DRIVER CONTROLS

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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

OVERALL SEQUENCE

```
                    ┌─────────────────────────┐
                    │     INSPECTION START     │
                    └─────────────────────────┘
                                 │
                                 ▼
        ┌──────────────────────────────────────────────┐
        │ 1. INTERVIEW FOR MALFUNCTION                   │
        │ Interview the symptom to the customer.         │
        └──────────────────────────────────────────────┘
                                 │
                                 ▼
        ┌──────────────────────────────────────────────┐
        │ 2. SYMPTOM CHECK                               │
        │ Check the symptom from the customer's          │
        │ information.                                    │
        └──────────────────────────────────────────────┘
                                 │
                                 ▼
        ┌──────────────────────────────────────────────┐
        │ 3. BASIC INSPECTION                            │
        │ Check the operation of each part.              │
        │ Check that any symptom occurs other than the   │
        │ interviewed symptom.                           │
        └──────────────────────────────────────────────┘
                                 │
                                 ▼
        ┌──────────────────────────────────────────────┐
        │          SYMPTOM PERCEPTION                    │
        └──────────────────────────────────────────────┘
                                 │
                                 ▼
        ┌──────────────────────────────┐  DTC is detected  ┌──────────────────────────────┐
        │ 4. SELF-DIAGNOSIS WITH         │─────────────────▶│ 5. TROUBLE DIAGNOSIS BY DTC    │
        │ CONSULT-III                    │                  │ Perform the trouble diagnosis  │
        │ Perform the self-diagnosis     │                  │ for the detected DTC.          │
        │ with CONSULT-III.              │                  │ Specify the malfunctioning     │
        │ Check that any DTC is detected.│                  │ part.                          │
        └──────────────────────────────┘                  └──────────────────────────────┘
                  │ DTC is not detected
                  ▼
        ┌──────────────────────────────┐  Fail-safe        ┌──────────────────────────────┐
        │ 6. FAIL-SAFE ACTIVATION CHECK  │  activates        │ 7. SYSTEM DIAGNOSIS            │
        │ Check that the symptom is      │─────────────────▶│ Perform the system diagnosis   │
        │ applied to the fail-safe       │                  │ for the system that the        │
        │ activation.                    │                  │ fail-safe activates. Specify   │
        └──────────────────────────────┘                  │ the malfunctioning part.       │
                  │ Fail-safe does not activate            └──────────────────────────────┘
                  ▼
        ┌──────────────────────────────┐
        │ 8. SYMPTOM DIAGNOSIS           │
        │ Perform the symptom diagnosis. │
        │ Specify the malfunctioning     │
        │ part.                          │
        └──────────────────────────────┘
                  │
                  ▼
        ┌──────────────────────────────────────────────┐
        │       SPECIFY THE MALFUNCTIONING PART          │
        └──────────────────────────────────────────────┘
                                 │
                                 ▼
        ┌──────────────────────────────────────────────┐
        │ 9. MALFUNCTIONING PART REPAIR                  │
        │ Repair or replace the malfunctioning part.     │
        └──────────────────────────────────────────────┘
                                 │
                                 ▼
        ┌──────────────────────────────────────────────┐
        │ 10. REPAIR CHECK (SELF-DIAGNOSIS WITH          │  DTC is detected
        │ 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.                │
        └──────────────────────────────────────────────┘
                  │ DTC is not detected
                  ▼
        ┌──────────────────────────────────────────────┐  Symptom remains
        │ 11. REPAIR CHECK (OPERATION CHECK)             │──────────────────▶
        │ Check the operation of each part.              │
        └──────────────────────────────────────────────┘
                  │ Normal operation
                  ▼
            ┌─────────────────────────┐
            │      INSPECTION END      │
            └─────────────────────────┘

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DETAILED FLOW

1. INTERVIEW FOR MALFUNCTION

Interview the symptom to the customer.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

>> GO TO 2.

2.SYMPTOM CHECK

Check the symptom from the customer's information.

>> GO TO 3.

3.BASIC INSPECTION

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

>> GO TO 4.

4.SELF-DIAGNOSIS WITH CONSULT-III

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

Is any DTC detected?

YES >> GO TO 5.
NO >> GO TO 6.

5.TROUBLE DIAGNOSIS BY DTC

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

>> GO TO 9.

6.FAIL-SAFE ACTIVATION CHECK

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

Does the fail-safe activate?

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

7.SYSTEM DIAGNOSIS

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

>> GO TO 9.

8.SYMPTOM DIAGNOSIS

Perform the symptom diagnosis. Specify the malfunctioning part.

>> GO TO 9.

9.MALFUNCTION PART REPAIR

Repair or replace the malfunctioning part.

>> GO TO 10.

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

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

Is any DTC detected?

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

11.REPAIR CHECK (OPERATION CHECK)

Check the operation of each part.

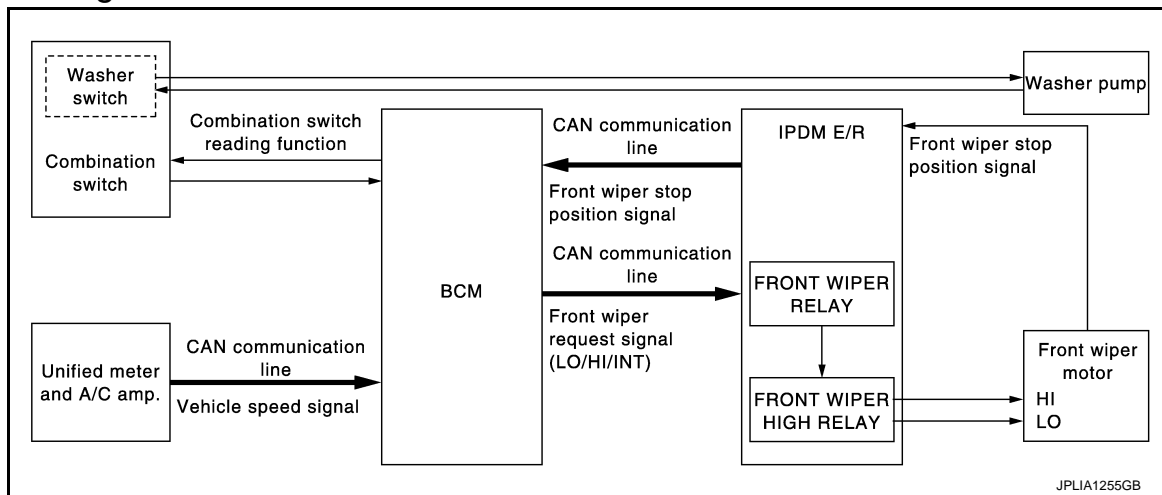Does it operate normally?

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

SYSTEM DESCRIPTION

FRONT WIPER AND WASHER SYSTEM

System Diagram

INFOID:0000000004345093

JPLIA1255GB

System Description

INFOID:0000000004345094

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

Control by BCM
- Combination switch reading function
- Front wiper control function

Control by IPDM E/R
- Front wiper control function
- Relay control function
  Combination meter indicates low washer fluid warning judged with the signal from the washer level switch. For details of low washer fluid warning, refer to MWI-29, "INFORMATION DISPLAY : System Description".

FRONT WIPER BASIC OPERATION
- BCM detects the combination switch condition by the combination switch reading function.
- 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 AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

FRONT WIPER INT OPERATION

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

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

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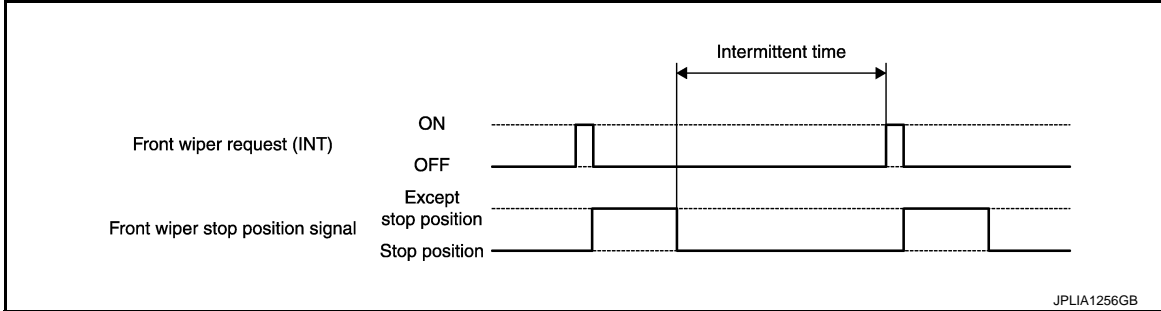
NOTE:
Factory setting of the front wiper intermittent operation is the operation without vehicle speed. Front wiper intermittent operation can be set to the operation with vehicle speed by CONSULT-III. Refer to WW-14, "WIPER : CONSULT-III Function (BCM - WIPER)".
  Front wiper intermittent operation 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		24	18	12	7.2
6	↓ Long	32	24	16	9.6
7		42	31.5	21	12.6

*: When without vehicle speed setting

FRONT WIPER AUTO STOP OPERATION

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

FRONT WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

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

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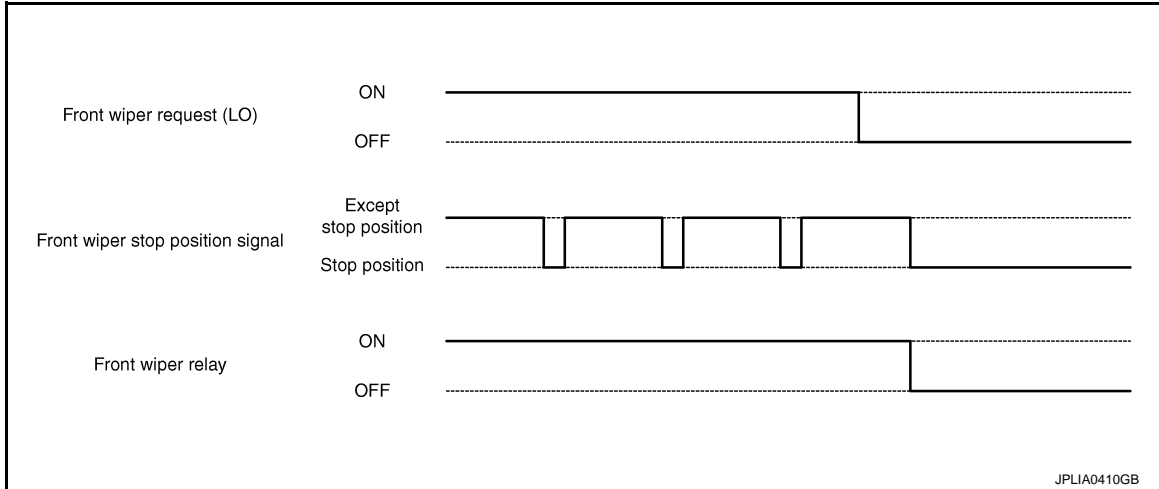
NOTE:
- BCM stops the transmitting of the front wiper request signal when the ignition switch OFF.
- IPDM E/R turns the front wiper relay OFF when the ignition switch OFF.

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 DROP WIPE OPERATION

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

Front wiper drop wipe operating condition
- Ignition switch ON
- Front wiper switch OFF
- Front washer switch OFF
- BCM transmits the front wiper request signal (LO) to IPDM E/R with CAN communication so that the front wiper operate once three seconds after front wiper operation linked with washer.
- IPDM E/R turns ON the integrated front wiper relay according to the front wiper request signal (LO).
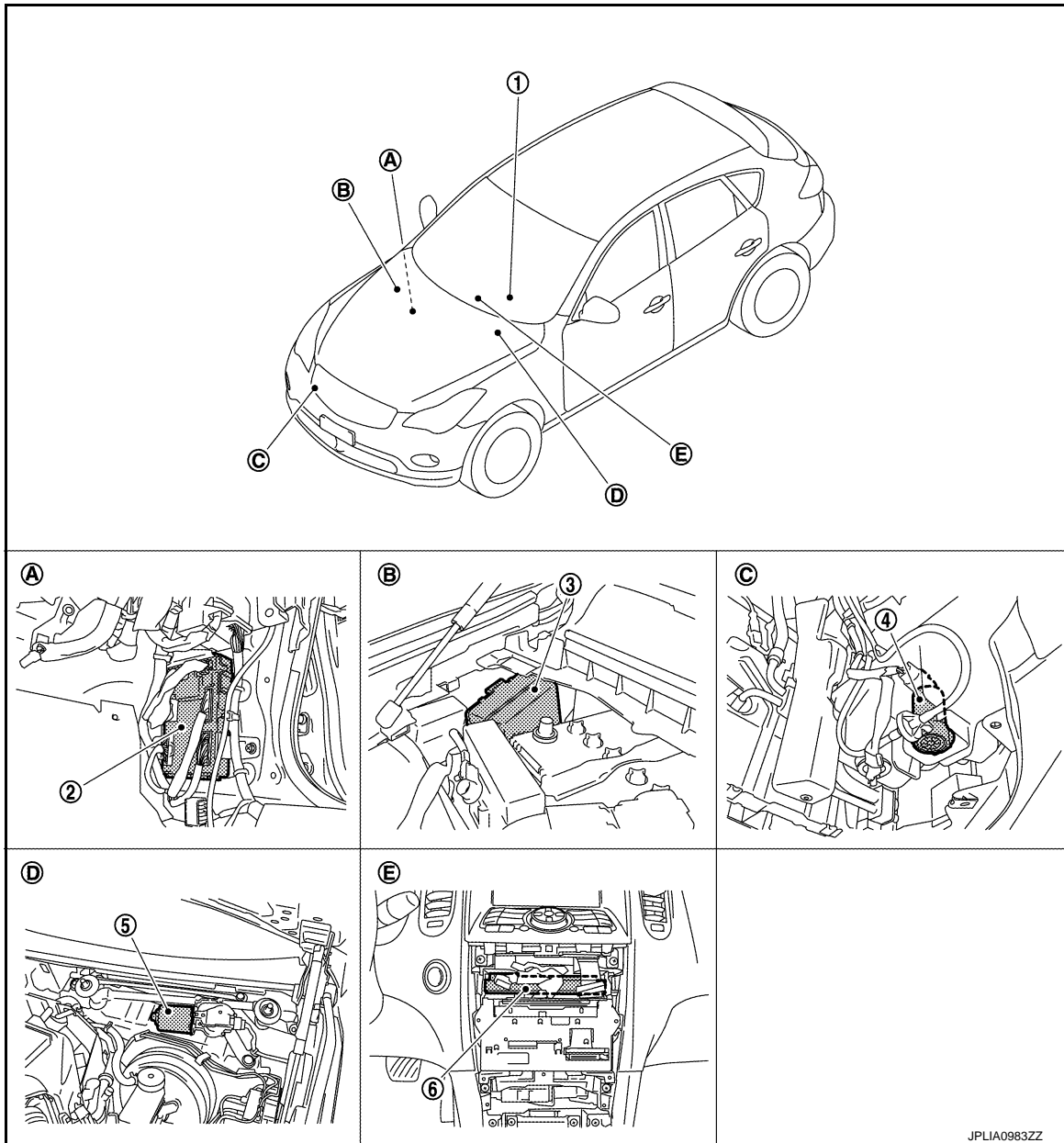
FRONT WIPER FAIL−SAFE OPERATION

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

Component Parts Location

JPLIA0983ZZ

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

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

FRONT WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

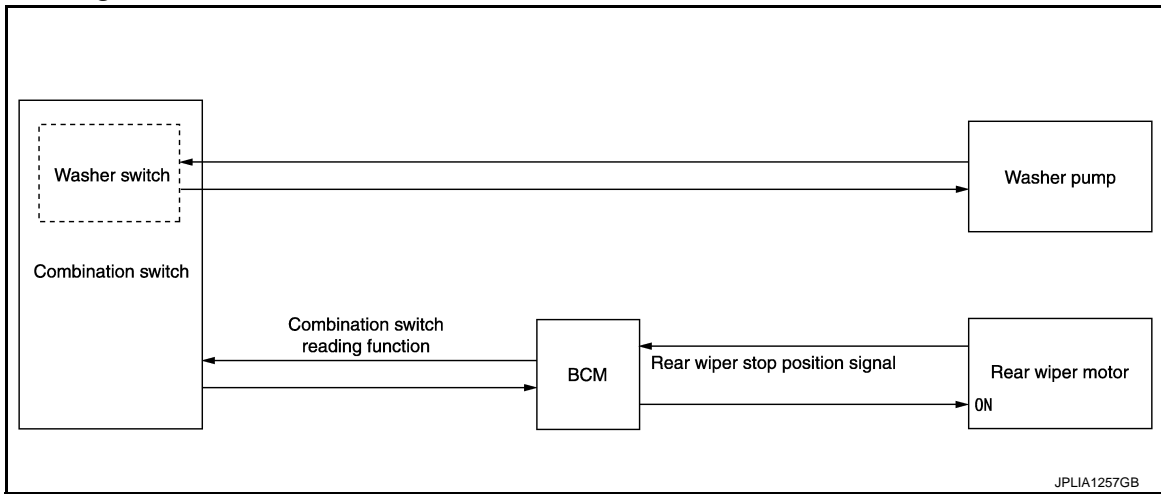| Part	Description
Combination switch (Wiper & washer switch)	Refer to BCS-8, "System Description".
Unified meter and A/C amp.	Transmits the vehicle speed signal to BCM with CAN communication.

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REAR WIPER AND WASHER SYSTEM

System Diagram

JPLIA1257GB

System Description

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.
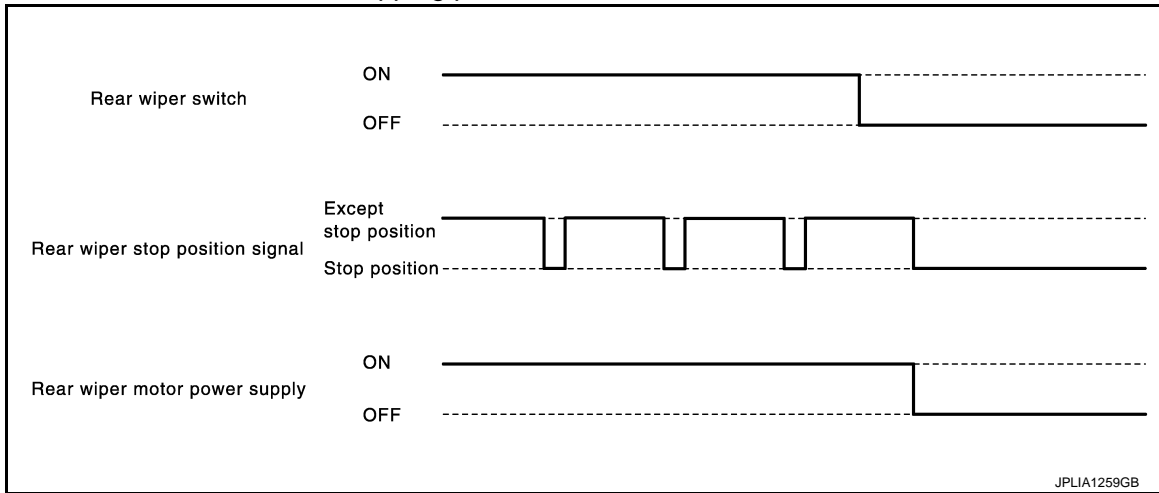

JPLIA1258GB
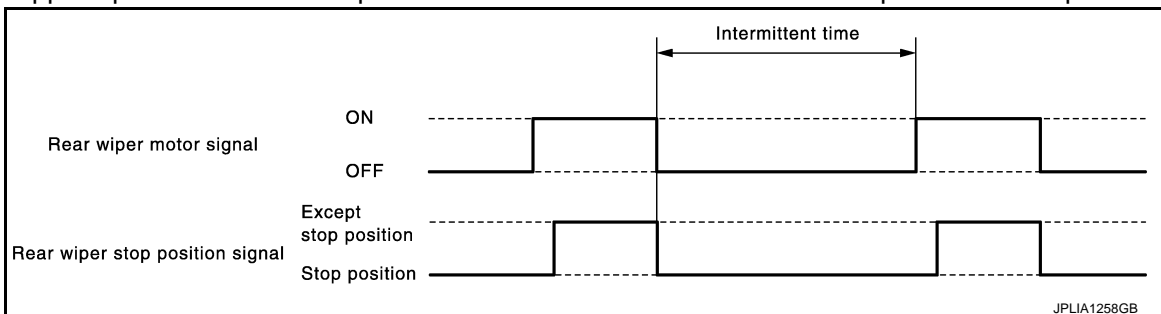
REAR WIPER AUTO STOP OPERATION
- BCM stops supplying power to the rear wiper motor when the rear wiper switch is turned OFF.

