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# **BASIC INSPECTION**

# DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

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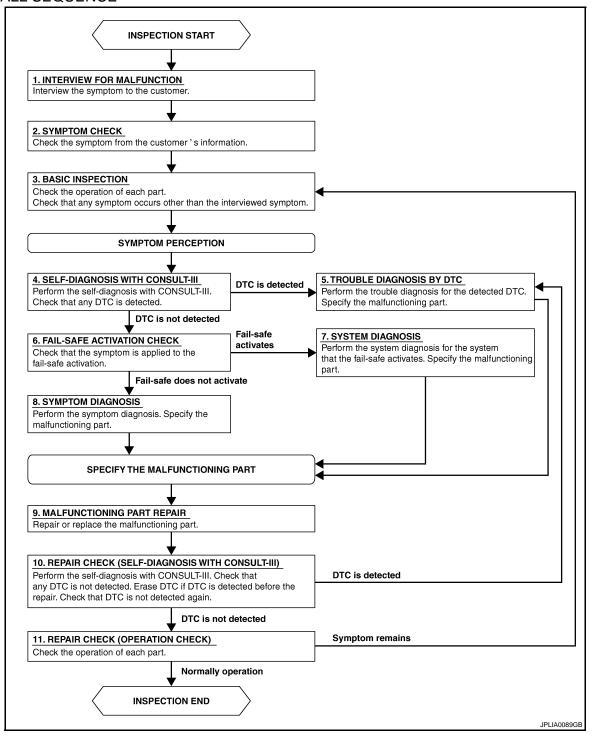
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### **OVERALL SEQUENCE**



INL-3

### **DIAGNOSIS AND REPAIR WORKFLOW**

### < BASIC INSPECTION >

### **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 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

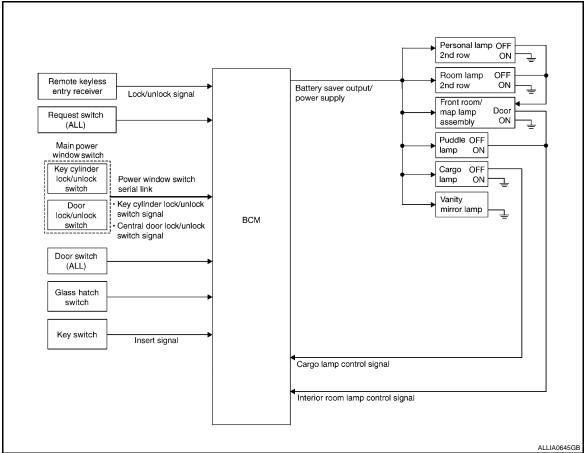
# **DIAGNOSIS AND REPAIR WORKFLOW** < BASIC INSPECTION > NO >> GO TO 11 11. REPAIR CHECK (OPERATION CHECK) Α Check the operation of each part. Does it operate normally? В >> Inspection End >> GO TO 3 YES NO С D Е F G Н J Κ INL M Ν 0

# **FUNCTION DIAGNOSIS**

### INTERIOR ROOM LAMP CONTROL SYSTEM

System Diagram

INFO/D:000000003938839



# System Description

INFOID:0000000003938840

### OUTLINE

- Interior room lamps\* are controlled by the interior room lamp timer control function of the BCM.
   \*Front room/map lamp, personal lamp 2nd row (with rear map lamps) or room lamp 2nd row (without rear map lamps).
- Cargo lamp is controlled by the cargo lamp control function of the BCM.

The timer control functions of the BCM activate based on inputs from the remote keyless entry receiver, the key cylinder lock/unlock switch, the door switches, the key switch (without Intelligent Key) or the key switch and ignition knob switch (with Intelligent Key).

### **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 Intelligent Key, main power window and door lock/unlock switch, or front door lock assembly (key cylinder switch)].
- When a door opens → closes and the Intelligent Key is not inserted in the key slot.

Timer control is cancelled under the following conditions.

- When the front door LH is locked [with Intelligent Key, main power window and door lock/unlock switch, or front door lock assembly (key cylinder switch)].
- A door is opened (door switch turns ON).
- Intelligent Key is inserted into the key slot.

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

### < FUNCTION DIAGNOSIS >

### 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.

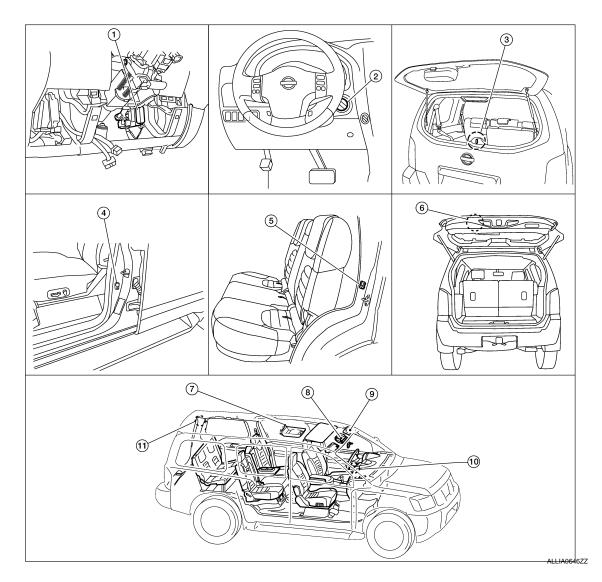
After the battery saver system turns the lamps OFF, the lamps will illuminate again when

- a signal is received from an Intelligent Key or main power window and door lock/unlock switch, or when the front door LH lock assembly (key cylinder switch) is locked or unlocked
- a door is opened or closed
- the Intelligent 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:0000000003938841



- BCM M18, M19, M20 (view with instru- 2. ment panel removed)
- Key switch and ignition knob switch (with Intelligent Key) M66 Key switch (without Intelligent Key) M27
- Front door switch LH B8 Front door switch RH B108
- 5. Rear door switch LH B18 Rear door switch RH B116
- Glass hatch ajar switch D503
- Back door latch (door ajar switch) D502

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### < FUNCTION DIAGNOSIS >

- Personal lamp 2nd row (with personal 8. lamp 2nd row) R10 Room lamp 2nd row (without personal lamp 2nd row) R12
- Front room/map lamp assembly R9
- Vanity lamp LH (with vanity lamps) B80
   Vanity lamp RH (with vanity lamps)
   B81

- 10. Ignition keyhole illumination M150
- 11. Cargo lamp R11

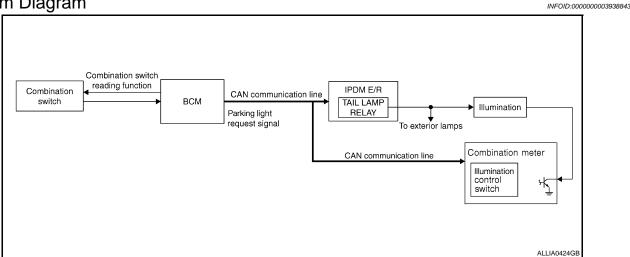
# **Component Description**

INFOID:0000000003938842

Part name	Description	
BCM	Provides power and ground and controls timer functions for the interior room lamps, step lamps and cargo lamp.	
Key switch and ignition knob switch (with Intelligent Key)	Provides key in ignition status to the BCM.	
Key switch (without Intelligent Key)	Provides key in ignition status to the BCM.	
Door switches	Provides door OPEN/CLOSED status to the BCM.	
Glass hatch ajar switch	Provides glass hatch OPEN/CLOSED status to the BCM.	
Back door latch (door ajar switch)	Provides back door OPEN/CLOSED status 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	Provides door lock/unlock position switch LH status to the BCM.	
Front door lock assembly LH (key cylinder switch)	Flovides door lock/unlock position switch Ln status to the BCIVI.	

### ILLUMINATION CONTROL SYSTEM

### System Diagram



# System Description

The illumination lamps 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 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 auto light system is activated) after illumination lamps have been turned off by the battery saver control, the illumination lamps illuminate again.

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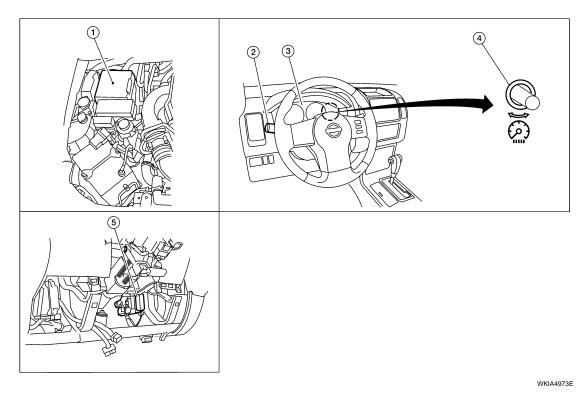
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# **Component Parts Location**

INFOID:0000000003938845



- 1. IPDM E/R E122, E124
- 4. Illumination control switch (built into combination meter)
- 2. Combination switch M28
- BCM M18, M20 (view with instrument panel removed)

Combination meter M24

# **Component Description**

INFOID:0000000003938846

Part name	Description	
ВСМ	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)**

### < FUNCTION DIAGNOSIS >

# **DIAGNOSIS SYSTEM (BCM)**

**COMMON ITEM** 

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

INFOID:0000000004404641

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### 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 INL-62, "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	<ul> <li>Enables to read and save the vehicle specification.</li> <li>Enables to write the vehicle specification when replacing BCM.</li> </ul>	

### SYSTEM APPLICATION

BCM can perform the following functions for each system.

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

Occata as	Out and an all of a first	Diagnosis mode			
System	Sub system selection item	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 <sup>1</sup>	MULTI REMOTE ENT	×	×	×	-
Exterior lamp	HEAD LAMP	×	×	×	
Wiper and washer	WIPER	×	×	×	IN
Turn signal and hazard warning lamps	FLASHER		×	×	
Air conditioner	AIR CONDITONER		×		
Intelligent Key system <sup>2</sup>	INTELLIGENT KEY		×		- 1
Combination switch	COMB SW		×		_
Immobilizer	IMMU		×	×	_
Interior room lamp battery saver	BATTERY SAVER	×	×	×	
Back door open	TRUNK		×	×	_
Theft alarm	THEFT ALM	×	×	×	- (
RAP (retained accessory power)	RETAINED PWR	×	×	×	
Signal buffer system	SIGNAL BUFFER		×	×	_
TPMS (tire pressure monitoring system)	AIR PRESSURE MONITOR	×	×	×	=
Vehicle security system	PANIC ALARM			×	_

<sup>1:</sup> With remote keyless entry system

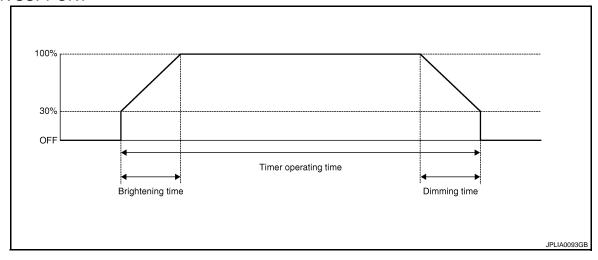
**INT LAMP** 

<sup>2:</sup> With Intelligent Key

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

INFOID:0000000004404642

### **WORK SUPPORT**



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

<sup>\*:</sup> 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	
BACK DOOR SW [ON/OFF]	The switch status input from back door switch	
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	
KEYLESS LOCK <sup>1</sup> [ON/OFF]	Lock signal status received from remote keyless entry receiver (integrated in the BCM)	

# **DIAGNOSIS SYSTEM (BCM)**

### < FUNCTION DIAGNOSIS >

Monitor Item [Unit]	Description
KEYLESS UNLOCK <sup>1</sup> [ON/OFF]	Unlock signal status received from remote keyless entry receiver (integrated in the BCM)
I-KEY LOCK <sup>2</sup> [ON/OFF]	Lock signal status received from Intelligent Key unit by CAN communication
I-KEY UNLOCK <sup>2</sup> [ON/OFF]	Unlock signal status received from Intelligent Key unit by CAN communication

<sup>1:</sup> With remote keyless entry

### **ACTIVE TEST**

Test Item	Operation	Description
INT LAMP	ON	Outputs the interior room lamp control signal to turn the interior room lamps ON.
INT LAWF	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.
STEP ENVIP TEST	OFF	Stops the step lamp control signal to turn the step lamps OFF.
LUGGAGE LAMP TEST ON		Outputs the luggage lamp control signal to turn the luggage lamp ON.
LOGGAGE LAWIF TEST	OFF	Stops the luggage lamp control signal to turn the luggage lamp OFF.

