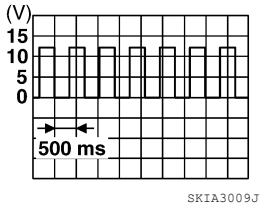
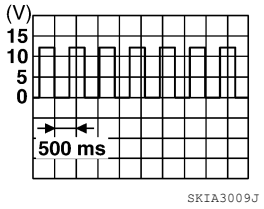
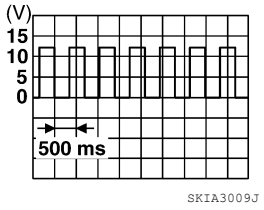
Physical Values

INFOID:0000000010229409

Terminal	Wire color	Item	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
1	BR	Ignition keyhole illumination	Output	OFF	Door is locked (SW OFF)	Battery voltage
					Door is unlocked (SW ON)	0V
2	P	Combination switch input 5	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
3	SB	Combination switch input 4	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
4	V	Combination switch input 3	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
5	L	Combination switch input 2	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
6	R	Combination switch input 1				
7	GR	Front door lock assembly LH (key cylinder switch) unlock	Input	OFF	ON (open, 2nd turn)	Momentary 1.5V
					OFF (closed)	0V
8	SB	Front door lock assembly LH (key cylinder switch) lock	Input		On (open)	Momentary 1.5V
					OFF (closed)	0V
9	LG	Brake sw	Input	OFF	OFF (brake pedal is not depressed)	0V
					ON (brake pedal is depressed)	Battery voltage
11	G/B	Ignition switch (ACC or ON)	Input	ACC or ON	Ignition switch ACC or ON	Battery voltage
12	LG	Front door switch RH (All)	Input	OFF	ON (open)	0V
		Rear door switch upper RH (King Cab)			OFF (closed)	Battery voltage
		Rear door switch lower RH (King Cab)				

Terminal	Wire color	Item	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
13	L	Rear door switch RH (Crew Cab)	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
15	W	Tire pressure warning check connector	Input	OFF	—	5V
18	BR	Remote keyless entry receiver and optical sensor (Ground)	Output	OFF	—	0V
19	V	Remote keyless entry receiver (power supply)	Output	OFF	Ignition switch OFF	
20	G	Remote keyless entry receiver signal (Signal)	Input	OFF	Stand-by (keyfob buttons released)	
					When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed)	
21	GR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move.
23	G	Security indicator lamp	Output	OFF	Goes OFF → illuminates (Every 2.4 seconds)	Battery voltage → 0V
25	BR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move.
27	W	Compressor ON signal	Input	ON	A/C switch OFF	5V
					A/C switch ON	0V
28	R	Front blower monitor	Input	ON	Front blower motor OFF	Battery voltage
					Front blower motor ON	0V
29	G	Hazard switch	Input	OFF	ON	0V
					OFF	5V
31	GR	Cargo lamp switch	Input	OFF	ON	0V
					OFF	Battery voltage

Terminal	Wire color	Item	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
32	BG	Combination switch output 5	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	
33	GR	Combination switch output 4	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	
34	G	Combination switch output 3	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	
35	BR	Combination switch output 2	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	
36	LG	Combination switch output 1				
37	B	Key switch	Input	OFF	Key inserted	Battery voltage
					Key removed	0V
38	W/R	Ignition switch (ON)	Input	ON	—	Battery voltage
39	L	CAN-H	—	—	—	—
40	P	CAN-L	—	—	—	—
41	Y	Rear window defogger switch	Input	ON	Rear window defogger switch ON	0V
					Rear window defogger switch OFF	5V
45	V	Lock switch	Input	OFF	ON (lock)	0V
					OFF	Battery voltage
46	LG	Unlock switch	Input	OFF	ON (unlock)	0V
					OFF	Battery voltage
47	GR	Front door switch LH (All)	Input	OFF	ON (open)	0V
		Rear door switch upper LH (King Cab)			OFF (closed)	Battery voltage
		Rear door switch lower LH (King Cab)				

Terminal	Wire color	Item	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
48	P	Rear door switch LH (Crew Cab)	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
50	P	Cargo lamp	Output	OFF	Any door open (ON)	0V
					All doors closed (OFF)	Battery voltage
51	BG	Trailer turn signal (right)	Output	ON	Turn right ON	
52	LG	Trailer turn signal (left)	Output	ON	Turn left ON	
56	R/Y	Battery saver output	Output	OFF	10 minutes after ignition switch is turned OFF	0V
				ON	—	Battery voltage
57	R/Y	Battery power supply	Input	—	—	Battery voltage
58	W	Optical sensor	Input	ON	When optical sensor is illuminated	3.1V or more
					When optical sensor is not illuminated	0.6V or less
59	GR	Front door lock assembly LH (unlock)	Output	OFF	OFF (neutral)	0V
					ON (unlock)	Battery voltage
60	LG	Turn signal (left)	Output	ON	Turn left ON	
61	G	Turn signal (right)	Output	ON	Turn right ON	
63	BR	Interior room/map lamp	Output	OFF	Any door switch: ON (open)	0V
					Any door switch: OFF (closed)	Battery voltage
65	V	All door lock actuators (lock)	Output	OFF	OFF (neutral)	0V
					ON (lock)	Battery voltage

Terminal	Wire color	Item	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
66	L	Front door lock actuator RH, rear door lock actuators LH/RH (unlock)	Output	OFF	OFF (neutral)	0V
					ON (unlock)	Battery voltage
67	B	Ground	Input	ON	—	0V
68[1]	O	Power window power supply (RAP)	Output	—	Ignition switch ON	Battery voltage
					Within 45 seconds after ignition switch OFF	Battery voltage
					More than 45 seconds after ignition switch OFF	0V
					When front door LH or RH is open or power window timer operates	0V
68[2]	SB	Power window power supply (RAP)	Output	—	Ignition switch ON	Battery voltage
					Within 45 seconds after ignition switch OFF	Battery voltage
					More than 45 seconds after ignition switch OFF	0V
					When front door LH or RH is open or power window timer operates	0V
69	P	Power window power supply (BAT)	Output	OFF	—	Battery voltage
70	W	Battery power supply	Input	OFF	—	Battery voltage

1: King cab

2: Crew cab

Fail Safe

INFOID:0000000010229410

Fail-safe index

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

Display contents of CONSULT	Fail-safe	Cancellation
U1000: CAN COMM CIRCUIT	Inhibit engine cranking	When the BCM re-establishes communication with the other modules.

DTC Inspection Priority Chart

INFOID:0000000010229411

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

Priority	DTC
1	• U1000: CAN COMM CIRCUIT
2	• B2190: NATS ANTENNA AMP • B2191: DIFFERENCE OF KEY • B2192: ID DISCORD BCM-ECM • B2193: CHAIN OF BCM-ECM

Priority	DTC
3	• C1729: VHCL SPEED SIG ERR • C1735: IGNITION SIGNAL
4	• 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

DTC Index

INFOID:0000000010229412

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	Low tire pressure warning lamp ON	Reference page
No DTC is detected. further testing may be required.	—	—	—
U1000: CAN COMM CIRCUIT	—	—	BCS-26
B2190: NATS ANTTENA AMP	—	—	SEC-18
B2191: DIFFERENCE OF KEY	—	—	SEC-21
B2192: ID DISCORD BCM-ECM	—	—	SEC-22
B2193: CHAIN OF BCM-ECM	—	—	SEC-24
C1708: [NO DATA] FL	—	X	WT-15
C1709: [NO DATA] FR	—	X	WT-15
C1710: [NO DATA] RR	—	X	WT-15
C1711: [NO DATA] RL	—	X	WT-15
C1712: [CHECKSUM ERR] FL	—	X	WT-17
C1713: [CHECKSUM ERR] FR	—	X	WT-17
C1714: [CHECKSUM ERR] RR	—	X	WT-17
C1715: [CHECKSUM ERR] RL	—	X	WT-17

