SECTION WW
WIPER & WASHER

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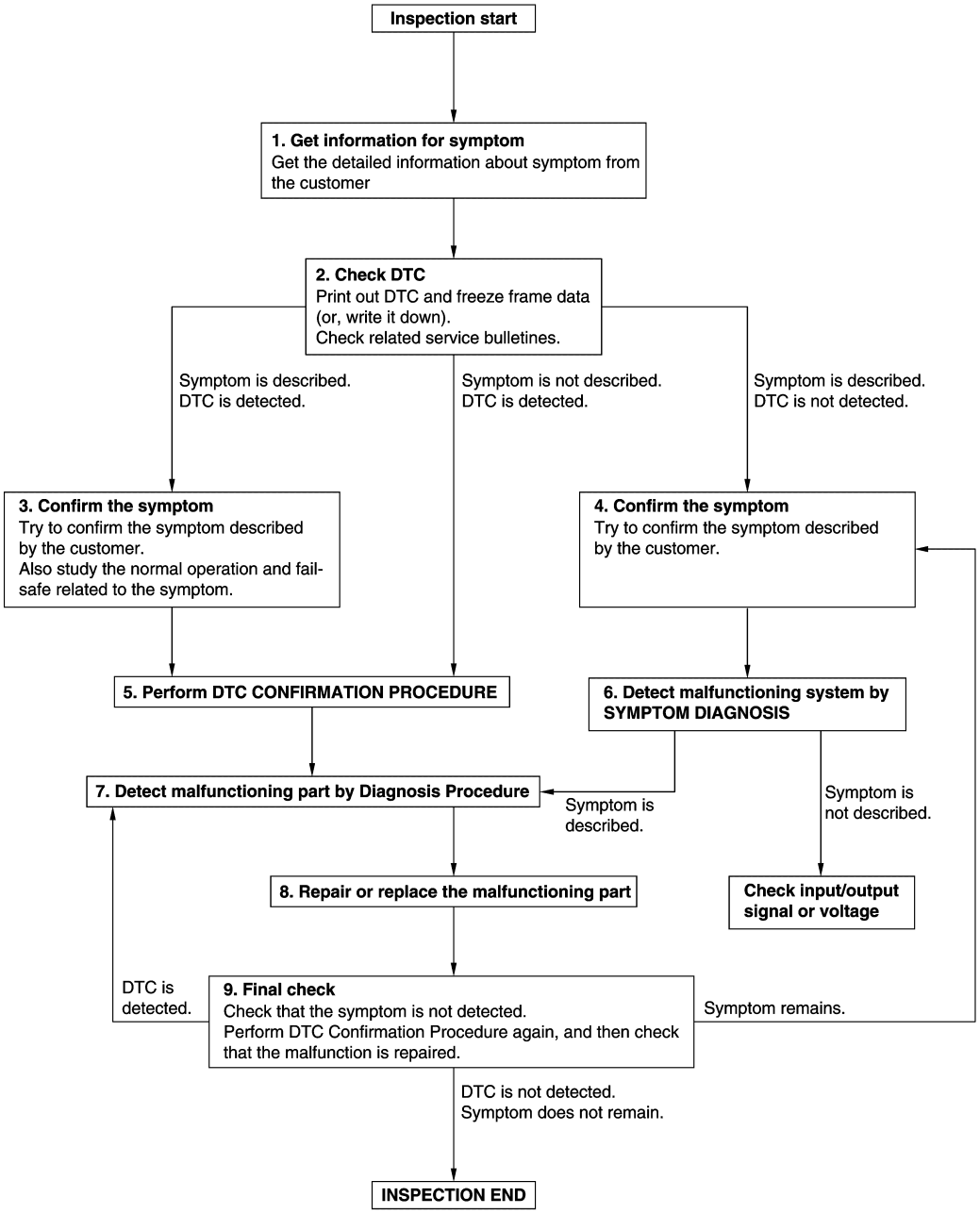
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000009945814

OVERALL SEQUENCE



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DETAILED FLOW

1. GET INFORMATION FOR SYMPTOM

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

>> GO TO 2.

2. CHECK DTC

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

Are any symptoms described and any DTC detected?

Symptom is described, DTC is detected>>GO TO 3.
Symptom is described, DTC is not detected>>GO TO 4.
Symptom is not described, DTC is detected>>GO TO 5.

3. CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.
Also study the normal operation and fail-safe related to the symptom.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

4. CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6.

5. PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC CONFIRMATION PROCEDURE for the detected DTC, and then check that DTC is detected again. At this time, always connect CONSULT to the vehicle, and check self diagnostic results in real time.
If two or more DTCs are detected, refer to following reference, and determine trouble diagnosis order.

BCM
- For models with Intelligent Key System: Refer to BCS-81, "DTC Inspection Priority Chart".
- For models without Intelligent Key System: Refer to BCS-150, "DTC Inspection Priority Chart".

IPDM E/R
- For models with Intelligent Key System: Refer to PCS-32, "DTC Index".
- For models without Intelligent Key System: Refer to PCS-62, "DTC Index".

NOTE:
- Freeze frame data is useful if the DTC is not detected.
- Perform Component Function Check if DTC CONFIRMATION PROCEDURE is not included on Service Manual. This simplified check procedure is an effective alternative though DTC cannot be detected during this check.
  If the result of Component Function Check is NG, it is the same as the detection of DTC by DTC CONFIRMATION PROCEDURE.

Is DTC detected?

YES >> GO TO 7.
NO >> Check according to GI-40, "Intermittent Incident".

6. DETECT MALFUNCTIONING SYSTEM BY SYMPTOM DIAGNOSIS

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

Is the symptom described?

YES >> GO TO 7.
NO >> Monitor input data from related sensors or check voltage of related module terminals using CONSULT.

7. DETECT MALFUNCTIONING PART BY DIAGNOSIS PROCEDURE

Inspect according to Diagnosis Procedure of the system.

Is malfunctioning part detected?

YES >> GO TO 8.
NO >> Check according to GI-40, "Intermittent Incident".

8. REPAIR OR REPLACE THE MALFUNCTIONING PART

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

>> GO TO 9.

9. FINAL CHECK

When DTC is detected in step 2, perform DTC CONFIRMATION PROCEDURE again, and then check that the malfunction is repaired securely.
When symptom is described by the customer, refer to confirmed symptom in step 3 or 4, and check that the symptom is not detected.

Is DTC detected and does symptom remain?

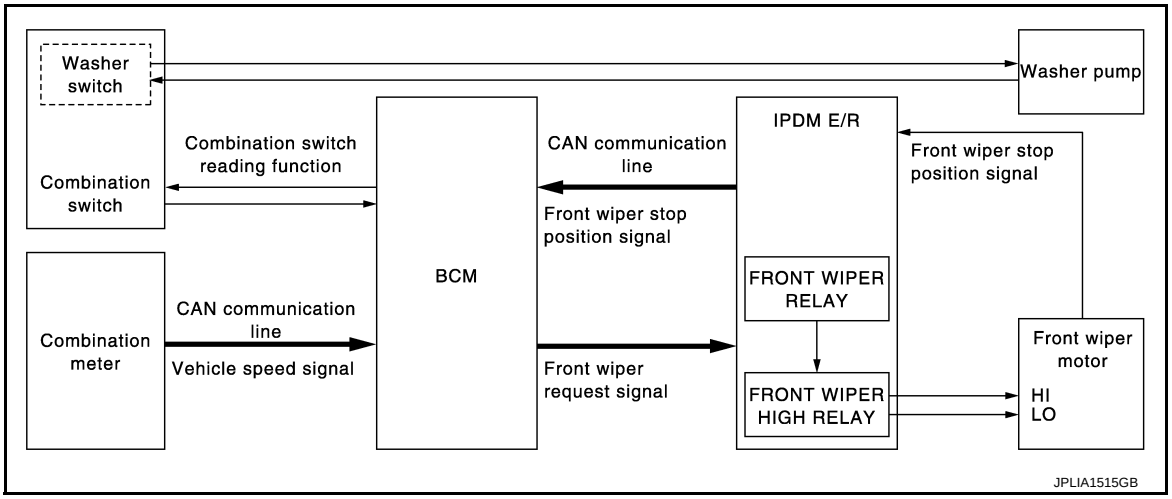
YES-1 >> DTC is detected: GO TO 7.
YES-2 >> Symptom remains: GO TO 4.
NO >> Before returning the vehicle to the customer, always erase DTC.

SYSTEM DESCRIPTION

FRONT WIPER AND WASHER SYSTEM

System Diagram

INFOID:0000000009945815



System Description

INFOID:0000000009945816

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-24, "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.

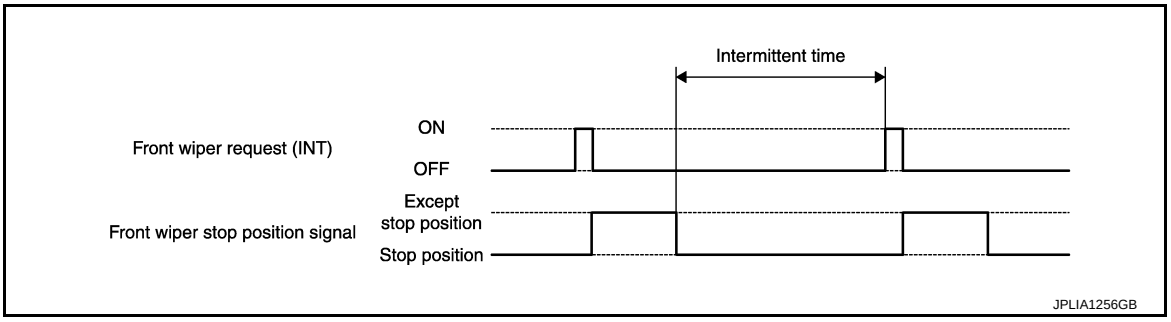
Front wiper HI operating condition
- Ignition switch ON
- Front wiper switch HI
- IPDM E/R turns ON the integrated front wiper relay and the front wiper high relay according to the front wiper request signal (HI).

FRONT WIPER INT OPERATION

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

Front wiper INT operating condition
- Ignition switch ON
- Front wiper switch INT

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



NOTE:
Factory setting of the front wiper intermittent operation is the operation without vehicle speed. Front wiper intermittent operation can be set to the operation with vehicle speed by CONSULT. Refer to WW-14, "WIPER : CONSULT Function (BCM - WIPER)" (with Intelligent Key) or WW-16, "WIPER : CONSULT Function (BCM - WIPER)" (without Intelligent Key).

Front wiper intermittent operation with vehicle speed
- BCM calculates the intermittent operation delay interval from the following.
- Vehicle speed signal (received from the combination meter with CAN communication)
- Wiper intermittent dial position

Unit: Second

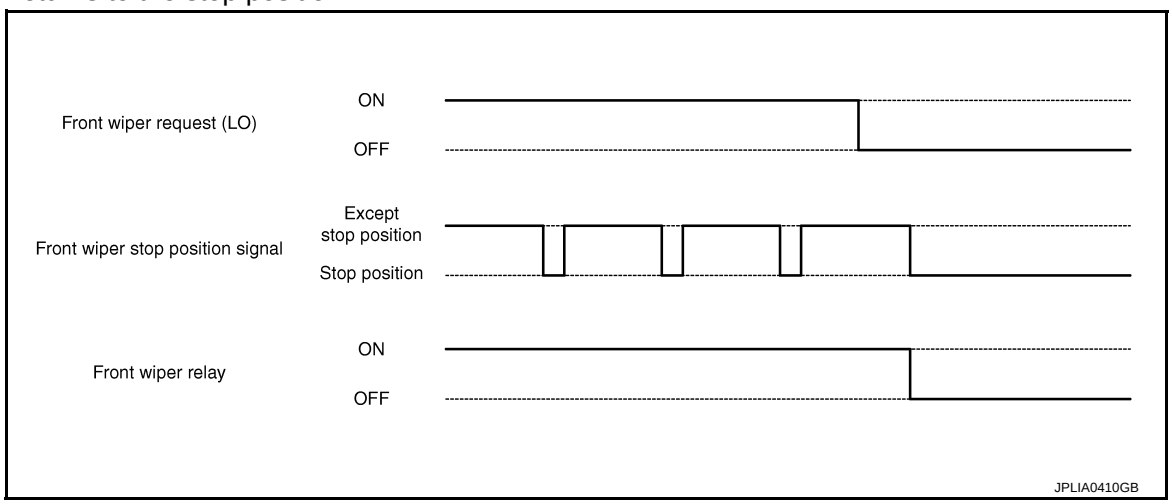
Wiper intermittent dial position	Intermittent operation interval	Intermittent operation delay Interval			
		Vehicle speed			
		0 – 5 km/h (0 – 3.1 MPH)	5 – 35 km/h (3.1 – 21.7 MPH)	35 – 65 km/h (21.7 – 40.4 MPH)*	65 km/h (40.4 MPH) or more
1	Short ↑	0.8	0.6	0.4	0.24
2		4	3	2	1.2
3		10	7.5	5	3
4		16	12	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).

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



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

FRONT WIPER OPERATION LINKED WITH WASHER

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

Washer linked operating condition of front wiper
- Ignition switch ON
- Front washer switch ON (0.4 second or more)

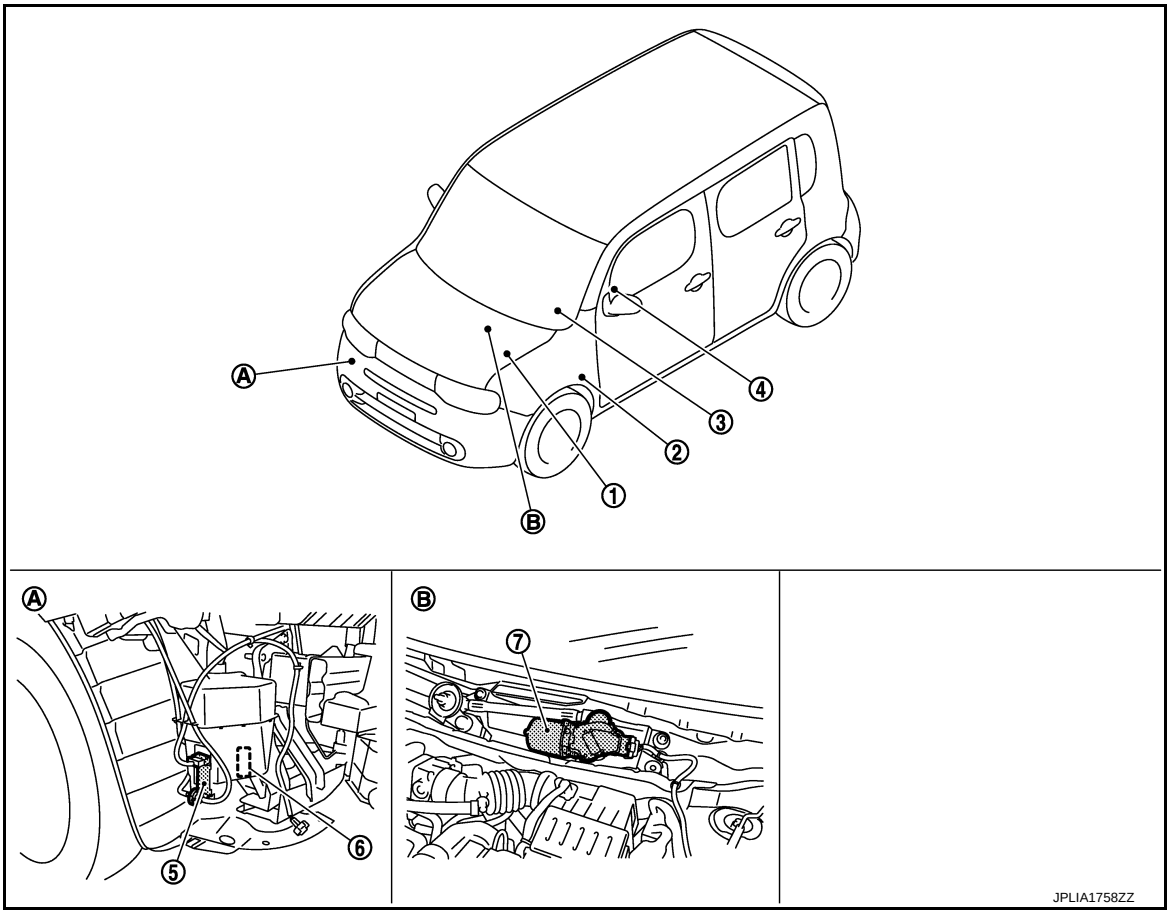
- IPDM E/R turns ON the integrated front wiper relay according to the front wiper request signal (LO).
- The washer pump is grounded through the combination switch with the front washer switch ON.

FRONT WIPER FAIL–SAFE OPERATION

IPDM E/R performs the fail-safe function when the front wiper stop position circuit is malfunctioning. Refer to PCS-30, "Fail-Safe".

Component Parts Location

INFOID:0000000009945817



1. IPDM E/R
   Refer to PCS-5, "Component Parts Location".
2. BCM
   Refer to BCS-10, "Component Parts Location" (with Intelligent Key system) or BCS-95, "Component Parts Location" (without Intelligent Key system).
3. Combination meter
   Refer to MWI-8, "METER SYSTEM : Component Parts Location".
4. Combination switch
5. Washer pump
6. Washer level switch
   (For Canada)
7. Front wiper motor

A. Radiator core support (RH)
B. Cowl top, left side of engine room

Component Description

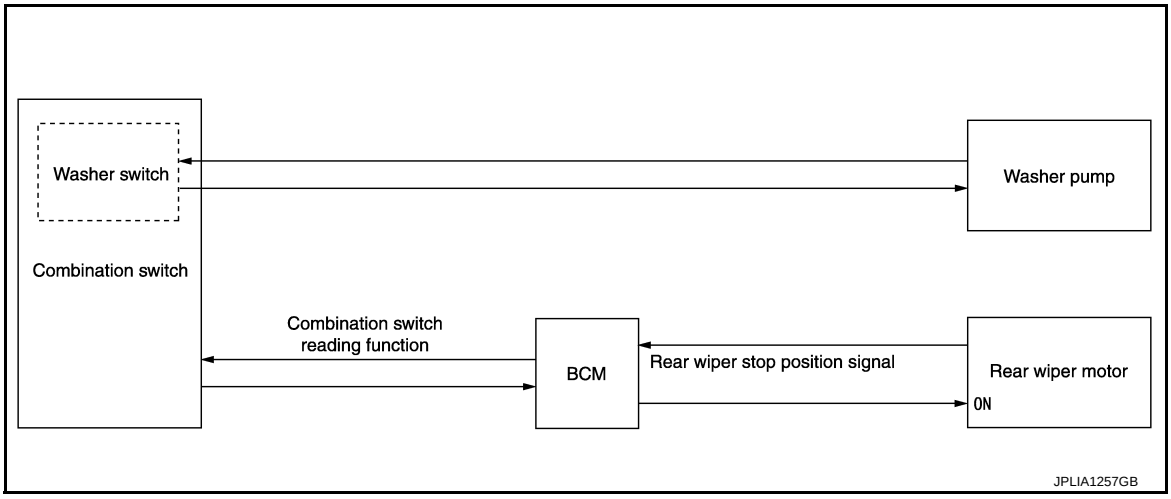
INFOID:0000000009945818

Part	Description
BCM	• Judges each switch status by the combination switch reading function. • Requests (with CAN communication) the front wiper relay and the front wiper high relay ON to IPDM E/R.
IPDM E/R	• Controls the integrated relay according to the request (with CAN communication) from BCM. • Performs the auto stop control of the front wiper.
Combination switch (Wiper & washer switch)	Refer to BCS-11, "System Diagram".
Combination meter	Transmits the vehicle speed signal to BCM with CAN communication.

REAR WIPER AND WASHER SYSTEM

System Diagram

INFOID:0000000009945819



System Description

INFOID:0000000009945820

OUTLINE

The rear wiper is controlled by each function of BCM.

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

REAR WIPER BASIC OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM controls the rear wiper to start or stop.

