SECTION INL
INTERIOR LIGHTING SYSTEM

CONTENTS

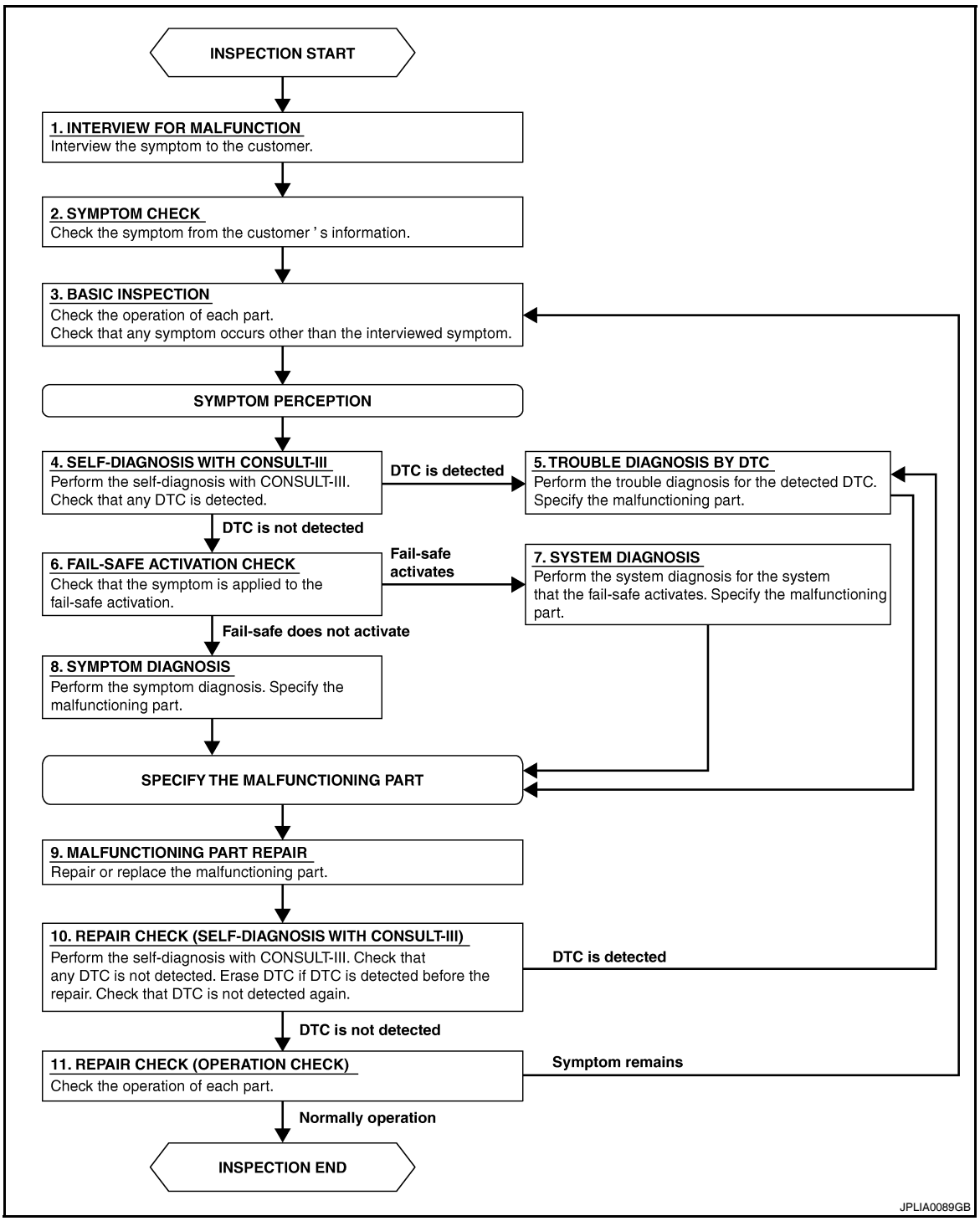
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000003789396

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-III

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

Is any DTC detected?

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

5.TROUBLE DIAGNOSIS BY DTC

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

>> GO TO 9

6.FAIL-SAFE ACTIVATION CHECK

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-III)

Perform the self-diagnosis with CONSULT-III. Verified 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?

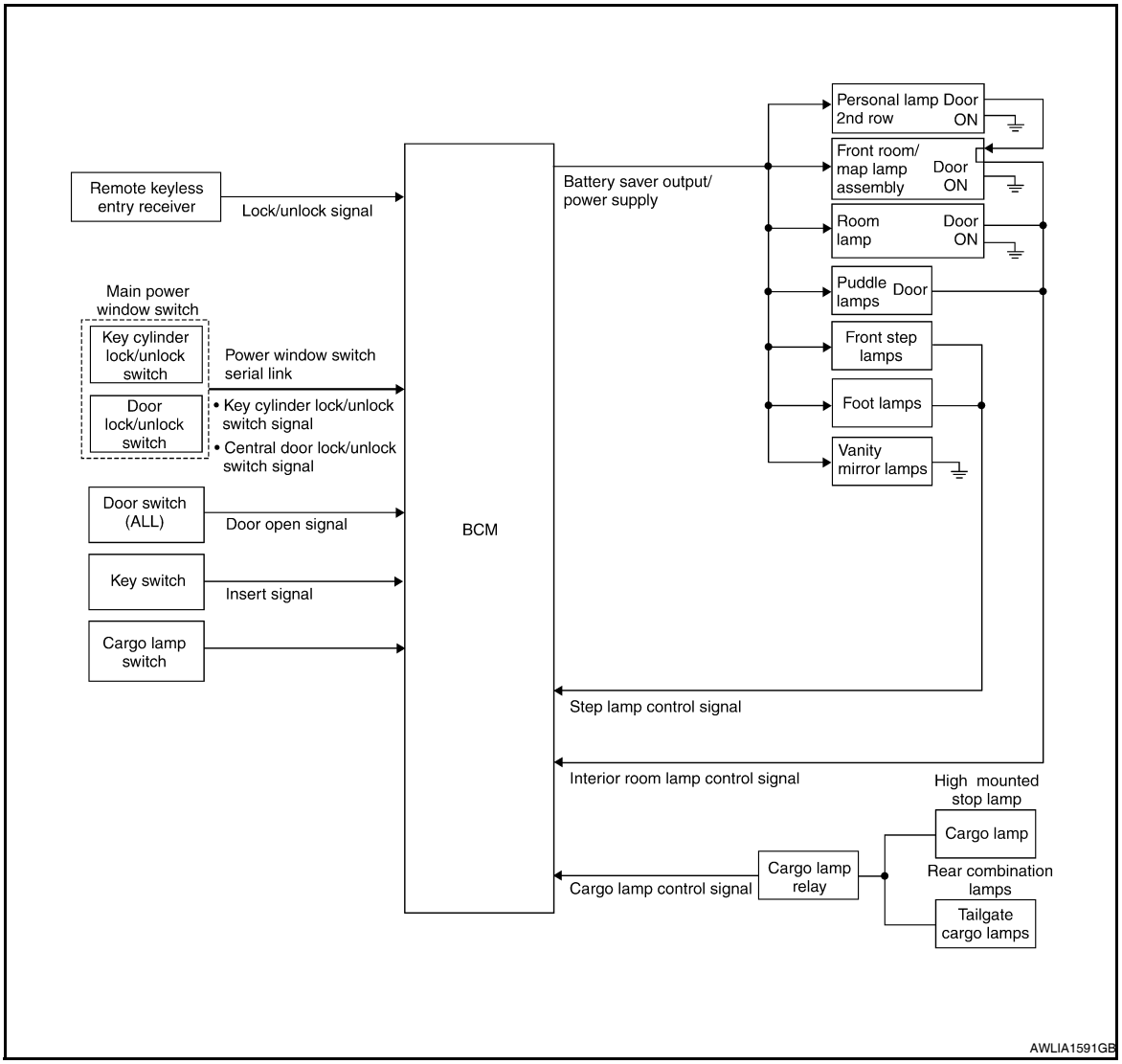
YES >> Inspection End
NO >> GO TO 3

FUNCTION DIAGNOSIS

INTERIOR ROOM LAMP CONTROL SYSTEM

System Diagram

INFOID:0000000003789397



System Description

INFOID:0000000003789398

OUTLINE

- Interior room lamps* are controlled by the interior room lamp timer control function of the BCM.
  *Room lamp (if equipped), Front room/map lamp assembly (if equipped), personal lamp 2nd row (if equipped) and puddle lamps (if equipped).
- Cargo lamp and tailgate cargo lamps (if equipped) are controlled by the cargo lamp control function of the BCM.
- Step lamps* are controlled by the step lamp control function of the BCM.
  *Front step lamps and foot lamps (if equipped).

The timer control functions of the BCM activate based on inputs from the remote keyless entry receiver, the door switches, the key switch (column shift), the key switch and key lock solenoid (floor shift) or the cargo lamp switch.

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 the main power window and door lock/unlock switch, front door lock assembly (key cylinder switch)].
- When the front door LH is unlocked with the remote keyless entry system (if equipped).
- When a door opens → closes and the key is not inserted in the ignition slot.

Timer control is cancelled under the following conditions.

- When the front door LH is locked [with the main power window and door lock/unlock switch or front door lock assembly (key cylinder switch)]
- When the front door LH is locked with the remote keyless entry system (if equipped).
- A door is opened (door switch turns ON).
- The ignition switch is turned ON.

Interior lamp operational settings can be changed with the function setting of CONSULT-III.

INTERIOR LAMP BATTERY SAVER CONTROL

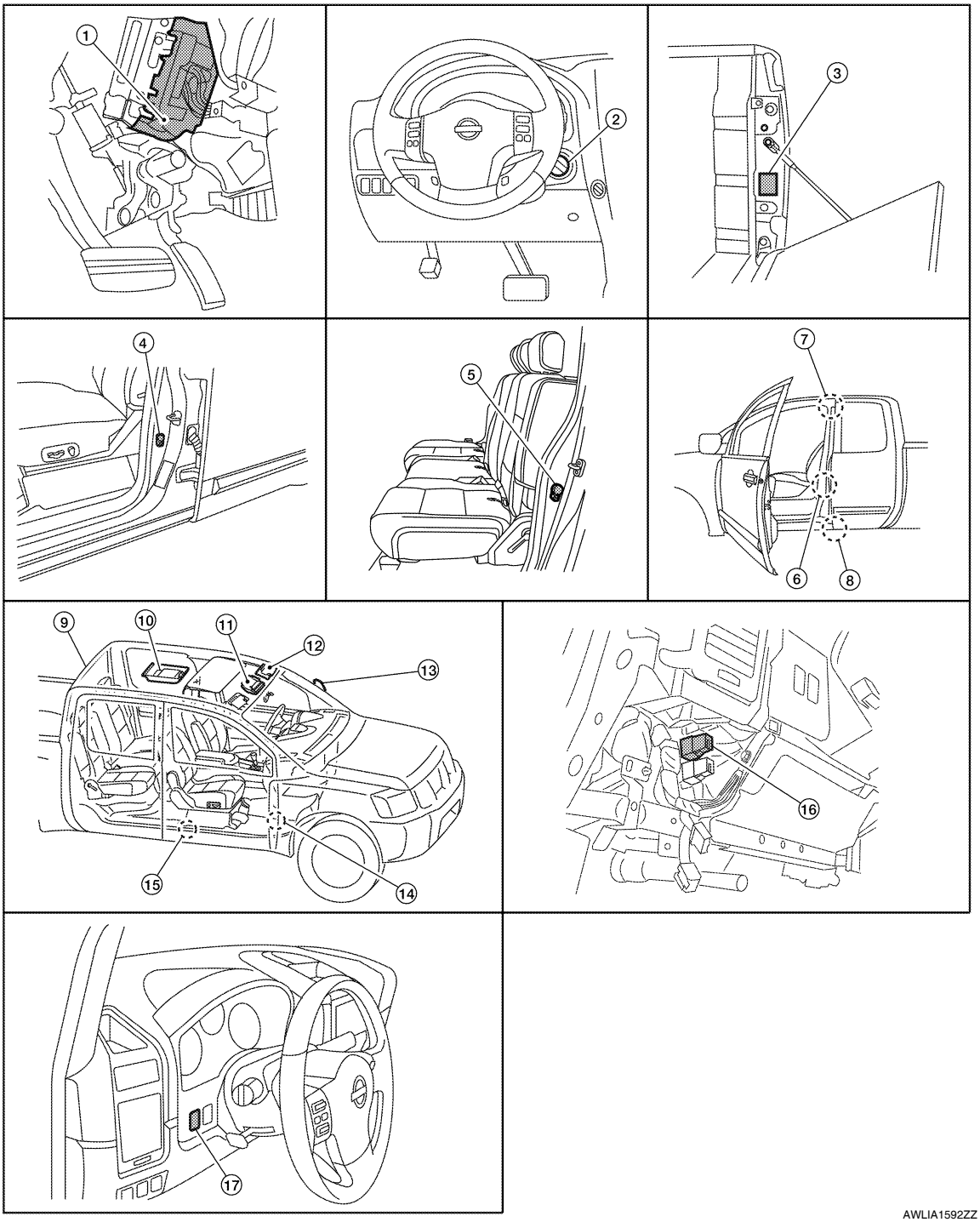
If an interior lamp is left ON and does not turn OFF even when the doors are closed, the BCM turns off power to the interior lamps automatically to save the battery 30 minutes after the ignition switch is turned OFF.
The BCM controls power and ground to all interior lamps.
After the battery saver system turns the lamps OFF, the lamps will illuminate again when

- a signal is received from the keyless entry system
- a door is opened or closed
- the key is removed from or inserted into the key slot.

The Interior lamp battery saver control time period can be changed with the function setting of CONSULT-III.

Component Parts Location

INFOID:0000000003789399



1. BCM M18, M19, M20 (view with instrument panel removed)
2. Ignition keyhole illumination M152
   Key switch M80 (column shift)
   Key switch and lock solenoid M27 (floor shift)
3. Tailgate cargo lamp LH C13
   Tailgate cargo lamp RH C14
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 B8 (king cab)
   Front door switch RH B108 (king cab)
7. Rear door switch upper LH B73 (king cab)
   Rear door switch upper RH B156 (king cab)
8. Rear door switch lower LH B74 (king cab)
   Rear door switch lower RH B157 (king cab)
9. Cargo lamp B158

10. Room lamp (without front roof console) R10
    Personal lamp 2nd row (crew cab with rear overhead console) R203
11. Front room/map lamp assembly (with front roof console) R102
12. Vanity lamp LH R3
    Vanity lamp RH R8
13. Puddle lamp LH D4 (Door mirror)
    Puddle lamp RH D107 (Door mirror)
14. Foot lamp LH M99
    Foot lamp RH M100
15. Front step lamp LH D11
    Front step lamp LH D109
16. Cargo lamp relay M150 (view with lower instrument panel LH removed)
17. Cargo lamp switch M149

Component Description

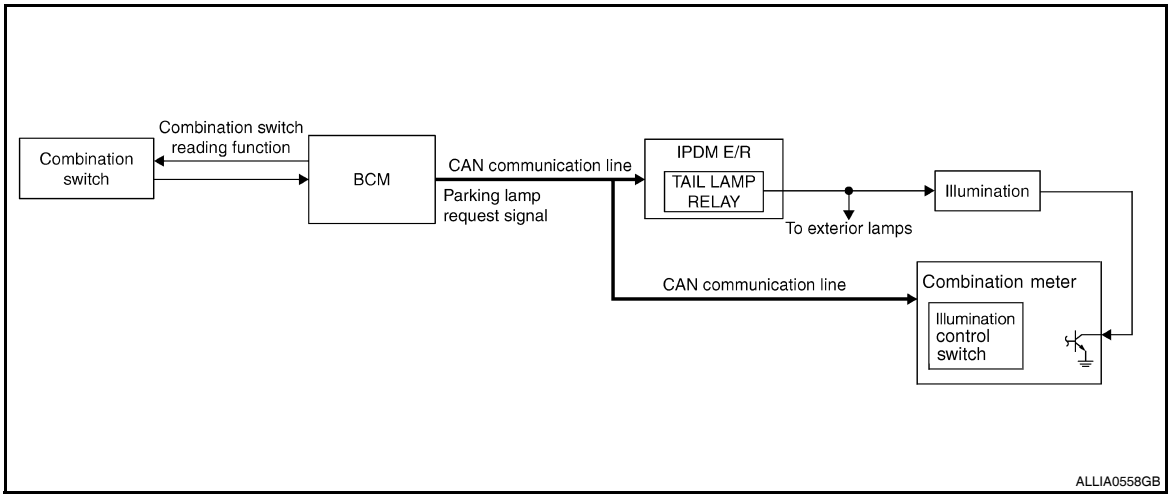
INFOID:0000000003789400

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

ILLUMINATION CONTROL SYSTEM

System Diagram

INFOID:0000000003789401



System Description

INFOID:0000000003789402

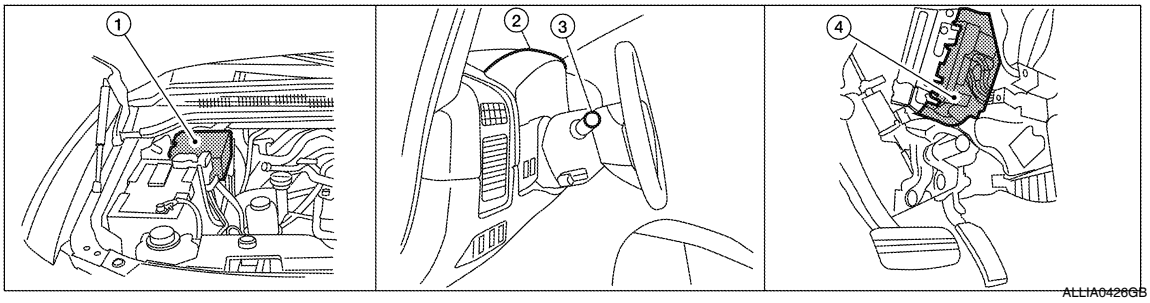
The illumination lamp operation is dependent upon the position of the lighting switch (combination switch). When the lighting switch is placed in the 1ST or 2ND position [or if the auto light system (if equipped) is activated] the BCM (body control module) receives input requesting the parking lamps 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 lighting switch (combination 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 30 minutes unless the lighting switch position is changed. If the lighting switch position is changed, then the illumination lamps are turned off after a 30 second delay. When the lighting switch is turned from OFF to 1ST or 2ND position [or if the auto light system (if equipped) is activated] after illumination lamps have been turned off by the battery saver control, the illumination lamps illuminate again.

Component Parts Location

INFOID:0000000003789403



1. IPDM E/R E122, E123, E124
2. Combination meter (illumination control switch) M24, M25
3. Combination switch M28
4. BCM M18, M20 (view with instrument panel removed)

Component Description

INFOID:0000000003789404

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	The combination switch provides input to the BCM about the lighting switch position.

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

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

INFOID:0000000004110609

APPLICATION ITEM

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

Diagnosis mode	Function Description
WORK SUPPORT	Changes the setting for each system function.
SELF-DIAG RESULTS	Displays the diagnosis results judged by BCM. Refer to BCS-49, "DTC Index".
CAN DIAG SUPPORT MNTR	Monitors the reception status of CAN communication viewed from BCM.
DATA MONITOR	The BCM input/output signals are displayed.
ACTIVE TEST	The signals used to activate each device are forcibly supplied from BCM.
ECU IDENTIFICATION	The BCM part number is displayed.
CONFIGURATION	• Enables to read and save the vehicle specification. • Enables to write the vehicle specification when replacing BCM.

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

It can perform the diagnosis modes except the following for all sub system selection items.

