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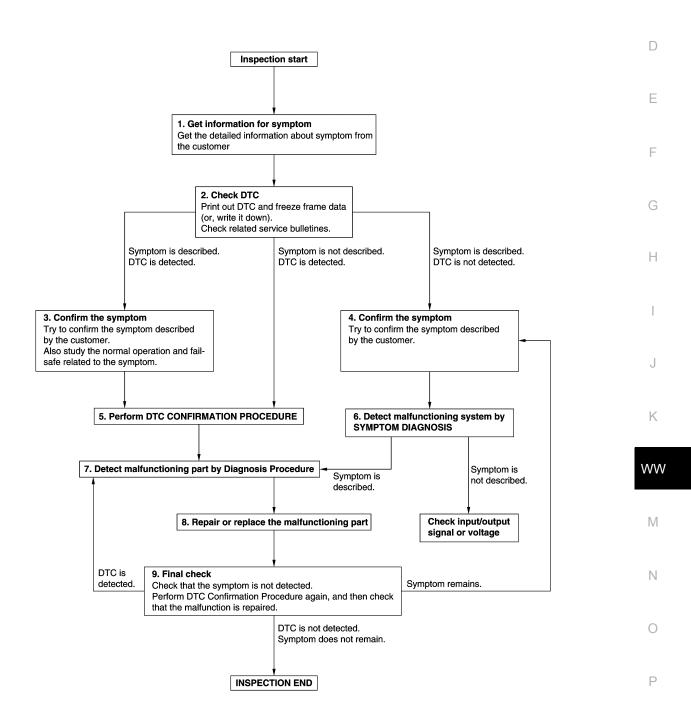
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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

OVERALL SEQUENCE



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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

1.GET INFORMATION FOR SYMPTOM

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

>> GO TO 2.

2.CHECK DTC

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

Are any symptoms described and any DTC detected?

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

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

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

3. CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.

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

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

>> GO TO 5.

4. CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.

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

>> GO TO 6.

5. PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC CONFIRMATION PROCEDURE for the detected DTC, and then check that DTC is detected again. At this time, always connect CONSULT to the vehicle, and check self diagnostic results in real time. If two or more DTCs are detected, refer to <u>BCS-87</u>, "<u>DTC Inspection Priority Chart</u>" (BCM) or <u>PCS-33</u>, "<u>DTC Index</u>" (IPDM E/R), and determine trouble diagnosis order.

NOTE:

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

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

Is DTC detected?

YES >> GO TO 7.

NO >> Check according to GI-47, "Intermittent Incident".

6.DETECT MALFUNCTIONING SYSTEM BY SYMPTOM DIAGNOSIS

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

Is the symptom described?

YES >> GO TO 7.

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

7.DETECT MALFUNCTIONING PART BY DIAGNOSIS PROCEDURE

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

Inspect according to Diagnosis Procedure of the system.

Is malfunctioning part detected?

YES >> GO TO 8.

NO >> Check according to GI-47, "Intermittent Incident".

8.repair or replace the malfunctioning part

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

>> GO TO 9.

9. FINAL CHECK

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

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

Is DTC detected and does symptom remain?

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

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

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

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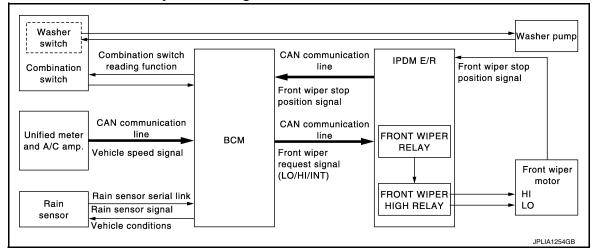
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SYSTEM DESCRIPTION

FRONT WIPER AND WASHER SYSTEM WITH RAIN SENSOR

WITH RAIN SENSOR: System Diagram

INFOID:0000000010581244



WITH RAIN SENSOR: System Description

INFOID:0000000010581245

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-25, "WARNING LAMPS/INDICATOR LAMPS: System Description".

FRONT WIPER BASIC OPERATION

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

FRONT WIPER LO OPERATION

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

Front wiper LO operating condition

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

FRONT WIPER HI OPERATION

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

Front wiper HI operating condition

- Ignition switch ON
- Front wiper switch HI

< SYSTEM DESCRIPTION >

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

FRONT WIPER AUTO OPERATION

Rain Sensing

Rain level and sensor conditions are detected by rain sensor.

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

Auto Wiping Operation

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

Front wiper AUTO operating condition

- Ignition switch ON
- Front wiper switch AUTO

NOTE

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

Rain Sensor Sensitivity Setting

BCM determines rain sensor sensitivity according to a wiper volume.

Wiper intermittent dial position	Sensitivity
1	Lligh consitivity
2	High sensitivity
3	Medium – high sensitivity
4	- iviediditi – nigri serisitivity
5	Low – medium sensitivity
6	Low – medium sensitivity
7	Low sensitivity

NOTE:

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

FRONT WIPER AUTO STOP OPERATION

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

Front wiper request (LO)	ON OFF	
Front wiper stop position signal	Except stop position Stop position	
Front wiper relay	ON OFF	
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< SYSTEM DESCRIPTION >

NOTE:

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

FRONT WIPER OPERATION LINKED WITH WASHER

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

Washer linked operating condition of front wiper

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

FAIL-SAFE FUNCTION

Front Wiper control

IPDM E/R performs the fail-safe function when the front wiper stop position circuit is malfunctioning. Refer to PCS-31, "Fail-safe".

Rain Sensor Malfunction

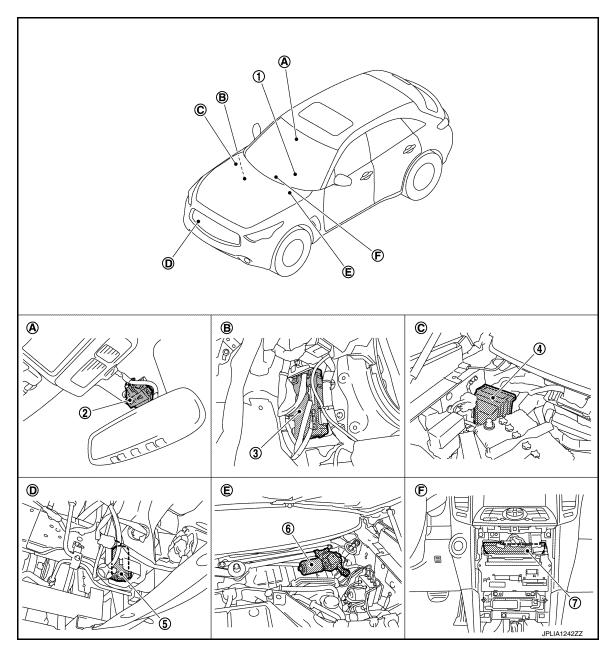
- BCM judges the rain sensor serial link error by the rain sensor serial link condition and detects the rain sensor malfunction by rain sensor malfunction signal.
- When BCM detects the rain sensor serial link error or the rain sensor malfunction while front wiper AUTO operation, BCM operates a fail-safe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

NOTE:

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

WITH RAIN SENSOR: Component Parts Location

INFOID:0000000010581246



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

WITH RAIN SENSOR: Component Description

INFOID:0000000010581247

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

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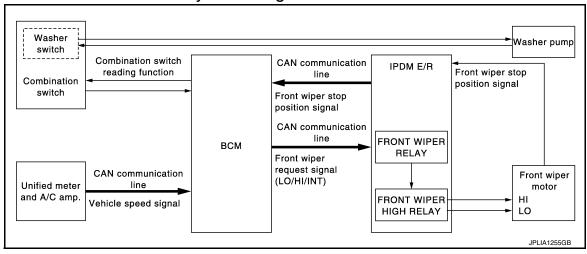
< SYSTEM DESCRIPTION >

Part	Description		
Combination switch (Wiper & washer switch)	Refer to BCS-11, "System Description".		
Unified meter and A/C amp.	Transmits the vehicle speed signal to BCM with CAN communication.		
Rain sensor	Detects water droplets on the windshield with infrared rays, and transmits the rain sensor signa to BCM through the rain sensor serial link.		

WITHOUT RAIN SENSOR

WITHOUT RAIN SENSOR: System Diagram

INFOID:0000000010581248



WITHOUT RAIN SENSOR: System Description

INFOID:0000000010581249

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-25, "WARNING LAMPS/INDICATOR LAMPS: System Description".

FRONT WIPER BASIC OPERATION

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

FRONT WIPER LO OPERATION

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

Front wiper LO operating condition

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

FRONT WIPER HI OPERATION

< SYSTEM DESCRIPTION >

• 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

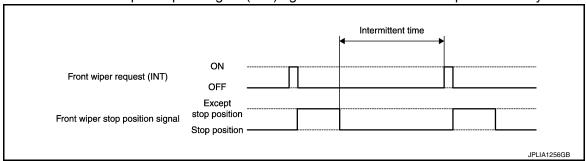
 IPDM E/R turns ON the integrated front wiper relay and the front wiper high relay according to the front wiper request signal (HI).

FRONT WIPER INT OPERATION

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

Front wiper INT operating condition

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



NOTE:

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

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

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

^{*:} When without vehicle speed setting

FRONT WIPER AUTO STOP OPERATION

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

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< 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.

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

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

FRONT WIPER OPERATION LINKED WITH WASHER

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

Washer linked operating condition of front wiper

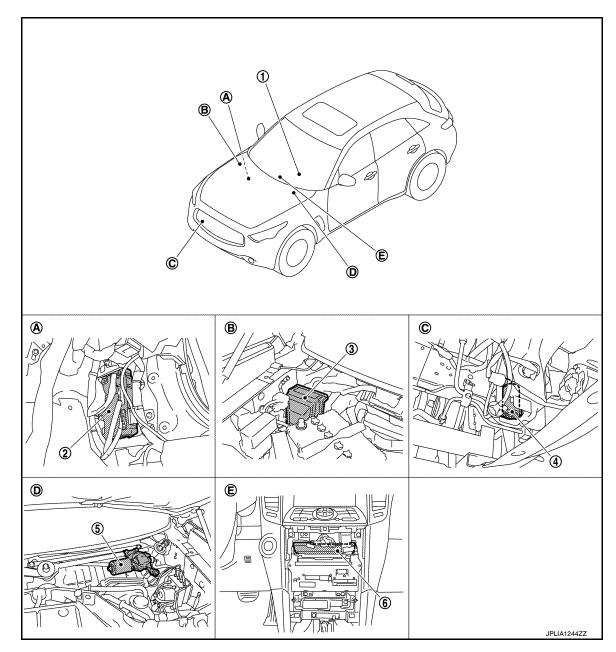
- Ignition switch ON
- Front washer switch ON (0.4 second or more)
- IPDM E/R turns ON the integrated front wiper relay according to the front wiper request signal (LO).
- The washer pump is grounded through the combination switch with the front washer switch ON.

FRONT WIPER FAIL-SAFE OPERATION

IPDM E/R performs the fail-safe function when the front wiper stop position circuit is malfunctioning. Refer to PCS-31, "Fail-safe".

WITHOUT RAIN SENSOR: Component Parts Location

INFOID:0000000010581250



- 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 (right side)
- E. Behind cluster lid C
- 3. IPDM E/R
- 6. Unified meter and A/C amp.
- C. Radiator core support (RH)

WITHOUT RAIN SENSOR: Component Description

INFOID:0000000010581251

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

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< SYSTEM DESCRIPTION >

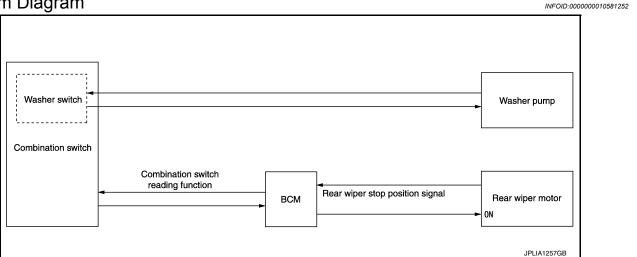
Part	Description
Combination switch (Wiper & washer switch)	Refer to BCS-11, "System Description".
Unified meter and A/C amp.	Transmits the vehicle speed signal to BCM with CAN communication.

REAR WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

REAR WIPER AND WASHER SYSTEM

System Diagram



System Description

INFOID:0000000010581253

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

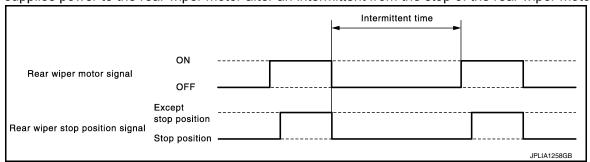
- Ignition switch ON
- Rear wiper switch ON

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.

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REAR WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

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

	949899	poottion:
Rear wiper switch	ON ·	
Rear wiper stop position signal	Except stop position	
Rear wiper motor power supply	ON OFF	
		JPLIA1259GB

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 stop position circuit is malfunctioning. Refer to <u>BCS-86, "Fail-safe"</u>.

REAR WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

Component Parts Location

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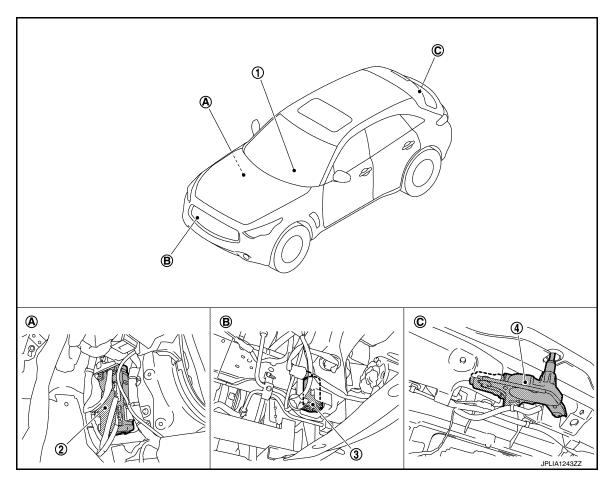
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- 1. Combination switch
- 2. BCM

3. Washer pump

- Rear wiper motor
- A. Dash side lower (Passenger side)
- B. Radiator core support (RH)
- C. Back door finisher inner inside

Component Description

INFOID:0000000010581255

Part	Description
BCM	 Judges each switch status by the combination switch reading function. Supplies power to the rear wiper motor. Performs the auto stop control of the rear wiper.
Combination switch (Wiper & washer switch)	Refer to BCS-11, "System Description".

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DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM: CONSULT Function (BCM - COMMON ITEM)

INFOID:0000000011016180

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description	
Work Support	Changes the setting for each system function.	
Self Diagnostic Result	Displays the diagnosis results judged by BCM.	
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM.	
Data Monitor	The BCM input/output signals are displayed.	
Active Test	The signals used to activate each device are forcibly supplied from BCM.	
Ecu Identification	The BCM part number is displayed.	
Configuration	 Read and save the vehicle specification. Write the vehicle specification when replacing BCM. 	

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

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

x: Applicable item

System	Sub avatam adjection 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	×	×	×	
_	AIR CONDITONER*				
Intelligent Key system Engine start system	INTELLIGENT KEY	×	×	×	
Combination switch	COMB SW		×		
Body control system	ВСМ	×			
IVIS - NATS	IMMU		×	×	
Interior room lamp battery saver	BATTERY SAVER	×	×	×	
Back door open	TRUNK		×	×	
Vehicle security system	THEFT ALM	×	×	×	
RAP system	RETAINED PWR		×		
Signal buffer system	SIGNAL BUFFER		×	×	

NOTE:

FREEZE FRAME DATA (FFD)

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

^{*:} This item is displayed, but is not used.

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 value) of the moment a particular DTC is detected			
	SLEEP>LOCK		While turning BCM status from low power consumption mode to	В	
			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".)	С	
	LOCK>ACC		While turning power supply position from "LOCK"* to "ACC"		
	ACC>ON		While turning power supply position from "ACC" to "IGN"	D	
	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)	UN" E	
	RUN>URGENT	Power position status of the moment a particular DTC is detected*	While turning power supply position from "RUN" to "ACC" (Emergency stop operation)	F	
	ACC>OFF		While turning power supply position from "ACC" to "OFF"		
	OFF>LOCK		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"	G"	
	OFF>SLEEP			While turning BCM status from normal mode (Power supply position is "OFF".) to low power consumption mode	H
	LOCK>SLEEP		While turning BCM status from normal mode (Power supply position is "LOCK"*.) to low power consumption mode		
	LOCK		Power supply position is "LOCK"*		
	OFF		Power supply position is "OFF" (Ignition switch OFF)		
	ACC		Power supply position is "ACC" (Ignition switch ACC)	J	
	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)	K	
	CRANKING		Power supply position is "CRANKING" (At engine cranking)	W	
			at ignition switch is turned ON after DTC is detected	V V \	
IGN Counter	0 - 39	 The number is 0 when a malfunction is detected now. The number increases like 1 → 2 → 338 → 39 after returning to the normal condition whenever ignition switch OFF → ON. The number is fixed to 39 until the self-diagnosis results are erased if it is over 39. 			

NOTE:

*: Power supply position shifts to "LOCK" from "OFF", when ignition switch is in the OFF position, selector lever is in the P position, and any of the following conditions are met.

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- Closing door
- Opening door
- Door is locked using door request switch
- Door is locked using Intelligent Key

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

WIPER

WIPER: CONSULT Function (BCM - WIPER)

WORK SUPPORT

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

Service item	Setting item	Description
WIPER SPEED SETTING* ¹	On	With vehicle speed (Front wiper intermittent time linked with the vehicle speed and wiper intermittent dial position)
	Off* ²	Without vehicle speed (Front wiper intermittent time linked with the wiper intermittent dial position)

^{*1:}For models without rain sensor.

DATA MONITOR

NOTE:

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

Monitor Item [Unit]	Description
PUSH SW [Off/On]	The switch status input from push-button ignition switch.
VEHICLE SPEED 1 [km/h]	The value of the vehicle speed signal received from unified meter and A/C amp. with CAN communication.
FR WIPER HI [Off/On]	
FR WIPER LOW [Off/On]	Fach quitab status that DCM indeed from the combination quitab reading function
FR WASHER SW [Off/On]	Each switch status that BCM judges from the combination switch reading function.
FR WIPER INT [Off/On]	
FR WIPER STOP [Off/On]	Front wiper motor (stop position) status received from IPDM E/R with CAN communication.
INT VOLUME [1 – 7]	Each switch status that BCM judges from the combination switch reading function.
RR WIPER ON [Off/On]	
RR WIPER INT [Off/On]	Each switch status that BCM judges from the combination switch reading function.
RR WASHER SW [Off/On]	
RR WIPER STOP [Off/On]	Rear wiper motor (stop position) status input from the rear wiper motor.
H/L WASH SW [Off/On]	NOTE: The item is indicated, but not monitored.

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	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 WIPFR	On	Outputs the voltage to operate the rear wiper motor.		
IXIX WIFER	Off	Stops the voltage to stop.		

^{*2:}Factory setting.

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:0000000011016181

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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 marker 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.

- Turn the ignition switch OFF.
- 3. Turn the ignition switch ON, and within 20 seconds, press the driver door switch 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 ignition switch OFF. **CAUTION:**

- If auto active test mode cannot be actuated, check door switch system. Refer to <u>DLK-107</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 5 steps are repeated 3 times.

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

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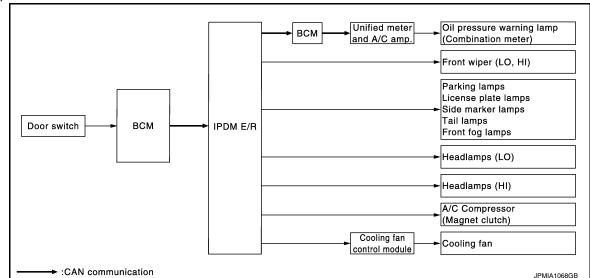
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< SYSTEM DESCRIPTION >

Concept of auto active test



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

Diagnosis chart in auto active test mode

Symptom	Inspection contents		Possible cause
Any of the following components do not operate		YES	BCM signal input circuit
 Parking lamps License plate lamps Side marker lamps Tail lamps Front fog lamps Headlamp (HI, LO) Front wiper 	Perform auto active test. Does the applicable system operate?	NO	Lamp or motor Lamp or motor ground circuit Harness or connector between IPDM E/R and applicable system IPDM E/R
A/C compressor does not operate	Perform auto active test. Does the magnet clutch operate?	YES	 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
		NO	Magnet clutch Harness or connector between IPDM E/R and magnet clutch IPDM E/R
	Perform auto active test. Does the oil pressure warning lamp blink?	YES	Harness or connector between IPDM E/R and oil pressure switch Oil pressure switch IPDM E/R
Oil pressure warning lamp does not operate		NO	 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 between cooling fan and cooling fan control module Cooling fan control module Harness or connector between IPDM E/R and cooling fan control module Cooling fan relay Harness or connector between IPDM E/R and cooling fan relay IPDM E/R	

CONSULT Function (IPDM E/R)

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APPLICATION ITEM

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

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

SELF DIAGNOSTIC RESULT

Refer to PCS-33, "DTC Index".

DATA MONITOR

NOTE:

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

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

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< SYSTEM DESCRIPTION >

Monitor Item [Unit]	MAIN SIG- NALS	Description
WIP PROT [Off/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.
IGN RLY1 -REQ [Off/On]		Displays the status of the ignition switch ON signal received from BCM via CAN communication.
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 /INHI/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 E/R.
S/L RLY -REQ [Off/On]		NOTE: The item is indicated, but not monitored.
S/L STATE [LOCK/UNLOCK/UNKWN]		NOTE: The item is indicated, but not monitored.
DTRL REQ [Off]		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]		NOTE: The item is indicated, but not monitored.
THFT HRN REQ [Off/On]		Displays the status of the theft warning horn request signal received from BCM via CAN communication.
HORN CHIRP [Off/On]		Displays the status of the horn reminder signal received from BCM via CAN communication.
CRNRNG LMP REQ [Off]		NOTE: The item is indicated, but not monitored.