REAR WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

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

JPLIA1259GB

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

REAR WIPER OPERATION LINKED WITH WASHER

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

Washer linked operating condition of rear wiper
- Ignition switch ON
- Rear washer switch ON (0.4 second or more)
- The washer pump is grounded through the combination switch with the rear washer switch ON.

REAR WIPER FAIL−SAFE OPERATION

BCM performs the fail-safe function when the rear wiper auto stop circuit is malfunctioning. Refer to BCS-76, "Fail-safe".

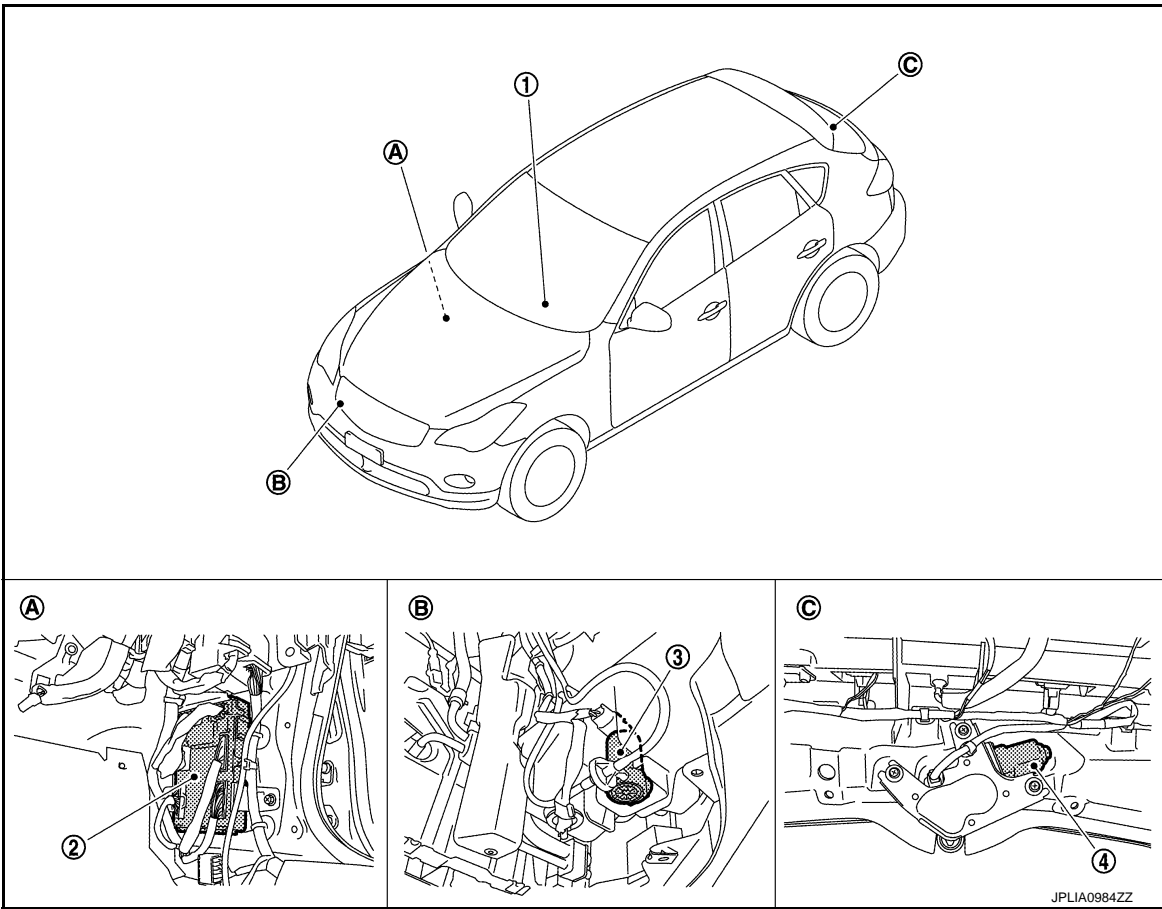## Component Parts Location

JPLIA0984ZZ

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

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)
COMMON ITEM

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

INFOID:0000000004921462

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	×	×	×
Back door open system	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)
The BCM records the following vehicle condition at the time a particular DTC is detected, and displays on CONSULT-III.

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

CONSULT screen item	Indication/Unit	Description	
Vehicle Speed	km/h	Vehicle speed of the moment a particular DTC is detected	
Odo/Trip Meter	km	Total mileage (Odometer value) of the moment a particular DTC is detected	
Vehicle Condition	SLEEP>LOCK	Power position status of the moment a particular DTC is detected	While turning BCM status from low power consumption mode to normal mode (Power supply position is "LOCK")
	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	0 - 39	The number of times that ignition switch is turned ON after DTC is detected • The number is 0 when a malfunction is detected now. • The number increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. • The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.	

WIPER

WIPER : CONSULT-III Function (BCM - WIPER)

INFOID:0000000004345102

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

WW-14

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

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)

Diagnosis Description

INFOID:000000004921463

AUTO ACTIVE TEST

Description
In auto active test mode, the IPDM E/R sends a drive signal to the following systems to check their operation.
- Oil pressure warning lamp
- Front wiper (LO, HI)
- Parking lamps
- License plate lamps
- Side maker lamps
- Tail lamps
- Front fog lamps
- Headlamps (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan (cooling fan control module)

Operation Procedure

1. Close the hood and lift the wiper arms from the windshield. (Prevent windshield damage due to wiper operation)
   NOTE:
   When auto active test is performed with hood opened, sprinkle water on windshield beforehand.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON, and within 20 seconds, press the front door switch (driver side) 10 times. Then turn the ignition switch OFF.
   CAUTION:
   Close passenger door.
4. Turn the ignition switch ON within 10 seconds. After that the horn sounds once and the auto active test starts.
5. The oil pressure warning lamp starts blinking when the auto active test starts.
6. After a series of the following operations is repeated 3 times, auto active test is completed.

NOTE:
When auto active test mode has to be cancelled halfway through test, turn the ignition switch OFF.
CAUTION:
- If auto active test mode cannot be actuated, check door switch system. Refer to DLK-66, "Component Function Check".
- Do not start the engine.

Inspection in Auto Active Test Mode
When auto active test mode is actuated, the following 6 steps are repeated 3 times.

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

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

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Concept of auto active test

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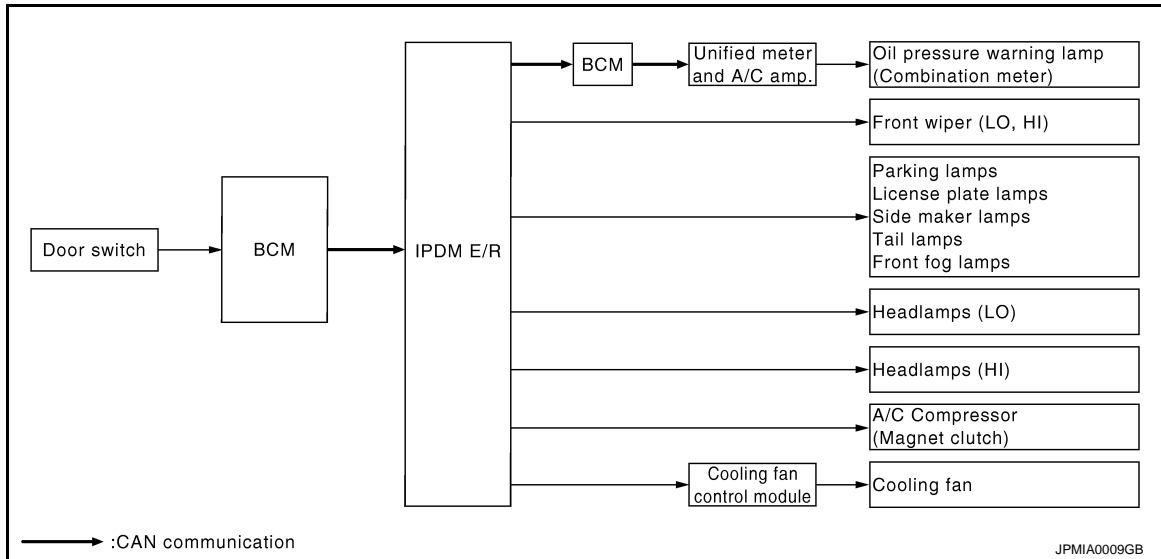
- IPDM E/R starts the auto active test with the door switch signals transmitted by BCM via CAN communication. Therefore, the CAN communication line between IPDM E/R and BCM is considered normal if the auto active test starts successfully.
- The auto active test facilitates troubleshooting if any systems 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 (HI, LO)	Perform auto active test. Does the applicable system operate?	YES	BCM signal input circuit
		NO	• Lamp or motor • Lamp or motor ground circuit • Harness or connector between IPDM E/R and applicable system • IPDM E/R
A/C compressor does not operate	Perform auto active test. Does the magnet clutch operate?	YES	• Unified meter and A/C amp. signal input circuit • CAN communication signal between unified meter and A/C amp. and ECM • CAN communication signal between ECM and IPDM E/R
		NO	• Magnet clutch • Harness or connector between IPDM E/R and magnet clutch • IPDM E/R
Oil pressure warning lamp does not operate	Perform auto active test. Does the oil pressure warning lamp blink?	YES	• Harness or connector between IPDM E/R and oil pressure switch • Oil pressure switch • IPDM E/R
		NO	• CAN communication signal between IPDM E/R and BCM • CAN communication signal between BCM and unified meter and A/C amp. • Combination meter

WW-17

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

CONSULT-III Function (IPDM E/R)

INFOID:0000000004921464

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 PCS-31, "DTC Index".

DATA MONITOR
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.

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Monitor Item [Unit]	MAIN SIGNALS	Description
IGN RLY1 -REQ [Off/On]		Displays the status of the ignition switch ON signal received from BCM via CAN communication.
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.
PUSH SW [Off/On]		Displays the status of the push-button ignition switch judged by IPDM E/R.
INTER/NP SW [Off/On]		Displays the status of the shift position judged by IPDM E/R.
ST RLY CONT [Off/On]		Displays the status of the starter relay status signal received from BCM via CAN communication.
IHBT RLY -REQ [Off/On]		Displays the status of the starter control relay signal received from BCM via CAN communication.
ST/INHI RLY [Off/ ST ON/INHI ON/UNKWN]		Displays the status of the starter relay and starter control relay judged by IPDM E/R.
DETENT SW [Off/On]		Displays the status of the A/T shift selector (detention switch) judged by IPDM 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/On]		**NOTE:** The item is indicated, but not monitored.
OIL P SW [Open/Close]		Displays the status of the oil pressure switch judged by IPDM E/R.
HOOD SW [Off/On]		Displays the status of the hood switch judged by IPDM E/R.
HL WASHER REQ [Off/On]		**NOTE:** The item is indicated, but not monitored.
THFT HRN REQ [Off/On]		Displays the status of the theft warning horn request signal received from BCM via CAN communication.
HORN CHIRP [Off/On]		Displays the status of the horn reminder signal received from BCM via CAN communication.
CRNRNG LMP REQ [Off/On]		**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.

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Test item	Operation	Description
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.

DTC/CIRCUIT DIAGNOSIS

WIPER AND WASHER FUSE

Description

INFOID:0000000004345105

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:0000000004345106

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

<u>Is the fuse fusing?</u>

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

POWER SUPPLY AND GROUND CIRCUIT
BCM (BODY CONTROL MODULE)

BCM (BODY CONTROL MODULE) : Diagnosis Procedure

INFOID:0000000004345107

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			
Connector	Terminal	Ground	
M118	1		Battery voltage
M119	11		

Is the measurement value normal?

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

3.CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M119	13		Existed

Does continuity exist?

YES   >> INSPECTION END
NO   >> Repair harness or connector.

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

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

INFOID:0000000004345108

1.CHECK FUSES AND FUSIBLE LINK

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

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Signal name	Fuses and fusible link No.
Battery power supply	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	
E4	1		Battery voltage

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3.CHECK GROUND CIRCUIT

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

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

Does continuity exist?

YES >> INSPECTION END

NO >> Repair harness or connector.

WW-23

FRONT WIPER MOTOR LO CIRCUIT

Component Function Check

INFOID:000000004345109

1.CHECK FRONT WIPER LO OPERATION

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

🗒CONSULT-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:0000000004345110

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	
Connector	Terminal	Ground		
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

< DTC/CIRCUIT DIAGNOSIS >

IPDM E/R		Ground	Continuity
Connector	Terminal		
E5	4		Not existed

Does continuity exist?

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

FRONT WIPER MOTOR HI CIRCUIT

Component Function Check

INFOID:000000004345111

1.CHECK FRONT WIPER HI OPERATION

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

ⒽCONSULT-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:000000004345112

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	
Connector	Terminal	Ground		
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.

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

Does continuity exist?

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

FRONT WIPER AUTO STOP SIGNAL CIRCUIT

Component Function Check

1.CHECK FRONT WIPER (AUTO STOP) SIGNAL

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

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

Is the status of item normal?

YES >> Auto stop signal circuit is normal.
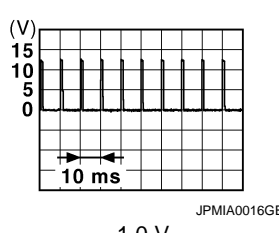NO >> Refer to WW-28, "Diagnosis Procedure".

Diagnosis Procedure

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			
Connector	Terminal	Ground	
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			Continuity
Connector	Terminal	Ground	
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. 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	16	E42	5	Existed

Does continuity exist?

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

FRONT WIPER MOTOR GROUND CIRCUIT

Diagnosis Procedure

INFOID:000000004345115

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

Description

INFOID:000000004345116

- 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.

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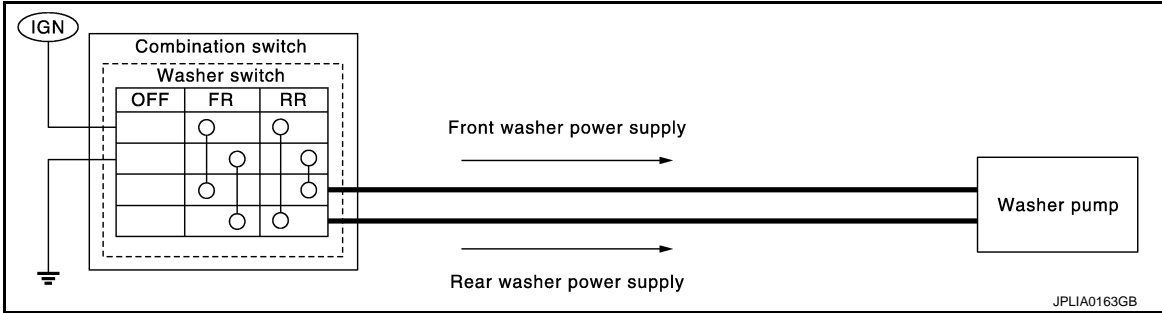
Component Inspection

INFOID:0000000004345117

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

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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 Function Check

1.CHECK REAR WIPER ON OPERATION

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

On : **Rear wiper ON operation**

Off : **Stop the rear wiper.**

Is rear wiper operation normally?

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

Diagnosis Procedure

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		Ground	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-85, "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

< DTC/CIRCUIT 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.

REAR WIPER AUTO STOP SIGNAL CIRCUIT

Component Function Check

INFOID:000000004345120

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	Off
		Except stop position	On

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:000000004345121

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			Value (Approx.)
(+)		(−)	
BCM			
Connector	Terminal		
M121	65	Ground	1.0 V

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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		
M121	65		Not existed

Does continuity exist?

YES >> Repair the harness or connector.
NO >> Replace BCM. Refer to BCS-85, "Exploded View".

REAR WIPER AUTO STOP SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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.

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

Does continuity exist?

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

FRONT WIPER AND WASHER SYSTEM

Wiring Diagram - FRONT WIPER AND WASHER SYSTEM -

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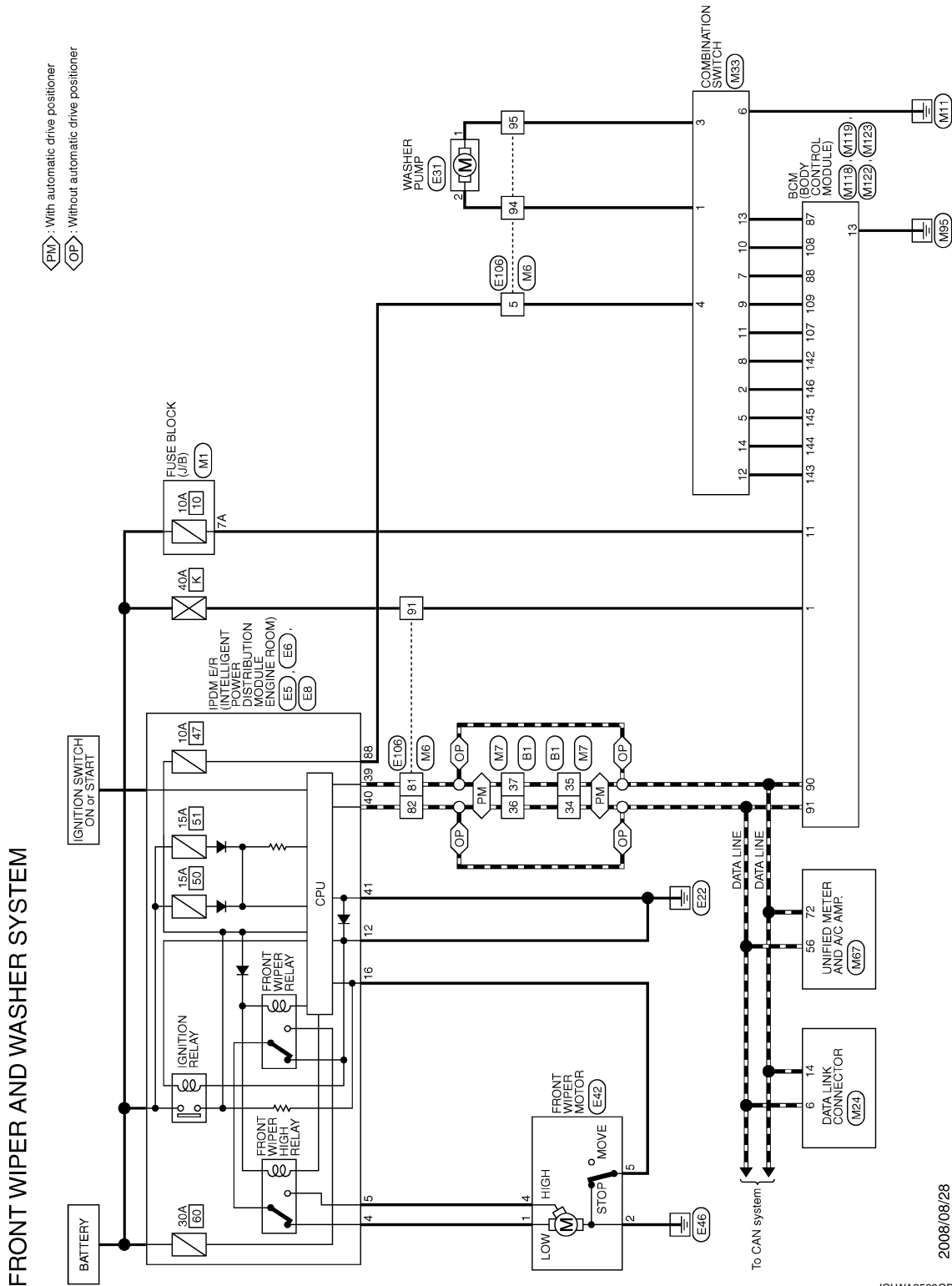
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FRONT WIPER AND WASHER SYSTEM

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]
88	GR	–

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.	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	–

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.	E5
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-IV

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

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

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

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.	E31
Connector Name	WASHER PUMP
Connector Type	E02FGY-RS

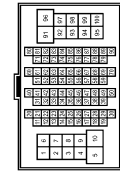| Terminal No.	Color of Wire	Signal Name [Specification]
1	O	–
2	LG	–

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FRONT WIPER AND WASHER SYSTEM

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

Terminal No.	Color of Wire	Signal Name [Specification]
5	G	—
81	P	—
82	L	—
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]
34	L	—
35	P	—
36	L	—
37	P	—

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

Connector No. M67
Connector Name UNIFIED METER AND A/C AMP.
