

SECTION **WW** WIPER & WASHER

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

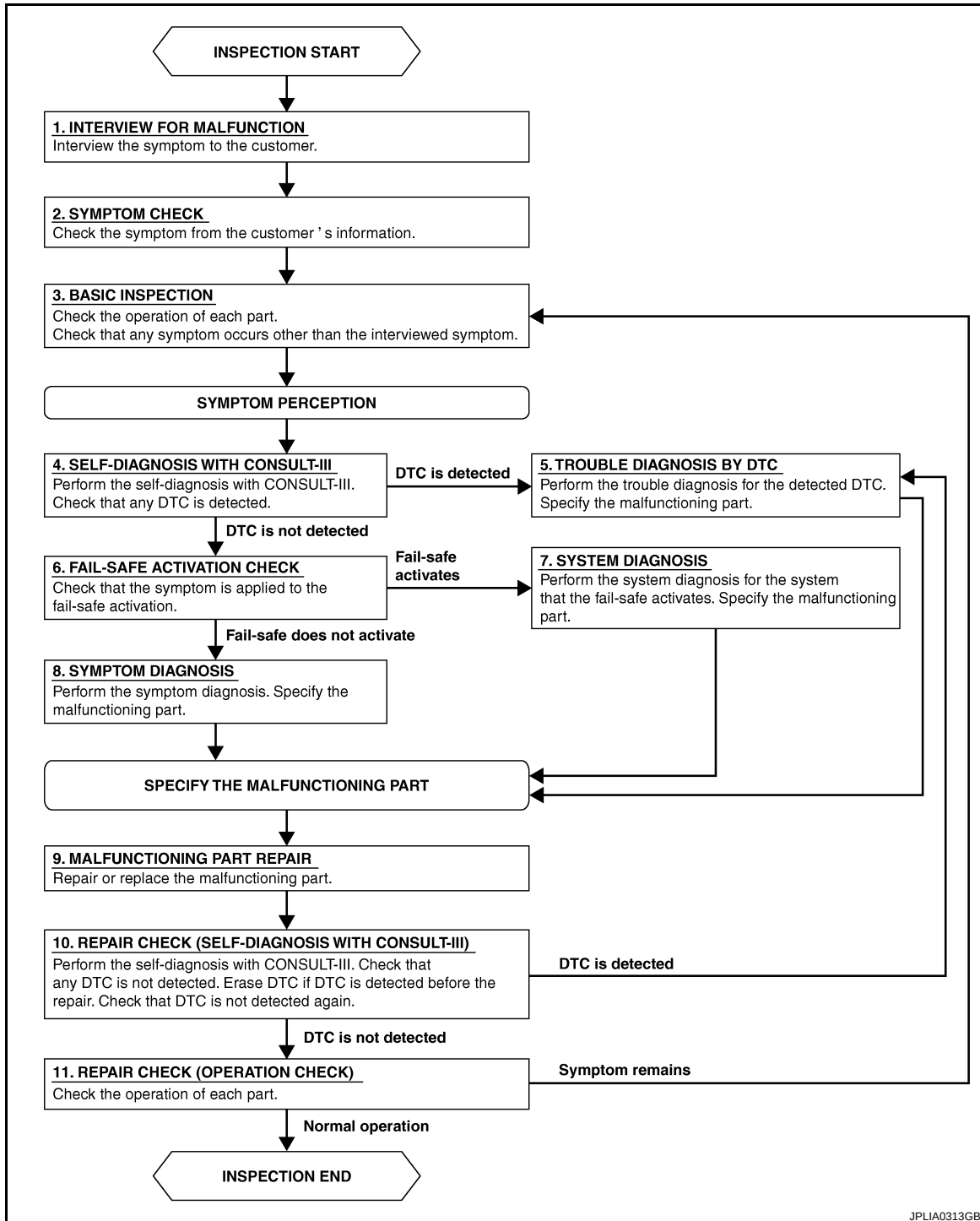
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000003138972

OVERALL SEQUENCE



DETAILED FLOW

1. INTERVIEW FOR MALFUNCTION

Interview the symptom to the customer.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

>> GO TO 2.

2. SYMPTOM CHECK

Check the symptom from the customer's information.

>> GO TO 3.

3. BASIC INSPECTION

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

>> GO TO 4.

4. SELF-DIAGNOSIS WITH CONSULT-III

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

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 6.

5. TROUBLE DIAGNOSIS BY DTC

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

>> GO TO 9.

6. FAIL-SAFE ACTIVATION CHECK

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

Does the fail-safe activate?

YES >> GO TO 7.

NO >> GO TO 8.

7. SYSTEM DIAGNOSIS

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

>> GO TO 9.

8. SYMPTOM DIAGNOSIS

Perform the symptom diagnosis. Specify the malfunctioning part.

>> GO TO 9.

9. MALFUNCTION PART REPAIR

Repair or replace the malfunctioning part.

>> GO TO 10.

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

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

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 11.

11. REPAIR CHECK (OPERATION CHECK)

Check the operation of each part.

Does it operate normally?

YES >> INSPECTION END

NO >> GO TO 3.

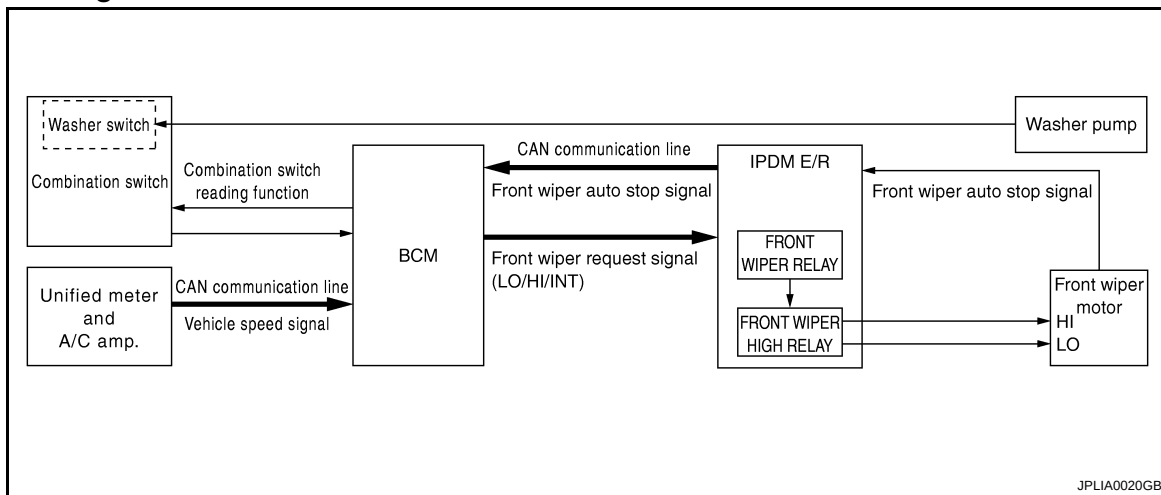
FRONT WIPER AND WASHER SYSTEM

< FUNCTION DIAGNOSIS >

FUNCTION DIAGNOSIS

FRONT WIPER AND WASHER SYSTEM

System Diagram



System Description

INFOID:000000003591517

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

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
- 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

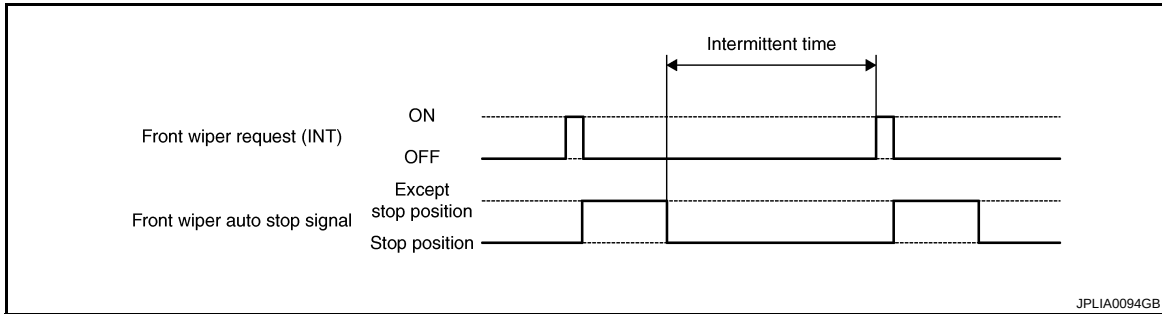
FRONT WIPER AND WASHER SYSTEM

< FUNCTION DIAGNOSIS >

- 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 auto stop signal received from IPDM E/R with CAN communication.
- BCM transmits the front wiper request signal (INT) again after the intermittent operation delay interval.



NOTE:

Factory setting of the front wiper intermittent operation is the operation without vehicle speed. Front wiper intermittent operation can be set to the operation with vehicle speed by CONSULT-III. Refer to [WW-14, "WIPER : CONSULT-III 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

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

*: When without vehicle speed setting

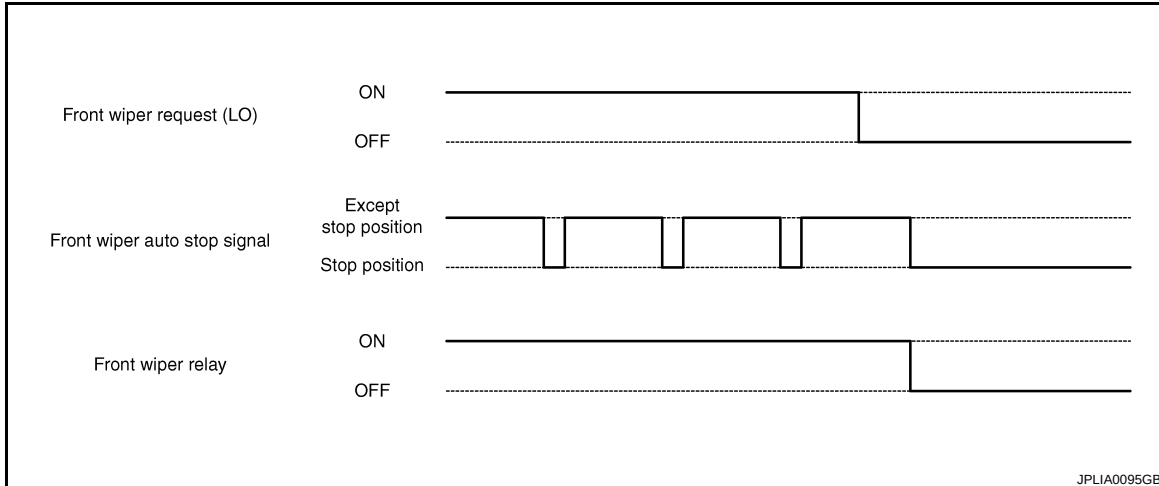
FRONT WIPER AUTO STOP OPERATION

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

FRONT WIPER AND WASHER SYSTEM

< FUNCTION DIAGNOSIS >

- 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 OFF.
- IPDM E/R turns the front wiper relay OFF when the ignition switch OFF.

FRONT WIPER OPERATION LINKED WITH WASHER

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

Washer linked operating condition of front wiper

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

FRONT WIPER FAIL-SAFE OPERATION

When the front wiper auto stop circuit is malfunctioning, IPDM E/R performs the fail-safe function. Refer to [PCS-30. "Fail-safe"](#).

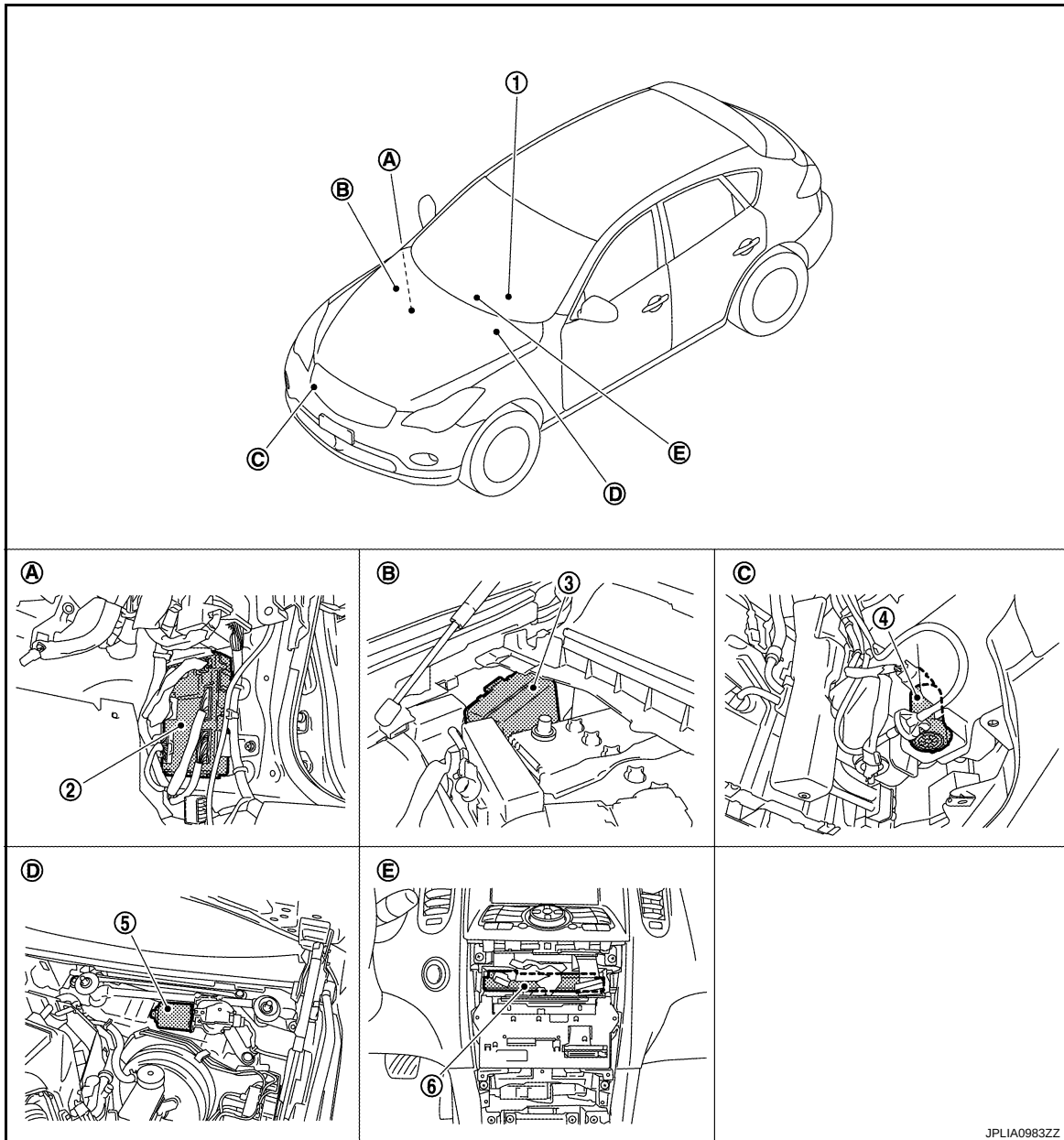
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FRONT WIPER AND WASHER SYSTEM

< FUNCTION DIAGNOSIS >

Component Parts Location

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- | | | |
|---------------------------------------|--------------------------------|-------------------------------|
| 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 dash panel (RH) | C. Radiator core support (RH) |
| D. Cowl top, left side of engine room | E. Behind cluster lid C | |

Component Description

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

FRONT WIPER AND WASHER SYSTEM

< FUNCTION DIAGNOSIS >

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

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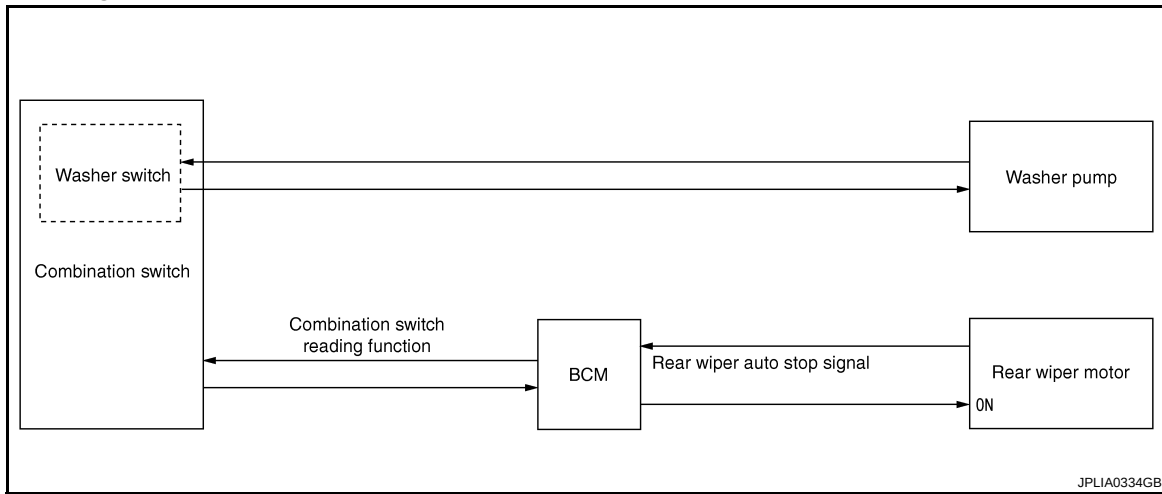
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REAR WIPER AND WASHER SYSTEM

< FUNCTION DIAGNOSIS >

REAR WIPER AND WASHER SYSTEM

System Diagram



System Description

INFOID:000000003591486

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

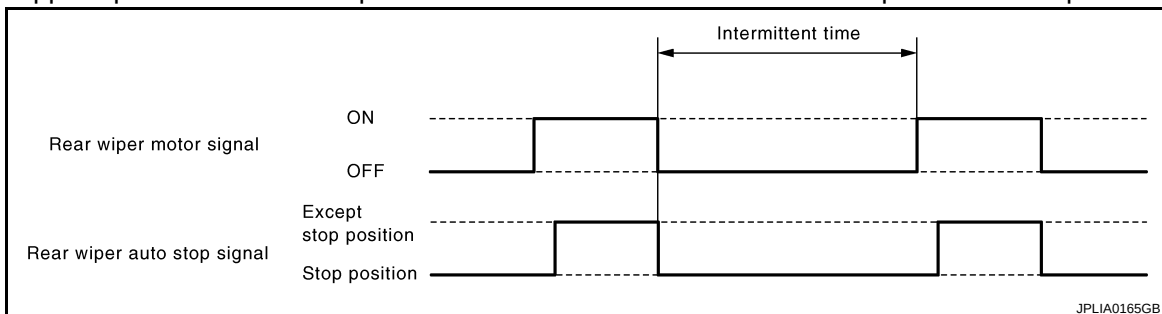
- Ignition switch ON
- Rear wiper switch ON

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.



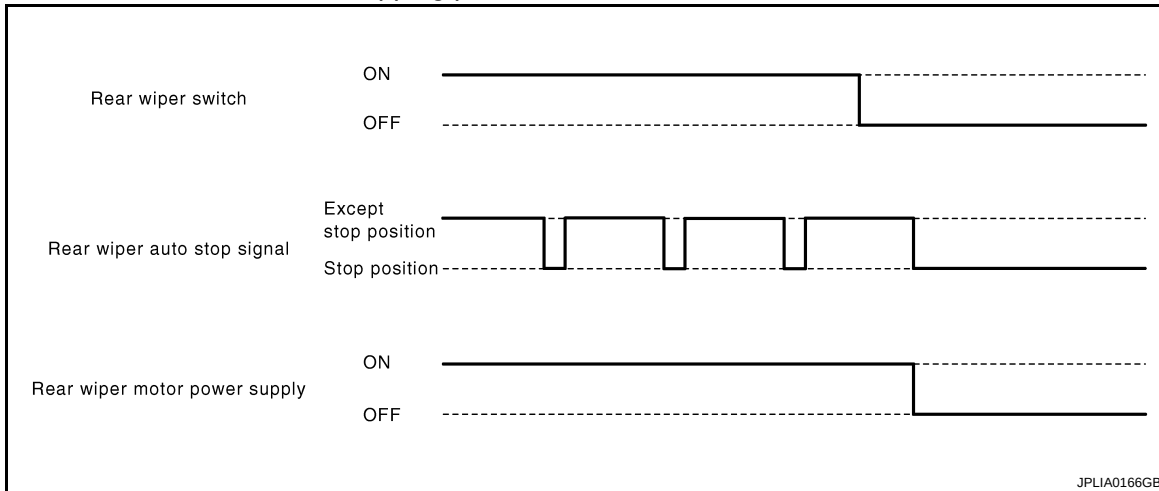
REAR WIPER AUTO STOP OPERATION

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

REAR WIPER AND WASHER SYSTEM

< FUNCTION DIAGNOSIS >

- BCM reads an auto stop 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 auto stop circuit is malfunctioning. Refer to [BCS-76](#), "[Fail-safe](#)".

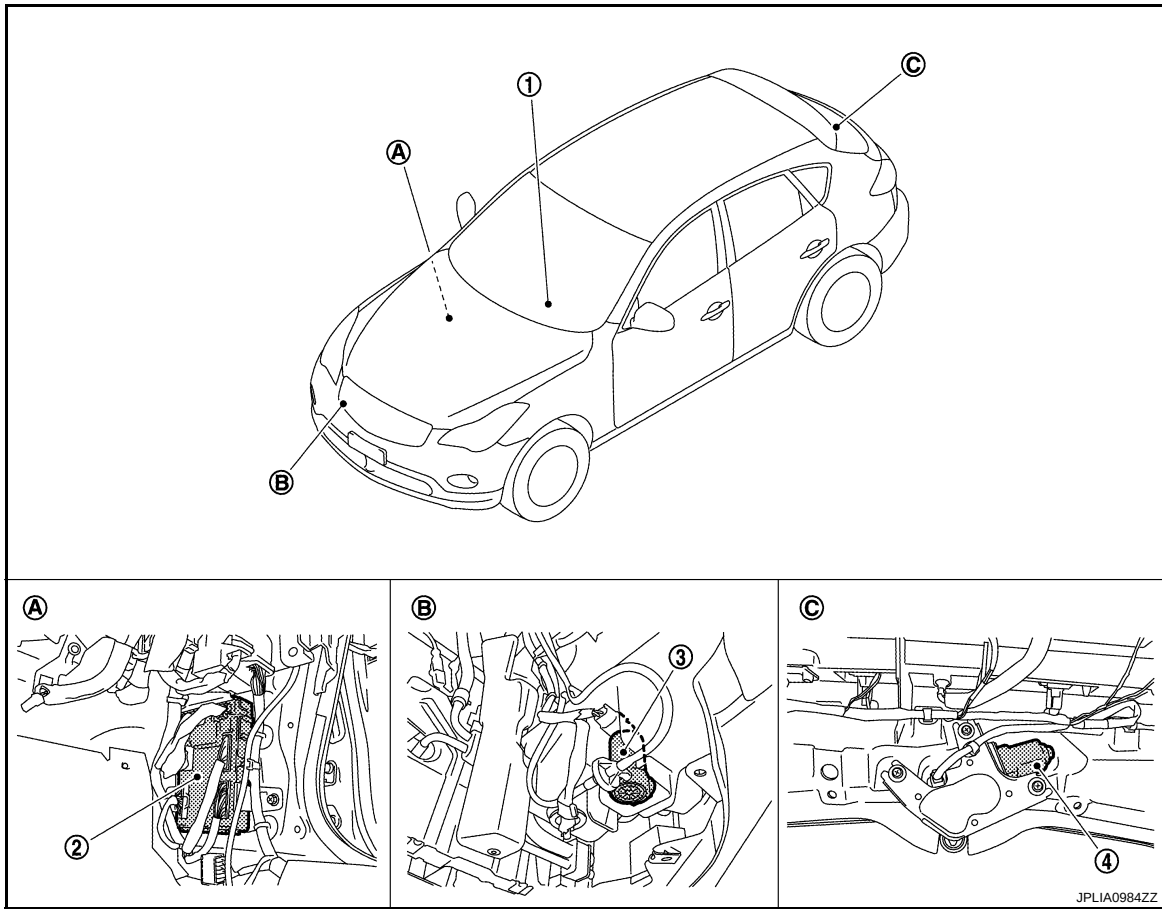
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REAR WIPER AND WASHER SYSTEM

< FUNCTION DIAGNOSIS >

Component Parts Location

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- | | | |
|-------------------------------------|-------------------------------|---|
| 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 trim finisher lower inside |

Component Description

INFOID:000000003591488

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-8, "System Diagram" .