ACTIVE TEST

Test item

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

< SYSTEM DESCRIPTION >

Test item	Operation	Description
	1	OFF
MOTOR FAN	2	Outputs 50% pulse duty signal (PWM signal) to the cooling fan control module.
	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.
HEAD LAMP WASHER	On	NOTE: The item is indicated, but cannot be tested.
EXTERNAL LAMPS	Off	OFF
	TAIL	Operates the tail lamp relay.
	Lo	Operates the headlamp low relay.
	Hi	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.
	Fog	Operates the front fog lamp relay.

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WIPER AND WASHER FUSE

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

WIPER AND WASHER FUSE

Description INFOID:000000010581260

Fuse list

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

Diagnosis Procedure

INFOID:0000000010581261

1. CHECK FUSES

Check that the following fuses are not fusing.

Unit	Location	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.

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

POWER SUPPLY AND GROUND CIRCUIT BCM (BODY CONTROL MODULE)

INFOID:0000000010581262

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BCM (BODY CONTROL MODULE) : Diagnosis Procedure

1. CHECK FUSE AND FUSIBLE LINK

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

Signal name	Fuse and fusible link No.
Ratteny nower supply	L
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

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

(+)	(-)	Voltage
всм			(Approx.)
Connector	Terminal	Ground	
M118	1	Ground	Battery voltage
M119	11		Dattery Voltage

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3.CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

ВСМ			Continuity
Connector	Terminal	Ground	Continuity
M119	13		Existed

Does continuity exist?

YES >> INSPECTION END

NO >> Repair harness or connector.

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

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

1. CHECK FUSES AND FUSIBLE LINK

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

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POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

Is the fuse fusing?

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

NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

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

(+)	(-)	Voltage
IPDM E/R		(-)	(Approx.)
Connector	Terminal	Ground	
E4	1	Ground	Battery voltage

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3. CHECK GROUND CIRCUIT

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

IPDM E/R			Continuity
Connector	Terminal	Ground	Continuity
E5	12	Ground	Existed
E6	41		LAISIEU

Does continuity exist?

YES >> INSPECTION END

NO >> Repair harness or connector.

FRONT WIPER MOTOR LO CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR LO CIRCUIT

Component Function Check

INFOID:0000000010581264

${f 1}$.CHECK FRONT WIPER LO OPERATION

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

(P)CONSULT ACTIVE TEST

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

: Front wiper (LO) operation Lo

Off : Stop the front wiper.

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Is front wiper (LO) operation normally?

YES >> Front wiper motor LO circuit is normal. >> Refer to WW-29, "Diagnosis Procedure". NO

Diagnosis Procedure

1. CHECK FRONT WIPER MOTOR (LO) OUTPUT VOLTAGE

INFOID:0000000010581265

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

	Terminals		
(+) (-)			Voltage (Approx.)
IPDM E/R			voltage (Approx.)
Connector	Terminal	Ground	
E5	4		Battery voltage (10 seconds)*

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

YES >> GO TO 2.

NO >> Replace IPDM E/R.

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2.CHECK FRONT WIPER MOTOR (LO) OPEN CIRCUIT

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

IPDN	IPDM E/R		Front wiper motor	
Connector	Terminal	Connector Terminal		Continuity
E5	4	E42	1	Existed

Does continuity exist?

YES >> GO TO 3.

NO >> Repair the harness or connector.

3.check front wiper motor (LO) short circuit

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

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FRONT WIPER MOTOR LO CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

IPDN	M E/R		Continuity
Connector	Terminal	Ground	Continuity
E5	4		Not existed

Does continuity exist?

YES >> Repair the harness or connector.

NO >> Replace front wiper motor.

FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR HI CIRCUIT

Component Function Check

INFOID:0000000010581266

1.CHECK FRONT WIPER HI OPERATION

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

(P)CONSULT ACTIVE TEST

- Select "FRONT WIPER" of IPDM E/R active test item.
- 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.

>> Refer to WW-31, "Diagnosis Procedure". NO

INFOID:0000000010581267

Diagnosis Procedure

1.CHECK FRONT WIPER MOTOR (HI) OUTPUT VOLTAGE

PCONSULT ACTIVE TEST

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

Terminals			Test item	
(+)		(-)	rest item	Voltage (Approx.)
IPDM E/R			FRONT WIPER	
Connector	onnector Terminal Ground		TROWT WII LIX	
E5	5		Hi	Battery voltage (10 seconds)*

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

Is the measurement value normal?

YES >> GO TO 2.

NO >> Replace IPDM E/R.

2.CHECK FRONT WIPER MOTOR (HI) OPEN CIRCUIT

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

IPDM E/R		Front wip	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
E5	5	E42	4	Existed
D "				

Does continuity exist?

YES >> GO TO 3.

NO >> Repair the harness or connector.

3.CHECK FRONT WIPER MOTOR (HI) SHORT CIRCUIT

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FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

٠	IPDN	/I E/R		Continuity	
•	Connector Terminal		Ground	Continuity	
	E5	E5 5		Not existed	

Does continuity exist?

>> Repair the harness or connector. >> Replace front wiper motor. YES

NO

FRONT WIPER STOP POSITION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER STOP POSITION SIGNAL CIRCUIT

Component Function Check

$1.\mathsf{check}$ front wiper stop position signal

(P)CONSULT DATA MONITOR

- Select "WIP AUTO STOP" of IPDM E/R data monitor item.
- Operate the front wiper.
- With the front wiper operation, check the monitor status.

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

Is the status of item normal?

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

NO >> Refer to WW-33, "Diagnosis Procedure".

Diagnosis Procedure

1. CHECK FRONT WIPER MOTOR OUTPUT VOLTAGE

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

(+)	(-)	Voltage (Approx.)
IPDI	M E/R		voltage (Approx.)
Connector	Connector Terminal		
E5	16		Battery voltage

Is the measurement value normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK FRONT WIPER MOTOR SHORT CIRCUIT

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

IPDN	M E/R		Continuity	
Connector	Connector Terminal		Continuity	
E5	16		Not existed	

Does continuity exist?

YES >> Repair the harnesses or connectors.

NO >> Replace IPDM E/R.

3.check front wiper motor circuit continuity

Check continuity between IPDM E/R harness connector and front wiper motor harness connector.

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

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FRONT WIPER STOP POSITION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Does continuity exist?

YES >> Replace front wiper motor.

NO >> Repair the harnesses or connectors.

FRONT WIPER MOTOR GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000010581270

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

- 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.

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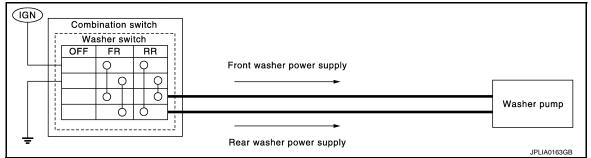
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WASHER SWITCH

Description INFOID:000000010581271

- Washer switch is integrated with combination switch.
- Combination switch switches polarity between front washer operating and rear washer operating to supply power to the washer pump on ground.



Component Inspection

INFOID:0000000010581272

1. CHECK WIPER SWITCH

- Turn the ignition switch OFF.
- 2. Disconnect combination switch connector.
- 3. Check continuity between the combination switch terminals.

A : Terminal 4
B : Terminal 6
C : Terminal 3

D : Terminal 1

	OFF	FR			RR	
Α		?			?	
В			7		ρ	
С		5			Q	
D		(5	(5	

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Combination switch		Condition	Continuity
Teri	minal	Condition	Continuity
1	6	Front washer switch ON	
3	4	TION WASHEL SWILCH ON	Existed
1	4	Rear washer switch ON	LAISIGU
3	6	ineal washer switch On	

Does continuity exist?

YES >> Wiper and washer switch is normal.

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

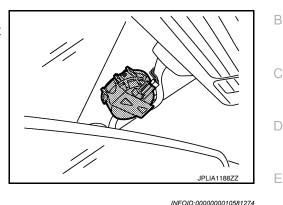
RAIN SENSOR

< DTC/CIRCUIT DIAGNOSIS >

RAIN SENSOR

Description INFOID:0000000010581273

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



Component Function Check

1. CHECK FRONT WIPER AUTO OPERATION

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

Is front wiper (AUTO) operation normally?

YES >> Rain sensor circuit is normal.

NO >> Refer to <u>WW-37</u>, "<u>Diagnosis Procedure</u>".

Diagnosis Procedure

1. CHECK RAIN SENSOR FUSE

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

Is the fuse fusing?

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

NO >> GO TO 2.

2. CHECK RAIN SENSOR POWER SUPPLY

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

Terr			
(+)		(-)	Voltage (Approx.)
Rain sensor connector	Terminal	(-)	
R9	1	Ground	Battery voltage

Is the measurement value normal?

YFS >> GO TO 3.

NO >> Repair or replace harness.

3.CHECK RAIN SENSOR GROUND CIRCUIT

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

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Rain	Rain sensor		Continuity
Connector	Connector Terminal		Continuity
R9	3		Existed

Does continuity exist?

YES >> GO TO 4.

NO >> Repair or replace harness.

4. CHECK RAIN SENSOR SIGNAL

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

	Terminal			
(+)		Condition	Signal
BCM connector	Terminal	(–)		(Reference value)
M123	112	Ground	Ignition switch ON	(V) 15 10 510ms10

Is the measurement value normal?

YES >> Replace rain sensor. Refer to <u>WW-130, "Removal and Installation"</u>.

NO >> GO TO 5.

5. CHECK RAIN SENSOR SIGNAL CIRCUIT FOR OPEN

- 1. Disconnect BCM connector.
- 2. Check continuity between BCM harness connector and rain sensor harness connector.

В	CM	Rain	sensor	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M123	112	R9	2	Existed

Does continuity exist?

YES >> GO TO 6.

NO >> Repair or replace harness.

6. CHECK RAIN SENSOR SIGNAL CIRCUIT FOR SHORT

Check continuity between BCM harness connector and ground.

В	BCM		Continuity
Connector	Connector Terminal		Continuity
M123	112		Not existed

Does continuity exist?

YES >> Repair or replace harness.

NO >> Replace BCM. Refer to BCS-93, "Removal and Installation".

REAR WIPER MOTOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER MOTOR CIRCUIT

Component Function Check

${f 1}$. CHECK REAR WIPER ON OPERATION

CONSULT ACTIVE TEST

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

: Rear wiper ON operation On

Off : Stop the rear wiper.

Is rear wiper operation normally?

YES >> Rear wiper motor circuit is normal.

NO >> Refer to WW-39, "Diagnosis Procedure".

Diagnosis Procedure

${f 1}$.CHECK REAR WIPER MOTOR OUTPUT VOLTAGE

©CONSULT ACTIVE TEST

- Turn rear wiper switch OFF, and wait for 1 minute or more. 1.
- Turn the ignition switch OFF. 2.
- 3. Disconnect rear wiper motor connector.
- Turn the ignition switch ON.
- 5. Select "RR WIPER" of BCM active test item.
- With operating the test item, check voltage between BCM harness connector and ground.

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

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

Is the measurement value normal?

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

2.CHECK REAR WIPER MOTOR SHORT CIRCUIT

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

В	BCM		Continuity
Connector	Terminal	Ground	Continuity
M120	26		Not existed

Does continuity exist?

YES >> Repair the harness or connector.

NO >> Replace BCM. Refer to BCS-93, "Exploded View"

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

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3.check rear wiper motor open circuit

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REAR WIPER MOTOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

ВСМ		Rear wiper motor		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M120	26	D115	2	Existed

Does continuity exist?

YES >> GO TO 4.

NO >> Repair the harness or connector.

4. CHECK REAR WIPER MOTOR GROUND OPEN CIRCUIT

Check continuity between rear wiper motor harness connector and ground.

Rear wiper motor			Continuity
Connector	Connector Terminal		Continuity
D115	4		Existed

Does continuity exist?

YES >> Replace rear wiper motor.

NO >> Repair the harness or connector.

REAR WIPER STOP POSITION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER STOP POSITION SIGNAL CIRCUIT

Component Function Check

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

(P)CONSULT DATA MONITOR

- Ĭ. Select "WIPER" of BCM data monitor item.
- Operate the rear wiper.
- Check that "RR WIPER STOP" changes to "On" and "Off" linked with the wiper operation.

Monitor item	Condition		Monitor status
RR WIPER STOP	Rear wiper	Stop position	On
IXIX WII LIX STOF	motor	Except stop position	Off

Is the status of item normal?

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

NO >> Refer to WW-41, "Diagnosis Procedure".

Diagnosis Procedure

1. CHECK REAR WIPER MOTOR OUTPUT VOLTAGE

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

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

Is the measurement value normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK REAR WIPER MOTOR SHORT CIRCUIT

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

ВСМ			Continuity	
Connector	Terminal	Ground	Continuity	
M121	65		Not existed	

Does continuity exist?

YES >> Repair the harness or connector.

NO >> Replace BCM. Refer to BCS-93, "Exploded View".

3.CHECK REAR WIPER MOTOR OPEN CIRCUIT

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

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REAR WIPER STOP POSITION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

В	СМ	Rear wip	per motor	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M121	65	D115	3	Existed

Does continuity exist?

YES >> Replace rear wiper motor.

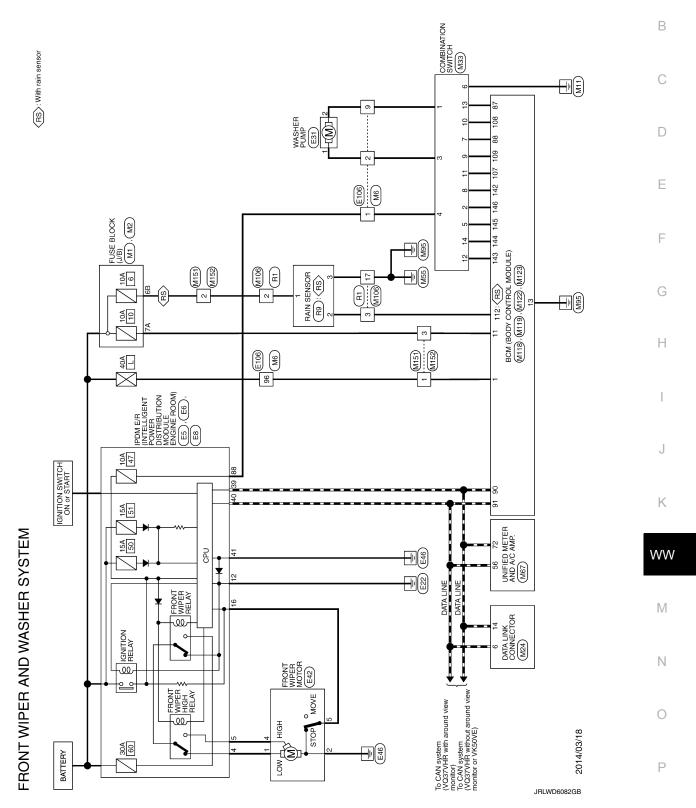
NO >> Repair the harness or connector.

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FRONT WIPER AND WASHER SYSTEM

Wiring Diagram - FRONT WIPER AND WASHER SYSTEM -



Corrector No. Estate interaction to control to stream Corrector Name Corrector Name	44 W	Cornector No. E42 Cornector Nome FRONT WIPER MOTOR	5 1 <th>88 □ 188 × 18</th> <th>- (With ICC] - (Wi</th> <th></th>	88 □ 188 × 18	- (With ICC] - (Wi	
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Signal Name [Specification]	4	171 1 1 1	65 69 69 70	LG LG SHELD		
		15 SHELD	7 2	9		_

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FRONT WIPER AND WASHER SYSTEM

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	M2		FUSE BLOCK (J/B)	NS10EW.CS	٦				48 38	03 03 07 00 00	ac ana / an ac			7	Signal Name [Specification]				-			•					M6	agiw CF agiw		TH80MW-CS16-TM4					8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9				Signal Name [Specification]			- [Without Auto aircon seat]	- [With Auto aircon seat]								
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FRONT WIPER AND WASHER SYSTEM											-							,						-		- 01:				M1	ELISE BLOCK (1/B)	(c)	Connector Type NS06FW-M2			3A 3A 1A	40	8A /A 10A 3A 4A]			e Signal Name [Specification]	-							•	
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FRONT WIPER AND WASHER SYSTEM

Corrector No. M119 Corrector Name BCM (BCDV CONTROL MODULE) Corrector Type NS16FW.CS THS 45 7 1 8 9 10 11 13 15 17 18 19	Terminal Color Of Signal Name Specification No. Wire Name Name Specification 4 PR ROW LAWP PURS SIRPA (PART SAVE) 7 Y ALL DOOR UNDOUTFUT 8 V ALL DOOR, FIEL LID LOCK OUTPUT 9 G DRIVER PROPER LID LOCK OUTPUT 10 DRIVER PROPER LID LOCK OUTPUT 10 DRIVER PROPER PLICE LID LOCK OUTPUT 10 DRIVER PROPER PLICE LID LOCK OUTPUT 10 DRIVER PROPER PRO	11 R BAT (FUSE) 15 Y ACC IND 17 Y ACC IND 18 BG TURN SIGNAL HAY FROWT) 19 SB ROOM LAMP TIMER Corrector Name BCM (BODY CONTROL MODULE) Corrector Name BCM (B	Terminal Color Of No. Wire Signal Name Specification No. Wire Signal Name Specification No. Wire Specification No. Series No.
Corrector No. M106 Corrector Name WRE TO WIRE Corrector Type NH10MW-CS10 1 2 3 4 5 6 7 8 910111213 19 20	Terminal Color Of Signal Name [Specification] No. Wire Vive Signal Name [Specification]	11 Y	13
TEM Connector Name UNFIED METER AND A/C AMP. Connector Type TH22FV+N44 Fig. 83886618288 68 887777	Terminal Color Of	1	
FRONT WIPER AND WASHER SYSTEM 8 G Connection 11 S8 Connection 13 L Connection 14 L Connection 15 B6 Connection 15 B7 Conne	7	Naminal Code Of Name (Specification) Name (Specification)	

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77	$\overline{}$	Connector Name WIRE TO WIRE	Connector Type NH10FW-CS10		_ [6 5 4 3 2 1		13 12 11 10 9 8 7	18 17 16 15 14		Terminal Color Of	No. Wire Signal Name [Specification]	- ·	+	T	A SHIELD	F	╁	10 G	11 Y .	12 BR -	13 L .	+		+	17 B	┨	Ī	_	Connector Name RAIN SENSOR	Connector Type AAB03FB	Œ	The state of the s	£	71123				a a		H :	an de	c decond	
A SOUND OW OUTDIES			SB COMBI SW OUTPUT 4	GR DRIVER DOOR SW	G REAR WINDOW DEFOGGER RELAY CONT		-	lo. M151	lame WIRE TO WIRE	voe M03FW-LC	1		Ī		3.2	Ē			Wire Signal Name (Specification)		· ·				lo. M152	lame WIRE TO WIRE	vpe M03MW-LC	1		_	<u>c</u>	67		Color Of Size of Manager 1	Wire Signal Name [Specification]		Υ .							
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FRONT WIPER AND WASHER SYSTEM	KEYLESS ENTEN BECEIVED SIGNAL	COMBI SW INPUT 5	COMBI SW INPUT 3	CAN-L	CAN-H	KEY SLOT ILL	ON IND	ACC RELAY CONT	A/T SHIFT SELECTOR POWER SUPPLY	PASSENGER DOOR REQUEST SW	DRIVER DOOR REQUEST SW	BLOWER FAN MOTOR RELAY CONT	KEYLESS ENTRY RECEIVER POWER SUPPLY	COMBI SW INPUT 1	COMBI SW INPUT 4	COMBLSW INPULZ			M123	BCM (BODY CONTROL MODILLE)	BOM (BOD) COMMOD MODOLE)	TH40FG-NH			[STI B11 B11 B11 B11 B1 B1 B1 B1	[5] [5] [14] HE HE HE HE HE HE HE HE TO TO TO			Signal Name [Specification]	RAIN SENSOR SERIAL LINK	OPLICAL SENSOR	STOP LAMP SW 2	DR DOOR UNLOCK SENSOR	KEY SLOT SW	IGN F/B	PASSENGER DOOR SW	POWER WINDOW SW COMM	LOCK IND	RECEIVER/SENSOR GND	SENSOR POWER SUPPLY	SHIFT NP	COMRISM OUTPUT 5	COINDI SW COLLOI S
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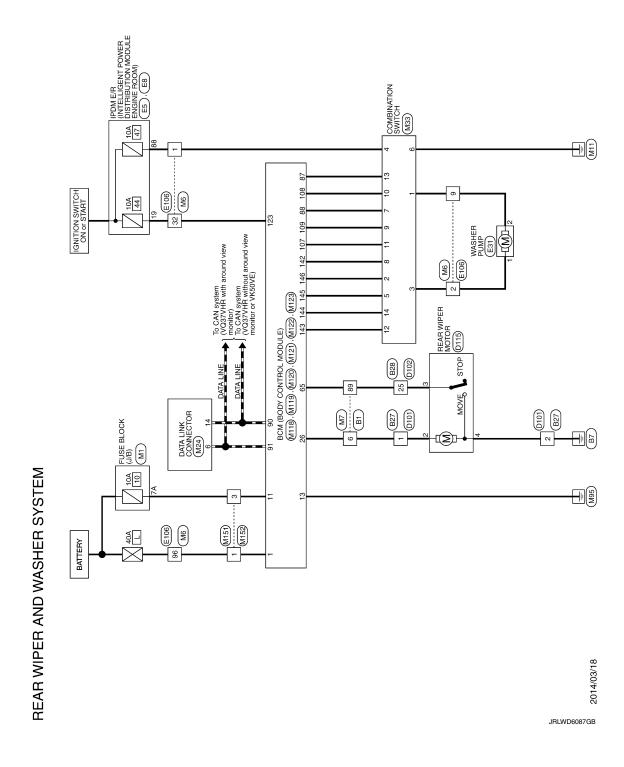
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REAR WIPER AND WASHER SYSTEM

Wiring Diagram - REAR WIPER AND WASHER SYSTEM -

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REAR WIPER AND WASHER SYSTEM