# **BATTERY SAVER**

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

INFOID:0000000004404643

### **WORK SUPPORT**

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

<sup>\*:</sup> 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
BACK DOOR SW [ON/OFF]	The switch status input from back door switch
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
I-KEY LOCK <sup>1</sup> [ON/OFF]	Lock signal status received from Intelligent Key unit by CAN communication
I-KEY UNLOCK <sup>1</sup> [ON/OFF]	Unlock signal status received from Intelligent Key unit by CAN communication

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<sup>2:</sup> With Intelligent Key

# **DIAGNOSIS SYSTEM (BCM)**

# < FUNCTION DIAGNOSIS >

Monitor Item [Unit]	Description
KEYLESS LOCK <sup>2</sup> [ON/OFF]	Lock signal status received from remote keyless entry receiver (integrated in the BCM)
KEYLESS UNLOCK <sup>2</sup> [ON/OFF]	Unlock signal status received from remote keyless entry receiver (integrated in the BCM)

<sup>1:</sup> With Intelligent Key

### **ACTIVE TEST**

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

<sup>\*:</sup> Each lamp switch is in ON position.

<sup>2:</sup> With remote keyless entry

### POWER SUPPLY AND GROUND CIRCUIT

### < COMPONENT DIAGNOSIS >

# **COMPONENT DIAGNOSIS**

# POWER SUPPLY AND GROUND CIRCUIT

**BCM** 

**BCM**: Diagnosis Procedure

INFOID:00000000004404644

### 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	Patton, power cupply	18 (10A)
70	Battery power supply	G (50A)
11	Ignition ACC or ON	4 (10A)
38	Ignition ON or START	1 (10A)

### Is the fuse blown?

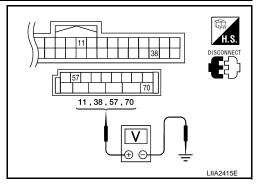
YES >> Replace the blown fuse or fusible link after repairing the affected circuit.

>> GO TO 2 NO

# 2. CHECK POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect BCM.
- Check voltage between BCM harness connector and ground.

Connector	Terminals		Power	Condition	Voltage (V) (Ap-	
Oormiccion	(+) (-) source		Condition	prox.)		
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	
IVI2U	70	Ground	Battery power supply	Ignition switch OFF	Battery voltage	



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### Is the measurement value normal?

YES >> GO TO 3

NO >> Repair or replace harness.

### 3. CHECK GROUND CIRCUIT

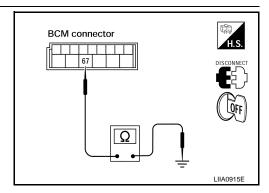
Check continuity between BCM harness connector and ground.

В	CM		Continuity
Connector	Terminal	Ground	Continuity
M20	67		Yes

### Does continuity exist?

YES >> Inspection End.

NO >> Repair or replace harness.



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### **BATTERY SAVER OUTPUT/POWER SUPPLY CIRCUIT**

< COMPONENT DIAGNOSIS >

### BATTERY SAVER OUTPUT/POWER SUPPLY CIRCUIT

Description INFOID:000000003938851

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

### Component Function Check

INFOID:0000000003938852

# 1. CHECK BATTERY SAVER OUTPUT/POWER SUPPLY FUNCTION

### (P)CONSULT-III

- 1. Turn ignition switch ON.
- 2. Turn each interior room lamp ON.
- Front room/map lamp assembly
- Vanity lamps (if equipped)
- Cargo lamp
- Personal lamp 2nd row (with personal lamp 2nd row)
- Room lamp 2nd row (without personal lamp 2nd row)
- 3. Select "BATTERY SAVER" of BCM (BATTERY SAVER) active test item.
- 4. While operating the test item, check that each interior room lamp turns ON/OFF.

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

### Is the inspection result normal?

YES >> Battery saver output/power supply circuit is normal.

NO >> Refer to INL-16, "Diagnosis Procedure".

### Diagnosis Procedure

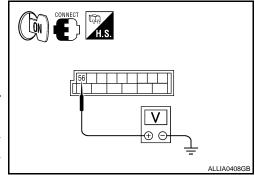
INFOID:0000000003938853

# 1. CHECK BATTERY SAVER OUTPUT/POWER SUPPLY OUTPUT

### (P)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	voltage
M20	56	Ground	OFF	0V
IVIZU	56 Ground	ON	Battery voltage	



### Is the inspection result normal?

YES >> GO TO 2

NO >> Replace BCM. Refer to BCS-59, "Removal and Installation".

# 2.CHECK BATTERY SAVER OUTPUT/POWER SUPPLY OPEN CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect the following connectors.
- BCM M20
- Ignition keyhole illumination
- Front room/map lamp assembly
- Vanity lamp LH (if equipped)
- Vanity lamp RH (if equipped)
- Cargo lamp
- Personal lamp 2nd row (with personal lamp 2nd row)
- Room lamp 2nd row (without personal lamp 2nd row)

### BATTERY SAVER OUTPUT/POWER SUPPLY CIRCUIT

### < COMPONENT DIAGNOSIS >

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

BCN	И	Each interior room lamp		Continuity	
Connector	Terminal	Connector			Continuity
		Ignition keyhole illumination	M150	1	
	Front room/map lamp assembly		R9	1	
	M20 56	Vanity lamp LH (if equipped)	B80	1	
M20		Vanity lamp RH (if equipped)	B81	1	Yes
			Cargo lamp	R11	2
		Personal lamp 2nd row (with personal lamp 2nd row)	R10	1	
		Room lamp 2nd row (without personal lamp 2nd row)	R12	2	

### Is the inspection result normal?

YES >> GO TO 3

NO >> Repair the harness or connectors.

# $3. \mathsf{CHECK}$ battery saver output/power supply short circuit

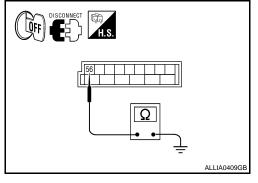
Check continuity between BCM connector M20 terminal 56 and ground.

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.



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### INTERIOR ROOM LAMP CONTROL CIRCUIT

< COMPONENT DIAGNOSIS >

### INTERIOR ROOM LAMP CONTROL CIRCUIT

Description INFOID:000000003938854

Controls the following interior room lamps (ground side) by PWM signal

- Front room/map lamp assembly
- Personal lamp 2nd row (with personal lamp 2nd row)
- Room lamp 2nd row (without personal lamp 2nd row)

### NOTE:

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

### Component Function Check

INFOID:0000000003938855

### **CAUTION:**

Before performing the diagnosis, check that the following is normal.

- Battery saver output/power supply
- Front room/map lamp bulbs
- Personal lamp 2nd row bulbs (with personal lamp 2nd row)
- Room lamp 2nd row bulbs (without personal lamp 2nd row)

### ${f 1}$ .CHECK INTERIOR ROOM LAMP CONTROL FUNCTION

### (P)CONSULT-III

- 1. Switch the map lamp switch to DOOR.
- 2. Turn ignition switch ON.
- 3. Select "INT LAMP" of BCM (INT LAMP) active test item.
- 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 <a href="INL-18">INL-18</a>, "Diagnosis Procedure".

# Diagnosis Procedure

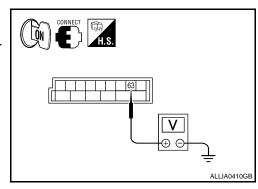
INFOID:0000000003938856

# 1. CHECK INTERIOR ROOM LAMP CONTROL OUTPUT

### (E)CONSULT-III

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

(+)		(-)	INT LAMP	Voltage
Connector	Terminal	( )	IIVI E/IIVII	voltage
M20	63	Ground	ON	0V
IVIZU	03	Ground	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, personal lamp 2nd row connector (with personal lamp 2nd row) or room lamp 2nd row connector (without personal lamp 2nd row) and front room/map lamp connector.

### INTERIOR ROOM LAMP CONTROL CIRCUIT

### < COMPONENT DIAGNOSIS >

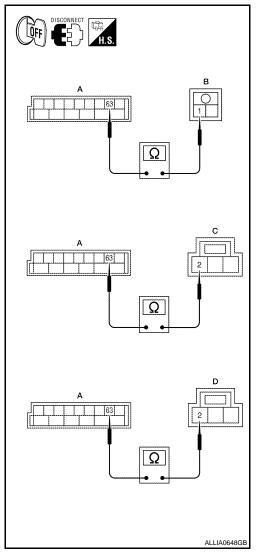
3. Check continuity between BCM connector M20 terminal 63 and interior room lamp connectors.

Term	inal	Terminal			Continuity
Connector	Terminal	Component	Connector	Terminal	Continuity
		Room lamp 2nd row (without per- sonal lamp 2nd row)	B: R12	1	
A: M20	63	Personal lamp 2nd row (with per- sonal lamp 2nd row)	C: R10	2	Yes
		Front room/map lamp	D: R9	2	

### Is the inspection result normal?

YES >> Check interior room lamps for an open. If OK, replace BCM. Refer to <u>BCS-59</u>, "Removal and Installation". If NG, replace interior room lamp. Refer to <u>INL-67</u>, "Removal and Installation".

NO >> Repair the harness or connectors.



# 3. CHECK INTERIOR ROOM LAMP CONTROL SHORT CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect BCM connector M20, personal lamps 2nd row connector (with personal lamp 2nd row) or room lamp 2nd row connector (without personal lamp 2nd row).
- 3. Check continuity between BCM connector and ground.

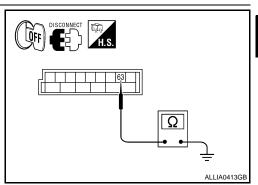
Connector	Terminal	_	Continuity
M20	63	Ground	No

### Is the inspection result normal?

YES >> Check interior room lamps for a short circuit. If OK, replace BCM. Refer to BCS-59, "Removal and Installation." If NC replace interior room lamp. Pefer to INI. 67.

tion". If NG, replace interior room lamp. Refer to INL-67, "Removal and Installation".

NO >> Repair the harness or connectors.



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### **CARGO LAMP CONTROL CIRCUIT**

### < COMPONENT DIAGNOSIS >

### CARGO LAMP CONTROL CIRCUIT

**Description** 

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

### Component Function Check

INFOID:0000000003938858

INFOID:0000000003938859

### **CAUTION:**

Before performing the diagnosis, check that the following is normal.

- Battery saver output/power supply
- Cargo lamp bulb
- 1. CHECK CARGO LAMP OPRATION

### (P)CONSULT-III

- 1. Turn ignition switch ON.
- 2. Select "LUGGAGE LAMP TEST" of BCM (INT LAMP) active test item.
- While operating the test item, check that cargo lamp turns ON/OFF.

ON : Cargo lamp ON OFF : Cargo lamp OFF

### Is the inspection result normal?

YES >> Cargo lamp circuit is normal.

NO >> Refer to <u>INL-20, "Diagnosis Procedure"</u>.

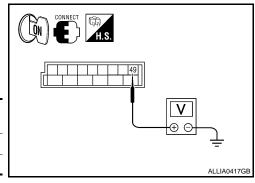
### Diagnosis Procedure

# 1. CHECK CARGO LAMP OUTPUT

### (E)CONSULT-III

- Turn ignition switch ON.
- Select "LUGGAGE LAMP TEST" of BCM (INT LAMP) active test item.
- 3. While operating the test item, check voltage between BCM connector M19 terminal 49 and ground.

Connector	Terminal	_	LUGGAGE LAMP TEST	Voltage
M19 49	49	Ground	ON	0V
IVITS	49	Ground	OFF	Battery voltage



### Is the inspection result normal?

YES >> Cargo lamp control circuit is operating normally.

Fixed ON>>GO TO 3

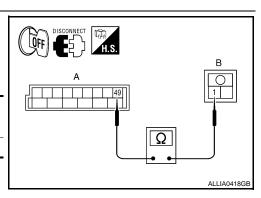
Fixed OFF>>GO TO 2

### 2. CHECK CARGO LAMP OPEN CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect BCM connector M19 and cargo lamp connector.
- 3. Check continuity between BCM connector M19 (A) terminal 49 and cargo lamp connector R11 (B) terminal 1.

В	CM	Cargo	o lamp	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M19 (A)	49	R11 (B)	1	Yes

### Is the inspection result normal?



### **CARGO LAMP CONTROL CIRCUIT**

### < COMPONENT DIAGNOSIS >

- >> Check cargo lamp for an open. If OK, replace BCM. Refer to BCS-59, "Removal and Installation". YES If NG, replace cargo lamp. Refer to INL-70, "Removal and Installation".
- NO >> Repair harness or connectors.

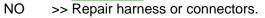
# 3.CHECK CARGO LAMP SHORT CIRCUIT

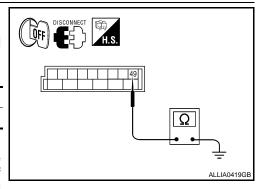
- 1. Turn ignition switch OFF.
- Disconnect BCM connector M19 and cargo lamp connector R11. 2.
- Check continuity between BCM connector M19 terminal 49 and ground.

Connector	Terminal	_	Continuity
M19	49	Ground	No

# Is the inspection result normal?

>> Check cargo lamp for a short circuit. If OK, replace BCM. Refer to BCS-59, "Removal and Installation". If YES NG, replace cargo lamp. Refer to INL-70, "Removal and Installation".





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### IGNITION KEYHOLE ILLUMINATION CONTROL CIRCUIT

< COMPONENT DIAGNOSIS >

### IGNITION KEYHOLE ILLUMINATION CONTROL CIRCUIT

Description INFOID:0000000003938860

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

### Component Function Check

INFOID:0000000003938861

### **CAUTION:**

Before performing the diagnosis, check that the following is normal.