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

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

INFOID:0000000003769969

APPLICATION ITEM

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

Diagnosis mode	Function Description
Work Support	Changes the setting for each system function.
Self Diagnostic Result	Displays the diagnosis results judged by BCM.
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM. Refer to CONSULT-III operation manual.
Data Monitor	The BCM input/output signals are displayed.
Active Test	The signals used to activate each device are forcibly supplied from BCM.
Ecu Identification	The BCM part number is displayed.
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	×	×	×
—	TRUNK*		×	×
Vehicle security system	THEFT ALM	×	×	×
RAP system	RETAINED PWR		×	
Signal buffer system	SIGNAL BUFFER		×	×
TPMS	TPMS (AIR PRESSURE MONITOR)	×	×	×

NOTE:

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

FREEZE FRAME DATA (FFD) AND IGN COUNTER

Freeze Frame Data

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

The BCM records the following condition at the moment a particular DTC is detected.

- Vehicle Speed
- Odd Trip Meter
- Vehicle Condition (BCM detected condition)

CONSULT screen terms	Description
SLEEP>LOCK	While turning BCM status from low power consumption mode to normal mode (Power supply position is "LOCK")
SLEEP>OFF	While turning BCM status from low power consumption mode to normal mode (Power supply position is "OFF".)
LOCK>ACC	While turning power supply position from "LOCK" to "ACC"
ACC>ON	While turning power supply position from "ACC" to "IGN"
RUN>ACC	While turning power supply position from "RUN" to "ACC" (Vehicle is stopping and selector lever is except P position.)
CRANK>RUN	While turning power supply position from "CRANKING" to "RUN" (From cranking up the engine to run it)
RUN>URGENT	While turning power supply position from "RUN" to "ACC" (Emergency stop operation)
ACC>OFF	While turning power supply position from "ACC" to "OFF"
OFF>LOCK	While turning power supply position from "OFF" to "LOCK"
OFF>ACC	While turning power supply position from "OFF" to "ACC"
ON>CRANK	While turning power supply position from "IGN" to "CRANKING"
OFF>SLEEP	While turning BCM status from normal mode (Power supply position is "OFF".) to low power consumption mode
LOCK>SLEEP	While turning BCM status from normal mode (Power supply position is "LOCK".) to low power consumption mode
LOCK	Power supply position is "LOCK" (Ignition switch OFF with steering is locked.)
OFF	Power supply position is "OFF" (Ignition switch OFF with steering is unlocked.)
ACC	Power supply position is "ACC" (Ignition switch ACC)
ON	Power supply position is "IGN" (Ignition switch ON with engine stopped)
ENGINE RUN	Power supply position is "RUN" (Ignition switch ON with engine running)
CRANKING	Power supply position is "CRANKING" (At engine cranking)

IGN Counter

IGN counter indicates 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.

WIPER

WIPER : CONSULT-III Function (BCM - WIPER)

INFOID:000000003591501

WORK SUPPORT

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

*:Factory setting

DATA MONITOR

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

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.

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)

< FUNCTION DIAGNOSIS >

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:000000003769970

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 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:

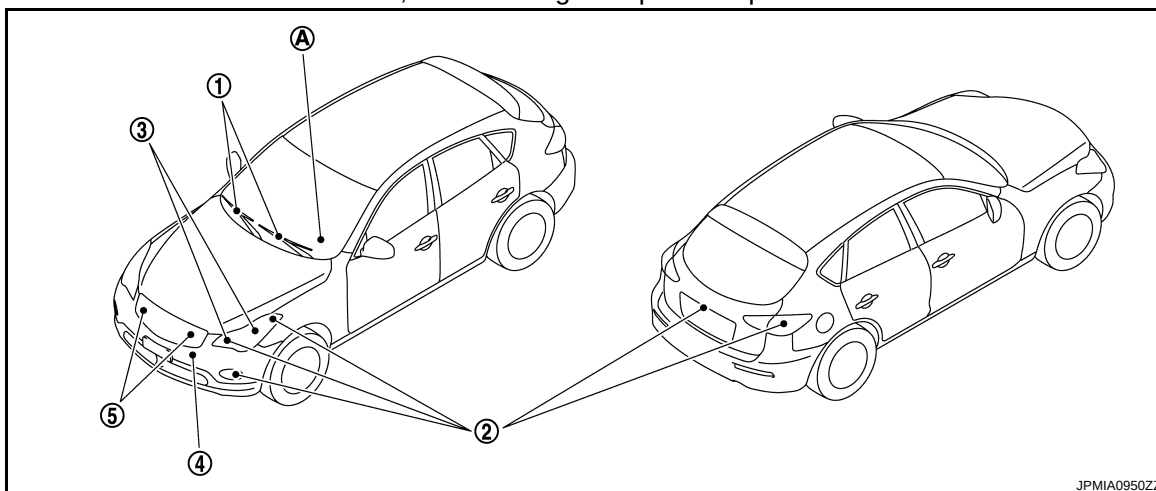
When auto active test mode has to be cancelled halfway through test, turn ignition switch OFF.

CAUTION:

- If auto active test mode cannot be actuated, check door switch system. Refer to [DLK-63, "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.



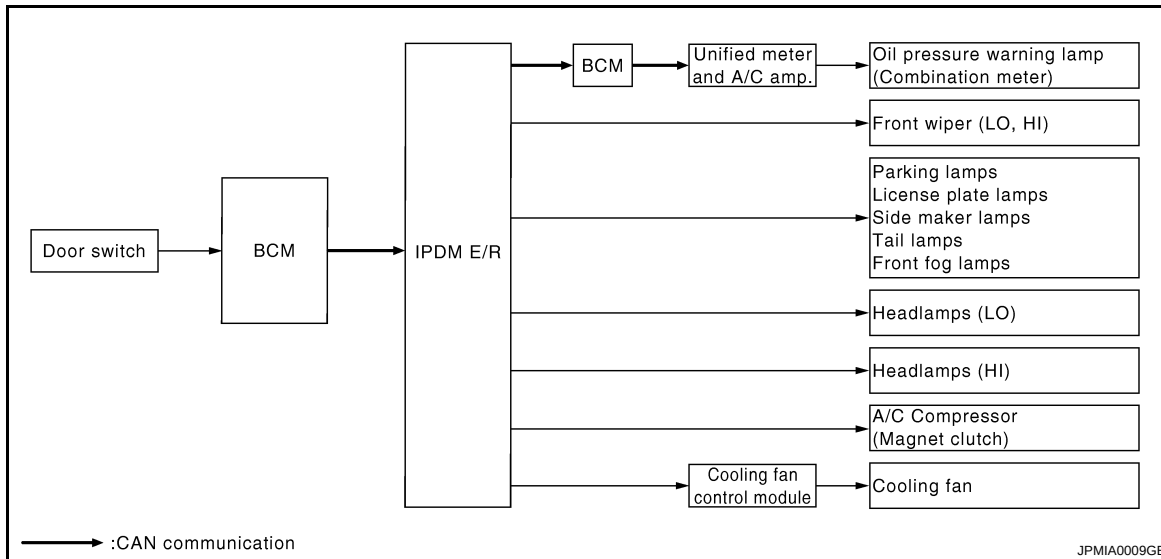
DIAGNOSIS SYSTEM (IPDM E/R)

< FUNCTION DIAGNOSIS >

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 maker 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.

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 maker 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

DIAGNOSIS SYSTEM (IPDM E/R)

< FUNCTION DIAGNOSIS >

Symptom	Inspection contents		Possible cause
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
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-III Function (IPDM E/R)

INFOID:000000003769971

APPLICATION ITEM

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

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

SELF DIAGNOSTIC RESULT

Refer to [WW-92. "DTC Index"](#).

DATA MONITOR

DIAGNOSIS SYSTEM (IPDM E/R)

< FUNCTION DIAGNOSIS >

Monitor item

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 auto stop signal judged by IPDM E/R.
WIP PROT [Off/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.
IGN RLY1 -REQ [Off/On]		Displays the status of the ignition switch ON signal received from BCM via CAN communication.
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 control device (detention switch) judged by IPDM E/R.
S/L RLY -REQ [Off/On]		Displays the status of the steering lock relay request received from BCM via CAN communication.
S/L STATE [LOCK/UNLOCK/UNKWN]		Displays the status of the steering lock judged by IPDM E/R.
DTRL REQ [Off]		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.

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DIAGNOSIS SYSTEM (IPDM E/R)

< FUNCTION DIAGNOSIS >

Monitor Item [Unit]	MAIN SIG- NALS	Description
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.
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.

WIPER AND WASHER FUSE

< COMPONENT DIAGNOSIS >

COMPONENT DIAGNOSIS

WIPER AND WASHER FUSE

Description

INFOID:000000003138981

Fuse list

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

Diagnosis Procedure

INFOID:000000003138982

1.CHECK FUSES

Check that the following fuses are not fusing.

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

Is the fuse fusing?

- YES >> Replace the fuse with a new one after repairing the applicable circuit.
NO >> The fuse is normal.

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WW

POWER SUPPLY AND GROUND CIRCUIT

< COMPONENT DIAGNOSIS >

POWER SUPPLY AND GROUND CIRCUIT

BCM (BODY CONTROL MODULE)

BCM (BODY CONTROL MODULE) : Diagnosis Procedure

INFOID:000000003769985

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	K
	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	
Connector	Terminal		
M118	1		
M119	11		
			Battery voltage

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3.CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

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:000000003769986

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

< COMPONENT DIAGNOSIS >

Signal name	Fuses and fusible link No.
Battery power supply	C
	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 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		
E5	12		Existed
E6	41		

Does continuity exist?

YES >> INSPECTION END

NO >> Repair harness or connector.

FRONT WIPER MOTOR LO CIRCUIT

< COMPONENT DIAGNOSIS >

FRONT WIPER MOTOR LO CIRCUIT

Component Function Check

INFOID:000000003138983

1.CHECK FRONT WIPER LO OPERATION

⊗IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-11, "Diagnosis Description"](#).
2. Check that the front wiper operates at the LO operation.

ⓂCONSULT-III ACTIVE TEST

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

Lo : Front wiper (LO) operation

Off : Stop the front wiper.

Is front wiper (LO) operation normally?

- YES >> Front wiper motor LO circuit is normal.
NO >> Refer to [WW-24, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000003138984

1.CHECK FRONT WIPER MOTOR (LO) OUTPUT VOLTAGE

ⓂCONSULT-III ACTIVE TEST

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

Terminals		Test item	Voltage (Approx.)
(+)	(-)		
IPDM E/R		FRONT WIPER	Battery voltage
Connector	Terminal		
E5	4	Lo	Battery voltage
		Off	0 V

Is the measurement value normal?

- YES >> GO TO 2.
NO >> Replace IPDM E/R.

2.CHECK FRONT WIPER MOTOR (LO) OPEN CIRCUIT

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

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

< COMPONENT 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.

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WW

FRONT WIPER MOTOR HI CIRCUIT

< COMPONENT DIAGNOSIS >

FRONT WIPER MOTOR HI CIRCUIT

Component Function Check

INFOID:000000003138985

1.CHECK FRONT WIPER HI OPERATION

⊗IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-11, "Diagnosis Description"](#).
2. Check that the front wiper operates at the HI operation.

ⓂCONSULT-III ACTIVE TEST

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

Hi : Front wiper (HI) operation

Off : Stop the front wiper.

Is front wiper (HI) operation normally?

YES >> Front wiper motor HI circuit is normal.

NO >> Refer to [WW-26, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000003138986

1.CHECK FRONT WIPER MOTOR (HI) OUTPUT VOLTAGE

ⓂCONSULT-III ACTIVE TEST

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

Terminals		Test item	Voltage (Approx.)
(+)	(-)		
IPDM E/R		FRONT WIPER	Battery voltage
Connector	Terminal		
E5	5	Hi	Battery voltage
		Off	0 V

Is the measurement value normal?

YES >> GO TO 2.

NO >> Replace IPDM E/R.

2.CHECK FRONT WIPER MOTOR (HI) OPEN CIRCUIT

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

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

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

FRONT WIPER MOTOR HI CIRCUIT

< COMPONENT DIAGNOSIS >

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.

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FRONT WIPER AUTO STOP SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

FRONT WIPER AUTO STOP SIGNAL CIRCUIT

Component Function Check

INFOID:000000003138987

1.CHECK FRONT WIPER (AUTO STOP) SIGNAL

CONSULT-III DATA MONITOR

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

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

Is the status of item normal?

- YES >> Auto stop signal circuit is normal.
NO >> Refer to [WW-28, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000003138988

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

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

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 (AUTO STOP) SHORT CIRCUIT

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

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 (AUTO STOP) CIRCUIT CONTINUITY

1. 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 AUTO STOP SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

Does continuity exist?

- YES >> Replace front wiper motor.
- NO >> Repair the harnesses or connectors.

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FRONT WIPER MOTOR GROUND CIRCUIT

< COMPONENT DIAGNOSIS >

FRONT WIPER MOTOR GROUND CIRCUIT

Diagnosis Procedure

INFOID:000000003138989

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.

WASHER SWITCH

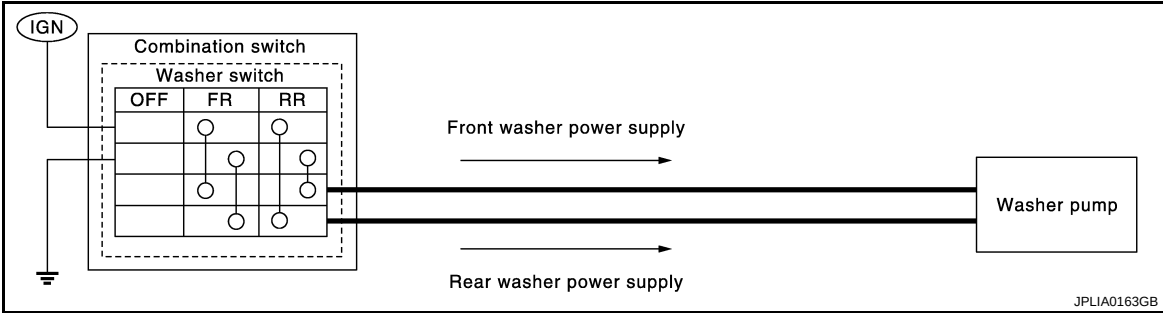
< COMPONENT DIAGNOSIS >

WASHER SWITCH

Description

INFOID:000000003622881

- 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:000000003622882

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).

REAR WIPER MOTOR CIRCUIT

< COMPONENT DIAGNOSIS >

REAR WIPER MOTOR CIRCUIT

Component Function Check

INFOID:000000003464501

1.CHECK REAR WIPER ON OPERATION

CONSULT-III ACTIVE TEST

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

On : Rear wiper ON operation

Off : Stop the rear wiper.

Is rear wiper operation normally?

- YES >> Rear wiper motor circuit is normal.
NO >> Refer to [WW-32, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000003464502

1.CHECK REAR WIPER MOTOR OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST

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

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

Is the measurement value normal?

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

2.CHECK REAR WIPER MOTOR SHORT CIRCUIT

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

BCM		Ground	Continuity
Connector	Terminal		
M120	26		Not existed

Does continuity exist?

- YES >> Repair the harness or connector.
NO >> Replace BCM. Refer to [BCS-84, "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 MOTOR CIRCUIT

< COMPONENT DIAGNOSIS >

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.

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REAR WIPER AUTO STOP SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

REAR WIPER AUTO STOP SIGNAL CIRCUIT

Component Function Check

INFOID:000000003464503

1.CHECK REAR WIPER (AUTO STOP) OPERATION

CONSULT-III DATA MONITOR

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

Monitor item	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 auto stop signal circuit is normal.

NO >> Refer to [WW-34, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000003464504

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

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

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 (AUTO STOP) 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-84, "Exploded View"](#).

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

< COMPONENT DIAGNOSIS >

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.

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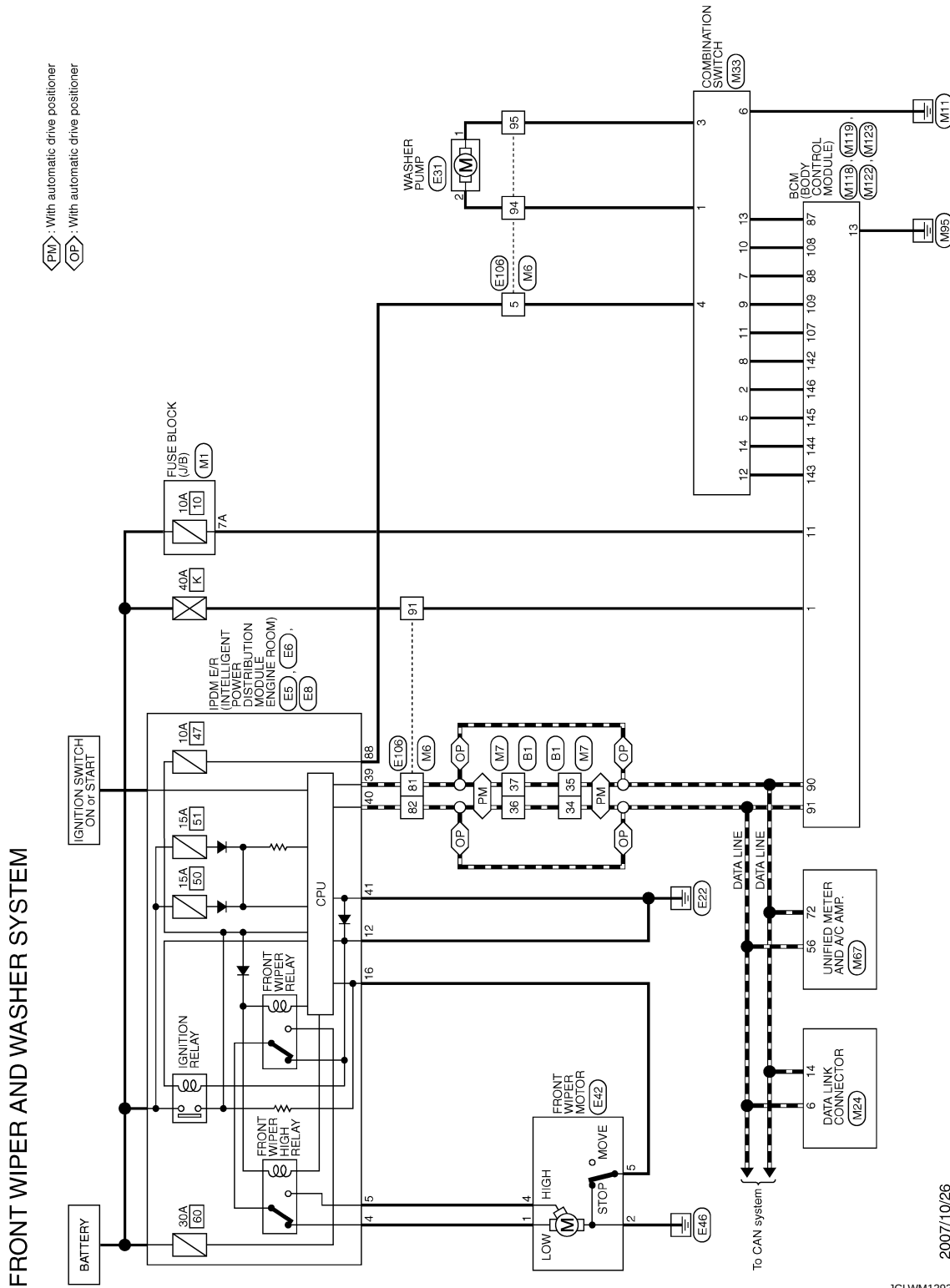
FRONT WIPER AND WASHER SYSTEM

< COMPONENT DIAGNOSIS >

FRONT WIPER AND WASHER SYSTEM

Wiring Diagram - FRONT WIPER AND WASHER SYSTEM -

INFOID:000000003138992



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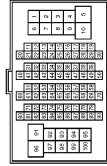
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FRONT WIPER AND WASHER SYSTEM

< COMPONENT DIAGNOSIS >

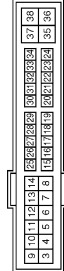
FRONT WIPER AND WASHER SYSTEM

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



Terminal No.	Color of Wire	Signal Name [Specification]
34	L	-
35	P	-
36	L	-
37	P	-

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



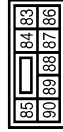
Terminal No.	Color of Wire	Signal Name [Specification]
4	V	-
5	L	-
12	B/W	-
16	LG	-

Connector No.	E6
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH80FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
39	P	-
40	L	-
41	B/W	-

Connector No.	E8
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS30FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
88	GR	-

Connector No.	E31
Connector Name	WASHER PUMP
Connector Type	ED2FGY-RS



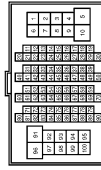
Terminal No.	Color of Wire	Signal Name [Specification]
1	O	-
2	LG	-

Connector No.	E42
Connector Name	FRONT WIPER MOTOR
Connector Type	HS0JFGY



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

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



Terminal No.	Color of Wire	Signal Name [Specification]
5	GR	-
81	P	-
82	L	-
91	W	-
94	LG	-
95	O	-

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS30FW-M2



Terminal No.	Color of Wire	Signal Name [Specification]
7A	R	-

JCLWM1293GE

A
B
C
D
E
F
G
H
I
J
K
M
N
O
P

WW

FRONT WIPER AND WASHER SYSTEM

< COMPONENT DIAGNOSIS >

FRONT WIPER AND WASHER SYSTEM

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-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	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

FRONT WIPER AND WASHER SYSTEM

< COMPONENT DIAGNOSIS >

FRONT WIPER AND WASHER SYSTEM

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	MS16PW-CS



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

Terminal No.	Color of Wire	Signal Name [Specification]
11	R	BAT (FUSE)
13	B	GND

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH4GFB-NH



91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72
111	110	109	108	107	106	105	104	103	102	101	100	99	98	97	96	95	94	93	92

Terminal No.	Color of Wire	Signal Name [Specification]
87	BR	COMBI SW INPUT 5
88	V	COMBI SW INPUT 3
90	P	CAN-L
91	L	CAN-H
107	LG	COMBI SW INPUT 1
108	R	COMBI SW INPUT 4
109	Y	COMBI SW INPUT 2