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	В
D101 WIRE TO WIRE MOSFW-GY-LC A 3 2 1 8 7 6 5 Signal Name (Specification)	С
13 W 15 W 16 W 16 W 17 W 17 W 17 W 17 W 17 W 17	D
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1 2 3 4 5 6 7 8 9 9 9 9 9 9 9 9 9	F
The. B27 Type M08MW-GY-V Wire BB B B B B B G G G G G G G G G G Signz Thype TH62MM-N-N-N Wire Color Of Signz Thype TH62MM-N-N Wire BB B G G G G Signz Thype Th62MM-N-N Wire BB B B B B B B B G G G G G Color Of Signz Thype Th62MM-N-N Wire B B B B B B SHELD Signz G G G G L G G G G L G G G G G L G G G G	G
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REAR	REAR WIPER AND WASH	ASHER SYSTEM	TEM								
Connector N	Connector No. D102		Connector No.	lor No. D115		Connector No.	E8	Conne	Connector No.	E106	
Connector N	Connector Name WIRE TO WIRE		Connec	Connector Name REAR	REAR WIPER MOTOR	Connector Name	IPDM EIR (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)	Conne	ctor Name	Connector Name WIRE TO WIRE	
Connector Type	TH32FW-NH		Connec	Connector Type CJ04FW-1V	V-1V	Connector Type	NS08FW-CS	Conne	Connector Type	TH80FW-CS16-TM4	
ES.	16 15 14 13 12 11 10 9 8 7 6 20 20 20 20 20 20 20 20 20 20 20 20 20	5 4 3 2 1	E.S.	vá.	4 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	图 H.S.	98) 680 88	匮	S. S.		
Terminal Color Of No. Wire	Color Of Signal Name [Specification]	cation]	Terminal No.	al Color Of Wire	Signal Name [Specification]	Terminal Color Of No. Wire	Signal Name [Specification]	Terminal No.	al Color Of Wire	Signal Name [Specification]	
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9	9		Connector No.	tor No. E5		√		9	Μ		
7	· >-		Connec	Connector Name PDM E/R	PDM E/R (NTELLIGENT POWER DISTRIBUTION MODULE			_	O		
8	- 7		8		iOM)			80	۸	•	
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			26	œ				25	Υ	- [With ICC]	
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REAR WIPER AND WASHER SYSTEM

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REAF	WIPE	REAR WIPER AND WASHER SYSTEM								
Connector No.	No.		24	+	-	Connector No.	M24	+	INPUT 4	
Connector Name	Name WIR	WIRE TO WIRE	29 28	SHELD		Connector Name	Connector Name DATA LINK CONNECTOR	11 LG	OUTPUT 1	
Connector Type		TH80MW-CS16-TM4	9	T	-	Connector Type	BD16FW	F	INPUT 5	
Q			61	Н	BR .	q		14 G	OUTPUT 2	
厚			62	+	α >	厚				
H.S.		ielei	8 8	╀		E.S.	11 12 13 14 16	Connector No.	M118	
			65	Н			1345678	Connector Name	Connector Name BCM (BODY CONTROL MODULE)	
		1 N N	99	+	^		- 0 0		(1)	
			68	+				Connector Type M03FB-LC	M03FB-LC	
Terminal	Color Of	Signal Name [Specification]	69	Н	9	Terminal Color Of	Signal Name [Specification]	修		
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7	>		76	+	. 9T	+		<u>a</u>	Signal Name [Specification]	
80	BG		4	+	SB .	7		No.		
10	*		78	+	GR -	12 P		+	BAT (F/L)	
11	BG		79	+		+		+	POWER WINDOW POWER SUPPLY (BAT)	
12	В		80			-		3 BG	POWER WINDOW POWER SUPPLY (RAP)	
13	9		81	\dashv		16 BG				
14	ď		82	~						
\neg	W		83	\dashv	٠,			Connector No.	M119	
┪	SHIELD		8	+	SB .	Connector No.	M33	Connector Name	Connector Name BCM (BODY CONTROL MODULE)	
17	٦		85	\dashv		Connector Name	COMBINATION SWITCH		(10000000000000000000000000000000000000	
18	Д		8	\dashv				Connector Type	NS16FW-CS	
16	9		87	+	B	Connector Type TH16FW-NH	TH16FW-NH	q		
20	œ !		88	+		q		季		
21	9 ;	•	8 8	+	BG .	45	<u> </u>	S	4 5 7 8 9 10	
3 2	> 0		5	$^{+}$		Si T			27	
25	L 82		8 8	+	20 20 20 20 20 20 20 20 20 20 20 20 20 2		123 456		61 91 71 61 61 111	
56	GR.		8	╁			7 8 9 10 11 12 13 14			
27	BG		8	┝	BG .		21 11 21 2			
28	*		97	H				Terminal Color Of		
38	8	·	98	H		Terminal Color Of		No. Wire	signal Name [Specification]	
39	8		66	L	BG .	No. Wire	Signal Name [Specification]	4 G	INT ROOM LAMP PWR SUPPLY (BAT SAVE)	
43	SB					-	FR WASHER (-)	>	PASSENGER DOOR UNLOCK OUTPUT	
44	W					2 SB	OUTPUT 4	7	STEP LAMP OUTPUT	
45	В					3 BG	FR WASHER (+)	8	ALL DOOR, FUEL LID LOCK OUTPUT	
51	^	-				4 G	IGN	9	DRIVER DOOR, FUEL LID UNLOCK OUTPUT	
	FIG					2 F	OUTPUT 3	10 BR	REAR DOOR UNLOCK OUTPUT	
\neg	SHIELD					6 B	GROUND	4	BAT (FUSE)	
25	æ					+	INPUT 3	+	GROUND	
┰	>					+	OUTPUT 5	+	ACC IND	
_	SHIELD	-				≻	INPUT 2	17 W	TURN SIGNAL RH (FRONT)	

JRLWD6091GB

REAR WIPER AND WASHER SYSTEM

REAR W	REAR WIPER AND WASHER SYSTEM	9	11 8738	PEAP I H DOOP SW	Connector No	M423		Connector No	M454	_
19 SB	ROOMLAN	1			Connector Name		BCM (BODY CONTROL MODULE)	e.	WIRE TO WIRE	
		Connector No.	s. M122		Connector Type	\Box	TH40FG-NH	Connector Type	M03FW-LC	_
Connector No.	Connector No. M120 Connector Name BCM (BODY CONTROL MODULE)	Connector Name Connector Type	me BCM (BODY CONTROL MODULE) pe TH40FB-NH	ROL MODULE)	偃			匮		
Connector Type	NS12FW-CS	ą			Ś	Е	124 (22) (124) (124) (124) (124) (125	S. S.	-	
Œ		李		17		151 153	अहोत्रहाम्बन्धियोग्दायाया छि। । । । । । । ।		3 2	
H.S.		ė E	9130	28180787787874						
	25 26			756 PS 150	Terminal Colo No. W	Color Of Wire	Signal Name [Specification]	Terminal Color Of No. Wire	Signal Name [Specification]	_
					112	GR	RAIN SENSOR SERIAL LINK	٨	-	_
		hal	<u>_</u>	Signal Name [Specification]	+	а.	OPLICAL SENSOR	+		_
la l	Of Signal Name [Specification]	+			+	H .	STOP LAMP SW 1	е В		_
20 0	TURN SIGNAL RH (REAR)	75	BR PASSENGE	PASSENGER DOOR ANT+	119	7 88	DR DOOR UNLOCK SENSOR			
25 G	TURN SIGNAL	H		DRIVER DOOR ANT-	╀	#	KEY SLOT SW	Connector No.	M152	_
Н		Н	LG DRIVER	DRIVER DOOR ANT+	Н	W	IGN F/B	Connector Name WIRE TO WIRE	WIRE TO WIRE	
		H		ROOM ANT1-	+	OJ -	PASSENGER DOOR SW	o lagrando		
		+		ROOM ANT1+	+	BG	POWER WINDOW SW COMM	Connector Type M03MW-LC	M03MW-LC	_
Connector No.		8 80	GR NATS,	NATS ANT AMP.	28 5	% a	LOCK IND	Œ		
Connector Name	BCM (BODY CONTROL MODULE)	+		GNEEL AV (F/B) CONT	+	> >	SENSOR POWER SLIDBLY	季		
Connector Type	TH40FGY-NH	t	+	KEYLESS ENTRY RECEIVER SIGNAL	╀	- œ	SHFT NP	Ę.S.	_	
1	1	H		COMBI SW INPUT 5	141	9	SECURITY INDICATOR OUTPUT		- 0	
F		88	v combi	COMBI SW INPUT 3	142 E	BG	COMBI SW OUTPUT 5		2 3	
Ę	K	06	0	CAN-L	\dashv	<u>а</u>	COMBI SW OUTPUT 1]	
5	75 SE			CAN-H		₀	COMBI SW OUTPUT 2			
	69 68 67 66 64	\dashv		KEY SLOT ILL	+	_	COMBI SW OUTPUT 3	E E	Signal Name [Specification]	
		+		ONIND	+	es :	COMBI SW OUTPUT 4	No.		
		36	BG ACC RE	ACC RELAY CONI	150	X 0	DRIVER DOOR SW	< ×		
Terminal Color Of		╁	╈	SHFT P	1	1		╀	1	_
No. Wire		H	H	PASSENGER DOOR REQUEST SW						1
"	LUGGAGE ROOM ANT-	H	H	DRIVER DOOR REQUEST SW						
+	LUGGAGE ROOM ANT+	+	+	BLOWER FAN MOTOR RELAY CONT						
+	BACK DOOR ANT-	+	+	KEYLESS ENTRY RECEIVER POWER SUPPLY						
36 36	BACK DOOR ANT+	+		COMBI SW INPUT 1						
+	9	+		COMBI SW INPUT 4						
25 LG	SIARIER RELAY CONI	+		COMBI SW INPUL 2						
+	1	110	G HAZ	HAZARD SW						
. w	IRUNK REQUEST SW									
64 65 BG	I-KEY WARN BUZZER (ENG ROOM) REAR WIDER STOP POSITION									
╀	Ļ									
67 P	BACK DOOR OPENER SW									
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< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION

BCM (BODY CONTROL MODULE)

Reference Value

VALUES ON THE DIAGNOSIS TOOL

NOTE:

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

CONSULT MONITOR ITEM

Monitor Item	Condition	Value/Status
FR WIPER HI	Other than front wiper switch HI	Off
FR WIPER III	Front wiper switch HI	On
ED WIDED LOW	Other than front wiper switch LO	Off
FR WIPER LOW	Front wiper switch LO	On
FR WASHER SW	Front washer switch OFF	Off
FR WASHER SW	Front washer switch ON	On
FR WIPER INT	Other than front wiper switch INT/AUTO	Off
FR WIPER INT	Front wiper switch INT/AUTO	On
FR WIPER STOP	Front wiper is not in STOP position	Off
FR WIFER STOP	Front wiper is in STOP position	On
INT VOLUME	Wiper volume dial is in a dial position 1 - 7	Wiper volume dial position
RR WIPER ON	Other than rear wiper switch ON	Off
RR WIPER ON	Rear wiper switch ON	On
RR WIPER INT	Other than rear wiper switch INT	Off
RR WIPER IN	Rear wiper switch INT	On
RR WASHER SW	Rear washer switch OFF	Off
RR WASHER SW	Rear washer switch ON	On
RR WIPER STOP	Rear wiper is in STOP position	Off
RR WIFER STOP	Rear wiper is not in STOP position	On
TURN SIGNAL R	Other than turn signal switch RH	Off
TORN SIGNAL R	Turn signal switch RH	On
TURN SIGNAL L	Other than turn signal switch LH	Off
TORN SIGNAL L	Turn signal switch LH	On
TAIL LAMP SW	Other than lighting switch 1ST and 2ND	Off
TAIL LAWIP SW	Lighting switch 1ST or 2ND	On
HI BEAM SW	Other than lighting switch HI	Off
HI BEAIN SW	Lighting switch HI	On
HEAD LAMP SW 1	Other than lighting switch 2ND	Off
HEAD LAWIP SW T	Lighting switch 2ND	On
HEAD LAMP SW 2	Other than lighting switch 2ND	Off
HEAD LAWF SW 2	Lighting switch 2ND	On
DASSING SW	Other than lighting switch PASS	Off
PASSING SW	Lighting switch PASS	On
AUTO LIGHT SW	Other than lighting switch AUTO	Off
AUTU LIGHT SW	Lighting switch AUTO	On

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Monitor Item	Condition	Value/Status
FR FOG SW	Front fog lamp switch OFF	Off
FR FOG SW	Front fog lamp switch ON	On
RR FOG SW	NOTE: The item is indicated, but not monitored.	Off
	Driver door closed	Off
DOOR SW-DR	Driver door opened	On
DOOR SW-AS	Passenger door closed	Off
DOOR SW-AS	Passenger door opened	On
DOOD SW DD	Rear RH door closed	Off
DOOR SW-RR	Rear RH door opened	On
DOOD OW DI	Rear LH door closed	Off
DOOR SW-RL	Rear LH door opened	On
	Back door closed	Off
DOOR SW-BK	Back door opened	On
ODL 1 001/ 3:::	Other than power door lock switch LOCK	Off
CDL LOCK SW	Power door lock switch LOCK	On
	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
KEY CYL LK-SW	Driver door key cylinder LOCK position	On
	Other than driver door key cylinder UNLOCK position	Off
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
TR CANCEL SW	NOTE: The item is indicated, but not monitored.	Off
TD/DD ODEN OW	Back door opener switch OFF	Off
TR/BD OPEN SW	While the back door opener switch is turned ON	On
TRNK/HAT MNTR	NOTE: The item is indicated, but not monitored.	Off
REVERSE SW	NOTE: The item is indicated, but not monitored.	Off
DKE I OCK	LOCK button of the Intelligent Key is not pressed	Off
RKE-LOCK	LOCK button of the Intelligent Key is pressed	On
DKE TINI OCK	UNLOCK button of the Intelligent Key is not pressed	Off
RKE-UNLOCK	UNLOCK button of the Intelligent Key is pressed	On
RKE-TR/BD	NOTE: The item is indicated, but not monitored.	Off
DICE DANIC	PANIC button of the Intelligent Key is not pressed	Off
RKE-PANIC	PANIC button of the Intelligent Key is pressed	On
DIVE DAM ODES!	UNLOCK button of the Intelligent Key is not pressed	Off
RKE-P/W OPEN	UNLOCK button of the Intelligent Key is pressed and held	On

Monitor Item	Condition	Value/Status
RKE-MODE CHG	LOCK/UNLOCK button of the Intelligent Key is not pressed and held simultaneously	Off
	LOCK/UNLOCK button of the Intelligent Key is pressed and held simultaneously	On
OPTICAL SENSOR	Bright outside of the vehicle	Close to 5 V
OF HOAL SLINSON	Dark outside of the vehicle	Close to 0 V
REQ SW -DR	Driver door request switch is not pressed	Off
REQ SW -DR	Driver door request switch is pressed	On
REQ SW -AS	Passenger door request switch is not pressed	Off
REQ SW -AS	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
REQ SW -BD/TR	Back door request switch is not pressed	Off
	Back door request switch is pressed	On
PUSH SW	Push-button ignition switch (push switch) is not pressed	Off
1 0011 0 11	Push-button ignition switch (push switch) is pressed	On
IGN RLY2 -F/B	NOTE: The item is indicated, but not monitored.	Off
ACC RLY -F/B	NOTE: The item is indicated, but not monitored.	Off
CLUCH SW	NOTE: The item is indicated, but not monitored.	Off
BRAKE SW 1	The brake pedal is depressed when No. 7 fuse is blown	Off
DRAKE SW I	The brake pedal is not depressed when No. 7 fuse is blown, or No. 7 fuse is normal	On
BRAKE SW 2	The brake pedal is not depressed	Off
DRAKE SW Z	The brake pedal is depressed	On
DETE/CANCL SW	Selector lever in P position	Off
DETE/CANCL SW	Selector lever in any position other than P	On
OFT DAI/ALOVA/	Selector lever in any position other than P and N	Off
SFT PN/N SW	Selector lever in P or N position	On
S/L -LOCK	NOTE: The item is indicated but not monitored.	Off
S/L -UNLOCK	NOTE: The item is indicated but not monitored.	Off
S/L RELAY-F/B	NOTE: The item is indicated but not monitored.	Off
LINI Z CENL DD	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
ION DIVI E/D	Ignition switch in OFF or ACC position	Off
IGN RLY1 -F/B	Ignition switch in ON position	On
DETE ON IDEA	Selector lever in any position other than P	Off
DETE SW -IPDM	Selector lever in P position	On
OFT DN 12214	Selector lever in any position other than P and N	Off
SFT PN -IPDM	Selector lever in P or N position	On

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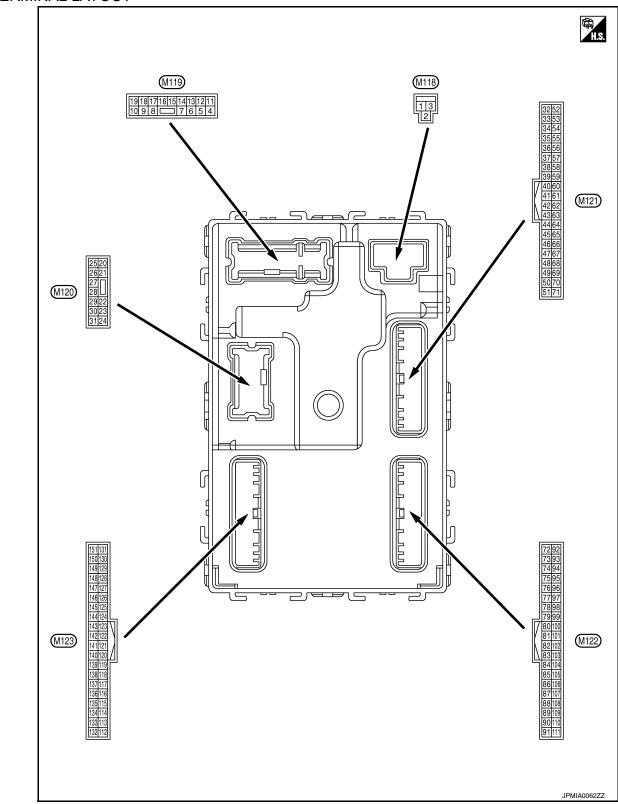
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Monitor Item	Condition	Value/Status
SFT P -MET	Selector lever in any position other than P	Off
SELF-MET	Selector lever in P position	On
SFT N -MET	Selector lever in any position other than N	Off
SELIN-MET	Selector lever in N position	On
	Engine stopped	Stop
ENGINE STATE	While the engine stalls	Stall
ENGINE STATE	At engine cranking	Crank
	Engine running	Run
S/L LOCK-IPDM	NOTE: The item is indicated but not monitored.	Off
S/L UNLK-IPDM	NOTE: The item is indicated but not monitored.	Off
S/L RELAY-REQ	NOTE: The item is indicated but not monitored.	Off
VEH SPEED 1	While driving	Equivalent to speed- ometer reading
VEH SPEED 2	While driving	Equivalent to speed- ometer reading
	Driver door is locked	LOCK
DOOR STAT-DR	Wait with selective UNLOCK operation (5 seconds)	READY
	Driver door is unlocked	UNLOCK
	Passenger door is locked	LOCK
DOOR STAT-AS	Wait with selective UNLOCK operation (5 seconds)	READY
	Passenger door is unlocked	UNLOCK
ID OK FLAG	Driver side door is open after ignition switch is turned OFF (Selector lever is in the P position)	Reset
	Ignition switch ON	Set
DDMT ENC CTDT	The engine start is prohibited	Reset
PRMT ENG STRT	The engine start is permitted	Set
PRMT RKE STRT	NOTE: The item is indicated, but not monitored.	Reset
KEY OM OLOT	The Intelligent Key is not inserted into key slot	Off
KEY SW -SLOT	The Intelligent Key is inserted into key slot	On
RKE OPE COUN1	During the operation of the Intelligent Key	Operation frequency of the Intelligent Key
RKE OPE COUN2	NOTE: The item is indicated, but not monitored.	_
CONFRM ID ALL	The key ID that the key slot receives is not recognized by any key ID registered to BCM.	Yet
	The key ID that the key slot receives accords with any key ID registered to BCM.	Done
CONFIDM ID4	The key ID that the key slot receives is not recognized by the fourth key ID registered to BCM.	Yet
CONFIRM ID4	The key ID that the key slot receives is recognized by the fourth key ID registered to BCM.	Done
CONFIDM ID2	The key ID that the key slot receives is not recognized by the third key ID registered to BCM.	Yet
CONFIRM ID3	The key ID that the key slot receives is recognized by the third key ID registered to BCM.	Done

Monitor Item	Condition						
CONFIRM ID2	The key ID that the key slot receives is not recognized by the second key ID registered to BCM.	Yet					
CONFIRM ID2	The key ID that the key slot receives is recognized by the second key ID registered to BCM.	Done					
CONFIRM ID1	The key ID that the key slot receives is not recognized by the first key ID registered to BCM.	Yet					
CONFIRMIDI	The key ID that the key slot receives is recognized by the first key ID registered to BCM.	Done					
TP 4	The ID of fourth Intelligent Key is not registered to BCM	Yet					
117 4	The ID of fourth Intelligent Key is registered to BCM	Done					
TP 3	The ID of third Intelligent Key is not registered to BCM	Yet					
1173	The ID of third Intelligent Key is registered to BCM	Done					
TD 0	The ID of second Intelligent Key is not registered to BCM	Yet					
TP 2	The ID of second Intelligent Key is registered to BCM	Done					
TD 4	The ID of first Intelligent Key is not registered to BCM	Yet					
ΓP 1	The ID of first Intelligent Key is registered to BCM	Done					