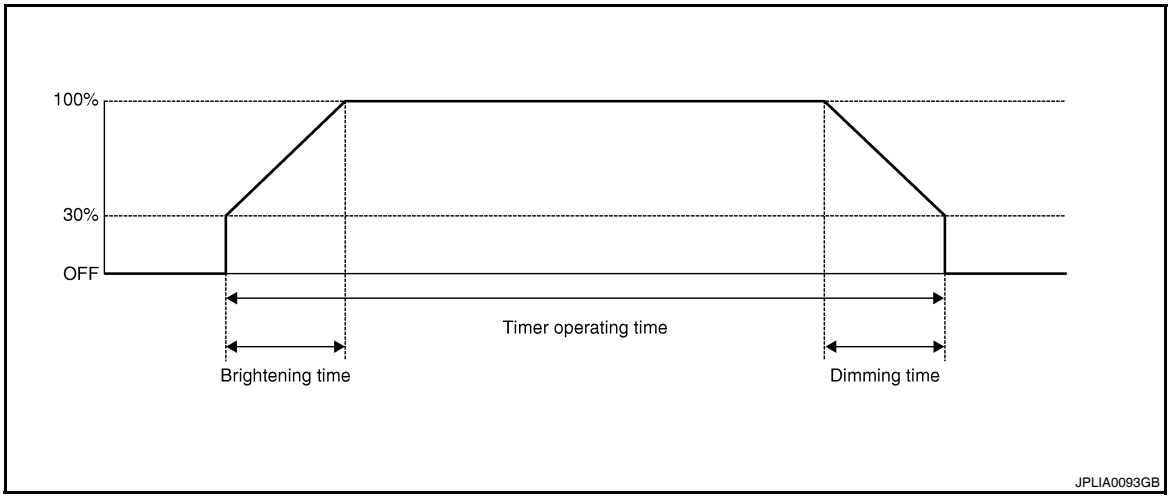
System	Sub system selection item	Diagnosis mode		
		WORK SUPPORT	DATA MONITOR	ACTIVE TEST
BCM	BCM	×		
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	
Warning chime	BUZZER		×	×
Interior room lamp timer	INT LAMP	×	×	×
Remote keyless entry system	MULTI REMOTE ENT	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER		×	×
Air conditioner	AIR CONDITONER		×	
Combination switch	COMB SW		×	
Immobilizer	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
RAP (retained accessory power)	RETAINED PWR	×	×	×
Signal buffer system	SIGNAL BUFFER		×	×
TPMS (tire pressure monitoring system)	AIR PRESSURE MONITOR	×	×	×
Vehicle security system	PANIC ALARM			×

INT LAMP

INT LAMP : CONSULT-III Function (BCM - INT LAMP)

INFOID:0000000004110610

WORK SUPPORT



Work Item	Setting item	Setting	
SET I/L D-UNLCK INTCON	ON*	With the interior room lamp timer function	
	OFF	Without the interior room lamp timer function	
ROOM LAMP ON TIME SET	MODE 1	0.5 sec.	Sets the interior room lamp gradual brightening time.
	MODE 2*	1 sec.	
	MODE 3	2 sec.	
	MODE 4	3 sec.	
	MODE 5	0 sec.	
ROOM LAMP OFF TIME SET	MODE 1	0.5 sec.	Sets the interior room lamp gradual dimming time.
	MODE 2	1 sec.	
	MODE 3	2 sec.	
	MODE 4*	3 sec.	
	MODE 5	0 sec.	

* : Initial setting

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [ON/OFF]	Ignition switch (ON) status judges from IGN signal (ignition power supply)
KEY ON SW [ON/OFF]	The switch status input from key switch
DOOR SW-DR [ON/OFF]	The switch status input from front door switch LH
DOOR SW-AS [ON/OFF]	The switch status input from front door switch RH
DOOR SW-RR [ON/OFF]	The switch status input from rear door switch RH
DOOR SW- RL [ON/OFF]	The switch status input from rear door switch LH
KEY CYL LK-SW [ON/OFF]	Lock switch status input from door lock and unlock switch
KEY CYL UN-SW [ON/OFF]	Lock switch status input from door lock and unlock switch
CDL LOCK SW [ON/OFF]	Lock switch status input from door lock and unlock switch
CDL UNLOCK SW [ON/OFF]	Unlock switch status input from door lock and unlock switch

Monitor Item [Unit]	Description
KEYLESS LOCK [ON/OFF]	Lock signal status received from remote keyless entry receiver (integrated in the BCM)
KEYLESS UNLOCK [ON/OFF]	Unlock signal status received from remote keyless entry receiver (integrated in the BCM)

ACTIVE TEST

Test Item	Operation	Description
INT LAMP	ON	Outputs the interior room lamp control signal to turn the interior room lamps ON.
	OFF	Stops the interior room lamp control signal to turn the interior room lamps OFF.
IGN ILLUM	ON	Outputs the ignition keyhole illumination control signal to turn the ignition keyhole illumination lamp ON.
	OFF	Stops the ignition keyhole illumination control signal to turn the ignition keyhole illumination lamp OFF.
STEP LAMP TEST	ON	Outputs the step lamp control signal to turn the step lamps ON.
	OFF	Stops the step lamp control signal to turn the step lamps OFF.

BATTERY SAVER

BATTERY SAVER : CONSULT-III Function (BCM - BATTERY SAVER)

INFOID:0000000004110611

WORK SUPPORT

Work Item	Setting Item	Setting	
ROOM LAMP TIMER SET	MODE 1*	15 min.	Sets the interior room lamp battery saver timer operating time.
	MODE 2	30 min.	

*: Initial setting

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [ON/OFF]	Ignition switch (ON) status judges from IGN signal (ignition power supply)
KEY ON SW [ON/OFF]	The switch status input from key switch
DOOR SW-DR [ON/OFF]	The switch status input from front door switch (driver side)
DOOR SW-AS [ON/OFF]	The switch status input from front door switch (passenger side)
DOOR SW-RR [ON/OFF]	The switch status input from rear door switch RH
DOOR SW- RL [ON/OFF]	The switch status input from rear door switch LH
KEY CYL LK-SW [ON/OFF]	Lock switch status input from door key cylinder switch
KEY CYL UN-SW [ON/OFF]	Unlock switch status input from door key cylinder switch
CDL LOCK SW [ON/OFF]	Lock switch status input from door lock and unlock switch
CDL UNLOCK SW [ON/OFF]	Unlock switch status input from door lock and unlock switch
KEYLESS LOCK [ON/OFF]	Lock signal status received from remote keyless entry receiver (integrated in the BCM)
KEYLESS UNLOCK [ON/OFF]	Unlock signal status received from remote keyless entry receiver (integrated in the BCM)

ACTIVE TEST

Test Item	Operation	Description
BATTERY SAVER	OFF	Cuts the interior room lamp power supply to turn interior room lamps OFF.
	ON	Outputs the interior room lamp power supply to turn interior room lamps ON.*

*: Each lamp switch is in ON position.

COMPONENT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000004207555

1. CHECK FUSES AND FUSIBLE LINK

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

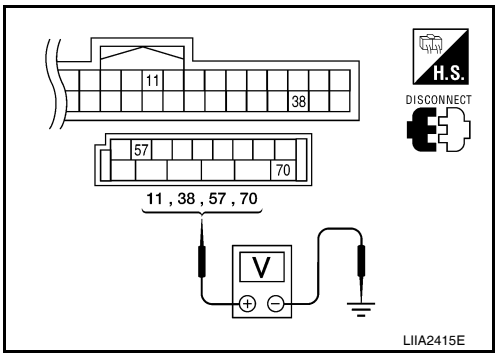
Terminal No.	Signal name	Fuses and fusible link No.
57	Battery power supply	22 (15A)
70		F (50A)
11	Ignition ACC or ON	4 (10A)
38	Ignition ON or START	59 (10A)

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.



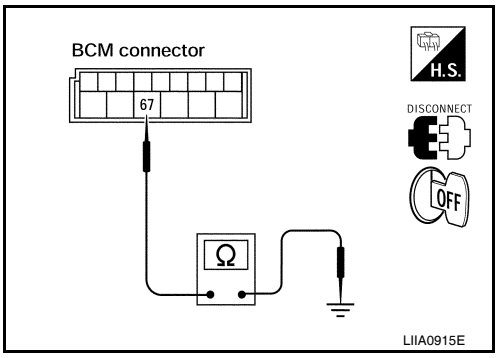
Connector	Terminals (+)	Terminals (-)	Power source	Condition	Voltage (V) (Approx.)
M18	11	Ground	ACC power supply	Ignition switch ACC or ON	Battery voltage
	38	Ground	Ignition power supply	Ignition switch ON or START	Battery voltage
M20	57	Ground	Battery power supply	Ignition switch OFF	Battery voltage
	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 Connector	BCM Terminal	Ground	Continuity
M20	67		Yes

Does continuity exist?

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

BATTERY SAVER OUTPUT/POWER SUPPLY CIRCUIT

Description

INFOID:0000000003789409

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

Component Function Check

INFOID:0000000003789410

1.CHECK BATTERY SAVER OUTPUT/POWER SUPPLY FUNCTION

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

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

Is the inspection result normal?

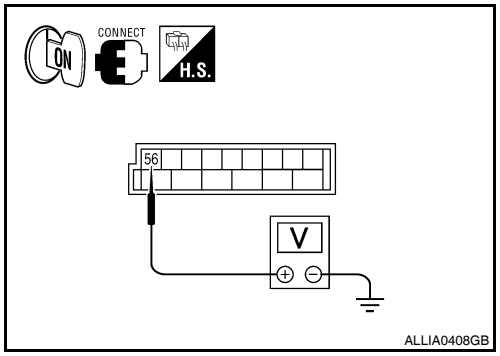
YES >> Battery saver output/power supply circuit is normal.
NO >> Refer to INL-17, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003789411

1.CHECK BATTERY SAVER OUTPUT/POWER SUPPLY OUTPUT

CONSULT-III
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. Refer to BCS-53, "Removal and Installation".

2.CHECK BATTERY SAVER OUTPUT/POWER SUPPLY OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the following connectors.
- BCM M20
- Front step lamp LH (if equipped)
- Front step lamp RH (if equipped)
- Door mirror LH (with puddle lamps)
- Door mirror RH (with puddle lamps)
- Foot lamp LH (if equipped)
- Foot lamp RH (if equipped)
- Room lamp (if equipped)
- Front room/map lamp assembly (if equipped)
- Vanity lamp LH (if equipped)
- Vanity lamp RH (if equipped)

- Personal lamp 2nd row (if equipped)
- Ignition keyhole illumination

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

BCM		Each interior room lamp			Continuity
Connector	Terminal	Connector		Terminal	
M20	56	Front step lamp LH (if equipped)	D11	1	Yes
		Front step lamp RH (if equipped)	D109	1	
		Door mirror LH (with puddle lamps)	D4	12	
		Door mirror RH (with puddle lamps)	D107	12	
		Foot lamp LH (if equipped)	M99	1	
		Foot lamp RH (if equipped)	M100	1	
		Room lamp (if equipped)	R10	2	
		Front room/map lamp assembly (if equipped)	R102	6	
		Vanity lamp LH (if equipped)	R3	1	
		Vanity lamp RH (if equipped)	R8	1	
		Personal lamp 2nd row (if equipped)	R203	3	
		Ignition keyhole illumination	M152	1	

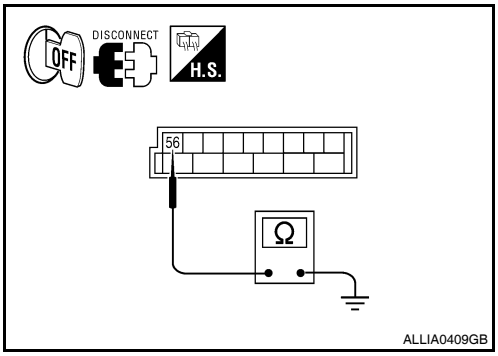
Is the inspection result normal?

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 >> Check that each interior room lamp has no internal short circuit.
NO >> Repair the harness or connectors.

INTERIOR ROOM LAMP CONTROL CIRCUIT

Description

INFOID:0000000003789412

Controls the following interior room lamps (ground side) by pulse width modulated signal
- Puddle lamps (with puddle lamps)
- Room lamp (if equipped)
- Front room/map lamp assembly (if equipped)
- Personal lamp 2nd row (if equipped)

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

Component Function Check

INFOID:0000000003789413

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

1. CHECK INTERIOR ROOM LAMP CONTROL FUNCTION

CONSULT-III
1. Switch the room lamp (if equipped), or front room/map lamp assembly (if equipped) switch 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?

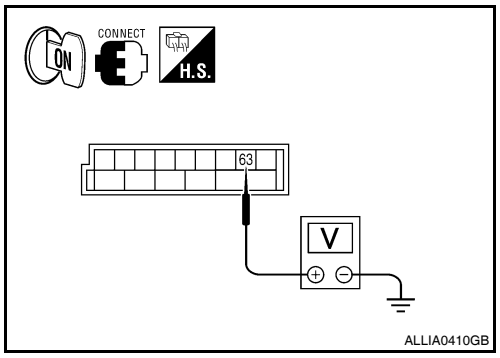
YES >> Interior room lamp control circuit is normal.
NO >> Refer to INL-19, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003789414

1. CHECK INTERIOR ROOM LAMP CONTROL OUTPUT

CONSULT-III
1. Switch the room lamp (if equipped), or front room/map lamp assembly (if equipped) switch 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 voltage between BCM connector M20 terminal 63 and ground.



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

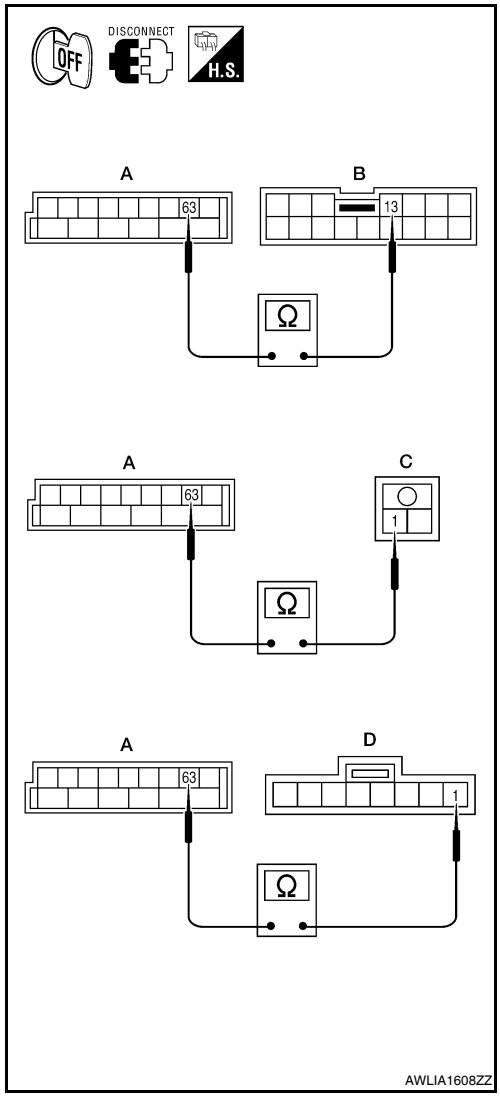
Is the inspection result normal?

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

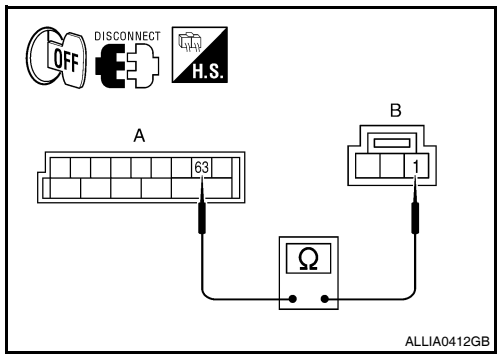
1. Turn ignition switch OFF.
2. Disconnect BCM connector M20, door mirror connectors (with puddle lamps), room lamp connector (if equipped) or front room/ map lamp assembly connector (if equipped).
3. Check continuity between BCM connector M20 (A) terminal 63 and door mirror connectors (B) terminal 13 (with puddle lamps), room lamp connector (C) terminal 1 (if equipped) or front room/ map lamp assembly connector (D) terminal 1 (if equipped).

Connector	Terminal	Component	Connector	Terminal	Continuity
M20 (A)	63	Door mirror LH (with puddle lamps)	D4 (B)	13	Yes
		Door mirror RH (with puddle lamps)	D107 (B)	13	
		Room lamp (if equipped)	R10 (C)	1	
		Front room/map lamp assembly (if equipped)	R102 (D)	1	



4. If equipped with personal lamp 2nd row, reconnect front room/ map lamp assembly connector.
5. Disconnect personal lamp 2nd row connector.
6. Check continuity between BCM connector M20 (A) terminal 63 and personal lamp 2nd row connector R203 (B) terminal 1.

BCM		Personal lamp 2nd row		Continuity
Connector	Terminal	Connector	Terminal	
M20 (A)	63	R203 (B)	1	Yes



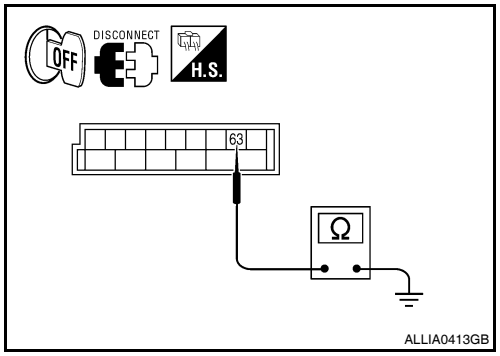
Is the inspection result normal?

YES >> Check interior room lamps for an open. If OK, replace BCM. Refer to BCS-53, "Removal and Installation". If NG, replace interior room lamp. Refer to INL-75, "Removal and Installation".

NO >> Repair the harness or connectors.

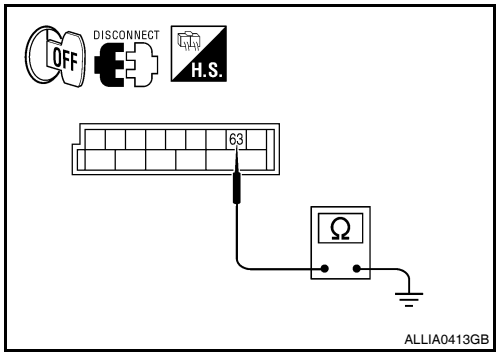
3. CHECK INTERIOR ROOM LAMP CONTROL SHORT CIRCUIT

1. Turn ignition switch OFF.
2. **On Crew Cab models with rear roof console**, disconnect BCM connector M20, door mirror connectors (with puddle lamps) and personal lamp 2nd row connector.
3. Switch the front room/map lamp assembly switch to ON position.
4. Check continuity between BCM connector and ground.



Connector	Terminal	—	Continuity
M20	63	Ground	No

5. **On models except Crew Cab with rear roof console**, disconnect BCM connector M20, door mirror connectors (with puddle lamps), room lamp connector (if equipped) or front room/map lamp assembly connector (if equipped).
6. Check continuity between BCM connector and ground.



Connector	Terminal	—	Continuity
M20	63	Ground	No

Is the inspection result normal?

YES >> Check interior room lamps for a short circuit. If OK, replace BCM. Refer to BCS-53, "Removal and Installation". If NG, replace interior room lamp. Refer to INL-75, "Removal and Installation".

NO >> Repair the harness or connectors.

STEP LAMP CIRCUIT

Description

INFOID:0000000003789415

Controls the front and rear step lamps and the foot lamps (ground side) to turn the lamps ON and OFF.

Component Function Check

INFOID:0000000003789416

CAUTION:
Before performing the diagnosis, check that the following is normal.
- **Battery saver output/power supply**
- **Front step lamp bulbs**
- **Foot lamp bulbs (if equipped)**

1.CHECK STEP LAMP OPERATION

CONSULT-III
1. Turn ignition switch ON.
2. Select “STEP LAMP TEST” of BCM (INT LAMP) active test item.
3. While operating the test item, check that the front step lamps, rear step lamps (early production crew cab) and foot lamps (if equipped) turn ON/OFF.

ON : Step lamp ON
OFF : Step lamp OFF

Is the inspection result normal?

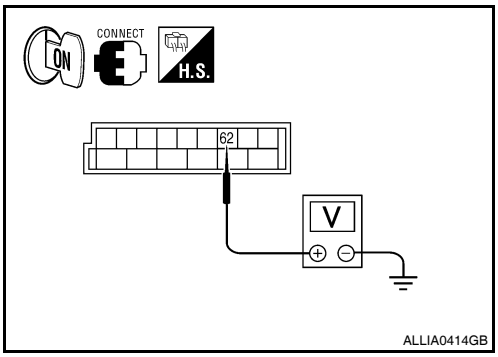
YES >> Step lamp circuit is normal.
NO >> Refer to INL-22, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003789417

1.CHECK STEP LAMP OUTPUT

CONSULT-III
1. Turn ignition switch ON.
2. Select “STEP LAMP TEST” of BCM (INT LAMP) active test item.
3. While operating the test item, check voltage between BCM harness connector and ground.



Connector	Terminal	—	STEP LAMP TEST	Voltage
M20	62	Ground	ON	0V
			OFF	Battery voltage

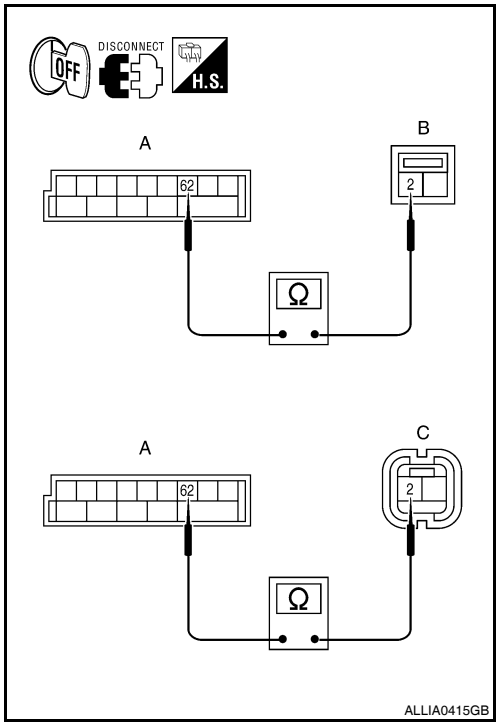
Is the inspection result normal?

