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CONTENTS

BASIC INSPECTION4
DIAGNOSIS AND REPAIR WORK FLOW 4 Work Flow4
SYSTEM DESCRIPTION7
FRONT WIPER AND WASHER SYSTEM7
WITH RAIN SENSOR
WITHOUT RAIN SENSOR
REAR WIPER AND WASHER SYSTEM16System Diagram16System Description16Component Parts Location18Component Description18
DIAGNOSIS SYSTEM (BCM)19
COMMON ITEM19 COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)19
WIPER20 WIPER : CONSULT Function (BCM - WIPER)20
DIAGNOSIS SYSTEM (IPDM E/R)

DTC/CIRCUIT DIAGNOSIS27
WIPER AND WASHER FUSE, FUSIBLE LINK
Description
POWER SUPPLY AND GROUND CIRCUIT28
BCM (BODY CONTROL MODULE)28 BCM (BODY CONTROL MODULE) : Diagnosis Procedure28
IPDM E/R (INTELLIGENT POWER DISTRIBU- TION MODULE ENGINE ROOM)28 IPDM E/R (INTELLIGENT POWER DISTRIBU- TION MODULE ENGINE ROOM) : Diagnosis Pro- cedure
FRONT WIPER MOTOR LO CIRCUIT30 Component Function Check30 Diagnosis Procedure30
FRONT WIPER MOTOR HI CIRCUIT32 Component Function Check32 Diagnosis Procedure32
FRONT WIPER STOP POSITION SIGNAL
CIRCUIT34 Component Function Check34 Diagnosis Procedure34
FRONT WIPER MOTOR GROUND CIRCUIT36 Diagnosis Procedure36
WASHER SWITCH 37 Description 37 Component Inspection 37
RAIN SENSOR

REAR WIPER MOTOR CIRCUIT40	FOR CALIFORNIA AND CANADA: Precautions	
Component Function Check 40	for Removing of Battery Terminal	. 126
Diagnosis Procedure	FOR MEXICO	. 126
REAR WIPER STOP POSITION SIGNAL CIR-	FOR MEXICO: Precaution for Supplemental Re-	
CUIT42	straint System (SRS) "AIR BAG" and "SEAT BELT	
Component Function Check	PRE-TENSIONER"	
Diagnosis Procedure	FOR MEXICO: Precaution for Procedure without	
-	Cowl Top Cover	
FRONT WIPER AND WASHER SYSTEM 44	FOR MEXICO : Precautions for Removing of Bat-	
Wiring Diagram - FRONT WIPER AND WASHER	tery Terminal	. 127
SYSTEM 44	REMOVAL AND INSTALLATION	. 128
REAR WIPER AND WASHER SYSTEM 52		
Wiring Diagram - REAR WIPER AND WASHER	WASHER TANK	
SYSTEM 52	Exploded View	
ECUI DIA CNOSIS INFORMATION 60	Removal and Installation	. 128
ECU DIAGNOSIS INFORMATION60	WASHER PUMP	.129
BCM (BODY CONTROL MODULE)60	Exploded View	
Reference Value	Removal and Installation	
Wiring Diagram - BCM 83		
Fail-safe	WASHER LEVEL SWITCH	
DTC Inspection Priority Chart99	Removal and Installation	. 130
DTC Index100	FRONT WASHER NOZZLE AND TUBE	.131
IPDM E/R (INTELLIGENT POWER DISTRI-	Exploded View	
BUTION MODULE ENGINE ROOM) 103	Hydraulic Layout	
Reference Value103	Removal and Installation	
Wiring Diagram - IPDM E/R111	Inspection and Adjustment	. 132
Fail-safe114	EDONT WIDED ADM	
DTC Index116	FRONT WIPER ARM	
	Exploded ViewRemoval and Installation	
SYMPTOM DIAGNOSIS117	Adjustment	
WIPER AND WASHER SYSTEM SYMPTOMS		
. 117	WIPER BLADE	
. 117	Exploded View	
WITH RAIN SENSOR117	Removal and Installation	
WITH RAIN SENSOR : Symptom Table117	Replacement	. 136
WITHOUT RAIN SENSOR119	FRONT WIPER DRIVE ASSEMBLY	.138
WITHOUT RAIN SENSOR : Symptom Table119	Exploded View	
William Carook : Cymptom rabio	Removal and Installation	
NORMAL OPERATING CONDITION 122	Disassembly and Assembly	. 139
Description122	·	
FRONT WIPER DOES NOT OPERATE 123	RAIN SENSOR	
Description	Exploded ViewRemoval and Installation	
Diagnosis Procedure123	Nemovai and installation	. 140
•	WIPER AND WASHER SWITCH	.141
PRECAUTION125	Exploded View	. 141
PRECAUTIONS125		
125	REAR WIPER ARM	
FOR CALIFORNIA AND CANADA125	Exploded ViewRemoval and Installation	
FOR CALIFORNIA AND CANADA: Precaution for	Adjustment	
Supplemental Restraint System (SRS) "AIR BAG"	•	
and "SEAT BELT PRE-TENSIONER"125	REAR WIPER MOTOR	
FOR CALIFORNIA AND CANADA: Precaution for	Exploded View	
Procedure without Cowl Top Cover125	Removal and Installation	. 144

REAR WASHER NOZZLE AND TUBE145 Removal and Installation146 Inspection and Adjustment147 Hydraulic Layout145 Α В С D Е F G Н Κ

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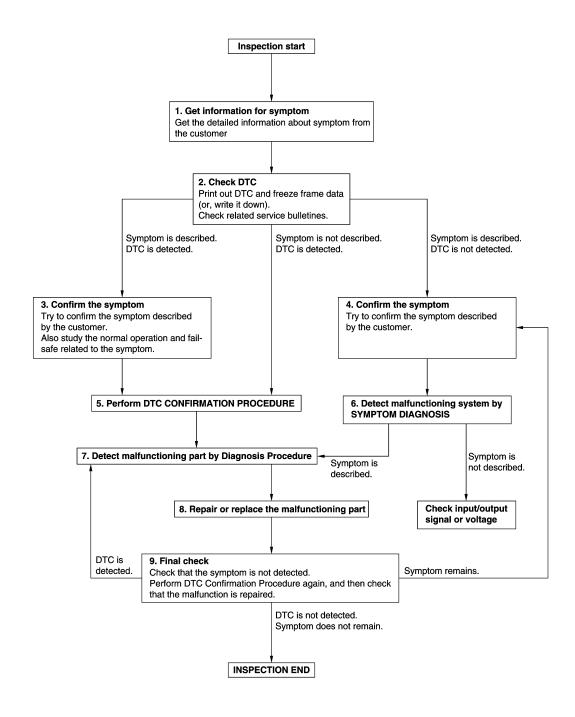
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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

OVERALL SEQUENCE



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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

1.GET INFORMATION FOR SYMPTOM

- 1. Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurs).
- 2. Check operation condition of the function that is malfunctioning.

>> GO TO 2.

2. CHECK DTC

- 1. Check DTC.
- 2. Perform the following procedure if DTC is detected.
- Record DTC and freeze frame data (Print them out using CONSULT.)
- Erase DTC.
- Study the relationship between the cause detected by DTC and the symptom described by the customer.
- Check related service bulletins for information.

Are any symptoms described and any DTC detected?

Symptom is described, DTC is detected>>GO TO 3.

Symptom is described, DTC is not detected>>GO TO 4.

Symptom is not described, DTC is detected>>GO TO 5.

3.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.

Also study the normal operation and fail-safe related to the symptom.

Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

4.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.

Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6.

5.PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC CONFIRMATION PROCEDURE for the detected DTC, and then check that DTC is detected again. At this time, always connect CONSULT to the vehicle, and check self diagnostic results in real time. If two or more DTCs are detected, refer to BCS-90, "DTC Inspection Priority Chart" (BCM) or PCS-34, "DTC Index" (IPDM E/R), and determine trouble diagnosis order.

NOTE

- Freeze frame data is useful if the DTC is not detected.
- Perform Component Function Check if DTC CONFIRMATION PROCEDURE is not included on Service Manual. This simplified check procedure is an effective alternative though DTC cannot be detected during this check.

If the result of Component Function Check is NG, it is the same as the detection of DTC by DTC CONFIR-MATION PROCEDURE.

Is DTC detected?

YES >> GO TO 7.

NO >> Check according to GI-44, "Intermittent Incident".

6. DETECT MALFUNCTIONING SYSTEM BY SYMPTOM DIAGNOSIS

Detect malfunctioning system according to SYMPTOM DIAGNOSIS based on the confirmed symptom in step 4, and determine the trouble diagnosis order based on possible causes and symptom.

Is the symptom described?

YES >> GO TO 7.

NO >> Monitor input data from related sensors or check voltage of related module terminals using CON-SULT.

7. DETECT MALFUNCTIONING PART BY DIAGNOSIS PROCEDURE

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

Inspect according to Diagnosis Procedure of the system.

Is malfunctioning part detected?

YES >> GO TO 8.

NO >> Check according to GI-44, "Intermittent Incident".

8.repair or replace the malfunctioning part

- 1. Repair or replace the malfunctioning part.
- Reconnect parts or connectors disconnected during Diagnosis Procedure again after repair and replacement.
- 3. Check DTC. If DTC is detected, erase it.

>> GO TO 9.

9. FINAL CHECK

When DTC is detected in step 2, perform DTC CONFIRMATION PROCEDURE again, and then check that the malfunction is repaired securely.

When symptom is described by the customer, refer to confirmed symptom in step 3 or 4, and check that the symptom is not detected.

Is DTC detected and does symptom remain?

YES-1 >> DTC is detected: GO TO 7.

YES-2 >> Symptom remains: GO TO 4.

NO >> Before returning the vehicle to the customer, always erase DTC.

SYSTEM DESCRIPTION

FRONT WIPER AND WASHER SYSTEM WITH RAIN SENSOR

WITH RAIN SENSOR: System Diagram

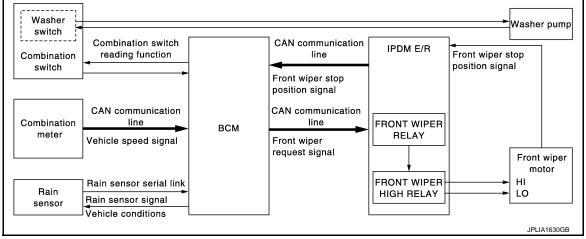
INFOID:0000000009719710 Washer pump

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WITH RAIN SENSOR: System Description

INFOID:0000000009719711

OUTLINE

The front wiper is controlled by each function of BCM and IPDM E/R.

Control by BCM

- Combination switch reading function
- Front wiper control function

Control by IPDM E/R

- Front wiper control function
- Relay control function

Combination meter indicates low washer fluid warning judged with the signal from the washer level switch. For details of low washer fluid warning, refer to MWI-26, "INFORMATION DISPLAY: System Description".

FRONT WIPER BASIC OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the front wiper request signal to IPDM E/R with CAN communication depending on each operating condition of the front wiper.
- IPDM E/R turns ON/OFF the integrated front wiper relay and the front wiper high relay according to the front wiper request signal. IPDM E/R provides the power supply to operate the front wiper HI/LO operation.

FRONT WIPER LO OPERATION

 BCM transmits the front wiper request signal (LO) to IPDM E/R with CAN communication according to the front wiper LO operating condition.

Front wiper LO operating condition

- Ignition switch ON
- Front wiper switch LO or front wiper switch MIST (while pressing)
- IPDM E/R turns ON the integrated front wiper relay according to the front wiper request signal (LO).

FRONT WIPER HI OPERATION

 BCM transmits the front wiper request signal (HI) to IPDM E/R with CAN communication according to the front wiper HI operating condition.

Front wiper HI operating condition

- Ignition switch ON
- Front wiper switch HI

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< SYSTEM DESCRIPTION >

• IPDM E/R turns ON the integrated front wiper relay and the front wiper high relay according to the front wiper request signal (HI).

FRONT WIPER AUTO OPERATION

Rain Sensing

Rain level and sensor conditions are detected by rain sensor.

- BCM transmits the vehicle conditions (vehicle speed, front wiper condition, rain sensor sensitivity setting, etc.) to the rain sensor via the rain sensor serial link.
- Rain sensor judges a wiping speed for front wiper by rain condition and the vehicle conditions. And it transmits the wiping speed request signal to the BCM via the rain sensor serial link.

Auto Wiping Operation

- BCM receives the wiping speed request signal from the rain sensor via the rain sensor serial link.
- BCM controls front wiper operation according to the wiping speed request signals. And it transmits the front wiper request signals (LO or HI) to the IPDM E/R via CAN communication line.

Front wiper AUTO operating condition

- Ignition switch ON
- Front wiper switch INT/AUTO

NOTE

When the front wiper switch is turned to INT/AUTO position, front wiper operates once regardless of a rainy condition.

Rain Sensor Sensitivity Setting

BCM determines rain sensor sensitivity according to a wiper volume.

Wiper volume dial position	Sensitivity
1	High sensitivity
2	Flight Sensitivity
3	Medium-high sensitivity
4	Wedidin-riigh Sensitivity
5	Low-medium sensitivity
6	Low-medium sensitivity
7	Low sensitivity

NOTE:

When the wiper volume is turned up at 1 level with front wiper AUTO operating condition, front wiper operates once

FRONT WIPER AUTO STOP OPERATION

- BCM stops transmitting the front wiper request signal when the front wiper switch is turned OFF.
- IPDM E/R detects the front wiper stop position signal from the front wiper motor and detects the front wiper motor position (stop position/except stop position).
- When the front wiper request signal is stopped, IPDM E/R turns ON the front wiper relay until the front wiper motor returns to the stop position.

Front wiper request (LO)	ON	
	OFF Except stop position	
Front wiper stop position signal	Stop position ON	
Front wiper relay	OFF	JPLIA0410GB

< SYSTEM DESCRIPTION >

NOTE:

- BCM stops the transmitting of the front wiper request signal when the ignition switch is OFF.
- IPDM E/R turns the front wiper relay OFF when the ignition switch is OFF.

FRONT WIPER OPERATION LINKED WITH WASHER

- BCM transmits the front wiper request signal (LO) to IPDM E/R with CAN communication according to the washer linked operating condition of the front wiper.
- BCM transmits the front wiper request signal (LO) so that the front wiper operates approximately 2 times when the front washer switch OFF is detected.

Washer linked operating condition of front wiper

- Ignition switch ON
- Front washer switch ON (0.4 second or more)
- IPDM E/R turns ON the integrated front wiper relay according to the front wiper request signal (LO).
- The washer pump is grounded through the combination switch with the front washer switch ON.

FAIL-SAFE FUNCTION

Front Wiper control

IPDM E/R performs the fail-safe function when the front wiper stop position circuit is malfunctioning. Refer to PCS-32, "Fail-safe".

Rain Sensor Malfunction

- BCM judges the rain sensor serial link error by the rain sensor serial link condition and detects the rain sensor malfunction by rain sensor malfunction signal.
- When BCM detects the rain sensor serial link error or the rain sensor malfunction while front wiper AUTO operation, BCM operates a fail-safe control.

NOTE:

If rain sensor malfunction is detected when ignition switch is turned OFF \Rightarrow ON and front wiper switch is INT/ AUTO position, BCM operates front wiper LO.

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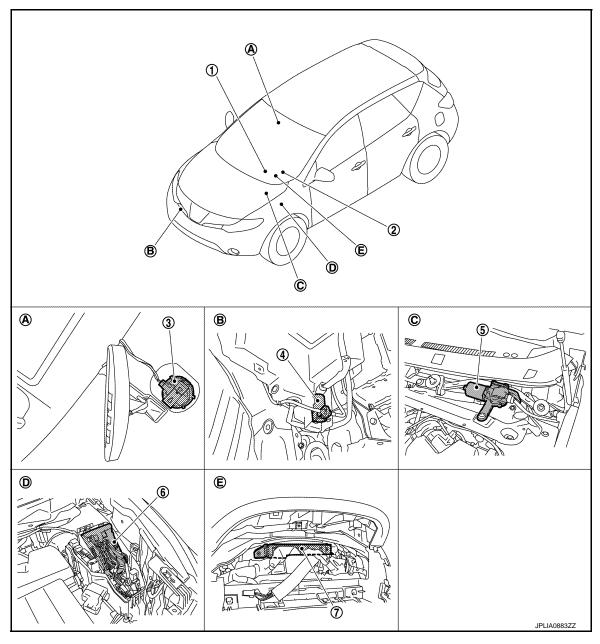
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WITH RAIN SENSOR: Component Parts Location

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- 1. Combination switch
- 4. Washer pump
- 7. BCM
- A. Wind shield upper
- D. Engine room (left side)
- 2. Combination meter
- 5. Front wiper motor
- B. Radiator core support (RH)
- E. Behind combination meter
- Rain sensor
- 6. IPDM E/R
- C. Cowl top, left side of engine room

WITH RAIN SENSOR: Component Description

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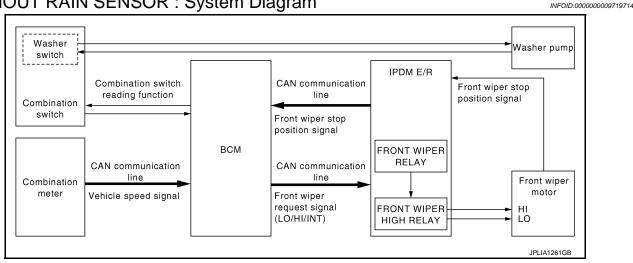
Part	Description
BCM	 Judges each switch status by the combination switch reading function. Requests (with CAN communication) the front wiper relay and the front wiper high relay ON to IPDM E/R.
IPDM E/R	 Controls the integrated relay according to the request (with CAN communication) from BCM. Performs the auto stop control of the front wiper.

< SYSTEM DESCRIPTION >

Part	Description
Combination switch (Wiper & washer switch)	Refer to BCS-10, "System Diagram".
Combination meter	Transmits the vehicle speed signal to BCM with CAN communication.
Rain sensor	Detects water droplets on the windshield with infrared rays, and transmits the rain sensor signal to BCM through the rain sensor serial link.

WITHOUT RAIN SENSOR

WITHOUT RAIN SENSOR: System Diagram



WITHOUT RAIN SENSOR: System Description

OUTLINE

The front wiper is controlled by each function of BCM and IPDM E/R.

Control by BCM

- Combination switch reading function
- Front wiper control function

Control by IPDM E/R

- Front wiper control function
- Relay control function

Combination meter indicates low washer fluid warning judged with the signal from the washer level switch. For details of low washer fluid warning, refer to MWI-26, "INFORMATION DISPLAY: System Description".

FRONT WIPER BASIC OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the front wiper request signal to IPDM E/R with CAN communication depending on each operating condition of the front wiper.
- IPDM E/R turns ON/OFF the integrated front wiper relay and the front wiper high relay according to the front wiper request signal. IPDM E/R provides the power supply to operate the front wiper HI/LO operation.

FRONT WIPER LO OPERATION

 BCM transmits the front wiper request signal (LO) to IPDM E/R with CAN communication according to the front wiper LO operating condition.

Front wiper LO operating condition

- Ignition switch ON

Revision: 2013 August

- Front wiper switch LO or front wiper switch MIST (while pressing)
- IPDM E/R turns ON the integrated front wiper relay according to the front wiper request signal (LO).

FRONT WIPER HI OPERATION

 BCM transmits the front wiper request signal (HI) to IPDM E/R with CAN communication according to the front wiper HI operating condition.

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< SYSTEM DESCRIPTION >

Front wiper HI operating condition

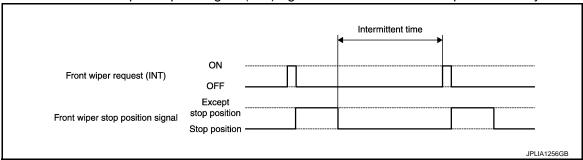
- Ignition switch ON
- Front wiper switch HI
- IPDM E/R turns ON the integrated front wiper relay and the front wiper high relay according to the front wiper request signal (HI).

FRONT WIPER INT OPERATION

 BCM transmits the front wiper request signal (INT) to IPDM E/R with CAN communication depending on the front wiper INT operating condition and intermittent operation delay interval according to the wiper intermittent dial position.

Front wiper INT operating condition

- Ignition switch ON
- Front wiper switch INT
- IPDM E/R turns ON the integrated front wiper relay so that the front wiper is operated only once according to the front wiper request signal (INT).
- BCM detects stop position/except stop position of the front wiper motor according to the front wiper stop
 position signal received from IPDM E/R with CAN communication.
- BCM transmits the front wiper request signal (INT) again after the intermittent operation delay interval.



NOTE:

Factory setting of the front wiper intermittent operation is the operation without vehicle speed. Front wiper intermittent operation can be set to the operation with vehicle speed by CONSULT. Refer to <a href="https://www.www.eman.com/www.ema.com/www.eman.com/www.eman.com/www.ema.com/www.ema.com/www.eman.com/www.ema.com/www.ema.com/www.ema.com/www.ema.com/www.ema.com/www.ema.com/www.ema.com/www.ema.com/www.ema.com/www.ema.com/www.

Front wiper intermittent operation with vehicle speed

- BCM calculates the intermittent operation delay interval from the following
- Vehicle speed signal (received from the combination meter with CAN communication)
- Wiper intermittent dial position

		Intermittent operation delay Interval (s)			
Wiper intermittent	Intermittent operation	Vehicle speed			
dial position	interval	0 – 5 km/h (0 – 3.1 MPH)	5 – 35 km/h (3.1 – 21.7 MPH)	35 – 65 km/h* (21.7 – 40.4 MPH)	65 km/h (40.4 MPH) or more
1	Short	0.8	0.6	0.4	0.24
2	1	4	3	2	1.2
3		10	7.5	5	3
4		16	12	8	4.8
5		24	18	12	7.2
6	. ↓	32	24	16	9.6
7	Long	42	31.5	21	12.6

^{*:} When without vehicle speed setting

FRONT WIPER AUTO STOP OPERATION

- BCM stops transmitting the front wiper request signal when the front wiper switch is turned OFF.
- IPDM E/R detects the front wiper stop position signal from the front wiper motor and detects the front wiper motor position (stop position/except stop position).

< SYSTEM DESCRIPTION >

• When the front wiper request signal is stopped, IPDM E/R turns ON the front wiper relay until the front wiper motor returns to the stop position.

Front wiper request (LO)	ON	
Tront wiper request (EO)	OFF	
	Except stop position	
Front wiper stop position signal	Stop position	
Front wiper relay	ON	
Florit wiper relay	OFF	
		JPLIA0410GB

NOTE:

- BCM stops the transmitting of the front wiper request signal when the ignition switch is OFF.
- IPDM E/R turns the front wiper relay OFF when the ignition switch is OFF.

FRONT WIPER OPERATION LINKED WITH WASHER

- BCM transmits the front wiper request signal (LO) to IPDM E/R with CAN communication according to the washer linked operating condition of the front wiper.
- BCM transmits the front wiper request signal (LO) so that the front wiper operates approximately 2 times when the front washer switch OFF is detected.

Washer linked operating condition of front wiper

- Ignition switch ON
- Front washer switch ON (0.4 second or more)
- IPDM E/R turns ON the integrated front wiper relay according to the front wiper request signal (LO).
- The washer pump is grounded through the combination switch with the front washer switch ON.

FRONT WIPER FAIL-SAFE OPERATION

IPDM E/R performs the fail-safe function when the front wiper stop position circuit is malfunctioning. Refer to PCS-32, "Fail-safe".

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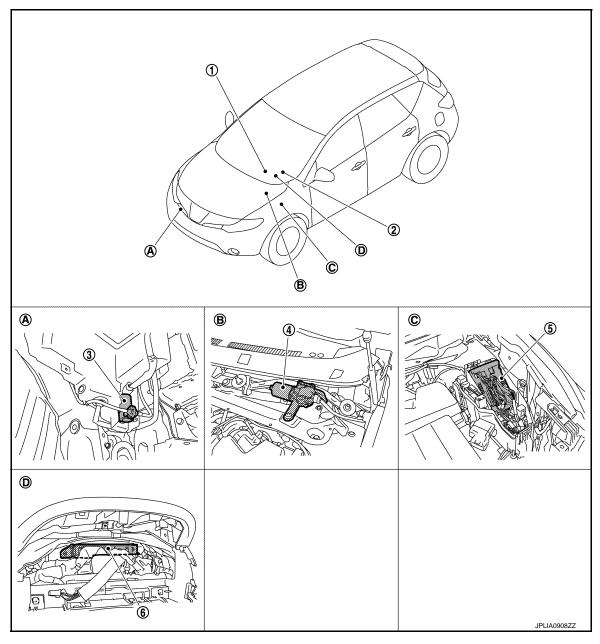
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WITHOUT RAIN SENSOR: Component Parts Location

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- 1. Combination switch
- 4. Front wiper motor
- A. Radiator core support (RH)
- D. Behind combination meter
- 2. Combination meter
- 5. IPDM E/R
- B. Cowl top, left side of engine room
- 3. Washer pump
- 6. BCM
- C. Engine room (left side)

WITHOUT RAIN SENSOR : Component Description

INFOID:0000000009719717

Part	Description
BCM	 Judges each switch status by the combination switch reading function. Requests (with CAN communication) the front wiper relay and the front wiper high relay ON to IPDM E/R.
IPDM E/R	 Controls the integrated relay according to the request (with CAN communication) from BCM. Performs the auto stop control of the front wiper.

< SYSTEM DESCRIPTION >

Part	Description	
Combination switch (Wiper & washer switch)	Refer to BCS-10, "System Diagram".	
Combination meter	Transmits the vehicle speed signal to BCM with CAN communication.	

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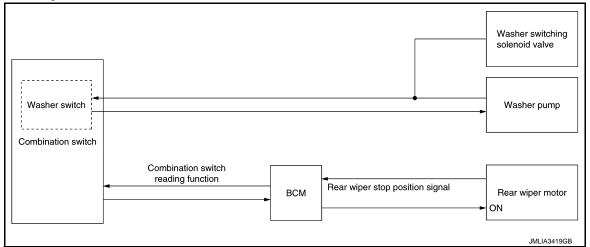
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REAR WIPER AND WASHER SYSTEM

System Diagram

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System Description

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OUTLINE

The rear wiper is controlled by each function of BCM.

Control by BCM

- Combination switch reading function
- Rear wiper control function

REAR WIPER BASIC OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM controls the rear wiper to start or stop.

REAR WIPER ON OPERATION

BCM supplies power to the rear wiper motor according to the rear wiper ON operating condition.

Rear wiper ON operating condition

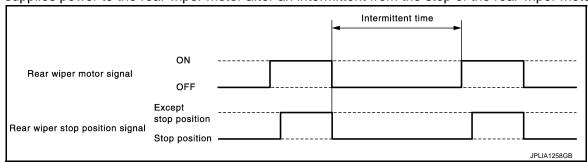
- Ignition switch ON
- Rear wiper switch ON

REAR WIPER INT OPERATION

• BCM supplies power to the rear wiper motor according to the INT operating condition.

Rear wiper INT operating condition

- Ignition switch ON
- Rear wiper switch INT
- BCM controls the rear wiper to operate once.
- BCM detects the rear wiper motor stopping position.
- BCM supplies power to the rear wiper motor after an intermittent from the stop of the rear wiper motor.