TERMINAL LAYOUT



PHYSICAL VALUES

WW-59 2015 QX70 **Revision: 2015 February**

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	inal No.	Description			O a a diffici	Value
+	-	Signal name	Input/ Output		Condition	(Approx.)
1 (W)	Ground	Battery power supply	Input	Ignition switch OF	F	Battery voltage
2 (Y)	Ground	P/W power supply (BAT)	Output	Ignition switch OF	F	12 V
3 (BG)	Ground	P/W power supply (IGN)	Output	Ignition switch ON	N .	12 V
					o battery saver is activated. room lamp power supply)	0 V
4 (P)	Ground	Interior room lamp power supply	Output	ed.	battery saver is not activat- ior room lamp power sup-	12 V
5	Cround	Passenger door UN-	Output	December door	UNLOCK (Actuator is activated)	12 V
(V)	Ground	LOCK	Output	Passenger door	Other than UNLOCK (Actuator is not activated)	0 V
7	Ground	Ston Jama control	Output	Ston Jamp	ON	0 V
(Y)	Ground	Step lamp control	Output	Step lamp	OFF	12 V
8	Cround	All doors, fuel lid	Output	out All doors, fuel lid	LOCK (Actuator is activated)	12 V
(V)	Giouna	LOCK			Other than LOCK (Actuator is not activated)	0 V
9	Cround	Driver door, fuel lid	Output	Driver door, fuel	UNLOCK (Actuator is activated)	12 V
(G)	Ground	UNLOCK	Output	lid	Other than UNLOCK (Actuator is not activated)	0 V
10	Ground	Rear RH door and rear LH door UN-	Output	Rear RH door	UNLOCK (Actuator is activated)	12 V
(BR)	Giodila	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	1	0 V
15 (Y)	Ground	ACC indicator lamp	Output	Ignition switch	OFF (LOCK indicator is not illuminated)	Battery voltage
(1)					ACC or ON	0 V
-					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 s
						6.5 V

	inal No.	Description				Value		
(Wire	e color)	Signal name	Input/ Output		Condition	(Approx.)		
					Turn signal switch OFF	0 V		
18 (BG)	Ground	Turn signal LH (Front)	Output	Ignition switch ON	Turn signal switch LH	(V) 15 10 5 0		
						PKID0926E 6.5 V		
				Other than under	condition	5.0 V		
19 (SB)	Ground	Interior room lamp control	Output	(Door is unlock	amp timer is activated. ked. etc) function is activated.	0 V		
					Turn signal switch OFF	0 V		
20 (V)	Ground	Turn signal RH (Rear)	Output	Ignition switch ON	Turn signal switch RH	(V) 15 10 5 0		
								1 s PKID0926E 6.5 V
					Turn signal switch OFF	0 V		
25 (G)	Ground	Turn signal LH (Rear)	Output	Ignition switch ON	Turn signal switch LH	(V) 15 10 5 0 1 s		
					OFF (Otamoral)	6.5 V		
26 (P)	Ground	Rear wiper	Output	Rear wiper	OFF (Stopped) ON (Operated)	0 V 12 V		
34		Luggage room anten-		Ignition switch	When Intelligent Key is in the passenger compartment	(V) 15 10 5 0 1 s JMKIA0062GB		
(SB)	Ground	na (–)	Output	OFF	When Intelligent Key is not in the passenger compartment	(V) 15 10 5 0 1 s JMKIA0063GB		

	inal No.	Description				Value	
(Wire	e color)	Signal name	Input/ Output		Condition	(Approx.)	
35	Ground	Luggage room anten-	Output	Output Ignition switch	When Intelligent Key is in the passenger compartment	(V) 15 10 5 0 1 s JMKIA0062GB	
(V)	Gloulu	na (+)	Output	OFF	When Intelligent Key is not in the passenger compartment	(V) 15 10 5 0 1 s JMKIA0063GB	
38	Ground	Back door antenna (–		When the back door opener request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	(V) 15 10 5 0 JMKIA0062GB	
(B)	Clound)	Output		operated with ig- nition switch	nition switch	When Intelligent Key is not in the antenna detection area
39	Cround	Back door antenna	Output	When the back door opener re-	When Intelligent Key is in the antenna detection area	(V) 15 10 5 0 1 s JMKIA0062GB	
(W)	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	
47 (Y)	Ground	Ignition relay (IPDM E/R) control	Output	Ignition switch	OFF or ACC	12 V 0 V	

Terminal No. (Wire color)		Description		Condition		Value	
+	e color)	Signal name	Input/ Output		Condition	(Approx.)	
52	Ground	Starter relay control	Output	Ignition switch	When selector lever is in P or N position	12 V	-
(LG)	Ground	Starter relay control	Output	ON	When selector lever is not in P or N position	0 V	_
60		Push-button ignition		Push-button ig-	Pressed	0 V	_
(SB)	Ground	switch (Push switch)	Input	nition switch (Push switch)	Not pressed	12 V	-
					ON (Pressed)	0 V	-
61 (W)	Ground	Back door opener request switch	Input	Back door request switch	OFF (Not pressed)	(V) 15 10 5 0 10 ms JPMIA0016GB 1.0 V	
		Intelligent Key warn-		Intelligent Key	Sounding	0 V	=
64 (L)	Ground	ing buzzer (Engine room)	Output	warning buzzer (Engine room)	Not sounding	12 V	-
65 (BG)	Ground	Rear wiper stop position	Input	Rear wiper	In stop position	(V) 15 10 5 0 10 ms JPMIA0016GB 1.0 V	
					Not in stop position	0 V	-
66	Ground	Back door switch	Input	Back door switch	OFF (Door close)	12 V	_
(LG)	Cround	Buok door ownor	mpat	Back acci cilicii	ON (Door open)	0 V	_
					Pressed	0 V	٠ ١
67 (P)	Ground	Back door opener switch	Input	Back door open- er switch	Not pressed	(V) 15 10 5 0 → 10ms JPMIA0594GB	
68 (BR)	Ground	Rear RH door switch	Input	Rear RH door switch	OFF (Door close)	8.5 - 9.0 V (V) ₁₅ 10 5 0 → 10ms JPMIA0594GB 8.5 - 9.0 V	-

	nal No.	Description				Value			
+ (Wire	color)	Signal name	Input/ Output		Condition	(Approx.)			
69 (R)	Ground	Rear LH door switch	Input	Rear LH door switch	OFF (Door close)	(V) ₁₅ 10 5 0 ***10ms JPMIA0594GB 8.5 - 9.0 V			
					ON (Door open)	0 V			
74	Ground	Passenger door an-				Output	When the passenger door re-	When Intelligent Key is in the antenna detection area	(V) 15 10 5 0 1 s JMKIA0062GB
(SB)	Ground	tenna (–)	Cutput	quest switch is operated with ig- nition switch OFF	When Intelligent Key is not in the antenna detection area	(V) 15 10 5 11 1 s JMKIA0063GB			
75	Ground	Passenger door antenna (+)	Output		When the pas- senger door re-	When Intelligent Key is in the antenna detection area	(V) 15 10 5 0 JMKIA0062GB		
(BR)	Ground			quest switch is operated with ig- nition switch OFF	When Intelligent Key is not in the antenna detection area	(V) 15 10 5 0 JMKIA0063GB			

	inal No. e color)	Description			O a differen	Value		
+	-	Signal name	Input/ Output		Condition	(Approx.)		
76		Driver door antenna		When the driver door request	When Intelligent Key is in the antenna detection area	(V) 15 10 5 0 JMKIA0062GB		
(V)	Ground	Ground (-) Output door request switch is operated with ignition switch OFF	When Intelligent Key is not in the antenna detection area	(V) 15 10 5 0 JMKIA0063GB				
77		Driver door antenna	0.1.1	When the driver door request	When Intelligent Key is in the antenna detection area	(V) 15 10 5 0 1 s JMKIA0062GB		
(LG)	Ground	(+)	Output	switch is operated with ignition switch OFF	ed with ignition switch OFF	When Intelligent Key is not in the antenna detection area	(V) 15 10 5 0 JMKIA0063GB	V
78	Ground	Room antenna (–)	Output	Ignition switch	When Intelligent Key is in the passenger compart- ment	(V) 15 10 5 0 JMKIA0062GB		
(Y)	Giodila	(Instrument panel)	Output	ÖFF	When Intelligent Key is not in the passenger compartment	(V) 15 10 5 0 1 s JMKIA0063GB		

	inal No.	Description				Value
+	e color)	Signal name	Input/ Output		Condition	(Approx.)
79	Ground	Room antenna (+)	Output	Ignition switch	When Intelligent Key is in the passenger compart- ment	(V) 15 10 5 0 1 s JMKIA0062GB
(BR)		(Instrument panel)	•	OFF	When Intelligent Key is not in the passenger compartment	(V) 15 10 5 11 1 s JMKIA0063GB
80 (GR)	Ground	NATS antenna amp.	Input/ Output	During waiting	Ignition switch is pressed while inserting the Intelligent 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 Intelligent Key into the key slot.	Just after pressing ignition switch. Pointer of tester should move.
82 (P)	Ground	Ignition relay [Fuse block (J/B)] control	Output	Ignition switch	OFF or ACC	0 V 12 V
83	Ground	Remote keyless entry	Input/	During waiting		(V) 15 10 5 0 1 ms JMKIA0064GB
(GR)	Giouna		Output	When operating of gent Key	either button on the Intelli-	(V) 15 10 5 1 ms JMKIA006SGB

< ECU DIAGNOSIS INFORMATION >

Terminal No.		Description				Value	
(Wire	color)	Signal name	Input/ Output	Condition		(Approx.)	
					All switches OFF (Wiper volume dial 4)	(V) 15 10 5 0 2 ms JPMIA0041GB	
87	Ground	Combination switch	Input	Combination	Front fog lamp switch ON (Wiper volume dial 4)	(V) 15 10 5 0 2 ms JPMIA0037GB	
(BR) Gro	Glound	INPUT 5		switch	Rear wiper switch ON (Wiper volume dial 4)	(V) 15 10 5 0 2 ms JPMIA0039GB 1.3 V	
					Any of the conditions below with all switches OFF Wiper volume dial 1 Wiper volume dial 2 Wiper volume dial 6 Wiper volume dial 7	(V) 15 10 5 0 2 ms JPMIA0040GB	

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	inal No.	Description				Value
+ (VVire	e color)	Signal name	Input/ Output		Condition	(Approx.)
					All switches OFF (Wiper volume dial 4)	(V) 15 10 5 0 2 ms JPMIA0041GB 1.4 V
					Lighting switch HI (Wiper volume dial 4)	(V) 15 10 5 0 2 ms JPMIA0036GB 1.3 V
88 (V)	Ground	Combination switch INPUT 3	Input	Combination switch	Lighting switch 2ND (Wiper volume dial 4)	(V) 15 10 5 0 2 ms JPMIA0037GB 1.3 V
					Rear washer switch ON (Wiper volume dial 4)	(V) 15 10 0 2 ms JPMIA0039GB 1.3 V
					Any of the conditions below with all switches OFF Wiper volume dial 1 Wiper volume dial 2 Wiper volume dial 3	(V) 15 10 5 0 2 ms JPMIA0040GB 1.3 V
90 (P)	Ground	CAN-L	Input/ Output		_	_
91 (L)	Ground	CAN-H	Input/ Output		_	_

Terminal No. Description (Wire color)		1			Value	
+	e color)	Signal name	Input/ Output		Condition	(Approx.)
92 (LG)		Key slot illumination	Output		OFF	12 V
	Ground			Key slot illumina- tion	Blinking	(V) 15 10 5 0 1 s JPMIA0015GB
					ON	0 V
93 (V)	Ground	ON indicator lamp	Output	Ignition switch	OFF (LOCK indicator is not illuminated)	Battery voltage
					ON or ACC	0 V
95	5 Cround ACC relay central Output Ignition avii	Ignition switch	OFF	0 V		
(BG)	Ground	ACC relay control	Output	igililion switch	ACC or ON	12 V
96 (GR)	Ground	A/T shift selector (Detention switch) power supply	Output		_	12 V
99 (R)	Ground	Selector lever P position switch	Input	Selector lever	P position	0 V
	Ground				Any position other than P	12 V
					ON (Pressed)	0 V
100 (G)	Ground	Passenger door request 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 request switch	OFF (Not pressed)	(V) 15 10 5 0 10 ms JPMIA0016GB 1.0 V
102	_	Blower fan motor re-			OFF or ACC	0 V
(BG)	Ground	lay control	Output	Ignition switch	ON	12 V
103 (BR)	Ground	Remote keyless entry receiver power supply	Output	Ignition switch OFF		12 V

Terminal No. (Wire color)		Description				Value	
+	- COIOT)	Signal name	Input/ Output		Condition	(Approx.)	
					All switches OFF	(V) 15 10 5 0 2 ms JPMIA0041GB 1.4 V	
					Turn signal switch LH	(V) 15 10 5 0 2 ms JPMIA0037GB	
107 (LG)	Ground	Combination switch INPUT 1	Input	Combination switch (Wiper volume dial 4)	Turn signal switch RH	(V) 15 10 5 0 2 ms JPMIA0036GB	
					Front wiper switch LO	(V) 15 10 5 0 2 ms JPMIA0038GB	
					Front washer switch ON	(V) 15 10 5 0 2 ms JPMIA0039GB 1.3 V	

Terminal No.	Description		Condition		Value (Approx.)	
(Wire color) + _	Signal name Input/ Outpu					
				All switches OFF (Wiper volume dial 4)	(V) 15 10 5 0 2 ms JPMIA0041GB 1.4 V	
				Lighting switch AUTO (Wiper volume dial 4)	(V) 15 10 5 0 2 ms JPMIA0038GB 1.3 V	
108 (R) Ground	Combination switch INPUT 4	Input	combination switch	Lighting switch 1ST (Wiper volume dial 4)	(V) 15 10 5 0 2 ms JPMIA0036GB 1.3 V	
				Rear wiper switch INT (Wiper volume dial 4)	(V) 15 10 5 0 2 ms JPMIA0040GB 1.3 V	V
				Any of the conditions below with all switches OFF Wiper volume dial 1 Wiper volume dial 5 Wiper volume dial 6	(V) 15 10 5 0 2 ms	

	nal No.	Description				Value		
(Wire	e color)	Signal name	Signal name Input/ Output		Condition	(Approx.)		
	Ground	Combination switch INPUT 2	Input	Combination switch (Wiper volume dial 4)	All switches OFF	(V) 15 10 5 0 2 ms JPMIA0041GB		
					Lighting switch PASS	(V) 15 10 5 0 2 ms JPMIA0037GB		
109 (Y)					Lighting switch 2ND	(V) 15 10 0 2 ms JPMIA0036GB		
						Front wiper sw AUTO	Front wiper switch INT/ AUTO	(V) 15 10 5 0 2 ms JPMIA0038GB
					Front wiper switch HI	(V) 15 10 5 0 2 ms JPMIA0040GB		
					ON	0 V		
110 (G)	Ground	Hazard switch	Input	Hazard switch	OFF	(V) 15 10 5 0 10 ms JPMIA0012GB 1.1 V		

	nal No.	Description	_			Value
+	color)	Signal name	Input/ Output		Condition	(Approx.)
112 (GR)	Ground	Rain sensor serial link	Input/ Output	Ignition switch ON	N	(V) 15 10 5 0 JPMIA0156GB 8.7 V
113				Ignition switch	When bright outside of the vehicle	Close to 5 V
(P)	Ground	Optical sensor	Input	ON ON	When dark outside of the vehicle	Close to 0 V
116 (BR)	Ground	Stop lamp switch 1	Input		_	Battery voltage
		Stop lamp switch 2		Stop lamp switch	OFF (Brake pedal is not depressed)	0 V
118	Ground	(Without ICC)	Input	Stop lamp switch	ON (Brake pedal is depressed)	Battery voltage
(P)	0.000	Stop lamp switch 2	pat		OFF (Brake pedal is not debrake hold relay OFF	0 V
		(With ICC)			ON (Brake pedal is de- brake hold relay ON	Battery voltage
119 (SB)	Ground	Front door lock assembly driver side (Unlock sensor)	Input	Driver door	LOCK status (Unlock sensor switch OFF)	(V) 15 10 5 0 JPMIA0594GB 8.5 - 9.0 V
					UNLOCK status (Unlock switch sensor ON)	0 V
121	Crownsi	Kov olet oviiteh	lp = · · t	When the Intellige slot	ent Key is inserted into key	12 V
(BR)	Ground	Key slot switch	Input	When the Intellige key slot	ent Key is not inserted into	0 V
123 (W)	Ground	IGN feedback	Input	Ignition switch	OFF or ACC	0 V
(**)					ON	Battery voltage
124 (LG)	Ground	Passenger door switch	Input	Passenger door switch	OFF (Door close)	(V) ₁₅ 10 5 0
						JPMIA0594GB 8.5 - 9.0 V
					ON (Door open)	0 V

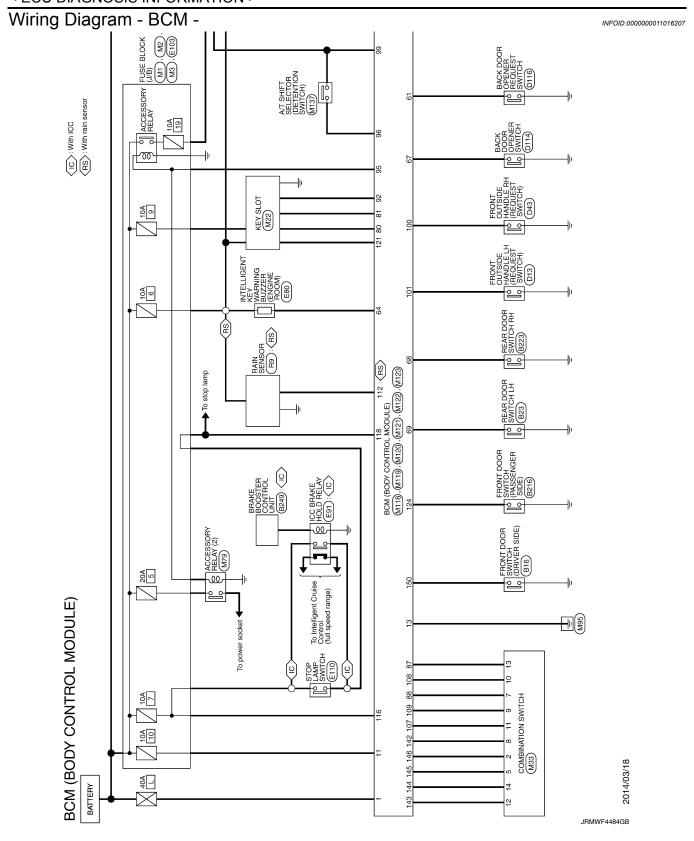
	nal No.	Description				Value
+	color)	Signal name	Input/ Output		Condition	(Approx.)
132 (BG)	Ground	Power window switch communication	Input/ Output	Ignition switch Of	N	(V) 15 10 5 0 10 ms JPMIA0013GB 10.2 V
				Ignition switch OF	F or ACC	12 V
134 (GR)	Ground	LOCK indicator lamp	Output	LOCK indicator lamp	OFF ON	Battery voltage
137 (B)	Ground	Receiver and sensor ground	Input	Ignition switch Of		0 V
138	Craund	Concernation	Outout	lamitian avvitab	OFF	0 V
(Y)	Ground	Sensor power supply	Output	Ignition switch	ACC or ON	5.0 V
140	Ground	Selector lever P/N	Input	Selector lever	P or N position	12 V
(R)	Ground	position	mpat	00.00.01	Except P and N positions ON	0 V 0 V
141 (G)	Ground	Security indicator lamp	Output	Security indicator lamp	Blinking	(V) 15 10 5 0 1 1 s JPMIA0014GB
					OFF	12 V
					All switches OFF	0 V
					Lighting switch 1ST	(V)
				Combination	Lighting switch HI	15
142 (BG)	Ground	Combination switch OUTPUT 5	Output	switch (Wiper volume	Lighting switch 2ND	5
				dial 4)	Turn signal switch RH	2 ms JPMIA0031GB
					All switches OFF (Wiper volume dial 4)	0 V
					Front wiper switch HI (Wiper volume dial 4)	
143 (P)	Ground	Combination switch OUTPUT 1	Output	Combination switch	Rear wiper switch INT (Wiper volume dial 4) Any of the conditions be-	(V) 15 10 5 0
ν,					low with all switches OFF Wiper volume dial 1 Wiper volume dial 2 Wiper volume dial 3 Wiper volume dial 6 Wiper volume dial 7	0 JPMIA0032GB 10.7 V