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

2.CHECK STEP LAMP OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector M20 and front step lamp and foot lamp connectors (if equipped).
3. Check continuity between BCM harness connector M20 terminal 62 and step lamp connectors and foot lamp connectors (if equipped).

Connector	Terminal	Connector		Terminal	Continuity
M20 (A)	62	Front step lamp LH	D11 (B)	2	Yes
		Front step lamp RH	D109 (B)	2	
		Foot lamp LH (if equipped)	M99 (C)	2	
		Foot lamp RH (if equipped)	M100 (C)	2	



Is the inspection result normal?

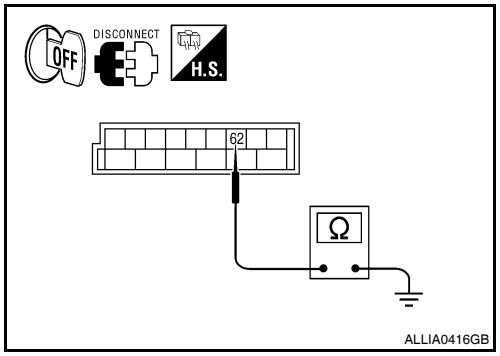
YES >> Check step lamp or foot lamp for an open. If OK, Replace BCM. Refer to BCS-53, "Removal and Installation". If NG, Replace step lamp or foot lamp. Refer to INL-75, "Removal and Installation".

NO >> Repair harness or connectors.

3. CHECK STEP LAMP SHORT CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and front step lamp and foot lamp connectors (if equipped).
3. Check continuity between BCM connector M20 terminal 62 and ground.

Connector	Terminal	—	Continuity
M20	62	Ground	No



Is the inspection result normal?

YES >> Check step lamp or foot lamp for a short circuit. If OK, Replace BCM. Refer to BCS-53, "Removal and Installation". If NG, replace step lamp or foot lamp. Refer to INL-75, "Removal and Installation".

NO >> Repair the harness or connectors.

CARGO LAMP CONTROL CIRCUIT

Description

INFOID:0000000003789418

The BCM controls ground to the cargo lamp relay to turn the the cargo lamp and tailgate cargo lamps (if equipped) ON and OFF.

Diagnosis Procedure

INFOID:0000000003789419

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

1. CHECK CARGO LAMP OPERATION

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

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

YES >> GO TO 4
NO >>
- Inoperative from cargo lamp switch only, GO TO 2
- Inoperative from door switches only, refer to DLK-26, "KING CAB : Description" (king cab) or DLK-27, "CREW CAB : Description" (crew cab).
- Inoperative from keyfob only, refer to DLK-47, "Description".

2. CHECK CARGO LAMP SWITCH

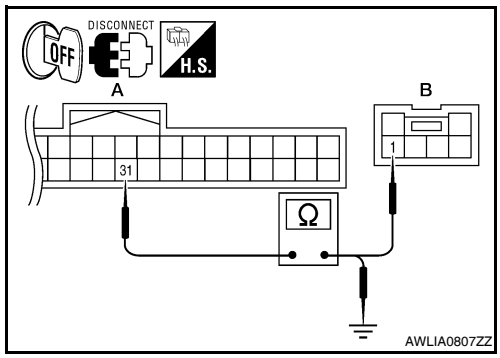
Check the cargo lamp switch. Refer to INL-26, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 3
NO >> Replace the cargo lamp switch.

3. CHECK CARGO LAMP SWITCH CIRCUIT

1. Disconnect BCM connector M18 and cargo lamp switch connector.
2. Check continuity between BCM connector M18 (A) terminal 31 and cargo lamp switch connector M149 (B) terminal 1.



BCM		Cargo lamp switch		Continuity
Connector	Terminal	Connector	Terminal	
M18 (A)	31	M149 (B)	1	Yes

3. Check continuity between BCM connector M18 (A) terminal 31 and ground.

Connector	Terminal	—	Continuity
M18 (A)	31	Ground	No

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-53, "Removal and Installation".
NO >> Repair harness or connectors.

4. CHECK CARGO LAMP RELAY

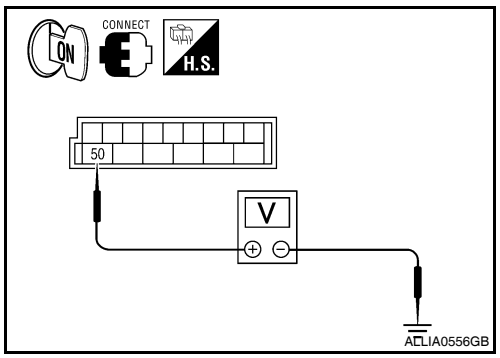
Check the cargo lamp relay. Refer to INL-26, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 5
NO >> Replace the cargo lamp relay.

5. CHECK CARGO LAMP RELAY CONTROL

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



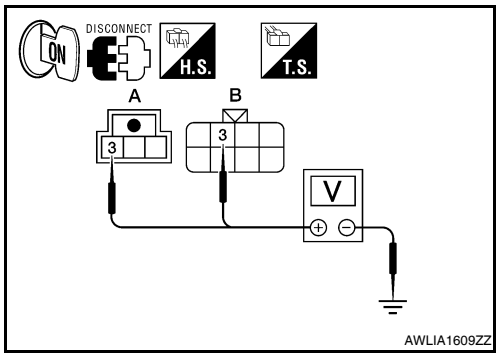
Connector	Terminal	—	Cargo lamp switch	Voltage
M19	50	Ground	ON	0V
			OFF	Battery voltage

Is the inspection result normal?

YES >> GO TO 6
NO >> GO TO 8

6. CHECK CARGO LAMP AND TAILGATE CARGO LAMPS (IF EQUIPPED) VOLTAGE

1. Disconnect the cargo lamp connector and the tailgate cargo lamp connectors (if equipped).
2. While operating the cargo lamp switch, check voltage between cargo lamp connector B158 (A) terminal 3 and ground and the tailgate cargo lamp connectors C13 (B) and C14 (B) terminal 3 and ground (if equipped).



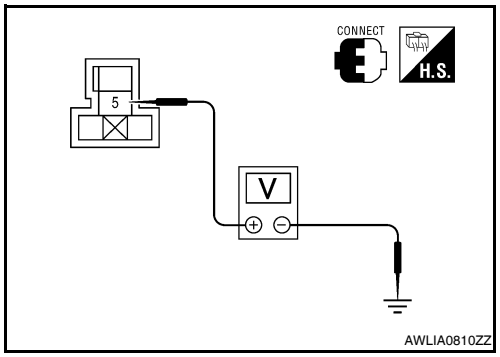
Connector	Terminal	—	Cargo lamp switch	Voltage
B158 (A)	3	Ground	ON	Battery voltage
C13 (B)	3			
C14 (B)	3			

Is the inspection result normal?

YES >> Replace cargo lamp or tailgate cargo lamp (if equipped). Refer to EXL-144, "Removal and Installation" or EXL-145, "Removal and Installation" (if equipped).
NO >> GO TO 7

7. CHECK CARGO LAMP RELAY VOLTAGE PART 1

Check voltage between cargo lamp relay connector M150 terminal 5 and ground.



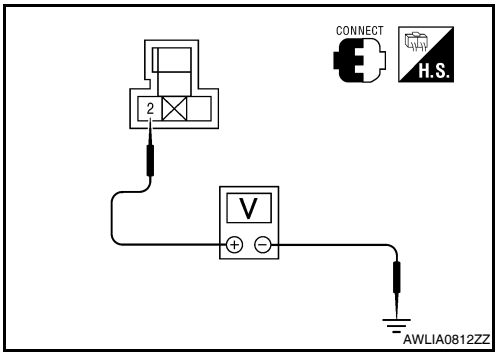
Cargo lamp relay		Ground	Voltage
Connector	Terminal		
M150	5		Battery voltage

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.

8. CHECK CARGO LAMP RELAY VOLTAGE PART 2

Check voltage between cargo lamp relay connector M150 terminal 2 and ground.



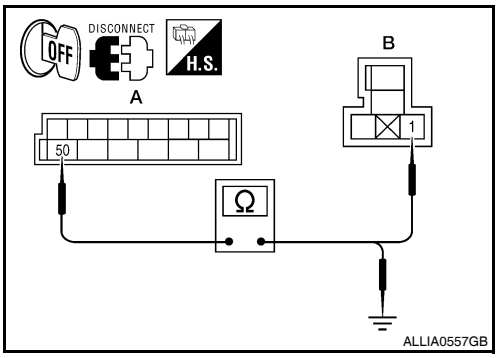
Cargo lamp relay		Ground	Voltage
Connector	Terminal		
M150	2		Battery voltage

Is the inspection result normal?

YES >> GO TO 9
NO >> Repair harness or connectors.

9. CHECK CARGO LAMP RELAY CONTROL CIRCUIT

1. Disconnect BCM connector M19 and cargo lamp relay connector.
2. Check continuity between BCM connector M19 (A) terminal 50 and cargo lamp relay connector B150 (B) terminal 1.



BCM		Cargo lamp relay		Continuity
Connector	Terminal	Connector	Terminal	
M19 (A)	50	B150 (B)	1	Yes

3. Check continuity between BCM connector M19 (A) terminal 50 and ground.

Connector	Terminal	—	Continuity
M19 (A)	50	Ground	No

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-53, "Removal and Installation".
NO >> Repair harness or connectors.

Component Inspection

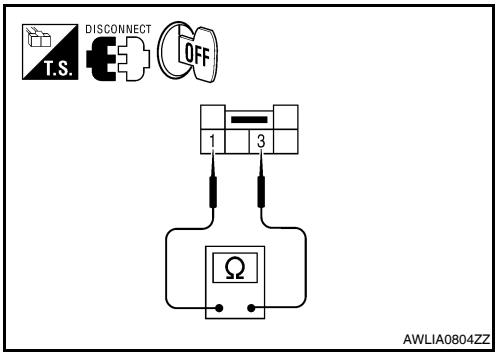
INFOID:0000000003789420

CARGO LAMP SWITCH

INSPECTION PROCEDURE

1. CHECK CARGO LAMP SWITCH

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



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

Is the inspection result normal?

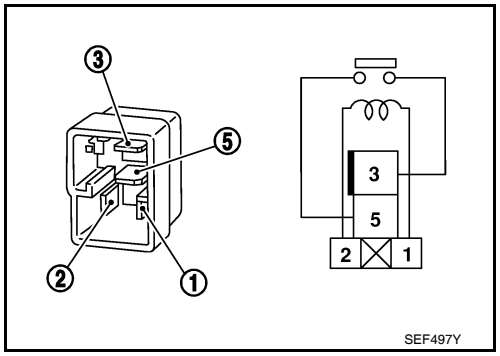
YES >> Inspection End
NO >> Replace cargo lamp switch.

CARGO LAMP RELAY

INSPECTION PROCEDURE

1. CHECK CARGO LAMP RELAY

1. Turn ignition switch OFF.
2. Disconnect cargo lamp relay harness connector.
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:0000000003789421

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

Component Function Check

INFOID:0000000003789422

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

1.CHECK IGNITION KEYHOLE ILLUMINATION OPERATION

CONSULT-III
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?

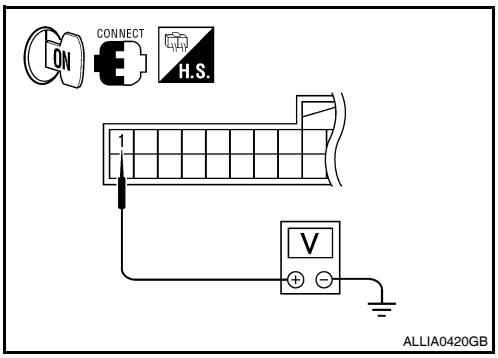
YES >> Ignition keyhole illumination circuit is normal.
NO >> Refer to INL-28, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003789423

1.CHECK IGNITION KEYHOLE OUTPUT

CONSULT-III
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.



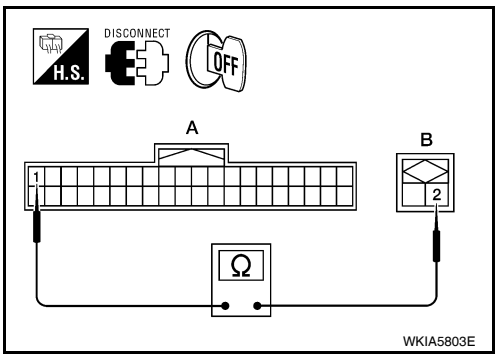
Connector	Terminal	—	IGN ILLUM	Voltage
M18	1	Ground	ON	0V
			OFF	Battery voltage

Is the inspection result normal?

YES >> Ignition keyhole illumination 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 M152 (B) terminal 2.



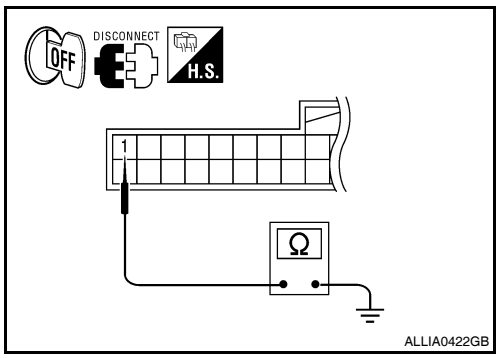
BCM		Ignition keyhole illumination		Continuity
Connector	Terminal	Connector	Terminal	
M18 (A)	1	M152 (B)	2	Yes

Is the inspection result normal?

YES >> Check ignition keyhole illumination for an open. If OK, replace BCM. Refer to BCS-53, "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?

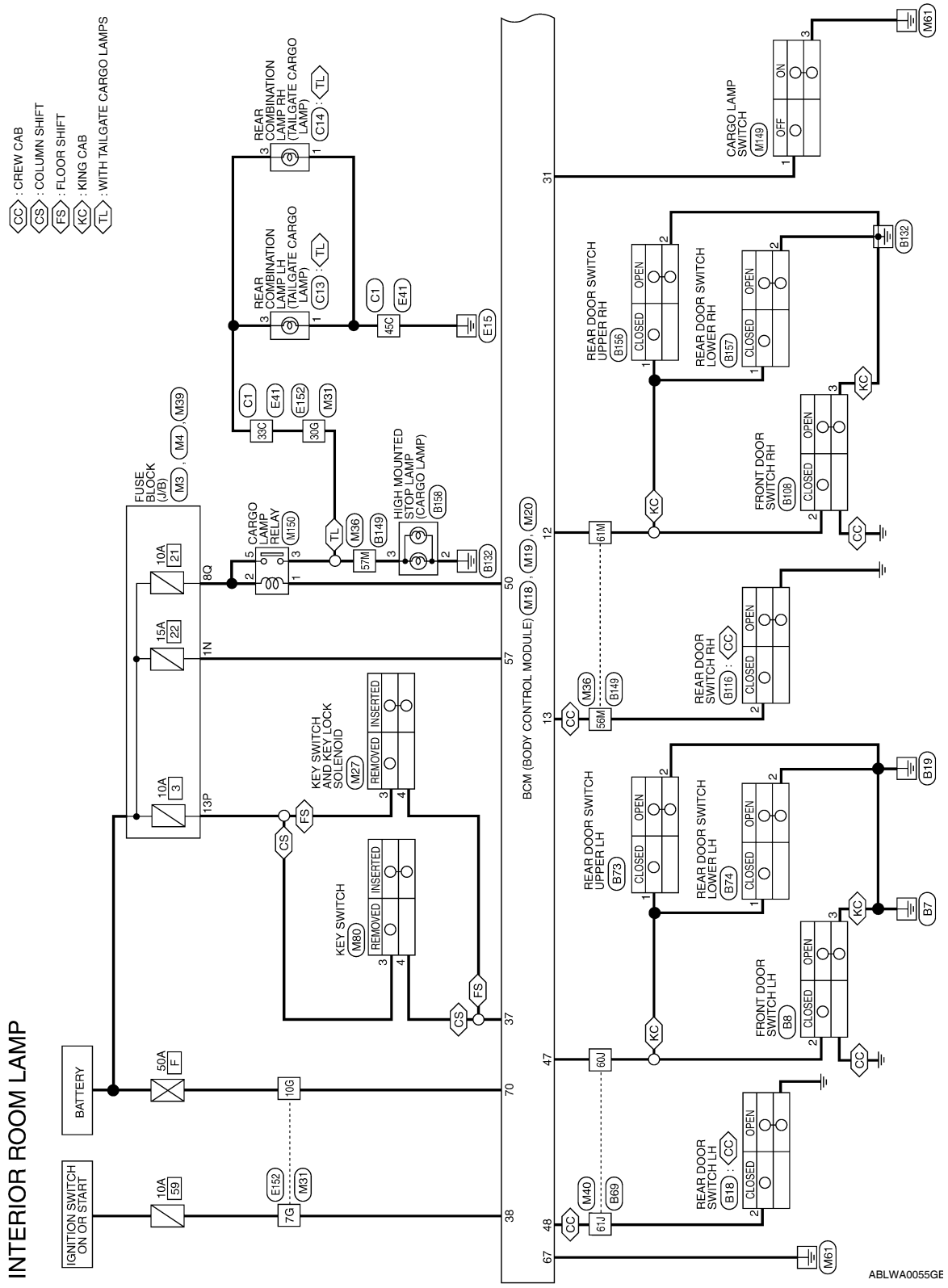
YES >> Check ignition keyhole illumination for a short circuit. If OK, replace BCM. Refer to BCS-53, "Removal and Installation". If NG, replace ignition keyhole illumination.

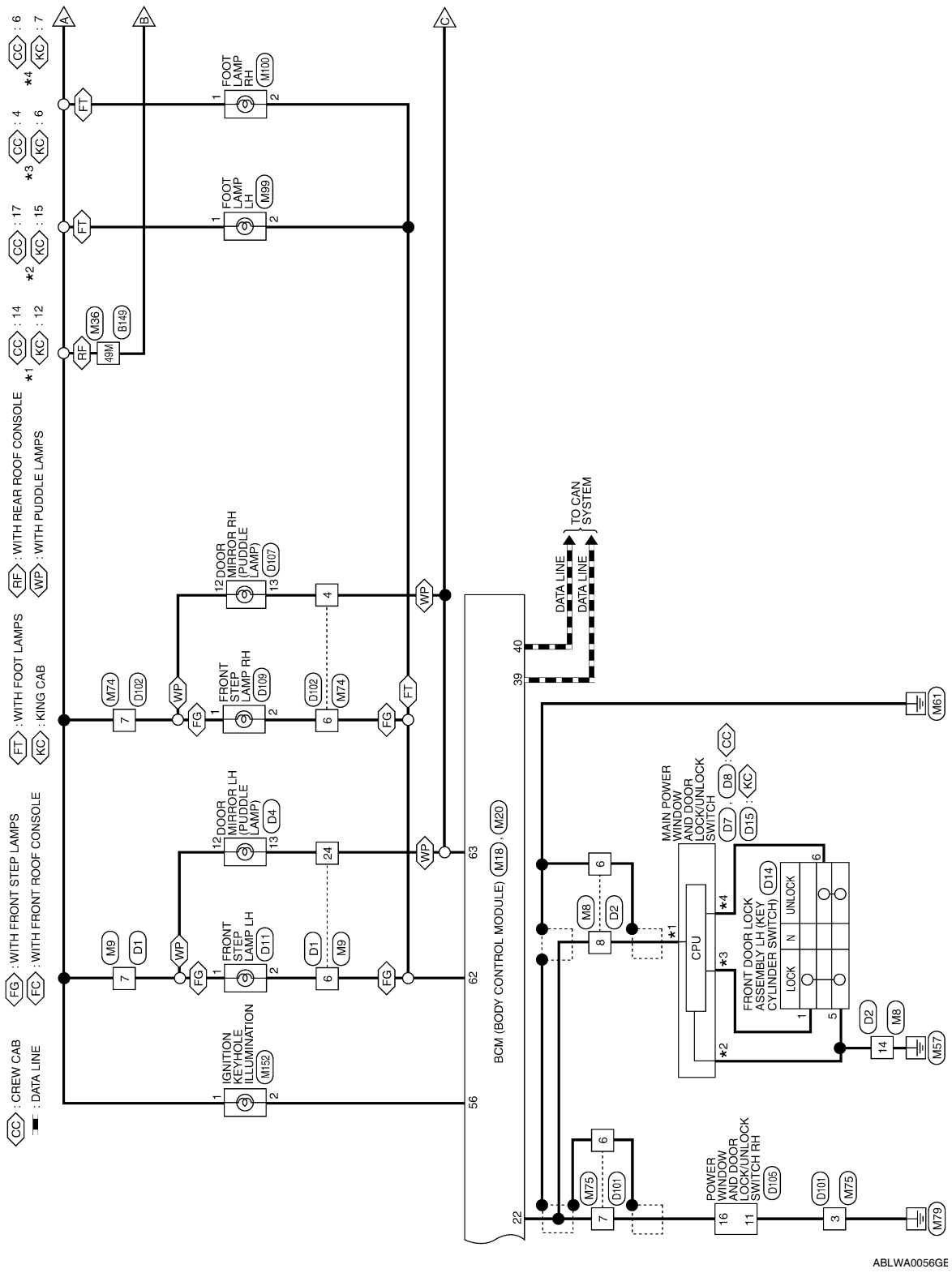
NO >> Repair harness or connectors.