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH4GFB-NH



131	130	129	128	127	126	25	24	23	22	21	20	119	118	117	116	115	114	113	112
151	150	149	147	145	45	44	43	42	41	140	139	138	137	136	135	134	133	132	

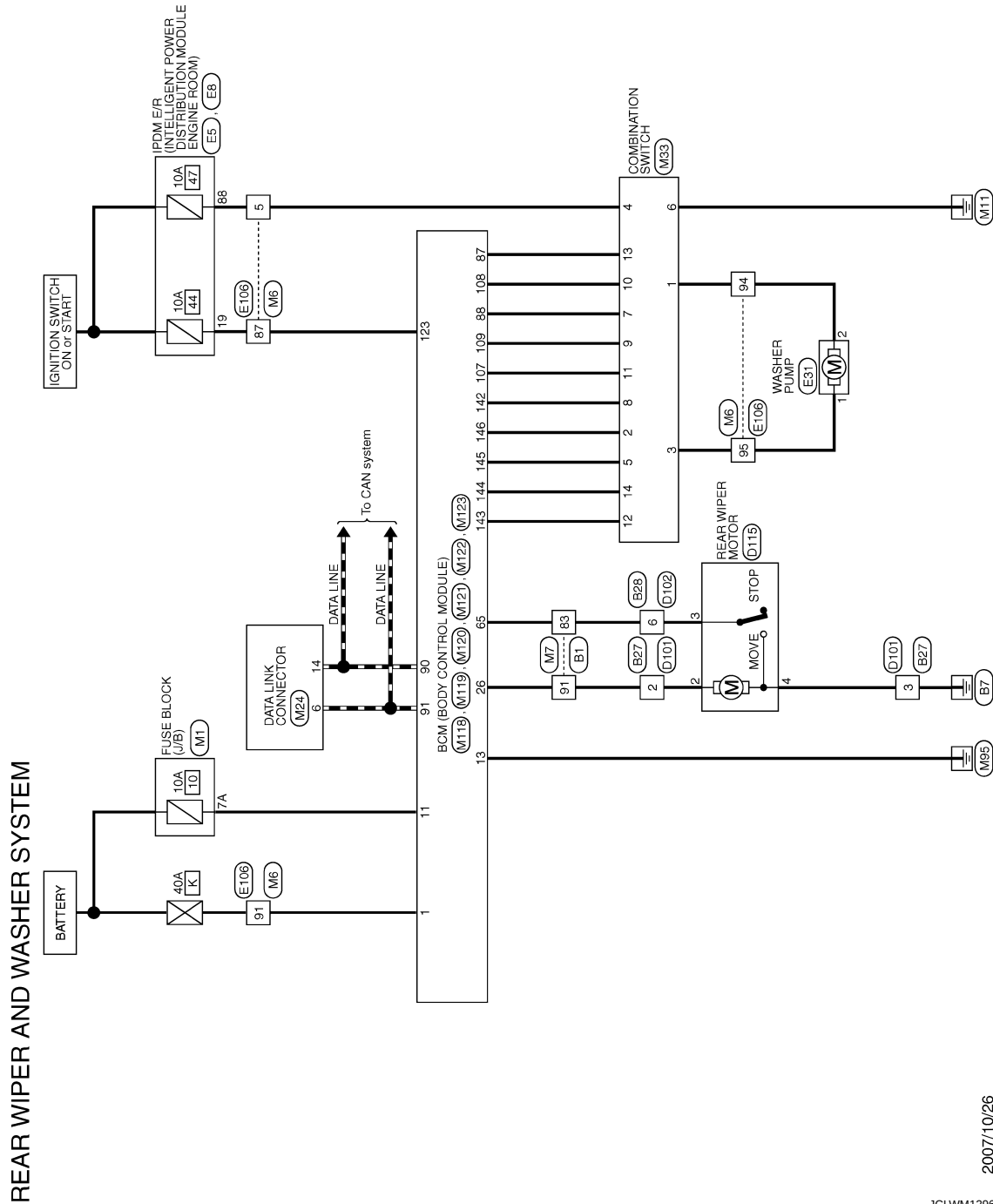
REAR WIPER AND WASHER SYSTEM

< COMPONENT DIAGNOSIS >

REAR WIPER AND WASHER SYSTEM

Wiring Diagram - REAR WIPER AND WASHER SYSTEM -

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2007/10/26

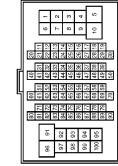
JCLWM1296GE

REAR WIPER AND WASHER SYSTEM

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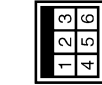
REAR WIPER AND WASHER SYSTEM

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



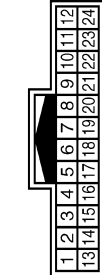
Terminal No.	Color of Wire	Signal Name [Specification]
83	O	-
91	G	-

Connector No.	B27
Connector Name	WIRE TO WIRE
Connector Type	M06FW-LC



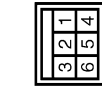
Terminal No.	Color of Wire	Signal Name [Specification]
2	G	-
3	B	-

Connector No.	B28
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH



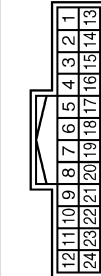
Terminal No.	Color of Wire	Signal Name [Specification]
6	O	-

Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Type	M06FW-LC



Terminal No.	Color of Wire	Signal Name [Specification]
2	G	-
3	B	-

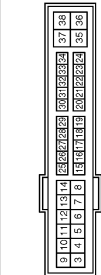
Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH



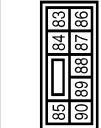
Connector No.	D115
Connector Name	REAR WIPER MOTOR
Connector Type	CJ04FW-IV



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



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



Terminal No.	Color of Wire	Signal Name [Specification]
6	O	-

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

Terminal No.	Color of Wire	Signal Name [Specification]
19	W	-

Terminal No.	Color of Wire	Signal Name [Specification]
88	GR	-

JCLWM1297GE

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WW

REAR WIPER AND WASHER SYSTEM

< COMPONENT DIAGNOSIS >

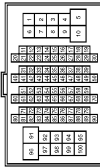
REAR WIPER AND WASHER SYSTEM

Connector No.	E31
Connector Name	WASHER PUMP
Connector Type	E02FCY-RS



Terminal No.	Color of Wire	Signal Name [Specification]
1	O	-
2	LG	-

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



Terminal No.	Color of Wire	Signal Name [Specification]
5	GR	-
87	W	-
91	W	-
94	LG	-
95	O	-

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



Terminal No.	Color of Wire	Signal Name [Specification]
7A	R	-

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



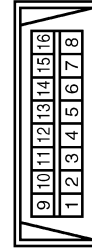
Terminal No.	Color of Wire	Signal Name [Specification]
5	G	-
87	W	-
91	W	-
94	P	-
95	GR	-

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



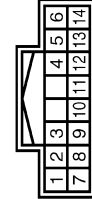
Terminal No.	Color of Wire	Signal Name [Specification]
83	O	-
91	G	-

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



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	-
14	P	-

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	GR	FR WASHER(+)
4	G	IGN
5	L	OUTPUT 3
6	B	GND
7	V	INPUT 3
8	O	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

REAR WIPER AND WASHER SYSTEM

< COMPONENT DIAGNOSIS >

REAR WIPER AND WASHER SYSTEM

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M02FB-LC



Terminal No.	Color of Wire	Signal Name [Specification]
1	W	BAT (F/L)

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS12FW-CS



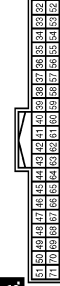
Terminal No.	Color of Wire	Signal Name [Specification]
11	R	BAT (FUSE)
13	B	GND

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



Terminal No.	Color of Wire	Signal Name [Specification]
28	G	REAR WIPER OUTPUT

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



Terminal No.	Color of Wire	Signal Name [Specification]
65	O	REAR WIPER STOP POSITION

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



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



BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:000000003769972

VALUES ON THE DIAGNOSIS TOOL

CONSULT-III MONITOR ITEM

Monitor Item	Condition	Value/Status
FR WIPER HI	Other than front wiper switch HI	Off
	Front wiper switch HI	On
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	Off
	Front wiper switch INT	On
FR WIPER STOP	Front wiper is not in STOP position	Off
	Front wiper is in STOP position	On
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	Wiper intermittent 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
FR FOG SW	Front fog lamp switch OFF	Off
	Front fog lamp switch ON	On

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Monitor Item	Condition	Value/Status	
RR FOG SW	NOTE: The item is indicated, but not monitored.	Off	A
DOOR SW-DR	Driver door closed	Off	B
	Driver door opened	On	
DOOR SW-AS	Passenger door closed	Off	C
	Passenger door opened	On	
DOOR SW-RR	Rear RH door closed	Off	D
	Rear RH door opened	On	
DOOR SW-RL	Rear LH door closed	Off	E
	Rear LH door opened	On	
DOOR SW-BK	Back door closed	Off	F
	Back door opened	On	
CDL LOCK SW	Other than power door lock switch LOCK	Off	G
	Power door lock switch LOCK	On	
CDL UNLOCK SW	Other than power door lock switch UNLOCK	Off	H
	Power door lock switch UNLOCK	On	
KEY CYL LK-SW	Other than driver door key cylinder LOCK position	Off	I
	Driver door key cylinder LOCK position	On	
KEY CYL UN-SW	Other than driver door key cylinder UNLOCK position	Off	J
	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	K
	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	WW
	While the back door opener switch is turned ON	On	
TRNK/HAT MNTR	NOTE: The item is indicated, but not monitored.	Off	
RKE-LOCK	LOCK button of the key is not pressed	Off	M
	LOCK button of the key is pressed	On	
RKE-UNLOCK	UNLOCK button of the key is not pressed	Off	N
	UNLOCK button of the key is pressed	On	
RKE-TR/BD	NOTE: The item is indicated, but not monitored.	Off	
RKE-PANIC	PANIC button of the key is not pressed	Off	O
	PANIC button of the key is pressed	On	
RKE-P/W OPEN	UNLOCK button of the key is not pressed	Off	P
	UNLOCK button of the key is pressed and held	On	
RKE-MODE CHG	LOCK/UNLOCK button of the key is not pressed and held simultaneously	Off	
	LOCK/UNLOCK button of the key is pressed and held simultaneously	On	

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Monitor Item	Condition	Value/Status
OPTICAL SENSOR	Bright outside of the vehicle	Close to 5 V
	Dark outside of the vehicle	Close to 0 V
REQ SW -DR	Driver door request switch is not pressed	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	Ignition switch in OFF or ACC position	Off
	Ignition switch in ON position	On
CLUCH SW	NOTE: The item is indicated, but not monitored.	Off
BRAKE SW 1	The brake pedal is not depressed	On
	The brake pedal is depressed	Off
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	Steering is locked	Off
	Steering is unlocked	On
S/L -UNLOCK	Steering is unlocked	Off
	Steering is locked	On
S/L RELAY-F/B	Ignition switch in OFF or ACC position	Off
	Ignition switch in ON position	On
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 P position	Off
	Selector lever in any position other than P	On
SFT PN -IPDM	Selector lever in any position other than P and N	Off
	Selector lever in P or N position	On
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

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Monitor Item	Condition	Value/Status	
ENGINE STATE	Engine stopped	Stop	A
	While the engine stalls	Stall	
	At engine cranking	Crank	B
	Engine running	Run	
S/L LOCK-IPDM	Steering is locked	Off	
	Steering is unlocked	On	C
S/L UNLK-IPDM	Steering is unlocked	Off	
	Steering is locked	On	D
S/L RELAY-REQ	Ignition switch in OFF or ACC position	Off	
	Ignition switch in ON position	On	
VEH SPEED 1	While driving	Equivalent to speedometer reading	E
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	F
	Driver door is unlocked	UNLOCK	
DOOR STAT-AS	Passenger door is locked	LOCK	G
	Wait with selective UNLOCK operation (5 seconds)	READY	
	Passenger door is unlocked	UNLOCK	
ID OK FLAG	Ignition switch in ACC or ON position	Reset	H
	Ignition switch in OFF position	Set	
PRMT ENG STRT	The engine start is prohibited	Reset	I
	The engine start is permitted	Set	
PRMT RKE STRT	NOTE: The item is indicated, but not monitored.	Reset	J
KEY SW -SLOT	The key is not inserted into key slot	Off	
	The key is inserted into key slot	On	
RKE OPE COUN1	During the operation of the key	Operation frequency of the key	K
RKE OPE COUN2	NOTE: The item is indicated, but not monitored.	—	WW
CONFIRM ID ALL	The key ID that the key slot receives does not accord with any key ID registered to BCM.	Yet	
	The key ID that the key slot receives accords with any key ID registered to BCM.	DONE	M
CONFIRM ID4	The key ID that the key slot receives does not accord with the fourth key ID registered to BCM.	Yet	
	The key ID that the key slot receives accords with the fourth key ID registered to BCM.	DONE	N
CONFIRM ID3	The key ID that the key slot receives does not accord with the third key ID registered to BCM.	Yet	
	The key ID that the key slot receives accords with the third key ID registered to BCM.	DONE	O
CONFIRM ID2	The key ID that the key slot receives does not accord with the second key ID registered to BCM.	Yet	P
	The key ID that the key slot receives accords with the second key ID registered to BCM.	DONE	

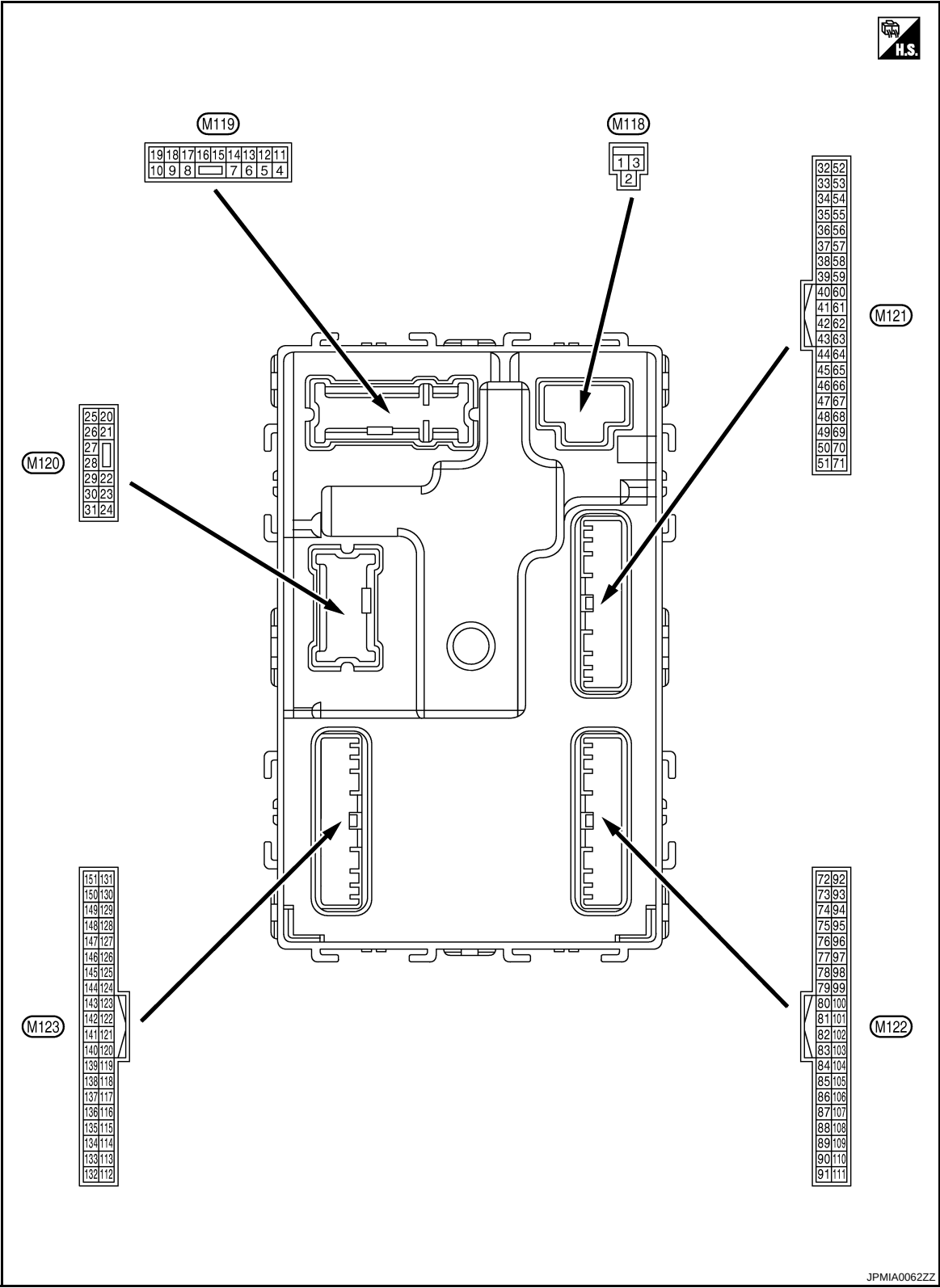
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Monitor Item	Condition	Value/Status
CONFIRM ID1	The key ID that the key slot receives does not accord with the first key ID registered to BCM.	Yet
	The key ID that the key slot receives accords with the first key ID registered to BCM.	DONE
TP 4	The ID of fourth key is not registered to BCM	Yet
	The ID of fourth key is registered to BCM	DONE
TP 3	The ID of third key is not registered to BCM	Yet
	The ID of third key is registered to BCM	DONE
TP 2	The ID of second key is not registered to BCM	Yet
	The ID of second key is registered to BCM	DONE
TP 1	The ID of first key is not registered to BCM	Yet
	The ID of first key is registered to BCM	DONE
AIR PRESS FL	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of front LH tire
AIR PRESS FR	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of front RH tire
AIR PRESS RR	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of rear RH tire
AIR PRESS RL	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of rear LH tire
ID REGST FL1	ID of front LH tire transmitter is registered	DONE
	ID of front LH tire transmitter is not registered	Yet
ID REGST FR1	ID of front RH tire transmitter is registered	DONE
	ID of front RH tire transmitter is not registered	Yet
ID REGST RR1	ID of rear RH tire transmitter is registered	DONE
	ID of rear RH tire transmitter is not registered	Yet
ID REGST RL1	ID of rear LH tire transmitter is registered	DONE
	ID of rear LH tire transmitter is not registered	Yet
WARNING LAMP	Tire pressure indicator OFF	Off
	Tire pressure indicator ON	On
BUZZER	Tire pressure warning alarm is not sounding	Off
	Tire pressure warning alarm is sounding	On

BCM (BODY CONTROL MODULE)

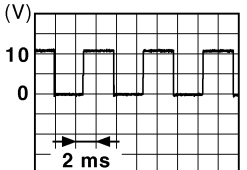
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TERMINAL LAYOUT



PHYSICAL VALUES

BCM (BODY CONTROL MODULE)

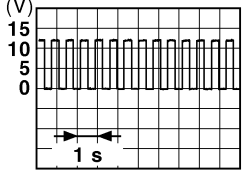
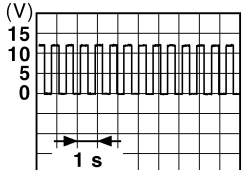
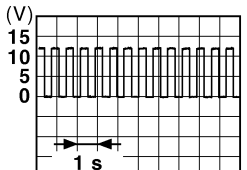
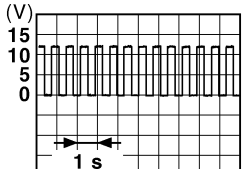
< ECU DIAGNOSIS >

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		Battery voltage
3 (O)	Ground	P/W power supply (RAP)	Output	Ignition switch ON		Battery voltage
4 (LG)	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)		Battery voltage
5 (L)	Ground	Passenger door UN- LOCK	Output	Passenger door	UNLOCK (Actuator is activated)	Battery voltage
					Other than UNLOCK (Actuator is not activated)	0 V
7 (Y)	Ground	Step lamp	Output	Step lamp	ON	0 V
					OFF	Battery voltage
8 (V)	Ground	All doors, fuel lid LOCK	Output	All doors	LOCK (Actuator is activated)	Battery voltage
					Other than LOCK (Actuator is not activated)	0 V
9 (G)	Ground	Driver door, fuel lid UNLOCK	Output	Driver door	UNLOCK (Actuator is activated)	Battery voltage
					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)	Battery voltage
					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
14 (W)	Ground	Push-button ignition switch illumination ground	Output	Tail lamp	OFF	0 V
					ON	NOTE: When the illumination brighten- ing/dimming level is in the neutral position 
15 (Y)	Ground	ACC indicator lamp	Output	Ignition switch	OFF or ON	Battery voltage
					ACC	0 V

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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
17 (W)	Ground	Turn signal RH (Front)	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	 6.5 V
18 (O)	Ground	Turn signal LH (Front)	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	 6.5 V
19 (V)	Ground	Room lamp timer control	Output	Interior room lamp	OFF	Battery voltage
					ON	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
23 (G)	Ground	Back door opening	Output	Back door	OPEN (Back door opener actuator is activated)	Battery voltage
					Other than OPEN (Back door opener actuator is not activated)	0 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 (G)	Ground	Rear wiper	Output	Rear wiper	OFF (Stopped)	0 V
					ON (Operated)	Battery voltage

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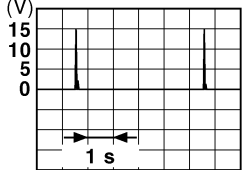
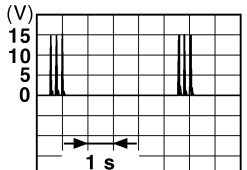
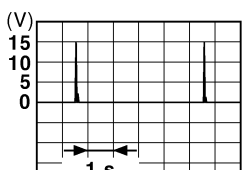
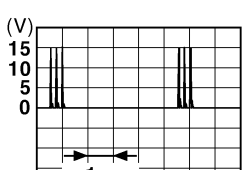
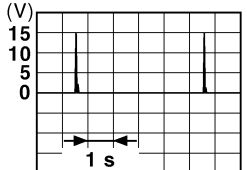
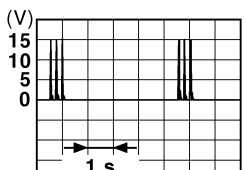
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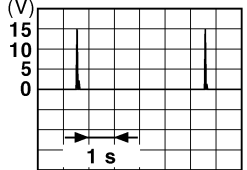
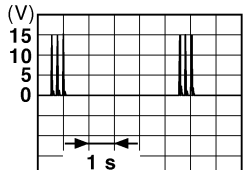
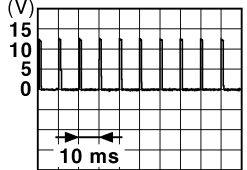
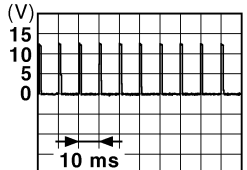
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
34 (SB)	Ground	Luggage room antenna 1 (-)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB
35 (V)	Ground	Luggage room antenna 1 (+)	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	Rear bumper antenna (-)	Output	When the back 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 >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)	
+	-	Signal name	Input/ Output				
39 (W)	Ground	Rear bumper antenna (+)	Output	When the back door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB	A
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB	B
47 (Y)	Ground	Ignition relay (IPDM E/R) control	Output	Ignition switch	OFF or ACC	Battery voltage	C
					ON	0 V	D
52 (SB)	Ground	Starter relay control	Output	Ignition switch ON	When selector lever is in P or N position	Battery voltage	E
					When selector lever is not in P or N position	0 V	F
61 (W)	Ground	Back door opener request switch	Input	Back door request switch	ON (Pressed)	0 V	G
					OFF (Not pressed)	 JPMIA0016GB 1.0 V	H
64 (V)	Ground	Request switch buzzer	Output	Request switch buzzer	Sounding	0 V	I
					Not sounding	Battery voltage	J
65 (O)	Ground	Rear wiper stop position	Input	Rear wiper	In stop position	 JPMIA0016GB 1.0 V	K
					Not in stop position	0 V	L