REAR WIPER ON OPERATION

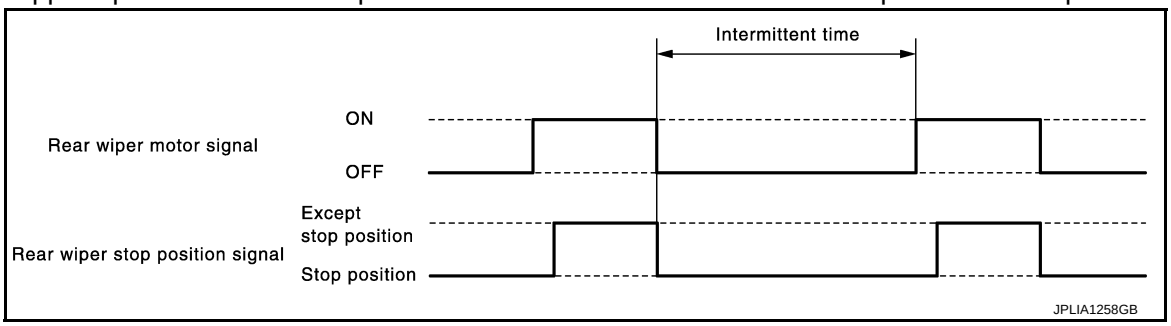
- BCM supplies power to the rear wiper motor according to the rear wiper ON operating condition.

Rear wiper ON operating condition
- Ignition switch ON
- Rear wiper switch ON

REAR WIPER INT OPERATION

- BCM supplies power to the rear wiper motor according to the INT operating condition.

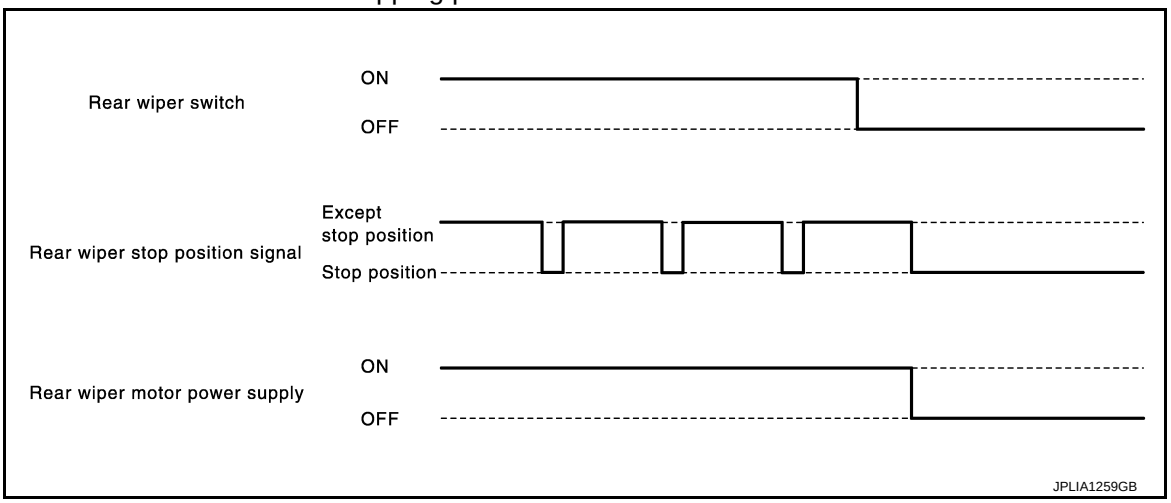
Rear wiper INT operating condition
- Ignition switch ON
- Rear wiper switch INT
- BCM controls the rear wiper to operate once.
- BCM detects the rear wiper motor stopping position.
- BCM supplies power to the rear wiper motor after an intermittent from the stop of the rear wiper motor.



REAR WIPER AUTO STOP OPERATION

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

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



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

REAR WIPER OPERATION LINKED WITH WASHER

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

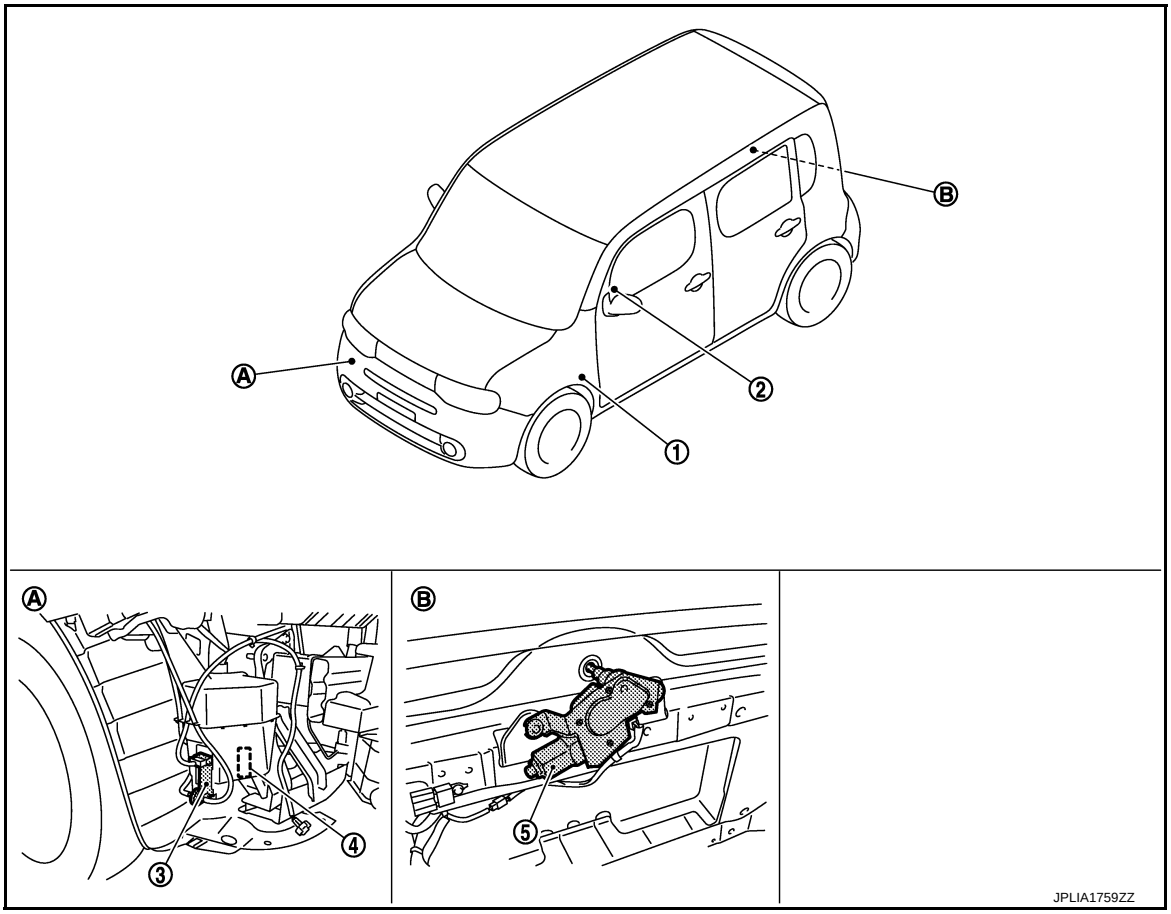
Washer linked operating condition of rear wiper
- Ignition switch ON
- Rear washer switch ON (0.4 second or more)
- The washer pump is grounded through the combination switch with the rear washer switch ON.

REAR WIPER FAIL–SAFE OPERATION

BCM performs the fail-safe function when the rear wiper stop position circuit is malfunctioning. Refer to BCS-80, "Fail-safe".

Component Parts Location

INFOID:0000000009945821



1. BCM
   Refer to BCS-10, "Component Parts Location" (with Intelligent Key system) or BCS-95, "Component Parts Location" (without Intelligent Key system).
2. Combination switch
3. Washer pump
4. Washer level switch
   (For canada)
5. Rear wiper motor

A. Radiator core support (RH)
B. Back door finisher inside

Component Description

INFOID:0000000009945822

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

DIAGNOSIS SYSTEM (BCM) (WITH INTELLIGENT KEY SYSTEM) COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:0000000010262832

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

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

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

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

×: Applicable item

System	Sub system selection item	Diagnosis mode		
		Work Support	Data Monitor	Active Test
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp timer	INT LAMP	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER	×	×	×
Automatic air conditioner	AIR CONDITONER		×	
• Intelligent Key system • Engine start system	INTELLIGENT KEY	×	×	×
Combination switch	COMB SW		×	
Body control system	BCM	×		
NVIS - NATS	IMMU	×	×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door	TRUNK		×	
Vehicle security system	THEFT ALM	×	×	×
RAP system	RETAINED PWR		×	
Signal buffer system	SIGNAL BUFFER		×	×
TPMS	TPMS (AIR PRESSURE MONITOR)	×	×	×

FREEZE FRAME DATA (FFD)

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

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”*
	OFF		Power supply position is “OFF” (Ignition switch OFF)
	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.	

NOTE:
*: Power position shifts to “LOCK” from “OFF”, when ignition switch is in the OFF position, selector lever is in the P position (CVT models), and any of the following conditions are met.
- Closing door
- Opening door
- Door is locked using door request switch
- Door is locked using Intelligent Key

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

WIPER

WIPER : CONSULT Function (BCM - WIPER)

INFOID:0000000009945824

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

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

Monitor Item [Unit]	Description
PUSH SW [Off/On]	The switch status input from push-button ignition switch.
VEH SPEED 1 [km/h]	The value of the vehicle speed signal received from combination meter 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.
RAIN SENSOR [Off/On]	**NOTE:** The item is indicated, but not monitored.

ACTIVE TEST

Test item	Operation	Description
FR WIPER	Hi	Transmits the front wiper request signal (HI) to IPDM E/R with CAN communication to operate the front wiper HI operation.
	Lo	Transmits the front wiper request signal (LO) to IPDM E/R with CAN communication to operate the front wiper LO operation.
	INT	Transmits the front wiper request signal (INT) to IPDM E/R with CAN communication to operate the front wiper INT operation.
	Off	Stops transmitting the front wiper request signal to stop the front wiper operation.
RR WIPER	On	Outputs the voltage to operate the rear wiper motor.
	Off	Stops the voltage to stop.

DIAGNOSIS SYSTEM (BCM) (WITHOUT INTELLIGENT KEY SYSTEM)

COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:0000000010262833

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

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

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

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

×: Applicable item

System	Sub system selection item	Diagnosis mode		
		Work Support	Data Monitor	Active Test
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp control	INT LAMP	×	×	×
Remote keyless entry system	MULTI REMOTE ENT	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER		×	×
Manual air conditioner	AIR CONDITONER		×	×
Combination switch	COMB SW		×	
Body control system	BCM	×		
NVIS - NATS	IMMU	×	×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door	TRUNK		×	
Vehicle security system	THEFT ALM	×	×	×
RAP system	RETAINED PWR		×	×
Signal buffer system	SIGNAL BUFFER		×	×
TPMS	TPMS (AIR PRESSURE MONITOR)	×	×	×
Panic alarm system	PANIC ALARM			×

WIPER

WIPER : CONSULT Function (BCM - WIPER)

INFOID:0000000009945826

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

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

Monitor Item [Unit]	Description
IGN ON SW [On/Off]	Ignition switch ON status judged from ignition power supply.
IGN SW CAN [On/Off]	Ignition switch ON status received from IPDM E/R with CAN communication.
FR WIPER HI [On/Off]	Each switch status that BCM judges from the combination switch reading function.
FR WIPER LOW [On/Off]	
FR WIPER INT [On/Off]	
FR WASHER SW [On/Off]	
INT VOLUME [1 – 7]	Each switch status that BCM judges from the combination switch reading function.
FR WIPER STOP [On/Off]	Front wiper motor (stop position) status received from IPDM E/R with CAN communication.
VEHICLE SPEED [km/h]	The value of the vehicle speed signal received from combination meter with CAN communication.
RR WIPER ON [On/Off]	Each switch status that BCM judges from the combination switch reading function.
RR WIPER INT [On/Off]	
RR WASHER SW [On/Off]	
REVERSE SW CAN [On/Off]	**NOTE:** The item is indicated, but not monitored.
RAIN SENSOR [On/Off]	

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.

Test item	Operation	Description
RR WIPER	On	Outputs the voltage to operate the rear wiper motor.
	Off	Stops the voltage to stop.

DIAGNOSIS SYSTEM (IPDM E/R) (WITH INTELLIGENT KEY SYSTEM)

Diagnosis Description

INFOID:0000000010262834

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
- Rear window defogger
- Front wiper (LO, HI)
- Parking lamps
- Side marker lamp
- License plate lamps
- Tail lamps
- Front fog lamps
- Headlamps (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan

Operation Procedure

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

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

CAUTION:

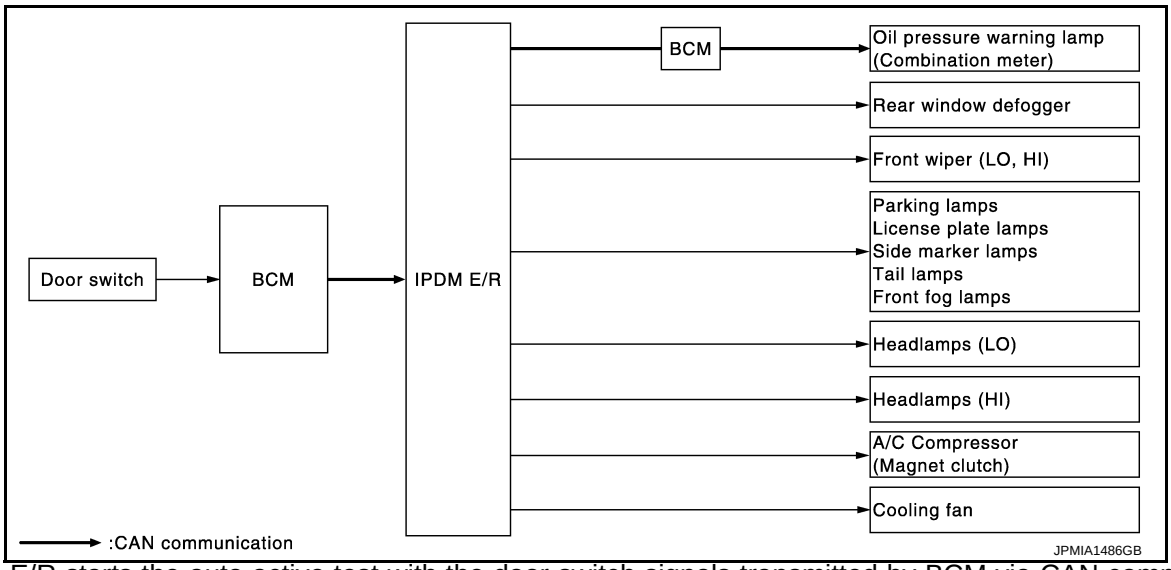
- **If auto active test mode cannot be actuated, check door switch system. Refer to DLK-55, "Component Function Check".**
- **Do not start the engine.**

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

Concept of auto active test



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

Diagnosis chart in auto active test mode

Symptom	Inspection contents		Possible cause
Rear window defogger does not operate	Perform auto active test. Does the rear window defogger operate?	YES	BCM signal input circuit
		NO	• Rear window defogger • Rear window defogger ground circuit • Harness or connector between IPDM E/R and rear window defogger • IPDM E/R
Any of the following components do not operate • Parking lamps • Side marker lamps • License plate lamps • Tail lamps • Front fog lamps • Headlamps (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	• A/C amp. signal input circuit • CAN communication signal between 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

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

CONSULT Function (IPDM E/R)

INFOID:0000000010262835

APPLICATION ITEM

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

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

SELF DIAGNOSTIC RESULT

Refer to PCS-32, "DTC Index".

DATA MONITOR

NOTE:

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

Monitor Item [Unit]	MAIN SIGNALS	Description
MOTOR FAN REQ [1/2/3/4]	×	Displays the value of the cooling fan speed request 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.

Monitor Item [Unit]	MAIN SIGNALS	Description
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper auto stop signal judged by IPDM E/R.
WIP PROT [Off/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.
IGN RLY1 -REQ [Off/On]		Displays the status of the ignition switch ON signal received from BCM via CAN communication.
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.
PUSH SW [Off/On]		Displays the status of the push-button ignition switch judged by IPDM E/R.
INTER/NP SW [Off/On]		Displays the status of the clutch interlock switch (M/T models) or shift position (CVT models) 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 CVT shift selector (detention switch) judged by IPDM E/R.
S/L RLY -REQ [Off/On]		**NOTE:** The item is indicated, but not monitored.
S/L STATE [LOCK/UNLOCK/UNKWN]		**NOTE:** The item is indicated, but not monitored.
DTRL REQ [Off/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]		**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.

ACTIVE TEST

Test item	Operation	Description
HORN	On	Operates horn relay 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	Operates the cooling fan relay (LO operation).
	3	Operates the cooling fan relay (HI operation).
	4	

Test item	Operation	Description
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.

DIAGNOSIS SYSTEM (IPDM E/R) (WITHOUT INTELLIGENT KEY SYSTEM)

Diagnosis Description

INFOID:0000000010262836

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
- Rear window defogger
- Front wiper (LO, HI)
- Parking lamps
- Side marker lamp
- License plate lamps
- Tail lamps
- Front fog lamps
- Headlamps (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan

Operation Procedure

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

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

CAUTION:

- **If auto active test mode cannot be actuated, check door switch system. Refer to DLK-55, "Component Function Check".**
- **Do not start the engine.**

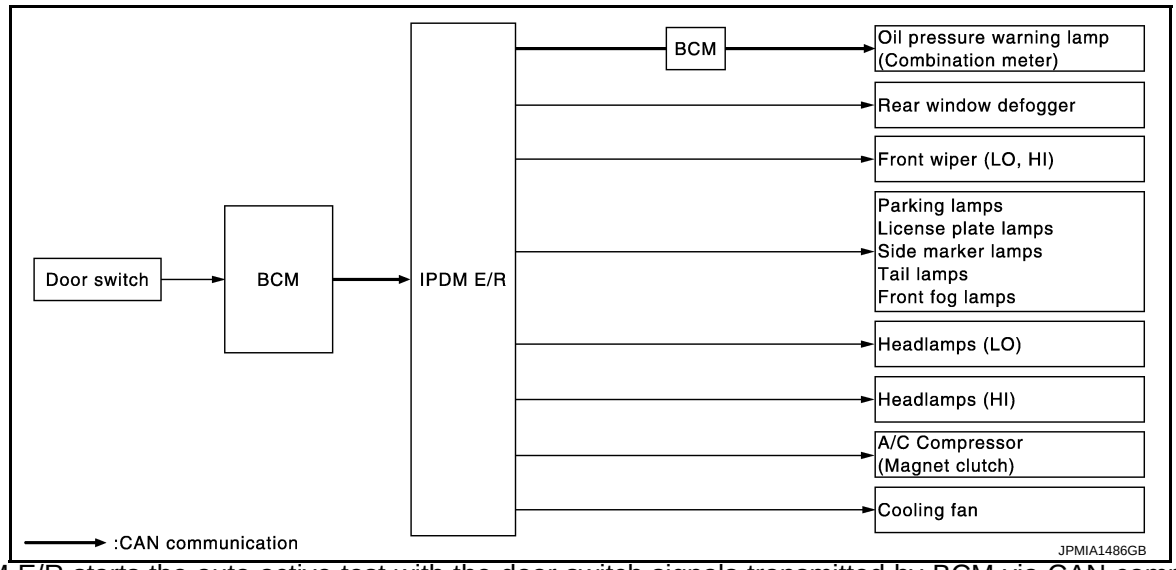
Inspection in Auto Active Test Mode

When auto active test mode is actuated, the following 6 steps are repeated 3 times.

Operation sequence	Inspection location	Operation
A	Oil pressure warning lamp	Blinks continuously during operation of auto active test
1	Rear window defogger	10 seconds
2	Front wiper	LO for 5 seconds → HI for 5 seconds
3	• Parking lamps • Side marker lamps • License plate lamps • Tail lamps • Front fog lamps	10 seconds
4	Headlamps	LO for 10 seconds →HI ON ⇔ OFF 5 times

Operation sequence	Inspection location	Operation
5	A/C compressor (magnet clutch)	ON ⇔ OFF 5 times
6	Cooling fan	LO for 5 seconds → HI for 5 seconds

Concept of auto active test



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

Diagnosis chart in auto active test mode

Symptom	Inspection contents		Possible cause
Rear window defogger does not operate	Perform auto active test. Does the rear window defogger operate?	YES	BCM signal input circuit
		NO	• Rear window defogger • Rear window defogger ground circuit • Harness or connector between IPDM E/R and rear window defogger • IPDM E/R
Any of the following components do not operate • Parking lamps • Side marker lamps • License plate lamps • Tail lamps • Front fog lamps • Headlamps (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	• A/C amp. signal input circuit • CAN communication signal between 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

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

CONSULT Function (IPDM E/R)

INFOID:0000000010262837

APPLICATION ITEM

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

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

SELF DIAGNOSTIC RESULT

Refer to PCS-62, "DTC Index".

DATA MONITOR

NOTE:

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

Monitor Item [Unit]	MAIN SIGNALS	Description
MOTOR FAN REQ [1/2/3/4]	×	Displays the value of the cooling fan speed request 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.