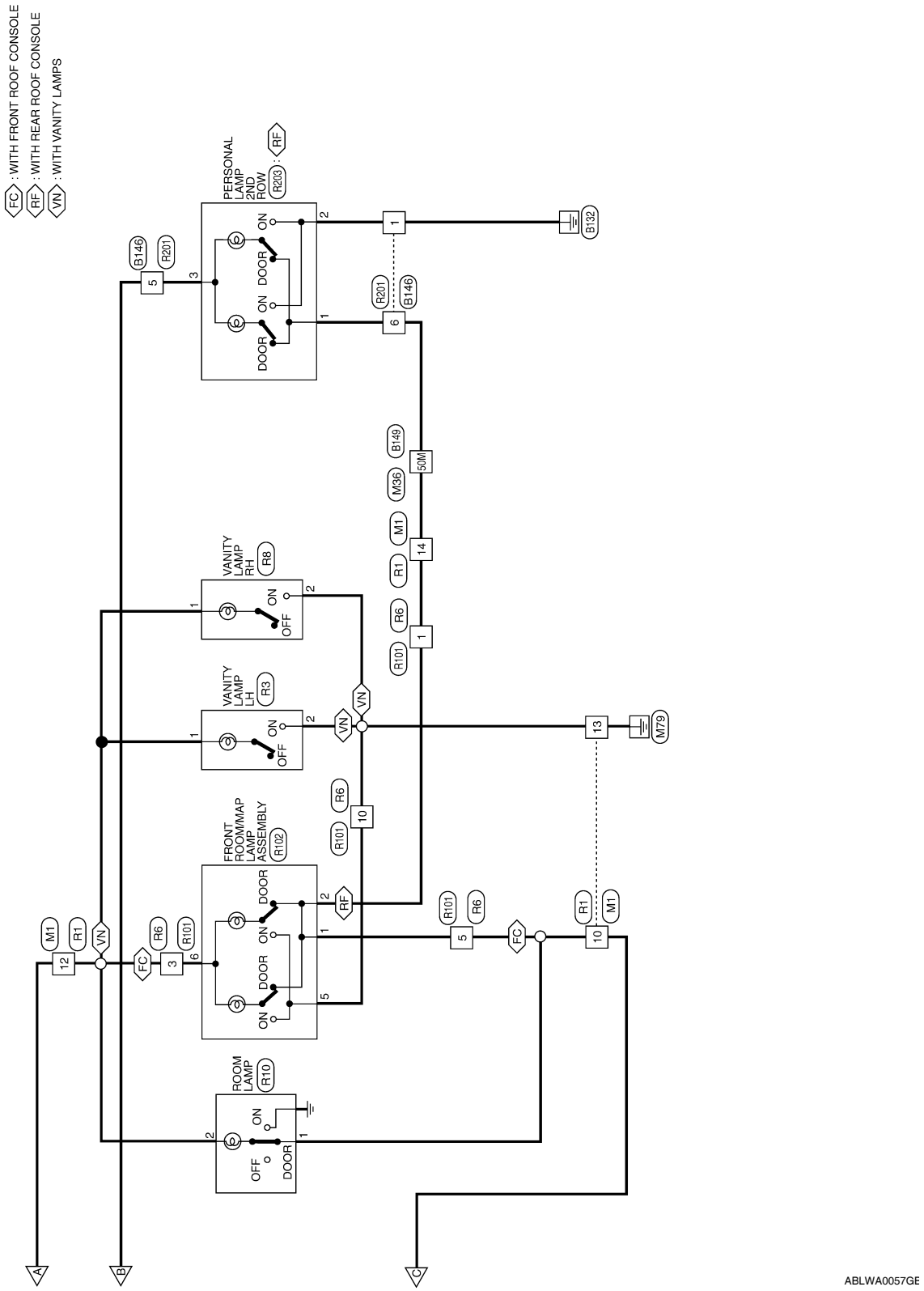
INTERIOR ROOM LAMP CONTROL SYSTEM

Wiring Diagram

INFOID:0000000003789424

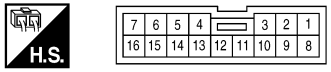



CC : CREW CAB
: DATA LINE
FG : WITH FRONT STEP LAMPS
FC : WITH FRONT ROOF CONSOLE
FT : WITH FOOT LAMPS
KC : KING CAB
RF : WITH REAR ROOF CONSOLE
WP : WITH PUDDLE LAMPS
IGNITION KEYHOLE ILLUMINATION
FRONT STEP LAMP LH
DOOR MIRROR LH (PUDDLE LAMP)
FRONT STEP LAMP RH
DOOR MIRROR RH (PUDDLE LAMP)
FOOT LAMP LH
FOOT LAMP RH
BCM (BODY CONTROL MODULE)
DATA LINE
TO CAN SYSTEM
MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH
CPU
FRONT DOOR LOCK ASSEMBLY LH (KEY CYLINDER SWITCH)
LOCK
N
UNLOCK
POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH
ABLWA0056GE


FC : WITH FRONT ROOF CONSOLE
RF : WITH REAR ROOF CONSOLE
VN : WITH VANITY LAMPS
PERSONAL LAMP 2ND ROW
R203
RF
DOOR
ON
B146
R201
B132
VANITY LAMP RH
R8
VANITY LAMP LH
R3
OFF
B149
M36
50M
M1
R1
14
R6
R101
M79
FRONT ROOM/MAP LAMP ASSEMBLY
R102
ROOM LAMP
R10
A
B
C
ABLWA0057GE

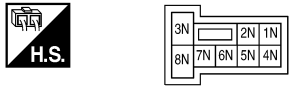
INTERIOR ROOM LAMP CONNECTORS

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



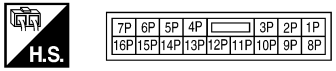
Terminal No.	Color of Wire	Signal Name
10	L	–
12	R/G	–
13	B	–
14	R	–

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



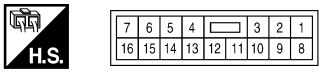
Terminal No.	Color of Wire	Signal Name
1N	Y/R	–

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



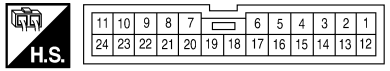
Terminal No.	Color of Wire	Signal Name
13P	P	–

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



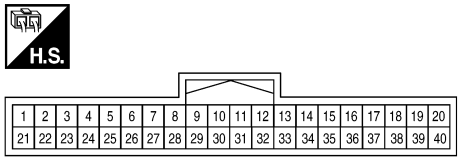
Terminal No.	Color of Wire	Signal Name
6	SHIELD	–
8	G	–
14	B	–

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



Terminal No.	Color of Wire	Signal Name
6	R/W	–
7	R/G	–
24	L	–

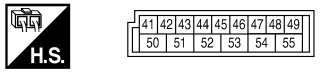
Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
12	R/L	DOOR SW (AS)
13	GR	DOOR SW (RR)
22	G	ANTI-PINCH SERIAL LINK (RX, TX)
31	P/L	CARGO LAMP SW
37	B/R	KEY SW
38	W/L	IGN SW
39	L	CAN-H
40	P	CAN-L

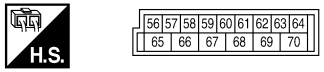
ABLIA0183GB

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



Terminal No.	Color of Wire	Signal Name
47	SB	DOOR SW (DR)
48	R/Y	DOOR SW (RL)
50	R/Y	CARGO LAMP OUTPUT

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

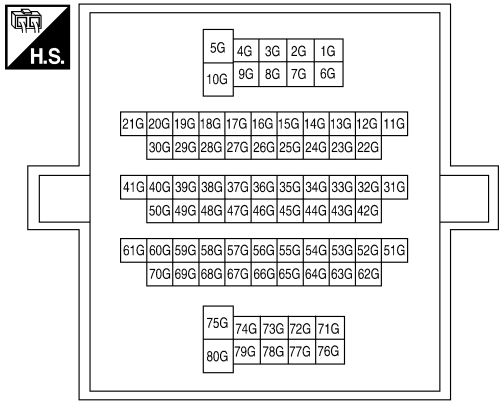


Terminal No.	Color of Wire	Signal Name
56	R/G	BATTERY SAVER OUTPUT
57	Y/R	BAT (FUSE)
62	R/W	STEP LAMP OUTPUT
63	L	ROOM LAMP
67	B	GND (POWER)
70	W/B	BATT (F/L)

Connector No.	M27
Connector Name	KEY SWITCH AND KEY LOCK SOLENOID
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
3	Y/R	– (TYPE A*)
3	P	– (TYPE B*)
4	B/R	–

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



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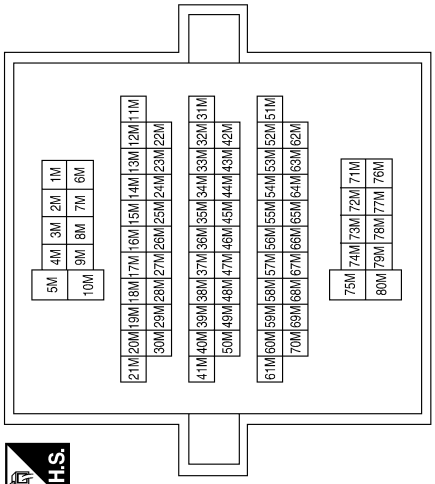
Terminal No.	Color of Wire	Signal Name
7G	W/L	–
10G	W/B	–
30G	Y	–

* : REFER TO HARNESS LAYOUT OF PG SECTION FOR DEFINITION OF TYPE A AND TYPE B.

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

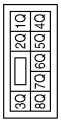
H.S.



Terminal No.	Color of Wire	Signal Name
49M	R/G	–
50M	R	–
56M	GR	–
57M	LG	–
61M	R/L	–

Connector No.	M39
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

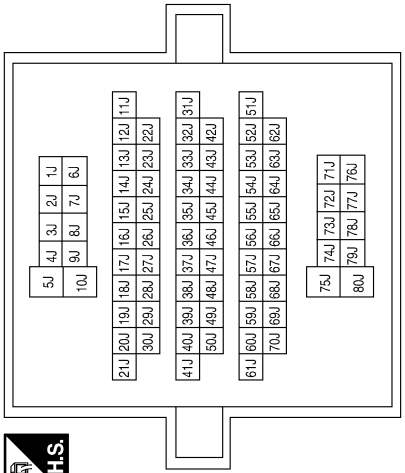
H.S.



Terminal No.	Color of Wire	Signal Name
8Q	G	–

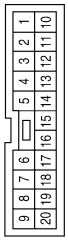
Connector No.	M40
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



Connector No.	M74
Connector Name	WIRE TO WIRE
Connector Color	BROWN

H.S.



Terminal No.	Color of Wire	Signal Name
4	L	–
6	R/W	–
7	R/G	–

Terminal No.	Color of Wire	Signal Name
60J	SB	–
61J	R/Y	–

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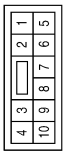
Connector No.	M75
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
3	B	–
6	SHIELD	–
7	G	–

Connector No.	M80
Connector Name	KEY SWITCH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
3	P	–
4	B/R	–

Connector No.	M99
Connector Name	FOOT LAMP LH
Connector Color	BROWN

H.S.

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

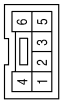
Connector No.	M100
Connector Name	FOOT LAMP RH
Connector Color	BROWN

H.S.

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

Connector No.	M149
Connector Name	CARGO LAMP SWITCH
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
1	P/L	–
3	B	–

Connector No.	M150
Connector Name	CARGO LAMP RELAY
Connector Color	BLUE

H.S.

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

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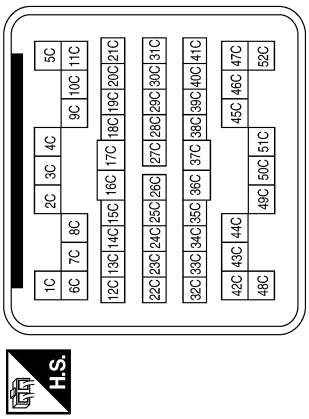
Connector No.	M152
Connector Name	IGNITION KEYHOLE ILLUMINATION
Connector Color	WHITE

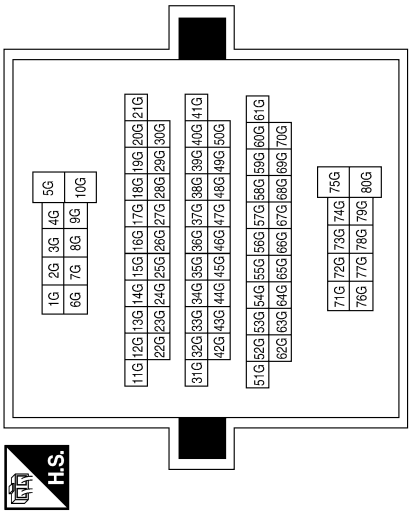
Terminal No.	Color of Wire	Signal Name
1	R/G	–
2	BR/W	–

Connector No.	E41
Connector Name	WIRE TO WIRE
Connector Color	GRAY



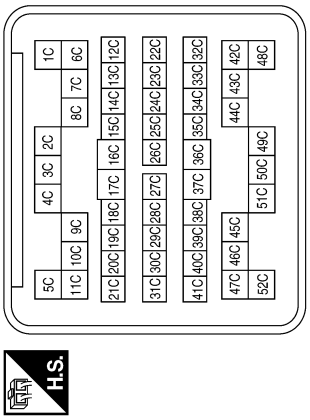
Terminal No.	Color of Wire	Signal Name
33C	LG	–
45C	B	–

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



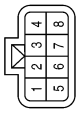
Terminal No.	Color of Wire	Signal Name
7G	L/W	–
10G	W/B	–
30G	Y	–

Connector No.	C1
Connector Name	WIRE TO WIRE
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
33C	LG	–
45C	B	–

Connector No.	C13
Connector Name	REAR COMBINATION LAMP LH
Connector Color	GRAY



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

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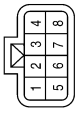
Connector No.	C14
Connector Name	REAR COMBINATION LAMP RH
Connector Color	GRAY

H.S.



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

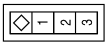
Connector No.	B8
Connector Name	FRONT DOOR SWITCH LH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
2	SB	–
3	B	–(WITH KING CAB)

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

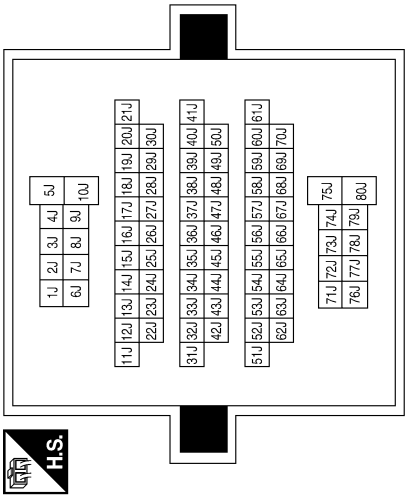
H.S.



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

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

H.S.



Terminal No.	Color of Wire	Signal Name
60J	SB	–
61J	R/Y	–

Connector No.	B73
Connector Name	REAR DOOR SWITCH UPPER LH
Connector Color	BLACK

H.S.

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

Connector No.	B74
Connector Name	REAR DOOR SWITCH LOWER LH
Connector Color	BLACK

H.S.

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

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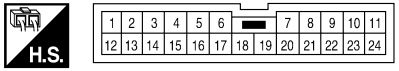
Connector No.	B108
Connector Name	FRONT DOOR SWITCH RH
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
2	R/L	–
3	B	– (WITH KING CAB)

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

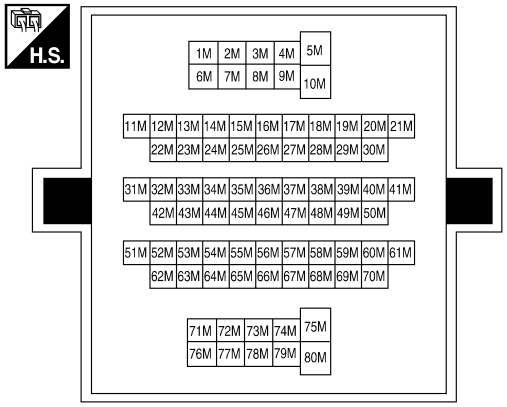
Terminal No.	Color of Wire	Signal Name
2	GR	–

Connector No.	B146
Connector Name	WIRE TO WIRE
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
1	B	–
5	R/G	–
6	R	–

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



Terminal No.	Color of Wire	Signal Name
49M	R/G	–
50M	R	–
56M	GR	–
57M	LG	–
61M	R/L	–

Connector No.	B156
Connector Name	REAR DOOR SWITCH UPPER RH
Connector Color	BLACK

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

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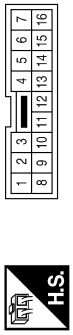
Connector No.	B157
Connector Name	REAR DOOR SWITCH LOWER RH
Connector Color	BLACK

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

Connector No.	B158
Connector Name	HIGH MOUNTED STOP LAMP
Connector Color	WHITE

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

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

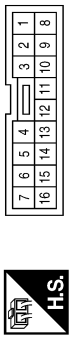


Terminal No.	Color of Wire	Signal Name
10	L	–
12	R/G	–
13	B	–
14	R	–

Connector No.	R3
Connector Name	VANITY LAMP LH
Connector Color	WHITE

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

Connector No.	R6
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	R	–
3	R/G	–
5	L	–
10	B	–

Connector No.	R8
Connector Name	VANITY LAMP RH
Connector Color	WHITE

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

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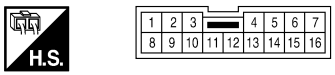
Connector No.	R10
Connector Name	ROOM LAMP
Connector Color	WHITE

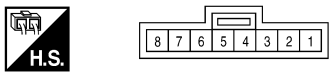
Terminal No.	Color of Wire	Signal Name
1	L	–
2	R/G	–

Connector No.	R101
Connector Name	WIRE TO WIRE
Connector Color	WHITE



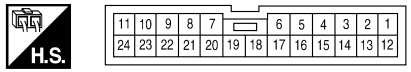
Terminal No.	Color of Wire	Signal Name
1	R	–
3	R/G	–
5	L	–
10	B	–

Connector No.	R102
Connector Name	FRONT ROOM/MAP LAMP ASSEMBLY
Connector Color	GRAY



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

Connector No.	R201
Connector Name	WIRE TO WIRE
Connector Color	BROWN

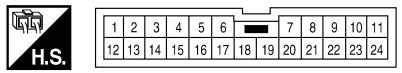


Terminal No.	Color of Wire	Signal Name
1	B	–
5	R/G	–
6	R	–

Connector No.	R203
Connector Name	PERSONAL LAMP 2ND ROW
Connector Color	WHITE

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

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



Terminal No.	Color of Wire	Signal Name
6	R/W	–
7	R/G	–
24	L	–

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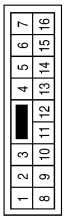
Connector No.	D2
Connector Name	WIRE TO WIRE
Connector Color	WHITE

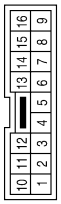
H.S.



Terminal No.	Color of Wire	Signal Name
6	SHIELD	–
8	LG/W	–
14	B	–

Connector No.	D4
Connector Name	DOOR MIRROR LH (WITH AUTOMATIC DRIVE POSITIONER
Connector Color	WHITE

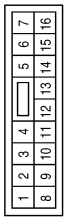
H.S.



Terminal No.	Color of Wire	Signal Name
12	R/G	–
13	L	–

Connector No.	D7
Connector Name	MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH (WITH CREW CAB)
Connector Color	WHITE

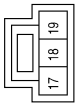
H.S.



Terminal No.	Color of Wire	Signal Name
4	L	LOCK
6	R	UNLOCK
14	LG/W	ANTI_PINCH_SERIAL_LINK

Connector No.	D8
Connector Name	MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH (WITH CREW CAB)
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
17	B	GND

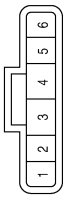
Connector No.	D11
Connector Name	FRONT STEP LAMP LH
Connector Color	WHITE

H.S.

