SECTION WIPER & WASHER C

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CONTENTS

BASIC INSPECTION
DIAGNOSIS AND REPAIR WORKFLOW
SYSTEM DESCRIPTION5
FRONT WIPER AND WASHER SYSTEM 5 System Diagram 5 System Description 5 Component Parts Location 8 Component Description 8
REAR WIPER AND WASHER SYSTEM10System Diagram
DIAGNOSIS SYSTEM (BCM)13
COMMON ITEM
WIPER
DIAGNOSIS SYSTEM (IPDM E/R)16 Diagnosis Description
DTC/CIRCUIT DIAGNOSIS21
WIPER AND WASHER FUSE21 Description
POWER SUPPLY AND GROUND CIRCUIT22
BCM (BODY CONTROL MODULE)

IPDM E/R (INTELLIGENT POWER DISTRIBU- TION MODULE ENGINE ROOM)22 IPDM E/R (INTELLIGENT POWER DISTRIBU- TION MODULE ENGINE ROOM) : Diagnosis Pro-	F
cedure	Н
FRONT WIPER MOTOR HI CIRCUIT26 Component Function Check	I
FRONT WIPER AUTO STOP SIGNAL CIR-	J
CUIT	K
FRONT WIPER MOTOR GROUND CIRCUIT30 Diagnosis Procedure	WV
WASHER SWITCH	M
REAR WIPER MOTOR CIRCUIT 32 Component Function Check 32 Diagnosis Procedure 32	Ν
REAR WIPER AUTO STOP SIGNAL CIRCUIT	
34 Component Function Check	0
FRONT WIPER AND WASHER SYSTEM	Ρ
REAR WIPER AND WASHER SYSTEM41 Wiring Diagram - REAR WIPER AND WASHER SYSTEM41	

ECU DIAGNOSIS INFORMATION4	8
BCM (BODY CONTROL MODULE) 44 Reference Value 44 Wiring Diagram - BCM - 77 Fail-safe 76 DTC Inspection Priority Chart 86 DTC Index 8	8 2 8 0
IPDM E/R (INTELLIGENT POWER DISTRI- BUTION MODULE ENGINE ROOM) 8 Reference Value 8 Wiring Diagram - IPDM E/R - 9 Fail-safe 9 DTC Index 9	4 1 4
SYMPTOM DIAGNOSIS9	7
WIPER AND WASHER SYSTEM SYMPTOMS	
9 Symptom Table	7
NORMAL OPERATING CONDITION 10 Description	
FRONT WIPER DOES NOT OPERATE 10 Description	1
PRECAUTION10	3
PRECAUTIONS	3
PREPARATION	
PREPARATION	4
REMOVAL AND INSTALLATION102	5
WASHER TANK	-

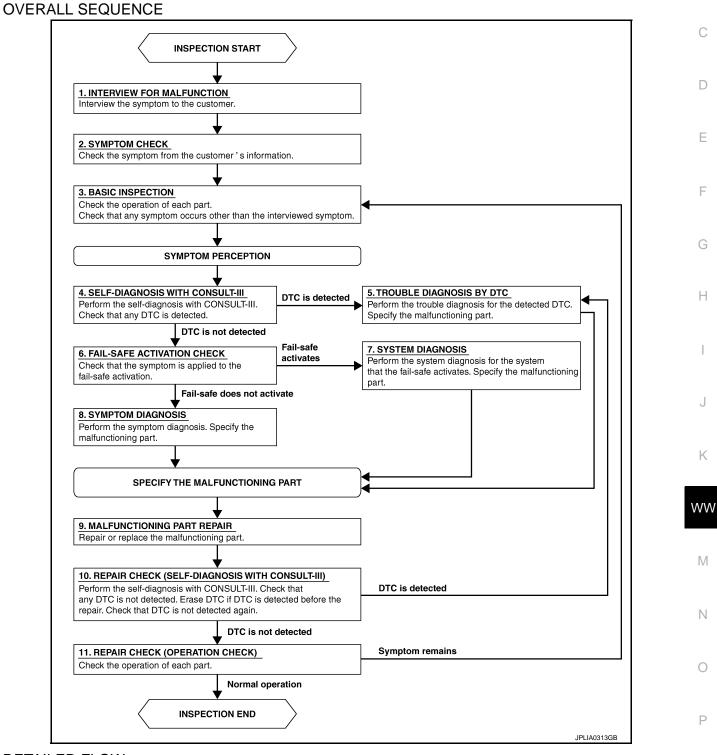
48	Removal and Installation 105
48 48 72	FRONT WASHER PUMP
78 80 81	WASHER LEVEL SWITCH 107 Removal and Installation 107
. 84 . 84 . 91	FRONT WASHER NOZZLE AND TUBE
94 96 97	FRONT WIPER ARM110Exploded View110Removal and Installation110Adjustment110
. 97 97 100	WIPER BLADE112Exploded View112Removal and Installation112Replacement112
100 101 101 101	FRONT WIPER DRIVE ASSEMBLY114Exploded View
103	WIPER AND WASHER SWITCH116 Exploded View
103 103	REAR WIPER ARM 117 Exploded View 117 Removal and Installation 117
103 104	Adjustment
104	Removal and Installation 119
104 105	REAR WASHER NOZZLE AND TUBE120Hydraulic Layout
105 105	Inspection and Adjustment 121

BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

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DETAILED FLOW

1.INTERVIEW FOR MALFUNCTION

Interview the symptom to the customer.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

>> GO TO 2. 2.SYMPTOM CHECK

Check the symptom from the customer's information.

>> GO TO 3.

3.BASIC INSPECTION

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

>> GO TO 4.

4.SELF-DIAGNOSIS WITH CONSULT-III

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

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 6.

5.TROUBLE DIAGNOSIS BY DTC

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

>> GO TO 9. 6.FAIL-SAFE ACTIVATION CHECK

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

Does the fail-safe activate?

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

7.SYSTEM DIAGNOSIS

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

>> GO TO 9.

8.SYMPTOM DIAGNOSIS

Perform the symptom diagnosis. Specify the malfunctioning part.

>> GO TO 9.

9.MALFUNCTION PART REPAIR

Repair or replace the malfunctioning part.

>> GO TO 10.

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

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

Is any DTC detected?

YES >> GO TO 5. NO >> GO TO 11.

11.REPAIR CHECK (OPERATION CHECK)

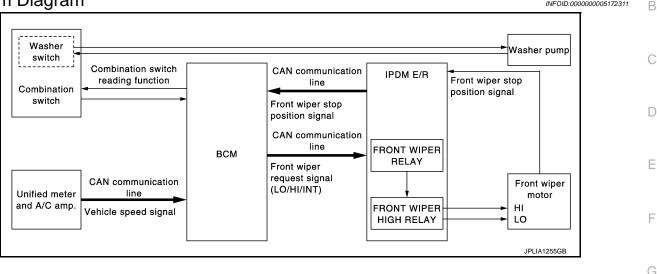
Check the operation of each part.

Does it operate normally?

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

SYSTEM DESCRIPTION FRONT WIPER AND WASHER SYSTEM

System Diagram



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-29, "INFORMATION DISPLAY : System Description".

FRONT WIPER BASIC OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- WW 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. Ν

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

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

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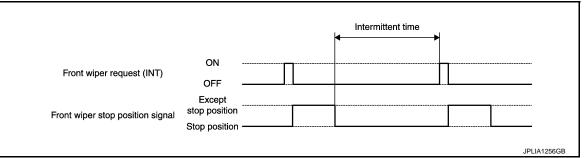
< SYSTEM DESCRIPTION >

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-III. Refer to <u>WW-14</u>, <u>"WIPER : CONSULT-III Function (BCM - WIPER)"</u>.

Front wiper intermittent operation with vehicle speed

- BCM calculates the intermittent operation delay interval from the following
- Vehicle speed signal (received from the unified meter and A/C amp. with CAN communication)
- Wiper intermittent dial position

		Intermittent operation delay Interval (s)				
Wiper intermittent dial position	Intermittent operation interval	Vehicle speed				
		Vehicle stopped or less than 5 km/h (3.1 MPH)	5 km/h (3.1MPH) or more or less than 35km/h (21.7 MPH)	35 km/h (21.7 MPH) or more or less than 65km/h (40.4 MPH)*	65 km/h (40.4MPH) or more	
1	Short	0.8	0.6	0.4	0.24	
2	Ŷ	4	3	2	1.2	
3		10	7.5	5	3	
4		16	12	8	4.8	
5		24	18	12	7.2	
6	\downarrow	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).

FRONT WIPER AND WASHER SYSTEM

< 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		
	OFF		
	Except		
Front wiper stop position signal	stop position Stop position		
Front wiper relay	ON		
From wiper relay	OFF		
		JPLIA0410GB	

NOTE

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

FRONT WIPER DROP WIPE OPERATION

BCM controls the front wiper to operate once according to the conditions of front wiper drop wipe operation.

Front wiper drop wipe operating condition

- Ignition switch ON
- Front wiper switch OFF
- Front washer switch OFF
- WW • BCM transmits the front wiper request signal (LO) to IPDM E/R with CAN communication so that the front wiper operate once three seconds after front wiper operation linked with washer.
- IPDM E/R turns ON the integrated front wiper relay according to the front wiper request signal (LO).

FRONT WIPER FAIL–SAFE OPERATION

When the front wiper auto stop circuit is malfunctioning, IPDM E/R performs the fail-safe function. Refer to PCS-29, "Fail-safe".

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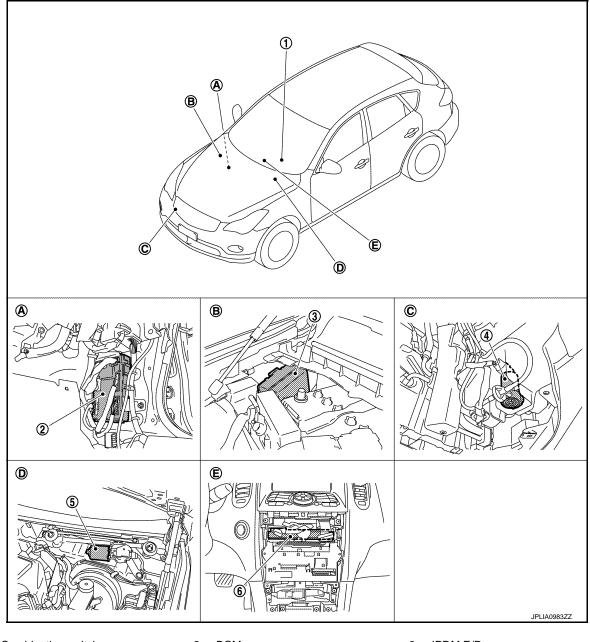
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FRONT WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

Component Parts Location

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- 1. Combination switch
- 4. Washer pump
- A. Dash side lower (Passenger side)
- D. Cowl top, left side of engine room
- 2. BCM
- 5. Front wiper motor
- B. Engine room dash panel (RH)
- E. Behind cluster lid C
- 3. IPDM E/R
- 6. Unified meter and A/C amp.
- C. Radiator core support (RH)

Component Description

INFOID:000000005172314

Part	Description
BCM	 Judges the 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.

FRONT WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

Part	Description	
Combination switch (Wiper & washer switch)	Refer to BCS-8, "System Description".	/
Unified meter and A/C amp.	Transmits the vehicle speed signal to BCM with CAN communication.	

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REAR WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

REAR WIPER AND WASHER SYSTEM

System Diagram

Washer switch Combination switch reading function BCM Rear wiper stop position signal Rear wiper motor N	Diagram			INFOID:00000
Combination switch reading function BCM Rear wiper stop position signal Rear wiper motor	Washer switch	 		Washer pump
	Combination switch	BCM	■ Rear wiper stop position signal	

System Description

INFOID:000000005172316

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

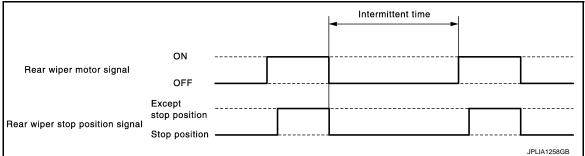
- Ignition switch ON
- Rear wiper switch ON

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.

WW-10

REAR WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

- BCM reads an 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 A wiper motor until it returns to the stopping position.

		-
Rear wiper switch	ON	В
	Except	С
Rear wiper stop position signal	Stop position	D
Rear wiper motor power supply	ON OFF	E
	JPLIA1259GB	F

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.

REAR WIPER FAIL-SAFE OPERATION

BCM performs the fail-safe function when the rear wiper auto stop circuit is malfunctioning. Refer to <u>BCS-76.</u> J <u>"Fail-safe"</u>.

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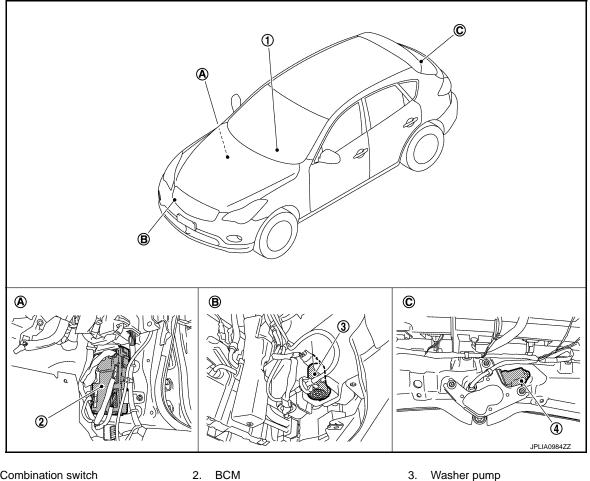
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REAR WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

Component Parts Location



- 1. Combination switch
- 4. Rear wiper motor
- A. Dash side lower (Passenger side)
- B. Radiator core support (RH)
- C. Back door trim finisher lower inside

Component Description

INFOID:000000005172318

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 <u>BCS-8, "System Diagram"</u> .

< SYSTEM DESCRIPTION > DIAGNOSIS SYSTEM (BCM) COMMON ITEM

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

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APPLICATION ITEM

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

Diagnosis mode	Function Description	
Work Support	Changes the setting for each system function.	_
Self Diagnostic Result	Displays the diagnosis results judged by BCM.	D
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM. Refer to CONSULT-III opera- tion manual.	_
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.	F
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.

Sustem	Sub aveter colection 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	×	×	×	
Turn signal and hazard warning lamps	FLASHER	×	×	Х	V
—	AIR CONDITONER*				V
Intelligent Key systemEngine start system	INTELLIGENT KEY	×	×	×	_
Combination switch	COMB SW		×		_
Body control system	BCM	×			_
IVIS - NATS	IMMU		×	×	-
Interior room lamp battery saver	BATTERY SAVER	×	×	×	_
Back door open system	TRUNK		×	Х	_
Vehicle security system	THEFT ALM	×	×	×	_
RAP system	RETAINED PWR		×		_
Signal buffer system	SIGNAL BUFFER		×	×	_
TPMS	TPMS (AIR PRESSURE MONITOR)	×	×	×	-

NOTE:

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

FREEZE FRAME DATA (FFD)

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

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

CONSULT screen item	Indication/Unit	Description		
Vehicle Speed	km/h	Vehicle speed of the moment a particular DTC is detected		
Odo/Trip Meter	km	Total mileage (Odometer	r 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" (Emer- gency 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 posi- tion is "OFF".) to low power consumption mode	
	LOCK>SLEEP		While turning BCM status from normal mode (Power supply posi- tion is "LOCK".) to low power consumption mode	
	LOCK		Power supply position is "LOCK" (Ignition switch OFF with steer- ing is locked.)	
	OFF		Power supply position is "OFF" (Ignition switch OFF with steering is unlocked.)	
	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. 		

WIPER

WIPER : CONSULT-III Function (BCM - WIPER)

INFOID:000000005172320

WORK SUPPORT

Service item	Setting item	Description
WIPER SPEED On With vehicle speed (Front wiper intermittent time linked with the vehicle speed and the vehicle speed an		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

DATA MONITOR

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

Monitor Item [Unit]	LASCRIDTION			
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 unified meter and A/C amp. 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]				
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.
FR WIPER	Lo	Transmits the front wiper request signal (LO) to IPDM E/R with CAN communication to operate the front wiper LO operation.
INT	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		Outputs the voltage to operate the rear wiper motor.
		Stops the voltage to stop.

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Diagnosis Description

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AUTO ACTIVE TEST

Description

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

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

Operation Procedure

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

NOTE:

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

- 2. Turn the ignition switch OFF.
- 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.

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

NOTE:

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

• If auto active test mode cannot be actuated, check door switch system. Refer to <u>DLK-66.</u> <u>"Component Function Check"</u>.

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.

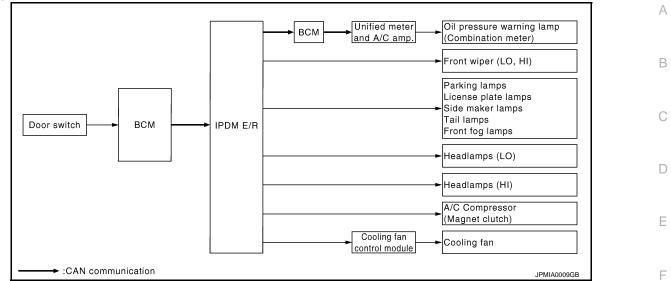
Operation sequence	Inspection location	Operation	
1	Oil pressure warning lamp	Blinks continuously during operation of auto active test	
2	Front wiper	LO for 5 seconds \rightarrow HI for 5 seconds	
3	 Parking lamps License plate lamps Side maker lamps Tail lamps Front fog lamps 	10 seconds	
4	Headlamps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

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

WW-16

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

< 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	 Cooling fan Harness or connector be- tween cooling fan and cool- ing fan control module Cooling fan control module Harness or connector be- tween IPDM E/R and cool- ing fan control module Cooling fan relay Harness or connector be- tween IPDM E/R and cool- ing fan relay IPDM E/R

CONSULT-III Function (IPDM E/R)

INFOID:000000005172322

APPLICATION ITEM

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

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

SELF DIAGNOSTIC RESULT Refer to <u>PCS-31, "DTC Index"</u>.

DATA MONITOR

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

< SYSTEM DESCRIPTION >

Monitor Item [Unit]	MAIN SIG- NALS	Description	
IGN RLY1 -REQ [Off/On]		Displays the status of the ignition switch ON signal received from BCM via CAN communication.	
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.	
PUSH SW [Off/On]		Displays the status of the push-button ignition switch judged by IPDM E/R.	
INTER/NP SW [Off/On]		Displays the status of the 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 A/T shift selector (detention switch) judged by IPDM R.	
S/L RLY -REQ [Off/On]		Displays the status of the steering lock relay request received from BCM via CAN communication.	
S/L STATE [LOCK/UNLOCK/UNKWN]		Displays the status of the steering lock judged by IPDM E/R.	
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]		Displays the status of the hood switch judged by IPDM E/R.	
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 com- munication.	
CRNRNG LMP REQ [Off/On]		NOTE: The item is indicated, but not monitored.	