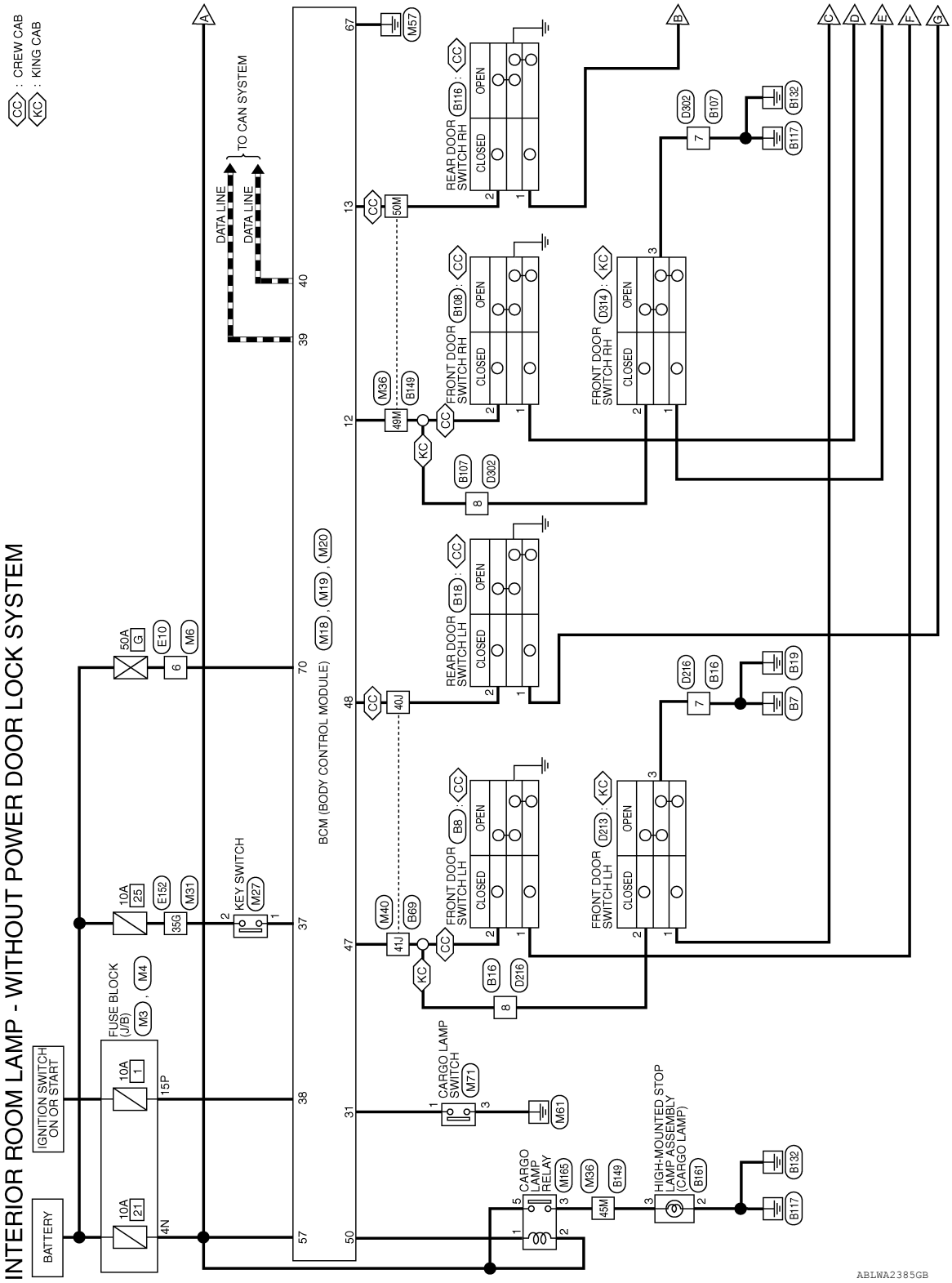
CONSULT display	Fail-safe	Low tire pressure warning lamp ON	Reference page
C1716: [PRESSDATA ERR] FL	—	X	WT-19
C1717: [PRESSDATA ERR] FR	—	X	WT-19
C1718: [PRESSDATA ERR] RR	—	X	WT-19
C1719: [PRESSDATA ERR] RL	—	X	WT-19
C1720: [CODE ERR] FL	—	X	WT-17
C1721: [CODE ERR] FR	—	X	WT-17
C1722: [CODE ERR] RR	—	X	WT-17
C1723: [CODE ERR] RL	—	X	WT-17
C1724: [BATT VOLT LOW] FL	—	X	WT-17
C1725: [BATT VOLT LOW] FR	—	X	WT-17
C1726: [BATT VOLT LOW] RR	—	X	WT-17
C1727: [BATT VOLT LOW] RL	—	X	WT-17
C1729: VHCL SPEED SIG ERR	—	X	WT-21
C1735: IGNITION SIGNAL	—	X	WT-22