Monitor Item [Unit]	MAIN SIGNALS	Description
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper auto stop signal judged by IPDM E/R.
WIP PROT [Off/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.
INTER/NP SW [Off/On]		Displays the status of the shift position (CVT models) judged by IPDM E/R.
ST RLY-REQ [Off/On]		Displays the status of the starter relay status signal received from BCM via CAN communication.
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]		**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.

ACTIVE TEST

Test item	Operation	Description
HORN	On	Operates horn relay 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	Operates the cooling fan relay (LO operation).
	3	Operates the cooling fan relay (HI operation).
	4	
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:0000000009945831

Fuse list

Unit	Location	No.	Capacity
Front wiper motor	IPDM E/R	48	30 A
Washer pump	Fuse block	4	15 A

Diagnosis Procedure

INFOID:0000000009945832

1.CHECK FUSES

Check that the following fuses are not fusing.

Unit	Location	No.	Capacity
Front wiper motor	IPDM E/R	48	30 A
Washer pump	Fuse block	4	15 A

Is the fuse fusing?

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

FRONT WIPER MOTOR LO CIRCUIT

Component Function Check

INFOID:0000000009945833

1. CHECK FRONT WIPER LO OPERATION

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

CONSULT ACTIVE TEST
1. Select “FRONT WIPER” of IPDM E/R active test item.
2. With operating the test item, check front wiper operation.

Lo : Front wiper (LO) operation
Off : Stop the front wiper.

Is front wiper (LO) operation normally?

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

Diagnosis Procedure

INFOID:0000000009945834

1. CHECK FRONT WIPER MOTOR (LO) OUTPUT VOLTAGE

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

Terminals			Voltage (Approx.)
(+)		(–)	
Front wiper motor		Ground	
Connector	Terminal		
E20	2		Battery voltage (10 seconds*)

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

Is the measurement value normal?

YES >> Replace front wiper motor.
NO >> GO TO 2.

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	
E14	46	E20	2	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.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E14	46		Not existed

Does continuity exist?

YES >> Repair the harness or connector.
NO >> Replace IPDM E/R.

FRONT WIPER MOTOR HI CIRCUIT

Component Function Check

INFOID:0000000009945835

1. CHECK FRONT WIPER HI OPERATION

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

CONSULT ACTIVE TEST
1. Select “FRONT WIPER” of IPDM E/R active test item.
2. With operating the test item, check front wiper operation.

Hi : Front wiper (HI) operation
Off : Stop the front wiper.

Is front wiper (HI) operation normally?

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

Diagnosis Procedure

INFOID:0000000009945836

1. CHECK FRONT WIPER MOTOR (HI) OUTPUT VOLTAGE

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

Terminals			Test item	Voltage (Approx.)
(+)		(–)		
Front wiper motor		Ground	FRONT WIPER	
Connector	Terminal			
E20	1		Hi	Battery voltage (10 seconds*)

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

Is the measurement value normal?

YES >> Replace front wiper motor.
NO >> GO TO 2.

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	
E14	39	E20	1	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		
E14	39		Not existed

Does continuity exist?

YES >> Repair the harness or connector.
NO >> Replace IPDM E/R.

FRONT WIPER STOP POSITION SIGNAL CIRCUIT

Component Function Check

INFOID:0000000009945837

1. CHECK FRONT WIPER STOP POSITION SIGNAL

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

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

Is the status of item normal?

YES >> Front wiper stop position signal circuit is normal.
NO >> Refer to WW-33, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000009945838

1. CHECK FRONT WIPER MOTOR OUTPUT VOLTAGE

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

Terminals			Voltage (Approx.)
(+)		(–)	
Front wiper motor		Ground	
Connector	Terminal		
E20	4		Battery voltage

Is the measurement value normal?

YES >> Replace front wiper motor
NO >> GO TO 2.

2. CHECK FRONT WIPER MOTOR 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	
E13	25	E20	4	Existed

Does continuity exist?

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

3. CHECK FRONT WIPER MOTOR SHORT CIRCUIT

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E13	25		Not existed

Does continuity exist?

YES >> Repair the harness or connector.
NO >> Replace IPDM E/R.

FRONT WIPER MOTOR GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000009945839

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		
E20	5		Existed

Does continuity exist?

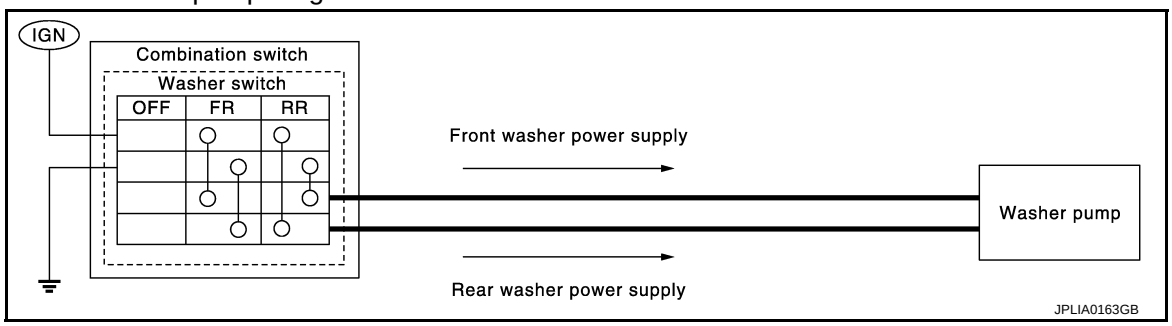
YES >> Front wiper motor ground circuit is normal.
NO >> Repair the harness or connector.

WASHER SWITCH

Description

INFOID:0000000009945840

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



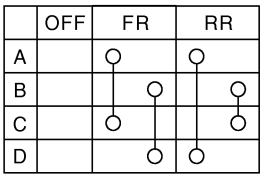
Component Inspection

INFOID:0000000009945841

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			
3	4	Front washer switch ON	Existed
1	6		
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

INFOID:0000000009945842

1. CHECK REAR WIPER ON OPERATION

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

On : Rear wiper ON operation
Off : Stop the rear wiper.

Is rear wiper operation normally?

YES >> Rear wiper motor circuit is normal.
NO >> Refer to WW-37, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000009945843

1. CHECK REAR WIPER MOTOR OUTPUT VOLTAGE

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

Terminals			Test item	Voltage (Approx.)
(+)		(–)		
Rear wiper motor		Ground	REAR WIPER	
Connector	Terminal			
M66	54		On	Battery voltage (5 seconds*)

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

Is the measurement value normal?

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

2. 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.

BCM		Rear wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
M66	54	D112	1	Existed

Does continuity exist?

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

3. 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		
M66	54		Not existed

Does continuity exist?

YES >> Repair the harness or connector.
NO >> Replace BCM. Refer to BCS-88, "Exploded View" (with Intelligent Key system) or BCS-155, "Exploded View" (without Intelligent Key system).

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		
D112	3		Existed

Does continuity exist?

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

REAR WIPER STOP POSITION SIGNAL CIRCUIT

Component Function Check

INFOID:0000000009945844

1. CHECK REAR WIPER STOP POSITION SIGNAL

CONSULT DATA MONITOR
1. Select “WIPER” of BCM data monitor item.
2. Operate the rear wiper.
3. With the rear wiper operation, check the monitor status.

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

Is the status of item normal?

YES >> Rear wiper stop position signal circuit is normal.
NO >> Refer to WW-39, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000009945845

1. CHECK REAR WIPER MOTOR OUTPUT VOLTAGE

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

Terminals			Voltage (Approx.)
(+)		(–)	
Rear wiper motor		Ground	
Connector	Terminal		
D112	4		Battery voltage

Is the measurement value normal?

YES >> Replace rear wiper motor
NO >> GO TO 2.

2. 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.

BCM		Rear wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
M66	44	D112	4	Existed

Does continuity exist?

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

3. 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		
M66	44		Not existed

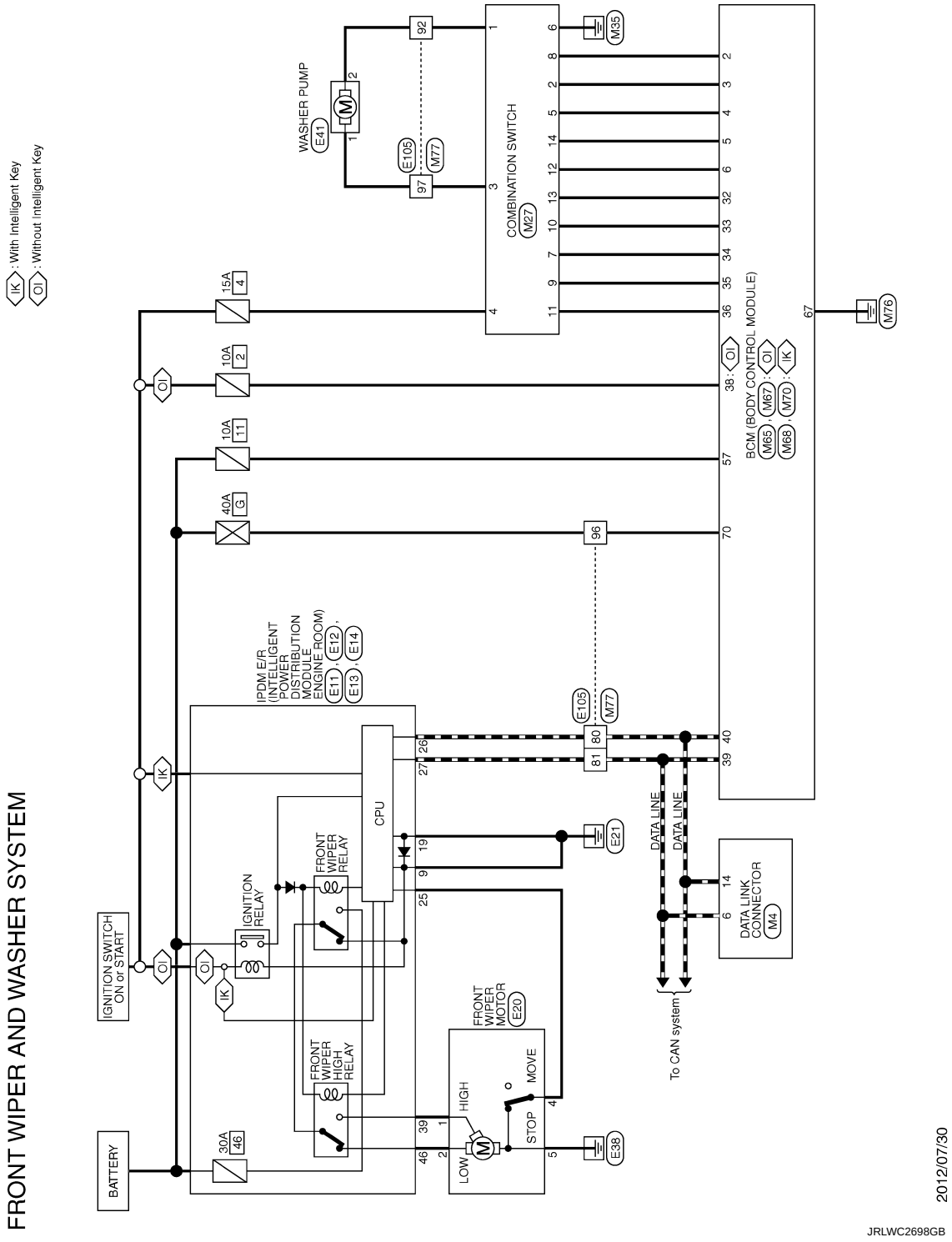
Does continuity exist?

YES >> Repair the harness or connector.
NO >> Replace BCM.

FRONT WIPER AND WASHER SYSTEM

Wiring Diagram - FRONT WIPER AND WASHER SYSTEM -

INFOID:0000000009945846

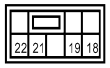


FRONT WIPER AND WASHER SYSTEM

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

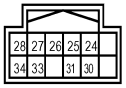
Terminal No.	Color Of Wire	Signal Name [Specification]
9	B/W	-
10	L	-
13	W	-

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS08FBR-CS



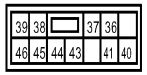
Terminal No.	Color Of Wire	Signal Name [Specification]
18	Y	-
19	B/W	-
21	W	-
22	V	-

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH12FW-NH



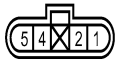
Terminal No.	Color Of Wire	Signal Name [Specification]
24	G	-
25	Y	-
26	P	-
27	L	-
28	P	-
30	SB	-
31	W	-
33	O	-
34	R	-

Connector No.	E14
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FBR-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
36	O	-
37	V	-
38	G	-
39	V	-
40	R	-
41	SB	-
43	G	-
44	P	-
45	Y	-
46	O	-

Connector No.	E20
Connector Name	FRONT WIPER MOTOR
Connector Type	FHX05FGY-B

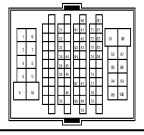


Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	O	-
4	Y	-
5	B/R	-

Connector No.	E41
Connector Name	WASHER PUMP
Connector Type	E02FGY-RS

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

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	W	-
3	SB	-
4	G	-
5	P	-
6	L	- [With NAVI]
6	R	- [Without NAVI]
7	Y	-
8	O	-
9	W	-
10	SB	-
31	V	-
32	R	-
33	GR	-
34	P	-
35	Y	-
36	BR	-
39	SB	-
44	R	-
45	V	-
46	P	-
48	L	-
51	B	- [With M/T]
51	BR	- [With CVT]
53	SB	-
54	O	- [With M/T]
54	W	- [With CVT]
57	LG	-
59	L	-
60	O	-
61	G	-
62	W	-
63	L	-
67	GR	- [With CVT]
67	V	- [With M/T]

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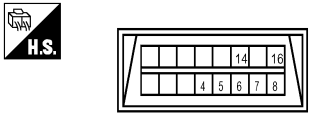
FRONT WIPER AND WASHER SYSTEM

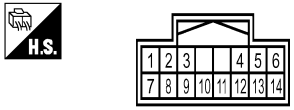
69	P	-
70	SHIELD	-
71	GR	-
72	LG	-
73	P	-
74	V	-
76	Y	-
77	LG	-
78	O	-
79	G	-
80	P	-
81	L	-
82	W	-
83	BR	-
84	B	-
91	W	-
92	Y	-
93	Y	-
94	R	-
95	V	-
96	LG	-
97	R	-
98	SB	-
99	G	-
100	P	-

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



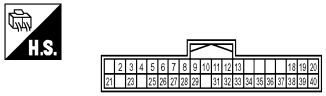
Terminal No.	Color Of Wire	Signal Name [Specification]
4	B	-
5	B	-
6	L	-
7	GR/R	-
8	O	-
14	P	-
16	LG/R	-

Connector No.	M27
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH



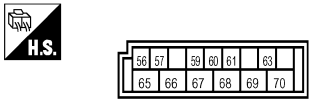
Terminal No.	Color Of Wire	Signal Name [Specification]
1	O/B	WASHER (RR)
2	GR	OUTPUT 4
3	R/G	WASHER (FR)
4	W	IGN
5	L/Y	OUTPUT 3
6	B	GROUND
7	W	INPUT 3
8	BR/W	OUTPUT 5
9	R/L	INPUT 2
10	Y/L	INPUT 4
11	L/O	INPUT 1
12	L/R	OUTPUT 1
13	LG	INPUT 5
14	G	OUTPUT 2

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FW-NH



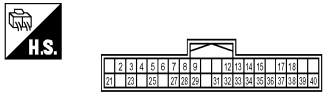
Terminal No.	Color Of Wire	Signal Name [Specification]
2	BR/W	COMBI SW INPUT 5
3	GR	COMBI SW INPUT 4
4	L/Y	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	L/R	COMBI SW INPUT 1
7	W/R	KEY CYL UNLOCK SW
8	W/B	KEY CYL LOCK SW
9	R	STOP LAMP SW
10	W/L	REAR WINDOW DEFOGGER SW
11	L/Y	ACC POWER SUPPLY
12	SB	PASSENGER DOOR SW
13	GR/L	REAR RH DOOR SW
18	V	RECEIVER / SENSOR GND
19	BR	KEYLESS ENTRY RECEIVER POWER SUPPLY
20	G/Y	KEYLESS ENTRY RECEIVER COMM
21	P/L	NATS ANTENNA AMP.
23	R/Y	SECURITY INDICATOR LAMP
25	LG	NATS ANTENNA AMP.
26	GR	THERMO CONTROL AMP.
27	Y/G	A/C SW
28	G/W	BLOWER FAN SW
29	L/W	HAZARD SW
31	G/Y	FR DEFROSTER SW
32	LG	COMBI SW OUTPUT 5
33	Y/L	COMBI SW OUTPUT 4
34	W	COMBI SW OUTPUT 3
35	R/L	COMBI SW OUTPUT 2
36	L/O	COMBI SW OUTPUT 1
37	R/W	KEY SWITCH
38	O	IGNITTION POWER SUPPLY
39	L	CAN-H
40	P	CAN-L

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FB-FHA6-SA



Terminal No.	Color Of Wire	Signal Name [Specification]
56	L	INTERIOR ROOM LAMP POWER SUPPLY
57	Y	BAT (FUSE)
59	L/B	DRIVER DOOR UNLOCK OUTPUT
60	W/B	TURN SIGNAL LH OUTPUT
61	W/L	TURN SIGNAL RH OUTPUT
63	BR	ROOM LAMP TIMER CONTROL
65	V	ALL DOOR LOCK OUTPUT
66	G	PASSENGER DOOR, REAR DOOR UNLOCK OUTPUT
67	B	GROUND
68	L	POWER WINDOW POWER SUPPLY (IGN)
69	P	POWER WINDOW POWER SUPPLY (BAT)
70	Y	BAT (F/L)

Connector No.	M68
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
2	BR/W	COMBI SW INPUT 5
3	GR	COMBI SW INPUT 4
4	L/Y	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	L/R	COMBI SW INPUT 1
7	W/R	KEY CYL UNLOCK SW
8	W/B	KEY CYL LOCK SW
9	R	STOP LAMP SW 1
12	GR	CENTRAL DOOR LOCK SW
13	BR	CENTRAL DOOR UNLOCK SW
14	L/G	OPTICAL SENSOR
15	W/L	REAR WINDOW DEFOGGER SW
17	R/G	OPTICAL SENSOR POWER SUPPLY
18	V	SENSOR GND
21	P/L	NATS ANTENNA AMP.
23	R/Y	SECURITY INDICATOR LAMP
25	LG	NATS ANTENNA AMP.
27	O	A/C SW
28	G/W	BLOWER FAN SW
29	L/W	HAZARD SW
31	G/B	DR DOOR UNLOCK SENSOR
32	LG	COMBI SW OUTPUT 5
33	Y/L	COMBI SW OUTPUT 4
34	W	COMBI SW OUTPUT 3
35	R/L	COMBI SW OUTPUT 2
36	L/O	COMBI SW OUTPUT 1
37	G/O	SHIFT P
38	G/Y	RECEIVER COMM
39	L	CAN-H
40	P	CAN-L

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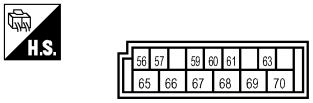
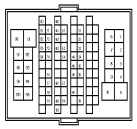
FRONT WIPER AND WASHER SYSTEM

Connector No.	M70
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FW-FHA6-SA



Terminal No.	Color Of Wire	Signal Name [Specification]
56	L	INTERIOR ROOM LAMP POWER SUPPLY
57	Y	BAT (FUSE)
59	G	PASSENGER DOOR UNLOCK OUTPUT
60	W/B	TURN SIGNAL LH OUTPUT
61	W/L	TURN SIGNAL RH OUTPUT
63	BR	ROOM LAMP TIMER CONTROL
65	V	ALL DOOR LOCK OUTPUT
66	L/B	DRIVER DOOR UNLOCK OUTPUT
67	B	GROUND
68	L	POWER WINDOW POWER SUPPLY (IGN)
69	P	POWER WINDOW POWER SUPPLY (BAT)
70	Y	BAT (F/L)

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B/O	-
2	R	-
3	G/R	-
4	G/B	-
5	L	-
6	L	-
7	W/R	-
8	G/W	-
9	Y/L	-
10	W	-
31	GR/L	-
32	L/B	-
33	R/Y	-
34	SB	-
35	BR	-
36	G	-
39	L/R	-
44	G/O	-
45	LG/R	-
46	GR/W	-
48	L/O	-
51	B/W	-
53	R/L	-
54	O	-
57	GR	-
59	V	-
60	R/W	-
61	PU/W	-
62	W/L	-
63	W/B	-
67	Y/R	-
69	LG	-
70	SHIELD	-
71	P/B	-
72	R/G	-
73	R	-
74	L/Y	-
76	W/G	-
77	GR/R	-
78	O	-
79	LG	-
80	P	-
81	L	-
82	GR	-
83	G/R	-
84	B	-
91	R	-
92	O	-
93	Y	-
94	R/B	-
95	L/W	-
96	Y	-
97	L	-
98	BR/W	-
99	W	-
100	G/R	-

