

SECTION WW

WIPER & WASHER

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

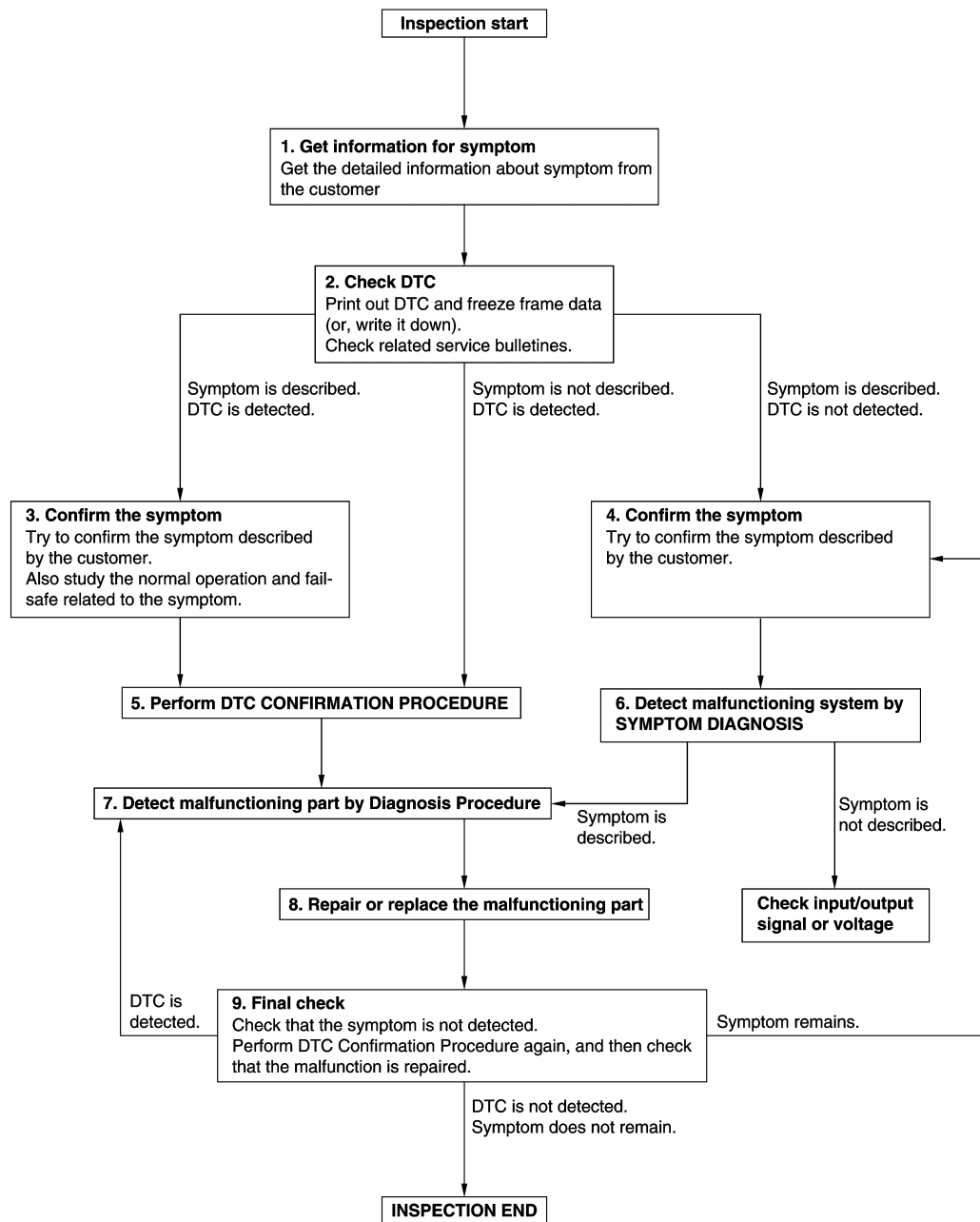
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000010581243

OVERALL SEQUENCE



DETAILED FLOW

Revision: 2015 February

WW-3

2015 QX70

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 [BCS-87. "DTC Inspection Priority Chart"](#) (BCM) or [PCS-33. "DTC Index"](#) (IPDM E/R), and determine trouble diagnosis order.

NOTE:

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

If the result of Component Function Check is NG, it is the same as the detection of DTC by DTC CONFIRMATION 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 CONSULT.

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.
2. 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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FRONT WIPER AND WASHER SYSTEM

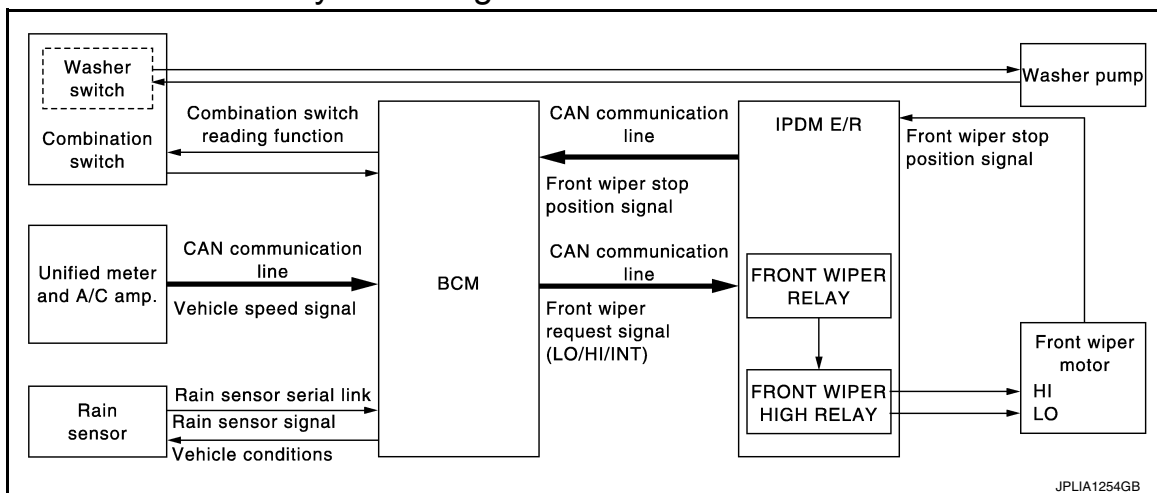
< SYSTEM DESCRIPTION >

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

FRONT WIPER AND WASHER SYSTEM

< 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.

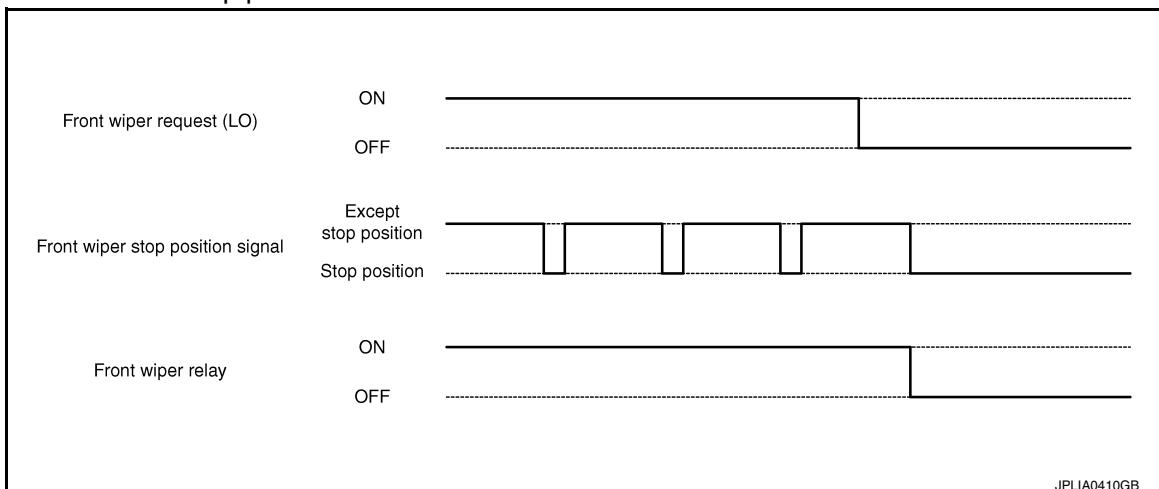
Wiper intermittent dial position	Sensitivity
1	High sensitivity
2	
3	Medium – high sensitivity
4	
5	Low – medium sensitivity
6	
7	Low sensitivity

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 AND WASHER SYSTEM

< 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:

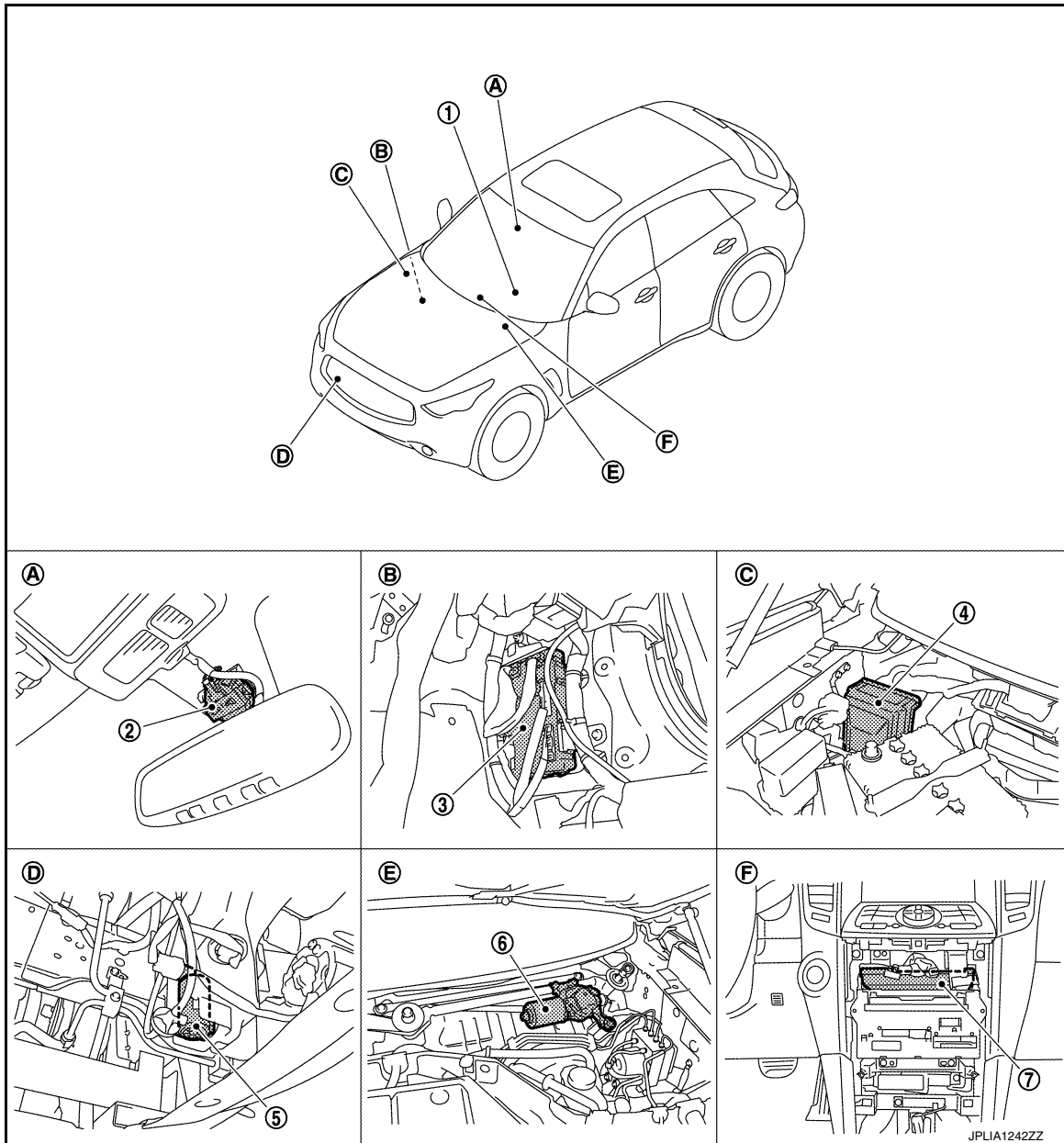
If rain sensor malfunction is detected when ignition switch is turned OFF ⇒ ON and front wiper switch is INT position, BCM operates front wiper LO.

FRONT WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

WITH RAIN SENSOR : Component Parts Location

INFOID:0000000010581246



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

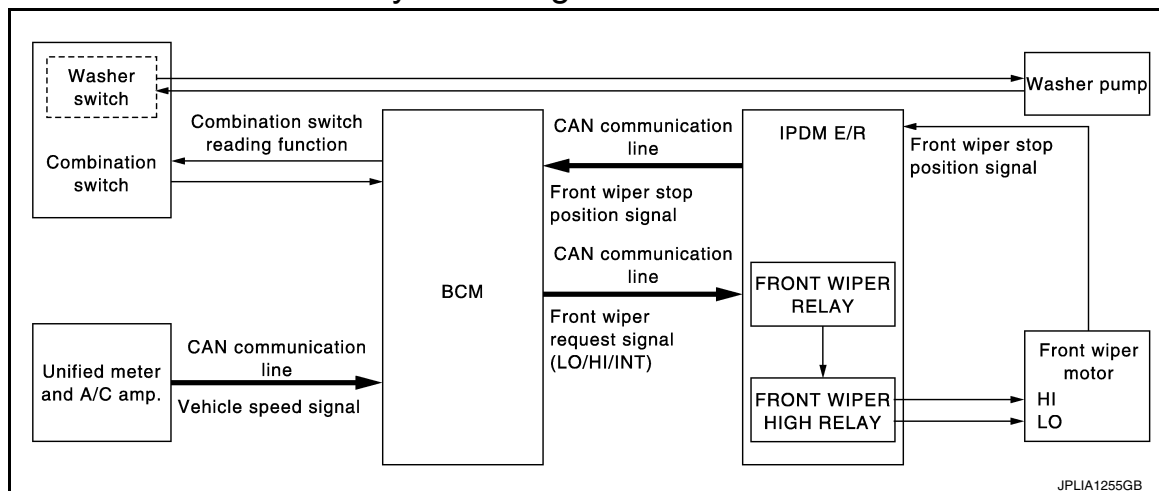
FRONT WIPER AND WASHER SYSTEM

< 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 signal to BCM through the rain sensor serial link.

WITHOUT RAIN SENSOR

WITHOUT RAIN SENSOR : System Diagram



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

FRONT WIPER AND WASHER SYSTEM

< 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

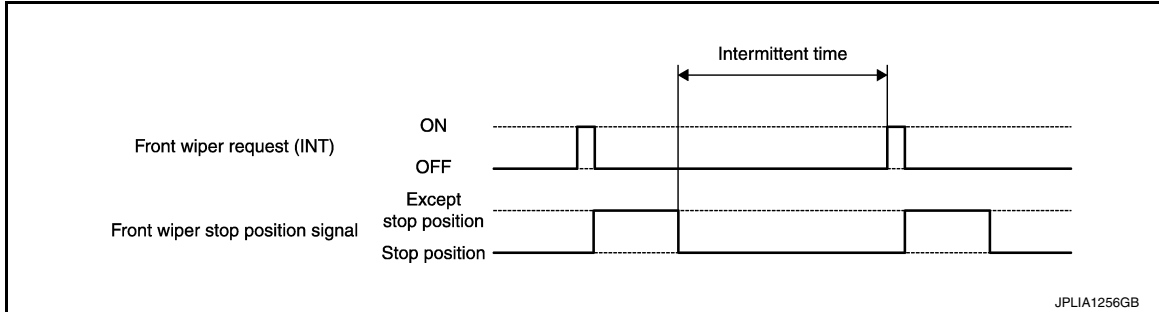
- Ignition switch ON
- Front wiper switch HI
- IPDM E/R turns ON the integrated front wiper relay and the front wiper high relay according to the front wiper request signal (HI).

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 [WW-19, "WIPER : CONSULT Function \(BCM - WIPER\)"](#).

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: Second

Wiper intermittent dial position	Intermittent operation interval	Intermittent operation delay Interval			
		Vehicle speed			
		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	Long ↓	32	24	16	9.6
7		42	31.5	21	12.6

*: When without vehicle speed setting

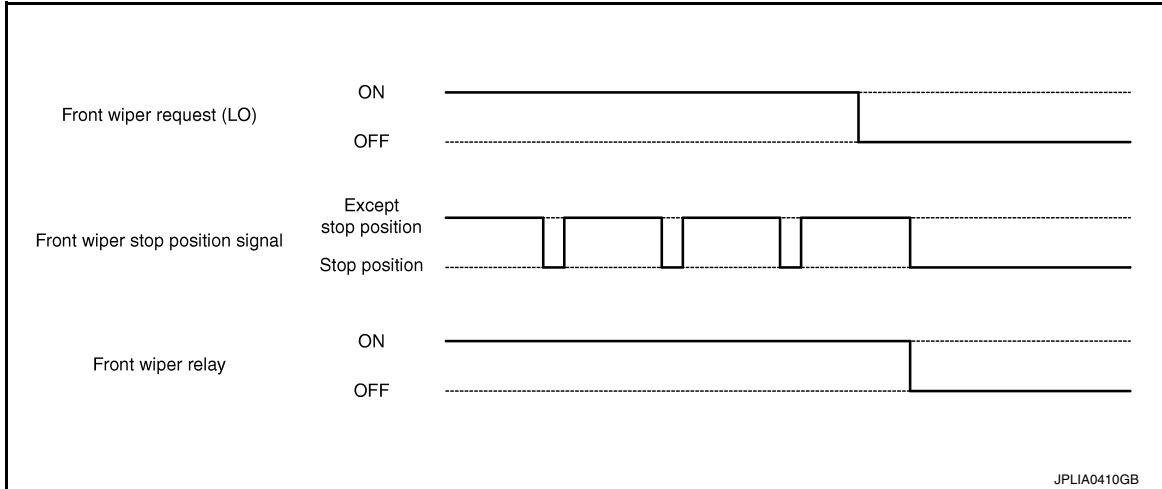
FRONT WIPER AUTO STOP OPERATION

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

FRONT WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

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



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

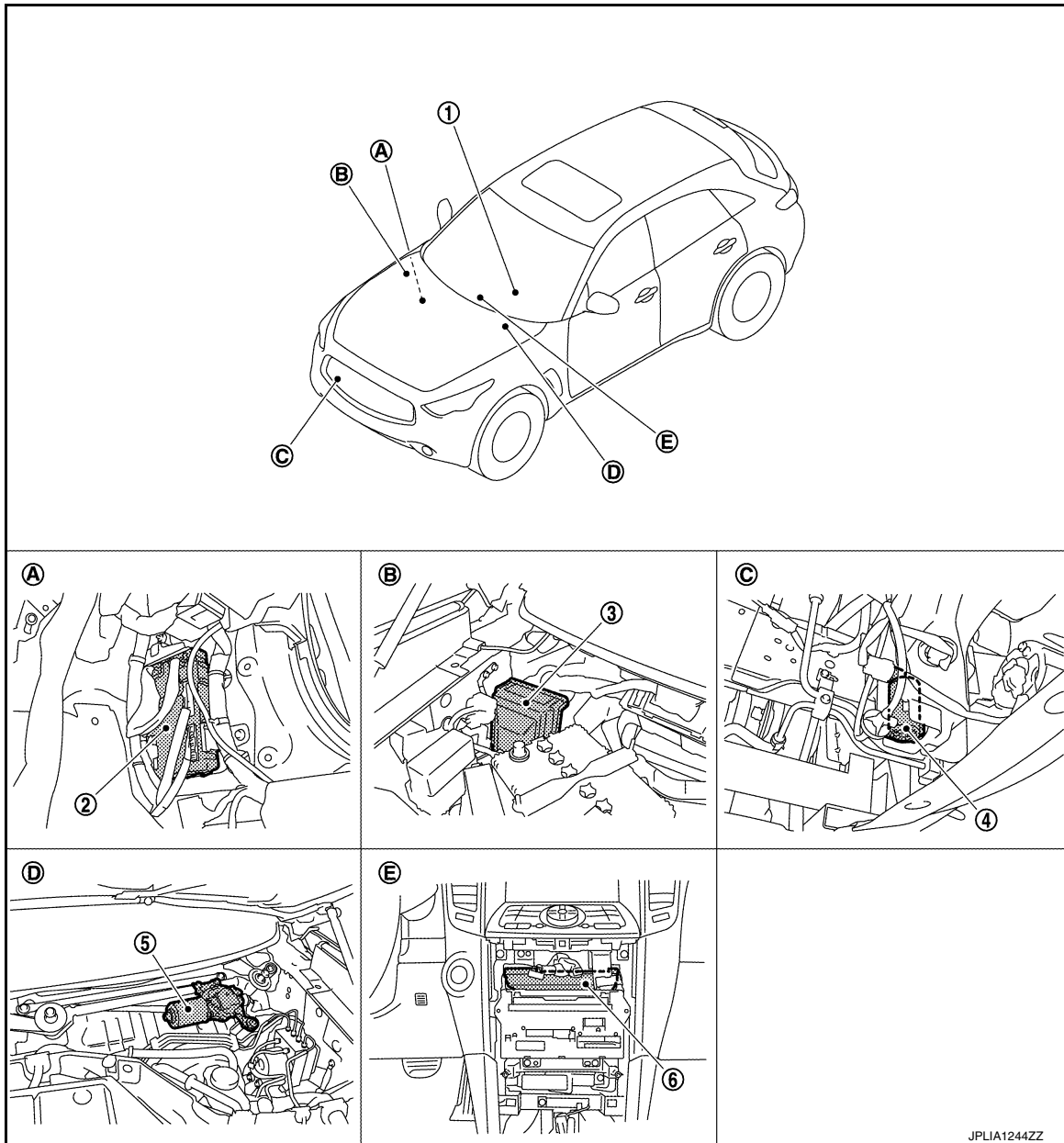
IPDM E/R performs the fail-safe function when the front wiper stop position circuit is malfunctioning. Refer to [PCS-31, "Fail-safe"](#).

FRONT WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

WITHOUT RAIN SENSOR : Component Parts Location

INFOID:0000000010581250



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

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.

FRONT WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

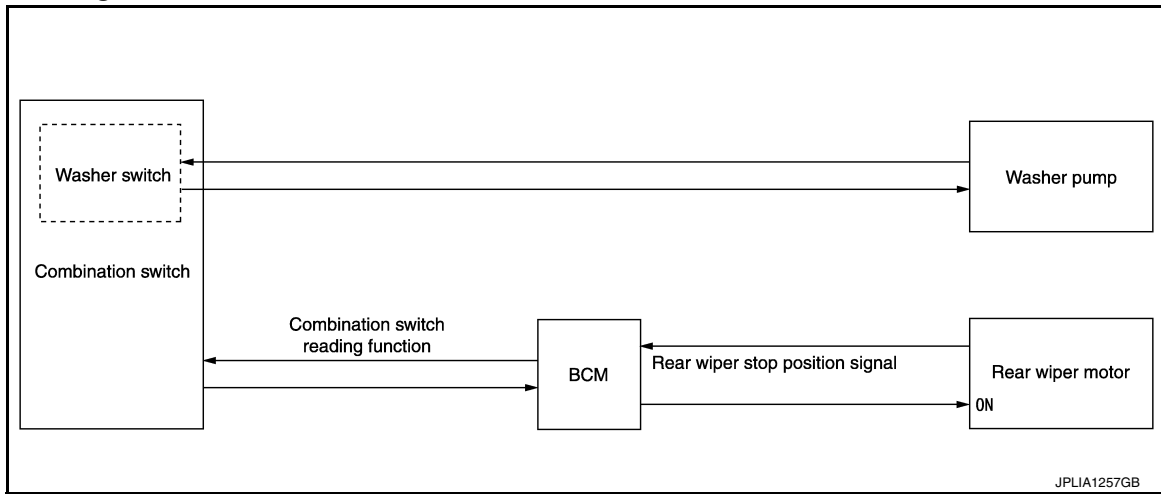
Part	Description
Combination switch (Wiper & washer switch)	Refer to BCS-11, "System Description" .
Unified meter and A/C amp.	Transmits the vehicle speed signal to BCM with CAN communication.

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

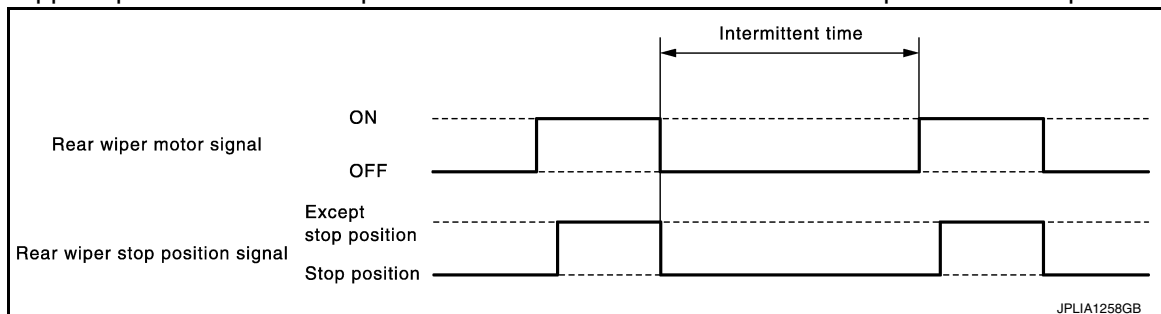
- Ignition switch ON
- Rear wiper switch ON

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.



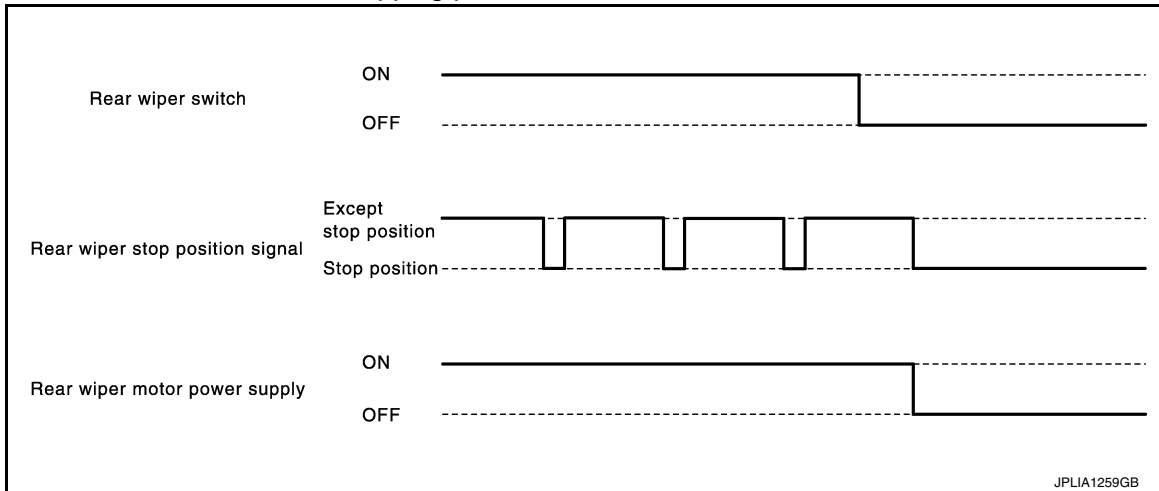
REAR WIPER AUTO STOP OPERATION

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

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.



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

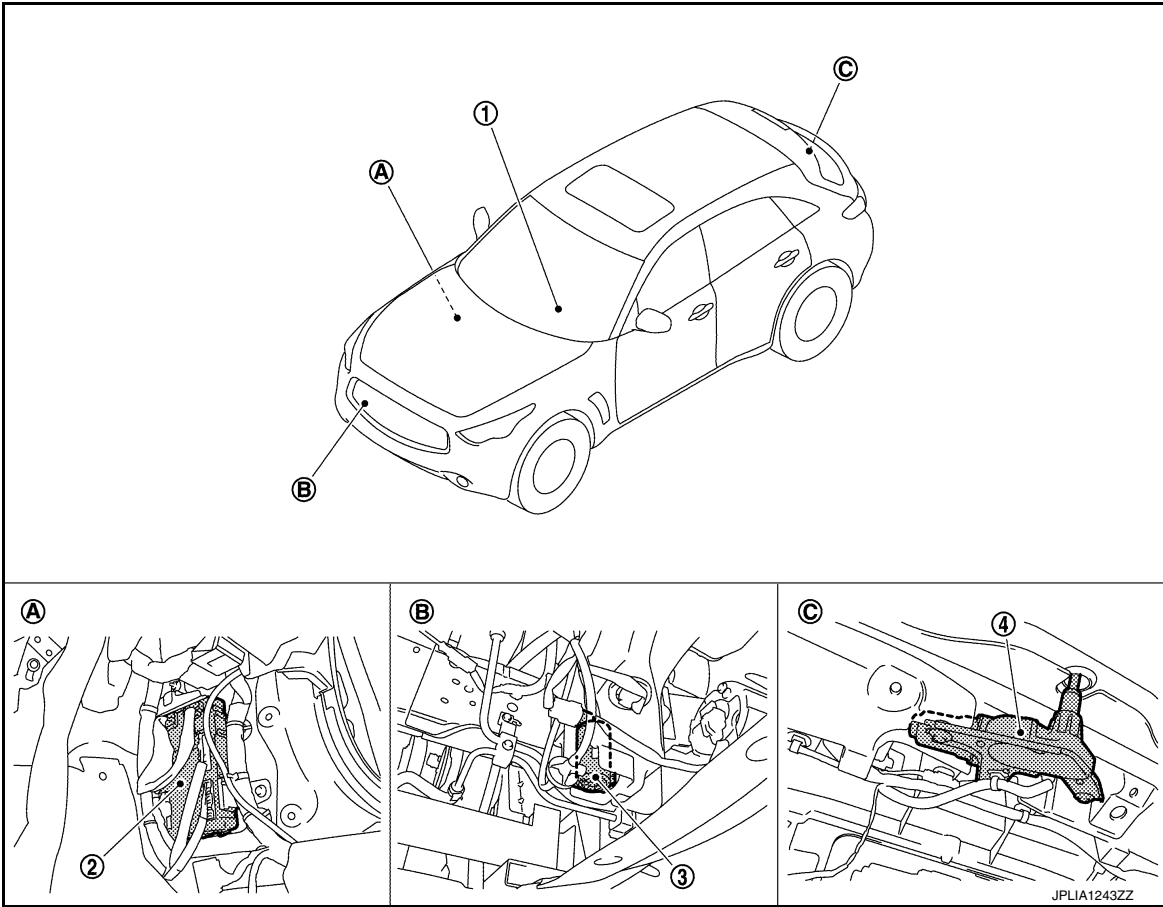
BCM performs the fail-safe function when the rear wiper stop position circuit is malfunctioning. Refer to [BCS-86, "Fail-safe"](#).