Connector Type TH32FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
56	L	CAN-H
72	P	CAN-L

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

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

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FRONT WIPER AND WASHER SYSTEM

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

H.S.

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	TH40FB-NH

H.S.

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	TH40FG-NH

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
142	O	COMBI SW OUTPUT 5
143	P	COMBI SW OUTPUT 1
144	G	COMBI SW OUTPUT 2
145	L	COMBI SW OUTPUT 3
146	SB	COMBI SW OUTPUT 4

JCLWA2572GB

REAR WIPER AND WASHER SYSTEM

Wiring Diagram - REAR WIPER AND WASHER SYSTEM -

INFOID:000000000345123

REAR WIPER AND WASHER SYSTEM

2008/08/28
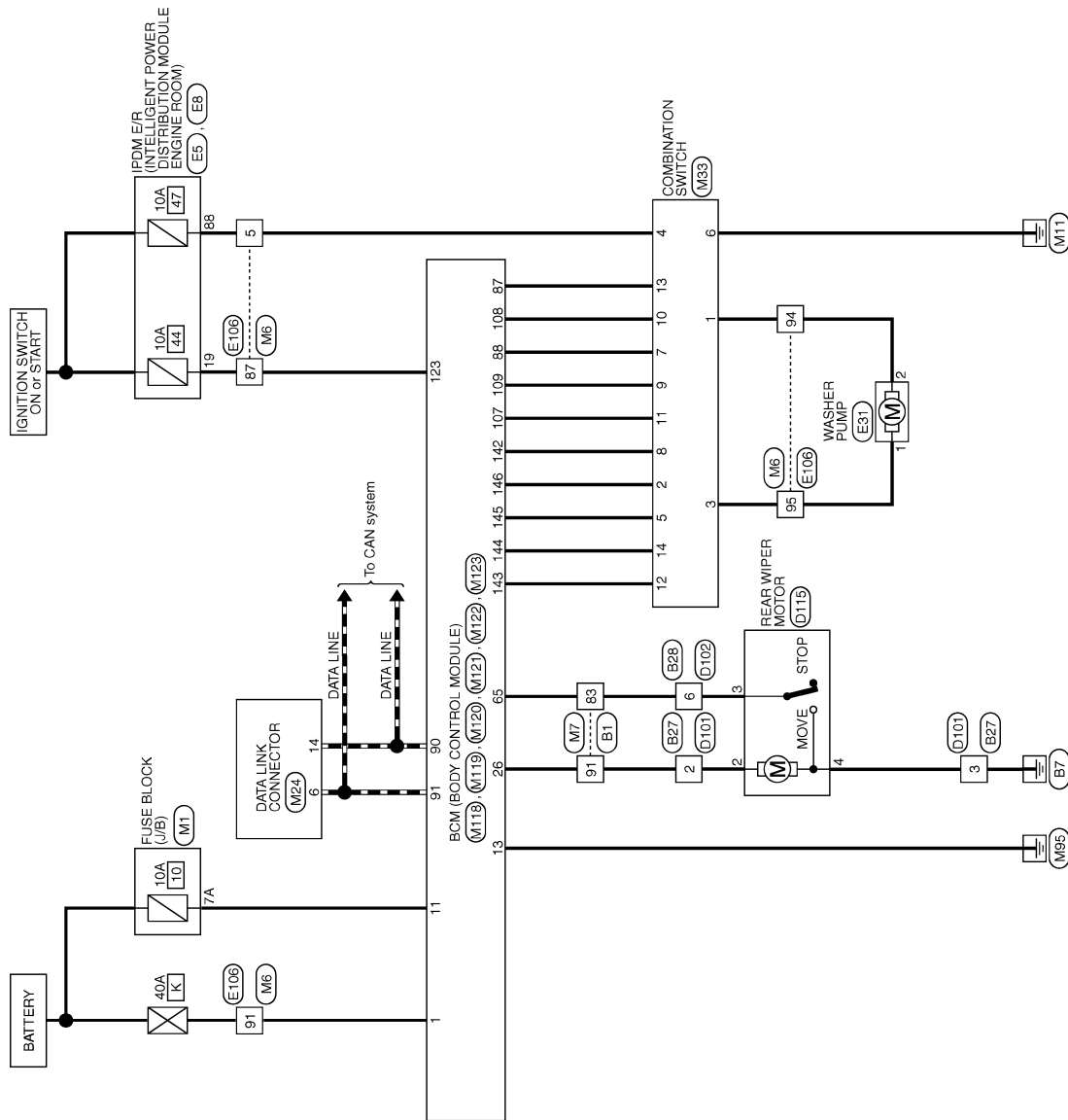
JCLWA2573GB

REAR WIPER AND WASHER SYSTEM

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.	E8
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS08FW-CS

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

Connector No.	B28
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH

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

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]
19	W	–

Connector No.	B27
Connector Name	WIRE TO WIRE
Connector Type	M06MW-LC

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

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

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

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.	D102
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH

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

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REAR WIPER AND WASHER SYSTEM

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	-

12	P	OUTPUT 1
13	BR	INPUT 5
14	G	OUTPUT 2

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. 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

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. M24
Connector Name DATA LINK CONNECTOR
Connector Type BD16FW

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

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

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

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	

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REAR WIPER AND WASHER SYSTEM

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.	M120
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS12FW-CS

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

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

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

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

Terminal No.	Color of Wire	Signal Name [Specification]
123	W	IGN F/B
142	O	COMBI SW OUTPUT 5
143	P	COMBI SW OUTPUT 1
144	G	COMBI SW OUTPUT 2
145	L	COMBI SW OUTPUT 3
146	SB	COMBI SW OUTPUT 4

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

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

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

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

JCLWA2576GB

ECU DIAGNOSIS INFORMATION

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000004921448

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 INFORMATION >

Monitor Item	Condition	Value/Status
RR FOG SW	**NOTE:** The item is indicated, but not monitored.	Off
DOOR SW-DR	Driver door closed	Off
	Driver door opened	On
DOOR SW-AS	Passenger door closed	Off
	Passenger door opened	On
DOOR SW-RR	Rear RH door closed	Off
	Rear RH door opened	On
DOOR SW-RL	Rear LH door closed	Off
	Rear LH door opened	On
DOOR SW-BK	Back door closed	Off
	Back door opened	On
CDL LOCK SW	Other than power door lock switch LOCK	Off
	Power door lock switch LOCK	On
CDL UNLOCK SW	Other than power door lock switch UNLOCK	Off
	Power door lock switch UNLOCK	On
KEY CYL LK-SW	Other than driver door key cylinder LOCK position	Off
	Driver door key cylinder LOCK position	On
KEY CYL UN-SW	Other than driver door key cylinder UNLOCK position	Off
	Driver door key cylinder UNLOCK position	On
KEY CYL SW-TR	**NOTE:** The item is indicated, but not monitored.	Off
HAZARD SW	Hazard switch is OFF	Off
	Hazard switch is ON	On
REAR DEF SW	**NOTE:** The item is indicated, but not monitored.	Off
TR CANCEL SW	**NOTE:** The item is indicated, but not monitored.	Off
TR/BD OPEN SW	Back door opener switch OFF	Off
	While the back door opener switch is turned ON	On
TRNK/HAT MNTR	**NOTE:** The item is indicated, but not monitored.	Off
RKE-LOCK	LOCK button of the key is not pressed	Off
	LOCK button of the key is pressed	On
RKE-UNLOCK	UNLOCK button of the key is not pressed	Off
	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
	PANIC button of the key is pressed	On
RKE-P/W OPEN	UNLOCK button of the key is not pressed	Off
	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 INFORMATION >

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
ACC RLY -F/B	**NOTE:** The item is indicated, but not monitored.	Off
CLUCH SW	**NOTE:** The item is indicated, but not monitored.	Off
BRAKE SW 1	The brake pedal is depressed when No. 7 fuse is blown	Off
	The brake pedal is not depressed when No. 7 fuse is blown, or No. 7 fuse is normal	On
BRAKE SW 2	The brake pedal is not depressed	Off
	The brake pedal is depressed	On
DETE/CANCL SW	Selector lever in P position	Off
	Selector lever in any position other than P	On
SFT PN/N SW	Selector lever in any position other than P and N	Off
	Selector lever in P or N position	On
S/L -LOCK	Steering is unlocked	Off
	Steering is locked	On
S/L -UNLOCK	Steering is locked	Off
	Steering is unlocked	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 any position other than P	Off
	Selector lever in P position	On
SFT PN -IPDM	Selector lever in any position other than P and N	Off
	Selector lever in P or N position	On

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Monitor Item	Condition	Value/Status
SFT P -MET	Selector lever in any position other than P	Off
	Selector lever in P position	On
SFT N -MET	Selector lever in any position other than N	Off
	Selector lever in N position	On
ENGINE STATE	Engine stopped	Stop
	While the engine stalls	Stall
	At engine cranking	Crank
	Engine running	Run
S/L LOCK-IPDM	Steering is unlocked	Off
	Steering is locked	On
S/L UNLK-IPDM	Steering is locked	Off
	Steering is unlocked	On
S/L RELAY-REQ	Steering lock system is not the LOCK condition and the changing condition from LOCK to UNLOCK.	Off
	Steering lock system is the LOCK condition or the changing condition from LOCK to UNLOCK.	On
VEH SPEED 1	While driving	Equivalent to speedometer reading
VEH SPEED 2	While driving	Equivalent to speedometer reading
DOOR STAT-DR	Driver door is locked	LOCK
	Wait with selective UNLOCK operation (5 seconds)	READY
	Driver door is unlocked	UNLOCK
DOOR STAT-AS	Passenger door is locked	LOCK
	Wait with selective UNLOCK operation (5 seconds)	READY
	Passenger door is unlocked	UNLOCK
ID OK FLAG	Steering is locked	Reset
	Steering is unlocked	Set
PRMT ENG STRT	The engine start is prohibited	Reset
	The engine start is permitted	Set
PRMT RKE STRT	**NOTE:** The item is indicated, but not monitored.	Reset
KEY SW -SLOT	The 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
RKE OPE COUN2	**NOTE:** The item is indicated, but not monitored.	—
CONFRM 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
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
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

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Monitor Item	Condition	Value/Status
CONFIRM ID2	The key ID that the key slot receives does not accord with the second key ID registered to BCM.	Yet
	The key ID that the key slot receives accords with the second key ID registered to BCM.	Done
CONFIRM 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)
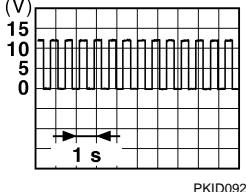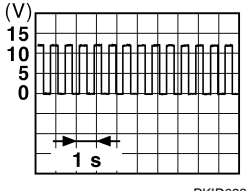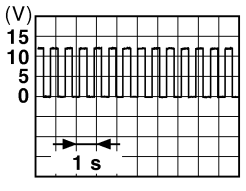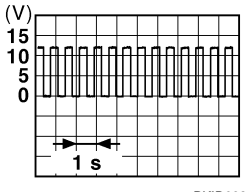
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TERMINAL LAYOUT

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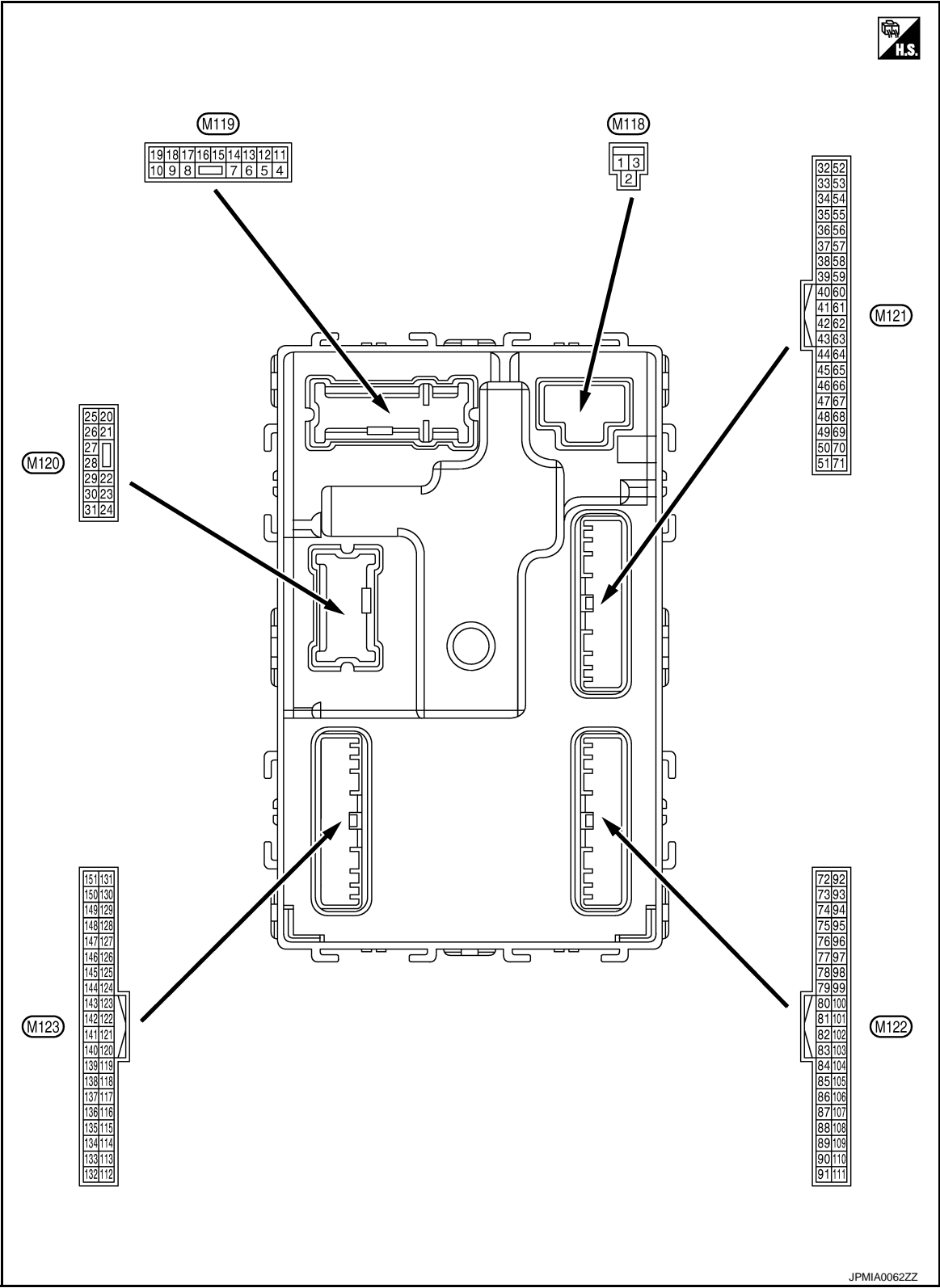
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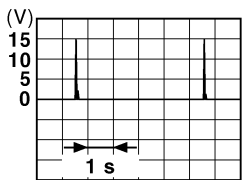
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	−	Signal name	Input/ Output			
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 brightening/dimming level is in the neutral position JSNIA0010GB
15 (Y)	Ground	ACC indicator lamp	Output	Ignition switch	OFF or ON	Battery voltage
					ACC	0 V

Terminal No. (Wire color) +	Terminal No. (Wire color) –	Description Signal name	Description Input/Output	Condition	Condition	Value (Approx.)