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REAR WIPER AND WASHER SYSTEM

Wiring Diagram - REAR WIPER AND WASHER SYSTEM -

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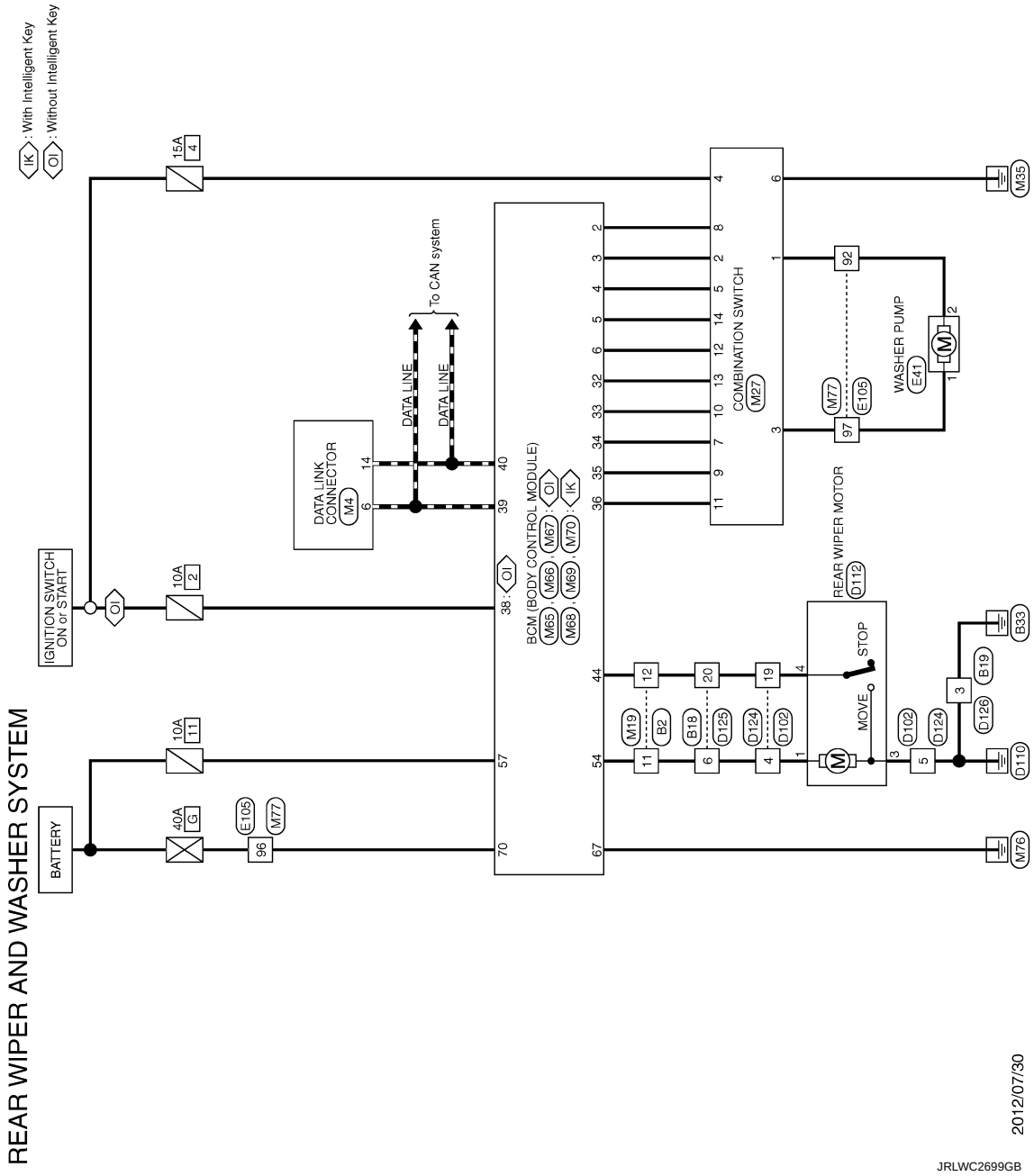
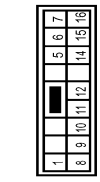


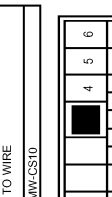
REAR WIPER AND WASHER SYSTEM

Connector No.	B2
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
5	O	-
6	R	-
7	L	-
8	L	-
9	G	-
10	V	-
11	P	-
12	LG	-
14	R	-
15	Y	-
16	B	-

Connector No.	B18
Connector Name	WIRE TO WIRE
Connector Type	NH10MW-CS10

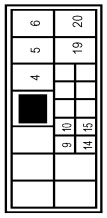


Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
3	BR	-
5	R	-
6	P	-
7	B	- [With Intelligent Key]
7	G	- [Without Intelligent Key]
8	SHIELD	-
9	B	-
10	Y	-
11	G	-
12	W	-
13	R	-
14	Y	-
15	O	-
16	L	-
17	R	-
18	BR	-
20	LG	-

Connector No.	B19
Connector Name	WIRE TO WIRE
Connector Type	M04MW-LC

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
3	B	-

Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Type	NH10MW-CS10

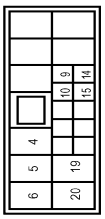


Terminal No.	Color Of Wire	Signal Name [Specification]
4	P	-
5	BR	-
6	Y	-
9	W	-
10	BR	-
14	L	-
15	R	-
19	LG	-
20	GR	-

Connector No.	D112
Connector Name	REAR WIPER MOTOR
Connector Type	CJ04FW-1V

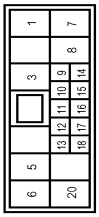
Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
3	BR	-
4	LG	-

Connector No.	D124
Connector Name	WIRE TO WIRE
Connector Type	NH10FW-CS10



Terminal No.	Color Of Wire	Signal Name [Specification]
4	G	-
5	B	-
6	Y	-
9	W	-
10	BR	-
14	L	-
15	R	-
19	LG	-
20	GR	-

Connector No.	D125
Connector Name	WIRE TO WIRE
Connector Type	NH10FW-CS10



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
3	SB	-
5	GR	-
6	G	-
7	GR	-
8	SHIELD	-
9	L	-
10	Y	-
11	G	-
12	BR	-
13	R	-
14	Y	-
15	W	-
16	L	-
17	R	-
18	BR	-
20	LG	-

Connector No.	D126
Connector Name	WIRE TO WIRE
Connector Type	M04FW-LC

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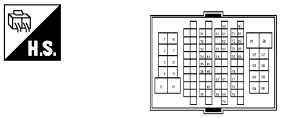
REAR WIPER AND WASHER SYSTEM

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
3	B	-

Connector No.	E41
Connector Name	WASHER PUMP
Connector Type	E02FGY-RS

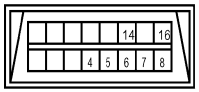
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	Y	-

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



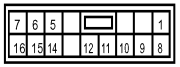
Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	W	-
3	SB	-
4	G	-
5	P	-
6	L	- [With NAVI]
6	R	- [Without NAVI]
7	Y	-
8	O	-
9	W	-
10	SB	-
31	V	-
32	R	-
33	GR	-
34	P	-
35	Y	-
36	BR	-
39	SB	-
44	R	-
45	V	-
46	P	-
48	L	-
51	B	- [With M/T]
51	BR	- [With CVT]
53	SB	-
54	O	- [With M/T]
54	W	- [With CVT]
57	LG	-
59	L	-
60	O	-
61	G	-
62	W	-
63	L	-
67	GR	- [With CVT]
67	V	- [With M/T]
69	P	-
70	SHIELD	-
71	GR	-
72	LG	-
73	P	-
74	V	-
76	Y	-
77	LG	-
78	O	-
79	G	-
80	P	-
81	L	-
82	W	-
83	BR	-
84	B	-
91	W	-
92	Y	-
93	Y	-
94	R	-
95	V	-
96	LG	-
97	R	-
98	SB	-
99	G	-
100	P	-

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



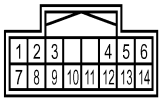
Terminal No.	Color Of Wire	Signal Name [Specification]
4	B	-
5	B	-
6	L	-
7	GR/R	-
8	O	-
14	P	-
16	LG/R	-

Connector No.	M19
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS



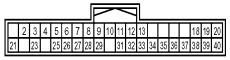
Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
5	L/R	-
6	R	-
7	L	-
8	R/B	-
9	G	-
10	V	-
11	L/W	-
12	LG	-
14	R	-
15	Y/R	-
16	B/R	-

Connector No.	M27
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	O/B	WASHER (RR)
2	GR	OUTPUT 4
3	R/G	WASHER (FR)
4	W	IGN
5	L/Y	OUTPUT 3
6	B	GROUND
7	W	INPUT 3
8	BR/W	OUTPUT 5
9	R/L	INPUT 2
10	Y/L	INPUT 4
11	L/O	INPUT 1
12	L/R	OUTPUT 1
13	LG	INPUT 5
14	G	OUTPUT 2

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
2	BR/W	COMBI SW INPUT 5
3	GR	COMBI SW INPUT 4
4	L/Y	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	L/R	COMBI SW INPUT 1
7	W/R	KEY CYL UNLOCK SW

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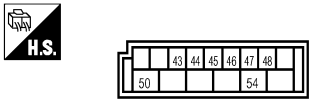
REAR WIPER AND WASHER SYSTEM

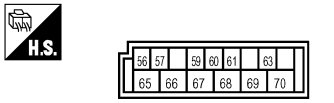
8	W/B	KEY CYL LOCK SW
9	R	STOP LAMP SW
10	W/L	REAR WINDOW DEFOGGER SW
11	L/Y	ACC POWER SUPPLY
12	SB	PASSENGER DOOR SW
13	GR/L	REAR RH DOOR SW
18	V	RECEIVER / SENSOR GND
19	BR	KEYLESS ENTRY RECEIVER POWER SUPPLY
20	G/Y	KEYLESS ENTRY RECEIVER COMM
21	P/L	NATS ANTENNA AMP.
23	R/Y	SECURITY INDICATOR LAMP
25	LG	NATS ANTENNA AMP.
26	GR	THERMO CONTROL AMP.
27	Y/G	A/C SW
28	G/W	BLOWER FAN SW
29	L/W	HAZARD SW
31	G/Y	FR DEFROSTER SW
32	LG	COMBI SW OUTPUT 5
33	Y/L	COMBI SW OUTPUT 4
34	W	COMBI SW OUTPUT 3
35	R/L	COMBI SW OUTPUT 2
36	L/O	COMBI SW OUTPUT 1
37	R/W	KEY SWITCH
38	O	IGNITION POWER SUPPLY
39	L	CAN-H
40	P	CAN-L

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FW-FHA6-SA



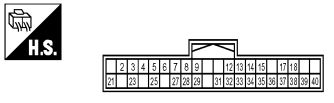
Terminal No.	Color Of Wire	Signal Name [Specification]
43	W	BACK DOOR SW
44	LG	REAR WIPER STOP POSITION
45	GR	CENTRAL DOOR LOCK SW
46	BR	CENTRAL DOOR UNLOCK SW
47	BR/Y	DRIVER DOOR SW
48	W/G	REAR LH DOOR SW
50	SB	A/C INDICATOR OUTPUT
54	LG	REAR WIPER OUTPUT

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FB-FHA6-SA



Terminal No.	Color Of Wire	Signal Name [Specification]
56	L	INTERIOR ROOM LAMP POWER SUPPLY
57	Y	BAT (FUSE)
59	L/B	DRIVER DOOR UNLOCK OUTPUT
60	W/B	TURN SIGNAL LH OUTPUT
61	W/L	TURN SIGNAL RH OUTPUT
63	BR	ROOM LAMP TIMER CONTROL
65	V	ALL DOOR LOCK OUTPUT
66	G	PASSENGER DOOR, REAR DOOR UNLOCK OUTPUT
67	B	GROUND
68	L	POWER WINDOW POWER SUPPLY (IGN)
69	P	POWER WINDOW POWER SUPPLY (BAT)
70	Y	BAT (F/L)

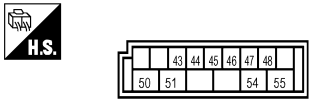
Connector No.	M68
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
2	BR/W	COMBI SW INPUT 5
3	GR	COMBI SW INPUT 4
4	L/Y	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	L/R	COMBI SW INPUT 1
7	W/R	KEY CYL UNLOCK SW
8	W/B	KEY CYL LOCK SW
9	R	STOP LAMP SW 1

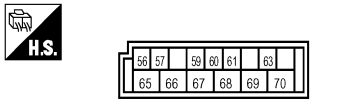
12	GR	CENTRAL DOOR LOCK SW
13	BR	CENTRAL DOOR UNLOCK SW
14	L/G	OPTICAL SENSOR
15	W/L	REAR WINDOW DEFOGGER SW
17	R/G	OPTICAL SENSOR POWER SUPPLY
18	V	SENSOR GND
21	P/L	NATS ANTENNA AMP.
23	R/Y	SECURITY INDICATOR LAMP
25	LG	NATS ANTENNA AMP.
27	O	A/C SW
28	G/W	BLOWER FAN SW
29	L/W	HAZARD SW
31	G/B	DR DOOR UNLOCK SENSOR
32	LG	COMBI SW OUTPUT 5
33	Y/L	COMBI SW OUTPUT 4
34	W	COMBI SW OUTPUT 3
35	R/L	COMBI SW OUTPUT 2
36	L/O	COMBI SW OUTPUT 1
37	G/O	SHIFT P
38	G/Y	RECEIVER COMM
39	L	CAN-H
40	P	CAN-L

Connector No.	M69
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FB-FHA6-SA



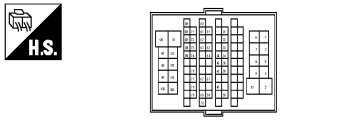
Terminal No.	Color Of Wire	Signal Name [Specification]
43	W	BACK DOOR SW
44	LG	REAR WIPER STOP POSITION
45	SB	PASSENGER DOOR SW
46	GR/L	REAR RH DOOR SW
47	BR/Y	DRIVER DOOR SW
48	W/G	REAR LH DOOR SW
50	R/W	BK DR LOCK ACT RELAY CONT
51	W	BACK DOOR REQUEST SW
54	LG	REAR WIPER OUTPUT
55	G	REAR DOOR UNLOCK OUTPUT

Connector No.	M70
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FW-FHA6-SA



Terminal No.	Color Of Wire	Signal Name [Specification]
56	L	INTERIOR ROOM LAMP POWER SUPPLY
57	Y	BAT (FUSE)
59	G	PASSENGER DOOR UNLOCK OUTPUT
60	W/B	TURN SIGNAL LH OUTPUT
61	W/L	TURN SIGNAL RH OUTPUT
63	BR	ROOM LAMP TIMER CONTROL
65	V	ALL DOOR LOCK OUTPUT
66	L/B	DRIVER DOOR UNLOCK OUTPUT
67	B	GROUND
68	L	POWER WINDOW POWER SUPPLY (IGN)
69	P	POWER WINDOW POWER SUPPLY (BAT)
70	Y	BAT (F/L)

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



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

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REAR WIPER AND WASHER SYSTEM

9	Y/L	-
10	W	-
31	GR/L	-
32	L/B	-
33	R/Y	-
34	SB	-
35	BR	-
36	G	-
39	L/R	-
44	G/O	-
45	LG/R	-
46	GR/W	-
48	L/O	-
51	B/W	-
53	R/L	-
54	O	-
57	GR	-
59	V	-
60	R/W	-
61	PU/W	-
62	W/L	-
63	W/B	-
67	Y/R	-
69	LG	-
70	SHIELD	-
71	P/B	-
72	R/G	-
73	R	-
74	L/Y	-
76	W/G	-
77	GR/R	-
78	O	-
79	LG	-
80	P	-
81	L	-
82	GR	-
83	G/R	-
84	B	-
91	R	-
92	O	-
93	Y	-
94	R/B	-
95	L/W	-
96	Y	-
97	L	-
98	BR/W	-
99	W	-
100	G/R	-

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ECU DIAGNOSIS INFORMATION

BCM (BODY CONTROL MODULE)
WITH INTELLIGENT KEY

WITH INTELLIGENT KEY : Reference Value

INFOID:0000000010278001

VALUES ON THE DIAGNOSIS TOOL

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

CONSULT MONITOR ITEM

Monitor Item	Condition	Value/Status
FR WIPER HI	Other than front wiper switch HI	Off
	Front wiper switch HI	On
FR WIPER LOW	Other than front wiper switch LO	Off
	Front wiper switch LO	On
FR WASHER SW	Front washer switch OFF	Off
	Front washer switch ON	On
FR WIPER INT	Other than front wiper switch INT	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

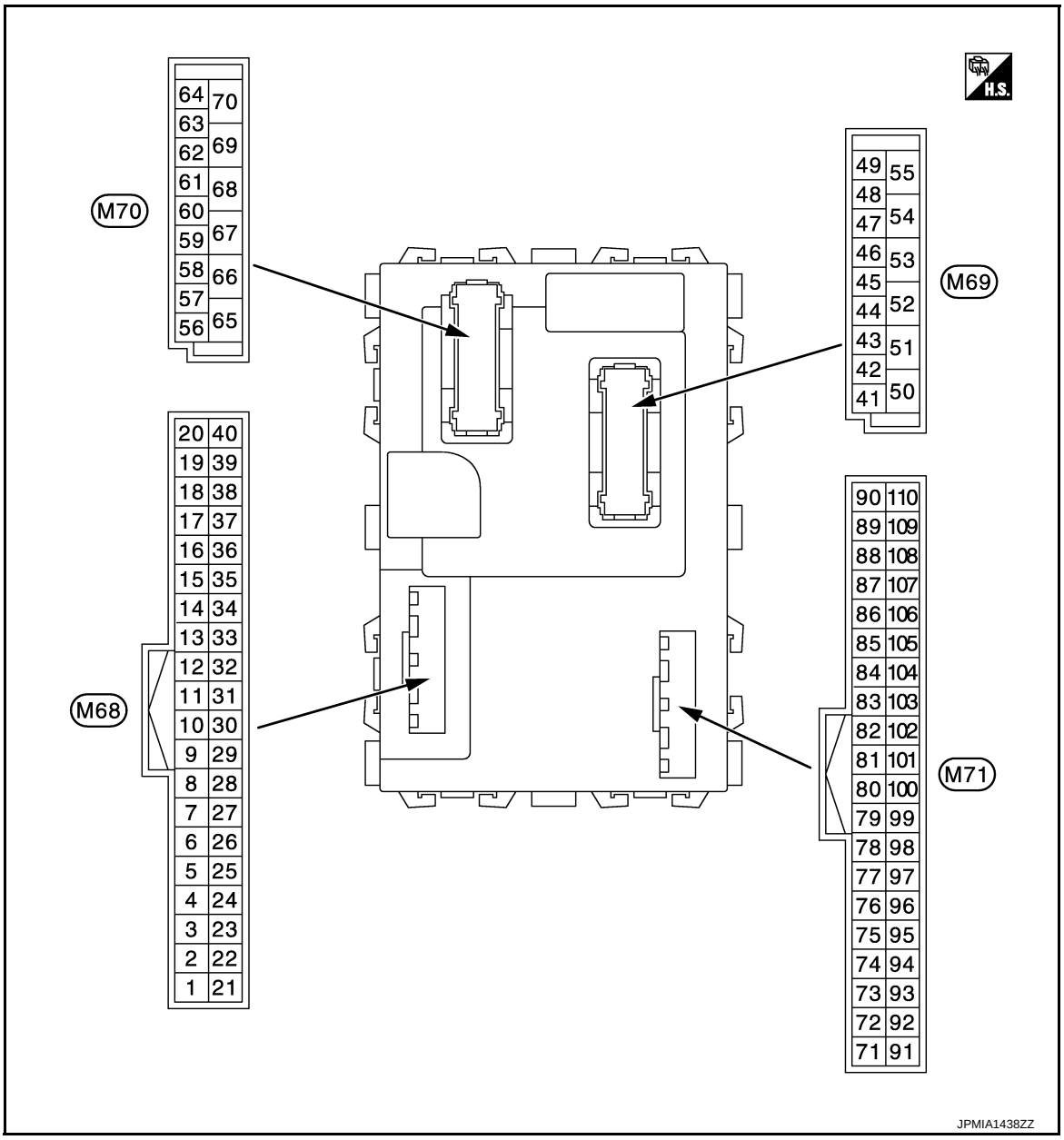
Monitor Item	Condition	Value/Status
AUTO LIGHT SW	Other than lighting switch AUTO	Off
	Lighting switch AUTO	On
FR FOG SW	Front fog lamp switch OFF	Off
	Front fog lamp switch ON	On
DOOR SW-DR	Driver door closed	Off
	Driver door opened	On
DOOR SW-AS	Passenger door closed	Off
	Passenger door opened	On
DOOR 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
HAZARD SW	Hazard switch is OFF	Off
	Hazard switch is ON	On
REAR DEF SW	Rear window defogger switch OFF	Off
	Rear window defogger switch ON	On
TR/BD OPEN SW	**NOTE:** The item is indicated, but not monitored.	Off
TRNK/HAT MNTR	**NOTE:** The item is indicated, but not monitored.	Off
FAN ON SIG	Blower fan OFF	Off
	Blower fan ON	On
AIR COND SW	Air conditioner OFF (A/C switch indicator OFF)	Off
	Air conditioner ON (A/C switch indicator ON)	On
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	BACK DOOR OPEN button of the key is not pressed	Off
	BACK DOOR OPEN button of the key is pressed	On
RKE-PANIC	PANIC button of the key is not pressed	Off
	PANIC button of the key is pressed	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