REAR WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

Component Parts Location

INFOID:0000000010581254



1. Combination switch
2. BCM
3. Washer pump
4. 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.

×: Applicable item

System	Sub system selection item	Diagnosis mode		
		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	BCM	×		
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:

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

FREEZE FRAME DATA (FFD)

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

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		A
Odo/Trip Meter	km	Total mileage (Odometer value) of the moment a particular DTC is detected		
Vehicle Condition	SLEEP>LOCK	Power position status of the moment a particular DTC is detected*	While turning BCM status from low power consumption mode to normal mode (Power supply position is "LOCK"*)	B
	SLEEP>OFF		While turning BCM status from low power consumption mode to normal mode (Power supply position is "OFF".)	C
	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)	E
	RUN>URGENT		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"*	G
	OFF>ACC		While turning power supply position from "OFF" to "ACC"	
	ON>CRANK		While turning power supply position from "IGN" to "CRANKING"	
	OFF>SLEEP		While turning BCM status from normal mode (Power supply position is "OFF".) to low power consumption mode	H
	LOCK>SLEEP		While turning BCM status from normal mode (Power supply position is "LOCK"*) to low power consumption mode	I
	LOCK		Power supply position is "LOCK"*	
	OFF		Power supply position is "OFF" (Ignition switch OFF)	J
	ACC		Power supply position is "ACC" (Ignition switch ACC)	
	ON		Power supply position is "IGN" (Ignition switch ON with engine stopped)	K
	ENGINE RUN		Power supply position is "RUN" (Ignition switch ON with engine running)	
	CRANKING		Power supply position is "CRANKING" (At engine cranking)	WW
IGN Counter	0 - 39	The number of times that ignition switch is turned ON after DTC is detected • The number is 0 when a malfunction is detected now. • The number increases like 1 → 2 → 3...38 → 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.		M

NOTE:

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

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

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

WIPER

WIPER : CONSULT Function (BCM - WIPER)

INFOID:0000000010581257

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.

*2:Factory setting.

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]	Each switch status that BCM judges from the combination switch reading function.
FR WIPER LOW [Off/On]	
FR WASHER SW [Off/On]	
FR WIPER INT [Off/On]	
FR WIPER STOP [Off/On]	Front wiper motor (stop position) status received from IPDM E/R with CAN communication.
INT VOLUME [1 – 7]	Each switch status that BCM judges from the combination switch reading function.
RR WIPER ON [Off/On]	Each switch status that BCM judges from the combination switch reading function.
RR WIPER INT [Off/On]	
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
FR WIPER	Hi	Transmits the front wiper request signal (HI) to IPDM E/R with CAN communication to operate the front wiper HI operation.
	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 WIPER	On	Outputs the voltage to operate the rear wiper motor.
	Off	Stops the voltage to stop.

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:0000000011016181

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.
2. 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 [DLK-107, "Component Function Check"](#).
- 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.

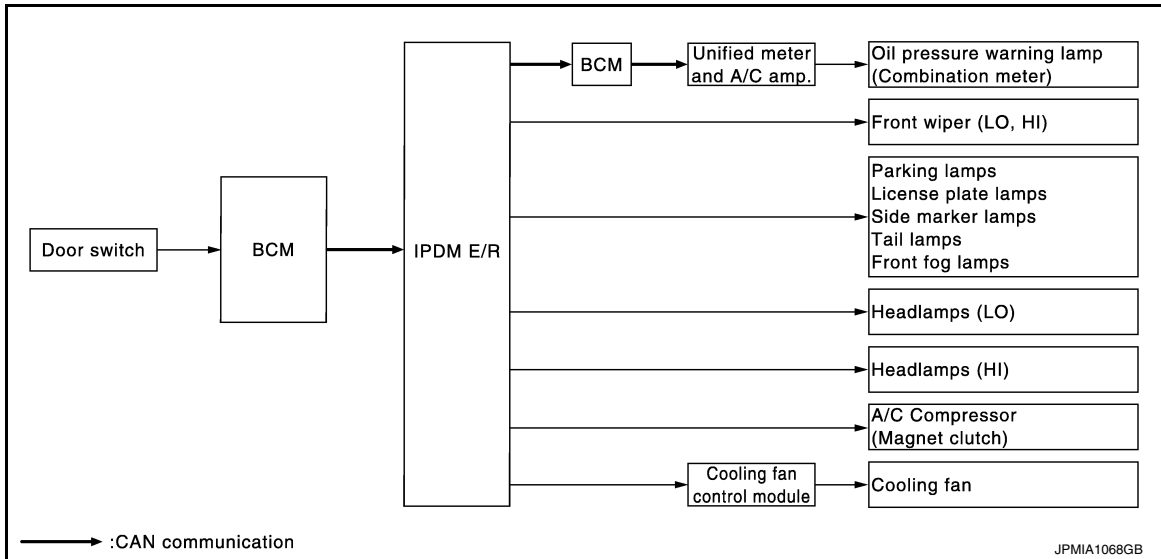
Operation sequence	Inspection location	Operation
A	Oil pressure warning lamp	Blinks continuously during operation of auto active test
1	Front wiper	LO for 5 seconds → HI for 5 seconds
2	• Parking lamps • License plate lamps • Side marker lamps • Tail lamps • Front fog lamps	10 seconds
3	Headlamps	• LO 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 → duty ratio of 100% for 5 seconds on the cooling fan control module.

DIAGNOSIS SYSTEM (IPDM E/R)

< 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 • 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?	YES BCM signal input circuit
		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
Oil pressure warning lamp does not operate	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
		NO • CAN communication signal between IPDM E/R and BCM • CAN communication signal between BCM and unified meter and A/C amp. • Combination meter

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Symptom	Inspection contents		Possible cause
Cooling fan does not operate	Perform auto active test. Does the cooling fan operate?	YES	- ECM signal input circuit - CAN communication signal between ECM and IPDM E/R
		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)

INFOID:0000000011016182

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.

DIAGNOSIS SYSTEM (IPDM E/R)

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

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Test item	Operation	Description
MOTOR FAN	1	OFF
	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:0000000010581260

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)

BCM (BODY CONTROL MODULE) : Diagnosis Procedure

INFOID:0000000010581262

1.CHECK FUSE AND FUSIBLE LINK

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

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

Is the fuse fusing?

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

NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

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

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

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.

BCM		Ground	Continuity
Connector	Terminal		
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

INFOID:0000000010581263

1.CHECK FUSES AND FUSIBLE LINK

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

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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

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		Ground	Continuity
Connector	Terminal		Existed
E5	12		
E6	41		

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

1.CHECK FRONT WIPER LO OPERATION

☒ IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-10, "Diagnosis Description"](#).
2. Check that the front wiper operates at the LO operation.

☐ CONSULT ACTIVE TEST

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

Lo : Front wiper (LO) operation

Off : Stop the front wiper.

Is front wiper (LO) operation normally?

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

Diagnosis Procedure

INFOID:0000000010581265

1.CHECK FRONT WIPER MOTOR (LO) OUTPUT VOLTAGE

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

Terminals			Voltage (Approx.)
(+)		(-)	
IPDM E/R		Ground	
Connector	Terminal		
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.

2.CHECK FRONT WIPER MOTOR (LO) OPEN CIRCUIT

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

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
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.

FRONT WIPER MOTOR LO CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

IPDM E/R		Ground	Continuity
Connector	Terminal		
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

☒ IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-10, "Diagnosis Description"](#).
2. Check that the front wiper operates at the HI operation.

☐ CONSULT ACTIVE TEST

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

Hi : Front wiper (HI) operation

Off : Stop the front wiper.

Is front wiper (HI) operation normally?

- YES >> Front wiper motor HI circuit is normal.
NO >> Refer to [WW-31, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:0000000010581267

1.CHECK FRONT WIPER MOTOR (HI) OUTPUT VOLTAGE

☐ CONSULT ACTIVE TEST

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

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

*: 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

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

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E5	5	E42	4	Existed

Does continuity exist?

- YES >> GO TO 3.
NO >> Repair the harness or connector.

3.CHECK FRONT WIPER MOTOR (HI) SHORT CIRCUIT

FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E5	5		Not existed

Does continuity exist?

- YES >> Repair the harness or connector.
NO >> Replace front wiper motor.

FRONT WIPER STOP POSITION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER STOP POSITION SIGNAL CIRCUIT

Component Function Check

INFOID:0000000010581268

1.CHECK FRONT WIPER STOP POSITION SIGNAL

CONSULT DATA MONITOR

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

Monitor item	Condition		Monitor status
WIP AUTO STOP	Front wiper motor	Stop position	STOP P
		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

INFOID:0000000010581269

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.
4. Check voltage between IPDM E/R harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(-)	
IPDM E/R		Ground	
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

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
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.

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

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.CHECK FRONT WIPER MOTOR (GND) OPEN CIRCUIT

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

Front wiper motor		Ground	Continuity
Connector	Terminal		
E42	2		Existed

Does continuity exist?

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

A

B

C

D

E

F

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P

WASHER SWITCH

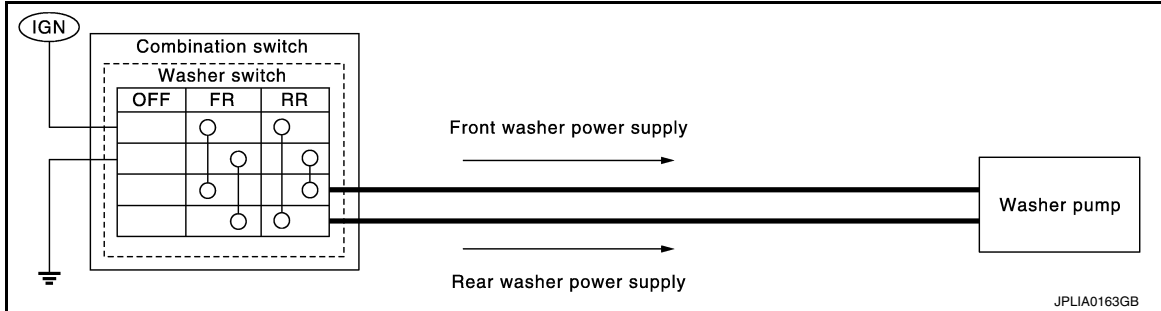
< DTC/CIRCUIT DIAGNOSIS >

WASHER SWITCH

Description

INFOID:0000000010581271

- 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

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

- A : Terminal 4
 B : Terminal 6
 C : Terminal 3
 D : Terminal 1

	OFF	FR	RR
A		○	○
B		○	○
C		○	○
D		○	○

JPLIA0164GB

Combination switch		Condition	Continuity
Terminal			
1	6	Front washer switch ON	Existed
3	4		
1	4	Rear washer switch ON	
3	6		

Does continuity exist?

- YES >> Wiper and washer switch is normal.
 NO >> Replace combination switch (Wiper and washer switch).

RAIN SENSOR

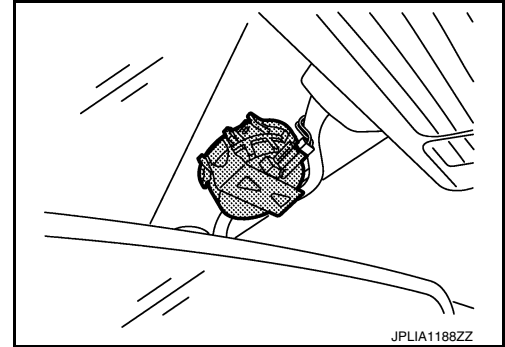
< DTC/CIRCUIT DIAGNOSIS >

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

INFOID:0000000010581274

1.CHECK FRONT WIPER AUTO OPERATION

1. Clean rain sensor detection area of windshield fully.
2. 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 [WW-37, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:0000000010581275

1.CHECK RAIN SENSOR FUSE

1. 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

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

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

Is the measurement value normal?

- YES >> GO TO 3.
NO >> Repair or replace harness.

3.CHECK RAIN SENSOR GROUND CIRCUIT

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

RAIN SENSOR

< DTC/CIRCUIT DIAGNOSIS >

Rain sensor		Ground	Continuity
Connector	Terminal		
R9	3		Existed

Does continuity exist?

YES >> GO TO 4.

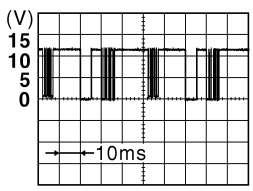
NO >> Repair or replace harness.

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 (Reference value)	
(+)				(-)
BCM connector	Terminal			
M123	112	Ground	Ignition switch ON	

(V)



JPMIA0156GB

Approx. 8.7V

Is the measurement value normal?

YES >> Replace rain sensor. Refer to [WW-130, "Removal and Installation"](#).

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.

BCM		Rain sensor		Continuity
Connector	Terminal	Connector	Terminal	
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.

BCM		Ground	Continuity
Connector	Terminal		
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

INFOID:000000010581276

1.CHECK REAR WIPER ON OPERATION

CONSULT ACTIVE TEST

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

On : Rear wiper ON operation

Off : Stop the rear wiper.

Is rear wiper operation normally?

- YES >> Rear wiper motor circuit is normal.
NO >> Refer to [WW-39, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000010581277

1.CHECK REAR WIPER MOTOR OUTPUT VOLTAGE

CONSULT ACTIVE TEST

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

Terminals		Test item	Voltage (Approx.)
(+)	(-)		
BCM		REAR WIPER	Battery voltage (5 seconds)*
Connector	Terminal		
M120	26	On	

*: 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.
3. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M120	26		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

1. Turn the ignition switch OFF.
2. Disconnect BCM connector.

REAR WIPER MOTOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

BCM		Rear wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
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		Ground	Continuity
Connector	Terminal		
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

INFOID:0000000010581278

1.CHECK REAR WIPER STOP POSITION OPERATION

CONSULT DATA MONITOR

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

Monitor item	Condition		Monitor status
RR WIPER STOP	Rear wiper motor	Stop position	On
		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

INFOID:0000000010581279

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.
4. Check voltage between BCM harness connector and ground.

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

Is the measurement value normal?

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

2.CHECK REAR WIPER MOTOR SHORT CIRCUIT

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

BCM		Ground	Continuity
Connector	Terminal		Not existed
M121	65		

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

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

REAR WIPER STOP POSITION SIGNAL CIRCUIT

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BCM		Rear wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
M121	65	D115	3	Existed

Does continuity exist?

- YES >> Replace rear wiper motor.
NO >> Repair the harness or connector.

FRONT WIPER AND WASHER SYSTEM

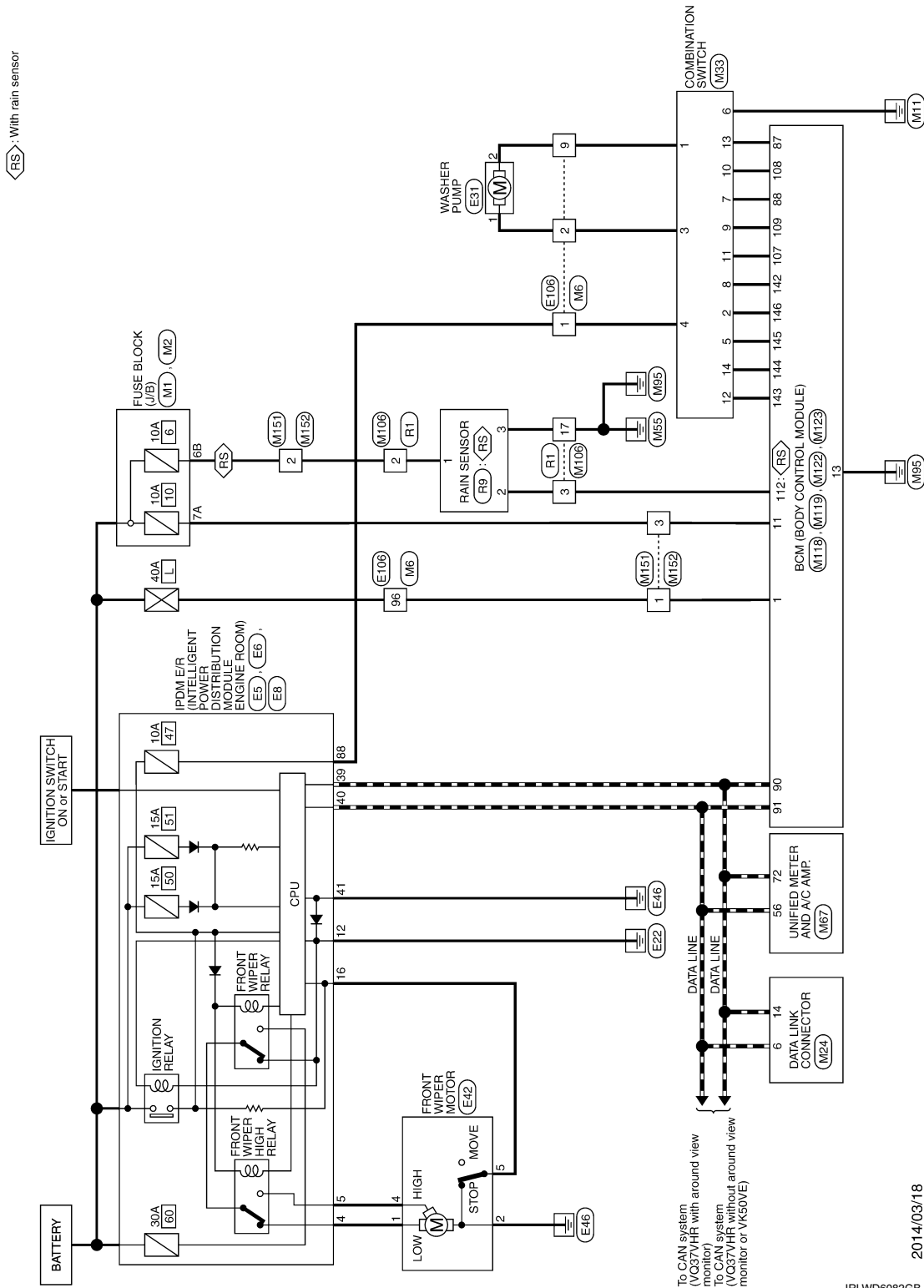
< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER AND WASHER SYSTEM

Wiring Diagram - FRONT WIPER AND WASHER SYSTEM -

INFOID:0000000010581280

FRONT WIPER AND WASHER SYSTEM



FRONT WIPER AND WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER AND WASHER SYSTEM

Connector No.	E5
Connector Name	(POWER INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM))
Connector Type	TH20FW-CS12-M4-1V



Connector No.	E8
Connector Name	(POWER INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM))
Connector Type	NS08FW-CS



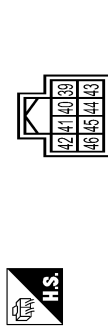
Terminal No.	Color Of Wire	Signal Name [Specification]
4	V	-
5	L	-
7	R	-
10	SB	-
12	B	-
13	Y	-
16	LG	-
19	W	-
25	G	-
26	R	-
27	Y	-
28	BG	-
30	GR	-
36	G	-

Terminal No.	Color Of Wire	Signal Name [Specification]
83	R	-
84	P	-
86	W	-
88	G	-
89	BR	-
90	Y	-

Connector No.	E31
Connector Name	WASHER PUMP
Connector Type	E02FGY-RS



Connector No.	E6
Connector Name	(POWER INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM))
Connector Type	TH08FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
39	P	-
40	L	-
41	B	-
42	Y	-
43	SB	-

Connector No.	E42
Connector Name	FRONT WIPER MOTOR
Connector Type	HS05FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	B	-
4	L	-
5	LG	-

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH06FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	BG	-
3	SB	-
4	LG	-
5	Y	-
6	W	-
7	G	-
8	V	-
9	R	-
10	BR	-
11	B	-
12	G	-
13	R	-
14	W	-
15	SHIELD	-

16	SB	-
17	L	-
18	P	-
19	G	-
20	W	- [With ICC]
21	BR	- [Without ICC]
22	R	- [With ICC]
23	V	- [Without ICC]
24	L	- [With ICC]
25	L	- [Without ICC]
26	SHIELD	- [With ICC]
28	G	-
29	LG	-
30	BG	-
32	W	-
33	Y	-
34	BG	-
37	Y	-
38	GR	-
39	LG	-
41	LG	-
42	V	-
43	R	-
44	G	-
45	GR	-
46	W	-
47	L	-
48	P	-
49	SB	-
50	BR	-
51	B	-
52	Y	-
53	BG	-
54	R	-
55	SB	-
59	P	-
60	SB	-
61	V	-
62	P	-
63	LG	-
64	L	-
65	BG	-
69	L	-
70	SHIELD	-
71	G	-

FRONT WIPER AND WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

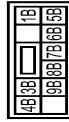
FRONT WIPER AND WASHER SYSTEM

Connector No.	Connector Name	Signal Name [Specification]
M1	FUSE BLOCK (J/B)	
NS08FW-M2		
72	G	-
73	R	-
74	BR	-
76	L	-
77	W	-
78	Y	-
80	SB	-
81	L	-
82	W	-
83	LG	-
84	GR	-
85	G	-
86	P	-
87	W	-
88	BG	-
89	LG	-
90	BR	-
91	GR	-
92	BR	-
93	SB	-
95	Y	-
96	W	-
97	W	-
98	SHIELD	-
100	Y	-



Terminal No.	Color Of Wire	Signal Name [Specification]
1A	BG	-
2A	G	-
3A	L	-
4A	R	-
5A	V	-
6A	Y	-
7A	R	-
8A	L	-

Connector No.	Connector Name	Signal Name [Specification]
M2	FUSE BLOCK (J/B)	
NS10FW-CS		



Terminal No.	Color Of Wire	Signal Name [Specification]
1B	LG	-
3B	P	-
4B	G	-
5B	GR	-
6B	Y	-
7B	L	-
8B	R	-
9B	BR	-

Connector No.	Connector Name	Signal Name [Specification]
M6	WIRE TO WIRE	
TH80MW-CS16-TM4		

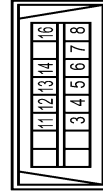


Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	BG	-
3	LG	-
4	SB	-
5	GR	-
6	W	-
7	G	-
8	W	-
9	P	-
10	BR	-
11	B	-

12	G	-
13	R	-
14	SHIELD	-
15	W	-
16	BR	-
17	L	-
18	P	-
19	G	-
20	GR	-
21	BR	-
22	L	-
23	G	-
24	P	-
25	W	-
26	SHIELD	-
28	GR	-
29	V	-
30	BG	-
32	W	-
33	Y	-
34	L	-
37	G	-
38	R	-
39	G	-
41	L	-
42	W	-
43	R	-
44	LG	-
45	GR	-
46	W	-
47	L	-
48	P	-
49	BG	-
50	LG	-
51	SB	-
52	Y	-
53	BG	-
54	BR	-
55	SB	-
56	SB	-
60	SB	-
61	V	-
62	P	-
63	R	-
64	L	-

65	BG	-
69	V	-
70	SHIELD	-
71	BG	-
72	GR	-
73	W	-
74	SB	-
76	V	-
77	V	-
78	Y	-
80	BG	-
81	L	-
82	W	-
83	Y	-
84	L	-
85	P	-
86	BR	-
87	P	-
88	V	-
89	G	-
90	P	-
91	R	-
92	R	-
93	GR	-
95	G	-
96	W	-
97	W	-
98	SHIELD	-
100	Y	-

Connector No.	Connector Name	Signal Name [Specification]
M24	DATA LINK CONNECTOR	
BD16FW		



Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	-
4	B	-
5	B	-
6	L	-
7	GR	-

FRONT WIPER AND WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER AND WASHER SYSTEM

Connector No.	M67
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH2FM-NH
8	G
11	SB
12	P
13	L
14	P
16	BG



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Connector No.	M33
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH



1	2	3	4	5	6	7	8	9	10	11	12	13	14

Terminal No.	Wire	Signal Name [Specification]
1	P	FR WASHER (-)
2	SB	OUTPUT 4
3	BG	FR WASHER (+)
4	G	IGN
5	L	OUTPUT 3
6	B	GROUND
7	V	INPUT 3
8	BG	OUTPUT 5
9	Y	INPUT 2
10	R	INPUT 4
11	LG	INPUT 1
12	P	OUTPUT 1
13	BR	INPUT 5
14	G	OUTPUT 2

Connector No.	M105
Connector Name	WIRE TO WIRE
Connector Type	NH10MW-CS10



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Terminal No.	Wire	Signal Name [Specification]
1	V	-
2	BR	-
3	GR	-
4	SHIELD	-
5	G	-
6	BR	-
8	P	-
9	G	-
10	G	-
11	Y	-
12	BR	-
13	L	-
14	L	-
15	R	-
16	R	-
17	B	-
20	BG	-

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Terminal No.	Wire	Signal Name [Specification]
1	W	BAT (E/L)
2	Y	POWER WINDOW POWER SUPPLY (BAT)
3	BG	POWER WINDOW POWER SUPPLY (PAD)

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FM-CS



4	5	7	8	9	10	11	13	15	17	18	19

Terminal No.	Wire	Signal Name [Specification]
4	P	INT ROOM LAMP PWR SUPPLY (BAT SAVE)
5	V	PASSENGER DOOR UNLOCK OUTPUT
7	Y	STEER LAMP OUTPUT
8	V	ALL DOOR FUEL ID LOCK OUTPUT
9	G	DRIVER DOOR FUEL ID LOCK OUTPUT
10	BR	REAR DOOR UNLOCK OUTPUT
11	R	BAT (FUSE)
13	B	GROUND
15	Y	ACC IND
17	W	TURN SIGNAL RH (FRONT)
18	BG	TURN SIGNAL LH (FRONT)
19	SB	ROOM LAMP TIMER

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Terminal No.	Wire	Signal Name [Specification]
74	SB	PASSENGER DOOR ANT-
75	BR	PASSENGER DOOR ANT+
76	V	DRIVER DOOR ANT-
77	LG	DRIVER DOOR ANT+
78	Y	ROOM ANT-L
79	BR	ROOM ANT-H
80	GR	NATS ANT AMP-
81	W	NATS ANT AMP+

FRONT WIPER AND WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER AND WASHER SYSTEM

82	P	IGN RELAY (F/B) CONT
83	GR	KEYLESS ENTRY RECEIVER SIGNAL
87	BR	COMBI SW INPUT 5
88	V	COMBI SW INPUT 3
90	P	CAN-L
91	L	CAN-H
92	LG	KEY SLOT ILL
93	V	ON IND
95	BG	AAC RELAY CONT
96	GR	AT SHIFT SELECTOR POWER SUPPLY
99	R	SHIFT P
100	G	PASSENGER DOOR REQUEST SW
101	SB	DRIVER DOOR REQUEST SW
102	BG	BLOWER FAN MOTOR RELAY CONT
103	BR	KEYLESS ENTRY RECEIVER POWER SUPPLY
107	LG	COMBI SW INPUT 1
108	R	COMBI SW INPUT 1
109	Y	COMBI SW INPUT 2
110	G	HAZARD SW

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH



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Terminal No.	Signal Name [Specification]
112	GR RAIN SENSOR SERIAL LINK
113	P OPTICAL SENSOR
116	BR STOP LAMP SW 1
118	P STOP LAMP SW 2
119	SB DR DOOR UNLOCK SENSOR
121	BR KEY SLOT SW
123	W IGN F/B
124	LG PASSENGER DOOR SW
132	BG POWER WINDOW SW COMM
134	GR LOCK IND
137	B RECEIVER SENSOR GND
138	Y SENSOR POWER SUPPLY
140	R SHIFT NP
141	G SECURITY INDICATOR OUTPUT
142	BG COMBI SW OUTPUT 5