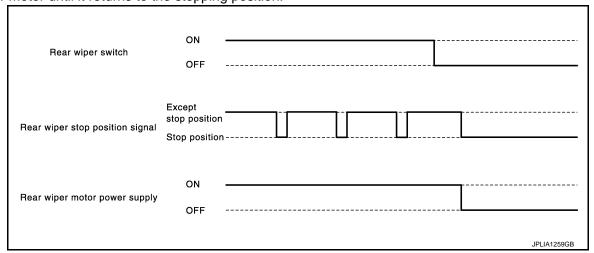
REAR WIPER AUTO STOP OPERATION

• BCM stops supplying power to the rear wiper motor when the rear wiper switch is turned OFF.

REAR WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

- BCM reads a rear wiper stop position signal from the rear wiper motor to detect a rear wiper motor position.
- When the rear wiper motor is at other than the stopping position, BCM continues to supply power to the rear wiper motor until it returns to the stopping position.



NOTE:

BCM stops supplying power to the rear wiper motor when the ignition switch is turned OFF.

REAR WIPER OPERATION LINKED WITH WASHER

· BCM supplies power to the rear wiper motor according to the washer linked operating condition of rear wiper. When the rear washer switch is turned OFF, BCM controls rear wiper to operate approximately 3 times.

Washer linked operating condition of rear wiper

- Ignition switch ON
- Rear washer switch ON (0.4 second or more)
- The washer pump is grounded through the combination switch with the rear washer switch ON.

WASHER PATH SWITCHING OPERATION

Rear washer and rear camera washer share the same washer pump.

Washer switching solenoid valve switches the washer path to rear washer side or to rear camera washer side. When rear washer is in the active condition, washer switching solenoid valve is activated and the washer path is switched to rear washer side.

For details refer to DAS-11, "Washer Switching Solenoid Valve".

REAR WIPER FAIL-SAFE OPERATION

BCM performs the fail-safe function when the rear wiper stop position circuit is malfunctioning. Refer to BCS-89. "Fail-safe"

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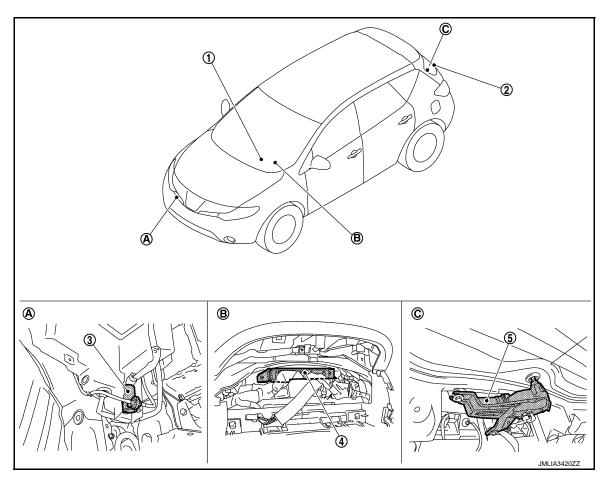
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Component Parts Location

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- 1. Combination switch
- 4. BCM
- A. Radiator core support (RH)
- 2. Washer switching solenoid valve
- 5. Rear wiper motor
- B. Behind combination meter
- 3. Washer pump
- C. Back door trim finisher lower inside

Component Description

INFOID:0000000009719721

Part	Description
BCM	 Judges each switch status by the combination switch reading function. Supplies power to the rear wiper motor. Performs the auto stop control of the rear wiper.
Combination switch (Wiper & washer switch)	Refer to BCS-10, "System Diagram".
Washer switching solenoid valve	Refer to DAS-11, "Washer Switching Solenoid Valve".

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM: CONSULT Function (BCM - COMMON ITEM)

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APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description	
Work Support	Changes the setting for each system function.	
Self Diagnostic Result	Displays the diagnosis results judged by BCM.	
CAN Diag Support Monitor	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	 Read and save the vehicle specification. 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.

×: Applicable item

Custom	Sub avatam calcation item	Diagnosis mode			
System	Sub system selection item	Work Support	Data Monitor	Active Test	
Door lock	DOOR LOCK	×	×	×	
Rear window defogger	REAR DEFOGGER		×	×	
Warning chime	BUZZER		×	×	
Interior room lamp timer	INT LAMP	×	×	×	
Exterior lamp	HEAD LAMP	×	×	×	
Wiper and washer	WIPER	×*1	×	×	
Turn signal and hazard warning lamps	FLASHER	×	×	×	
_	AIR CONDITONER*2				
Intelligent Key systemEngine start system	INTELLIGENT KEY	×	×	×	
Combination switch	COMB SW		×		
Body control system	BCM ×				
NVIS - NATS	IMMU ×		×	×	
Interior room lamp battery saver	BATTERY SAVER × ×		×	×	
Back door opener system	TRUNK ×		×	×	
Vehicle security system	THEFT ALM × ×		×	×	
RAP system	RETAINED PWR ×		×		
Signal buffer system	SIGNAL BUFFER		×	×	
TPMS	TPMS (AIR PRESSURE MONITOR)	×	×	×	

NOTE:

- *1: For models with rain sensor this mode is displayed, but is not used.
- *2: This item is displayed, but is not used.

FREEZE FRAME DATA (FFD)

Revision: 2013 August WW-19 2014 MURANO

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DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

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

CONSULT screen item	Indication/Unit		Description	
Vehicle Speed	km/h	Vehicle speed of the mo	ment a particular DTC is detected	
Odo/Trip Meter	km	Total mileage (Odometer value) of the moment a particular DTC is detected		
	SLEEP>LOCK		While turning BCM status from low power consumption mode to normal mode (Power supply position is "LOCK"*)	
	SLEEP>OFF		While turning BCM status from low power consumption mode to normal mode (Power supply position is "OFF".)	
	LOCK>ACC		While turning power supply position from "LOCK" to "ACC"	
	ACC>ON		While turning power supply position from "ACC" to "IGN"	
	RUN>ACC		While turning power supply position from "RUN" to "ACC" (Vehicle is stopping and selector lever is except P position.)	
	CRANK>RUN		While turning power supply position from "CRANKING" to "RUN" (From cranking up the engine to run it)	
	RUN>URGENT		While turning power supply position from "RUN" to "ACC" (Emergency stop operation)	
	ACC>OFF		While turning power supply position from "ACC" to "OFF"	
	OFF>LOCK	Power position status of the moment a particular DTC is detected	While turning power supply position from "OFF" to "LOCK"*	
Vehicle Condition	OFF>ACC		While turning power supply position from "OFF" to "ACC"	
	ON>CRANK		While turning power supply position from "IGN" to "CRANKING"	
	OFF>SLEEP		While turning BCM status from normal mode (Power supply position is "OFF".) to low power consumption mode	
	LOCK>SLEEP		While turning BCM status from normal mode (Power supply position is "LOCK"*) to low power consumption mode	
	LOCK		Power supply position is "LOCK"*	
	OFF		Power supply position is "OFF" (Ignition switch OFF)	
	ACC		Power supply position is "ACC" (Ignition switch ACC)	
	ON		Power supply position is "IGN" (Ignition switch ON with engine stopped)	
	ENGINE RUN		Power supply position is "RUN" (Ignition switch ON with engine running)	
	CRANKING		Power supply position is "CRANKING" (At engine cranking)	
IGN Counter	0 - 39	 The number of times that ignition switch is turned ON after DTC is detected The number is 0 when a malfunction is detected now. The number increases like 1 → 2 → 338 → 39 after returning to the normal condition whenever ignition switch OFF → ON. The number is fixed to 39 until the self-diagnosis results are erased if it is over 39. 		

NOTE:

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

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

WIPER

WIPER: CONSULT Function (BCM - WIPER)

INFOID:0000000009719723

WORK SUPPORT

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

Service item	Setting item	Description
WIPER SPEED On	With vehicle speed (Front wiper intermittent time linked with the vehicle speed and wiper intermittent dial position)	
SETTING	Off*	Without vehicle speed (Front wiper intermittent time linked with the wiper intermittent dial position)

^{*:}Factory setting

NOTE:

Work support item is not indicated when the vehicle with rain sensor.

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor Item [Unit]	Description	
PUSH SW [Off/On]	The switch status input from push-button ignition switch.	
VEHICLE SPEED 1 [km/h]	The value of the vehicle speed signal received from combination meter with CAN communication.	
FR WIPER HI [Off/On]		
FR WIPER LOW [Off/On]	Each switch status that BCM judges from the combination switch reading function.	
FR WASHER SW [Off/On]	Each switch status that Bow judges from the combination switch reading function.	
FR WIPER INT [Off/On]		
FR WIPER STOP [Off/On]	Front wiper motor (stop position) status received from IPDM E/R with CAN communication.	
INT VOLUME [1 – 7]	Each switch status that BCM judges from the combination switch reading function.	
RR WIPER ON [Off/On]		
RR WIPER INT [Off/On]	Each switch status that BCM judges from the combination switch reading function.	
RR WASHER SW [Off/On]		
RR WIPER STOP [Off/On]	Rear wiper motor (stop position) status input from the rear wiper motor.	

ACTIVE TEST

Test item	Operation	Description
	Hi	Transmits the front wiper request signal (HI) to IPDM E/R with CAN communication to operate the front wiper HI operation.
Lo FR WIPER		Transmits the front wiper request signal (LO) to IPDM E/R with CAN communication to operate the front wiper LO operation.
	INT	Transmits the front wiper request signal (INT) to IPDM E/R with CAN communication to operate the front wiper INT operation.
Off		Stops transmitting the front wiper request signal to stop the front wiper operation.
RR WIPER	On	Outputs the voltage to operate the rear wiper motor.
NR WIPER	Off	Stops the voltage to stop.

Revision: 2013 August WW-21 2014 MURANO

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< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:0000000010129276

AUTO ACTIVE TEST

Description

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

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

Operation Procedure

 Close the hood and lift the wiper arms from the windshield. (Prevent windshield damage due to wiper operation)

NOTE:

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

- 2. Turn the ignition switch OFF.
- 3. Turn the ignition switch ON, and within 20 seconds, press the front door switch (driver side) 10 times. Then turn the ignition switch OFF.

CAUTION:

Close passenger door.

- Turn the ignition switch ON within 10 seconds. After that the horn sounds once and the auto active test starts.
- 5. The oil pressure warning lamp starts blinking when the auto active test starts.
- 6. After a series of the following operations is repeated 3 times, auto active test is completed.

NOTE:

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

- If auto active test mode cannot be actuated, check door switch system. Refer to <u>DLK-97</u>, "WITH AUTOMATIC BACK DOOR: Component Function Check".
- Do not start the engine.

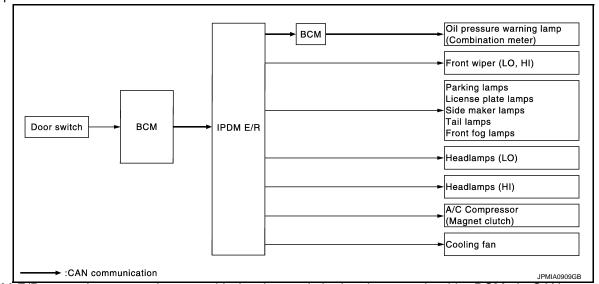
Inspection in Auto Active Test Mode

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

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

< SYSTEM DESCRIPTION >

Concept of auto active test



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

Diagnosis chart in auto active test mode

Symptom	Inspection contents		Possible cause	
Any of the following components do not operate		YES	BCM signal input circuit	
 Parking lamps License plate lamps Side maker lamps Tail lamps Front fog lamps Headlamp (HI, LO) Front wiper (HI, LO) 	Perform auto active test. Does the applicable system operate?	NO	Lamp or motor Lamp or motor ground circuit Harness or connector between IPDM E/R and applicable system IPDM E/R	
A/C compressor does not operate	Perform auto active test. Does the magnet clutch oper-	YES	A/C amp. signal input circuit CAN communication signal between A/C amp. and ECM CAN communication signal between ECM and IPDM E/R	
	ate?	NO	Magnet clutch Harness or connector between IPDM E/R and magnet clutch IPDM E/R	
	Perform auto active test.	YES	Harness or connector between IPDM E/R and oil pressure switch Oil pressure switch IPDM E/R	
Oil pressure warning lamp does not operate	Does the oil pressure warning lamp blink?	NO	CAN communication signal between IPDM E/R and BCM CAN communication signal between BCM and combination meter Combination meter	

WW-23 Revision: 2013 August 2014 MURANO

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< SYSTEM DESCRIPTION >

Symptom	Inspection contents		Possible cause
		YES	ECM signal input circuit CAN communication signal between ECM and IPDM E/R
Cooling fan does not operate	Perform auto active test. Does the cooling fan operate?	NO	Harness or connector between IPDM E/R and cooling fan motor Harness or connector between IPDM E/R and cooling fan relay Cooling fan motor Cooling fan relay IPDM E/R

CONSULT Function (IPDM E/R)

INFOID:0000000010129277

APPLICATION ITEM

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

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

SELF DIAGNOSTIC RESULT

Refer to PCS-34, "DTC Index".

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor Item [Unit]	MAIN SIG- NALS	Description
MOTOR FAN REQ [1/2/3/4]	×	Displays the value of the cooling fan speed request signal received from ECM via CAN communication.
AC COMP REQ [Off/On]	×	Displays the status of the A/C compressor request signal received from ECM via CAN communication.
TAIL&CLR REQ [Off/On]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR FOG REQ [Off/On]	×	Displays the status of the front fog light request signal received from BCM via CAN communication.
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper auto stop signal judged by IPDM E/R.
WIP PROT [Off/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.
IGN RLY1 -REQ [Off/On]		Displays the status of the ignition switch ON signal received from BCM via CAN communication.

< SYSTEM DESCRIPTION >

Monitor Item [Unit]	MAIN SIG- NALS	Description
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.
PUSH SW [Off/On]		Displays the status of the push-button ignition switch judged by IPDM E/R.
INTER/NP SW [Off/On]		Displays the status of the shift position judged by IPDM E/R.
ST RLY CONT [Off/On]		Displays the status of the starter relay status signal received from BCM via CAN communication.
IHBT RLY -REQ [Off/On]		Displays the status of the starter control relay signal received from BCM via CAN communication.
ST/INHI RLY [Off/ ST ON/INHI ON/UNKWN]		Displays the status of the starter relay and starter control relay judged by IPDM E/R.
DETENT SW [Off/On]		Displays the status of the CVT shift selector (detention switch) judged by IPDM E/R.
S/L RLY -REQ [Off/On]		NOTE: The item is indicated, but not monitored.
S/L STATE [LOCK/UNLOCK/UNKWN]		NOTE: The item is indicated, but not monitored.
DTRL REQ [Off/On]		NOTE: The item is indicated, but not monitored.
OIL P SW [Open/Close]		Displays the status of the oil pressure switch judged by IPDM E/R.
HOOD SW [Off/On]		NOTE: The item is indicated, but not monitored.
HL WASHER REQ [Off/On]		NOTE: The item is indicated, but not monitored.
THFT HRN REQ [Off/On]		Displays the status of the theft warning horn request signal received from BCM via CAN communication.
HORN CHIRP [Off/On]		Displays the status of the horn reminder signal received from BCM via CAN communication.
CRNRNG LMP REQ [Off/On]		NOTE: The item is indicated, but not monitored.

ACTIVE TEST

Test item	Operation	Description
	Off	
CORNERING LAMP	LH	NOTE: The item is indicated, but cannot be tested.
	RH	
HORN	On	Operates horn relay for 20 ms.
FRONT WIPER	Off	OFF
	Lo	Operates the front wiper relay.
	Hi	Operates the front wiper relay and front wiper high relay.
	1	OFF
MOTOR FAN	2	Operates the cooling fan relay-1.
	3	Operates the cooling fan relay-2.
	4	Operates the cooling fan relay-2 and cooling fan relay-3.
HEAD LAMP WASHER	On	NOTE: The item is indicated, but cannot be tested.

Revision: 2013 August WW-25 2014 MURANO

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< SYSTEM DESCRIPTION >

Test item	Operation	Description	
	Off	OFF	
	TAIL	Operates the tail lamp relay.	
EXTERNAL LAMPS	Lo	Operates the headlamp low relay.	
	Hi	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.	
	Fog	Operates the front fog lamp relay.	

WIPER AND WASHER FUSE, FUSIBLE LINK

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

WIPER AND WASHER FUSE, FUSIBLE LINK

Description INFOID:0000000009719726

Fuse, fusible link list

Unit	Location	No.	Capacity
Front wiper motor	IPDM E/R	60	30 A
Washer pump	IPDM E/R	47	10 A
Rain sensor	Fuse block	6	10 A

Diagnosis Procedure

1. CHECK FUSES AND FUSIBLE LINK

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

Unit	Location	No.	Capacity
Front wiper motor	IPDM E/R	60	30 A
Washer pump	IPDM E/R	47	10 A
Rain sensor	Fuse block	6	10 A

Is the fuse or fusible link fusing?

YES >> Replace the fuse or fusible link with a new one after repairing the applicable circuit.

NO >> The fuse or fusible link is normal.

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WW-27 Revision: 2013 August 2014 MURANO

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POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

POWER SUPPLY AND GROUND CIRCUIT BCM (BODY CONTROL MODULE)

BCM (BODY CONTROL MODULE): Diagnosis Procedure

INFOID:0000000009719728

1. CHECK FUSE AND FUSIBLE LINK

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

Signal name	Fuse and fusible link No.	
Battery power supply	L	
battery power suppry	10	

Is the fuse fusing?

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

NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

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

	Voltage		
(
В	СМ	Ground	(Approx.)
Connector	Terminal		
M118			Battery voltage
M119	11		Ballery Vollage

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3.CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

В	CM		Continuity	
Connector	Terminal	Ground	Continuity	
M119 13			Existed	

Does continuity exist?

YES >> INSPECTION END

NO >> Repair harness or connector.

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

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

1. CHECK FUSES AND FUSIBLE LINK

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

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Signal name	Fuses and fusible link No.
	E
Battery power supply	50
	51

Is the fuse fusing?

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

NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

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

(+)			Voltage
IPDM E/R		(-)	(Approx.)
Connector Terminal		Ground	
E9 1		Giodila	Battery voltage

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair the harness or connector.

3. CHECK GROUND CIRCUIT

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

IPDM E/R			Continuity
Connector	Terminal	Ground	Continuity
E10	12	Ground	Existed
E11	41		LXISIEU

Does continuity exist?

YES >> INSPECTION END

NO >> Repair the harness or connector.

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FRONT WIPER MOTOR LO CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR LO CIRCUIT

Component Function Check

INFOID:0000000009719730

1. CHECK FRONT WIPER LO OPERATION

RIPDM E/R AUTO ACTIVE TEST

- Start IPDM E/R auto active test. Refer to <u>PCS-10, "Diagnosis Description"</u>.
- 2. Check that the front wiper operates at the LO operation.

(P)CONSULT ACTIVE TEST

- 1. Select "FRONT WIPER" of IPDM E/R active test item.
- 2. With operating the test item, check front wiper operation.

Lo : Front wiper (LO) operation

Off : Stop the front wiper.

Is front wiper (LO) operation normally?

YES >> Front wiper motor LO circuit is normal.
NO >> Refer to <u>WW-30, "Diagnosis Procedure"</u>.

Diagnosis Procedure

INFOID:0000000009719731

1. CHECK FRONT WIPER MOTOR (LO) OUTPUT VOLTAGE

- 1. Turn the ignition switch OFF, and wait for 20 seconds or more.
- 2. Disconnect front wiper motor connector.
- 3. Turn the ignition switch ON, and wait for 10 seconds.
- 4. Check voltage between IPDM E/R harness connector and ground.

	Terminals			
(+) (-)			Voltage (Approx.)	
IPDM E/R			voltage (Approx.)	
Connector	Terminal	Ground		
E10	4		Battery voltage (10 seconds)*	

^{*:} According to front wiper protection function, IPDM E/R supplies voltage for 10 seconds (battery voltage) and then stops for 20 seconds (0 V). This operations repeats 5 times, and then IPDM E/R stops voltage supply. To perform the check again, turn ignition switch OFF, wait for 20 seconds or more, and then perform the check.

Is the measurement value normal?

YES >> GO TO 2.

NO >> Replace IPDM E/R.

2.CHECK FRONT WIPER MOTOR (LO) OPEN CIRCUIT

- Turn the ignition switch OFF.
- 2. Disconnect IPDM E/R connector.
- 3. Check continuity between IPDM E/R harness connector and front wiper motor harness connector.

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector Terminal		Continuity
E10	4	E12	1	Existed

Does continuity exist?

YES >> GO TO 3.

NO >> Repair the harness or connector.

3.check front wiper motor (LO) short circuit

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

FRONT WIPER MOTOR LO CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

IPDM E/R			Continuity
Connector	Terminal	Ground	Continuity
E10	4		Not existed

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Does continuity exist?

YES >> Repair the harness or connector.

NO >> Replace front wiper motor.

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FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR HI CIRCUIT

Component Function Check

INFOID:0000000009719732

1. CHECK FRONT WIPER HI OPERATION

PIPDM E/R AUTO ACTIVE TEST

- Start IPDM E/R auto active test. Refer to <u>PCS-10, "Diagnosis Description"</u>.
- 2. Check that the front wiper operates at the HI operation.

(P)CONSULT ACTIVE TEST

- 1. Select "FRONT WIPER" of IPDM E/R active test item.
- 2. With operating the test item, check front wiper operation.

Hi : Front wiper (HI) operation

Off: Stop the front wiper.

Is front wiper (HI) operation normally?

YES >> Front wiper motor HI circuit is normal.

NO >> Refer to <u>WW-32</u>, "<u>Diagnosis Procedure</u>".

INFOID:0000000009719733

1. CHECK FRONT WIPER MOTOR (HI) OUTPUT VOLTAGE

©CONSULT ACTIVE TEST

Diagnosis Procedure

- 1. Turn the ignition switch OFF, and wait for 20 seconds or more.
- 2. Disconnect front wiper motor connector.
- 3. Turn the ignition switch ON.
- 4. Select "FRONT WIPER" of IPDM E/R active test item.
- 5. With operating the test item, check voltage between IPDM E/R harness connector and ground.

Terminals			Test item	
(+)		(-)	rest item	Voltage (Approx.)
IPDM E/R		FRONT WIPER	voltage (Approx.)	
Connector	Terminal	Ground	TROWN ER	
E10	5		Hi	Battery voltage (10 seconds)*

^{*:} According to front wiper protection function, IPDM E/R supplies voltage for 10 seconds (battery voltage) and then stops for 20 seconds (0 V). This operations repeats 5 times, and then IPDM E/R stops voltage supply. To perform the check again, turn ignition switch OFF, wait for 20 seconds or more, and then perform the check.

Is the measurement value normal?

YES >> GO TO 2.

NO >> Replace IPDM E/R.

2.CHECK FRONT WIPER MOTOR (HI) OPEN CIRCUIT

- Turn the ignition switch OFF.
- 2. Disconnect IPDM E/R connector.
- 3. Check continuity between IPDM E/R harness connector and front wiper motor harness connector.

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector Terminal		Continuity
E10	5	E12	4	Existed

Does continuity exist?

YES >> GO TO 3.

NO >> Repair the harness or connector.

 ${f 3.}$ CHECK FRONT WIPER MOTOR (HI) SHORT CIRCUIT

FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

IPDM E/R			Continuity
Connector	Terminal	Ground	Continuity
E10	5		Not existed

Does continuity exist?

YES >> Repair the harness or connector.

NO >> Replace front wiper motor.

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FRONT WIPER STOP POSITION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER STOP POSITION SIGNAL CIRCUIT

Component Function Check

INFOID:0000000009719734

1. CHECK FRONT WIPER STOP POSITION SIGNAL

(P)CONSULT DATA MONITOR

- 1. Select "FR WIPER STOP" of BCM data monitor item.
- 2. Operate the front wiper.
- 3. Check that "FR WIPER STOP" changes to "STOP P" and "ACT P" linked with the wiper operation.

Monitor item	Condition		Monitor status
FR WIPER STOP	Front wiper	Stop position	STOP P
	motor	Except stop position	ACT P

Is the status of item normal?

YES >> Front wiper stop position signal circuit is normal.

NO >> Refer to <u>WW-34</u>, "<u>Diagnosis Procedure</u>".

Diagnosis Procedure

INFOID:0000000009719735

1. CHECK FRONT WIPER MOTOR OUTPUT VOLTAGE

- Turn the ignition switch OFF.
- 2. Disconnect front wiper motor connector.
- 3. Turn the ignition switch ON.
- 4. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Voltage (Approx.)
IPDM E/R			voltage (Approx.)
Connector	Terminal	Ground	
E10	16		Battery voltage

Is the measurement value normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK FRONT WIPER MOTOR SHORT CIRCUIT

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

IPDM E/R			Continuity
Connector	Terminal	Ground	Continuity
E10	16		Not existed

Does continuity exist?

YES >> Repair the harness or connector.

NO >> Replace IPDM E/R.

3. CHECK FRONT WIPER MOTOR CIRCUIT CONTINUITY

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

FRONT WIPER STOP POSITION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

IPDI	M E/R	Front wip	per motor	Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
E10	16	E12	5	Existed	

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Does continuity exist?

YES >> Replace front wiper motor.

NO >> Repair the harness or connector.

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FRONT WIPER MOTOR GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000009719736

1.CHECK FRONT WIPER MOTOR (GROUND) OPEN CIRCUIT

- 1. Turn the ignition switch OFF.
- 2. Disconnect front wiper motor connector.
- 3. Check continuity between front wiper motor harness connector and ground.

Front wiper motor			Continuity
Connector	Terminal	Ground	Continuity
E12	2		Existed

Does continuity exist?

YES >> Front wiper motor ground circuit is normal.

NO >> Repair the harness or connector.

WASHER SWITCH

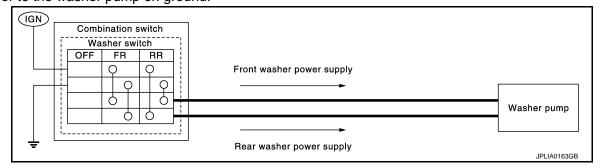
< DTC/CIRCUIT DIAGNOSIS >

WASHER SWITCH

Description INFOID:0000000009719737

• Washer switch is integrated with combination switch.

• Combination switch switches polarity between front washer operating and rear washer operating to supply power to the washer pump on ground.



Component Inspection

1. CHECK WIPER SWITCH

1. Turn the ignition switch OFF.

2. Disconnect combination switch connector.

3. Check continuity between the combination switch terminals.

A : Terminal 4
B : Terminal 6

C : Terminal 3

D : Terminal 1

	OFF	FR			RI	7
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В			7			Q
С		5				9
D			5	(5	

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Combination switch		Condition	Continuity	
Teri	minal	Condition	Continuity	
1	6	Front washer switch ON		
3	4	Tront washer switch on	Existed	
1	4	Rear washer switch ON	LAISIEU	
3	6	iteal washer switch ON		

Does continuity exist?

YES >> Wiper and washer switch is normal.

NO >> Replace combination switch (Wiper and washer switch).

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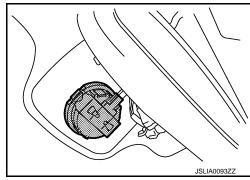
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RAIN SENSOR

Description INFOID:000000009719739

Rain sensor judges a wiping speed for front wiper by rain condition and the vehicle conditions. And it transmits the wiping speed request signal to the BCM via the rain sensor serial link.



Component Function Check

INFOID:0000000009719740

1. CHECK FRONT WIPER AUTO OPERATION

- Clean rain sensor detection area of windshield fully.
- When the front wiper switch is turned to INT/AUTO position, front wiper operates once regardless of a rainy condition.