ACTIVE TEST

Test item

Test item	Operation	Description	
	Off		Ν
CORNERING LAMP	LH	NOTE: The item is indicated, but cannot be tested.	
	RH		
HORN	On	Operates horn relay 1 and horn relay 2 for 20 ms.	0
	Off	OFF	
FRONT WIPER	Lo	Operates the front wiper relay.	Ρ
	Hi	Operates the front wiper relay and front wiper high relay.	
	1	OFF	
MOTOR FAN	2	Outputs 50% pulse duty signal (PWM signal) to the cooling fan control module.	
MOTOR FAN	3	Outputs 80% pulse duty signal (PWM signal) to the cooling fan control module.	
	4	Outputs 100% pulse duty signal (PWM signal) to the cooling fan control module.	

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< SYSTEM DESCRIPTION >

Test item	Operation	Description
HEAD LAMP WASHER	On	NOTE: The item is indicated, but cannot be tested.
	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 sec- ond intervals.
	Fog	Operates the front fog lamp relay.

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS WIPER AND WASHER FUSE

Descr

escription			INFOID:0000000051:
se list Unit	Location	Fuse No.	Capacity
Front wiper motor	IPDM E/R	#60	30 A
Washer pump	IPDM E/R	#47	10 A

1.CHECK FUSES

Check that the following fuses are not fusing.

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

Is the fuse fusing?

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

NO >> The fuse is normal.

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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:000000005172325

1.CHECK FUSE AND FUSIBLE LINK

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

Signal name	Fuse and fusible link No.
	К
Battery power supply	10

Is the fuse fusing?

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

NO >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.

- 2. Disconnect BCM connectors.
- 3. Check voltage between BCM harness connector and ground.

	Terminals		
(+)	(-)	Voltage
B	CM		(Approx.)
Connector	Terminal	Ground	
M118	1	Giouna	Pottory voltage
M119	11		Battery voltage

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

 ${f 3.}$ CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

В	CM		Continuity
Connector	Terminal	Ground	Continuity
M119	13	Ť	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	<u> </u>		Fuses and fusible link No.
				С
	Battery power s	upply		50
				51
blo	eplace the bl own. O TO 2.		sible link after repa	iring the affected circuit if a fuse or fusible link is
. Turn ignition. Disconnect	on switch OF ct IPDM E/R	F. connector.	rness connector ar	nd ground.
	Terminals			-
(+	+)		Voltage	
IPDN	1 E/R	(-)	(Approx.)	
Connector	Terminal	Ground		_
E4 s the measure	1		Battery voltage	_
Check continu		PDM E/R harn	ess connectors an	d ground.
	_/1			
Connector	Terminal		Continuity	
	Terminal 12	Ground		_
Connector E5 E6	12 41	Ground	Continuity Existed	_
Connector E5 E6 Poes continuit YES >> IN	12 41 <u>y exist?</u> ISPECTION			
Connector E5 E6 Does continuit YES >> IN	12 41 <u>y exist?</u> ISPECTION	END		
Connector E5 E6 Does continuit YES >> IN	12 41 <u>y exist?</u> ISPECTION	END		
Connector E5 E6 Does continuit YES >> IN	12 41 <u>y exist?</u> ISPECTION	END		

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR LO CIRCUIT

Component Function Check

1.CHECK FRONT WIPER LO OPERATION

®IPDM E/R AUTO ACTIVE TEST

1. 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.

CONSULT-III 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-24, "Diagnosis Procedure"</u>.

Diagnosis Procedure

INFOID:000000005172328

INFOID:000000005172327

1.CHECK FRONT WIPER MOTOR (LO) OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST

- Turn the ignition switch OFF.
- 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	
(+)	(-)	Test tem	Voltage
IPDN	/I E/R		FRONT WIPER	(Approx.)
Connector	Terminal			
E5	4	Ground	Lo	Battery voltage
			Off	0 V

Is the measurement value normal?

YES >> GO TO 2.

NO >> Replace IPDM E/R.

2.CHECK FRONT WIPER MOTOR (LO) OPEN CIRCUIT

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.

IPDN	/I E/R	Front wi	per motor	Continuity
Connector	Terminal	Connector	Terminal	Continuity
E5	4	E42	1	Existed

Does continuity exist?

YES >> GO TO 3.

NO >> Repair the harness or connector.

 ${
m 3.}$ 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	1 E/R		
Con	nector	Terminal	Ground	Continuity
	5	4	-	Not existed
	ontinuity			
YES NO	>> Rep >> Rep	pair the harnes place front wipe	s or connector. er motor.	

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< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR HI CIRCUIT

Component Function Check

1.CHECK FRONT WIPER HI OPERATION

®IPDM E/R AUTO ACTIVE TEST

1. 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.

CONSULT-III 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-26, "Diagnosis Procedure"</u>.

Diagnosis Procedure

INFOID:000000005172330

INFOID:000000005172329

1.CHECK FRONT WIPER MOTOR (HI) OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST

- 1. Turn the ignition switch OFF.
- 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			
	Terriniais		Test item	
(+)	(—)		Voltage
IPDN	/I E/R		FRONT WIPER	(Approx.)
Connector	Terminal			
E5	5	Ground	Hi	Battery voltage
			Off	0 V

Is the measurement value normal?

YES >> GO TO 2.

NO >> Replace IPDM E/R.

2.CHECK FRONT WIPER MOTOR (HI) OPEN CIRCUIT

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.

IPD	M E/R	Front wi	per motor	Continuity
Connector	Terminal	Connector	Terminal	Continuity
E5	5	E42	4	Existed

Does continuity exist?

YES >> GO TO 3.

NO >> Repair the harness or connector.

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

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

FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

	IPDN	/I E/R		
Con	nector	Terminal	Ground	Continuity
	E5	5		Not existed
	ontinuity	exist?		
YES NO	>> Re >> Re	pair the harness place front wipe	s or connector. er motor.	

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FRONT WIPER AUTO STOP SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER AUTO STOP SIGNAL CIRCUIT

Component Function Check

1.CHECK FRONT WIPER (AUTO STOP) SIGNAL

CONSULT-III DATA MONITOR

1. Select "WIP AUTO STOP" of IPDM E/R data monitor item.

2. Operate the front wiper.

3. With the front wiper operation, check the monitor status.

Monitor item		Condition	Monitor status
WIP AUTO STOP	Front wiper	Stop position	STOP P
WIF AUTO STOP	motor	Except stop position	ACT P

Is the status of item normal?

YES >> Auto stop signal circuit is normal.

NO >> Refer to <u>WW-28, "Diagnosis Procedure"</u>.

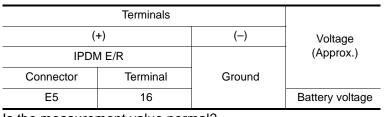
Diagnosis Procedure

INFOID:000000005172332

INFOID:000000005172331

1. CHECK FRONT WIPER MOTOR (AUTO STOP) OUTPUT VOLTAGE

- 1. 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.



Is the measurement value normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK FRONT WIPER MOTOR (AUTO STOP) 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.

IPDN	/I E/R		Continuity
Connector	Terminal	Ground	Continuity
E5	16	Ţ	Not existed

Does continuity exist?

YES >> Repair the harnesses or connectors.

NO >> Replace IPDM E/R.

3.CHECK FRONT WIPER MOTOR (AUTO STOP) 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 AUTO STOP SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

IPDI	IPDM E/R		Front wiper motor		
Connector	Terminal	Connector	Terminal	Continuity	
E5	16	E42	5	Existed	

Does continuity exist?

YES >> Replace front wiper motor.

NO >> Repair the harnesses or connectors.

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FRONT WIPER MOTOR GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR GROUND CIRCUIT

Diagnosis Procedure

INFOID:000000005172333

 $1. \mathsf{CHECK} \ \mathsf{FRONT} \ \mathsf{WIPER} \ \mathsf{MOTOR} \ (\mathsf{GND}) \ \mathsf{OPEN} \ \mathsf{CIRCUIT}$

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

Front wij	per motor		Continuity
Connector	Terminal	Ground	Continuity
E42	2	*	Existed

Does continuity exist?

- YES >> Front wiper motor ground circuit is normal.
- NO >> Repair the harnesses or connectors.

WASHER SWITCH

< DTC/CIRCUIT DIAGNOSIS >

WASHER SWITCH

Description

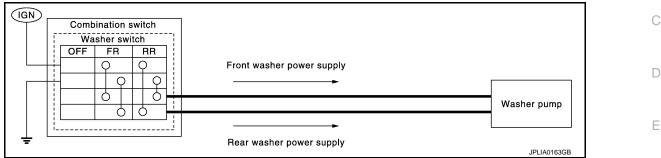
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- Washer switch is integrated with combination switch.
- Combination switch is integrated with combination switch.
 Combination switch switches polarity between front washer operating and rear washer operating to supply power to the washer pump on 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. Н А : Terminal 4 в : Terminal 6 OFF FR RR С : Terminal 3 А 0 0 В Q Q С 6 Q D : Terminal 1 D 6 Q

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Combina	tion switch	Condition	Continuity
Terminal		Condition	Continuity
1	6	Front washer switch ON	
3	4	Tiont washer switch of	Existed
1	4	Rear washer switch ON	LAISteu
3	6		

Does continuity exist?

YES >> Wiper and washer switch is normal.

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

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< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER MOTOR CIRCUIT

Component Function Check

1.CHECK REAR WIPER ON OPERATION

CONSULT-III ACTIVE TEST

1. Select "RR WIPER" of BCM active test item.

2. With operating the test item, check rear wiper operation.

On : Rear wiper ON operation

Off : Stop the rear wiper.

Is rear wiper operation normally?

- YES >> Rear wiper motor circuit is normal.
- NO >> Refer to <u>WW-32</u>, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:000000005172337

INFOID:000000005172336

1.CHECK REAR WIPER MOTOR OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST

1. Turn the ignition switch OFF.

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

	Terminals		Test item		
(+)		(-)	iest item	Voltage	
BC	BCM		REAR WIPER	(Approx.)	
Connector	Terminal				
M120	26	Ground	On	Battery voltage	
			Off	0 V	

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.

3. Check continuity between BCM harness connector and ground.

B	CM		Continuity
Connector	Terminal	Ground	Continuity
M120	26	Ť	Not existed

Does continuity exist?

YES >> Repair the harness or connector.

NO >> Replace BCM. Refer to <u>BCS-84, "Exploded View"</u>.

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.

WW-32

REAR WIPER MOTOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

BC	M	Rear win	per motor	
Connector	Terminal	Connector	Terminal	Continuity
M120	26	D115	2	Existed
NO >> 4. CHECK F	GO TO 4. Repair the h EAR WIPE	narness or co R MOTOR G en rear wiper		
	iuity betwee	en rear wiper		
Rear	wiper motor			Continuity
Connector	Termi		round	
D115	4			Existed
	Replace rea	ar wiper moto narness or co		

REAR WIPER AUTO STOP SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER AUTO STOP SIGNAL CIRCUIT

Component Function Check

1.CHECK REAR WIPER (AUTO STOP) OPERATION

CONSULT-III DATA MONITOR

1. 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	Co	ndition	Monitor status
RR WIPER STOP	Rear wiper motor	Stop position	Off
KK WIFLK STOP	iteal wiper motor	Except stop position	On

Is the status of item normal?

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

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

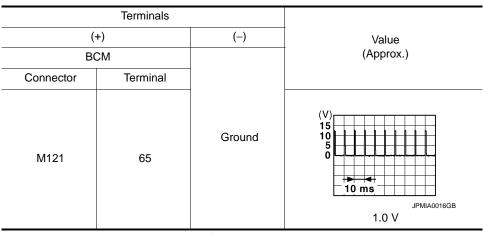
Diagnosis Procedure

INFOID:000000005172339

INFOID:000000005172338

1.CHECK REAR WIPER MOTOR (AUTO STOP) OUTPUT VOLTAGE

- 1. 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.



Is the measurement value normal?

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

2.CHECK REAR WIPER MOTOR (AUTO STOP) SHORT CIRCUIT

1. Turn the ignition switch OFF.

2. Disconnect BCM connector.

3. Check continuity between BCM harness connector and ground.

B	CM		Continuity
Connector	Terminal	Ground	Continuity
M121	65	*	Not existed

Does continuity exist?

YES >> Repair the harness or connector.

NO >> Replace BCM. Refer to <u>BCS-84</u>, "Exploded View".

WW-34

REAR WIPER AUTO STOP SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

. Turn the . Disconn	ignition swi ect BCM co	nnector.		-	rear wiper motor harr	ness connector.	/
BC	M	Rear wip	er motor		-		l
Connector	Terminal	Connector	Terminal	Continuity			(
M121	65	D115	3	Existed	-		
oes continu	uity exist?						
YES >>	Replace rea	ar wiper moto narness or co					[
YES >>	Replace rea						I
YES >>	Replace rea						
YES >>	Replace rea						

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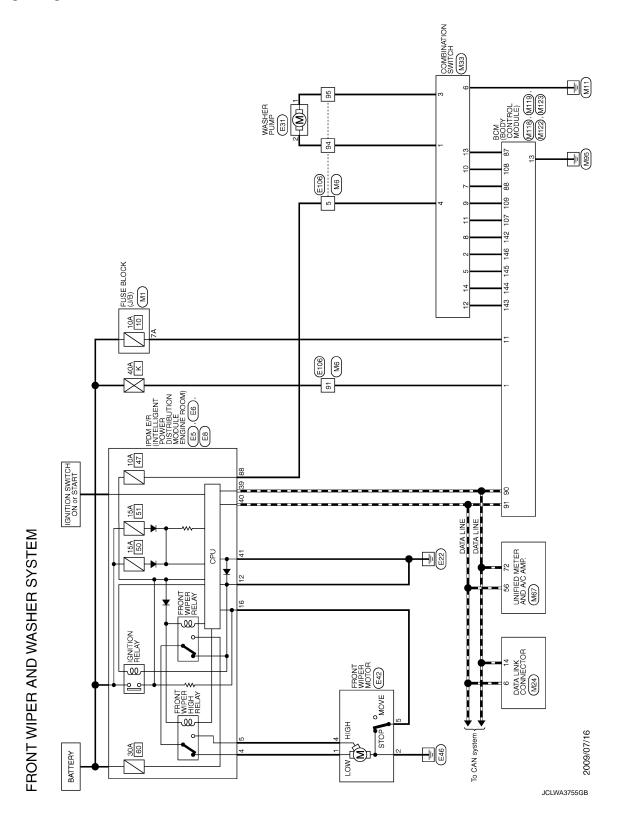
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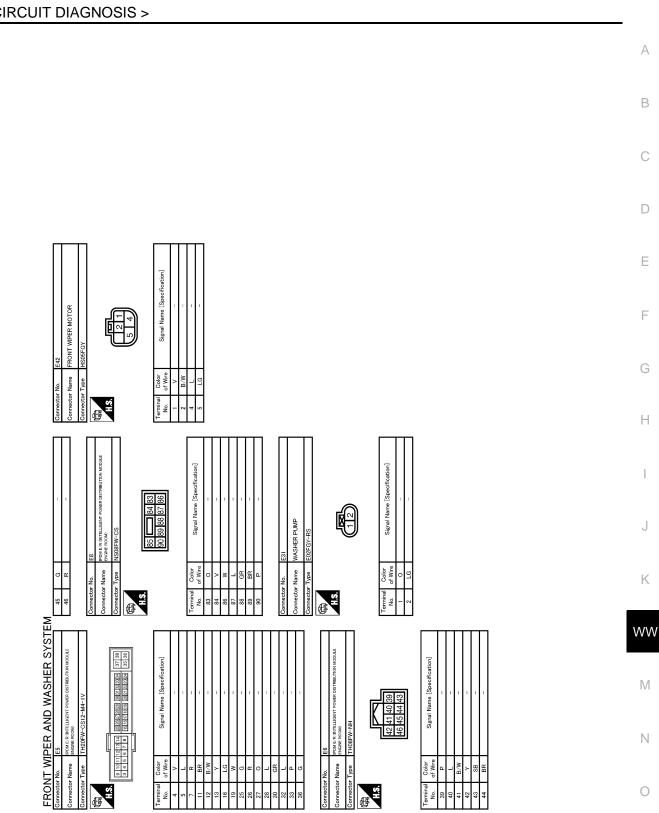
FRONT WIPER AND WASHER SYSTEM

Wiring Diagram - FRONT WIPER AND WASHER SYSTEM -

INFOID:000000005172340



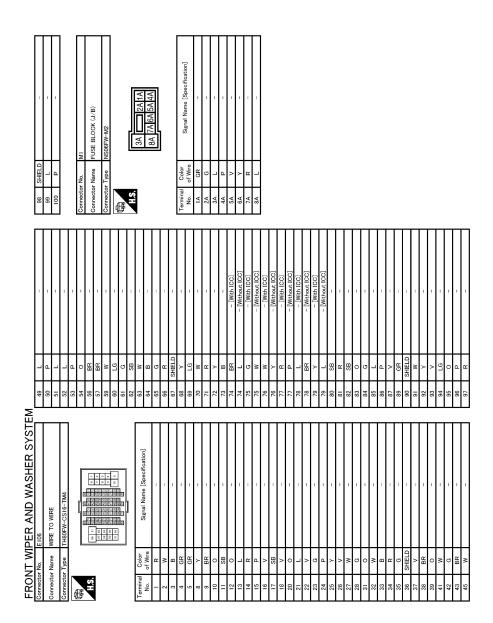
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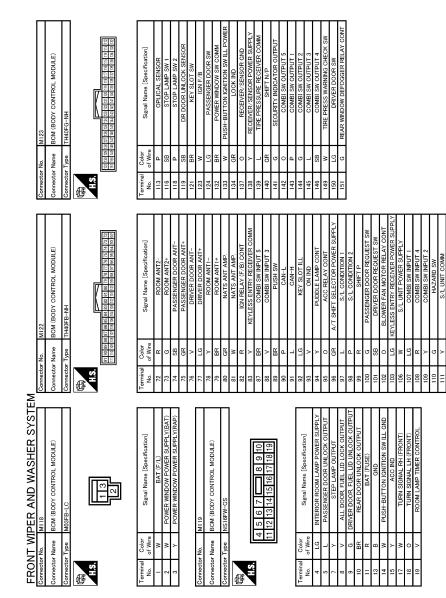
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INPUT 1 INPUT 1 INPUT 1 INPUT 1 INPUT 2 OUTPUT 2 INPUT 2 INPUT 2 INPUT 2 INPUT 2 INPUT 2 INPUT 2 INTARE ENSOR SIGNAL INTARE ENSOR SIGNAL INTARE ESTOR SIGNAL INTARE ESTOR SIGNAL INTARE	С
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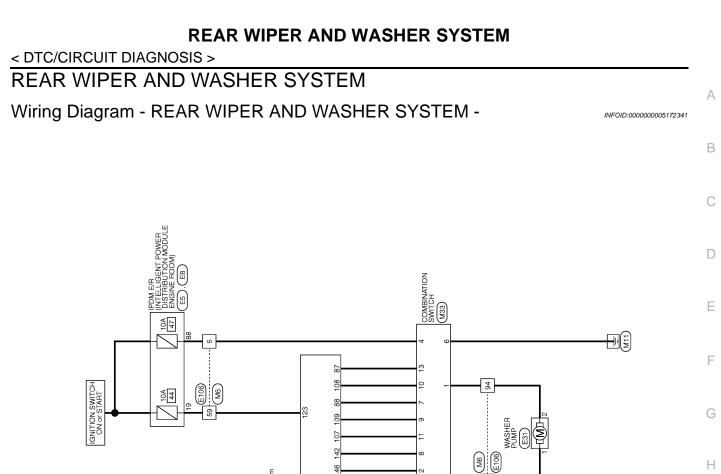
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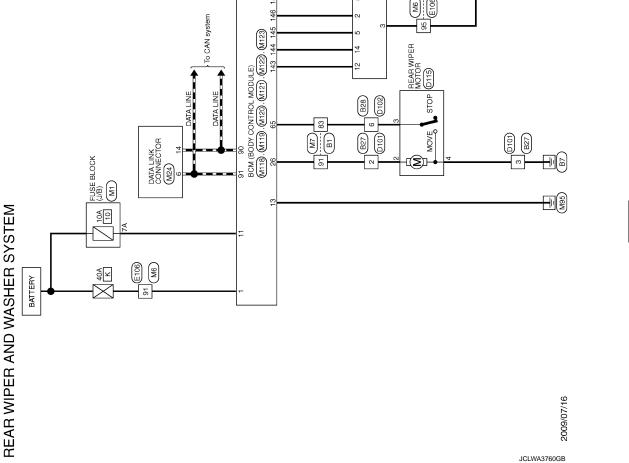
FRONT WIPER AND WASHER SYSTEM