143	P	COMBI SW OUTPUT 1
144	G	COMBI SW OUTPUT 2
145	L	COMBI SW OUTPUT 3
146	SB	COMBI SW OUTPUT 4
150	GR	DRIVER DOOR SW
151	G	REAR WINDOW DEFROGGER RELAY CONT

Connector No.	M151
Connector Name	WIRE TO WIRE
Connector Type	M03FW-LC



	1	2	3
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REAR WIPER AND WASHER SYSTEM

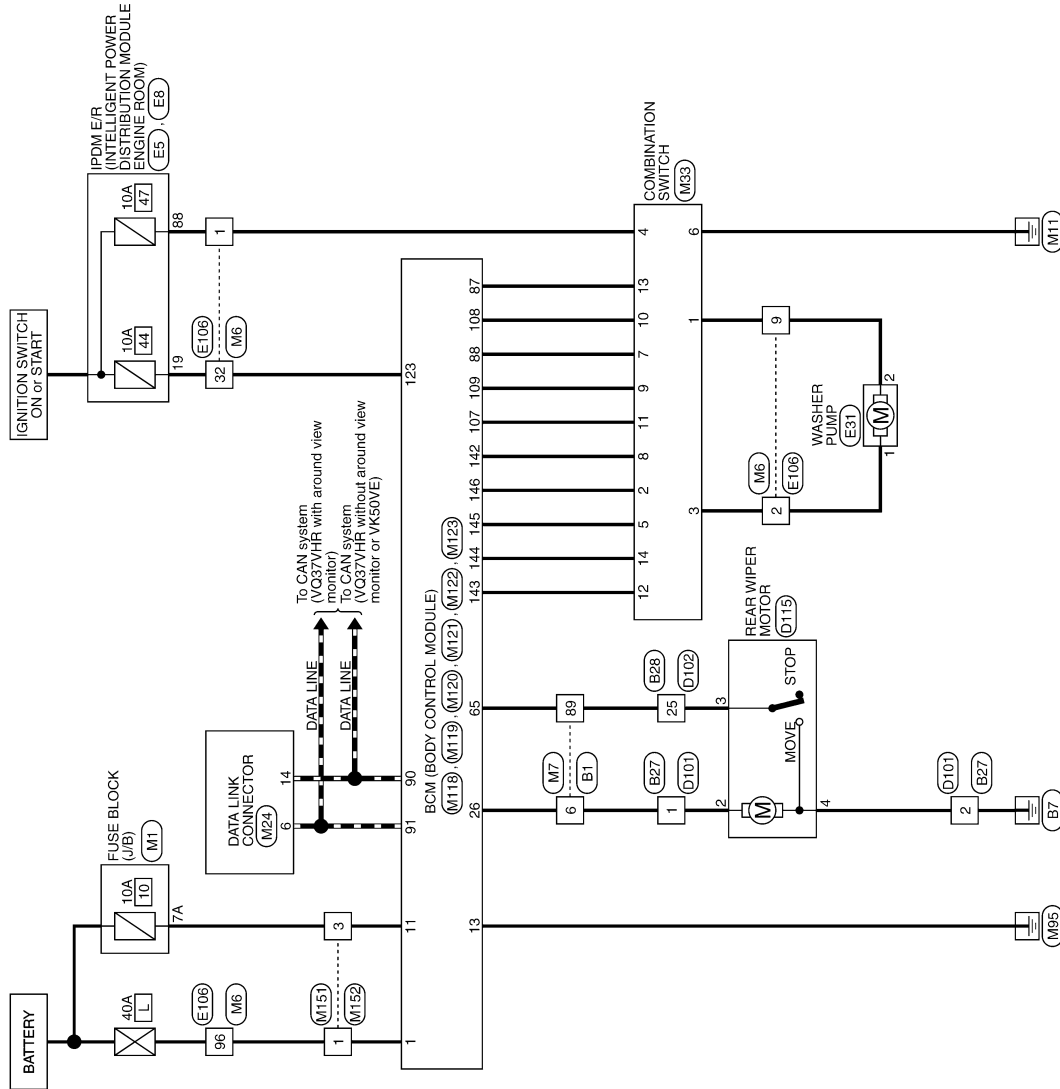
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REAR WIPER AND WASHER SYSTEM

Wiring Diagram - REAR WIPER AND WASHER SYSTEM -

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REAR WIPER AND WASHER SYSTEM



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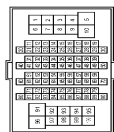
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REAR WIPER AND WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER AND WASHER SYSTEM

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	L	-
3	W	-
4	G	-
5	P	-
6	BG	-
7	SB	-
8	SB	-
9	B	-
10	G	-
11	R	-
12	W	-
13	SHIELD	-
14	L	-
15	P	-
16	Y	-
17	W	-
18	G	-
19	B	-
20	BR	-
21	P	-
22	GR	-
23	W	-
24	B	-
25	SB	-
26	GR	-
27	W	-
28	B	-
29	SB	-
30	Y	-
31	W	-
32	G	-
33	P	-
34	BG	-
35	SHIELD	-
36	SB	-
37	B	-
38	GR	-
39	W	-
40	L	-
41	P	-
42	Y	-
43	W	-
44	G	-
45	P	-
46	BG	-
47	SHIELD	-
48	SB	-
49	B	-
50	GR	-
51	W	-
52	L	-
53	P	-
54	BG	-
55	SHIELD	-
56	SB	-
57	B	-
58	GR	-
59	W	-
60	L	-
61	P	-
62	BG	-
63	SHIELD	-
64	SB	-
65	B	-
66	GR	-
67	W	-
68	L	-
69	P	-
70	BG	-
71	SHIELD	-
72	SB	-
73	B	-
74	GR	-
75	W	-
76	L	-
77	P	-
78	BG	-
79	SHIELD	-
80	SB	-
81	B	-
82	GR	-
83	W	-
84	L	-
85	P	-
86	BG	-
87	SHIELD	-
88	SB	-
89	B	-
90	GR	-
91	W	-
92	L	-
93	P	-
94	BG	-
95	SHIELD	-
96	SB	-
97	B	-
98	GR	-
99	W	-

Connector No.	B27
Connector Name	WIRE TO WIRE
Connector Type	MO8MMW-GY-LC



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	B	-
3	W	-
4	B	-
5	GR	-
6	BR	-
7	G	-
8	SHIELD	-

Connector No.	B28
Connector Name	WIRE TO WIRE
Connector Type	TH32MMW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	B	-
3	W	-
4	B	-
5	GR	-
6	BR	-
7	G	-
8	SHIELD	-

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	W	-
4	SHIELD	-
5	G	-
6	L	-
7	R	-
8	SHIELD	-
9	W	-
10	B	-
11	G	-
12	L	-

13	W	-
14	LG	-
15	BG	-
16	G	-
17	BG	-
18	V	-
19	W	-
20	B	-
21	G	-
22	LG	-
23	R	-
24	BG	-
25	BR	-
26	GR	-
27	L	-
32	BG	-

Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Type	MO8FW-GY-LC



4	3	2	1
8	7	6	5

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	B	-
3	R	-
4	GR	-
6	L/W	-
7	L/B	-
8	SHIELD	-

REAR WIPER AND WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER AND WASHER SYSTEM

Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Type	TH22FW-NH



16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17

Connector No.	D115
Connector Name	REAR WIPER MOTOR
Connector Type	CJ04FW-1V



2	4	3
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Connector No.	E8
Connector Name	FROM E/R INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	NS08FW-CS



84	83	82	81	80
89	88	87	86	85

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
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Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	L	-
3	Y	-
4	SHIELD	-
5	R	-
6	G	-
7	Y	-
8	L	-
9	W	-
10	SHIELD	-
11	G	-
12	L	-
13	W	-
14	LG	-
15	BG	-
16	G	-
17	W	-
18	LG	-
19	BR	-
20	R	-
21	V	-
22	LG	-
23	P	-
24	BG	-
25	BG	-
26	GR	-
27	L	-
32	BG	-

Terminal No.	Color Of Wire	Signal Name [Specification]
2	G	-
3	BG	-
4	B	-

Connector No.	E5
Connector Name	FROM E/R INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-1V



10	14	13	12	11	10	9	8	7	6	5	4	3	2	1
14	13	12	11	10	9	8	7	6	5	4	3	2	1	15

Terminal No.	Color Of Wire	Signal Name [Specification]
83	R	-
84	P	-
86	W	-
88	G	-
89	BR	-
90	Y	-

Connector No.	E31
Connector Name	WASHER PUMP
Connector Type	E02FGY-RS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BG	-
2	R	-

Terminal No.	Color Of Wire	Signal Name [Specification]
4	V	-
5	L	-
7	R	-
10	SB	-
12	B	-
13	Y	-
16	LG	-
19	W	-
25	G	-
26	R	-
27	Y	-
28	BG	-
30	GR	-
36	G	-

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	BG	-
3	SB	-
4	LG	-
5	Y	-
6	W	-
7	G	-
8	V	-
9	R	-
10	BR	-
11	B	-
12	G	-
13	R	-
14	W	-
15	SHIELD	-
16	SB	-
17	L	-
18	P	-
19	G	-
20	W	- [With ICC]
21	BR	- [Without ICC]
22	R	- [With ICC]
23	V	- [Without ICC]
24	L	- [With ICC]
25	Y	- [Without ICC]
26	SHIELD	- [Without ICC]
28	G	-
29	LG	-
30	BG	-
32	W	-
33	Y	-
34	BG	-

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REAR WIPER AND WASHER SYSTEM

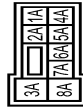
< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER AND WASHER SYSTEM

37	Y	-
38	GR	-
39	LG	-
41	LG	-
42	V	-
43	R	-
44	G	-
45	GR	-
46	W	-
47	L	-
48	P	-
49	SB	-
50	BR	-
51	B	-
52	Y	-
53	BG	-
54	R	-
55	SB	-
59	P	-
60	SB	-
61	V	-
62	P	-
63	LG	-
64	L	-
65	BG	-
69	L	-
70	SHIELD	-
71	G	-
72	G	-
73	R	-
74	BR	-
76	L	-
77	W	-
78	Y	-
80	SB	-
81	L	-
82	W	-
83	LG	-
84	GR	-
85	G	-
86	P	-
87	W	-
88	BG	-
89	L	-
90	P	-
91	R	-
92	R	-
93	GR	-
95	G	-
96	W	-
97	W	-
98	SHIELD	-
99	Y	-
100	W	-

97	W	-
98	SHIELD	-
100	Y	-

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NSGFW-M2



Terminal No.	Color Of Wire	Signal Name [Specification]
1A	BG	-
2A	G	-
3A	L	-
4A	R	-
5A	V	-
6A	Y	-
7A	R	-
8A	L	-

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	BG	-
3	LG	- [Without Auto aircon seat]
4	SB	- [With Auto aircon seat]
5	LG	-
6	GR	-
6	W	-

60	SB	-
61	V	-
62	P	-
63	R	-
64	L	-
65	BG	-
69	V	-
70	SHIELD	-
71	BG	-
72	GR	-
73	W	-
74	SB	-
76	V	-
77	V	-
78	Y	-
80	BG	-
81	L	-
82	W	-
83	Y	-
84	L	-
85	P	-
86	BR	-
87	P	-
88	V	-
89	G	-
90	P	-
91	R	-
92	R	-
93	GR	-
95	G	-
96	W	-
97	W	-
98	SHIELD	-
100	Y	-

7	G	-
8	W	-
9	P	-
10	BR	-
11	B	-
12	G	-
13	R	-
14	W	-
15	SHIELD	-
16	BR	-
17	L	-
18	P	-
19	G	-
20	GR	- [Without ICC]
21	W	- [With ICC]
22	W	- [Without ICC]
23	BR	- [With ICC]
24	R	- [Without ICC]
25	L	- [With ICC]
26	SHIELD	-
28	GR	-
29	V	-
30	BG	-
32	W	-
33	Y	-
34	L	-
37	G	-
38	R	-
39	G	-
41	L	-
42	W	-
43	R	-
44	LG	-
45	GR	-
46	W	-
47	L	-
48	P	-
49	BG	-
50	LG	-
51	SB	-
52	Y	-
53	BG	-
54	BR	-
55	SB	-
59	SB	-

JRLWD6090GB

A
B
C
D
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REAR WIPER AND WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

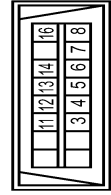
REAR WIPER AND WASHER SYSTEM

Connector No.	M7
Connector Name	WIPE TO WIRE
Connector Type	TH80MW-CS16-TM4



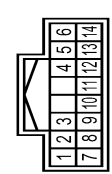
Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	- [With Auto aircon seat]
2	B	- [Without Auto aircon seat]
3	W	-
4	P	-
5	V	-
6	RG	-
7	W	-
8	RG	-
9	W	-
10	BG	-
11	BG	-
12	B	-
13	G	-
14	R	-
15	W	-
16	SHIELD	-
17	L	-
18	P	-
19	G	-
20	R	-
21	LG	-
23	V	-
24	P	-
25	BR	-
26	GR	-
27	BG	-
28	W	-
38	B	-
43	SB	-
44	W	-
45	B	-
51	V	-
52	LG	-
53	SHIELD	-
54	BR	-
55	V	-
56	SHIELD	-

Connector No.	M24
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	-
4	B	-
5	B	-
6	L	-
7	GR	-
8	G	-
11	SB	-
12	P	-
13	L	-
14	P	-
16	BG	-

Connector No.	M33
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	FR WASHER (-) OUTPUT 4
2	SB	FR WASHER (+) IGN
3	BG	-
4	G	-
5	L	OUTPUT 3
6	B	GROUND
7	V	INPUT 3
8	BG	OUTPUT 5
9	Y	INPUT 2

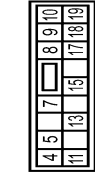
10	R	INPUT 4
11	LG	INPUT 1
12	P	OUTPUT 1
13	BR	INPUT 5
14	G	OUTPUT 2

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	BAT (F/L)
2	Y	POWER WINDOW POWER SUPPLY (BAT)
3	BG	POWER WINDOW POWER SUPPLY (RASP)

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
4	P	INT ROOM LAMP PWR SUPPLY (BAT SAVE)
5	V	PASSENGER DOOR UNLOCK OUTPUT
7	Y	STEP LAMP OUTPUT
8	V	ALL DOOR FUEL LID LOCK OUTPUT
9	G	DRIVER DOOR FUEL LID UNLOCK OUTPUT
10	BR	REAR DOOR UNLOCK OUTPUT
11	R	BAT (FUSE)
13	B	GROUND
15	Y	ACC IGN
17	W	TURN SIGNAL RH (FRONT)

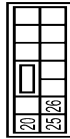
REAR WIPER AND WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER AND WASHER SYSTEM

18	BG	TURN SIGNAL LH (FRONT)
19	SB	ROOM LAMP TIMER

Connector No.	M120
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS12FW-GS



Terminal No.	Color Of Wire	Signal Name [Specification]
20	V	TURN SIGNAL RH (REAR)
25	G	TURN SIGNAL LH (REAR)
26	P	REAR WIPER OUTPUT

Connector No.	M121
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FGY-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
34	SB	LUGGAGE ROOM ANT-
35	V	LUGGAGE ROOM ANT+
38	B	BACK DOOR ANT-
39	W	BACK DOOR ANT+
47	Y	IGN RELAY (IPDM/ERI) CONT
52	LG	STARTER RELAY CONT
60	SB	ENG. START SW
61	W	TRUNK REQUEST SW
64	L	1-KEY WARN Buzzer (ENG ROOM)
65	BG	REAR WIPER STOP POSITION
66	LG	BACK DOOR SW
67	P	BACK DOOR OPENER SW
68	BR	REAR RH DOOR SW

69	R	REAR LH DOOR SW
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Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
74	SB	PASSENGER DOOR ANT-
75	BR	PASSENGER DOOR ANT+
76	V	DRIVER DOOR ANT-
77	LG	DRIVER DOOR ANT+
78	Y	ROOM ANT-
79	BR	ROOM ANT+
80	GR	NATS ANT AMP.
81	W	IGN RELAY (F/B) CONT
82	P	KEYLESS ENTRY RECEIVER SIGNAL
83	GR	COMBI SW INPUT 5
87	BR	COMBI SW INPUT 3
88	V	CAN-L
90	P	CAN-H
91	L	KEY SLOT ILL
92	LG	ON IND.
93	V	ACC RELAY CONT
95	BG	SHIFT P
96	GR	PASSENGER DOOR REQUEST SW
99	R	DRIVER DOOR REQUEST SW
100	G	BLOWER FAN MOTOR RELAY CONT
101	SB	KEYLESS ENTRY RECEIVER POWER SUPPLY
102	BG	COMBI SW INPUT 1
103	BR	COMBI SW INPUT 4
107	LG	COMBI SW INPUT 2
108	R	HAZARD SW
109	Y	
110	G	

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
112	GR	RAIN SENSOR SERIAL LINK
113	P	OPTICAL SENSOR
116	BR	STOP LAMP SW 1
118	B	STOP LAMP SW 2
119	SB	DR DOOR UNLOCK SENSOR
121	BR	KEY SLOT SW
123	W	IGN F/B
124	LG	PASSENGER DOOR SW
132	BG	POWER WINDOW SW COMM
134	GR	LOCK IND.
137	B	RECEIVER/SENSOR GND
138	Y	SENSOR POWER SUPPLY
140	R	SHIFT NP
141	G	SECURITY INDICATOR OUTPUT
142	BG	COMBI SW OUTPUT 5
143	P	COMBI SW OUTPUT 1
144	G	COMBI SW OUTPUT 2
145	L	COMBI SW OUTPUT 3
146	SB	COMBI SW OUTPUT 4
150	GR	DRIVER DOOR SW
151	G	REAR WINDOW DEFROGGER RELAY CONT

Connector No.	M152
Connector Name	WIRE TO WIRE
Connector Type	M03MM-LC



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	
2	Y	
3	R	

Connector No.	M151
Connector Name	WIRE TO WIRE
Connector Type	M03FW-LC



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	
2	Y	
3	R	

JRLWD6092GB

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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000011016206

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
	Front wiper switch HI	On
FR WIPER LOW	Other than front wiper switch LO	Off
	Front wiper switch LO	On
FR WASHER SW	Front washer switch OFF	Off
	Front washer switch ON	On
FR WIPER INT	Other than front wiper switch INT/AUTO	Off
	Front wiper switch INT/AUTO	On
FR WIPER STOP	Front wiper is not in STOP position	Off
	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
	Rear wiper switch ON	On
RR WIPER INT	Other than rear wiper switch INT	Off
	Rear wiper switch INT	On
RR WASHER SW	Rear washer switch OFF	Off
	Rear washer switch ON	On
RR WIPER STOP	Rear wiper is in STOP position	Off
	Rear wiper is not in STOP position	On
TURN SIGNAL R	Other than turn signal switch RH	Off
	Turn signal switch RH	On
TURN SIGNAL L	Other than turn signal switch LH	Off
	Turn signal switch LH	On
TAIL LAMP SW	Other than lighting switch 1ST and 2ND	Off
	Lighting switch 1ST or 2ND	On
HI BEAM SW	Other than lighting switch HI	Off
	Lighting switch HI	On
HEAD LAMP SW 1	Other than lighting switch 2ND	Off
	Lighting switch 2ND	On
HEAD LAMP SW 2	Other than lighting switch 2ND	Off
	Lighting switch 2ND	On
PASSING SW	Other than lighting switch PASS	Off
	Lighting switch PASS	On
AUTO LIGHT SW	Other than lighting switch AUTO	Off
	Lighting switch AUTO	On

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Monitor Item	Condition	Value/Status
FR FOG SW	Front fog lamp switch OFF	Off
	Front fog lamp switch ON	On
RR FOG SW	NOTE: The item is indicated, but not monitored.	Off
DOOR SW-DR	Driver door closed	Off
	Driver door opened	On
DOOR SW-AS	Passenger door closed	Off
	Passenger door opened	On
DOOR SW-RR	Rear RH door closed	Off
	Rear RH door opened	On
DOOR SW-RL	Rear LH door closed	Off
	Rear LH door opened	On
DOOR SW-BK	Back door closed	Off
	Back door opened	On
CDL LOCK SW	Other than power door lock switch LOCK	Off
	Power door lock switch LOCK	On
CDL UNLOCK SW	Other than power door lock switch UNLOCK	Off
	Power door lock switch UNLOCK	On
KEY CYL LK-SW	Other than driver door key cylinder LOCK position	Off
	Driver door key cylinder LOCK position	On
KEY CYL UN-SW	Other than driver door key cylinder UNLOCK position	Off
	Driver door key cylinder UNLOCK position	On
KEY CYL SW-TR	NOTE: The item is indicated, but not monitored.	Off
HAZARD SW	Hazard switch is OFF	Off
	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
TR/BD OPEN SW	Back door opener switch OFF	Off
	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
RKE-LOCK	LOCK button of the Intelligent Key is not pressed	Off
	LOCK button of the Intelligent Key is pressed	On
RKE-UNLOCK	UNLOCK button of the Intelligent Key is not pressed	Off
	UNLOCK button of the Intelligent Key is pressed	On
RKE-TR/BD	NOTE: The item is indicated, but not monitored.	Off
RKE-PANIC	PANIC button of the Intelligent Key is not pressed	Off
	PANIC button of the Intelligent Key is pressed	On
RKE-P/W OPEN	UNLOCK button of the Intelligent Key is not pressed	Off
	UNLOCK button of the Intelligent Key is pressed and held	On

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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

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
	Dark outside of the vehicle	Close to 0 V
REQ SW -DR	Driver door request switch is not pressed	Off
	Driver door request switch is pressed	On
REQ SW -AS	Passenger door request switch is not pressed	Off
	Passenger door request switch is pressed	On
REQ SW -RR	NOTE: The item is indicated, but not monitored.	Off
REQ SW -RL	NOTE: The item is indicated, but not monitored.	Off
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
	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
	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
	The brake pedal is depressed	On
DETE/CANCL SW	Selector lever in P position	Off
	Selector lever in any position other than P	On
SFT PN/N SW	Selector lever in any position other than P and N	Off
	Selector lever in P or N position	On
S/L -LOCK	NOTE: The item is indicated but not monitored.	Off
S/L -UNLOCK	NOTE: The item is indicated but not monitored.	Off
S/L RELAY-F/B	NOTE: The item is indicated but not monitored.	Off
UNLK SEN -DR	Driver door is unlocked	Off
	Driver door is locked	On
PUSH SW -IPDM	Push-button ignition switch (push-switch) is not pressed	Off
	Push-button ignition switch (push-switch) is pressed	On
IGN RLY1 -F/B	Ignition switch in OFF or ACC position	Off
	Ignition switch in ON position	On
DETE SW -IPDM	Selector lever in any position other than P	Off
	Selector lever in P position	On
SFT PN -IPDM	Selector lever in any position other than P and N	Off
	Selector lever in P or N position	On

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Monitor Item	Condition	Value/Status
SFT P -MET	Selector lever in any position other than P	Off
	Selector lever in P position	On
SFT N -MET	Selector lever in any position other than N	Off
	Selector lever in N position	On
ENGINE STATE	Engine stopped	Stop
	While the engine stalls	Stall
	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 speedometer reading
VEH SPEED 2	While driving	Equivalent to speedometer reading
DOOR STAT-DR	Driver door is locked	LOCK
	Wait with selective UNLOCK operation (5 seconds)	READY
	Driver door is unlocked	UNLOCK
DOOR STAT-AS	Passenger door is locked	LOCK
	Wait with selective UNLOCK operation (5 seconds)	READY
	Passenger door is unlocked	UNLOCK
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
PRMT ENG STRT	The engine start is prohibited	Reset
	The engine start is permitted	Set
PRMT RKE STRT	NOTE: The item is indicated, but not monitored.	Reset
KEY SW -SLOT	The Intelligent Key is not inserted into key slot	Off
	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.	—
CONFIRM 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
CONFIRM ID4	The key ID that the key slot receives is not recognized by the fourth key ID registered to BCM.	Yet
	The key ID that the key slot receives is recognized by the fourth key ID registered to BCM.	Done
CONFIRM ID3	The key ID that the key slot receives is not recognized by the third key ID registered to BCM.	Yet
	The key ID that the key slot receives is recognized by the third key ID registered to BCM.	Done

BCM (BODY CONTROL MODULE)

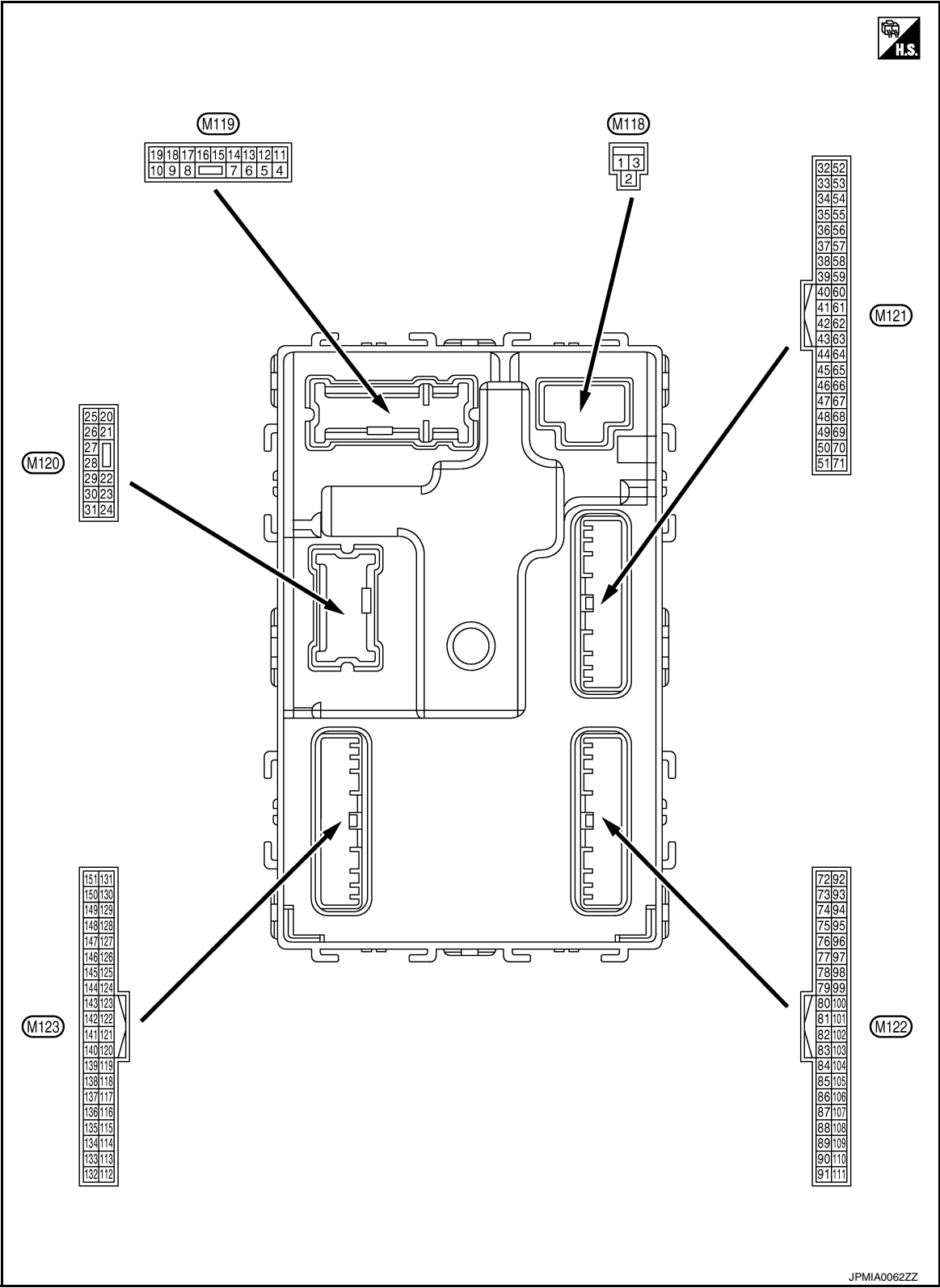
< ECU DIAGNOSIS INFORMATION >

Monitor Item	Condition	Value/Status
CONFIRM ID2	The key ID that the key slot receives is not recognized by the second key ID registered to BCM.	Yet
	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
	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
	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
	The ID of third Intelligent Key is registered to BCM	Done
TP 2	The ID of second Intelligent Key is not registered to BCM	Yet
	The ID of second Intelligent Key is registered to BCM	Done
TP 1	The ID of first Intelligent Key is not registered to BCM	Yet
	The ID of first Intelligent Key is registered to BCM	Done