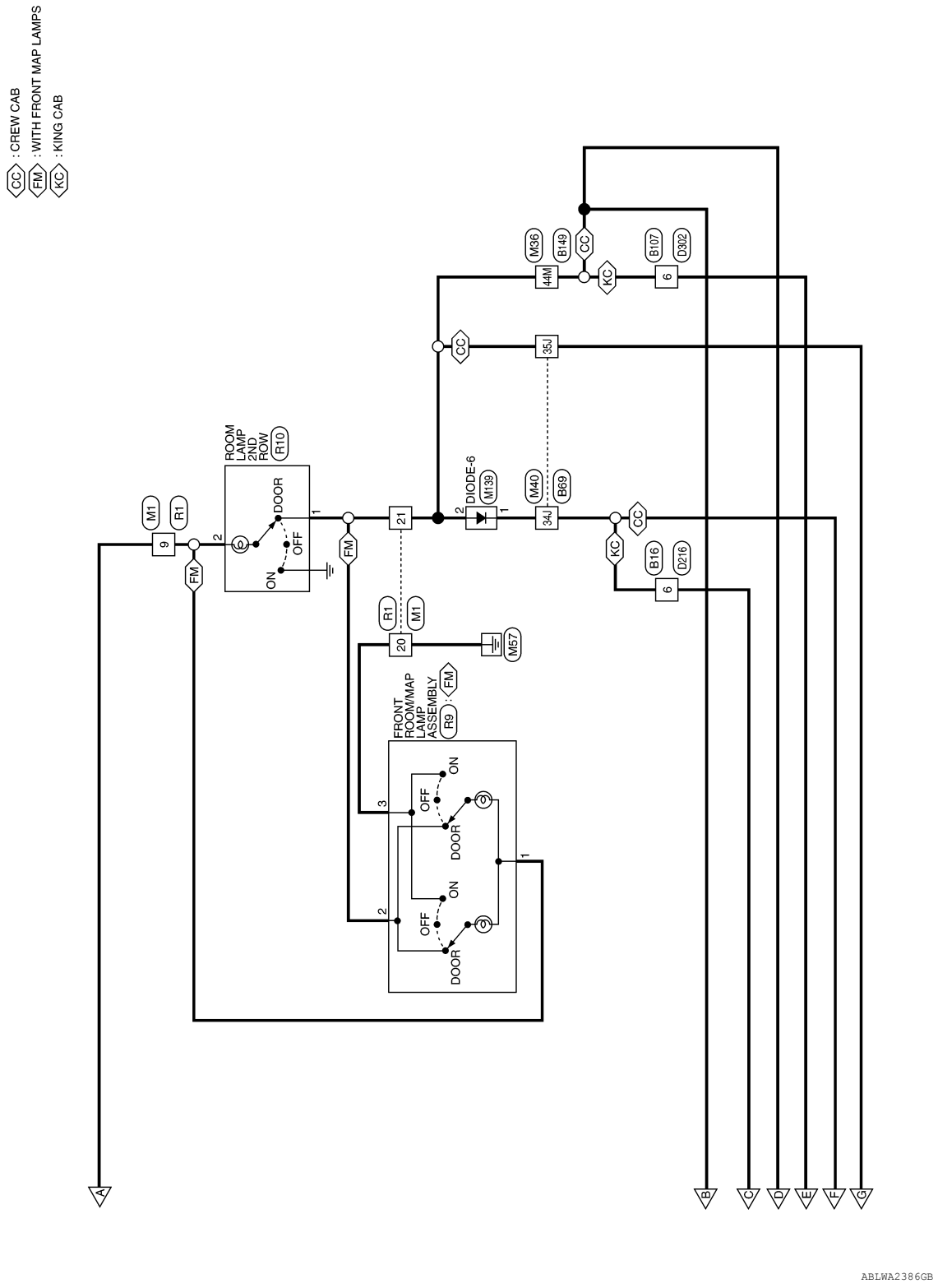
WIRING DIAGRAM

INTERIOR ROOM LAMP

Wiring Diagram - Without Power Door Lock System

INFOID:0000000009480185





ABLWA2386GB

INTERIOR ROOM LAMP CONNECTORS - WITHOUT POWER DOOR LOCK SYSTEM

Connector No.	M1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
9	R/Y	–
20	B	–
21	BR	–

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
4N	R/Y	–

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
15P	W/R	–

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

3	2	1
6	5	4

Terminal No.	Color of Wire	Signal Name
6	W	–

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
12	LG	DOOR SW (AS)
13	L	DOOR SW (RR)
31	GR	CARGO LAMP SW
37	B	KEY SW
38	W/R	IGN SW
39	L	CAN-H
40	P	CAN-L

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
47	GR	DOOR SW (DR)
48	P	DOOR SW (RL)
50	P	CARGO LAMP OUTPUT

ABLIA5627GB

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK

H.S.

56	57	58	59	60	61	62	63	64
65	66	67	68	69	70			

Terminal No.	Color of Wire	Signal Name
57	R/Y	BAT (FUSE)
67	B	GND (POWER)
70	W	BAT (F/L)

Connector No.	M27
Connector Name	KEY SWITCH
Connector Color	WHITE

H.S.

2	1

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

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

11G	12G	13G	14G	15G	16G	17G	18G	19G	20G	21G
22G	23G	24G	25G	26G	27G	28G	29G	30G		

31G	32G	33G	34G	35G	36G	37G	38G	39G	40G	41G
42G	43G	44G	45G	46G	47G	48G	49G	50G		

51G	52G	53G	54G	55G	56G	57G	58G	59G	60G	61G
62G	63G	64G	65G	66G	67G	68G	69G	70G		

71G	72G	73G	74G	75G	76G	77G	78G	79G	80G	81G
82G	83G	84G	85G	86G	87G	88G	89G	90G		

91G	92G	93G	94G	95G
96G	97G	98G	99G	100G

Terminal No.	Color of Wire	Signal Name
35G	Y	–

Connector No.	M36
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

11M	12M	13M	14M	15M	16M	17M	18M	19M	20M	21M
22M	23M	24M	25M	26M	27M	28M	29M	30M		

31M	32M	33M	34M	35M	36M	37M	38M	39M	40M	41M
42M	43M	44M	45M	46M	47M	48M	49M	50M		

51M	52M	53M	54M	55M	56M	57M	58M	59M	60M	61M
62M	63M	64M	65M	66M	67M	68M	69M	70M		

71M	72M	73M	74M	75M	76M	77M	78M	79M	80M	81M
82M	83M	84M	85M	86M	87M	88M	89M	90M		

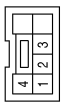
91M	92M	93M	94M	95M
96M	97M	98M	99M	100M

Terminal No.	Color of Wire	Signal Name
44M	R	–
45M	G	–
49M	LG	–
50M	L	–

ABLIA5628GB

Connector No.	M71
Connector Name	CARGO LAMP SWITCH
Connector Color	WHITE

H.S.



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

Connector No.	E10
Connector Name	WIRE TO WIRE
Connector Color	WHITE

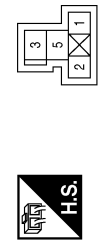
H.S.

Terminal No.	Color of Wire	Signal Name
6	W	–

Terminal No.	Color of Wire	Signal Name
34J	L	–
35J	R	–
40J	P	–
41J	GR	–

Connector No.	M165
Connector Name	CARGO LAMP RELAY
Connector Color	BLUE

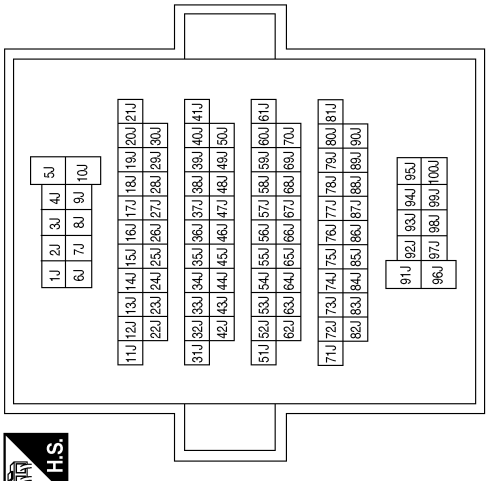
H.S.



Terminal No.	Color of Wire	Signal Name
1	P	–
2	R/Y	–
3	G	–
5	R/Y	–

Connector No.	M40
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



Connector No.	M139
Connector Name	DIODE-6
Connector Color	BLACK

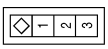
H.S.

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

ABLIA5629GB

Connector No.	B8
Connector Name	FRONT DOOR SWITCH LH (CREW CAB)
Connector Color	WHITE

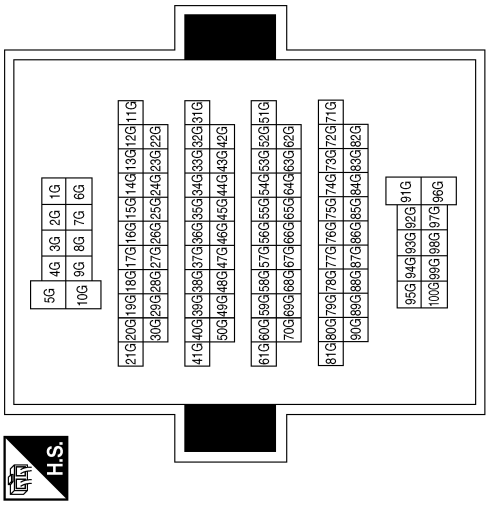
H.S.



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

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE

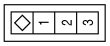
H.S.



Terminal No.	Color of Wire	Signal Name
35G	Y	–

Connector No.	B18
Connector Name	REAR DOOR SWITCH LH
Connector Color	WHITE

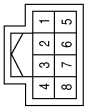
H.S.