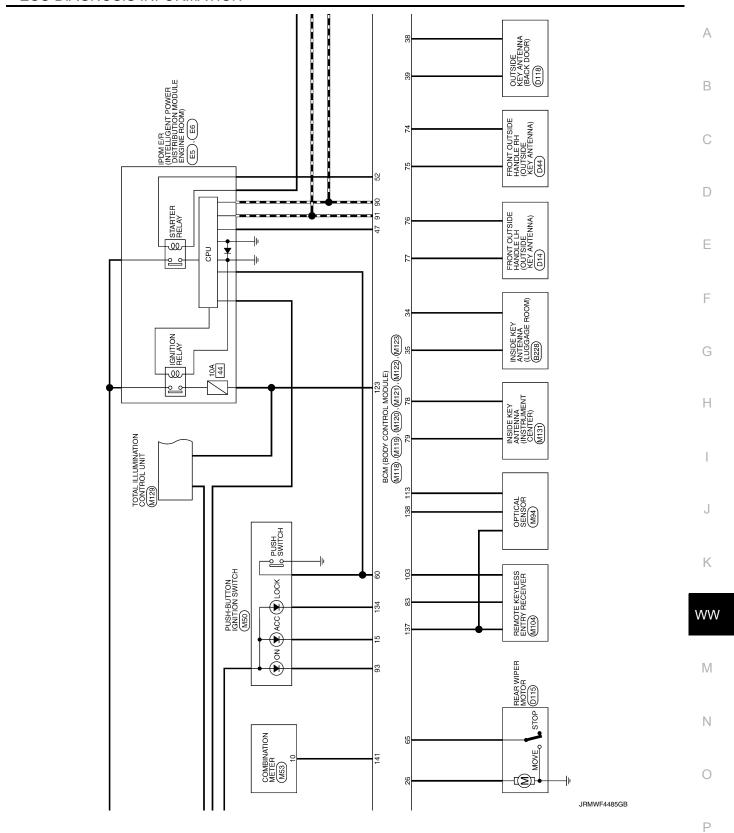
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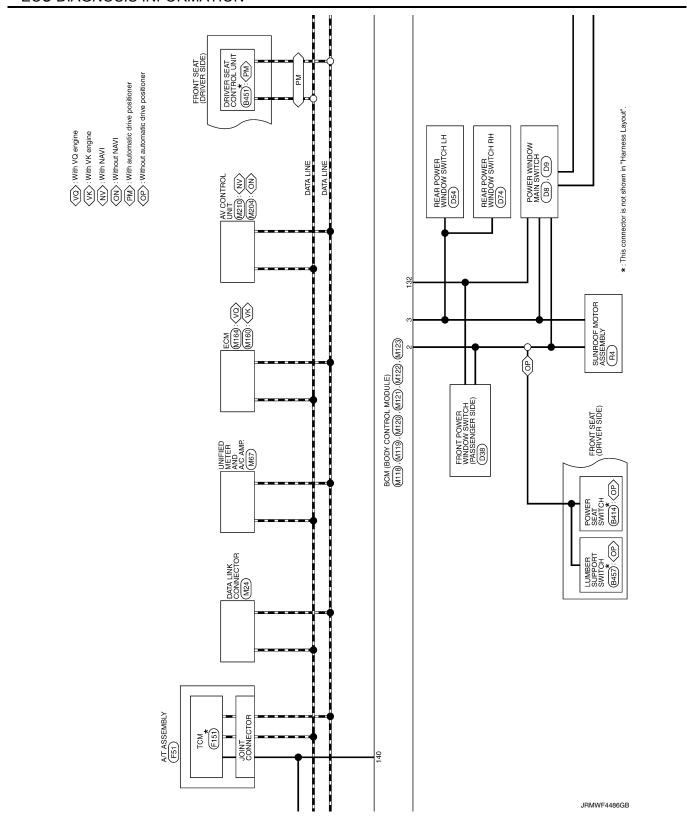
	inal No. e color)	Description	T		On a dition	Value
+	- COIOT)	Signal name	Input/ Output		Condition	(Approx.)
					All switches OFF (Wiper volume dial 4)	0 V
					Front washer switch ON (Wiper volume dial 4)	
144		Combination switch		Combination	Rear wiper switch ON (Wiper volume dial 4)	(V) 15 10
(G)	Ground	OUTPUT 2	Output	switch	Rear washer switch ON (Wiper volume dial 4)	0
					Any of the conditions below with all switches OFF Wiper volume dial 1 Wiper volume dial 5	2 ms JPMIA0033GB
					Wiper volume dial 6 All switches OFF	0 V
					Front wiper switch INT/	(V)
145		Combination switch		Combination switch	Front wiper switch LO	15
(L)	Ground	OUTPUT 3	Output	(Wiper volume dial 4)	Lighting switch AUTO	2 ms
						10.7 V
					All switches OFF	0 V
					Front fog lamp switch ON	(\(\)
4.40		Complete attack and the b		Combination	Lighting switch 2ND	(V) 15 10
146 (SB)	Ground	Combination switch OUTPUT 4	Output	switch (Wiper volume dial 4)	Lighting switch PASS Turn signal switch LH	5 0 2 ms
						JРМIA0035GB 10.7 V
150 (GR)	Ground	Driver door switch	Input	Driver door switch	OFF (Door close)	(V) ₁₅ 10 5 0 **10ms
						JPMIA0594GB 8.5 - 9.0 V
					ON (Door open)	0 V
151 (G)	Ground	Rear window defog- ger relay control	Output	Rear window de- fogger	Active	0 V
(0)		gor relay control		109961	Not activated	Battery voltage

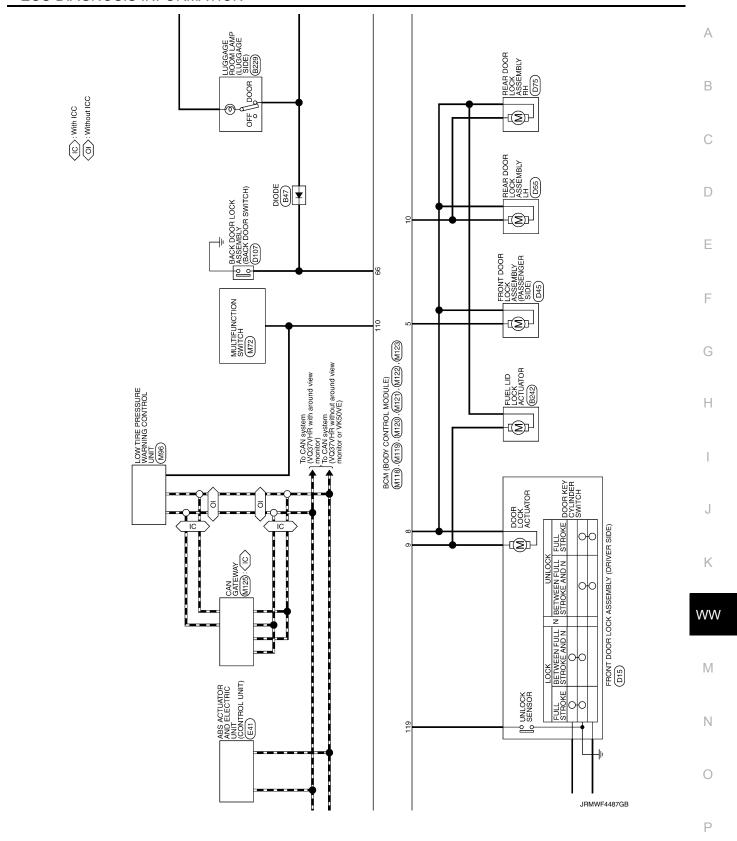
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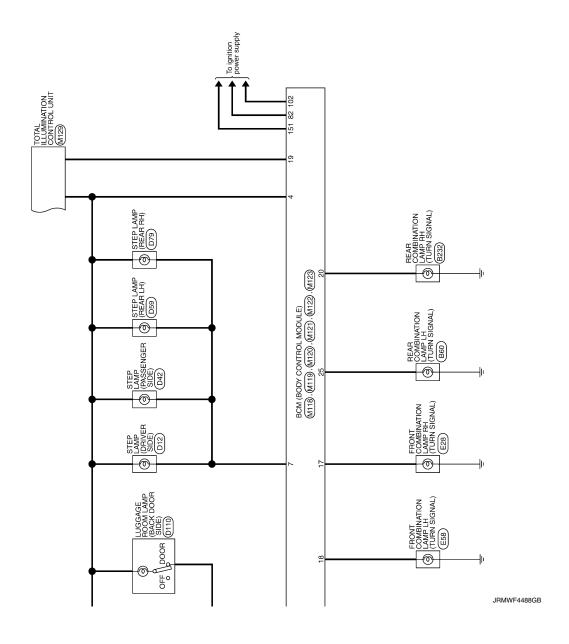
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E229 UJGGAGE ROOM LAMP (LUGGAGE SDE) Signal Name [Specification] Signal Name [Specification] Signal Name [Specification] Signal Name [Specification]	С
Cornector No. B229 Cornector No. B229 Cornector No. Wire No. No. Wire No.	D
	Е
REAR DOOR SWITCH RH AGSPW Signal Name [Specification] Signal Name [Specification] Signal Name [Specification]	F
MO3FW A03FW A03FW NSDE KI RKO2FC	G
Corrector No. Corrector Name Correc	Н
Signal Name [Specification] BEAR COMBINATION LAMP LH THEAMMAN-NAH THE	I
Signal Na THO4MWANH THO4MWANH Signal Na Signal Na Signal Na	J
Terminal Color Of No. Wire 1	K
ER SIDE)	WW
BCM (BODY CONTROL MODULE) Convector Name FRONT DOOR SWITCH (DRIVER SIDE) Convector Name FRONT DOOR SWITCH (DRIVER SIDE) Convector Name REAR DOOR SWITCH LH Convector Name Biggs Cagnal Name (Specification) AND STATE CONTROL OF Signal Name (Specification) Convector Name DIODE C	M
Connector Name Fig. Connector Type A Connector Name R Connector Name D Connector	Ν
Connector	0
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BCM (BODY CONTROL MODULE)			ŀ				
Connector No. B242	Connector No.	B414	+	CAN-L	S	. as	
Connector Name FUEL LID LOCK ACTUATOR	Connector Name	POWER SEAT SWITCH	_	P RANGE SW	9		
			+	PULSE (SLIDING)	7	BR -	
Connector Type M04FW-LC	Connector Type	NS10FW-CS	Y/B	PULSE (FR LIFTING)	80	٠ .	
4	4		>-	SLIDING SW (FORWARD)	6	W	
			27 R/G REC	RECLINING SW (FORWARD)	10	- 0	
	ŧ	Ī	28 W/B FROM	FRONT LIFTING SW (UPWARD)	1		
S. F.	Ż	48 33	29 P/L REA	REAR LIFTING SW (UPWARD)	13	-	
		0 0 2 2 7	31 GR	SENSOR GND	41	>	
		0 0	H	GND (SIGNAL)	15		
	Terminal Color O		Connector No B457		Connector No	20	
No. Wire Signal Name [Specification]	No. Wire	Signal Name [Specification]	Г				
Т	8		Connector Name LUMBAR 3	LUMBAR SUPPORT SWITCH	Connector Name	Vame POWER WINDOW MAIN SWITCH	- H2H
2 v	H		Connector Type NS04FW-CS	93	Connector Type	lype NS03FW-CS	
	. Y		1				
	-		4		4		
Connector No. B249	7		AHT		T.		
0.70	α		H.S.		S		
Connector Name BRAKE BOOSTER CONTROL UNIT	0	,		50 57 40 00		17	
Connector Tyrus TK24EGY	Ŧ			20 27 40 33			
Collector type Treat of	t						
	+						
	1		Terminal Color Of		Terminal Color Of	L	
H.S.				Signal Name [Specification]	ž	Wire Signal Name [Specification]	ation]
40 40	Connector No	B451	t		t		
			F		0	>	
46 47	Connector Name	DRIVER SEAT CONTROL UNIT	╀		2		
]	Connector Type	TH32FW	+				
		1			Connector No	JD 12	
No. Wire Signal Name [Specification]	Œ						
	至		14 2000000		Connector Name	Vame STEP LAMP (DRIVER SIDE)	
9 8	S.		Τ			, a 1000 CH	
8 0		1 3 9 10 11 12 13 14 16	Connector Name POWER V	POWER WINDOW MAIN SWITCH	Corrector	7	
NOTING C		17 19 21 24 25 26 27 28 29 31 32	i de la companya de l		4		
n !		Ш	Connector Type NS16FW-U	R	至于		
47 LG BRAKE HOLD RLY DRIVE SIGNAL			4		S :		
			李			1	
	Terminal Color Of	Of Signal Name [Specification]	<u>.</u>	7 3 4 7 1 5 6 7		2 1	
	†		<u> </u>]			
	+			9 10 11 13 14 15			
	3						
	9 W/G	PULSE (RECLINING)			Terminal Color Of	olor Of Signal Name (Specification)	of income.
	10 P/B	PULSE (RR LIFTING)			ģ	Wire Signal Name Johecine	alloll j
	11 BR	SLIDING SW (BACKWARD)	Terminal Color Of		-	. 51	
	12 SB			Signal Name [Specification]	2	es es	
	13 LG/R	FRONT LIFTING SW (DOWNWARD)	Α				
	H	L	2 LG				
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Corrector No. D44 Corrector Name record cursing evicing electivities (Corrector Type RKQ2MG)* H.S.	Terminal Color Of Signal Name (Specification) 2 W/Ve	
Corrector No. Du2 Corrector Name STEP LAMP (PASSENGER SIDE) Corrector Type TB02FW H.S.	Terminal Color Of Signal Name [Specification] No. Wife Corrector No. D43 Corrector Name FROMTOUTSDE HANDLE RH/REQUEST SWITCH) Corrector Name ROWI OUTSDE HANDLE RH/REQUEST SWITCH) Corrector Name ROWI OUTSDE HANDLE RH/REQUEST SWITCH) Terminal Color Of Signal Name [Specification] No. Wife Signal Name [Specification] 1	
Connector No. D15 Connector Name FRONT DOOR LOCK ASSEMBLY (DRIVER SIDE) Connector Type EDBF GY-RS H.S.	Terminal Color Of Signal Name [Specification] No. Wive Signal Name [Specification]	
BCM (BODY CONTROL MODULE) Corrector No. 613 Corrector Name FROYT CUISDE HANDLE LH/REQUEST SAMTCH Corrector Type RROZFL-B Th.S.	Terminal Color Of Signal Name (Specification) No. Wire Corrector No. D14 Corrector Name Proxi united wwice unjourned key virtually Corrector Type ROCZMO Y No. Wire No. Wire Terminal Color Of Signal Name (Specification) 1	
		JRMWF4491GB

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BCM (BODY CONTROL MODULE)			
Connector No. D54	Connector No. D59	Connector No. D75	Connector No. D107
Connector Name REAR POWER WINDOW SWITCH LH	Connector Name STEP LAMP (REAR LH)	Connector Name REAR DOOR LOCK ASSEMBLY RH	Connector Name BACK DOOR LOCK ASSEMBLY
Connector Type NS08FW-CS	Connector Type TB02FW	Connector Type E06FGY-RS	Connector Type NS08FW-CS
	E	逐	
23451		<u> </u>	4 5 6 7 8
Terminal Color Of Signal Name [Specification]	Terminal Color Of Signal Name [Specification]	Terminal Color Of Signal Name [Specification]	Terminal Color Of Signal Name [Specification]
1 W -	1 L	1 6	1 L/W
+	2 0 -	2 L .	2 L/B ·
3 R			1
+			+
	Connector No. D/4	Connector No. D79	M .
	Connector Name REAR POWER WINDOW SWITCH RH	Connector Name STEP LAMP (REAR RH)	
	Connector Type NS08FW-CS	Connector Type TB02FW	
Connector No. D55	á	ą	- 1
Connector Name REAR DOOR LOCK ASSEMBLY LH	医	唐	Connector No. D110
Connector Type E06FGY-RS	H.S.	HS	Connector Name LUGGAGE ROOM LAMP (BACK DOOR SIDE)
ά	2 3 4 5 1	2 1	Connector Type TK03FW
	Terminal Color Of Signal Name [Specification] No.	Terminal Color Of Signal Name [Specification] No. Wire	
	W (
Terminal Color Of	-	+	
No. Wire signal name [specification]	H		Terminal Color Of Signal Name (Specification)
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45 G	1 1 2 3 4 4 4 4 4 4 4 4 4		Terminal Color Of Signal Name Specification No. Wive	
Corrector No. E5 Corrector Name Para Remarks of the Corrector Name Process (Corrector Type THEOFW.CST2-M4-1V THEOFW.CST2-M4-1V THEOFW.CST2-M4-1V	Terminal Color Of Nune Signal Name Specification Nune Signal Name Specification Nune Signal Name Specification Signal Name Specification Signal Name Specification Signal Name Signal Name Specification Signal Name Signal	actor h	1 1 1 1 1 1 1 1 1 1	
Connector No. D116 Connector Name BACK DOOR OPENER REQUEST Connector Type TKO2NBR-P TKO2NBR-P	Terminal Color Of Nune Signal Name (Specification) 1 V	Terminal Color Of		
BCM (BODY CONTROL MODULE) Cornector No. D114 Cornector Name BACK DOOR OFENER SWITCH Cornector Type TKG2MBR-P H.S.	Odlor Ot Signal Nan Wree B	1 2 4 3 4 3		
				JRMWF4493GB

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BCM (BODY CONTROL MODULE)	Connector No.		940	Nonemon No	1784
	Connector No.	Connector No.	ELIO	Connector No.	101
J-SDR A	Connector Name ICC BRAKE HOLD RELAY	Connector Name	STOP LAMP SWITCH	Connector Name	e TCM
3. S.	Connector Type M06EGY-R-HS	Connector Type	M04EW-I C	Connector Type	SP10FG
				di localino	1
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	2 1	S	Ī	=	
R VDC OFF SW	6 7 3	5	3 4	į	(12345)
B BIS-H	∀		1 2		8 7 8 0 10
	Tin. Online Of	Tourism Dall		Tourism	7
Connector No.		No. Wire	Signal Name [Specification]		Signal Name [Specification]
Connector Name FRONT COMBINATION LAMP LH	-	-		←	IGNITION POWER SUPPLY
Connector Type RS04FB-PR	2 B .	2 W		2 B	BATTE
	3 6 -	3 C		3 R	
<u>[</u>	\dashv	4 BR		4 0	
*				5 G	
(1 2)	7 L			6 GR	2
		Connector No.	F51	7 L	BACK-UP LAMP RELAY
	ſ	Connector Name	A/T ASSEMBLY	8 BR	
)	Connector No. E103		SOCIAL PROPERTY OF THE PROPERT	6	STARTER RELAY
-	Connector Name FLISE BLOCK (J/B)	Connector Type	RK10FG-DGY	10 W/B	3 GROUND
Terminal Color Of Signal Name [Specification] No. Wire	Connector Type NS16FW-CS	4	<		
· -				Connector No.	M1
		Ž.	5 4 3 2 1	Connector Nan	Connector Name FUSE BLOCK (J/B)
98	H.S. 6F 4F 1 2F 7F 1F		- a	Connector Typ	Connector Type NS06FW-M2
	10F 9F 8F			4	
Competer No.		Tarminal Color Of		至	
000		No. Wire	Signal Name [Specification]	H.S.	3A 2A 1A
	Jal Jal	7	IGNITION POWER SUPPLY		84 74 64 54 44
Connector Type RK03FBR	Wire	2 R	BATTERY POWER SUPPLY (MEMORY BACK-UP)		
	\dashv	3 L	CAN-H		
<		_	K-LINE		
«	2F W .	2 B	GROUND	la Ia	Of Signal Name (Specification)
(4	>- 9	IGNITION POWER SUPPLY	+	
((1 3))	+	+	BACK-UP LAMP RELAY	7	
	6F BG -	+	CAN-L	2A G	10
	+	+	STARTER RELAY [With VQ engine]	+	
	9F R .	4	STARTER RELAY [With VK engine]	4A R	
Terminal Color Of Signal Name (Specification)		10 B	GROUND	4	•
				+	
+BAT (V				7A R	•
GR BUZZER SIGNAL				8A L	

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< ECU DIAGNOSIS INFORMATION >

7 V	12 15 15 17 10 11 15 15 15 15 15 15	
Corrector No. M33 Corrector Name COMBINATION SWITCH Corrector Type THISPW-NH 1 2 3 4 5 6 7 8 9 10 11 12 13 14	Terminal Color Of Signal Name [Specification] No. Wire Signal Name [Specification] No. Wire Signal Name [Specification] No. Wire Signal Name [Specification] No. No.	
Connector No. M22 Connector Name KEY SLOT Connector Type THI2FW-NH H.S. 112 3 5 6	Terminal Color Of Wire Signal Name [Specification]	
BCM (BODY CONTROL MODULE) Corrector Name FUSE BLOCK (JIS) Corrector Type NSTIFW-CS (48 38 718 18 18 18 18 18 18	Terminal Color Of No. 19 (19 19 19 19 19 19 19	

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25 W FRTUNER (GND) 26 P FLTUNER (GND) 20 P FL	toor No. M104 ctor Name REMOTE KE'	#S.	Terminal Color Of Signal Name [Specification] No. Whre Signal Name [Specification] 1 B GROUND 2 GR SIGNAL OUTPUT 4 BR BATTERY	Corrector No. M118 Corrector Name BCM (BODY CONTROL MODULE) Corrector Type M03FB-LC	Terminal Color Of Signal Name [Specification] No. Wire Wire Signal Name [Specification] 1 W BAT (FL) 2 Y POWER WINDOW POWER SUPPLY (BAT) 3 BG POWER WINDOW POWER SUPPLY (RAP)
Connector No. M94 Connector Name OPTICAL SENSOR	Connector Type TK03FW H.S. 1123	Terminal Color Of Signal Name (Specification) Wine Wine POWER 2 P OUTPUT 3 B GROUND	Cornector No. M96 Cornector Name (OV TRE PRESSURE WARNING CONTROL UNIT Cornector Type THRSPW/NH	12 3 4 5 19 19 19 19 19 19 19	A L RILUMER (SIG)
Connector No. M72 Connector Name MULTFUNCTION SWITCH	Connector Type THISFWANT 1 1 1 1 1 1 1 1 1	Terminal Color Of Signal Name (Specification) Wire Signal Name (Specification) 1 B GROLND 3 V ACC C C C C C C C C	SB AI DISK	Connector No. M79 Connector Name ACCESSORY RELAY (2) Connector Type MS02PL-M2-LC The Accessory Relay (2) The Accessory Relay (2) The Accessory Relay (2) The Accessory Relay (2)	Terminal Color Of Signal Name Specification No. Wire O
BCM (BODY CONTROL MODULE) Connector No. M67 Connector Name UNIFIED METER AND A/C AMP.	TH32FW-NH	Terminal Color Of Signal Name [Specification] No. Wire ACC POWER SIPPLY 42 Y FUEL LEVEL SENSOR SIGNAL A4 I/O INJURIES ENENCE SIGNAL A4 I/O INJURIES ENENCE SIGNAL A4 I/O INJURIES ENENCE SIGNAL A4 I/O INJURIES ENENCED SIGNAL A4 I/O I/O	0 < 8 P P P	N	72 P CAN-L