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

TERMINAL LAYOUT



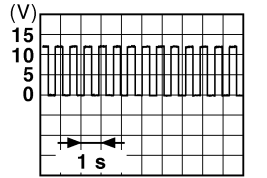
PHYSICAL VALUES

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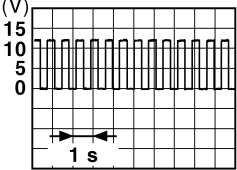
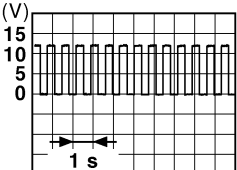
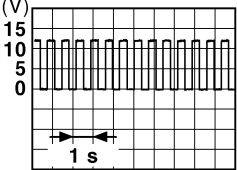
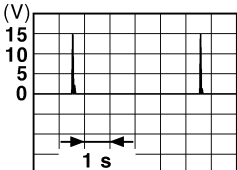
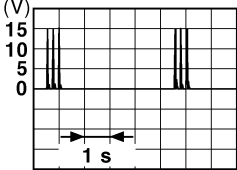
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
1 (W)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
2 (Y)	Ground	P/W power supply (BAT)	Output	Ignition switch OFF		12 V
3 (BG)	Ground	P/W power supply (IGN)	Output	Ignition switch ON		12 V
4 (P)	Ground	Interior room lamp power supply	Output	Interior room lamp battery saver is activated. (Cuts the interior room lamp power supply)		0 V
				Interior room lamp battery saver is not activated. (Outputs the interior room lamp power supply)		12 V
5 (V)	Ground	Passenger door UN- LOCK	Output	Passenger door	UNLOCK (Actuator is activated)	12 V
					Other than UNLOCK (Actuator is not activated)	0 V
7 (Y)	Ground	Step lamp control	Output	Step lamp	ON	0 V
					OFF	12 V
8 (V)	Ground	All doors, fuel lid LOCK	Output	All doors, fuel lid	LOCK (Actuator is activated)	12 V
					Other than LOCK (Actuator is not activated)	0 V
9 (G)	Ground	Driver door, fuel lid UNLOCK	Output	Driver door, fuel lid	UNLOCK (Actuator is activated)	12 V
					Other than UNLOCK (Actuator is not activated)	0 V
10 (BR)	Ground	Rear RH door and rear LH door UN- LOCK	Output	Rear RH door and rear LH door	UNLOCK (Actuator is activated)	12 V
					Other than UNLOCK (Actuator is not activated)	0 V
11 (R)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
13 (B)	Ground	Ground	—	Ignition switch ON		0 V
15 (Y)	Ground	ACC indicator lamp	Output	Ignition switch	OFF (LOCK indicator is not illuminated)	Battery voltage
					ACC or ON	0 V
17 (W)	Ground	Turn signal RH (Front)	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	

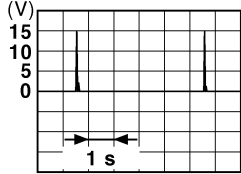
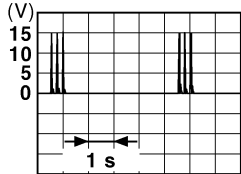
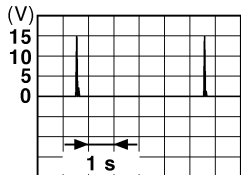
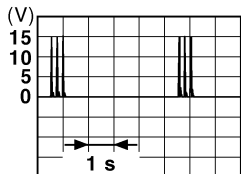
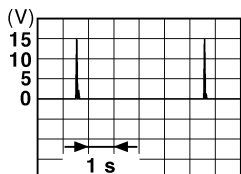
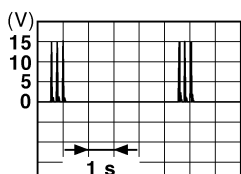
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
18 (BG)	Ground	Turn signal LH (Front)	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	 6.5 V
19 (SB)	Ground	Interior room lamp control	Output	Other than under condition		5.0 V
				- Interior room lamp timer is activated. (Door is unlocked. etc...) - Welcome light function is activated.		0 V
20 (V)	Ground	Turn signal RH (Rear)	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	 6.5 V
25 (G)	Ground	Turn signal LH (Rear)	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	 6.5 V
26 (P)	Ground	Rear wiper	Output	Rear wiper	OFF (Stopped)	0 V
					ON (Operated)	12 V
34 (SB)	Ground	Luggage room anten- na (-)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compart- ment	 JMKIA0062GB
					When Intelligent Key is not in the passenger com- partment	 JMKIA0063GB

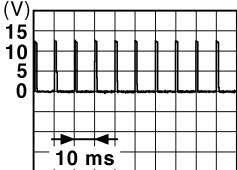
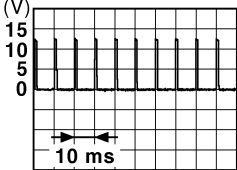
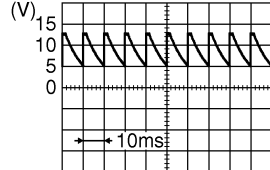
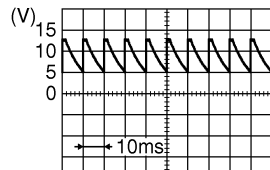
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
35 (V)	Ground	Luggage room antenna (+)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB
38 (B)	Ground	Back door antenna (-)	Output	When the back door opener request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB
39 (W)	Ground	Back door antenna (+)	Output	When the back door opener request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB
47 (Y)	Ground	Ignition relay (IPDM E/R) control	Output	Ignition switch	OFF or ACC	12 V
					ON	0 V

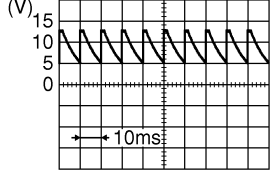
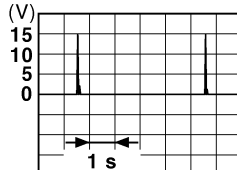
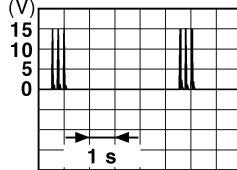
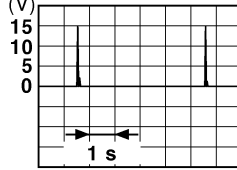
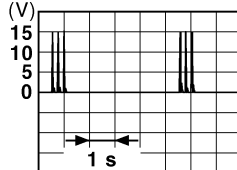
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
52 (LG)	Ground	Starter relay control	Output	Ignition switch ON	When selector lever is in P or N position	12 V
					When selector lever is not in P or N position	0 V
60 (SB)	Ground	Push-button ignition switch (Push switch)	Input	Push-button ig- nition switch (Push switch)	Pressed	0 V
					Not pressed	12 V
61 (W)	Ground	Back door opener re- quest switch	Input	Back door re- quest switch	ON (Pressed)	0 V
					OFF (Not pressed)	 1.0 V
64 (L)	Ground	Intelligent Key warn- ing buzzer (Engine room)	Output	Intelligent Key warning buzzer (Engine room)	Sounding	0 V
					Not sounding	12 V
65 (BG)	Ground	Rear wiper stop posi- tion	Input	Rear wiper	In stop position	 1.0 V
					Not in stop position	0 V
66 (LG)	Ground	Back door switch	Input	Back door switch	OFF (Door close)	12 V
					ON (Door open)	0 V
67 (P)	Ground	Back door opener switch	Input	Back door open- er switch	Pressed	0 V
					Not pressed	 8.5 - 9.0 V
68 (BR)	Ground	Rear RH door switch	Input	Rear RH door switch	OFF (Door close)	 8.5 - 9.0 V
					ON (Door open)	0 V

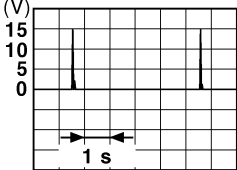
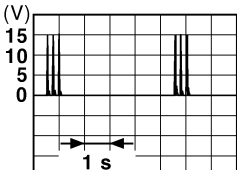
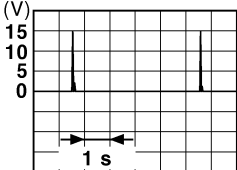
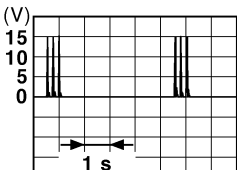
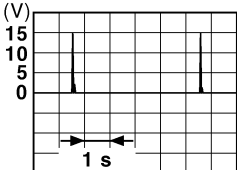
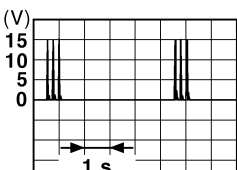
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
69 (R)	Ground	Rear LH door switch	Input	Rear LH door switch	OFF (Door close)	 JPMIA0594GB 8.5 - 9.0 V
					ON (Door open)	0 V
74 (SB)	Ground	Passenger door antenna (-)	Output	When the passenger door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB
75 (BR)	Ground	Passenger door antenna (+)	Output	When the passenger door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
76 (V)	Ground	Driver door antenna (-)	Output	When the driver door request switch is operat- ed with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detec- tion area	 JMKIA0063GB
77 (LG)	Ground	Driver door antenna (+)	Output	When the driver door request switch is operat- ed with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detec- tion area	 JMKIA0063GB
78 (Y)	Ground	Room antenna (-) (Instrument panel)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compart- ment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compart- ment	 JMKIA0063GB

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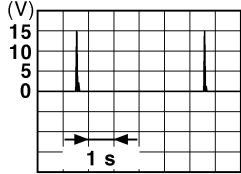
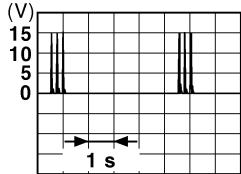
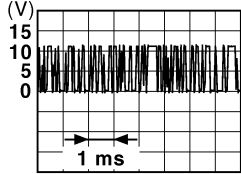
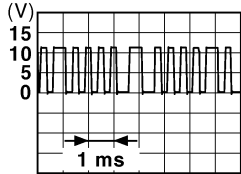
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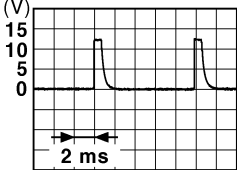
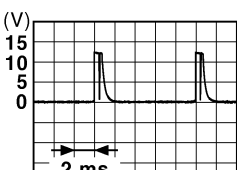
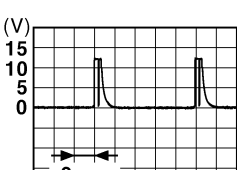
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
79 (BR)	Ground	Room antenna (+) (Instrument panel)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compart- ment	 JMKIA0062GB
					When Intelligent Key is not in the passenger com- partment	 JMKIA0063GB
80 (GR)	Ground	NATS antenna amp.	Input/ Output	During waiting	Ignition switch is pressed while inserting the Intelli- gent 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 Intelli- gent 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
					ON	12 V
83 (GR)	Ground	Remote keyless entry receiver communica- tion	Input/ Output		During waiting	 JMKIA0064GB
					When operating either button on the Intelli- gent Key	 JMKIA0065GB

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

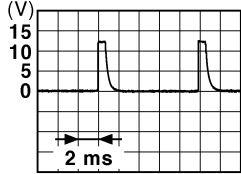
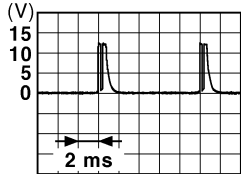
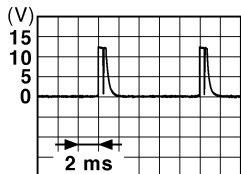
Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
87 (BR)	Ground	Combination switch INPUT 5	Input	Combination switch	 1.4 V
				Front fog lamp switch ON (Wiper volume dial 4)	 1.3 V
				Rear wiper switch ON (Wiper volume dial 4)	 1.3 V
				Any of the conditions below with all switches OFF • Wiper volume dial 1 • Wiper volume dial 2 • Wiper volume dial 6 • Wiper volume dial 7	 1.3 V

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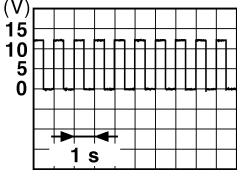
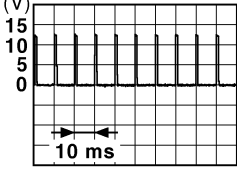
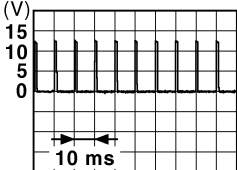
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
88 (V)	Ground	Combination switch INPUT 3	Input	Combination switch	All switches OFF (Wiper volume dial 4)  1.4 V
					Lighting switch HI (Wiper volume dial 4)  1.3 V
					Lighting switch 2ND (Wiper volume dial 4)  1.3 V
					Rear washer switch ON (Wiper volume dial 4)  1.3 V
					Any of the conditions below with all switches OFF • Wiper volume dial 1 • Wiper volume dial 2 • Wiper volume dial 3  1.3 V
90 (P)	Ground	CAN-L	Input/ Output	—	—
91 (L)	Ground	CAN-H	Input/ Output	—	—

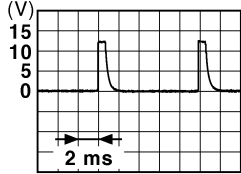
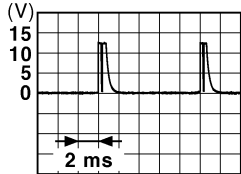
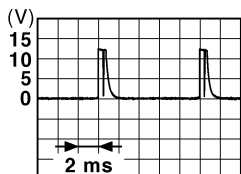
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
92 (LG)	Ground	Key slot illumination	Output	Key slot illumination	OFF	12 V
					Blinking	 JPMIA0015GB 6.5 V
					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 (BG)	Ground	ACC relay control	Output	Ignition switch	OFF	0 V
					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
					Any position other than P	12 V
100 (G)	Ground	Passenger door request switch	Input	Passenger door request switch	ON (Pressed)	0 V
					OFF (Not pressed)	 JPMIA0016GB 1.0 V
101 (SB)	Ground	Driver door request switch	Input	Driver door request switch	ON (Pressed)	0 V
					OFF (Not pressed)	 JPMIA0016GB 1.0 V
102 (BG)	Ground	Blower fan motor relay control	Output	Ignition switch	OFF or ACC	0 V
					ON	12 V
103 (BR)	Ground	Remote keyless entry receiver power supply	Output	Ignition switch OFF		12 V

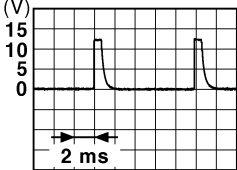
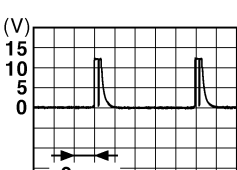
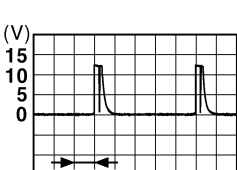
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

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

BCM (BODY CONTROL MODULE)

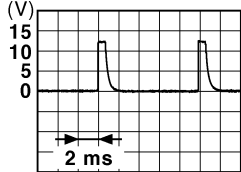
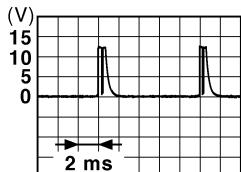
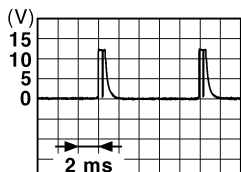
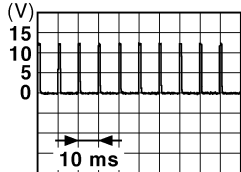
< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
108 (R)	Ground	Combination switch INPUT 4	Input	Combination switch	All switches OFF (Wiper volume dial 4)  1.4 V
					Lighting switch AUTO (Wiper volume dial 4)  1.3 V
					Lighting switch 1ST (Wiper volume dial 4)  1.3 V
					Rear wiper switch INT (Wiper volume dial 4)  1.3 V
					Any of the conditions be- low with all switches OFF • Wiper volume dial 1 • Wiper volume dial 5 • Wiper volume dial 6  1.3 V

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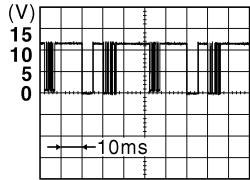
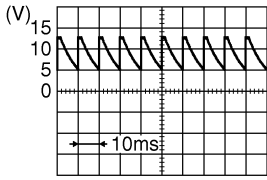
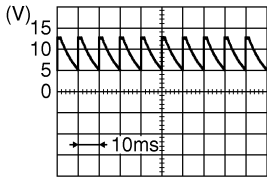
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
109 (Y)	Ground	Combination switch INPUT 2	Input	Combination switch (Wiper volume dial 4)	All switches OFF	 1.4 V
					Lighting switch PASS	 1.3 V
					Lighting switch 2ND	 1.3 V
					Front wiper switch INT/ AUTO	 1.3 V
					Front wiper switch HI	 1.3 V
110 (G)	Ground	Hazard switch	Input	Hazard switch	ON	0 V
					OFF	 1.1 V

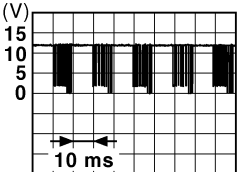
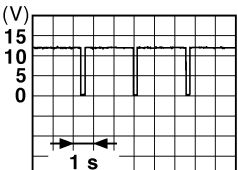
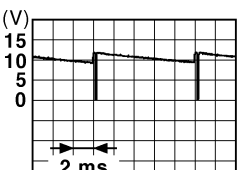
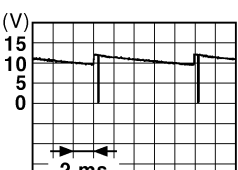
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
112 (GR)	Ground	Rain sensor serial link	Input/ Output	Ignition switch ON		 8.7 V
113 (P)	Ground	Optical sensor	Input	Ignition switch ON	When bright outside of the vehicle	Close to 5 V
					When dark outside of the vehicle	Close to 0 V
116 (BR)	Ground	Stop lamp switch 1	Input	—		Battery voltage
118 (P)	Ground	Stop lamp switch 2 (Without ICC)	Input	Stop lamp switch	OFF (Brake pedal is not depressed)	0 V
					ON (Brake pedal is depressed)	Battery voltage
		Stop lamp switch 2 (With ICC)	Input	Stop lamp switch OFF (Brake pedal is not depressed) and ICC brake hold relay OFF		0 V
				Stop lamp switch ON (Brake pedal is depressed) or ICC 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)	 8.5 - 9.0 V
					UNLOCK status (Unlock switch sensor ON)	0 V
121 (BR)	Ground	Key slot switch	Input	When the Intelligent Key is inserted into key slot		12 V
				When the Intelligent Key is not inserted into key slot		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)	 8.5 - 9.0 V
					ON (Door open)	0 V

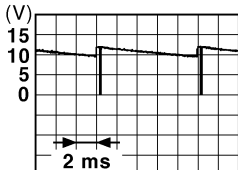
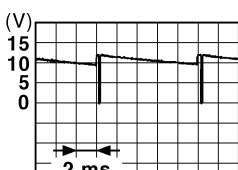
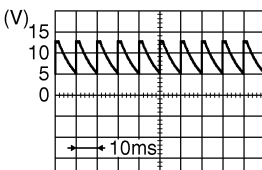
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	−	Signal name	Input/ Output			
132 (BG)	Ground	Power window switch communication	Input/ Output	Ignition switch ON		 JPMIA0013GB 10.2 V
				Ignition switch OFF or ACC		12 V
134 (GR)	Ground	LOCK indicator lamp	Output	LOCK indicator lamp	OFF	Battery voltage
					ON	0 V
137 (B)	Ground	Receiver and sensor ground	Input	Ignition switch ON		0 V
138 (Y)	Ground	Sensor power supply	Output	Ignition switch	OFF	0 V
					ACC or ON	5.0 V
140 (R)	Ground	Selector lever P/N position	Input	Selector lever	P or N position	12 V
					Except P and N positions	0 V
141 (G)	Ground	Security indicator lamp	Output		ON	0 V
						 JPMIA0014GB 11.3 V
					OFF	12 V
142 (BG)	Ground	Combination switch OUTPUT 5	Output	Combination switch (Wiper volume dial 4)	All switches OFF	0 V
					Lighting switch 1ST	 JPMIA0031GB 10.7 V
					Lighting switch HI	
					Lighting switch 2ND	
					Turn signal switch RH	
143 (P)	Ground	Combination switch OUTPUT 1	Output	Combination switch	All switches OFF (Wiper volume dial 4)	0 V
					Front wiper switch HI (Wiper volume dial 4)	 JPMIA0032GB 10.7 V
					Rear wiper switch INT (Wiper volume dial 4)	
					Any of the conditions be- 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	

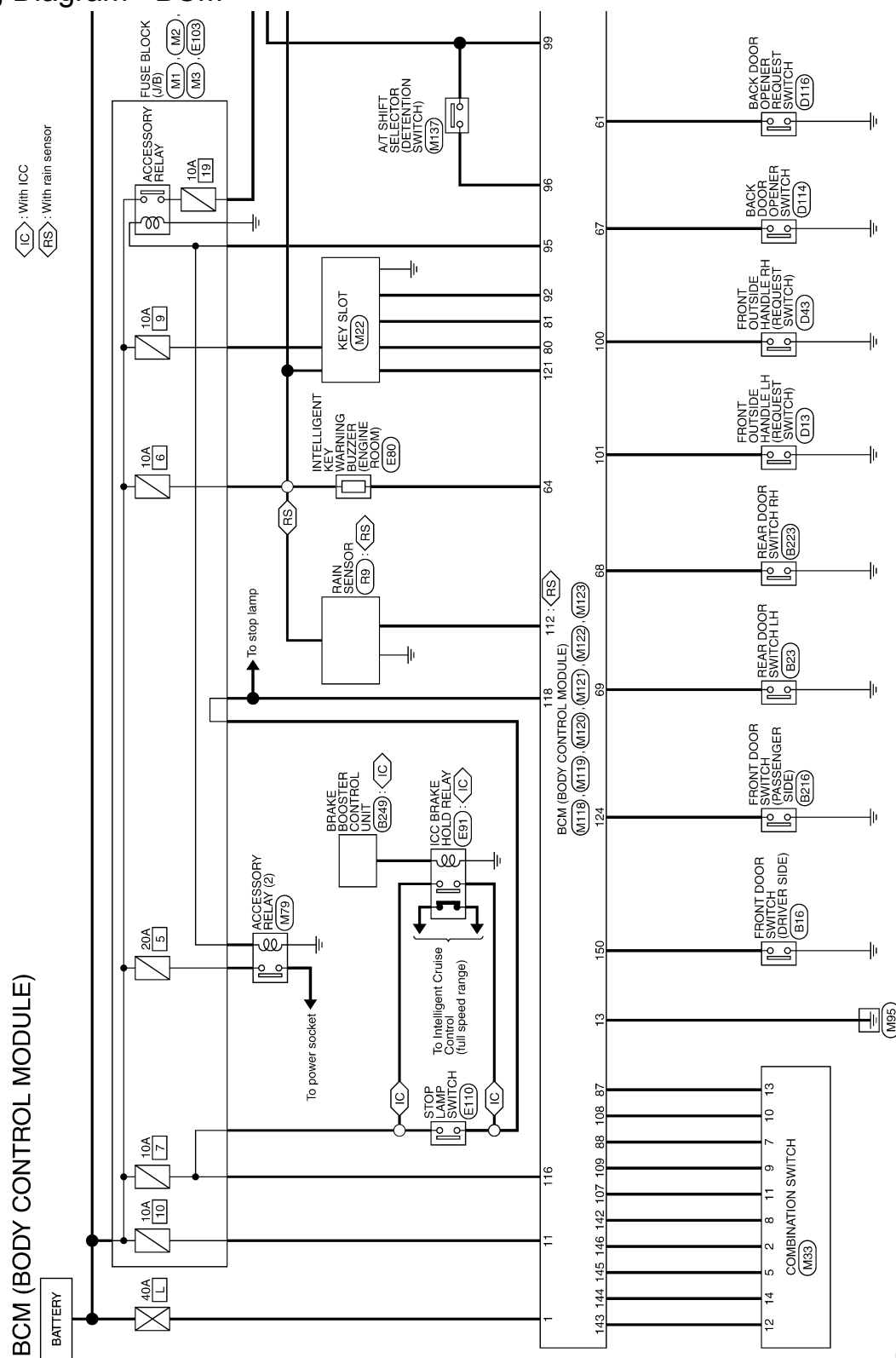
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
144 (G)	Ground	Combination switch OUTPUT 2	Output	Combination switch	All switches OFF (Wiper volume dial 4)	0 V
					Front washer switch ON (Wiper volume dial 4)	
					Rear wiper switch ON (Wiper volume dial 4)	
					Rear washer switch ON (Wiper volume dial 4)	
					Any of the conditions below with all switches OFF • Wiper volume dial 1 • Wiper volume dial 5 • Wiper volume dial 6	
10.7 V						
145 (L)	Ground	Combination switch OUTPUT 3	Output	Combination switch (Wiper volume dial 4)	All switches OFF	0 V
					Front wiper switch INT/ AUTO	
					Front wiper switch LO	
					Lighting switch AUTO	
10.7 V						
146 (SB)	Ground	Combination switch OUTPUT 4	Output	Combination switch (Wiper volume dial 4)	All switches OFF	0 V
					Front fog lamp switch ON	
					Lighting switch 2ND	
					Lighting switch PASS	
					Turn signal switch LH	
10.7 V						
150 (GR)	Ground	Driver door switch	Input	Driver door switch	OFF (Door close)	
					ON (Door open)	8.5 - 9.0 V
151 (G)	Ground	Rear window defog- ger relay control	Output	Rear window de- fogger	Active	0 V
					Not activated	Battery voltage

Wiring Diagram - BCM -

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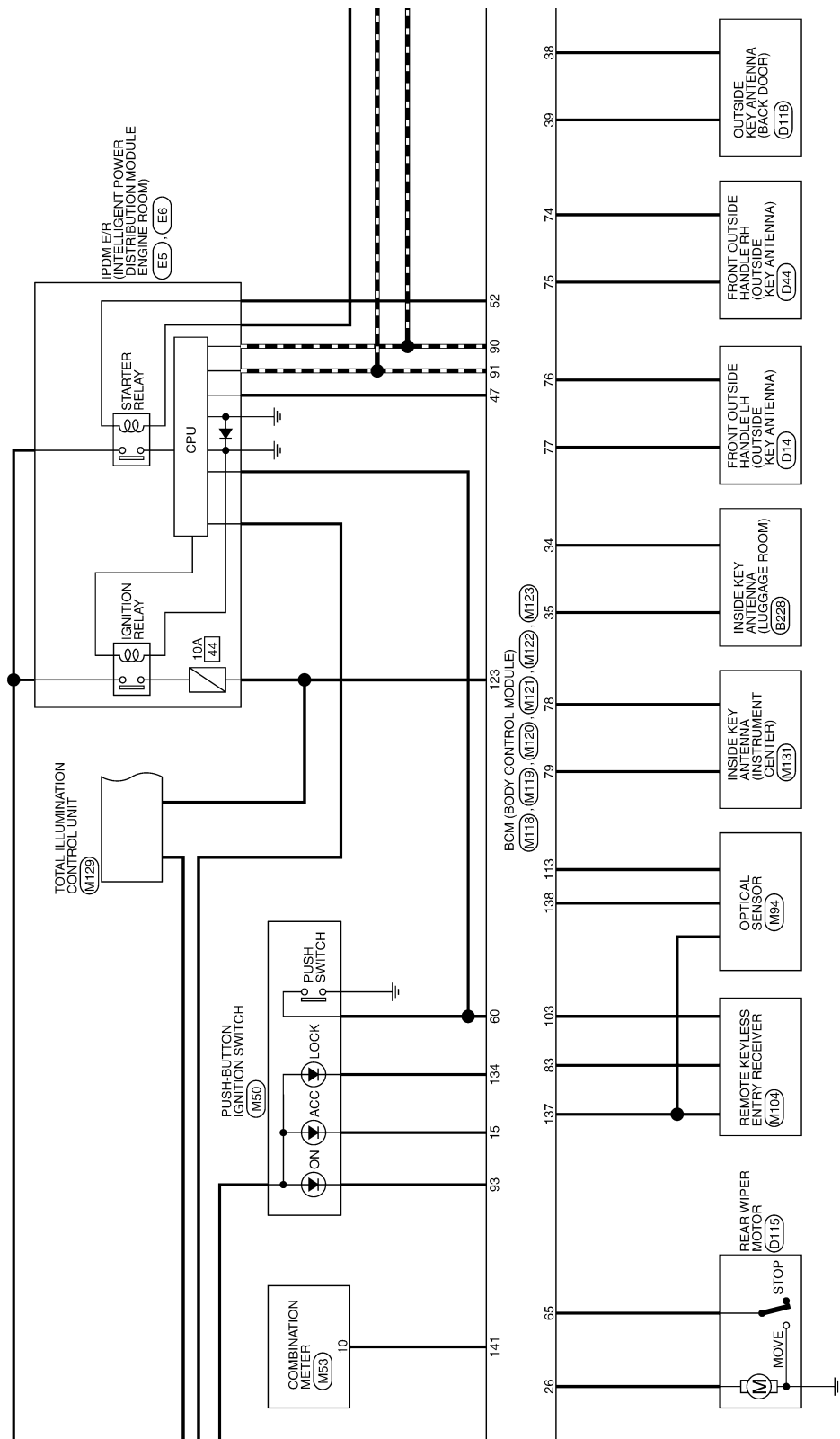


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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >



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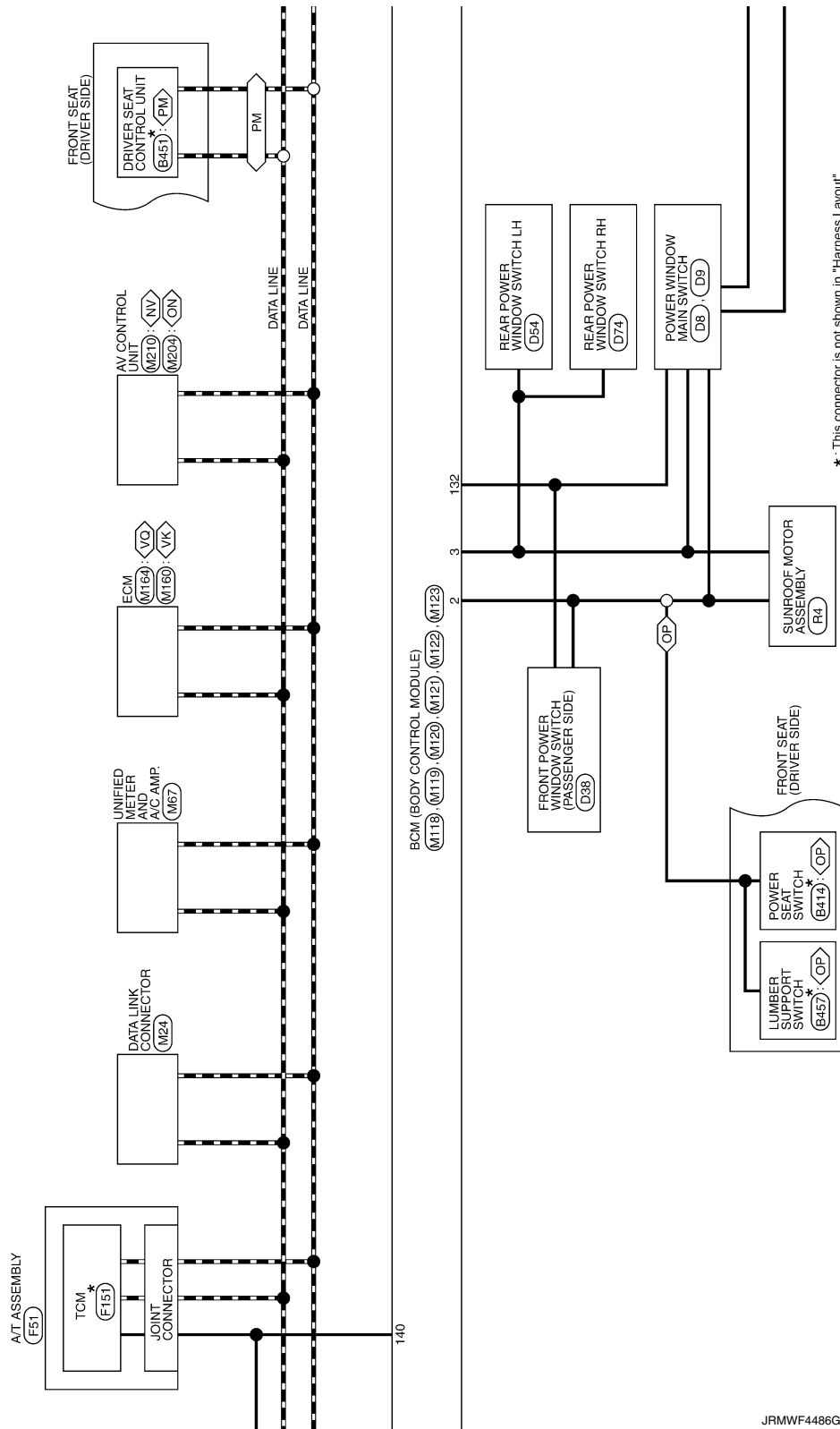
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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

<VQ> : With VQ engine
 <VK> : With VK engine
 <NV> : With NAVI
 <ON> : Without NAVI
 <PM> : With automatic drive positioner
 <OP> : Without automatic drive positioner

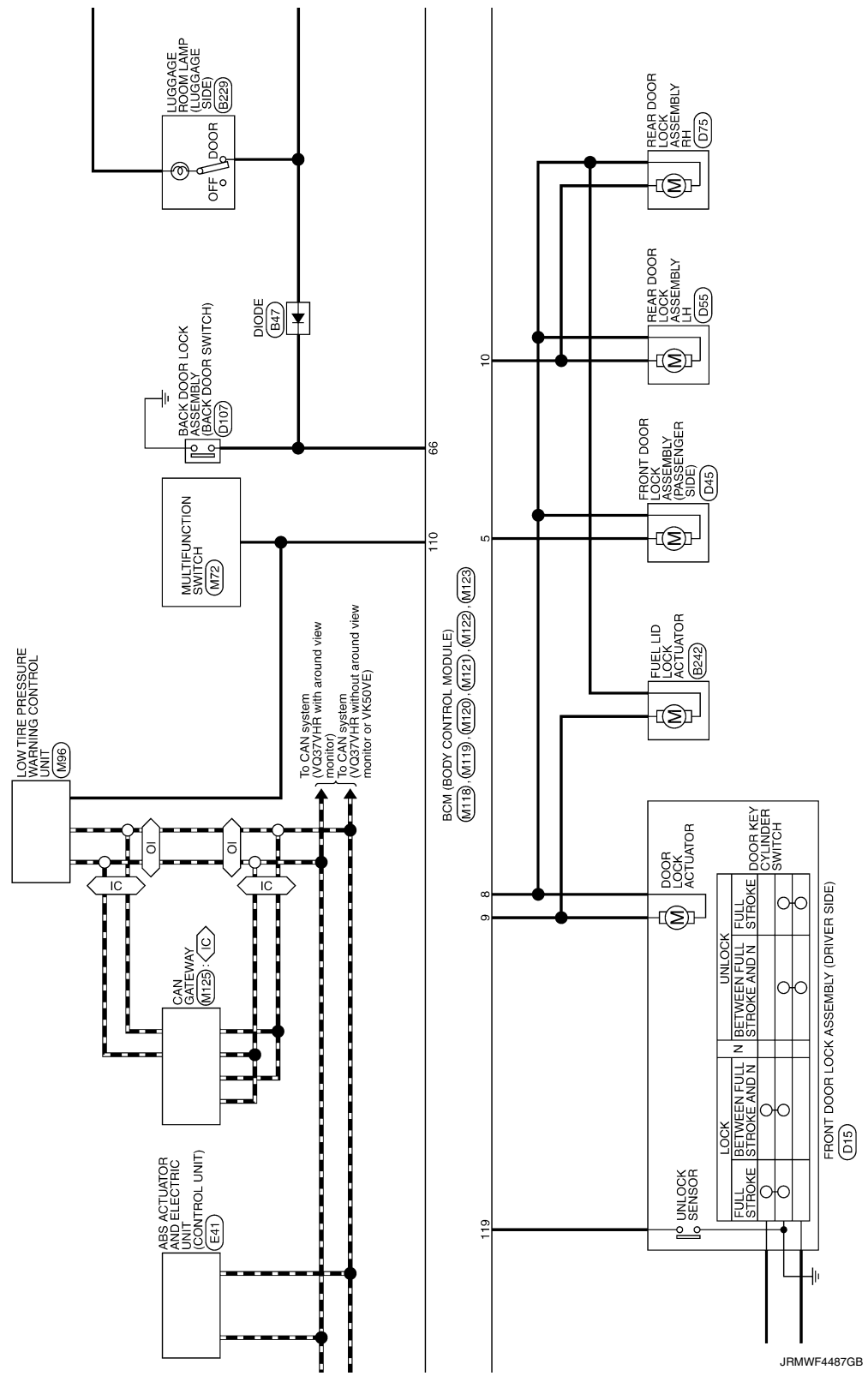


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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

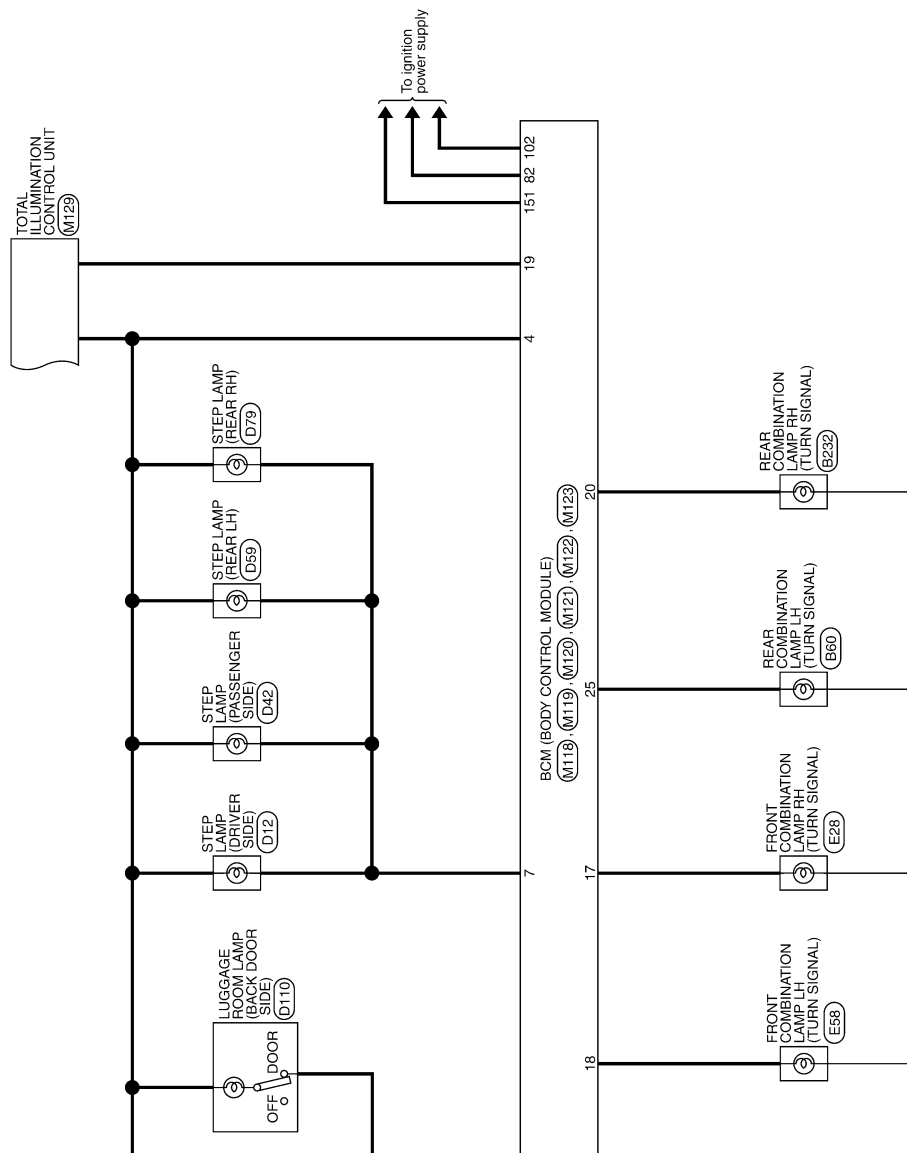
IC : With ICC
OI : Without ICC



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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >



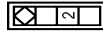
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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

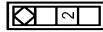
BCM (BODY CONTROL MODULE)

Connector No.	B16
Connector Name	FRONT DOOR SWITCH (DRIVER SIDE)
Connector Type	A03FW



Terminal No.	Wire	Signal Name [Specification]
2	GR	-

Connector No.	B23
Connector Name	REAR DOOR SWITCH-LH
Connector Type	A03FW



Terminal No.	Wire	Signal Name [Specification]
2	W	-

Connector No.	B47
Connector Name	DIODE
Connector Type	24135_C5900



Terminal No.	Wire	Signal Name [Specification]
1	GR	-
2	V	-

Connector No.	B60
Connector Name	REAR COMBINATION LAMP LH
Connector Type	TH04MW-NH



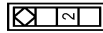
Terminal No.	Wire	Signal Name [Specification]
1	R	-
2	LG	-
3	G	-
4	B	-

Connector No.	B216
Connector Name	FRONT DOOR SWITCH (PASSENGER SIDE)
Connector Type	A03FW



Terminal No.	Wire	Signal Name [Specification]
2	GR	-

Connector No.	B223
Connector Name	REAR DOOR SWITCH RH
Connector Type	A03FW



Terminal No.	Wire	Signal Name [Specification]
2	BG	-

Connector No.	B228
Connector Name	INSIDE KEY ANTENNA (LUGGAGE ROOM)
Connector Type	RK02EGY



Terminal No.	Wire	Signal Name [Specification]
1	V	-
2	SB	-

Connector No.	B229
Connector Name	LUGGAGE ROOM LAMP (LUGGAGE SIDE)
Connector Type	TK03FW



Terminal No.	Wire	Signal Name [Specification]
1	W	-
2	L	-

Connector No.	B232
Connector Name	REAR COMBINATION LAMP RH
Connector Type	TH04MW-NH



Terminal No.	Wire	Signal Name [Specification]
1	P	-
2	LG	-
3	V	-
4	B	-

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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

BCM (BODY CONTROL MODULE)

Connector No.	B242
Connector Name	FUEL LID LOCK ACTUATOR
Connector Type	MS4FW-LC



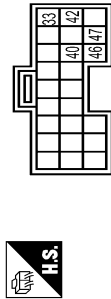
Connector No.	B414
Connector Name	POWER SEAT SWITCH
Connector Type	NS10FW-CS



19	V	CAN-L
21	L/Y	P RANGE SW
24	R	PULSE (SLIDING)
25	Y/B	PULSE (RR LIFTING)
26	Y	SLIDING SW (FORWARD)
27	R/G	RECLINING SW (FORWARD)
28	W/B	FRONT LIFTING SW (UPWARD)
29	P/L	REAR LIFTING SW (UPWARD)
31	GR	SENSOR GND
32	B/W	GND (SIGNAL)

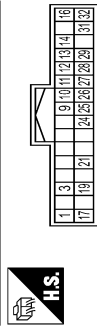
Terminal No.	Wire	Signal Name [Specification]
1	W	-
2	V	-

Connector No.	B249
Connector Name	BRAKE BOOSTER CONTROL UNIT
Connector Type	TK24FGY



Terminal No.	Wire	Signal Name [Specification]
3	GY	-
4	P	-
5	W	-
6	V	-
7	L/Y	-
8	L	-
9	L/R	-
10	GW	-
33	R	-
48	B	-

Connector No.	B451
Connector Name	DRIVER SEAT CONTROL UNIT
Connector Type	TH32FW



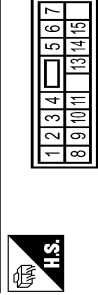
Terminal No.	Wire	Signal Name [Specification]
1	L/W	RX
3	R/Y	CAN-H
9	W/G	PULSE (RECLINING)
10	P/B	PULSE (RR LIFTING)
11	BR	SLIDING SW (BACKWARD)
12	SB	RECLINING SW (BACKWARD)
13	LG/R	FRONT LIFTING SW (DOWNWARD)
14	G/B	REAR LIFTING SW (DOWNWARD)
16	O	VCC
17	Y/R	TX

Connector No.	B457
Connector Name	LUMBAR SUPPORT SWITCH
Connector Type	NS04FW-CS



Terminal No.	Wire	Signal Name [Specification]
33	R	-
48	B	-
57	W	-
58	L	-

Connector No.	D8
Connector Name	POWER WINDOW MAIN SWITCH
Connector Type	NS16FW-CS



Terminal No.	Wire	Signal Name [Specification]
1	W	-
2	LG	-
3	GR	-
4	V	-

Connector No.	D9
Connector Name	POWER WINDOW MAIN SWITCH
Connector Type	NS03FW-CS



Terminal No.	Wire	Signal Name [Specification]
17	B	-
19	Y	-

Connector No.	D12
Connector Name	STEP LAMP (DRIVER SIDE)
Connector Type	TB02FW



Terminal No.	Wire	Signal Name [Specification]
1	LG	-
2	SB	-

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

BCM (BODY CONTROL MODULE)

Connector No.	D13
Connector Name	FRONT OUTSIDE HANDLE LH (REQUEST SWITCH)
Connector Type	RK02FL-B



Terminal No.	1	2
Color Of Wire	G	B
Signal Name [Specification]	-	-

Connector No.	D14
Connector Name	FRONT OUTSIDE HANDLE LH (OUTSIDE KEY ANTENNA)
Connector Type	RK02MGY



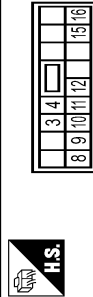
Terminal No.	1	2
Color Of Wire	P	V
Signal Name [Specification]	-	-

Connector No.	D15
Connector Name	FRONT DOOR LOCK ASSEMBLY (DRIVER SIDE)
Connector Type	E08FGY-RS



Terminal No.	1	2	3	4	5	6
Color Of Wire	LG	R	G	B	Y	V
Signal Name [Specification]	-	-	-	-	-	-

Connector No.	D38
Connector Name	FRONT POWER WINDOW SWITCH (PASSENGER SIDE)
Connector Type	NS16FW-CS



Terminal No.	3	4	8	9	10	11	12	15	16
Color Of Wire	LG	W	L	G	Y	B	P	R	V
Signal Name [Specification]	-	-	-	-	-	-	-	-	-

Connector No.	D42
Connector Name	STEP LAMP (PASSENGER SIDE)
Connector Type	TB02FW



Terminal No.	1	2
Color Of Wire	SB	R
Signal Name [Specification]	-	-

Connector No.	D43
Connector Name	FRONT OUTSIDE HANDLE RH (REQUEST SWITCH)
Connector Type	RK02FL-B



Terminal No.	1	2
Color Of Wire	G	B
Signal Name [Specification]	-	-

Connector No.	D44
Connector Name	FRONT OUTSIDE HANDLE RH (OUTSIDE KEY ANTENNA)
Connector Type	RK02MGY



Terminal No.	1	2
Color Of Wire	P	W
Signal Name [Specification]	-	-

Connector No.	D45
Connector Name	FRONT DOOR LOCK ASSEMBLY (PASSENGER SIDE)
Connector Type	E08FGY-RS



Terminal No.	1	2
Color Of Wire	R	LG
Signal Name [Specification]	-	-

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

BCM (BODY CONTROL MODULE)

Connector No.	D54
Connector Name	REAR POWER WINDOW SWITCH LH
Connector Type	NS08FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	L	-
3	R	-
4	L	-
5	G	-
7	B	-

Connector No.	D55
Connector Name	REAR DOOR LOCK ASSEMBLY LH
Connector Type	E06FGY-RS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	G	-

Connector No.	D59
Connector Name	STEP LAMP (REAR LH)
Connector Type	TB02FW



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	O	-

Connector No.	D74
Connector Name	REAR POWER WINDOW SWITCH RH
Connector Type	NS08FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	P	-
3	R	-
4	L	-
5	G	-
7	B	-

Connector No.	D75
Connector Name	REAR DOOR LOCK ASSEMBLY RH
Connector Type	E06FGY-RS



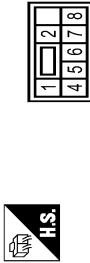
Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	L	-

Connector No.	D79
Connector Name	STEP LAMP (REAR RH)
Connector Type	TB02FW



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	O	-

Connector No.	D107
Connector Name	BACK DOOR LOCK ASSEMBLY
Connector Type	NS08FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LW	-
2	LB	-
4	G	-
5	L	-
6	W	-
7	LG	-
8	GR	-

Connector No.	D110
Connector Name	LUGGAGE ROOM LAMP (BACK DOOR SIDE)
Connector Type	TK03FW



Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	-
2	L	-

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

BCM (BODY CONTROL MODULE)

Connector No.	D114
Connector Name	BACK DOOR OPENER SWITCH
Connector Type	TK02MBR-P



Connector No.	D116
Connector Name	BACK DOOR OPENER REQUEST SWITCH
Connector Type	TK02MBR-P



Connector No.	E5
Connector Name	IPDM/ER INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH02FW-CS12-M4-1V



Terminal No.	45	G
Terminal No.	46	BR

Connector No.	E28
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	RS04FB-PR



Terminal No.	1	W
Terminal No.	2	B

Terminal No.	1	V
Terminal No.	2	B

Terminal No.	4	V
Terminal No.	5	L
Terminal No.	6	R
Terminal No.	7	SB
Terminal No.	8	B
Terminal No.	9	Y
Terminal No.	10	LG
Terminal No.	11	W
Terminal No.	12	G
Terminal No.	13	R
Terminal No.	14	Y
Terminal No.	15	W
Terminal No.	16	G
Terminal No.	17	R
Terminal No.	18	Y
Terminal No.	19	W
Terminal No.	20	G
Terminal No.	21	R
Terminal No.	22	Y
Terminal No.	23	W
Terminal No.	24	G
Terminal No.	25	R
Terminal No.	26	Y
Terminal No.	27	W
Terminal No.	28	G
Terminal No.	29	R
Terminal No.	30	Y
Terminal No.	31	W
Terminal No.	32	G
Terminal No.	33	R
Terminal No.	34	Y
Terminal No.	35	W
Terminal No.	36	G

Connector No.	D115
Connector Name	REAR WIPER MOTOR
Connector Type	CJ04FM-1V



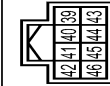
Connector No.	D118
Connector Name	OUTSIDE KEY ANTENNA (BACK DOOR)
Connector Type	RK02FGY



Terminal No.	2	G
Terminal No.	3	BG
Terminal No.	4	B

Terminal No.	1	BR
Terminal No.	2	R

Connector No.	E6
Connector Name	IPDM/ER INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH08FW-AH



Terminal No.	1	B
Terminal No.	2	G
Terminal No.	3	R
Terminal No.	4	B
Terminal No.	5	Y
Terminal No.	6	BG
Terminal No.	7	BR
Terminal No.	8	B
Terminal No.	9	W
Terminal No.	10	Y
Terminal No.	11	L
Terminal No.	12	P
Terminal No.	13	SHIELD
Terminal No.	14	AGND

Terminal No.	39	P
Terminal No.	40	L
Terminal No.	41	B
Terminal No.	42	Y
Terminal No.	43	SB
Terminal No.	44	W

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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

BCM (BODY CONTROL MODULE)

Connector No.	Signal Name [Specification]
19 P	UST
25 Y	BUS-L
26 R	DP FL
27 GR	DS RL
28 G	UZ
29 LG	DS RR
30 SB	BLS
31 R	VDC OFF SW
35 L	CANH
45 B	BUS-H

Connector No.	Signal Name [Specification]
E58	FRONT COMBINATION LAMP LH
Connector Name	RS04EB-PR
Connector Type	



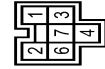
Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	G	-
3	B	-
4	BG	-

Connector No.	Signal Name [Specification]
E80	INTELLIGENT KEY WARNING BUZZER (ENGINE ROOM)
Connector Name	RK03FBR
Connector Type	



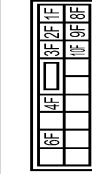
Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	+BAT (VOL SMALL)
3	GR	BUZZER SIGNAL

Connector No.	Signal Name [Specification]
E91	ICC BRAKE HOLD RELAY
Connector Name	M06FGY-R-US
Connector Type	



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	B	-
3	G	-
4	G	-
6	W	-
7	L	-

Connector No.	Signal Name [Specification]
E103	FUSE BLOCK (J/B)
Connector Name	NS16FW-CS
Connector Type	



Terminal No.	Color Of Wire	Signal Name [Specification]
10F	L	-
1F	SB	-
2F	W	-
3F	Y	-
4F	G	-
6F	BG	-
8F	L	-
9F	R	-

Connector No.	Signal Name [Specification]
E110	STOP LAMP SWITCH
Connector Name	M04FW-LC
Connector Type	



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	W	-
3	G	-
4	BR	-

Connector No.	Signal Name [Specification]
F51	A/T ASSEMBLY
Connector Name	RK0FG-DGY
Connector Type	



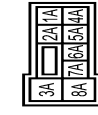
Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	IGNITION POWER SUPPLY
2	R	BATTERY POWER SUPPLY (MEMORY BACK-UP)
3	L	CANH
4	V	K-LINE
5	B	GROUND
6	Y	IGNITION POWER SUPPLY
7	R	BACK-UP LAMP RELAY
8	P	CAN-L
9	GR	STARTER RELAY (With VQ engine)
9	LG	STARTER RELAY (With VK engine)
10	B	GROUND

Connector No.	Signal Name [Specification]
F151	TCM
Connector Name	SP10FG
Connector Type	



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	IGNITION POWER SUPPLY
2	B	BATTERY POWER SUPPLY (MEMORY BACK-UP)
3	R	CANH
4	O	K-LINE
5	G	GROUND
6	GR	IGNITION POWER SUPPLY
7	L	BACK-UP LAMP RELAY
8	BR	CAN-L
9	Y	STARTER RELAY
10	WB	GROUND

Connector No.	Signal Name [Specification]
M1	FUSE BLOCK (J/B)
Connector Name	NS06FW-M2
Connector Type	



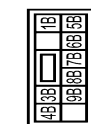
Terminal No.	Color Of Wire	Signal Name [Specification]
1A	BG	-
2A	G	-
3A	L	-
4A	R	-
5A	V	-
6A	Y	-
7A	R	-
8A	L	-

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

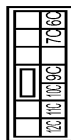
BCM (BODY CONTROL MODULE)

Connector No.	M2
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS



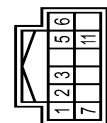
Terminal No.	Color Of Wire	Signal Name [Specification]
1B	LG	-
3B	P	-
4B	G	-
5B	BG	-
6B	Y	-
7B	L	-
8B	R	-
9B	BR	-

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS12FW-CS



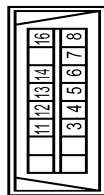
Terminal No.	Color Of Wire	Signal Name [Specification]
10C	L	-
11C	LG	-
12C	R	-
6C	P	-
7C	B	-
9C	BG	-

Connector No.	M22
Connector Name	KEY SLOT
Connector Type	TH12FW-NH



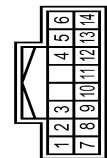
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	BAT
2	GR	CLOCK
3	W	DATA
5	Y	ILL BAT
6	LG	ILL BAT
7	B	GROUND
11	BR	KEY SWITCH SIGNAL

Connector No.	M24
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



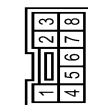
Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	-
4	B	-
5	B	-
6	L	-
7	GR	-
8	G	-
11	SB	-
12	P	-
13	L	-
14	P	-
16	BG	-

Connector No.	M33
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	FR WASHER (-)
2	SB	OUTPUT 4
3	BG	FR WASHER (+)
4	G	IG
5	L	OUTPUT 3
6	B	GROUND
7	V	INPUT 3
8	BG	OUTPUT 5
9	Y	INPUT 2
10	R	INPUT 4
11	LG	INPUT 1
12	P	OUTPUT 1
13	BR	INPUT 5
14	G	OUTPUT 2

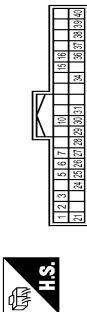
Connector No.	M50
Connector Name	PUSH-BUTTON IGNITION SWITCH
Connector Type	TK08FR



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	R	-
3	BG	-
4	SB	-
6	GR	-
8	Y	-

7	V
8	P

Connector No.	M53
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BG	BATTERY POWER SUPPLY
2	LG	COMMUNICATION SIGNAL (METER->AMP.)
3	GR	COMMUNICATION SIGNAL (AMP->METER)
5	B	GROUND
6	W	ALTERNATOR SIGNAL
7	P	AIR BAG SIGNAL
10	G	SECURITY INDICATOR SIGNAL
15	B	GROUND
16	B	METER CONTROL SWITCH GROUND
21	R	IGNITION SIGNAL
24	BR	COMMUNICATION SIGNAL (LCD->AMP.)
25	Y	COMMUNICATION SIGNAL (AMP->LCD)
26	R	VEHICLE SPEED SIGNAL (8-PULSE)
27	V	PARKING BRAKE SWITCH SIGNAL
28	W	BRAKE FLUID LEVEL SWITCH SIGNAL
29	SB	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)
30	G	PASSENGER SEAT BELT WARNING SIGNAL
31	L	WASHER LEVEL SWITCH SIGNAL
34	B	ILLUMINATION CONTROL SIGNAL
36	LG	SELECT SWITCH SIGNAL
37	SB	ENTER SWITCH SIGNAL
38	L	TRIP AIR RESET SWITCH SIGNAL
39	P	ILLUMINATION CONTROL SWITCH SIGNAL (-)
40	BG	ILLUMINATION CONTROL SWITCH SIGNAL (+)

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

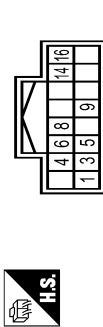
BCM (BODY CONTROL MODULE)

Connector No.	M67
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH32FM-NH



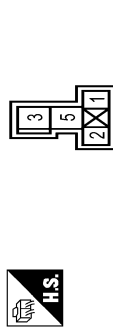
Terminal No.	Color Of Wire	Signal Name [Specification]
41	V	ACC POWER SUPPLY
42	Y	FUEL LEVEL SENSOR SIGNAL
43	R	INTAKE SENSOR SIGNAL
44	LG	IN-VEHICLE SENSOR SIGNAL
45	P	AMBIENT SENSOR SIGNAL
46	BG	SUNLOAD SENSOR SIGNAL
47	V	GAS SENSOR SIGNAL
53	G	IGNITION POWER SUPPLY
54	BG	BATTERY POWER SUPPLY
55	B	GROUND
56	L	CANH
57	W	BRAKE FLUID LEVEL SWITCH SIGNAL
58	B	FUEL LEVEL SENSOR GROUND
59	GR	INTAKE SENSOR GROUND
60	L	IN-VEHICLE SENSOR GROUND
61	BR	AMBIENT SENSOR GROUND
62	SB	SUNLOAD SENSOR GROUND
63	R	ION MODE SIGNAL
65	BG	ECV SIGNAL
69	L	A/C LAN SIGNAL
70	R	EACH DOOR MOTOR POWER SUPPLY
71	B	GROUND
72	P	CANH