Is front wiper (AUTO) operation normally?

YES >> Rain sensor circuit is normal.

NO >> Refer to <u>WW-38</u>, "<u>Diagnosis Procedure</u>".

Diagnosis Procedure

INFOID:0000000009719741

1. CHECK RAIN SENSOR FUSE

- 1. Turn the ignition switch OFF.
- Check that the rain sensor 10 A fuse (#6) is not fusing.

Is the fuse fusing?

YES >> Replace the fuse after repairing the applicable circuit.

NO >> GO TO 2.

2.CHECK RAIN SENSOR POWER SUPPLY

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

Т			
(+)		(-)	Voltage (Approx.)
Rain sensor connector	Terminal	(-)	
R23	1	Ground	Battery voltage

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

3.CHECK RAIN SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- Check continuity between rain sensor harness connector and ground.

RAIN SENSOR

< DTC/CIRCUIT DIAGNOSIS >

Rain	sensor		Continuity
Connector	Connector Terminal		Continuity
R23	3		Existed

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Does continuity exist?

YES >> GO TO 4.

NO >> Repair or replace harness.

4. CHECK RAIN SENSOR SIGNAL

- 1. Connect rain sensor connector.
- 2. Turn ignition switch ON.
- 3. Check signal between BCM harness connector and ground with oscilloscope.

	Terminal			
(+	(+)		Condition	Signal
BCM connector	Terminal	(–)		(Reference value)
M123	112	Ground	Ignition switch ON	(V) 15 10 5 0 JPMIA0156GB Approx. 8.7V

Is the measurement value normal?

YES >> Replace rain sensor. Refer to WW-140, "Exploded View".

NO >> GO TO 5.

5. CHECK RAIN SENSOR SIGNAL CIRCUIT FOR OPEN

1. Disconnect BCM connector.

2. Check continuity between BCM harness connector and rain sensor harness connector.

В	СМ	Rain	Continuity	
Connector	Terminal	Connector Terminal		Continuity
M123	112	R23	2	Existed

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Does continuity exist?

YES >> GO TO 6.

NO >> Repair or replace harness.

$\mathsf{6}.$ CHECK RAIN SENSOR SIGNAL CIRCUIT FOR SHORT

Check continuity between BCM harness connector and ground.

В	CM		Continuity
Connector	Connector Terminal		Continuity
M123	112		Not existed

Does continuity exist?

YES >> Repair or replace harness.

NO >> Replace BCM. Refer to BCS-98, "Exploded View".

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Revision: 2013 August WW-39 2014 MURANO

REAR WIPER MOTOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER MOTOR CIRCUIT

Component Function Check

1. CHECK REAR WIPER ON OPERATION

®CONSULT ACTIVE TEST

- Select "RR WIPER" of BCM active test item.
- With operating the test item, check rear wiper operation.

: Rear wiper ON operation On

Off : Stop the rear wiper.

Is rear wiper operation normally?

YES >> Rear wiper motor circuit is normal.

NO >> Refer to WW-40, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000009719743

INFOID:0000000009719742

1. CHECK REAR WIPER MOTOR OUTPUT VOLTAGE

(P)CONSULT ACTIVE TEST

- Turn rear wiper switch OFF, and wait for 1 minute or more.
- Turn the ignition switch OFF.
- 3. Disconnect rear wiper motor connector.
- 4. Turn the ignition switch ON.
- 5. Select "RR WIPER" of BCM active test item.
- With operating the test item, check voltage between BCM harness connector and ground.

•		Terminals		Test item		
-	(+)		(-)	rest item	Voltage (Approx.)	
-	ВС	М		REAR WIPER	voltage (Approx.)	
-	Connector	Terminal	Ground	KLAK WII EK		
-	M120	26		On	Battery voltage (5 seconds)*	

^{*:} When "REAR WIPER" is "On" for 5 seconds or more during active test of CONSULT, BCM stops the power supply according to rear wiper motor protection function. To perform the check again, turn "REAR WIPER" to "Off", wait for 1 minute or more, and then perform the check.

Is the measurement value normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.check rear wiper motor short circuit

- Turn the ignition switch OFF.
- 2. Disconnect BCM connector.
- Check continuity between BCM harness connector and ground.

В	CM		Continuity
Connector Terminal		Ground	Continuity
M120	26		Not existed

Does continuity exist?

YES >> Repair the harness or connector.

NO >> Replace BCM. Refer to BCS-98, "Exploded View".

3.check rear wiper motor open circuit

- Turn the ignition switch OFF.
- Disconnect BCM connector.

REAR WIPER MOTOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

3. Check continuity between BCM harness connector and rear wiper motor harness connector.

В	CM	Rear wip	Continuity	
Connector	Terminal	Connector Terminal		Continuity
M120	26	D193	1	Existed

Does continuity exist?

YES >> GO TO 4.

NO >> Repair the harness or connector.

4. CHECK REAR WIPER MOTOR GROUND OPEN CIRCUIT

Check continuity between rear wiper motor harness connector and ground.

Rear wip	per motor		Continuity
Connector Terminal		Ground	Continuity
D193	3		Existed

Does continuity exist?

YES >> Replace rear wiper motor.

NO >> Repair the harness or connector.

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REAR WIPER STOP POSITION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER STOP POSITION SIGNAL CIRCUIT

Component Function Check

INFOID:0000000009719744

${f 1}$.CHECK REAR WIPER STOP POSITION SIGNAL

(P)CONSULT DATA MONITOR

- Select "WIPER" of BCM data monitor item.
- 2. Operate the rear wiper.
- 3. Check that "RR WIPER STOP" changes to "ON" and "OFF" linked with the wiper operation.

Monitor item	(Monitor status	
RR WIPER STOP	Rear wiper	Stop position	On
RR WIPER STOP	motor	Except stop position	Off

Is the status of item normal?

YES >> Rear wiper stop position signal circuit is normal.

NO >> Refer to <u>WW-42, "Diagnosis Procedure"</u>.

Diagnosis Procedure

INFOID:0000000009719745

1. CHECK REAR WIPER MOTOR OUTPUT VOLTAGE

- Turn the ignition switch OFF.
- 2. Disconnect rear wiper motor connector.
- 3. Turn the ignition switch ON.
- 4. Check voltage between BCM harness connector and ground.

	Terminals		
(+)	(–)	Voltage (Approx.)
В	СМ		voltage (Approx.)
Connector	Terminal	Ground	
M121	65		Battery voltage

Is the measurement value normal?

YES >> GO TO 3.

NO >> GO TO 2.

2. CHECK REAR WIPER MOTOR SHORT CIRCUIT

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

В	CM		Continuity
Connector	Terminal	Ground	Continuity
M121	65		Not existed

Does continuity exist?

YES >> Repair the harness or connector.

NO >> Replace BCM. Refer to BCS-98, "Exploded View".

3.CHECK REAR WIPER MOTOR OPEN CIRCUIT

- 1. Turn the ignition switch OFF.
- 2. Disconnect BCM connector.
- 3. Check continuity between BCM harness connector and rear wiper motor harness connector.

REAR WIPER STOP POSITION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

В	CM	Rear wip	er motor	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M121	65	D193	4	Existed

Α

Does continuity exist?

YES >> Replace rear wiper motor.

NO >> Repair the harness or connector.

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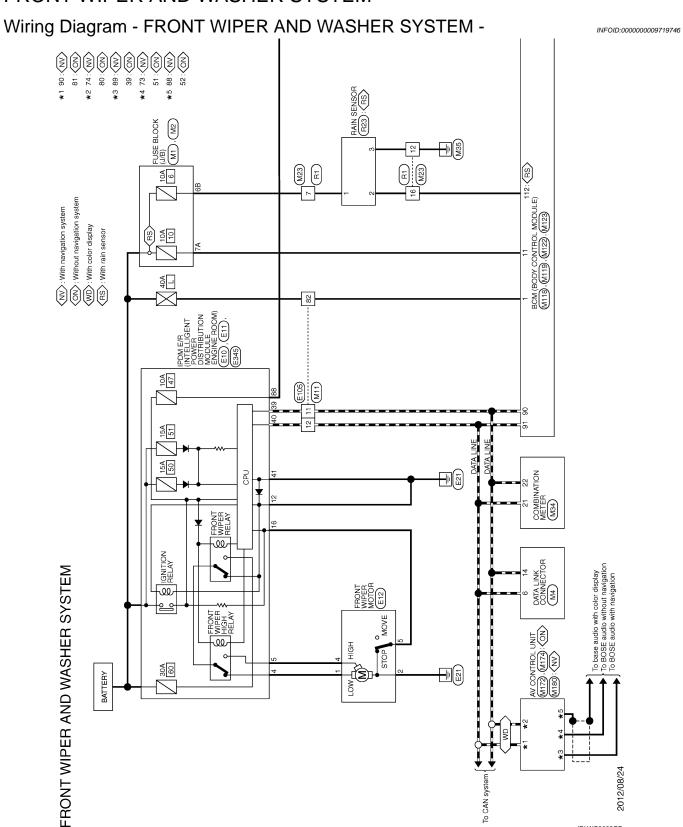
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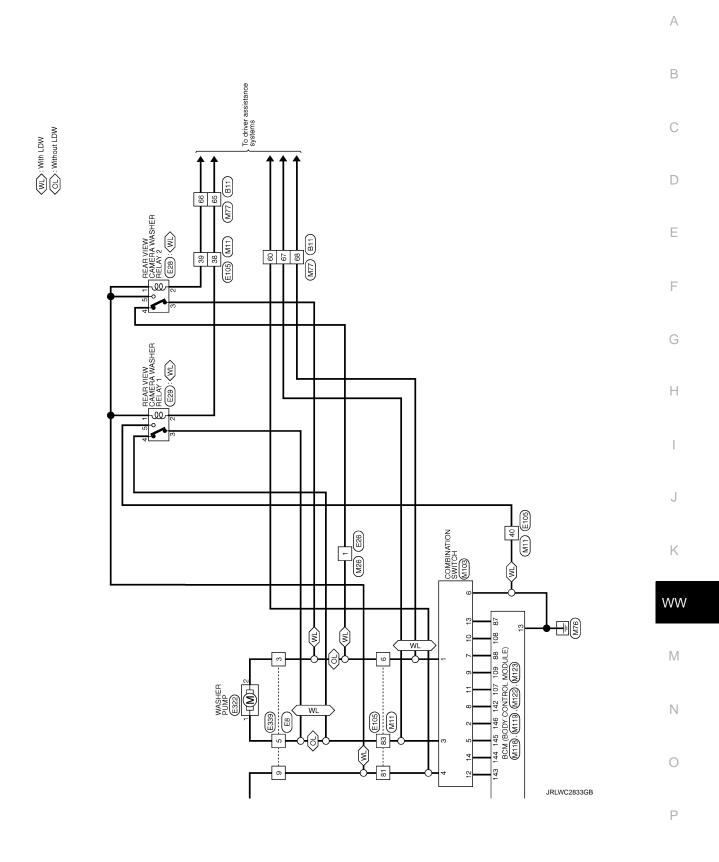
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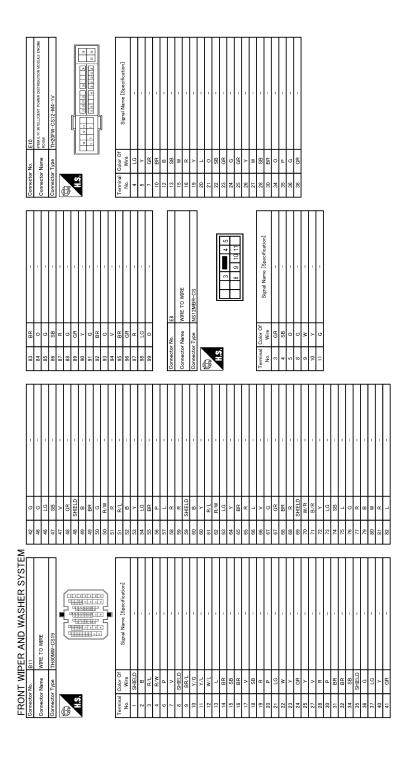
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FRONT WIPER AND WASHER SYSTEM



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FRONT WIPER AND WASHER SYSTEM

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Revision: 2013 August WW-47 2014 MURANO

FRONT WIPER AND WASHER SYSTEM	5			
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Connector Name WASHER PUMP	Connector Name ROOMS FOR CONTELLIGENT POWER DISTRIBUTION MODULE ENCINE ROOMS	Connector Name FUSE BLOCK (J/B)	Connector Name	WIRE TO WIRE
Connector Type E02FGY-RS	Connector Type NS08FW-CS	Connector Type NS10FW-CS	Connector Type	TH70FW-CS10-M3
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Terminal Color Of Signal Name [Specification]	Terminal Color Of Signal Name [Specification]	Terminal Color Of Signal Name [Specification]	Terminal Color Of	Signal Name [Specification]
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	- BS 98	4B G -	2	-
	GR	5B L	9	1
Connector No. E339	M -	+	+	
Connector Name WIRE TO WIRE	- 9 06	88 R	= 5- T -	
Connector Type NS12FBR-CS	\cdot	H	13	
		\cdot	14 Y	-
唐	Connector No. M1		+	1
	Connector Name FUSE BLOCK (J/B)	Connector No. M4	20 W	-[Without colour display]
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FRONT WIPER AND WASHER SYSTEM

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		Cor	Connector No.	M119	18	0	NATS ANT AMP.	139 0	TIRE PRESS RECEIVER COMM	
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1 G	-	L	5	PASSENGER DOOR UNLOCK OUTPUT	103	٦	KEYLESS ENTRY RECEIVER POWER SUPPLY			
2 Y	OUTPUT 4	Ш	7 W	Н	107	0	COMBI SW INPUT 1			
3 BG	FR		8	ALL DOOR, FUEL LID LOCK OUTPUT	108	۵	COMBI SW INPUT 4			
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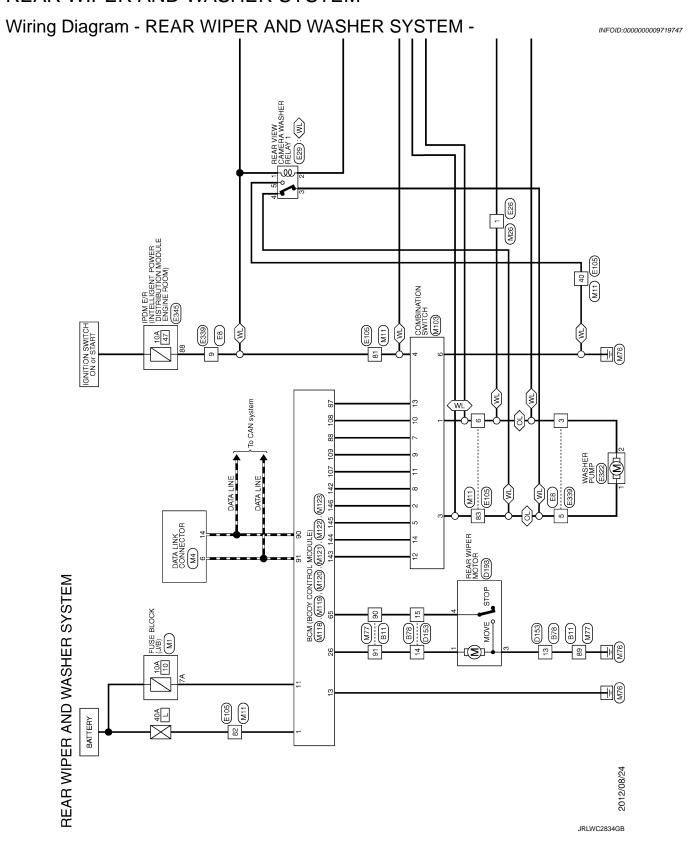
FRONT WIPER AND WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

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Connector Name	MV M
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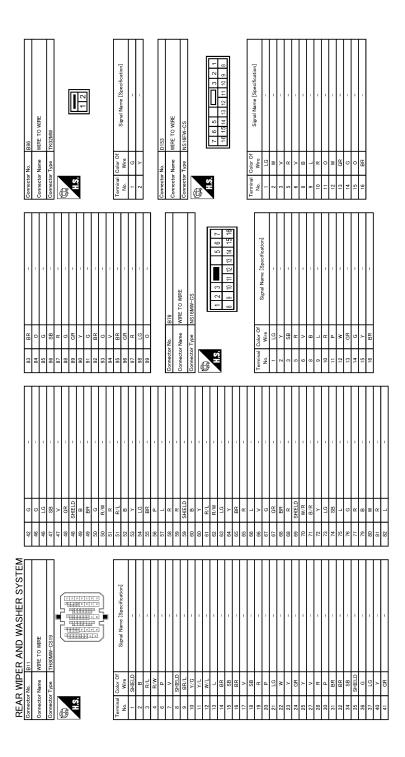
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REAR WIPER AND WASHER SYSTEM



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REAR WIPER AND WASHER SYSTEM

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WW-55 Revision: 2013 August 2014 MURANO

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Connector No. E322	ı	Connector Name WASHER PUMP	Connector Type E02FGY-RS	Ó	MAT	ĘĘ)		-	<u></u>		- 0	2 0 =		Connector No. F339	Γ	Connector Name WIRE TO WIRE	Connector Type NS12FBR-CS	φ	彦		5 4 3	11 10 9 8			ler		+	2 C	╀	- M 6	+										
REAR WIPER AND WASHER SYSTEM		1			1	1	1	-	1	-	1	1	1	-	1			-	1	-	-			-			1	1			- [Without iPod and navigation system] - [With navigation evetam]	Currents Incomplete In			1	-								
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JRLWC9479GB

REAR WIPER AND WASHER SYSTEM

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Revision: 2013 August WW-57 2014 MURANO

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REAR WIPER AND WASHER SYSTEM

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REAR WIPER AND WASHER SYSTEM	RECEIVER/SENSOR POWER SUPPLY	TIRE PRESS RECEIVER COMM	SHIFT N/P	SECURITY IND LAMP CONT	COMBI SW OUTPUT 5	COMBI SW OUTPUT 1	COMBI SW OUTPUT 2	COMBI SW OUTPUT 3	COMBI SW OUTPUT 4	DRIVER DOOR SW	
WIP!	۸	0	ВD	0	7	Μ	d	۸	Å	BS	
REAF	138	139	140	141	142	143	144	145	146	150	

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION

BCM (BODY CONTROL MODULE)

Reference Value

VALUES ON THE DIAGNOSIS TOOL

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

CONSULT MONITOR ITEM

Monitor Item	Condition	Value/Status
FR WIPER HI	Other than front wiper switch HI	Off
TIX WIF LIX III	Front wiper switch HI	On
FR WIPER LOW	Other than front wiper switch LO	Off
FR WIPER LOW	Front wiper switch LO	On
FR WASHER SW	Front washer switch OFF	Off
FR WASHER SW	Front washer switch ON	On
FR WIPER INT	Other than front wiper switch INT/AUTO	Off
FR WIPER IN	Front wiper switch INT/AUTO	On
FR WIPER STOP	Front wiper is not in STOP position	Off
FR WIPER STOP	Front wiper is in STOP position	On
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	Wiper intermittent dial position
DD WIDED ON	Other than rear wiper switch ON	Off
RR WIPER ON	Rear wiper switch ON	On
DD WIDED INT	Other than rear wiper switch INT	Off
RR WIPER INT	Rear wiper switch INT	On
DD WACHED CW	Rear washer switch OFF	Off
RR WASHER SW	Rear washer switch ON	On
DD WIDED OTOD	Rear wiper is in STOP position	Off
RR WIPER STOP	Rear wiper is not in STOP position	On
TUDNI CIONAL D	Other than turn signal switch RH	Off
TURN SIGNAL R	Turn signal switch RH	On
TUDNI CICNIAL I	Other than turn signal switch LH	Off
TURN SIGNAL L	Turn signal switch LH	On
TAIL LAND OW	Other than lighting switch 1ST and 2ND	Off
TAIL LAMP SW	Lighting switch 1ST or 2ND	On
LILDE ANA CVA	Other than lighting switch HI	Off
HI BEAM SW	Lighting switch HI	On
LIEAD LAMB OW 4	Other than lighting switch 2ND	Off
HEAD LAMP SW 1	Lighting switch 2ND	On
LIEAD LAMB CW C	Other than lighting switch 2ND	Off
HEAD LAMP SW 2	Lighting switch 2ND	On
DA CCINIC CIVI	Other than lighting switch PASS	Off
PASSING SW	Lighting switch PASS	On
ALITO LICHT SW	Other than lighting switch AUTO	Off
AUTO LIGHT SW	Lighting switch AUTO	On

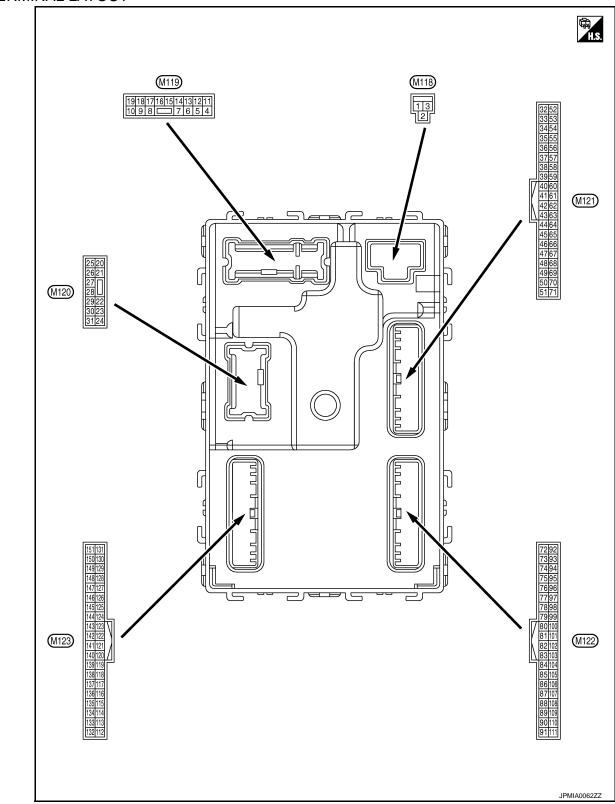
Monitor Item	Condition	Value/Status
FR FOG SW	Front fog lamp switch OFF	Off
1(100 5W	Front fog lamp switch ON	On
RR FOG SW	NOTE: The item is indicated, but not monitored.	Off
DOOR SW-DR	Driver door closed	Off
OOOK SW-DK	Driver door opened	On
DOOR SW-AS	Passenger door closed	Off
500K 3W-A3	Passenger door opened	On
DOOR SW-RR	Rear RH door closed	Off
JOOK SW-KK	Rear RH door opened	On
DOOR SW-RL	Rear LH door closed	Off
JOOK SW-RL	Rear LH door opened	On
DOOD SW BY	Back door closed	Off
DOOR SW-BK	Back door opened	On
CDL LOCK SW	Other than power door lock switch LOCK	Off
ADE FOR SAA	Power door lock switch LOCK	On
CDL TINI OCK SW	Other than power door lock switch UNLOCK	Off
CDL UNLOCK SW	Power door lock switch UNLOCK	On
(EV CVI LK CM	Other than driver door key cylinder LOCK position	Off
KEY CYL LK-SW	Driver door key cylinder LOCK position	On
KEY CYL UN-SW	Other than driver door key cylinder UNLOCK position	Off
	Driver door key cylinder UNLOCK position	On
KEY CYL SW-TR	NOTE: The item is indicated, but not monitored.	Off
IAZADD CIM	Hazard switch is OFF	Off
HAZARD SW	Hazard switch is ON	On
REAR DEF SW	Rear window defogger switch OFF	Off
NOTE: For models with BOSE audio system his item is not monitored.	Rear window defogger switch ON	On
	NOTE:	
TR CANCEL SW	The item is indicated, but not monitored.	Off
TR/BD OPEN SW	Back door opener switch OFF	Off
IR/BD OPEN SW	While the back door opener switch is turned ON	On
TRNK/HAT MNTR	NOTE: The item is indicated, but not monitored.	Off
DVE LOOK	LOCK button of Intelligent Key is not pressed	Off
RKE-LOCK	LOCK button of Intelligent Key is pressed	On
DIVE LINII OOK	UNLOCK button of Intelligent Key is not pressed	Off
RKE-UNLOCK	UNLOCK button of Intelligent Key is pressed	On
OVE TO/DD	BACK DOOR OPEN button of Intelligent Key is not pressed	Off
RKE-TR/BD	BACK DOOR OPEN button of Intelligent Key is pressed	On
DIVE BANIO	PANIC button of Intelligent Key is not pressed	Off
RKE-PANIC	PANIC button of Intelligent Key is pressed	On
	UNLOCK button of Intelligent Key is not pressed	Off
RKE-P/W OPEN	UNLOCK button of Intelligent Key is pressed and held	On

Monitor Item	Condition	Value/Status
RKE-MODE CHG	LOCK/UNLOCK button of Intelligent Key is not pressed and held simultaneously	Off
RRE-WODE CHG	LOCK/UNLOCK button of Intelligent Key is pressed and held simultaneously	On
OPTICAL SENSOR	Bright outside of the vehicle	Close to 5 V
OF HOAL SENSOR	Dark outside of the vehicle	Close to 0 V
REQ SW -DR	Driver door request switch is not pressed	Off
NEQ 3W -DIN	Driver door request switch is pressed	On
REQ SW -AS	Passenger door request switch is not pressed	Off
NEW OW THO	Passenger door request switch is pressed	On
REQ SW -RR	NOTE: The item is indicated, but not monitored.	Off
REQ SW -RR	NOTE: The item is indicated, but not monitored.	Off
REQ SW -BD/TR	Back door request switch is not pressed	Off
ILM OAA -DD/ II/	Back door request switch is pressed	On
PUSH SW	Push-button ignition switch (push switch) is not pressed	Off
FUSH SW	Push-button ignition switch (push switch) is pressed	On
IGN RLY2 -F/B	Ignition switch in OFF or ACC position	Off
IGN KLTZ -F/D	Ignition switch in ON position	On
ACC RLY -F/B	NOTE: The item is indicated, but not monitored.	Off
CLUCH SW	NOTE: The item is indicated, but not monitored.	Off
	The brake pedal is depressed when No. 7 fuse is blown	Off
BRAKE SW 1	The brake pedal is not depressed when No. 7 fuse is blown, or No. 7 fuse is normal	On
BRAKE SW 2	The brake pedal is not depressed	Off
DRANE SW Z	Stop lamp switch 1 signal circuit is normal	On
DETE/CANCL SW	Selector lever in P position	Off
DETE/CANGE SW	Selector lever in any position other than P	On
SFT PN/N SW	Selector lever in any position other than P and N	Off
51 1 1 W/W 5W	Selector lever in P or N position	On
S/L -LOCK	NOTE: The item is indicated, but not monitored.	Off
S/L -UNLOCK	NOTE: The item is indicated, but not monitored.	Off
S/L RELAY-F/B	NOTE: The item is indicated, but not monitored.	Off
UNLK SEN -DR	Driver door is unlocked	Off
CITEL OLIV DIX	Driver door is locked	On
PUSH SW -IPDM	Push-button ignition switch (push-switch) is not pressed	Off
	Push-button ignition switch (push-switch) is pressed	On
IGN RLY1 -F/B	Ignition switch in OFF or ACC position	Off
ON INCLUITUD	Ignition switch in ON position	On
DETE SW -IPDM	Selector lever in any position other than P	Off
	Selector lever in P position	On