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

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

H.S.



Terminal No.	Color of Wire	Signal Name
1	L	LOCK
5	B	GND
6	R	UNLOCK

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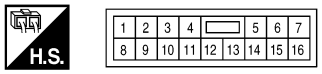
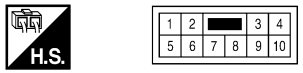
Connector No.	D15
Connector Name	MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH (WITH KING CAB)
Connector Color	WHITE



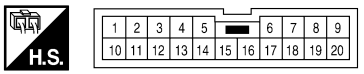
Terminal No.	Color of Wire	Signal Name
6	L	LOCK
7	R	UNLOCK
12	LG/W	ANTI PINCH SERIAL LINK
15	B	GND

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



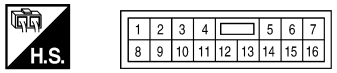
Terminal No.	Color of Wire	Signal Name
3	B	–
6	SHIELD	–
7	LG/W	–

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



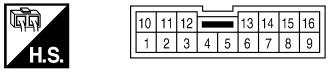
Terminal No.	Color of Wire	Signal Name
4	L	–
6	R/W	–
7	R/G	–

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



Terminal No.	Color of Wire	Signal Name
11	B	GND
16	LG/W	ANTI_PINCH_SERIAL_LINK

Connector No.	D107
Connector Name	DOOR MIRROR RH (WITH AUTOMATIC DRIVE POSITIONER
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
12	R/G	–
13	L	–

Connector No.	D109
Connector Name	FRONT STEP LAMP RH
Connector Color	WHITE

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

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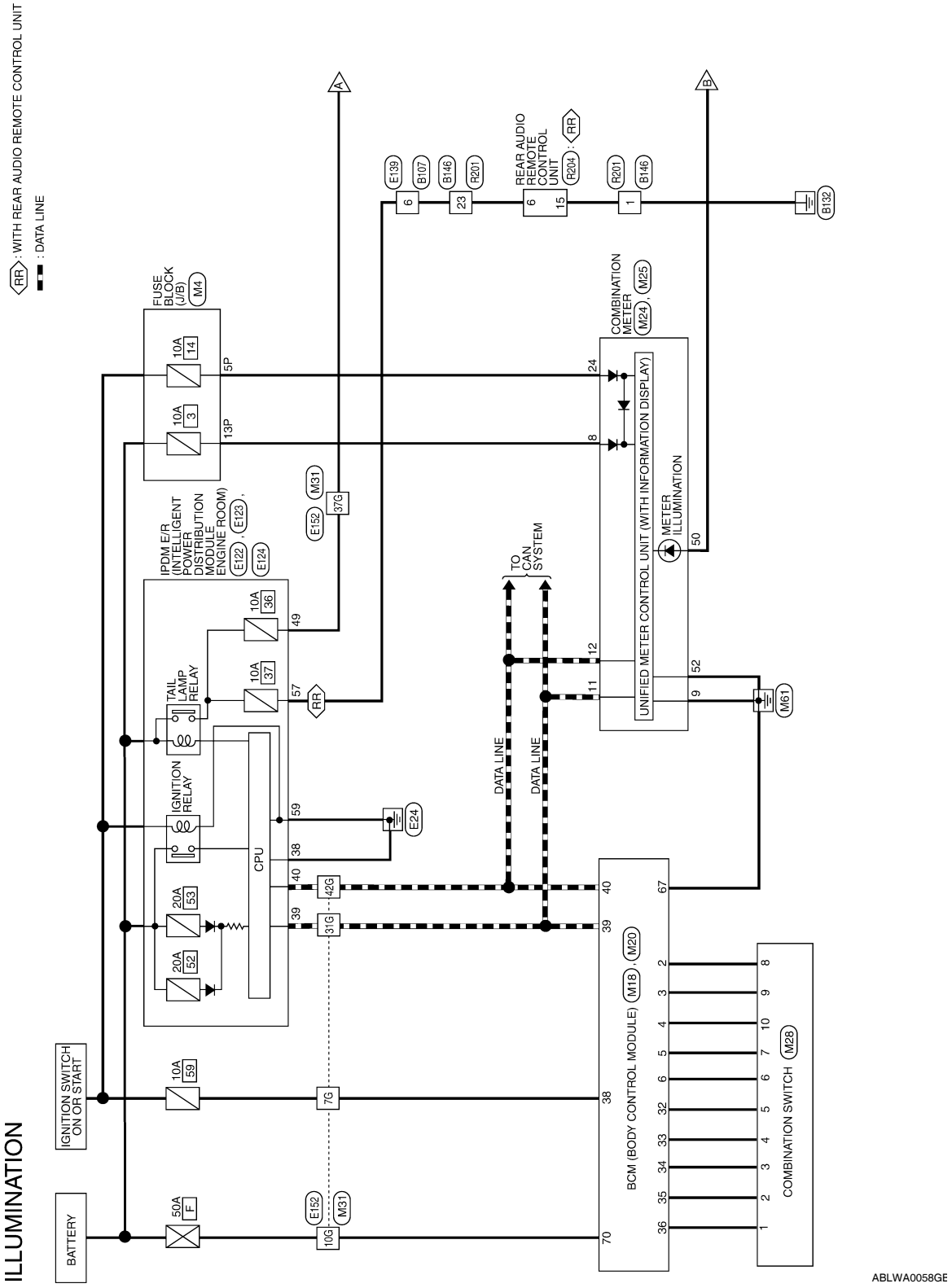
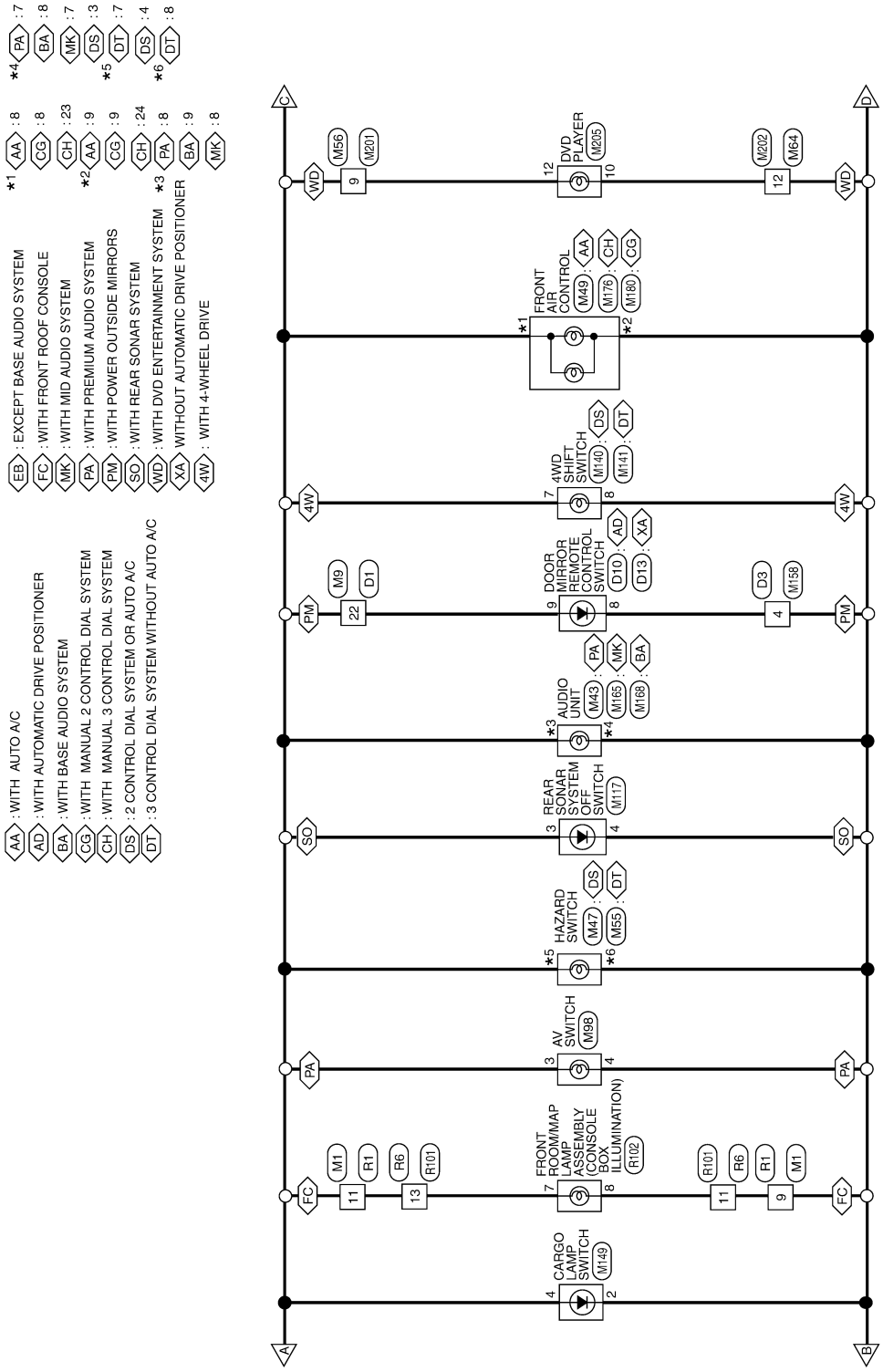
ILLUMINATION

Wiring Diagram

INFOID:0000000003789425





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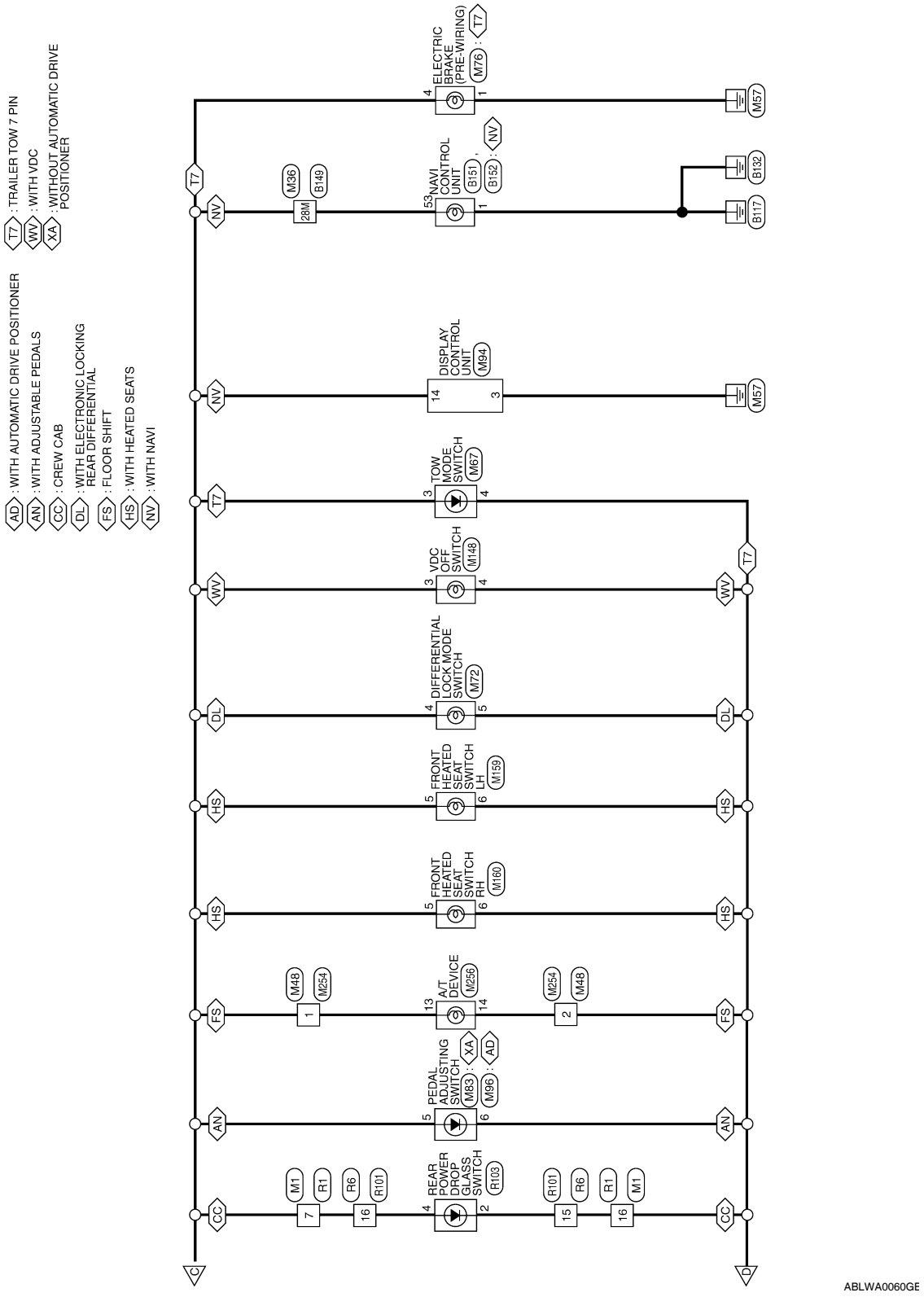
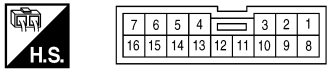

T7 : TRAILER TOW 7 PIN
WV : WITH VDC
XA : WITHOUT AUTOMATIC DRIVE POSITIONER
AD : WITH AUTOMATIC DRIVE POSITIONER
AN : WITH ADJUSTABLE PEDALS
CC : CREW CAB
DL : WITH ELECTRONIC LOCKING REAR DIFFERENTIAL
FS : FLOOR SHIFT
HS : WITH HEATED SEATS
NV : WITH NAVI
ELECTRIC BRAKE (PRE-WIRING)
M76
NAVI CONTROL UNIT
B151
B152
28M
M36
B149
DISPLAY CONTROL UNIT
M94
TOW MODE SWITCH
M67
VDC OFF SWITCH
M148
DIFFERENTIAL LOCK MODE SWITCH
M72
FRONT HEATED SEAT SWITCH LH
M159
FRONT HEATED SEAT SWITCH RH
M160
A/T DEVICE
M256
PEDAL ADJUSTING SWITCH
M83
M96
REAR POWER DROP GLASS SWITCH
R103
M57
B132
B117
M48
M254
M1
R1
R6
R101
ABLWA0060GE

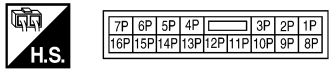
ILLUMINATION CONNECTORS

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



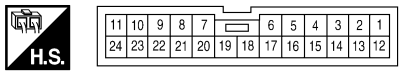
Terminal No.	Color of Wire	Signal Name
7	R/L	–
9	BR	–
11	R/L	–
16	BR	–

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



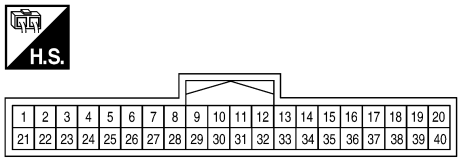
Terminal No.	Color of Wire	Signal Name
5P	O/L	–
13P	P	–

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



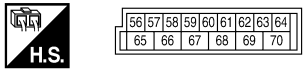
Terminal No.	Color of Wire	Signal Name
22	R/L	–

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



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

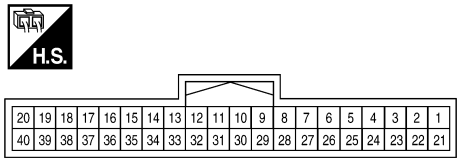
Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



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

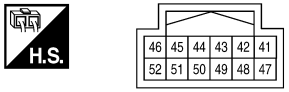
ABLIA0195GB

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE



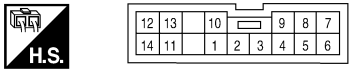
Terminal No.	Color of Wire	Signal Name
8	Y/R	BATTERY (TYPE A*)
8	P	BATTERY (TYPE B*)
9	B	GND
11	L	CAN-H
12	P	CAN-L
24	O/L	RUN/START

Connector No.	M25
Connector Name	COMBINATION METER
Connector Color	WHITE



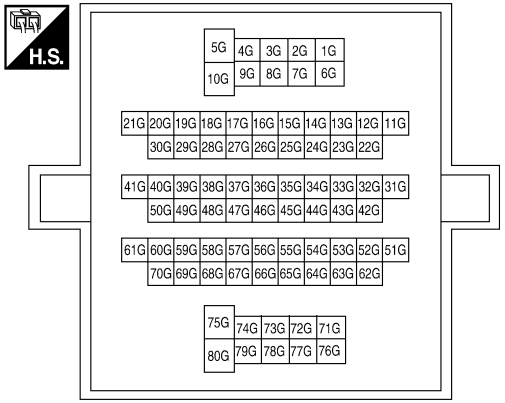
Terminal No.	Color of Wire	Signal Name
50	BR	ILL LED CON OUTPUT
52	B	ILL GND

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	R/W	INPUT 1
2	O/B	INPUT 2
3	L	INPUT 3
4	R/Y	INPUT 4
5	R/G	INPUT 5
6	V	OUTPUT 1
7	G/B	OUTPUT 2
8	SB	OUTPUT 5
9	G/Y	OUTPUT 4
10	Y	OUTPUT 3

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



ABLIA0196GB

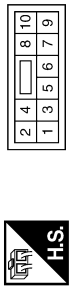
Terminal No.	Color of Wire	Signal Name
7G	W/L	–
10G	W/B	–
31G	L	–
37G	R/L	–
42G	P	–

*: REFER TO HARNESS LAYOUT OF PG SECTION FOR DEFINITION OF TYPE A AND TYPE B.