17 (W)	Ground	Turn signal RH (Front)	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	(V) 15 10 5 0 1 s PKID0926E 6.5 V
18 (O)	Ground	Turn signal LH (Front)	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	(V) 15 10 5 0 1 s PKID0926E 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	(V) 15 10 5 0 1 s PKID0926E 6.5 V
23 (G)	Ground	Back door open	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	(V) 15 10 5 0 1 s PKID0926E 6.5 V
26 (G)	Ground	Rear wiper	Output	Rear wiper	OFF (Stopped)	0 V
					ON (Operated)	Battery voltage
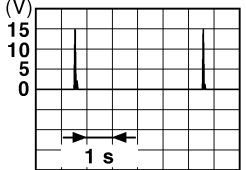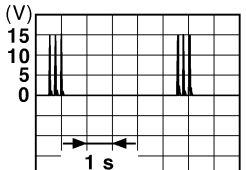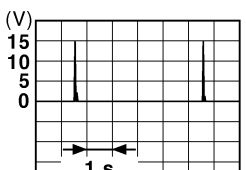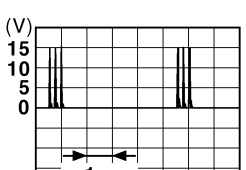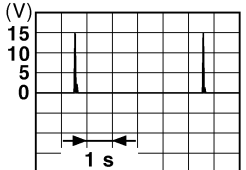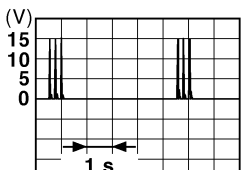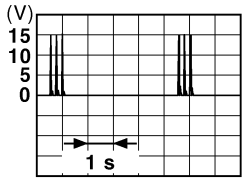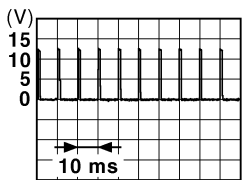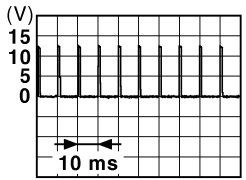
Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	−	Signal name	Input/ Output		
34 (SB)	Ground	Luggage room antenna (−)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment
					When Intelligent Key is not in the passenger compartment
35 (V)	Ground	Luggage room antenna (+)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment
					When Intelligent Key is not in the passenger compartment
38 (B)	Ground	Back door antenna (−)	Output	When the back door opener request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area
					When Intelligent Key is not in the antenna detection area

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

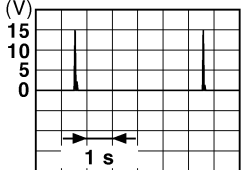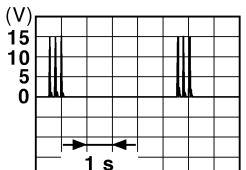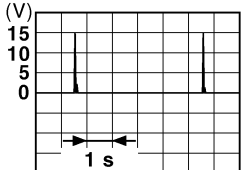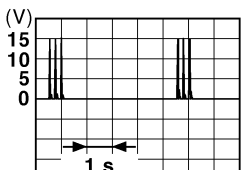| Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	−	Signal name	Input/ Output			
39 (W)	Ground	Back door antenna (+)	Output	When the back door opener request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	(V) 15 10 5 0 ⟵ 1 s ⟶ JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	(V) 15 10 5 0 ⟵ 1 s ⟶ JMKIA0063GB
47 (Y)	Ground	Ignition relay (IPDM E/R) control	Output	Ignition switch	OFF or ACC	Battery voltage
					ON	0 V
52 (SB)	Ground	Starter relay control	Output	Ignition switch ON	When selector lever is in P or N position	Battery voltage
					When selector lever is not in P or N position	0 V
61 (W)	Ground	Back door opener request switch	Input	Back door opener request switch	ON (Pressed)	0 V
					OFF (Not pressed)	(V) 15 10 5 0 ⟵ 10 ms ⟶ JPMIA0016GB 1.0 V
64 (V)	Ground	Intelligent Key warning buzzer (Engine room)	Output	Intelligent Key warning buzzer (Engine room)	Sounding	0 V
					Not sounding	Battery voltage
65 (O)	Ground	Rear wiper stop position	Input	Rear wiper	In stop position	(V) 15 10 5 0 ⟵ 10 ms ⟶ JPMIA0016GB 1.0 V
					Not in stop position	0 V
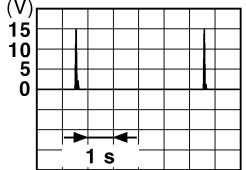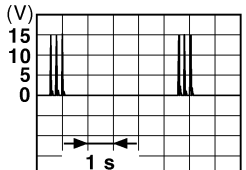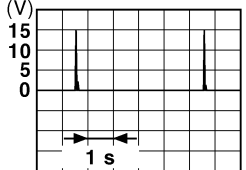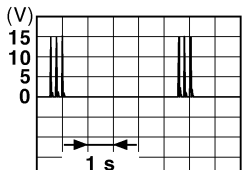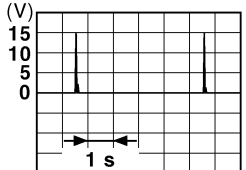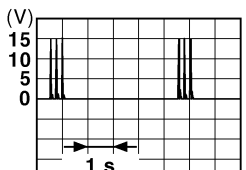
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

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

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color) +	Terminal No. (Wire color) −	Description Signal name	Description Input/ Output	Condition	Condition	Value (Approx.)
72 (R)	Ground	Room antenna 2 (−) (Center console)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	(V) 15 10 5 0 ←1 s→ JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	(V) 15 10 5 0 ←1 s→ JMKIA0063GB
73 (G)	Ground	Room antenna 2 (+) (Center console)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	(V) 15 10 5 0 ←1 s→ JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	(V) 15 10 5 0 ←1 s→ JMKIA0063GB
74 (SB)	Ground	Passenger door antenna (−)	Output	When the passenger door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	(V) 15 10 5 0 ←1 s→ JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	(V) 15 10 5 0 ←1 s→ JMKIA0063GB
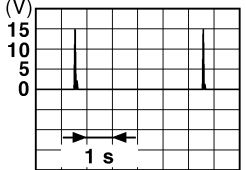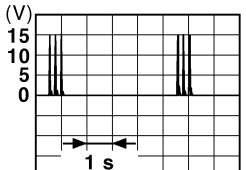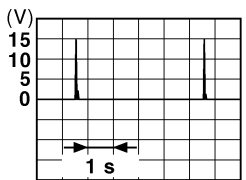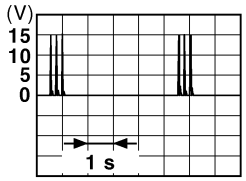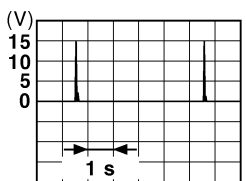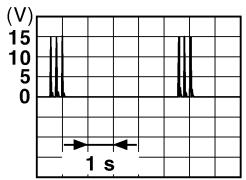
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	−	Signal name	Input/ Output			
75 (GR)	Ground	Passenger door antenna (+)	Output	When the passenger door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	(V) 15 10 5 0 — 1 s — JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	(V) 15 10 5 0 — 1 s — JMKIA0063GB
76 (V)	Ground	Driver door antenna (−)	Output	When the driver door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	(V) 15 10 5 0 — 1 s — JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	(V) 15 10 5 0 — 1 s — JMKIA0063GB
77 (LG)	Ground	Driver door antenna (+)	Output	When the driver door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	(V) 15 10 5 0 — 1 s — JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	(V) 15 10 5 0 — 1 s — JMKIA0063GB
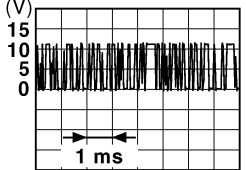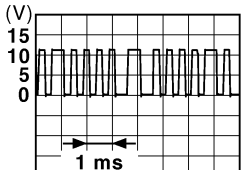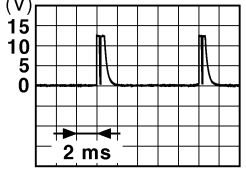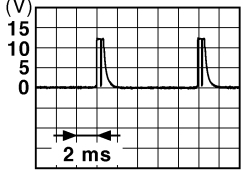
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	−	Signal name	Input/Output			
78 (Y)	Ground	Room antenna 1 (−) (Instrument panel)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	JMKIA0063GB
79 (BR)	Ground	Room antenna 1 (+) (Instrument panel)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	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
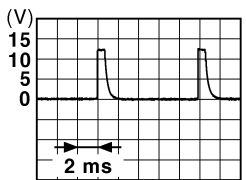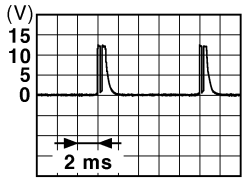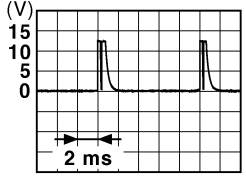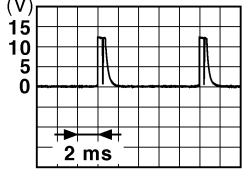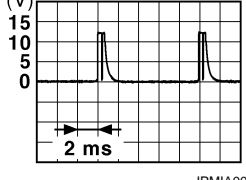
Terminal No. (Wire color)		Description		Condition			Value (Approx.)
+	−	Signal name	Input/ Output				
83 (Y)	Ground	Remote keyless entry receiver communication	Input/ Output	During waiting			JMKIA0064GB
				When operating either button on the key			JMKIA0065GB
87 (BR)	Ground	Combination switch INPUT 5	Input	Combination switch	All switches 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 switches OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 6 • Wiper intermittent dial 7		JPMIA0040GB 1.3 V

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
+	–	Signal name	Input/ Output			
88 (V)	Ground	Combination switch INPUT 3	Input	Combination switch	All switches OFF (Wiper intermittent dial 4)	JPMIA0041GB 1.4 V
					Lighting switch HI (Wiper intermittent dial 4)	JPMIA0036GB 1.3 V
					Lighting switch 2ND (Wiper intermittent dial 4)	JPMIA0037GB 1.3 V
					Rear washer switch ON (Wiper intermittent dial 4)	JPMIA0039GB 1.3 V
					Any of the conditions below with all switches OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3	JPMIA0040GB 1.3 V
89 (BR)	Ground	Push-button ignition switch (Push switch)	Input	Push-button ignition switch (push switch)	Pressed	0 V
					Not pressed	Battery voltage
90 (P)	Ground	CAN-L	Input/ Output	—		—
91 (L)	Ground	CAN-H	Input/ Output	—		—
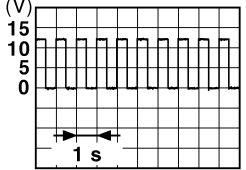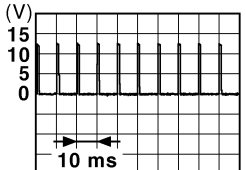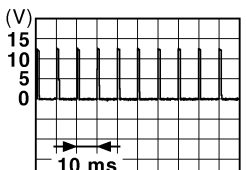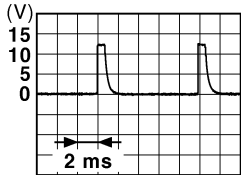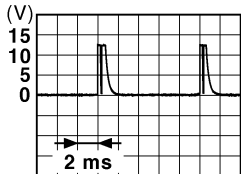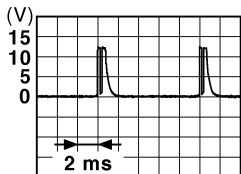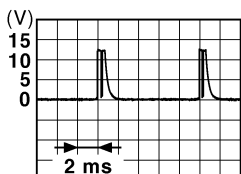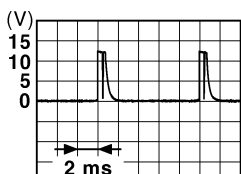
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	−	Signal name	Input/ Output			
92 (LG)	Ground	Key slot illumination	Output	Key slot illumination	OFF	0 V
					Blinking	JPMIA0015GB 6.5 V
					ON	Battery voltage
93 (V)	Ground	ON indicator lamp	Output	Ignition switch	OFF or ACC	Battery 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	A/T shift selector (Detention switch) power supply	Output	—		Battery voltage
97 (L)	Ground	Steering lock condition No. 1	Input	Steering lock	LOCK status	0 V
					UNLOCK status	Battery voltage
98 (P)	Ground	Steering lock condition No. 2	Input	Steering lock	LOCK status	Battery voltage
					UNLOCK status	0 V
99 (R)	Ground	Selector lever P position switch	Input	Selector lever	P position	0 V
					Any position other than P	Battery voltage
100 (G)	Ground	Passenger door request switch	Input	Passenger door request switch	ON (Pressed)	0 V
					OFF (Not pressed)	JPMIA0016GB 1.0 V
101 (SB)	Ground	Driver door request switch	Input	Driver door request switch	ON (Pressed)	0 V
					OFF (Not pressed)	JPMIA0016GB 1.0 V
102 (O)	Ground	Blower fan motor relay control	Output	Ignition switch	OFF or ACC	0 V
					ON	Battery voltage

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

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
106 (W)	Ground	Steering lock unit power supply	Output	Ignition switch	OFF or ACC	Battery voltage
					ON	0 V
107 (LG)	Ground	Combination switch INPUT 1	Input	Combination switch (Wiper intermittent dial 4)	All switches OFF	JPMIA0041GB 1.4 V
					Turn signal switch LH	JPMIA0037GB 1.3 V
					Turn signal switch RH	JPMIA0036GB 1.3 V
					Front wiper switch LO	JPMIA0038GB 1.3 V
					Front washer switch ON	JPMIA0039GB 1.3 V
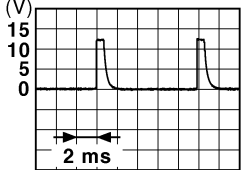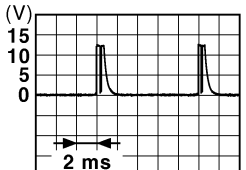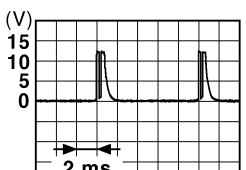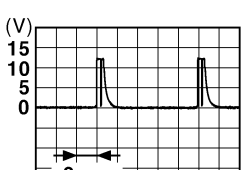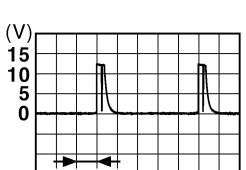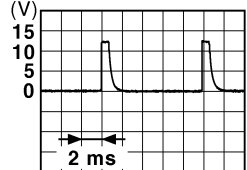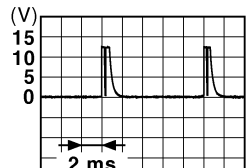
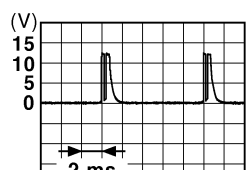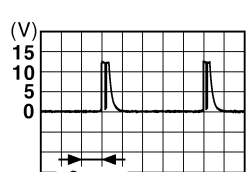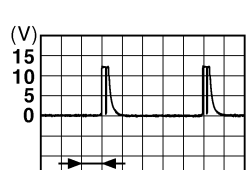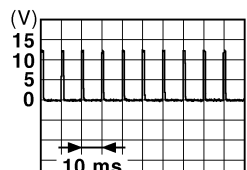| Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	−	Signal name	Input/Output		
108 (R)	Ground	Combination switch INPUT 4	Input	Combination switch	All switches OFF (Wiper intermittent dial 4) JPMIA0041GB 1.4 V
					Lighting switch AUTO (Wiper intermittent dial 4) JPMIA0038GB 1.3 V
					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 switches OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6 JPMIA0039GB 1.3 V

BCM (BODY CONTROL MODULE)
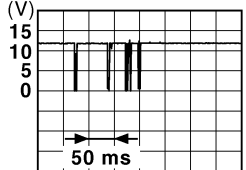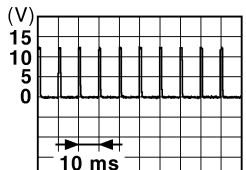
< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	–	Signal name	Input/ Output		
109 (Y)	Ground	Combination switch INPUT 2	Input	Combination switch (Wiper intermittent dial 4)	
				All switches OFF	JPMIA0041GB 1.4 V
				Lighting switch PASS	JPMIA0037GB 1.3 V
				Lighting switch 2ND	JPMIA0036GB 1.3 V
				Front wiper switch INT	JPMIA0038GB 1.3 V
				Front wiper switch HI	JPMIA0040GB 1.3 V
110 (G)	Ground	Hazard switch	Input	Hazard switch	ON — 0 V
				OFF	JPMIA0012GB 1.1 V
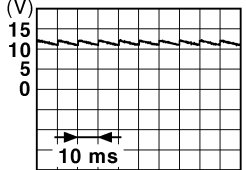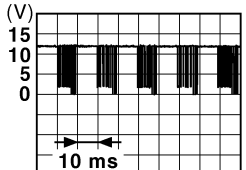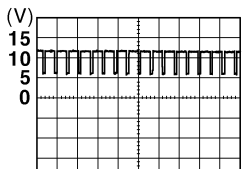
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color) +	−	Description Signal name	Input/Output	Condition		Value (Approx.)