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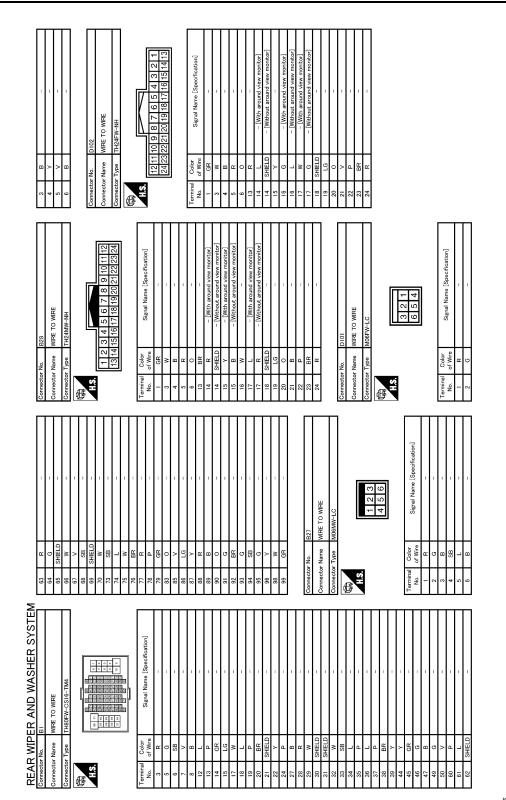
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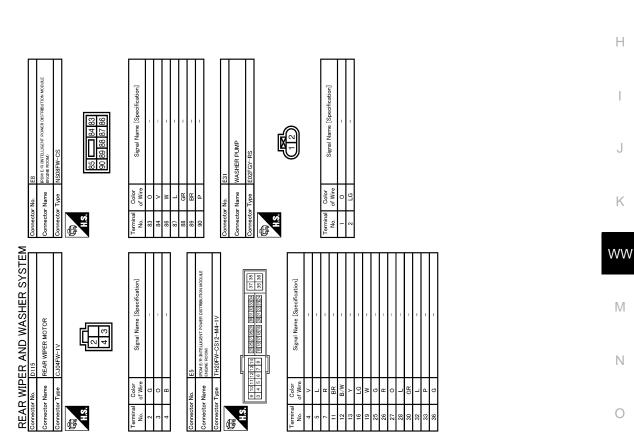
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< DTC/CIRCUIT DIAGNOSIS >



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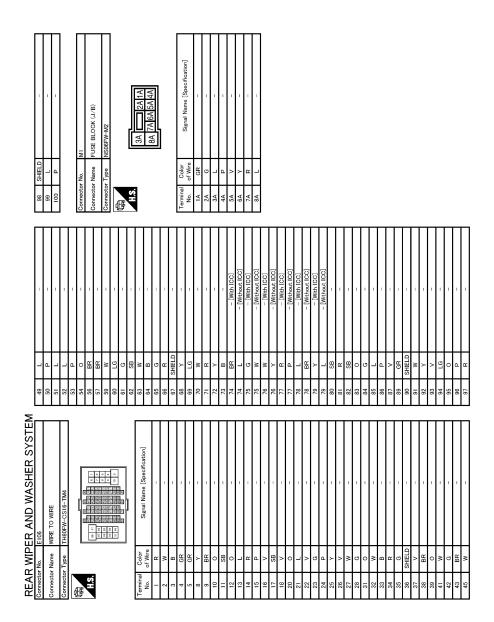
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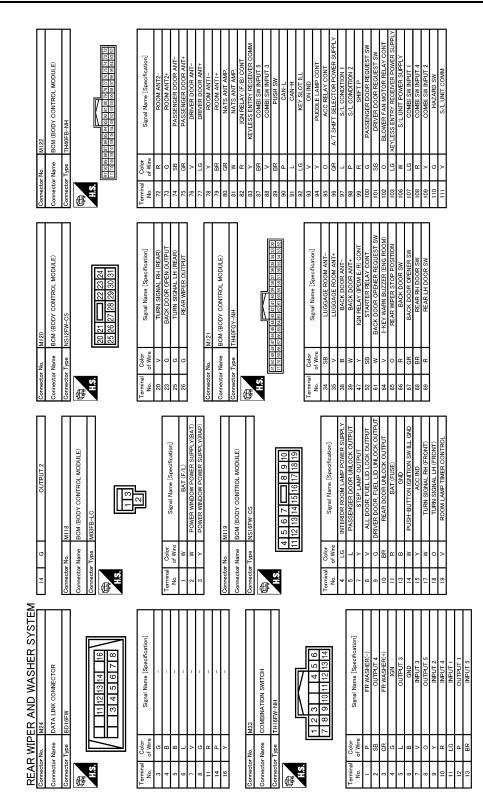
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Terminal Connector Name Connector Name Connector Name No. Connector Name 1 P 1 P 1 P 1 P 1 P 1 P 1 P 1 P 2 P 3 P 3 P 3 P 3 P 3 P 3 P 3 P 3 P 3 P 3 P 3 P 3 P 3 P 3 P 3 P 3	0

JCLWA3764GB

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< DTC/CIRCUIT DIAGNOSIS >



JCLWA3765GB

< DTC/CIRCUIT DIAGNOSIS >

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SYSTEM	n) OR MA B D D D D D D MMA K SW K SW K SW K SV CONT		WW
ER AND WASHER S MI23 BGM (BODY CONTROL MODULE) TH40FG-NH TH40FG-NH	Signal Name [Spacification] OPLICAL SENSOR STOP LAMP SW1 STOP LAMP SW1 STOP LAMP SW1 STOP LAMP SW2 NEY SLOT SW NEY		Μ
			Ν
REAR WIF Connector Name Connector Type Connector Type	Terminal Color No. of With 113 Color 116 P 119 PB 119 PB 121 BR 123 BR 133 V 134 CR 133 V 134 CR 134 CR 134 CR 145 CR 144 CR 144 CR 144 CR 144 CR 145 CR 146 CR 147 CR 148 CR 144 CR 145 CR 146 CR 147 CR 148 CR 149 CR 141 CR 143 CR 144 CR 145 CR 150 CR	JCLWA3766GB	0
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ECU DIAGNOSIS INFORMATION BCM (BODY CONTROL MODULE)

Reference Value

INFOID:000000005588580

VALUES ON THE DIAGNOSIS TOOL

CONSULT-III MONITOR ITEM

Monitor Item	Condition	Value/Status
FR WIPER HI	Other than front wiper switch HI	Off
	Front wiper switch HI	On
	Other than front wiper switch LO	Off
	Front wiper switch LO	On
	Front washer switch OFF	Off
FR WASHER SW	Front washer switch ON	On
	Other than front wiper switch INT	Off
	Front wiper switch INT	On
	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
	Other than rear wiper switch ON	Off
RR WIPER ON	Rear wiper switch ON	On
	Other than rear wiper switch INT	Off
	Rear wiper switch INT	On
	Rear washer switch OFF	Off
RR WASHER SW	Rear washer switch ON	On
	Rear wiper is in STOP position	Off
RR WIPER STOP	Rear wiper is not in STOP position	On
	Other than turn signal switch RH	Off
I URN SIGNAL R	Turn signal switch RH	On
	Other than turn signal switch LH	Off
I URN SIGNAL L	Turn signal switch LH	On
	Other than lighting switch 1ST and 2ND	Off
TAIL LAMP SW	Lighting switch 1ST or 2ND	On
	Other than lighting switch HI	Off
HI BEAM SW	Lighting switch HI	On
	Other than lighting switch 2ND	Off
HEAD LAMP SW 1	Lighting switch 2ND	On
	Other than lighting switch 2ND	Off
HEAD LAMP SW 2	Lighting switch 2ND	On
	Other than lighting switch PASS	Off
PASSING SW	Lighting switch PASS	On
FR WIPER LOW From FR WASHER SW From FR WIPER INT Ot FR WIPER STOP From FR WIPER STOP From RR WIPER ON Ot RR WIPER INT Ot RR WIPER STOP Ref RURN SIGNAL R Ot TURN SIGNAL R Ot TURN SIGNAL L Ot FAIL LAMP SW Ot HI BEAM SW Ot HEAD LAMP SW 1 Lig HEAD LAMP SW 2 Ot HEAD LAMP SW 3 Lig FR FOG SW From	Other than lighting switch AUTO	Off
	Lighting switch AUTO	On
	Front fog lamp switch OFF	Off
FR FOG SW	Front fog lamp switch ON	On

Monitor Item	Condition	Value/Status	^
RR FOG SW	NOTE: The item is indicated, but not monitored.	Off	A
	Driver door closed	Off	D
DOOR SW-DR	Driver door opened	On	— В
	Passenger door closed	Off	
DOOR SW-AS	Passenger door opened	On	С
	Rear RH door closed	Off	
DOOR SW-RR	Rear RH door opened	On	
	Rear LH door closed	Off	D
DOOR SW-RL	Rear LH door opened	On	
	Back door closed	Off	E
DOOR SW-BK	Back door opened	On	
	Other than power door lock switch LOCK	Off	
CDL LOCK SW	Power door lock switch LOCK	On	F
	Other than power door lock switch UNLOCK	Off	
CDL UNLOCK SW	Power door lock switch UNLOCK	On	
	Other than driver door key cylinder LOCK position	Off	G
KEY CYL LK-SW	Driver door key cylinder LOCK position	On	
EY CYL UN-SW	Other than driver door key cylinder UNLOCK position	Off	H
KEY CYL UN-SW	Driver door key cylinder UNLOCK position	On	
KEY CYL SW-TR	NOTE: The item is indicated, but not monitored.	Off	
	Hazard switch is OFF	Off	
HAZARD SW	Hazard switch is ON	On	
REAR DEF SW	NOTE: The item is indicated, but not monitored.	Off	0
TR CANCEL SW	NOTE: The item is indicated, but not monitored.	Off	K
	Back door opener switch OFF	Off	
TR/BD OPEN SW	While the back door opener switch is turned ON	On	W
FRNK/HAT MNTR	NOTE: The item is indicated, but not monitored.	Off	
RKE-LOCK	LOCK button of the key is not pressed	Off	N
KRE-LOCK	LOCK button of the key is pressed	On	
	UNLOCK button of the key is not pressed	Off	
RKE-UNLOCK	UNLOCK button of the key is pressed	On	— N
RKE-TR/BD	NOTE: The item is indicated, but not monitored.	Off	
	PANIC button of the key is not pressed	Off	0
RKE-PANIC	PANIC button of the key is pressed	On	
	UNLOCK button of the key is not pressed	Off	P
RKE-P/W OPEN	UNLOCK button of the key is pressed and held	On	
	LOCK/UNLOCK button of the key is not pressed and held simulta- neously	Off	
RKE-MODE CHG	LOCK/UNLOCK button of the key is pressed and held simulta- neously	On	

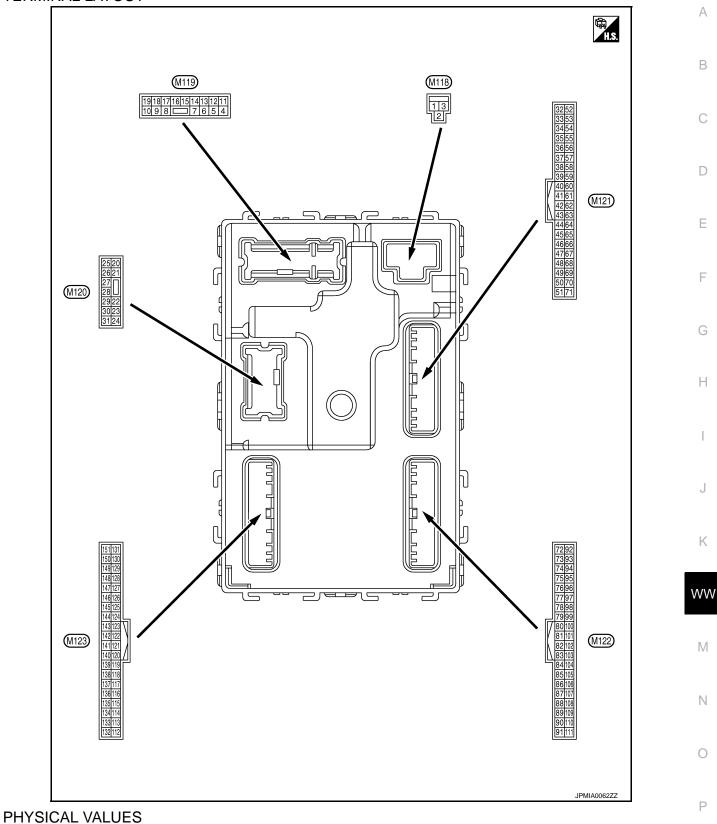
Monitor Item	Condition	Value/Status
OPTICAL SENSOR	Bright outside of the vehicle	Close to 5 V
	Dark outside of the vehicle	Close to 0 V
REQ SW -DR	Driver door request switch is not pressed	Close to 5 V Close to 0 V Off On Off On Off On Off On Sed Off Sed Off Sed Off Selown Off Selown Off Selown, or No. On Off On Off
	Driver door request switch is pressed	
REQ SW -AS	Passenger door request switch is not pressed	Off
	Passenger door request switch is pressed	On
REQ SW -RR	NOTE: The item is indicated, but not monitored.	Off
REQ SW -RL	NOTE: The item is indicated, but not monitored.	Off
	Back door request switch is not pressed	Off
REQ SW -BD/TR	Back door request switch is pressed	On
	Push-button ignition switch (push switch) is not pressed	Off
PUSH SW	Push-button ignition switch (push switch) is pressed	On
	Ignition switch in OFF or ACC position	Off
GN RLY2 -F/B	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
	The brake pedal is not depressed	On Off On
BRAKE SW 2	The brake pedal is depressed	On
	Selector lever in P position	Off
DETE/CANCL SW	Selector lever in any position other than P	On
	Selector lever in any position other than P and N	Off
SFT PN/N SW	Selector lever in P or N position	On
	Steering is unlocked	Off
S/L -LOCK	Steering is locked	On
	Steering is locked	Off
S/L -UNLOCK	Steering is unlocked	On
	Ignition switch in OFF or ACC position	Off
S/L RELAY-F/B	Ignition switch in ON position	On
	Driver door is unlocked	Off
UNLK SEN -DR	Driver door is locked	On
	Push-button ignition switch (push-switch) is not pressed	Off
PUSH SW -IPDM	Push-button ignition switch (push-switch) is pressed	On
	Ignition switch in OFF or ACC position	Off
GN RLY1 -F/B	Ignition switch in ON position	On
	Selector lever in any position other than P	Off
DETE SW -IPDM	Selector lever in P position	On
	Selector lever in any position other than P and N	Off
SFT PN -IPDM	Selector lever in P or N position	Off On Off On Off Off Off Off Off Off On Off

Monitor Item	Condition	Value/Status
	Selector lever in any position other than P	Off
SFT P -IVIET	Selector lever in P position	On
	Selector lever in any position other than N	Off
	Selector lever in N position	On
	Engine stopped	Stop
ENCINE STATE	While the engine stalls	Stall
SFT P -METSelector lever in any position other than POffSelector lever in P positionOnSFT N -METSelector lever in any position other than NOffSelector lever in N positionOnEngine stoppedStop	At engine cranking	Crank
		P -MET Selector lever in any position other than P Off N -MET Selector lever in ny position On Selector lever in N position On IN -MET Selector lever in N position On Selector lever in N position On On IN -MET Selector lever in N position On Selector lever in N position On On IN - Selector lever in N position On On Selector lever in N position On On Selector lever in N position On Staring is tordet Staring LOCK-IPDM Steering is cocked Off On Steering is locked On On Steering is cocked On Steering lock system is the LOCK condition and the changing condi- tion from LOCK to UNLOCK. On On Steering lock system is the LOCK condition or the changing condi- tion from LOCK to UNLOCK. Diver door is locked LOCK Steering lock system is the LOCK condition or the changing condi- tion from LOCK to UNLOCK. Diver door is locked UNLOCK Steering is unlocked LOCK UNLOCK Ready
S/L LUCK-IPDIVI	Steering is locked	On
	Steering is locked	Off
5/L UNLK-IPDM	Steering is unlocked	On
		Off
S/L RELAT-REQ		On
VEH SPEED 1	While driving	Equivalent to speedometer reading
VEH SPEED 2	While driving	Equivalent to speedometer reading
	Driver door is locked	LOCK
DOOR STAT-DR	Wait with selective UNLOCK operation (5 seconds)	READY
	Driver door is unlocked	UNLOCK
DOOR STAT-AS	Passenger door is locked	LOCK
	Wait with selective UNLOCK operation (5 seconds)	READY
	Passenger door is unlocked	UNLOCK
	Steering is locked	Reset
ID OK FLAG	Steering is unlocked	Set
	The engine start is prohibited	Reset
PRMIENGSIRI	The engine start is permitted	Set
PRMT RKE STRT		Reset
	The key is not inserted into key slot	Off
NET SW -SLUI	The key is inserted into key slot	On
RKE OPE COUN1	During the operation of the key	Operation frequency of the key
RKE OPE COUN2		_
		Yet
CONFRM ID ALL		Done
		Yet
CONFIRM ID4		Done
		Yet
CONFIRM ID3	The key ID that the key slot receives accords with the third key ID registered to BCM.	Done