Connector No.	M72
Connector Name	MULTIFUNCTION SWITCH
Connector Type	TH16FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
3	V	ACC
4	R	ILL
5	R	ILL CONT
8	SB	AV COM1 (H)
8	LG	AV COM1 (L)
9	BR	SW GND
14	SB	DISK EJECT SIGNAL
16	G	HAZARD ON

Connector No.	M79
Connector Name	ACCESSORY RELAY (2)
Connector Type	MS02FL-M2-LC



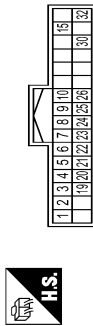
Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	B	-
3	LG	-
5	L	-

Connector No.	M94
Connector Name	OPTICAL SENSOR
Connector Type	TK03FW



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	POWER
2	P	OUTPUT
3	B	GROUND

Connector No.	M95
Connector Name	LOW TIRE PRESSURE WARNING CONTROL UNIT
Connector Type	TH32FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	CAN- (L)
2	L	CAN+ (H)
3	BG	RR TUNER (SIG)
4	L	RL TUNER (SIG)
5	R	FR TUNER (SIG)
6	P	FL TUNER (SIG)
7	SB	RR TUNER (VCC)
8	R	RL TUNER (VCC)
9	GR	FR TUNER (VCC)
10	G	FL TUNER (VCC)
15	Y	IGN
19	W	RR TUNER (RSSI)
20	BR	RL TUNER (RSSI)
21	LG	FR TUNER (RSSI)
22	V	FL TUNER (RSSI)
23	B	RR TUNER (GND)
24	Y	RL TUNER (GND)

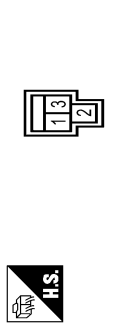
25	W	FR TUNER (GND)
26	P	FL TUNER (GND)
30	LG	BCM FLASHER
32	B	GROUND

Connector No.	M104
Connector Name	REMOTE KEYLESS ENTRY RECEIVER
Connector Type	JAB04FB



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
2	GR	SIGNAL OUTPUT
4	BR	BATTERY

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	BAT (F/L)
2	Y	POWER WINDOW POWER SUPPLY (BAT)
3	BG	POWER WINDOW POWER SUPPLY (RAP)

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

BCM (BODY CONTROL MODULE)		
Connector No.	M119	
Connector Name	BCM (BODY CONTROL MODULE)	
Connector Type	NS16FW-CS	



4	5	7	8	9	10
11	13	15	17	18	19

Terminal No.	Color Of Wire	Signal Name [Specification]
4	P	INT ROOM LAMP PWR SUPPLY (BAT SAME)
5	V	PASSENGER DOOR UNLOCK OUTPUT
7	Y	STEP LAMP OUTPUT
8	V	ALL DOOR FUEL LID LOCK OUTPUT
9	G	DRIVER DOOR FUEL LID UNLOCK OUTPUT
10	BR	REAR DOOR UNLOCK OUTPUT
11	R	BAT (FUSE)
13	B	GROUND
15	Y	ACC IND
17	W	TURN SIGNAL RH (FRONT)
18	BG	TURN SIGNAL LH (FRONT)
19	SB	ROOM LAMP TIMER

Connector No.	M120	
Connector Name	BCM (BODY CONTROL MODULE)	
Connector Type	NS12FW-CS	



20	25	26
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Terminal No.	Color Of Wire	Signal Name [Specification]
20	V	TURN SIGNAL RH (REAR)
25	G	TURN SIGNAL LH (REAR)
26	P	REAR WIPER OUTPUT

Connector No.	M121	
Connector Name	BCM (BODY CONTROL MODULE)	
Connector Type	TH40FGY-NH	



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Terminal No.	Color Of Wire	Signal Name [Specification]
34	SB	LUGGAGE ROOM ANT+
35	V	LUGGAGE ROOM ANT-
38	B	BACK DOOR ANT+
39	W	BACK DOOR ANT-
47	Y	IGN RELAY (PWR) CONT
52	LG	STARTER RELAY CONT
60	SB	ENG START SW
61	W	TRUNK REQUEST SW
64	L	1KEY WARN BUZZER (ENG ROOM)
65	BG	REAR WIPER STOP POSITION
66	LG	BACK DOOR SW
67	P	BACK DOOR OPENER SW
68	BR	REAR RH DOOR SW
69	R	REAR LH DOOR SW

Connector No.	M122	
Connector Name	BCM (BODY CONTROL MODULE)	
Connector Type	TH40FB-NH	



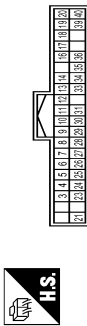
91	90	88	87					83	82	81	80	79	78	77	76	75	74		
103	102	100	97					100	95	91	90	89			96	95	93	92	

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

BCM (BODY CONTROL MODULE)

Connector No.	M129
Connector Name	TOTAL ILLUMINATION CONTROL UNIT
Connector Type	TH40FW-NH



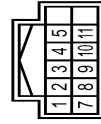
Terminal No.	Color	Wire	Signal Name [Specification]
3	V		DDL2
4	L		TAIL LAMP SIGNAL
5	V		ACC SIGNAL
6	P		BAT SAVING SIGNAL
7	W		IGN SIGNAL
8	G		DOOR SW (AS)
9	B		DOOR SW (RL)
10	SB		MOOD LAMP (FR ARMREST RH)
11	Y		MOOD LAMP (RR ARMREST RH)
12	P		MAP LAMP (AS)
13	G		PERSONAL LAMP (LH)
14	R		PERSONAL LAMP (RH)
16	GR		FOOT LAMP (RH)
17	LG		HSPL ILLUMINATIONS
18	L		MAP LAMP (DR)
19	R		PUSH ENG START SW LED
20	Y		AMBIENCE LAMP
21	R		BAT POWER SUPPLY
23	B		GROUND
24	B		ILL CONT INPUT
25	BR		DOOR SW (RR)
26	BR		MAP LAMP SW (DOOR)
27	R		MAP LAMP SW (ALL ON)
28	SB		ROOM LAMP TIMER
29	GR		DOOR SW (DR)
30	LG		MOOD LAMP (FR ARMREST LH)
31	B		MOOD LAMP (RR ARMREST LH)
33	W		HSPL POWER SUPPLY 3
34	R		HSPL POWER SUPPLY 2
35	V		HSPL POWER SUPPLY 1
36	L		FOOT LAMP (LH)
39	B		Puddle LAMP (RH)
40	B		Puddle LAMP (LH)

Connector No.	M131
Connector Name	INSIDE KEY ANTENNA (INSTRUMENT CENTER)
Connector Type	RK02MGY



Terminal No.	Color	Wire	Signal Name [Specification]
1	BR		-
2	Y		-

Connector No.	M137
Connector Name	AT SHIFT SELECTOR
Connector Type	TH12FW-NH



Terminal No.	Color	Wire	Signal Name [Specification]
1	W		-
2	V		-
3	L		-
4	B		-
5	G		-
7	B		-
8	SB		-
9	B		-
10	GR		-
11	R		-

Connector No.	M160
Connector Name	ECM
Connector Type	RH24FGY-R28-LH-Z



Terminal No.	Color	Wire	Signal Name [Specification]
97	R		ENGINE SPEED SIGNAL OUTPUT
99	G		SENSOR POWER SUPPLY
100	L		SENSOR POWER SUPPLY
101	P		CAN COMMUNICATION LINE
102	SB		ASCD/CC STEERING SWITCH
104	R		ACCELERATOR PEDAL POSITION SENSOR 1
105	L		CAN COMMUNICATION LINE
108	P		ACCELERATOR PEDAL POSITION SENSOR 2
110	P		STOP LAMP SWITCH
111	V		SENSOR GROUND
112	LG		FUEL PUMP CONTROL MODULE (FFCM) CHECK
114	GR		DATA LINK CONNECTOR
115	GR		SENSOR GROUND
116	G		TRANSMISSION RANGE SWITCH
117	BR		ASCD/CC BRAKE SWITCH
118	R		POWER SUPPLY FOR ECM (BACK-UP)
119	W		SENSOR GROUND
120	W		FUEL TANK TEMPERATURE SENSOR
121	GR		POWER SUPPLY FOR ECM
123	B		ECM GROUND
125	R		FUEL PUMP CONTROL MODULE (FFCM)
128	B		ECM GROUND

Connector No.	M164
Connector Name	ECM
Connector Type	RH24FGY-R28-LH-Z



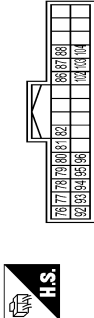
Terminal No.	Color	Wire	Signal Name [Specification]
97	R		ACCELERATOR PEDAL POSITION SENSOR 1
98	P		ACCELERATOR PEDAL POSITION SENSOR 2 (Without NAVI)
99	Y		ACCELERATOR PEDAL POSITION SENSOR 2 (With NAVI)
99	G		SENSOR POWER SUPPLY (With NAVI)
100	L		SENSOR POWER SUPPLY (Without NAVI)
100	W		SENSOR GROUND
101	SB		ASCD/CC STEERING SWITCH
102	LG		EVAP CONTROL SYSTEM PRESSURE SENSOR
103	G		SENSOR POWER SUPPLY (Without NAVI)
103	L		SENSOR POWER SUPPLY (With NAVI)
104	BR		SENSOR GROUND (With NAVI)
104	GR		SENSOR GROUND (Without NAVI)
105	L		REFRIGERANT PRESSURE SENSOR
106	W		FUEL TANK TEMPERATURE SENSOR
107	B		SENSOR POWER SUPPLY
108	V		SENSOR GROUND
109	G		PNP SIGNAL
110	R		ENGINE SPEED OUTPUT SIGNAL
112	V		SENSOR GROUND (CAN COMMUNICATION LINE)
113	W		SENSOR GROUND (CAN COMMUNICATION LINE)
114	P		CAN COMMUNICATION LINE
114	L		CAN COMMUNICATION LINE
117	GR		DATA LINK CONNECTOR
121	LG		EVAP CANISTER VENT CONTROL VALVE
122	P		STOP LAMP SWITCH
123	B		ECM GROUND
124	B		ECM GROUND
125	GR		POWER SUPPLY FOR ECM
126	BR		ASCD/CC BRAKE SWITCH
127	B		ECM GROUND
128	B		ECM GROUND

JRMWF4498GB

BCM (BODY CONTROL MODULE)

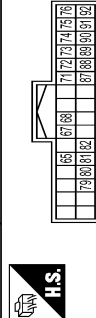
< ECU DIAGNOSIS INFORMATION >

BCM (BODY CONTROL MODULE)	
Connector No.	M204
Connector Name	AV CONTROL UNIT
Connector Type	TH32FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
76	LG	AV COMM (L)
77	SB	AV COMM (H)
78	LG	AV COMM (L)
79	SB	AV COMM (H)
80	P	CAN-L
81	L	CAN-H
82	BR	SW GND
86	SHIELD	SHIELD
87	L	TEL VOICE SIGNAL (+)
88	P	TEL VOICE SIGNAL (-)
92	R	VEHICLE SPEED SIGNAL (8-PULSE)
93	V	PARKING BRAKE SIGNAL
94	BG	REVERSE SIGNAL
95	G	IGNITION SIGNAL
96	SB	DISK EJECT SIGNAL
102	B	AUX AUDIO LH+
103	W	AUX AUDIO LH+
104	R	AUX AUDIO RH+

Connector No.	M210
Connector Name	AV CONTROL UNIT
Connector Type	TH32FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
65	V	PARKING BRAKE SIGNAL
67	B	COMPOSITE IMAGE SIGNAL GND
68	R	COMPOSITE IMAGE SIGNAL
71	SHIELD	MICROPHONE SHIELD
72	G	MICROPHONE VCC
73	R	COMM (CONT->DISP)
74	P	CAN-L
75	LG	AV COMM (L)
76	LG	AV COMM (L)
79	R	ILLUMINATION
80	G	IGNITION SIGNAL
81	BG	REVERSE SIGNAL
82	R	VEHICLE SPEED SIGNAL (8-PULSE)
87	R	MICROPHONE SIGNAL
88	B	SHIELD
89	G	COMM (DISP->CONT)
90	L	CAN-H
91	SB	AV COMM (H)
92	SB	AV COMM (H)

Connector No.	R4
Connector Name	SUNROOF MOTOR ASSEMBLY
Connector Type	YEA10FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	SW-BIT1
5	P	SW-BIT0
7	BR	+B
8	L	SPEED SENSOR (2P)
9	Y	TIMER (+IGN)
10	G	GROUND

Connector No.	R9
Connector Name	RAIN SENSOR
Connector Type	JAAB03FB



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	+B
2	GR	S/G
3	B	GROUND

Fail-safe

FAIL-SAFE CONTROL BY DTC
BCM performs fail-safe control when any DTC are detected.

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Display contents of CONSULT	Fail-safe	Cancellation
B2190: NATS ANTENNA AMP	Inhibit engine cranking	Erase DTC
B2191: DIFFERENCE OF KEY	Inhibit engine cranking	Erase DTC
B2192: ID DISCORD BCM-ECM	Inhibit engine cranking	Erase DTC
B2193: CHAIN OF BCM-ECM	Inhibit engine cranking	Erase DTC
B2195: ANTI SCANNING	Inhibit engine cranking	Ignition switch ON → OFF
B2560: STARTER CONT RELAY	Inhibit engine cranking	500 ms after the following CAN signal communication status becomes consistent • Starter control relay signal • Starter relay status signal
B2608: STARTER RELAY	Inhibit engine cranking	500 ms after the following signal communication status becomes consistent • Starter 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 ⇒ 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)

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

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 - B2608: STARTER RELAY - B260A: IGNITION RELAY - B260F: ENG STATE SIG LOST - B2614: BCM - B2615: BCM - B2616: BCM - B2617: BCM - B2618: BCM - B261A: PUSH-BTN IGN SW - B261E: VEHICLE TYPE - B26EA: KEY REGISTRATION - U0415: VEHICLE SPEED SIG
5	- B2621: INSIDE ANTENNA - B2623: INSIDE ANTENNA
6	B26E7: TPMS CAN COMM

DTC Index

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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 \(BCM - COMMON ITEM\)"](#).

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	×	—	—	SEC-50
B2192: ID DISCORD BCM-ECM	×	—	—	SEC-51
B2193: CHAIN OF BCM-ECM	×	—	—	SEC-53
B2195: ANTI SCANNING	×	—	—	SEC-54
B2553: IGNITION RELAY	—	×	—	PCS-53
B2555: STOP LAMP	—	×	—	SEC-55

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

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)	SEC-82
B2621: INSIDE ANTENNA	—	×	—	DLK-101
B2623: INSIDE ANTENNA	—	×	—	DLK-103
B26E7: TPMS CAN COMM	—	—	—	BCS-43
B26EA: KEY REGISTRATION	—	×	× (Turn ON for 15 seconds)	SEC-76

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

< ECU DIAGNOSIS INFORMATION >

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

Reference Value

INFOID:0000000011016219

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 %
AC COMP REQ	Engine running	A/C switch OFF	Off
		A/C switch ON (Compressor is operating)	On
TAIL&CLR REQ	Lighting switch OFF		Off
	Lighting switch 1ST, 2ND, HI or AUTO (light is illuminated)		On
HL LO REQ	Lighting switch OFF		Off
	Lighting switch 2ND HI or AUTO (light is illuminated)		On
HL HI REQ	Lighting switch OFF		Off
	Lighting switch HI		On
FR FOG REQ	Lighting switch 2ND or AUTO (light is illuminated)	Front fog lamp switch OFF	Off
		• Front fog lamp switch ON • Daytime running light activated (Only for Canada)	On
FR WIP REQ	Ignition switch ON	Front wiper switch OFF	Stop
		Front wiper switch INT	1LOW
		Front wiper switch LO	Low
		Front wiper switch HI	Hi
WIP AUTO STOP	Ignition switch ON	Front wiper stop position	STOP P
		Any position other than front wiper stop position	ACT P
WIP PROT	Ignition switch ON	Front wiper operates normally	Off
		Front wiper stops at fail-safe operation	BLOCK
IGN RLY1 -REQ	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
IGN RLY	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
PUSH SW	Release the push-button ignition switch		Off
	Press the push-button ignition switch		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
	At engine cranking		On

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

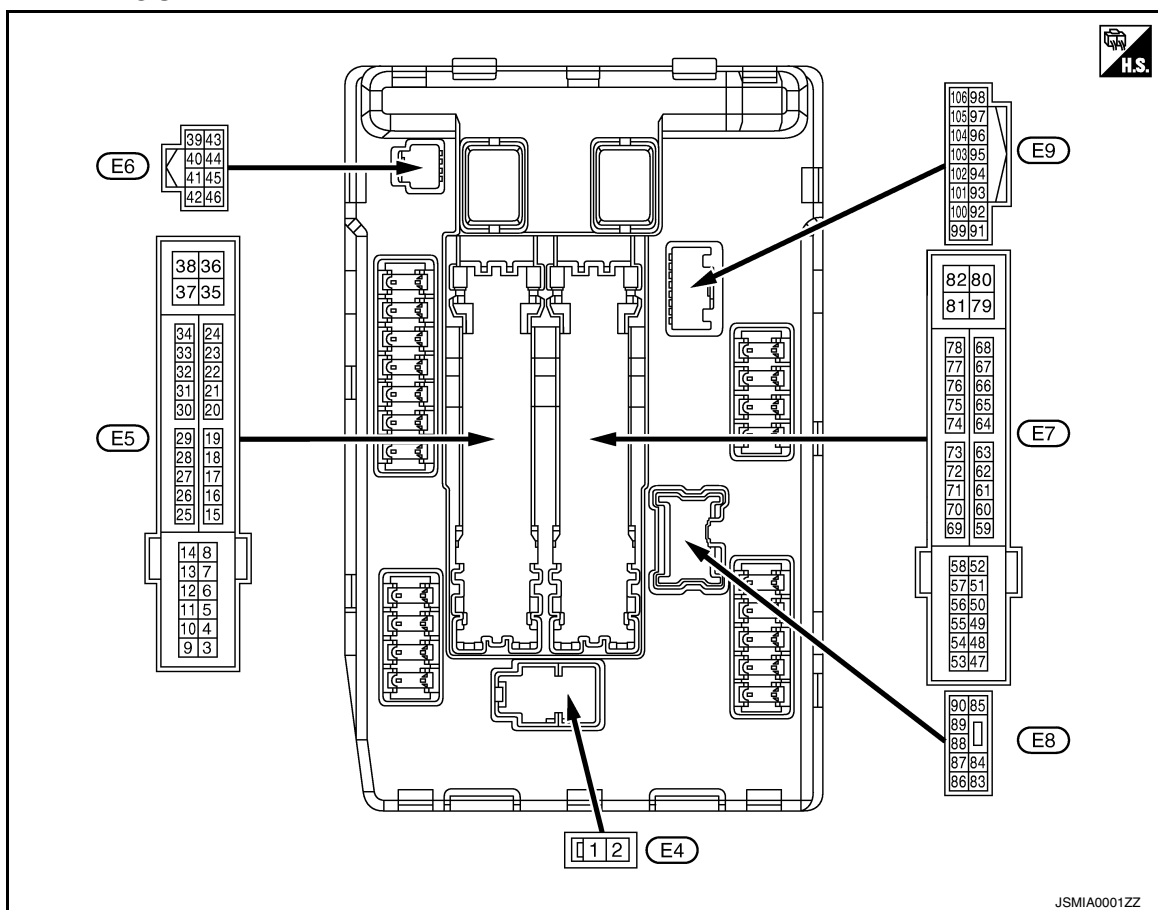
< ECU DIAGNOSIS INFORMATION >

Monitor Item	Condition		Value/Status
IHBT RLY -REQ	Ignition switch ON		Off
	At engine cranking		On
ST/INHI RLY	Ignition switch ON		Off
	At engine cranking		INHI → ST
	The status of starter relay or starter control relay cannot be recognized by the battery voltage malfunction, etc. when the starter relay is ON and the starter control relay is OFF		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 selector lever in P position		On
S/L RLY -REQ	NOTE: The item is indicated, but not monitored.		Off
S/L STATE	NOTE: The item is indicated, but not monitored.		UNLOCK
DTRL REQ	NOTE: The item is indicated, but not monitored.		Off
OIL P SW	Ignition switch OFF, ACC or engine running		Open
	Ignition switch ON		Close
HOOD SW	Close the hood		Off
	Open the hood		On
HL WASHER REQ	NOTE: The item is indicated, but not monitored.		Off
THFT HRN REQ	Not operation		Off
	• Panic alarm is activated • Horn is activated with VEHICLE SECURITY (THEFT WARNING) SYSTEM		On
HORN CHIRP	Not operating		Off
	Door locking with Intelligent Key (horn chirp mode)		On
CRNRNG LMP REQ	NOTE: The item is indicated, but not monitored.		Off

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

< ECU DIAGNOSIS INFORMATION >

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
1 (W)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
2 (L)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
4 (V)	Ground	Front wiper LO	Output	Ignition switch OFF	Front wiper switch OFF	0 V
				Ignition switch ON	Front wiper switch LO	Battery voltage
5 (L)	Ground	Front wiper HI	Output	Ignition switch OFF	Front wiper switch OFF	0 V
				Ignition switch ON	Front wiper switch HI	Battery voltage
7 (R)	Ground	Tail, license plate lamps & interior lamps	Output	Ignition switch OFF	Lighting switch OFF	0 V
				Ignition switch ON	Lighting switch 1ST	Battery voltage
10*1 (SB)	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 V
				- Ignition switch ON - Ignition switch OFF (For a few seconds after turning igni- tion switch OFF)		Battery voltage
12 (B)	Ground	Ground	—	Ignition switch ON		0 V

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

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	—	Signal name	Input/ Output			
13 (Y)	Ground	Fuel pump power supply	Output	Approximately 1 second or more after turning the ignition switch ON		0 V
				- Approximately 1 second after turning the ignition switch ON - Engine running		Battery voltage
16 (LG)	Ground	Front wiper stop position	Input	Ignition switch ON	Front wiper stop position	0 V
					Any position other than front wiper stop position	Battery voltage
19 (W)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
25 (G)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
26*2 (R)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
27 (Y)	Ground	Ignition relay monitor	Input	Ignition switch OFF or ACC		Battery voltage
				Ignition switch ON		0 V
28 (BG)	Ground	Push-button ignition switch	Input	Press the push-button ignition switch		0 V
				Release the push-button ignition switch		Battery voltage
30 (GR)	Ground	Starter relay control	Input	Ignition switch ON	Selector lever in any position other than P or N	0 V
					Selector lever P or N	Battery voltage
36 (G)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
39 (P)	—	CAN-L	Input/ Output	—		—
40 (L)	—	CAN-H	Input/ Output	—		—
41 (B)	Ground	Ground	—	Ignition switch ON		0 V
42 (Y)	Ground	Cooling fan relay control	Input	Ignition switch OFF or ACC		0 V
				Ignition switch 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 button (selector lever P)	0 V
44 (W)	Ground	Horn relay control	Input	The horn is deactivated		Battery voltage
				The horn is activated		0 V
45 (G)	Ground	Anti theft horn relay control	Input	The horn is deactivated		Battery voltage
				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
					Selector lever P or N	Battery voltage
48 (L)	Ground	A/C relay power supply	Output	Engine running	A/C switch OFF	0 V
					A/C switch ON (A/C compressor is operating)	Battery voltage

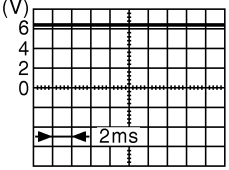
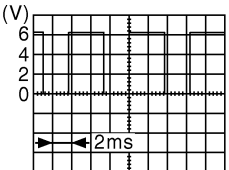
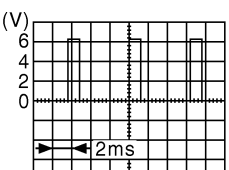
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
49 (W)*1 (SB)*3	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)	0 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning igni- tion switch OFF)	Battery voltage
51 (G)	Ground	Ignition relay power supply	Output	Ignition switch OFF	0 V
				Ignition switch ON	Battery voltage
52 (W)	Ground	Ignition relay power supply	Output	Ignition switch OFF	0 V
				Ignition switch ON	Battery voltage
53 (W)	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)	0 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning igni- tion switch OFF)	Battery voltage
54 (R)	Ground	Throttle control motor re- lay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)	0 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning igni- tion switch OFF)	Battery voltage
55 (BR)	Ground	ECM power supply	Output	Ignition switch OFF	Battery voltage
56 (BG)*1 (V)*3	Ground	Ignition relay power supply	Output	Ignition switch OFF	0 V
				Ignition switch ON	Battery voltage
57 (LG)	Ground	Ignition relay power supply	Output	Ignition switch OFF	0 V
				Ignition switch ON	Battery voltage
58 (Y)	Ground	Ignition relay power supply	Output	Ignition switch OFF	0 V
				Ignition switch ON	Battery voltage
69 (W)	Ground	ECM relay control	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)	Battery voltage
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning igni- tion switch OFF)	0 – 1.5 V
70 (BG)	Ground	Throttle control motor re- lay control	Output	Ignition switch ON → OFF	0 – 1.0 V ↓ Battery voltage ↓ 0 V
				Ignition switch ON	0 – 1.0 V
74 (G)	Ground	Ignition relay power supply	Output	Ignition switch OFF	0 V
				Ignition switch ON	Battery voltage
75 (Y)	Ground	Oil pressure switch	Input	Ignition switch ON	0 V
				Engine stopped Engine running	Battery voltage

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

< ECU DIAGNOSIS INFORMATION >

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

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

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
91 (P)	Ground	Parking lamp	Output	Ignition switch ON	Lighting switch 1ST	Battery voltage
					Lighting switch OFF	0 V
97 (V)	Ground	Cooling fan control	Output	Engine idling		0 – 5 V
104 (LG)	Ground	Hood switch	Input	Close the hood		Battery voltage
				Open the hood		0 V

*1: VK engine models

*2: Only for the models with ICC system

*3: VQ engine models

A

B

C

D

E

F

G

H

I

J

K

WW

M

N

O

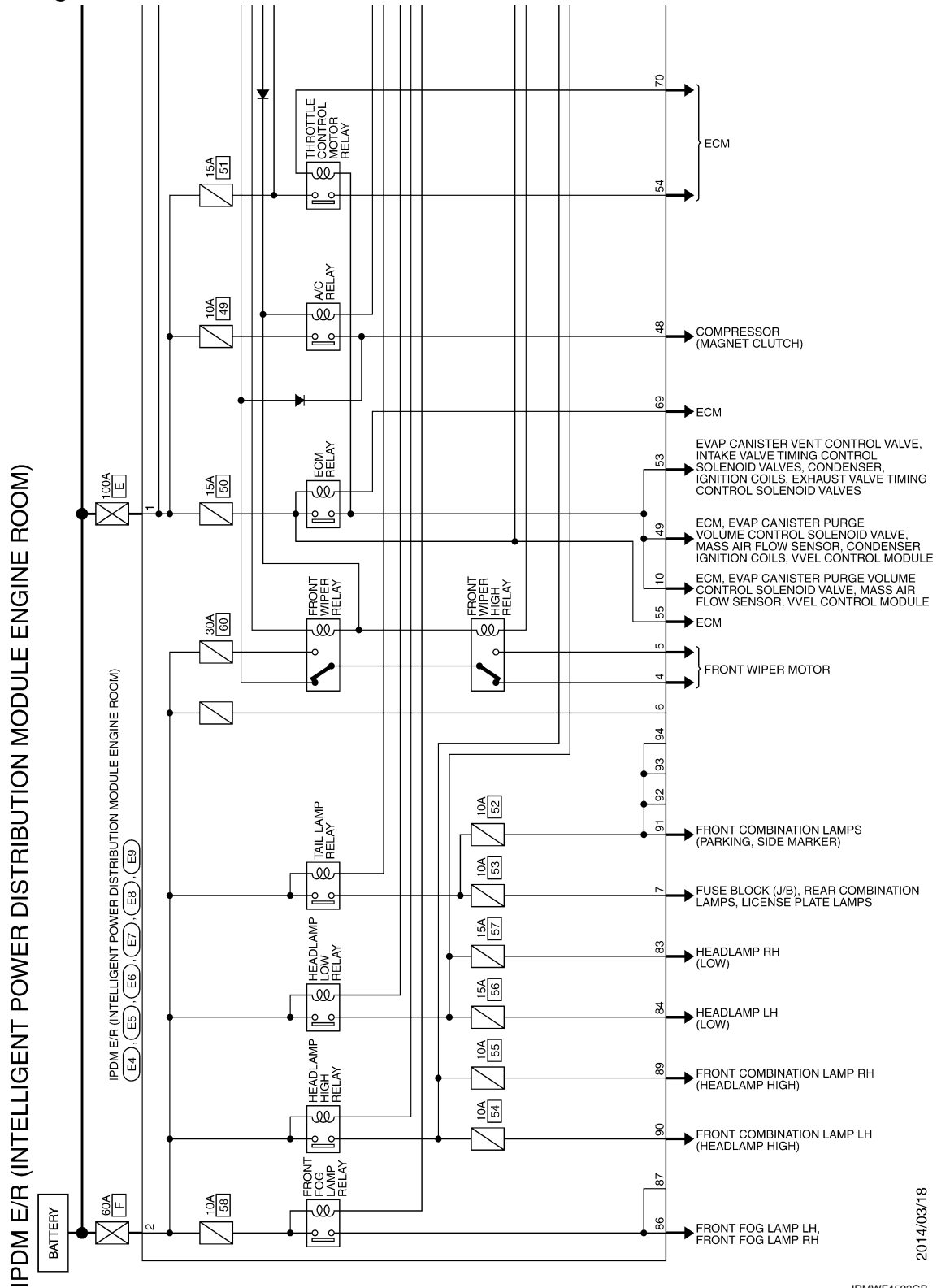
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IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