- Battery saver output/power supply circuit
- Ignition keyhole illumination bulb
- 1. CHECK IGNITION KEYHOLE ILLUMINATION OPERATION

### (P)CONSULT-III

- Turn the ignition switch ON.
- Select "IGN ILLUM" of BCM (INT LAMP) active test item.
- 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?

>> Ignition keyhole illumination circuit is normal.

>> Refer to INL-22, "Diagnosis Procedure". NO

# Diagnosis Procedure

INFOID:0000000003938862

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# 1. CHECK IGNITION KEYHOLE OUTPUT

### (P)CONSULT-III

- Turn ignition switch ON.
- Select "IGN ILLUM" of BCM (INT LAMP) active test item. 2.
- 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
IVITO	'	Giodila	OFF	Battery voltage

### Is the inspection result normal?

>> Ignition keyhole illumination is operating normally.

Fixed ON>>GO TO 3

Fixed OFF>>GO TO 2

# 2.CHECK IGNITION KEYHOLE ILLUMINATION OPEN CIRCUIT

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

В	CM	Ignition keyho	ole illumination	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M18 (A)	1	M150 (B)	2	Yes

CONNECT H.S

### Is the inspection result normal?

- YES >> Check ignition keyhole illumination for an open. If OK, replace BCM. Refer to BCS-59, "Removal and Installation". If NG, replace ignition keyhole illumination.
- NO >> Repair harness or connectors.

### **IGNITION KEYHOLE ILLUMINATION CONTROL CIRCUIT**

### < COMPONENT DIAGNOSIS >

# 3. CHECK IGNITION KEYHOLE ILLUMINATION SHORT CIRCUIT

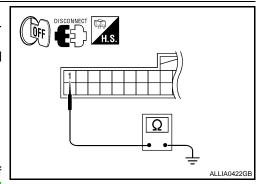
- 1. Turn ignition switch OFF.
- 2. Disconnect BCM connector M18 and ignition keyhole illumination connector.
- 3. Check continuity between BCM connector M18 terminal 1 and ground.

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 <u>BCS-59</u>, "Removal and <u>Installation"</u>. If NG, replace ignition keyhole illumination.

NO >> Repair harness or connectors.



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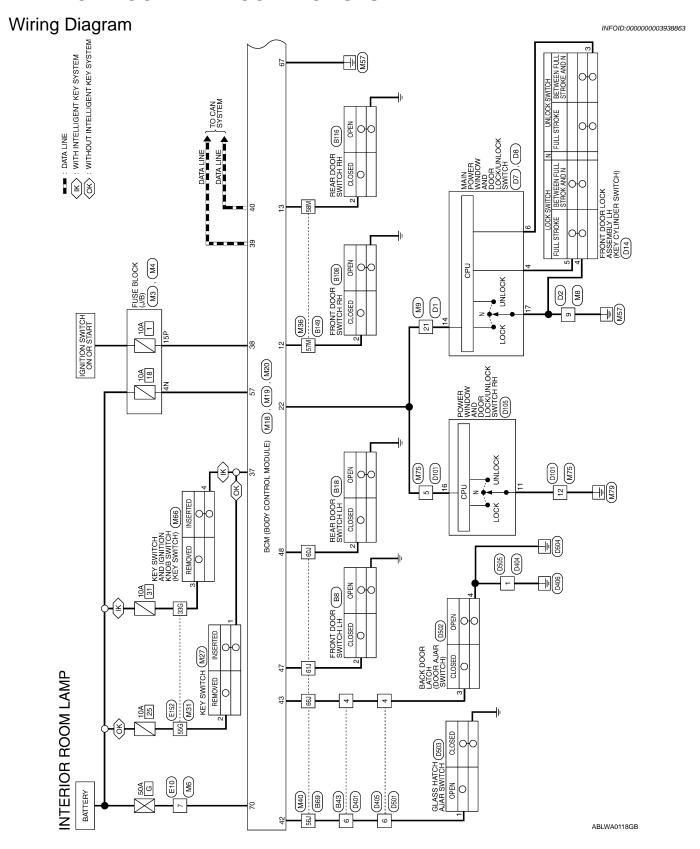
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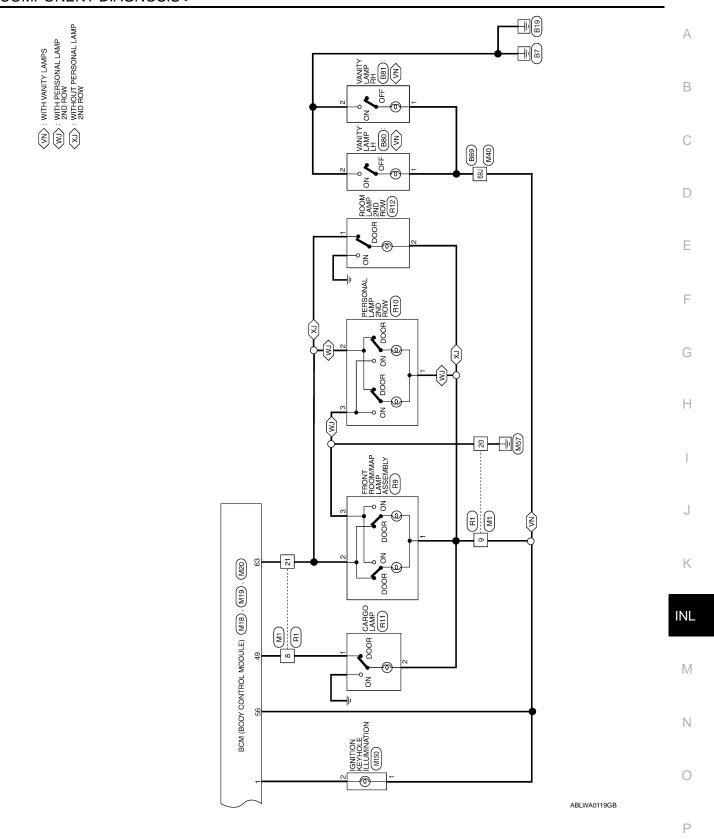
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### < COMPONENT DIAGNOSIS >

Connector Name | FUSE BLOCK (J/B)

Connector Name FUSE BLOCK (J/B)

Connector No.

Connector Color WHITE

Connector No.

Connector Color WHITE

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

Signal Name

Color of Wire

Terminal No. 15P

Signal Name

Color of Wire

Terminal No.

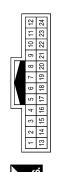
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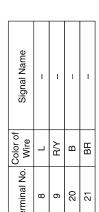
# INTERIOR ROOM LAMP CONNECTORS

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



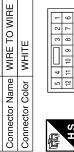
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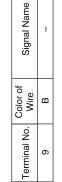




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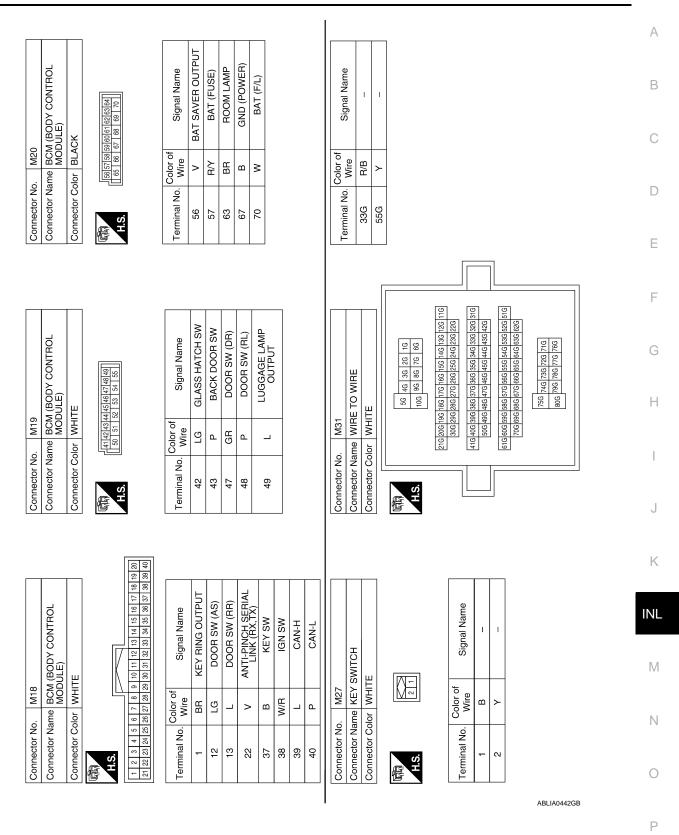


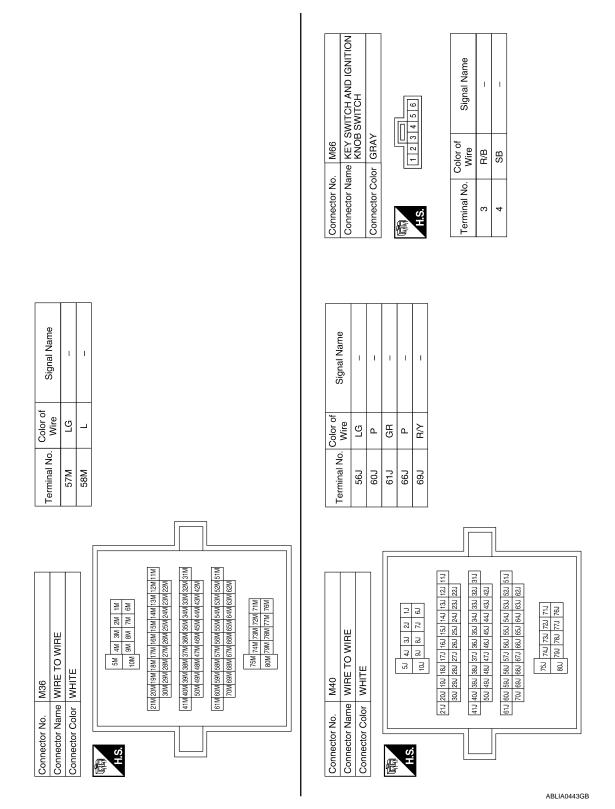
	6 5 4 3 2 1	24 23 22 21 20 19 18 17 16 15 14 13	Signal Name	-
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	∞	1 2	Color of Wire	_
	11 10 9	5	ો સં	_
	유	22	Ŏ,	
	Ξ	23		
L	12	24	8   	
E	¥	Ņ.	Terminal No.	21

	WIRE TO WIRE	ITE	8 2 9	Signal Nam	1
M6		r WHITE	8 4 3	Color of Wire	×
٠. ا	am	응			
Connector No.	Connector Name	Connector Color	H.S.	Terminal No.	2

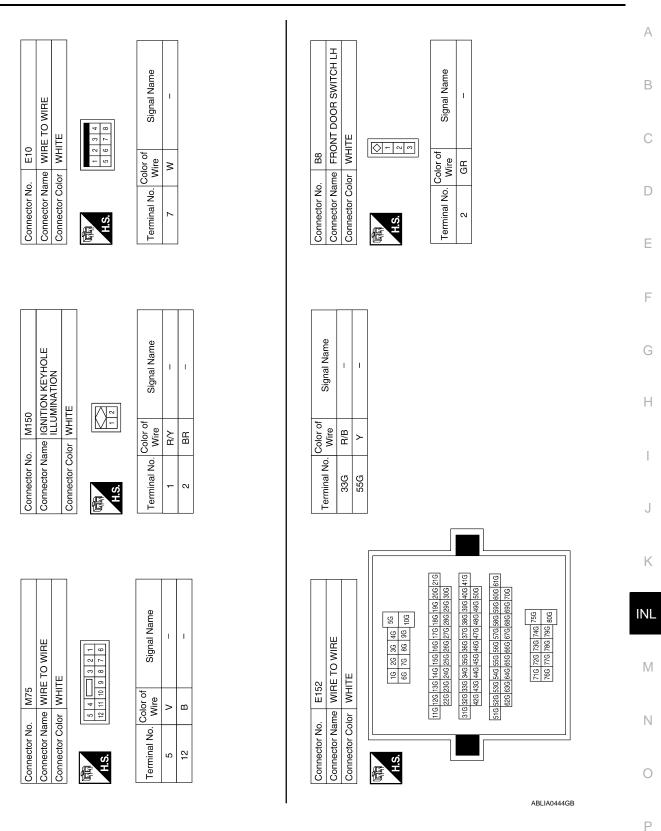
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### < COMPONENT DIAGNOSIS >