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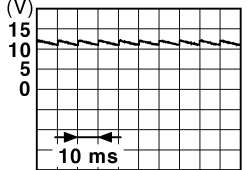
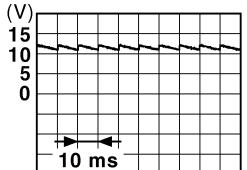
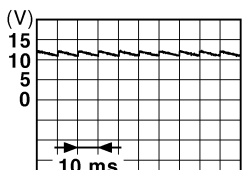
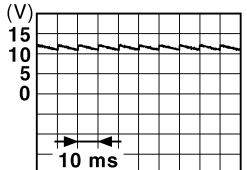
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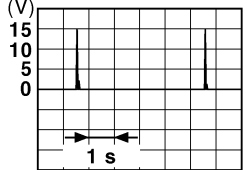
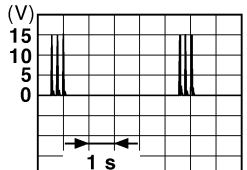
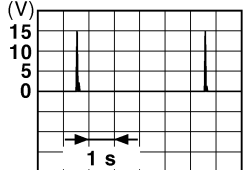
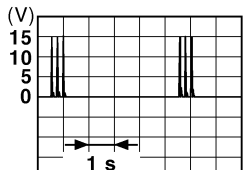
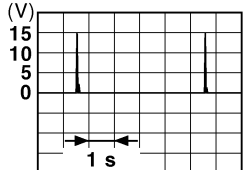
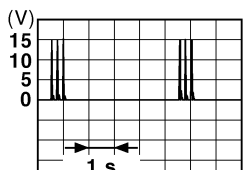
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

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

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
72 (R)	Ground	Room antenna 2 (-) (Center console)	Output	Ignition switch OFF	 JMKIA0062GB
				When Intelligent Key is not in the passenger compart- ment	 JMKIA0063GB
73 (G)	Ground	Room antenna 2 (+) (Center console)	Output	Ignition switch OFF	 JMKIA0062GB
				When Intelligent Key is not in the passenger compart- ment	 JMKIA0063GB
74 (SB)	Ground	Passenger door an- tenna (-)	Output	When the pas- senger door re- quest switch is operated with ig- nition switch OFF	 JMKIA0062GB
				When Intelligent Key is not in the antenna detection area	 JMKIA0063GB

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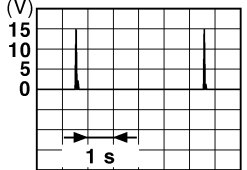
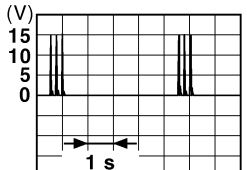
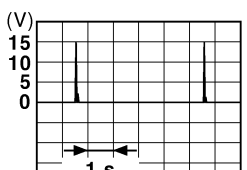
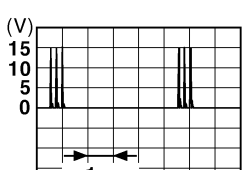
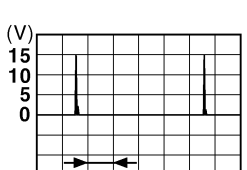
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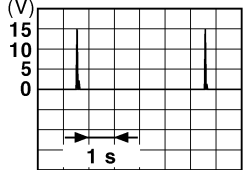
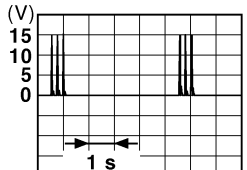
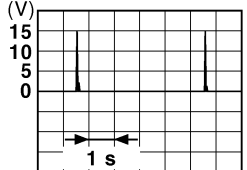
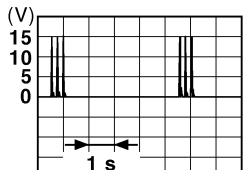
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
75 (GR)	Ground	Passenger door antenna (+)	Output	When the passenger door request switch is operated with ignition switch OFF	 JMKIA0062GB
				When Intelligent Key is not in the antenna detection area	 JMKIA0063GB
76 (V)	Ground	Driver door antenna (-)	Output	When the driver door request switch is operated with ignition switch OFF	 JMKIA0062GB
				When Intelligent Key is not in the antenna detection area	 JMKIA0063GB
77 (LG)	Ground	Driver door antenna (+)	Output	When the driver door request switch is operated with ignition switch OFF	 JMKIA0062GB
				When Intelligent Key is not in the antenna detection area	 JMKIA0063GB

BCM (BODY CONTROL MODULE)

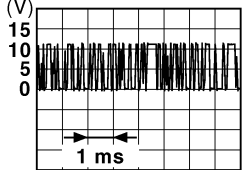
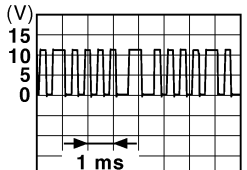
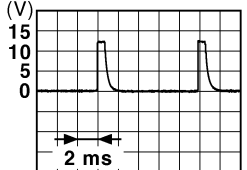
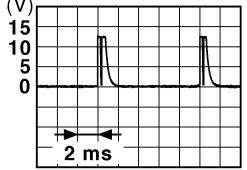
< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
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
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 compart- ment	 JMKIA0063GB
80 (GR)	Ground	NATS antenna amp (Built in key slot)	Input/ Output	During waiting	Ignition switch is pressed while inserting the key into the key slot.	Just after pressing ignition switch. Pointer of tester should move.
81 (W)	Ground	NATS antenna amp (Built in key slot)	Input/ Output	During waiting	Ignition switch is pressed while inserting the key into the key slot.	Just after pressing ignition switch. Pointer of tester should move.
82 (R)	Ground	Ignition relay [Fuse block (J/B)] control	Output	Ignition switch	OFF or ACC	0 V
					ON	Battery voltage

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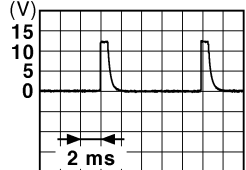
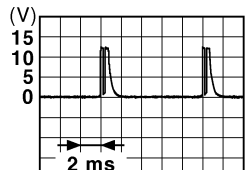
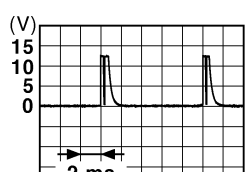
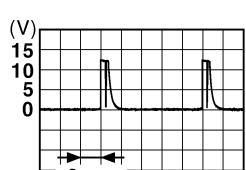
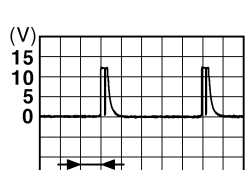
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
83 (Y)	Ground	Remote keyless entry receiver signal	Input/ Output	During waiting	 JMKIA0064GB
				When operating either button on the key	 JMKIA0065GB
87 (BR)	Ground	Combination switch INPUT 5	Input	Combination switch	
				All switch OFF (Wiper intermittent dial 4)	 JPMIA0041GB 1.4 V
				Front fog lamp switch ON (Wiper intermittent dial 4)	 JPMIA0037GB 1.3 V
				Rear wiper switch ON (Wiper intermittent dial 4)	 JPMIA0039GB 1.3 V
				Any of the conditions below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 6 • Wiper intermittent dial 7	 JPMIA0040GB 1.3 V

BCM (BODY CONTROL MODULE)

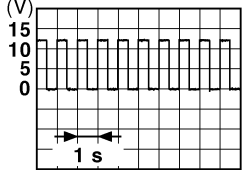
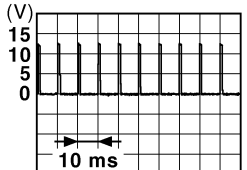
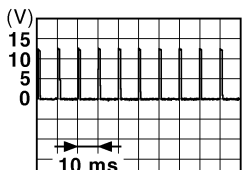
< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)	
+	−	Signal name	Input/ Output				
88 (V)	Ground	Combination switch INPUT 3	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 1.4 V	A
					Lighting switch HI (Wiper intermittent dial 4)	 1.3 V	B
					Lighting switch 2ND (Wiper intermittent dial 4)	 1.3 V	C
					Rear washer switch ON (Wiper intermittent dial 4)	 1.3 V	D
					Any of the conditions below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3	 1.3 V	E
89 (BR)	Ground	Push-button ignition switch (Push switch)	Input	Push-button igni- tion switch (push switch)	Pressed	0 V	F
					Not pressed	Battery voltage	G
90 (P)	Ground	CAN-L	Input/ Output	—	—	—	H
91 (L)	Ground	CAN-H	Input/ Output	—	—	—	I

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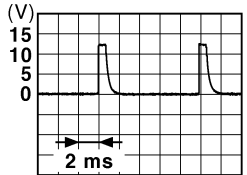
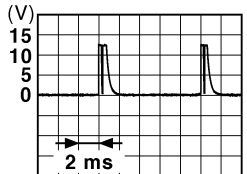
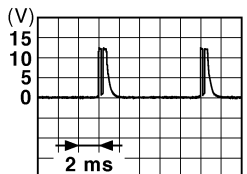
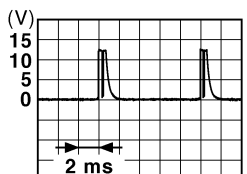
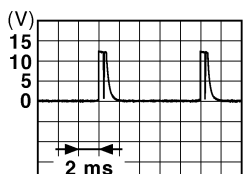
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
92 (LG)	Ground	Key slot illumination	Output	Key slot illumination	OFF	Battery voltage
					Blinking	 JPMIA0015GB 6.5 V
					ON	0 V
93 (V)	Ground	ON indicator lamp	Output	Ignition switch	OFF or ACC	Battery voltage
					ON	0 V
94 (Y)	Ground	Puddle lamp control	Output	Puddle lamp	OFF	Battery voltage
					ON	0 V
95 (O)	Ground	ACC relay control	Output	Ignition switch	OFF	0 V
					ACC or ON	Battery voltage
96 (GR)	Ground	Control device (De- tention switch) power supply	Output	—	—	Battery voltage
97 (L)	Ground	Steering lock condi- tion No. 1	Input	Steering lock	LOCK status	0 V
					UNLOCK status	Battery voltage
98 (P)	Ground	Steering lock condi- tion No. 2	Input	Steering lock	LOCK status	Battery voltage
					UNLOCK status	0 V
99 (R)	Ground	Selector lever P posi- tion switch	Input	Selector lever	P position	0 V
					Any position other than P	Battery voltage
100 (G)	Ground	Passenger door re- quest 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 re- quest switch	ON (Pressed)	0 V
					OFF (Not pressed)	 JPMIA0016GB 1.0 V
102 (O)	Ground	Blower fan motor re- lay control	Output	Ignition switch	OFF or ACC	0 V
					ON	Battery voltage

BCM (BODY CONTROL MODULE)

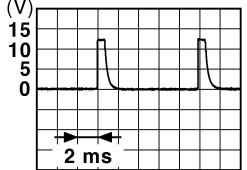
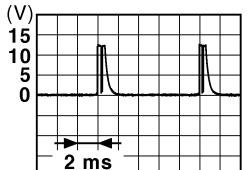
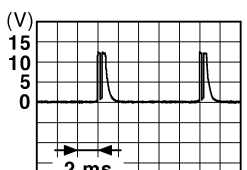
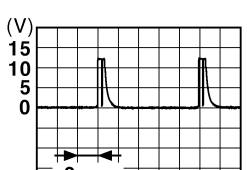
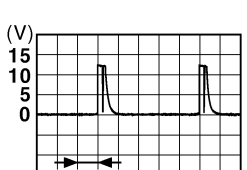
< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)	
+	-	Signal name	Input/ Output				
103 (LG)	Ground	Remote keyless entry receiver power supply	Output	Ignition switch OFF		Battery voltage	A
106 (W)	Ground	Steering wheel lock unit power supply	Output	Ignition switch	OFF or ACC	Battery voltage	B
					ON	0 V	C
107 (LG)	Ground	Combination switch INPUT 1	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	 1.4 V	D
					Turn signal switch LH	 1.3 V	E
					Turn signal switch RH	 1.3 V	F
					Front wiper switch LO	 1.3 V	G
					Front washer switch ON	 1.3 V	H

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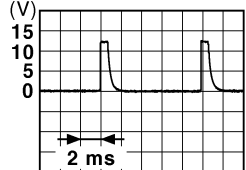
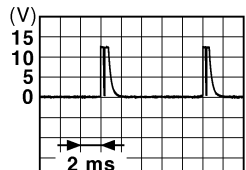
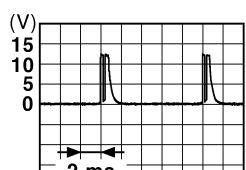
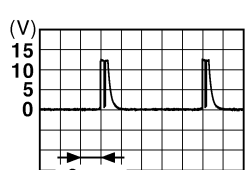
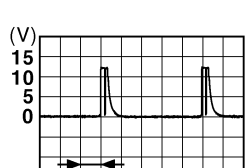
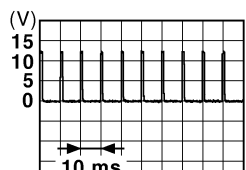
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
108 (R)	Ground	Combination switch INPUT 4	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)  JPMIA0041GB 1.4 V
					Lighting switch AUTO (Wiper intermittent dial 4)  JPMIA0038GB 1.3 V
					Lighting switch 1ST (Wiper intermittent dial 4)  JPMIA0036GB 1.3 V
					Rear wiper switch INT (Wiper intermittent dial 4)  JPMIA0040GB 1.3 V
					Any of the conditions below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6  JPMIA0039GB 1.3 V

BCM (BODY CONTROL MODULE)

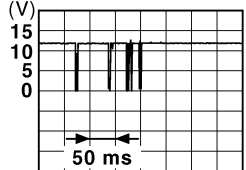
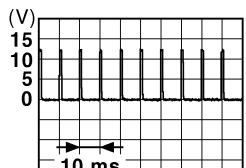
< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)	
+	−	Signal name	Input/ Output				
109 (Y)	Ground	Combination switch INPUT 2	Input	Combination switch (Wiper intermit- tent dial 4)	All switch OFF	 JPMIA0041GB 1.4 V	A
					Lighting switch PASS	 JPMIA0037GB 1.3 V	B
					Lighting switch 2ND	 JPMIA0036GB 1.3 V	C
					Front wiper switch INT	 JPMIA0038GB 1.3 V	D
					Front wiper switch HI	 JPMIA0040GB 1.3 V	E
110 (G)	Ground	Hazard switch	Input	Hazard switch	ON	0 V	F
					OFF	 JPMIA0012GB 1.1 V	G

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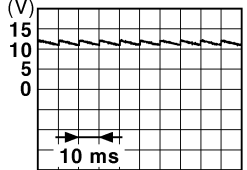
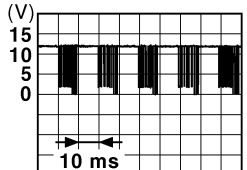
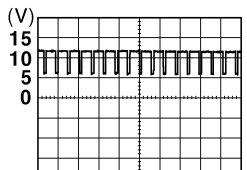
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	−	Signal name	Input/ Output			
111 (Y)	Ground	Steering lock unit communication	Input/ Output	Steering lock	LOCK status	Battery voltage
					LOCK or UNLOCK	 JMKIA0066GB
					For 15 seconds after UN- LOCK	Battery voltage
					15 seconds or later after UNLOCK	0 V
113* (P)	Ground	Optical sensor signal	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 (SB)	Ground	Fuse check [Stop lamp switch, ICC brake hold relay (With ICC)]	Input	—		Battery voltage
118 (P)	Ground	Stop lamp switch (Without ICC)	Input	Stop lamp switch	OFF (Brake pedal is not depressed)	0 V
					ON (Brake pedal is de- pressed)	Battery voltage
		Stop lamp switch and ICC brake hold relay (With ICC)		Stop lamp switch OFF (Brake pedal is not de- pressed) and ICC brake hold relay OFF		0 V
				Stop lamp switch ON (Brake pedal is de- pressed) or ICC brake hold relay ON		Battery voltage
119 (SB)	Ground	Front door lock as- sembly driver side (unlock sensor)	Input	Driver door	LOCK status (Unlock sensor switch OFF)	 JPMIA0012GB 1.1 V
					UNLOCK status (Unlock switch sensor ON)	0 V
121 (BR)	Ground	Key slot switch	Input	When the key is inserted into key slot		Battery voltage
				When the key is not inserted into key slot		0 V
122 (V)	Ground	ACC feedback signal	Input	Ignition switch	OFF	0 V
					ACC or ON	Battery voltage
123 (W)	Ground	IGN feedback signal	Input	Ignition switch	OFF or ACC	0 V
					ON	Battery voltage

BCM (BODY CONTROL MODULE)

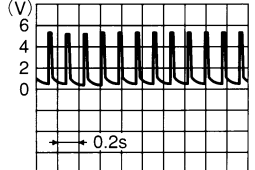
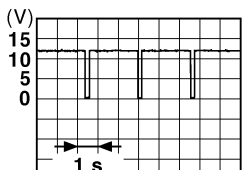
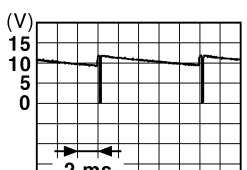
< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
124 (LG)	Ground	Passenger door switch	Input	Passenger door switch	OFF (Door close)	 JPMIA0011GB 11.8 V
					ON (Door open)	0 V
132 (V)	Ground	Power window switch communication	Input/ Output	Ignition switch ON		 JPMIA0013GB 10.2 V
				Ignition switch OFF or ACC		Battery voltage
133 (W)	Ground	Push-button ignition switch illumination	Output	Push-button igni- tion switch illumi- nation	ON (Tail lamps OFF)	9.5 V
					ON (Tail lamps ON)	NOTE: The pulse width of this wave is varied by the illumination bright- ening/dimming level.  JPMIA0159GB
					OFF	0 V
134 (GR)	Ground	LOCK indicator lamp	Output	LOCK indicator lamp	OFF	Battery voltage
					ON	0 V
137 (O)	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

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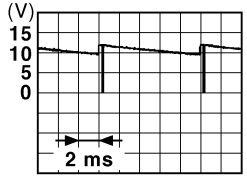
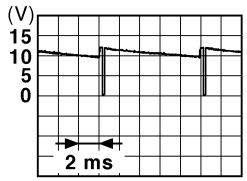
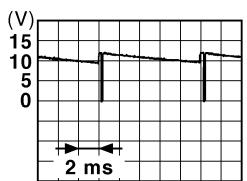
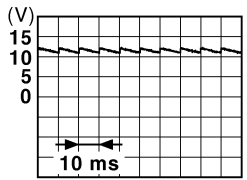
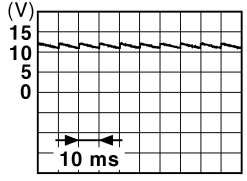
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
139 (L)	Ground	Tire pressure receiver signal	Input/ Output	Ignition switch ON	Standby state	 OCC3881D
					When receiving the signal from the transmitter	 OCC3880D
140 (GR)	Ground	Selector lever P/N position signal	Input	Selector lever	P or N position	Battery voltage
					Except P and N positions	0 V
141 (G)	Ground	Security indicator signal	Output	Security indicator	ON	0 V
					Blinking	 JPMIA0014GB 11.3 V
					OFF	Battery voltage
142 (O)	Ground	Combination switch OUTPUT 5	Output	Combination switch (Wiper intermittent dial 4)	All switch 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 switch OFF (Wiper intermittent dial 4)	0 V
					Front wiper switch HI (Wiper intermittent dial 4)	 JPMIA0032GB 10.7 V
					Rear wiper switch INT (Wiper intermittent dial 4)	
					Any of the conditions below with all switch OFF - Wiper intermittent dial 1 - Wiper intermittent dial 2 - Wiper intermittent dial 3 - Wiper intermittent dial 6 - Wiper intermittent dial 7	

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

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

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BCM (BODY CONTROL MODULE)

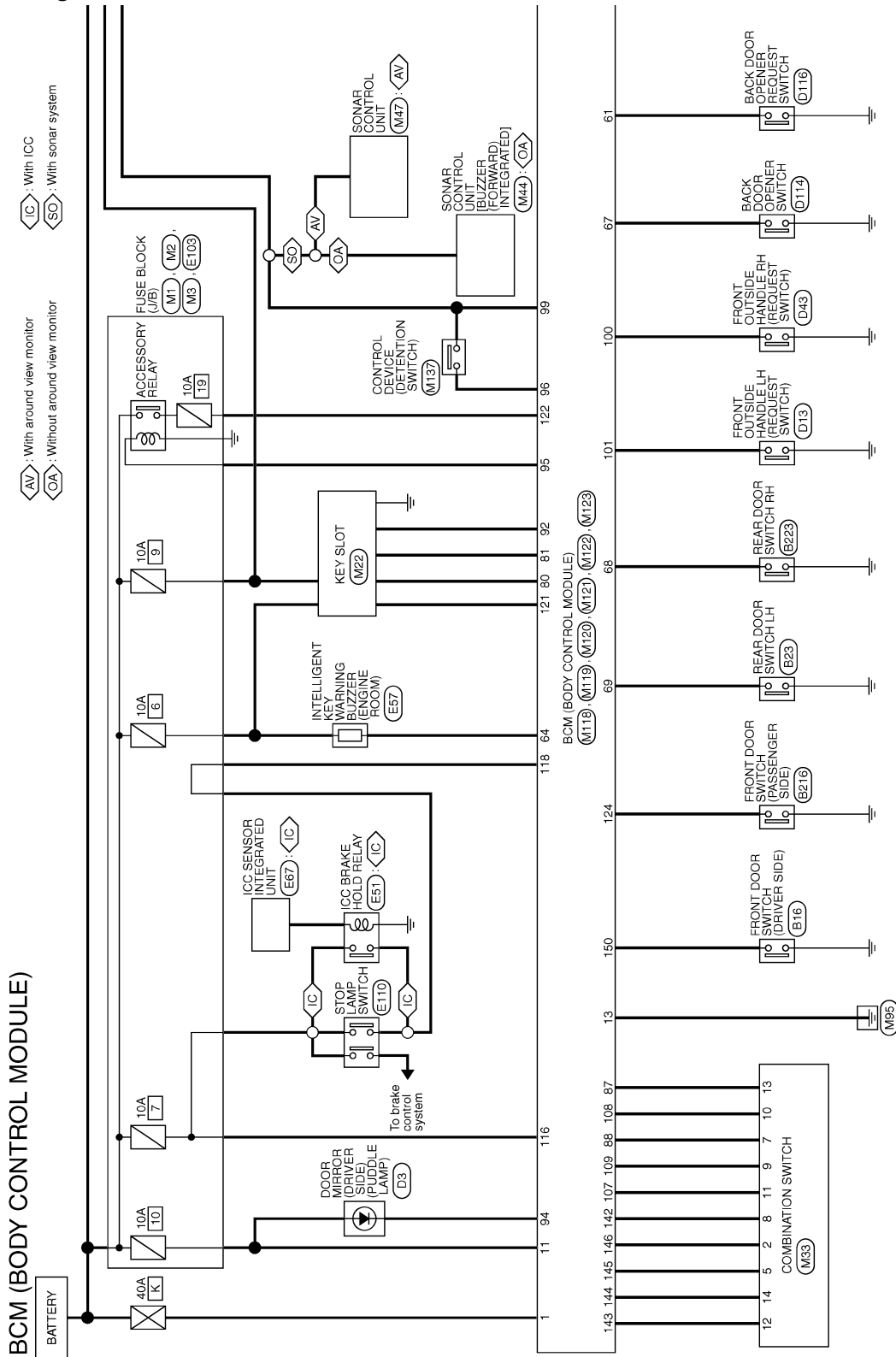
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NOTE:

*: With auto light system

Wiring Diagram - BCM -

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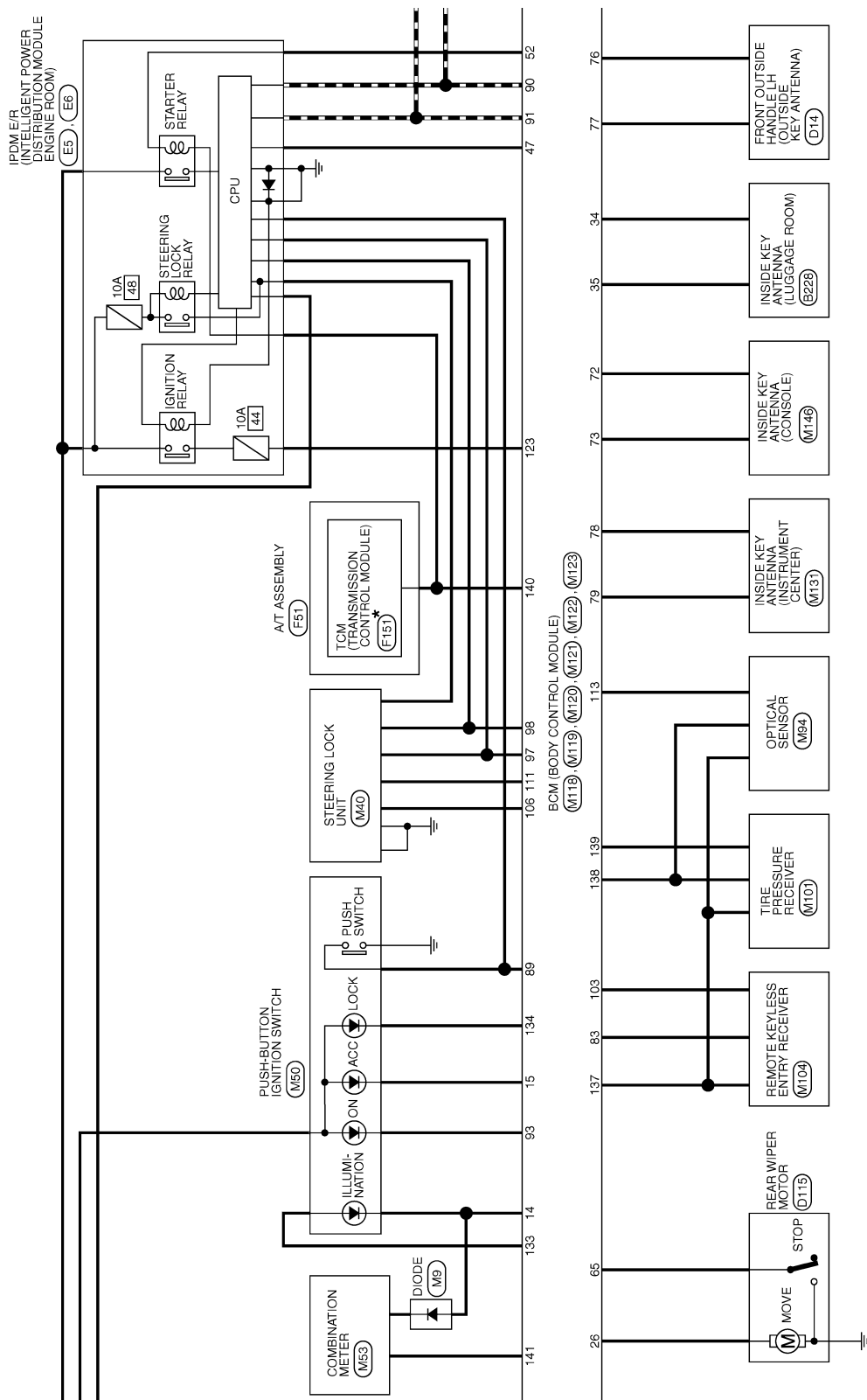


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JCMW1398G

BCM (BODY CONTROL MODULE)

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*: This connector is not shown in "Harness Layout".

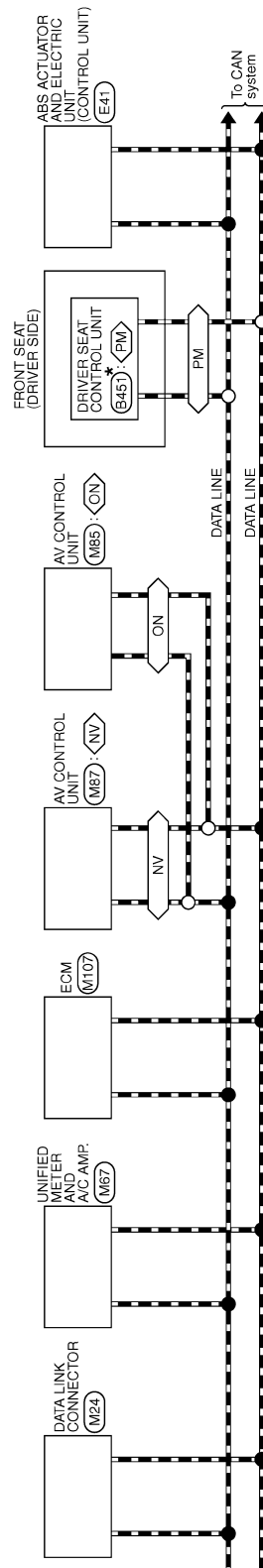
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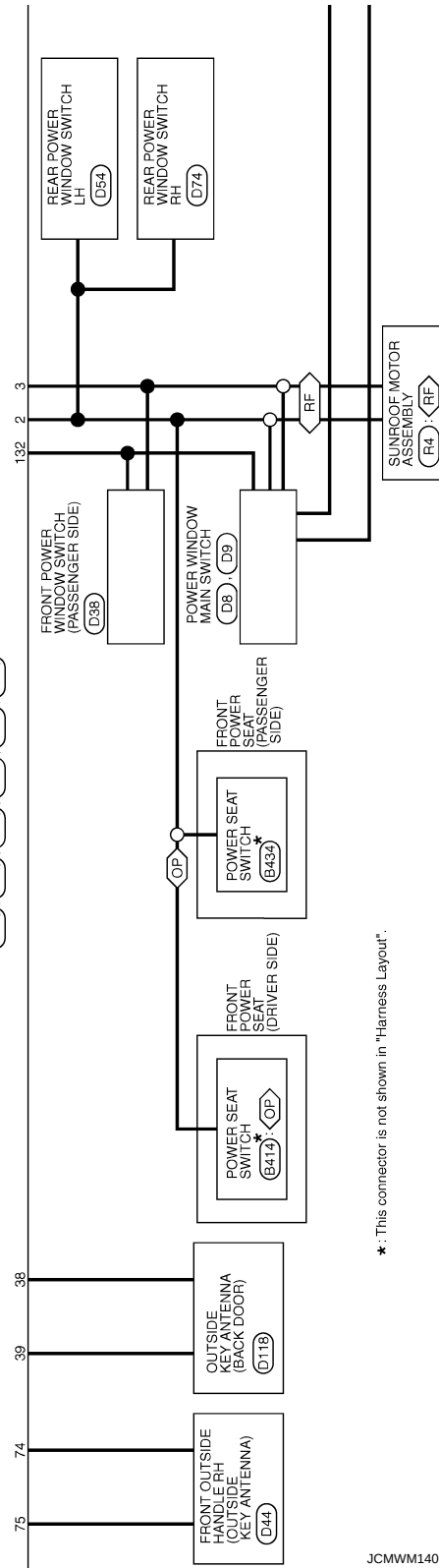
BCM (BODY CONTROL MODULE)

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- (NV) : With NAVI
- (ON) : Without NAVI
- (RF) : With sunroof
- (PM) : With automatic drive positioner
- (OP) : Without automatic drive positioner



BCM (BODY CONTROL MODULE)
(M119) (M120) (M121) (M122) (M123)

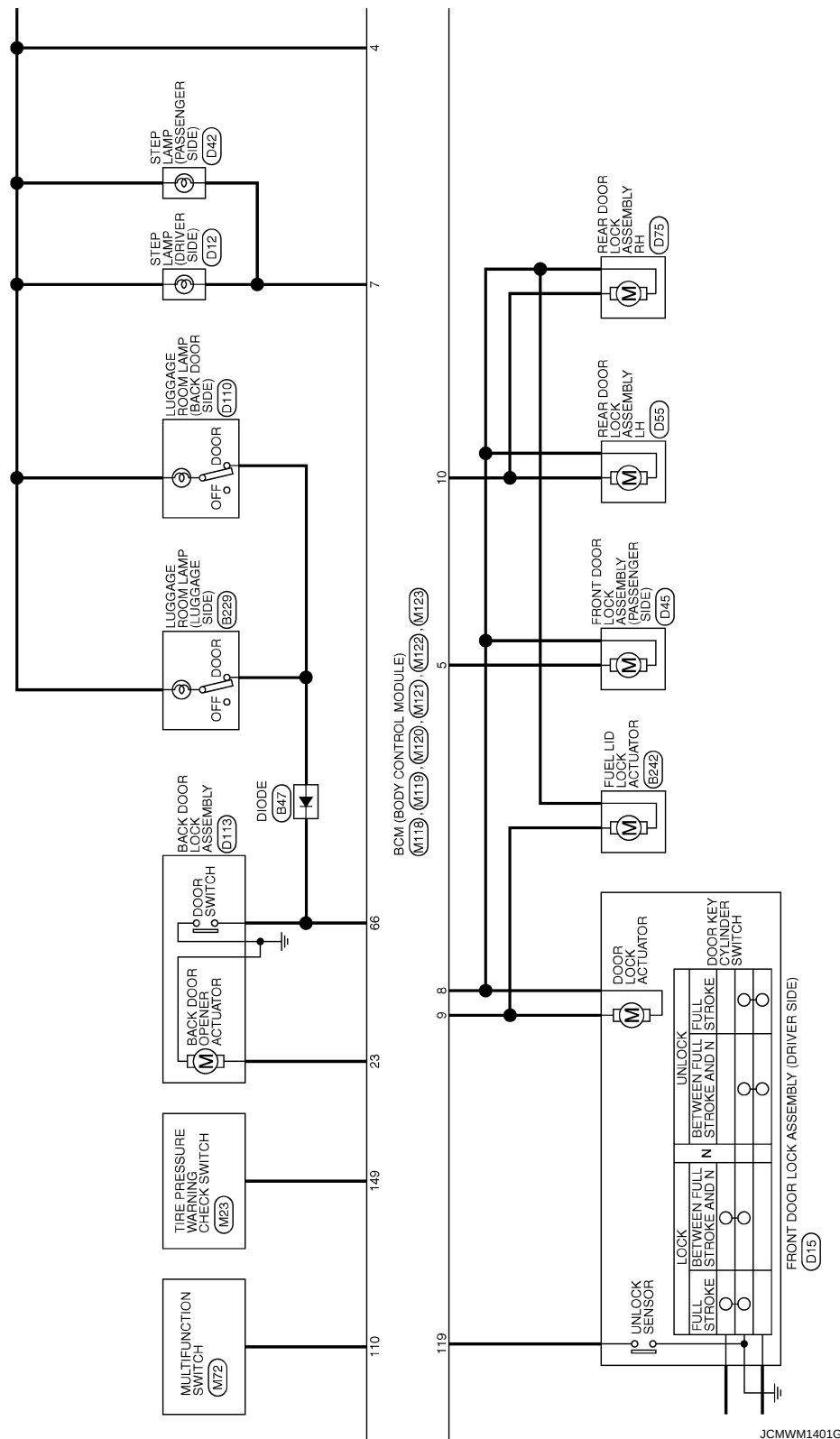


★ : This connector is not shown in "Harness Layout".

JCMWM1400G

BCM (BODY CONTROL MODULE)

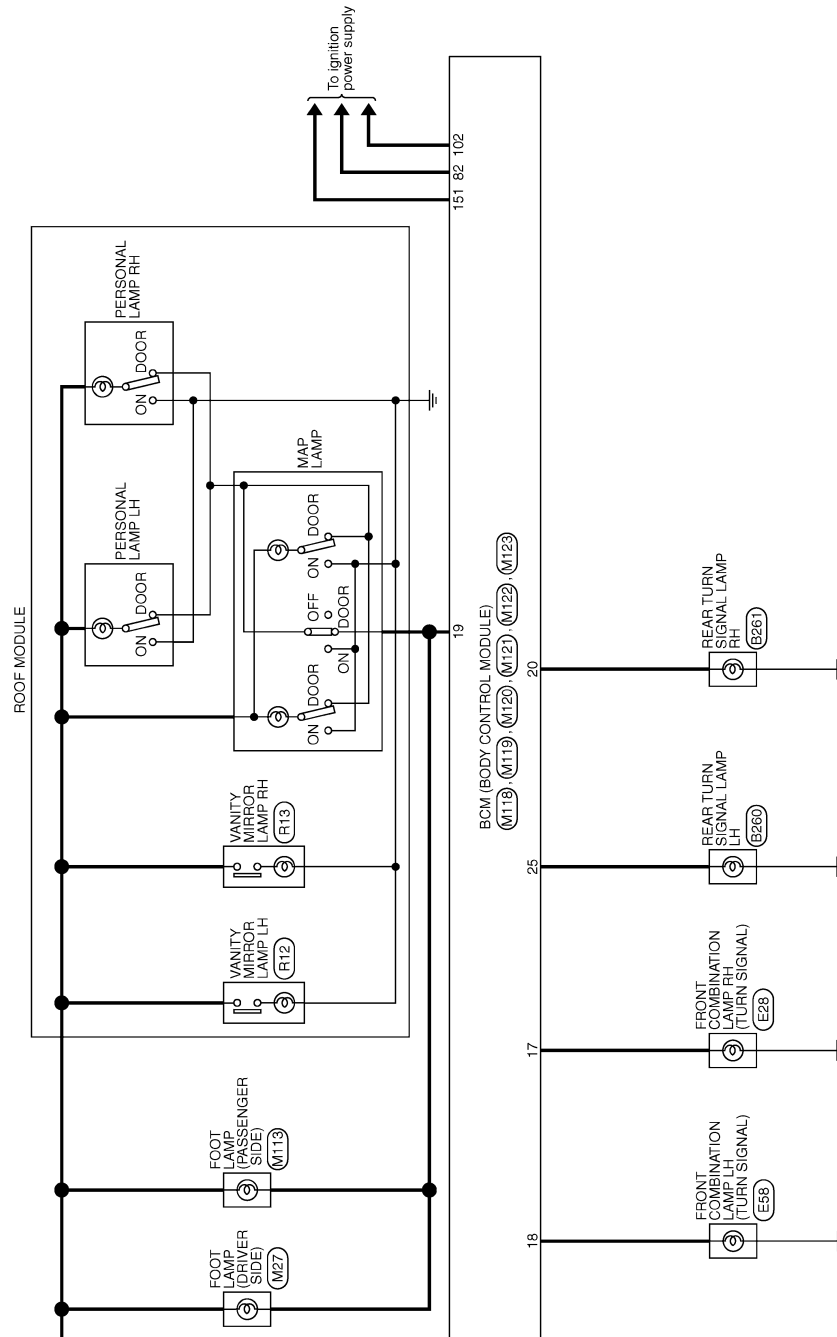
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BCM (BODY CONTROL MODULE)

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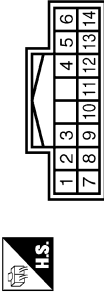
JCMWWM1402G

BCM (BODY CONTROL MODULE)

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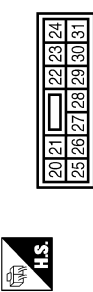
BCM (BODY CONTROL MODULE)

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



Terminal No.	Color of Wire	Signal Name [Specification]
2	SB	OUTPUT 4
5	L	OUTPUT 3
7	V	INPUT 3
8	O	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.	M120
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS12FW-CS



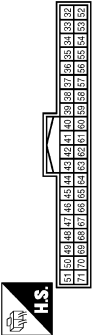
Terminal No.	Color of Wire	Signal Name [Specification]
20	V	TURN SIGNAL RH (REAR)
23	G	BACK DOOR OPEN OUTPUT
25	G	TURN SIGNAL LH (REAR)
26	G	REAR WIPER OUTPUT

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M33FB-LC



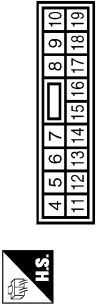
Terminal No.	Color of Wire	Signal Name [Specification]
1	W	BAT (F/L)
2	Y	POWER WINDOW POWER SUPPLY(BAT)
3	O	POWER WINDOW POWER SUPPLY(RAP)

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 ANTI-
35	V	LUGGAGE ROOM ANTI+
38	B	REAR BUMPER ANTI-
39	W	REAR BUMPER ANTI+
47	Y	IGN RELAY IPDM E/R CONT
52	SB	STARTER RELAY CONT
61	W	BACK DOOR OPENER REQUEST SW
64	V	REQUEST SW BUZZER
65	O	REAR WIPER STOP POSITION
66	R	BACK DOOR SW
67	GR	BACK DOOR OPENER SW

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



Terminal No.	Color of Wire	Signal Name [Specification]
4	LG	INTERIOR ROOM LAMP POWER SUPPLY
5	L	PASSSENGER DOOR UNLOCK OUTPUT
7	Y	STEP LAMP OUTPUT
8	V	ALL DOOR FUEL LID LOCK OUTPUT
9	G	DRIVER DOOR UNLOCK OUTPUT
10	BR	REAR DOOR UNLOCK OUTPUT
11	R	BAT (FUSE)
13	B	GND
14	W	PUSH-BUTTON IGNITION SW ILL GND
15	Y	ACC IND
17	W	TURN SIGNAL RH (FRONT)

68	BR	REAR RH DOOR SW
69	R	REAR LH DOOR SW

18	O	TURN SIGNAL LH (FRONT)
19	V	ROOM LAMP TIMER CONTROL

JCMWWM1403GI

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

BCM (BODY CONTROL MODULE)

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	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	12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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Display contents of CONSULT	Fail-safe	Cancellation	
B2013: ID DISCORD BCM-S/L	Inhibit engine cranking	Erase DTC	A
B2014: CHAIN OF S/L-BCM	Inhibit engine cranking	Erase DTC	B
B2190: NATS ANTENNA AMP	Inhibit engine cranking	Erase DTC	B
B2191: DIFFERENCE OF KEY	Inhibit engine cranking	Erase DTC	
B2192: ID DISCORD BCM-ECM	Inhibit engine cranking	Erase DTC	C
B2193: CHAIN OF BCM-ECM	Inhibit engine cranking	Erase DTC	
B2557: VEHICLE SPEED	Inhibit steering lock	When normal vehicle speed signals have been received from ABS actuator and electric unit (control unit) for 500 ms	D
B2560: STARTER CONT RELAY	Inhibit engine cranking	500 ms after the following CAN signal communication status has become consistent • Starter control relay signal • Starter relay status signal	E
B2601: SHIFT POSITION	Inhibit steering lock	500 ms after the following signal reception status becomes consistent • Selector lever P position switch signal • P range signal (CAN)	F
B2602: SHIFT POSITION	Inhibit steering lock	5 seconds after the following BCM recognition conditions are fulfilled • Ignition switch is in the ON position • Selector lever P position switch signal: Except P position (battery voltage) • Vehicle speed: 4 km/h (2.5 MPH) or more	G
B2603: SHIFT POSI STATUS	Inhibit steering lock	500 ms after the following BCM recognition conditions are fulfilled • Ignition switch is in the ON position • Selector lever P position switch signal: Except P position (battery voltage) • Selector lever P/N position signal: Except P and N positions (0 V)	H
B2604: PNP SW	Inhibit steering lock	500 ms after any of the following BCM recognition conditions is fulfilled • Status 1 - Ignition switch is in the ON position - Selector lever P/N position signal: P and N position (battery voltage) - P range signal or N range signal (CAN): ON • Status 2 - Ignition switch is in the ON position - Selector lever P/N position signal: Except P and N positions (0 V) - P range signal and N range signal (CAN): OFF	I
B2605: PNP SW	Inhibit steering lock	500 ms after any of the following BCM recognition conditions is fulfilled • Ignition switch is in the ON position - Power position: IGN - Selector lever P/N position signal: Except P and N positions (0 V) - Interlock/PNP switch signal (CAN): OFF • Status 2 - Ignition switch is in the ON position - Selector lever P/N position signal: P or N position (battery voltage) - PNP switch signal (CAN): ON	J
B2606: S/L RELAY	Inhibit engine cranking	500 ms after the following CAN signal communication status has become consistent • Steering lock relay signal (Request signal) • Steering lock relay signal (Condition signal)	K
B2607: S/L RELAY	Inhibit engine cranking	500 ms after the following CAN signal communication status has become consistent • Steering lock relay signal (Request signal) • Steering lock relay signal (Condition signal)	WW

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Display contents of CONSULT	Fail-safe	Cancellation
B2608: STARTER RELAY	Inhibit engine cranking	500 ms after the following signal communication status becomes consistent - Starter motor relay control signal - Starter relay status signal (CAN)
B2609: S/L STATUS	- Inhibit engine cranking - Inhibit steering lock	When the following steering lock conditions agree - BCM steering lock control status - Steering lock condition No. 1 signal status - Steering lock condition No. 2 signal status
B260A: IGNITION RELAY	Inhibit engine cranking	500 ms after the following conditions are fulfilled - IGN relay (IPDM E/R) control signal: OFF (Battery voltage) - Ignition ON signal (CAN to IPDM E/R): OFF (Request signal) - Ignition ON signal (CAN from IPDM E/R): OFF (Condition signal)
B260F: ENG STATE SIG LOST	Maintains the power supply position attained at the time of DTC detection	When any of the following conditions is fulfilled - Power position changes to ACC - Receives engine status signal (CAN)
B2612: S/L STATUS	- Inhibit engine cranking - Inhibit steering lock	When any of the following conditions is fulfilled - Steering lock unit status signal (CAN) is received normally - The BCM steering lock control status matches the steering lock status recognized by the steering lock unit status signal (CAN from IPDM E/R)
B2617: STARTER RELAY CIRC	Inhibit engine cranking	1 second after the starter motor relay control inside BCM becomes normal
B2618: BCM	Inhibit engine cranking	1 second after the ignition relay (IPDM E/R) control inside BCM becomes normal
B2619: BCM	Inhibit engine cranking	1 second after the steering lock unit power supply output control inside BCM becomes normal
B261E: VEHICLE TYPE	Inhibit engine cranking	BCM initialization
B26E1: ENG STATE NO RECIV	Inhibit engine cranking	When any of the following conditions is fulfilled - Power position changes to ACC - Receives engine status signal (CAN)
B26E9: S/L STATUS	- Inhibit engine cranking - Inhibit steering lock	When BCM transmits the LOCK request signal to steering lock unit, and receives LOCK response signal from steering lock unit, the following conditions is fulfilled - Steering condition No. 1 signal: LOCK (0V) - Steering condition No. 2 signal: LOCK (Battery voltage)