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

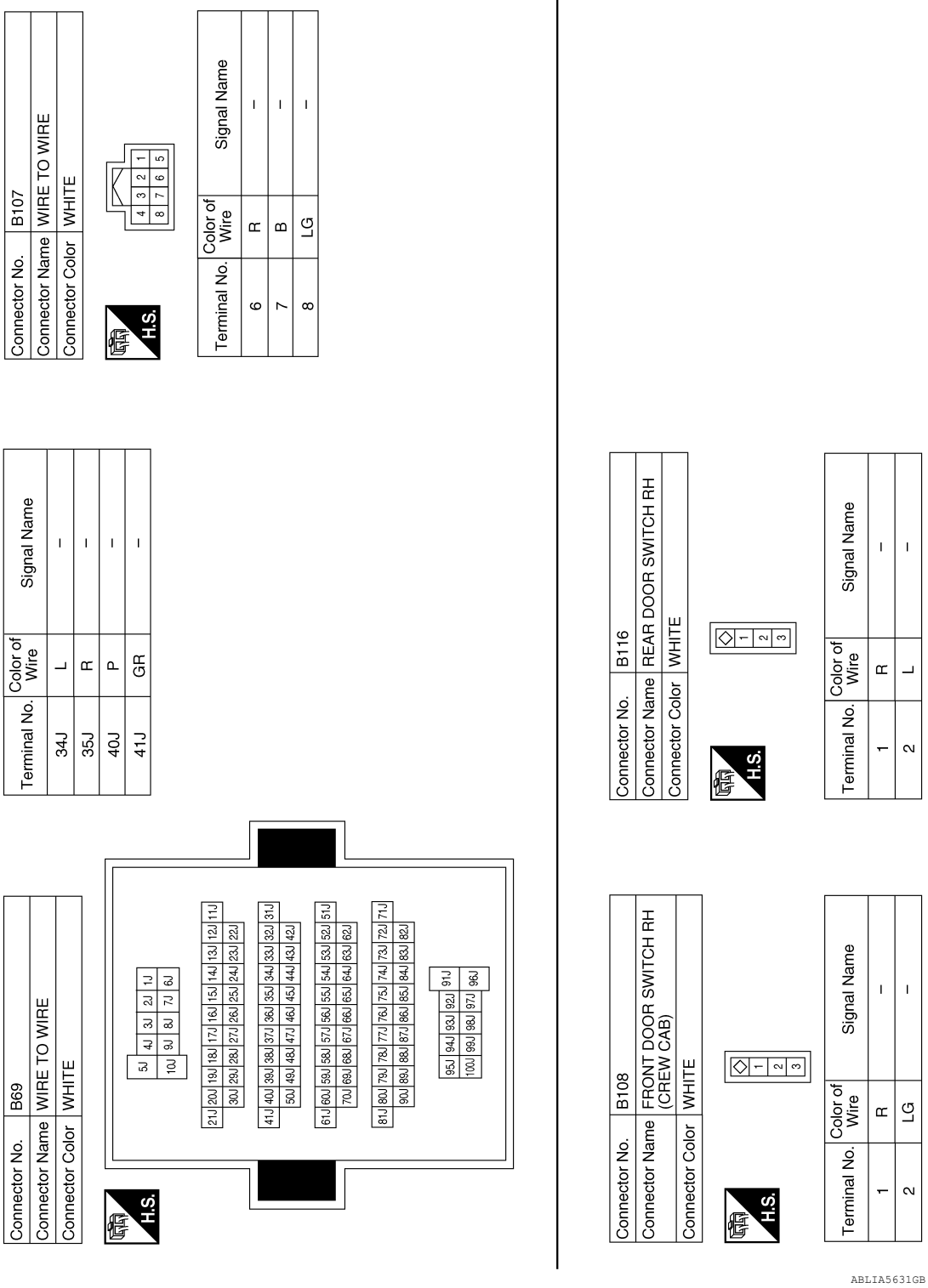
Connector No.	B16
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



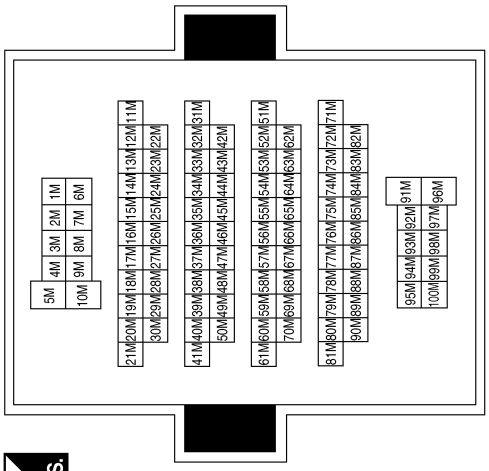
Terminal No.	Color of Wire	Signal Name
6	L	–
7	B	–
8	GR	–

ABLIA5630GB


Connector No. B107
Connector Name WIRE TO WIRE
Connector Color WHITE
H.S.
4 3 2 1
8 7 6 5
Terminal No. Color of Wire Signal Name
6 R –
7 B –
8 LG –
Connector No. B69
Connector Name WIRE TO WIRE
Connector Color WHITE
H.S.
5J 4J 3J 2J 1J
10J 9J 8J 7J 6J
21J 20J 19J 18J 17J 16J 15J 14J 13J 12J 11J
30J 29J 28J 27J 26J 25J 24J 23J 22J
41J 40J 39J 38J 37J 36J 35J 34J 33J 32J 31J
50J 49J 48J 47J 46J 45J 44J 43J 42J
61J 60J 59J 58J 57J 56J 55J 54J 53J 52J 51J
70J 69J 68J 67J 66J 65J 64J 63J 62J
81J 80J 79J 78J 77J 76J 75J 74J 73J 72J 71J
90J 89J 88J 87J 86J 85J 84J 83J 82J
95J 94J 93J 92J 91J
100J 99J 98J 97J 96J
Terminal No. Color of Wire Signal Name
34J L –
35J R –
40J P –
41J GR –
Connector No. B116
Connector Name REAR DOOR SWITCH RH
Connector Color WHITE
H.S.
1 2 3
Terminal No. Color of Wire Signal Name
1 R –
2 L –
Connector No. B108
Connector Name FRONT DOOR SWITCH RH (CREW CAB)
Connector Color WHITE
H.S.
1 2 3
Terminal No. Color of Wire Signal Name
1 R –
2 LG –
ABLIA5631GB

Connector No.	B149
Connector Name	WIRE TO WIRE
Connector Color	WHITE

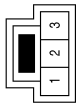
H.S.



Terminal No.	Color of Wire	Signal Name
44M	R	–
45M	G	–
49M	LG	–
50M	L	–

Connector No.	B161
Connector Name	HIGH-MOUNTED STOP LAMP ASSEMBLY
Connector Color	WHITE

H.S.



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

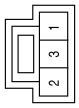
Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
9	R/Y	–
20	B	–
21	BR	–

Connector No.	R9
Connector Name	FRONT ROOM/MAP LAMP ASSEMBLY
Connector Color	WHITE

H.S.



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

Connector No.	R10
Connector Name	ROOM LAMP 2ND ROW
Connector Color	WHITE

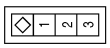
H.S.

Terminal No.	Color of Wire	Signal Name
1	BR	–
2	R/Y	–

ABLIA5632GB

Connector No.	D213
Connector Name	FRONT DOOR SWITCH LH (KING CAB)
Connector Color	WHITE

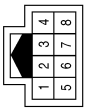
H.S.



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

Connector No.	D216
Connector Name	WIRE TO WIRE
Connector Color	WHITE

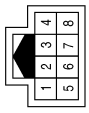
H.S.



Terminal No.	Color of Wire	Signal Name
6	L	–
7	B	–
8	LG	–

Connector No.	D302
Connector Name	WIRE TO WIRE
Connector Color	WHITE

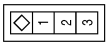
H.S.



Terminal No.	Color of Wire	Signal Name
6	R	–
7	B	–
8	LG	–

Connector No.	D314
Connector Name	FRONT DOOR SWITCH RH (KING CAB)
Connector Color	WHITE

H.S.