Monitor Item	Condition	Value/Status
OPTI SEN (DTCT)	Bright outside of the vehicle	Close to 5 V
	Dark outside of the vehicle	Close to 0 V
OPTI SEN (FILT)	Bright outside of the vehicle (Lighting switch AUTO)	Close to 5 V
	Dark outside of the vehicle (Lighting switch AUTO)	Close to 1.50 V
OPTICAL SENSOR	**NOTE:** The item is indicated, but not monitored.	Off
RAIN SENSOR	**NOTE:** The item is indicated, but not monitored.	Off
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
CLUCH SW	The clutch pedal is not depressed.	Off
	The clutch pedal is depressed	On
BRAKE SW 1	The brake pedal is not depressed	Off
	The brake pedal is depressed	On
BRAKE SW 2	The brake pedal is depressed when No. 9 fuse is blown	Off
	The brake pedal is not depressed when No. 9 fuse is blown, or No. 9 fuse is normal	On
DETE/CANCL SW	Selector lever in P position	Off
	Selector lever in any position other than P	On
SFT PN/N SW	Selector lever in any position other than P and N	Off
	Selector lever in P or N position	On
S/L -LOCK	**NOTE:** The item is indicated, but not monitored.	Off
S/L -UNLOCK	**NOTE:** The item is indicated, but not monitored.	Off
S/L RELAY-F/B	**NOTE:** The item is indicated, but not monitored.	Off
UNLK SEN -DR	Driver door is locked	Off
	Driver door is unlocked	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

Monitor Item	Condition	Value/Status
SFT P -MET	Selector lever in any position other than P	Off
	Selector lever in P position	On
SFT N -MET	Selector lever in any position other than N	Off
	Selector lever in N position	On
ENGINE STATE	Engine stopped	Stop
	While the engine stalls	Stall
	At engine cranking	Crank
	Engine running	Run
S/L LOCK-IPDM	**NOTE:** The item is indicated, but not monitored.	Off
S/L UNLK-IPDM	**NOTE:** The item is indicated, but not monitored.	Off
S/L RELAY-REQ	**NOTE:** The item is indicated, but not monitored.	Off
VEH SPEED 1	While driving	Equivalent to speed-ometer reading
VEH SPEED 2	While driving	Equivalent to speed-ometer reading
DOOR STAT-DR	Driver door is locked	LOCK
	Wait with selective UNLOCK operation (5 seconds)	READY
	Driver door is unlocked	UNLOCK
DOOR STAT-AS	Passenger door is locked	LOCK
	Wait with selective UNLOCK operation (5 seconds)	READY
	Passenger door is unlocked	UNLOCK
ID OK FLAG	Driver side door is open after ignition switch is turned OFF (Selector lever is in the P position except for M/T models)	Reset
	Ignition switch ON	Set
PRMT ENG STRT	The engine start is prohibited	Reset
	The engine start is permitted	Set
PRMT RKE STRT	**NOTE:** The item is indicated, but not monitored.	Reset
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 is not recognized by any key ID registered to BCM.	Yet
	The key ID that the key slot receives is recognized by any key ID registered to BCM.	Done
CONFIRM ID4	The key ID that the key slot receives is not recognized by the fourth key ID registered to BCM.	Yet
	The key ID that the key slot receives is recognized by the fourth key ID registered to BCM.	Done
CONFIRM ID3	The key ID that the key slot receives is not recognized by the third key ID registered to BCM.	Yet
	The key ID that the key slot receives is recognized by the third key ID registered to BCM.	Done

Monitor Item	Condition	Value/Status
CONFIRM ID2	The key ID that the key slot receives is not recognized by the second key ID registered to BCM.	Yet
	The key ID that the key slot receives is recognized by the second key ID registered to BCM.	Done
CONFIRM ID1	The key ID that the key slot receives is not recognized by the first key ID registered to BCM.	Yet
	The key ID that the key slot receives is recognized by the first key ID registered to BCM.	Done
NOT REGISTERED	BCM detects registered key ID, or BCM does not detect key ID.	ID OK
	BCM detects non-registration key ID.	ID NG
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

TERMINAL LAYOUT

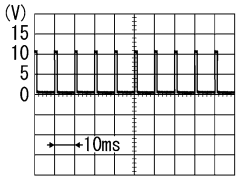
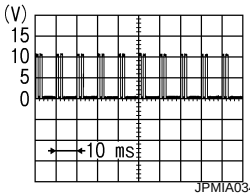
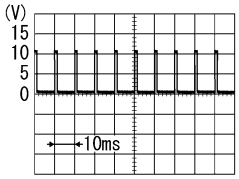
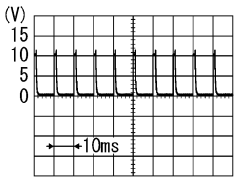
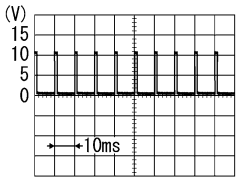


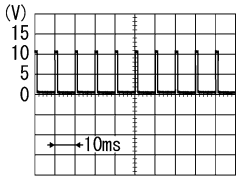
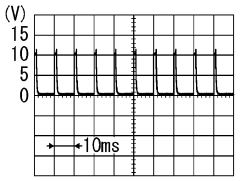
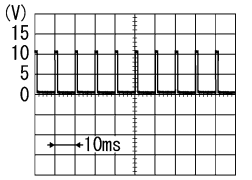
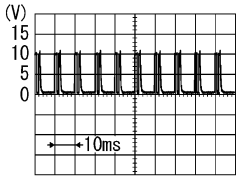
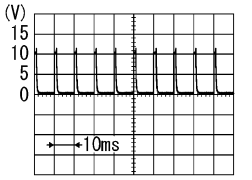
NOTE:

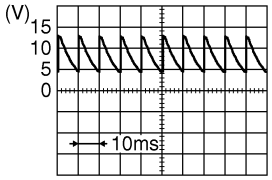
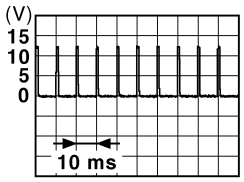
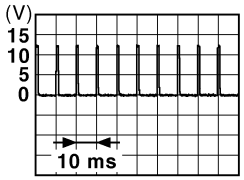
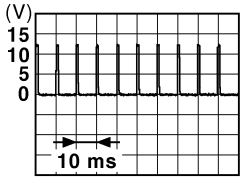
Connector color

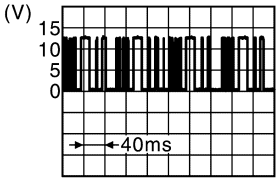
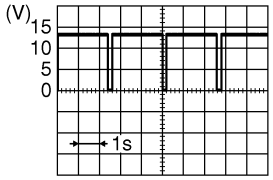
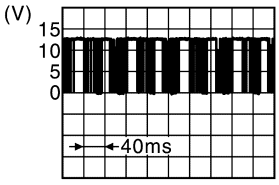
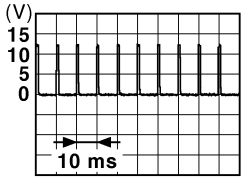
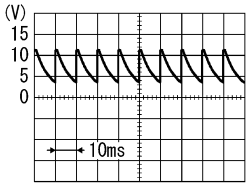
- M68, M70: Black
- M69, M71: White

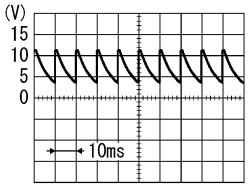
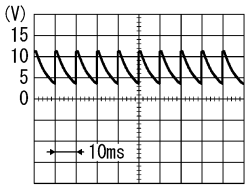
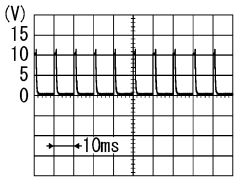
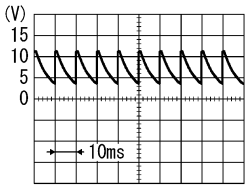
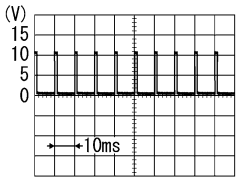
PHYSICAL VALUES

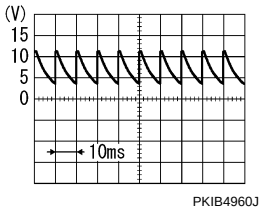
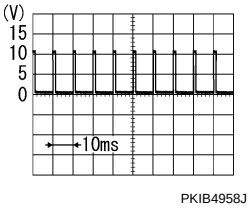
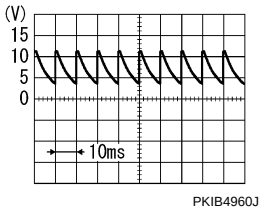
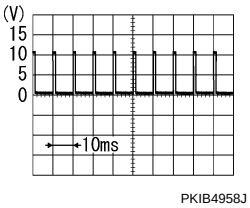
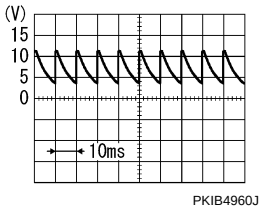
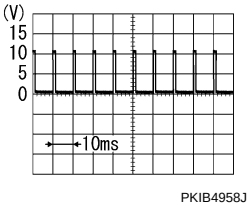
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
2 (BR/W)	Ground	Combination switch INPUT 5	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Turn signal switch RH	 PKIB4958J 1.0 V
					Lighting switch HI	
					Lighting switch 1ST	
					Lighting switch 2ND	 JPMIA0342JP 2.0 V
3 (GR)	Ground	Combination switch INPUT 4	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Turn signal switch LH	 PKIB4958J 1.0 V
					Lighting switch PASS	
					Lighting switch 2ND	
					Front fog lamp switch ON	 PKIB4956J 0.8 V
4 (L/Y)	Ground	Combination switch INPUT 3	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Front wiper switch LO	 PKIB4958J 1.0 V
					Front wiper switch MIST	
					Front wiper switch INT	
					Lighting switch AUTO	

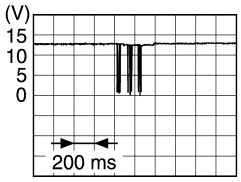
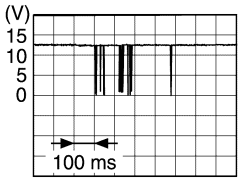
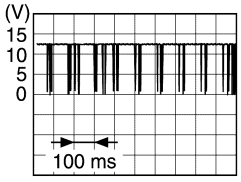
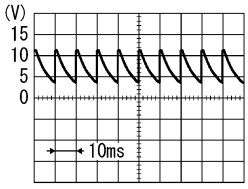
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
5 (G)	Ground	Combination switch INPUT 2	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front washer switch (Wiper intermittent dial 4) Rear washer ON (Wiper intermittent dial 4) Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	 PKIB4958J 1.0 V
					Rear wiper switch ON (Wiper intermittent dial 4)	 PKIB4956J 0.8 V
6 (L/R)	Ground	Combination switch INPUT 1	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front wiper switch HI (Wiper intermittent dial 4) Rear wiper switch INT (Wiper intermittent dial 4) Wiper intermittent dial 3 (All switch OFF)	 PKIB4958J 1.0 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2	 PKIB4952J 1.9 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 6 • Wiper intermittent dial 7	 PKIB4956J 0.8 V

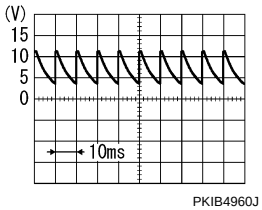
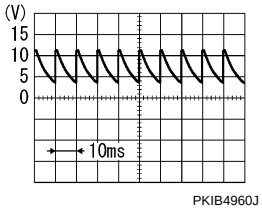
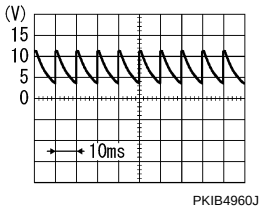
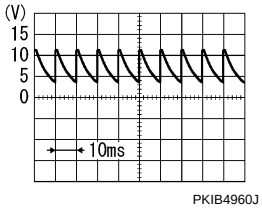
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
7 (W/R)	Ground	Door key cylinder switch UNLOCK	Input	Door key cylinder switch	NEUTRAL position	 JPMIA0587GB 8.0 - 8.5 V
					UNLOCK position	0 V
8 (W/B)	Ground	Door key cylinder switch LOCK	Input	Door key cylinder switch	NEUTRAL position	12 V
					LOCK position	0 V
9 (R)	Ground	Stop lamp switch 1	Input	Stop lamp switch	OFF (Brake pedal is not depressed)	0 V
					ON (Brake pedal is depressed)	Battery voltage
12 (GR)	Ground	Door lock and unlock switch LOCK	Input	Door lock and unlock switch	NEUTRAL position	 JPMIA0012GB 1.0 - 1.5 V
					LOCK position	0 V
13 (BR)	Ground	Door lock and unlock switch UNLOCK	Input	Door lock and unlock switch	NEUTRAL position	 JPMIA0012GB 1.0 - 1.5 V
					UNLOCK position	0 V
14 (L/G)	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
15 (W/L)	Ground	Rear window defogger switch	Input	Rear window defogger switch	Not pressed	 JPMIA0012GB 1.0 - 1.5 V
					Pressed	0 V
17 (R/G)	Ground	Optical sensor power supply	Output	Ignition switch	OFF, ACC	0 V
					ON	5 V

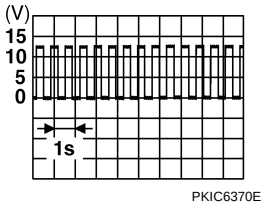
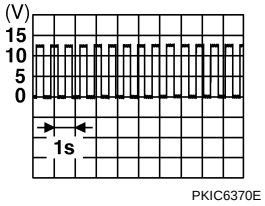
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
18 (V)	Ground	Sensor ground	Input	Ignition switch ON		0 V
21 (P/L)	Ground	NATS antenna amp.	Input/ Output	Intelligent Key: Intelligent Key battery is removed	Brake pedal: Depressed **NOTE:** Waveform varies each time when brake pedal is depressed	 JMKIA6232JP
					Brake pedal: Not depressed	12 V
23 (R/Y)	Ground	Security indicator lamp	Output	Security indicator	ON	0 V
					Blinking (Ignition switch OFF)	 JPMIA0590GB 12.0 V
					OFF	Battery voltage
25 (LG)	Ground	NATS antenna amp.	Input/ Output	During waiting	Brake pedal: Depressed **NOTE:** Waveform varies each time when brake pedal is depressed	 JMKIA6233JP
					Brake pedal: Not depressed	12 V
27 (O)	Ground	A/C ON	Input	A/C	OFF (A/C switch indicator: OFF)	 JPMIA0012GB 1.0 - 1.5 V
					ON (A/C switch indicator: ON)	0 V
28 (G/W)	Ground	Blower fan switch	Input	Fan switch	Blower fan switch OFF	0 V
					Blower fan switch ON	 PKIB4960J 7.0 - 8.0 V

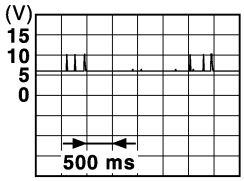
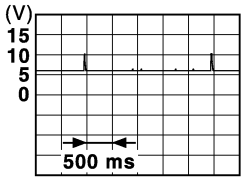
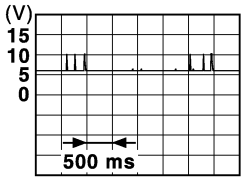
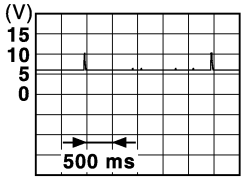
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
29 (L/W)	Ground	Hazard switch	Input	Hazard switch	OFF	12 V
					ON	0 V
31 (G/B)	Ground	Front door lock assembly driver side (Unlock sensor)	Input	Driver door	LOCK status (Unlock sensor switch OFF)	 PKIB4960J 7.0 - 8.0 V
					UNLOCK status (Unlock sensor switch ON)	0 V
32 (LG)	Ground	Combination switch OUTPUT 5	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 PKIB4960J 7.0 - 8.0 V
					Front fog lamp switch ON (Wiper intermittent dial 4)	 PKIB4956J 1.0 V
					Rear wiper switch ON (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 6 • Wiper intermittent dial 7	
33 (Y/L)	Ground	Combination switch OUTPUT 4	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 PKIB4960J 7.0 - 8.0 V
					Lighting switch 1ST (Wiper intermittent dial 4)	 PKIB4958J 1.2 V
					Lighting switch AUTO (Wiper intermittent dial 4)	
					Rear wiper switch INT (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	

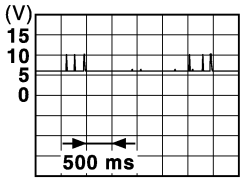
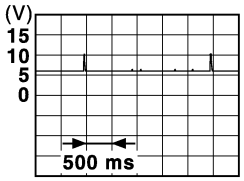
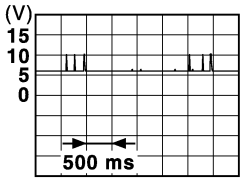
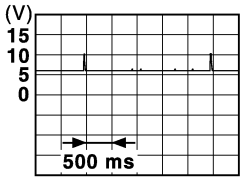
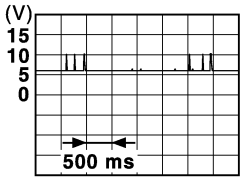
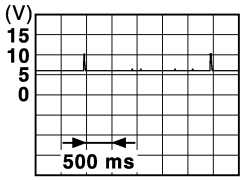
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
34 (W)	Ground	Combination switch OUTPUT 3	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 7.0 - 8.0 V
					Lighting switch 2ND (Wiper intermittent dial 4) Lighting switch HI (Wiper intermittent dial 4) Rear washer switch ON (Wiper intermittent dial 4) Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3	 1.2 V
35 (R/L)	Ground	Combination switch OUTPUT 2	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	 7.0 - 8.0 V
					Lighting switch 2ND Lighting switch PASS Front wiper switch INT Front wiper switch HI	 1.2 V
36 (L/O)	Ground	Combination switch OUTPUT 1	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	 7.0 - 8.0 V
					Turn signal switch RH Turn signal switch LH Front wiper switch LO (Front wiper switch MIST) Front washer switch ON	 1.2 V

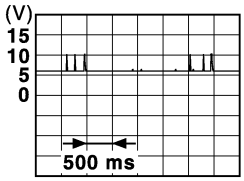
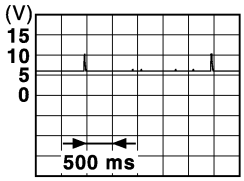
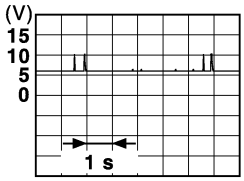
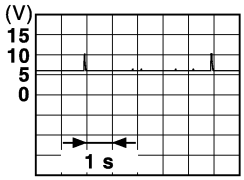
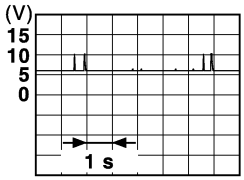
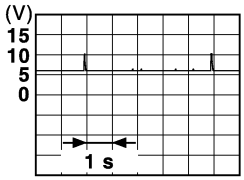
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
37 (G/O)	Ground	Selector lever P position switch	Input	Selector lever	P position	0 V
					Any position other than P	12 V
38 (G/Y)	Ground	Receiver communication	Input/ Output	Ignition switch OFF (Remote keyless entry communication)	Waiting	12 V
					When operating either button on Intelligent Key	 JMMIA0572GB
				Ignition switch ON (TPMS communication)	Waiting	 JMMIA0573GB
					When receiving signal from tire pressure sensor	 JMMIA0574GB
39 (L)	Ground	CAN-H	Input/ Output	—		—
40 (P)	Ground	CAN-L	Input/ Output	—		—
43 (W)	Ground	Back door switch	Input	Back door switch	OFF (When back door closed)	 PKIB4960J 9.5 - 10.0 V
					ON (When back door opened)	0 V
44 (LG)	Ground	Rear wiper stop position	Input	Ignition switch ON	Rear wiper stop position	12 V
					Any position other than rear wiper stop position	0 V