Monitor Item	Condition	Value/Status
SFT PN -IPDM	Selector lever in any position other than P and N	Off
SET AN -IADIM	Selector lever in P or N position	On
CET D MET	Selector lever in any position other than P	Off
SFT P -MET	Selector lever in P position	On
OFT N. MET	Selector lever in any position other than N	Off
SFT N -MET	Selector lever in N position	On
	Engine stopped	Stop
ENGINE CTATE	While the engine stalls	Stall
ENGINE STATE	At engine cranking	Crank
	Engine running	Run
S/L LOCK-IPDM	NOTE: The item is indicated, but not monitored.	Off
S/L UNLK-IPDM	NOTE: The item is indicated, but not monitored.	Off
S/L RELAY-REQ	NOTE: The item is indicated, but not monitored.	Off
VEH SPEED 1	While driving	Equivalent to speed- ometer reading
VEH SPEED 2	While driving	Equivalent to speed- ometer reading
	Driver door is locked	LOCK
DOOR STAT-DR	Wait with selective UNLOCK operation (5 seconds)	READY
	Driver door is unlocked	UNLOCK
	Passenger door is locked	LOCK
DOOR STAT-AS	Wait with selective UNLOCK operation (5 seconds)	READY
	Passenger door is unlocked	UNLOCK
ID OK FLAG	Power supply position in LOCK position	Reset
ID ON FLAG	Power supply position in any position other than LOCK	Set
PRMT ENG STRT	The engine start is prohibited	Reset
I MIVIT LING STILL	The engine start is permitted	Set
PRMT RKE STRT	NOTE: The item is indicated, but not monitored.	Reset
KEY SW -SLOT	Intelligent Key is not inserted into key slot	Off
INE I SVV -SLUT	Intelligent Key is inserted into key slot	On
RKE OPE COUN1	During the operation of Intelligent Key	Operation frequency of Intelligent Key
RKE OPE COUN2	NOTE: The item is indicated, but not monitored.	_
CONFRM ID ALL	The Intelligent Key ID that the key slot receives is not recognized by any Intelligent Key ID registered to BCM.	Yet
OOM NIN ID ALL	The Intelligent Key ID that the key slot receives is recognized by any Intelligent Key ID registered to BCM.	Done
CONFIRM ID4	The Intelligent Key ID that the key slot receives is not recognized by the fourth Intelligent Key ID registered to BCM.	Yet
CONFINITID4	The Intelligent Key ID that the key slot receives is recognized by the fourth Intelligent Key ID registered to BCM.	Done

Monitor Item	Condition	Value/Status
CONFIRM ID3	The Intelligent Key ID that the key slot receives is not recognized by the third Intelligent Key ID registered to BCM.	Yet
CONFIRM IDS	The Intelligent Key ID that the key slot receives is recognized by the third Intelligent Key ID registered to BCM.	Done
CONFIRM ID2	The Intelligent Key ID that the key slot receives is not recognized by the second Intelligent Key ID registered to BCM.	Yet
CONFIRMIDZ	The Intelligent Key ID that the key slot receives is recognized by the second Intelligent Key ID registered to BCM.	Done
CONFIDM ID4	The Intelligent Key ID that the key slot receives is not recognized by the first Intelligent Key ID registered to BCM.	Yet
CONFIRM ID1	The Intelligent Key ID that the key slot receives is recognized by the first Intelligent Key ID registered to BCM.	Done
TP 4	The ID of fourth Intelligent Key is not registered to BCM	Yet
1 P 4	The ID of fourth Intelligent Key is registered to BCM	Done
	The ID of third Intelligent Key is not registered to BCM	Yet
TP 3	The ID of third Intelligent Key is registered to BCM	Done
TD 0	The ID of second Intelligent Key is not registered to BCM	Yet
TP 2	The ID of second Intelligent Key is registered to BCM	Done
TP 1	The ID of first Intelligent Key is not registered to BCM	Yet
IP I	The ID of first Intelligent Key is registered to BCM	Done
AIR PRESS FL	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of front LH tire
AIR PRESS FR	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of front RH tire
AIR PRESS RR	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of rear RH tire
AIR PRESS RL	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of rear LH tire
D REGST FL1	ID of front LH tire transmitter is registered	Done
ID REGGI FLI	ID of front LH tire transmitter is not registered	Yet
ID DECCT ED4	ID of front RH tire transmitter is registered	Done
ID REGST FR1	ID of front RH tire transmitter is not registered	Yet
ID REGST RR1	ID of rear RH tire transmitter is registered	Done
ID REGOT KRT	ID of rear RH tire transmitter is not registered	Yet
ID DECCT DI 1	ID of rear LH tire transmitter is registered	Done
ID REGST RL1	ID of rear LH tire transmitter is not registered	Yet
MADNING LAMP	Tire pressure indicator OFF	Off
WARNING LAMP	Tire pressure indicator ON	On
DI 177ED	Tire pressure warning alarm is not sounding	Off
BUZZER	Tire pressure warning alarm is sounding	On

TERMINAL LAYOUT



PHYSICAL VALUES

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Term	inal No.	Description				
	e color)		Input/	Condition		Value
+	_	Signal name	Output			(Approx.)
1 (W)	Ground	Battery power supply	Input	Ignition switch OF	F	Battery voltage
2 (GR)	Ground	P/W power supply (BAT)	Output	Ignition switch OF	F	Battery voltage
3 (L)	Ground	P/W power supply (IGN)	Output	Ignition switch ON		Battery voltage
4		Intorior room long			battery saver is activated. oom lamp power supply)	0 V
4 (P/W)	Ground	Interior room lamp power supply	Output	ed.	battery saver is not activat- or room lamp power supply)	Battery voltage
5	Ground	Passenger door UN-	Output	December door	UNLOCK (Actuator is activated)	Battery voltage
(G)	Ground	LOCK	Output	Passenger door	Other than UNLOCK (Actuator is not activated)	0 V
7	Ground	Step lamp control	Output	Step lamp	ON	0 V
(W)	Ground	Step lamp control	Output	Step lamp	OFF	Battery voltage
8	Ground	All doors LOCK	Output	All doors	LOCK (Actuator is activated)	Battery voltage
(V)	Ground	All doors LOCK	Output	All doors	Other than LOCK (Actuator is not activated)	0 V
9	Cround	Driver deer LINI OCK	Output	Driver deer	UNLOCK (Actuator is activated)	Battery voltage
(G)	Ground	Driver door UNLOCK	Output	Driver door	Other than UNLOCK (Actuator is not activated)	0 V
10	Crownd	Rear RH door and	Outenut	Rear RH door	UNLOCK (Actuator is activated)	Battery voltage
(P)	Ground	rear LH door UN- LOCK	Output	and rear LH door	Other than UNLOCK (Actuator is not activated)	0 V
11 (LG)	Ground	Battery power supply	Input	Ignition switch OF	F	Battery voltage
13 (B)	Ground	Ground	_	Ignition switch ON		0 V
					OFF	0 V
14 (O)	Ground	Push-button ignition switch illumination ground	Output	Tail lamp	ON	NOTE: When the illumination brightening/dimming level is in the neutral position (V) 10 0 JSNIA0010GB
15 (L)	Ground	ACC indicator lamp	Output	Ignition switch	OFF (LOCK and ON indicator lamps are not illuminated.)	Battery voltage
					ACC	0 V

Terminal No.		Description				Value	
+	e color)	Signal name	Input/ Output		Condition	(Approx.)	
					Turn signal switch OFF	0 V	
17 (G)		Output	Ignition switch ON	Turn signal switch RH	(V) 15 10 5 0 1 s PKID0926E 6.5 V		
					Turn signal switch OFF	0 V	
18 (BR)	Ground	Turn signal LH	Output	Ignition switch ON	Turn signal switch LH	(V) 15 10 5 0 1 s	
19		Interior room lamp		Interior room	OFF	6.5 V Battery voltage	
(Y)	Ground	control	Output	lamp	ON	0 V	
23					OPEN (Back door opener actuator is activated)	Battery voltage	
23 (BR)	Ground	Back door open	Output	tput Back door	Other than OPEN (Back door opener actuator is not activated)	0 V	
26	Ground	Rear wiper	Output	Rear wiper	OFF (Stopped)	0 V	
(G)	Giound	iteai wipei	Output	iteal wipel	ON (Operated)	Battery voltage	
34		Luggage room anten-		Ignition switch	When Intelligent Key is in the passenger compartment	(V) 15 10 5 0 1 S S S S S S S S S	
(B)	Ground	na (-)	Output	Ignition switch OFF	When Intelligent Key is not in the passenger compartment	(V) 15 10 5 0 1 s	

	inal No.	Description				Value	
+	e color)	Signal name	Input/ Output		Condition	(Approx.)	
35	Cround Luggage room anten-		Output	Ignition switch	When Intelligent Key is in the passenger compartment	(V) 15 10 5 0 JMKIA0062GB	
(W)	Ground	na (+)	Output	OFF	When Intelligent Key is not in the passenger compartment	(V) 15 10 5 0 JMKIA0063GB	
38	When the back	When Intelligent Key is in the antenna detection area	(V) 15 10 5 0 1 s JMKIA0062GB				
(L)	Glodina	na (-)) Switch is ope	ed with ignition switch OFF	ed with ignition		(V) 15 10 5 0 JMKIA0063GB
39	Ground	Rear bumper anten-	Output	When the back door request switch is operat- ed with ignition switch OFF	When Intelligent Key is in the antenna detection area	(V) 15 10 5 0 JMKIA0062GB	
(BR)	Clound	na (+)	Output		When Intelligent Key is not in the antenna detection area	(V) 15 10 5 0 1 s JMKIA0063GB	
47	Ground	Ignition relay (IPDM	Output	Ignition switch	OFF or ACC	Battery voltage	
(L)	2.300	E/R) control		J	ON	0 V	

Terminal No.		Description				Value	
(Wire	e color)	Signal name	Input/ Output		Condition	Value (Approx.)	А
				Ignition switch	When selector lever is in P or N position	Battery voltage	В
52 (R)	Ground	Starter relay control	Output	ON	When selector lever is not in P or N position	0.3 V	
				Ignition switch OF	F	0 V	С
60		Push-button ignition		Push-button igni-	Pressed	0 V	
(BR)	Ground	switch (push switch)	Input	tion switch (push switch)	Not pressed	Battery voltage	D
					ON (Pressed)	0 V	
61 (R)	Ground	Back door request switch	Input	Back door request switch	OFF (Not pressed)	(V) 15 10 5 0 10 ms JPMIA0016GB 1.0 V	E F G
64		Intelligent key warn-			Sounding	0 V	
(GR)	Ground	ing buzzer control	Output	Warning buzzer	Not sounding	Battery voltage	Н
65 (O)	Ground	Rear wiper stop position	Input	Rear wiper	In stop position	(V) 15 10 5 0 10 ms JPMIA0016GB 1.0 V	J
					Not in stop position	0 V	K
66 (Y)	Ground	Back door switch	Input	Back door switch	OFF (When back door closes)	(V) 15 10 5 0 10 ms JPMIA0011GB 11.8 V	WV
					ON (When back door opens)	0 V	Ν
					Pressed	0 V	
67 (LG)	Ground	Back door opener switch	Input	Back door opener switch	Not pressed	(V) 15 10 5 0 10 ms JPMIA0011GB	O
						11.8 V	

	ninal No. e color)	Description			O a Property	Value				
+		Signal name	Input/ Output	Condition		(Approx.)				
68 (W)	Ground	Rear RH door switch	Input	Rear RH door switch	OFF (When rear RH door closes)	(V) 15 10 5 0 10 ms JPMIA0011GB				
					ON (When rear RH door opens)	0 V				
69 (R)	Ground	Rear LH door switch	Input	Input	Input	Input	Input	Rear LH door switch	OFF (When rear LH door closes)	(V) 15 10 5 0 10 ms JPMIA0011GB
					ON (When rear LH door opens)	0 V				
72					When Intelligent Key is in the passenger compartment	(V) 15 10 5 0 1 s JMKIA0062GB				
(B)			ÖFF	When Intelligent Key is not in the passenger compartment	(V) 15 10 5 0 1 s JMKIA0063GB					

Terminal No. (Wire color)		Description		Condition		Value	
+	-	Signal name	Input/ Output	Condition		(Approx.)	Α
73 (W)	Ground	Room antenna (+) (Center console)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	(V) 15 10 5 0 1 s JMKIA0062GB	B C D
					When Intelligent Key is not in the passenger compartment	(V) 15 10 5 0 1 s JMKIA0063GB	E F G
74	Ground	Passenger door antenna (-)	Output	When the passenger door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	(V) 15 10 5 0 1 S S S S S S S S S	Н
(Y)					When Intelligent Key is not in the antenna detection area	(V) 15 10 5 0 1 s JMKIA0063GB	J K
75	Ground	Passenger door antenna (+)	Output	When the passenger door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	(V) 15 10 5 0 JMKIA0062GB	M
(LG)					When Intelligent Key is not in the antenna detection area	(V) 15 10 1	O

Terminal No. (Wire color)		Description				Value	
+	- COIOT)	Signal name	Input/ Output	Condition		(Approx.)	
76	Ground	Driver door antenna (-)	Output	When the driver door request switch is operat- ed with ignition switch OFF	When Intelligent Key is in the antenna detection area	(V) 15 10 5 0 JMKIA0062GB	
(V)					When Intelligent Key is not in the antenna detection area	(V) 15 10 5 0 JMKIA0063GB	
77	Ground	Driver door antenna (+)	Output	When the driver door request switch is operat- ed with ignition switch OFF	When Intelligent Key is in the antenna detection area	(V) 15 10 5 11 1 s JMKIA0062GB	
(P)					When Intelligent Key is not in the antenna detection area	(V) 15 10 5 11 1 s JMKIA0063GB	
80 (SB)	Ground	NATS antenna amp.	Input/ Output	During waiting	Ignition switch is pressed while inserting Intelligent Key into the key slot.	Just after pressing ignition switch. Pointer of tester should move.	
81 (O)	Ground	NATS antenna amp.	Input/ Output	During waiting	Ignition switch is pressed while inserting Intelligent Key into the key slot.	Just after pressing ignition switch. Pointer of tester should move.	
82	Ground	Ignition relay [fuse block (J/B)] control	Output	Ignition switch	OFF or ACC	0 V	
(BR)					ON	Battery voltage	

	ninal No. e color)	Description	T			Value	
+	e color)	Signal name	Input/ Output		Condition	(Approx.)	
83		Remote keyless entry		During waiting		(V) 15 10 5 0 1 ms JMKIA0064GB	
63 (P)	Ground	receiver communication	Input/ Output	When operating e	ither button on Intelligent Key	(V) 15 10 5 0 1 ms JMKIA0065GB	
					All switches OFF (Wiper intermittent dial 4)	(V) 15 10 5 0 2 ms JPMIA0041GB 1.4 V	
87	Ground	Combination switch	Input	Combination	Front fog lamp switch ON (Wiper intermittent dial 4)	(V) 15 10 5 0 2 ms JPMIA0037GB 1.3 V	٧
(R)		INPUT 5		switch	Rear wiper switch ON (Wiper intermittent dial 4)	(V) 15 10 5 0 2 ms JPMIA0039GB 1.3 V	
					Any of the conditions below with all switches OFF Wiper intermittent dial 1 Wiper intermittent dial 2 Wiper intermittent dial 6 Wiper intermittent dial 7	(V) 15 10 5 0 2 ms JPMIA0040GB	

	inal No. e color)	Description	ı		O Bri	Value
+	-	Signal name	Input/ Output		Condition	(Approx.)
					All switches OFF (Wiper intermittent dial 4)	(V) 15 10 5 0 2 ms JPMIA0041GB
					Lighting switch HI (Wiper intermittent dial 4)	(V) 15 10 5 0 2 ms JPMIA0036GB 1.3 V
88 (GR)	Ground	Combination switch INPUT 3	Input	Combination switch	Lighting switch 2ND (Wiper intermittent dial 4)	(V) 15 10 2 ms 1.3 V
					Rear washer switch ON (Wiper intermittent dial 4)	(V) 15 10 5 0 2 ms JPMIA0039GB 1.3 V
					Any of the conditions below with all switches OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3	(V) 15 10 5 0 2 ms JPMIA0040GB
90 (P)	Ground	CAN-L	Input/ Output		_	_
91 (L)	Ground	CAN-H	Input/ Output		_	_

	inal No.	Description				Value	
(Wir	e color)	Signal name	Input/ Output		Condition	(Approx.)	
					OFF	0 V	-
92 (R)	Ground	Key slot illumination	Output	Key slot illumina- tion	Blinking	(V) 15 10 5 0 JPMIA0015GB 6.5 V	
					ON	Battery voltage	-
93 (P)	Ground	ON indicator lamp	Output	Ignition switch	OFF (LOCK and ACC indicator lamps are not illuminated.)	Battery voltage	-
					ON	0 V	-
95	Ground	ACC relay control	Output	Ignition switch	OFF	0 V	-
(L)	Ground	AGO Telay CUTILIUI	Juipul	iginuon switch	ACC or ON	Battery voltage	
96 (Y)	Ground	CVT shift selector (detention switch) power supply	Output		_	Battery voltage	=
99	Ground	Selector lever P posi-	Input	Selector lever	P position	0 V	=
(V)	Ground	tion switch	input	Selector level	Any position other than P	Battery voltage	
					ON (Pressed)	0 V	
100 (P)	Ground	Passenger door request switch	Input	Passenger door request switch	OFF (Not pressed)	(V) 15 10 5 0 10 ms JPMIA0016GB	
					ON (Pressed)	0 V	1
101 (W)	Ground	Driver door request switch	Input	Driver door request switch	OFF (Not pressed)	(V) 15 10 5 0 10 ms JPMIA0016GB	
102	Ground	Blower fan motor re-	Output	Ignition switch	OFF or ACC	0 V	-
(Y)	Giouria	lay control	Output	ignition switch	ON	Battery voltage	-
103 (L)	Ground	Remote keyless entry receiver power supply	Output	Ignition switch OF	F	Battery voltage	=

	inal No.	Description	T			Value
+	e color)	Signal name	Input/ Output		Condition	(Approx.)
					All switches OFF	(V) 15 10 5 0 2 ms JPMIA0041GB
					Turn signal switch LH	(V) 15 10 5 0 2 ms JPMIA0037GB
107 (O)	Ground	Combination switch INPUT 1	Input	Combination switch (Wiper intermit- tent dial 4)	Turn signal switch RH	(V) 15 10 5 0 2 ms JPMIA0036GB 1.3 V
					Front wiper switch LO	(V) 15 10 5 0 2 ms JPMIA0038GB
					Front washer switch ON	(V) 15 10 5 0 2 ms JPMIA0039GB 1.3 V

	inal No. e color)	Description		_	0 10	Value	Α
+	e color)	Signal name	Input/ Output		Condition	(Approx.)	\wedge
					All switches OFF (Wiper intermittent dial 4)	(V) 15 10 5 0 2 ms JPMIA0041GB 1.4 V	С
					Lighting switch AUTO (Wiper intermittent dial 4)	(V) 15 10 5 0 2 ms JPMIA0038GB 1.3 V	E F
108 (P)	Ground	Combination switch INPUT 4	Input	Combination switch	Lighting switch 1ST (Wiper intermittent dial 4)	(V) 15 10 5 0 2 ms JPMIA0036GB	G H I
					Rear wiper switch INT (Wiper intermittent dial 4)	(V) 15 10 5 0 2 ms JPMIA0040GB	J K
					Any of the conditions below with all switches OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	(V) 15 10 5 0 2 ms	M
						JPMIA0039GB 1.3 V	0

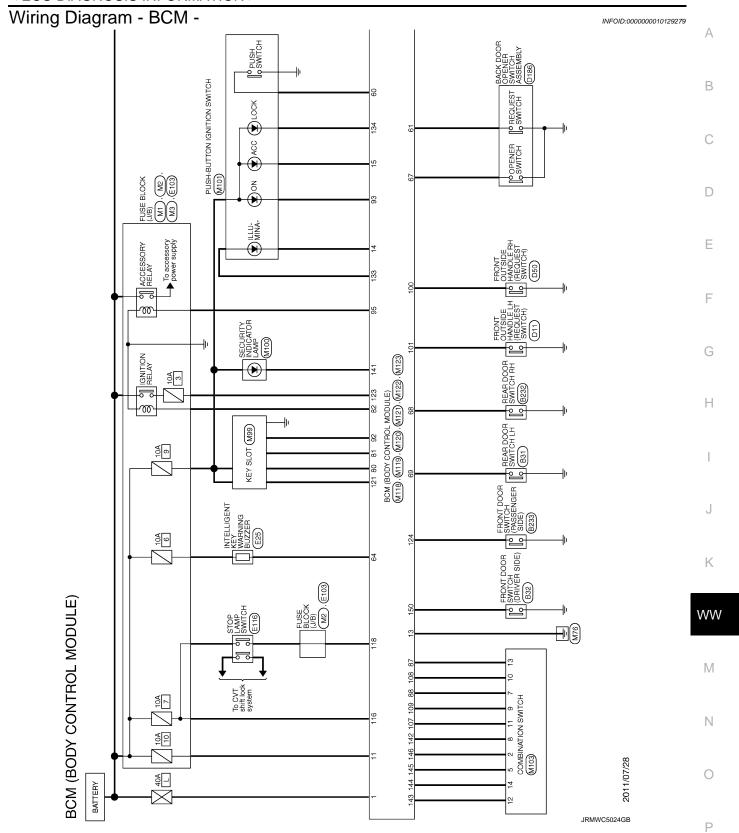
	inal No.	Description				Value
+ (vvire	e color)	Signal name	Input/ Output		Condition	(Approx.)
					All switches OFF	(V) 15 10 5 0 2 ms JPMIA0041GB
					Lighting switch PASS	(V) 15 10 5 0 2 ms JPMIA0037GB 1.3 V
109 (SB)	Ground	Combination switch INPUT 2	Input	Combination switch (Wiper intermit- tent dial 4)	Lighting switch 2ND	(V) 15 10 5 2 ms JPMIA0036GB 1.3 V
					Front wiper switch INT/ AUTO	(V) 15 10 5 0 2 ms JPMIA0038GB 1.3 V
					Front wiper switch HI	(V) 15 10 5 0 2 ms JPMIA0040GB
					ON	0 V
110 (G)	Ground	Hazard switch	Input	Hazard switch	OFF	(V) 15 10 5 0 JPMIA0012GB

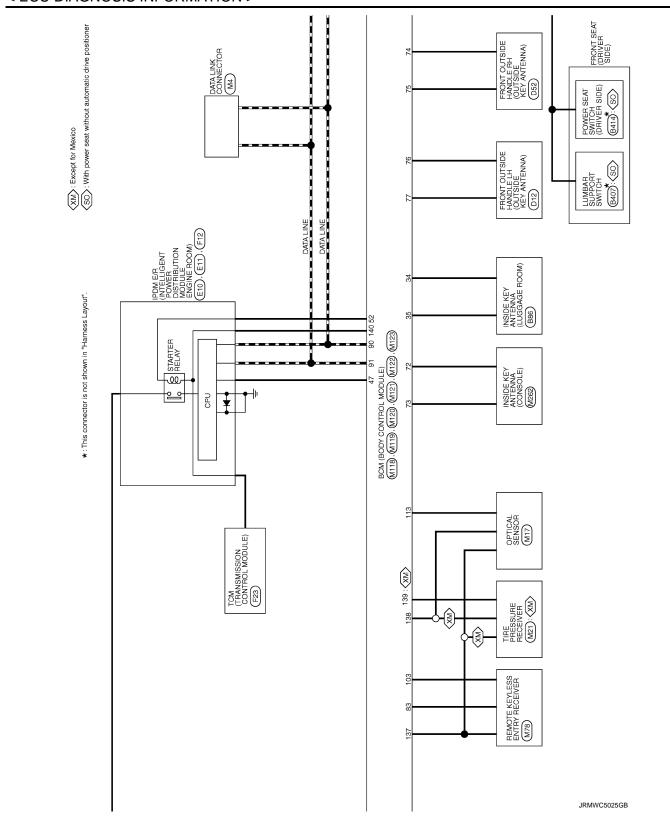
	inal No.	Description				Value	^
(VVire	e color) –	Signal name	Input/ Output		Condition	(Approx.)	A _
112 (R)	Ground	Rain sensor serial link	Input/ Output	Ignition switch ON		(V) 15 10 5 0 JPMIA0156GB 8.7 V	B C
113	0	Ontical	la a cat	Ignition switch	When bright outside of the vehicle	Close to 5 V	=
(P/B)	Ground	Optical sensor	Input	ŎN	When dark outside of the vehicle	Close to 0 V	E
116 (GR)	Ground	Stop lamp switch 1	Input		_	Battery voltage	F
118	Ground	Ston Jamp switch 2	Innut	Stop Jamp switch	OFF (Brake pedal is not depressed)	0 V	_
(L)	Ground	Stop lamp switch 2	Input	Stop lamp switch	ON (Brake pedal is depressed)	Battery voltage	G
119 (W)	Ground	Front door lock as- sembly driver side (Unlock sensor)	Input	Driver door	LOCK status (unlock sensor switch OFF)	(V) 15 10 5 0 10 ms JPMIA0012GB	H
					UNLOCK status (unlock	1.1 V 0 V	_ J
				When Intelligent I	sensor switch ON) (ey is inserted into key slot	Battery voltage	- K
121 (Y)	Ground	Key slot switch	Input	_	ey is not inserted into key slot	0 V	-
123					OFF or ACC	0 V	
(G)	Ground	IGN feedback	Input	Ignition switch	ON	Battery voltage	WV
124 (R)	Ground	Passenger door switch	Input	Passenger door switch	OFF (When passenger door closes)	(V) 15 10 5 0 10 ms JPMIA0011GB 11.8 V	M
					ON (When passenger door opens)	0 V	_ 0