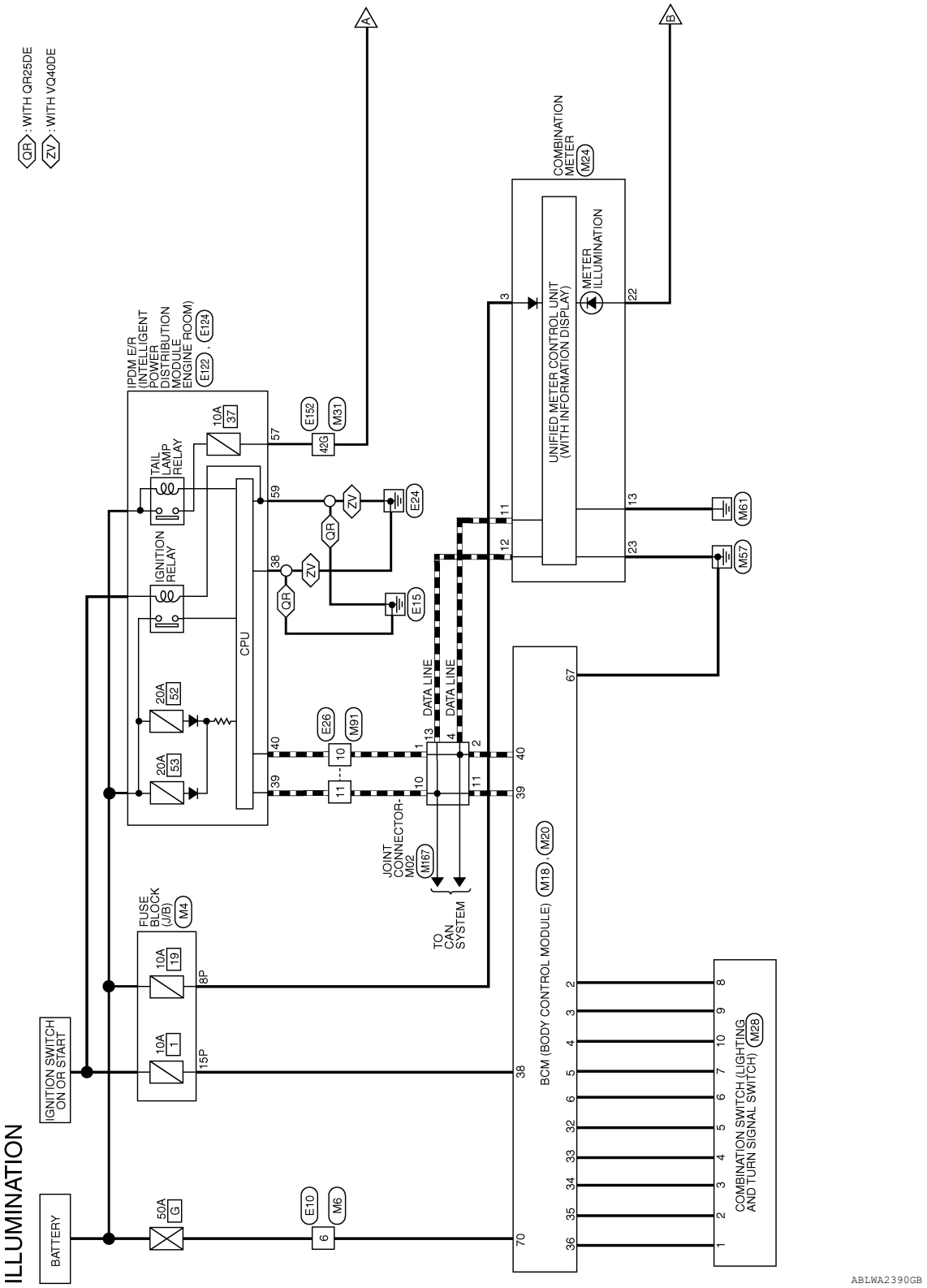
Terminal No.	Color of Wire	Signal Name
1	R	–
2	LG	–
3	B	–