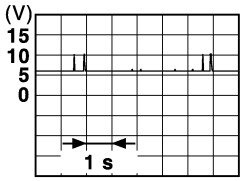
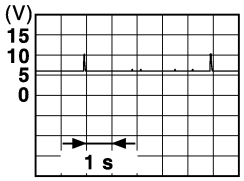
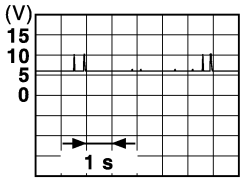
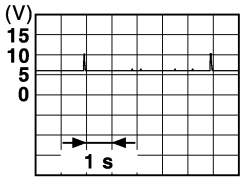
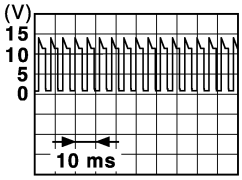
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
45 (SB)	Ground	Passenger door switch	Input	Passenger door switch	OFF (When passenger door closed)	 7.0 - 8.0 V
					ON (When passenger door opened)	0 V
46 (GR/L)	Ground	Rear RH door switch	Input	Rear RH door switch	OFF (When rear RH door closed)	 7.0 - 8.0 V
					ON (When rear RH door opened)	0 V
47 (BR/Y)	Ground	Driver door switch	Input	Driver door switch	OFF (When driver door closed)	 7.0 - 8.0 V
					ON (When driver door opened)	0 V
48 (W/G)	Ground	Rear LH door switch	Input	Rear LH door switch	OFF (When rear LH door closed)	 7.0 - 8.0 V
					ON (When rear door LH opened)	0 V
50 (R/W)	Ground	Back door lock actuator relay control	Output	Back door	LOCK (Actuator is activated)	0 V
					Other than LOCK (Actuator is not activated)	Battery voltage
51 (W)	Ground	Back door request switch	Input	Back door request switch	ON (Pressed)	0 V
					OFF (Not pressed)	12 V
54 (LG)	Ground	Rear wiper	Output	Rear wiper	OFF (Stopped)	0 V
					ON (Activated)	12 V

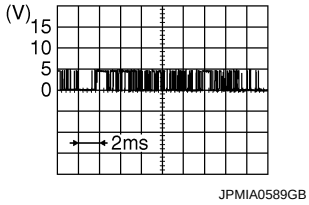
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
55 (G)	Ground	Rear door UNLOCK	Output	Rear door	UNLOCK (Actuator is activated)	12 V
					Other than UNLOCK (Actuator is not activated)	0 V
56 (L)	Ground	Interior room lamp power supply	Output	Interior room lamp battery saver is activated. (Cuts the interior room lamp power supply)		0 V
				Interior room lamp battery saver is not activated. (Outputs the interior room lamp power supply)		12 V
57 (Y)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
59 (G)	Ground	Passenger door UNLOCK	Output	Passenger door	UNLOCK (Actuator is activated)	12 V
					Other than UNLOCK (Actuator is not activated)	0 V
60 (W/B)	Ground	Turn signal LH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	 6.0 V
61 (W/L)	Ground	Turn signal RH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	 6.0 V
63 (BR)	Ground	Interior room lamp control signal	Output	Interior room lamp	OFF	12 V
					ON	0 V
65 (V)	Ground	All doors LOCK	Output	All doors	LOCK (Actuator is activated)	12 V
					Other than LOCK (Actuator is not activated)	0 V
66 (L/B)	Ground	Driver door UNLOCK	Output	Driver door	UNLOCK (Actuator is activated)	12 V
					Other than UNLOCK (Actuator is not activated)	0 V
67 (B)	Ground	Ground	Output	Ignition switch ON		0 V
68 (L)	Ground	P/W power supply (IGN)	Output	Ignition switch ON		12 V
69 (P)	Ground	P/W power supply (BAT)	Output	Ignition switch OFF		12 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
70 (Y)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
72 (SB)	Ground	A/C indicator	Output	A/C indicator	OFF	12 V
					ON	0 V
75 (SB)	Ground	Driver door request switch	Input	Driver door request switch	ON (Pressed)	0 V
					OFF (Not pressed)	12 V
76 (L/O)	Ground	Push-button ignition switch (push switch)	Input	Push-button ignition switch (push switch)	Pressed	0 V
					Not pressed	12 V
78 (LG)	Ground	Driver door antenna (+)	Output	When the driver door request switch is operated with ignition switch ON	When Intelligent Key is not in the antenna detection area (The distance between Intelligent Key and antenna: Approx. 2 m)	 JMKIA5954GB
					When Intelligent Key is in the antenna detection area (The distance between Intelligent Key and antenna: 80 cm or less)	 JMKIA5955GB
79 (V)	Ground	Driver door antenna (-)	Output	When the driver door request switch is operated with ignition switch ON	When Intelligent Key is not in the antenna detection area (The distance between Intelligent Key and antenna: Approx. 2 m)	 JMKIA5954GB
					When Intelligent Key is in the antenna detection area (The distance between Intelligent Key and antenna: 80 cm or less)	 JMKIA5955GB

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
80 (BR/Y)	Ground	Passenger door antenna (+)	Output	When the passenger door request switch is operated with ignition switch ON	When Intelligent Key is not in the antenna detection area (The distance between Intelligent Key and antenna: Approx. 2 m)	 JMKIA5954GB
					When Intelligent Key is in the antenna detection area (The distance between Intelligent Key and antenna: 80 cm or less)	 JMKIA5955GB
81 (L/Y)	Ground	Passenger door antenna (-)	Output	When the passenger door request switch is operated with ignition switch ON	When Intelligent Key is not in the antenna detection area (The distance between Intelligent Key and antenna: Approx. 2 m)	 JMKIA5954GB
					When Intelligent Key is in the antenna detection area (The distance between Intelligent Key and antenna: 80 cm or less)	 JMKIA5955GB
82 (W/B)	Ground	Back door antenna (+)	Output	When the back door request switch is operated with ignition switch ON	When Intelligent Key is not in the antenna detection area (The distance between Intelligent Key and antenna: Approx. 2 m)	 JMKIA5954GB
					When Intelligent Key is in the antenna detection area (The distance between Intelligent Key and antenna: 80 cm or less)	 JMKIA5955GB

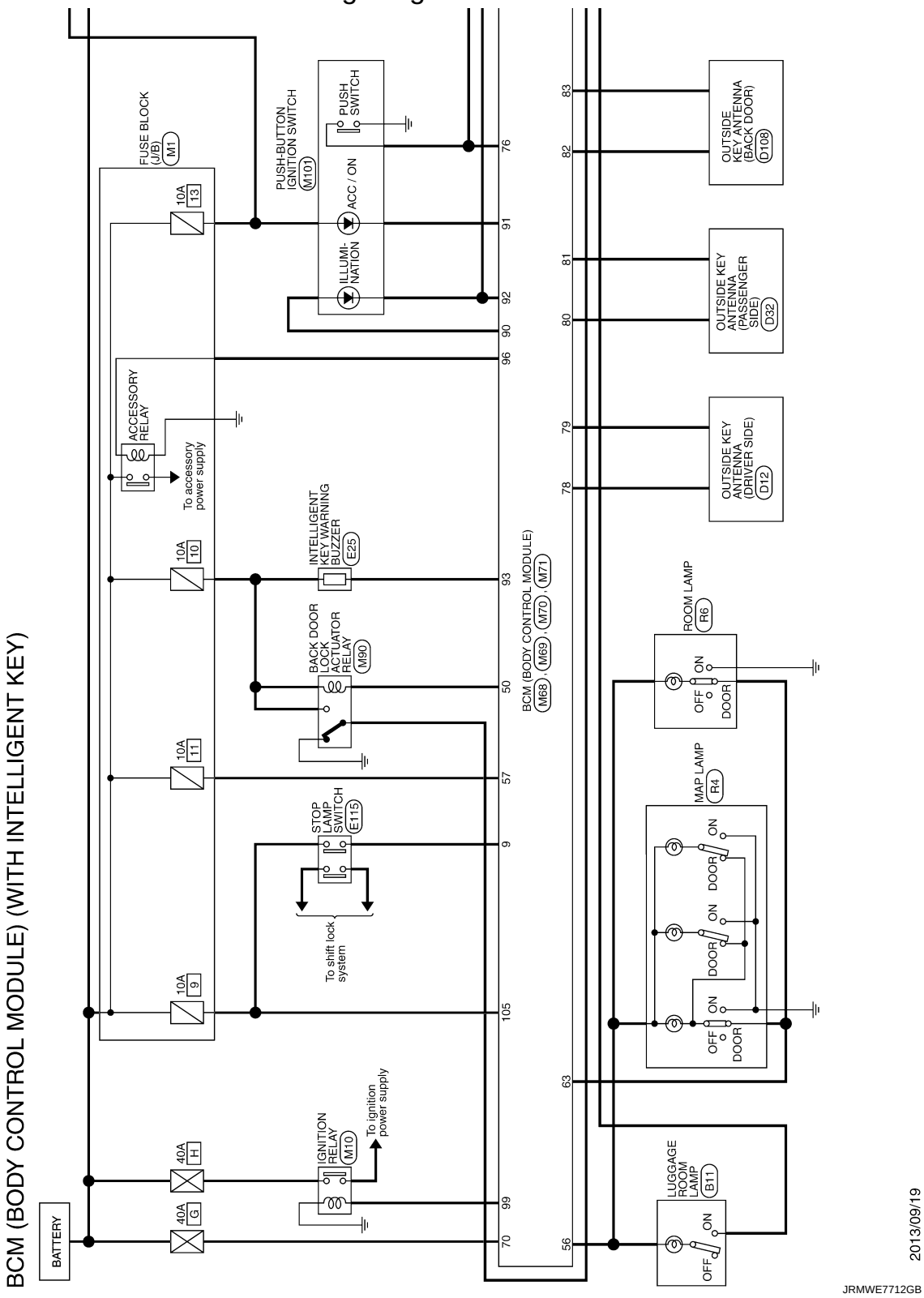
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
83 (B/W)	Ground	Back door antenna (-)	Output	When the back door request switch is operated with ignition switch ON	When Intelligent Key is not in the antenna detection area (The distance between Intelligent Key and antenna: Approx. 2 m)	 JMKIA5954GB
					When Intelligent Key is in the antenna detection area (The distance between Intelligent Key and antenna: 80 cm or less)	 JMKIA5955GB
84 (Y/G)	Ground	Room antenna (+) (Instrument center)	Output	Ignition switch ON	When Intelligent Key is not in the antenna detection area	 JMKIA5951GB
					When Intelligent Key is in the antenna detection area	 JMKIA3839GB
85 (Y/L)	Ground	Room antenna (-) (Instrument center)	Output	Ignition switch ON	When Intelligent Key is not in the antenna detection area	 JMKIA5951GB
					When Intelligent Key is in the antenna detection area	 JMKIA3839GB

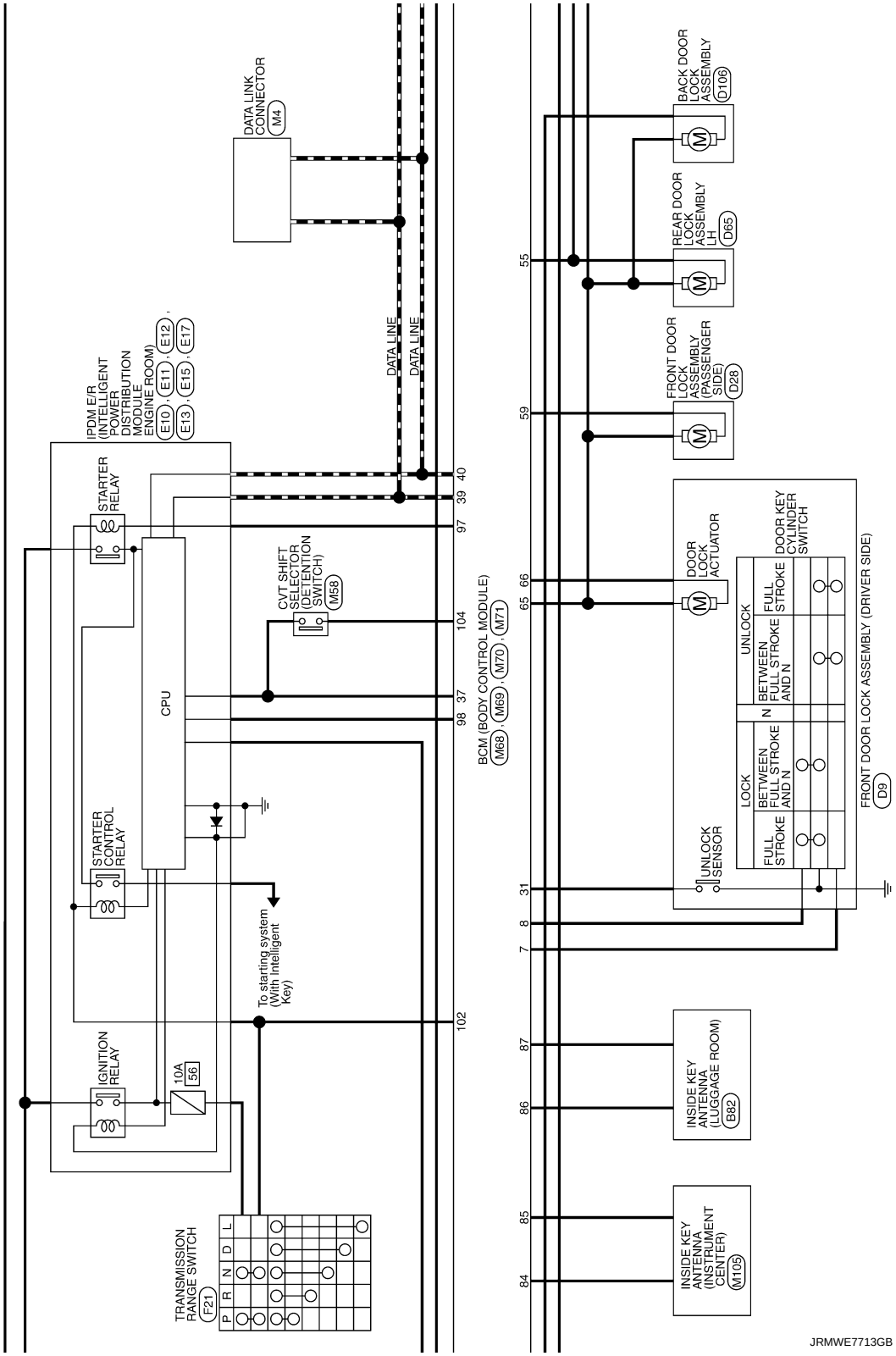
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
86 (P)	Ground	Luggage room antenna (+)	Output	Ignition switch ON	When Intelligent Key is not in the antenna detection area	 JMKIA5951GB
					When Intelligent Key is in the antenna detection area	 JMKIA3839GB
87 (L)	Ground	Luggage room antenna (-)	Output	Ignition switch ON	When Intelligent Key is not in the antenna detection area	 JMKIA5951GB
					When Intelligent Key is in the antenna detection area	 JMKIA3839GB
90 (W/L)	Ground	Push-button ignition switch illumination	Output	Push-button ignition switch illumination	ON	12 V
					OFF	0 V
91 (Y)	Ground	ACC/ON indicator lamp	Output	Ignition switch	OFF	Battery voltage
					ACC or ON	0.5 V
92 (BR/R)	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  JPMIA1554GB 6.0 - 7.0 V

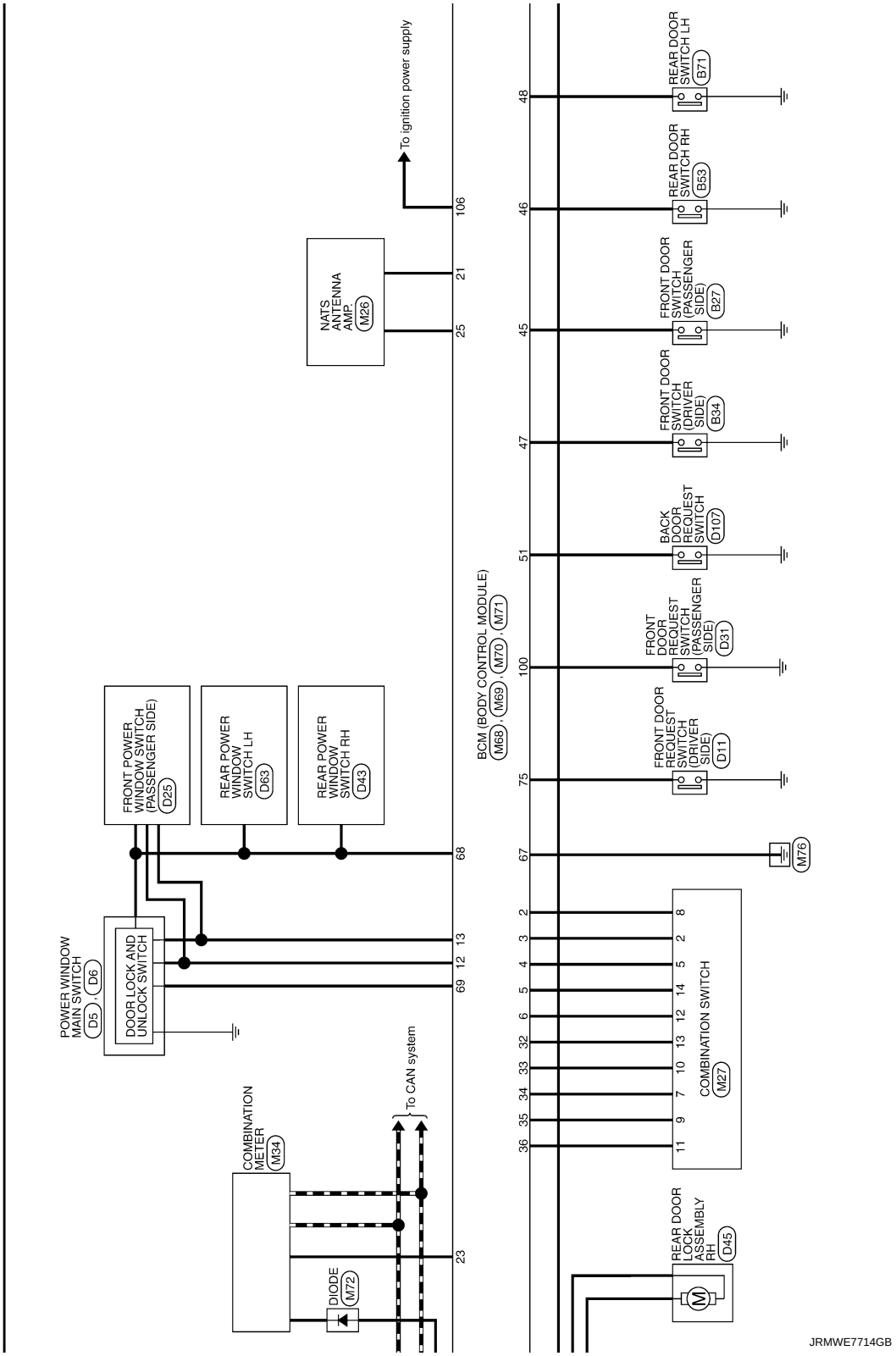
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
93 (GR/W)	Ground	Intelligent Key warning buzzer	Output	Intelligent Key warning buzzer	Sounding	0 V
					Not sounding	12 V
96 (BR/W)	Ground	ACC relay control	Output	Ignition switch	OFF	0 V
					ACC or ON	12 V
97 (L/R)	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
98 (BR)	Ground	Ignition relay (IPDM E/R) control	Output	Ignition switch	OFF or ACC	12 V
					ON	0 V
99 (W/R)	Ground	Ignition relay control	Output	Ignition switch	OFF or ACC	0 V
					ON	12 V
100 (G)	Ground	Passenger door request switch	Input	Passenger door request switch	ON (Pressed)	0 V
					OFF (Not pressed)	12 V
102 (G)	Ground	Selector lever P/N position	Input	Selector lever	P or N position	Battery voltage
					Except P and N positions	0 V
103 (G/Y)	Ground	Front defroster switch	Input	Ignition switch ON	A/C mode defroster ON position	0 V
					Other than A/C mode defroster ON position	 8.0 - 9.0 V
104 (Y/R)	Ground	CVT shift selector (detention switch) power supply	Output	Ignition switch ON		12 V
105 (B/O)	Ground	Stop lamp switch 2	Input	Ignition switch OFF		Battery voltage
106 (Y/B)	Ground	Blower fan motor relay control	Output	Ignition switch	OFF or ACC	0 V
					ON	12 V