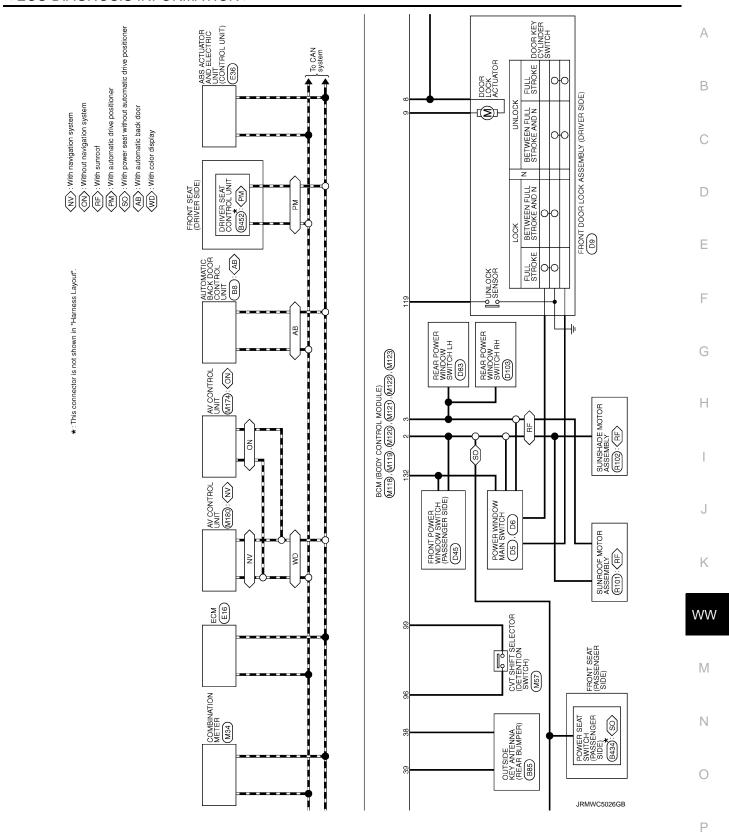
	inal No. e color)	Description	ı		O Eff	Value
+	-	Signal name	Input/ Output		Condition	(Approx.)
130 (BR)	Ground	Rear window defog- ger switch	Input	Ignition switch ON	Rear window defogger switch OFF	(V) 15 10 5 0 10 ms JPMIA0012GB 1.1 V
					Rear window defogger switch ON	0 V
132 (G)	Ground	Power window switch communication	Input/ Output	Ignition switch ON		(V) 15 10 5 0 10 ms JPMIA0013GB 10.2 V
				Ignition switch OF	F or ACC	Battery voltage
					ON (When tail lamps OFF)	9.5 V
133 (W)	Ground	Push-button ignition switch illumination	Output	Push-button ignition switch illumination	ON (When tail lamps ON)	NOTE: The pulse width of this wave is varied by the illumination brightening/dimming level. (V) 15 10 5 UPMIA0159GB
					OFF	0 V
134 (R)	Ground	LOCK indicator lamp	Output	LOCK indicator lamp	OFF (ACC and ON indicator lamps are not illuminated.)	Battery voltage
					ON	0 V
137 (P)	Ground	Receiver and sensor ground	Input	Ignition switch ON		0 V
138	Ground	Receiver and sensor	Output	Ignition switch	OFF	0 V
(V)	Ciodila	power supply	Calput	igilition switch	ACC or ON	5.0 V

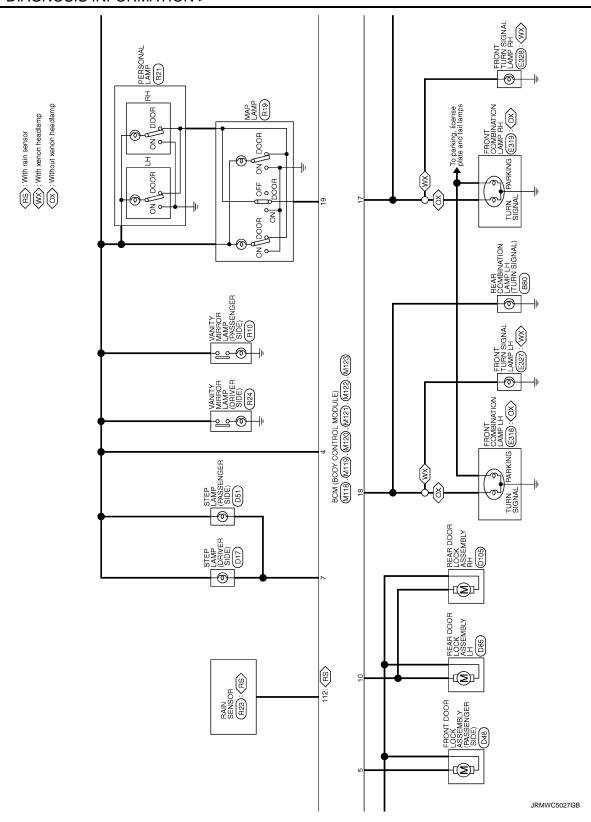
	inal No.	Description				Value	Λ
(Wir	e color)	Signal name	Input/ Output		Condition	(Approx.)	А
139		Tire pressure receiv-	Input/	Ignition switch	Standby state	(V) 6 4 2 0 	B C
(O)	Ground	er communication	Output	ŎN	When receiving the signal from the transmitter	(V) 6 4 2 0 0.2s	E
140		Selector lever P/N			P or N position	Battery voltage	G
(GR)	Ground	position	Input	Selector lever	Except P and N positions	0 V	
					ON	0 V	Н
141 (O)	Ground	Security indicator	Output	Security indicator	Blinking	(V) 15 10 5 0 11.3 V	J
142 (L)	Ground	Combination switch OUTPUT 5	Output	Combination switch (Wiper intermit- tent dial 4)	OFF All switches OFF Lighting switch 1ST Lighting switch HI Lighting switch 2ND Turn signal switch RH	Battery voltage 0 V (V) 15 10 2 ms JPMIA0031GB 10.7 V	W M
143 (W)	Ground	Combination switch OUTPUT 1	Output	Combination switch	All switches OFF (Wiper intermittent dial 4) Front wiper switch HI (Wiper intermittent dial 4) Rear wiper switch INT (Wiper intermittent dial 4) Any of the conditions below with all switches OFF Wiper intermittent dial 1 Wiper intermittent dial 2 Wiper intermittent dial 3 Wiper intermittent dial 6 Wiper intermittent dial 7	0 V (V) 15 10 2 ms JPMIA0032GB 10.7 V	O P

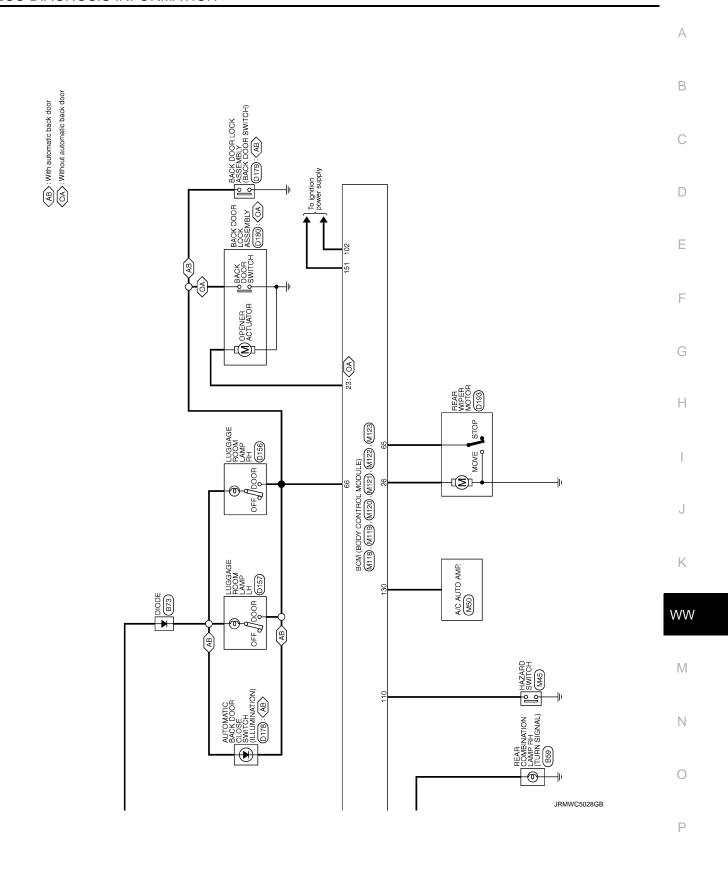
	ninal No. e color)	Description			0 110	Value
+	-	Signal name	Input/ Output		Condition	(Approx.)
					All switches OFF (Wiper intermittent dial 4)	0 V
					Front washer switch ON (Wiper intermittent dial 4)	
144		Combination switch		Combination	Rear wiper switch ON (Wiper intermittent dial 4)	(V) 15 10
(P)	Ground	OUTPUT 2	Output	switch	Rear washer switch ON (Wiper intermittent dial 4)	5 0
					Any of the conditions below with all switches OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	2 ms JPMIA0033GB
					All switches OFF	0 V
					Front wiper switch INT/ AUTO	(V)
145		Combination switch		Combination switch	Front wiper switch LO	15
(V)	Ground	OUTPUT 3	Output	(Wiper intermit- tent dial 4)	Lighting switch AUTO	2 ms JPMIA0034GB
					All switches OFF	0 V
					Front fog lamp switch ON	
				O and the office	Lighting switch 2ND	(V)
146	0	Combination switch	0	Combination switch	Lighting switch PASS	15 10 5
(Y)	Ground	OUTPUT 4	Output	(Wiper intermit- tent dial 4)	Turn signal switch LH	2 ms JPMIA0035GB
150 (SB)	Ground	Driver door switch	Input	Driver door switch	OFF (When driver door closes)	(V) 15 10 5 0 10 ms JPMIA0011GB
					ON (When driver door opens)	0 V
151	Ground	Rear window defog-	Output	Rear window de-	Active	0 V
(G)	Giouria	ger relay control	Output	fogger	Not activated	Battery voltage



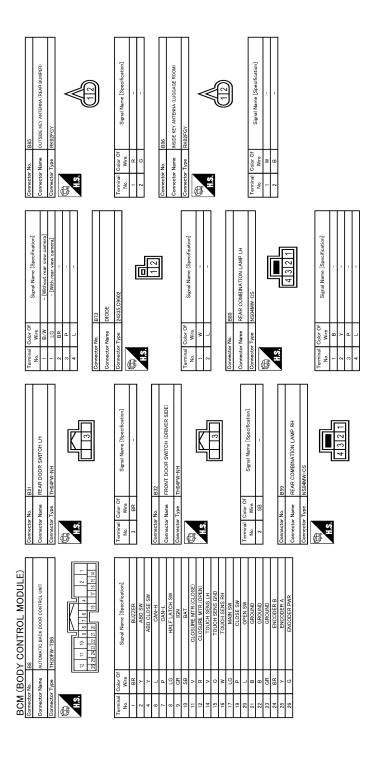








Revision: 2013 August WW-87 2014 MURANO



JRMWE5830GB

< ECU DIAGNOSIS INFORMATION >

Connector No. D5	Connector Name POWER WINDOW MAIN SWITCH	Connector Type NS16FW-CS	€		7 6 5 4 1 3 2 1	16 15 14 13 12 11 10 9 8				<u>ء</u>		- GR	2 W -	3 BR -		+	- 22	7 P -	+	- D 6	10 v –	II FG	13 Y	H	15 R –			Connector No. D6	Connector Name POWER WINDOW MAIN SWITCH	- 1	Connector Type NS03FW-CS	⊕	Arts .			17 19				<u></u>	Wire	+	19 FG							
	No. Wire Signal Name [Specification]	Н	9 %	- C	F			Connector No. B452	Connector Name DRIVER SEAT CONTROL UNIT	Т	Connector Type TH32FW	d)	学	<u> </u>		11 13 17	24 19 22 21 30 27 25 12 14 18 16 29			اع	Wire		12 G/W -	Н	14 R/W -	15 Y/B –	Н	+	Н	+	20 R/Y -	+	+	1 20 20	24 P/L	+	2/2	Ŧ	- M/A	+	†	1	32 W/L -	33 W =	ł					
	No. Wire Signal Name [Specification]	Н	13 Y/W	- +-		Connector No. B414	Connector Name POWER SEAT SWITCH (DRIVER SIDE)		1	ą.	AHT	9		2 2	1			Terminal Color Of Signal Name [Specification]	Wire		2 B -	3 6	4 G/R -		6 R/L -	7 L – –	8 L/W –	7	10 L/B -		-	Connector No. B434	Connector Name POWER SEAT SWITCH (PASSENGER SIDE)	Commenter Trees	nector Type	1	AMID	30 38 7 8		5 6 3 4 9 10										
BCM (BODY CONTROL MODULE) Connector No. 1822	Connector Name REAR DOOR SWITCH RH	Connector Type TH04FW-NH	€							Ierminal Color Of Signal Name [Specification]		3 W =			Connector No. B233	Connector Name FRONT DOOR SWITCH (PASSENGER SIDE)		Connector Type TH04FW-NH	á	10000000000000000000000000000000000000		_		3			Terminal Color Of Simal Name [Specification]		3 R -			Connector No. B407	Connector Name LUMBAR SUPPORT SWITCH	Constitution Transfer	Connector Type NSU4FBR-US	€.		5.		11 12 13 14										

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		01-2	Commercial No.
Connector Name FRONT DOOR LOCK ASSEMBLY (DRIVER SIDE) Connector	Connector Name FRONT OUTSIDE HANDLE LH (OUTSIDE KEY ANTENNA)	Connector Name FRONT POWER WINDOW SMITCH (PASSENGER SIDE)	R SIDE) Connector Name FRONT OUTSIDE HANDLE RH (REQUEST SWITCH)
Connector Type E06FGY-RS Connector Type	tor Type RK02MGY	Connector Type NS16FW-CS	Connector Type RH02FB
		1 2 3 4 5 6	15 16
	9		
Terminal Color Of Signal Name [Specification] Terminal No.	Ferminal Color Of Signal Name [Specification] No. Wire	Terminal Color Of Signal Name [Specification]	trion] Terminal Color Of Signal Name [Specification]
_ ^	- B	Н	Н
+	- ^	α.	_ 2 B
7 00		J 5	T
5 R – Connector No.	tor No. D17	10 P	Connector No. D51
6 L Connector	Connector Name STEP LAMP (DRIVER SIDE)	В	Connector Name STEP LAMP (PASSENGER SIDE)
Connector Type	tor Type CO2FW	15 7	Connector Type CO2EW
Connector No. D11	1	╀	ı
Connector Name FRONT OUTSIDE HANDLE LH (REQUEST SWITCH)	Ŀ		Ŀ
Connector Type RH02FB	0	Connector No. D48	
	2 1	Connector Name FRONT DOOR LOCK ASSEMBLY (PASSEMGER SIDE)	son: 2 1
K.S.		Connector Type E06FGY-RS	
(12) Terminal	rerminal Color Of Signal Name [Specification]	匮	Terminal Golor Of Signal Name [Specification]
)	9 ($^{++}$
Terminal Color Of Signal Name [Specification]	7		
Н			
2 B -		Terminal Golor Of Signal Name [Specification]	ition]
		> 0	

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< ECU DIAGNOSIS INFORMATION >

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ortion]	[control of the control of the contr	В
Signal Name (Specification) Signal Name (Specification) Signal Name (Specification) Autrobatic Back book close switch TROBEDY	Signal Name (Specification)	С
Connector No. D157	Color Of No No No No No No No N	D
		Е
PILAS DOOR LOOK ASSEMBLY PH- EGBFTOY-RS Signal Name (Specification) 1156 LUGGAGE ROOM LAMP RH CJOHFW	Signal Name (Specification)	F
P105 REAR DO E06FGY-I LUGGAGI		G
Connector No. Connector Name Connector Type Connector Type No. Were 5 Connector No.	Color Of Pub. Color Of Pub.	Н
PRAM DOOR LOCK ASSEMBLY LH EGGETSY-RS Signal Mann (Specification) PRAM POWER WINDOW SWITCH RH NSSBFW-CS NSSBFW-CS	Signal Name (Specification)	I
PEAR DOOR LO PEAR DOOR LO PEAR POWER W NSSEPW-CS	19.00 Miles	J
Connector No. Connector Name Connector Type No. Vir. Terminal Connector No. Connector	Terminal Color Of No. Wise No. Wise No. Wise No.	К
ULE)	[pop]	WW
BCM (BODY CONTROL MODULE) Connector Nue proof consist event minorities ex variente. Connector Type Registration of the control of the contr	Signal Name (Specification)	М
BCM (BOD) Connector None	No.	N
BO Community of the property o	<u> - </u>	0
		JRMWE5833GB

Revision: 2013 August WW-91 2014 MURANO

BCM (BODY CONTROL MODULE) Connector No. D179	Connector No. D186	Connector No. E10		Connector No.	
BACK DOOR LOCK ASSEMBLY NS08FW-CS	Connector Name BACK DOOR OPENER SWITCH ASSEMBLY Connector Type THYAMM-NH	Connector Name ROWER OFFICE DESTRIBUTION MODILE ENGINE ROOM COnnector Two THOREW-CS(12-MA-1V)	DN MODULE ENGINE	Connector Name	I'MO EY CHTELLICENT POWER DISTRIBUTION MODULE EKCINE ROOM THOREM-NH
1 1 1 1 1 1 1 1 1 1		1 📖		E.S.	
Signal Name [Specification]	Terminal Color Of Signal Name [Specification]	Terminal Color Of Signal Name [Specification]	ation]	Terminal Co	Color Of Signal Name [Specification]
1	- M	4 LG -		39	-
1	a (- × × × ×		40	
	D >	10 BR		4 4	2 2
		t		43	
-		Н		44	
1	Connector No. D193	+		+	- 0
	Connector Name REAR WIPER MOTOR	16 R ×		46	BR -
	Connector Type CJ04FW-1V	7 7 20			
VIGNESSA NOO I GOOD NOAG	1	21 0 -		Connector No.	s. E16
Connector Tone Montelline		22 SB -		Connector Name	ame ECM
	1.5. A	╀		Connector Type	pe RH24FB-RZ8-L-LH
	. 0	25 GR -		ą	
	#6	7 7 7		厚	20 20 20 20
4 2 2		- M /7		Ś	3 90 31 32 33 33 33 33 33 33 33 33 33 33 33 33
2	le O	Н			23
		\dashv			St. 188 SC 98 100 104 109 112
	3 GR	35 P	T		
Signal Name [Specification]		38 GR -		Terminal Co	Color Of Signal Name [Specification]
1				18	W ACCELERATOR PEDAL POSITION SENSOR 1
-				Н	ACCELEF
-				+	SEI
				84	SENSOR GROUND
				8 8	SR EVAP CONTROL SYSTEM PRESSURE SENSOR
				╁	t
				88	
				Н	SE
				+	
				+	4
				94	GR ENGINE SPEED OUTPUT SIGNAL

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< ECU DIAGNOSIS INFORMATION >

	Т		Connector Type Z03FBR	₫.	Myth						E E		ac 1	1 1			Connector No. E327	H I AMB I TIMBI STONE HAMB I H	7	Connector Type RS02FGY		Arth		<u>[2</u> [1]			Torminal Color Of		- ×	2 B –															
	Т		Connector Type M04FW-LC	₫.	Mith	H.S.	7	1 2			la C	_	az :	2 LG) >	-		Connector No. E318	Connector Name FRONT COMBINATION LAMP LH	Т	Connector Type Z03FBR							Terminal Color Of	No. Wire Signal Name [Specification]	TO TO	2 2 2	- 0													
	Color Of Signal Name [Specification]	VA	Y WSS RL SIG (-)			WSS FR PWR (+)	W WSS FR SIG (=)	WSS	W WSS FL PWR (+)	SB CLUSTER GND	P WSS RR PWR (+)			G MOTOR SUPPLY	0			Y VDC OFF SW			B/W VALVE / ECU GND		lo. E103	ame FUSE BLOCK (J/B)	Т	ype NS16FW-CS			4 5 7 8 9 10	11 13 14 15 17 18 19			Color Of Similar Color Of	Wire	- 5	- ^	T		BR -			GR -			
	Terminal Co No	Н	2	e	4 '	o 0	٦		6	10	Ξ	+	+	4 9	0 6	20	21	22	23	+	56		Connector No.	Connector Name	N I I	Connector Type	€	E	Ž				Terminal Co	No.	11.	12F	11	2F	4F	- QE	胺	9F			
[FUEL TANK TEMPERATURE SENSOR T	CAN COMMUNICATION LINE(CAN-L)	CAN COMMUNICATION LINE(CAN-H)	SENSOR GROUND	PNP SIGNAL	18	\downarrow	ECM GROUND	ECM GROUND	EVAP CANISTER VENT CONTROL VALVE	ASCD BRAKE SWITCH	ECM GROUND	ECM GROUND	1	F25	т	INTELLIGENT KEY WARNING BUZZER	RK03FBR			√	{)		Signal Name [Specification]					E36	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)	AEZ22FB-AJZ4-LH			25 23 21 20 19 16		12 11 10 9 8 7 6 5 4 3 2 1							
M (BO	> 8	Н	4	4	+	4	> 8	╀	L	W	4	4	8		Connector No.		Connector Name	Connector Type		_	νi					No Wire	+	, g			Connector No.	Connector Name	Connector Type		_	e.	9								
BG	92	97	86	90	102	104	100	101	108	109	110	=	112		Conne		Conne	Conne	Q	事	H.S.					e min	-	- m		٥	Conne	Conne	Conne	ą	厚	SH.									

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BCM (I	BCM (BODY CONTROL MODULE)							
Connector No.	4o. E328	Connec	Connector No.	F23	Connector No.	· M1	Connector No.	M3
Connector Name	Name FRONT TURN SIGNAL LAMP RH	Connec	Connector Name	TCM (TRANSMISSION CONTROL MODULE)	Connector Name	me FUSE BLOCK (J/B)	Connector Name	FUSE BLOCK (J/B)
Connector Type	Type RS02FGY	Connec	Connector Type	RH40FB-RZ8-L-RH	Connector Type	pe NS06FW-M2	Connector Type	NS12FW-CS
偃	ı	Œ		The second second	Œ		Œ	
HS.		H.S.	vi.	57 52 53 53 54 54 54 54 54 54 54 54 54 54 54 54 54	H.S.	₩ .	H.S.	
				2 5		8A /A 64 54 4A		4 5 10 8 7 2
Terminal Color Of No. Wire	Signal Name [Specification]	Terminal No.	al Color Of Wire	Signal Name [Specification]	Terminal Col	Color Of Signal Name [Specification]	Terminal Color Of No. Wire	Signal Name [Specification]
-	- D	-	B/B	TRANSMISSION RANGE SWITCH 2	Н		Н	-
2		~	7	TRANSMISSION RANGE SWITCH 3	+	- 5	+	
		ω 4	0/9	TRANSMISSION RANGE SWITCH 4 TRANSMISSION RANGE SWITCH 3 (MONITOR)	3A		12C O	1 1
Connector No.	4o. F12	c	9	GROUND	╁	- 97	H	1
Connector Name	IPOM E/R DIVIELLIGENT POWER DISTRIBUTION MODULE ENGINE	7	W	SENSOR GROUND	H	-	H	-
Collifector is	- 1	œ	M/9	CLOCK (SEL 2)			9C GR	-
Connector Type	TH20FW-CS12-M4	6	5	٥				
q.		2	BR/R	_	Connector No.	. M2		
李		= \$	BR/W	TRANSMISSION RANGE SWITCH 1	Connector Name	me FUSE BLOCK (J/B)	Connector No.	M4
S. E.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 7	- K/W	PRIMARY PRESSURE SENSOR	Connector Type	De NS10FW-CS	Connector Name	DATA LINK CONNECTOR
		15	W/N	SECONDARY PRESSURE SENSOR		1	Connector Type	BD16FW
		19	g/B	REVERSE LAMP RELAY	匮		ą	
		20	8/8	STARTER RELAY	Š		彦	
		52	W/R	SENSOR GROUND			S	11 14 16
-e	color Of Signal Name [Specification]	56	\$	SENSOR POWER		2		76
+		27	R/G	STEP MOTOR D				3 4 5 6 7 8
+		8 8	× 5	SIEP MOIOR C				
+	H/B	8	9 6	SIEP MOLOR B		2011-20		
+	50%	3 2	5 0	SIEF MOTOR A	No.	Wire Signal Name [Specification]	Terminal Color Of	
23.	R/W	32		CAN-H	╁			Signal Name [Specification]
H	G/W	33	97	PRIMARY SPEED SENSOR	38	- 1	3	
Н	M/N	34	LG/R		48	- 5	4 B	1
Н	R/Y -	37	V/R	LOCK-UP SELECT SOLENOID VALVE	58	T	2 B	-
57	- 0	38	T/W	TORQUE CONVERTER CLUTCH SOLENOID VALVE	6B	X	- P	-
58	γ -	38	M/B	SECONDARY PRESSURE SOLENOID VALVE	78		7 BR	-
Н	W/B -	40	R/Y	LINE PRESSURE SOLENOID VALVE	Н	R -	8	1
70	- 0	45	8	GROUND	98	GR -	11 SB	_
\forall	R/B -	46	>-	POWER SUPPLY			14 P	-
75	DT	47	Z,	POWER SUPPLY (MEMORY BACK-UP)			16 Y	I
76	SB	48	>	POWER SUPPLY				
77	GR –							
80	В –							

JRMWE5836GB

< ECU DIAGNOSIS INFORMATION >

34 V AMB POWER [Without colour display]	35 G AMB SENS (Without colour display)	97	SB SENS GND [W		4	\neg	1	(HA)		4 - 6 8 8		Terminal Color Of		1 16		7 B -		^ 6		Signal Name [Specification] Connector No. M78	Connector Name REMOTE KEYLESS ENTRY RECEIVER	CAN-L Connector Type JAB04FB	(SP)	RX (SW AMP)	An Std. [With colour display]	VACTR 12 4	SUN SENS	INTAKE SENS [With colour display]	INTAKE SENS [Without colour display] [Terminal Color Of CROIND		1 P	RR DEF ON SIGNAL
Connector No. M45	Connector Name HAZARD SWITCH	Connector Type TK04FW	E IIS	4		Terminal Color Of Signal Name No.	1 B	2 3 B	4 R.Y		Connector No. M50	Connector Name A/C AUTO AMP.	Connector Type SAB40FW	1	Arth	ė.	- Ba			Terminal Color Of Signal Name		2 P		а «	10 LAN SIG FWEN	œ		9	16 R INTAKE SENS LW	9	GR	27 BR RR DEF ON
M34	e COMBINATION METER	TH40FW-NH		1 2 3 4 5 5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			BATTE	G IGN SIGNAL		B ILLUMINATION CONTROL SIGNAL		G METER CONTROL SWITCH GROUND ENTER SWITCH SIGNAL	П	11. LUMINATION CONTROL SWITCH SIGNAL (*) [With automatic drive positioned] D 11.1 LIMINATION CONTED CONTROL CO	Т	. AMBIENT SENSOR SIGNAL		AMBIENT SENSOR GROUND			R ALTERNATOR SIGNAL	PARK	BF	WASHER LEVEL SWITCH SIGNAL	+	LG OVERDRIVE CONTROL SWITCH SIGNAL	G FUEL LEVEL SENSOR SIGNAL	Т	SEAT BELT BUCKLE SWITCH SIGNAL (PASSENGER SIDE)			
Connector No.	Connector Name	Connector Type	€ SH			Terminal Color Of No. Wire	-	2 LG	4 B	5 SB	+	10 LG	12 R	5 5	+	18 L	19 P	20	22 P	+	25 BR	┝	Н	29 R	+	H	Н	+	36 R			
BCM (BODY CONTROL MODULE) Connector No. M17	Connector Name OPTICAL SENSOR	Connector Type TK03FW				Terminal Color Of Signal Name [Specification] No. Wire	- ^	> a		Connector No M21		Connector Name IIRE PRESSURE RECEIVER Connector Type TK04FW				1 0 1	151		Terminal Color Of Simpl Name [Specification]	o de la companya de l	O SIGNAL											