Monitor Item	Condition	Value/Status
	The key ID that the key slot receives does not accord with the sec- ond key ID registered to BCM.	Yet
	The key ID that the key slot receives accords with the second key ID registered to BCM.	Done
CONFIRM ID2The key ID ond key ID The key ID ID registered 	The key ID that the key slot receives does not accord with the first key ID registered to BCM.	Yet
CONFIRMIDI	The key ID that the key slot receives does not accord with the second key ID registered to BCM.YeThe key ID that the key slot receives accords with the second key ID registered to BCM.DorThe key ID that the key slot receives does not accord with the first key ID registered to BCM.YeThe key ID that the key slot receives accords with the first key ID registered to BCM.DorThe key ID that the key slot receives accords with the first key ID registered to BCM.DorThe ID of fourth key is not registered to BCMYeThe ID of fourth key is not registered to BCMOorThe ID of third key is registered to BCMYeThe ID of second key is registered to BCMOorThe ID of first key is not registered to BCMYeThe ID of first key is not registered to BCMYeThe ID of first key is not registered to BCMYeThe ID of first key is registered to BCMYeThe ID of first key is not registered to BCMYeThe ID of first key is registered to BCMYeThe ID of first key is not registered to BCMYeIgnition switch ON (Only when the signal from the transmitter is received)Air pressure ofIgnition switch ON (Only when the signal from the transmitter is received)Air pressure ofID of front LH tire transmitter is registeredDorID of front LH tire transmitter is not registeredPID of front LH tire transmitter is not registeredPID of front RH tire transmitter is not registeredYeID of rear RH tire transmitter is not registeredPID of r	Done
	The ID of fourth key is not registered to BCM	Yet
124	The ID of fourth key is registered to BCM	Done
TD 2	The ID of third key is not registered to BCM	Yet
IF J	The ID of third key is registered to BCM	Done
	The ID of second key is not registered to BCM	Yet
1 F Z	The ID of second key is registered to BCM	Done
TD 1	The ID of first key is not registered to BCM	Yet Done Yet Done Yet Done Yet Done Yet Done Yet Done Yet Done Air pressure of front LH tire Air pressure of front RH tire Air pressure of rear RH tire
	The ID of first key is registered to BCM	Done
AIR PRESS FL		Air pressure of front LH tire
AIR PRESS FR		Air pressure of front RH tire
AIR PRESS RR		Air pressure of rear RH tire
AIR PRESS RL		Air pressure of rear LH tire
	ID of front LH tire transmitter is registered	Done
ID REGOT FLI	ID of front LH tire transmitter is not registered	Yet
	ID of front RH tire transmitter is registered	Done
	ID of front RH tire transmitter is not registered	Yet
	ID of rear RH tire transmitter is registered	Done t Yet Done Yet Air pressure of front LH tire Air pressure of rear RH tire Air pressure of rear LH tire Air pressure of rear LH tire Done Yet Off
	ID of rear RH tire transmitter is not registered	
	ID of rear LH tire transmitter is registered	Done
ID REGOT KLI	ID of rear LH tire transmitter is not registered	Yet
	Tire pressure indicator OFF	Off
	Tire pressure indicator ON	On
	Tire pressure warning alarm is not sounding	Off
BUZZER	Tire pressure warning alarm is sounding	On

< ECU DIAGNOSIS INFORMATION >

TERMINAL LAYOUT



	inal No. e color)	Description			0	Value
+		Signal name	Input/ Output	Condition		(Approx.)
1 (W)	Ground	Battery power supply	Input	Ignition switch OF	F	Battery voltage
2 (W)	Ground	P/W power supply (BAT)	Output	Ignition switch OF	F	Battery voltage
3 (Y)	Ground	P/W power supply (RAP)	Output	Ignition switch ON		Battery voltage
					battery saver is activated. oom lamp power supply)	0 V
4 (LG)	Ground	Interior room lamp power supply	Output	ed.	battery saver is not activat- or room lamp power supply)	Battery voltage
5	Cround	Passenger door UN-	Quitout	Descender desr	UNLOCK (Actuator is activated)	Battery voltage
(L)	Ground	LOCK	Output	Passenger door	Other than UNLOCK (Actuator is not activated)	0 V
7	Ground	Step lamp	Output	Step lamp	ON	0 V
(Y)	Ground	Step lamp	Output	Step lamp	OFF	Battery voltage
8	Ground	All doors, fuel lid	Output	All doors	LOCK (Actuator is activated)	Battery voltage
(V)	Ground	LOCK	Output		Other than LOCK (Actuator is not activated)	0 V
9	Crownd	Driver door, fuel lid	Output		UNLOCK (Actuator is activated)	Battery voltage
(G)	Ground	UNLOCK	Output	Driver door	Other than UNLOCK (Actuator is not activated)	0 V
10		Rear RH door and	0	Rear RH door	UNLOCK (Actuator is activated)	Battery voltage
(BR)	Ground	rear LH door UN- LOCK	Output	and rear LH door	Other than UNLOCK (Actuator is not activated)	0 V
11 (R)	Ground	Battery power supply	Input	Ignition switch OF	F	Battery voltage
13 (B)	Ground	Ground	_	Ignition switch ON		0 V
					OFF	0 V
14 (W)	Ground	Push-button ignition switch illumination ground	Output	Tail lamp	ON	NOTE: When the illumination brighten- ing/dimming level is in the neutral position (V) 10 0 0 2 ms JSNIA0010GB
15	Ground	ACC indicator lama	Output	Ignition owitch	OFF or ON	Battery voltage
(Y)	Ground	ACC indicator lamp	Output	Ignition switch	ACC	0 V

	inal No.	Description				Value
(Wire color)		Signal name Input/ Output			Condition	Value (Approx.)
•			Calput		Turn signal switch OFF	0 V
17 (W)	Ground	Turn signal RH (Front)	Output	Ignition switch ON	Turn signal switch RH	(V) 15 10 5 0 1 1 1 1 1 1 1 1 1 1 1 1 1
					Turn signal switch OFF	0.0 V
18 (O)	Ground	Turn signal LH (Front)	Output	Ignition switch ON	Turn signal switch LH	(V) 15 10 5 0 1 s 1 s 1 s 1 s 1 s 1 s 1 s 1 s
19	Ground	Room lamp timer	Output	Interior room	OFF	Battery voltage
(V)	Ground	control	Output	lamp	ON	0 V
20 (V)	Ground	Turn signal RH (Rear)	Output	Ignition switch ON	Turn signal switch OFF	(V) 15 10 50 1 1 1 1 1 1 1 1 1 1 1 1 1
23	Ground	Back door open	Output	Back door	OPEN (Back door opener actuator is activated)	Battery voltage
(G)	Ground		Output	DACK UUUI	Other than OPEN (Back door opener actuator is not activated)	0 V
					Turn signal switch OFF	0 V
25 (G)	Ground	Turn signal LH (Rear)	Output	Ignition switch ON	Turn signal switch LH	(V) 15 10 5 0 1 1 1 1 1 1 1 1 1 1 1 1 1
26	Orrest	Deerwiner	Quitariat	Deerwizer	OFF (Stopped)	0 V
(G)	Ground	Rear wiper	Output	Rear wiper	ON (Operated)	Battery voltage

	ninal No.	Description				Value								
+	re color)	Signal name	Input/ Output		Condition	(Approx.)								
34	Ground	Luggage room anten-	Output	Ignition switch	When Intelligent Key is in the passenger compart- ment	(V) 15 10 5 0 1 s JMKIA0062GB								
(SB)	Ground	na (–)	OFF		OFF	Urr	When Intelligent Key is not in the passenger compart- ment	(V) 15 10 5 0 1 s JMKIA0063GB						
35	35 Ground Luggage room anten- Output OFF		Ignition switch	When Intelligent Key is in the passenger compart- ment	(V) 15 10 5 0 1 s JMKIA0062GB									
(V)		na (+) OFF					Cupu	Cuput	Output	When Intelligent Key is n	Ignition switch OFF	OFF	When Intelligent Key is not in the passenger compart- ment	(V) 15 10 5 1 1 1 1 1 1 1 1 1 1 1 1 1
38	Ground	Back door antenna (-	Output	When the back door opener re-	When Intelligent Key is in the antenna detection area	(V) 15 0 15 0 15 15 15 15 15 15 15 15 15 15								
(B)	Ground)	Output	quest switch is operated with ig- nition switch OFF	When Intelligent Key is not in the antenna detection area	(V) 15 10 5 0 1 s JMKIA0063GB								

	inal No.	Description				Value	Λ
(Wir +	e color) –	Signal name	Input/ Output		Condition	(Approx.)	A
39		Back door antenna		When the back door opener re-	When Intelligent Key is in the antenna detection area	(V) 15 0 1 s JMKIA0062GB	B C D
(W)	Ground	(+)	Output	quest switch is operated with ig- nition switch OFF	When Intelligent Key is not in the antenna detection area	(V) 15 0 0 1 s JMKIA0063GB	E
47	Ground	Ignition relay (IPDM	Output	Ignition switch	OFF or ACC	Battery voltage	G
(Y)		E/R) control			ON When selector lever is in P	0 V	Н
52 (SB)	Ground	Starter relay control	Output	Ignition switch ON	or N position When selector lever is not	Battery voltage	П
					in P or N position	0 V	
61 (W)	Ground	Back door opener re- quest switch	Input	Back door opener request switch	ON (Pressed) OFF (Not pressed)	0 V (V) 10 10 10 10 10 10 10 10 10 10	J
64		Intelligent Key warn-	0.1.1	Intelligent Key	Sounding	0 V	WV
(V)	Ground	ing buzzer (Engine room)	Output	warning buzzer (Engine room)	Not sounding	Battery voltage	N /I
65 (O)	Ground	Rear wiper stop posi- tion	Input	Rear wiper	In stop position	(V) 15 10 5 10 10 ms JPMIA0016GB 1.0 V	M N O
					Not in stop position	0 V	Р

	inal No. e color)	Description				Value
+	-	Signal name	Input/ Output		Condition	(Approx.)
66 (R)	Ground	Back door switch	Input	Back door switch	OFF (Door close)	(V) 15 10 5 0 10 ms JPMIA0011GB 11.8 V
					ON (Door open)	0 V
					Pressed	0 V
67 (GR)	Ground	Back door opener switch	Input	Back door opener switch	Not pressed	(V) 15 10 5 0 10 ms JPMIA0011GB 11.8 V
68 (BR)	Ground	Rear RH door switch	Input	Rear RH door switch	OFF (Door close)	(V) 15 10 5 0 10 ms JPMIA0011GB 11.8 V
					ON (Door open)	0 V
69 (R)	Ground	Rear LH door switch	Input	Rear LH door switch	OFF (Door close)	(V) 15 10 5 0 10 ms JPMIA0011GB 11.8 V
					ON (Door open)	0 V

	Terminal No. Description					Value	
(Wire +	e color) –	Signal name	Input/ Output		Condition	Value (Approx.)	A
72	Ground	Room antenna 2 (–)	Output	Ignition switch	When Intelligent Key is in the passenger compart- ment	(V) 15 10 50 1 s JMKIA0062GB	B C D
(R)		(Center console)		OFF	When Intelligent Key is not in the passenger compart- ment	(V) 15 10 5 0 1 s JMKIA0063GB	E
73	Ground	Room antenna 2 (+) (Center console)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compart- ment	(V) 15 10 5 0 1 s JMKIA0062GB	G H I
(G)	Glound				When Intelligent Key is not in the passenger compart- ment	(V) 15 10 5 0 1 s JMKIA0063GB	J K
74	Ground	Passenger door an- tenna (–)	Output	When the pas- senger door re- quest switch is operated with ig- nition switch OFF	When Intelligent Key is in the antenna detection area	(V) 15 10 5 0 1 s JMKIA0062GB	M
(SB)					When Intelligent Key is not in the antenna detection area	(V) 15 10 5 0 1 s 10 1 s 10 1 s 10 1 s 10 1 s 10 10 10 10 10 10 10 10 10 10 10 10 10	O P

	inal No.	Description				Value
(VVire +	e color) –	Signal name	Input/ Output		Condition	(Approx.)
75	Ground	Passenger door an-	Output	When the pas- senger door re- quest switch is operated with ig- nition switch OFF	When Intelligent Key is in the antenna detection area	(V) 15 0 1 1 1 J J MKIA0062GB
(GR)		tenna (+)	Cutput		When Intelligent Key is not in the antenna detection area	(V) 15 10 5 0 1 s 1 s JMKIA0063GB
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 1 1 1 1 5 0 1 1 5 0 1 1 5 0 1 1 5 0 1 1 5 0 1 1 5 0 1 1 1 1 1 1 1 1 1 1 1 1 1
76 (V)	Ground				When Intelligent Key is not in the antenna detection area	(V) 15 0 1 1 1 1 1 1 1 J J MKIA0063GB
77	Ground	Ground Driver door antenna Output When the driver door request switch is operated with ignition switch OFF		When Intelligent Key is in the antenna detection area	(V) 15 0 1 1 1 1 1 1 1 1 1 1 1 1 1	
(LG)	Ground		Jouput	ed with ignition	When Intelligent Key is not in the antenna detection area	(V) 15 10 5 0 1 s JMKIA0063GB

< ECU DIAGNOSIS INFORMATION >

Terminal No.		Description				Value	
(Wire +	e color) –	Signal name	Input/ Output		Condition	(Approx.)	
78		Room antenna 1 (–)		Ignition switch	When Intelligent Key is in the passenger compart- ment	(V) 15 10 5 0 1 s JMKIA0062GB	
(Y) Grour	Ground	(Instrument panel)	Output	ŎFF	When Intelligent Key is not in the passenger compart- ment	(V) 15 10 5 0 1 s JMKIA0063GB	
79		Room antenna 1 (+) (Instrument panel)		It Ignition switch OFF	When Intelligent Key is in the passenger compart- ment	(V) 15 0 10 10 10 10 10 10 10 10 10	
79 (BR)	Ground				When Intelligent Key is not in the passenger compart- ment	(V) 15 0 1 1 1 1 1 1 1 1 1 1 1 1 1	
80 (GR)	Ground	NATS antenna amp.	Input/ Output	During waiting	Ignition switch is pressed while inserting the key into the key slot.	Just after pressing ignition switch. Pointer of tester should move.	
81 (W)	Ground	NATS antenna amp.	Input/ Output	During waiting	Ignition switch is pressed while inserting the key into the key slot.	Just after pressing ignition switch. Pointer of tester should move.	
82	Ground	Ignition relay [Fuse	Output	Ignition switch	OFF or ACC	0 V	
(R)	0.00110	block (J/B)] control	- apar		ON	Battery voltage	

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	inal No.	Description				Value
(VVire +	e color)	Signal name	Input/ Output		Condition	(Approx.)
83	Ground	Remote keyless entry			(V) 15 10 50 1 ms JMKIA0064GB	
(Y)	(Y) Cround	receiver communica- tion	Output	When operating ei	ther button on the key	(V) 15 10 5 0 1 ms JMKIA0065GB
87		Combination switch INPUT 5	Input	Combination switch	All switches OFF (Wiper intermittent dial 4)	(V) 15 0 10 10 10 10 10 10 10 10 10
	Ground				Front fog lamp switch ON (Wiper intermittent dial 4)	(V) 15 0 2 ms JPMIA0037GB 1.3 V
(BR)					Rear wiper switch ON (Wiper intermittent dial 4)	(V) 15 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 0 2 ms JPMIA0040GB 1.3 V

	inal No.	Description				Value	А
(Wir) +	e color) –	Signal name	Input/ Output		Condition	(Approx.)	
					All switches OFF (Wiper intermittent dial 4)	(V) 15 0 2 ms JPMIA0041GB 1.4 V	B C D
					Lighting switch HI (Wiper intermittent dial 4)	(V) 15 0 2.ms. JPMIA0036GB 1.3 V	E
88 (V)	Ground	Combination switch INPUT 3	Input	Combination switch	Lighting switch 2ND (Wiper intermittent dial 4)	(V) 15 0 2 ms JPMIA0037GB 1.3 V	G H
					Rear washer switch ON (Wiper intermittent dial 4)	(V) 15 0 2 ms JPMIA0039GB 1.3 V	J K WW
					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 1.3 V	M
89 (BR)	Ground	Push-button ignition switch (Push switch)	Input	Push-button igni- tion switch (push switch)	Pressed Not pressed	0 V Battery voltage	0
90 (P)	Ground	CAN-L	Input/ Output	_		_	Ρ
91 (L)	Ground	CAN-H	Input/ Output				

	inal No.	Description				
(Wire +	e color) –	Signal name	Input/ Output		Condition	Value (Approx.)
					OFF	Battery voltage
92 (LG)	Ground	Key slot illumination	Output	Key slot illumina- tion	Blinking	(V) 15 0 1 s JPMIA0015GB 6.5 V
					ON	0 V
93	Ground	ON indicator lamp	Output	Ignition switch	OFF or ACC	Battery voltage
(V)				.g	ON	0 V
94	Ground	Buddle lamp control	Output	Buddle leme	OFF	Battery voltage
(Y)	Ground	Puddle lamp control	Output	Puddle lamp	ON	0 V
95		100 J	0 1 1	to alternation of the t	OFF	0 V
(O)	Ground	ACC relay control	Output	Ignition switch	ACC or ON	Battery voltage
96 (GR)	Ground	A/T shift selector (De- tention switch) power supply	Output	_		Battery voltage
97 (L)	Ground	Steering lock condi- tion No. 1	Input	Steering lock	LOCK status UNLOCK status	0 V
						Battery voltage
98 (P)	Ground	Steering lock condi- tion No. 2	Input	Steering lock	LOCK status UNLOCK status	Battery voltage
99		Selector lever P posi-			P position	0 V
(R)	Ground	tion switch	Input	Selector lever	Any position other than P	Battery voltage
					ON (Pressed)	0 V
100 (G)	Ground	Passenger door re- quest switch	Input	Passenger door request switch	OFF (Not pressed)	(V) 15 10 5 0 10 ms JPMIA0016GB 1.0 V
					ON (Pressed)	0 V
101 (SB)	Ground	Driver door request switch	Input	Driver door re- quest switch	OFF (Not pressed)	(V) 15 10 5 0 10 ms JPMIA0016GB
					OFF or ACC	1.0 V
102 (O)	Ground	Blower fan motor re- lay control	Output	Ignition switch	OFF or ACC ON	0 V
(0)						Battery voltage

	ninal No.	Description	1			Value
(VVir +	e color) –	Signal name	Input/ Output		Condition	(Approx.)
103 (LG)	Ground	Remote keyless entry receiver power sup- ply	Output	Ignition switch Of	F	Battery voltage
106 (W)	Ground	Steering lock unit power supply	Output	Ignition switch	OFF or ACC ON	Battery voltage
			Combination switch (Wiper intermit- tent dial 4)	All switches OFF	(V) 15 10 2 ms JPMIA0041GB 1.4 V	
	Combination switch INPUT 1	Input		Turn signal switch LH	(V) 15 10 2 ms JPMIA0037GB 1.3 V	
				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 1.3 V
					Front washer switch ON	(V) 15 10 5 0 2 ms JPMIA0039GB 1.3 V