111 (Y)	Ground	Steering lock unit communication	Input/Output	Steering lock	LOCK status	Battery voltage
					LOCK or UNLOCK	 JMKIA0066GB
					For 15 seconds after UNLOCK	Battery voltage
					15 seconds or later after UNLOCK	0 V
113 (P)	Ground	Optical sensor	Input	Ignition switch ON	When bright outside of the vehicle	Close to 5 V
					When dark outside of the vehicle	Close to 0 V
116 (SB)	Ground	Stop lamp switch 1	Input	—		Battery voltage
118 (P)	Ground	Stop lamp switch 2 (Without ICC)	Input	Stop lamp switch	OFF (Brake pedal is not depressed)	0 V
					ON (Brake pedal is depressed)	Battery voltage
		Stop lamp switch 2 (With ICC)		Stop lamp switch OFF (Brake pedal is not depressed) and ICC brake hold relay OFF		0 V
				Stop lamp switch ON (Brake pedal is depressed) or ICC brake hold relay ON		Battery voltage
119 (SB)	Ground	Front door lock assembly driver side (Unlock sensor)	Input	Driver door	LOCK status (Unlock sensor switch OFF)	 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
123 (W)	Ground	IGN feedback	Input	Ignition switch	OFF or ACC	0 V
					ON	Battery voltage
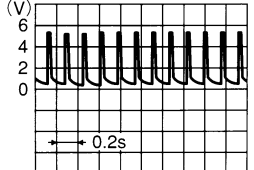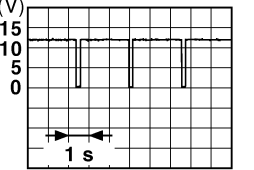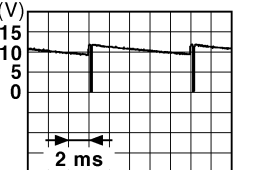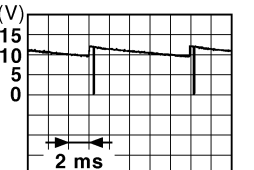
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
124 (LG)	Ground	Passenger door switch	Input	Passenger door switch	OFF (Door close)	(V) 15 10 5 0 ⟵ 10 ms ⟶ JPMIA0011GB 11.8 V
					ON (Door open)	0 V
132 (V)	Ground	Power window switch communication	Input/ Output	Ignition switch ON		(V) 15 10 5 0 ⟵ 10 ms ⟶ JPMIA0013GB 10.2 V
				Ignition switch OFF or ACC		Battery voltage
133 (W)	Ground	Push-button ignition switch illumination	Output	Push-button ignition switch illumination	ON (Tail lamps OFF)	9.5 V
					ON (Tail lamps ON)	**NOTE:** The pulse width of this wave is varied by the illumination brightening/dimming level. (V) 15 10 5 0 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	Receiver and sensor power supply	Output	Ignition switch	OFF	0 V
					ACC or ON	5.0 V
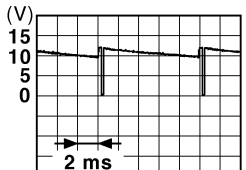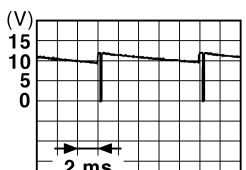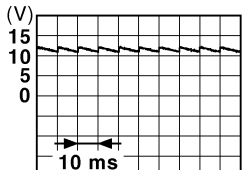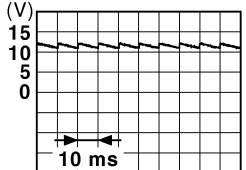
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	−	Signal name	Input/ Output			
139 (L)	Ground	Tire pressure receiver communication	Input/ Output	Ignition switch ON	Standby state	 OCC3881D
					When receiving the signal from the transmitter	 OCC3880D
140 (GR)	Ground	Selector lever P/N position	Input	Selector lever	P or N position	Battery voltage
					Except P and N positions	0 V
141 (G)	Ground	Security indicator	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 switches OFF	0 V
					Lighting switch 1ST	 JPMIA0031GB 10.7 V
					Lighting switch HI	
					Lighting switch 2ND	
					Turn signal switch RH	
143 (P)	Ground	Combination switch OUTPUT 1	Output	Combination switch	All switches OFF (Wiper 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 switches OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3 • Wiper intermittent dial 6 • Wiper intermittent dial 7	

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	−	Signal name	Input/ Output			
144 (G)	Ground	Combination switch OUTPUT 2	Output	Combination switch	All switches OFF (Wiper intermittent dial 4)	0 V
					Front washer switch ON (Wiper intermittent dial 4)	10.7 V
					Rear wiper switch ON (Wiper intermittent dial 4)	
					Rear washer switch ON (Wiper intermittent dial 4)	
					Any of the conditions below with all switches OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	
145 (L)	Ground	Combination switch OUTPUT 3	Output	Combination switch (Wiper intermittent dial 4)	All switches OFF	0 V
					Front wiper switch INT	10.7 V
					Front wiper switch LO	
					Lighting switch AUTO	
146 (SB)	Ground	Combination switch OUTPUT 4	Output	Combination switch (Wiper intermittent dial 4)	All switches OFF	0 V
					Front fog lamp switch ON	10.7 V
					Lighting switch 2ND	
					Lighting switch PASS	
					Turn signal switch LH	
149 (W)	Ground	Tire pressure warning 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
					ON (Door open)	0 V
151 (G)	Ground	Rear window defogger relay control	Output	Rear window defogger	Active	0 V
					Not activated	Battery voltage

Wiring Diagram - BCM -

INFOID:0000000004921449

IC : With ICC

BCM (BODY CONTROL MODULE)

BATTERY

A/T SHIFT SELECTOR (DETENTION SWITCH) (M137)

FUSE BLOCK (J/B) (M1), (M2), (E103), (M3)

ACCESSORY RELAY

To accessory power supply

KEY SLOT (M22)

INTELLIGENT KEY WARNING BUZZER (ENGINE ROOM) (E57)

BRAKE BOOSTER CONTROL UNIT (B249) : IC

ICC BRAKE HOLD RELAY (E50) : IC

To stop lamp

To Intelligent Cruise Control (full speed range)

STOP LAMP SWITCH (E110)

To A/T shift lock system

DOOR MIRROR (DRIVER SIDE) (PUDDLE LAMP) (D3)

10A 9
10A 6
10A 7
10A 10
40A K

BCM (BODY CONTROL MODULE)
(M118), (M119), (M120), (M121), (M122), (M123)

BACK DOOR OPENER REQUEST SWITCH (D116)

BACK DOOR OPENER SWITCH (D114)

FRONT OUTSIDE HANDLE RH (REQUEST SWITCH) (D43)

FRONT OUTSIDE HANDLE LH (REQUEST SWITCH) (D13)

REAR DOOR SWITCH RH (B223)

REAR DOOR SWITCH LH (B23)

FRONT DOOR SWITCH (PASSENGER SIDE) (B216)

FRONT DOOR SWITCH (DRIVER SIDE) (B16)

(M95)

COMBINATION SWITCH (M33)

99
96
95
92
81
80
121
64
118
116
94
11
1
61
67
100
101
68
69
124
150
13

87 13
108 10
88 7
109 9
107 11
142 8
146 2
145 5
144 14
143 12

2008/08/28

JCMWA3119GB

JCMWA3120GB

RF : With sunroof

PM : With automatic drive positioner

OP : Without automatic drive positioner

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) (E41)

To CAN system

FRONT SEAT (DRIVER SIDE)

DRIVER SEAT CONTROL UNIT (B451) (PM) ★

UNIFIED METER AND A/C AMP. (M67)

DATA LINK CONNECTOR (M24)

DATA LINE

DATA LINE

A/T ASSEMBLY (F51)

TCM (TRANSMISSION CONTROL MODULE) (F151) ★

BCM (BODY CONTROL MODULE)
(M118) (M119) (M120) (M121) (M122) (M123)

REAR POWER WINDOW SWITCH LH (D54)

REAR POWER WINDOW SWITCH RH (D74)

SUNROOF MOTOR ASSEMBLY (R4) (RF)

FRONT POWER WINDOW SWITCH (PASSENGER SIDE) (D38)

POWER WINDOW MAIN SWITCH (D8) (D9)

FRONT POWER SEAT (PASSENGER SIDE)

POWER SEAT SWITCH (B434) ★

FRONT POWER SEAT (DRIVER SIDE)

POWER SEAT SWITCH (B414) ★ (OP)

OUTSIDE KEY ANTENNA (BACK DOOR) (D118)

FRONT OUTSIDE HANDLE RH (OUTSIDE KEY ANTENNA) (D44)

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

3
2
132
38
39
74
75
140

JCMWA3121GB

A

B

C

D

E

F

G

H

I

J

K

WW

M

N

O

P

JCMWA3122GB

JCMWA3123GB

Terminal No.	Color of Wire	Signal Name [Specification]
18	O	TURN SIGNAL LH (FRONT)
19	V	ROOM LAMP TIMER CONTROL

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	PASSNEGER DOOR UNLOCK OUTPUT
7	Y	STEP LAMP OUTPUT
8	V	ALL DOOR, FUEL LID LOCK OUTPUT
9	G	DRIVER DOOR, FUEL LID UNLOCK OUTPUT
10	BR	REAR DOOR UNLOCK OUTPUT
11	R	BAT (FUSE)
13	B	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

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

Terminal No.	Color of Wire	Signal Name [Specification]
1	W	BAT (F/L)
2	Y	POWER WINDOW POWER SUPPLY(BAT)
3	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 ANT−
35	V	LUGGAGE ROOM ANT+
38	B	BACK DOOR ANT−
39	W	BACK DOOR ANT+
47	Y	IGN RELAY (IPDM E/R) CONT
52	SB	STARTER RELAY CONT
61	B	BACK DOOR OPENER REQUEST SW
64	V	I-KEY WARN BUZZER (ENG ROOM)
65	O	REAR WIPER STOP POSITION
66	R	BACK DOOR SW
67	GR	BACK DOOR OPENER SW

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

JCMWA3124GB

Terminal No.	Color	Signal Name [Specification]
138	Y	RECEIVER/SENSOR POWER SUPPLY
139	L	TIRE PRESSURE RECEIVER COMM
140	GR	SHIFT N/P
141	G	SECURITY INDICATOR OUTPUT
142	O	COMBI SW OUTPUT 5
143	P	COMBI SW OUTPUT 1
144	G	COMBI SW OUTPUT 2
145	L	COMBI SW OUTPUT 3
146	SB	COMBI SW OUTPUT 4
149	W	TIRE PRESS WARNING CHECK SW
150	LG	DRIVER DOOR SW
151	G	REAR WINDOW DEFOGGER RELAY CONT

Connector No. M123
Connector Name BCM (BODY CONTROL MODULE)
Connector Type TH40FG-NH
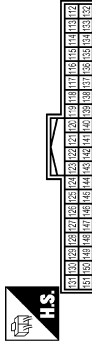
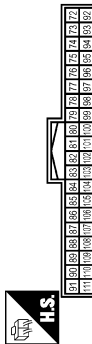| Terminal No.	Color of Wire	Signal Name [Specification]
113	P	OPTICAL SENSOR
116	SB	STOP LAMP SW 1
118	P	STOP LAMP SW 2
119	SB	DR DOOR UNLOCK SENSOR
121	BR	KEY SLOT SW
123	W	IGN F/B
124	LG	PASSENGER DOOR SW
132	V	POWER WINDOW SW COMM
133	W	PUSH-BUTTON IGNITION SW ILL POWER
134	GR	LOCK IND
137	O	RECEIVER/SENSOR GND

Terminal No.	Color	Signal Name [Specification]
83	Y	KEYLESS ENTRY RECEIVER COMM
87	BR	COMBI SW INPUT 5
88	V	COMBI SW INPUT 3
89	BR	PUSH SW
90	P	CAN-L
91	L	CAN-H
92	LG	KEY SLOT ILL
93	V	ON IND
94	Y	PUDDLE LAMP CONT
95	O	ACC RELAY CONT
96	GR	A/T SHIFT SELECTOR POWER SUPPLY
97	L	S/L CONDITION 1
98	P	S/L CONDITION 2
99	R	SHIFT P
100	G	PASSENGER DOOR REQUEST SW
101	SB	DRIVER DOOR REQUEST SW
102	O	BLOWER FAN MOTOR RELAY CONT
103	LG	KEYLESS ENTRY RECEIVER POWER SUPPLY
106	W	S/L UNIT POWER SUPPLY
107	LG	COMBI SW INPUT 1
108	R	COMBI SW INPUT 4
109	Y	COMBI SW INPUT 2
110	G	HAZARD SW
111	Y	S/L UNIT COMM

BCM (BODY CONTROL MODULE)

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

Terminal No.	Color of Wire	Signal Name [Specification]
72	R	ROOM ANT2-
73	G	ROOM ANT2+
74	SB	PASSENGER DOOR ANT-
75	GR	PASSENGER DOOR ANT+
76	V	DRIVER DOOR ANT-
77	LG	DRIVER DOOR ANT+
78	Y	ROOM ANT1-
79	BR	ROOM ANT1+
80	GR	IMMOBI ANTENNA CONTROL
81	W	IMMOBI ANTENNA SIGNAL
82	R	IGN RELAY (F/B) CONT

JCMWA3125GB

Fail-safe

INFOID:0000000004921450

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

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Display contents of CONSULT	Fail-safe	Cancellation
B2013: ID DISCORD BCM-S/L	Inhibit engine cranking	Erase DTC
B2014: CHAIN OF S/L-BCM	Inhibit engine cranking	Erase DTC
B2190: NATS ANTENNA AMP	Inhibit engine cranking	Erase DTC
B2191: DIFFERENCE OF KEY	Inhibit engine cranking	Erase DTC
B2192: ID DISCORD BCM-ECM	Inhibit engine cranking	Erase DTC
B2193: CHAIN OF BCM-ECM	Inhibit engine cranking	Erase DTC
B2195: ANTI SCANNING	Inhibit engine cranking	Ignition switch ON → OFF
B2557: VEHICLE SPEED	Inhibit steering lock	When normal vehicle speed signals are received from ABS actuator and electric unit (control unit) for 500 ms
B2560: STARTER CONT RELAY	Inhibit engine cranking	500 ms after the following CAN signal communication status becomes consistent • Starter control relay signal • Starter relay status signal
B2601: SHIFT POSITION	Inhibit steering lock	500 ms after the following signal reception status becomes consistent • Selector lever P position switch signal • P range signal (CAN)
B2602: SHIFT POSITION	Inhibit steering lock	5 seconds after the following BCM recognition conditions are fulfilled • Ignition switch is in the ON position • Selector lever P position switch signal: Except P position (battery voltage) • Vehicle speed: 4 km/h (2.5 MPH) or more
B2603: SHIFT POSI STATUS	Inhibit steering lock	500 ms after the following BCM recognition conditions are fulfilled • Ignition switch is in the ON position • Selector lever P position switch signal: Except P position (battery voltage) • Selector lever P/N position signal: Except P and N positions (0 V)
B2604: PNP SW	Inhibit steering lock	500 ms after any of the following BCM recognition conditions are fulfilled • Status 1 - Ignition switch is in the ON position - Selector lever P/N position signal: P and N position (battery voltage) - P range signal or N range signal (CAN): ON • Status 2 - Ignition switch is in the ON position - Selector lever P/N position signal: Except P and N positions (0 V) - P range signal and N range signal (CAN): OFF
B2605: PNP SW	Inhibit steering lock	500 ms after any of the following BCM recognition conditions are fulfilled • Ignition switch is in the ON position - Power position: IGN - Selector lever P/N position signal: Except P and N positions (0 V) - Interlock/PNP switch signal (CAN): OFF • Status 2 - Ignition switch is in the ON position - Selector lever P/N position signal: P or N position (battery voltage) - PNP switch signal (CAN): ON
B2606: S/L RELAY	Inhibit engine cranking	500 ms after the following CAN signal communication status becomes consistent • Steering lock relay signal (Request signal) • Steering lock relay signal (Condition signal)

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Display contents of CONSULT	Fail-safe	Cancellation
B2607: S/L RELAY	Inhibit engine cranking	500 ms after the following CAN signal communication status becomes consistent • Steering lock relay signal (Request signal) • Steering lock relay signal (Condition signal)
B2608: STARTER RELAY	Inhibit engine cranking	500 ms after the following signal communication status becomes consistent • Starter motor relay control signal • Starter relay status signal (CAN)
B2609: S/L STATUS	• Inhibit engine 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 are 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 are fulfilled • Steering lock unit status signal (CAN) is received normally • The BCM steering lock control status matches the steering lock status recognized by the steering lock unit status signal (CAN from IPDM E/R)
B2617: STARTER RELAY CIRC	Inhibit engine cranking	1 second after the starter motor relay control inside BCM becomes normal
B2618: BCM	Inhibit engine cranking	1 second after the ignition relay (IPDM E/R) control inside BCM 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
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 are fulfilled • Steering condition No. 1 signal: LOCK (0 V) • Steering condition No. 2 signal: LOCK (Battery voltage)

HIGH FLASHER OPERATION

BCM detects the turn signal lamp circuit status by the current value.
BCM increases the turn signal lamp blinking speed if the bulb or harness open is detected with the turn signal lamp operating.
NOTE:
The blinking speed is normal while activating the hazard warning lamp.

REAR WIPER MOTOR PROTECTION

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

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

DTC Inspection Priority Chart

INFOID:0000000004921451

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

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

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 • B2195: ANTI SCANNING
4	• B2013: ID DISCORD BCM-S/L • B2014: CHAIN OF S/L-BCM • B2553: IGNITION RELAY • B2555: STOP LAMP • B2556: PUSH-BTN IGN SW • B2557: VEHICLE SPEED • B2560: STARTER CONT RELAY • B2601: SHIFT POSITION • B2602: SHIFT POSITION • B2603: SHIFT POSI STATUS • B2604: PNP SW • B2605: PNP SW • B2606: S/L RELAY • B2607: S/L RELAY • B2608: STARTER RELAY • B2609: S/L STATUS • B260A: IGNITION RELAY • B260B: STEERING LOCK UNIT • B260C: STEERING LOCK UNIT • B260D: STEERING LOCK UNIT • B260F: ENG STATE SIG LOST • B2612: S/L STATUS • B2614: ACC RELAY CIRC • B2615: BLOWER RELAY CIRC • B2616: IGN RELAY CIRC • B2617: STARTER RELAY CIRC • B2618: BCM • B2619: BCM • B261A: PUSH-BTN IGN SW • B261E: VEHICLE TYPE • B26E9: S/L STATUS • B26EA: KEY REGISTRATION • C1729: VHCL SPEED SIG ERR • U0415: VEHICLE SPEED SIG

Priority	DTC
5	• C1704: LOW PRESSURE FL • C1705: LOW PRESSURE FR • C1706: LOW PRESSURE RR • C1707: LOW PRESSURE RL • C1708: [NO DATA] FL • C1709: [NO DATA] FR • C1710: [NO DATA] RR • C1711: [NO DATA] RL • 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

DTC Index

INFOID:0000000004921452

NOTE:
The details of time display are as follows.
• CRNT: A malfunction is detected now.
• PAST: A malfunction was detected in the past.
IGN counter is displayed on Freeze Frame Data. For details of Freeze Frame Data, refer to BCS-16, "COM-MON ITEM : CONSULT-III Function (BCM - COMMON ITEM)".

CONSULT display	Fail-safe	Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle Condition	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference 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-41
B2191: DIFFERENCE OF KEY	×	—	—	—	SEC-44
B2192: ID DISCORD BCM-ECM	×	—	—	—	SEC-45
B2193: CHAIN OF BCM-ECM	×	—	—	—	SEC-46
B2195: ANTI SCANNING	×	—	—	—	SEC-47
B2553: IGNITION RELAY	—	×	—	—	PCS-49

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

CONSULT display	Fail-safe	Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle Condition	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
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-56
B2616: IGN RELAY CIRC	—	×	×	—	PCS-59
B2617: STARTER RELAY CIRC	×	×	×	—	SEC-90
B2618: BCM	×	×	×	—	PCS-62
B2619: BCM	×	×	×	—	SEC-92
B261A: PUSH-BTN IGN SW	—	×	×	—	SEC-93
B261E: VEHICLE TYPE	×	×	× (Turn ON for 15 seconds)	—	SEC-96
B2621: INSIDE ANTENNA	—	×	—	—	DLK-59
B2622: INSIDE ANTENNA	—	×	—	—	DLK-61
B2623: INSIDE ANTENNA	—	×	—	—	DLK-63
B26E1: ENG STATE NO RES	×	×	×	—	SEC-83
B26E9: S/L STATUS	×	×	× (Turn ON for 15 seconds)	—	SEC-84
B26EA: KEY REGISTRATION	—	×	× (Turn ON for 15 seconds)	—	SEC-85
C1704: LOW PRESSURE FL	—	—	—	×	WT-17
C1705: LOW PRESSURE FR	—	—	—	×	
C1706: LOW PRESSURE RR	—	—	—	×	
C1707: LOW PRESSURE RL	—	—	—	×	

CONSULT display	Fail-safe	Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle Condition	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
C1708: [NO DATA] FL	—	—	—	×	WT-19
C1709: [NO DATA] FR	—	—	—	×	
C1710: [NO DATA] RR	—	—	—	×	
C1711: [NO DATA] RL	—	—	—	×	
C1712: [CHECKSUM ERR] FL	—	—	—	×	WT-22
C1713: [CHECKSUM ERR] FR	—	—	—	×	
C1714: [CHECKSUM ERR] RR	—	—	—	×	
C1715: [CHECKSUM ERR] RL	—	—	—	×	
C1716: [PRESSDATA ERR] FL	—	—	—	×	WT-25
C1717: [PRESSDATA ERR] FR	—	—	—	×	
C1718: [PRESSDATA ERR] RR	—	—	—	×	
C1719: [PRESSDATA ERR] RL	—	—	—	×	
C1720: [CODE ERR] FL	—	—	—	×	WT-27
C1721: [CODE ERR] FR	—	—	—	×	
C1722: [CODE ERR] RR	—	—	—	×	
C1723: [CODE ERR] RL	—	—	—	×	
C1724: [BATT VOLT LOW] FL	—	—	—	×	WT-30
C1725: [BATT VOLT LOW] FR	—	—	—	×	
C1726: [BATT VOLT LOW] RR	—	—	—	×	
C1727: [BATT VOLT LOW] RL	—	—	—	×	
C1729: VHCL SPEED SIG ERR	—	—	—	×	WT-33
C1734: CONTROL UNIT	—	—	—	×	WT-34

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

Reference Value

INFOID:0000000004921453

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

Monitor Item	Condition		Value/Status
ST/INHI RLY	Ignition switch ON		Off
	At engine cranking		INHI ON → ST ON
	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

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

< ECU DIAGNOSIS INFORMATION >

TERMINAL LAYOUT

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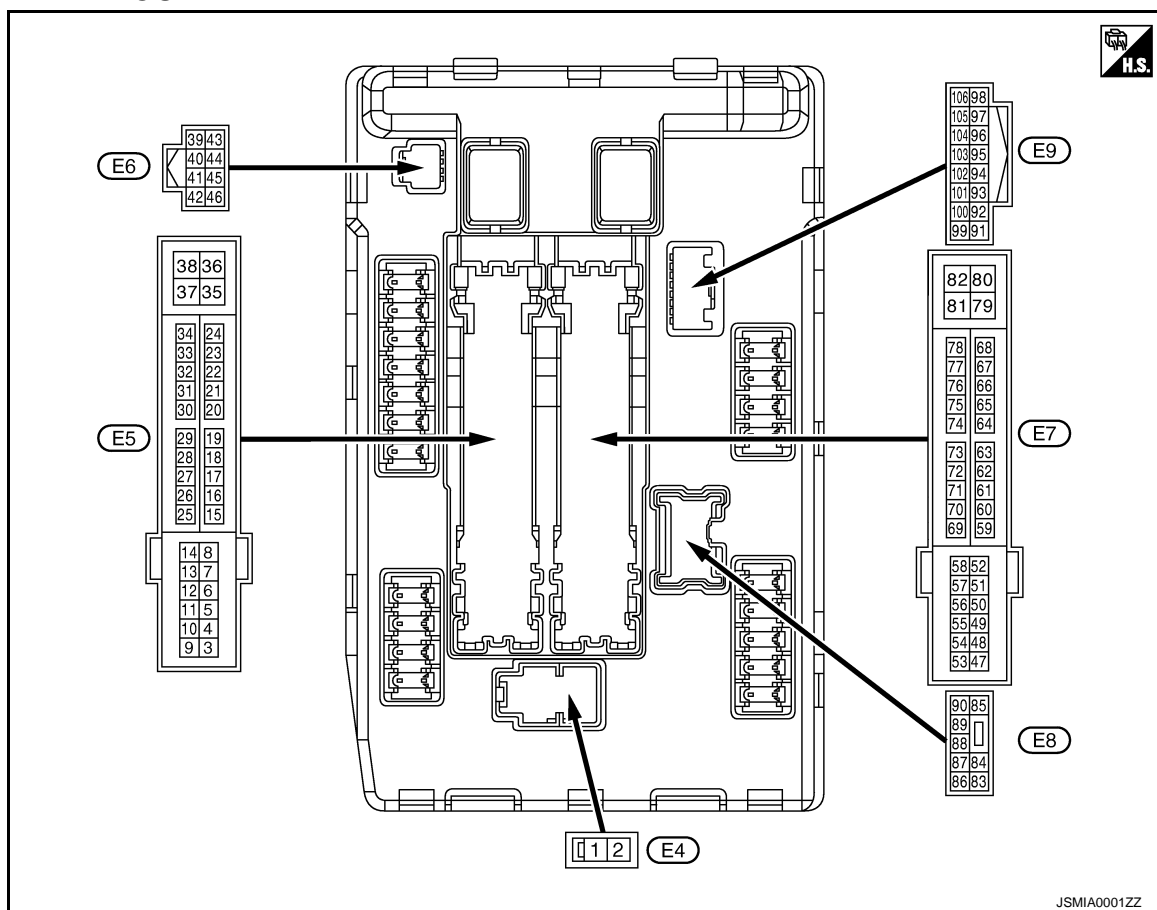
PHYSICAL VALUES

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 ON	Front wiper switch OFF	0 V
					Front wiper switch LO	Battery voltage
5 (L)	Ground	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch HI	Battery voltage
7 (R)	Ground	Tail, license plate lamps & interior lamps	Output	Ignition switch ON	Lighting switch OFF	0 V
					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

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
				Ignition switch ON — 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
				Ignition switch ON — 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
				Ignition switch ON — 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

Terminal No. (Wire color) +	−	Description Signal name	Input/ Output	Condition		Value (Approx.)