HIGH FLASHER OPERATION

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

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

NOTE:

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

DTC Inspection Priority Chart

INFOID:000000003769975

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 CIRCUIT - U1010: CONTROL UNIT (CAN)
3	- B2190: NATS ANTENNA AMP - B2191: DIFFERENCE OF KEY - B2192: ID DISCORD BCM-ECM - B2193: CHAIN OF BCM-ECM

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Priority	DTC	
4	• B2013: ID DISCORD BCM-S/L	A
	• B2014: CHAIN OF S/L-BCM	
	• B2553: IGNITION RELAY	
	• B2555: STOP LAMP	B
	• B2556: PUSH-BTN IGN SW	
	• B2557: VEHICLE SPEED	
	• B2560: STARTER CONT RELAY	
	• B2601: SHIFT POSITION	C
	• B2602: SHIFT POSITION	
	• B2603: SHIFT POSI STATUS	
	• B2604: PNP SW	
	• B2605: PNP SW	D
	• B2606: S/L RELAY	
	• B2607: S/L RELAY	
	• B2608: STARTER RELAY	
	• B2609: S/L STATUS	E
	• B260A: IGNITION RELAY	
	• B260B: STEERING LOCK UNIT	
	• B260C: STEERING LOCK UNIT	F
	• B260D: STEERING LOCK UNIT	
	• B260F: ENG STATE SIG LOST	
	• B2612: S/L STATUS	
	• B2614: ACC RELAY CIRC	G
	• B2615: BLOWER RELAY CIRC	
	• B2616: IGN RELAY CIRC	
	• B2617: STARTER RELAY CIRC	
	• B2618: BCM	H
	• B2619: BCM	
	• B261A: PUSH-BTN IGN SW	
	• B261E: VEHICLE TYPE	
	• B26E1: ENG STATE NO RECIV	I
	• B26E9: S/L STATUS	
	• B26EA: KEY REGISTRATION	
	• C1729: VHCL SPEED SIG ERR	J
	• U0415: VEHICLE SPEED SIG	
5	• C1704: LOW PRESSURE FL	
	• C1705: LOW PRESSURE FR	
	• C1706: LOW PRESSURE RR	K
	• C1707: LOW PRESSURE RL	
	• C1708: [NO DATA] FL	
	• C1709: [NO DATA] FR	
	• C1710: [NO DATA] RR	
	• C1711: [NO DATA] RL	
	• C1712: [CHECKSUM ERR] FL	
	• C1713: [CHECKSUM ERR] FR	
	• C1714: [CHECKSUM ERR] RR	
	• C1715: [CHECKSUM ERR] RL	
	• C1716: [PRESSDATA ERR] FL	
	• C1717: [PRESSDATA ERR] FR	
	• C1718: [PRESSDATA ERR] RR	
	• C1719: [PRESSDATA ERR] RL	
	• C1720: [CODE ERR] FL	
	• C1721: [CODE ERR] FR	
	• C1722: [CODE ERR] RR	
	• C1723: [CODE ERR] RL	
	• C1724: [BATT VOLT LOW] FL	
	• C1725: [BATT VOLT LOW] FR	
	• C1726: [BATT VOLT LOW] RR	
	• C1727: [BATT VOLT LOW] RL	
	• C1734: CONTROL UNIT	
6	• B2621: INSIDE ANTENNA	
	• B2622: INSIDE ANTENNA	
	• B2623: INSIDE ANTENNA	

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BCM (BODY CONTROL MODULE)

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DTC Index

INFOID:000000003769976

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 and IGN Counter, refer to [WW-13, "COMMON ITEM : CONSULT-III Function \(BCM - COMMON ITEM\)"](#).

CONSULT display	Fail-safe	Freeze Frame Data	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
No DTC is detected. further testing may be required.	—	—	—	—	—
U1000: CAN COMM CIRCUIT	—	—	—	—	BCS-37
U1010: CONTROL UNIT (CAN)	—	—	—	—	BCS-38
U0415: VEHICLE SPEED SIG	—	—	—	—	BCS-39
B2013: ID DISCORD BCM-S/L	×	×	—	—	SEC-48
B2014: CHAIN OF S/L-BCM	×	×	—	—	SEC-49
B2190: NATS ANTENNA AMP	×	—	—	—	SEC-42
B2191: DIFFERENCE OF KEY	×	—	—	—	SEC-45
B2192: ID DISCORD BCM-ECM	×	—	—	—	SEC-46
B2193: CHAIN OF BCM-ECM	×	—	—	—	SEC-47
B2553: IGNITION RELAY	—	×	—	—	PCS-49
B2555: STOP LAMP	—	×	—	—	SEC-52
B2556: PUSH-BTN IGN SW	—	×	×	—	SEC-54
B2557: VEHICLE SPEED	×	×	×	—	SEC-56
B2560: STARTER CONT RELAY	×	×	×	—	SEC-57
B2562: LOW VOLTAGE	—	×	—	—	BCS-40
B2601: SHIFT POSITION	×	×	×	—	SEC-58
B2602: SHIFT POSITION	×	×	×	—	SEC-61
B2603: SHIFT POSI STATUS	×	×	×	—	SEC-63
B2604: PNP SW	×	×	×	—	SEC-66
B2605: PNP SW	×	×	×	—	SEC-68
B2606: S/L RELAY	×	×	×	—	SEC-70
B2607: S/L RELAY	×	×	×	—	SEC-71
B2608: STARTER RELAY	×	×	×	—	SEC-73
B2609: S/L STATUS	×	×	×	—	SEC-75
B260A: IGNITION RELAY	×	×	×	—	PCS-51
B260B: STEERING LOCK UNIT	—	×	×	—	SEC-79
B260C: STEERING LOCK UNIT	—	×	×	—	SEC-80
B260D: STEERING LOCK UNIT	—	×	×	—	SEC-81
B260F: ENG STATE SIG LOST	×	×	×	—	SEC-82
B2612: S/L STATUS	×	×	×	—	SEC-86
B2614: ACC RELAY CIRC	—	×	×	—	PCS-53
B2615: BLOWER RELAY CIRC	—	×	×	—	PCS-57
B2616: IGN RELAY CIRC	—	×	×	—	PCS-59
B2617: STARTER RELAY CIRC	×	×	×	—	SEC-90

BCM (BODY CONTROL MODULE)

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CONSULT display	Fail-safe	Freeze Frame Data	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page	
B2618: BCM	×	×	×	—	PCS-61	A
B2619: BCM	×	×	×	—	SEC-92	B
B261A: PUSH-BTN IGN SW	—	×	×	—	SEC-93	
B261E: VEHICLE TYPE	×	×	× (Turn ON for 15 seconds)	—	SEC-96	C
B2621: INSIDE ANTENNA	—	×	—	—	DLK-56	
B2622: INSIDE ANTENNA	—	×	—	—	DLK-58	D
B2623: INSIDE ANTENNA	—	×	—	—	DLK-60	
B26E1: ENG STATE NO RES	×	×	×	—	SEC-83	
B26E9: S/L STATUS	×	×	× (Turn ON for 15 seconds)	—	SEC-84	E
B26EA: KEY REGISTRATION	—	×	× (Turn ON for 15 seconds)	—	SEC-85	F
C1704: LOW PRESSURE FL	—	—	—	×	WT-16	G
C1705: LOW PRESSURE FR	—	—	—	×		
C1706: LOW PRESSURE RR	—	—	—	×		
C1707: LOW PRESSURE RL	—	—	—	×		
C1708: [NO DATA] FL	—	—	—	×	WT-18	H
C1709: [NO DATA] FR	—	—	—	×		
C1710: [NO DATA] RR	—	—	—	×		
C1711: [NO DATA] RL	—	—	—	×		
C1712: [CHECKSUM ERR] FL	—	—	—	×	WT-21	J
C1713: [CHECKSUM ERR] FR	—	—	—	×		
C1714: [CHECKSUM ERR] RR	—	—	—	×		
C1715: [CHECKSUM ERR] RL	—	—	—	×		
C1716: [PRESSDATA ERR] FL	—	—	—	×	WT-24	K
C1717: [PRESSDATA ERR] FR	—	—	—	×		
C1718: [PRESSDATA ERR] RR	—	—	—	×		
C1719: [PRESSDATA ERR] RL	—	—	—	×		
C1720: [CODE ERR] FL	—	—	—	×	WT-26	M
C1721: [CODE ERR] FR	—	—	—	×		
C1722: [CODE ERR] RR	—	—	—	×		
C1723: [CODE ERR] RL	—	—	—	×		
C1724: [BATT VOLT LOW] FL	—	—	—	×	WT-29	N
C1725: [BATT VOLT LOW] FR	—	—	—	×		
C1726: [BATT VOLT LOW] RR	—	—	—	×		
C1727: [BATT VOLT LOW] RL	—	—	—	×		
C1729: VHCL SPEED SIG ERR	—	—	—	×	WT-32	O
C1734: CONTROL UNIT	—	—	—	×	WT-33	

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

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

Reference Value

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VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition		Value/Status
RAD FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	0 – 100 %
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
IHBT RLY -REQ	Ignition switch ON		Off
	At engine cranking		On

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

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Monitor Item	Condition		Value/Status
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	None of the conditions below are present		Off
	- Open the driver door after the ignition switch is turned OFF (for a few seconds) - Press the push-button ignition switch when the steering lock is activated		On
S/L STATE	Steering lock is activated		LOCK
	Steering lock is deactivated		UNLOCK
	[DTC: B210A] is detected		UNKWN
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

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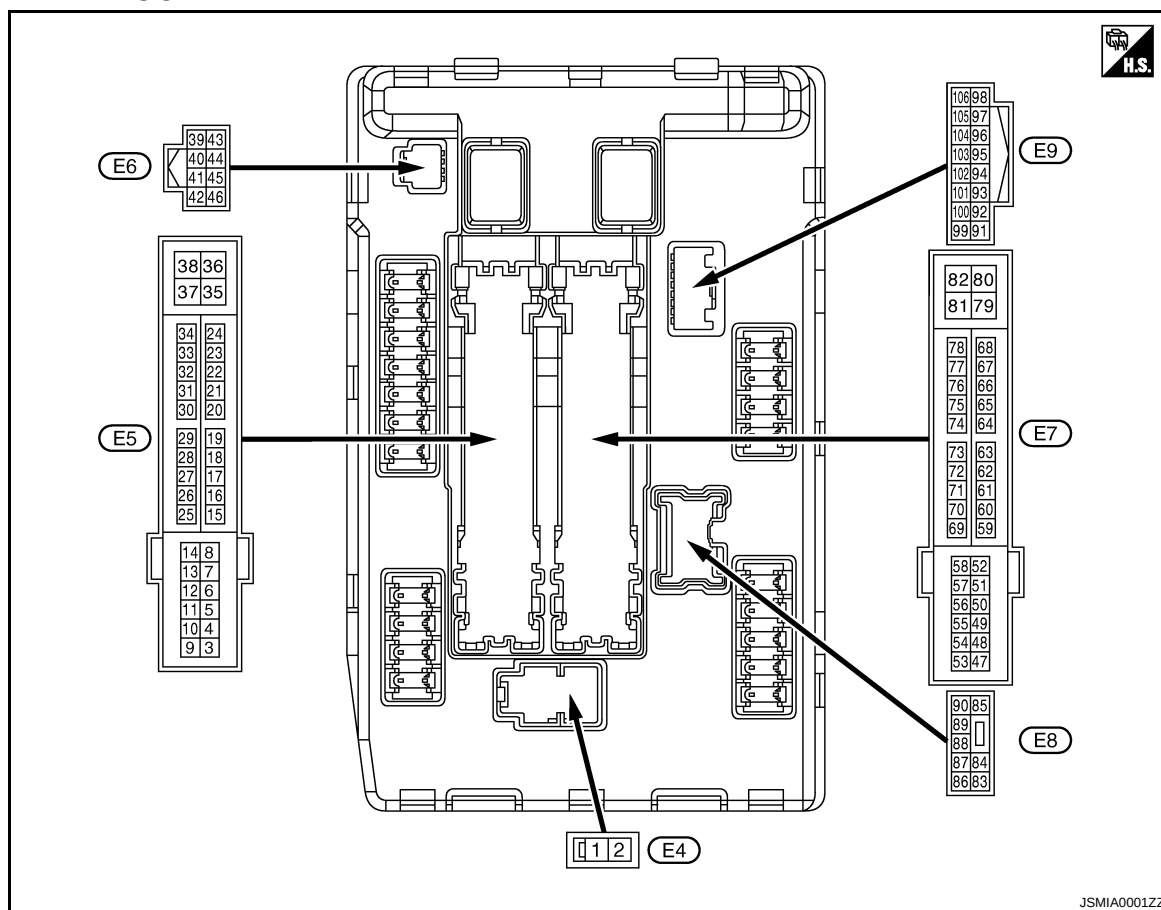
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IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

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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
11 (BR)	Ground	Steering lock unit power supply	Output	Ignition switch OFF	A few seconds after opening the driver door	Battery voltage
				Ignition switch LOCK	Press the push-button ignition switch	Battery voltage
				Ignition switch ACC or ON		0 V
12 (B/W)	Ground	Ground	—	Ignition switch ON		0 V

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

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Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	—	Signal name	Input/ Output			
13 (SB)	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 auto stop	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* (R)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
27 (O)	Ground	Ignition relay monitor	Input	Ignition switch OFF or ACC		Battery voltage
				Ignition switch ON		0 V
28 (L)	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
32 (L)	Ground	Steering lock unit condition-1	Input	Steering lock is activated		0 V
				Steering lock is deactivated		Battery voltage
33 (P)	Ground	Steering lock unit condition-2	Input	Steering lock is activated		Battery voltage
				Steering lock is deactivated		0 V
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/W)	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	Control device (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

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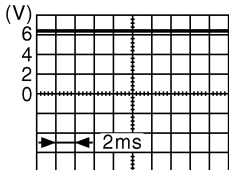
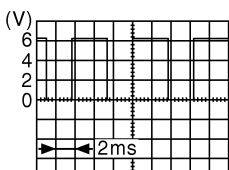
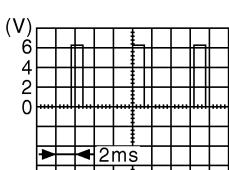
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

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Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
46 (R)	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
49 (R)	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 ignition switch OFF)		Battery voltage
51 (G)	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 ignition switch OFF)		Battery voltage
54 (LG)	Ground	Throttle control motor 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 ignition switch OFF)		Battery voltage
55 (BR)	Ground	ECM power supply	Output	Ignition switch OFF		Battery voltage
56 (V)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
57 (SB)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
58 (P)	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 ignition switch OFF)		0 – 1.5 V
70 (O)	Ground	Throttle control motor relay control	Output	Ignition switch ON → OFF		0 – 1.0 V ↓ Battery voltage ↓ 0 V
				Ignition switch ON		0 – 1.0 V

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

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
74 (P)	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	Engine stopped	0 V
					Engine running	Battery voltage
76 (V)	Ground	Power generation com- mand signal	Output	Ignition switch ON		 JPMIA0001GB 6.3 V
				40% is set on "ACTIVE TEST", "AL- TERNATOR DUTY" of "ENGINE"		 JPMIA0002GB 3.8 V
				80% is set on "ACTIVE TEST", "AL- TERNATOR DUTY" of "ENGINE"		 JPMIA0003GB 1.4 V
77 (L)	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 (O)	Ground	Headlamp LO (RH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 2ND	Battery voltage
84 (V)	Ground	Headlamp LO (LH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 2ND	Battery voltage
86 (W)	Ground	Front fog lamp (RH)	Output	Lighting switch 2ND	- Front fog lamp switch ON - Daytime running light activated (Only for Can- ada)	Battery voltage
					Front fog lamp switch OFF	0 V

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

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Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
87 (L)	Ground	Front fog lamp (LH)	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 (GR)	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 (P)	Ground	Headlamp HI (LH)	Output	Ignition switch ON	- Lighting switch HI - Lighting switch PASS	Battery voltage
					Lighting switch OFF	0 V
91 (P)	Ground	Parking lamp (RH)	Output	Ignition switch ON	Lighting switch 1ST	Battery voltage
					Lighting switch OFF	0 V
92 (O)	Ground	Parking lamp (LH)	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

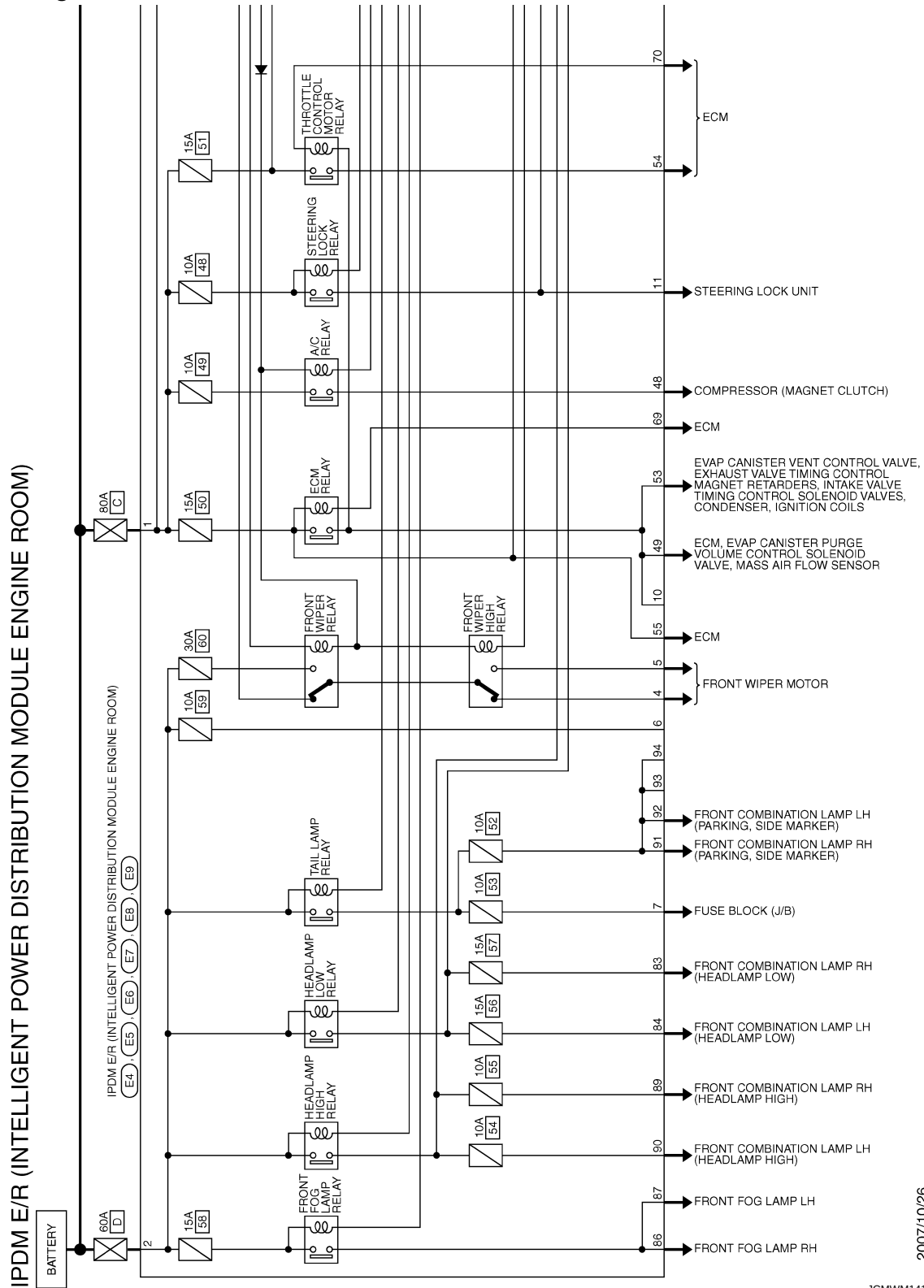
*: Only for the models with ICC system

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

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Wiring Diagram - IPDM E/R -

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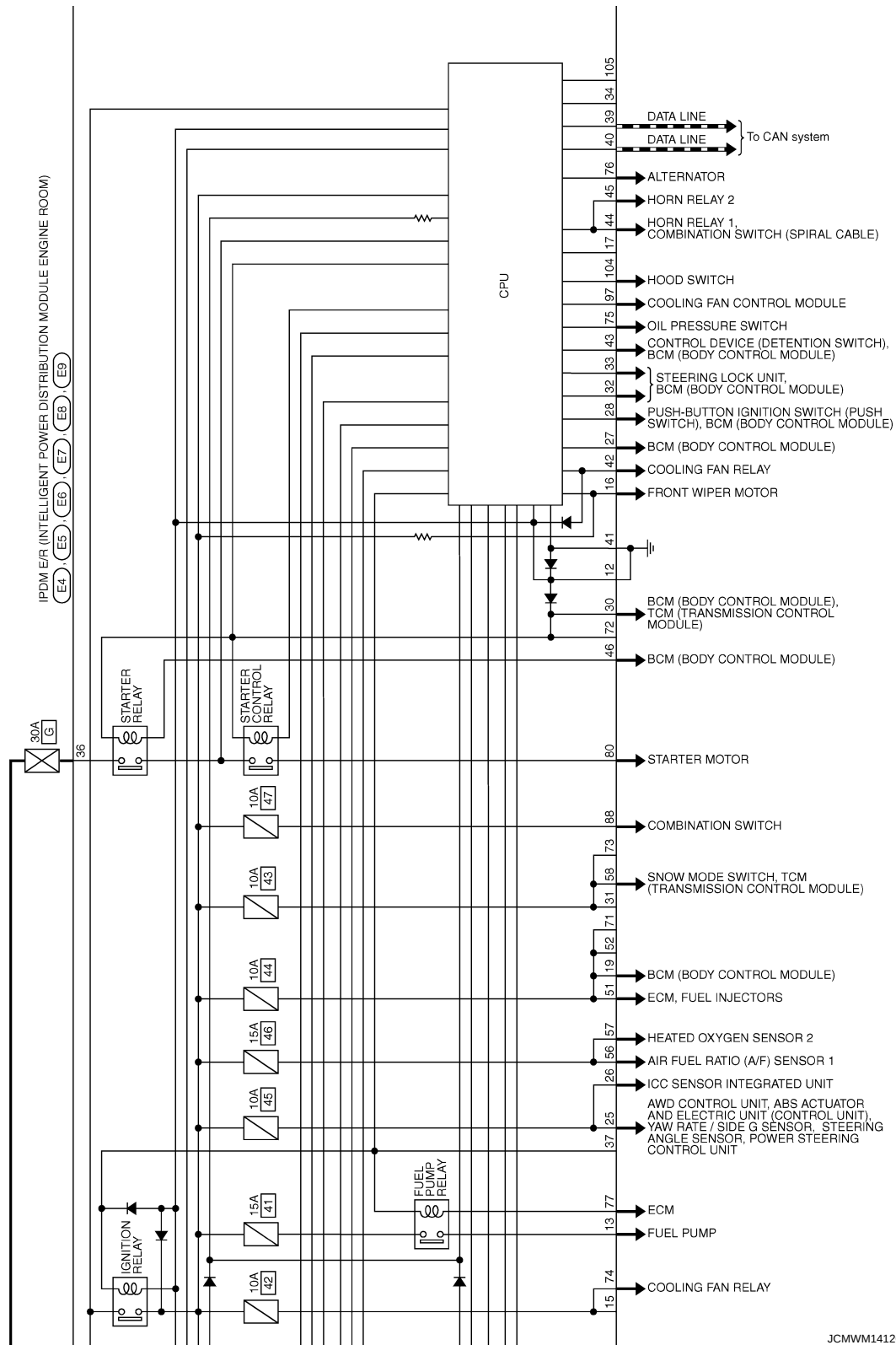
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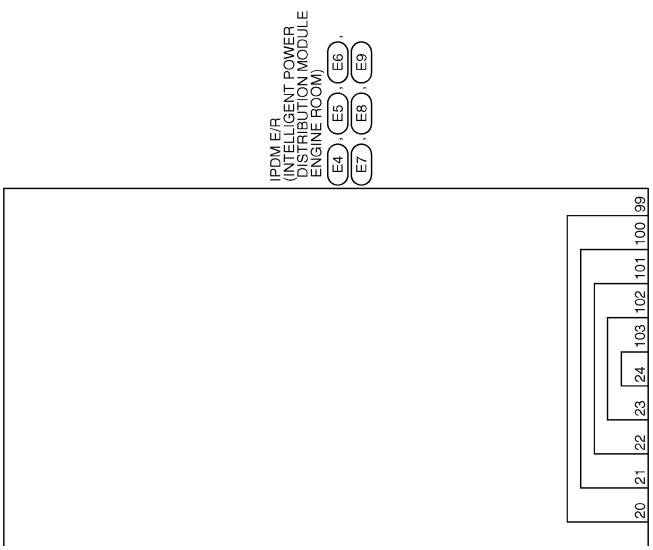
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IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

< ECU DIAGNOSIS >

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	102FB-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



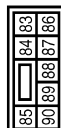
Terminal No.	Color of Wire	Signal Name [Specification]
4	V	-
5	L	-
7	R	-
11	BR	-
12	B/W	-
13	SB	-
16	LG	-
19	W	-
25	G	-
26	R	-
27	O	-

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	R	-
51	G	-
53	W	-
54	LG	-
55	BR	-
56	V	-
57	SB	-
58	P	-
69	W	-
70	O	-

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



Terminal No.	Color of Wire	Signal Name [Specification]
83	O	-
84	V	-
86	W	-
87	L	-
88	GR	-
89	BR	-
90	P	-

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



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

Connector No.	E9
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH18FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
91	P	-
92	O	-
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

JCMWM1414G

INFOID:0000000003769979

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

< ECU DIAGNOSIS >

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
Steering lock unit	Steering lock relay OFF

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

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

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 auto stop signal.