Connector No.	M47
Connector Name	HAZARD SWITCH (2 CONTROL DIAL SYSTEM OR AUTO A/C)
Connector Color	WHITE

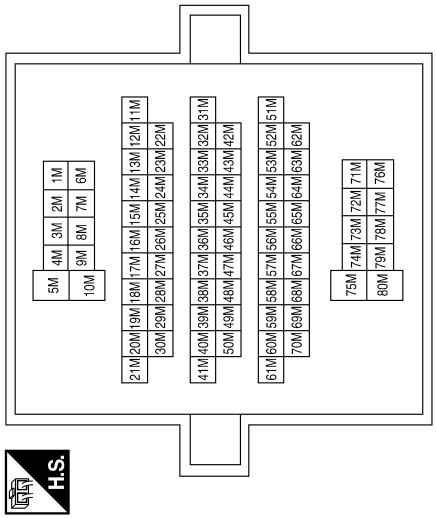
Terminal No.	Color of Wire	Signal Name
3	R/L	–
4	BR	–

Connector No.	M43
Connector Name	AUDIO UNIT (WITH PREMIUM AUDIO SYSTEM)
Connector Color	WHITE



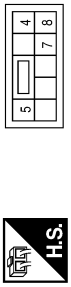
Terminal No.	Color of Wire	Signal Name
7	BR	LIGHT SW
8	R/L	ILL CONT

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



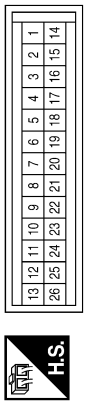
Terminal No.	Color of Wire	Signal Name
28M	R/L	–

Connector No.	M55
Connector Name	HAZARD SWITCH (3 CONTROL DIAL SYSTEM WITHOUT AUTO A/C
Connector Color	WHITE



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

Connector No.	M49
Connector Name	FRONT AIR CONTROL (WITH AUTO A/C)
Connector Color	BLACK



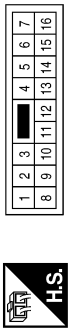
Terminal No.	Color of Wire	Signal Name
8	R/L	ILL
9	BR	ILL-

Connector No.	M48
Connector Name	WIRE TO WIRE
Connector Color	BROWN

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

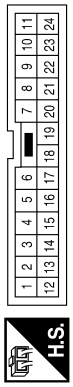
ABLIA0197GB

Connector No.	M56
Connector Name	WIRE TO WIRE
Connector Color	WHITE



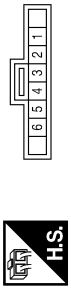
Terminal No.	Color of Wire	Signal Name
9	R/L	–

Connector No.	M64
Connector Name	WIRE TO WIRE
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
12	BR	–

Connector No.	M67
Connector Name	TOW MODE SWITCH
Connector Color	GRAY

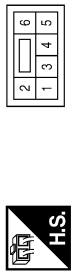


Terminal No.	Color of Wire	Signal Name
3	R/L	–
4	BR	–

Connector No.	M72
Connector Name	DIFFERENTIAL LOCK MODE SWITCH
Connector Color	WHITE

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

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



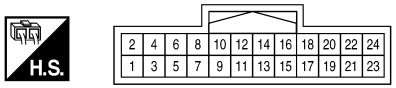
Terminal No.	Color of Wire	Signal Name
1	B	GND
4	R/L	ILL (TAIL)

Connector No.	M83
Connector Name	PEDAL ADJUSTING SWITCH (WITHOUT AUTOMATIC DRIVE POSITIONER)
Connector Color	BROWN

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

ABLIA0198GB

Connector No.	M94
Connector Name	DISPLAY CONTROL UNIT
Connector Color	WHITE

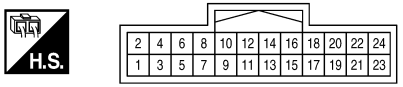


Terminal No.	Color of Wire	Signal Name
3	B	–
14	R/L	–

Connector No.	M96
Connector Name	PEDAL ADJUSTING SWITCH (WITH AUTOMATIC DRIVE POSITIONER)
Connector Color	BROWN

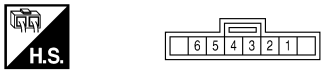
Terminal No.	Color of Wire	Signal Name
5	R/L	–
6	BR	–

Connector No.	M98
Connector Name	AV SWITCH
Connector Color	WHITE



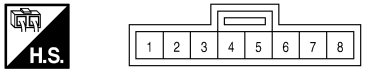
Terminal No.	Color of Wire	Signal Name
3	R/L	ILL
4	BR	ILL CONT GND

Connector No.	M117
Connector Name	REAR SONAR STSTEM OFF SWITCH
Connector Color	GRAY



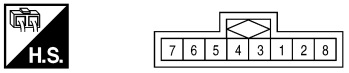
Terminal No.	Color of Wire	Signal Name
3	R/L	–
4	BR	–

Connector No.	M140
Connector Name	4WD SHIFT SWITCH (2 CONTROL DIAL SYSTEM OR AUTO A/C)
Connector Color	GRAY



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

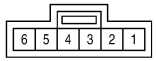
Connector No.	M141
Connector Name	4WD SHIFT SWITCH (3 CONTROL DIAL SYSTEM WITHOUT AUTO A/C)
Connector Color	WHITE



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

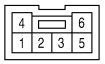
ABLIA0199GB

Connector No.	M148
Connector Name	VDC OFF SWITCH
Connector Color	GRAY



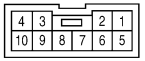
Terminal No.	Color of Wire	Signal Name
3	R/L	–
4	BR	–

Connector No.	M149
Connector Name	CARGO LAMP SWITCH
Connector Color	WHITE



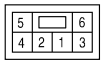
Terminal No.	Color of Wire	Signal Name
2	BR	–
4	R/L	–

Connector No.	M158
Connector Name	WIRE TO WIRE
Connector Color	WHITE



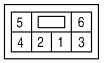
Terminal No.	Color of Wire	Signal Name
4	BR	–

Connector No.	M159
Connector Name	FRONT HEATED SEAT SWITCH LH
Connector Color	WHITE



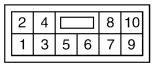
Terminal No.	Color of Wire	Signal Name
5	R/L	–
6	BR	–

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



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

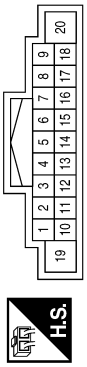
Connector No.	M165
Connector Name	AUDIO UNIT (WITH MID AUDIO SYSTEM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7	BR	ILL CONT
8	R/L	LIGHT SW

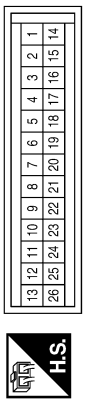
ABLIA0200GB

Connector No.	M168
Connector Name	AUDIO UNIT (WITH BASE AUDIO SYSTEM)
Connector Color	WHITE



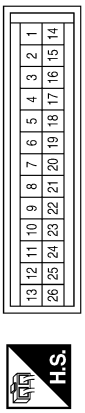
Terminal No.	Color of Wire	Signal Name
8	BR	–
9	R/L	–

Connector No.	M176
Connector Name	FRONT AIR CONTROL (WITH MANUAL 3 CONTROL DIAL SYSTEM)
Connector Color	BLACK



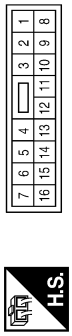
Terminal No.	Color of Wire	Signal Name
7	R/L	ILL
8	BR	ILL-

Connector No.	M180
Connector Name	FRONT AIR CONTROL (WITH MANUAL 2 CONTROL DIAL SYSTEM)
Connector Color	BLACK



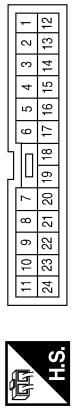
Terminal No.	Color of Wire	Signal Name
8	R/L	ILL+
9	BR	ILL-

Connector No.	M201
Connector Name	WIRE TO WIRE
Connector Color	WHITE



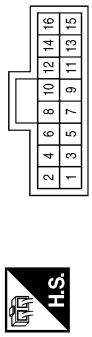
Terminal No.	Color of Wire	Signal Name
9	R/L	–

Connector No.	M202
Connector Name	WIRE TO WIRE
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
12	BR	–

Connector No.	M205
Connector Name	DVD PLAYER
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
10	BR	ILL-
12	R/L	LIGHTING SW

ABLIA0201GB

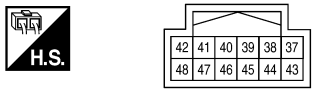
Connector No.	M254
Connector Name	WIRE TO WIRE
Connector Color	BROWN

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

Connector No.	M256
Connector Name	A/T DEVICE
Connector Color	BLACK

Terminal No.	Color of Wire	Signal Name
13	R/L	–
14	BR	–

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



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

Connector No.	E123
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM
Connector Color	BROWN

Terminal No.	Color of Wire	Signal Name
49	R/L	ILLUMINATION

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

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

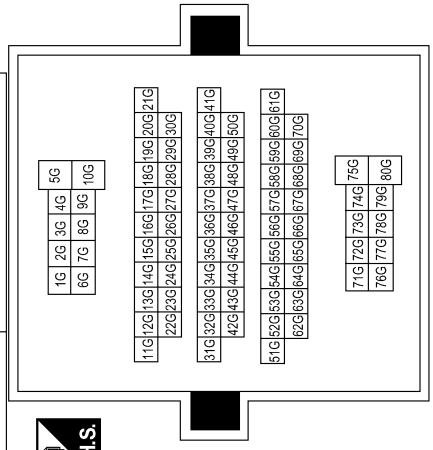
Connector No.	E139
Connector Name	WIRE TO WIRE
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
6	R/L	–

ABLIA0202GB

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

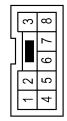
H.S.



Terminal No.	Color of Wire	Signal Name
7G	L/W	–
10G	W/B	–
31G	L	–
37G	R/L	–
42G	P	–

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

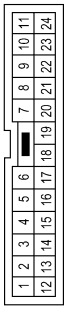
H.S.



Terminal No.	Color of Wire	Signal Name
6	R/L	–

Connector No.	B146
Connector Name	WIRE TO WIRE
Connector Color	BROWN

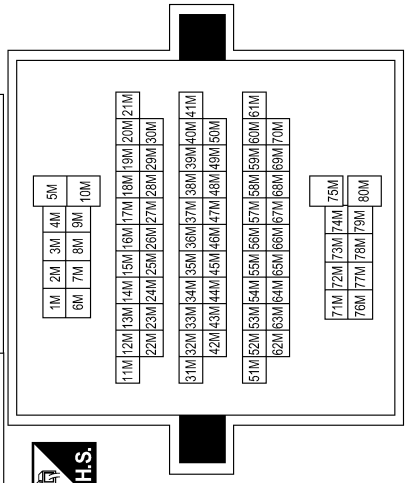
H.S.



Terminal No.	Color of Wire	Signal Name
1	B	–
23	R/L	–

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

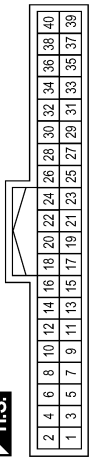
H.S.



Terminal No.	Color of Wire	Signal Name
28M	R/L	–

Connector No.	B151
Connector Name	NAVI CONTROL UNIT
Connector Color	WHITE

H.S.

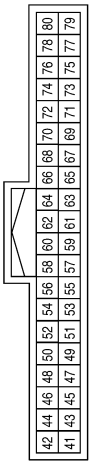


Terminal No.	Color of Wire	Signal Name
1	BR	GND

ABLIA0203GB

Connector No.	B152
Connector Name	NAVI CONTROL UNIT
Connector Color	WHITE

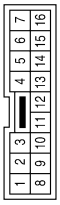
H.S.



Terminal No.	Color of Wire	Signal Name
53	R/L	ILL

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

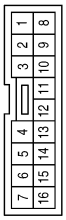
H.S.



Terminal No.	Color of Wire	Signal Name
7	R/L	–
9	BR	–
11	R/L	–
16	BR	–

Connector No.	R6
Connector Name	WIRE TO WIRE
Connector Color	WHITE

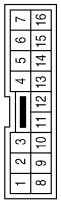
H.S.



Terminal No.	Color of Wire	Signal Name
11	BR	–
13	R/L	–
15	BR	–
16	R/L	–

Connector No.	R101
Connector Name	WIRE TO WIRE
Connector Color	WHITE

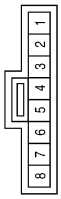
H.S.



Terminal No.	Color of Wire	Signal Name
11	BR	–
13	R/L	–
15	BR	–
16	R/L	–

Connector No.	R102
Connector Name	FRONT ROOM/MAP LAMP ASSEMBLY
Connector Color	GRAY

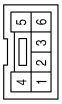
H.S.



Terminal No.	Color of Wire	Signal Name
7	R/L	ILL+
8	BR	ILL-

Connector No.	R103
Connector Name	REAR POWER DROP GLASS SWITCH
Connector Color	WHITE

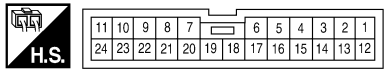
H.S.



Terminal No.	Color of Wire	Signal Name
2	BR	–
4	R/L	–

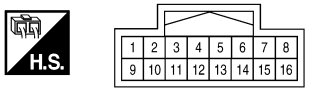
ABLIA0204GB

Connector No.	R201
Connector Name	WIRE TO WIRE
Connector Color	BROWN



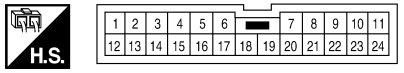
Terminal No.	Color of Wire	Signal Name
1	B	–
23	R/L	–

Connector No.	R204
Connector Name	REAR AUDIO REMOTE CONTROL UNIT
Connector Color	WHITE



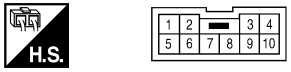
Terminal No.	Color of Wire	Signal Name
6	R/L	ILL+
15	B	GND

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



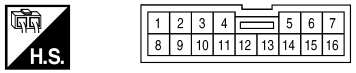
Terminal No.	Color of Wire	Signal Name
22	R/L	–

Connector No.	D3
Connector Name	WIRE TO WIRE
Connector Color	WHITE



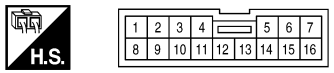
Terminal No.	Color of Wire	Signal Name
4	BR	–

Connector No.	D10
Connector Name	DOOR MIRROR REMOTE CONTROL SWITCH (WITH AUTOMATIC DRIVE POSITIONER)
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
8	BR	–
9	R/L	–

Connector No.	D13
Connector Name	DOOR MIRROR REMOTE CONTROL SWITCH (WITHOUT AUTOMATIC DRIVE POSITIONER)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
8	BR	–
9	R/L	–

ABLIA0205GB

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000004207556

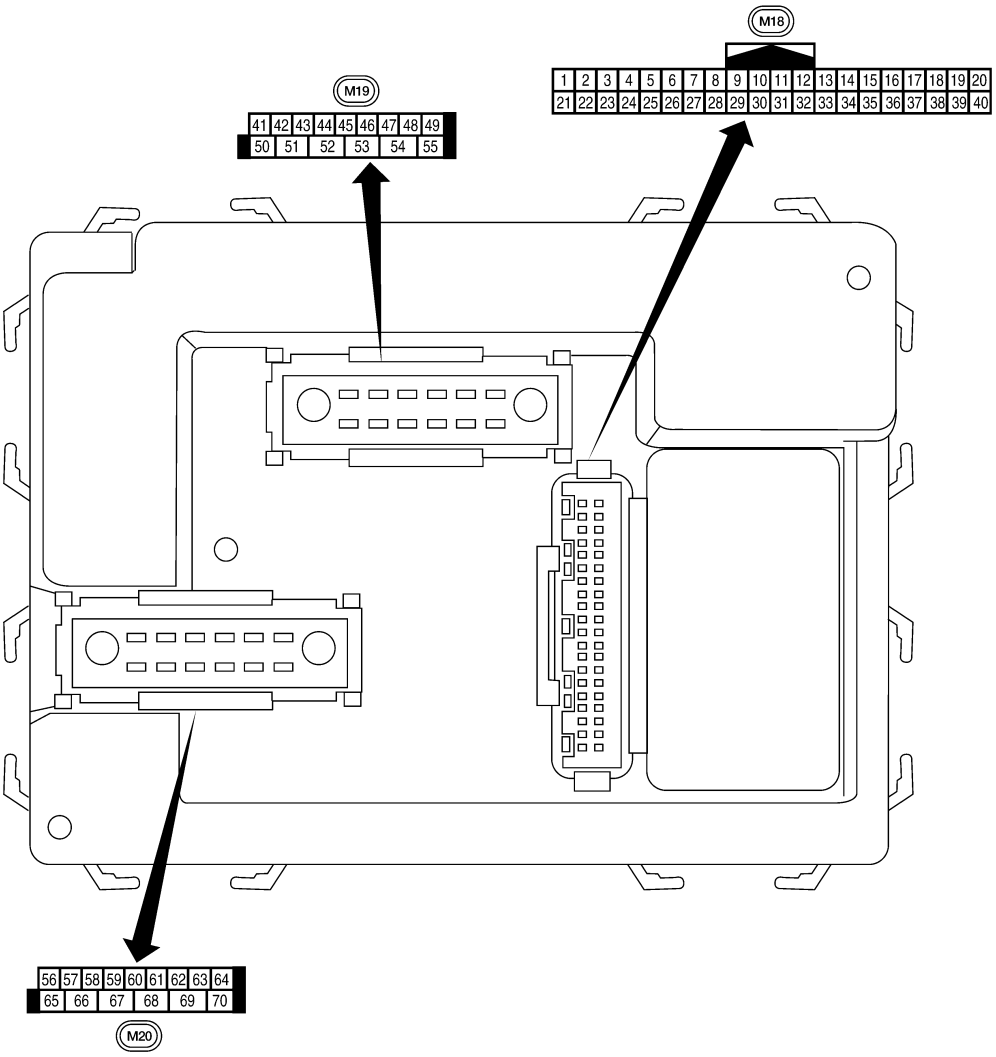
VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
AIR COND SW	A/C switch OFF	OFF
	A/C switch ON	ON
AUT LIGHT SYS	Outside of the room is dark	OFF
	Outside of the room is bright	ON
AUTO LIGHT SW	Lighting switch OFF	OFF
	Lighting switch AUTO	ON
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
ENGINE RUN	Engine stopped	OFF
	Engine running	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
LIGHT SW 1ST	Lighting switch OFF	OFF
	Lighting switch 1st	ON
HEADLAMP SW1	Headlamp switch OFF	OFF
	Headlamp switch 1st	ON

Monitor Item	Condition	Value/Status
HEADLAMP SW2	Headlamp switch OFF	OFF
	Headlamp switch 1st	ON
HI BEAM SW	High beam switch OFF	OFF
	High beam switch HI	ON
H/L WASH SW	**NOTE:** The item is indicated, but not monitored	OFF
IGN ON SW	Ignition switch OFF or ACC	OFF
	Ignition switch ON	ON
IGN SW CAN	Ignition switch OFF or ACC	OFF
	Ignition switch ON	ON
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7
KEY ON SW	Key is removed from key cylinder	OFF
	Key is inserted to key cylinder	ON
KEYLESS LOCK	LOCK button of key fob is not pressed	OFF
	LOCK button of key fob is pressed	ON
KEYLESS UNLOCK	UNLOCK button of key fob is not pressed	OFF
	UNLOCK button of key fob is pressed	ON
OIL PRESS SW	• Ignition switch OFF or ACC • Engine running	OFF
	Ignition switch ON	ON
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
RKE LOCK AND UN-LOCK	**NOTE:** The item is indicated, but not monitored	OFF
		ON
TAIL LAMP SW	Lighting switch OFF	OFF
	Lighting switch 1ST	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

Terminal Layout

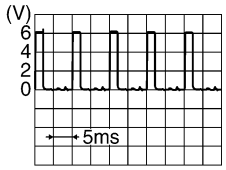
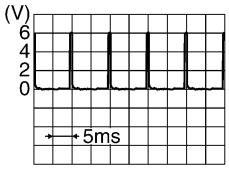
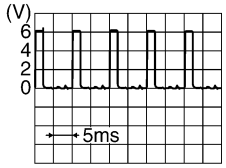
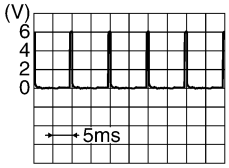
INFOID:0000000004207557

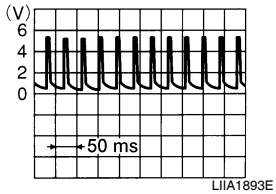
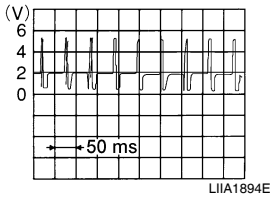
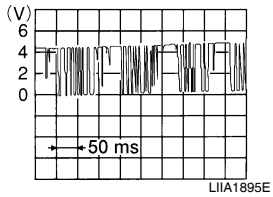
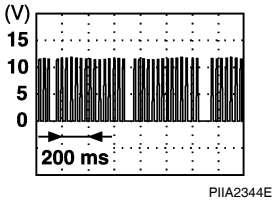


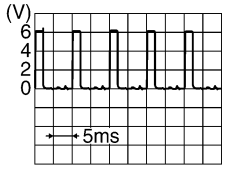
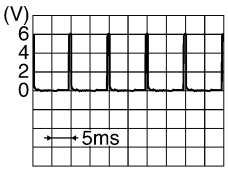
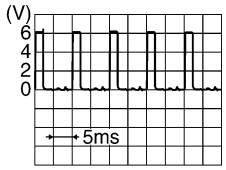
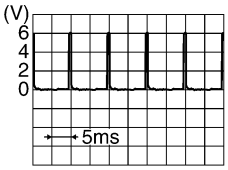
LIIA2443E

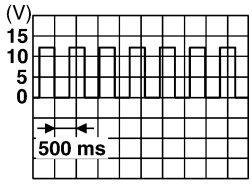
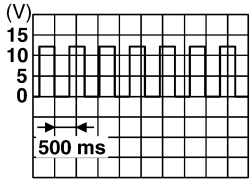
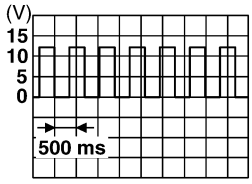
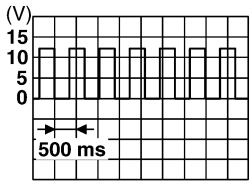
Physical Values

INFOID:0000000004207558

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
1	BR/W	Ignition keyhole illumination	Output	OFF	Door is locked (SW OFF)	Battery voltage
					Door is unlocked (SW OFF)	0V
2	SB	Combination switch input 5	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
3	G/Y	Combination switch input 4	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
4	Y	Combination switch input 3	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
5	G/B	Combination switch input 2	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
6	V	Combination switch input 1				
9	Y/B	Rear window defogger switch (Crew Cab)	Input	ON	Rear window defogger switch ON	0V
					Rear window defogger switch OFF	5V
11	O	Ignition switch (ACC or ON)	Input	ACC or ON	Ignition switch ACC or ON	Battery voltage
12	R/L	Front door switch RH (All)	Input	OFF	ON (open)	0V
		Rear door switch lower RH (King Cab)				
		Rear door switch upper RH (King Cab)			OFF (closed)	Battery voltage
13	GR	Rear door switch RH (Crew Cab)	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
15	L/W	Tire pressure warning check connector	Input	OFF	—	5V