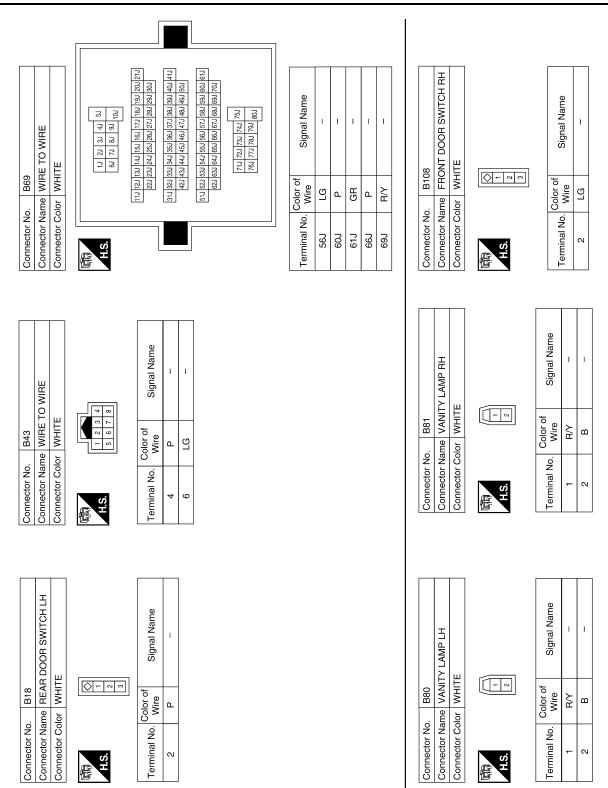




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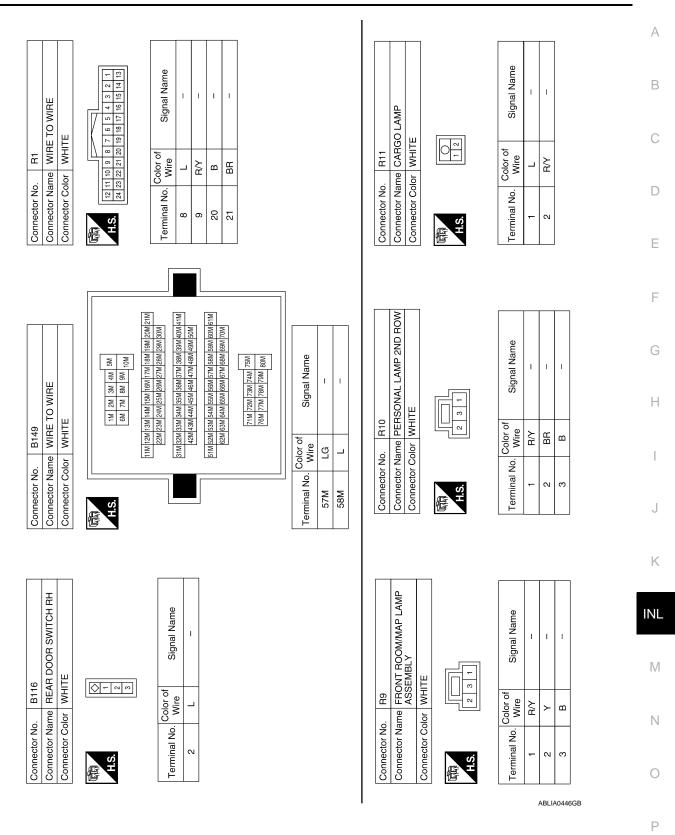


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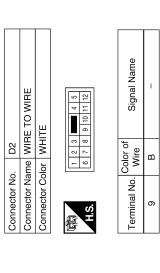


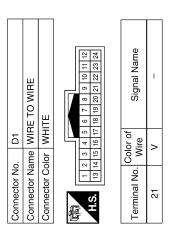
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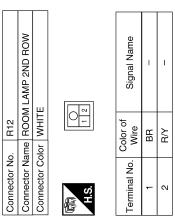
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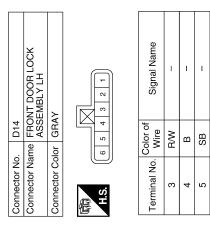


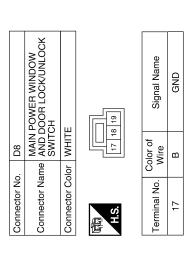
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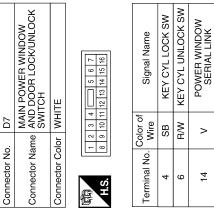












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### < COMPC

Connector No. D101
Connector Name WIRE TO WIRE

Connector Color WHITE

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		TO WIRE	111	[F:	- S 7 20 9	Signal Name	ı	1
	D401	ne WIRE	or WHITE	[K	1 1 11 1	Color of Wire	۵	יי
	Connector No. D401	Connector Name WIRE TO WIRE	Connector Color WHITE		H.S.	Terminal No.   Color of Wire	4	u
	15	WER WINDOW AND	SWITCH RH	ITE	2 3 4 5 6 7 9 10 11 12 13 14 15 16	Signal Name	GND	
	). D105	PO	S S	olor WH	8 9 10 11	Color of Wire	В	
	Connector No.	Connector N		Connector Color WHITE	馬 H.S.	Terminal No. Wire	=	

H.S. 8 7 6 5	al No. Wire Signa				Connector No. D501	Connector Name WIRE TO WIRE	Connector Color WHITE	H.S. (1 2 3 4 4 8 6 7 8 8 8 9 7 8 8 9 9 9 9 9 9 9 9 9 9 9 9	Terminal No. Wire Signal Name	4 P –	- P 9
H.S. (1   2   3   4   (1   5   6   7   1   1   1   1   1   1   1   1   1	Terminal No. Wire Signal Name	11 B GND	16 V SERIAL LINK		Connector No. D405	Connector Name WIRE TO WIRE	Connector Color WHITE	H.S. (4 7 6 5 1	Terminal No. Color of Wire Signal Name	4 P –	- PJ 9
S.	ninal No. Wire Signal Name	\ \	12 B –		nector No. D404	nector Name   WIRE TO WIRE	nector Color   WHITE	ý.	ninal No. Wire Signal Name	1 B -	

4	E TO WIRE	ITE		Signal Naı	I
. D404	me WIF	lor WH	4	Color of Wire	В
Connector No.	Connector Name WIRE TO WIRE	Connector Color WHITE	原动 H.S.	Terminal No.	-

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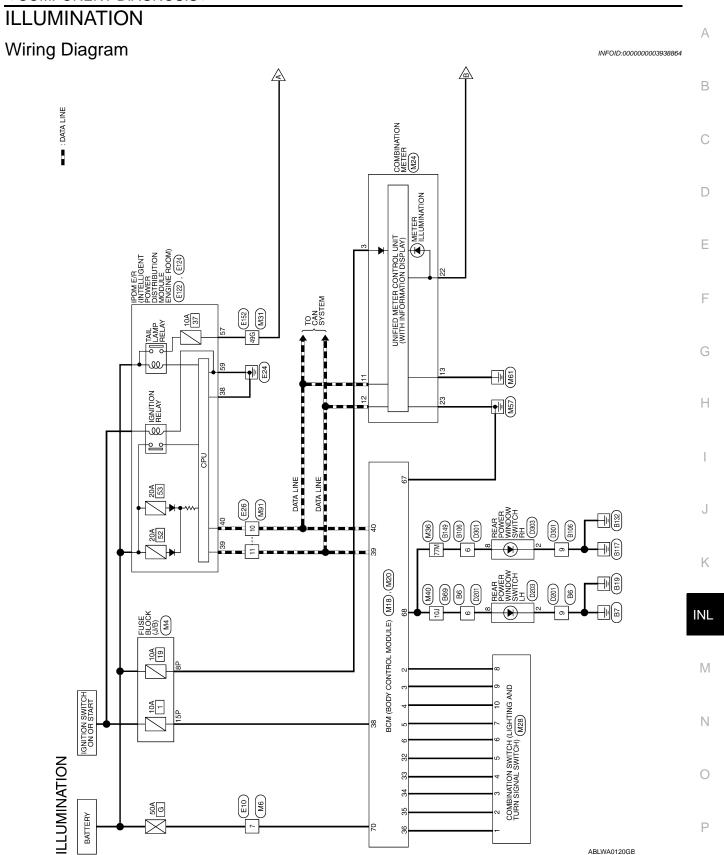
### < COMPONENT DIAGNOSIS >

Connector No.	). D505	5
Connector Name WIRE TO WIRE	ıme WIF	IE TO WIRE
Connector Color WHITE	lor WH	ΠE
H.S.	- 2	1 4
Terminal No.	Color of Wire	Signal Name
1	В	ı

Connector No.	). D503	33
Connector Name		GLASS HATCH AJAR SWITCH
Connector Color	olor BLACK	4CK
H.S.		
Terminal No.	Color of Wire	Signal Name
1	ГG	ı

Connector No.	). D502	
Connector Na	ıme BACK	Connector Name BACK DOOR LATCH
Connector Color WHITE	lor WHITE	111
是 H.S.	1 4 C	2 7 2
Terminal No.	Color of Wire	Signal Name
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4	BB	I

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 (AW): WITH 4-WHEEL DRIVE

 (AA): WITH AUTO A/C

 (AD): WITH AUTOMATIC DRIVE POSITIONER

 (AM): ALL-MODE 4WD SYSTEM

 (BA): WITH BASE AUDIO SYSTEM

 (BO): WITH BOSE AUDIO SYSTEM-WITH NAVI

 (MA): WITHOUT AUTO A/C

(MG): WITH MID AUDIO SYSTEM OR WITH
BOSE AUDIO SYSTEM-WITH NAVIGATION
(PT): PART TIME 4WD SYSTEM
(SW): WITH HEATED STEERING WHEEL
(WD): WITH DVD ENTERTAINMENT SYSTEM
(XA): WITH DVD ENTERTAINMENT SYSTEM

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(AB): WITH AUTO A/C
(AD): WITH AUTOMATIC DRIVE POSITIONER
(AM): WITH ADJUSTABLE PEDALS
(DC): WITH HILL DESCENT CONTROL AND
HILL START ASSIST
(EB): EXCEPT BASE AUDIO SYSTEM
(EN): WITH OUT NAVI
(HF): WITH FRONT HEATED SEATS
(MI): WITH MANUAL MODE SWITCH
(MIX): WITH NAVI
(MIX): WITH NAVI
(MIX): WITH TRAILER TOW 7 PIN
(TT): WITH TRAILER TOW 7 PIN

: WITHOUT AUTOMATIC DRIVE POSITIONER

:WITH MANUAL MODE SWITCH, WITHOUT INTELLIGENT KEY SYSTEM

W92 AV CONTROL UNIT (M39): (NV) **⊚** HEATED SEAT SWITCH (1) FRONT HEATED SEAT SWITCH RH (1) PEDAL ADJUSTING SWITCH (M84): (XA) (M96): (AD)

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Connector Name HEATED STEERING WHEEL SWITCH

Connector No. M7

Connector No. M6
Connector Name WIRE TO WIRE

Connector Color WHITE

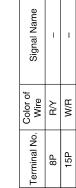
Connector Color WHITE

# ILLUMINATION CONNECTORS

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







# 

Signal Name	-	1
Color of Wire	R/Υ	W/R
inal No.	35	5P

Signal Name

Color of Wire ≥

Terminal No.

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





	Signal Name	GND (POWER)	POWER WINDOW POWER SUPPLY OUTPUT (LINKED TO RAP)	BAT (F/L)
10,000	Wire	В	0	М
	Terminal No.	29	89	02

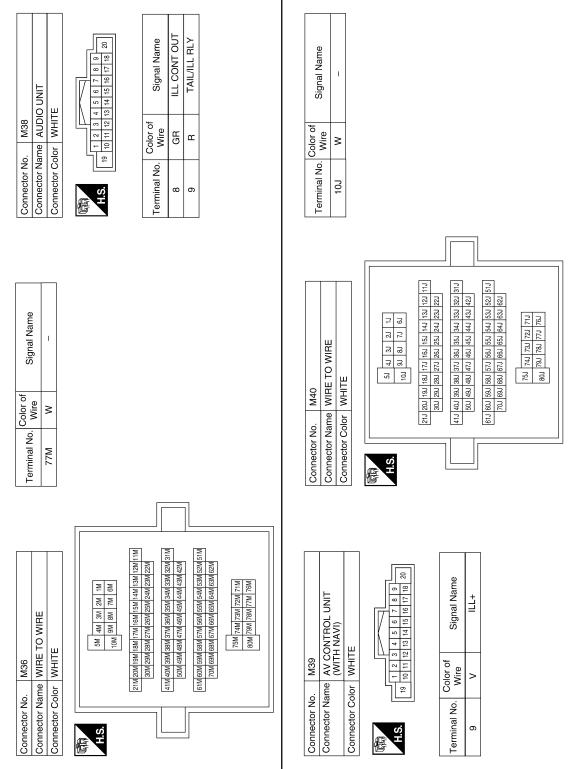
Signal Name	INPUT 1	OUTPUT 5	OUTPUT 4	OUTPUT 3	OUTPUT 2	OUTPUT 1	IGN SW	CAN-H	CAN-L
Color of Wire	В	0	GR	В	BR	ГG	W/R	Τ	Ь
Terminal No.	9	32	33	34	35	36	38	39	40