When a front wiper auto stop 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.

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

< ECU DIAGNOSIS >

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

NOTE:

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

STARTER MOTOR PROTECTION FUNCTION

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

DTC Index

INFOID:000000003769980

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-16
B2098: IGN RELAY ON	×	PCS-17
B2099: IGN RELAY OFF	—	PCS-18
B2108: STRG LCK RELAY ON	—	SEC-97
B2109: STRG LCK RELAY OFF	—	SEC-98
B210A: STRG LCK STATE SW	—	SEC-99
B210B: START CONT RLY ON	—	SEC-103
B210C: START CONT RLY OFF	—	SEC-104
B210D: STARTER RELAY ON	—	SEC-105
B210E: STARTER RELAY OFF	—	SEC-106
B210F: INTRLCK/PNP SW ON	—	SEC-108
B2110: INTRLCK/PNP SW OFF	—	SEC-110

WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

WIPER AND WASHER SYSTEM SYMPTOMS

Symptom Table

INFOID:000000003591483

CAUTION:

Perform the self-diagnosis with CONSULT-III 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-82, "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-26, "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-82, "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-24, "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-82, "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-97, "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 Refer to BCS-82, "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 Refer to BCS-82, "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 Refer to BCS-82, "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 Refer to BCS-82, "Symptom Table" .
		BCM —
	Intermittent control linked with vehicle speed cannot be performed.	Check the vehicle speed detection wiper setting. Refer to WW-14, "WIPER : CONSULT-III 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 Refer to BCS-82, "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 auto stop signal circuit Refer to WW-28, "Component Function Check" .
Rear wiper does not operate.	ON only	- Combination switch - Harness between combination switch and BCM - BCM Refer to BCS-82, "Symptom Table" .
	INT only	- Combination switch - Harness between combination switch and BCM - BCM Refer to BCS-82, "Symptom Table" .
	ON and INT	- Combination switch - Harness between combination switch and BCM - BCM Refer to BCS-82, "Symptom Table" .
		- BCM - Harness between rear wiper motor and BCM - Harness between rear wiper motor and ground - Rear wiper motor Refer to BCS-82, "Symptom Table" .

WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

Symptom		Probable malfunction location	Inspection item
Rear wiper does not stop.	ON only	- Combination switch - BCM	Rear wiper motor circuit Refer to WW-32, "Component Function Check" .
	INT only	- Combination switch - BCM	Combination switch Refer to BCS-82, "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-82, "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 auto stop signal circuit Refer to WW-34, "Component Function Check" .

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WW

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description

INFOID:000000003591484

FRONT WIPER MOTOR PROTECTION FUNCTION

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

REAR WIPER MOTOR PROTECTION FUNCTION

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

FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

FRONT WIPER DOES NOT OPERATE

Description

INFOID:000000003139003

The front wiper does not operate under any operating conditions.

Diagnosis Procedure

INFOID:000000003139004

1.CHECK WIPER RELAY OPERATION

☒ IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-11, "Diagnosis Description"](#).
2. Check that the front wiper operates at the LO/HI operation.

☐ CONSULT-III ACTIVE TEST

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

Lo : Front wiper LO operation

Hi : Front wiper HI operation

Off : Stop the front wiper.

Does the front wiper operate?

YES >> GO TO 5.

NO >> GO TO 2.

2.CHECK FRONT WIPER MOTOR FUSE

1. Turn the ignition switch OFF.
2. Check that the front wiper motor 30A (#60) fuse 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 (GND) 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 harnesses or connectors.

4.CHECK FRONT WIPER MOTOR OUTPUT VOLTAGE

☐ CONSULT-III ACTIVE TEST

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

FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

Terminals		Test item	Voltage (Approx.)
(+)	(-)		
IPDM E/R		FRONT WIPER	
Connector	Terminal		
E5	4	Lo	Battery voltage
		Off	0 V
	5	Hi	Battery voltage
		Off	0 V

Is the measurement normal?

- YES >> Replace front wiper motor.
NO >> Replace IPDM E/R.

5.CHECK FRONT WIPER REQUEST SIGNAL INPUT

CONSULT-III DATA MONITOR

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

Monitor item	Condition		Monitor status
FR WIPER 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.
NO >> GO TO 6.

6.CHECK COMBINATION SWITCH

Perform the inspection of the combination switch. Refer to [BCS-82, "Symptom Table"](#).

Is combination switch normal?

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

PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000003139006

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 AIRBAG" and "SEAT BELT" of this Service Manual.

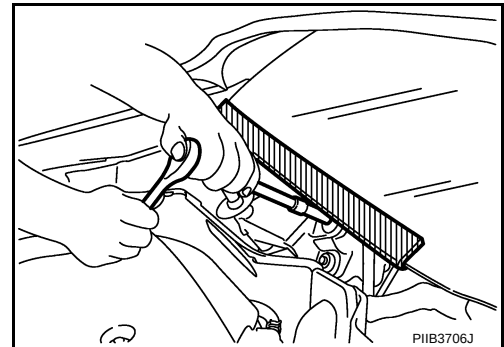
WARNING:

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

Precaution for Procedure without Cowl Top Cover

INFOID:000000003139007

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



PIIB3706J

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WASHER TANK

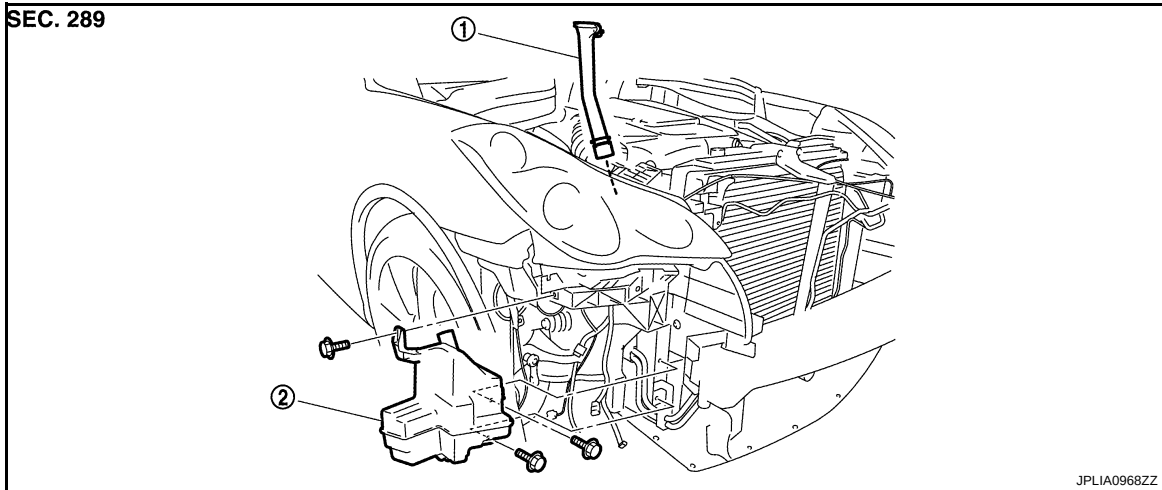
< ON-VEHICLE REPAIR >

ON-VEHICLE REPAIR

WASHER TANK

Exploded View

INFOID:000000003139008



1. Washer tank inlet

2. Washer tank

Removal and Installation

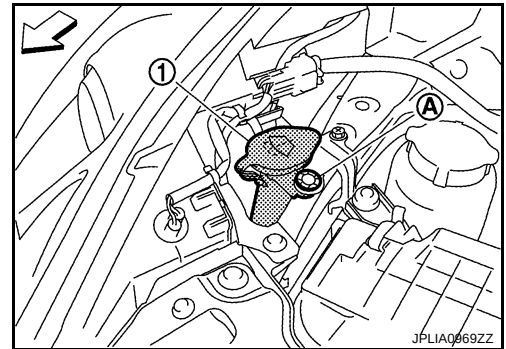
INFOID:000000003139009

REMOVAL

1. Remove the clip (A).

↖ : Vehicle front

2. Pull out the washer tank inlet (1) from the washer tank.
3. Remove the fender protector RH (front). Refer to [EXT-25, "FENDER PROTECTOR : Exploded View"](#).
4. Remove the engine lower cover. Refer to [EXT-31, "Exploded View"](#).
5. Disconnect washer pump connector.
6. Disconnect the washer level switch connector.
7. Remove front washer tube and rear washer tube.
8. Remove washer tank mounting bolts.
9. Remove washer tank from the vehicle.



INSTALLATION

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

CAUTION:

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

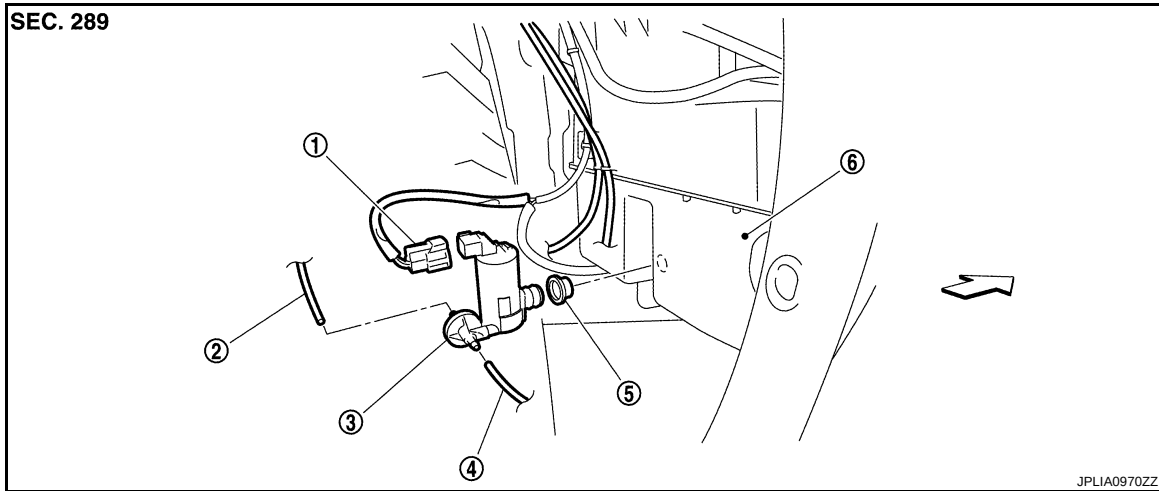
FRONT WASHER PUMP

< ON-VEHICLE REPAIR >

FRONT WASHER PUMP

Exploded View

INFOID:000000003139010



- | | | |
|--------------------------|---------------------|----------------|
| 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:000000003139011

REMOVAL

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

INSTALLATION

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

CAUTION:

Never twist the packing when installing the washer pump.

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WASHER LEVEL SWITCH

< ON-VEHICLE REPAIR >

WASHER LEVEL SWITCH

Removal and Installation

INFOID:000000003139012

The washer level switch must be replaced together with the washer tank as an assembly. Refer to [WW-100, "Removal and Installation"](#).

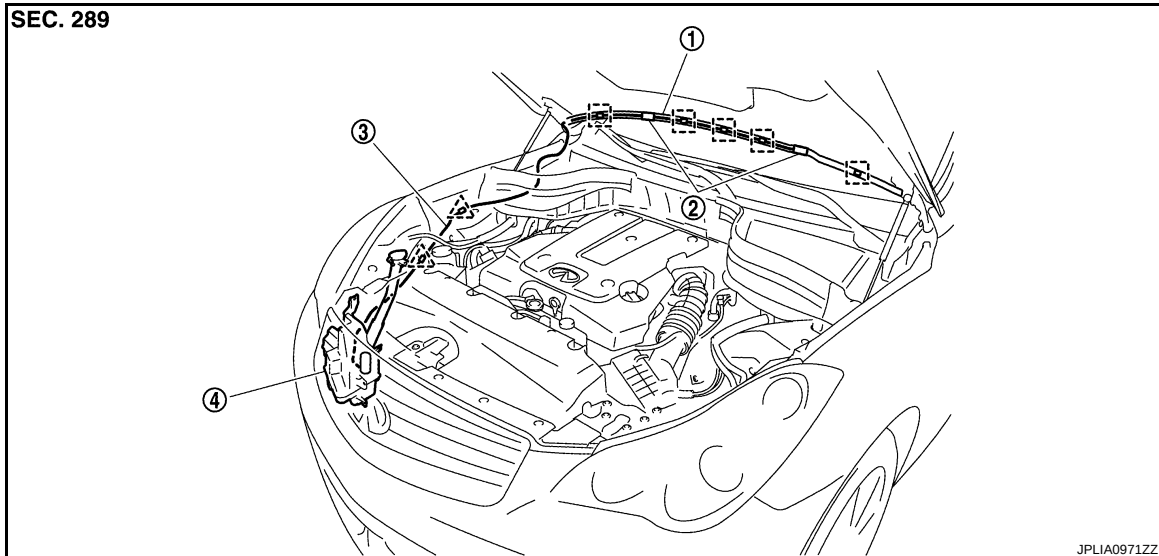
FRONT WASHER NOZZLE AND TUBE

< ON-VEHICLE REPAIR >

FRONT WASHER NOZZLE AND TUBE

Hydraulic Layout

INFOID:000000003139013



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

△ : Clip

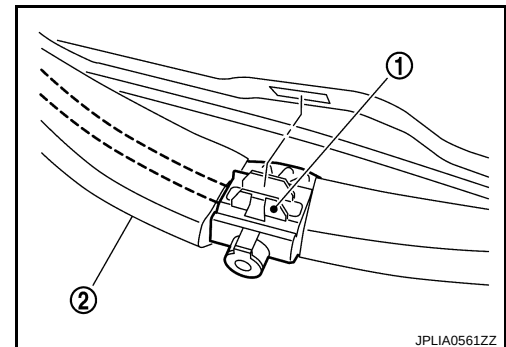
□ : Clip

Removal and Installation

INFOID:000000003587113

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. Remove the washer tube (2) from the washer nozzle.



INSTALLATION

1. Install washer tube into the washer nozzle.
2. Install the washer nozzle to the hood.
3. Adjust the washer nozzle spray position. Refer to [WW-103, "Inspection and Adjustment"](#).

CAUTION:

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

Inspection and Adjustment

INFOID:000000003587114

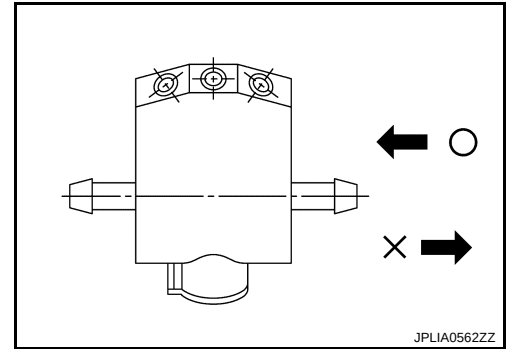
INSPECTION

Washer Nozzle Inspection

FRONT WASHER NOZZLE AND TUBE

< ON-VEHICLE REPAIR >

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

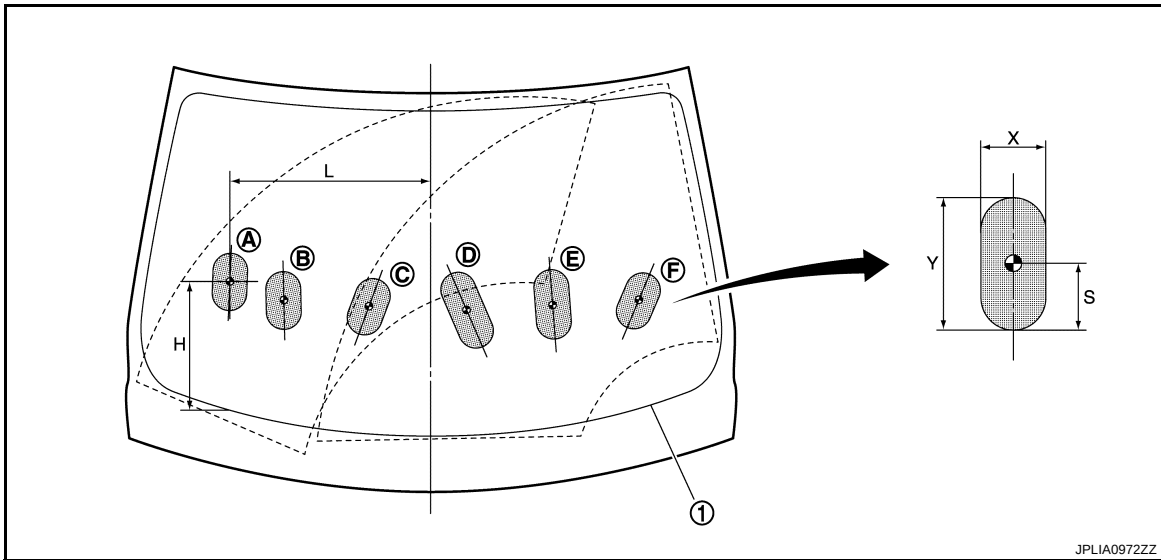


JPLIA0562ZZ

ADJUSTMENT

Washer Nozzle Spray Position Adjustment

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



JPLIA0972ZZ

1. Black printed frame line

 : Spray area

 : Target spray position

Unit: mm (in)

Spray position	H	L	X	Y	S
A	295 (11.61)	453 (17.83)	80 (3.15)	130 (5.12)	65 (2.56)
B	279 (10.98)	333 (13.11)	80 (3.15)	130 (5.12)	65 (2.56)
C	288 (11.34)	139 (5.47)	80 (3.15)	130 (5.12)	65 (2.56)
D	283 (11.14)	82 (3.23)	80 (3.15)	180 (7.09)	90 (3.54)
E	277 (10.91)	275 (10.83)	80 (3.15)	160 (6.30)	80 (3.15)
F	247 (9.72)	470 (18.50)	80 (3.15)	130 (5.12)	65 (2.56)

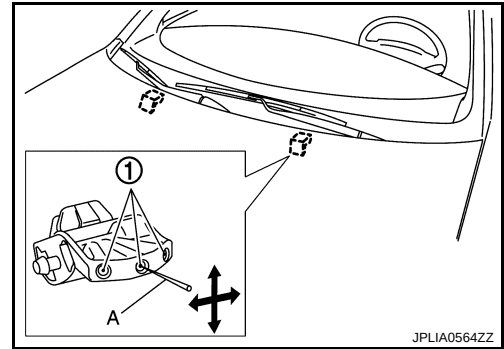
FRONT WASHER NOZZLE AND TUBE

< ON-VEHICLE REPAIR >

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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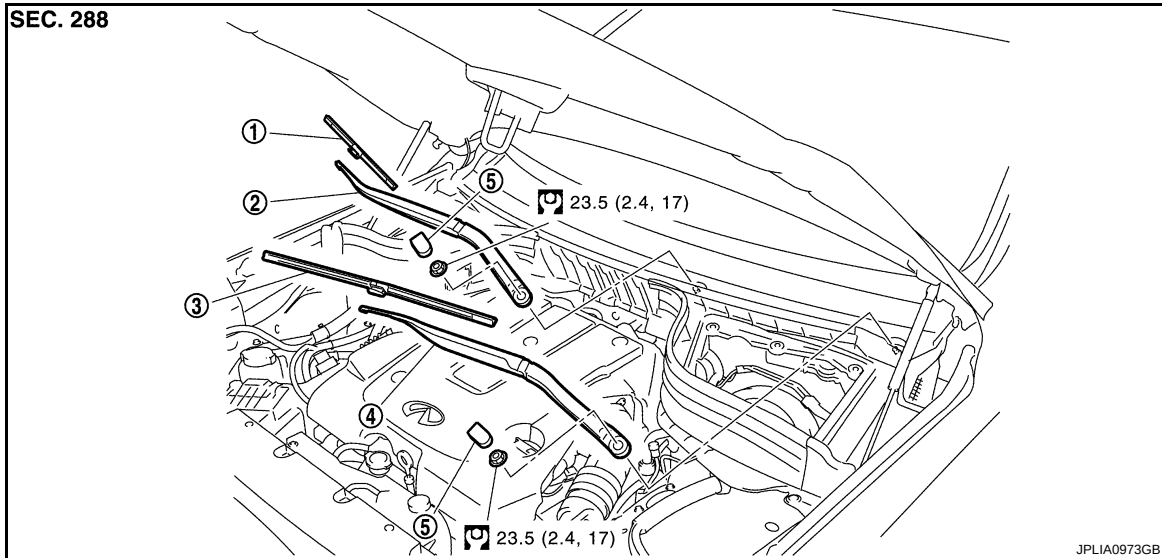
FRONT WIPER ARM AND BLADE

< ON-VEHICLE REPAIR >

FRONT WIPER ARM AND BLADE

Exploded View

INFOID:0000000003139016



- | | | |
|---------------------------|-------------------------|---------------------------|
| 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 | |

Refer to [GI-4, "Components"](#) for symbols in the figure.