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
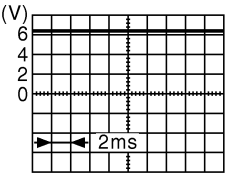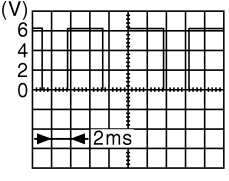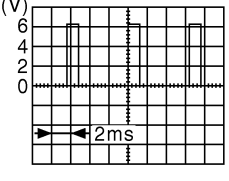
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	−	Signal name	Input/ Output			
74 (P)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
75 (Y)	Ground	Oil pressure switch	Input	Ignition switch ON	Engine stopped	0 V
					Engine running	Battery voltage
76 (V)	Ground	Power generation command signal	Output	Ignition switch ON		JPMIA0001GB 6.3 V
				40% is set on "ACTIVE TEST", "ALTERNATOR DUTY" of "ENGINE"		JPMIA0002GB 3.8 V
				80% is set on "ACTIVE TEST", "ALTERNATOR DUTY" of "ENGINE"		JPMIA0003GB 1.4 V
77 (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 OFF	0 V
					• Front fog lamp switch ON • Daytime running light activated (Only for Canada)	Battery voltage

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

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color) +	Terminal No. (Wire color) −	Description Signal name	Description Input/ Output	Condition	Condition	Value (Approx.)
87 (L)	Ground	Front fog lamp (LH)	Output	Lighting switch 2ND	Front fog lamp switch OFF	0 V
					• Front fog lamp switch ON • Daytime running light activated (Only for Canada)	Battery voltage
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 OFF	0 V
					• Lighting switch HI • Lighting switch PASS	Battery voltage
90 (P)	Ground	Headlamp HI (LH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					• Lighting switch HI • Lighting switch PASS	Battery voltage
91 (P)	Ground	Parking lamp (RH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 1ST	Battery voltage
92 (O)	Ground	Parking lamp (LH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 1ST	Battery voltage
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

Wiring Diagram - IPDM E/R -

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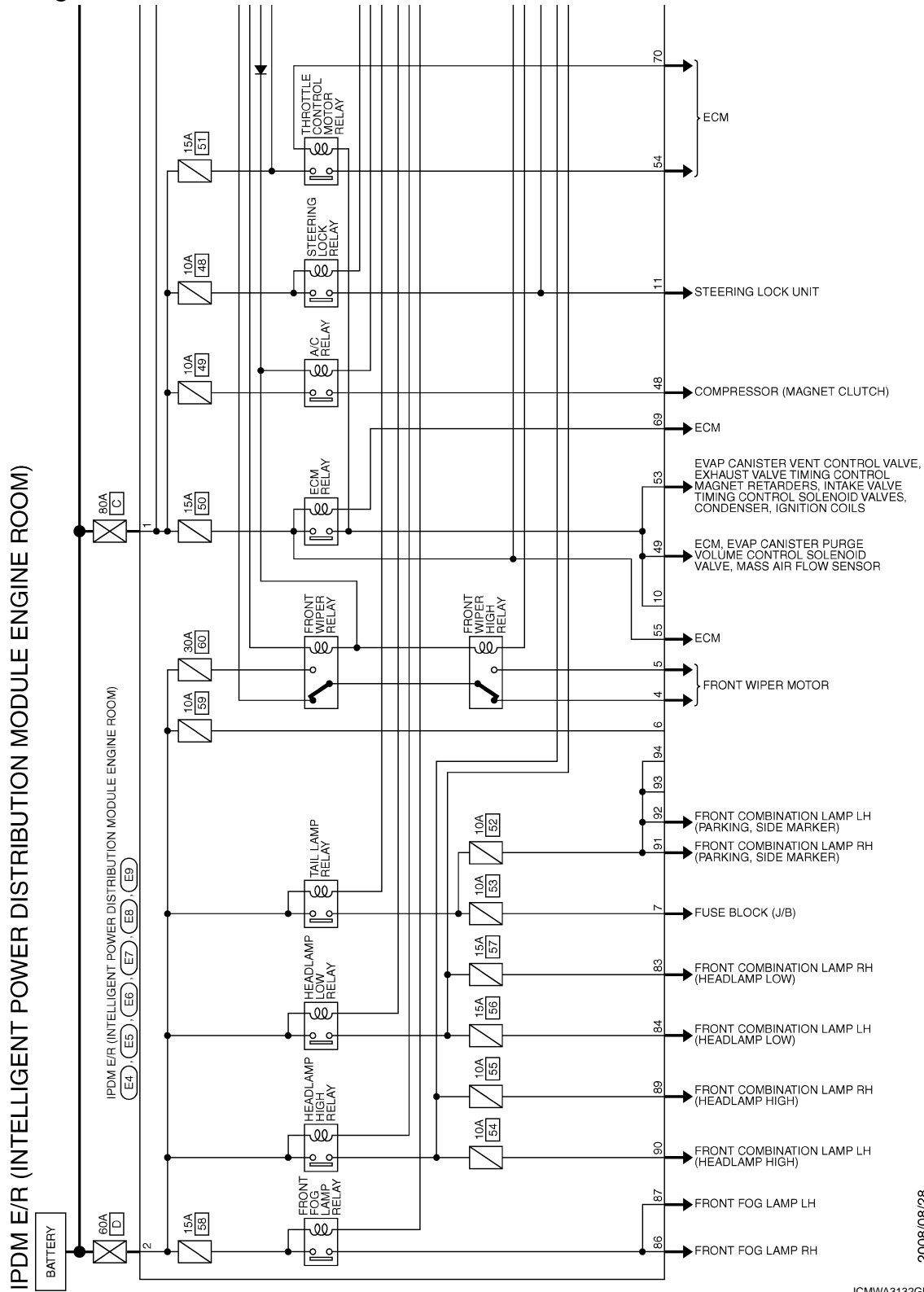
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IPDM E/R
(INTELLIGENT POWER
DISTRIBUTION MODULE
ENGINE ROOM)

E4 , E5 , E6 ,
E7 , E8 , E9

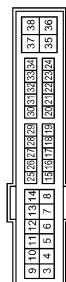| 20 | 21 | 22 | 23 | 24 | 103 | 102 | 101 | 100 | 99 |
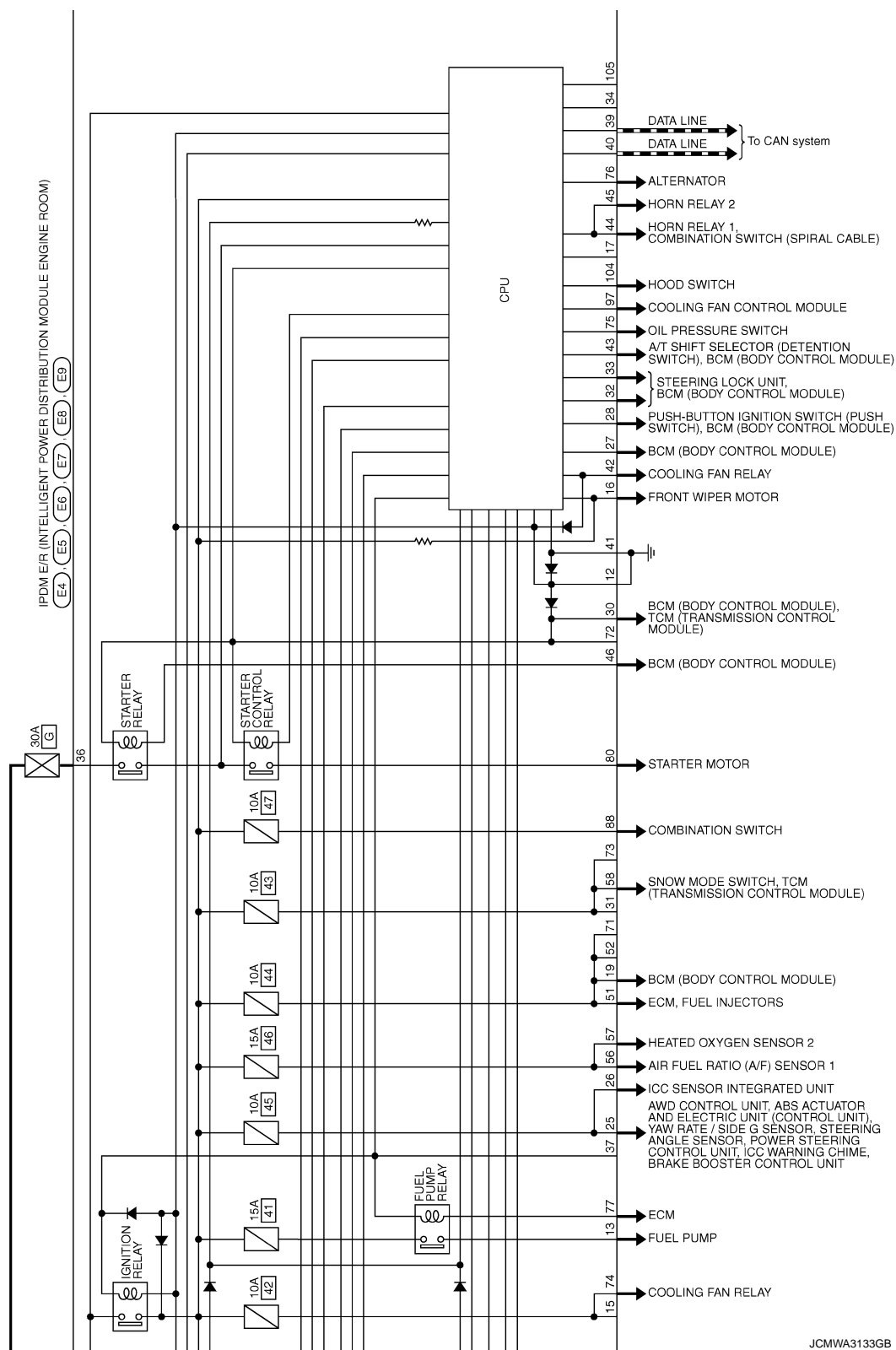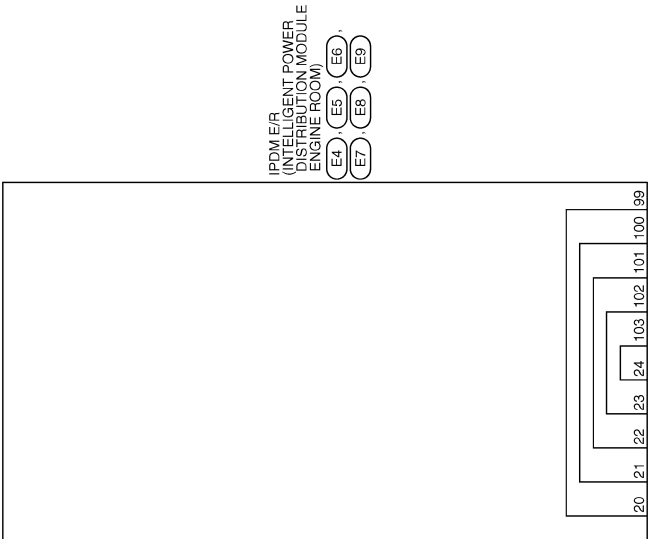
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IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

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 TH16FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
91	P	—
92	O	—
97	V	—
104	LG	—

28	L	—
30	GR	—
32	L	—
33	P	—
36	G	—

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. E5
Connector Name IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type TH20FW-CS12-M4-IV

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	—

74	P	—
75	Y	—
76	V	—
77	L	—
80	W	—

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

Terminal No.	Color of Wire	Signal Name [Specification]
1	W	—
2	L	—

Connector No. 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	—

JCMWA3135GB

Fail-safe

INFOID:0000000004921455

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

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

If No CAN Communication Is Available With BCM

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

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

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

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

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

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:0000000004921456

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

×: Applicable

CONSULT display	Fail-safe	Reference
No DTC is detected. further testing may be required.	—	—
U1000: CAN COMM CIRCUIT	×	PCS-15
B2098: IGN RELAY ON	×	PCS-16
B2099: IGN RELAY OFF	—	PCS-17
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

SYMPTOM DIAGNOSIS

WIPER AND WASHER SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000004345133

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-83, "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-83, "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-83, "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-98, "Diagnosis Procedure".	

WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

Symptom		Probable malfunction location	Inspection item
Front wiper does not stop.	HI only	• Combination switch • BCM	Combination switch Refer to BCS-83, "Symptom Table".
		Front wiper request signal • BCM • IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"
		IPDM E/R	—
	LO only	• Combination switch • BCM	Combination switch Refer to BCS-83, "Symptom Table".
		Front wiper request signal • BCM • IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"
		IPDM E/R	—
	INT only	• Combination switch • BCM	Combination switch Refer to BCS-83, "Symptom Table".
		Front wiper request signal • BCM • IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"
Front wiper does not operate normally.	Intermittent adjustment cannot be performed.	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-83, "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	Combination switch Refer to BCS-83, "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	Combination switch Refer to BCS-83, "Symptom Table".
	INT only	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-83, "Symptom Table".
	ON and INT	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-83, "Symptom Table".
		• BCM • Harness between rear wiper motor and BCM • Harness between rear wiper motor and ground • Rear wiper motor	Combination switch Refer to BCS-83, "Symptom Table".

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-83, "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-83, "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".

NORMAL OPERATING CONDITION

Description

INFOID:000000000345134

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

Description

INFOID:000000004345135

The front wiper does not operate under any operating conditions.

Diagnosis Procedure

INFOID:000000004345136

1.CHECK WIPER RELAY OPERATION

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

□CONSULT-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	Ground	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-83, "Symptom Table".
Is combination switch normal?

YES >> Replace BCM. Refer to BCS-85, "Exploded View".
NO >> Repair or replace the applicable parts.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000004345137

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

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

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

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

Precaution for Procedure without Cowl Top Cover

INFOID:0000000004345138

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

PIIB3706J

REMOVAL AND INSTALLATION
WASHER TANK

Exploded View

INFOID:0000000004345139

SEC. 289

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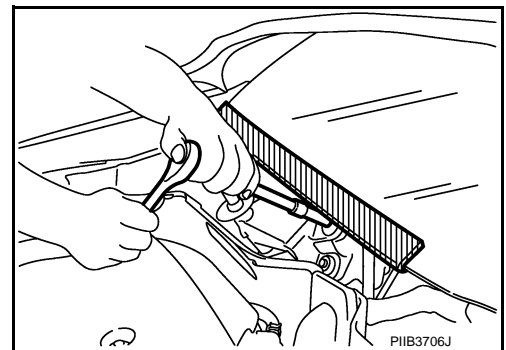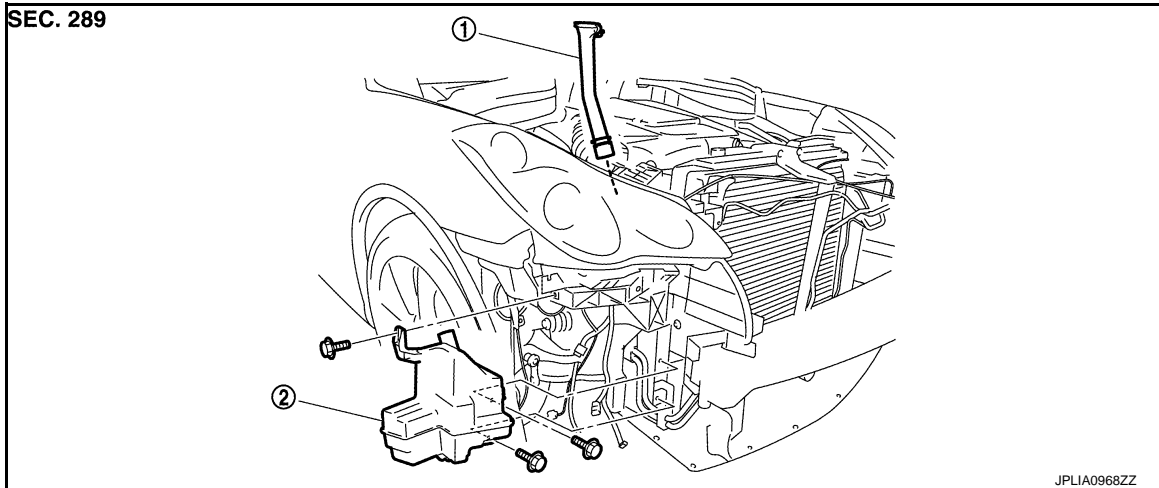
1. Washer tank inlet	2. Washer tank

Removal and Installation

INFOID:0000000004345140

REMOVAL

1. Remove the clip (A).

    ⬅ : Vehicle front

JPLIA0969ZZ

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.