	inal No.	Description				Value
(vvire +	e color) –	Signal name	Input/ Output		Condition	(Approx.)
					All switches OFF (Wiper intermittent dial 4)	(V) 15 0 2 ms JPMIA0041GB 1.4 V
					Lighting switch AUTO (Wiper intermittent dial 4)	(V) 15 0 2 ms JPMA0038GB 1.3 V
108 (R)	Ground	Combination switch INPUT 4	Input	Combination switch	Lighting switch 1ST (Wiper intermittent dial 4)	(V) 15 0 2 ms JPMIA0036GB 1.3 V
					Rear wiper switch INT (Wiper intermittent dial 4)	(V) 15 0 2 ms JPMIA0040GB 1.3 V
					Any of the conditions below with all switches OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	(V) 15 0 2 ms JPMA0039GB 1.3 V

	inal No.	Description				Value	
	e color) _	Signal name	Input/ Output		Condition	(Approx.)	А
+			Output		All switches OFF	(V) 15 10 5 0 2 ms JPMIA0041GB 1.4 V	B C D
109 (Y) G		Combination switch INPUT 2	Input	Combination switch (Wiper intermit- tent dial 4)	Lighting switch PASS	(V) 15 10 5 0 2 ms JPMIA0037GB 1.3 V	E
	Ground				Lighting switch 2ND	(V) 15 0 2 ms 2 ms JPMIA0036GB 1.3 V	G
					Front wiper switch INT	(V) 15 0 2 ms JPMIA0038GB 1.3 V	J K WW
					Front wiper switch HI	(V) 15 0 2 ms 	M
					ON	0 V	0
110 (G)	Ground	Hazard switch	Input	Hazard switch	OFF	(V) 15 10 5 0 10 ms JPMIA0012GB 1.1 V	Ρ

	inal No.	Description				Value
(VVire +	e color) -	Signal name	Input/ Output		Condition	(Approx.)
111	Ground	Steering lock unit	Input/		LOCK status	Battery voltage
(Y)	Ground	communication	Output	Steering lock	For 15 seconds after UN- LOCK	50 ms JMKIA0066GB
					15 seconds or later after UNLOCK	0 V
113	Ground	Optical sensor	Input	Ignition switch	When bright outside of the vehicle	Close to 5 V
(P)	Ground	Oplical sensor	input	ON When dark outside o vehicle	When dark outside of the vehicle	Close to 0 V
116 (SB)	Ground	Stop lamp switch 1	Input	_		Battery voltage
		Stop lamp switch 2 (Without ICC)	- Input	Stop lamp switch	OFF (Brake pedal is not depressed)	0 V
118	Ground				ON (Brake pedal is de- pressed)	Battery voltage
(P)		Stop lamp switch 2 (With ICC)		Stop lamp switch OFF (Brake pedal is not de- pressed) and ICC brake hold relay OFF		0 V
				Stop lamp switch ON (Brake pedal is de- pressed) or ICC brake hold relay ON		Battery voltage
119 (SB)	Ground	Front door lock as- sembly driver side (Unlock sensor)	Input	Driver door	LOCK status (Unlock sensor switch OFF)	(V) 15 10 10 ms JPMIA0012GB 1.1 V
					UNLOCK status (Unlock switch sensor ON)	0 V
121	Ground	Key slot switch	Input	-	serted into key slot	Battery voltage
(BR)				When the key is no	ot inserted into key slot	0 V
123	Ground	IGN feedback	Input	Ignition switch	OFF or ACC	0 V
(W)					ON	Battery voltage

< ECU DIAGNOSIS INFORMATION >

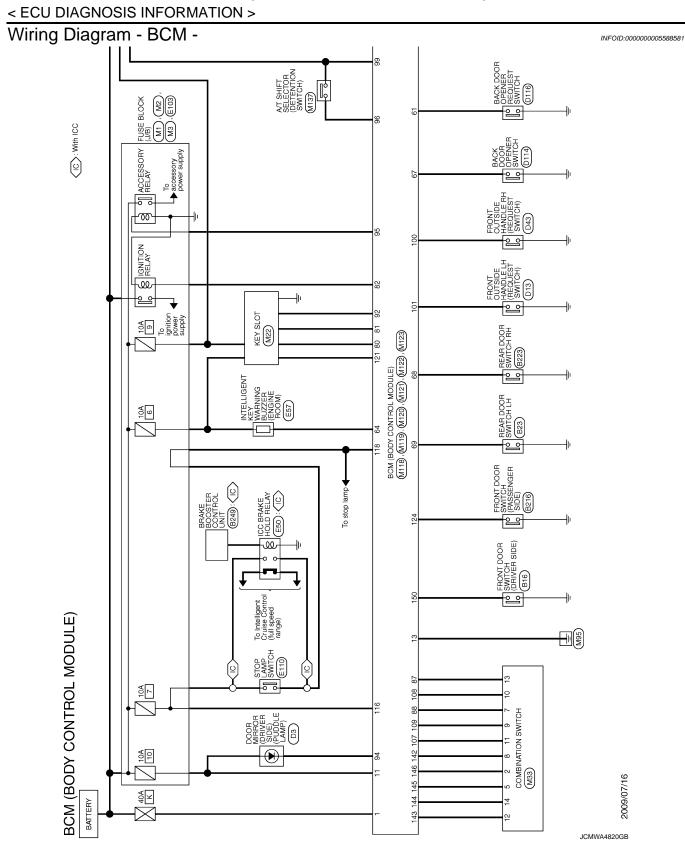
	inal No.	Description				Value	Λ
(VVire +	e color) –	Signal name	Input/ Output		Condition	(Approx.)	А
124 (LG)	Ground	Passenger door switch	Input	Passenger door switch	OFF (Door close)	(V) 15 0 10 10 ms JPMIA0011GB 11.8 V	B C D
					ON (Door open)	0 V	
132 (BR)	Ground	Power window switch communication	Input/ Output	Ignition switch ON		(V) 15 0 10 ms 10 ms JPMA0013GB 10.2 V	E F G
				Ignition switch OF	F or ACC	Battery voltage	
					ON (Tail lamps OFF)	9.5 V	Н
						NOTE: The pulse width of this wave is varied by the illumination bright- ening/dimming level.	I
133 (W)	Ground	Push-button ignition switch illumination		Push-button igni- tion switch illumi- nation	ON (Tail lamps ON)	(V) 15 0 0 0 0 0 0 0 0 0 0 0 0 0	J
					OFF	0 V	
134	Ground	LOCK indicator lamp	Output	LOCK indicator	OFF	Battery voltage	WW
(GR)		-		lamp	ON	0 V	
137 (O)	Ground	Receiver and sensor ground	Input	Ignition switch ON		0 V	M
138	Ground	Receiver and sensor	Output	Ignition switch	OFF	0 V	
(Y)	Cround	power supply	Caiput	.grider ownor	ACC or ON	5.0 V	Ν

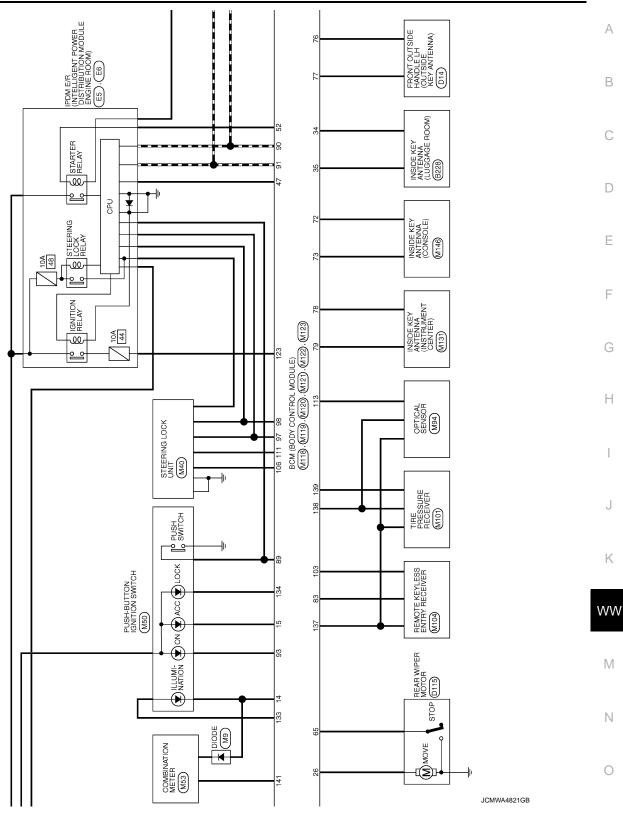
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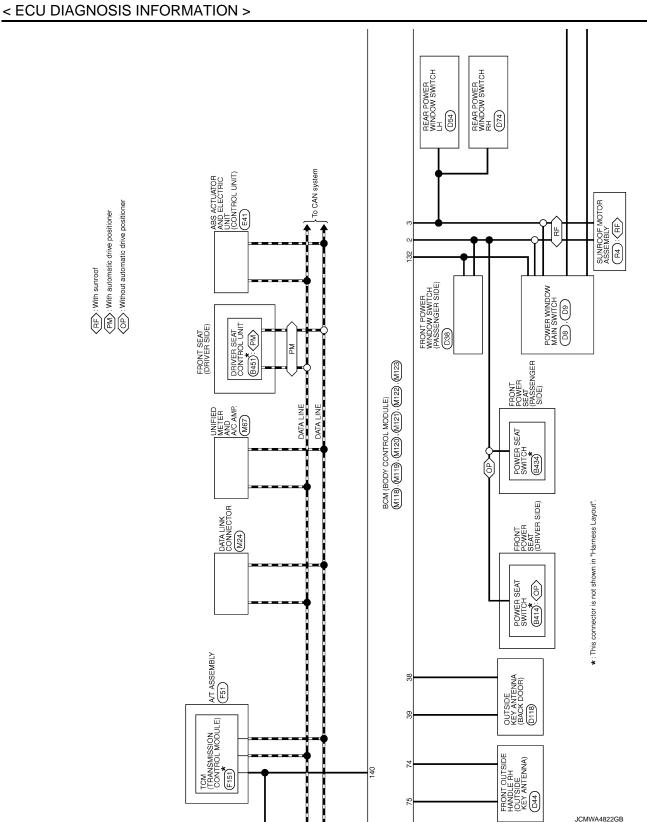
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Terminal No. (Wire color)		Description				Value	
(VVIr +		Signal name Input/ Output		Condition		(Approx.)	
139 (L)	Ground	Tire pressure receiv- er communication	Input/ Output	Ignition switch ON	Standby state	(V) 4 0 0 0 0 0 0 0 0 0 0 0 0 0	
					When receiving the signal from the transmitter	(V) 4 2 0 + 0.2s OCC3880D	
140	Ground	Selector lever P/N	Input	Selector lever	P or N position	Battery voltage	
(GR)		position			Except P and N positions ON	0 V 0 V	
141 (G)	Ground	Security indicator	Output	Security indicator	Blinking	(V) 15 0 1 s JPMIA0014GB 11.3 V	
					OFF	Battery voltage	
142 (O)	Ground	Combination switch OUTPUT 5	Output	Combination switch (Wiper intermit- tent dial 4)	All switches OFF Lighting switch 1ST Lighting switch HI Lighting switch 2ND Turn signal switch RH	0 V	
143 (P)	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	

Terminal No.		Description				Value	
(Wire +	e color) –	Signal name	Input/ Output		Condition	Value (Approx.)	A
144 (G)	Ground	Combination switch OUTPUT 2	Output	Combination switch	All switches OFF (Wiper intermittent dial 4)	0 V	В
					Front washer switch ON (Wiper intermittent dial 4)	(V) 15 0 2.ms JPMIA0033GB 10.7 V	
					Rear wiper switch ON (Wiper intermittent dial 4)		С
					Rear washer switch ON (Wiper intermittent dial 4)		D
					Any of the conditions below with all switches OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6		E
145 (L)	Ground	Combination switch OUTPUT 3	Output	Combination switch (Wiper intermit- tent dial 4)	All switches OFF	0 V	F
					Front wiper switch INT		
					Front wiper switch LO		
					Lighting switch AUTO		G
							Н
						JPMIA0034GB 10.7 V	
146 (SB)	Ground	Combination switch OUTPUT 4	Output	Combination switch (Wiper intermit- tent dial 4)	All switches OFF	0 V	I
					Front fog lamp switch ON		
					Lighting switch 2ND	(V) 15	1
					Lighting switch PASS		0
					Turn signal switch LH		
						2 ms	Κ
						10.7 V	
149 (W)	Ground	Tire pressure warn- ing check switch	Input			(V)	WW
						15 15	
				Ignition switch ON			M
				5			
						10 ms	Ν
					Γ	11.8 V	
	Ground	Driver door switch	Input	Driver door switch		(V)	0
					OFF (Door close)	15 10 5	0
150						0	
(LG)						10 ms	Ρ
						JPMIA0011GB	
					ON (Door open)	11.8 V 0 V	
151 (G)	Ground	Rear window defog- ger relay control	Output	Rear window de- fogger	Active	0 V	
					Not activated	Battery voltage	
				l	l	, ,	



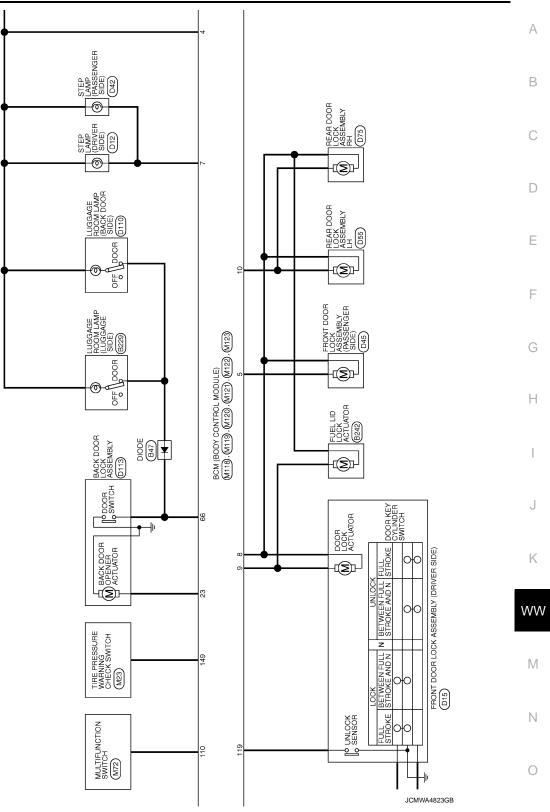




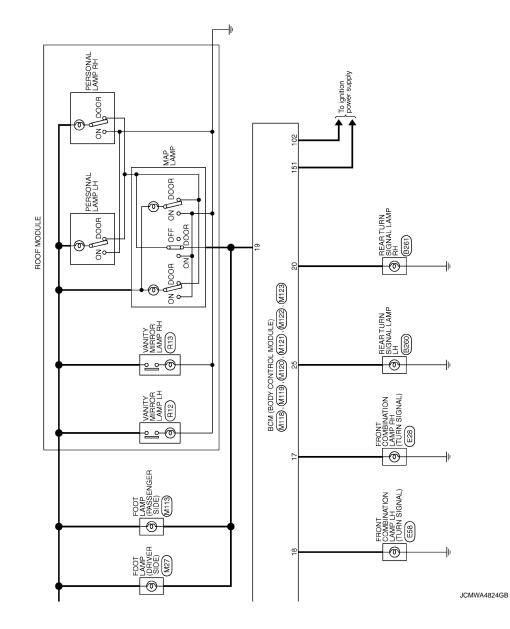


Revision: 2009 August

< ECU DIAGNOSIS INFORMATION >



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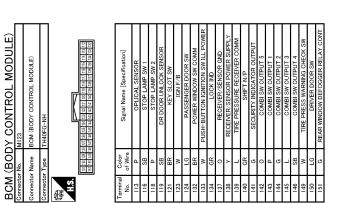


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< ECU DIAGNOSIS INFORMATION >

Revision: 2009 August

< ECU DIAGNOSIS INFORMATION >



JCMWA4826GB

INFOID:000000005588582

Fail-safe

FAIL-SAFE CONTROL BY DTC

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

Display contents of CONSULT	Fail-safe	Cancellation
B2013: ID DISCORD BCM-S/L	Inhibit engine cranking	Erase DTC
B2014: CHAIN OF S/L-BCM	Inhibit engine cranking	Erase DTC
B2190: NATS 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 $ON \rightarrow OFF$
B2557: VEHICLE SPEED	Inhibit steering lock	When normal vehicle speed signals are received from ABS actua- tor and electric unit (control unit) for 500 ms
B2560: STARTER CONT RELAY	Inhibit engine cranking	 500 ms after the following CAN signal communication status be- comes consistent Starter control relay signal Starter relay status signal
B2601: SHIFT POSITION	Inhibit steering lock	 500 ms after the following signal reception status becomes consistent Selector lever P position switch signal P range signal (CAN)
B2602: SHIFT POSITION	Inhibit steering lock	 5 seconds after the following BCM recognition conditions are fulfilled Ignition switch is in the ON position Selector lever P position switch signal: Except P position (battery voltage) Vehicle speed: 4 km/h (2.5 MPH) or more
B2603: SHIFT POSI STATUS	Inhibit steering lock	 500 ms after the following BCM recognition conditions are fulfilled Ignition switch is in the ON position Selector lever P position switch signal: Except P position (battery voltage) Selector lever P/N position signal: Except P and N positions (0 V)
B2604: PNP SW	Inhibit steering lock	 500 ms after any of the following BCM recognition conditions are fulfilled Status 1 Ignition switch is in the ON position Selector lever P/N position signal: P and N position (battery voltage) P range signal or N range signal (CAN): ON Status 2 Ignition switch is in the ON position Selector lever P/N position signal: Except P and N positions (0 V) P range signal and N range signal (CAN): OFF
B2605: PNP SW	Inhibit steering lock	 500 ms after any of the following BCM recognition conditions are fulfilled Ignition switch is in the ON position Power position: IGN Selector lever P/N position signal: Except P and N positions (0 V) Interlock/PNP switch signal (CAN): OFF Status 2 Ignition switch is in the ON position Selector lever P/N position signal: P or N position (battery voltage) PNP switch signal (CAN): ON
B2606: S/L RELAY	Inhibit engine cranking	 500 ms after the following CAN signal communication status becomes consistent Steering lock relay signal (Request signal) Steering lock relay signal (Condition signal)

< ECU DIAGNOSIS INFORMATION >

Display contents of CONSULT	Fail-safe	Cancellation
B2607: S/L RELAY	Inhibit engine cranking	 500 ms after the following CAN signal communication status becomes consistent Steering lock relay signal (Request signal) Steering lock relay signal (Condition 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)
B2609: S/L STATUS	Inhibit engine crankingInhibit steering lock	 When the following steering lock conditions agree BCM steering lock control status Steering lock condition No. 1 signal status Steering lock condition No. 2 signal status
B260A: IGNITION RELAY	Inhibit engine cranking	 500 ms after the following conditions are fulfilled IGN relay (IPDM E/R) control signal: OFF (Battery voltage) Ignition ON signal (CAN to IPDM E/R): OFF (Request signal) Ignition ON signal (CAN from IPDM E/R): OFF (Condition signal)
B260F: ENG STATE SIG LOST	Maintains the power supply position attained at the time of DTC detection	When any of the following conditions are fulfilledPower position changes to ACCReceives engine status signal (CAN)
B2612: S/L STATUS	Inhibit engine crankingInhibit steering lock	 When any of the following conditions are fulfilled Steering lock unit status signal (CAN) is received normally The BCM steering lock control status matches the steering lock status recognized by the steering lock unit status signal (CAN from IPDM E/R)
B2617: STARTER RELAY CIRC	Inhibit engine cranking	1 second after the starter motor relay control inside BCM becomes normal
B2618: BCM	Inhibit engine cranking	1 second after the ignition relay (IPDM E/R) control inside BCM be- comes normal
B2619: BCM	Inhibit engine cranking	1 second after the steering lock unit power supply output control in- side BCM becomes normal
B261E: VEHICLE TYPE	Inhibit engine cranking	BCM initialization
B26E9: S/L STATUS	Inhibit engine crankingInhibit steering lock	 When BCM transmits the LOCK request signal to steering lock unit, and receives LOCK response signal from steering lock unit, the following conditions are fulfilled Steering condition No. 1 signal: LOCK (0 V) Steering condition No. 2 signal: LOCK (Battery voltage)

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.