			19 20 39 40					
	Connector Name BCM (BODY CONTROL MODULE)	<u> </u>	12 13 14 15 16 17 18 32 33 34 35 36 37 38	Signal Name	INPUT 5	INPUT 4	INPUT 3	INPUT 2
M18	me BCI MO	lor WHITE	26 27 7 28 8	Color of Wire	۵	SB	>	_
Connector No.	Connector Na	Connector Color	HS. 1 2 23 24 25 26 27 28 29 30 31	Terminal No.	2	က	4	5

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Signal Name	OUTPUT 4	OUTPUT 3										Signal Name		ı									В
Color of Wire	SB	>										r of	e e										С
	S											$\sim$	>	>									D
Terminal No.	6	10										Terminal No		49G									E
	<u> </u>	1						T									G 11G	g]	26 316	\$6 51G			F
HÖLIMS	5		<u> </u>	Signal Name	INPUT 1	INPUT 2	INPUT 3	NPI T	OUTPUT 1	OUTPUT 2	OUTPUT 5					26 16 76 66	5G 14G 13G 12	30G 29G 28G 27G 26G 25G 24G 23G 22G	40G 39G 38G 37G 36G 35G 34G 33G 32G 50G 49G 48G 47G 46G 45G 44G 43G 42G	5G 54G 53G 52	726 716		G
NOITANI			10 9 8 7	Signa	N N	N N				OUT	OUT		TO WIRE			56 46 36 26 16 106 96 86 76 66	8G 17G 16G 18	86 276 266 2	38G 37G 36G 3 18G 47G 46G 4	86 576 566 5	735 736 726 716 806 736 786 776 76		Н
Connector No. M28 Connector Name COMBINATION SWITCH	v WHITE		12 13 10 14 11 2	Color of Wire	LG	BB	ۍ <del>و</del>	<u> </u>	) Œ	_	۵	M31	Connector Name WIRE TO WIRE	or WHITE			216 206 196 186 176 166 156 146 136 126 116	30G 29G	41G 40G 39G 38G 37G 36G 35G 34G 33G 32G 31G 50G 49G 48G 47G 46G 45G 44G 43G 42G	61G   600G   550G   5			
Connector No.	Connector Color			Terminal No.	_	2	m <	t r	n	7	80	Connector No.	ector Nan	Connector Color									I
Con			是 H.S.	Term								Conn	Conn	Conn	é	H.S.							J
				- 12J																			K
				5 4 3 2 25 24 23 22						NO			TCH					Ф					
METAN			_	8 7 6 5 28 27 26 28	2	Signal Name	BATTERY	CAN-H	GROUND	ILLUMINATIO	POWER GND							Signal Name	ILL+	긜			INL
CITAMIAN	1 1 1	<u>.</u>		12 11 10 9 32 31 30 29	ä	Sig	B)		9	ILLU	PO		<b>ABINATIC</b>	<u>}</u>		26 27 33 34							M
M24	lor WHITE			15 14 13 1; 35 34 33 3;	Color of		<u>~</u>	-  -	GB 4	BR	В	o: M30	ame CON	olor GRAY		24 25 26		Color of Wire	æ	Ø			N
Connector No. M24 Connector Name COMBINATION MET	Connector Color		H.S.	20 19 18 17 16 15 14 13 40 39 38 37 36 35 34 33		l erminal No.	ω <del>[</del>	-   5	1 5	22	23	Connector No.	Connector Name COMBINATION SWIT	Connector Color		Q.		Terminal No.	26	27			
0 5	<u> </u>	5		40 40	L	<u>ā</u>						Ö	Ö	Ŝ		E Y		Ter			ABLIA04510	SB.	0
																					ADDIAU4010		

**INL-39** 

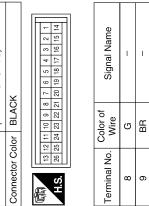


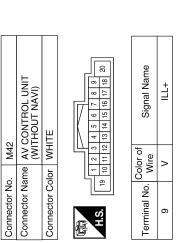
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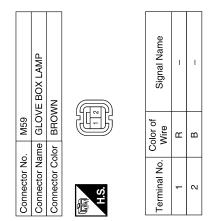
#### < COMPONENT DIAGNOSIS >

Connector No. M49	M49	Connector No. M52	M52
Connector Name	Sonnector Name A/C AUTO AMP. (WITH AUTO A/C)	Connector Name	Sonnector Name FRONT AIR CONTROL (WITHOUT AUTO A/C)
Connector Color BLACK	BLACK	Connector Color BLACK	BLACK

13 12 11 10 9 8 7 6 5 4 3 2 1	26 25 24 23 22 21 20 19 18 17 16 15 14				Color of	Color of Signal Name	Color of Wire
13	H.S.			_	erminal No.	ω	







Connector No.	). M56	
Connector Name		WIRE TO WIRE
Connector Color	olor WHITE	ш
H.S.	16 15 14 6 5 14 13 13 14 13 13 14 13 14 13 14 13 14 13 14 13 14 14 15 14	13 12 11 10 9
Terminal No.	Color of Wire	Signal Name
14	BR	I
15	SB	1

Connector No.	). M55	
Connector Name		HAZARD SWITCH
Connector Color	olor WHITE	ш
H.S.		0   0   0   0   0   0   0   0   0   0
Terminal No.	Color of Wire	Signal Name
င	œ	ı
4	BB	ı

Wire Wire 4 BR BR

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#### < COMPONENT DIAGNOSIS >

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

Connector Name WIRE TO WIRE

Connector No. M64

Connector Color WHITE

Connector Color WHITE

Connector No.	). M84	
Connector Na	PEDA Ime (WITH DRIVE	Connector Name (WITHOUT AUTOMATIC DRIVE POSITIONER)
Connector Color BROWN	olor BROV	N/
南 H.S.	4 2	3 (1)
Terminal No.	Color of Wire	Signal Name

Connector No.	o. M98	
Connector Name		A/C AND AV SWITCH ASSEMBLY(WITH MID AUDIO SYSTEM OR WITH BOSE AUDIO SYSTEM-WITHOUT NAVI)
Connector Color	olor WHITE	ш
是 H.S.	2 4 6 8 7 7 8 7 7 8 9 7 8 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9	10 12 14 16 9 11 13 15
Terminal No.	Color of Wire	Signal Name
ဇ	ΓG	III
4	BR	ILL CONT GND

Signal Name	I	
Color of Wire	н	
Terminal No.	4	

Signal Name

Color of Wire

Terminal No. 2 9

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Connector No	96W
Connector Name	PEDAL ADJUSTING SWITCH Connector Name (WITH AUTOMATIC DRIVE
	POSITIONER)
Connector Color BROWN	BROWN
恒	5
S	4 2 1 3

Connector Na	PEDAI WITH POSIT	Connector Name (WITH AUTOMATIC DRIVE POSITIONER)
Connector Color BROWN	olor BROM	N
H.S.	0         4           0         4	36
Terminal No.	Color of Wire	Signal Name
2	Н	I
9	BB	ı





Signal Name	ı	_
Color of Wire	Ь	Т
Terminal No.	10	11

ninal No. Wire Sign	10 P	
Terminal No.	10	

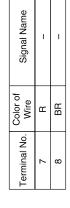
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#### < COMPONENT DIAGNOSIS >

Connector No. M138	M138	Connector No. M141	M141
Connector Name	connector Name 4WD SHIFT SWITCH (PART TIME 4WD SYSTEM)	Connector Name	Connector Name 4WD SHIFT SWITCH (ALL-MODE 4WD SYSTEM)
Connector Color GRAY	GRAY	Connector Color GRAY	GRAY

<u>                                      </u>	Signal Name	ı	ı
12345678	Color of Wire	ш	BR
H.S.	erminal No.	7	8



Signal Name

Color of Wire ш BB

Terminal No.

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A/C AND AV SWITCH ASSEMBLY (WITH BOSE AUDIO SYSTEM-WITH NAVI)

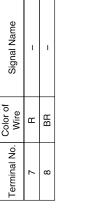
Connector Name

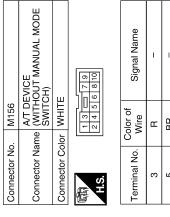
M99

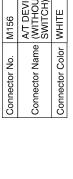
Connector No.

WHITE

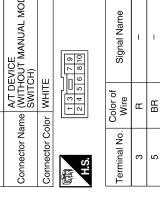
Connector Color

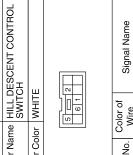






Connector No. M155





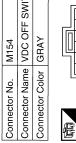
HILL DESCENT CC SWITCH	111		Signal N	-	_
me HILL E	lor WHITE	9	Color of Wire	В	BR
Connector Name	Connector Color WHITE	是 H.S.	Terminal No.	5	9

DESCEN CH	111		ôiS		
HILL DE	WHITE	0 0	Color of Wire	В	BR
me	힏		\ )O		
Connector Name   HILL DESCEN	Connector Color	原 H.S.	Terminal No.	2	9
		<u> </u>			

	Name VDC OFF SWITCH		3 2 1	Signal Name	_	=
M154	VDC (	GRAY	4	Color of Wire	Ж	a
	ıme	Color	9	<u>ٽ</u> _		
Ö.	ž	ပိ		o.		

<u></u>	10 12 14 16	9 11 13 15	Signal Name	ILL
\	2 4 6 8	1 3 5 7	Color of Wire	FG
9	No. of the last of	H.S.	Terminal No.	3







Sigr			
Color of Wire	н	BR	
Terminal No.	8	7	

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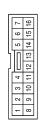
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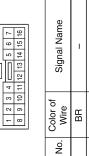
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#### < COMPONENT DIAGNOSIS >











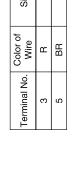




Signal Nam	1	_	
Color of Wire	Я	BR	
Terminal No.	3	5	



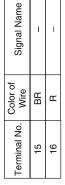
Signal Na	ı	-	
Color of Wire	В	BR	
Terminal No.	3	2	











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



Signal Name	-	-
Color of Wire	В	BR
Terminal No.	2	9

	NUAL OUT STEM)				
	A/T DEVICE (WITH MANUAL MODE SWITCH, WITHOUT INTELLIGENT KEY SYSTEM)	ш	[	6 /	5 6 8 10
/C   W	AT D MOD!	WHITE		1	2

Connector Name Connector Color

Connector No.







Signal Naı	ı	1	
Color of Wire	н	BR	
Terminal No.	3	5	

Sonnector No. M160	Sonnector Name   FRONT HEATED SEAT	Connector Color BROWN	5   1   3
Connect	Sonnect	Connect	原 S





Signal Name	_	1
Color of Wire	SB	0
Ferminal No.	5	9

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#### < COMPONENT DIAGNOSIS >

NE	N	Γ	DIAGNOSIS >			
	LAYER		7 6 5 4 3 2 1 33 22 21 20 19 18 17	Signal Name	ILL-	ILL+
. M205	me DVD P	lor WHITE	14   13   12   11   10   9   8   7   6   5   5   24   23   22   21	Color of Wire	BR	SB
Connector No.	Connector Name DVD PLAYER	Connector Color WHITE	H.S. 16 15 14 13 12 11 32 21 32 23 33 33 133 23 23 27 37	Terminal No. Wire	9	22
	TO WIRE	Е	29	Signal Name	I	ı
M202	me WIRE	ior WHIT	- 00 4	Color of Wire	ŋ	В
Connector No.	Connector Name WIRE TO WIRE	Connector Color WHITE	南南 H.S.	Terminal No.	2	9
		ı	1			
	TO WIRE	ш	13 14 15 16 13 16 7 8	Signal Name	ı	ı
. M201	me WIRE	lor WHITE	100112 4 4 112 12 14	Color of Wire	BR	SB
Connector No.	Connector Name WIRE TO WIRE	Connector Color WHITE	H.S.	Terminal No. Wire	14	15

	E TO WIRE	TE	2 3 mm 4 5 6 7 9 10 11 12 13 14 15 16	Signal Name	ſ	-
E26	ne WIR	or WHI		Color of Wire	Д	٦
Connector No.	Connector Name WIRE TO WIRE	Connector Color WHITE	H.S.	Terminal No. Wire	10	11
Connector No. E10	Connector Name WIRE TO WIRE	Connector Color WHITE	斯勒 H.S.	Terminal No. Wire Signal Name	7 W –	

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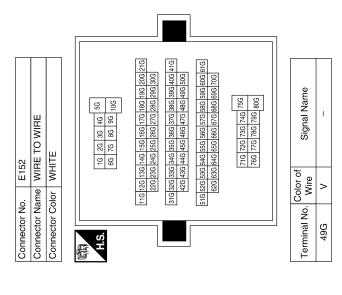
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Connector No. M208
Connector Name REAR AIR CONTROL (REAR)

Connector Color BLACK



24	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)	BLACK	09 E5	Signal Name	TAIL LAMPS	GND (POWER)
. E124		_	29	Color of Wire	GR	В
Connector No.	Connector Name	Connector Color	所 H.S.	Terminal No.	29	69

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

Connector No.