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BCM (BODY CONTROL MODULE) Connector No. Mag	Connector No.	Min	5	۵	S II I d N	Connector No.	M120	
Connector Name KEY SLOT	Connector Name		7	۵	OUTPUT 2	Connector Name		
Connector Type TH12FW-NH	Connector Type	TK08FBR				Connector Type	n NS12FW-CS	
	43	[Connector No.	tor No.	M118	13		
SE S	S.	1 2 3	Connec	Connector Name	BCM (BODY CONTROL MODULE)	H.S.	5 4 7 3 2 1	
1 2 3 4 5 6		4 5 6 7 8	Connec	Connector Type	M03FB-LC) o	
11 12			Œ					
			H.S.	7	- 3			
Terminal Color Of	Terminal Color Of	Of				Terminal Color Of	rof	
	No. Wire				7	No. Wire		
GR		1]	\dashv	84	
SB	2 0	1				56 (G REAR WIPER OUTPUT	
+	8 4	1	Terminal	al Color Of	Signal Name [Specification]			
9 GR ILL BA	+		-	3	BAT (E/I)	Connector No	M121	
< 0	+	1	~	E 89	POWER WINDOW POWER SUPPLY (BAT)		Т	
KEY SV	, /	,	· ~	-	POWER WINDOW POWER SUPPLY (IGN)	Connector Name	e BCM (BODY CONTROL MODULE)	
	8 GR	-				Connector Type	TH40FGY-NH	
-				-		Q		
Connector No. M100			Connec	Connector No.	M119	厚		
Connector Name SECURITY INDICATOR LAMP	Connector No.	Т	Connec	Connector Name	BCM (BODY CONTROL MODULE)	H.S.		
Connector Type TK02FBR	Connector Name	COMBINATION SWITCH	Connec	Connector Type	NS16FW-CS			
1	Connector Type	TH16FW-NH	1				89 69 67 89 65 64 61 89 81 82	
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2 1	S.				15 14 13 15 15 15 15 15 15 15 15 15 15 15 15 15		Signal Name [Specification]	
		, , ,			01 11 71 01	34	B LUGGAGE ROOM ANT-	
		9 10 11 14 16				35 V	W LUGGAGE ROOM ANT+	
						38	- REAR BUMPER ANT-	
) le			Termin	Terminal Color Of	Signal Name [Specification]	39 B	BR REAR BUMPER ANT+	
	<u>ه</u>	Of Signal Name [Specification]	o N	Wire		+	ISI	
- CR	No. Wire		4	M/d	INTERIOR ROOM LAMP POWER SUPPLY	+	STARI	
2 0 2	. ·		ا م		PASSENGER DOOR UNLOCK OUTPUT	+	+	
	2 0	8	\	* :	SIEP LAMP CONI	+	R BACK DOOR OPENER REQUEST SW	
	3 BC	IGN IGN	o	> 0	ALL DOOK, FUEL LID LOCK OUTPUT	65	GR I-KEY WARN BUZZER O REAR WIDER STOP POSITION	
	+	ē	9 5	, .	BEAR DOOR UNIOCK OUTBILL	╀	+	
			= =	_ <u>c</u>	BAT (FISE)	+	G BACK DOOR OPENER SW	
	7 GR		13	8	GROUND	╀		
	8		14	0	PUSH-BUTTON IGNITION SWILL GND	H	R REAR LH DOOR SW	
	BS 6		15	_	ACC IND			
	10 P		11	9	TURN SIGNAL RH			
	Н		82	BR	TURN SIGNAL LH			
	12 W	OUTPUT 1	19	>-	INT ROOM LAMP CONT			

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< ECU DIAGNOSIS INFORMATION >

Consider Name Consider Nam	1040/16 1040	MODULE) Continue	H S S S S S S S S S S S S S S S S S S S		I (BODY CONTROL MODULE) OFG-NH	Connector Name		S 8 2	_	Signal Name [Specification] PARKING BRAKE
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W PASSENGER DOOR ANT- LOCK MICHOLAGE STORM (M.) IS SED AVY COMMET(*) BS B AVY COMMET(*) BS B	W PASSENGER	M ANTT- REDOR ANT- REDOR ANT- ONG ANT- NOT ANT- NOT ANT- NAT ANT- (I'R SI CONT (I'R SI CONT NOT ANT- N	 	æ	RAIN SENSOR SERIAL LINK	Н		82	^	VEHICLE SPEED SIGNAL (8-PULSE)
Y PASSENCER DOOR ANT** 116 GR STOP LAMP SWI 73 SB LC AV COMM (L) BS B CAMPH B	Y PASSENGER Y PASSENGER Y Y Y Y Y Y Y Y Y	R DOOR ANT- R DOOR ANT- R DOOR ANT- DOOR ANT- ANT AMP (I F B) COMT (I		/B	OPTICAL SENSOR	H		83	В	1
13 14 DRASENGERO DOMANT- 119 L STOP LANDENS ZERO OF ANT- 121 V DRASENGERO DOME ANT- 122 V DRASENGERO DOME ANT- 123 V DRASENGERO DOME ANT- 124 R PASSENGERO DOME ANT- 124 R PASSENGERO DOME SIZO SWIND S	1	R DOOR ANT+ DOOR ANT- DOOR ANT- ANT ANP- (f F B) CONT R HOUT 5 WW INPUT 5		38	STOP LAMP SW 1	┝		87	*	MICROPHONE SIGNAL
V DRIVER DOOR ANT- 119 W DROOF HOUSE KENSOR 80 L CANH- 80 L SW CANH- 80 L SW CANH- 80 L SW CANH- 80 L SW CANH- 80 CANH-	V DRAVERO D NATE & COMBUSE NAT	OOGR ANT- OOGR ANT- OOGR ANT- ANT AMP. KE AS OOGR ANT- CE AS		L	STOP LAMP SW 2	H		88	В	
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SS WATS MATE AND 122 G DASSERVARE BOOK BY SWELD SWELD SWELD SPIEZAR	SSB MATSA	ANT AMP. (F/B) CONT F RECEIVER COMM Y RECEIVER COMM WW INPUT 5 WINPUT 3 MAH-I.	HH	>	KEY SLOT SW	81 L	CAN-H	96	٦,	CAN-H
12	O O NATSA	ANT AMP. ((F/B) CONT (FESEVER COMM SW INPUT 5 WINDUT 3	Н	9	IGN F/B	82 ^	SW GND	16	SB	AV COMM (H)
P REVIESS BITTER PRECEDENT NAME 120 G POWER WINDOWS SWI COMM 120 G POW	BR COMELS P	Y (F/B) CONT Y RECEIVER COMM SW INPUT 5 SW INPUT 3	Н	~	PASSENGER DOOR SW	H		92	SB	AV COMM (H)
P FIVE VOICES PETRY PETRONAM 133 W PUSSH-BUTTON SYN CLOMES BY INPUT 2 PUONE NUMBON'S WICCOMES BY INPUT 2 PUSSH SWINDLY SYN PETRON	P KEYLESS B-HTPP,	Y RECEIVER COMM SW INPUT 5 SW INPUT 3 AN-L.	ł	ı,	REAR DEFOGGER SW	H	TEL VOICE SIGNAL (+)] _		
134 R COMBISW INPUT 3 133 R PUISH-BUTTON BYILL POWER 29 V VEHCIE SPEED SIGNAL (8-PULSE) Connector Name INSIDE KR	R COMBES	SW INPUT 5 SW INPUT 3 AN-L	_	9	POWER WINDOW SW COMM	88	TEL VOICE SIGNAL (-)	Ι		
134 R COMBISW IN-UT 134 R CHURCHEN GROWN 135 CHURCHEN GROWN 135 CHURCHEN GROWN 1	GR COMBIS COMBI	SW INPUT 3	L	H	JSH-BUTTON IGNITION SW ILL POWER	92 ^	VEHICLE SPEED SIGNAL (8-PULSE)	Connect		M262
13	P	4N-L	H	H	LOCK IND	H	PARKING BRAKE [Without BOSE system]	.	Г	Chiconal Almanda Chy Postore
1	CA CA CA CA CA CA CA CA		L	<u>a</u>	RECEIVER/SENSOR GND	H		Source		INSIDE NET ANTENNA (CONSOLE)
F	R KEY SLOT	AN-H	138	>	RECEIVER/SENSOR POWER SUPPLY	┞	IGNITION	Connect	Г	RK02FGY
14 O	P ACC REL Y CVT SHIFT SELECT V PASSENGER DC W DRIVER DOOR	T ILL CONT	H	0	TIRE PRESS RECEIVER COMM	H	DISK EJECT SIGNAL	 		
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V P PASSENGE DOOR REQUEST SW 144 P COMBI SW OUTPUT	> 0. >	TOR POWER SUPPLY	142		COMBI SW OUTPUT 5	4	AUX SOUND SIGNAL RH (+)			{
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150 SB DRIVERS BUTTAY RECEIVER POWER SUPPLY 151 G REAR WINDOW DEFOGGER RELAY COMT Connector Type TH-22PW-WHH 2 C C C C C C C C C	Y BLOWER R	RELAY CONT	146	 -	COMBI SW OUTPUT 4	2	Г	Γ		
COMBISS WIR HEUT 151 G REAR WINDOW DEFOGGER RELAY CONT Commerce Type Triggery-HH	L KEYLESS ENTRY REC	SEIVER POWER SUPPLY	H	SB	DRIVER DOOR SW	DIEGO MAILE		Termina	1 Color Of	Lucian Sirve of Company
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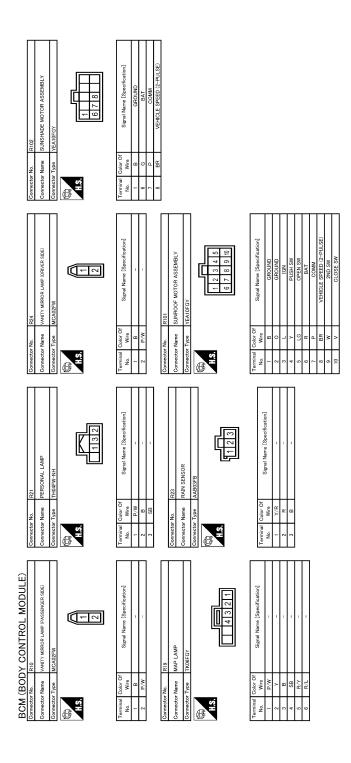
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Fail-safe

INFOID:0000000010129280

FAIL-SAFE CONTROL BY DTC

BCM performs fail-safe control when any DTC are detected.

< ECU DIAGNOSIS INFORMATION >

Display contents of CONSULT	Fail-safe	Cancellation
B2190: NATS ANTENNA AMP	Inhibit engine cranking	Erase DTC
B2191: DIFFERENCE OF KEY	Inhibit engine cranking	Erase DTC
B2192: ID DISCORD BCM-ECM	Inhibit engine cranking	Erase DTC
B2193: CHAIN OF BCM-ECM	Inhibit engine cranking	Erase DTC
B2195: ANTI SCANNING	Inhibit engine cranking	Ignition switch ON → OFF
B2560: STARTER CONT RELAY	Inhibit engine cranking	500 ms after the following CAN signal communication status becomes consistent • Starter control relay signal • Starter relay status signal
B2608: STARTER RELAY	Inhibit engine cranking	500 ms after the following signal communication status becomes consistent • Starter motor relay control signal • Starter relay status signal (CAN)
B260A: IGNITION RELAY	Inhibit engine cranking	 500 ms after the following conditions are fulfilled IGN relay (IPDM E/R) control signal: OFF (Battery voltage) Ignition ON signal (CAN to IPDM E/R): OFF (Request signal) Ignition ON signal (CAN from IPDM E/R): OFF (Condition signal)
B260F: ENG STATE SIG LOST	Maintains the power supply position attained at the time of DTC detection	When any of the following conditions are fulfilled • Power position changes to ACC • Receives engine status signal (CAN)
B2617: STARTER RELAY CIRC	Inhibit engine cranking	1 second after the starter motor relay control inside BCM becomes normal
B2618: BCM	Inhibit engine cranking	1 second after the ignition relay (IPDM E/R) control inside BCM becomes normal
B261E: VEHICLE TYPE	Inhibit engine cranking	BCM initialization

HIGH FLASHER OPERATION

BCM detects the turn signal lamp circuit status by the current value.

BCM increases the turn signal lamp blinking speed if the bulb or harness open is detected with the turn signal lamp operating.

NOTE:

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

FAIL-SAFE CONTROL BY RAIN SENSOR MALFUNCTION

- BCM judges the rain sensor serial link error by the rain sensor serial link condition and detects the rain sensor malfunction by rain sensor malfunction signal.
- When BCM detects the rain sensor serial link error or the rain sensor malfunction while front wiper AUTO operation, BCM operates a fail-safe control.

NOTE:

If rain sensor malfunction is detected when ignition switch is turned OFF \Rightarrow ON and front wiper switch is INT/ AUTO position, BCM operates a fail-safe control.

REAR WIPER MOTOR PROTECTION

BCM detects the rear wiper stopping position according to the rear wiper stop position signal.

When the rear wiper stop position signal does not change for more than 5 seconds while driving the rear wiper, BCM stops power supply to protect the rear wiper motor.

Condition of cancellation

Revision: 2013 August

- 1. More than 1 minute is passed after the rear wiper stop.
- Turn rear wiper switch OFF.
- Operate the rear wiper switch or rear washer switch.

DTC Inspection Priority Chart

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

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< ECU DIAGNOSIS INFORMATION >

Priority	DTC
1	B2562: LOW VOLTAGE
2	U1000: CAN COMM U1010: CONTROL UNIT(CAN)
3	 B2190: NATS ANTENNA AMP B2191: DIFFERENCE OF KEY B2192: ID DISCORD BCM-ECM B2193: CHAIN OF BCM-ECM B2195: ANTI SCANNING
4	B2553: IGNITION RELAY B2555: STOP LAMP B2556: PUSH-BTN IGN SW B2557: VEHICLE SPEED B2560: STARTER CONT RELAY B2601: SHIFT POSITION B2602: SHIFT POSITION B2603: SHIFT POSI STATUS B2604: PNP SW B2605: PNP SW B2605: PNP SW B2606: IGNITION RELAY B2606: ENG STATE RELAY B2607: ENG STATE SIG LOST B2614: ACC RELAY CIRC B2615: BLOWER RELAY CIRC B2616: IGN RELAY CIRC B2616: IGN RELAY CIRC B2617: STARTER RELAY CIRC B2618: BCM B2618: BCM B2614: PUSH-BTN IGN SW B2615: VEHICLE TYPE B266A: KEY REGISTRATION C1729: VHCL SPEED SIG ERR U0415: VEHICLE SPEED SIG
5	 C1704: LOW PRESSURE FL C1705: LOW PRESSURE FR C1706: LOW PRESSURE RR C1707: LOW PRESSURE RL C1708: [NO DATA] FL C1709: [NO DATA] FR C1710: [NO DATA] RR C1711: [NO DATA] RL C1716: [PRESSDATA ERR] FL C1717: [PRESSDATA ERR] FR C1718: [PRESSDATA ERR] RR C1719: [PRESSDATA ERR] RR C1719: [PRESSDATA ERR] RL C1734: CONTROL UNIT
6	B2622: INSIDE ANTENNA B2623: INSIDE ANTENNA

DTC Index

NOTE:

The details of time display are as follows.

- CRNT: A malfunction is detected now.
- PAST: A malfunction was detected in the past.

IGN counter is displayed on Freeze Frame Data. For details of Freeze Frame Data, refer to <u>BCS-18</u>, "COM-MON ITEM: CONSULT Function (BCM - COMMON ITEM)".

< ECU DIAGNOSIS INFORMATION >

CONSULT display	Fail-safe	Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle Condition	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference
No DTC is detected. further testing may be required.	_	_	_	_	_
U1000: CAN COMM		_			BCS-42
U1010: CONTROL UNIT(CAN)		_			BCS-43
U0415: VEHICLE SPEED SIG		_			BCS-44
B2190: NATS ANTENNA AMP	×	_	_	_	SEC-42
B2191: DIFFERENCE OF KEY	×	_	_	_	SEC-45
B2192: ID DISCORD BCM-ECM	×	_	_	_	SEC-46
B2193: CHAIN OF BCM-ECM	×	_	_		SEC-48
B2195: ANTI SCANNING	×	_	_	_	SEC-49
B2553: IGNITION RELAY	_	×	_	_	PCS-50
B2555: STOP LAMP		×	_	_	SEC-50
B2556: PUSH-BTN IGN SW	_	×	×	_	<u>SEC-52</u>
B2557: VEHICLE SPEED	×	×	×	_	SEC-54
B2560: STARTER CONT RELAY	×	×	×	_	<u>SEC-55</u>
B2562: LOW VOLTAGE	_	×	_	_	BCS-45
B2601: SHIFT POSITION	×	×	×	_	<u>SEC-56</u>
B2602: SHIFT POSITION	×	×	×	_	<u>SEC-59</u>
B2603: SHIFT POSI STATUS	×	×	×	_	<u>SEC-61</u>
B2604: PNP SW	×	×	×	_	SEC-64
B2605: PNP SW	×	×	×	_	SEC-66
B2608: STARTER RELAY	×	×	×	_	SEC-68
B260A: IGNITION RELAY	×	×	×	_	PCS-52
B260F: ENG STATE SIG LOST	×	×	×	_	SEC-70
B2614: ACC RELAY CIRC	_	×	×	_	PCS-54
B2615: BLOWER RELAY CIRC		×	×		PCS-57
B2616: IGN RELAY CIRC	_	×	×		PCS-60
B2617: STARTER RELAY CIRC	×	×	×		SEC-72
B2618: BCM	×	×	×	_	PCS-63
B261A: PUSH-BTN IGN SW	_	×	×	_	<u>SEC-75</u>
B261E: VEHICLE TYPE	×	×	× (Turn ON for 15 seconds)	_	<u>SEC-78</u>
B2622: INSIDE ANTENNA	_	×	_		DLK-91
B2623: INSIDE ANTENNA	<u> </u>	×	_	_	DLK-93
B26EA: KEY REGISTRATION	_	×	× (Turn ON for 15 seconds)	_	<u>SEC-71</u>
C1704: LOW PRESSURE FL	_	_	_	×	
C1705: LOW PRESSURE FR	_	_	_	×	WT-23
C1706: LOW PRESSURE RR		_	_	×	<u> </u>
C1707: LOW PRESSURE RL			_	×	

Revision: 2013 August WW-101 2014 MURANO

CONSULT display	Fail-safe	Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle Condition	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference
C1708: [NO DATA] FL	_	_	_	×	
C1709: [NO DATA] FR	_	_	_	×	WT-25
C1710: [NO DATA] RR	_	_	_	×	<u> </u>
C1711: [NO DATA] RL	_	_	_	×	
C1716: [PRESSDATA ERR] FL	_	_	_	×	
C1717: [PRESSDATA ERR] FR	_	_	_	×	WT-28
C1718: [PRESSDATA ERR] RR	_	_	_	×	<u> </u>
C1719: [PRESSDATA ERR] RL	_	_	_	×	
C1729: VHCL SPEED SIG ERR	_	_	_	×	<u>WT-29</u>
C1734: CONTROL UNIT	_	_	_	×	<u>WT-30</u>

< ECU DIAGNOSIS INFORMATION >

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

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VALUES ON THE DIAGNOSIS TOOL

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

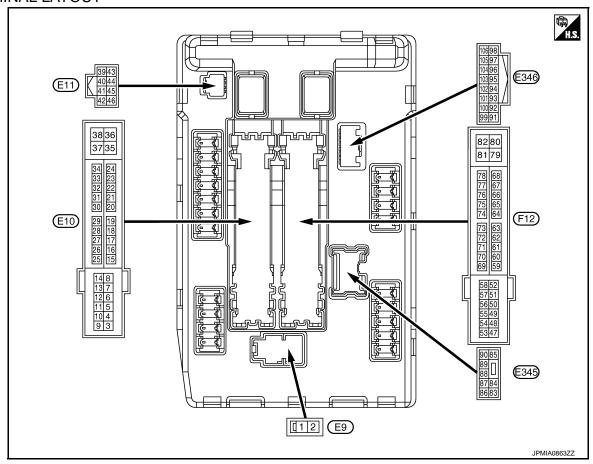
Monitor Item		Condition	Value/Status
MOTOR FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	1/2/3/4
		A/C switch OFF	Off
AC COMP REQ	Engine running	A/C switch ON (Compressor is operating)	On
TAIL OOLD DEO	Lighting switch OFF		Off
TAIL&CLR REQ	Lighting switch 1ST, 2ND, HI or	AUTO (Light is illuminated)	On
LI LO BEO	Lighting switch OFF		Off
HL LO REQ	Lighting switch 2ND HI or AUTO	(Light is illuminated)	On
LI LI DEO	Lighting switch OFF		Off
HL HI REQ	Lighting switch HI		On
		Front fog lamp switch OFF	Off
FR FOG REQ	Lighting switch 2ND or AUTO (Light is illuminated)	 Front fog lamp switch ON Daytime running light activated (Only for Canada) 	On
		Front wiper switch OFF	Stop
FR WIP REQ	Ignition switch ON	Front wiper switch INT	1LOW
FR WIF REQ	Ignition switch ON	Front wiper switch LO	Low
		Front wiper switch HI	Hi
		Front wiper stop position	STOP P
WIP AUTO STOP	Ignition switch ON	Any position other than front wiper stop position	ACT P
		Front wiper operates normally	Off
WIP PROT	Ignition switch ON	Front wiper stops at fail-safe operation	BLOCK
IGN RLY1 -REQ	Ignition switch OFF or ACC		Off
IGN RLY I -REQ	Ignition switch ON		On
ICN PLV	Ignition switch OFF or ACC		Off
IGN RLY	Ignition switch ON		On
PUSH SW	Release the push-button ignition	n switch	Off
FUSH SW	Press the push-button ignition s	witch	On
INTER/NP SW	Ignition switch ON	Selector lever in any position other than P or N	Off
		Selector lever in P or N position	On
ST RLY CONT	Ignition switch ON		Off
STALI CONT	At engine cranking		On

Revision: 2013 August WW-103 2014 MURANO

Monitor Item	Con	Value/Status				
IHBT RLY -REQ	Ignition switch ON	Off				
INDI KLI -KEQ	At engine cranking	At engine cranking				
	Ignition switch ON	Ignition switch ON				
	At engine cranking		INHI ON \rightarrow ST ON			
ST/INHI RLY		The status of starter relay or starter control relay cannot be recognized by the battery voltage malfunction, etc. when the starter relay is ON and the starter control relay is OFF				
DETENT SW	Ignition switch ON	Press the selector button with selector lever in Prosition				
	Release the selector button with se	lector lever in P position	On			
S/L RLY -REQ	NOTE: The item is indicated, but not monitor	Off				
S/L STATE	NOTE: The item is indicated, but not monitor	UNLOCK				
DTRL REQ	NOTE: The item is indicated, but not monitor	Off				
OIL P SW	Ignition switch OFF, ACC or engine	Open				
OIL P 3W	Ignition switch ON		Close			
HOOD SW	NOTE: The item is indicated, but not monitor	Off				
HL WASHER REQ	NOTE: The item is indicated, but not monitor	Off				
	Not operating	Off				
THFT HRN REQ	Panic alarm is activated Horn is activated with VEHICLE S TEM	On				
HODN CHIDD	Not operating	Off				
HORN CHIRP	Door locking with Intelligent Key (ho	On				
CRNRNG LMP REQ	NOTE: The item is indicated, but not monitor	Off				

< ECU DIAGNOSIS INFORMATION >

TERMINAL LAYOUT



PHYSICAL VALUES

	inal No.	Description				Value	
+ (VVire	e color)	Signal name	Input/ Output	Condition		(Approx.)	
1 (R)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage	
2 (L)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage	
4	Cround	Facility is a 10	Output	Ignition switch ON	Front wiper switch OFF	0 V	
(LG)	Ground	Front wiper LO			Front wiper switch LO	Battery voltage	
5	5 Ground Front wiper HI	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0 V	
(Y)	Giodila	Tiont wiper in	Output		Front wiper switch HI	Battery voltage	
7	Ground	Tail, license plate lamps &	Output	Ignition	Lighting switch OFF	0 V	
(GR)	Ground	illuminations	Output	switch ON	Lighting switch 1ST	Battery voltage	
10				Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		(More than a few seconds after turning	0 V
(BR)	Ground FCM relay nower supply		Output	 Ignition switch ON Ignition switch OFF (For a few seconds after turning ignition switch OFF) 		Battery voltage	
12 (B)	Ground	Ground	1	Ignition switch ON		0 V	

Revision: 2013 August WW-105 2014 MURANO

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	inal No.	Description				Value
+ (VVire	e color)	Signal name	Input/ Output		Condition	(Approx.)
13	Ground	Fuel pump power supply	Output	Approximately 1 second or more after turning the ignition switch ON • Approximately 1 second after turning		0 V
(36)	(SB)			the ignition switch ON • Engine running		Battery voltage
15 (W)	Ground	Ignition relay power supply	Output	Ignition swi		0 V
				Ignition swi	Г	Battery voltage 0 V
16 (R)	Ground	Front wiper auto stop	Input	Ignition switch ON	Front wiper stop position Any position other than front wiper stop position	Battery voltage
19	Ground	Ignition relay power supply	Output	Ignition swi	itch OFF	0 V
(Y)	Giodila	ignition relay power supply	Output	Ignition swi	tch ON	Battery voltage
20 (L)	Ground	Ambient sensor ground	Output	Ignition swi	itch ON	0 V
21 (O)	Ground	Ambient sensor	Input	Ignition switch ON NOTE: Changes depending to ambient temperature		(V) 4 3 2 1 0
22 (SB)	Ground	Refrigerant pressure sensor ground	Output	Engine running	Warm-up condition Idle speed	0 V
23 (GR)	Ground	Refrigerant pressure sensor	Output	Engine running	Warm-up condition Both A/C switch and blower fan motor switch ON (Compressor operates)	1.0 - 4.0 V
24	Ground	Refrigerant pressure sen-	Input	Ignition swi	itch OFF	0 V
(G)	Glodila	sor power supply	Прис	Ignition swi	tch ON	5.0 V
25	Ground	Ignition relay power supply	Output	Ignition swi	tch OFF	0 V
(GR)		3,		Ignition swi		Battery voltage
26 ^{*1}	Ground	Ignition relay power supply	Output	Ignition swi		0 V
(Y)				Ignition swi		Battery voltage
27 (W)	Ground	Ignition relay monitor	Input	Ignition swi	itch OFF or ACC	Battery voltage 0 V
-		Doob botton inviting				0 V
28 (SB)	Ground	Push-button ignition switch	Input	3		Battery voltage
30	Ground	Starter relay control	Input	Ignition switch ON	Selector lever in any position other than P or N	0 V
(DK)	(BR)		· 	SWILCH ON	Selector lever P or N	Battery voltage
34	Ground	Cooling fan relay-3 control	Input	Cooling far	stopped	Battery voltage
(O)	2.00110	Journal relay-3 Corniol	mpat	Cooling fan at HI operation		0 V
35 (P)	Ground	Cooling fan relay-1 power supply	Input	Cooling fan stopped Cooling fan at LO operation		Battery voltage 6.0 V
36 (G)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage

< ECU DIAGNOSIS INFORMATION >

Terminal No. Description					Value		
(Wire	e color)	Signal name	Input/ Output	Condition		Value (Approx.)	
38	Ground	Cooling fan relay-1 power	Output	Cooling fan not operating		0 V	_
(GR)	Ground	supply	Output	Cooling fan at LO operation		6.0 V	
39 (P)	_	CAN-L	Input/ Output		_	_	
40 (L)	_	CAN-H	Input/ Output		_	_	
41 (B)	Ground	Ground	_	Ignition swi	itch ON	0 V	
42				Cooling far	n stopped	Battery voltage	
(SB)	Ground	Cooling fan relay-2 control	Input		fan MID operating fan HI operating	0 V	
43 (Y)	Ground	CVT shift selector (Detention switch)	Input	Ignition switch ON	Press the selector button (selector lever P) Selector lever in any position other than P	Battery voltage	
				Release the selector but- ton (selector lever P)	0 V		
44	Ground	Horn relay control	Input	The horn is deactivated		Battery voltage	
(W)	Giodila	Hom relay control	iliput	The horn is activated		0 V	
45	Ground	Horn switch	Input	The horn is deactivated		Battery voltage	
(G)	(-round			The horn is activated		0 V	
46 (BR)	Ground	Starter relay control	Input	Ignition switch ON	Selector lever in any position other than P or N	0 V	
(DIX)					Selector lever P or N	Battery voltage	
					A/C switch OFF	0 V	
48 (W)	Ground	A/C relay power supply	Output	Engine running	A/C switch ON (A/C compressor is operating)	Battery voltage	
49				Ignition swi (More than ignition swi	a few seconds after turning	0 V	
(R/B)	Ground	ECM relay power supply	Output	Ignition s Ignition s (For a fe tion switch	switch OFF w seconds after turning igni-	Battery voltage	
51	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V	
(LG)	Ground		Output	Ignition switch ON		Battery voltage	
52	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V	
(Y/G)	Cround	ignition relay power supply	Catput	Ignition switch ON		Battery voltage	
53 (R/W) Ground ECM			Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 V	_	
		ECM relay power supply	ECM relay power supply	Output	Ignition sIgnition s(For a fe tion switch	switch OFF w seconds after turning igni-	Battery voltage

Revision: 2013 August WW-107 2014 MURANO

Terminal No.		Description				Value	
(Wire	e color)	Signal name	Input/ Output	Condition		(Approx.)	
				Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 V	
54 (G/W) Ground Throttle control motor re lay power supply			Output	Ignition switch ON Ignition switch OFF (For a few seconds after turning ignition switch OFF)		Battery voltage	
55 (W/L)	Ground	ECM power supply	Output	Ignition swi	tch OFF	Battery voltage	
56	0	126	0 1 1	Ignition swi	tch OFF	0 V	
(R/Y)	Ground	Ignition relay power supply	Output	Ignition swi	tch ON	Battery voltage	
57	Craund	l : 4:	0 1 1	Ignition switch OFF		0 V	
(O)	Ground	Ignition relay power supply	Output	Ignition switch ON		Battery voltage	
58	Ground	lanitian raleum augus aumah	0.1.1	Ignition switch OFF		0 V	
(Y)	Giodila	Ignition relay power supply	Output	Ignition swi	tch ON	Battery voltage	
60				Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		Battery voltage	
69 (W/B)	Ground	ECM relay control	Output	 Ignition switch ON Ignition switch OFF (For a few seconds after turning ignition switch OFF) 		0 - 1.5 V	
70 (O)	Ground	Throttle control motor re- lay control	Output	Ignition switch $ON \rightarrow OFF$		0 -1.0 V ↓ Battery voltage ↓ 0 V	
			Ignition switch ON		0 - 1.0 V		
72 (R/B) Ground	Starter relay control	Input	Ignition	Selector lever in any position other than P or N	0 V		
		,	-	switch ON	Selector lever P or N	Battery voltage	
75	Ground	od Oil progrups quitab	Innut	Ignition	Engine stopped	0 V	
(LG)		Oil pressure switch	Input	switch ON Engine running		Battery voltage	

< ECU DIAGNOSIS INFORMATION >

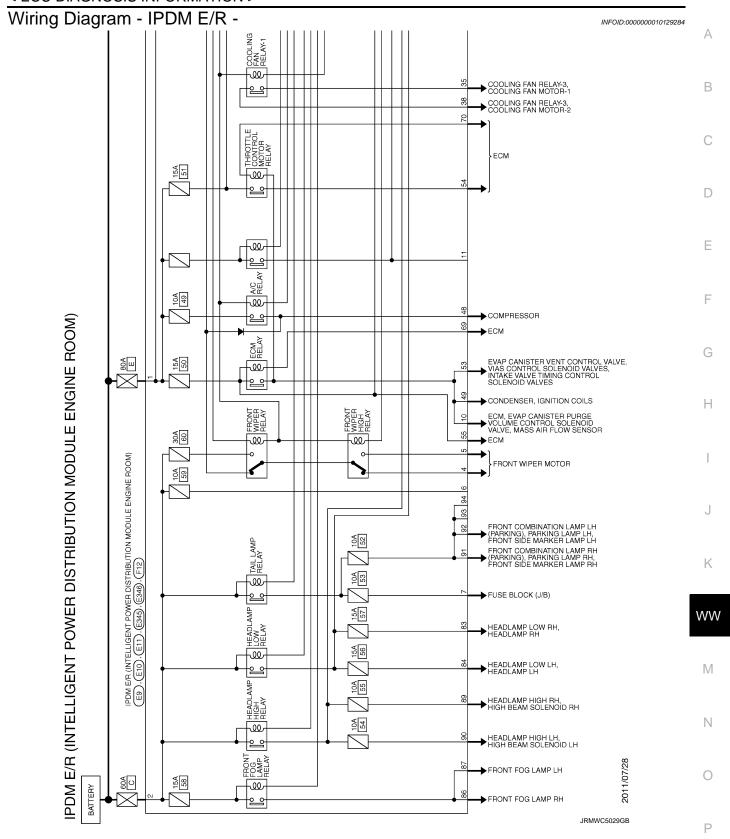
Terminal No. (Wire color)		Description				Value
+	e color)	Signal name	Input/ Output		Condition	(Approx.)
				Ignition swi	tch ON	(V) 6 4 2 0
76 (SB)	Ground	Power generation command signal	Output		on "ACTIVE TEST", "AL- R DUTY" of "ENGINE"	6.3 V
					on "ACTIVE TEST", "AL- R DUTY" of "ENGINE"	3.8 V (V) 6 4 2 0
77 (GR)	Ground	Fuel pump relay control	Output	Approximately 1 second after turning the ignition switch ON Engine running Approximately 1 second or more after turning the ignition switch ON		1.4 V 0 - 1.5 V Battery voltage
80 (B)	Ground	Starter motor	Output	At engine cranking		Battery voltage
83 (Y)	Ground	Headlamp LO (RH)	Output	Ignition switch ON	Lighting switch OFF Lighting switch 2ND	0 V Battery voltage
84 (L)	Ground	Headlamp LO (LH)	Output	Ignition switch ON	Lighting switch OFF Lighting switch 2ND	0 V Battery voltage
86 (SB)	Ground	Front fog lamp (RH)	Output	Lighting switch 2ND	 Front fog lamp switch OFF Front fog lamp switch ON Daytime running light activated (Only for Canada) 	0 V Battery voltage
87 (GR)	Ground	Front fog lamp (LH)	Output	Lighting switch 2ND	Front fog lamp switch OFF • Front fog lamp switch ON • Daytime running light activated (Only for Canada)	0 V Battery voltage
88 (W)	Ground	Washer pump power supply	Output	Ignition swi	tch ON	Battery voltage

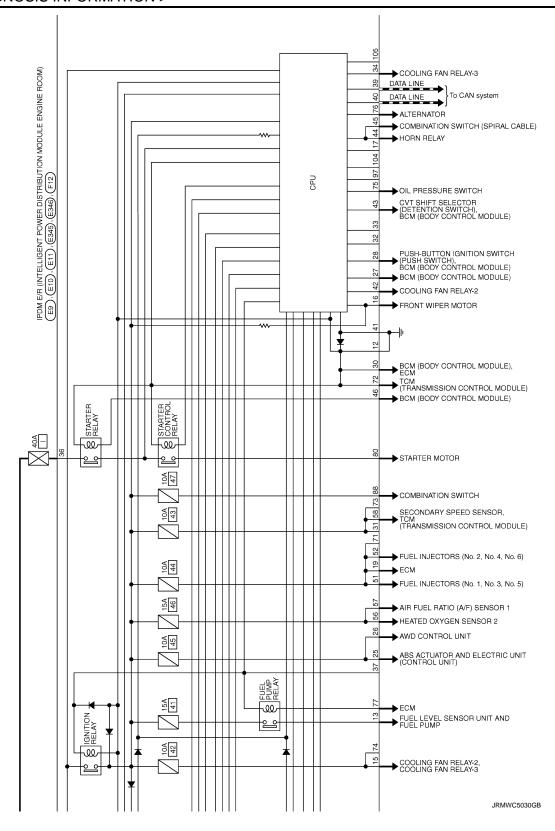
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	inal No.	Description				Value
+ (Wire	e color)	Signal name	Input/ Output		Condition	(Approx.)
89				Ignition	Lighting switch OFF	0 V
(L)	Ground	Headlamp HI (RH)	Output	switch ON	Lighting switch HI Lighting switch PASS	Battery voltage
90				Ignition	Lighting switch OFF	0 V
90 (G)	Ground	Headlamp HI (LH)	Output	switch ON	Lighting switch HI Lighting switch PASS	Battery voltage
91	Ground	Parking lamp (RH)	Output	Ignition	Lighting switch OFF	0 V
(R)	Giodila	raiking lamp (KH)	Output	switch ON	Lighting switch 1ST	Battery voltage
92	Ground	Parking lamp (LH)	Output	Ignition	Lighting switch OFF	0 V
(LG)	Giodila	Faiking lamp (Lin)	Output	switch ON	Lighting switch 1ST	Battery voltage
99 (BR)	Ground	Ambient sensor ground	Input	Ignition sw	itch ON	0 V
100 (SB)	Ground	Ambient sensor	Output	Ignition sw NOTE: Changes d perature	itch ON epending to ambient tem-	(V) 4 3 2 1 0
101 (L)	Ground	Refrigerant pressure sensor ground	Input	Engine running	Warm-up condition Idle speed	0 V
102 (B)	Ground	Refrigerant pressure sensor	Input	Engine running	Warm-up condition Both A/C switch and blower fan motor switch ON (Compressor operates)	1.0 - 4.0 V
103	Ground	Refrigerant pressure sen-	Output	Ignition sw	itch OFF	0 V
(P)	Giouila	sor power supply	Output	Ignition sw	itch ON	5.0 V

^{*1:} AWD models only

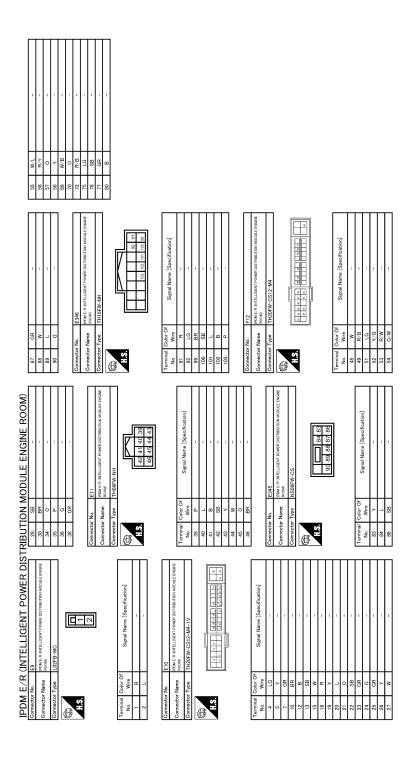
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Α В C D Е F G Н K WW AMBIENT SENSOR 101 M Ν → COMBINATION METER, A/C AUTO AMP. COMBINATION METER, A/C AUTO AMP, INTAKE SENSOR, IN-VEHICLE SENSOR, SUNLOAD SENSOR 0 JRMWC5031GB Р



JRMWE5847GB

Fail-safe

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With ECM

< ECU DIAGNOSIS INFORMATION >

Control part	Fail-safe operation
Cooling fan	 Turns ON the cooling fan relay-2 and the cooling fan relay-3 when ignition switch is turned ON (Cooling fan operates at HI) Turns OFF the cooling fan relay-1, the cooling fan relay-2 and the cooling fan relay-3 when the ignition switch is turned OFF (Cooling fan does not operate)
A/C compressor	A/C relay OFF
Alternator	Outputs the power generation command signal (PWM signal) 0%

If No CAN Communication Is Available With BCM

Control part	Fail-safe operation
Headlamp	 Turns ON the headlamp low relay when the ignition switch is turned ON Turns OFF the headlamp low relay when the ignition switch is turned OFF Headlamp high relay OFF
Parking lampsLicense plate lampsSide maker lampsIlluminationsTail lamps	 Turns ON the tail lamp relay when the ignition switch is turned ON Turns OFF the tail lamp relay when the ignition switch is turned OFF
Front wiper	 The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed. The wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the INT/AUTO mode and the front wiper motor is operating.
Front fog lamps	Front fog lamp relay OFF
Horn	Horn OFF
Ignition relay	The status just before activation of fail-safe is maintained.
Starter motor	Starter control relay OFF

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

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

Voltage j	judgment			
Ignition relay contact side	relay contact side Ignition relay excitation coil side		Operation	
ON	ON	Ignition relay ON normal	_	
OFF	OFF	Ignition relay OFF normal	_	
ON	OFF	Ignition relay ON stuck	Detects DTC "B2098: IGN RELAY ON" Turns ON the tail lamp relay for 10 minutes	
OFF	ON	Ignition relay OFF stuck	Detects DTC "B2099: IGN RELAY OFF"	

FRONT WIPER CONTROL

IPDM E/R detects front wiper stop position by a front wiper auto stop signal.

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

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

Revision: 2013 August WW-115 2014 MURANO

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< ECU DIAGNOSIS INFORMATION >

NOTE:

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

STARTER MOTOR PROTECTION FUNCTION

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

DTC Index

NOTE:

- The details of time display are as follows.
- CRNT: A malfunction is detected now.
- PAST: A malfunction was detected in the past.
- IGN counter is displayed on FFD (Freeze Frame data).
- The number is 0 when is detected now.
- The number increases like 1 \rightarrow 2 \cdots 38 \rightarrow 39 after returning to the normal condition whenever IGN OFF \rightarrow ON.
- The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.

×: Applicable

		x. Applicable
CONSULT display	Fail-safe	Refer to
No DTC is detected. further testing may be required.	_	_
U1000: CAN COMM CIRCUIT	×	PCS-15
B2098: IGN RELAY ON CIRC	×	PCS-16
B2099: IGN RELAY OFF CIRC	_	PCS-18
B210B: STR CONT RLY ON CIRC	_	<u>SEC-79</u>
B210C: STR CONT RLY OFF CIRC	_	<u>SEC-80</u>
B210D: STARTER RLY ON CIRC	_	<u>SEC-81</u>
B210E: STARTER RLY OFF CIRC	_	<u>SEC-83</u>
B210F: INTRLCK/PNP SW ON	_	<u>SEC-85</u>
B2110: INTRLCK/PNP SW OFF	_	<u>SEC-87</u>

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

WIPER AND WASHER SYSTEM SYMPTOMS WITH RAIN SENSOR

WITH RAIN SENSOR: Symptom Table

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CAUTION:

Perform the self-diagnosis with CONSULT before performing the diagnosis by symptom. Perform the diagnosis by DTC if DTC is detected.

Syr	nptom	Probable malfunction location	Inspection item
		Combination switch Harness between combination switch and BCM BCM	Combination switch Refer to BCS-94, "Symptom Table".
	HI only	IPDM E/R Harness between IPDM E/R and front wiper motor Front wiper motor	Front wiper motor (HI) circuit Refer to <u>WW-32</u> , "Compo- nent Function Check".
		ront wiper request signal BCM IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"
		Combination switch Harness between combination switch and BCM BCM	Combination switch Refer to BCS-94, "Symptom Table".
Front wiper does not operate.	LO only	IPDM E/R Harness between IPDM E/R and front wiper motor Front wiper motor	Front wiper motor (LO) circuit Refer to <u>WW-30, "Compo-</u> nent Function Check".
		Front wiper request signal BCM IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"
	INT/AUTO only	Combination switch Harness between combination switch and BCM BCM	Combination switch Refer to BCS-94, "Symptom Table".
	 (Auto operation) Rain sensor Harness between rain sensor and BCM BCM 	Harness between rain sensor and BCM	Rain sensor Refer to <u>WW-38, "Component Function Check"</u> .
	HI, LO and INT/AUTO	SYMPTOM DIAGNOSIS "FRONT WIPER DOES NOT OPERATE" Refer to WW-123, "Diagnosis Procedure".	

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< SYMPTOM DIAGNOSIS >

Syn	nptom	Probable malfunction location	Inspection item
		Combination switch BCM	Combination switch Refer to BCS-94, "Symptom Table".
	HI only	Front wiper request signal BCM IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"
		IPDM E/R	_
Front wiper does not		Combination switch BCM	Combination switch Refer to BCS-94, "Symptom Table".
stop.	LO only	Front wiper request signal BCM IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"
		IPDM E/R	_
	INT/AUTO only	Combination switch BCM	Combination switch Refer to BCS-94, "Symptom Table".
	(Auto operation)	Rain sensorHarness between rain sensor and BCMBCM	Rain sensor Refer to <u>WW-38, "Compo-</u> nent Function Check".
	Sensitivity setting cannot be performed.	 Combination switch Harness between combination switch and BCM BCM 	Combination switch Refer to BCS-94, "Symptom Table".
		BCM	_
Front wiper does not	Wiper is not linked to the washer operation.	 Combination switch Harness between combination switch and BCM BCM 	Combination switch Refer to BCS-94, "Symptom Table".
operate normally.	·	BCM	_
	Does not return to stop position. [Repeatedly operates for 10 sec- onds and then stops for 20 seconds. After that, it stops the opera- tion. (Fail-safe)]	IPDM E/R Harness between IPDM E/R and front wiper motor Front wiper motor	Front wiper stop position signal circuit Refer to WW-34, "Component Function Check".
	ON only	 Combination switch Harness between combination switch and BCM BCM 	Combination switch Refer to BCS-94, "Symptom Table".
Poor wiper does not	INT only	 Combination switch Harness between combination switch and BCM BCM 	Combination switch Refer to BCS-94, "Symptom Table".
Rear wiper does not operate.		 Combination switch Harness between combination switch and BCM BCM 	Combination switch Refer to BCS-94, "Symptom Table".
	ON and INT	BCM Harness between rear wiper motor and BCM Harness between rear wiper motor and ground Rear wiper motor	Rear wiper motor circuit Refer to <u>WW-40</u> , "Component Function Check".
Rear wiper does not	ON only	Combination switch BCM	Combination switch Refer to BCS-94, "Symptom Table".
stop.	INT only	Combination switch BCM	Combination switch Refer to BCS-94, "Symptom Table".

< SYMPTOM DIAGNOSIS >

Symptom		Probable malfunction location	Inspection item	
	Wiper is not linked to the washer operation.	Combination switch Harness between rear wiper motor and BCM BCM	Combination switch Refer to BCS-94, "Symptom Table".	
Rear wiper does not		BCM	_	
operate normally.	Rear wiper does not return to the stop position. [Stops after a five-second operation. (Fail-safe)]	BCM Harness between rear wiper motor and BCM Rear wiper motor	Rear wiper stop position signal circuit Refer to <u>WW-42</u> , "Component Function Check".	
Rear washer is in the active condition, but washer fluid is sprayed from rear view camera side.		Washer switching solenoid valve	Washer switching solenoid valve circuit Refer to DAS-83, "Component Function Check".	

WITHOUT RAIN SENSOR

WITHOUT RAIN SENSOR: Symptom Table

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CAUTION:

Perform the self-diagnosis with CONSULT before performing the diagnosis by symptom. Perform the diagnosis by DTC if DTC is detected.

Syr	nptom	Probable malfunction location	Inspection item
		Combination switch Harness between combination switch and BCM BCM	Combination switch Refer to BCS-94, "Symptom Table".
	HI only	IPDM E/R Harness between IPDM E/R and front wiper motor Front wiper motor	Front wiper motor (HI) circuit Refer to <u>WW-32</u> , "Compo- nent Function Check".
		Front wiper request signal BCM IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"
		Combination switch Harness between combination switch and BCM BCM	Combination switch Refer to BCS-94, "Symptom Table".
Front wiper does not operate.	LO and INT Pharness between IPDM E/R and front wimotor Front wiper motor Front wiper request signal BCM IPDM E/R	Harness between IPDM E/R and front wiper motor	Front wiper motor (LO) circuit Refer to <u>WW-30</u> , <u>"Compo-</u> <u>nent Function Check"</u> .
		• BCM	IPDM E/R DATA MONITOR "FR WIP REQ"
	INT only	Combination switch Harness between combination switch and BCM BCM	Combination switch Refer to BCS-94, "Symptom Table".
	INT only	Front wiper request signal BCM IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"
	HI, LO and INT	SYMPTOM DIAGNOSIS "FRONT WIPER DOES NOT OPERATE" Refer to	

WW-119 Revision: 2013 August 2014 MURANO

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< SYMPTOM DIAGNOSIS >

Syn	nptom	Probable malfunction location	Inspection item	
		Combination switch BCM	Combination switch Refer to BCS-94, "Symptom Table".	
	HI only	Front wiper request signal BCM IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"	
		IPDM E/R	_	
Front wiper does not		Combination switch BCM	Combination switch Refer to BCS-94, "Symptom Table".	
stop.	LO only	Front wiper request signal BCM IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"	
		IPDM E/R	_	
	INT only	Combination switch BCM	Combination switch Refer to BCS-94, "Symptom Table".	
	INT Offig	Front wiper request signal BCM IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"	
	Intermittent adjustment cannot be performed.	 Combination switch Harness between combination switch and BCM BCM 	Combination switch Refer to BCS-94, "Symptom Table".	
		BCM	_	
	Intermittent control linked with vehicle speed cannot be performed.	Check the vehicle speed detection wiper setting. Refer to www.20 , "WIPER: CONSULT Function (B NOTE: Factory setting of the front wiper intermitted operathicle speed.		
Front wiper does not operate normally.	Wiper is not linked to the washer operation.	Combination switch Harness between combination switch and BCM BCM	Combination switch Refer to BCS-94, "Symptom Table".	
		BCM	_	
	Does not return to stop position. [Repeatedly operates for 10 sec- onds and then stops for 20 seconds. After that, it stops the opera- tion. (Fail-safe)]	IPDM E/R Harness between IPDM E/R and front wiper motor Front wiper motor	Front wiper stop position sig nal circuit Refer to <u>WW-34</u> , "Compo- nent Function Check".	
	ON only	Combination switch Harness between combination switch and BCM BCM	Combination switch Refer to BCS-94, "Symptom Table".	
Rear winer does not	INT only	Combination switch Harness between combination switch and BCM BCM	Combination switch Refer to BCS-94, "Symptom Table".	
Rear wiper does not operate.		Combination switch Harness between combination switch and BCM BCM	Combination switch Refer to BCS-94, "Symptom Table".	
	ON and INT	 BCM Harness between rear wiper motor and BCM Harness between rear wiper motor and ground Rear wiper motor 	Rear wiper motor circuit Refer to <u>WW-40, "Compo-</u> nent Function Check".	

< SYMPTOM DIAGNOSIS >

Symptom		Probable malfunction location	Inspection item
Rear wiper does not	ON only	Combination switch BCM	Combination switch Refer to BCS-94, "Symptom Table".
stop.	INT only Combination BCM	Combination switch BCM	Combination switch Refer to BCS-94, "Symptom Table".
Rear washer is in the active condition, but washer fluid is sprayed from rear view camera side.		Washer switching solenoid valve	Washer switching solenoid valve circuit Refer to DAS-83, "Component Function Check"

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NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description INFOID:000000009719759

FRONT WIPER MOTOR PROTECTION FUNCTION

- IPDM E/R may stop the front wiper to protect the front wiper motor if any obstruction (operation resistance) such as a large amount of snow is detected during the front wiper operation.
- At that time turn OFF the front wiper and remove the foreign object. Then wait for approximately 20 seconds or more and reactivate the front wiper. The wiper will operate normally.

REAR WIPER MOTOR PROTECTION FUNCTION

- BCM may stop rear wiper to protect the rear wiper motor when the rear wiper is stopped for 5 seconds or more due to a snowfall.
- Rear wiper operates normally one minute after the obstacles are removed with rear wiper OFF.

FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

FRONT WI	PER DOE	S NOT OP	ERATE			٨
Description					INFOID:0000000009719760	А
The front wiper	does not opera	te under any op	peration conditi	ons.		В
Diagnosis Pr	ocedure				INFOID:0000000009719761	
1.CHECK WIP	ER RELAY OP	ERATION				С
 Check that the Consult AC Select "FRC 	E/R auto active the front wiper CTIVE TEST ONT WIPER" of	e test. Refer to <u>I</u> operates at the f IPDM E/R acti	LO/HI operation ve test item.			D
•		n, check front w				Е
Lo Hi Off		er LO operation er HI operation ront wiper.				F
Is front wiper op YES >> GO NO >> GO	TO 5.	l <u>y?</u>				G
2.CHECK FRO						Н
2. Check that the street street is the fuse fusing YES >> Rep NO >> GO	g? blace the fuse a TO 3.	motor 30 A fuse	ne applicable ci	rcuit.		I
3.CHECK FRO			D OPEN CIRC	UIT ————————————————————————————————————		J
	front wiper mo nuity between		or harness con	nector and ground.		K
Front wip			Continuity	-		
Connector E12	Terminal 2	Ground	Existed	_		WW
Does continuity YES >> GO	exist? TO 4. pair the harness	s or connector.		<u>-</u>		M
CONSULT AC					-	Ν
2. Select "FRC		f IPDM E/R acti		M E/R harness connector and	d ground.	0
						Р

FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

Terminals			Test item	
(+)		(-)	rest item	Voltage (Approx.)
IPDM E/R			FRONT WIPER	
Connector	Terminal	Terminal	TROWT WILL	
E10	4	Ground	Lo	Battery voltage
			Off	0 V
	5		Hi	Battery voltage
			Off	0 V

Is the measurement value normal?

YES >> Replace front wiper motor.

NO >> Replace IPDM E/R.

5. CHECK FRONT WIPER REQUEST SIGNAL INPUT

(P)CONSULT DATA MONITOR

- 1. Select "FR WIP REQ" of IPDM E/R data monitor item.
- Switch the front wiper switch to HI and LO.
- 3. With operating the front wiper switch, check the status of "FR WIP REQ".

Monitor item	Condition	Monitor status	
	Front wiper switch HI	On	Hi
FR WIP REQ	Tront wiper switch th	Off	Stop
	Front wiper switch LO	On	Low
	Tront wiper switch LO	Off	Stop

Is the status of item normal?

YES >> Replace IPDM E/R.

NO >> GO TO 6.

6. CHECK COMBINATION SWITCH

Perform the inspection of the combination switch. Refer to BCS-94, "Symptom Table".

Is combination switch normal?

YES >> Replace BCM. Refer to BCS-98, "Exploded View".

NO >> Repair or replace the applicable parts.

PRECAUTION

PRECAUTIONS

FOR CALIFORNIA AND CANADA

FOR CALIFORNIA AND CANADA: Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" INFOID:0000000009719762

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

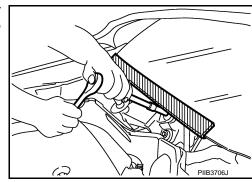
PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

FOR CALIFORNIA AND CANADA: Precaution for Procedure without Cowl Top Cover

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc to prevent damage to windshield.



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FOR CALIFORNIA AND CANADA: Precautions for Removing of Battery Terminal

INFOID:0000000010101863

 When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur

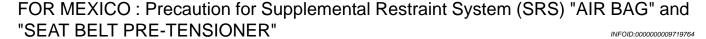
For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
 NOTE:

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.



The removal of 12V battery may cause a DTC detection error.