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BCM (BODY CONTROL	CONTROL MODULE				6	5			(Г
Connector No. M1	19	Connector No.	ν Θ	121	80	GR	NATS ANT AMP.	141	g	SECURITY INDICATOR OUTPUT	7
Compostor Namo	(3 II I I I I I I I I I I I I I I I I I	Connector Mamo		G III COM TOGENOO XGOG) MOG	81	W	NATS ANT AMP.	142	BG	COMBI SW OUTPUT 5	
allie o	M (BOD) COMINCE MODOLE)			ON (BOD) CONTROL MODOLE)	82	Д	IGN RELAY (F/B) CONT	143	۵	COMBI SW OUTPUT 1	
Connector Type NS:	NS16FW-CS	Connector Type		TH40FGY-NH	83	GR	KEYLESS ENTRY RECEIVER SIGNAL	144	o	COMBI SW OUTPUT 2	Г
		Ĺ			87	BR	COMBI SW INPUT 5	145	7	COMBI SW OUTPUT 3	
		1			88	>	COMBI SW INPUT 3	146	88	COMBI SW OUTPUT 4	Г
					06	۵	CAN-L	150	S.	DRIVER DOOR SW	Γ
	4 5 7 8 9 10	A S	L		20	-	CANT	151	c	REAR WINDOW DEFORGER RELAY CONT	T⊨
	40			47 39.38 35.34	6	, (KEV SI OT II I	2			7
	61.91.71.00.1.01.1.1			69 68 67 66 65 64 61 60 52	95	2 >	NET SECTIFIE				
			J		3	> 2	DNINO				Γ
					S 8	9 g	ACC RELAY CONI	Connector No.	or No.	M125	Т
0			0		8 8	¥ (A/I SHIFT SELECTOR POWER SUPPLY	Connect	Connector Name	CAN GATEWAY	
No Wire	Signal Name [Specification]	S S	Nire of	Signal Name [Specification]	88 5	Y (MS TOTI COD GOOD GOOD SAGE	found	Contactor Time	TU105/W NU	Т
+			2 6	Est Mood Lovoor	3 3	9 8	PASSEINGEN BOOK NEGOEST SW	00	201	TITIET WEIGH	٦
†	INI ROOM LAMP PWR SUPPLY (BAI SAVE)	34	g :	LUGGAGE ROOM ANI-	D 5	9 6	DRIVER DOOR REQUEST SW	ąĮ.			
†	PASSENGER DOOR UNEOUR DOLLPUI	င္ပ	>	LUGGAGE ROOM ANI+	701	2 1	BLOWER FAN MOTOR RELAY CON	至		<u> </u>	
+	STEP LAMP OUTPUT	38	m	BACK DOOR ANT-	103	æ	KEYLESS ENTRY RECEIVER POWER SUPPLY	Ę	7		
\dashv	ALL DOOR, FUEL LID LOCK OUTPUT	39	>	BACK DOOR ANT+	107	ГG	COMBI SW INPUT 1	É	7	1 3 1 5 6	
	DRIVER DOOR, FUEL LID UNLOCK OUTPUT	47	\	IGN RELAY (IPDM E/R) CONT	108	Ж	COMBI SW INPUT 4			7	
H	REAR DOOR UNLOCK OUTPUT	25	9	STARTER RELAY CONT	109	>	COMBI SW INPUT 2			7 9 10 11 12	
ď	BAT (FUSE)	09	SB	ENG_START_SW	110	9	HAZARD SW				
8	GROUND	61	>	TRUNK_REQUEST_SW							
>-	ACC IND	64	7	I-KEY WARN BUZZER (ENG ROOM)				Terminal	Color Of		Г
*	TURN SIGNAL RH (FRONT)	65	BG	REAR WIPER STOP POSITION	Connector No.	l	M123	g	Wire	Signal Name [Specification]	
BG	TURN SIGNAL LH (FRONT)	99	97	BACK DOOR SW	(-	_	CANH	Г
SB	ROOM LAMP TIMER	49	۵	BACK DOOR OPENER SW	Connect	Connector Name	BCM (BODY CONTROL MODULE)	က	SR	BATTERY	Т
		89	æ	REAR RH DOOR SW	Connect	Connector Type	TH40FG-NH	4	_	CAN-H	Г
		69	œ	REAR LH DOOR SW	(Ω	В	GROUND	
Connector No. M120	20				1	_		9	_	CAN-H	Г
8	E I I I I I I I I I I I I I I I I I I I					,		7	۵	CANL	
	IN (BOD) CONTROL MODOLE)	Connector No.		M122	ý E	á	order or solar balance	6	97	IGNITION	_
Connector Type NS:	NS12FW-CS		П				71 01 01 01 01 01 01 01 01 01 01 01 01 01	9	۵	CANL	Г
1		Connector Name		BCM (BODY CONIROL MODULE)			12 T.S. 15 T.S	Ξ	В	GROUND	Γ
		Connector Type	П	TH40FB-NH				12	۵	CAN-L	Г
											1
	50	Œ			Termina	Ferminal Color Of					
	25,26				Ž	Wire	Signal Name [Specification]				
	0707	1.8	ĮĻ.		112	S.	RAIN SENSOR SERIAL LINK				
			<u></u>	83 82 81 80 79 78 77	113	۵	OPLICAL SENSOR				
				1.예약병예계 1.08(기계기(지원) 96(95) 95(92)	116	ä	STOP LAMP SW 1				
Terminal Color Of					2,00	٥	STOP LAMP SW 2				
Wire	Signal Name [Specification]				19	g	DR DOOR IN OCK SENSOR				
>	THON STONAL BH (BEAD)	Torimina	Color		5 5	3 8	VEN OF SIM				
	TIDNOISING THOUSE	2	Wire	Signal Name [Specification]	4 55	í	CALL SECTION				
9 0	DISTRIBUTE CIT (NEAR)	į	2 8	H 44 0000 00000000000000000000000000000	3 3	\$.	a/ INISI				
ı.	REAR WIPER OUI PUI	74	90	PASSENGER DOOR ANI-	124	9	PASSENGER DOOR SW				
		75	æ	PASSENGER DOOR ANT+	132	BG	POWER WINDOW SW COMM				
		92	>	DRIVER DOOR ANT-	134	GR	LOCK IND				
		77	Pl	DRIVER DOOR ANT+	137	В	RECEIVER/SENSOR GND				
		78	Υ	ROOM ANT1-	138	٨	SENSOR POWER SUPPLY				
		62	R	ROOM ANT1+	140	~	SHIFT N/P				

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Connector No. M164	Connector Name ECM	Connector Type RH24FGY-RZ8-R-LH-Z	(A)	Terminal Color Of Signal Name [Specification]	Н	98 P ACCELERATOR PEDAL POSITION SENSOR 2 [Without Navi]	- თ	L SENSOR P	*	101 SB ASCD/ICC STEERING SWITCH	3 0	L	H	GR	_	W FUEL	BG SEN	> 0	109 G PNP SIGNAL	: >	W	۵	7 5	¥ :	121 LG EVAP CANISTER VENT CONTROL VALVE	L 0	0 00	GR POWE	H	127 B ECM GROUND	128 B ECM GROUND	
Connector No. M160	Connector Name ECM	Connector Type RH24FGY-RZ8-R-LH-Z	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	Terminal Color Of Signal Name [Specification]	ω E	99 G SENSOR POWER SUPPLY	1 a	SB /	R	105 L CAN COMMUNICATION LINE	P ACCELERA	110 P STOP LAMP SWITCH	111 V SENSOR GROUND	LG FUEL PL	GR DA	GR	G T	+	118 K POWEK SUPPLY FOR ECM (BACK-UP) 119 W SENSOR GROUND	W FUEL TA	GR POWE	В	R FUEL PUMP	128 B ECM GROUND								
Connector No. M131	Connector Name NSIDE KEY ANTENNA (NSTRUMENT CENTER)	Connector Type RK02MGY	H.S.	Terminal Color Of Signal Name [Specification]	H	2 Y		Connector No. M137	Connector Name A/T SHIFT SELECTOR					1001	0 7	7 8 9 10 11			I erminal Color Of Signal Name [Specification]	w 1	2 v	3	+		7 BG	+	Ť	╁				
BCM (BODY CONTROL MODULE) Connector No. M129	e TOTAL ILLUMINATION CONTROL UNIT	TH40FW-NH		Of Signal Name [Specification]	DDL2	TAIL LAMP SIGNAL	BAT SAN		DOOR	MOOD I AMP (ED ADMDEST BLI)	MOOD LAMP (MAPL		PERSON		HSPL ILL			AMBIENCE LAMP BAT POWER SLIPPLY		ILL CO		MAP LAME		ROOM LAMP TIMER	NOOU AMA I GOOM	+	HSPL POW	L	HSPL POWER SUPPLY 1	FOOT LAMP (LH)	PUDDLE LAMP (RH) PUDDLE LAMP (LH)
BCM (BC Connector No.	Connector Name	Connector Type	H.S.	Terminal Color Of No. Wire	3	4 4	9	Н	+	9 BG	+	12 P	13 G	Н	\dashv	17 LG	+	19 X	20 21 8	\vdash	Н	\dashv	+	+	28 SB	29 GR	+	H	┝	35 V	36 L	39 B 40 BG

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	r No. R9	r Name RAIN SENSOR	r Type AAB03FB			<u></u>	<u></u>	1123				Color Of Signal Name [Specification]	Wire Wire	BR +B	GR SIG	B GROUND																							
	Connector No.	Connector Name	Connector Type	<u>.</u>			2 1 2					ā	ò	-	2	3																							
	Signal Name (Specification)	PARKING BRAKE SIGNAL	COMPOSITE IMAGE SIGNAL GND	COMPOSITE IMAGE SIGNAL	MICROPHONE SHIELD	MICROPHONE VCC	COMM (CONT->DISP)	CAN-L	AV COMM (L)	AV COMM (L)	ILLUMINATION	IGNITION SIGNAL	REVERSE SIGNAL	VEHICLE SPEED SIGNAL (8-PULSE)	MICROPHONE SIGNAL	CHIELD	COMM (DISP->CONT)	CAN-H	AV COMM (H)	AV COMM (H)			R4	> Idwassy dollow accounts	SOMEOUT WOLCH ASSEMBLE	Connector Type YEA10FGY			F F	1 1	7 8 9 10		Signal Name [Specification]	SW-BIT1	SW-BIT0	8+	SPEED SENSOR (2P)	TIMER (+IGN)	GROUND
	· ·	wire >	m	œ	SHIELD	ŋ	œ	۵	97	97	œ	9	BG	ч	ď	В	9	٦	SB	SB			П	-		or Type							Ferminal Color Of No. Wire	GR	۵	BR	٦	>	ŋ
	Terminal	92	29	99	7	72	73	74	75	9/	79	80	81	82	87	88	88	06	91	95			Connector No.	300		Connecto	[ŧ	2			Terminal No.	-	2	_	80	о	10
BCM (BODY CONTROL MODULE)	M204	AV CONTROL UNIT	Connector Type TH32FW-NH			<u> </u>	00 20 20 00 00 00 00 00 00 00 00 00 00 0	70	92 93 94 95 96			Signal Namo [Secontina]	olgilar i varire [opecification]	AV COMM (L)	AV COMM (H)	AV COMM (L)	AV COMM (H)	CAN-L	CAN-H	SW GND	SHIELD	TEL VOICE SIGNAL (+)	TEL VOICE SIGNAL (-)	VEHICLE SPEED SIGNAL (8-PULSE)	PARKING BRAKE SIGNAL	REVERSE SIGNAL	IGNITION SIGNAL	DISK EJECT SIGNAL	AUX_GND	AUX_AUDIO_LH+	AUX_AUDIO_RH+	M210	AV CONTROL UNIT	TH32FW-NH			<u> </u>	65 67 65 7 17 17 17 17 17 17 17 17 17 17 17 17 1	87
1 (BOL	for No.	Connector Name	for Type		_	-	<i>5</i>					Ferminal Color Of	Wire	LG	SB	FIG	SB	Ь	_	BR	SHIELD	7	Ь	ď	۸	BG	9	SB	В	W	œ		Connector Name	Connector Type		_	_	n n	
BC	Connector No.	Connect	Connect	١	1		2					Termina	Š.	9/	77	78	79	80	81	82	98	87	88	95	93	94	92	96	102	103	104	Connector No.	Connect	Connect		Œ	ir.	1	

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FAIL-SAFE CONTROL BY DTC

Fail-safe

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

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

FAIL-SAFE CONTROL BY RAIN SENSOR MALFUNCTION

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

NOTE:

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

REAR WIPER MOTOR PROTECTION

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

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

Condition of cancellation

- 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

INFOID:0000000011016209

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

Priority	DTC
1	B2562: LOW VOLTAGE
2	U1000: CAN COMM U1010: CONTROL UNIT(CAN)

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Priority	DTC	
3	B2190: NATS ANTENNA AMP B2191: DIFFERENCE OF KEY B2192: ID DISCORD BCM-ECM B2193: CHAIN OF BCM-ECM B2195: ANTI SCANNING	
4	 B2553: IGNITION RELAY B2555: STOP LAMP B2556: PUSH-BTN IGN SW B2557: VEHICLE SPEED B2560: STARTER CONT RELAY B2601: SHIFT POSITION B2602: SHIFT POSITION B2603: SHIFT POSI STATUS B2604: PNP/CLUTCH SW B2605: PNP/CLUTCH SW B2605: PNP/CLUTCH SW B2608: STARTER RELAY B260A: IGNITION RELAY B260F: ENG STATE SIG LOST B2614: BCM B2615: BCM B2616: BCM B2617: BCM B2618: BCM B2618: DCM B2618: WHICLE TYPE B262A: KEY REGISTRATION U0415: VEHICLE SPEED SIG 	
5	B2621: INSIDE ANTENNA B2623: INSIDE ANTENNA	
6	B26E7: TPMS CAN COMM	

DTC Index

NOTE:

The details of time display are as follows.

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

IGN counter is displayed on Freeze Frame Data. For details of Freeze Frame Data, refer to BCS-20, "COMMON ITEM: CONSULT Function (BCM - COMMON ITEM)".

		T		
CONSULT display	Fail-safe	Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle Condition	Intelligent Key warn- ing lamp ON	Reference
No DTC is detected. Further testing may be required.				_
U1000: CAN COMM				BCS-39
U1010: CONTROL UNIT(CAN)	_	_	_	BCS-40
U0415: VEHICLE SPEED SIG	_	_		BCS-41
B2190: NATS ANTENNA AMP	×	_	_	SEC-47
B2191: DIFFERENCE OF KEY	×	<u> </u>		<u>SEC-50</u>
B2192: ID DISCORD BCM-ECM	×	_		<u>SEC-51</u>
B2193: CHAIN OF BCM-ECM	×	_		<u>SEC-53</u>
B2195: ANTI SCANNING	×	_	<u> </u>	<u>SEC-54</u>
B2553: IGNITION RELAY	-	×	- 1	PCS-53
B2555: STOP LAMP	-	×	- 1	<u>SEC-55</u>

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CONSULT display	Fail-safe	Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle Condition	Intelligent Key warn- ing lamp ON	Reference
B2556: PUSH-BTN IGN SW	_	×	×	SEC-57
B2557: VEHICLE SPEED	×	×	×	SEC-59
B2560: STARTER CONT RELAY	×	×	×	SEC-60
B2562: LOW VOLTAGE	_	×	_	BCS-42
B2601: SHIFT POSITION	×	×	×	SEC-61
B2602: SHIFT POSITION	×	×	×	SEC-64
B2603: SHIFT POSI STATUS	×	×	×	SEC-66
B2604: PNP/CLUTCH SW	×	×	×	SEC-69
B2605: PNP/CLUTCH SW	×	×	×	SEC-71
B2608: STARTER RELAY	×	×	×	SEC-73
B260A: IGNITION RELAY	×	×	×	PCS-55
B260F: ENG STATE SIG LOST	×	×	×	SEC-75
B2614: BCM	_	×	×	PCS-57
B2615: BCM	_	×	×	PCS-59
B2616: BCM	_	×	×	PCS-61
B2617: BCM	×	×	×	SEC-77
B2618: BCM	×	×	×	PCS-63
B261A: PUSH-BTN IGN SW	_	×	×	SEC-79
B261E: VEHICLE TYPE	×	×	× (Turn ON for 15 seconds)	<u>SEC-82</u>
B2621: INSIDE ANTENNA	_	×	_	DLK-101
B2623: INSIDE ANTENNA	_	×	_	DLK-103
B26E7: TPMS CAN COMM	_	_	_	BCS-43
B26EA: KEY REGISTRATION	_	×	× (Turn ON for 15 seconds)	<u>SEC-76</u>

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

Reference Value

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VALUES ON THE DIAGNOSIS TOOL

NOTE:

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

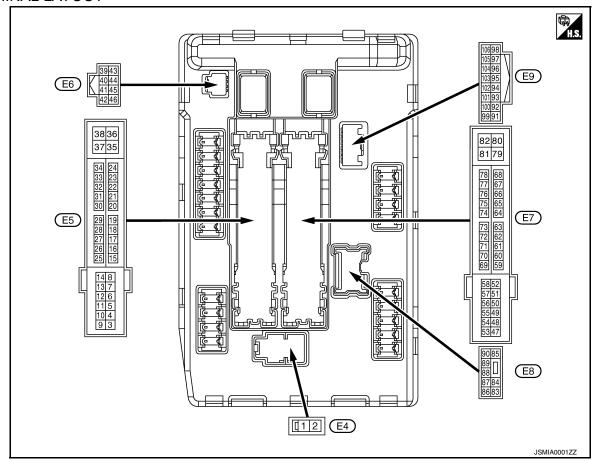
Monitor Item		Condition	Value/Status
RAD FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	0 – 100 %
		A/C switch OFF	Off
AC COMP REQ	Engine running	A/C switch ON (Compressor is operating)	On
TAIL OOLD DEO	Lighting switch OFF		Off
TAIL&CLR REQ	Lighting switch 1ST, 2ND, HI or	AUTO (light is illuminated)	On
HI LO BEO	Lighting switch OFF		Off
HL LO REQ	Lighting switch 2ND HI or AUTO) (light is illuminated)	On
HI HI DEO	Lighting switch OFF		Off
HL HI REQ	Lighting switch HI		On
		Front fog lamp switch OFF	Off
FR FOG REQ	Lighting switch 2ND or AUTO (light is illuminated)	 Front fog lamp switch ON Daytime running light activated (Only for Canada) 	On
		Front wiper switch OFF	Stop
FR WIP REQ	Ignition awitch ON	Front wiper switch INT	1LOW
FR WIP REQ	Ignition switch ON	Front wiper switch LO	Low
		Front wiper switch HI	Hi
		Front wiper stop position	STOP P
WIP AUTO STOP	Ignition switch ON	Any position other than front wiper stop position	ACT P
		Front wiper operates normally	Off
WIP PROT	Ignition switch ON	Front wiper stops at fail-safe operation	BLOCK
ION DIVI DEO	Ignition switch OFF or ACC		Off
IGN RLY1 -REQ	Ignition switch ON		On
ION DLV	Ignition switch OFF or ACC		Off
IGN RLY	Ignition switch ON		On
PUSH SW	Release the push-button ignition	n switch	Off
F USITI SVV	Press the push-button ignition s	witch	On
INTER/NP SW	Ignition switch ON	Selector lever in any position other than P or N	Off
		Selector lever in P or N position	On
ST RLY CONT	Ignition switch ON		Off
SI KLI CUNI	At engine cranking		On

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Monitor Item	Con	ndition	Value/Status
IHBT RLY -REQ	Ignition switch ON		Off
IDDI KLY-KEV	At engine cranking		On
	Ignition switch ON		Off
	At engine cranking		$INHI \to ST$
ST/INHI RLY	•	control relay cannot be recognized by 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 se	lector lever in P position	On
S/L RLY -REQ	NOTE: The item is indicated, but not monit	ored.	Off
S/L STATE	NOTE: The item is indicated, but not monit	ored.	UNLOCK
DTRL REQ	NOTE: The item is indicated, but not monit	ored.	Off
OIL P SW	Ignition switch OFF, ACC or engine	running	Open
OIL P SW	Ignition switch ON		Close
HOOD CW	Close the hood		Off
HOOD SW	Open the hood		On
HL WASHER REQ	NOTE: The item is indicated, but not monit	ored.	Off
	Not operation		Off
THFT HRN REQ	 Panic alarm is activated Horn is activated with VEHICLE S TEM 	SECURITY (THEFT WARNING) SYS-	On
LIODN CHIDD	Not operating		Off
HORN CHIRP	Door locking with Intelligent Key (ho	orn chirp mode)	On
CRNRNG LMP REQ	NOTE: The item is indicated, but not monit	ored.	Off

< ECU DIAGNOSIS INFORMATION >

TERMINAL LAYOUT



PHYSICAL VALUES

	inal No.	Description				Value
+ (Wire	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	Cround	Front winer I O	Quitaut	Ignition	Front wiper switch OFF	0 V
(V)	Ground	Front wiper LO	Output	switch ON	Front wiper switch LO	Battery voltage
5	Ground	Front wiper HI	Output	Ignition	Front wiper switch OFF	0 V
(L)	Ground	Tront wiper til	Output	switch ON	Front wiper switch HI	Battery voltage
7	Ground	Tail, license plate lamps &	Output	Ignition	Lighting switch OFF	0 V
(R)	Ground	interior lamps	Output	switch ON	Lighting switch 1ST	Battery voltage
10 ^{*1}				Ignition swi (More than ignition swi	a few seconds after turning	0 V
(SB)	Ground	ECM relay power supply	Output	Ignition s	witch ON witch OFF w seconds after turning igni- ch OFF)	Battery voltage
12 (B)	Ground	Ground	_	Ignition swi	tch ON	0 V

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	inal No. e color)	Description			Condition	Value
+	-	Signal name	Input/ Output		Condition	(Approx.)
13	Ground	Fuel pump power supply	Output	turning the	tely 1 second or more after ignition switch ON nately 1 second after turning	0 V
(Y)	O. Gama	, act pamp perior cappi	- Calpai		on switch ON	Battery voltage
16				Ignition	Front wiper stop position	0 V
(LG)	Ground	Front wiper stop position	Input	switch ON	Any position other than front wiper stop position	Battery voltage
19	Ground	Ignition relay power supply	Output	Ignition sw	tch OFF	0 V
(W)		3		Ignition sw	itch ON	Battery voltage
25	Ground	Ignition relay power supply	Output	Ignition sw	tch OFF	0 V
(G)	0.00		Carpar	Ignition sw		Battery voltage
26 ^{*2}	Ground	Ignition relay power supply	Output	Ignition sw	itch OFF	0 V
(R)	2.odiid	.gon Jones oupply	Jacpac	Ignition sw	itch ON	Battery voltage
27	Ground	Ignition relay monitor	Input	Ignition sw	itch OFF or ACC	Battery voltage
(Y)	Ground	ignition relay monitor	πραι	Ignition sw	itch ON	0 V
28	Cround	Push-button ignition	Innut	Press the p	oush-button ignition switch	0 V
(BG)	Ground	switch	Input	Release th	e push-button ignition switch	Battery voltage
30	Ground	Starter relay control	Input	Ignition	Selector lever in any position other than P or N	0 V
(GR)		•	·	switch ON	Selector lever P or N	Battery voltage
36 (G)	Ground	Battery power supply	Input	Ignition sw	itch OFF	Battery voltage
39 (P)	_	CAN-L	Input/ Output		_	_
40 (L)	_	CAN-H	Input/ Output		_	_
41 (B)	Ground	Ground	_	Ignition sw	itch ON	0 V
42	Ground	Cooling fan relay control	Input	Ignition sw	tch OFF or ACC	0 V
(Y)	Ground	Cooming lan relay Contion	πραι	Ignition sw	itch ON	0.7 V
43 (SB)	Ground	A/T shift selector (Detention switch)	Input	Ignition switch ON	Press the selector button (Selector lever P) Selector lever in any position other than P	Battery voltage
					Release the selector but- ton (selector lever P)	0 V
44	Ground	Horn relay control	Input	The horn is	deactivated	Battery voltage
(W)	Cround	Hom roley control		The horn is	activated	0 V
45	Ground	Anti theft horn relay control	Input	The horn is	deactivated	Battery voltage
(G)	Ground	And their norm letay contion	πραι	The horn is	activated	0 V
46 (BR)	Ground	Starter relay control	Input	Ignition switch ON	Selector lever in any position other than P or N	0 V
(DK)				SWILCH 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 operating)	Battery voltage