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
18	P	Remote keyless entry receiver and optical sensor (ground)	Output	OFF	—	0V
19	V/W	Remote keyless entry receiver (power supply)	Output	OFF	Ignition switch OFF	
20	G/W	Remote keyless entry receiver (signal)	Input	OFF	Stand-by (keyfob buttons released)	
					When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed)	
21	G	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
22	G	BUS	—	—	Ignition switch ON or power window timer operates	
23	G/O	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 for approx. 1 second, then return to battery voltage.
27	W/R	Compressor ON signal	Input	ON	A/C switch OFF	5V
					A/C switch ON	0V
28	L/R	Front blower monitor	Input	ON	Front blower motor OFF	Battery voltage
					Front blower motor ON	0V
29	W/B	Hazard switch	Input	OFF	ON	0V
					OFF	5V
31	P/L	Cargo lamp switch	Input	OFF	Cargo lamp switch ON	0
					Cargo lamp switch OFF	Battery voltage

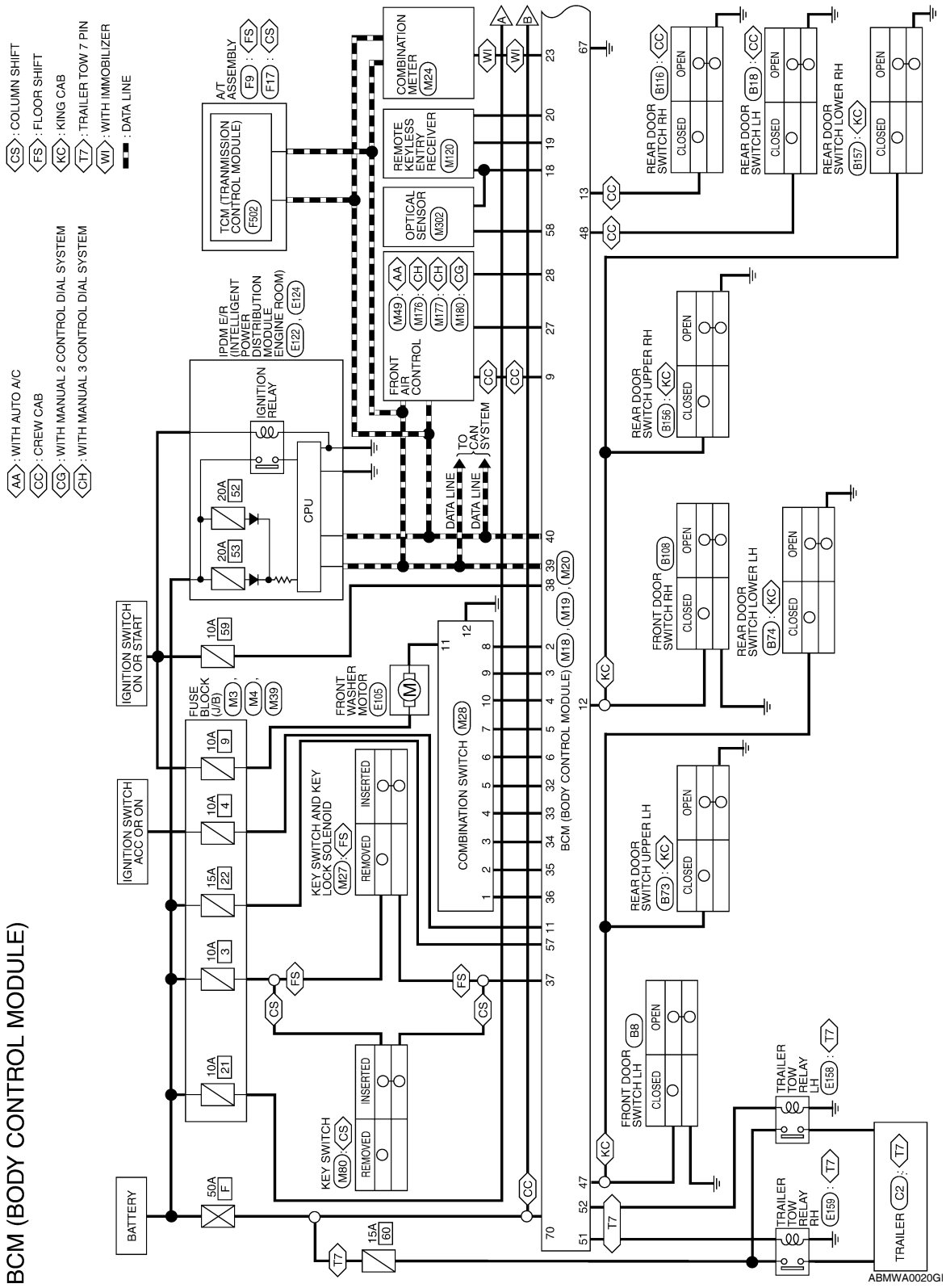
Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
32	R/G	Combination switch output 5	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
33	R/Y	Combination switch output 4	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
34	L	Combination switch output 3	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
35	O/B	Combination switch output 2	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
36	R/W	Combination switch output 1				
37	B/R	Key switch and key lock solenoid	Input	OFF	Key inserted	Battery voltage
					Key inserted	0V
38	W/L	Ignition switch (ON)	Input	ON	—	Battery voltage
39	L	CAN-H	—	—	—	—
40	P	CAN-L	—	—	—	—
47	SB	Front door switch LH (All)	Input	OFF	ON (open)	0V
		Rear door switch lower LH (King Cab)				
		Rear door switch upper LH (King Cab)			OFF (closed)	Battery voltage
48	R/Y	Rear door switch LH (Crew Cab)	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
50	R/Y	Cargo bed lamp control	Output	OFF	Cargo lamp switch (ON)	0V
					Cargo lamp switch (OFF)	Battery voltage

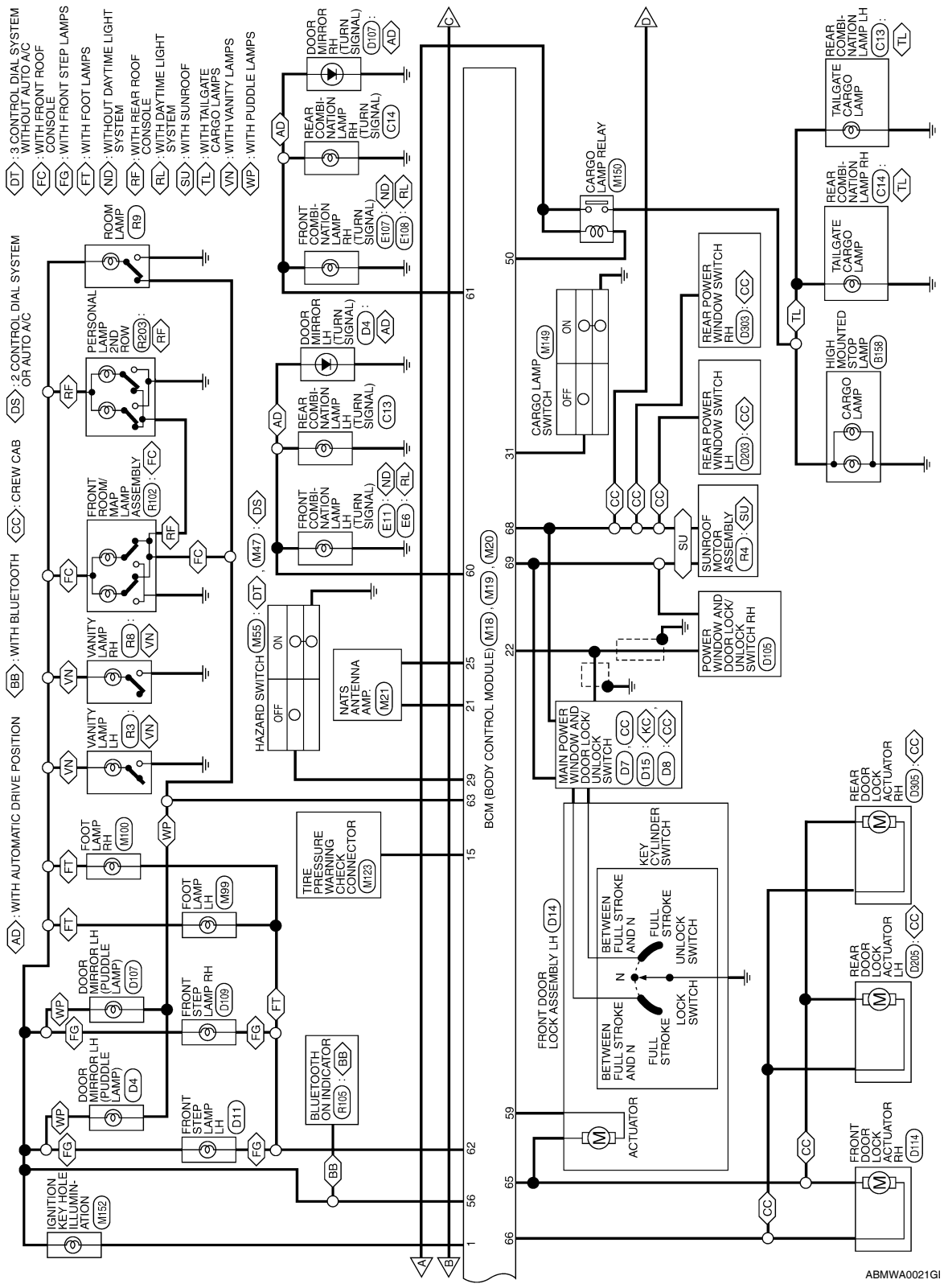
Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
51	G/Y	Trailer turn signal (right)	Output	ON	Turn right ON	 SKIA3009J
52	G/B	Trailer turn signal (left)	Output	ON	Turn left ON	 SKIA3009J
56	R/G	Battery saver output	Output	OFF	30 minutes after ignition switch is turned OFF	0V
				ON	—	Battery voltage
57	Y/R	Battery power supply	Input	OFF	—	Battery voltage
58	W/R	Optical sensor	Input	ON	When optical sensor is illuminated	3.1V or more
					When optical sensor is not illuminated	0.6V or less
59	G	Front door lock assembly LH actuator (unlock)	Output	OFF	OFF (neutral)	0V
					ON (unlock)	Battery voltage
60	G/B	Turn signal (left)	Output	ON	Turn left ON	 SKIA3009J
61	G/Y	Turn signal (right)	Output	ON	Turn right ON	 SKIA3009J
62	R/W	Step lamp LH and RH	Output	OFF	ON (any door open)	0V
					OFF (all doors closed)	Battery voltage
63	L	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
66	G/Y	Front door lock actuator RH and rear door lock actuators LH/RH (unlock)	Output	OFF	OFF (neutral)	0V
					ON (unlock)	Battery voltage

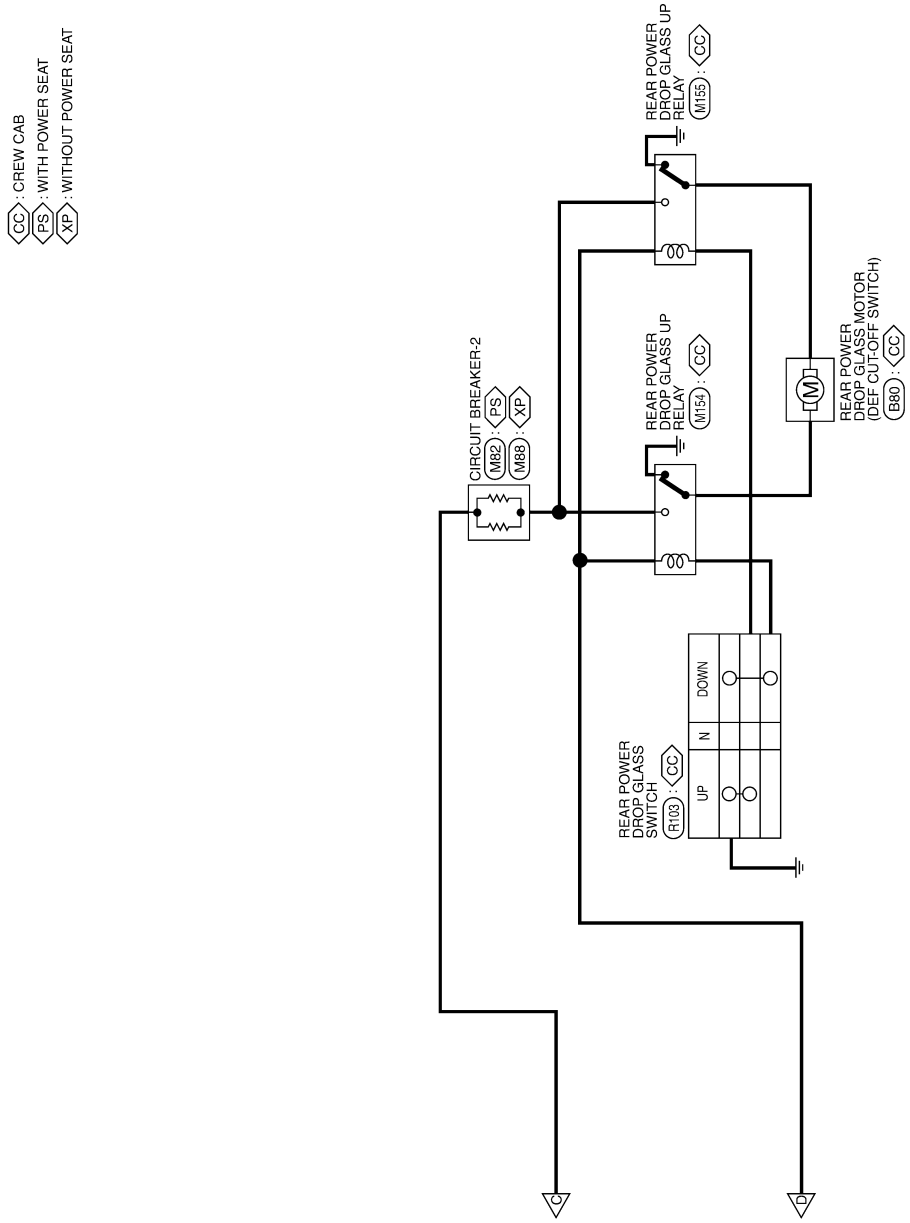
Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
67	B	Ground	Input	ON	—	0V
68	W/L	Power window power supply (RAP)	Output	—	Ignition switch ON	Battery voltage
					Within 45 seconds after ignition 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	W/R	Power window power supply	Output	—	—	Battery voltage
70	W/B	Battery power supply	Input	OFF	—	Battery voltage

Wiring Diagram

INFOID:0000000004207559




DT : 3 CONTROL DIAL SYSTEM WITHOUT AUTO A/C
FC : WITH FRONT ROOF CONSOLE
FG : WITH FRONT STEP LAMPS
FT : WITH FOOT LAMPS
ND : WITHOUT DAYTIME LIGHT SYSTEM
RF : WITH REAR ROOF CONSOLE
RL : WITH DAYTIME LIGHT SYSTEM
SU : WITH SUNROOF
TL : WITH TAILGATE CARGO LAMPS
VN : WITH VANITY LAMPS
WP : WITH PUDDLE LAMPS
DS : 2 CONTROL DIAL SYSTEM OR AUTO A/C
CC : CREW CAB
BB : WITH BLUETOOTH
AD : WITH AUTOMATIC DRIVE POSITION
ROOM LAMP (R9)
PERSONAL LAMP 2ND ROW (R203)
FRONT ROOM/ MAP LAMP ASSEMBLY (R102)
VANITY LAMP RH (R8)
VANITY LAMP LH (R3)
FOOT LAMP RH (M100)
FOOT LAMP LH (M99)
DOOR MIRROR LH (PUDDLE LAMP) (D107)
DOOR MIRROR LH (PUDDLE LAMP) (D4)
FRONT STEP LAMP RH (D109)
FRONT STEP LAMP LH (D11)
IGNITION KEY HOLE ILLUMIN-ATION (M152)
BLUETOOTH ON INDICATOR (R105)
TIRE PRESSURE WARNING CHECK CONNECTOR (M123)
DOOR MIRROR RH (TURN SIGNAL) (D107)
REAR COMBI-NATION LAMP RH (TURN SIGNAL) (C14)
FRONT COMBI-NATION LAMP RH (TURN SIGNAL) (E107) (E108)
DOOR MIRROR LH (TURN SIGNAL) (D4)
REAR COMBI-NATION LAMP LH (TURN SIGNAL) (C13)
FRONT COMBI-NATION LAMP LH (TURN SIGNAL) (E11) (E6)
HAZARD SWITCH (M55)
OFF
ON
NATS ANTENNA AMP. (M21)
BCM (BODY CONTROL MODULE) (M18) (M19) (M20) (M47)
CARGO LAMP RELAY (M150)
CARGO LAMP SWITCH (M149)
REAR POWER WINDOW SWITCH RH (D303)
REAR POWER WINDOW SWITCH LH (D203)
SUNROOF MOTOR ASSEMBLY (R4)
POWER WINDOW AND DOOR LOCK/ UNLOCK SWITCH RH (D105)
MAIN POWER WINDOW AND DOOR LOCK/ UNLOCK SWITCH (D7) (D15) (D8)
TAILGATE CARGO LAMP
REAR COMBI-NATION LAMP LH (C13)
REAR COMBI-NATION LAMP RH (C14)
HIGH MOUNTED STOP LAMP (B158)
CARGO LAMP
KEY CYLINDER SWITCH
BETWEEN FULL STROKE AND N
FULL STROKE
UNLOCK SWITCH
LOCK SWITCH
FRONT DOOR LOCK ASSEMBLY LH (D14)
ACTUATOR
REAR DOOR LOCK ACTUATOR RH (D305)
REAR DOOR LOCK ACTUATOR LH (D205)
FRONT DOOR LOCK ACTUATOR RH (D114)
ABMWA0021GI



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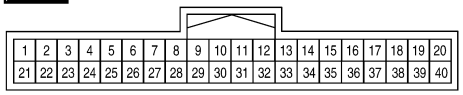
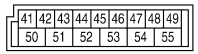
BCM (BODY CONTROL MODULE) CONNECTORS

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



Terminal No.	Color of Wire	Signal Name
1	BR/W	KEY RING OUTPUT
2	SB	INPUT 5
3	G/Y	INPUT 4
4	Y	INPUT 3
5	G/B	INPUT 2
6	V	INPUT 1
7	–	–
8	–	–
9	Y/B	REAR DEFOGGER SW
10	–	–
11	O	ACC SW
12	R/L	DOOR SW (AS)
13	GR	DOOR SW (RR)
14	–	–
15	L/W	TPMS MODE TRIGGER SW
16	–	–
17	–	–
18	P	KEYLESS AND AUTO LIGHT SENSOR GND
19	V/W	KEYLESS TUNER POWER SUPPLY OUTPUT
20	G/W	KEYLESS TUNER SIGNAL
21	G	IMMOBILIZER ANTENNA SIGNAL (CLOCK)
22	G	ANTI-PINCH SERIAL LINK (RX,TX)
23	G/O	SECURITY INDICATOR OUTPUT
24	–	–
25	BR	IMMOBILIZER ANTENNA SIGNAL (RX, TX)
26	–	–
27	W/R	AIRCON SW
28	L/R	BLOWER FAN SW
29	W/B	HAZARD SW
30	–	–
31	P/L	CARGO LAMP SW
32	R/G	OUTPUT 5
33	R/Y	OUTPUT 4
34	L	OUTPUT 3
35	O/B	OUTPUT 2
36	R/W	OUTPUT 1
37	B/R	KEY SW
38	W/L	IGN SW
39	L	CAN-H
40	P	CAN-L

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



Terminal No.	Color of Wire	Signal Name
41	–	–
42	–	–
43	–	–
44	–	–
45	–	–
46	–	–
47	SB	DOOR SW (DR)
48	R/Y	DOOR SW (RL)
49	–	–
50	R/Y	CARGO LAMP OUTPUT
51	G/Y	TRAILER FLASHER OUTPUT (RIGHT)
52	G/B	TRAILER FLASHER OUTPUT (LEFT)
53	–	–
54	–	–
55	–	–

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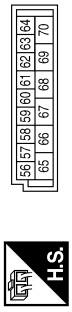
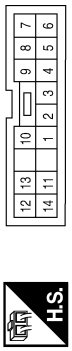
Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
56	R/G	BATTERY SAVER OUTPUT
57	Y/R	BAT (FUSE)
58	W/R	AUTO LIGHT SENSOR INPUT 2
59	G	DOOR UNLOCK OUTPUT (DR)
60	G/B	FLASHER OUTPUT (LEFT)
61	G/Y	FLASHER OUTPUT (RIGHT)
62	R/W	STEP LAMP OUTPUT
63	L	ROOM LAMP
64	–	–
65	V	DOOR LOCK OUTPUT (ALL)
66	G/Y	DOOR UNLOCK OUTPUT (OTHER)
67	B	GND (POWER)
68	W/L	POWER WINDOW POWER SUPPLY (RAP)
69	W/R	POWER WINDOW POWER SUPPLY (BAT)
70	W/B	BAT (F/L)

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	R/W	INPUT 1
2	O/B	INPUT 2
3	L	INPUT 3
4	R/Y	INPUT 4
5	R/G	INPUT 5
6	V	OUTPUT 1
7	G/B	OUTPUT 2
8	SB	OUTPUT 5
9	G/Y	OUTPUT 4
10	Y	OUTPUT 3
11	V/W	WASHER MOTOR
12	B	GND
13	–	–
14	–	–

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Fail Safe

INFOID:0000000004207560

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.
U1010: CONTROL UNIT (CAN)	Inhibit engine cranking	When the BCM re-start communicating with the other modules.