< ECU DIAGNOSIS INFORMATION >

Wiring Diagram - IPDM E/R -

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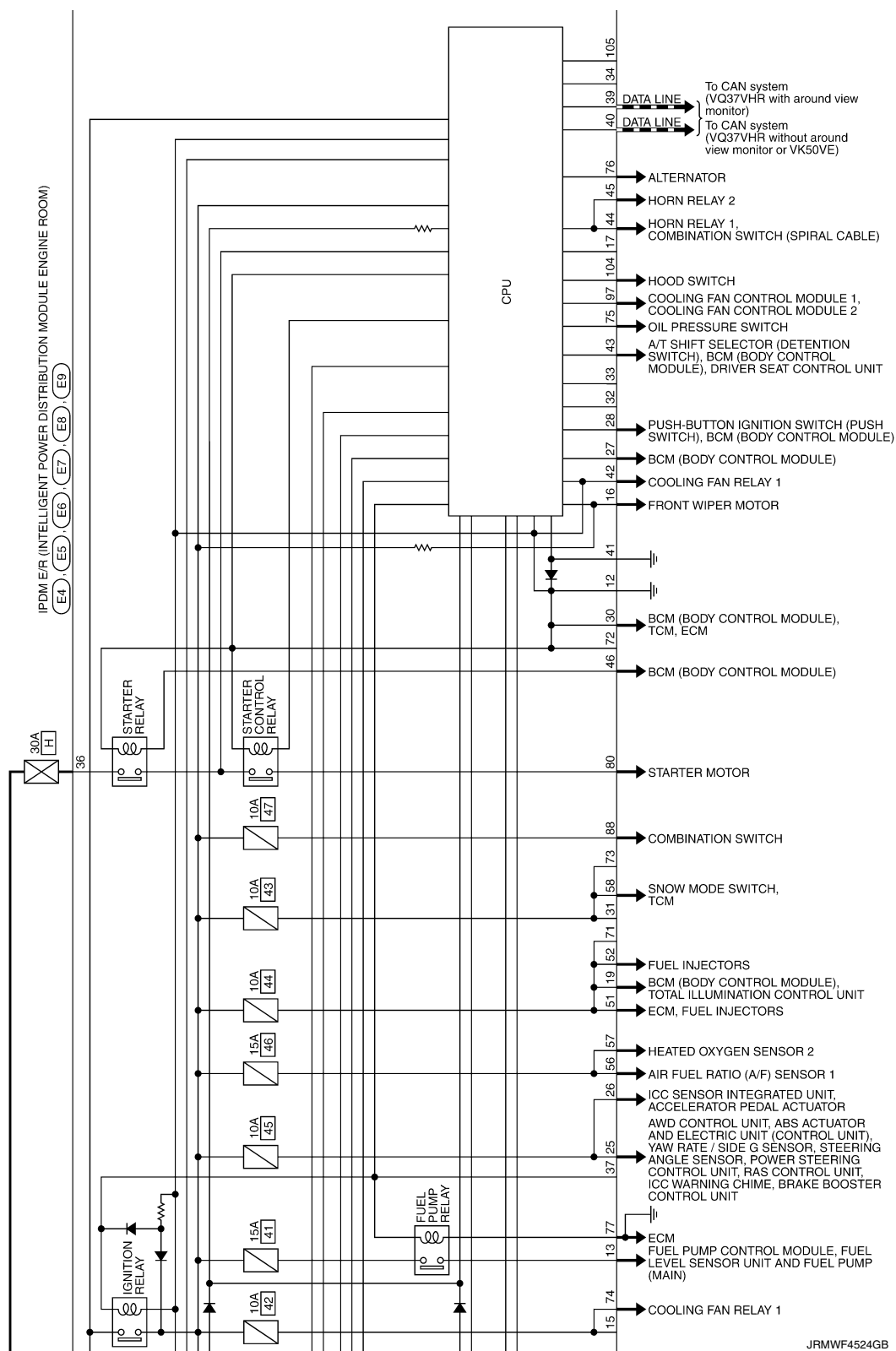


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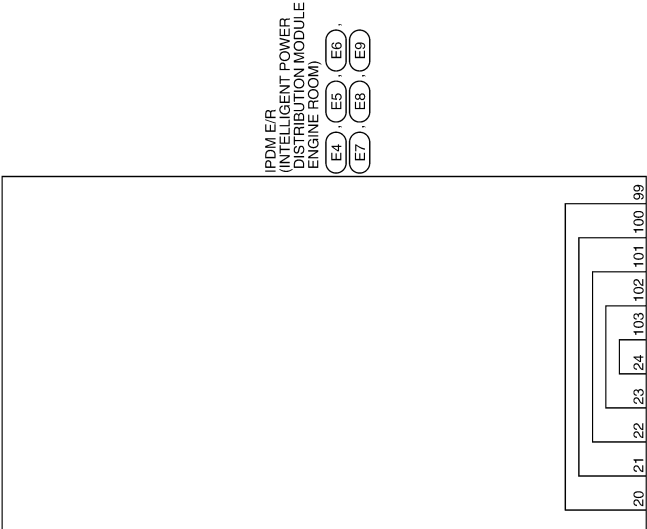
JRMWF4523GB

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

< ECU DIAGNOSIS INFORMATION >



JRMWF4524GB



JRMWF4525GB

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

< ECU DIAGNOSIS INFORMATION >

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

Connector No.	E4
Connector Name	IPDM E/R INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	L02FB-MC

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	L	-

Connector No.	E5
Connector Name	IPDM E/R INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-1V

Terminal No.	Color Of Wire	Signal Name [Specification]
4	V	-
5	L	-
7	R	-
10	SB	-
12	B	-
13	Y	-
16	LG	-
19	W	-
25	G	-
26	R	-
27	Y	-
28	BG	-
30	GR	-
36	G	-

Connector No.	E6
Connector Name	IPDM E/R INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH08FM-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
39	P	-
40	L	-
41	B	-
42	Y	-
43	SB	-
44	W	-
45	G	-
46	BR	-

Connector No.	E7
Connector Name	IPDM E/R INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH20FW-CS12-M4

Terminal No.	Color Of Wire	Signal Name [Specification]
48	L	-
49	SB	- [With VQ engine]
49	W	- [With VK engine]
51	G	-
52	W	-
53	W	-
54	R	-
55	BR	-
56	EG	- [With VK engine]
56	V	- [With VQ engine]
57	LG	-

58	Y	-
69	W	-
70	BG	-
74	G	-
75	Y	-
76	P	- [With VK engine]
76	V	- [With VQ engine]
77	B	- [With VK engine]
77	L	- [With VQ engine]
80	W	-

Connector No.	E9
Connector Name	IPDM E/R INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH08FM-CS

Terminal No.	Color Of Wire	Signal Name [Specification]
83	R	-
84	P	-
86	W	-
88	G	-
89	BR	-
90	Y	-

Connector No.	E9
Connector Name	IPDM E/R INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH16FM-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
91	P	-
97	V	-
104	LG	-

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

JRMWF4526GB

INFOID:000000011016221

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

< ECU DIAGNOSIS INFORMATION >

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

If No CAN Communication Is Available With BCM

Control part	Fail-safe operation
Headlamp	- Turns ON the headlamp low relay when the ignition switch is turned ON - Turns OFF the headlamp low relay when the ignition switch is turned OFF - Headlamp high relay OFF
- Parking lamps - License plate lamps - Side marker lamps - Illuminations - Tail lamps	- Turns ON the tail lamp relay when the ignition switch is turned ON - Turns OFF the tail lamp relay when the ignition switch is turned OFF
Front wiper	- The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed. - The wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the INT mode and the front 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		IPDM E/R judgment	Operation
Ignition relay contact side	Ignition relay excitation coil side		
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.

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

< 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

INFOID:0000000011016222

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 → 2 ... 38 → 39 after returning to the normal condition whenever IGN OFF → 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	—	SEC-83
B210C: STR CONT RLY OFF CIRC	—	SEC-84
B210D: STARTER RLY ON CIRC	—	SEC-86
B210E: STARTER RLY OFF CIRC	—	SEC-88
B210F: INTRLCK/PNP SW ON	—	SEC-90
B2110: INTRLCK/PNP SW OFF	—	SEC-92

WW

WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

WIPER AND WASHER SYSTEM SYMPTOMS WITH RAIN SENSOR

WITH RAIN SENSOR : Symptom Table

INFOID:0000000010581291

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
Front wiper does not operate.	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 WW-31, "Component 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" .
		- IPDM E/R - Harness between IPDM E/R and front wiper motor - Front wiper motor	Front wiper motor (LO) circuit Refer to WW-29, "Component 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 WW-37, "Component Function Check" .
	HI, LO and AUTO	SYMPTOM DIAGNOSIS "FRONT WIPER DOES NOT OPERATE" Refer to WW-114, "Diagnosis Procedure" .	

WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

Symptom		Probable malfunction location	Inspection item
Front wiper does not stop.	HI only	- Combination switch - 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"
		IPDM E/R	—
	LO only	- Combination switch - 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"
		IPDM E/R	—
	AUTO only	- Combination switch - BCM	Combination switch Refer to BCS-90, "Symptom Table" .
		- Rain sensor - Harness between rain sensor and BCM - BCM	Rain sensor Refer to WW-37, "Component Function Check" .
Front wiper does not operate normally.	Sensitivity adjustment cannot be performed.	- Combination switch - Harness between combination switch and BCM - BCM	Combination switch Refer to BCS-90, "Symptom Table" .
		BCM	—
	Wiper is not linked to the washer operation.	- Combination switch - Harness between combination switch and BCM - BCM	Combination switch Refer to BCS-90, "Symptom Table" .
		BCM	—
	Does not return to stop position. [Repeatedly operates for 10 seconds and then stops for 20 seconds. After that, it stops the operation. (Fail-safe)]	- IPDM E/R - Harness between IPDM E/R and front wiper motor - Front wiper motor	Front wiper stop position signal circuit Refer to WW-33, "Component Function Check" .
Rear wiper does not operate.	ON only	- Combination switch - Harness between combination switch and BCM - BCM	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" .
	ON and INT	- Combination switch - Harness between combination switch and BCM - BCM	Combination switch Refer to BCS-90, "Symptom Table" .
		- BCM - Harness between rear wiper motor and BCM - Harness between rear wiper motor and ground - Rear wiper motor	Rear wiper motor circuit Refer to WW-39, "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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WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

Symptom		Probable malfunction location	Inspection item
Rear wiper does not operate normally.	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" .
		BCM	—
	Rear wiper does not return to the stop position. [Stops after a five-second operation. (Fail-safe)]	- BCM - Harness between rear wiper motor and BCM - Rear wiper motor	Rear wiper stop position signal circuit Refer to WW-41, "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
Front wiper does not operate.	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 WW-31, "Component Function Check" .
		Front wiper request signal - BCM - IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"
	LO and INT	- Combination switch - Harness between combination switch and BCM - BCM	Combination switch Refer to 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 WW-29, "Component 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" .	

WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

Symptom		Probable malfunction location	Inspection item
Front wiper does not stop.	HI only	- Combination switch - 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"
		IPDM E/R	—
	LO only	- Combination switch - 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"
		IPDM E/R	—
	INT only	- Combination switch - 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"
Front wiper does not operate normally.	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 WW-19, "WIPER : CONSULT Function (BCM - WIPER)" . NOTE: Factory setting of the front wiper intermitted operation is the operation without vehicle speed.	
	Wiper is not linked to the washer operation.	- Combination switch - Harness between combination switch and BCM - BCM	Combination switch Refer to BCS-90, "Symptom Table" .
		BCM	—
	Does not return to stop position. [Repeatedly operates for 10 seconds and then stops for 20 seconds. After that, it stops the operation. (Fail-safe)]	- IPDM E/R - Harness between IPDM E/R and front wiper motor - Front wiper motor	Front wiper stop position signal circuit Refer to WW-33, "Component Function Check" .
Rear wiper does not operate.	ON only	- Combination switch - Harness between combination switch and BCM - BCM	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" .
	ON and INT	- Combination switch - Harness between combination switch and BCM - BCM	Combination switch Refer to BCS-90, "Symptom Table" .
		- BCM - Harness between rear wiper motor and BCM - Harness between rear wiper motor and ground - Rear wiper motor	Rear wiper motor circuit Refer to WW-39, "Component Function Check" .

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WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

Symptom		Probable malfunction location	Inspection item
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" .
Rear wiper does not operate normally.	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 return to the stop position. [Stops after a five-second operation. (Fail-safe)]	- BCM - Harness between rear wiper motor and BCM - Rear wiper motor	Rear wiper stop position signal circuit Refer to WW-41, "Component Function Check" .

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description

INFOID:0000000010581293

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:0000000010581294

The front wiper does not operate under any operation conditions.

Diagnosis Procedure

INFOID:0000000010581295

1.CHECK WIPER RELAY OPERATION

⊗ IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-10, "Diagnosis Description"](#).
2. Check that the front wiper operates at the LO/Hi operation.

Ⓜ CONSULT ACTIVE TEST

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

Lo : Front wiper LO operation

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 wiper motor		Ground	Continuity
Connector	Terminal		
E42	2		Existed

Does continuity exist?

YES >> GO TO 4.

NO >> Repair the harness or connector.

4.CHECK FRONT WIPER REQUEST SIGNAL INPUT

Ⓜ CONSULT DATA MONITOR

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

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

Perform the inspection of the combination switch. Refer to [BCS-90, "Symptom Table"](#).

Is combination switch normal?

YES >> Replace BCM. Refer to [BCS-93, "Exploded View"](#).

NO >> Repair or replace the applicable parts.

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PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000010581296

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:

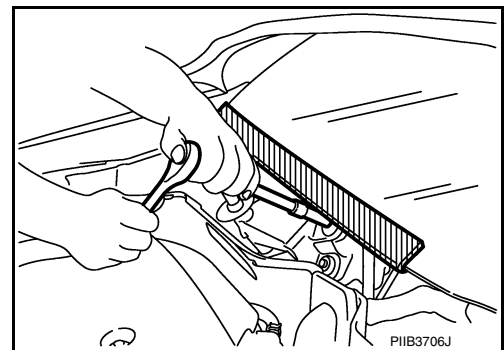
Always observe the following items for preventing accidental activation.

- 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:000000010581297

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

INFOID:0000000010769770

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

NOTE:

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

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

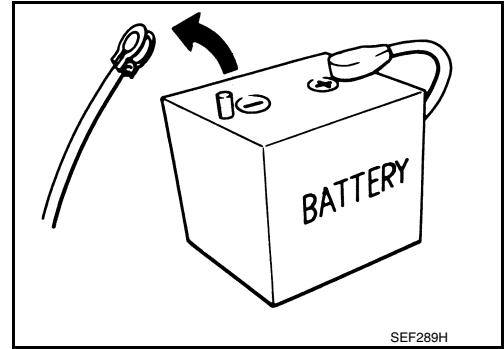
NOTE:

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

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

NOTE:

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



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WASHER TANK

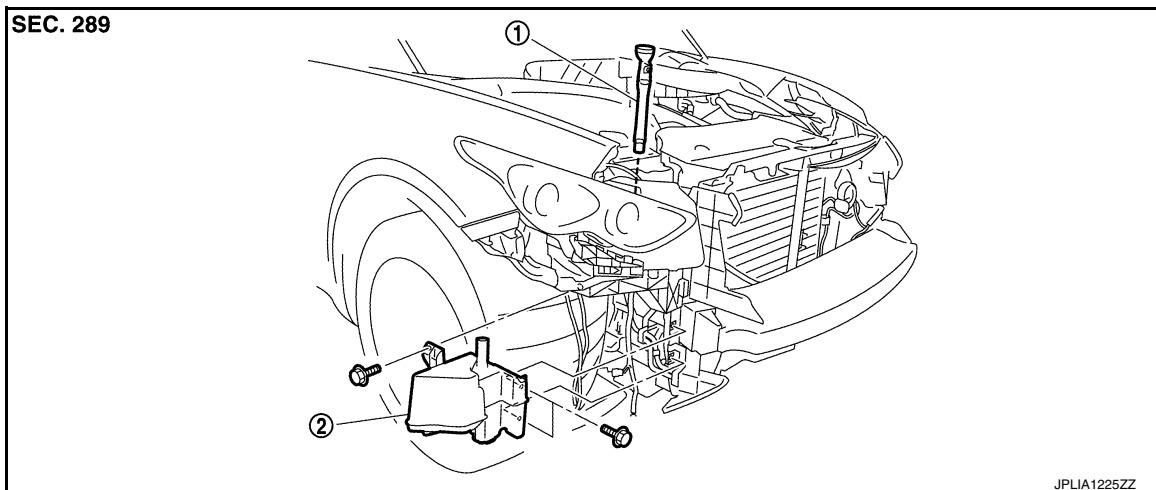
< REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION

WASHER TANK

Exploded View

INFOID:0000000010581298



1. Washer tank inlet

2. Washer tank

Removal and Installation

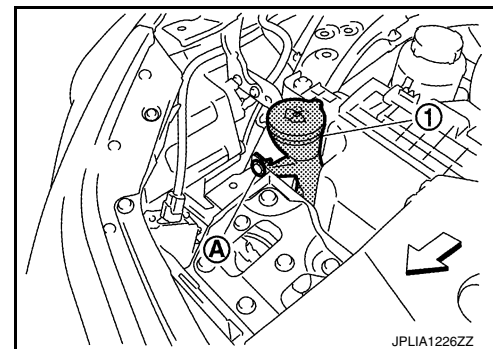
INFOID:0000000010581299

REMOVAL

1. Remove the engine room cover RH (for VK50VE engine). Refer to [EM-184. "Exploded View"](#).
2. Remove the clip (A).

↶ : Vehicle front

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.

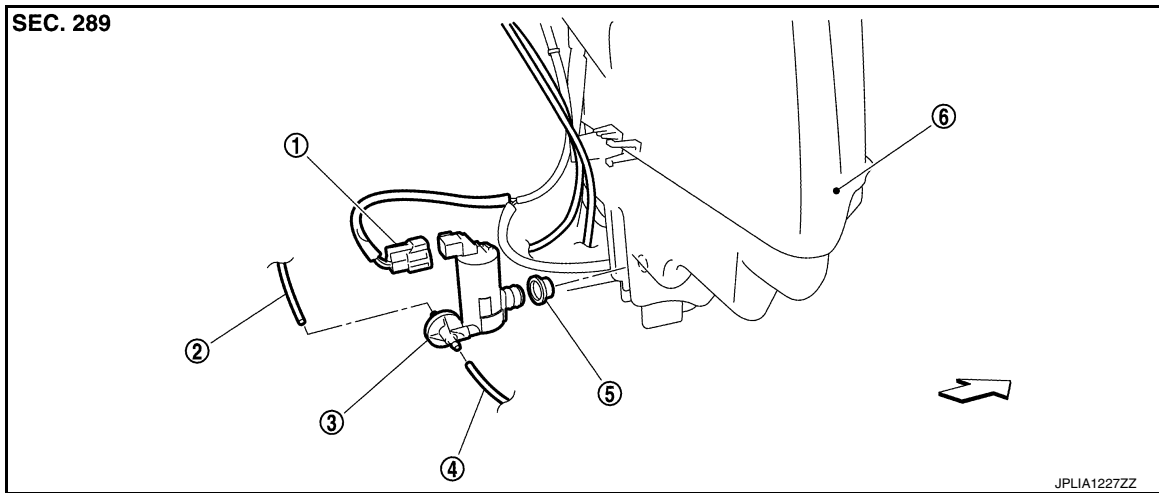
WASHER PUMP

< REMOVAL AND INSTALLATION >

WASHER PUMP

Exploded View

INFOID:000000010581300



- | | | |
|--------------------------|---------------------|----------------|
| 1. Washer pump connector | 2. Rear washer tube | 3. Washer pump |
| 4. Front washer tube | 5. Packing | 6. Washer tank |

⇨ : Vehicle front

Removal and Installation

INFOID:000000010581301

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 [WW-118](#), "[Removal and Installation](#)".

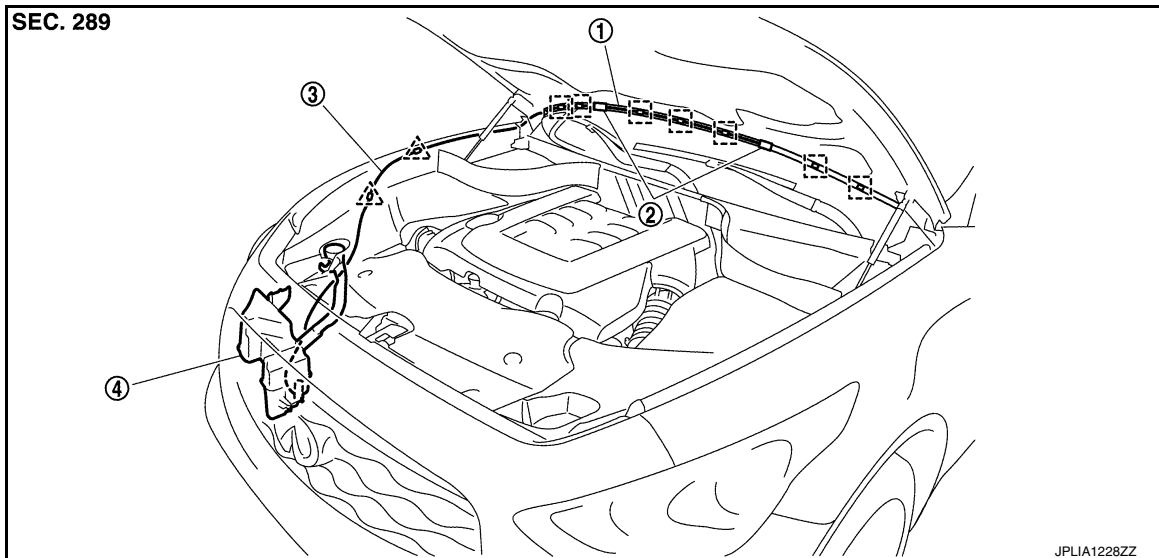
FRONT WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

FRONT WASHER NOZZLE AND TUBE

Hydraulic Layout

INFOID:000000010581303



- 1. Front washer tube
- 2. Front washer nozzle
- 3. Front washer tube
- 4. Washer tank

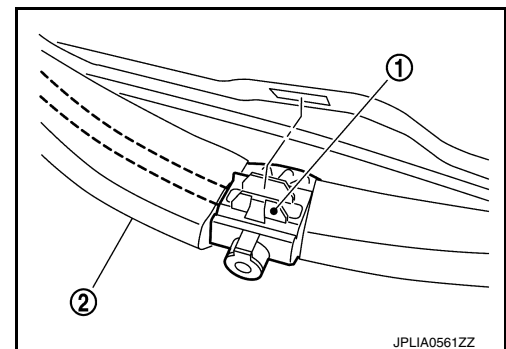
△ : Clip A
□ : Clip B

Removal and Installation

INFOID:000000010581304

REMOVAL

1. Open the hood.
2. 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.
2. Install the washer nozzle to the hood.
3. Adjust the washer nozzle spray position. Refer to [WW-121, "Inspection and Adjustment"](#).

CAUTION:

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

Inspection and Adjustment

INFOID:000000010581305

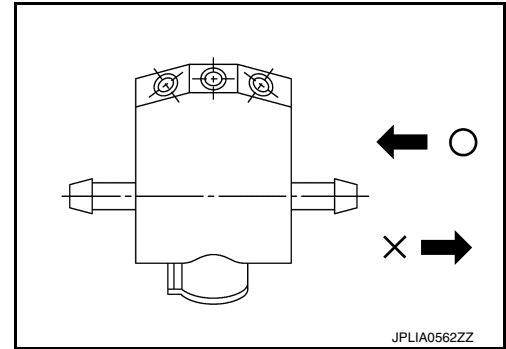
INSPECTION

Washer Nozzle Inspection

FRONT WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

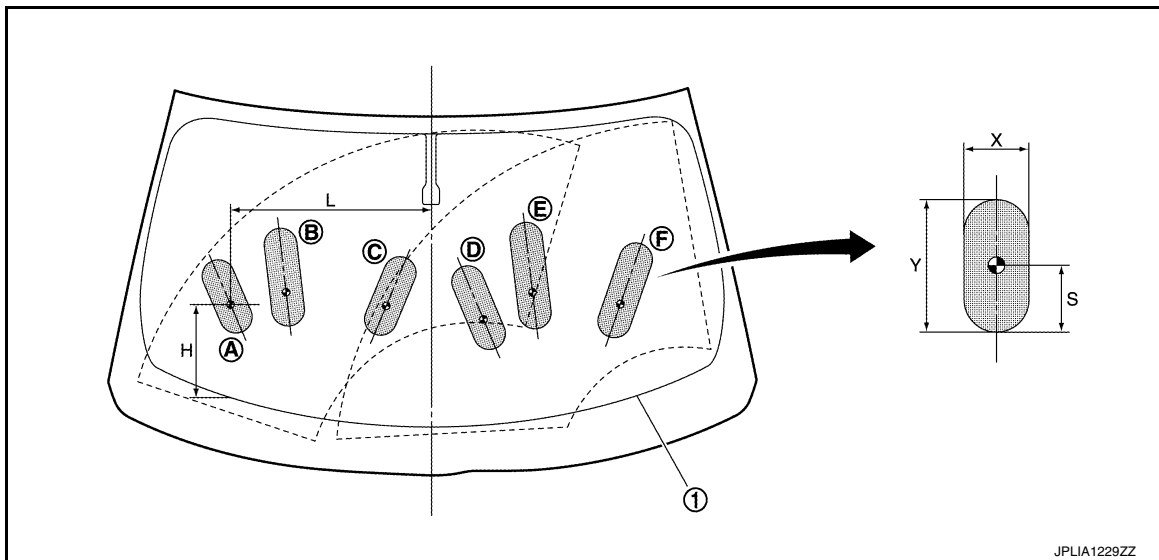
Check that air can pass through the hose by blowing forward (toward the nozzle), and check that air cannot pass through by sucking.



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	H	L	X	Y	S
A	204 (8.03)	486 (19.13)	80 (3.15)	226 (8.90)	79 (3.11)
B	274 (10.79)	358 (14.09)	80 (3.15)	319 (12.56)	99 (3.90)
C	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)

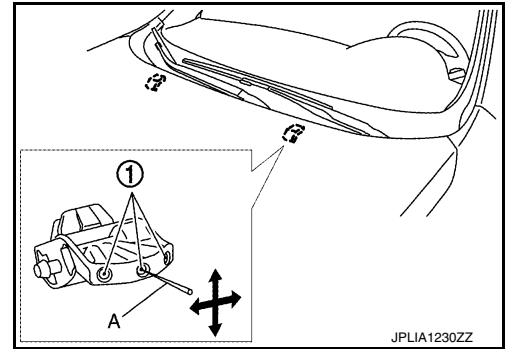
FRONT WASHER NOZZLE AND TUBE

< 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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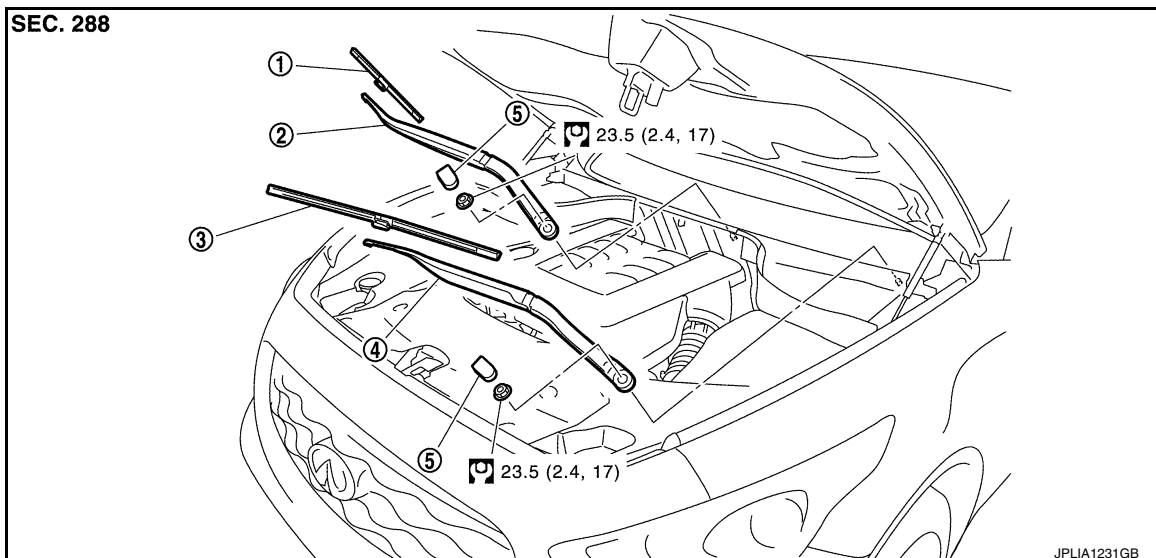
FRONT WIPER ARM

< REMOVAL AND INSTALLATION >

FRONT WIPER ARM

Exploded View

INFOID:0000000010581306



- | | | |
|---------------------------|-------------------------|---------------------------|
| 1. Front wiper blade (RH) | 2. Front wiper arm (RH) | 3. Front wiper blade (LH) |
| 4. Front wiper arm (LH) | 5. Front wiper arm cap | |

 : N·m (kg-m, ft-lb)

Removal and Installation

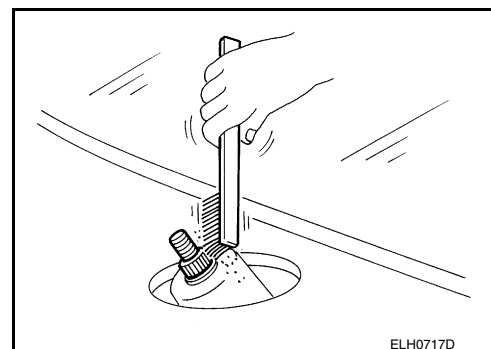
INFOID:0000000010581307

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.
4. Remove the front wiper arm mounting nuts.
5. Raise front wiper arm, and remove front wiper arm from the vehicle.