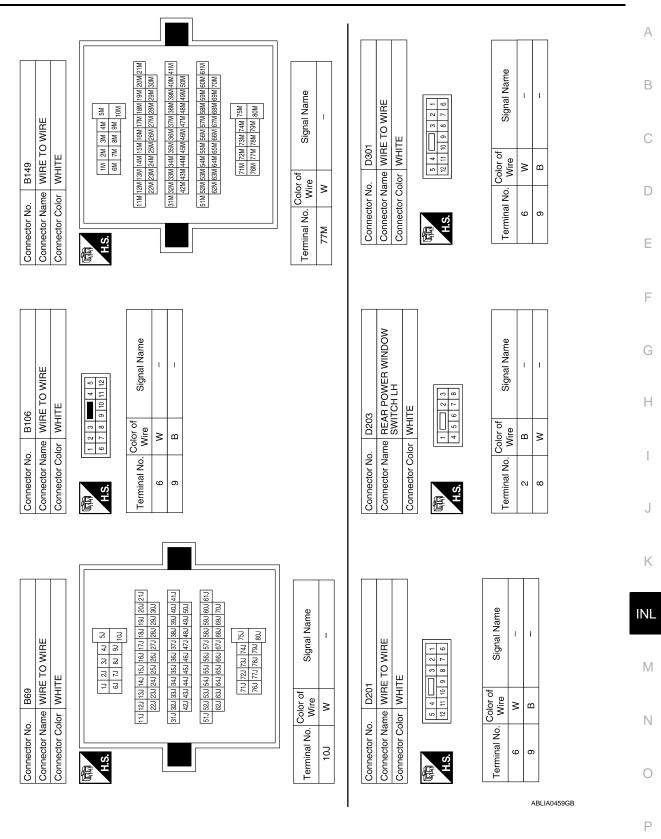
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Connector Color WHITE

Signal Name	GND (SIGNAL)	CAN-H	CAN-L	
Color of Wire	В	٦	Ь	
Terminal No.	38	39	40	

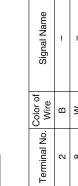
Connector No.	. B6	
Connector Name		WIRE TO WIRE
Connector Color	lor WHITE	ш
哥 H.S.	6 7 7 8 9	9 10 11 12
Terminal No.	Color of Wire	Signal Name
9	W	1
6	В	I

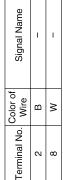
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#### < ECU DIAGNOSIS >

# **ECU DIAGNOSIS**

# BCM (BODY CONTROL MODULE)

Reference Value

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#### VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status	
AID COND CW	A/C switch OFF	OFF	
AIR COND SW	A/C switch ON	ON	D
ALIT LICHT CVC	Outside of the room is dark	OFF	
AUT LIGHT SYS	Outside of the room is bright	ON	
AUTO LIGHT SW	Lighting switch OFF	OFF	— Е
AUTO LIGHT SW	Lighting switch AUTO	ON	
BACK DOOR SW	Back door closed	OFF	F
BACK DOOK SW	Back door opened	ON	
CDL LOCK SW	Door lock/unlock switch does not operate	OFF	
CDL LOCK 3W	Press door lock/unlock switch to the LOCK side	ON	G
CDL UNLOCK SW	Door lock/unlock switch does not operate	OFF	
CDL UNLOCK SW	Press door lock/unlock switch to the UNLOCK side	ON	Н
DOOR SW-AS	Front door RH closed	OFF	
DOOR SW-AS	Front door RH opened	ON	
DOOR SW-DR	Front door LH closed	OFF	
DOOK SW-DK	Front door LH opened	ON	
DOOR SW-RL	Rear door LH closed	OFF	J
	Rear door LH opened	ON	
DOOR SW-RR	Rear door RH closed	OFF	
DOOK SW-KK	Rear door RH opened	ON	K
ENGINE RUN	Engine stopped	OFF	
ENGINE RON	Engine running	ON	INL
FR FOG SW	Front fog lamp switch OFF	OFF	IINL
1 K 1 OG 3W	Front fog lamp switch ON	ON	
FR WASHER SW	Front washer switch OFF	OFF	M
TIX WASHER SW	Front washer switch ON	ON	
FR WIPER LOW	Front wiper switch OFF	OFF	N.I.
TR WIFER LOW	Front wiper switch LO	ON	N
FR WIPER HI	Front wiper switch OFF	OFF	
TIX WIF LIXTII	Front wiper switch HI	ON	0
FR WIPER INT	Front wiper switch OFF	OFF	
FR WIFER IN	Front wiper switch INT	ON	
FR WIPER STOP	Any position other than front wiper stop position	OFF	P
IN WIF LIX STOP	Front wiper stop position	ON	
HAZARD SW	When hazard switch is not pressed	OFF	
HAZAKU SW	When hazard switch is pressed	ON	
LIGHT SW 1ST	Lighting switch OFF	OFF	
LIGITI SW 131	Lighting switch 1st	ON	

#### < ECU DIAGNOSIS >

Monitor Item	Condition	Value/Status
HEADLAMP SW1	Headlamp switch OFF	OFF
HEADLAINF SWI	Headlamp switch 1st	ON
HEADLAMP SW2	Headlamp switch OFF	OFF
TILADLAWF 3WZ	Headlamp switch 1st	ON
HI BEAM SW	High beam switch OFF	OFF
HI BEAW SW	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
IGN ON SW	Ignition switch ON	ON
IGN SW CAN	Ignition switch OFF or ACC	OFF
IGN SW CAN	Ignition switch ON	ON
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7
LKEV LOOK <sup>1</sup>	LOCK button of Intelligent Key is not pressed	OFF
I-KEY LOCK <sup>1</sup>	LOCK button of Intelligent Key is pressed	ON
	UNLOCK button of Intelligent Key is not pressed	OFF
I-KEY UNLOCK <sup>1</sup>	UNLOCK button of Intelligent Key is pressed	ON
KEY ON SW	Mechanical key is removed from key cylinder	OFF
	Mechanical key is inserted to key cylinder	ON
KEYLESS LOCK <sup>2</sup>	LOCK button of key fob is not pressed	OFF
KEYLESS LOCK <sup>2</sup>	LOCK button of key fob is pressed	ON
KEYLESS UNLOCK <sup>2</sup>	UNLOCK button of key fob is not pressed	OFF
KEYLESS UNLOCK <sup>2</sup>	UNLOCK button of key fob is pressed	ON
OIL PRESS SW	Ignition switch OFF or ACC     Engine running	OFF
	Ignition switch ON	ON
DA CCINIC CVV	Other than lighting switch PASS	OFF
PASSING SW	Lighting switch PASS	ON
1	Return to ignition switch to LOCK position	OFF
PUSH SW <sup>1</sup>	Press ignition switch	ON
DE 4 D DEE 0144	Rear window defogger switch OFF	OFF
REAR DEF SW	Rear window defogger switch ON	ON
RKE LOCK AND	NOTE:	OFF
UNLOCK <sup>2</sup>	The item is indicated, but not monitored	ON
	Rear washer switch OFF	OFF
RR WASHER SW	Rear washer switch ON	ON
	Rear wiper switch OFF	OFF
RR WIPER INT	Rear wiper switch INT	ON
	Rear wiper switch OFF	OFF
RR WIPER ON	Rear wiper switch ON	ON
	Rear wiper stop position	OFF
RR WIPER STOP	Other than rear wiper stop position	ON
	Lighting switch OFF	OFF
TAIL LAMP SW	<b>U U U U U U U U U U</b>	-

#### < ECU DIAGNOSIS >

Monitor Item	Condition	Value/Status
TRNK OPNR SW	When back door opener switch is not pressed	OFF
	When back door opener switch is pressed	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

<sup>1:</sup> With Intelligent Key

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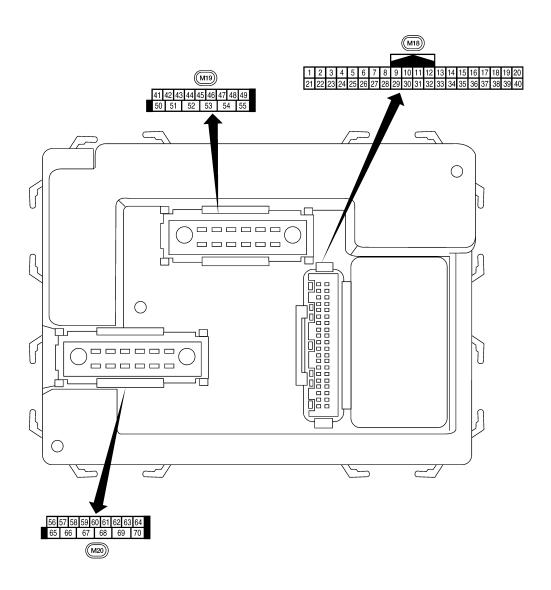
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<sup>2:</sup> With remote keyless entry system

Terminal Layout



LIIA2443E

Physical Values

	14.0		Signal		Measuring condition	Defenses division (
Terminal	Wire color	Signal name	input/ output	Ignition switch	Operation or condition	Reference value or waveform (Approx.)
1	BR	Ignition keyhole illumi-	Output	OFF	Door is locked (SW OFF)	Battery voltage
ı	DK	nation	Output	OFF	Door is unlocked (SW ON)	0V
2	Р	Combination switch input 5	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ***5ms
3	SB	Combination switch input 4	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 2 0 +-5ms SKIA5292E
4	V	Combination switch input 3	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 **5ms
5	L	Combination switch input 2				(V)
6	R	Combination switch input 1	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	5ms SKIA5292E
0		Rear window defogger		ON	Rear window defogger switch ON	0V
9	Y	switch	Input	ON	Rear window defogger switch OFF	5V
11	G/B	Ignition switch (ACC or ON)	Input	ACC or ON	Ignition switch ACC or ON	Battery voltage
12	LG	Front door switch RH	Input	OFF	ON (open)	0V
12		. Tone door Switch INT	iiiput	011	OFF (closed)	Battery voltage
13	L	Rear door switch RH	Input	OFF	ON (open)	0V
	_				OFF (closed)	Battery voltage
15	W	Tire pressure warning check connector	Input	OFF	_	5V
18	BR	Remote keyless entry receiver and optical sensor (ground)	Output	OFF	_	0V

	) A (*	S	Signal Mea		Measuring condition	
Terminal	Wire color	Signal name	input/ output	Ignition switch	Operation or condition	Reference value or waveform (Approx.)
19	V	Remote keyless entry receiver (power sup- ply)	Output	OFF	Ignition switch OFF	(V) 6 4 2 0 +-50 ms
20	G	Remote keyless entry	lnnut	OFF	Stand-by (keyfob buttons released)	(V) 6 4 2 0 + 50 ms LIIA1894E
20	Ü	receiver (signal)	Input OFF	When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed)	(V) 6 4 2 -1 0 **50 ms	
21	GR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switc ON: Pointer of tester should move for approx. 1 second, the return to battery voltage.
22	V	BUS	_	_	Ignition switch ON or power window timer operates	(V) 15 10 5 0 200 ms
23	G	Security indicator lamp	Output	OFF	Goes OFF $\rightarrow$ illuminates (Every 2.4 seconds)	Battery voltage → 0V
25	BR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF $\rightarrow$ ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, the return to battery voltage.
27	W	Compressor ON sig-	Input	ON	A/C switch OFF	5V
		nal	•		A/C switch ON	0V
28	LG	Front blower monitor	Input	ON	Front blower motor OFF Front blower motor ON	Battery voltage 0V
29	G	Hazard switch	Input	OFF	ON OFF	0V 5V
30 <sup>1</sup>	G	Back door opener switch	Input	OFF	ON (open) OFF (closed)	0V  Battery voltage
30 <sup>2</sup>	SB	Back door opener switch	Input	OFF	ON (open)  OFF (closed)	0V  Battery voltage

# < ECU DIAGNOSIS >

	10/:		Signal		Measuring condition	Defended and a second and
Terminal	Wire color	Signal name	input/ output	Ignition switch	Operation or condition	Reference value or waveform (Approx.)
32	0	Combination switch output 5	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 +5ms SKIA5291E
33	GR	Combination switch output 4	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 
34	G	Combination switch output 3	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 *-5ms SKIA5291E
35	BR	Combination switch				
36	LG	Combination switch output 1	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ***5ms SKIA5292E
37 <sup>1</sup>	В	Key switch and key	Input	OFF	Key inserted	Battery voltage
		lock solenoid	pat	0.1	Key inserted	OV
37 <sup>2</sup>	В	Key switch and igni-	Input	OFF	Intelligent Key inserted	Battery voltage
		tion knob switch			Intelligent Key inserted	0V
38	W/R	Ignition switch (ON)	Input	ON	_	Battery voltage
39	L	CAN-H		_	_	_
40	Р	CAN-L		_	_	_
42	LG	Glass hatch ajar	Input	ON	Glass hatch open	0
		switch			Glass hatch closed	Battery
43	Р	Back door latch switch	Input	OFF	ON (open)	OV Date of the second
					OFF (closed)	Battery voltage