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

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

DTC Inspection Priority Chart

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

WW-80

< ECU DIAGNOSIS INFORMATION >

Priority	DTC	
1	B2562: LOW VOLTAGE	
	U1000: CAN COMM CIRCUIT	
2	U1010: CONTROL UNIT (CAN)	
	B2190: NATS ANTENNA AMP	
	B2191: DIFFERENCE OF KEY	
3	B2192: ID DISCORD BCM-ECM	
	B2193: CHAIN OF BCM-ECM	
	B2195: ANTI SCANNING	
	B2013: ID DISCORD BCM-S/L	
	B2014: CHAIN OF S/L-BCM	
	B2553: IGNITION RELAY	
	B2555: STOP LAMP	
	B2556: PUSH-BTN IGN SW	
	B2557: VEHICLE SPEED B2560: STARTER CONT RELAY	
	B2601: SHIFT POSITION	
	B2602: SHIFT POSITION	
	B2603: SHIFT POSI STATUS	
	• B2604: PNP SW	
	• B2605: PNP SW	
	• B2606: S/L RELAY	
	• B2607: S/L RELAY	
	B2608: STARTER RELAY	
	B2609: S/L STATUS	
4	B260A: IGNITION RELAY B260B: STEERING LOCK UNIT	
	B260C: STEERING LOCK UNIT	
	B260D: STEERING LOCK UNIT	
	B260F: ENG STATE SIG LOST	
	• B2612: S/L STATUS	
	B2614: ACC RELAY CIRC	
	B2615: BLOWER RELAY CIRC	
	B2616: IGN RELAY CIRC	
	B2617: STARTER RELAY CIRC	
	• B2618: BCM	
	 B2619: BCM B261A: PUSH-BTN IGN SW 	
	B261E: VEHICLE TYPE	
	B26E9: S/L STATUS	
	B26EA: KEY REGISTRATION	
	C1729: VHCL SPEED SIG ERR	
	U0415: VEHICLE SPEED SIG	
	C1704: LOW PRESSURE FL	
	C1705: LOW PRESSURE FR	
	C1706: LOW PRESSURE RR	
	C1707: LOW PRESSURE RL	
	 C1708: [NO DATA] FL C1709: [NO DATA] FR 	
5	 C1709: [NO DATA] FR C1710: [NO DATA] RR 	
0	C1710: [NO DATA] RL C1711: [NO DATA] RL	
	C1716: [PRESSDATA ERR] FL	
	C1717: [PRESSDATA ERR] FR	
	C1718: [PRESSDATA ERR] RR	
	C1719: [PRESSDATA ERR] RL	
	C1734: CONTROL UNIT	
	B2621: INSIDE ANTENNA	
6	B2622: INSIDE ANTENNA	
	B2623: INSIDE ANTENNA	

DTC Index

< ECU DIAGNOSIS INFORMATION >

- 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-16, "COM-MON ITEM : CONSULT-III Function (BCM - COMMON ITEM)"</u>.

CONSULT display	Fail-safe	Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle Condi- tion	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
No DTC is detected. further testing may be required.	_	_	_	_	_
U1000: CAN COMM CIRCUIT	—	—		_	BCS-37
U1010: CONTROL UNIT (CAN)	—	—	_	—	BCS-38
U0415: VEHICLE SPEED SIG	—	—	—	_	BCS-39
B2013: ID DISCORD BCM-S/L	×	×		—	<u>SEC-48</u>
B2014: CHAIN OF S/L-BCM	×	×		—	<u>SEC-49</u>
B2190: NATS ANTENNA AMP	×	—	—	—	<u>SEC-41</u>
B2191: DIFFERENCE OF KEY	×	—	—	—	<u>SEC-44</u>
B2192: ID DISCORD BCM-ECM	×	—		—	<u>SEC-45</u>
B2193: CHAIN OF BCM-ECM	×	—		_	<u>SEC-46</u>
B2195: ANTI SCANNING	×	—	_	—	<u>SEC-47</u>
B2553: IGNITION RELAY	—	×		—	PCS-49
B2555: STOP LAMP	—	×		—	<u>SEC-52</u>
B2556: PUSH-BTN IGN SW	—	×	×	—	<u>SEC-54</u>
B2557: VEHICLE SPEED	×	×	×	—	<u>SEC-56</u>
B2560: STARTER CONT RELAY	×	×	×	—	<u>SEC-57</u>
B2562: LOW VOLTAGE	_	×	_	_	BCS-40
B2601: SHIFT POSITION	×	×	×	_	<u>SEC-58</u>
B2602: SHIFT POSITION	×	×	×	—	<u>SEC-61</u>
B2603: SHIFT POSI STATUS	×	×	×	_	<u>SEC-63</u>
B2604: PNP SW	×	×	×	_	<u>SEC-66</u>
B2605: PNP SW	×	×	×	_	<u>SEC-68</u>
B2606: S/L RELAY	×	×	×	_	<u>SEC-70</u>
B2607: S/L RELAY	×	×	×		<u>SEC-71</u>
B2608: STARTER RELAY	×	×	×	_	<u>SEC-73</u>
B2609: S/L STATUS	×	×	×	_	<u>SEC-75</u>
B260A: IGNITION RELAY	×	×	×	_	PCS-51
B260B: STEERING LOCK UNIT	_	×	×		<u>SEC-79</u>
B260C: STEERING LOCK UNIT	_	×	×	_	<u>SEC-80</u>
B260D: STEERING LOCK UNIT		×	×		<u>SEC-81</u>
B260F: ENG STATE SIG LOST	×	×	×	_	<u>SEC-82</u>
B2612: S/L STATUS	×	×	×		<u>SEC-86</u>
B2614: ACC RELAY CIRC		×	×	_	PCS-53
B2615: BLOWER RELAY CIRC	—	×	×	_	PCS-56
B2616: IGN RELAY CIRC		×	×		PCS-59

< ECU DIAGNOSIS INFORMATION >

CONSULT display	Fail-safe	Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle Condi- tion	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page	
B2617: STARTER RELAY CIRC	×	×	×	—	<u>SEC-90</u>	-
B2618: BCM	×	×	×	_	PCS-62	-
B2619: BCM	×	×	×	_	<u>SEC-92</u>	-
B261A: PUSH-BTN IGN SW	—	×	×	_	<u>SEC-93</u>	-
B261E: VEHICLE TYPE	×	×	× (Turn ON for 15 seconds)	_	<u>SEC-96</u>	-
B2621: INSIDE ANTENNA	_	×	—	_	DLK-59	_
B2622: INSIDE ANTENNA	—	×	—		DLK-61	-
B2623: INSIDE ANTENNA	—	×	—	—	DLK-63	_
B26E1: ENG STATE NO RES	×	×	×	_	<u>SEC-83</u>	_
B26E9: S/L STATUS	×	×	× (Turn ON for 15 seconds)	_	<u>SEC-84</u>	_
B26EA: KEY REGISTRATION	_	×	× (Turn ON for 15 seconds)	_	<u>SEC-85</u>	-
C1704: LOW PRESSURE FL	—	—	—	×		_
C1705: LOW PRESSURE FR	_	—	—	×	WT-25	
C1706: LOW PRESSURE RR	—	—	—	×	<u>vv1-25</u>	
C1707: LOW PRESSURE RL	—	—	—	×		
C1708: [NO DATA] FL	—	—	—	×		-
C1709: [NO DATA] FR	—	—	—	×	WT-27	
C1710: [NO DATA] RR	—	—	—	×	<u>vv1-27</u>	
C1711: [NO DATA] RL	—	—	—	×		
C1716: [PRESSDATA ERR] FL	—	—	—	×		_
C1717: [PRESSDATA ERR] FR	—	—	—	×	WT-30	
C1718: [PRESSDATA ERR] RR	—	—	—	×	<u>vv1-30</u>	_
C1719: [PRESSDATA ERR] RL	—	—	—	×		
C1729: VHCL SPEED SIG ERR	—	—	—	×	<u>WT-32</u>	
C1734: CONTROL UNIT	—	—	—	×	<u>WT-34</u>	_

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IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) < ECU DIAGNOSIS INFORMATION >

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

Reference Value

INFOID:000000005612302

VALUES ON THE DIAGNOSIS TOOL

Monitor Item		Condition	Value/Status	
RAD FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	0 – 100 %	
		A/C switch OFF	Off	
AC COMP REQ	Engine running	A/C switch ON (Compressor is operating)	On	
	Lighting switch OFF		Off	
TAIL&CLR REQ	Lighting switch 1ST, 2ND, HI or	AUTO (Light is illuminated)	On	
	Lighting switch OFF		Off	
HL LO REQ	Lighting switch 2ND HI or AUTC) (Light is illuminated)	On	
	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		
		Front wiper switch LO	Low	
		Front wiper switch HI	Hi	
		Front wiper stop position	STOP P	
WIP AUTO STOP		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 opera- tion	BLOCK	
IGN RLY1 -REQ	Ignition switch OFF or ACC		Off	
	Ignition switch ON		On	
IGN RLY	Ignition switch OFF or ACC		Off	
	Ignition switch ON	On		
PUSH SW	Release the push-button ignition	n switch	Off	
	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			
	At engine cranking		On	
IHBT RLY -REQ	Ignition switch ON		Off	
	At engine cranking		On	

< ECU DIAGNOSIS INFORMATION >

Monitor Item		Value/Status			
	Ignition switch ON	Off			
	At engine cranking		$INHI\;ON\toST\;ON$		
ST/INHI RLY		arter control relay cannot be recognized by , etc. when the starter relay is ON and the	UNKWN		
DETENT SW	Ignition switch ON	 Press the selector button with selector lever in P position Selector lever in any position other than P 	Off		
	Release the selector button with	th selector lever in P position	On		
	None of the conditions below a	are present	Off		
S/L RLY -REQ	seconds)	Press the push-button ignition switch when the steering lock is activat-			
	Steering lock is activated		LOCK		
S/L STATE	Steering lock is deactivated	UNLOCK			
	[DTC: B210A] is detected		UNKWN		
DTRL REQ	NOTE: The item is indicated, but not n	Off			
OIL P SW	Ignition switch OFF, ACC or en	igine running	Open		
OIL P SVV	Ignition switch ON		Close		
HOOD SW	Close the hood		Off		
	Open the hood		On		
HL WASHER REQ	NOTE: The item is indicated, but not n	nonitored.	Off		
	Not operation		Off		
THFT HRN REQ	 Panic alarm is activated Horn is activated with VEHIC TEM 	On			
	Not operating		Off		
HORN CHIRP	Door locking with Intelligent Ke	ey (horn chirp mode)	On		
CRNRNG LMP REQ	NOTE: The item is indicated, but not n	nonitored.	Off		

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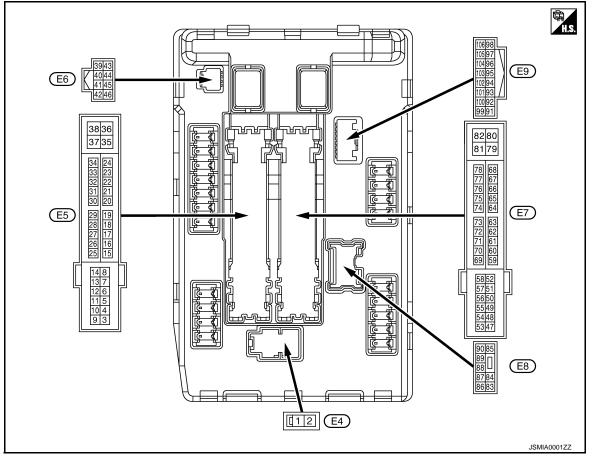
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< ECU DIAGNOSIS INFORMATION >

TERMINAL LAYOUT



PHYSICAL VALUES

	inal No.	Description				Value
(VVire +	e color) –	Signal name	Input/ Output	Condition		(Approx.)
1 (W)	Ground	Battery power supply	Input	Ignition swi	tch OFF	Battery voltage
2 (L)	Ground	Battery power supply	Input	Ignition swi	tch OFF	Battery voltage
4	Oround	FrontwinerLO	Quitaut	Ignition	Front wiper switch OFF	0 V
(V)	Ground	Front wiper LO	Output	switch ON	Front wiper switch LO	Battery voltage
5	Cround	Front win or HI	Quitout	Ignition	Front wiper switch OFF	0 V
(L)	Ground	Front wiper HI	Output	switch ON	Front wiper switch HI	Battery voltage
7	Ground	Tail, license plate lamps &	Quitout	Ignition	Lighting switch OFF	0 V
(R)	Ground	interior lamps	Output	switch ON	Lighting switch 1ST	Battery voltage
				Ignition switch OFF	A few seconds after open- ing the driver door	Battery voltage
11 (BR)	Ground	Steering lock unit power supply	Output	Ignition switch LOCK	Press the push-button ig- nition switch	Battery voltage
				Ignition swi	tch ACC or ON	0 V
12 (B/W)	Ground	Ground	_	Ignition switch ON		0 V

	inal No.	Description					-
(Wire +	e color) –	Signal name	Input/ Output	•	Condition	Value (Approx.)	А
13					tely 1 second or more after ignition switch ON	0 V	В
(Y)	Ground	Fuel pump power supply	Output		nately 1 second after turning on switch ON unning	Battery voltage	С
16				Ignition	Front wiper stop position	0 V	_
(LG)	Ground	Front wiper auto stop	Input	switch ON	Any position other than front wiper stop position	Battery voltage	D
19	Ground	Ignition relay power supply	Output	Ignition swi	tch OFF	0 V	_
(W)	Cround	ignition roldy power supply	Output	Ignition swi	tch ON	Battery voltage	- E
25	Ground	Ignition relay power supply	Output	Ignition swi	tch OFF	0 V	
(G)	Ground	Ignition relay power supply	Output	Ignition swi	tch ON	Battery voltage	_
26*	Cround	Ignition roley newer symply	Quitout	Ignition swi	tch OFF	0 V	F
(R)	Ground	Ignition relay power supply	Output	Ignition swi	tch ON	Battery voltage	_
27	<u> </u>			Ignition swi	tch OFF or ACC	Battery voltage	-
(O)	Ground	Ignition relay monitor	Input	Ignition swi	tch ON	0 V	G
28		Push-button ignition		Press the p	oush-button ignition switch	0 V	_
(L)	Ground	switch	Input	Release the	e push-button ignition switch	Battery voltage	- н
30	Ground	Starter relay control	Input	Ignition	Selector lever in any posi- tion other than P or N	0 V	
(GR)		,		switch ON	Selector lever P or N	Battery voltage	-
32	• •	Steering lock unit condi-		Steering lo	ck is activated	0 V	-
(L)	Ground	tion-1	Input	Steering lo	ck is deactivated	Battery voltage	-
33	<u> </u>	Steering lock unit condi-		Steering lo	ck is activated	Battery voltage	- J
(P)	Ground	tion-2	Input	Steering lo	ck is deactivated	0 V	-
36 (G)	Ground	Battery power supply	Input	Ignition swi	itch OFF	Battery voltage	K
39 (P)	—	CAN-L	Input/ Output		_	-	W
40 (L)		CAN-H	Input/ Output		_	_	
41 (B/W)	Ground	Ground	_	Ignition swi	itch ON	0 V	M
42	Ground	Cooling fan relay control	Input	Ignition swi	tch OFF or ACC	0 V	_
(Y)	C icalia		p ut	Ignition switch ON		0.7 V	N
43 (SB)	Ground	A/T shift selector (Detention switch)	Input	Ignition switch ON	 Press the selector but- ton (Selector lever P) Selector lever in any po- sition other than P 	Battery voltage	С
					Release the selector but- ton (selector lever P)	0 V	
44	Ground	Horn rolay control	Innut	The horn is	deactivated	Battery voltage	- P
(BR)	Ground	Horn relay control	Input	The horn is	activated	0 V	-
45	Creation		المحمد	The horn is	deactivated	Battery voltage	
(G)	Ground	Anti theft horn relay control	Input	The horn is	activated	0 V	

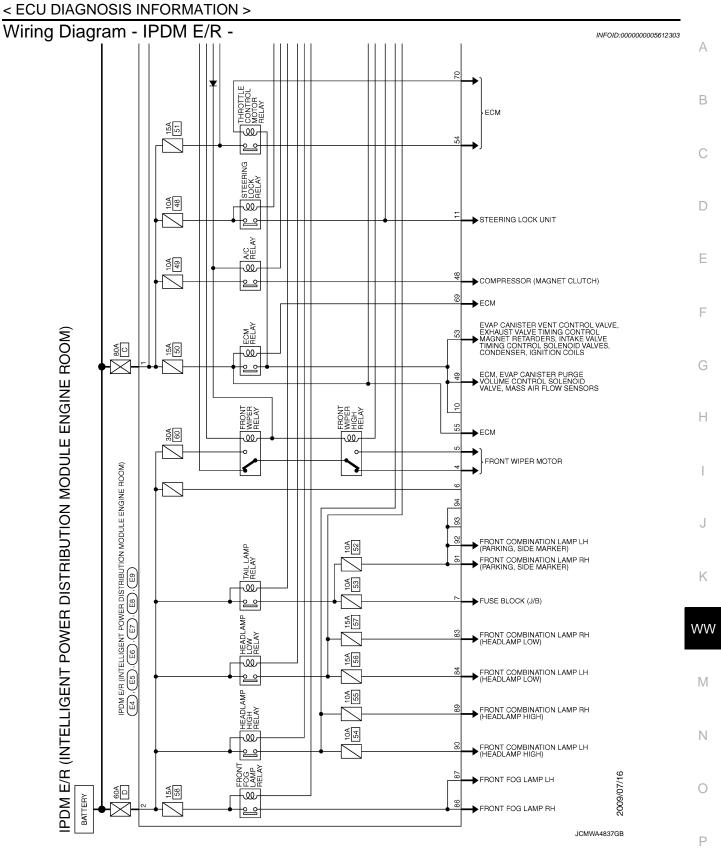
	inal No. e color)	Description			0	Value
+	-	Signal name	Input/ Output	Condition		(Approx.)
46 (R)	Ground	Starter relay control	Input	Ignition Switch ON		0 V
(13)				SWITCH ON	Selector lever P or N	Battery voltage
					A/C switch OFF	0 V
48 (L)	Ground	A/C relay power supply	Output	Engine running	A/C switch ON (A/C compressor is oper- ating)	Battery voltage
49				Ignition sw (More than ignition swi	a few seconds after turning	0 V
(O)	Ground	ECM relay power supply	Output	 Ignition s Ignition s (For a fe tion swite 	witch OFF w seconds after turning igni-	Battery voltage
51	Ground	Ignition relay power supply	Output	Ignition sw	itch OFF	0 V
(Y)	Ground	ignition relay power supply	Juipui	Ignition sw	itch ON	Battery voltage
50				Ignition sw (More than ignition swi	a few seconds after turning	0 V
53 (W)	Ground	ECM relay power supply	Output	 Ignition s Ignition s (For a fe tion swite 	witch OFF w seconds after turning igni-	Battery voltage
54		Throttle control motor re-		Ignition sw (More than ignition swi	a few seconds after turning	0 V
(P)	Ground	lay power supply	Output	 Ignition s Ignition s (For a fe tion swite) 	witch OFF w seconds after turning igni-	Battery voltage
55 (SB)	Ground	ECM power supply	Output	Ignition sw	itch OFF	Battery voltage
56	Cround	Ignition roley newer supply	Output	Ignition sw	itch OFF	0 V
(LG)	Ground	Ignition relay power supply	Output	Ignition sw	itch ON	Battery voltage
57	Ground	Ignition relay power supply	Output	Ignition sw	tch OFF	0 V
(G)	Cround	.gon roldy power ouppry	Calput	Ignition sw	itch ON	Battery voltage
58	Ground	Ignition relay power supply	Output	Ignition sw	itch OFF	0 V
(V)		·9·········9·····		Ignition sw	itch ON	Battery voltage
69				Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		Battery voltage
(BR)	Ground	ECM relay control	Output	 Ignition switch ON Ignition switch OFF (For a few seconds after turning igni- tion switch OFF) 		0 – 1.5 V
70 (O)	Ground	Throttle control motor re- lay control	Output	_	itch ON \rightarrow OFF	0 – 1.0 V ↓ Battery voltage ↓ 0 V
				Ignition sw	tch ON	0 – 1.0 V