WITH INTELLIGENT KEY : Wiring Diagram - BCM -

INFOID:0000000010278002




DATA LINK CONNECTOR
M4
DATA LINE
DATA LINE
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10, E11, E12, E13, E15, E17
STARTER RELAY
CPU
CVT SHIFT SELECTOR (DETENTION SWITCH)
M58
STARTER CONTROL RELAY
IGNITION RELAY
10A
56
To starting system (With Intelligent Key)
TRANSMISSION RANGE SWITCH
F21
P R N D L
40
39
97
104
37
98
102
BCM (BODY CONTROL MODULE)
M68, M69, M70, M71
55
59
66
65
31
8
7
87
86
85
84
BACK DOOR LOCK ASSEMBLY
D106
REAR DOOR LOCK ASSEMBLY LH
D65
FRONT DOOR LOCK ASSEMBLY (PASSENGER SIDE)
D28
DOOR LOCK ACTUATOR
UNLOCK SENSOR
DOOR KEY CYLINDER SWITCH
UNLOCK
FULL STROKE
BETWEEN FULL STROKE AND N
N
LOCK
BETWEEN FULL STROKE AND N
FULL STROKE
FRONT DOOR LOCK ASSEMBLY (DRIVER SIDE)
D9
INSIDE KEY ANTENNA (LUGGAGE ROOM)
B82
INSIDE KEY ANTENNA (INSTRUMENT CENTER)
M105
JRMWE7713GB


POWER WINDOW MAIN SWITCH
D5 , D6
DOOR LOCK AND UNLOCK SWITCH
FRONT POWER WINDOW SWITCH (PASSENGER SIDE)
D25
REAR POWER WINDOW SWITCH LH
D63
REAR POWER WINDOW SWITCH RH
D43
COMBINATION METER
M34
DIODE
M72
To CAN system
NATS ANTENNA AMP.
M26
To ignition power supply
BCM (BODY CONTROL MODULE)
M68 , M69 , M70 , M71
23
68
13
12
69
25
21
106
2
3
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5
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32
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34
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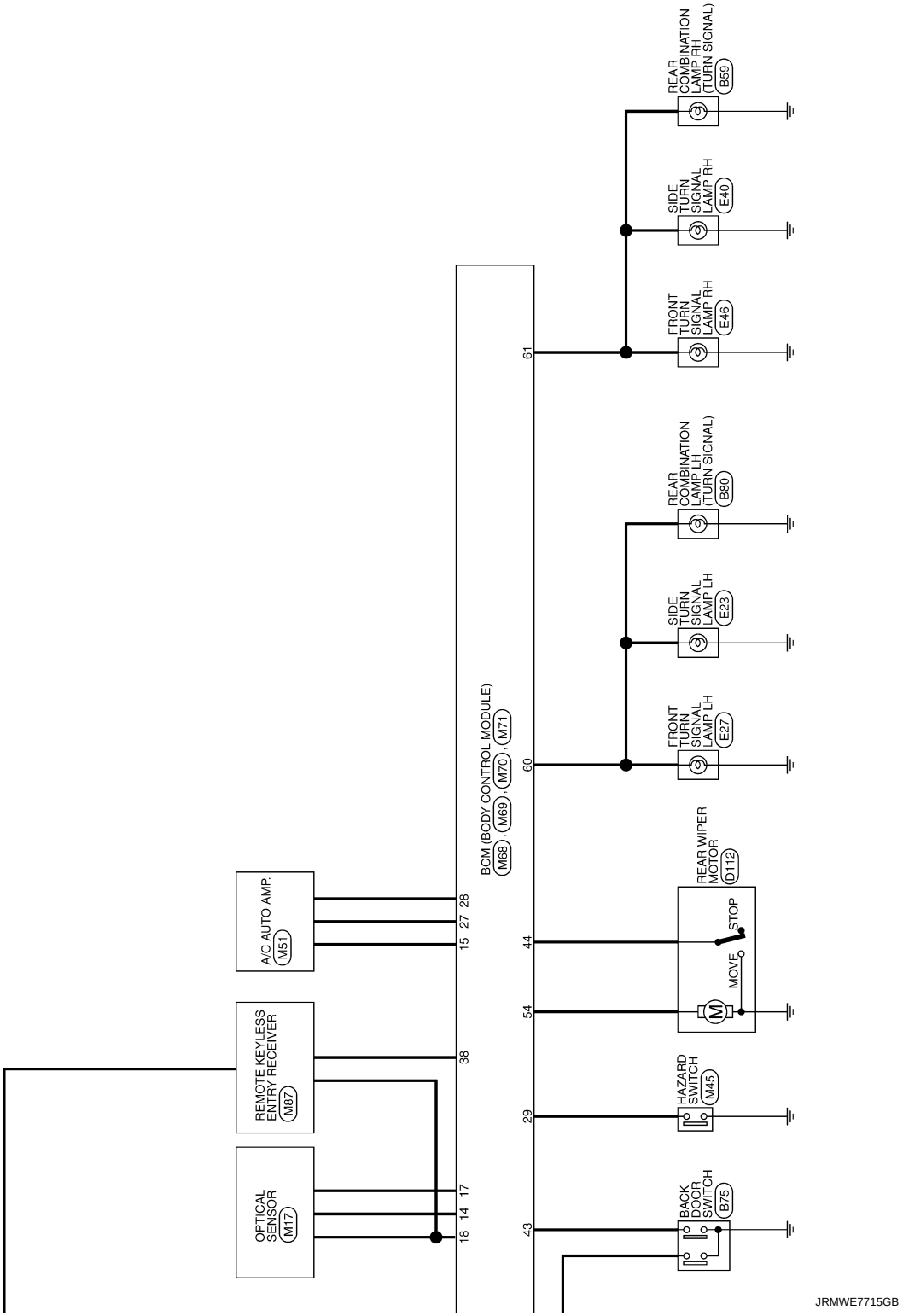
36
75
100
51
47
45
46
48
FRONT DOOR REQUEST SWITCH (DRIVER SIDE)
D11
FRONT DOOR REQUEST SWITCH (PASSENGER SIDE)
D31
BACK DOOR REQUEST SWITCH
D107
FRONT DOOR SWITCH (DRIVER SIDE)
B34
FRONT DOOR SWITCH (PASSENGER SIDE)
B27
REAR DOOR SWITCH RH
B53
REAR DOOR SWITCH LH
B71
M76
COMBINATION SWITCH
M27
11
9
7
10
13
12
14
5
2
8
REAR DOOR LOCK ASSEMBLY RH
D45
JRMWE7714GB


A/C AUTO AMP.
M51
REMOTE KEYLESS ENTRY RECEIVER
M87
OPTICAL SENSOR
M17
BCM (BODY CONTROL MODULE)
M68, M69, M70, M71
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27
15
38
17
14
18
61
60
44
54
29
43
REAR COMBINATION LAMP RH (TURN SIGNAL)
B59
SIDE TURN SIGNAL LAMP RH
E40
FRONT TURN SIGNAL LAMP RH
E46
REAR COMBINATION LAMP LH (TURN SIGNAL)
B80
SIDE TURN SIGNAL LAMP LH
E23
FRONT TURN SIGNAL LAMP LH
E27
REAR WIPER MOTOR
D112
STOP
MOVE
HAZARD SWITCH
M45
BACK DOOR SWITCH
B75
JRMWE7715GB

BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY)

Connector No.	B11
Connector Name	LUGGAGE ROOM LAMP
Connector Type	CJ04FW

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
3	L	-

Connector No.	B27
Connector Name	FRONT DOOR SWITCH (PASSENGER SIDE)
Connector Type	TH04FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
3	SB	-

Connector No.	B34
Connector Name	FRONT DOOR SWITCH (DRIVER SIDE)
Connector Type	TH04FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	-

Connector No.	B53
Connector Name	REAR DOOR SWITCH RH
Connector Type	TH04FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	-

Connector No.	B59
Connector Name	REAR COMBINATION LAMP RH
Connector Type	RS06FB-PR

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

Connector No.	B71
Connector Name	REAR DOOR SWITCH LH
Connector Type	TH04FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
3	W	-

Connector No.	B75
Connector Name	BACK DOOR SWITCH
Connector Type	TH04FW-NH

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

Connector No.	B80
Connector Name	REAR COMBINATION LAMP LH
Connector Type	RS06FB-PR

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
3	B	-
4	P	-
5	R	-
6	GR	-

Connector No.	B82
Connector Name	INSIDE KEY ANTENNA (LUGGAGE ROOM)
Connector Type	RK02FL

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

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BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY)

Connector No.	D5
Connector Name	POWER WINDOW MAIN SWITCH
Connector Type	NS16FW-CS

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	LG	-
3	O	-
5	Y	-
6	V	-
7	LG	-
8	BR	-
9	V	-
10	L	-
11	GR	-
12	SB	-
13	W	-
15	G	-
16	W	-

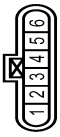
Connector No.	D6
Connector Name	POWER WINDOW MAIN SWITCH
Connector Type	NS03FW-CS

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
17	B	-
18	GR	-
19	P	-

Connector No.	D9
Connector Name	FRONT DOOR LOCK ASSEMBLY (DRIVER SIDE)
Connector Type	E06FGY-RS

H.S.



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

Connector No.	D11
Connector Name	FRONT DOOR REQUEST SWITCH (DRIVER SIDE)
Connector Type	RK02FGY

H.S.

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

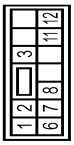
Connector No.	D12
Connector Name	OUTSIDE KEY ANTENNA (DRIVER SIDE)
Connector Type	RK02MGY

H.S.

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

Connector No.	D25
Connector Name	FRONT POWER WINDOW SWITCH (PASSENGER SIDE)
Connector Type	NS12FW-CS

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	-
2	BR	-
3	B	-
6	Y	-
7	R	-
8	L	-
11	SB	-
12	W	-

Connector No.	D28
Connector Name	FRONT DOOR LOCK ASSEMBLY (PASSENGER SIDE)
Connector Type	E06FGY-RS

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
5	V	-
6	Y	-

Connector No.	D31
Connector Name	FRONT DOOR REQUEST SWITCH (PASSENGER SIDE)
Connector Type	RK02FGY

H.S.

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

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BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY)

Connector No.	D32
Connector Name	OUTSIDE KEY ANTENNA (PASSENGER SIDE)
Connector Type	RK02MGY

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

Connector No.	D45
Connector Name	REAR DOOR LOCK ASSEMBLY RH
Connector Type	E06FGY-RS

Terminal No.	Color Of Wire	Signal Name [Specification]
5	W	-
6	P	-

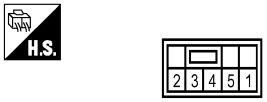
Connector No.	D65
Connector Name	REAR DOOR LOCK ASSEMBLY LH
Connector Type	E06FGY-RS

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

Connector No.	D107
Connector Name	BACK DOOR REQUEST SWITCH
Connector Type	RK02FGY

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

Connector No.	D43
Connector Name	REAR POWER WINDOW SWITCH RH
Connector Type	NS08FW-CS



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

Connector No.	D63
Connector Name	REAR POWER WINDOW SWITCH LH
Connector Type	NS08FW-CS

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

Connector No.	D106
Connector Name	BACK DOOR LOCK ASSEMBLY
Connector Type	FEA04FB-FHA2-LC

Terminal No.	Color Of Wire	Signal Name [Specification]
2	GR	-
3	Y	-

Connector No.	D108
Connector Name	OUTSIDE KEY ANTENNA (BACK DOOR)
Connector Type	RK02MGY

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

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BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY)

Connector No.	D112
Connector Name	REAR WIPER MOTOR
Connector Type	CJ04FW-1V

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
3	BR	-
4	LG	-

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FW-LC

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
3	BR	-
4	P	-
5	LG	-
6	SB	-
7	Y	-
8	V	-

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
9	B/W	-
10	L	-
13	W	-

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS08FBR-CS

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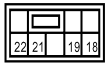
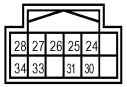


Terminal No.	Color Of Wire	Signal Name [Specification]
18	Y	-
19	B/W	-
21	W	-
22	V	-

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH12FW-NH

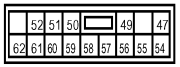
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
24	G	-
25	Y	-
26	P	-
27	L	-
28	P	-
30	SB	-
31	W	-
33	O	-
34	R	-

Connector No.	E15
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS16FW-CS

H.S.

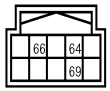


Terminal No.	Color Of Wire	Signal Name [Specification]
47	BR	-
49	W	-
50	GR	-
51	R	-
52	P	-
54	GR	-
55	P	-
56	SB	-
57	G	-
58	LG	- [With M/T]
58	R	- [With CVT]

Terminal No.	Color Of Wire	Signal Name [Specification]
59	Y	-
60	V	-
61	W	-
62	L	-

Connector No.	E17
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH10FB-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
64	R	-
66	L	-
69	O	-

Connector No.	E23
Connector Name	SIDE TURN SIGNAL LAMP LH
Connector Type	STL02FW

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	B/R	-

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BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY)

Connector No.	E25
Connector Name	INTELLIGENT KEY WARNING BUZZER
Connector Type	RK03FBR

H.S.

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

Connector No.	E27
Connector Name	FRONT TURN SIGNAL LAMP LH
Connector Type	RS02FB

H.S.

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

Connector No.	E40
Connector Name	SIDE TURN SIGNAL LAMP RH
Connector Type	STL02FW

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	B/Y	-

Connector No.	E46
Connector Name	FRONT TURN SIGNAL LAMP RH
Connector Type	RS02FB

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	B/Y	-

Connector No.	E115
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC

H.S.

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

Connector No.	F21
Connector Name	TRANSMISSION RANGE SWITCH
Connector Type	RK08FG

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	W	-
3	R	-
4	GR	-
5	SB	-
6	W	-
7	Y	-
8	G	-

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	24311_ED000

H.S.

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

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW

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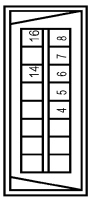

Terminal No.	Color Of Wire	Signal Name [Specification]
4	B	-
5	B	-
6	L	-
7	GR/R	-
8	O	-
14	P	-
16	LG/R	-

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BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY)

Connector No.	M10
Connector Name	IGNITION RELAY
Connector Type	MS02FL-M2-LC

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

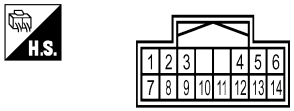
Connector No.	M17
Connector Name	OPTICAL SENSOR
Connector Type	TK03FW

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/G	POWER
2	L/B	OUTPUT
3	V	GROUND

Connector No.	M26
Connector Name	NATS ANTENNA AMP.
Connector Type	TH04FW-NH

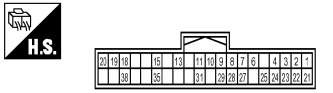
Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	BAT
2	P/L	CLK
3	B	GND [Without Intelligent Key]
3	LG	DATA [With Intelligent Key]
4	B	GND [With Intelligent Key]
4	LG	DATA [Without Intelligent Key]

Connector No.	M27
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	O/B	WASHER (RR)
2	GR	OUTPUT 4
3	R/G	WASHER (FR)
4	W	IGN
5	L/Y	OUTPUT 3
6	B	GROUND
7	W	INPUT 3
8	BR/W	OUTPUT 5
9	R/L	INPUT 2
10	Y/L	INPUT 4
11	L/O	INPUT 1
12	L/R	OUTPUT 1
13	LG	INPUT 5
14	G	OUTPUT 2

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH

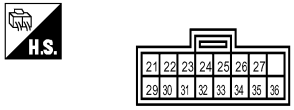


Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-H
2	P	CAN-L
3	V	VEHICLE SPEED SIGNAL (2-PULSE)
4	L	VEHICLE SPEED SIGNAL (8-PULSE) [Without NAVI]
4	V/R	VEHICLE SPEED SIGNAL (8-PULSE) [With NAVI]
6	BR/Y	FUEL LEVEL SENSOR SIGNAL
7	R/G	AIR BAG SIGNAL
8	P	OVERDRIVE CONTROL SWITCH SIGNAL
9	O	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)
10	SB	PARKING BRAKE SWITCH SIGNAL
11	G/R	BRAKE FLUID LEVEL SWITCH SIGNAL
13	B/R	ILLUMINATION CONTROL SIGNAL
15	L/Y	ACC POWER SUPPLY
18	R/Y	SECURITY SIGNAL
19	PU/W	AMBIENT SENSOR SIGNAL
20	R/W	AMBIENT SENSOR GROUND
21	B	GROUND
22	B	GROUND
23	B	GROUND
24	PU	FUEL LEVEL SENSOR GROUND
25	B	VDC GROUND
27	LG/R	BATTERY POWER SUPPLY
28	GR	IGNITION SIGNAL
29	BR	PASSENGER SEAT BELT WARNING SIGNAL
31	R	A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL
35	BR	ENGINE COOLANT TEMPERATURE SIGNAL
38	GR	ALTERNATOR SIGNAL

Connector No.	M45
Connector Name	HAZARD SWITCH
Connector Type	TK04FW

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

Connector No.	M51
Connector Name	A/C AUTO AMP.
Connector Type	TK16FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
21	BR	WATER TEMPERATURE SIGNAL
22	PU/W	AMBIENT SENSOR SIGNAL
23	O	INTAKE SENSOR SIGNAL
24	G	IN-VEHICLE SENSOR SIGNAL
25	P	SUNLOAD SENSOR SIGNAL
26	SB	INTAKE DOOR MOTOR PBR F/B SIGNAL
27	R	REAR WINDOW DEFOGGER F/B SIGNAL
29	GR	MODE DRIVE SIGNAL 4
30	W	MODE DRIVE SIGNAL 3
31	Y	MODE DRIVE SIGNAL 2
32	V	MODE DRIVE SIGNAL 1
33	W/L	REAR WINDOW DEFOGGER ON SIGNAL
34	Y/G	A/C ON SIGNAL
35	G/W	BLOWER FAN ON SIGNAL
36	GR/R	POWER TRANSISTOR CONTROL SIGNAL

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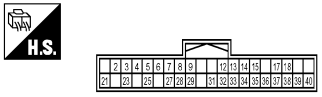
BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY)

Connector No.	M58
Connector Name	CVT SHIFT SELECTOR
Connector Type	TH08FW-NH

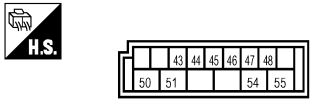
Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	B	-
3	W	-
4	B/R	-
5	LG	-
6	B	-
7	Y/R	-
8	G/Y	-

Connector No.	M68
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



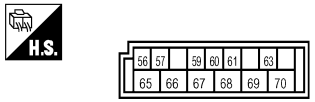
Terminal No.	Color Of Wire	Signal Name [Specification]
2	BR/W	COMBI SW INPUT 5
3	GR	COMBI SW INPUT 4
4	L/Y	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	L/R	COMBI SW INPUT 1
7	W/R	KEY CYL UNLOCK SW
8	W/B	KEY CYL LOCK SW
9	R	STOP LAMP SW 1
12	GR	CENTRAL DOOR LOCK SW
13	BR	CENTRAL DOOR UNLOCK SW
14	L/G	OPTICAL SENSOR
15	W/L	REAR WINDOW DEFOGGER SW
17	R/G	OPTICAL SENSOR POWER SUPPLY
18	V	SENSOR GND
21	P/L	NATS ANTENNA AMP.
23	R/Y	SECURITY INDICATOR LAMP
25	LG	NATS ANTENNA AMP.
27	O	A/C SW
28	G/W	BLOWER FAN SW
29	L/W	HAZARD SW
31	G/B	DR DOOR UNLOCK SENSOR
32	LG	COMBI SW OUTPUT 5
33	Y/L	COMBI SW OUTPUT 4
34	W	COMBI SW OUTPUT 3
35	R/L	COMBI SW OUTPUT 2
36	L/O	COMBI SW OUTPUT 1
37	G/O	SHIFT P
38	G/Y	RECEIVER COMM
39	L	CAN-H
40	P	CAN-L

Connector No.	M69
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FB-FHA6-SA