FOR MEXICO



The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

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

WARNING:

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the
 ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with
 a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing
 serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

PRECAUTIONS

< PRECAUTION >

FOR MEXICO: Precaution for Procedure without Cowl Top Cover

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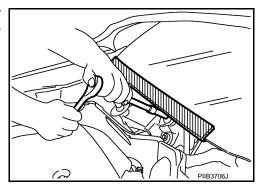
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When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc to prevent damage to windshield.



FOR MEXICO: Precautions for Removing of Battery Terminal

INFOID:0000000010101862

 When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

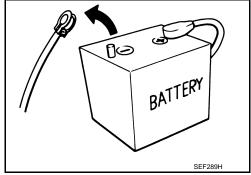
NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

• For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

NOTE:

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.



After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
 NOTE:

The removal of 12V battery may cause a DTC detection error.

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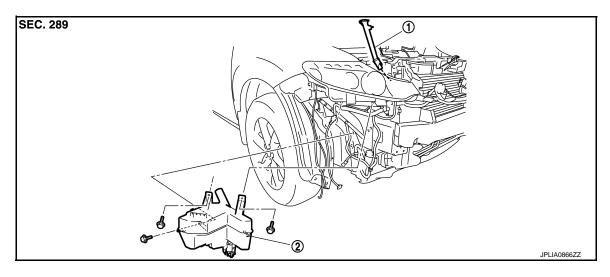
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REMOVAL AND INSTALLATION

WASHER TANK

Exploded View



1. Washer tank inlet

2. Washer tank

Removal and Installation

INFOID:0000000009719767

REMOVAL

1. Remove the clip (A).

<□ : Vehicle front

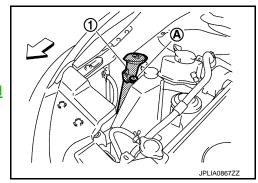
- 2. Pull out the washer tank inlet (1) from the washer tank.
- 3. Remove the front bumper fascia. Refer to EXT-14, "Exploded <a href="View".
- 4. Disconnect washer pump connector.
- 5. Disconnect washer level switch connector.
- 6. Remove front washer tube and rear washer tube.
- 7. Remove washer tank mounting bolts.
- 8. Remove the washer tank from the vehicle.

INSTALLATION

Install in the reverse order of removal.

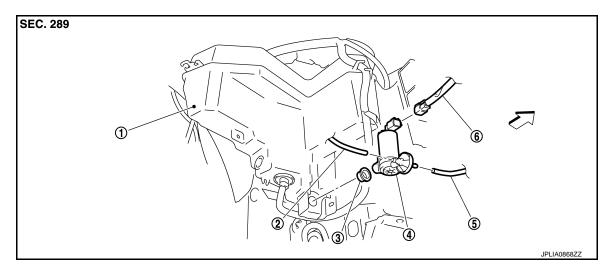
CAUTION:

Add water up to the top of the washer tank inlet after installing. Check that there is no leakage.



WASHER PUMP

Exploded View



- 1. Washer tank
- 4. Washer pump

- 2. Rear washer tube
- 5. Front washer tube
- 3. Packing
- 6. Washer pump connector

Removal and Installation

REMOVAL

1. Remove the fender protector RH (front). Refer to EXT-26, "FENDER PROTECTOR: Exploded View".

- 2. Disconnect washer pump connector.
- 3. Remove front washer tube and rear washer tube.
- 4. Remove washer pump from the washer tank.
- 5. Remove the packing from the washer tank.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

Never twist the packing when installing the washer pump.

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WASHER LEVEL SWITCH

< REMOVAL AND INSTALLATION >

WASHER LEVEL SWITCH

Removal and Installation

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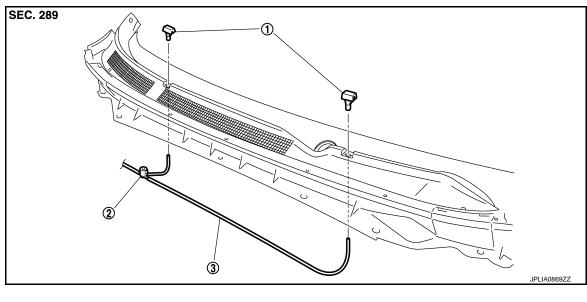
The washer level switch must be replaced together with the washer tank as an assembly. Refer to <u>WW-128</u>, <u>"Removal and Installation"</u>.

FRONT WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

FRONT WASHER NOZZLE AND TUBE

Exploded View

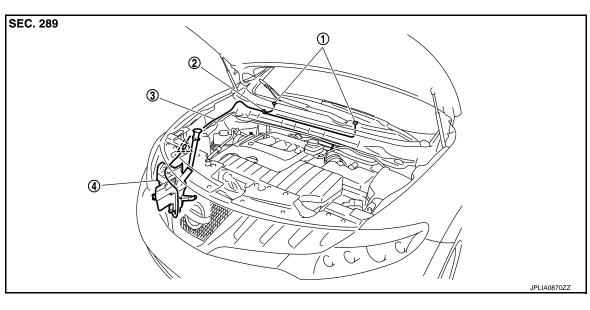


Front washer nozzle

2. Check valve

3. Front washer tube

Hydraulic Layout



- Front washer nozzle
- 2. Check valve

Front washer tube

Washer tank

^ : Clip

Removal and Installation

REMOVAL

- Remove cowl top cover. Refer to EXT-23, "Exploded View".
- Disconnect front washer tube from front washer nozzle.

WW-131 Revision: 2013 August 2014 MURANO

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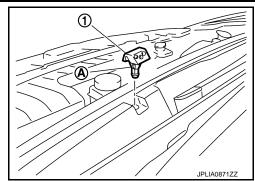
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FRONT WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

While pressing pawl (A) on the cowl top cover front side of front washer nozzle (1), remove front washer nozzle from cowl top cover.



INSTALLATION

Install in the reverse order of removal.

CAUTION:

The spray positions differ, check that left and right nozzles are installed correctly.

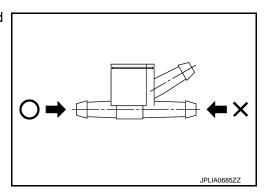
Inspection and Adjustment

INFOID:0000000009719774

INSPECTION

Check valve Inspection

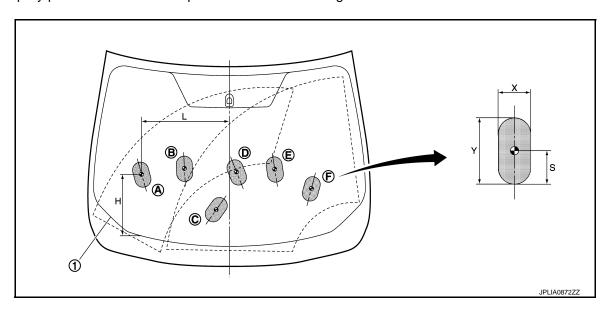
Check that air can pass through the hose by blowing forward (toward the nozzle), and check that air cannot pass through by sucking.



ADJUSTMENT

Washer Nozzle Spray Position Adjustment

Adjust spray positions to match the positions shown in the figure.



1. Black printed frame line

: Spray area

: Target spray position

Revision: 2013 August WW-132 2014 MURANO

FRONT WASHER NOZZLE AND TUBE

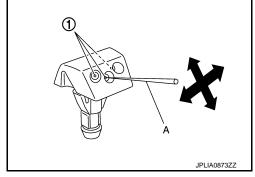
< REMOVAL AND INSTALLATION >

					Unit: mm (in
Spray position	Н	L	X	Υ	S
A	285 (11.22)	429 (16.89)	80 (3.15)	130 (5.12)	65 (2.56)
В	398 (15.67)	232 (9.13)	80 (3.15)	130 (5.12)	65 (2.56)
С	185 (7.28)	69 (2.72)	80 (3.15)	130 (5.12)	65 (2.56)
D	381 (15.00)	37 (1.46)	80 (3.15)	130 (5.12)	65 (2.56)
E	398 (15.67)	232 (9.13)	80 (3.15)	130 (5.12)	65 (2.56)
F	296 (11.65)	421 (16.57)	80 (3.15)	130 (5.12)	65 (2.56)

Insert a needle or similar object (A) into the spray opening (1) and move up/down and left/right to adjust the spray position.

NOTE:

If wax or dust gets into the nozzle, remove wax or dust with a needle or small pin.



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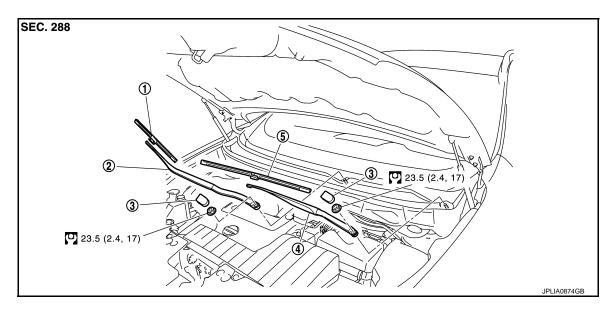
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FRONT WIPER ARM

Exploded View INFOID:0000000009719775



- 1. Front wiper blade (RH)
- 2. Front wiper arm (RH)
- 4. Front wiper arm (LH) 5. Front wiper blade (LH)

3. Front wiper arm cap

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

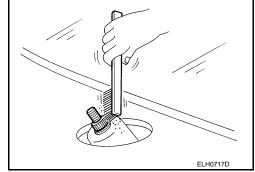
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REMOVAL

- 1. Operate the front wiper to move it to the auto stop position.
- 2. Open the hood.
- 3. Remove front wiper arm caps.
- 4. Remove the front wiper arm mounting nuts.
- Raise front wiper arm, and remove front wiper arm from the vehicle.

INSTALLATION

- 1. Clean wiper arm mount as shown in the figure to prevent nuts from being loosened.
- 2. Operate the front wiper motor to move the front wiper to the auto stop position.
- 3. Adjust the front wiper blade position. Refer to WW-134, "Adjustment".
- 4. Install the front wiper arms by tightening the mounting nuts.
- 5. Inject the washer fluid.
- 6. Operate the front wiper to move it to the auto stop position.
- 7. Check that the front wiper blades stop at the specified position.
- Install front wiper arm caps.



Adjustment INFOID:0000000009719777

WIPER BLADE POSITION ADJUSTMENT

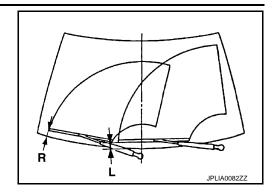
Clearance between the end of cowl top cover and the top of front wiper blade center

FRONT WIPER ARM

< REMOVAL AND INSTALLATION >

Standard clearance

R : 51.0 \pm 7.5 mm (2.008 \pm 0.295 in) L : 48.0 \pm 7.5 mm (1.890 \pm 0.295 in)



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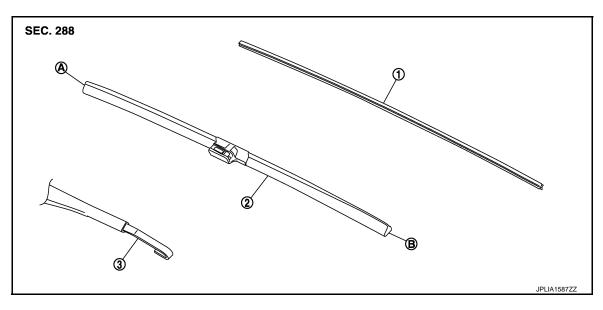
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WIPER BLADE

Exploded View



1. Wiper refill

- 2. Wiper blade
- A. Wiper blade end
- B. Wiper blade tip

3. Wiper arm

Removal and Installation

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REMOVAL

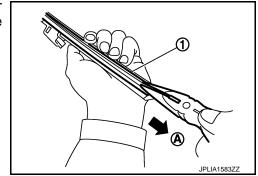
Remove the wiper blade from the wiper arm.

INSTALLATION

Install the front wiper blade to the wiper arm.

Replacement INFOID:000000009719780

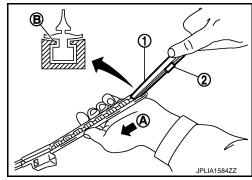
1. Hold the rip of old wiper refill (1) at the rear end of the wiper blade with long-nose pliers, and pull out the wiper refill to the direction (A).



2. Insert the tip of new wiper refill (1) into the rear end of wiper blade. Slide the wiper refill to the direction (A) while pressing the wiper refill onto the wiper blade rear end.

NOTE:

- Insert the wiper refill to be held securely by tab (B) of wiper blade
- After the wiper refill is fully inserted, remove the holder (2).
- *: Attached to service parts.



WIPER BLADE

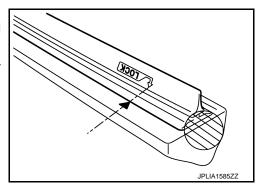
< REMOVAL AND INSTALLATION >

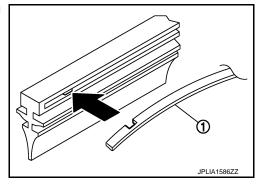
- 3. Inert the wiper refill until the stopper at the rear end of wiper refill fits in the tab. Check that "LOCK" mark on wiper refill is aligned with "▼" mark on wiper blade.
- 4. Untwist the twisted wiper refill (SSSS) at the rear end of wiper blade, if any.
- 5. Check the following items after replacing wiper refill.
 - Wiper refill is not twisted at all.
 - Wiper refill thoroughly fits in the tab on wiper blade.
 - Wiper refill is inserted from the proper direction.

NOTE:

When the vertebra is detached.

- Insert the vertebra (1) into the wiper blade to the same bending direction.
- If a vertebra has a notch, fit it to a protrusion inside the wiper refill.





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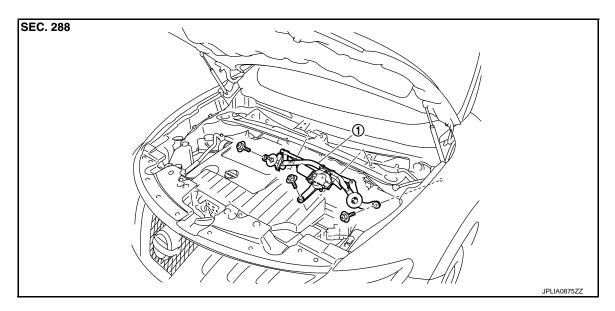
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FRONT WIPER DRIVE ASSEMBLY

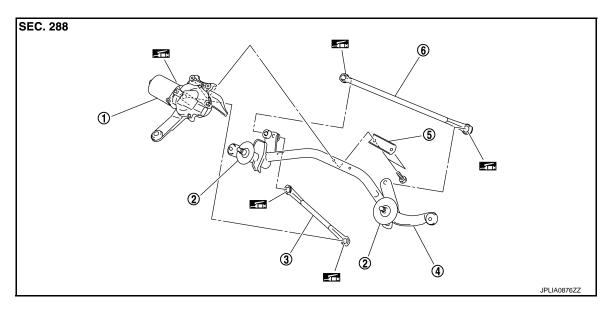
Exploded View

REMOVAL VIEW



1. Front wiper drive assembly

DISASSEMBLY VIEW



1. Front wiper motor

Front wiper frame

- 2. Shaft seal
- 5. Bracket

- 3. Front wiper linkage 2
- 6. Front wiper linkage 1

: Multi-purpose grease or an equivalent

Removal and Installation

INFOID:0000000009719782

REMOVAL

- Remove front wiper arm. Refer to <u>WW-134, "Exploded View"</u>.
- 2. Remove cowl top cover. Refer to EXT-23, "Exploded View".
- 3. Remove bolts from the front wiper drive assembly.

Revision: 2013 August WW-138 2014 MURANO

FRONT WIPER DRIVE ASSEMBLY

< REMOVAL AND INSTALLATION >

- Disconnect the front wiper motor connector.
- Remove front wiper drive assembly from the vehicle. 5.

INSTALLATION

- 1. Install the front wiper drive assembly to the vehicle.
- Connect the front wiper motor connector.
- Operate the front wiper to move it to the auto stop position.
- 4. Install the cowl top cover. Refer to EXT-23, "Exploded View".
- Install front wiper arms. Refer to <u>WW-134</u>, "Exploded View".

Disassembly and Assembly

INFOID:0000000009719783

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DISASSEMBLY

Remove the front wiper linkage 1 and 2 from the front wiper drive assembly.

CAUTION:

Never bend the linkage or damage the plastic part of the ball joint when removing the front wiper linkage.

Remove the front wiper motor mounting screws, and then remove the front wiper motor from the front wiper frame.

ASSEMBLY

- Connect the front wiper motor connector.
- Operate the front wiper to move it to the auto stop position.
- Disconnect the front wiper motor connector.
- Install front wiper motor to front wiper frame.
- 5. Install the front wiper linkage 2 to the front wiper motor and the front wiper frame.
- 6. Install the front wiper linkage 1 to the front wiper frame.

CAUTION:

- Never drop front wiper motor or cause it to come into contact with other parts.
- Be careful for the grease condition at the front wiper motor and front wiper linkage joint (retainer). Apply multi-purpose grease or an equivalent if necessary.

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WW-139 Revision: 2013 August 2014 MURANO

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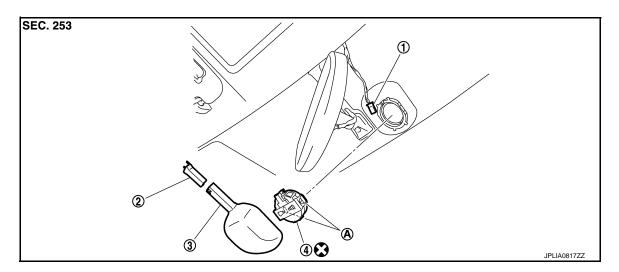
RAIN SENSOR

Exploded View

CAUTION:

When the rain sensor is removed from windshield, the rain sensor cannot be re-used.

REMOVAL



- Rain sensor connector
- 2. Inside mirror cover (upper)
- 3. Inside mirror cover (lower)

- 4. Rain sensor
- A. Metal spring clip

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

INFOID:0000000009719785

REMOVAL

- 1. Remove the inside mirror cover (upper and lower).
- 2. Disengage the both sides of metal spring clips, and remove the rain sensor from the windshield.
- 3. Disconnect rain sensor connector.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

- Surface of windshield should be cleaned.
- · Never touch gel/adhesive of new part.
- · Lock the metal spring clips and install the rain sensor securely.

WIPER AND WASHER SWITCH

< REMOVAL AND INSTALLATION >

WIPER AND WASHER SWITCH

Exploded View

Refer to BCS-99, "Exploded View".

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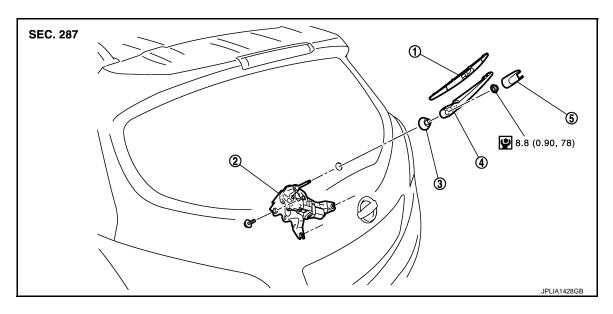
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REAR WIPER ARM

Exploded View INFOID:0000000009719787



- 1. Rear wiper blade 4. Rear wiper arm
- 2. Rear wiper motor
- 5. Rear wiper arm cover

3. Pivot seal

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

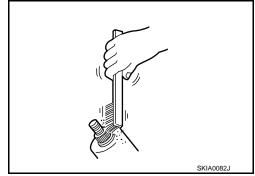
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REMOVAL

- 1. Operate the rear wiper to the auto stop position.
- 2. Remove rear wiper arm cover.
- 3. Remove the rear wiper arm mounting nut.
- 4. Raise rear wiper arm, and remove wiper arm from the vehicle.

INSTALLATION

- 1. Clean wiper arm mount as shown in the figure to prevent nut from being loosened.
- 2. Operate the rear wiper motor to the auto stop position.
- 3. Adjust the rear wiper blade position. Refer to WW-142, "Adjust-
- 4. Install the rear wiper arm by tightening the mounting nut.
- 5. Inject the washer fluid.
- 6. Operate the rear wiper to the auto stop position.
- 7. Check that the rear wiper blades stop at the specified position.
- Install rear wiper arm cover.



Adjustment INFOID:0000000009719789

REAR WIPER BLADE POSITION ADJUSTMENT

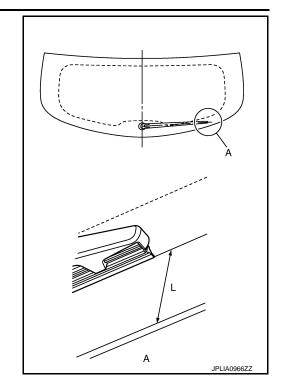
Clearance between the end of back door glass and top of wiper blade center.

REAR WIPER ARM

< REMOVAL AND INSTALLATION >

Standard clearance

L : $48.8 \pm 7.5 \text{ mm} (1.92 \pm 0.295 \text{ in})$



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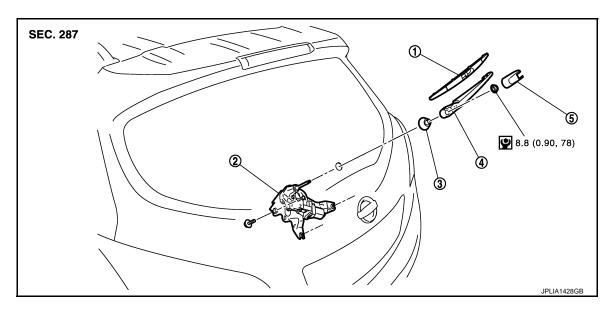
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REAR WIPER MOTOR

Exploded View



- 1. Rear wiper blade
- 2. Rear wiper motor
- 3. Pivot seal

4. Rear wiper arm

5. Rear wiper arm cover

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

INFOID:0000000009719791

REMOVAL

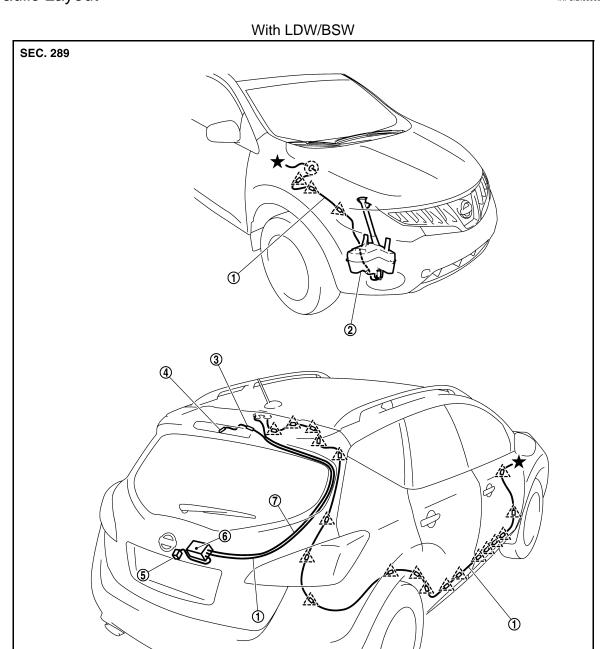
- 1. Remove rear wiper arm cover and rear wiper arm. Refer to <u>WW-142, "Exploded View"</u>.
- 2. Remove the back door finisher inner. Refer to INT-38, "Removal and Installation".
- 3. Disconnect the rear wiper motor connector.
- 4. Remove the rear wiper motor mounting bolts.
- 5. Remove the rear wiper motor from the vehicle.
- 6. Remove the pivot seal.

INSTALLATION

- 1. Install the pivot seal.
- 2. Install the rear wiper motor to the vehicle.
- 3. Connect the rear wiper motor connector.
- 4. Operate the rear wiper to the auto stop position.
- 5. Install the back door finisher inner. Refer to INT-38, "Removal and Installation".
- 6. Install rear wiper arm cover and rear wiper arm. Refer to WW-142, "Exploded View".

REAR WASHER NOZZLE AND TUBE

Hydraulic Layout INFOID:0000000009719792



- Rear washer tube (From washer tank to washer switching solenoid valve)
- 4. Rear washer nozzle
- Rear washer tube (From washer switching solenoid valve to rear washer nozzle)
- ر^` : Clip
- $\overline{}$: Grommet

- Washer tank
- Nozzle

- 3. Check valve
 - Washer switching solenoid valve

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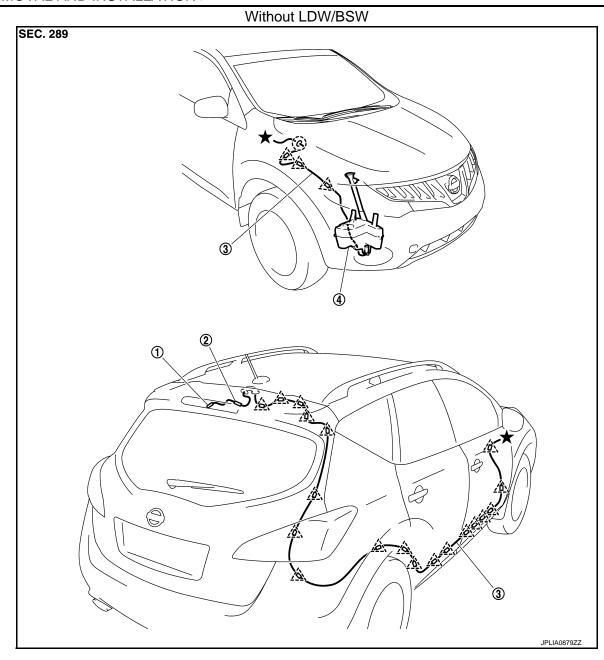
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1. Rear washer nozzle

2. Check valve

3. Rear washer tube

INFOID:0000000009719793

4. Washer tank

^ : Clip

(): Grommet

Removal and Installation

REMOVAL

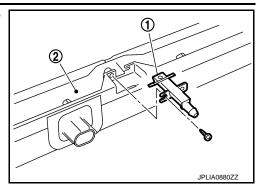
1. Remove the high-mounted stop lamp. Refer to EXL-189, "Exploded View".

2. Remove the rear washer tube from the rear washer nozzle.

REAR WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

3. Remove the rear washer nozzle (1) from the high-mounted stop lamp (2).



INSTALLATION

Install in the reverse order of removal.

Inspection and Adjustment

INFOID:0000000009719794

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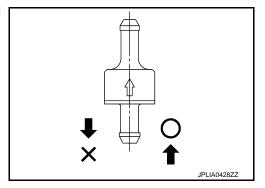
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INSPECTION

Check valve Inspection

Check that air can pass through the hose by blowing forward (toward the nozzle), and check that air cannot pass through by sucking.



ADJUSTMENT

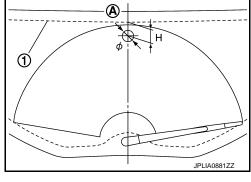
Washer Nozzle Spray Position adjustment

Adjust spray positions to match the positions shown in the figure.

1 : Black printed frame line

Unit: mm (in)

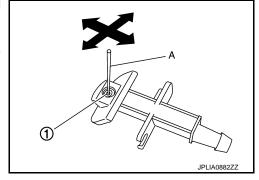
Spray position	H (Height)	φ (Spray position area)
A	30 (1.18)	30 (1.18)



Insert a needle or similar object (A) into the spray opening (1) and move up/down and left/right to adjust the spray position.

NOTE:

If wax or dust gets into the nozzle, remove wax or dust with a needle or small pin.



Revision: 2013 August WW-147 2014 MURANO

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