ABLIA5675GB

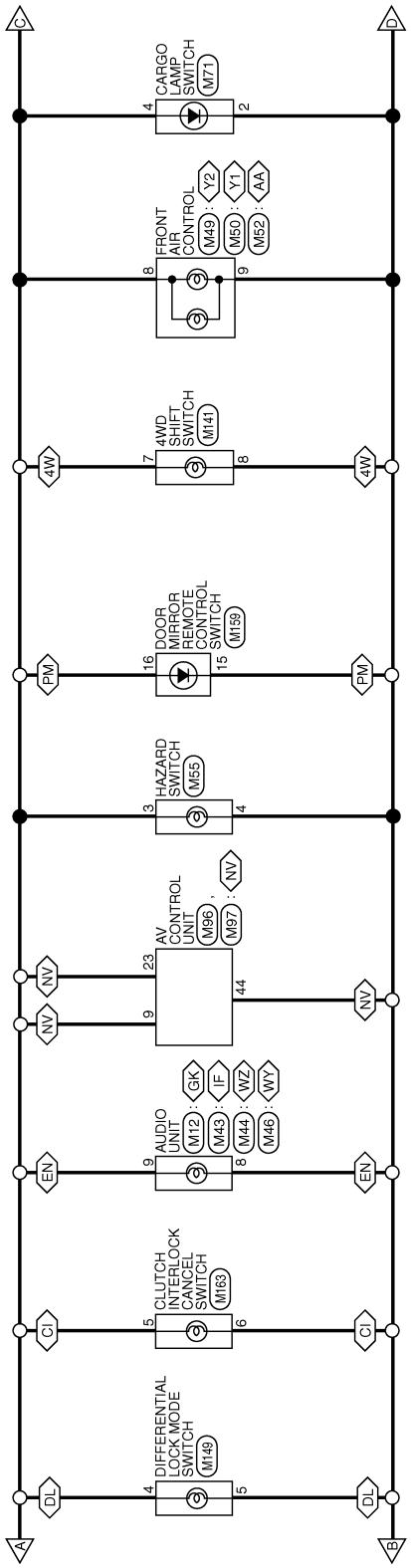
ILLUMINATION

Wiring Diagram

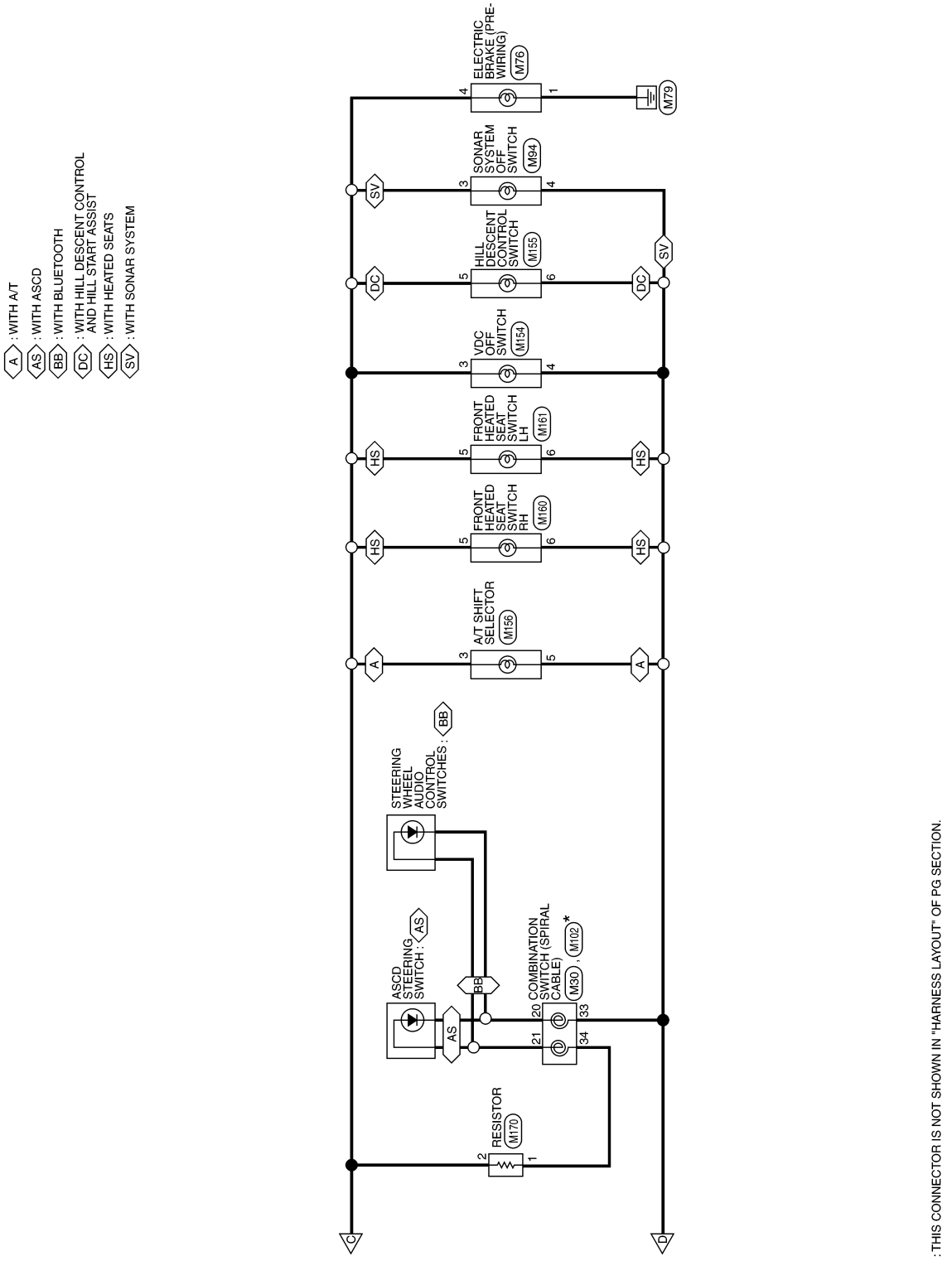
INFOID:0000000010230396



4W : WITH 4-WHEEL DRIVE
AA : WITH AUTO A/C
BA : WITH BASE AUDIO SYSTEM
CI : WITH CLUTCH INTERLOCK CANCEL SWITCH
DL : WITH ELECTRONIC LOCKING REAR DIFFERENTIAL
EN : WITHOUT NAVI
GK : WITH BASE AUDIO SYSTEM FOR MEXICO
IF : WITH BASE AUDIO SYSTEM EXCEPT FOR MEXICO
NV : WITH NAVI
PM : WITH POWER OUTSIDE MIRRORS
WY : WITH DISPLAY AUDIO AND AMPLIFIER
WZ : WITH DISPLAY AUDIO WITHOUT AMPLIFIER
Y1 : MANUAL WITH TYPE 1
Y2 : MANUAL WITH TYPE 2



ABLWA2399GB


A : WITH A/T
AS : WITH ASCD
BB : WITH BLUETOOTH
DC : WITH HILL DESCENT CONTROL AND HILL START ASSIST
HS : WITH HEATED SEATS
SV : WITH SONAR SYSTEM
ELECTRIC BRAKE (PRE-WIRING) M76
M79
SONAR SYSTEM OFF SWITCH M94
HILL DESCENT CONTROL SWITCH M155
VDC OFF SWITCH M154
FRONT HEATED SEAT SWITCH LH M161
FRONT HEATED SEAT SWITCH RH M160
A/T SHIFT SELECTOR M156
STEERING WHEEL AUDIO CONTROL SWITCHES : BB
ASCD STEERING SWITCH : AS
COMBINATION SWITCH (SPIRAL CABLE) M30, M102*
RESISTOR M170
C
D
* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.
ABLWA2030GB

ILLUMINATION CONNECTORS

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
8P	R/Y	–
15P	W/R	–

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
6	W	–

Connector No.	M12
Connector Name	AUDIO UNIT (BASE AUDIO SYSTEM - FOR MEXICO)
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
8	GR	ILL CONT
9	R	LIGHT SW

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
2	P	INPUT 5
3	SB	INPUT 4
4	V	INPUT 3
5	L	INPUT 2
6	R	INPUT 1
32	BG	OUTPUT 5
33	GR	OUTPUT 4
34	G	OUTPUT 3
35	BR	OUTPUT 2
36	LG	OUTPUT 1
38	W/R	IGN SW
39	L	CAN-H
40	P	CAN-L

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
67	B	GND (POWER)
70	W	BAT (F/L)

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
3	R/Y	BATTERY
11	P	CAN-L
12	L	CAN-H
13	GR	GROUND
22	BR	ILLUMINATION CONTROL
23	B	POWER GND

ABLIA5647GB

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	LG	–
2	BR	–
3	G	–
4	GR	–
5	BG	–
6	R	–
7	L	–
8	P	–
9	SB	–
10	V	–

Connector No.	M30
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	GRAY

H.S.

24	25	26	27
31	32	33	34

Terminal No.	Color of Wire	Signal Name
33	V	–
34	LG	–

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

11G	12G	13G	14G	15G	16G	17G	18G	19G	20G	21G
	22G	23G	24G	25G	26G	27G	28G	29G	30G	
31G	32G	33G	34G	35G	36G	37G	38G	39G	40G	41G
	42G	43G	44G	45G	46G	47G	48G	49G	50G	
51G	52G	53G	54G	55G	56G	57G	58G	59G	60G	61G
	62G	63G	64G	65G	66G	67G	68G	69G	70G	
71G	72G	73G	74G	75G	76G	77G	78G	79G	80G	81G
	82G	83G	84G	85G	86G	87G	88G	89G	90G	
				91G	92G	93G	94G	95G		
				96G	97G	98G	99G	100G		

Terminal No.	Color of Wire	Signal Name
42G	R	–

Connector No.	M43
Connector Name	AUDIO UNIT (BASE AUDIO SYSTEM - EXCEPT FOR MEXICO)
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
8	GR	ILL CONT
9	R	LIGHT SW

Connector No.	M44
Connector Name	AUDIO UNIT (WITH DISPLAY AUDIO WITHOUT AMPLIFIER)
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
8	GR	ILL (-)
9	R	ILL (+)

Connector No.	M46
Connector Name	AUDIO UNIT (WITH DISPLAY AUDIO WITH AMPLIFIER)
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
8	GR	ILL (-)
9	R	ILL (+)

ABLIA5648GB

Connector No.	M49
Connector Name	FRONT AIR CONTROL (MANUAL WITH TYPE 2)
Connector Color	BLACK

H.S.

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

Terminal No.	Color of Wire	Signal Name
8	G	ILLUM+
9	BR	ILLUM-

Connector No.	M50
Connector Name	FRONT AIR CONTROL (MANUAL WITH TYPE 1)
Connector Color	BLACK

H.S.

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

Terminal No.	Color of Wire	Signal Name
8	G	ILLUM+
9	BR	ILLUM-

Connector No.	M52
Connector Name	FRONT AIR CONTROL (WITH AUTO A/C)
Connector Color	BLACK

H.S.

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

Terminal No.	Color of Wire	Signal Name
8	G	ILLUM+
9	BR	ILLUM-

Connector No.	M55
Connector Name	HAZARD SWITCH
Connector Color	WHITE

H.S.

3	1	2	4

Terminal No.	Color of Wire	Signal Name
3	R	–
4	BR	–

Connector No.	M71
Connector Name	CARGO LAMP SWITCH
Connector Color	WHITE

H.S.

4	
1	2 3

Terminal No.	Color of Wire	Signal Name
2	P	–
4	V	–

Connector No.	M76
Connector Name	ELECTRIC BRAKE (PRE-WIRING)
Connector Color	WHITE

H.S.