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	nal No.	Description			Value
+ (vvire	e color) –	Signal name	Input/ Output	Condition	(Approx.)
49				Ignition switch OFF (More than a few seconds after turning ignition switch OFF)	0 V
(W)*1 (SB)*3	Ground	ECM relay power supply	Output	Ignition switch ON Ignition switch OFF (For a few seconds after turning ignition switch OFF)	Battery voltage
51	Ground	Ignition relay power supply	Output	Ignition switch OFF	0 V
(G)	Oround	ignition relay power supply	Output	Ignition switch ON	Battery voltage
52	Ground	Ignition relay power supply	Output	Ignition switch OFF	0 V
(W)	Oroana	igiliadir rolay power cappiy	Оигриг	Ignition switch ON	Battery voltage
53				Ignition switch OFF (More than a few seconds after turning ignition switch OFF)	0 V
(W)	Ground	ECM relay power supply	Output	Ignition switch ON Ignition switch OFF (For a few seconds after turning ignition switch OFF)	Battery voltage
				Ignition switch OFF (More than a few seconds after turning ignition switch OFF)	0 V
54 (R)	Ground	Throttle control motor re- lay power supply	Output	Ignition switch ON Ignition switch OFF (For a few seconds after turning ignition switch OFF)	Battery voltage
55 (BR)	Ground	ECM power supply	Output	Ignition switch OFF	Battery voltage
56				Ignition switch OFF	0 V
(BG) ^{*1} (V) ^{*3}	Ground	Ignition relay power supply	Output	Ignition switch ON	Battery voltage
57	Ground	Ignition relay power supply	Output	Ignition switch OFF	0 V
(LG)	Ground	ignition relay power supply	Output	Ignition switch ON	Battery voltage
58	Ground	Ignition relay power supply	Output	Ignition switch OFF	0 V
(Y)	Orodria	ignition relay power supply	Output	Ignition switch ON	Battery voltage
69				Ignition switch OFF (More than a few seconds after turning ignition switch OFF)	Battery voltage
(W)	Ground	ECM relay control	Output	 Ignition switch ON Ignition switch OFF (For a few seconds after turning ignition switch OFF) 	0 – 1.5 V
					0 – 1.0 V
70 (BG)	Ground	Throttle control motor re- lay control	Output	Ignition switch ON → OFF	↓ Battery voltage ↓
(60)		iay control			0 V
				Ignition switch ON	0 – 1.0 V
74	Ground	Ignition relay power supply	Output	Ignition switch OFF	0 V
(G)	Ground	ignition relay power supply	Output	Ignition switch ON	Battery voltage
75	Ground	Oil pressure switch	Input	Ignition Engine stopped	0 V
(Y)	Ground	On pressure switch	πιραι	switch ON Engine running	Battery voltage

Terminal No.		Description				Value
+	e color)	Signal name	Input/ Output		Condition	(Approx.)
	Ground	Power generation command signal	Output	Ignition switch ON		(V) 6 4 2 0 2 2ms JPMIA0001GB 6.3 V
76 (P)*1 (V)*3				40% is set on "ACTIVE TEST", "ALTERNATOR DUTY" of "ENGINE"		(V) 6 4 2 0 2 2ms JPMIA0002GB 3.8 V
				80% is set on "ACTIVE TEST", "ALTERNATOR DUTY" of "ENGINE"		(V) 6 4 2 0 2ms JPMIA0003GB 1.4 V
77 (B) ^{*1}	Ground	Fuel pump relay control	Output		nately 1 second after turning on switch ON unning	0 – 1.0 V
(L)*3					tely 1 second or more after ignition switch ON	Battery voltage
80 (W)	Ground	Starter motor	Output	At engine of	cranking	Battery voltage
83	Ground	Headlamp LO (RH)	Output	Ignition	Lighting switch OFF	0 V
(R)		, ,		switch ON	Lighting switch 2ND	Battery voltage
84 (P)	Ground	Headlamp LO (LH)	Output	Ignition switch ON	Lighting switch OFF	0 V
86 (W)	Ground	Front fog lamp	Output	Lighting switch 2ND	Front fog lamp switch ON Daytime running light activated (Only for Canada)	Battery voltage Battery voltage
					Front fog lamp switch OFF	0 V
88 (G)	Ground	Washer pump power supply	Output	Ignition switch ON		Battery voltage
89 (BR)	Ground	Headlamp HI (RH)	Output	Ignition switch ON	Lighting switch HI Lighting switch PASS Lighting switch OFF	Battery voltage
90	Ground	Headlamp HI (LH)	Output	Ignition	Lighting switch HI Lighting switch PASS	Battery voltage
(Y)				switch ON	Lighting switch OFF	0 V

< ECU DIAGNOSIS INFORMATION >

	inal No.	Description		Condition		Value (Approx.)
(Wire color) + _		Signal name	Input/ Output			
91 Cround		A Darking laws	Output	Ignition	Lighting switch 1ST	Battery voltage
(P)	Ground	Parking lamp	Output	switch ON	Lighting switch OFF	0 V
97 (V)	Ground	Cooling fan control	Output	Engine idling		0 – 5 V
104	Cround	Ground Hood switch	lanut	Close the h	nood	Battery voltage
(LG)	Giouna		Input	Open the h	ood	0 V

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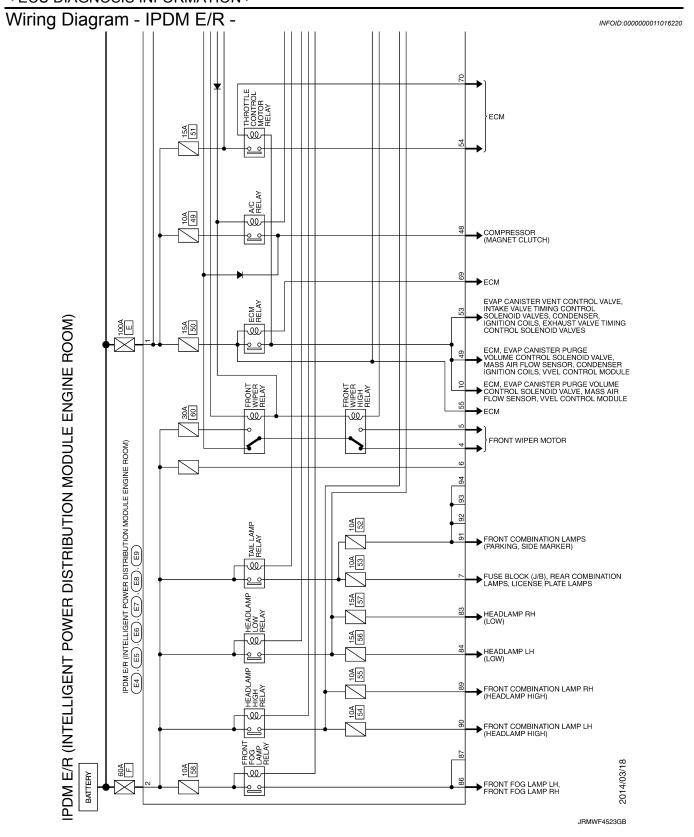
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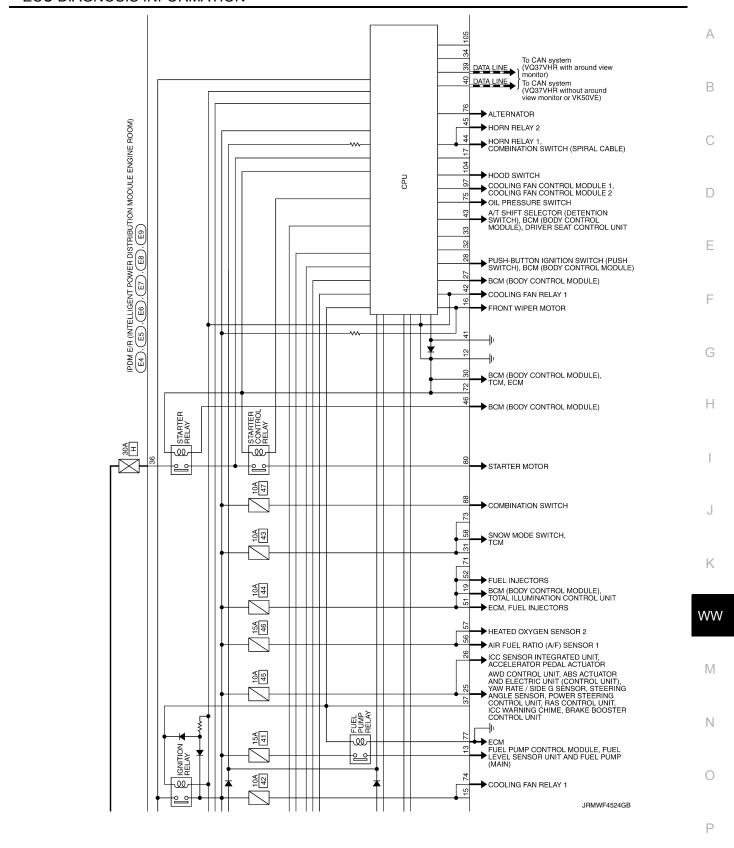
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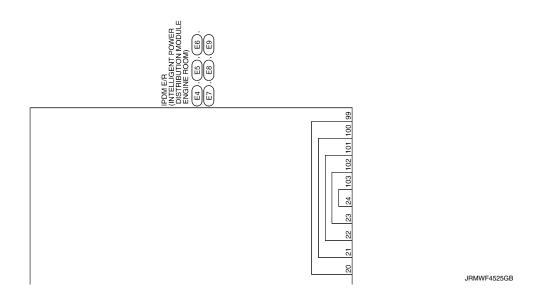
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^{*1:} VK engine models
*2: Only for the models with ICC system

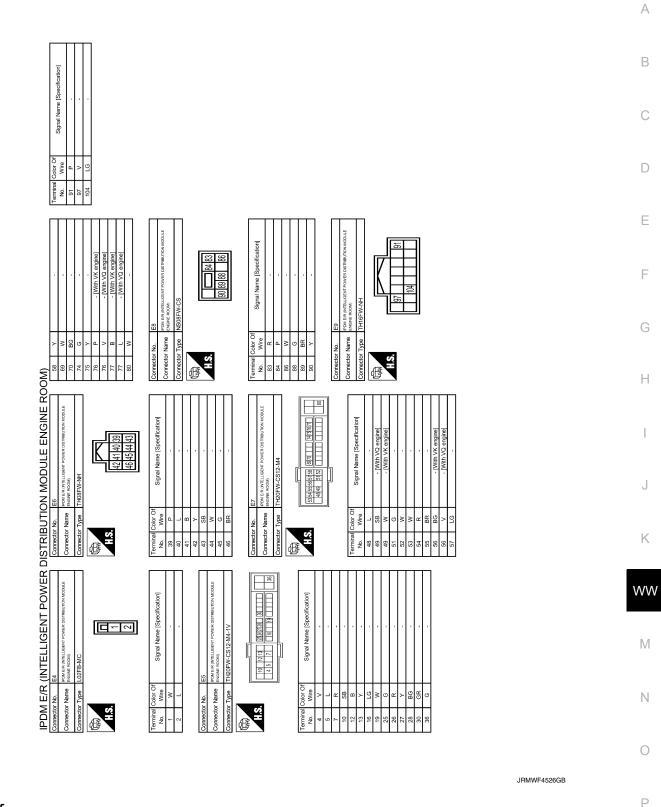
^{*3:} VQ engine models







< ECU DIAGNOSIS INFORMATION >



Fail-safe

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With ECM

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< 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 lampsLicense plate lampsSide marker lampsIlluminationsTail lamps	Turns ON the tail lamp relay when the ignition switch is turned ON Turns OFF the tail lamp relay when the ignition switch is turned OFF
Front wiper	 The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed. The wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the INT mode and the front wiper motor is operating.
Front fog lamps	Front fog lamp relay OFF
Horn	Horn OFF
Ignition relay	The status just before activation of fail-safe is maintained.
Starter motor	Starter control relay OFF

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

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

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

FRONT WIPER CONTROL

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

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

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

< ECU DIAGNOSIS INFORMATION >

NOTE:

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

STARTER MOTOR PROTECTION FUNCTION

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

DTC Index

NOTE:

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

		×: Applicable
CONSULT display	Fail-safe	Reference
No DTC is detected. further testing may be required.	_	_
U1000: CAN COMM CIRCUIT	×	PCS-15
B2098: IGN RELAY ON CIRC	×	PCS-16
B2099: IGN RELAY OFF CIRC	_	PCS-18
B210B: STR CONT RLY ON CIRC	-	<u>SEC-83</u>
B210C: STR CONT RLY OFF CIRC	-	<u>SEC-84</u>
B210D: STARTER RLY ON CIRC	_	<u>SEC-86</u>
B210E: STARTER RLY OFF CIRC	_	<u>SEC-88</u>
B210F: INTRLCK/PNP SW ON	_	<u>SEC-90</u>
B2110: INTRLCK/PNP SW OFF	_	<u>SEC-92</u>

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WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

WIPER AND WASHER SYSTEM SYMPTOMS WITH RAIN SENSOR

WITH RAIN SENSOR: Symptom Table

INFOID:000000010581291

CAUTION:

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

Symptom		Probable malfunction location	Inspection item
	HI only	Combination switch Harness between combination switch and BCM BCM	Combination switch Refer to BCS-90. "Symptom Table".
		IPDM E/R Harness between IPDM E/R and front wiper motor Front wiper motor	Front wiper motor (HI) circuit Refer to <u>WW-31, "Compo-</u> nent Function Check".
		Front wiper request signal BCM IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"
	LO only	Combination switch Harness between combination switch and BCM BCM	Combination switch Refer to BCS-90, "Symptom Table".
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-29</u> , "Compo- nent Function Check".
		Front wiper request signal BCM IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"
	AUTO only	Combination switch Harness between combination switch and BCM BCM	Combination switch Refer to BCS-90. "Symptom Table".
		Rain sensor Harness between rain sensor and BCM BCM	Rain sensor Refer to <u>WW-37, "Component Function Check"</u> .
	HI, LO and AUTO	SYMPTOM DIAGNOSIS "FRONT WIPER DOES NOT OPERATE" Refer to	

< SYMPTOM DIAGNOSIS >

Symptom		Probable malfunction location	Inspection item	
		Combination switchBCM	Combination switch Refer to BCS-90, "Symptom Table".	
	HI only	Front wiper request signal BCM IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"	
		IPDM E/R		
Front wiper does not		Combination switch BCM	Combination switch Refer to BCS-90, "Symptom Table".	
stop.	LO only	Front wiper request signal BCM IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"	
		IPDM E/R		
	AUTO	Combination switchBCM	Combination switch Refer to BCS-90, "Symptom Table".	
	AUTO only	Rain sensorHarness between rain sensor and BCMBCM	Rain sensor Refer to <u>WW-37, "Component Function Check"</u> .	
	Sensitivity adjustment cannot be performed.	Combination switchHarness between combination switch and BCMBCM	Combination switch Refer to BCS-90, "Symptom Table".	
		BCM	_	
Front wiper does not	Wiper is not linked to the washer operation.	Combination switchHarness between combination switch and BCMBCM	Combination switch Refer to BCS-90, "Symptom Table".	
operate normally.		BCM	_	
	Does not return to stop position. [Repeatedly operates for 10 sec- onds and then stops for 20 seconds. After that, it stops the opera- tion. (Fail-safe)]	 IPDM E/R Harness between IPDM E/R and front wiper motor Front wiper motor 	Front wiper stop position signal circuit Refer to <u>WW-33</u> , "Component Function Check".	
	ON only	Combination switchHarness between combination switch and BCMBCM	Combination switch Refer to BCS-90, "Symptom Table".	
Rear wiper does not operate.	INT only	Combination switchHarness between combination switch and BCMBCM	Combination switch Refer to BCS-90, "Symptom Table".	
		Combination switchHarness between combination switch and BCMBCM	Combination switch Refer to BCS-90, "Symptom Table".	
	ON and INT	 BCM Harness between rear wiper motor and BCM Harness between rear wiper motor and ground Rear wiper motor 	Rear wiper motor circuit Refer to <u>WW-39</u> , "Component Function Check".	
Rear wiper does not stop.	ON only	Combination switch BCM	Combination switch Refer to BCS-90, "Symptom Table".	
	INT only	Combination switch BCM	Combination switch Refer to BCS-90, "Symptom Table".	

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< SYMPTOM DIAGNOSIS >

Symptom		Probable malfunction location	Inspection item
		Combination switch Harness between rear wiper motor and BCM BCM	Combination switch Refer to BCS-90, "Symptom Table".
Rear wiper does not		BCM	_
operate normally.			Rear wiper stop position signal circuit Refer to <u>WW-41</u> , "Component Function Check".

WITHOUT RAIN SENSOR

WITHOUT RAIN SENSOR: Symptom Table

INFOID:0000000010581292

CAUTION:

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

Symptom		Probable malfunction location	Inspection item	
	HI only	Combination switch Harness between combination switch and BCM BCM	Combination switch Refer to BCS-90, "Symptom Table".	
		IPDM E/R Harness between IPDM E/R and front wiper motor Front wiper motor	Front wiper motor (HI) circuit Refer to <u>WW-31, "Compo-</u> nent Function Check".	
		Front wiper request signal BCM IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"	
Front wiper does not operate.	LO and INT	Combination switch Harness between combination switch and BCM BCM	Combination switch Refer to BCS-90, "Symptom Table".	
		IPDM E/R Harness between IPDM E/R and front wiper motor Front wiper motor	Front wiper motor (LO) circuit Refer to <u>WW-29, "Compo-</u> nent Function Check".	
		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 BCS-90, "Symptom Table".	
		Front wiper request signal BCM IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"	
	HI, LO and INT	SYMPTOM DIAGNOSIS "FRONT WIPER DOES NOT OPERATE" Refer to WW-114, "Diagnosis Procedure".		

< SYMPTOM DIAGNOSIS >

Symptom		Probable malfunction location	Inspection item	
		Combination switch BCM	Combination switch Refer to BCS-90, "Symptom Table".	
	HI only	Front wiper request signal BCM IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"	
		IPDM E/R	_	
Front wiper does not		Combination switch BCM	Combination switch Refer to BCS-90, "Symptom Table".	
stop.	LO only	Front wiper request signal BCM IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"	
		IPDM E/R	_	
	INT only	Combination switch BCM	Combination switch Refer to BCS-90, "Symptom Table".	
	TIVE OTHY	Front wiper request signalBCMIPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"	
	Intermittent adjustment cannot be performed.	Combination switch Harness between combination switch and BCM BCM	Combination switch Refer to BCS-90, "Symptom Table".	
		BCM	_	
	Intermittent control linked with vehicle speed cannot be performed.	Check the vehicle speed detection wiper setting. Refer to <a <="" href="https://www.19." td="" ww.19."="" www.19."="">		
Front wiper does not operate normally.	Wiper is not linked to the washer operation.	Combination switchHarness between combination switch and BCMBCM	Combination switch Refer to BCS-90, "Symptom Table".	
		BCM	_	
	Does not return to stop position. [Repeatedly operates for 10 sec- onds and then stops for 20 seconds. After that, it stops the opera- tion. (Fail-safe)]	IPDM E/R Harness between IPDM E/R and front wiper motor Front wiper motor	Front wiper stop position signal circuit Refer to <u>WW-33</u> , "Component Function Check".	
Rear wiper does not operate.	ON only	Combination switchHarness between combination switch and BCMBCM	Combination switch Refer to BCS-90, "Symptom Table".	
	INT only	Combination switch Harness between combination switch and BCM BCM	Combination switch Refer to BCS-90, "Symptom Table".	
		Combination switch Harness between combination switch and BCM	Combination switch Refer to BCS-90, "Symptom	
орегате.		• BCM	<u>Table"</u> .	

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< SYMPTOM DIAGNOSIS >

Symptom		Probable malfunction location	Inspection item
Rear wiper does not	ON only	Combination switch BCM	Combination switch Refer to BCS-90, "Symptom Table".
stop.	INT only	Combination switch BCM	Combination switch Refer to BCS-90, "Symptom Table".
	Wiper is not linked to the washer operation.	Combination switch Harness between rear wiper motor and BCM BCM	Combination switch Refer to BCS-90, "Symptom Table".
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 stop position signal circuit Refer to <u>WW-41</u> , "Component Function Check".

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description A

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.

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FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

FRONT WIPER DOES NOT OPERATE

Description INFOID:000000010581294

The front wiper does not operate under any operation conditions.

Diagnosis Procedure

INFOID:0000000010581295

1. CHECK WIPER RELAY OPERATION

PIPDM E/R AUTO ACTIVE TEST

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

PCONSULT 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

Hi : Front wiper HI operation

Off : Stop the front wiper.

Is front wiper operation normally?

YES >> GO TO 4. NO >> GO TO 2.

2. CHECK FRONT WIPER MOTOR FUSE

- 1. Turn the ignition switch OFF.
- 2. Check that the front wiper motor 30A fuse (#60) is not fusing.

Is the fuse fusing?

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

NO >> GO TO 3.

3.CHECK FRONT WIPER MOTOR GROUND OPEN CIRCUIT

- 1. Disconnect front wiper motor connector.
- 2. Check continuity between front wiper motor harness connector and ground.

Front wi	per motor		Continuity	
Connector Terminal		Ground	Continuity	
E42	2		Existed	

Does continuity exist?

YES >> GO TO 4.

NO >> Repair the harness or connector.