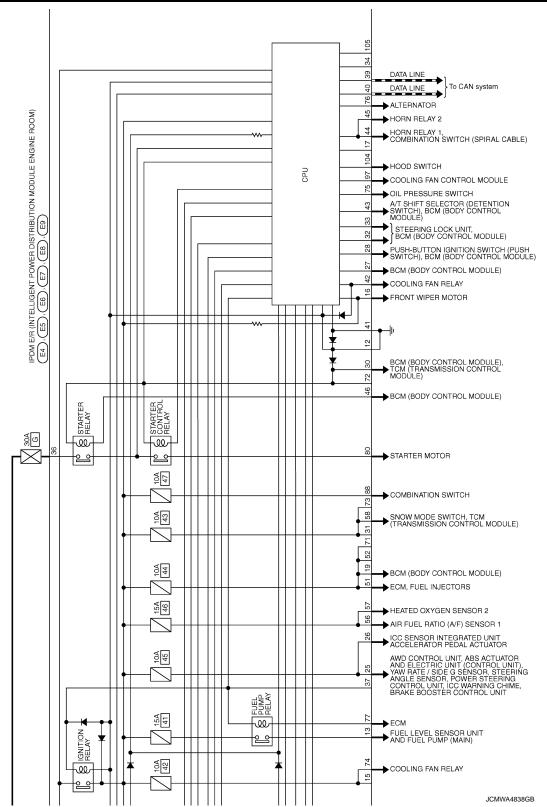
	inal No.	Description				Value				
(Wire +	e color) _	Signal name	Input/ Output		Condition	(Approx.)				
74	Cround	Ignition roley power supply	Output	Ignition swi	tch OFF	0 V				
(P)	Ground	Ignition relay power supply	Output	Ignition swi	itch ON	Battery voltage				
75	Ground	Oil pressure switch	Input	Ignition	Engine stopped	0 V				
(SB)	Ground	On pressure switch	input	switch ON	Engine running	Battery voltage				
76 (Y)				Ignition switch ON		(V) 6 4 0 2 0 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3				
	Ground	Power generation com- mand signal	Output		on "ACTIVE TEST", "AL- R DUTY" of "ENGINE"	(V) 4 0 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓				
							80% is set on "ACTIVE TEST", "A TERNATOR DUTY" of "ENGINE"			(V) 6 4 2 0 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓
					nately 1 second after turning	1.4 V				
77 (D)	Ground	Fuel pump relay control	Output		on switch ON	0 – 1.0 V				
(R)					tely 1 second or more after ignition switch ON	Battery voltage				
80 W)	Ground	Starter motor	Output	At engine o	ranking	Battery voltage				
83	Ground	Headlamp LO (RH)	Output	Ignition	Lighting switch OFF	0 V				
(O)	Croand		Caipai	switch ON	Lighting switch 2ND	Battery voltage				
84	Ground	Headlamp LO (LH)	Output	Ignition Lighting switch OFF		0 V				
(V)	croand		- aipui	switch ON	Lighting switch 2ND	Battery voltage				
86 (W)	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 Can- ada) 	0 V Battery voltage				

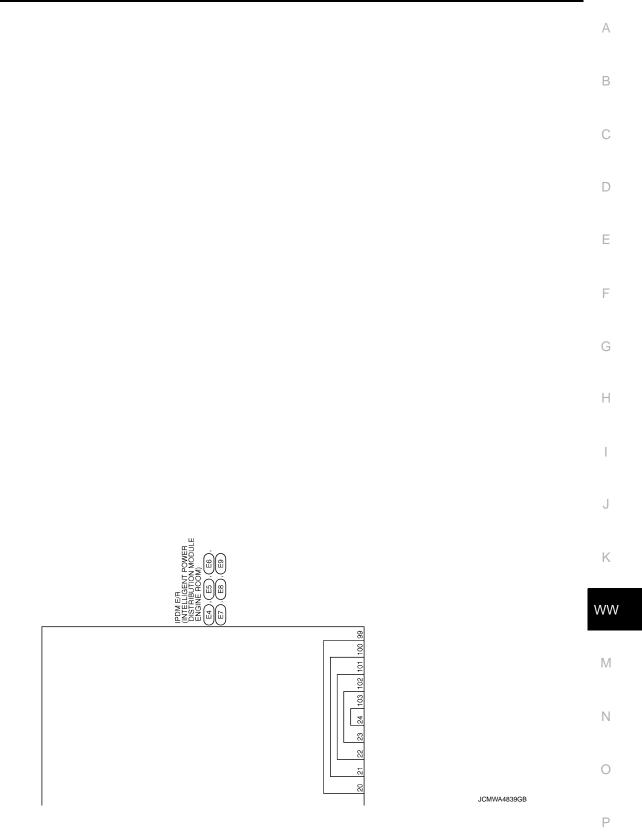
< ECU DIAGNOSIS INFORMATION >

Terminal No.		Description				Value	
(Wire +	e color) –	Signal name	Input/ Output	Condition		(Approx.)	
					Front fog lamp switch OFF	0 V	
87 (L)	Ground	Front fog lamp (LH)	Output	Lighting switch 2ND	 Front fog lamp switch ON Daytime running light activated (Only for Can- ada) 	Battery voltage	
88 (GR)	Ground	Washer pump power sup- ply	Output	Ignition swi	itch ON	Battery voltage	
89			Lighting switch OFF	0 V			
(BR)	Ground	Headlamp HI (RH)	Output	switch ON		Battery voltage	
90				Ignition	Lighting switch OFF	0 V	
90 (P)	Ground	Headlamp HI (LH)	Output	switch ON	Lighting switch HILighting switch PASS	Battery voltage	
91	Ground	Parking lamp (RH)	Output	Ignition	Lighting switch OFF	0 V	
(P)	Giouna		Output	switch ON	Lighting switch 1ST	Battery voltage	
92	Ground	Parking lamp (LH)	Output	Ignition	Lighting switch OFF	0 V	
(O)	Giouna		Output	switch ON	Lighting switch 1ST	Battery voltage	
97 (V)	Ground	Cooling fan control	Output	Engine idling		0 – 5 V	
104	Ground	Hood switch	Input	Close the hood		Battery voltage	
(LG)	Giouriu		mput	Open the h	lood	0 V	

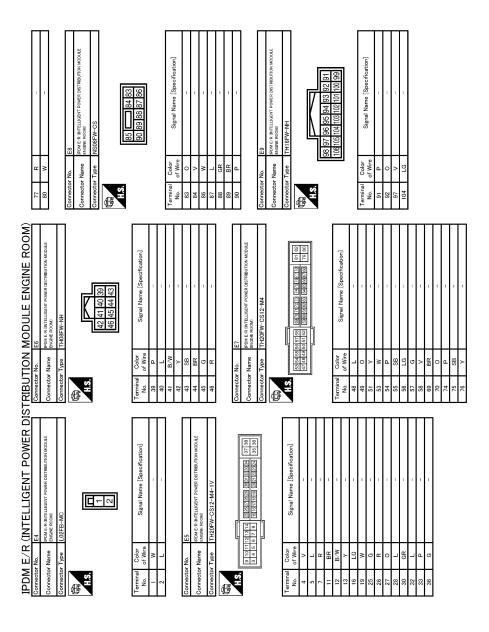
*: Only for the models with ICC system







< ECU DIAGNOSIS INFORMATION >



JCMWA4840GB

INFOID:000000005588587

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

Fail-safe

< ECU DIAGNOSIS INFORMATION >

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

If No CAN Communication Is Available With BCM

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

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

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

				WW
Voltage	judgment		Operation	
Ignition relay contact side	Ignition relay excitation coil side	IPDM E/R judgment		
ON	ON	Ignition relay ON normal	—	Μ
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 	Ν
OFF	ON	Ignition relay OFF stuck	Detects DTC "B2099: IGN RELAY OFF"	0

FRONT WIPER CONTROL

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

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

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< ECU DIAGNOSIS INFORMATION >

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.
UN	ON	The front wiper stop position signal does not change for 10 seconds.

NOTE:

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

STARTER MOTOR PROTECTION FUNCTION

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

DTC Index

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 … 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
CONSULT display	Fail-safe	Reference
No DTC is detected. further testing may be required.	_	_
U1000: CAN COMM CIRCUIT	×	PCS-15
B2098: IGN RELAY ON	×	PCS-16
B2099: IGN RELAY OFF	_	PCS-17
B2108: STRG LCK RELAY ON	-	<u>SEC-97</u>
B2109: STRG LCK RELAY OFF	-	<u>SEC-98</u>
B210A: STRG LCK STATE SW	-	<u>SEC-99</u>
B210B: START CONT RLY ON	-	<u>SEC-103</u>
B210C: START CONT RLY OFF	-	<u>SEC-104</u>
B210D: STARTER RELAY ON	-	<u>SEC-105</u>
B210E: STARTER RELAY OFF	-	<u>SEC-106</u>
B210F: INTRLCK/PNP SW ON	-	<u>SEC-108</u>
B2110: INTRLCK/PNP SW OFF	-	<u>SEC-110</u>

WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS WIPER AND WASHER SYSTEM SYMPTOMS

Symptom Table

INFOID:000000005172351 В

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CAUTION:

Perform the self-diagnosis with CONSULT-III 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 <u>BCS-82, "Symptom</u> <u>Table"</u> .
	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-26, "Compo-</u> <u>nent Function Check"</u> .
		Front wiper request signal • BCM • IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"
	LO and INT	 Combination switch Harness between combination switch and BCM BCM 	Combination switch Refer to <u>BCS-82, "Symptom</u> <u>Table"</u> .
Front wiper does not operate.		 IPDM E/R Harness between IPDM E/R and front wiper motor Front wiper motor 	Front wiper motor (LO) circuit Refer to <u>WW-24, "Compo-</u> <u>nent Function Check"</u> .
		Front wiper request signal • BCM • IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"
	INT only	 Combination switch Harness between combination switch and BCM BCM 	Combination switch Refer to <u>BCS-82, "Symptom</u> <u>Table"</u> .
	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 <u>WW-101, "Diagnosis Procedure"</u> .	

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WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

Symptom		Probable malfunction location	Inspection item		
		Combination switchBCM	Combination switch Refer to <u>BCS-82, "Symptom</u> <u>Table"</u> .		
	HI only	Front wiper request signal • BCM • IPDM E/R IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"		
Front wiper does not		Combination switch BCM	Combination switch Refer to <u>BCS-82, "Symptom</u> <u>Table"</u> .		
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 switchBCM	Combination switch Refer to <u>BCS-82, "Symptom</u> <u>Table"</u> .		
	INT ONLY	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 <u>BCS-82, "Symptom</u> <u>Table"</u> .		
		BCM	_		
	Intermittent control linked with vehicle speed cannot be per- formed.	Check the vehicle speed detection wiper setting. Refer to <u>WW-14, "WIPER : CONSULT-III Function (BCM - WIPER)"</u> . NOTE: Factory setting of the front wiper intermitted operation is the operation without vehicle speed.			
Front wiper does not operate normally.	Wiper is not linked to the washer operation.	 Combination switch Harness between combination switch and BCM BCM BCM 	Combination switch Refer to <u>BCS-82, "Symptom</u> <u>Table"</u> .		
	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 auto stop signal circuit Refer to <u>WW-28, "Compo-</u> <u>nent Function Check"</u> .		
	ON only	 Combination switch Harness between combination switch and BCM BCM 	Combination switch Refer to <u>BCS-82, "Symptom</u> <u>Table"</u> .		
	INT only	 Combination switch Harness between combination switch and BCM BCM 	Combination switch Refer to <u>BCS-82, "Symptom</u> <u>Table"</u> .		
Rear wiper does not operate.		 Combination switch Harness between combination switch and BCM BCM 	Combination switch Refer to <u>BCS-82, "Symptom</u> <u>Table"</u> .		
	ON and INT	 BCM Harness between rear wiper motor and BCM Harness between rear wiper motor and ground Rear wiper motor 	Combination switch Refer to <u>BCS-82, "Symptom</u> <u>Table"</u> .		

WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

Symptom		Probable malfunction location	Inspection item
Rear wiper does not	ON only	Combination switchBCM	Rear wiper motor circuit Refer to <u>WW-32, "Compo-</u> nent Function Check".
stop. INT only • Combination switch • BCM			Combination switch Refer to <u>BCS-82, "Symptom</u> <u>Table"</u> .
	Wiper is not linked to the washer operation.	 Combination switch Harness between rear wiper motor and BCM BCM 	Combination switch Refer to <u>BCS-82, "Symptom</u> <u>Table"</u> .
Rear wiper does not		BCM	_
operate normally.	Rear wiper does not return to the stop posi- tion [Stops after a five- second operation. (Fail-safe)]	 BCM Harness between rear wiper motor and BCM Rear wiper motor 	Rear wiper auto stop signal circuit Refer to <u>WW-34, "Compo-</u> <u>nent Function Check"</u> .

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< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description

INFOID:000000005172352

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 DIAGN					
FRONT WIPER	DOES NOT (OPERATE			А
Description				INFOID:000000005172353	
The front wiper does n	ot operate under ar	y operating conditi	ons.		В
Diagnosis Proced	ure			INFOID:000000005172354	
1. CHECK WIPER RE	LAY OPERATION				С
2. Check that the from CONSULT-III ACTIV 1. Select "FRONT W	to active test. Refe nt wiper operates at /E TEST IPER" of IPDM E/R	the LO/HI operation active test item.			D
Lo : Fro	ont wiper LO opera	ation			
	ont wiper HI opera	tion			F
	op the front wiper.				
<u>Does the front wiper op</u> YES >> GO TO 5.	<u>berate ?</u>				G
NO >> GO TO 2.					
2.CHECK FRONT W		E			Н
 Turn the ignition s¹ Check that the from 	witch OFF. nt wiper motor 30A	(#60) fuse is not fu	sina.		
Is the fuse fusing?		(,	- 5		
YES >> Replace the NO >> GO TO 3.	ne fuse after repairir	ng the applicable ci	rcuit.		
3.CHECK FRONT W	PER MOTOR (GNI	D) OPEN CIRCUIT			J
	viper motor connect				
	etween front wiper		nector and ground.		K
Front wiper motor			-		
	minal Ground	Continuity			WW
E42	2	Existed	-		
Does continuity exist?YES>> GO TO 4.NO>> Repair the4.CHECK FRONT WI	harnesses or conn		-		Μ
					Ν
 Disconnect front w Turn the ignition s¹ Select "FRONT W 	viper motor connect witch ON. IPER" of IPDM E/R	active test item.	M E/R harness connector and	ground.	0
					Ρ

FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

	Terminals		Test item	Voltage (Approx.)
(·	+)	(-)	Test tient	
IPDN	/IE/R		FRONT WIPER	
Connector	Terminal			
	4	Ground	Lo	Battery voltage
E5	4	Giodila	Off 0 V	0 V
20	5			Battery voltage
	5		Off	0 V

Is the measurement normal?

YES >> Replace front wiper motor.

NO >> Replace IPDM E/R.

5.CHECK FRONT WIPER REQUEST SIGNAL INPUT

(P)CONSULT-III DATA MONITOR

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

Monitor item	Condition	Monitor status	
	Front wiper switch HI	ON	Hi
FR WIPER REQ	I TOTIL WIPEL SWITCH TH	OFF	Stop
FR WIPER REQ	Front wiper switch LO	ON	Low
	I TOTIL WIPEL SWILCH 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-82, "Symptom Table". Is combination switch normal?

- YES >> Replace BCM. Refer to BCS-84, "Exploded View".
- NO >> Repair or replace the applicable parts.

< PRECAUTION > PRECAUTION PRECAUTIONS

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

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:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the "SRS AIR BAG".
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

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

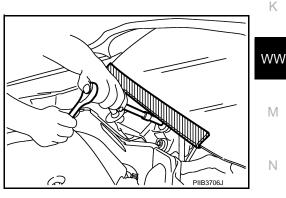
WARNING:

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precaution for Procedure without Cowl Top Cover

INFOID:000000005172356

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



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< PREPARATION >

PREPARATION PREPARATION

Commercial Service Tool

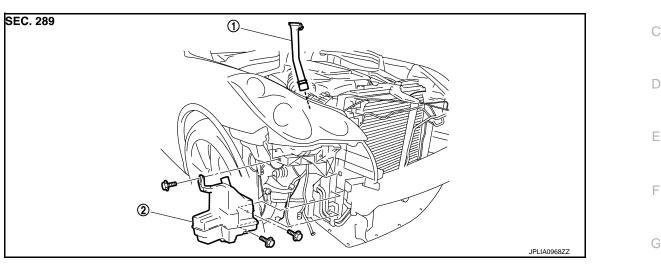
Tool name		Description
Washer nozzle adjuster	JSLIA0149ZZ	Adjusting washer nozzle. (Available in SEC. 289 of PARTS CATALOG: Part No. 28949 1EA0A) NOTE: Washer nozzle adjuster is included with shipment of nozzle.