2		6
1	3	4 5

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

ABLIA5691GB

Connector No.	M91
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
10	P	–
11	L	–

Connector No.	M94
Connector Name	SONAR SYSTEM OFF SWITCH
Connector Color	GRAY

H.S.

6	5	4	3	2	1

Terminal No.	Color of Wire	Signal Name
3	R	–
4	BR	–

Connector No.	M96
Connector Name	AV CONTROL UNIT
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
9	R	LIGHT SW

Connector No.	M97
Connector Name	AV CONTROL UNIT
Connector Color	WHITE

H.S.

32	31	30	29	28	27	26	25	24	23	22	21
44	43	42	41	40	39	38	37	36	35	34	33

Terminal No.	Color of Wire	Signal Name
23	P	MR OUTPUT
44	GR	ILL CONT

Connector No.	M102
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	GRAY

H.S.

14	15	16	17	18	19	20	21

Terminal No.	Color of Wire	Signal Name
20	W	–
21	R	–

Connector No.	M141
Connector Name	4WD SHIFT SWITCH
Connector Color	GRAY

H.S.

1	2	3	4	5	6	7	8

Terminal No.	Color of Wire	Signal Name
7	R	–
8	BR	–

ABLIA5669GB

Connector No.	M155
Connector Name	HILL DESCENT CONTROL SWITCH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
5	R	–
6	BR	–

Connector No.	M154
Connector Name	VDC OFF SWITCH
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
3	R	–
4	BR	–

Connector No.	M149
Connector Name	DIFFERENTIAL LOCK MODE SWITCH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
4	R	–
5	BR	–

Connector No.	M160
Connector Name	FRONT HEATED SEAT SWITCH RH
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
5	SB	–
6	BG	–

Connector No.	M159
Connector Name	DOOR MIRROR REMOTE CONTROL SWITCH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
15	BR	–
16	R	–

Connector No.	M156
Connector Name	A/T SHIFT SELECTOR
Connector Color	WHITE

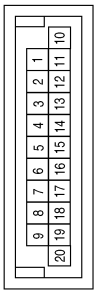
H.S.

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

ABLIA5649GB

Connector No.	M167
Connector Name	JOINT CONNECTOR-M02
Connector Color	BLUE

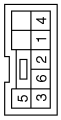
H.S.



Terminal No.	Color of Wire	Signal Name
1	P	–
2	P	–
4	P	–
10	L	–
11	L	–
13	L	–

Connector No.	M163
Connector Name	CLUTCH INTERLOCK CANCEL SWITCH
Connector Color	WHITE

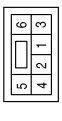
H.S.



Terminal No.	Color of Wire	Signal Name
5	R	–
6	BR	–

Connector No.	M161
Connector Name	FRONT HEATED SEAT SWITCH LH
Connector Color	WHITE

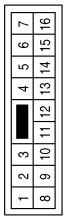
H.S.



Terminal No.	Color of Wire	Signal Name
5	R	–
6	BR	–

Connector No.	E26
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
10	P	–
11	L	–

Connector No.	E10
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

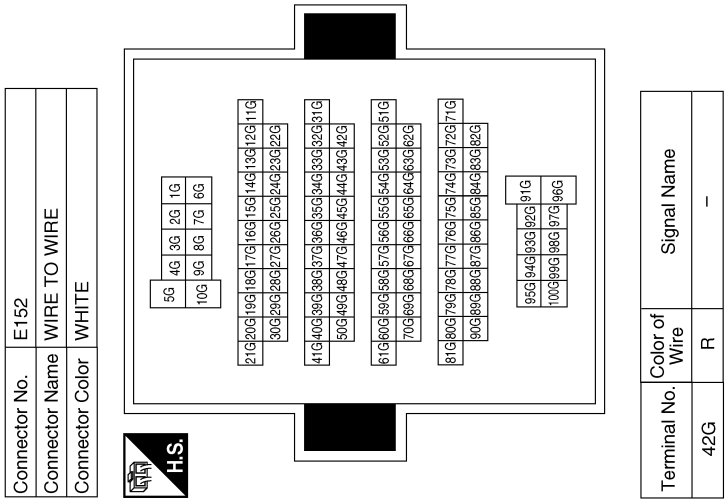
Terminal No.	Color of Wire	Signal Name
6	W	–

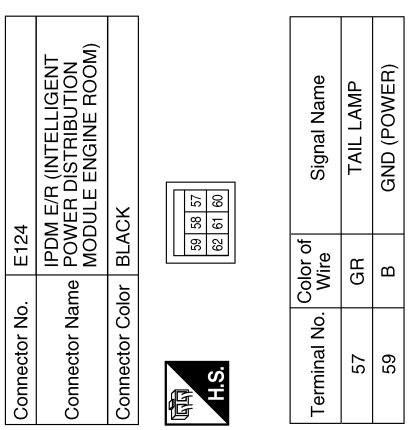
Connector No.	M170
Connector Name	RESISTOR
Connector Color	BLACK

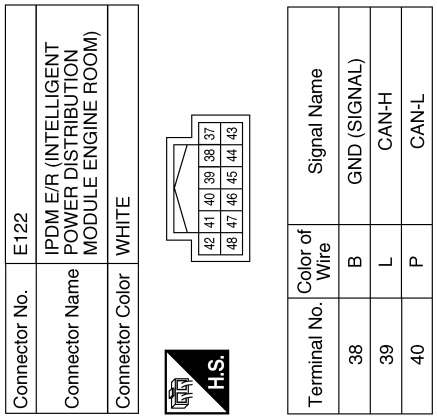
H.S.

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

ABLIA5692GB







ABLIA5650GB

SYMPTOM DIAGNOSIS

INTERIOR LIGHTING SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000009480187

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

Symptom	Possible cause	Inspection item
interior room lamps do not turn ON/OFF • Room lamp 2nd row • Front room/map lamp assembly	• Harness between fuse block (J/B) and each interior room lamp • Harness between each interior room lamp and door switches • Door switches	Interior room lamp Refer to INL-78.
Cargo lamp does not turn ON/OFF	• Harness between fuse block (J/B) and cargo lamp relay • Harness between cargo lamp relay and cargo lamp • Harness between BCM and cargo lamp relay • BCM	Cargo lamp control circuit Refer to INL-80.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000010126947

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 SR and SB section of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, 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 SR section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

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

Precaution for Work

INFOID:0000000009480189

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

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

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

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

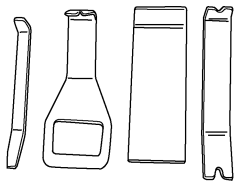
PREPARATION

PREPARATION

Special Service Tool

INFOID:0000000009480190

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

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

REMOVAL AND INSTALLATION

INTERIOR ROOM LAMP

Removal and Installation

INFOID:0000000009480191

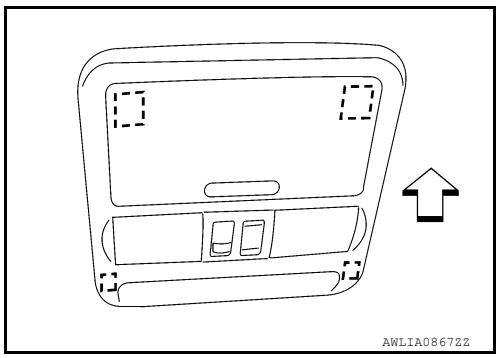
FRONT ROOM/MAP LAMP ASSEMBLY (IF EQUIPPED)

Removal

The front room/map lamp assembly is replaced as part of the roof console. Refer to INT-25, "Removal and Installation".