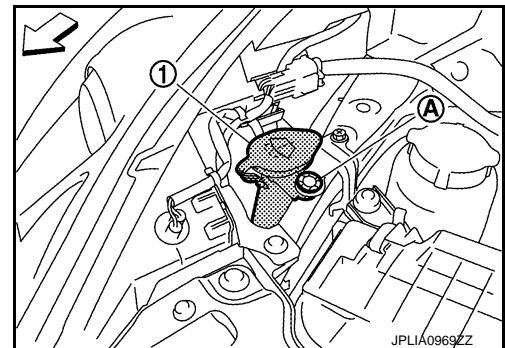
INSTALLATION
Note the following, and install in the reverse order of removal.
CAUTION:
Add water up to the top of the washer tank inlet after installing. Check that there is no leakage.

FRONT WASHER PUMP

Exploded View

INFOID:000000004345141

SEC. 289

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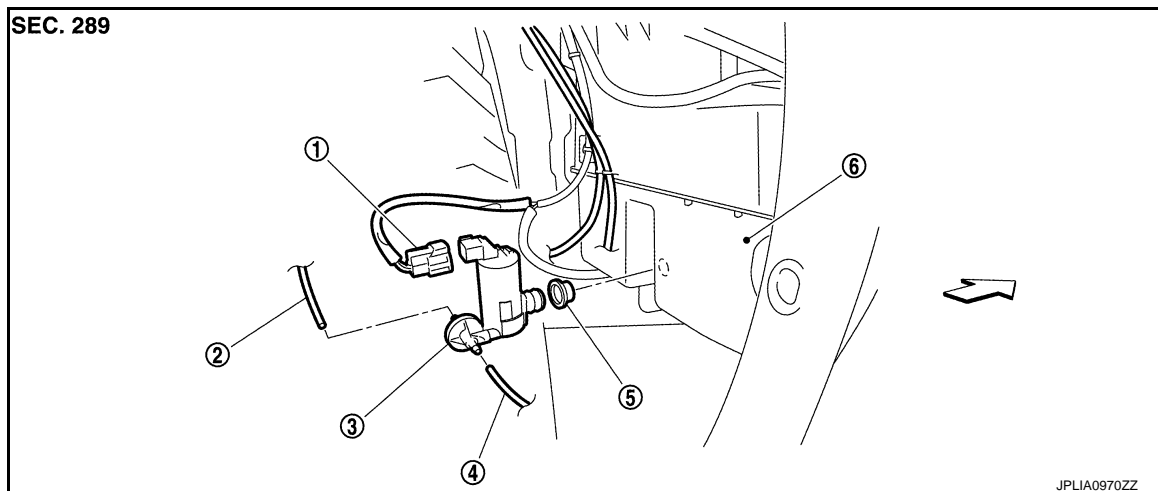
1. Washer pump connector
2. Rear washer tube
3. Washer pump
4. Front washer tube
5. Packing
6. Washer tank

⟵ : Vehicle front

Removal and Installation

INFOID:0000000004345142

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.

WASHER LEVEL SWITCH

Removal and Installation

INFOID:000000000345143

The washer level switch must be replaced together with the washer tank as an assembly. Refer to WW-101, "Removal and Installation".

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FRONT WASHER NOZZLE AND TUBE

Hydraulic Layout

SEC. 289

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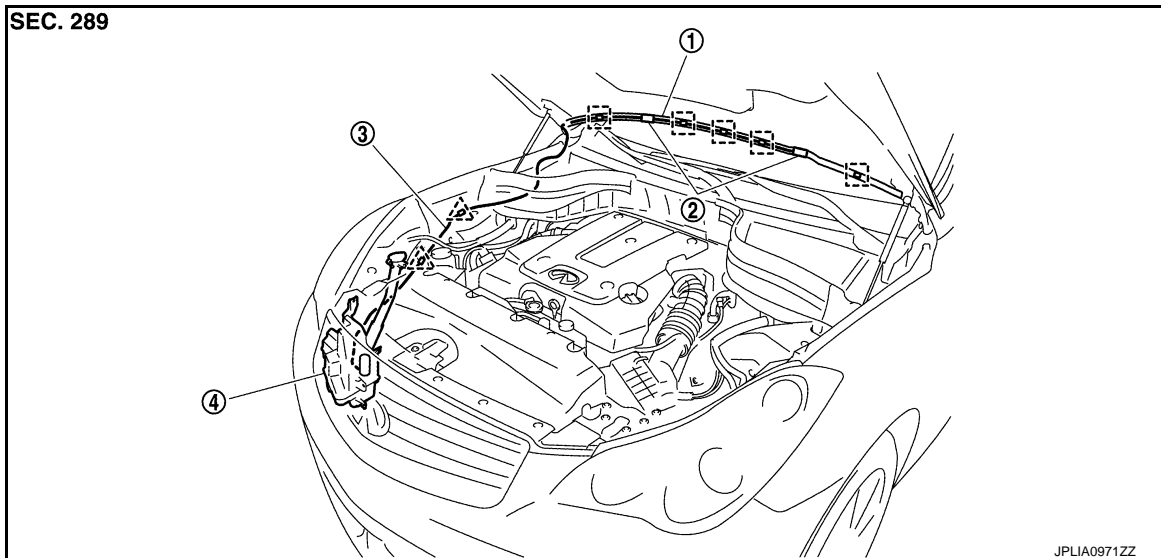
1. Front washer tube
2. Front washer nozzle
3. Front washer tube
4. Washer tank

△ : Clip

⌐⌐ : Clip

Removal and Installation

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.

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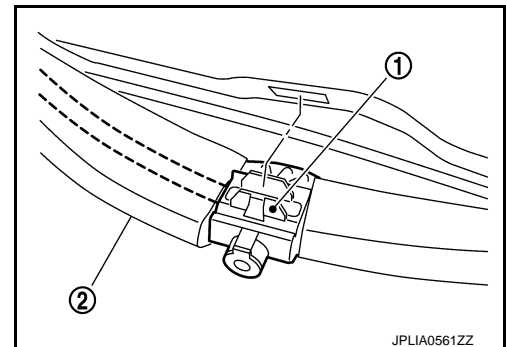
INSTALLATION

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-104, "Inspection and Adjustment".
   CAUTION:
   The spray positions differ. Check that left and right nozzles are installed correctly.

Inspection and Adjustment

INSPECTION

Washer Nozzle Inspection

FRONT WASHER NOZZLE AND TUBE

REMOVAL AND INSTALLATION >

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

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ADJUSTMENT

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

JPLIA1593ZZ
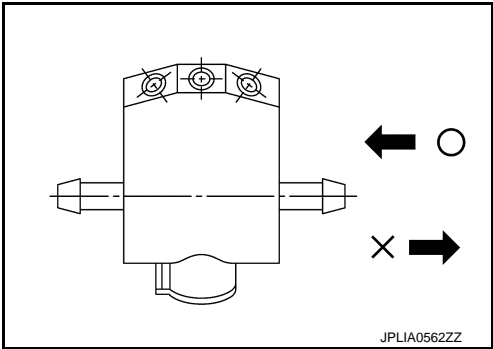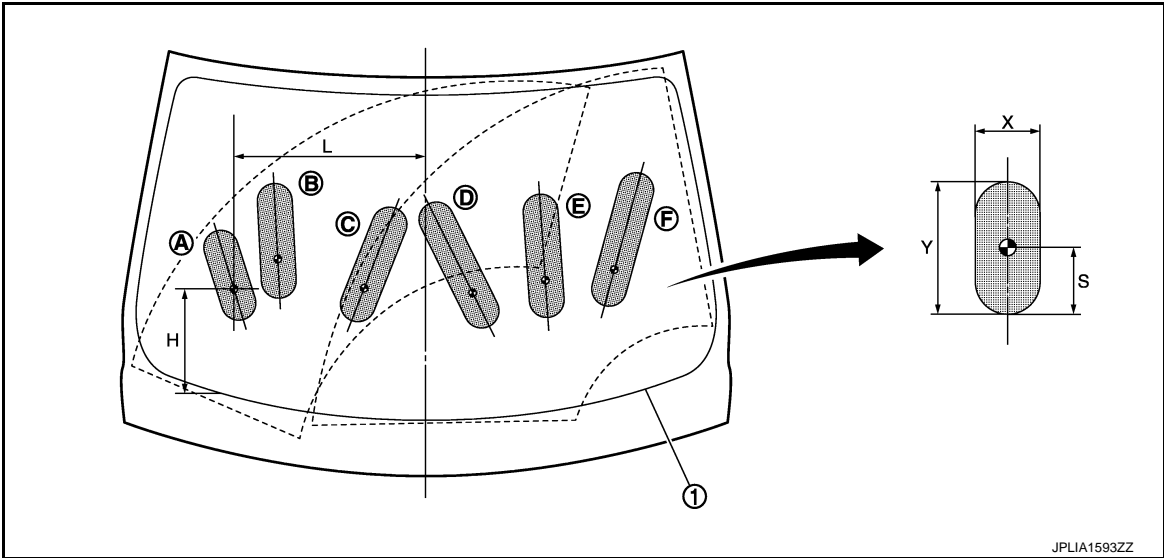
1. Black printed frame line

▨ : Spray area

◖ : Target spray position

Unit: mm (in)

Spray position	H	L	X	Y	S
A	239 (9.41)	436 (17.17)	80 (3.15)	212 (8.35)	72 (2.83)
B	329 (12.95)	336 (13.23)	80 (3.15)	260 (10.24)	90 (3.54)
C	288 (11.34)	139 (5.47)	80 (3.15)	278 (10.94)	82 (3.23)
D	278 (10.94)	109 (4.24)	80 (3.15)	313 (12.32)	86 (3.39)
E	290 (11.42)	274 (10.79)	80 (3.15)	281 (11.06)	85 (3.35)
F	285 (11.22)	432 (17.01)	80 (3.15)	315 (12.40)	87 (3.43)

FRONT WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

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

NOTE:

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

JPLIA0564ZZ
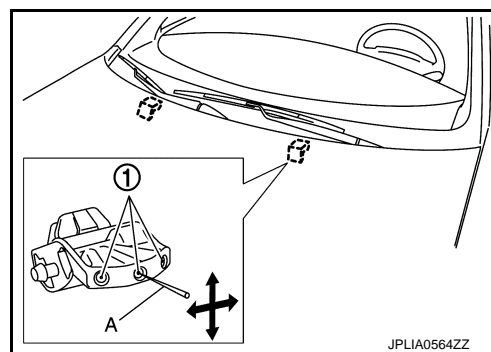
FRONT WIPER ARM

Exploded View

INFOID:000000004345147

SEC. 288

23.5 (2.4, 17)

23.5 (2.4, 17)

JPLIA0973GB
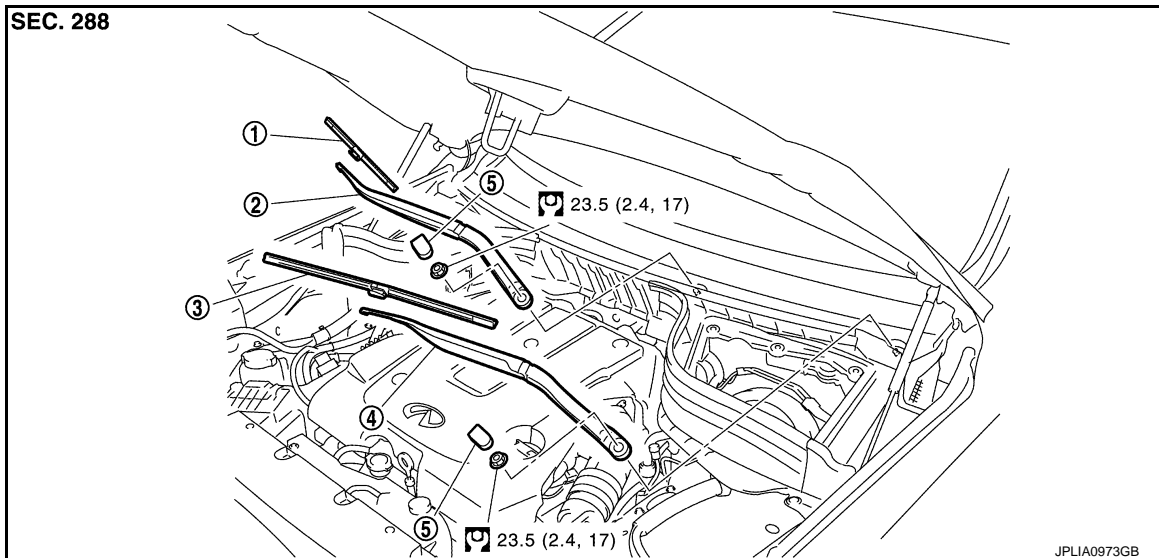
1. Front wiper blade (RH)
2. Front wiper arm (RH)
3. Front wiper blade (LH)
4. Front wiper arm (LH)
5. Front wiper arm cap

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

Removal and Installation

INFOID:000000004345148

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-107, "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.

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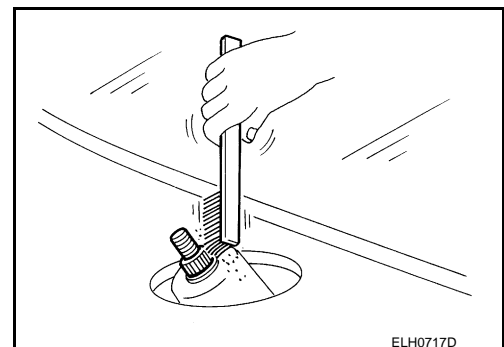
Adjustment

INFOID:000000004345149

WIPER BLADE POSITION ADJUSTMENT
Clearance between the end of cowl top cover and the top of wiper blade center

FRONT WIPER ARM

< REMOVAL AND INSTALLATION >

Standard clearance

R : **48.0** $\pm$ **7.5 mm (1.890** $\pm$ **0.295 in)**

L : **76.5** $\pm$ **7.5 mm (3.012** $\pm$ **0.295 in)**

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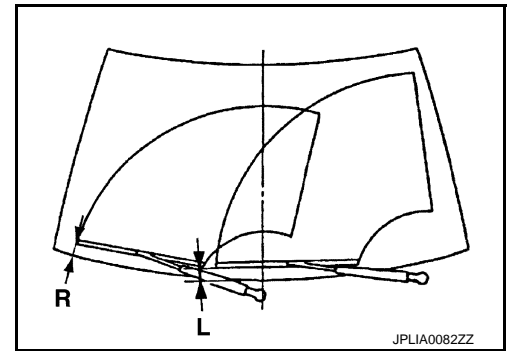
WIPER BLADE

Exploded View

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SEC. 288

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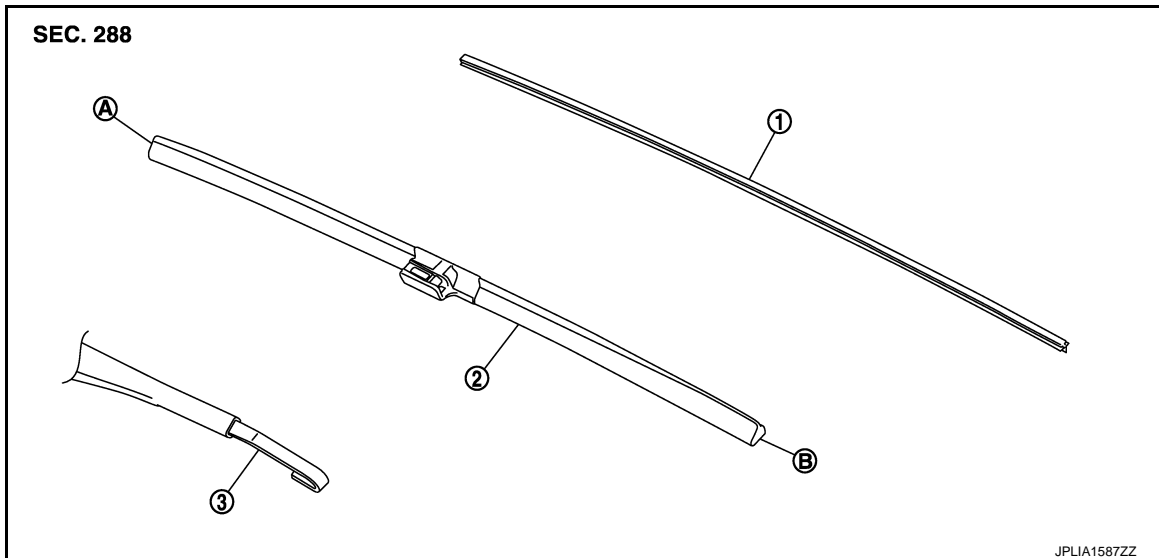
1.	Wiper refill	2.	Wiper blade	3.	Wiper arm
A.	Wiper blade end	B.	Wiper blade tip		

Removal and Installation

INFOID:000000004921446

REMOVAL
Remove the wiper blade from the wiper arm.

INSTALLATION
Install the front wiper blade to the wiper arm.

Replacement

INFOID:000000004921447

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

JPLIA1583ZZ
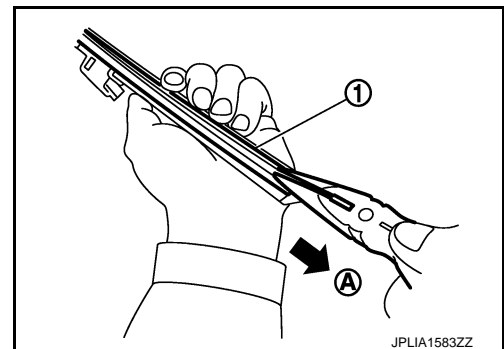
2. Insert the tip of new wiper refill (1) into the rear end of wiper blade. Slide the wiper refill to the direction (A) while pressing the wiper refill onto the wiper blade rear end.
   NOTE:
   • Insert the wiper refill to be held securely by tab (B) of wiper blade.
   • After the wiper refill is fully inserted, remove the holder* (2).
   *: Attached to service parts.

JPLIA1584ZZ
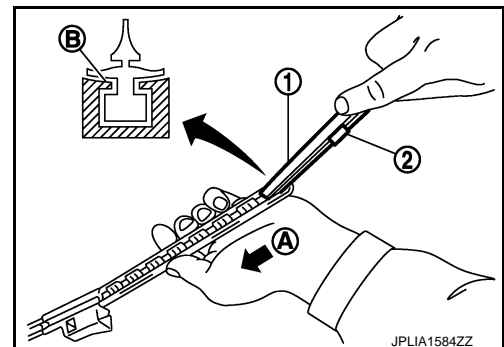
3. Inert the wiper refill until the stopper at the rear end of wiper refill fits in the tab. Check that "LOCK" mark on wiper refill is aligned with "▼" mark on wiper blade.

4. Untwist the twisted wiper refill (▨) at the rear end of wiper blade, if any.

5. Check the following items after replacing wiper refill.
   • Wiper refill is not twisted at all.
   • Wiper refill thoroughly fits in the tab on wiper blade.
   • Wiper refill is inserted from the proper direction.

NOTE:
When the vertebra is detached.
• Insert the vertebra (1) into the wiper blade to the same bending direction.
• If a vertebra has a notch, fit it to a protrusion inside the wiper refill.