INSTALLATION

1. Clean wiper arm mount as shown in the figure to prevent nuts from being loosened.
2. Operate the front wiper motor to move the front wiper to the auto stop position.
3. Adjust the front wiper blade position. Refer to [WW-124. "Adjustment"](#).
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

INFOID:0000000010581308

WIPER BLADE POSITION ADJUSTMENT

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

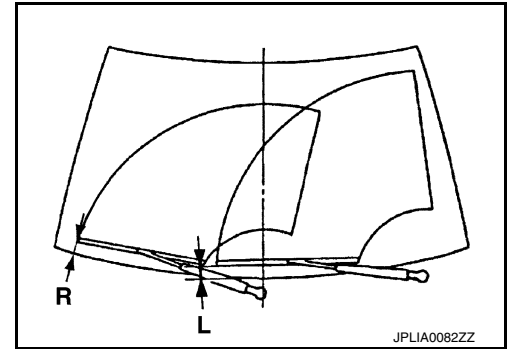
FRONT WIPER ARM

< REMOVAL AND INSTALLATION >

Standard clearance

R : $72.2 \pm 7.5 \text{ mm}$ ($2.843 \pm 0.295 \text{ in}$)

L : $60.6 \pm 7.5 \text{ mm}$ ($2.386 \pm 0.295 \text{ in}$)



A

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WW

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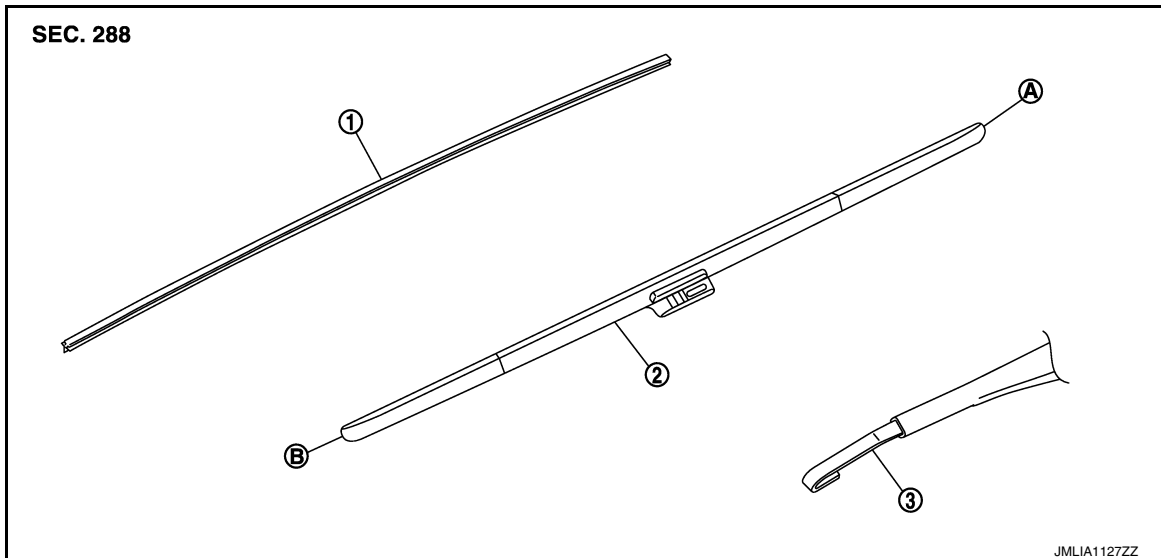
WIPER BLADE

< REMOVAL AND INSTALLATION >

WIPER BLADE

Exploded View

INFOID:0000000010581309



- 1. Wiper refill
 - 2. Wiper blade
 - 3. Wiper arm
- A : Wiper blade end
B : Wiper blade tip

Removal and Installation

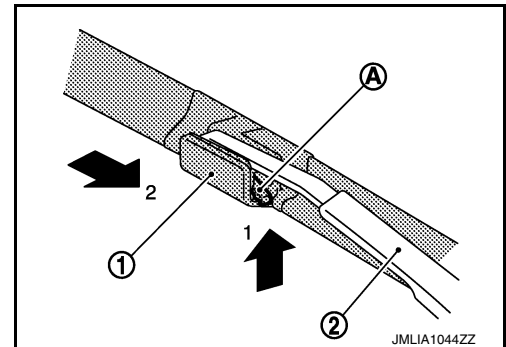
INFOID:0000000010581310

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.



INSTALLATION

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

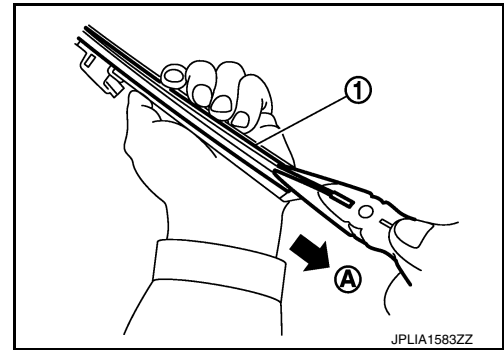
WIPER BLADE

< REMOVAL AND INSTALLATION >

Replacement

INFOID:0000000010581311

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

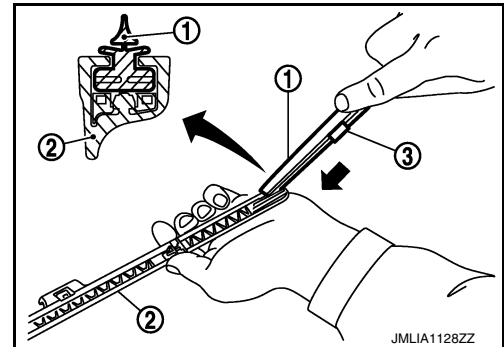


2. Insert the tip of new wiper refill (1) into the rear end of wiper blade (2). Slide the new wiper refill to the direction shown by the arrow while pressing the new wiper refill onto the wiper blade rear end.

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.

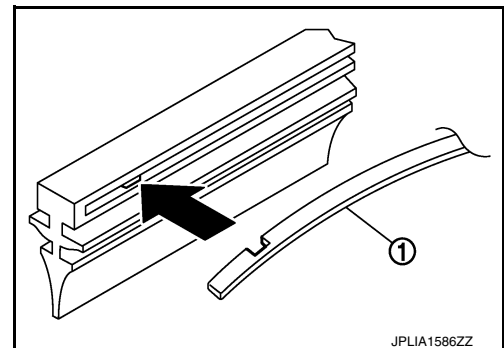
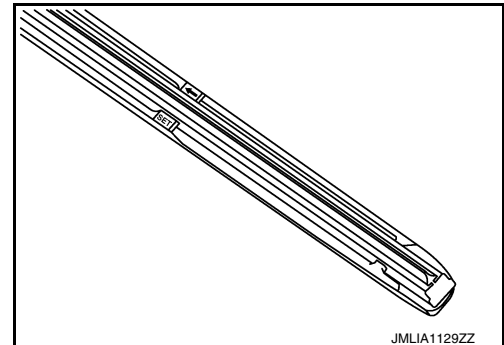


3. Insert the new wiper refill toward the direction shown by the mark "←" until the stopper at the rear end of wiper refill fits in the "SET" mark tab on wiper blade.
4. Untwist the twisted wiper refill at the rear end of wiper blade, if any.
5. Check the following items after replacing wiper refill.
 - 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.



FRONT WIPER DRIVE ASSEMBLY

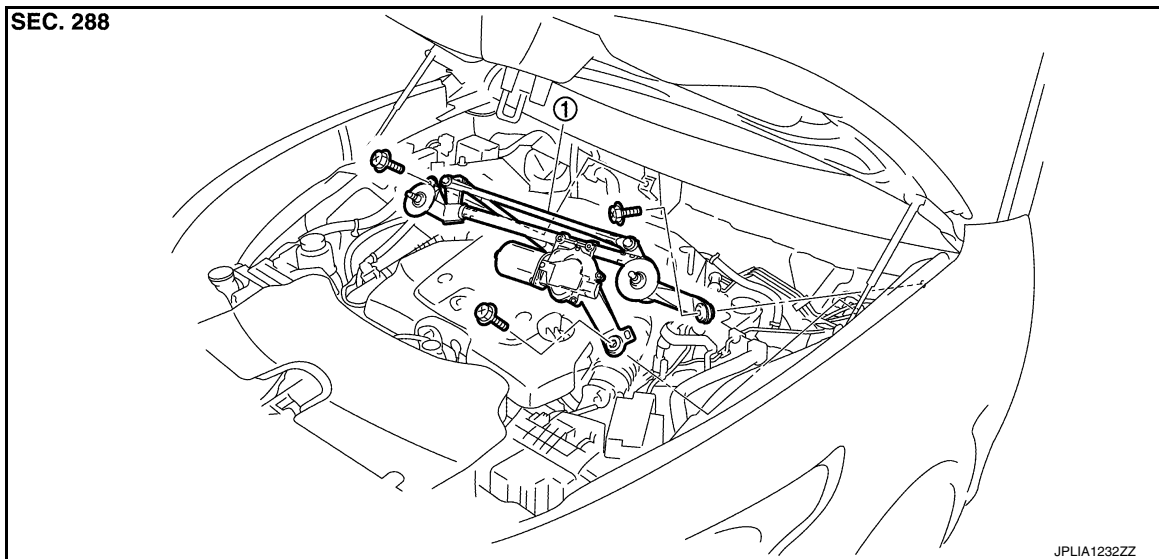
< REMOVAL AND INSTALLATION >

FRONT WIPER DRIVE ASSEMBLY

Exploded View

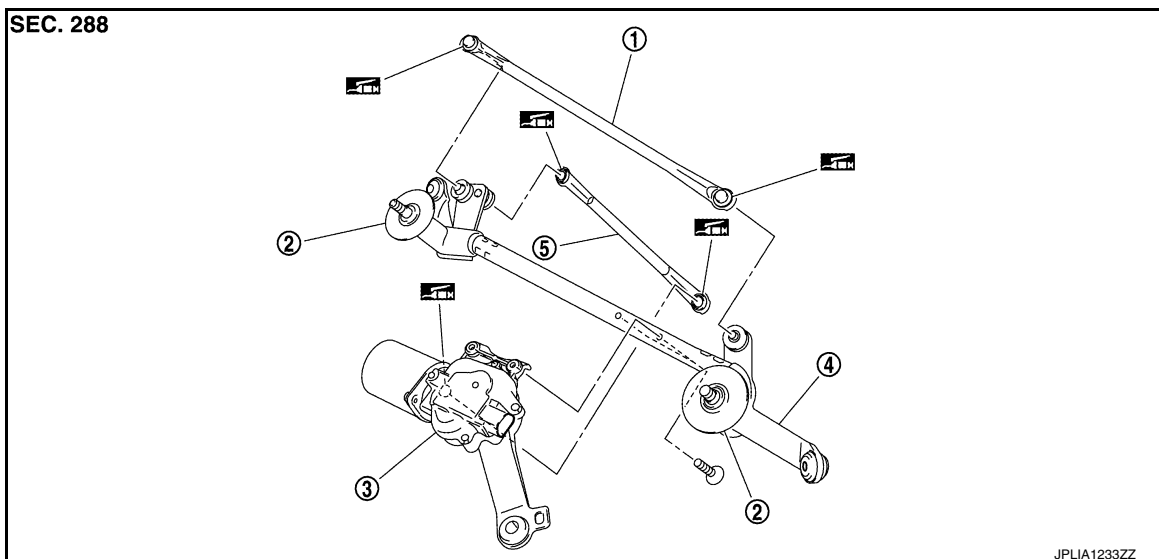
INFOID:0000000010581312

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

1. Remove the front wiper arm. Refer to [WW-124, "Exploded View"](#).
2. Remove the cowl top cover. Refer to [EXT-22, "Exploded View"](#).
3. Remove the bolts from the front wiper drive assembly.

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

INFOID:0000000010581314

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

ASSEMBLY

1. 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.**

WW

RAIN SENSOR

< REMOVAL AND INSTALLATION >

RAIN SENSOR

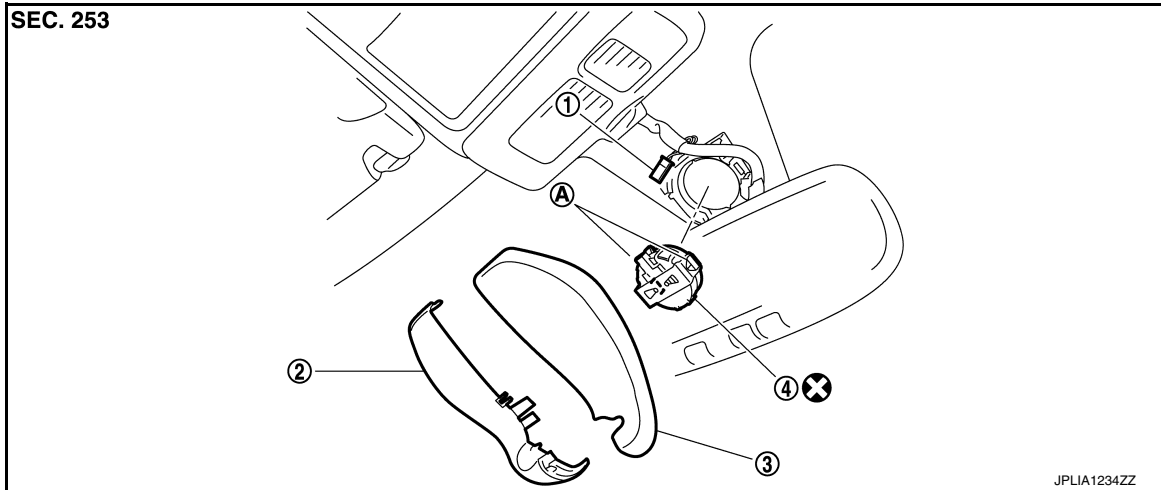
Exploded View

INFOID:0000000010581315

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).
2. Disengage the both sides of metal spring clips, and remove the rain sensor from the windshield.
3. Disconnect rain sensor connector.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

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

WIPER AND WASHER SWITCH

< REMOVAL AND INSTALLATION >

WIPER AND WASHER SWITCH

Exploded View

INFOID:0000000010581317

Refer to [BCS-94, "Exploded View"](#).

- A
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- WW
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- O
- P

WW

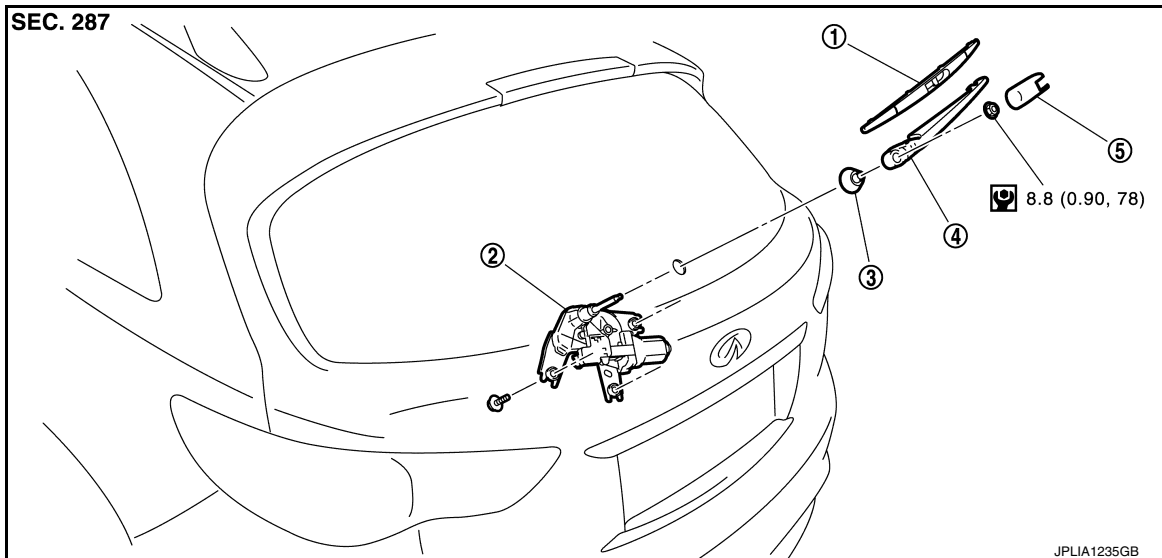
REAR WIPER ARM

< REMOVAL AND INSTALLATION >

REAR WIPER ARM

Exploded View

INFOID:0000000010581318



- | | | |
|---------------------|-------------------------|---------------|
| 1. Rear wiper blade | 2. Rear wiper motor | 3. Pivot seal |
| 4. Rear wiper arm | 5. Rear wiper arm cover | |

: N·m (kg-m, in-lb)

Removal and Installation

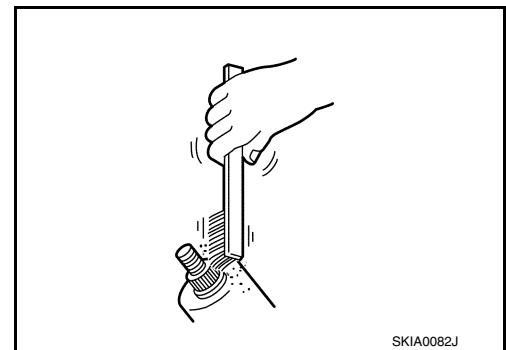
INFOID:0000000010581319

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.
8. Install the rear wiper arm cover.



Adjustment

INFOID:0000000010581320

REAR WIPER BLADE POSITION ADJUSTMENT

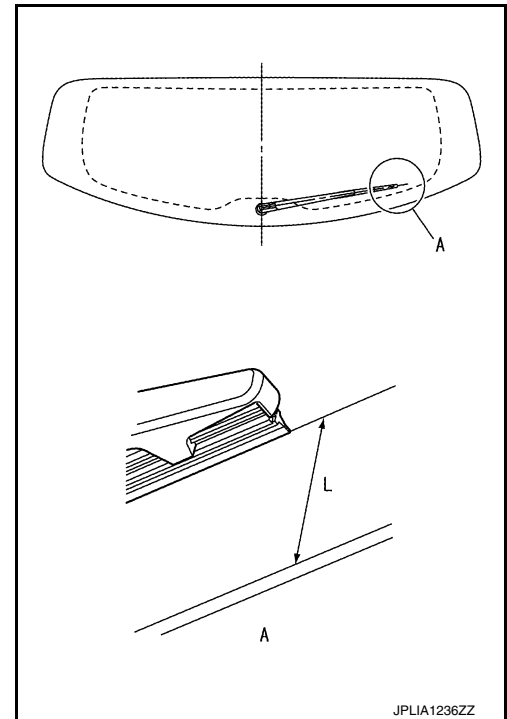
Clearance between the end of back door glass and the top of wiper blade center.

REAR WIPER ARM

< REMOVAL AND INSTALLATION >

Standard clearance

L : 51.5 ± 7.5 mm (2.028 ± 0.295 in)



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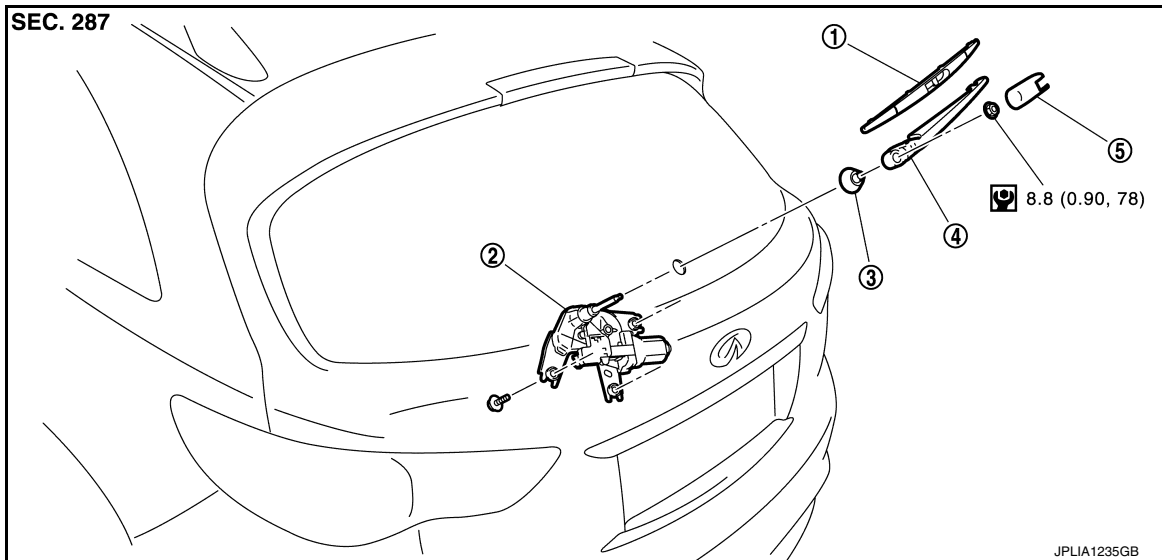
REAR WIPER MOTOR

< REMOVAL AND INSTALLATION >

REAR WIPER MOTOR

Exploded View

INFOID:0000000010581321



1. Rear wiper blade

2. Rear wiper motor

3. Pivot seal

4. Rear wiper arm

5. Rear wiper arm cover

 : N·m (kg-m, in-lb)

Removal and Installation

INFOID:0000000010581322

REMOVAL

1. Remove the rear wiper arm. Refer to [WW-132, "Exploded View"](#).
2. 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.
5. Remove the rear wiper motor from the vehicle.
6. Remove the pivot seal.

INSTALLATION

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

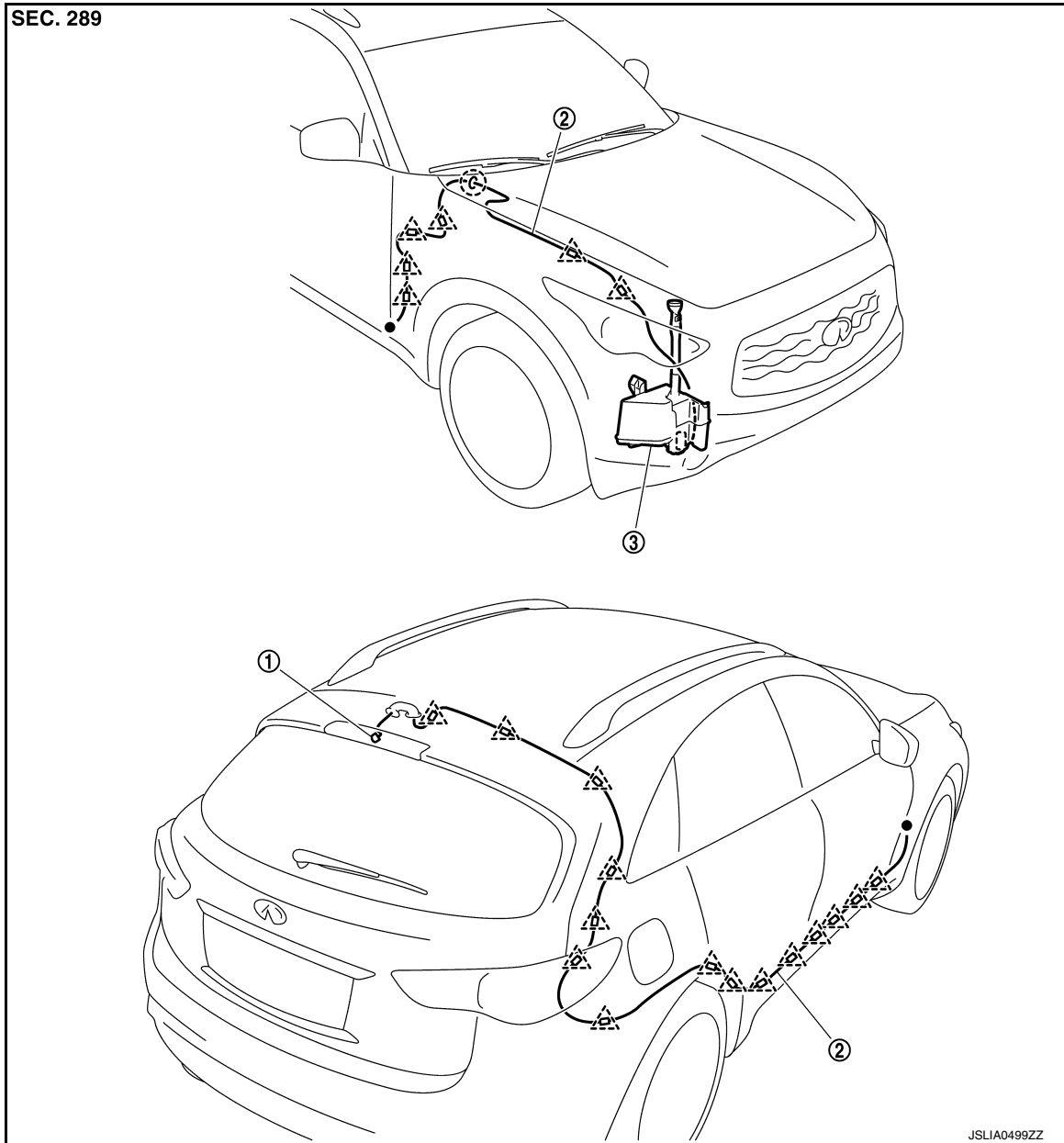
REAR WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

REAR WASHER NOZZLE AND TUBE

Hydraulic Layout

INFOID:0000000010581323



Removal and Installation

INFOID:0000000010581324

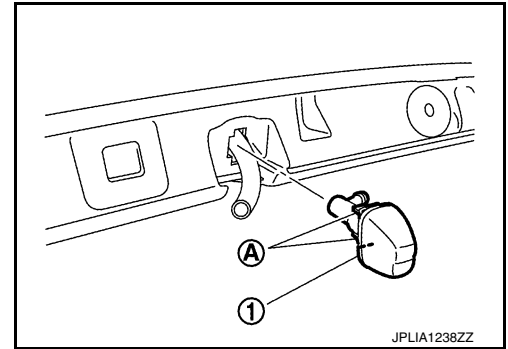
REMOVAL

1. Remove the high-mounted stop lamp. Refer to [EXL-237, "Exploded View"](#).

REAR WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

2. 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.

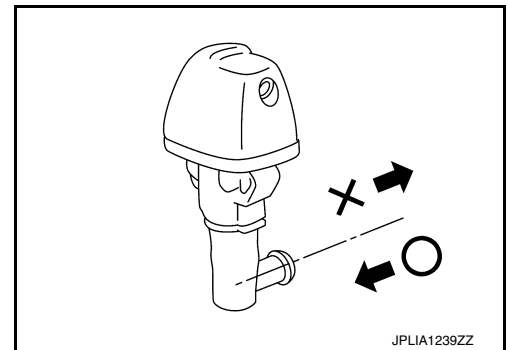
Inspection and Adjustment

INFOID:000000010581325

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

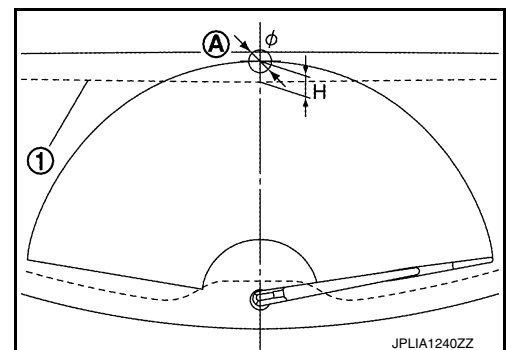
Washer Nozzle Spray Position adjustment

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
A	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.