⇦: Front

⬚: Metal clip



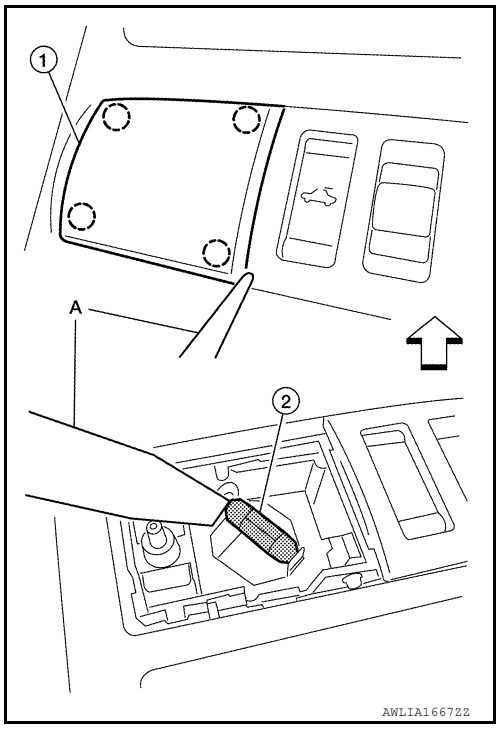
Installation

Installation is in the reverse order of removal.

Bulb or Lens Replacement

1. Using a suitable tool (A), remove the front room/map lamp RH and/or LH lenses (1) as necessary.
   ⇦: Front
   ◌: Pawl
2. Release one side of the bulb (2) from the tab using a suitable tool, then pull straight downward to remove.

Front room/ map lamp assembly bulb	**: 12V - 8W**

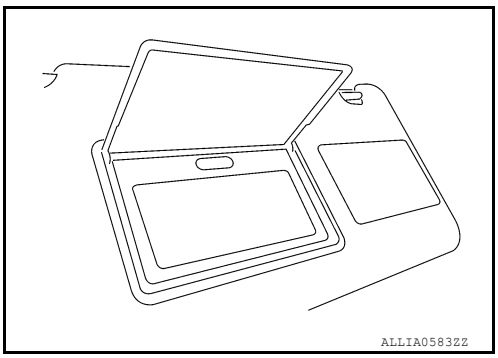


3. Install the new bulb into the socket tabs.
4. Install the front room/map lamp lens(es).

VANITY LAMP

Removal

The vanity lamp is replaced as part of the sun visor assembly. Refer to INT-25, "Removal and Installation".



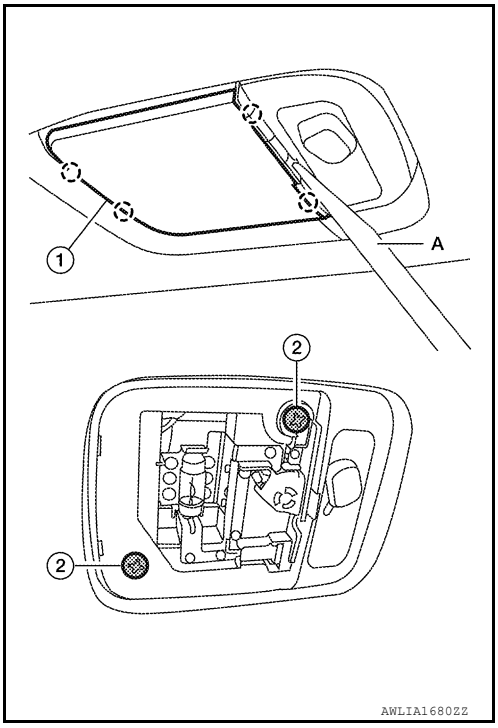
Installation
Installation is in the reverse order of removal.

Bulb Replacement
The vanity mirror lamp bulb is replaced as part of the sun visor assembly. Refer to INT-25, "Removal and Installation".

ROOM LAMP 2ND ROW

Removal

1. Using a suitable tool (A), release the pawls and remove the room lamp lens (1).
   ◌: Pawl
2. Remove room lamp screws (2).
3. Disconnect the harness connector from the room lamp and remove.

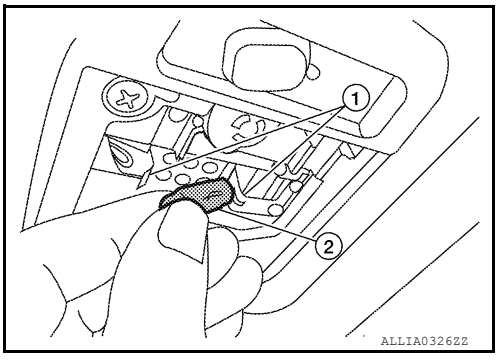


Installation
Installation is in the reverse order of removal.

Bulb or Lens Replacement

1. Using a suitable tool, release the pawls and remove the room lamp lens.
2. Release the room lamp bulb retainers (1), then pull bulb (2) straight out to remove.
3. Install the bulb (2) securely into the room lamp bulb retainers (1).

Room lamp bulb : 12V - 8W



4. Install the room lamp lens.

ILLUMINATION

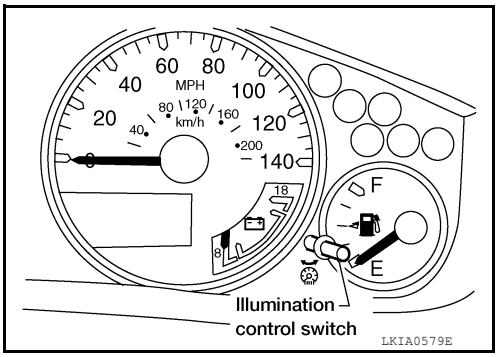
Removal and Installation

INFOID:0000000009480192

ILLUMINATION CONTROL SWITCH

Removal

The illumination control switch is replaced as a part of the combination meter. Refer to MWI-90, "Removal and Installation".



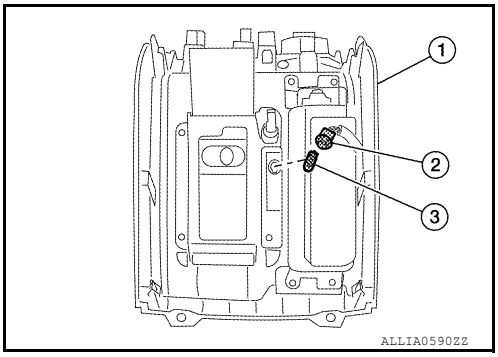
Installation

Installation is in the reverse order of removal.

SHIFT SELECTOR FINISHER LAMP

Removal

1. Remove shift selector finisher from center console. Refer to IP-25, "Removal and Installation".
2. Rotate shift selector finisher lamp socket (2) with bulb (3) counterclockwise, then pull away from finisher (1).



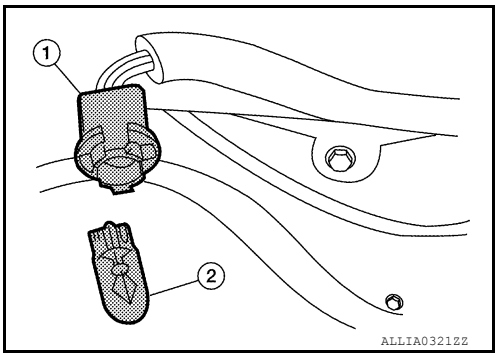
Installation

Installation is in the reverse order of removal.

Bulb Replacement

1. Remove shift selector finisher from center console. Refer to IP-25, "Removal and Installation".
2. Remove shift selector finisher lamp socket (1), then pull bulb (2) straight out away from socket.
3. Install the bulb (2) into the shift selector finisher socket (1).

AT finisher lamp bulb : 12V - 3W



4. Install shift selector finisher in center console. Refer to IP-25, "Removal and Installation".

SERVICE DATA AND SPECIFICATIONS (SDS)

BULB SPECIFICATIONS

Bulb Specifications

INFOID:0000000009480193

Item	Wattage (W)*
Front room/map lamp (if equipped)	8
Vanity lamp	–
Room lamp 2nd row	8
Shift selector finisher lamp	3

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