Removal and Installation

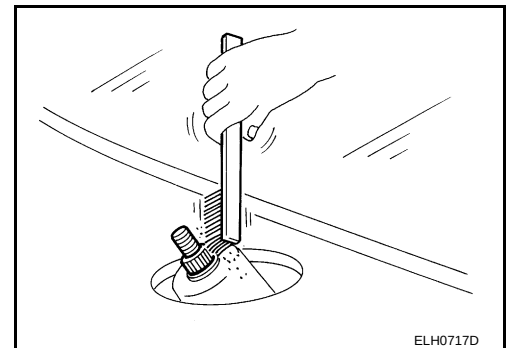
INFOID:0000000003139017

REMOVAL

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

INSTALLATION

1. Clean wiper arm mount as shown in the figure to prevent nuts from being loosened.
2. Operate the front wiper motor to move the front wiper to the auto stop position.
3. Adjust the front wiper blade position. Refer to [WW-106, "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 front wiper arm caps.



Adjustment

INFOID:0000000003139018

WIPER BLADE POSITION ADJUSTMENT

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

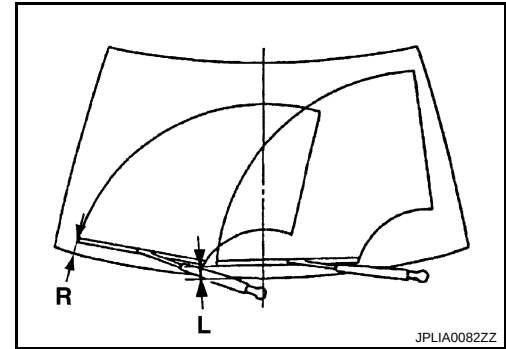
FRONT WIPER ARM AND BLADE

< ON-VEHICLE REPAIR >

Standard clearance

R : $48.0 \pm 7.5 \text{ mm}$ ($1.890 \pm 0.295 \text{ in}$)

L : $76.5 \pm 7.5 \text{ mm}$ ($3.012 \pm 0.295 \text{ in}$)



Replacement

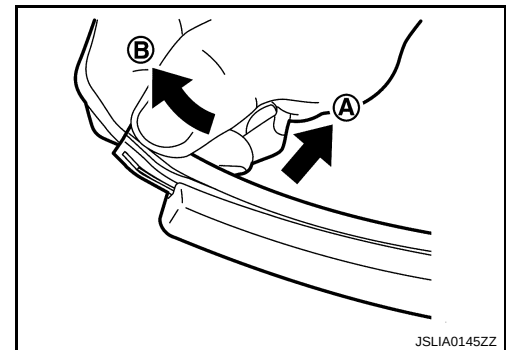
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FLAT BLADE REFILL

1. Remove the wiper blade from wiper arm.
2. Pick up the blade refill rear end to direction (A), pull out the wiper blade refill to direction (B).

CAUTION:

Never use excessive force to pull the blade refill out. The blade refill may be torn.

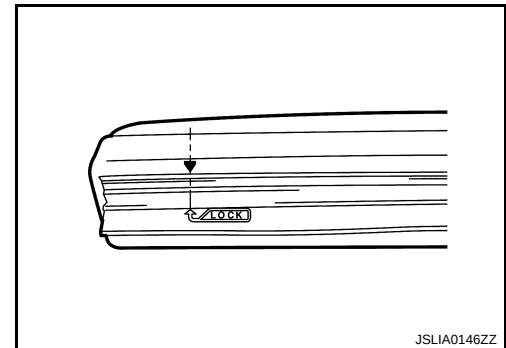


3. Insert a tip of new blade refill ("LOCK" mark is blade refill rear end) from the wiper blade rear end. And then slide until the hole of the blade refill fits in the tab of the wiper blade.

NOTE:

Confirm that "▼" mark (Wiper blade side) fits to "LOCK" mark (Blade refill side).

4. Confirm that an installation condition of the blade refill.
5. Install the wiper blade to the wiper arm.



A
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FRONT WIPER DRIVE ASSEMBLY

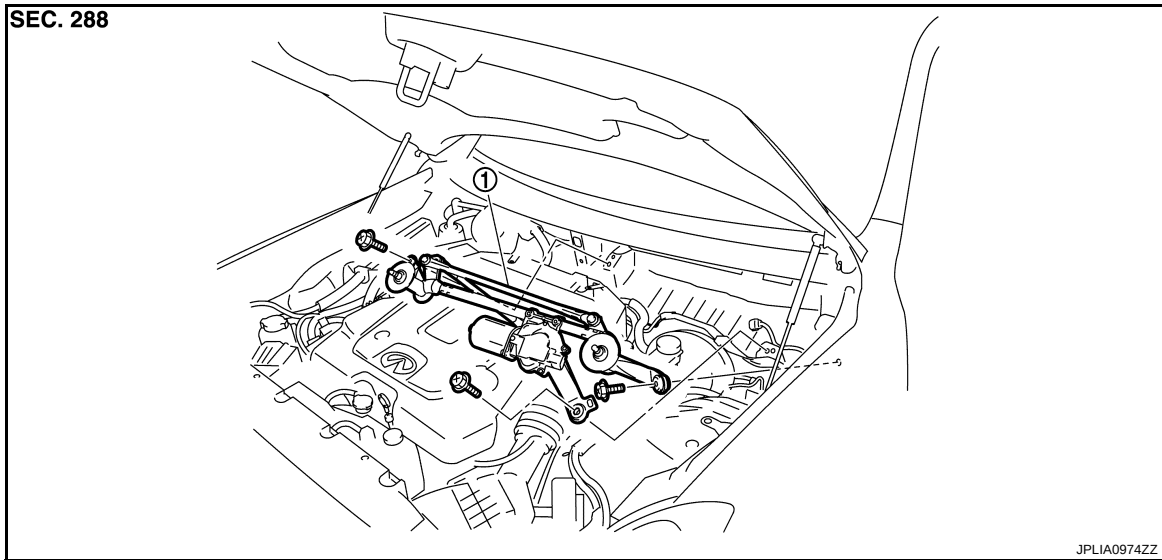
< ON-VEHICLE REPAIR >

FRONT WIPER DRIVE ASSEMBLY

Exploded View

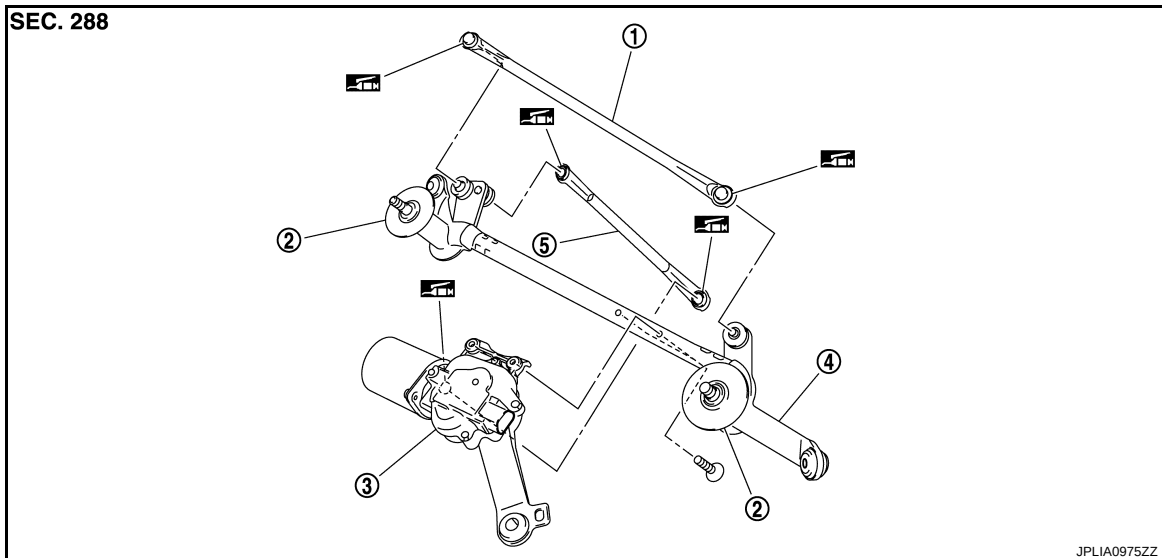
INFOID:000000003139019

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:000000003139020

REMOVAL

1. Remove front wiper arm. Refer to [WW-106, "Removal and Installation"](#).
2. Remove cowl top cover. Refer to [EXT-23, "Removal and Installation"](#).
3. Remove bolts from the front wiper drive assembly.

FRONT WIPER DRIVE ASSEMBLY

< ON-VEHICLE REPAIR >

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

A

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-23, "Removal and Installation"](#).
5. Install front wiper arms. Refer to [WW-106, "Removal and Installation"](#).

B

C

Disassembly and Assembly

INFOID:000000003139021

D

DISASSEMBLY

1. Remove the front wiper linkage 1 and 2 from the front wiper drive assembly.
CAUTION:
Do not 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.

E

F

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 front wiper motor to front wiper frame.
5. Install the front wiper linkage 2 to the front wiper motor and the front wiper frame.
6. Install the front wiper linkage 1 to the front wiper frame.
CAUTION:
 - Do not drop front wiper motor or cause it to come into contact with other parts.
 - Be careful for the grease condition at the front wiper motor and front wiper linkage joint (retainer). Apply Multi-purpose grease or an equivalent if necessary.

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WIPER AND WASHER SWITCH

< ON-VEHICLE REPAIR >

WIPER AND WASHER SWITCH

Exploded View

INFOID:000000003464507

Refer to [BCS-85, "Exploded View"](#).

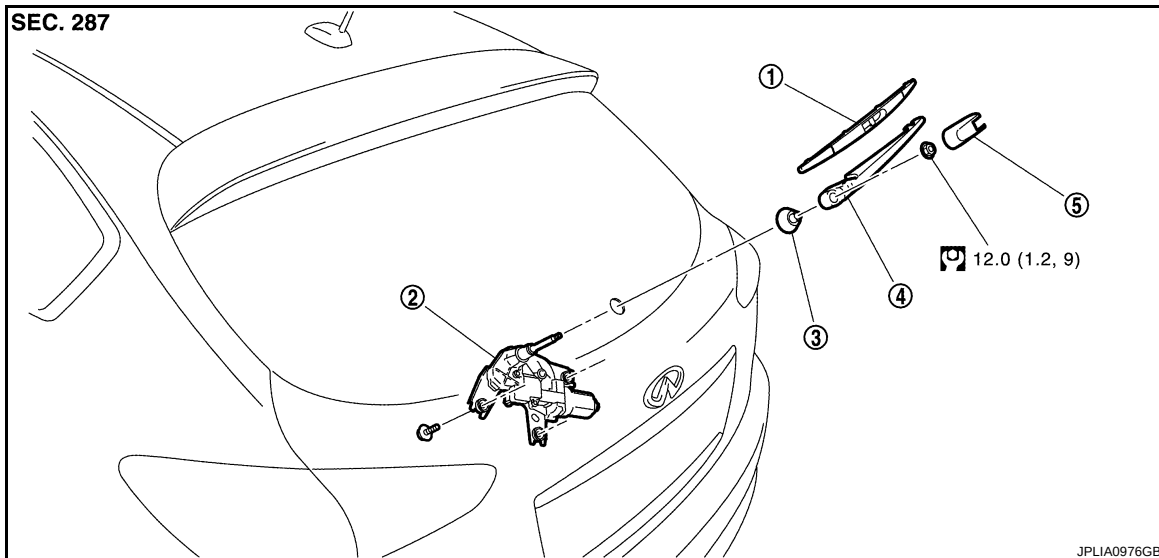
REAR WIPER ARM

< ON-VEHICLE REPAIR >

REAR WIPER ARM

Exploded View

INFOID:000000003464509



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

Refer to [GI-4, "Components"](#) for symbols in the figure.

Removal and Installation

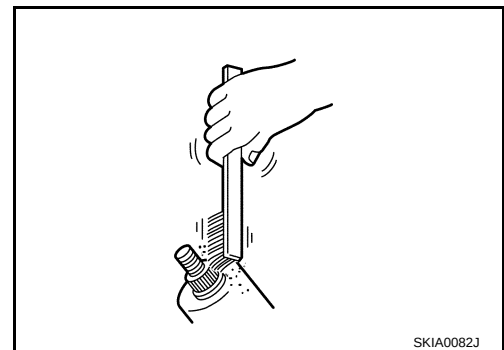
INFOID:000000003464510

REMOVAL

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

INSTALLATION

1. Clean wiper arm mount as shown in the figure to prevent nut from being loosened.
2. Operate the rear wiper motor to the auto stop position.
3. Adjust the rear wiper blade position. Refer to [WW-111, "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:000000003464511

REAR WIPER BLADE POSITION ADJUSTMENT

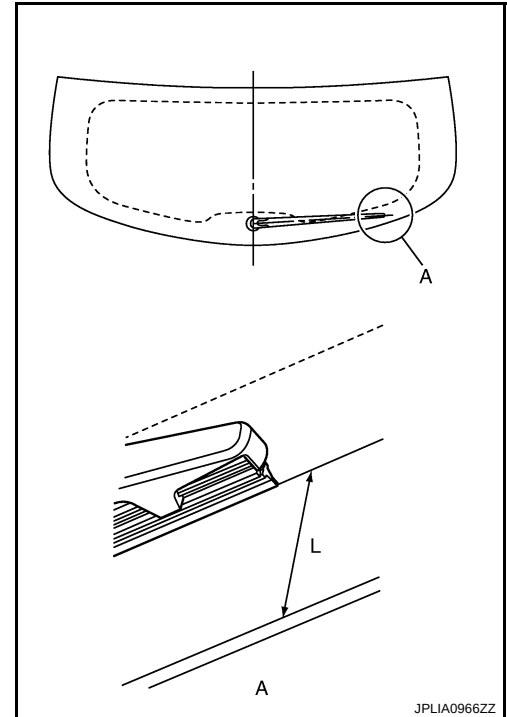
Clearance between the end of back door glass and the top of wiper blade center.

REAR WIPER ARM

< ON-VEHICLE REPAIR >

Standard clearance

L : 35.0 ± 7.5 mm (1.378 ± 0.295 in)



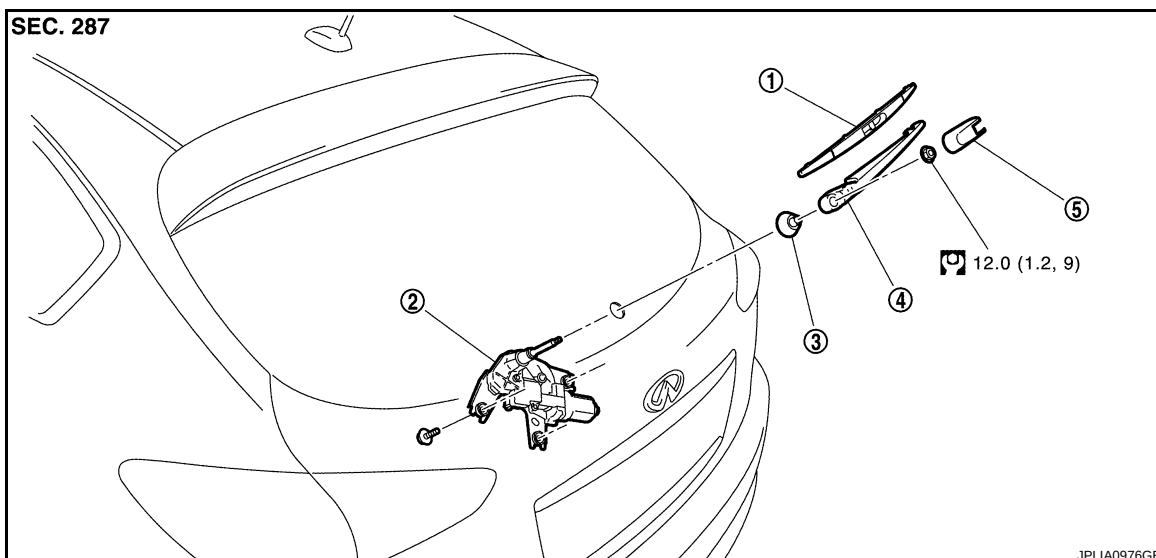
REAR WIPER MOTOR

< ON-VEHICLE REPAIR >

REAR WIPER MOTOR

Exploded View

INFOID:000000003591459



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

Refer to [GI-4, "Components"](#) for symbols in the figure.

Removal and Installation

INFOID:000000003464513

REMOVAL

1. Remove rear wiper arm cover and rear wiper arm. Refer to [WW-111, "Removal and Installation"](#).
2. Remove back door finisher inner. Refer to [INT-38, "Exploded View"](#).
3. Disconnect the rear wiper motor connector.
4. Remove rear wiper motor mounting bolts.
5. Remove rear wiper motor from the vehicle.
6. Remove pivot seal.

INSTALLATION

1. Install the pivot seal.
2. Install the rear wiper motor to the vehicle.
3. Connect the rear wiper motor connector.
4. Operate the rear wiper to the auto stop position.
5. Install the back door finisher inner. Refer to [INT-38, "Exploded View"](#).
6. Install rear wiper arm cover and rear wiper arm. Refer to [WW-111, "Removal and Installation"](#).

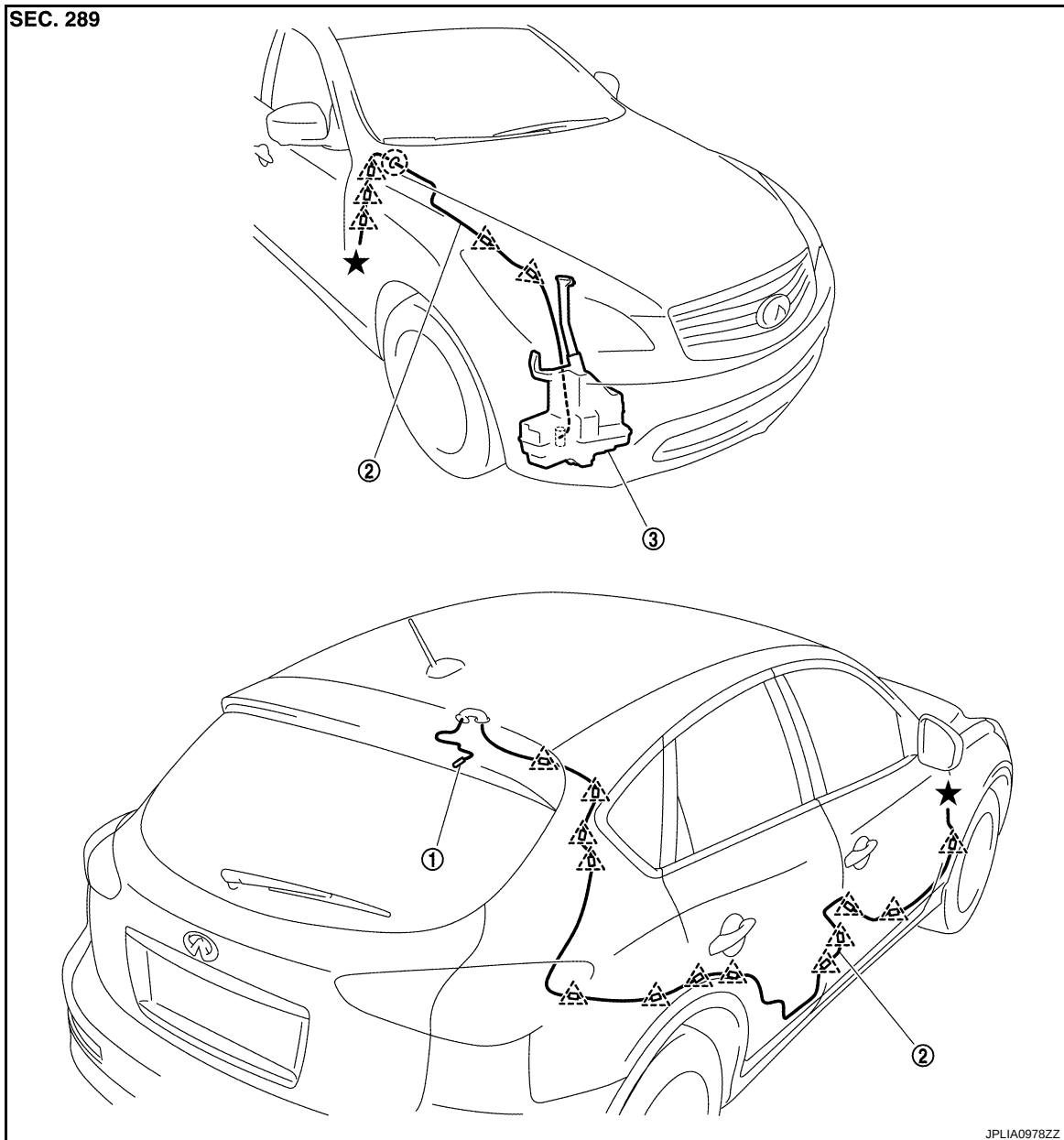
REAR WASHER NOZZLE AND TUBE

< ON-VEHICLE REPAIR >

REAR WASHER NOZZLE AND TUBE

Hydraulic Layout

INFOID:000000003464515



Removal and Installation

INFOID:000000003464516

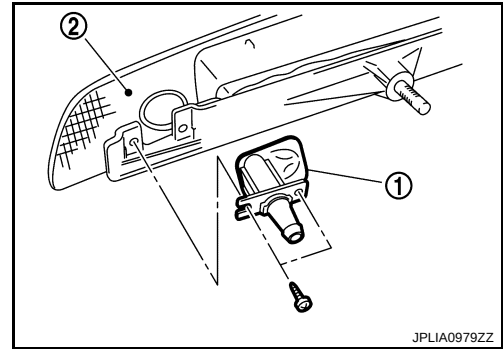
REMOVAL

1. Remove the high-mounted stop lamp. Refer to [EXL-206, "Exploded View"](#).
2. Remove the rear washer tube from the rear washer nozzle.

REAR WASHER NOZZLE AND TUBE

< ON-VEHICLE REPAIR >

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



INSTALLATION

Install in the reverse order of removal.

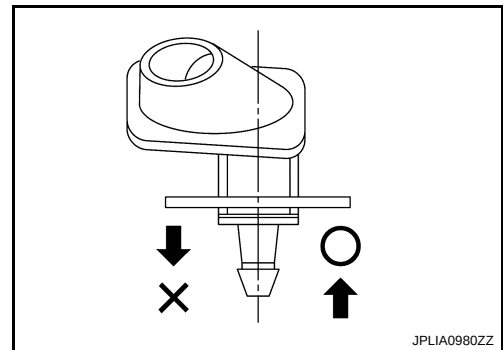
Inspection and Adjustment

INFOID:000000003464517

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

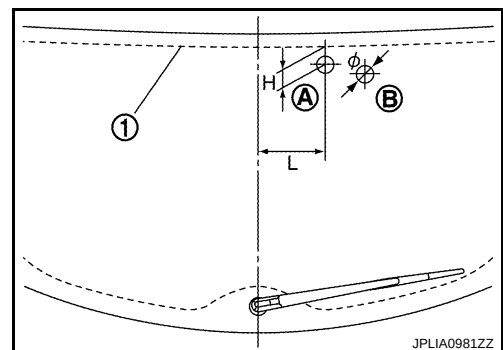
Washer Nozzle Spray Position adjustment

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

1 : Black printed frame line

Unit: mm (in)

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



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

NOTE:

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