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	14/:		Signal		Measuring condition	Defenses selve en verses ferre
Terminal	Wire color	Signal name	input/ output	Ignition switch	Operation or condition	Reference value or waveform (Approx.)
					Rise up position (rear wiper arm on stopper)	0V
					A Position (full clockwise stop position)	Battery voltage
44	0	Rear wiper auto stop switch	Input	ON	Forward sweep (counterclockwise direction)	Fluctuating
					B Position (full counterclockwise stop position)	0V
					Reverse sweep (clockwise direction)	Fluctuating
47	GR	Front door switch LH	lpput	OFF	ON (open)	0V
41	GIX	1 TOTAL GOOF SWILCH LIT	Input	Orr	OFF (closed)	Battery voltage
48	Р	Rear door switch LH	lanut	OFF	ON (open)	0V
40	Р	Real door switch Lm	Input	OFF	OFF (closed)	Battery voltage
49		Cargo lamp	Output	OFF	Any door open (ON)	0V
49	L	Cargo lamp	Output	OFF	All doors closed (OFF)	Battery voltage
51	G	Trailer turn signal (right)	Output	ON	Turn right ON	(V) 15 10 5 0 500 ms SKIA3009J
52	V	Trailer turn signal (left)	Output	ON	Turn left ON	(V) 15 10 5 0
53	L	Back door latch actua-	Output	OFF	OFF	0
					ON	Battery voltage
55	W	Rear wiper output cir- cuit 1	Output	ON	OFF	0
		Cuit i			ON	Battery voltage
56	V	Battery saver output	Output	OFF	30 minutes after ignition switch is turned OFF	0V
				ON	_	Battery voltage
57	R/Y	Battery power supply	Input	OFF	_	Battery voltage
58	W	Optical sensor	Input	ON	When optical sensor is illuminated	3.1V or more
		- 1			When optical sensor is not illuminated	0.6V or less
	0.5	Front door lock as-	0	055	OFF (neutral)	0V
59	GR	sembly LH actuator (unlock)	Output	OFF	ON (unlock)	Battery voltage

#### < ECU DIAGNOSIS >

	Wire		Signal		Measuring cond	dition	Reference value or waveform
Terminal	color	Signal name	input/ output	Ignition switch	Operation	or condition	(Approx.)
60	LG	Turn signal (left)	Output	ON	Turn left ON		(V) 15 10 500 ms SKIA3009J
61	G	Turn signal (right)	Output	ON	Turn right ON		(V) 15 10 500 ms 500 ms
63	BR	Interior room/map	Output	OFF	Any door	ON (open)	0V
		lamp			switch	OFF (closed)	Battery voltage
65	V	All door lock actuators	Output	OFF	OFF (neutral)		0V
		(lock)	<u>'</u>		ON (lock)		Battery voltage
		Front door lock actua-			OFF (neutral)		0V
66	L	tor RH, rear door lock actuators LH/RH and glass hatch lock actu- ator (unlock)	Output	OFF	ON (unlock)		Battery voltage
67	В	Ground	Input	ON	_		0V
					Ignition switch	ON	Battery voltage
					Within 45 seco		Battery voltage
68	0	Power window power supply (RAP)	Output	_	More than 45 s	econds after ig-	0V
					When front doo open or power operates		OV
69	L	Power window power supply	Output	_	-	_	Battery voltage
70	W	Battery power supply	Input	OFF	-	_	Battery voltage

<sup>1:</sup> With remote keyless entry system

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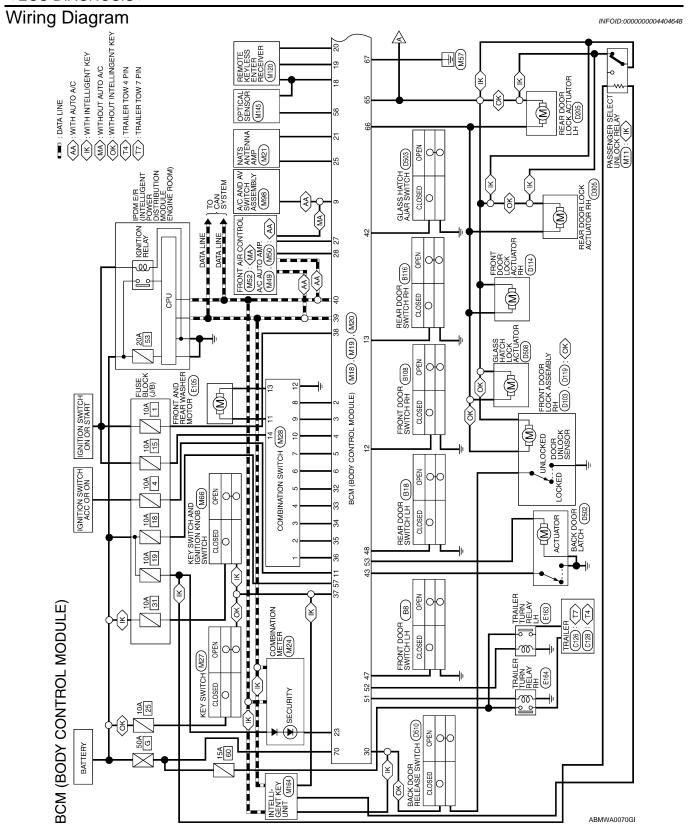
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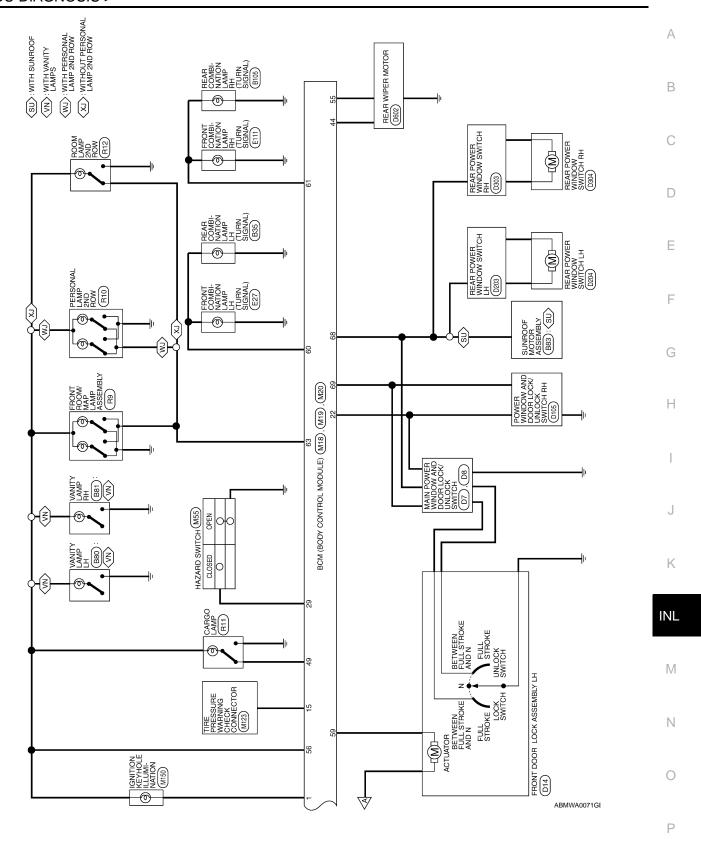
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<sup>2:</sup> With Intelligent Key system





OUTPUT 2

ВВ

36 35

IMMOBILIZER ANTENNA SIG (CLOCK)

GR

2

KEYLESS TUNER SIGNAL

Q

20

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OUTPUT 1

<u>6</u>

IGN SW KEY SW

W/R

SECURITY INDICATOR OUTPUT

മ

23

ANTI-PINCH SERIAL LINK (RX,TX)

>

22

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37 39 38 4

CAN-H CAN-L

۵

LIFTGATE OPENER SW WITHOUT INTELLIGENT KEY SYSTEM)

30 31

KEYLESS TUNER POWER SUPPLY OUTPUT

>

19

KEYLESS AND AUTOLIGHT SENSOR GND

BR

OUTPUT 5 OUTPUT 4 OUTPUT 3

GR

32

0

BACK DOOR AUTO CLOSURE (WITH INTELLIGENT KEY SYSTEM)

SB

30

**BLOWER FAN SW** HAZARD SW

P

Q

TPMS MODE TRIGGER SW

≥ 1

1

4 15 16 17 18

13

≥

26 27 28 29

**AIRCON SW** 

IMMOBILIZER ANTENNA SIGNAL (TX,RX)

25

DOOR SW (AS) DOOR SW (RR)

Signal Name

Color of Wire

Terminal No.

Signal Name ACC SW

Color of Wire G/B ا ا

Terminal No.

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# BCM (BODY CONTROL MODULE) CONNECTORS

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

MT8	BCM (BODY CONTROL MODULE)	VHITE	
Connector No.	Connector Name	Connector Color WHITE	是 H.S.

	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	Signal Name
	6 7 8 9	86 27 28 29	Color of
	4 5	24 25 2	ģ
Σ.	2 3	22 23 2	Terminal No.
7	-	21	Le

Signal Name	KEY RING OUTPUT	INPUT 5	INPUT 4	INPUT 3	INPUT 2	INPUT 1	I	1	REAR DEFOGGER SW	I
Color of Wire	HH.	۵	SB	>	_	Я	I	1	٨	I
Terminal No.	-	2	3	4	5	9	7	8	6	10

Signal Name	KEY RING OUTPUT	S TUPNI	4 TUPNI	INPUT 3	INPUT 2	I TUPNI	-	_	REAR DEFOGGER SW	- 1
Color of Wire	BR	Ф	SB	>	_	В	ı	ı	Υ	ı
Ferminal No.	-	2	3	4	5	9	7	8	6	10

Color of Signal Name	V TRAILER FLASHER OUTPUT (LEFT)	LIFT GATE OPENER OUTPUT	1	W REAR WIPE MOTOR OUTPUT1
Terminal No. Wire	52	53	54	22

Signal Name	REAR WIPE AUTO STOP SW1	1	1	DOOR SW (DR)	DOOR SW (RL)	LUGGAGE LAMP OUTPUT	_	TRAILER FLASHER OUTPUT (RIGHT)
Color of Wire	0	ı	1	GR	۵	Г	_	G
Terminal No.	44	45	46	47	48	49	90	51

	H	
Connector No.	elm .	T)
Connector Name		BCM (BODY CONTROL MODULE)
or Co	Connector Color WHITE	ITE
	145	41   42   43   44   45   46   47   48   49   45   50   51   52   53   54   55
Terminal No.	Color of Wire	Signal Name
	-	ı
	ΓG	GLASS HATCH SW
	Ь	BACK DOOR SW

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S   B   C   S   S   S   S   S   S   S   S   S	Terminal No.	Color of Wire	Signal Name
H	61	ŋ	FLASHER OUTPUT (RIGHT)
€ L >	62	ı	ı
>	63	BR	ROOM LAMP
>	64	ı	ı
B O ¬ ≥	65	^	DOOR LOCK OUTPUT (ALL)
B O B	99	Γ	DOOR UNLOCK OUTPUT (OTHER)
0 7 %	29	В	GND (POWER)
۸ ۲	89	0	POWER WINDOW POWER SUPPLY OUT- PUT (LINKED TO RAP)
	69	Τ	POWER WINDOW POWER SUPPLY OUTPUT (BAT)
^^	20	Μ	BAT (F/L)

Signal Name	INPUT 1	INPUT 2	INPUT 3	INPUT 4	INPUT 5	OUTPUT 1	OUTPUT 2	OUTPUT 5	OUTPUT 4	OUTPUT 3	WASHER MOTOR (RR+)	GND	WASHER MOTOR (RR-)	IGN
Color of Wire	LG	BR	g	GR	0	۳	٦	۵	SB	>	0	В	٦	M/G
Terminal No.	-	2	က	4	5	9	7	8	6	10	Ŧ	12	13	14

Connector No.	M20
Connector Name	Connector Name BCM (BODY CONTROL MODULE)
Connector Color   BLACK	BLACK
	56 57 58 59 60 61 62 63 64   65  66  67  68  69  70

Signal Name	BAT SAVER OUTPUT	BAT (FUSE)	AUTO LIGHT SENSOR INPUT 2	DOOR UNLOCK OUTPUT (DR)	FLASHER OUTPUT (LEFT)
Color of Wire	>	R/Y	W	GR	ГС
Terminal No.	56	22	28	29	09

82	Connector Name   COMBINATION SWITCH	HTE	
M28	CC or	W	
Connector No.	Connector Nam	Connector Color WHITE	9





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# DTC Inspection Priority Chart

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

#### < ECU DIAGNOSIS >

· · ·	
Priority	DTC
1	U1000: CAN COMM CIRCUIT
	U1010: CONTROL UNIT (CAN)
	B2190: NATS ANTENNA AMP     B2191: DIFFERENCE OF KEY
	B2192: ID DISCORD BCM-ECM
2	B2193: CHAIN OF BCM-ECM
	B2013: STRG COMM 1     B0550: INTELLIGENT KEY
	B2552: INTELLIGENT KEY     B2590: NATS MALFUNCTION
	C1729: VHCL SPEED SIG ERR
3	C1729: VRCL SPEED SIG ERR      C1735: IGNITION SIGNAL
	C1704: LOW PRESSURE FL
	C1704: LOW PRESSURE FR      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
4	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
	C1725: [BATT VOLT LOW] FR  C1726: [BATT VOLT LOW] RR
	• C1727: [BATT VOLT LOW] RL