JPLIA1585ZZ

JPLIA1586ZZ

A

B
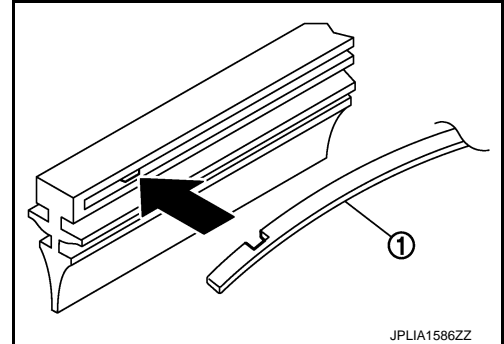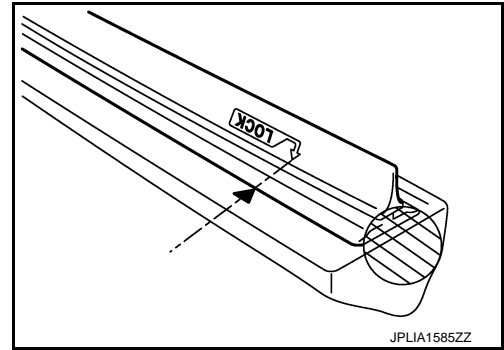
FRONT WIPER DRIVE ASSEMBLY

Exploded View

INFOID:000000004345151

REMOVAL

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SEC. 288

JPLIA0974ZZ

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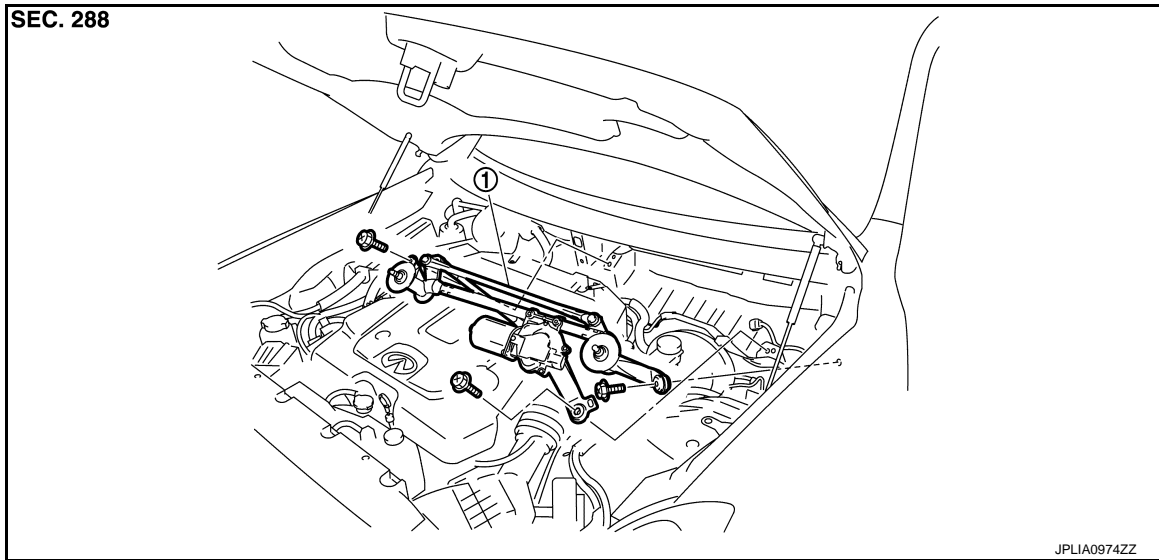
1. Front wiper drive assembly

DISASSEMBLY

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SEC. 288

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WW

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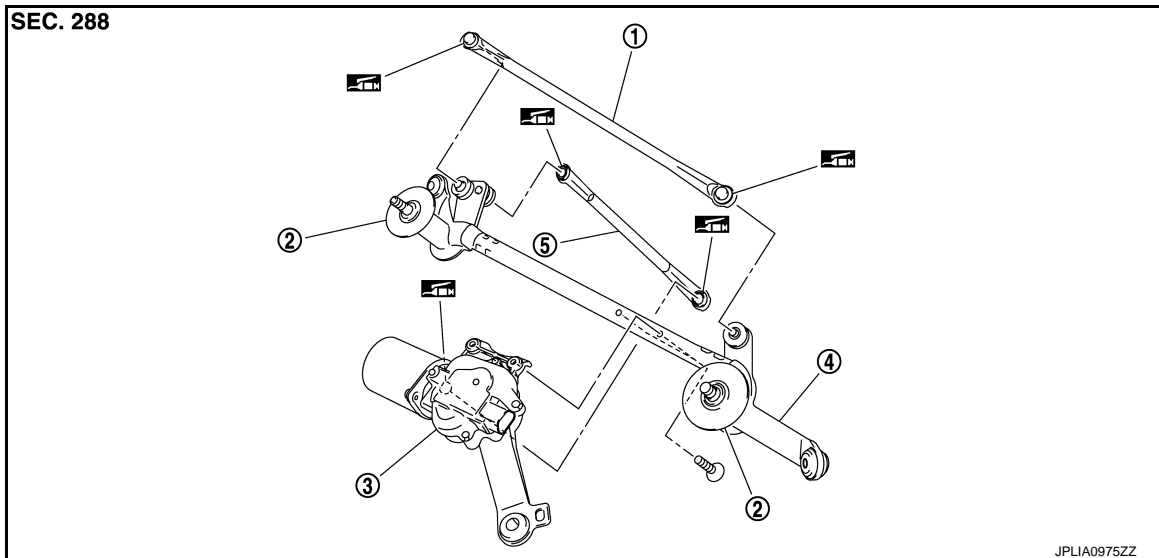
1. Front wiper linkage 1   2. Shaft seal   3. Front wiper motor

4. Front wiper frame   5. Front wiper linkage 2

O

: Multi–purpose grease or an equivalent.

Removal and Installation

INFOID:000000004345152

P

REMOVAL

1. Remove front wiper arm. Refer to WW-107, "Removal and Installation".
2. Remove cowl top cover. Refer to EXT-23, "Removal and Installation".
3. Remove bolts from the front wiper drive assembly.

4. Disconnect the front wiper motor connector.

5. Remove front wiper drive assembly from the vehicle.

INSTALLATION

1. Install the front wiper drive assembly to the vehicle.

2. Connect the front wiper motor connector.

3. Operate the front wiper to move it to the auto stop position.

4. Install the cowl top cover. Refer to EXT-23, "Removal and Installation".

5. Install front wiper arms. Refer to WW-107, "Removal and Installation".

Disassembly and Assembly

INFOID:0000000004345153

DISASSEMBLY

1. Remove the front wiper linkage 1 and 2 from the front wiper drive assembly.
   CAUTION:
   Never bend the linkage or damage the plastic part of the ball joint when removing the wiper linkage.

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

ASSEMBLY

1. Connect the front wiper motor connector.

2. Operate the front wiper to move it to the auto stop position.

3. Disconnect the front wiper motor connector.

4. Install front wiper motor to front wiper frame.

5. Install the front wiper linkage 2 to the front wiper motor and the front wiper frame.

6. Install the front wiper linkage 1 to the front wiper frame.
   CAUTION:
   • **Never drop front wiper motor or cause it to come into contact with other parts.**
   • **Be careful for the grease condition at the front wiper motor and front wiper linkage joint (retainer). Apply Multi−purpose grease or an equivalent if necessary.**

WIPER AND WASHER SWITCH

Exploded View

INFOID:000000000345154

Refer to BCS-86, "Exploded View".
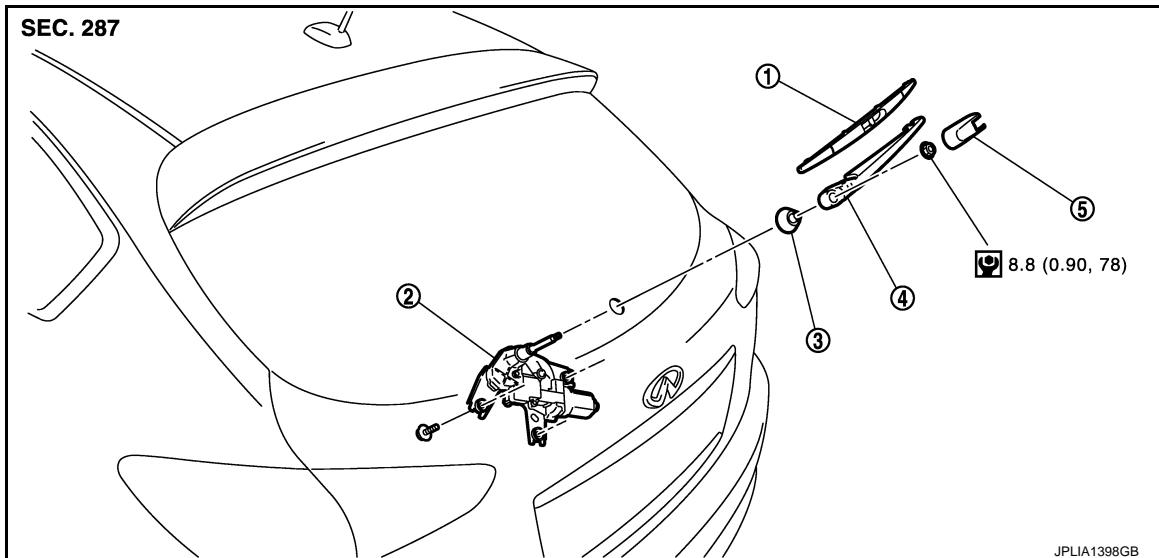
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REAR WIPER ARM

Exploded View

SEC. 287

JPLIA1398GB

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

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-114, "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.
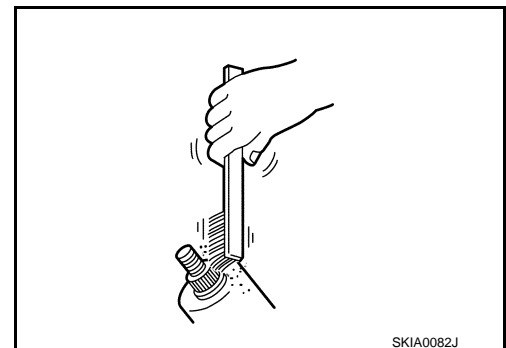
SKIA0082J

Adjustment

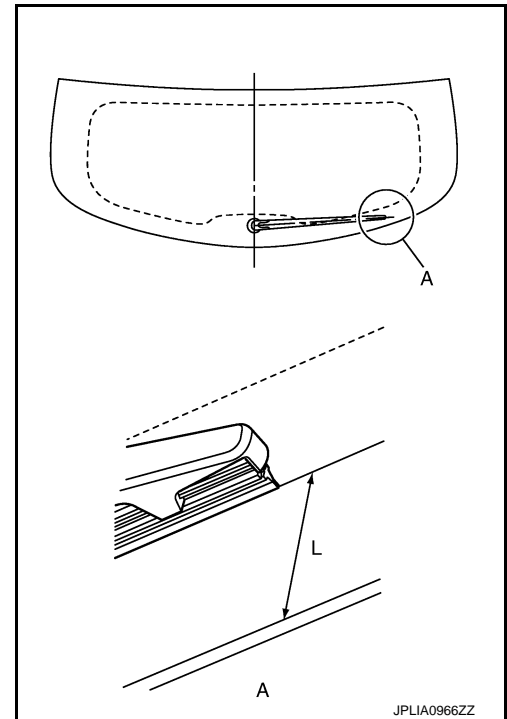### REAR WIPER BLADE POSITION ADJUSTMENT
Clearance between the end of back door glass and the top of wiper blade center.

REAR WIPER ARM

< REMOVAL AND INSTALLATION >

Standard clearance

L **: 35.0 $\pm$ 7.5 mm (1.378 $\pm$ 0.295 in)**

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REAR WIPER MOTOR

Exploded View
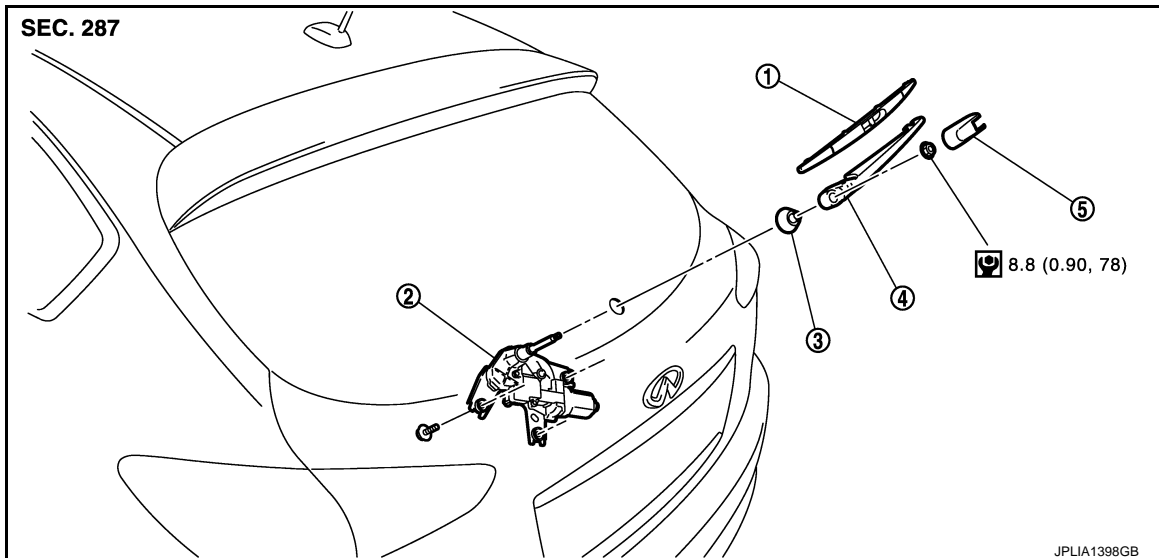
SEC. 287

JPLIA1398GB

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

REMOVAL

1. Remove rear wiper arm cover and rear wiper arm. Refer to WW-114, "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".
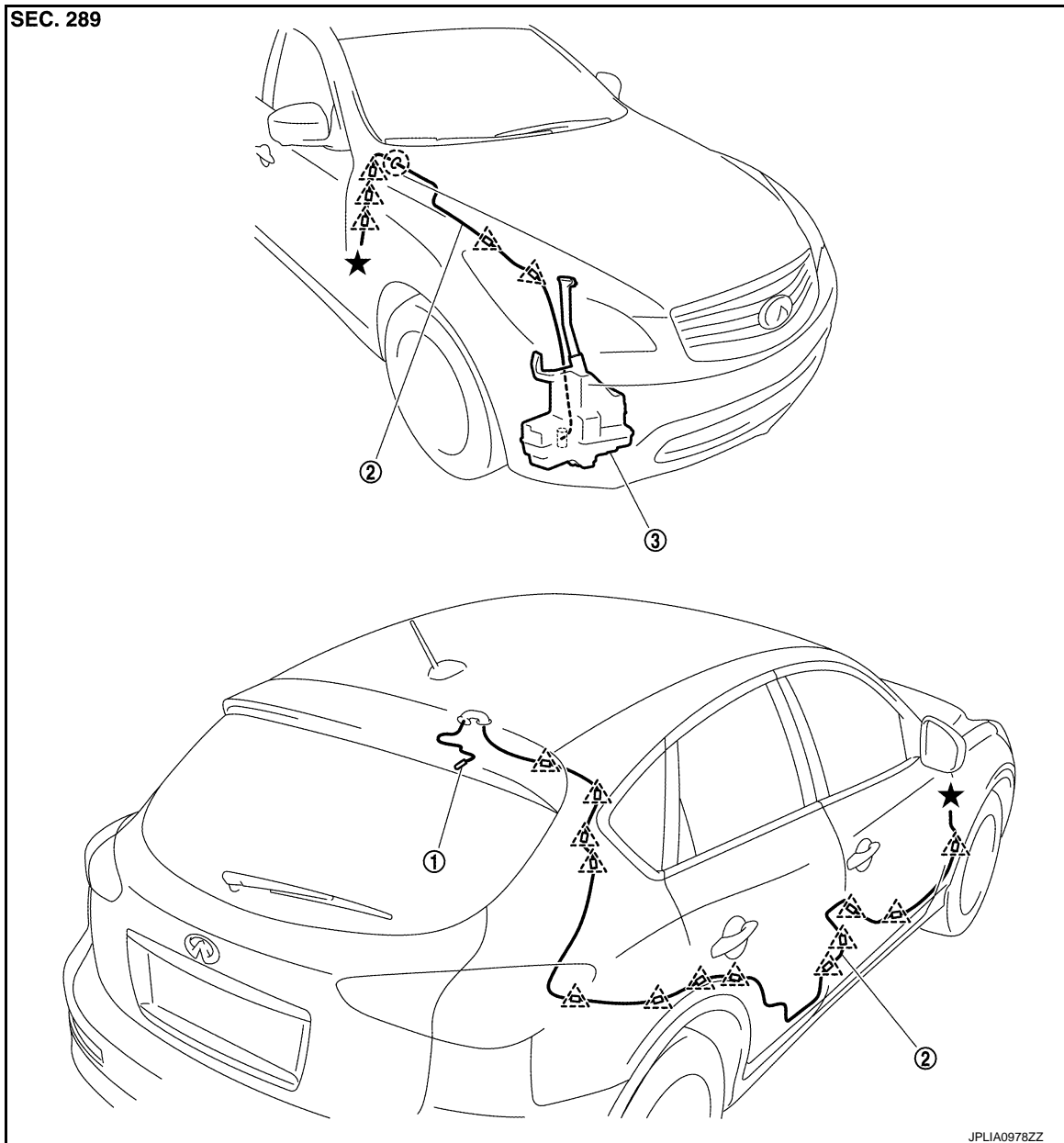6. Install rear wiper arm cover and rear wiper arm. Refer to WW-114, "Removal and Installation".

REAR WASHER NOZZLE AND TUBE

Hydraulic Layout

SEC. 289

JPLIA0978ZZ

1. Rear washer nozzle
2. Rear washer tube
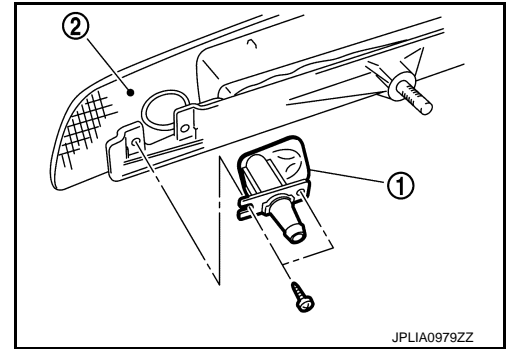3. Washer tank

⌃ : Clip

◠ : Grommet

Removal and Installation

REMOVAL

1. Remove the high-mounted stop lamp. Refer to EXL-205, "Exploded View".
2. Remove the rear washer tube from the rear washer nozzle.

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

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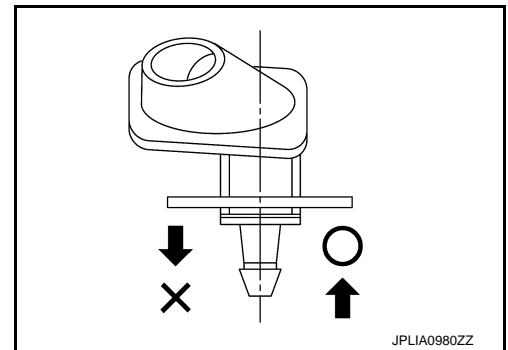## INSTALLATION
Install in the reverse order of removal.

Inspection and Adjustment

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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.
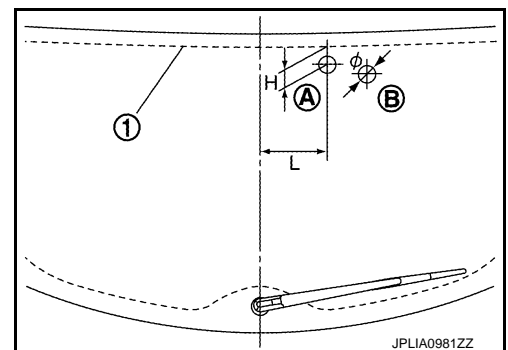
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ADJUSTMENT

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)

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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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