WASHER TANK

< REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION WASHER TANK

INFOID:000000005172357 B

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1. Washer tank inlet

Removal and Installation

REMOVAL

1. Remove the clip (A).

- 2. Pull out the washer tank inlet (1) from the washer tank.
- Remove the fender protector RH (front). Refer to <u>EXT-25</u>, <u>"FENDER PROTECTOR : Exploded View"</u>.

2. Washer tank

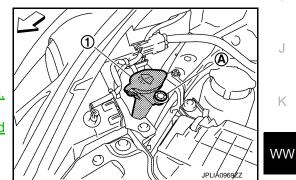
- Remove the engine lower cover. Refer to <u>EXT-31</u>, "Exploded <u>View"</u>.
- 5. Disconnect washer pump connector.
- 6. Disconnect the washer level switch connector.
- 7. Remove front washer tube and rear washer tube.
- 8. Remove washer tank mounting bolts.
- 9. Remove washer tank from the vehicle.

INSTALLATION

Note the following, and 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.



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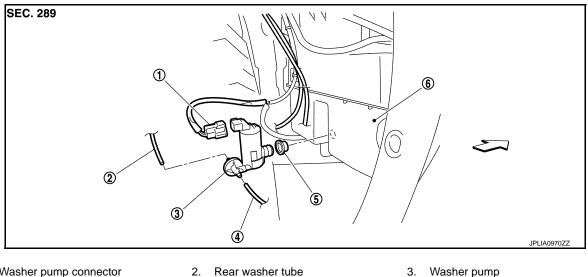
FRONT WASHER PUMP

< REMOVAL AND INSTALLATION >

FRONT WASHER PUMP

Exploded View

INFOID:000000005172359



- 1. Washer pump connector
- 5. Packing
- 4. Front washer tube
- : Vehicle front

Removal and Installation

REMOVAL

1. Remove the fender protector RH (front). Refer to EXT-25, "FENDER PROTECTOR : Removal and Installation".

6.

Washer tank

- 2. Disconnect the 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

Note the following, and install in the reverse order of removal. **CAUTION:**

Never twist the packing when installing the washer pump.

WASHER LEVEL SWITCH

< REMOVAL AND INSTALLATION > WASHER LEVEL SWITCH А **Removal and Installation** INFOID:000000005172361 The washer level switch must be replaced together with the washer tank as an assembly. Refer to WW-105, В "Removal and Installation". С D Е F G Н J Κ WW Μ Ν Ο Ρ

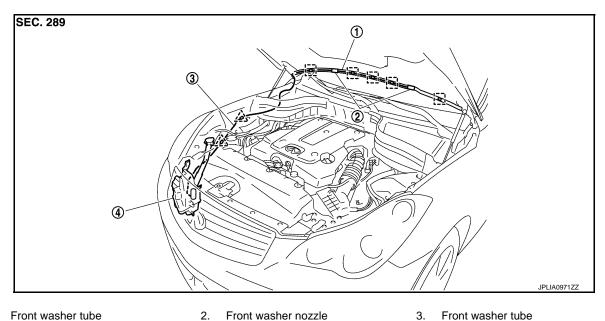
FRONT WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

FRONT WASHER NOZZLE AND TUBE

Hydraulic Layout

INFOID:000000005172362



3.

- Front washer tube 1.
- Washer tank 4.
- : Clip Â
- : Clip []

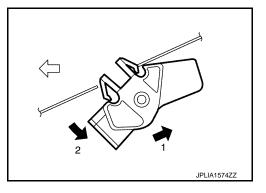
Removal and Installation

REMOVAL

- 1. Fully open hood assembly.
- Remove the front washer nozzle in numerical order shown in the 2. figure.

<□ : Vehicle front

Disconnect the front washer tube from the front washer nozzle. 3.



INSTALLATION

- 1. Connect the front washer tube into the front washer nozzle.
- 2. Install the front washer nozzle to the hood.
- 3. Adjust the front washer nozzle spray position. Refer to <u>WW-108</u>, "Inspection and Adjustment". **CAUTION:**

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

Inspection and Adjustment

INSPECTION

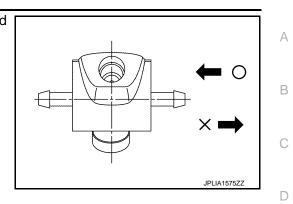
Washer Nozzle Inspection

INFOID:000000005588111

FRONT WASHER NOZZLE AND TUBE

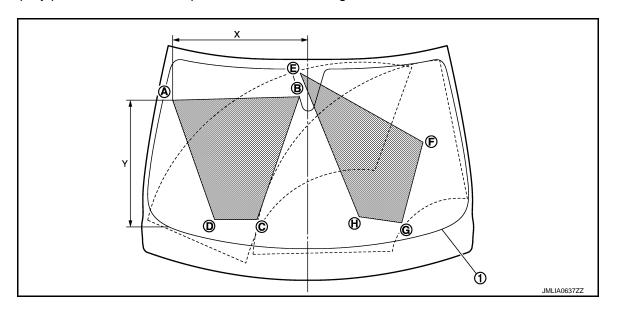
< REMOVAL AND INSTALLATION >

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

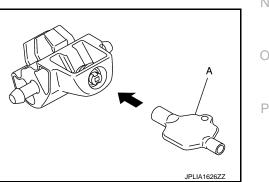
: Spray area

_									Unit: mm	nm (in) WW					
-		Passenger side				Driver side									
		А	В	С	D	E	F	G	Н						
-	Х	569 (22.40)	45 (1.77)	216 (8.50)	392 (15.43)	39 (1.54)	469 (18.46)	379 (14.92)	203 (7.99)	M					
_	Y	523 (20.59)	623 (24.53)	108 (4.25)	81 (3.19)	723 (28.46)	379 (14.92)	73 (2.87)	123 (4.84)						

CAUTION:

- Use washer nozzle adjuster* (A) for nozzle adjustment.
- Never use needle or small pin.
- *: Washer nozzle adjuster is included with shipment of nozzle. NOTE:

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



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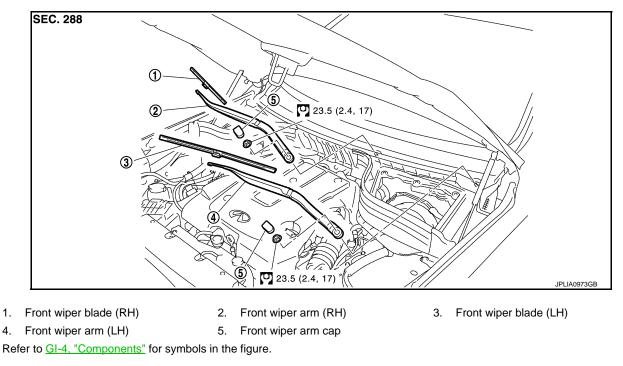
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FRONT WIPER ARM

Exploded View

INFOID:000000005172365



Removal and Installation

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.
- 5. Raise front wiper arm, and remove front wiper arm from the vehicle.

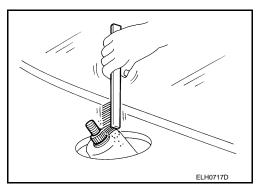
INSTALLATION

- 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 <u>WW-110, "Adjust-ment"</u>.
- 4. Install the front wiper arm 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.
- 8. Install front wiper arm caps.

Adjustment

WIPER BLADE POSITION ADJUSTMENT

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

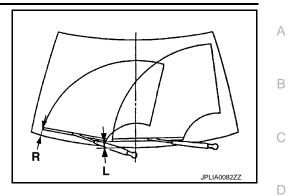


INFOID:000000005172367

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WW-110

Standard clearanceR: 48.0 \pm 7.5 mm (1.890 \pm 0.295 in)L: 76.5 \pm 7.5 mm (3.012 \pm 0.295 in)



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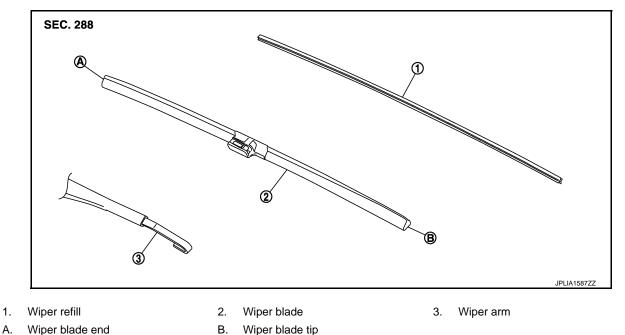
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WIPER BLADE

Exploded View

INFOID:000000005172368



Removal and Installation

REMOVAL

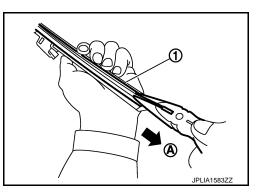
Remove the wiper blade from the wiper arm.

INSTALLATION

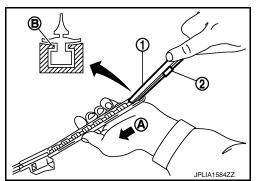
Install the front wiper blade to the wiper arm.

Replacement

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).



- 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.



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INFOID:000000005172370

WIPER BLADE

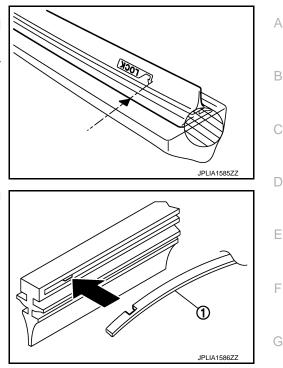
< REMOVAL AND INSTALLATION >

- 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 (2022) 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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FRONT WIPER DRIVE ASSEMBLY

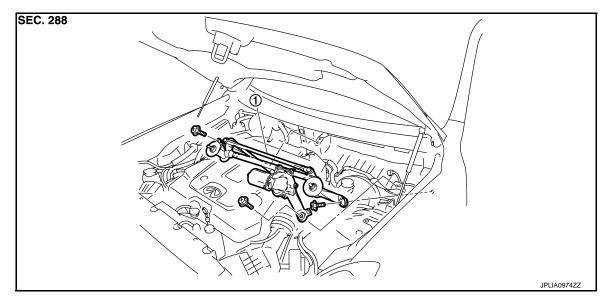
< REMOVAL AND INSTALLATION >

FRONT WIPER DRIVE ASSEMBLY

Exploded View

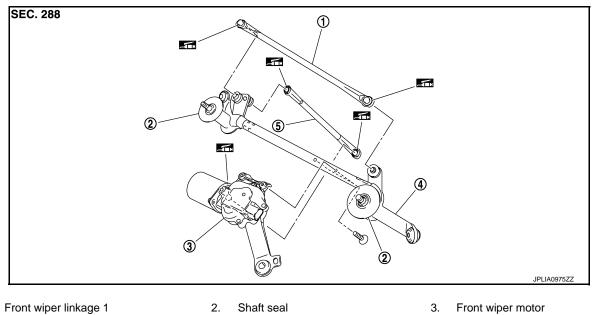
INFOID:000000005172371

REMOVAL



1. Front wiper drive assembly

DISASSEMBLY



- 1. 4.
 - Front wiper frame
- 5. Front wiper linkage 2

: Multi-purpose grease or an equivalent.

Removal and Installation

REMOVAL

- Remove front wiper arm. Refer to WW-110, "Removal and Installation". 1.
- Remove cowl top cover. Refer to EXT-23, "Removal and Installation". 2.
- 3. Remove bolts from the front wiper drive assembly.

WW-114

2010 EX35

INFOID:000000005172372

FRONT WIPER DRIVE ASSEMBLY

< R	EMOVAL AND INSTALLATION >				
4.	Disconnect the front wiper motor connector.				
5.	Remove front wiper drive assembly from the vehicle.	А			
INS	STALLATION				
1.	Install the front wiper drive assembly to the vehicle.	В			
2.	Connect the front wiper motor connector.				
3.	Operate the front wiper to move it to the auto stop position.				
4.	tall the cowl top cover. Refer to EXT-23, "Removal and Installation".				
5.	Install front wiper arms. Refer to WW-110, "Removal and Installation".				
Dis	sassembly and Assembly	D			
DIS	SASSEMBLY				
1.	Remove the front wiper linkage 1 and 2 from the front wiper drive assembly.	Е			
	CAUTION: Never bend the linkage or damage the plastic part of the ball joint when removing the wiper link- age.				
2.	Remove the front wiper motor mounting screws, and then remove the front wiper motor from the front wiper frame.	F			
AS	SEMBLY	G			
1.	Connect the front wiper motor connector.	0			
2.	Operate the front wiper to move it to the auto stop position.				
3.	Disconnect the front wiper motor connector.	Н			
4.	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:	I			
	 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. 	J			

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WIPER AND WASHER SWITCH

< REMOVAL AND INSTALLATION >

WIPER AND WASHER SWITCH

Exploded View

Refer to BCS-85, "Exploded View".

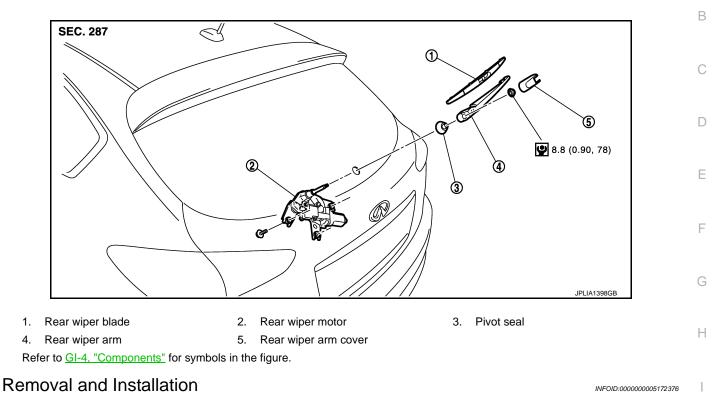
INFOID:000000005172374

REAR WIPER ARM

Exploded View

INFOID:000000005172375

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REMOVAL

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

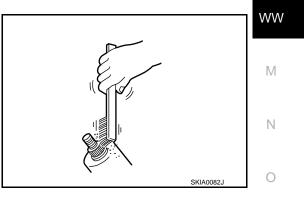
INSTALLATION

- 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 <u>WW-117, "Adjust-ment"</u>.
- 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.
- 8. Install the rear wiper arm cover.

Adjustment

REAR WIPER BLADE POSITION ADJUSTMENT

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



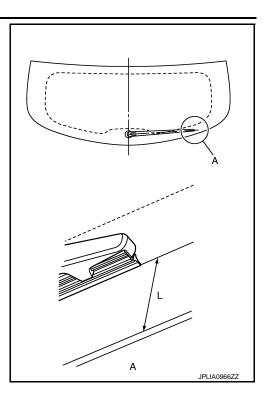
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WW-117

Standard clearance L : 35.0 ± 7.5 mm (1.378 ± 0.295 in)

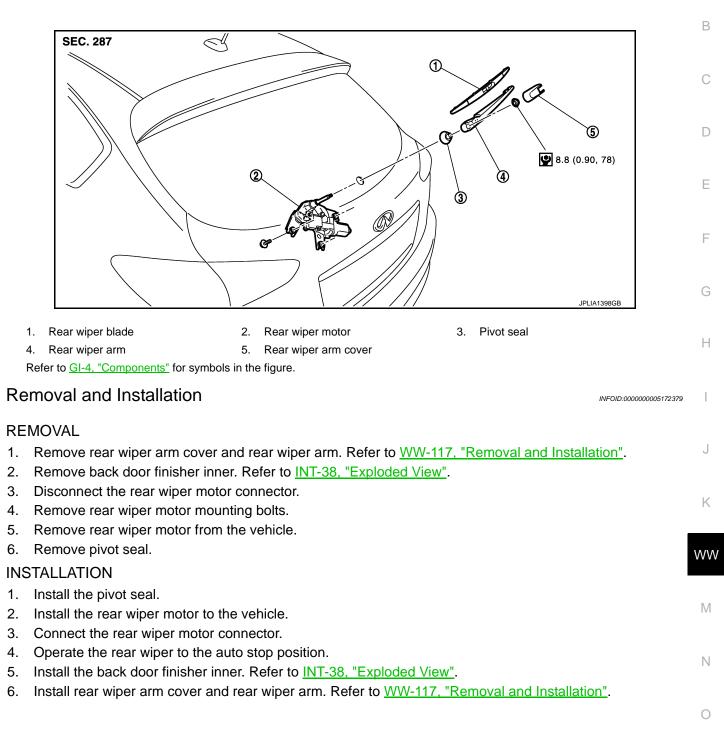


REAR WIPER MOTOR

Exploded View

INFOID:000000005172378

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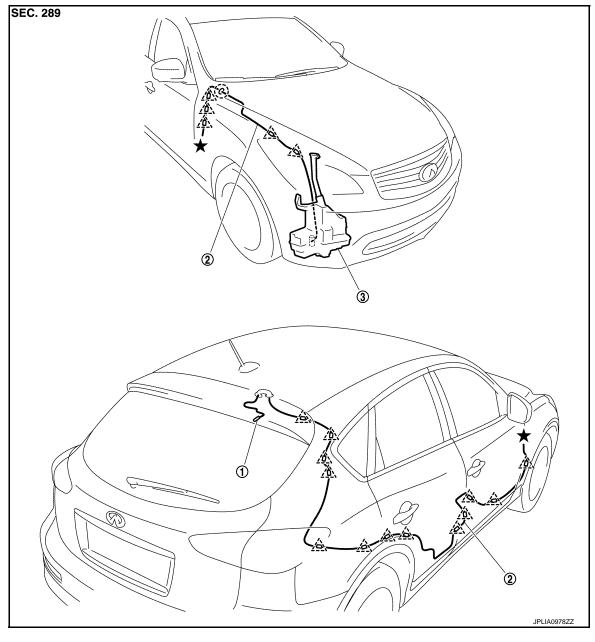
REAR WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

REAR WASHER NOZZLE AND TUBE

Hydraulic Layout

INFOID:000000005172380



1. Rear washer nozzle

Rear washer tube

3. Washer tank

Clip : Clip

() : Grommet

Removal and Installation

INFOID:000000005172381

REMOVAL

1. Remove the high-mounted stop lamp. Refer to EXL-218, "Exploded View".

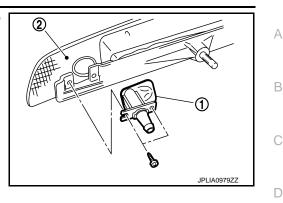
2.

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).



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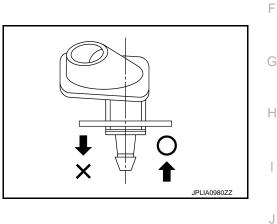
INSTALLATION Install in the reverse order of removal.

Inspection and Adjustment

INSPECTION

Washer Nozzle Inspection

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

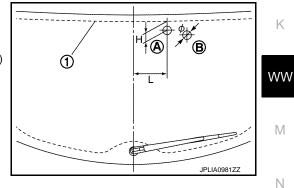


ADJUSTMENT

Washer Nozzle Spray Position adjustment Adjust spray positions to match the positions shown in the figure.

1 : Black printed frame line

Spray position	H : Height	L : Length	ϕ : Spray position area				
A	32.0 (1.26)	120.5 (4.74)	30 (1.18)				
В	49.6 (1.95)	189.7 (7.47)	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.