DTC Index

#### NOTE:

Details of time display

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

CONSULT display	Fail-safe	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
No DTC is detected. further testing may be required.	_	_		_
U1000: CAN COMM CIRCUIT	_	_	_	BCS-33
U1010: CONTROL UNIT (CAN)	_	_	_	BCS-34
B2013: STRG COMM 1	_	_	_	SEC-27
B2190: NATS ANTTENA AMP	_	_	_	SEC-30 (with I- Key), SEC-136 (without I-Key)

# < ECU DIAGNOSIS >

CONSULT display	Fail-safe	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
B2191: DIFFERENCE OF KEY	_	_	_	SEC-33 (with I- Key), SEC-139 (without I-Key)
B2192: ID DISCORD BCM-ECM	_	_	_	SEC-34 (with I- Key), SEC-140 (without I-Key)
B2193: CHAIN OF BCM-ECM	_	_	_	SEC-36 (with I- Key), SEC-142 (without I-Key)
B2552: INTELLIGENT KEY	_	_	_	SEC-38
B2590: NATS MALFUNCTION	_	_	_	SEC-39
C1708: [NO DATA] FL	_	_	_	<u>WT-14</u>
C1709: [NO DATA] FR	_	_	_	<u>WT-14</u>
C1710: [NO DATA] RR	_	_	_	<u>WT-14</u>
C1711: [NO DATA] RL	_	_	_	<u>WT-14</u>
C1712: [CHECKSUM ERR] FL	_	_	_	<u>WT-16</u>
C1713: [CHECKSUM ERR] FR	_	_	_	<u>WT-16</u>
C1714: [CHECKSUM ERR] RR	_	_	_	<u>WT-16</u>
C1715: [CHECKSUM ERR] RL	_	_	_	<u>WT-16</u>
C1716: [PRESSDATA ERR] FL	_	_	_	<u>WT-18</u>
C1717: [PRESSDATA ERR] FR	_	_	_	<u>WT-18</u>
C1718: [PRESSDATA ERR] RR	_	_	_	<u>WT-18</u>
C1719: [PRESSDATA ERR] RL	_	_	_	<u>WT-18</u>
C1720: [CODE ERR] FL	_	_	_	<u>WT-16</u>
C1721: [CODE ERR] FR	_	_	_	<u>WT-16</u>
C1722: [CODE ERR] RR	_	_	_	<u>WT-16</u>
C1723: [CODE ERR] RL	_	_	_	<u>WT-16</u>
C1724: [BATT VOLT LOW] FL	_	_	_	<u>WT-16</u>
C1725: [BATT VOLT LOW] FR	_	_	_	<u>WT-16</u>
C1726: [BATT VOLT LOW] RR	_	_	_	<u>WT-16</u>
C1727: [BATT VOLT LOW] RL	_	_	_	<u>WT-16</u>
C1729: VHCL SPEED SIG ERR	_	_	_	<u>WT-19</u>
C1735: IGNITION SWITCH	_	_	_	_

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#### **INTERIOR LIGHTING SYSTEM SYMPTOMS**

< SYMPTOM DIAGNOSIS >

# SYMPTOM DIAGNOSIS

# INTERIOR LIGHTING SYSTEM SYMPTOMS

Symptom Table

#### **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 Front room/map lamp assembly Personal lamp 2nd row (with personal lamp 2nd row) Room lamp 2nd row (without personal lamp 2nd row) Cargo room lamp Vanity mirror lamps (if equipped)	Harness between BCM and each interior room lamp Harness between BCM and each door switch BCM	Battery saver output/power supply circuit Refer to INL-16.	
Some or all of the following interior room lamps do not turn ON/OFF  • Front room/map lamp assembly  • Personal lamp 2nd row (with personal lamp 2nd	Harness between BCM and each interior room lamp	Door switch circuit Refer to <u>DLK-57</u> (with Intelligent Key system) or <u>DLK-226</u> (without Intelligent Key system).	
row)  Room lamp 2nd row (without personal lamp 2nd row)	• BCM	Interior room lamp control circuit Refer to INL-18.	
Cargo lamp does not turn ON/OFF	Harness between BCM and cargo lamp     BCM	Cargo lamp circuit Refer to <u>INL-20</u> .	
Ignition keyhole illumination does not turn ON/OFF	Harness between BCM and cargo lamp     BCM	Ignition keyhole illumination circuit Refer to INL-22	
Interior room lamp timer does not activate. (It turns ON/ OFF when the door opens/closes.)	_	Check the interior room lamp setting. Refer to INL-12.	
Interior room lamp battery saver does not activate.	_	Check the interior room lamp battery saver setting. Refer to INL-13.	

# **PRECAUTION**

#### **PRECAUTIONS**

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

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.

Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

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#### NOTE:

- This Procedure is applied only to models with Intelligent Key system and NATS (NISSAN ANTI-THEFT SYS-
- Remove and install all control units after disconnecting both battery cables with the ignition knob in the "LOCK" position.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If DTC is detected, perform trouble diagnosis according to self-diagnostic results.

For models equipped with the Intelligent Key system and NATS, an electrically controlled steering lock mechanism is adopted on the key cylinder.

For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.

If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

#### **OPERATION PROCEDURE**

1. Connect both battery cables.

#### NOTE:

Supply power using jumper cables if battery is discharged.

- 2. Use the Intelligent Key or mechanical key to turn the ignition switch to the "ACC" position. At this time, the steering lock will be released.
- Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
- 4. Perform the necessary repair operation.
- 5. When the repair work is completed, return the ignition switch to the "LOCK" position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
- Perform a self-diagnosis check of all control units using CONSULT-III.

# General precautions for service operations

 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.

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#### **PRECAUTIONS**

# < PRECAUTION >

- · 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

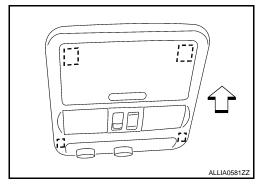
#### MAP LAMP

#### Removal

The map lamp is replaced as part of the overhead console assembly. Refer to INT-20, "Removal and Installation".

: Metal clip

⇐: Vehicle front



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#### Installation

Installation is in the reverse order of removal.

#### **Bulb Replacement**

- 1. Disconnect the negative battery terminal.
- 2. Using a suitable tool (A), remove map lamp lens (1).

( ): Pawl

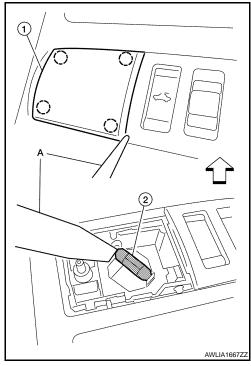
€: Vehicle front

#### **CAUTION:**

#### Wrap a cloth around tool to protect the housing and lens.

3. Release one side of the bulb (2) from the tab, then pull straight downward to remove.

Map lamp bulb : 12V - 8W



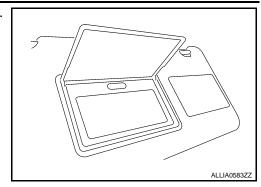
VANITY MIRROR LAMP (if equipped)

Removal

#### **INTERIOR ROOM LAMP**

#### < ON-VEHICLE REPAIR >

The vanity mirror lamp is replaced as part of the sunvisor assembly. Refer to <a href="INT-20">INT-20</a>, "Removal and Installation".



#### Installation

Installation is in the reverse order of removal.

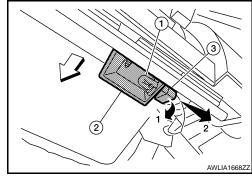
#### **Bulb Replacement**

The vanity mirror lamp bulb is replaced as part of the sunvisor assembly. Refer to <a href="INT-20">INT-20</a>, "Removal and Installation".

#### **GLOVE BOX LAMP**

#### Removal

- 1. Remove lower instrument panel RH and glove box. Refer to IP-11, "Removal and Installation".
- Rotate glove box lamp socket (3) with bulb (1) counterclockwise, then pull away from lamp shield (2) on steering member to remove.



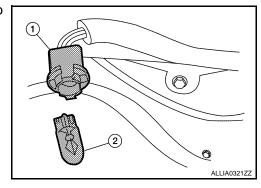
#### Installation

Installation is in the reverse order of removal.

#### **Bulb Replacement**

- 1. Disconnect the negative battery terminal.
- 2. Remove glove box lamp.
- 3. Pull bulb (2) straight out from glove box lamp socket (1) to remove.

Glove box lamp bulb : 12V - 3.4W



#### PERSONAL LAMP

#### Removal

Disconnect the negative battery terminal.

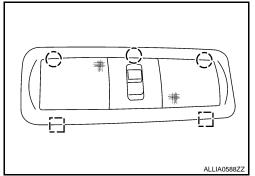
#### INTERIOR ROOM LAMP

#### < ON-VEHICLE REPAIR >

2. Release the clips and remove personal lamp from headlining. Refer to <a href="INT-20">INT-20</a>, "Removal and Installation".

(\_): Pawl [\_]: Metal clip

3. Disconnect personal lamp electrical connector, then remove from overhead console.



#### Installation

Installation is in the reverse order of removal.

#### **Bulb Replacement**

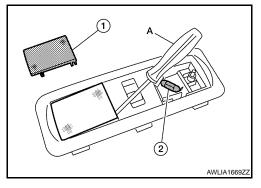
- 1. Remove personal lamp.
- 2. Using a suitable tool (A), release the pawls and remove personal lamp lens (1).

#### **CAUTION:**

Wrap a cloth around tool to protect the housing and lens.

3. Release one side of the bulb (2) from the tab, then pull straight downward to remove.

Personal lamp bulb : 12V - 8W



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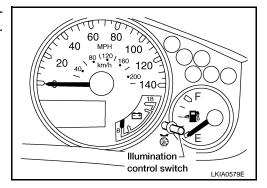
#### Removal and Installation

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#### **ILLUMINATION CONTROL SWITCH**

#### Removal

The illumination control switch (1) is replaced as a part of the combination meter assembly. Refer to <a href="MWI-94">MWI-94</a>, "Removal and Installation".



#### Installation

Installation is in the reverse order of removal.

#### **CARGO LAMP**

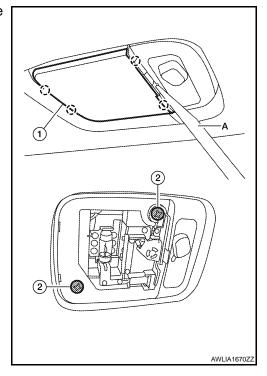
#### Removal

- 1. Disconnect the negative battery terminal.
- 2. Using a suitable tool (A), release the pawls and remove the cargo lamp lens (1).

# (): Pawl CAUTION:

Wrap a cloth around tool to protect the housing and lens.

- 3. Remove cargo lamp screws (2).
- 4. Disconnect the connector, then remove cargo lamp.



#### Installation

Installation is in the reverse order of removal.

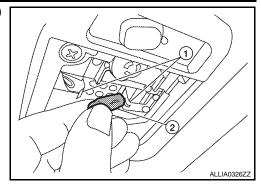
#### **Bulb Replacement**

- 1. Disconnect the negative battery terminal.
- 2. Using a suitable tool, release the pawls and remove the cargo lamp lens.

#### < ON-VEHICLE REPAIR >

3. Release the cargo lamp bulb retainers (1), then pull bulb (2) straight out to remove.

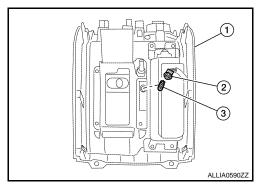
Cargo lamp bulb : 12V - 8W



#### AT FINISHER LAMP

#### Removal

- 1. Remove AT finisher from center console. Refer to IP-11, "Removal and Installation".
- 2. Rotate AT finisher lamp socket (2) with bulb (3) counterclockwise, then pull away from finisher (1).



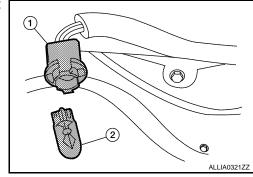
#### Installation

Installation is in the reverse order of removal.

#### **Bulb Replacement**

- 1. Remove AT finisher from center console. Refer to IP-11, "Removal and Installation".
- Remove AT finisher lamp socket (1), then pull bulb (2) straight out from socket.

AT finisher lamp bulb : 12V - 3W



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#### **BULB SPECIFICATIONS**

< SERVICE DATA AND SPECIFICATIONS (SDS)

# SERVICE DATA AND SPECIFICATIONS (SDS)

# **BULB SPECIFICATIONS**

# Interior Lamp/Illumination

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Item	Wattage (W)*
Map lamp	8
Vanity lamp (if equipped)	*
Glove box lamp	3.4
Personal lamp	8
Cargo lamp	8
A/T finisher lamp	3

<sup>\*:</sup> Always check with the Parts Department for the latest parts information.