4. CHECK FRONT WIPER REQUEST SIGNAL INPUT

(P)CONSULT DATA MONITOR

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

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

Is the status of item normal?

YES >> Replace IPDM E/R.

FRONT WIPER DOES NOT OPERATE < SYMPTOM DIAGNOSIS > NO >> GO TO 5. 5. CHECK COMBINATION SWITCH Α Perform the inspection of the combination switch. Refer to BCS-90, "Symptom Table". Is combination switch normal? В YES >> Replace BCM. Refer to BCS-93, "Exploded View". NO >> Repair or replace the applicable parts. D Е F G Н K

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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:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

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

WARNING:

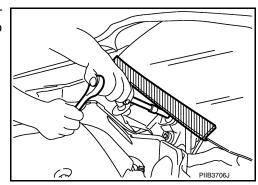
Always observe the following items for preventing accidental activation.

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

Precaution for Procedure without Cowl Top Cover

INFOID:0000000010581297

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



PRECAUTIONS

< PRECAUTION >

Precautions for Removing Battery Terminal

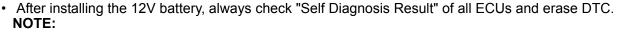
• When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

NOTE:

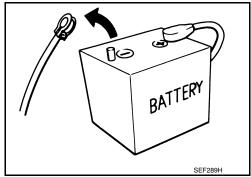
ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

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

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



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



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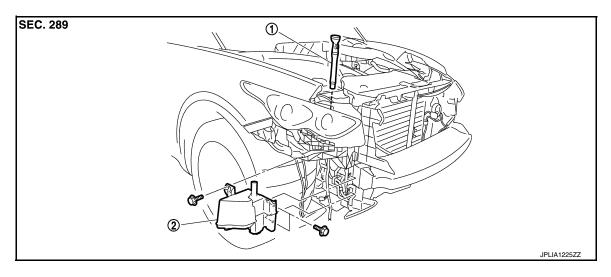
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REMOVAL AND INSTALLATION

WASHER TANK

Exploded View



1. Washer tank inlet

2. Washer tank

Removal and Installation

INFOID:0000000010581299

REMOVAL

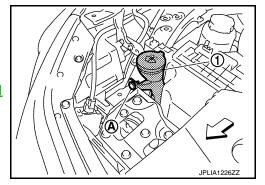
- Remove the engine room cover RH (for VK50VE engine). Refer to <u>EM-184, "Exploded View"</u>.
- 2. Remove the clip (A).
- 3. Pull out the washer tank inlet (1) from the washer tank.
- 4. Remove the front bumper fascia. Refer to EXT-12, "Exploded View".
- 5. Disconnect the washer pump connector.
- 6. Disconnect the washer level switch connector.
- 7. Disconnect the front washer tube and rear washer tube.
- 8. Remove the washer tank mounting bolts.
- 9. Remove the washer tank from the vehicle.

INSTALLATION

Install in the reverse order of removal.

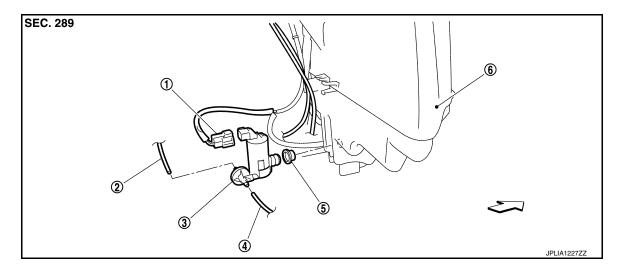
CAUTION:

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



WASHER PUMP

Exploded View



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

- 2. Rear washer tube
- 5. Packing

- 3. Washer pump
- 6. Washer tank

Removal and Installation

REMOVAL

- 1. Remove the fender protector RH (front). Refer to EXT-25, "FENDER PROTECTOR: Exploded View".
- 2. Disconnect the washer pump connector.
- 3. Disconnect the front washer tube and rear washer tube.
- 4. Remove the washer pump from the washer tank.
- 5. Remove the packing from the washer tank.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

Never twist the packing when installing the washer pump.

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WASHER LEVEL SWITCH

< REMOVAL AND INSTALLATION >

WASHER LEVEL SWITCH

Removal and Installation

INFOID:0000000010581302

The washer level switch must be replaced together with the washer tank as an assembly. Refer to <u>WW-118</u>, <u>"Removal and Installation"</u>.

FRONT WASHER NOZZLE AND TUBE

Hydraulic Layout

SEC. 289

- 1. Front washer tube
- 2. Front washer nozzle
- 3. Front washer tube

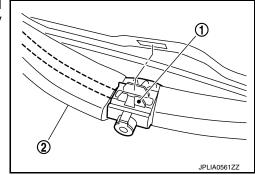
4. Washer tank

______: Clip A ______: Clip B

Removal and Installation

REMOVAL

- 1. Open the hood.
- Use the stop point of washer nozzle (1) as the support point and rotate nozzle to remove it from body, while pushing nozzle spray point side along the hood.
- 3. Disconnect the washer tube (2) from the washer nozzle.



INSTALLATION

- 1. Connect the washer tube into the washer nozzle.
- Install the washer nozzle to the hood.
- Adjust the washer nozzle spray position. Refer to <u>WW-121, "Inspection and Adjustment"</u>.

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

Inspection and Adjustment

INSPECTION

Washer Nozzle Inspection

Revision: 2015 February WW-121 2015 QX70

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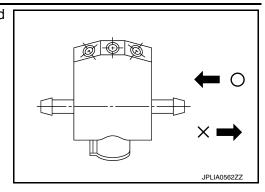
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FRONT WASHER NOZZLE AND TUBE

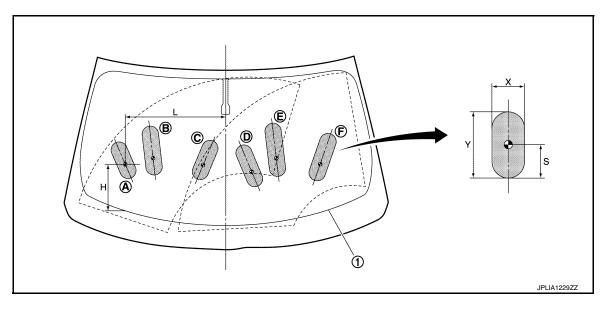
< REMOVAL AND INSTALLATION >

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

: Target spray position

Unit: mm (in)

					· · · · · · · · · · · · · · · · · · ·
Spray position	Н	L	X	Y	S
A	204 (8.03)	486 (19.13)	80 (3.15)	226 (8.90)	79 (3.11)
В	274 (10.79)	358 (14.09)	80 (3.15)	319 (12.56)	99 (3.90)
С	274 (10.79)	124 (4.88)	80 (3.15)	332 (13.07)	96 (3.78)
D	269 (10.59)	126 (4.96)	80 (3.15)	304 (11.97)	93 (3.66)
E	298 (11.73)	253 (9.96)	80 (3.15)	332 (13.07)	94 (3.70)
F	239 (9.41)	466 (18.35)	80 (3.15)	295 (11.61)	91 (3.58)

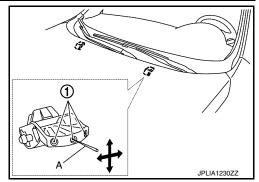
FRONT WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

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

NOTE:

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



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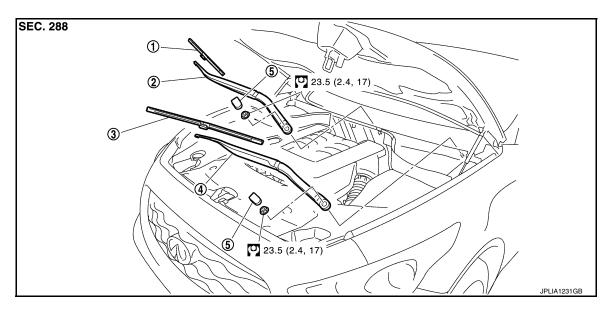
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FRONT WIPER ARM

Exploded View



- 1. Front wiper blade (RH)
- 4. Front wiper arm (LH)
- : N·m (kg-m, ft-lb)
- 2. Front wiper arm (RH)
- 5. Front wiper arm cap
- 3. Front wiper blade (LH)

Removal and Installation

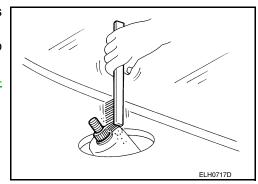
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REMOVAL

- 1. Operate the front wiper to move it to the auto stop position.
- 2. Open the hood.
- 3. Remove the front wiper arm caps.
- 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.
- Operate the front wiper motor to move the front wiper to the auto stop position.
- Adjust the front wiper blade position. Refer to <u>WW-124, "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 the front wiper arm caps.



Adjustment

WIPER BLADE POSITION ADJUSTMENT

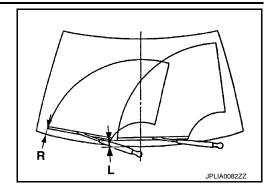
Clearance between the end of cowl top cover and the top of wiper blade center

FRONT WIPER ARM

< REMOVAL AND INSTALLATION >

Standard clearance

R : 72.2 \pm 7.5 mm (2.843 \pm 0.295 in) L : 60.6 \pm 7.5 mm (2.386 \pm 0.295 in)



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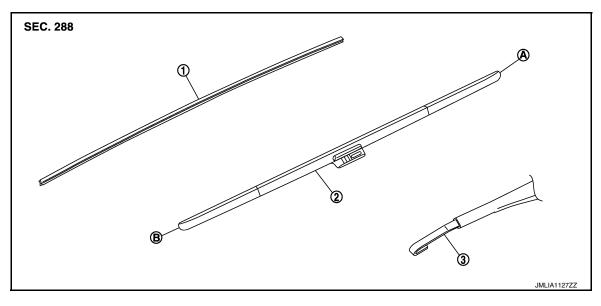
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WIPER BLADE

Exploded View



1. Wiper refill

Wiper blade

3. Wiper arm

A : Wiper blade endB : Wiper blade tip

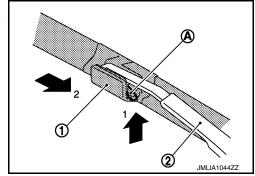
Removal and Installation

REMOVAL

1. Push up the lever (A) of wiper blade (1), while sliding wiper blade toward the direction of the arrow, to remove it from wiper arm (2).

CAUTION:

Be careful not to drop the wiper blade onto the windshield glass.



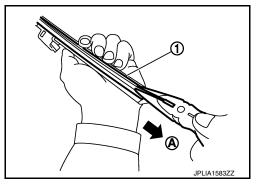
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INSTALLATION

- 1. Install wiper blade into wiper arm.
- 2. Install wiper arm.

Replacement

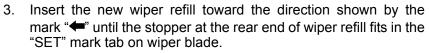
1. Hold the rip of old wiper refill (1) at the rear end of the wiper blade with long-nose pliers, and pull out the wiper refill to the direction (A).



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

NOTE:

- Insert the wiper refill to be held securely by tab of wiper blade as shown in section.
- After the wiper refill is fully inserted, remove the holder (3).
- *: Attached to service parts.

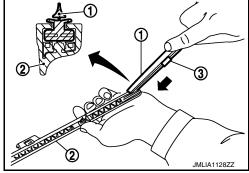


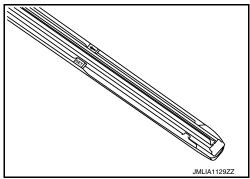
- 4. Untwist the twisted wiper refill at the rear end of wiper blade, if any.
- 5. Check the following items after replacing wiper refill.
 - Wiper refill is not twisted at all.
 - Wiper refill thoroughly fits in the tab on wiper blade.
 - Wiper refill is inserted from the proper direction.

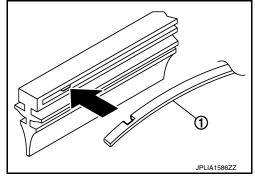
NOTE:

When the vertebra is detached.

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







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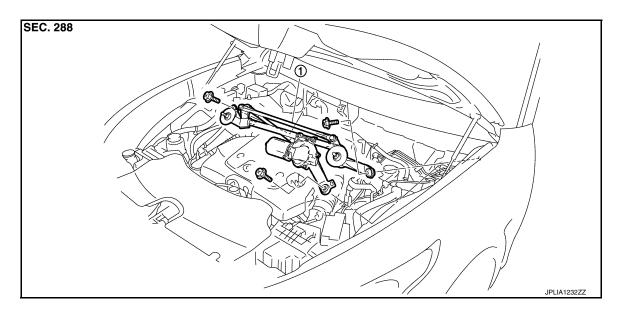
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FRONT WIPER DRIVE ASSEMBLY

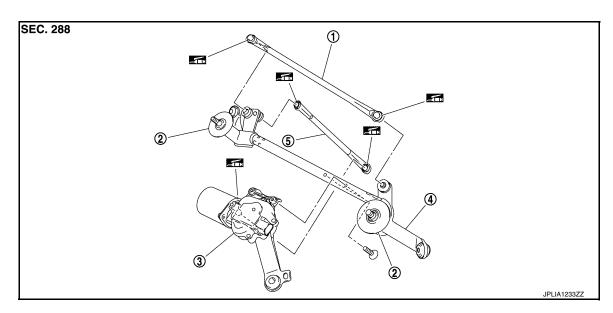
Exploded View

REMOVAL



1. Front wiper drive assembly

DISASSEMBLY



- 1. Front wiper linkage 1
- 2. Shaft seal

3. Front wiper motor

4. Front wiper frame

5. Front wiper linkage 2

: Multi-purpose grease or an equivalent.

Removal and Installation

INFOID:0000000010581313

REMOVAL

- Remove the front wiper arm. Refer to <u>WW-124, "Exploded View"</u>.
- Remove the cowl top cover. Refer to <u>EXT-22</u>, "<u>Exploded View</u>".
- 3. Remove the bolts from the front wiper drive assembly.

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FRONT WIPER DRIVE ASSEMBLY

< REMOVAL AND INSTALLATION >

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

INSTALLATION

- 1. Install the front wiper drive assembly to the vehicle.
- 2. Connect the front wiper motor connector.
- 3. Operate the front wiper to move it to the auto stop position.
- 4. Install the cowl top cover. Refer to EXT-22, "Exploded View".
- 5. Install the front wiper arms. Refer to WW-124, "Exploded View".

Disassembly and Assembly

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DISASSEMBLY

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

CAUTION:

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

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

ASSEMBLY

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

CAUTION:

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

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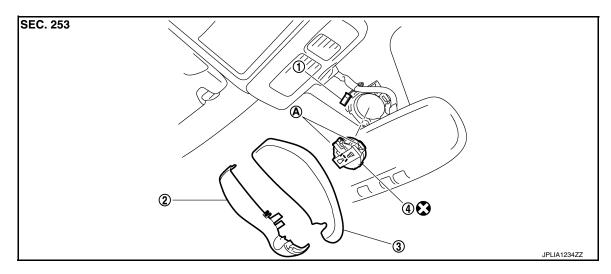
RAIN SENSOR

Exploded View

CAUTION:

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

REMOVAL



- 1. Rain sensor connector
- 2. Inside mirror cover (LH)
- 3. Inside mirror cover (RH)

- 4. Rain sensor
- A. Metal spring clip
- : Always replace after every disassembly.

Removal and Installation

INFOID:0000000010581316

REMOVAL

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

INSTALLATION

Install in the reverse order of removal.

CAUTION:

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

WIPER AND WASHER SWITCH

< REMOVAL AND INSTALLATION >

WIPER AND WASHER SWITCH

Exploded View

Refer to BCS-94, "Exploded View".

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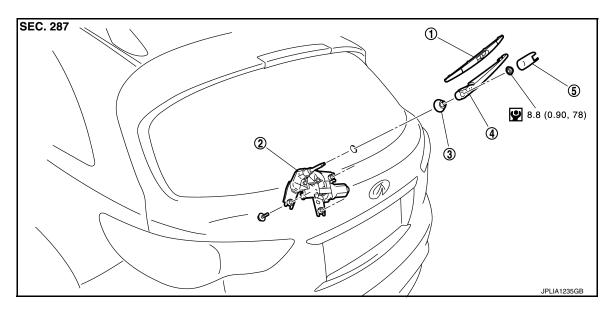
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REAR WIPER ARM

Exploded View INFOID:0000000010581318



- 1. Rear wiper blade
- 4. Rear wiper arm

- 2. Rear wiper motor
- Rear wiper arm cover
- 3. Pivot seal

: N·m (kg-m, in-lb)

Removal and Installation

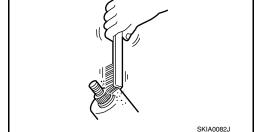
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REMOVAL

- 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. Remove wiper arm from the vehicle.

INSTALLATION

- 1. Clean wiper arm mount as shown in the figure to prevent nut from being loosened.
- 2. Operate the rear wiper motor to the auto stop position.
- 3. Adjust the rear wiper blade position. Refer to WW-132, "Adjustment".
- 4. Install the rear wiper arm by tightening the mounting nut.
- 5. Inject the washer fluid.
- 6. Operate the rear wiper to the auto stop position.
- 7. Check that the rear wiper blades stop at the specified position.
- Install the rear wiper arm cover.



Adjustment INFOID:0000000010581320

REAR WIPER BLADE POSITION ADJUSTMENT

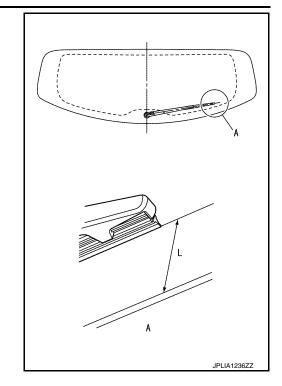
Clearance between the end of back door glass and the top of wiper blade center.

REAR WIPER ARM

< REMOVAL AND INSTALLATION >

Standard clearance

L : 51.5 \pm 7.5 mm (2.028 \pm 0.295 in)



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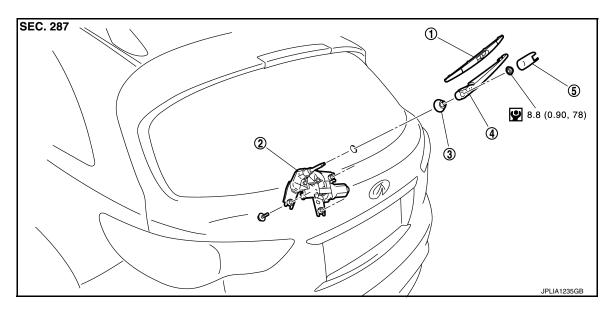
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REAR WIPER MOTOR

Exploded View INFOID:0000000010581321



- 1. Rear wiper blade
- 4. Rear wiper arm

- 2. Rear wiper motor
- Rear wiper arm cover
- 3. Pivot seal

: N·m (kg-m, in-lb)

Removal and Installation

INFOID:0000000010581322

REMOVAL

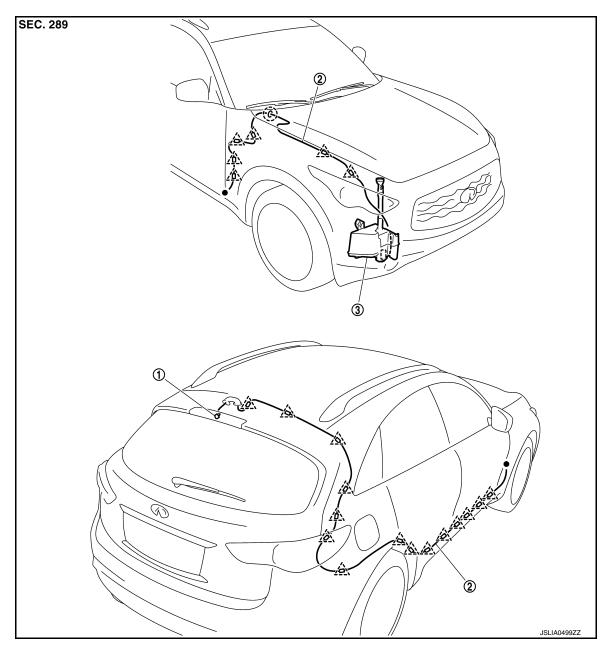
- 1. Remove the rear wiper arm. Refer to WW-132. "Exploded View".
- Remove the back door finisher inner. Refer to INT-34, "Exploded View".
- 3. Disconnect the rear wiper motor connector.
- 4. Remove the rear wiper motor mounting bolts.
- Remove the rear wiper motor from the vehicle. 5.
- Remove the pivot seal. 6.

INSTALLATION

- 1. Install the pivot seal.
- Install the rear wiper motor to the vehicle.
- 3. Connect the rear wiper motor connector.
- 4. Operate the rear wiper to the auto stop position.
- 5. Install the back door finisher inner. Refer to INT-34, "Exploded View".
- Install the rear wiper arm. Refer to WW-132, "Exploded View".

REAR WASHER NOZZLE AND TUBE

Hydraulic Layout



- Rear washer nozzle
- 2. Rear washer tube
- Washer tank

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- ر^_ : Clip
- () : Gromme
- indicates that the part is connected at points with same symbol in actual vehicle.

Removal and Installation

REMOVAL

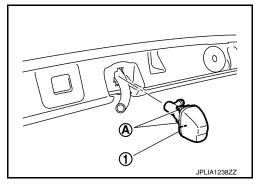
Remove the high-mounted stop lamp. Refer to <u>EXL-237</u>, "Exploded View".

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REAR WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

- Push pawl (A), and remove the rear washer nozzle (1) from the back door.
- 3. Disconnect the rear washer tube from the rear washer nozzle.



INSTALLATION

Install in the reverse order of removal.

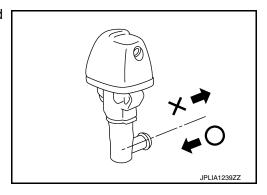
Inspection and Adjustment

INFOID:0000000010581325

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

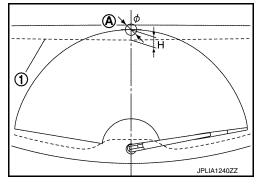
Washer Nozzle Spray Position adjustment

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

1 : Black printed frame line

Unit: mm (in)

Spray position	H : Height	φ : Spray position area	
А	23.1 (0.91)	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.