DTC Inspection Priority Chart

INFOID:0000000004207561

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 • U1010: CONTROL UNIT (CAN)
2	• B2190: NATS ANTENNA AMP • B2191: DIFFERENCE OF KEY • B2192: ID DISCORD BCM-ECM • B2193: CHAIN OF BCM-ECM
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:0000000004207562

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	Tire pressure monitor warning lamp ON	Reference page
No DTC is detected. further testing may be required.	—	—	—
U1000: CAN COMM CIRCUIT	—	—	BCS-28
U1010: CONTROL UNIT (CAN)	—	—	BCS-29
B2190: NATS ANTTENA AMP	—	—	SEC-17
B2191: DIFFERENCE OF KEY	—	—	SEC-20
B2192: ID DISCORD BCM-ECM	—	—	SEC-21
B2193: CHAIN OF BCM-ECM	—	—	SEC-23
C1708: [NO DATA] FL	—	—	WT-14
C1709: [NO DATA] FR	—	—	WT-14
C1710: [NO DATA] RR	—	—	WT-14
C1711: [NO DATA] RL	—	—	WT-14
C1712: [CHECKSUM ERR] FL	—	—	WT-16
C1713: [CHECKSUM ERR] FR	—	—	WT-16
C1714: [CHECKSUM ERR] RR	—	—	WT-16
C1715: [CHECKSUM ERR] RL	—	—	WT-16
C1716: [PRESSDATA ERR] FL	—	—	WT-18
C1717: [PRESSDATA ERR] FR	—	—	WT-18
C1718: [PRESSDATA ERR] RR	—	—	WT-18
C1719: [PRESSDATA ERR] RL	—	—	WT-18
C1720: [CODE ERR] FL	—	—	WT-16
C1721: [CODE ERR] FR	—	—	WT-16
C1722: [CODE ERR] RR	—	—	WT-16
C1723: [CODE ERR] RL	—	—	WT-16
C1724: [BATT VOLT LOW] FL	—	—	WT-16
C1725: [BATT VOLT LOW] FR	—	—	WT-16
C1726: [BATT VOLT LOW] RR	—	—	WT-16
C1727: [BATT VOLT LOW] RL	—	—	WT-16
C1729: VHCL SPEED SIG ERR	—	—	WT-19
C1735: IGNITION SIGNAL	—	—	WT-20

SYMPTOM DIAGNOSIS

INTERIOR LIGHTING SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000003789432

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

Symptom	Possible cause	Inspection item
All of the following lamps do not turn ON • Room lamp (if equipped) • Front room/map lamp assembly (if equipped) • Personal lamp 2nd (if equipped) • Vanity lamps (if equipped) • Front step lamps (if equipped) • Puddle lamps (if equipped) • Foot lamps (if equipped)	• Harness between BCM and each interior room lamp • BCM	Battery saver output/power supply circuit. Refer toINL-17, "Description" .
Some or all of the following interior room lamps do not turn ON/OFF • Room lamp (if equipped) • Puddle lamps (if equipped) • Front room/map lamp assembly (if equipped) • Personal lamp 2nd row (if equipped)	• Harness between BCM and each door switch • Harness between BCM and each interior room lamp • BCM	Door switch circuit Refer to DLK-26, "KING CAB : Diagnosis Procedure" (king cab) or DLK-28, "CREW CAB : Diagnosis Procedure" (crew cab). Interior room lamp control circuit. Refer to INL-19, "Description".
Some or all of the following lamps do not turn ON/OFF • Front step lamps • Foot lamps (if equipped)	• Harness between BCM and step lamps and foot lamps • BCM	Step lamp circuit. Refer to INL-22, "Description".
Cargo lamp and tailgate cargo lamps (if equipped) do not turn ON/OFF	• Harness between BCM and cargo lamp relay • Harness between cargo lamp relay and cargo lamps • BCM • Cargo lamp relay	Cargo lamp control circuit. Refer to INL-24, "Description".
Ignition keyhole illumination does not turn ON/OFF	• Harness between BCM and ignition keyhole illumination • BCM	Ignition keyhole illumination control circuit. Refer to INL-28, "Description"
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-13, "INT LAMP : CONSULT-III Function (BCM - INT LAMP)".
Interior room lamp battery saver does not activate.	—	Check the interior room lamp battery saver setting. Refer to INL-14, "BATTERY SAVER : CONSULT-III Function (BCM - BATTERY SAVER)".

PRECAUTION

PRECAUTIONS

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

INFOID:0000000003789433

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.**

General precautions for service operations

INFOID:0000000003789434

- When removing or disassembling any part, be careful not to damage or deform it. Protect parts which may get in the way with cloth.
- When removing parts with a screw driver or other tool, protect parts by wrapping them with vinyl or tape.
- Keep removed parts protected with cloth.
- If an non-reuseable part is removed, replace it with a new one.
- After re-assembly has been completed, make sure each part functions correctly.
- Never work with wet hands.
- Turn the lighting switch OFF before disconnecting and connecting the connector.
- Do not use organic solvent (paint thinner or gasoline) to clean lamps or remove sealant residue.

ON-VEHICLE REPAIR

INTERIOR ROOM LAMP

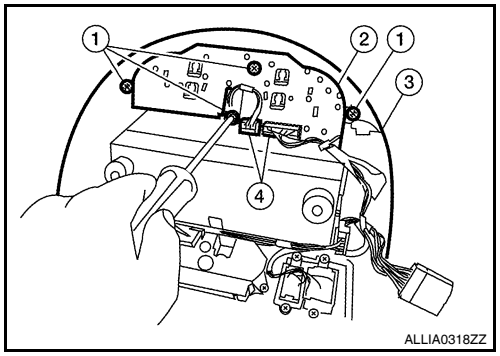
Removal and Installation

INFOID:0000000003789435

ROOM/MAP LAMP

Removal

1. Disconnect the negative battery terminal.
2. Remove overhead console (3). Refer to INT-21, "Removal and Installation".
3. Disconnect connectors (4) and remove the room/map lamp screws (1), then remove room/map lamp (2) from overhead console (3).



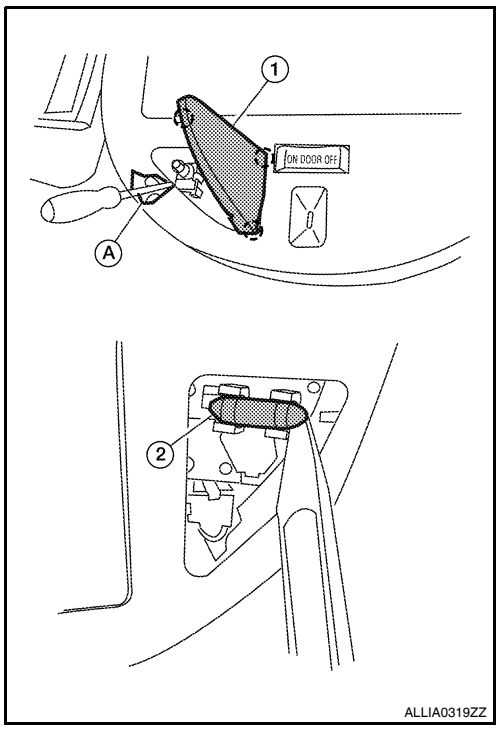
Installation

Installation is in the reverse order of removal.

Bulb Replacement

1. Disconnect the negative battery terminal.
2. Using a suitable tool (A), remove room/map lamp lens (1).
   ◌: Pawl
   CAUTION:
   Wrap a cloth around suitable tool (A) to protect the housing and lens (1).
3. Release one side of the bulb (2) from the tab, then pull straight downward to remove.

Room/map lamp bulb : 12V - 6W



VANITY MIRROR LAMP

Removal

The vanity mirror lamp is replaced as part of the sunvisor assembly. Refer to INT-21, "Removal and Installation".

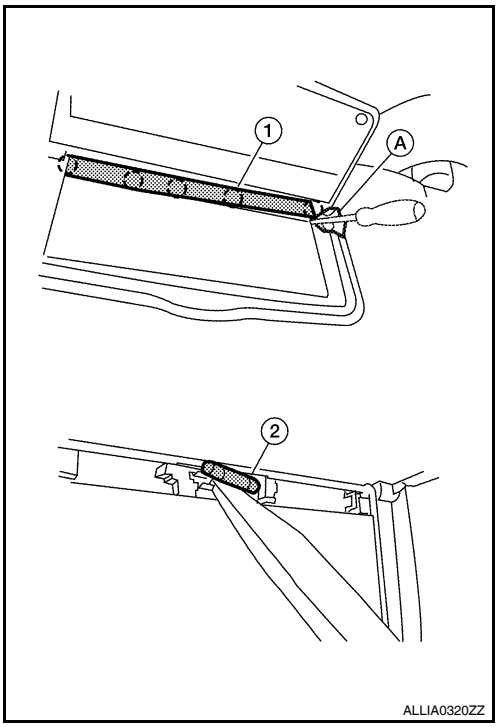
Installation

Installation is in the reverse order of removal.

Bulb Replacement

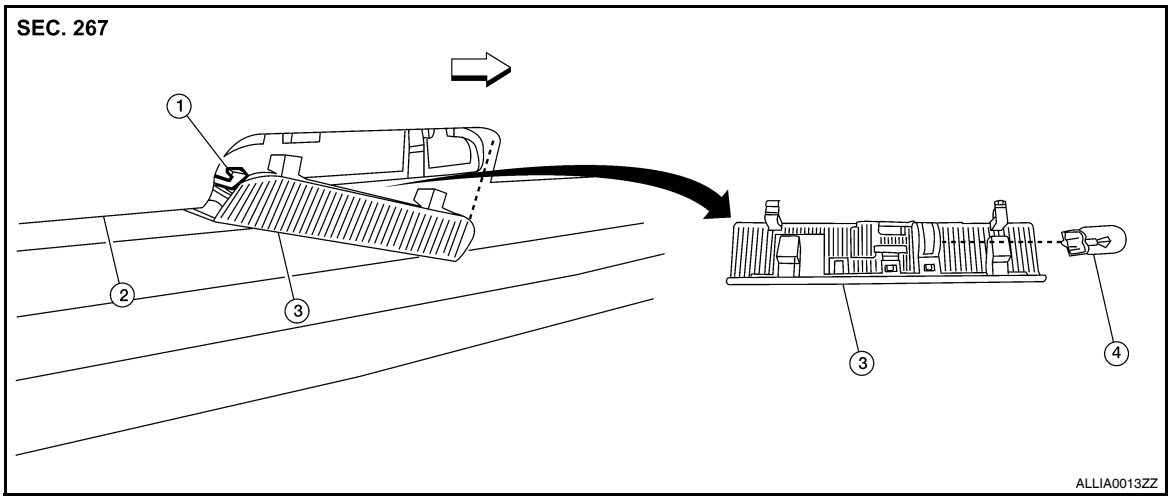
1. Disconnect the negative battery terminal.
2. Using a suitable tool (A), release the tabs and remove the vanity mirror lamp lens (1).
   ◌: Pawl
   CAUTION:
   Wrap a cloth around suitable tool (A) to protect the housing and lens.
3. Release one side of the bulb (2) from the tab, then pull straight out to remove.

Vanity mirror lamp bulb : 12V - 1.8W



STEP LAMP

Removal



1. Step lamp connector
2. Door finisher
3. Step lamp lens/socket
4. Step lamp bulb

⇦ Vehicle front

1. Disconnect the negative battery terminal.
2. Insert a suitable tool between door finisher and step lamp lens/socket to release the pawls.
   CAUTION:
   Wrap a cloth around the suitable tool to protect door finisher and lens.
3. Disconnect the step lamp connector, then remove step lamp.

Installation

Installation is in the reverse order of removal.

Bulb Replacement

1. Disconnect the negative battery terminal.

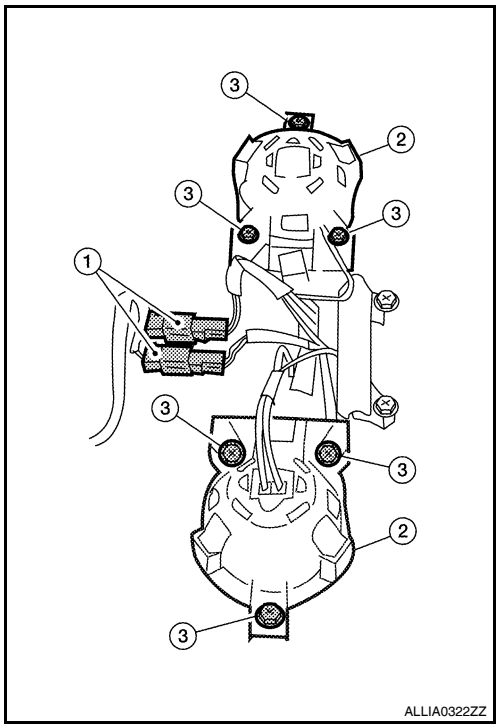
2. Remove the step lamp lens/socket.
3. Pull the bulb straight out to remove.

Step lamp bulb : 12V - 3.8W

PERSONAL LAMP - TYPE A (if equipped)

Removal

1. Disconnect the negative battery terminal.
2. Remove overhead console. Refer to INT-21, "Removal and Installation".
3. Remove personal lamp screws (3).
4. Disconnect personal lamp electrical connectors (1), then remove personal lamp (2) from overhead console.

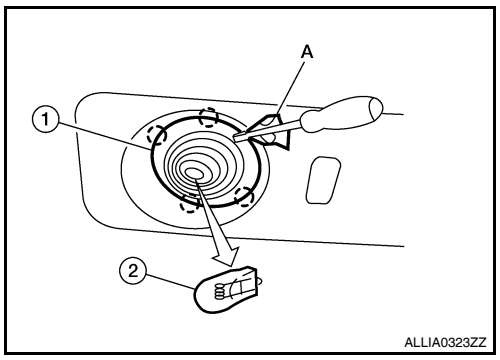


Installation

Installation is in the reverse order of removal.

Bulb Replacement

1. Disconnect the negative battery terminal.
2. Using a suitable tool (A), release the pawls and remove personal lamp lens (1).
   (⌒): Pawl
   CAUTION:
   Wrap a cloth around suitable tool (A) to protect the housing and lens (1).
3. Pull bulb (2) straight out to remove.



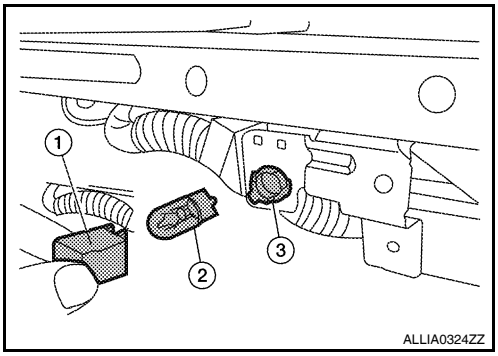
Personal lamp bulb (type A) : 12V - 8W

FOOTWELL LAMP

Removal

1. Disconnect the negative battery terminal.

2. Rotate footwell lamp socket (3) counterclockwise from bracket.



Installation

Installation is in the reverse order of removal.

Bulb Replacement

1. Disconnect the negative battery terminal.
2. Release the pawls and remove bulb shield (1) from bracket.
3. Pull bulb (2) straight out from footwell lamp socket (3) to remove.

Footwell lamp bulb : 12V - 3.4W

ILLUMINATION

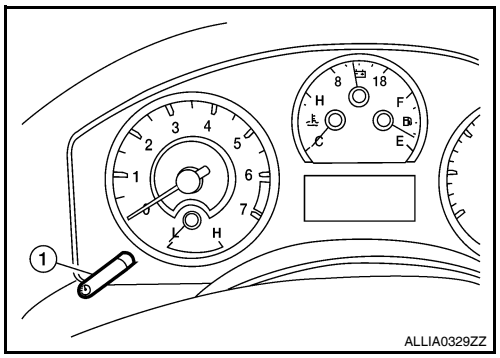
Removal and Installation

INFOID:0000000003789436

ILLUMINATION CONTROL SWITCH

Removal

The illumination control switch (1) is replaced as a part of the combination meter assembly. Refer to MWI-103, "Removal and Installation".



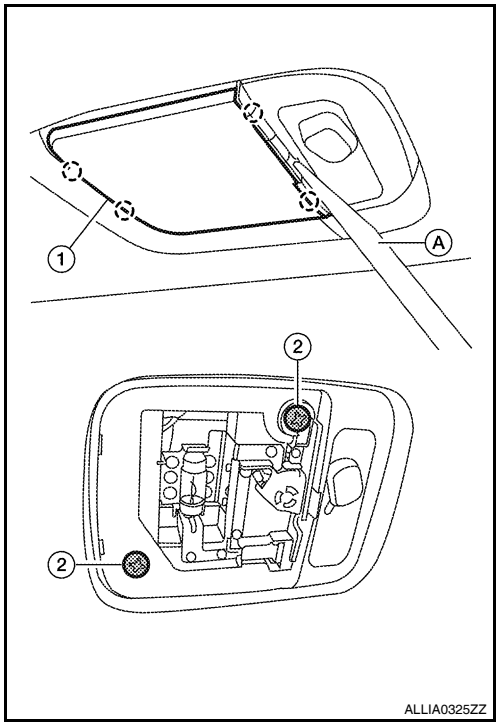
Installation

Installation is in the reverse order of removal.

PERSONAL LAMP - TYPE B (if equipped)

Removal

1. Disconnect the negative battery terminal.
2. Using a suitable tool (A), release the pawls and remove the personal lamp lens (1).
3. Remove personal lamp screws (2).
4. Disconnect the connector, then remove personal lamp.



Installation

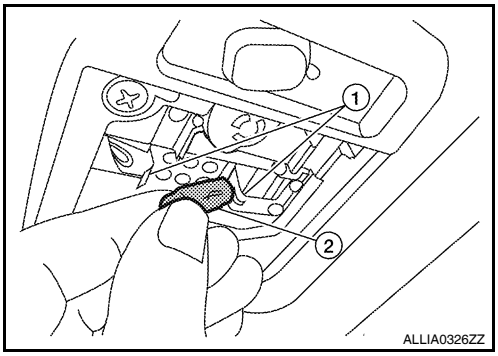
Installation is in the reverse order of removal.

Bulb Replacement

1. Disconnect the negative battery terminal.

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

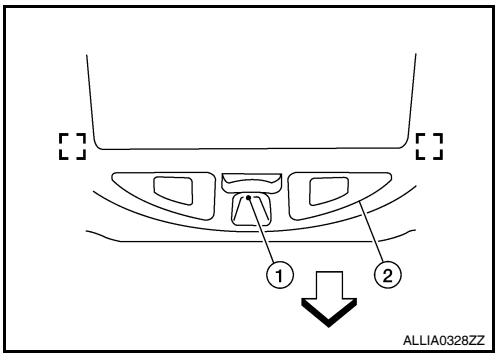
Personal lamp bulb (type B) : 12V - 6W



CONSOLE ILLUMINATION LAMP (if equipped)

Removal

The console illumination lamp (1) is replaced as part of the room/map lamp assembly (2). Refer to INL-75, "Removal and Installation".
⇐: Vehicle front

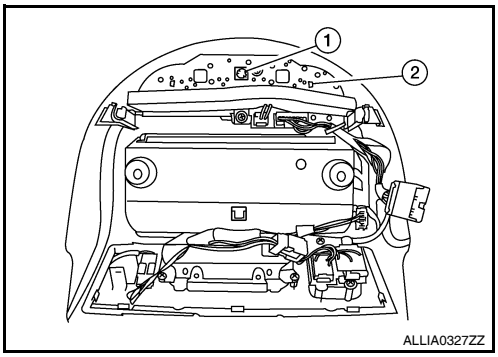


Installation

Installation is in the reverse order of removal.

Bulb Replacement

1. Disconnect the negative battery terminal.
2. Remove overhead console. Refer to INT-21, "Removal and Installation".
3. Rotate console illumination lamp bulb (1) counterclockwise, then pull straight out away from room/map lamp assembly (2) to remove.



SERVICE DATA AND SPECIFICATIONS (SDS)

BULB SPECIFICATIONS

Interior Lamp/Illumination

INFOID:0000000003789437

Item	Wattage (W)*
Room/map lamp	6
Vanity mirror lamp	1.8
Step lamp	3.8
Personal lamp - type A	8
Personal lamp - type B	6
Footwell lamp	3.4
Console illumination lamp	*

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