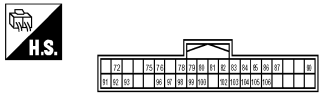
Terminal No.	Color Of Wire	Signal Name [Specification]
43	W	BACK DOOR SW
44	LG	REAR WIPER STOP POSITION
45	SB	PASSENGER DOOR SW
46	GR/L	REAR RH DOOR SW
47	BR/Y	DRIVER DOOR SW
48	W/G	REAR LH DOOR SW
50	R/W	BK DR LOCK ACT RELAY CONT
51	W	BACK DOOR REQUEST SW
54	LG	REAR WIPER OUTPUT
55	G	REAR DOOR UNLOCK OUTPUT

Connector No.	M70
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FW-FHA6-SA



Terminal No.	Color Of Wire	Signal Name [Specification]
56	L	INTERIOR ROOM LAMP POWER SUPPLY
57	Y	BAT (FUSE)
59	G	PASSENGER DOOR UNLOCK OUTPUT
60	W/B	TURN SIGNAL LH OUTPUT
61	W/L	TURN SIGNAL RH OUTPUT
63	BR	ROOM LAMP TIMER CONTROL
65	V	ALL DOOR LOCK OUTPUT
66	L/B	DRIVER DOOR UNLOCK OUTPUT
67	B	GROUND
68	L	POWER WINDOW POWER SUPPLY (IGN)
69	P	POWER WINDOW POWER SUPPLY (BAT)
70	Y	BAT (F/L)

Connector No.	M71
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FW-NH

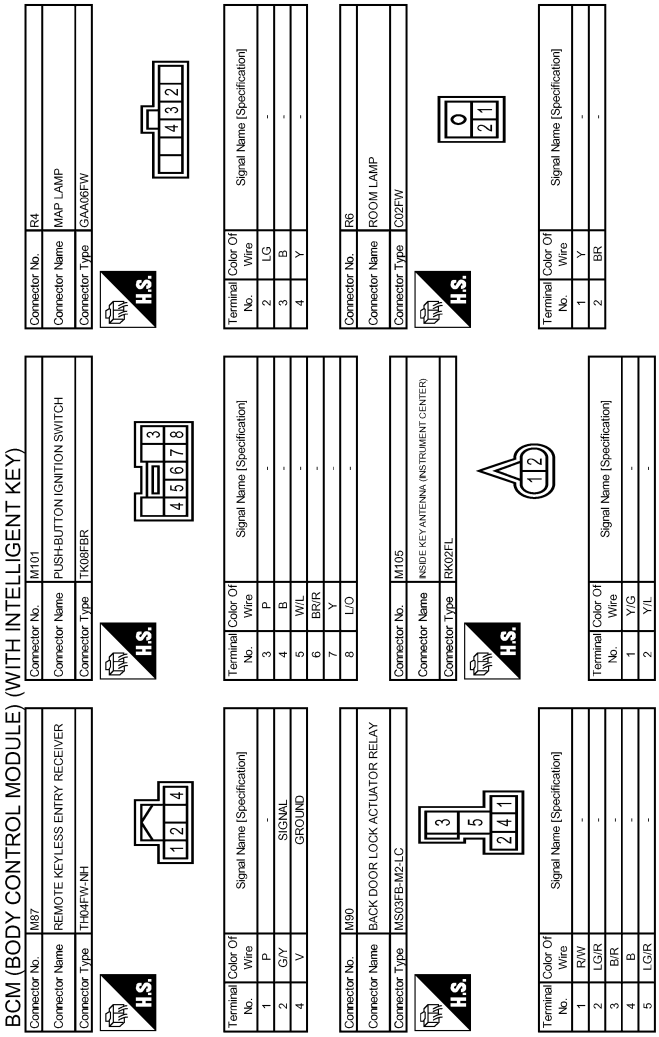


Terminal No.	Color Of Wire	Signal Name [Specification]
72	SB	A/C INDICATOR OUTPUT
75	SB	DRIVER DOOR REQUEST SW
76	L/O	PUSH SW
78	LG	DRIVER DOOR ANT+
79	V	DRIVER DOOR ANT-
80	BR/Y	PASSENGER DOOR ANT+
81	L/Y	PASSENGER DOOR ANT-
82	W/B	BACK DOOR ANT+
83	B/W	BACK DOOR ANT-
84	Y/G	ROOM ANT+
85	Y/L	ROOM ANT-
86	P	LUGGAGE ROOM ANT+
87	L	LUGGAGE ROOM ANT-
90	W/L	PUSH-BUTTON IGNITION SW ILL POWER
91	Y	ACC/ON IND
92	BR/R	PUSH-BUTTON IGNITION SW ILL GND
93	GR/W	I-KEY WARN BUZZER
96	BR/W	ACC RELAY CONT
97	L/R	STARTER RELAY CONT
98	BR	IGN RELAY (IPDM E/R) CONT
99	W/R	IGN RELAY CONT
100	G	PASSENGER DOOR REQUEST SW
102	G	SHIFT N/P
103	G/Y	FR DEFROSTER SW
104	Y/R	CVT SHIFT SELECTOR POWER SUPPLY
105	B/O	STOP LAMP SW 2
106	Y/B	BLOWER FAN MOTOR RELAY CONT

Connector No.	M72
Connector Name	DIODE
Connector Type	24335_C9900

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B/R	-
2	BR/R	-

JRMWE7824GB



JRMWE7825GB

WITH INTELLIGENT KEY : Fail-safe

INFOID:0000000010278003

FAIL-SAFE CONTROL BY DTC

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

Display contents of CONSULT	Fail-safe	Cancellation
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
B2198: NATS ANTENNA AMP	Inhibit engine cranking	Erase DTC
B2608: STARTER RELAY	Inhibit engine cranking	500 ms after the following signal communication status becomes consistent • Starter relay control signal • Starter relay status signal (CAN)
B260F: ENG STATE SIG LOST	Inhibit engine cranking	When any of the following conditions are fulfilled • Power position changes to ACC • Receives engine status signal (CAN)
B26F1: IGN RELAY OFF	Inhibit engine cranking	When the following conditions are fulfilled • Ignition switch ON signal (CAN: Transmitted from BCM): ON • Ignition switch ON signal (CAN: Transmitted from IPDM E/R): ON
B26F2: IGN RELAY ON	Inhibit engine cranking	When the following conditions are fulfilled • Ignition switch ON signal (CAN: Transmitted from BCM): OFF • Ignition switch ON signal (CAN: Transmitted from IPDM E/R): OFF
B26F3: START CONT RLY ON	Inhibit engine cranking	When the following conditions are fulfilled • Starter control relay signal (CAN: Transmitted from BCM): OFF • Starter control relay signal (CAN: Transmitted from IPDM E/R): OFF
B26F4: START CONT RLY OFF	Inhibit engine cranking	When the following conditions are fulfilled • Starter control relay signal (CAN: Transmitted from BCM): ON • Starter control relay signal (CAN: Transmitted from IPDM E/R): ON
B26F7: BCM	Inhibit engine cranking by Intelligent Key system	When room antenna and luggage room antenna functions normally

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 stop.
2. Turn rear wiper switch OFF.
3. Operate the rear wiper switch or rear washer switch.

FAIL-SAFE CONTROL OF COMBINATION SWITCH READING FUNCTION CAUSED BY LOW POWER SUPPLY VOLTAGE

If voltage of battery power supply lower, BCM maintains combination switch reading to the status when input voltage is less than approximately 9 V.
NOTE:
When voltage of battery power supply is approximately 9 V or more, combination switch reading function returns to normal operation.

WITH INTELLIGENT KEY : DTC Inspection Priority Chart

INFOID:0000000010278004

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

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

Priority	DTC
3	• B2192: ID DISCORD BCM-ECM • B2193: CHAIN OF BCM-ECM • B2195: ANTI-SCANNING • B2198: NATS ANTENNA AMP
4	• B2555: STOP LAMP • B2556: PUSH-BTN IGN SW • B2557: VEHICLE SPEED • B2601: SHIFT POSITION • B2602: SHIFT POSITION • B2603: SHIFT POSI STATUS • B2604: PNP/CLUTCH SW • B2605: PNP/CLUTCH SW • B2608: STARTER RELAY • B260F: ENG STATE SIG LOST • B2614: BCM • B2615: BCM • B2616: BCM • B2618: BCM • B261A: PUSH-BTN IGN SW • B26F1: IGN RELAY OFF • B26F2: IGN RELAY ON • B26F3: START CONT RLY ON • B26F4: START CONT RLY OFF • B26F6: BCM • B26F7: BCM • B26F8: BCM • B26FC: KEY REGISTRATION • C1729: VHCL SPEED SIG ERR • U0415: VEHICLE SPEED
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 • C1716: [PRESSDATA ERR] FL • C1717: [PRESSDATA ERR] FR • C1718: [PRESSDATA ERR] RR • C1719: [PRESSDATA ERR] RL
6	• B2621: INSIDE ANTENNA • B2622: INSIDE ANTENNA
7	• B2626: OUTSIDE ANTENNA • B2627: OUTSIDE ANTENNA • B2628: OUTSIDE ANTENNA

WITH INTELLIGENT KEY : DTC Index

INFOID:0000000010278005

NOTE:
The details of time display are as follows.
- CRNT: A malfunction is detected now.
- PAST: A malfunction was detected in the past.

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

CONSULT display	Fail-safe	Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle Condi-tion	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
No DTC is detected. further testing may be required.	—	—	—	—	—
U1000: CAN COMM	—	—	—	—	BCS-40
U1010: CONTROL UNIT (CAN)	—	—	—	—	BCS-41
U0415: VEHICLE SPEED	—	—	×	—	BCS-42
B2192: ID DISCORD BCM-ECM	×	—	—	—	SEC-38
B2193: CHAIN OF BCM-ECM	×	—	—	—	SEC-40
B2195: ANTI-SCANNING	×	—	—	—	SEC-41
B2198: NATS ANTENNA AMP	×	—	—	—	SEC-42
B2555: STOP LAMP	—	×	×	—	SEC-46
B2556: PUSH-BTN IGN SW	—	×	×	—	SEC-48
B2557: VEHICLE SPEED	—	×	×	—	SEC-50
B2562: LOW VOLTAGE	—	×	—	—	BCS-43
B2601: SHIFT POSITION	—	×	×	—	SEC-51
B2602: SHIFT POSITION	—	×	×	—	SEC-54
B2603: SHIFT POSI STATUS	—	×	×	—	SEC-57
B2604: PNP/CLUTCH SW	—	×	×	—	SEC-62
B2605: PNP/CLUTCH SW	—	×	×	—	SEC-65
B2608: STARTER RELAY	×	×	×	—	SEC-67
B260F: ENG STATE SIG LOST	×	×	×	—	SEC-69
B2614: BCM	—	×	×	—	PCS-77
B2615: BCM	—	×	×	—	PCS-80
B2616: BCM	—	×	×	—	PCS-83
B2618: BCM	—	×	×	—	PCS-86
B261A: PUSH-BTN IGN SW	—	×	×	—	PCS-87
B2621: INSIDE ANTENNA	—	×	—	—	DLK-44
B2622: INSIDE ANTENNA	—	×	—	—	DLK-46
B2626: OUTSIDE ANTENNA	—	×	—	—	DLK-50
B2627: OUTSIDE ANTENNA	—	×	—	—	DLK-48
B2628: OUTSIDE ANTENNA	—	×	—	—	DLK-52
B26F1: IGN RELAY OFF	×	×	×	—	PCS-89
B26F2: IGN RELAY ON	×	×	×	—	PCS-91
B26F3: START CONT RLY ON	×	×	×	—	SEC-70
B26F4: START CONT RLY OFF	×	×	×	—	SEC-71
B26F6: BCM	—	×	×	—	PCS-93
B26F7: BCM	×	×	×	—	SEC-73
B26F8: BCM	—	×	×	—	SEC-74
B26FC: KEY REGISTRATION	—	×	×	—	SEC-75

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
C1704: LOW PRESSURE FL	—	—	—	×	WT-26
C1705: LOW PRESSURE FR	—	—	—	×	
C1706: LOW PRESSURE RR	—	—	—	×	
C1707: LOW PRESSURE RL	—	—	—	×	
C1708: [NO DATA] FL	—	—	—	×	WT-28
C1709: [NO DATA] FR	—	—	—	×	
C1710: [NO DATA] RR	—	—	—	×	
C1711: [NO DATA] RL	—	—	—	×	
C1716: [PRESSDATA ERR] FL	—	—	—	×	WT-31
C1717: [PRESSDATA ERR] FR	—	—	—	×	
C1718: [PRESSDATA ERR] RR	—	—	—	×	
C1719: [PRESSDATA ERR] RL	—	—	—	×	
C1729: VHCL SPEED SIG ERR	—	—	—	×	WT-33

WITHOUT INTELLIGENT KEY

WITHOUT INTELLIGENT KEY : Reference Value

INFOID:0000000010278006

VALUES ON THE DIAGNOSIS TOOL

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

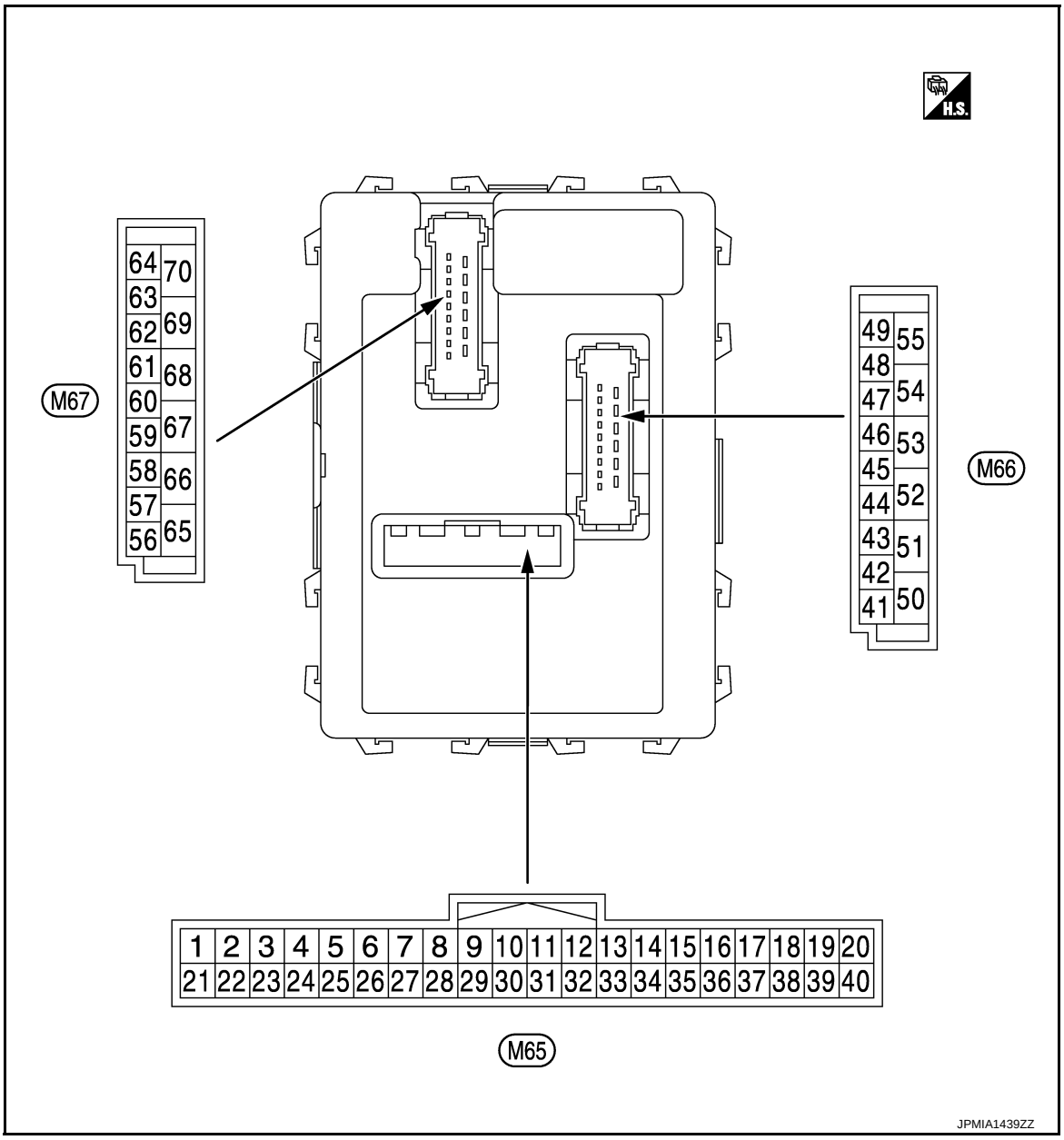
Monitor Item	Condition	Value/Status
IGN ON SW	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
KEY ON SW	Mechanical key is removed from key cylinder	Off
	Mechanical key is inserted to key cylinder	On
CDL LOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the lock side	On
CDL UNLOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the unlock side	On
DOOR SW-DR	Driver's door closed	Off
	Driver's 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
BACK DOOR SW	Back door closed	Off
	Back door opened	On
LOCK STATUS	**NOTE:** The item is indicated, but not monitored.	Off

Monitor Item	Condition	Value/Status
ACC ON SW	Ignition switch OFF	Off
	Ignition switch ACC or ON	On
KEYLESS LOCK	“LOCK” button of key fob is not pressed	Off
	“LOCK” button of key fob is pressed	On
KEYLESS UNLOCK	“UNLOCK” button of key fob is not pressed	Off
	“UNLOCK” button of key fob is pressed	On
SHOCK SENSOR	**NOTE:** The item is indicated, but not monitored.	NORMAL
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
VEHICLE SPEED	While driving	Equivalent to speed-ometer reading
REAR DEF SW	Rear window defogger switch OFF	Off
	Rear window defogger switch ON	On
REVERSE SW CAN	**NOTE:** The item is indicated, but not used.	Off
		On
TAIL LAMP SW	Lighting switch OFF	Off
	Lighting switch 1ST	On
FR FOG SW	**NOTE:** The item is indicated, but not monitored.	Off
BUCKLE SW	The seat belt (driver side) is fastened. [Seat belt switch (driver side) OFF]	Off
	The seat belt (driver side) is unfastened. [Seat belt switch (driver side) ON]	On
TRNK/HAT MNTR	**NOTE:** The item is indicated, but not monitored.	Off
KYLS TRNK/HAT	**NOTE:** The item is indicated, but not monitored.	Off
KEYLESS PANIC	PANIC button of key fob is not pressed	Off
	PANIC button of key fob is pressed	On
HI BEAM SW	Lighting switch OFF	Off
	Lighting switch HI	On
HEAD LAMP SW 1	Lighting switch OFF	Off
	Lighting switch 2ND	On
HEAD LAMP SW 2	Lighting switch OFF	Off
	Lighting switch 2ND	On
AUTO LIGHT SW	**NOTE:** The item is indicated, but not monitored.	Off
PASSING SW	Other than lighting switch PASS	Off
	Lighting switch PASS	On
RR FOG SW	**NOTE:** The item is indicated, but not monitored.	Off
TURN SIGNAL R	Turn signal switch OFF	Off
	Turn signal switch RH	On
TURN SIGNAL L	Turn signal switch OFF	Off
	Turn signal switch LH	On

Monitor Item	Condition	Value/Status
PKB SW	Parking brake switch is OFF	Off
	Parking brake switch is ON	On
ENGINE RUN	Engine stopped	Off
	Engine running	On
OPTI SEN (DTCT)	**NOTE:** The item is indicated, but not monitored.	Close to 5 V
OPTI SEN (FILT)	**NOTE:** The item is indicated, but not monitored.	Close to 5 V
LIG SEN COND	**NOTE:** The item is indicated, but not monitored.	OFF
IGN SW CAN	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
FR WIPER HI	Front wiper switch OFF	Off
	Front wiper switch HI	On
FR WIPER LOW	Front wiper switch OFF	Off
	Front wiper switch LO	On
FR WIPER INT	Front wiper switch OFF	Off
	Front wiper switch INT	On
FR WASHER SW	Front washer switch OFF	Off
	Front washer switch ON	On
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7
FR WIPER STOP	Any position other than front wiper stop position	Off
	Front wiper stop position	On
RR WIPER ON	Rear wiper switch OFF	Off
	Rear wiper switch ON	On
RR WIPER INT	Rear wiper switch OFF	Off
	Rear wiper switch INT	On
RR WASHER SW	Rear washer switch OFF	Off
	Rear washer switch ON	On
RR WIPER STOP	Rear wiper stop position	Off
	Other than rear wiper stop position	On
RAIN SENSOR	**NOTE:** The item is indicated, but not monitored.	Off
HAZARD SW	Hazard switch OFF	Off
	Hazard switch ON	On
FAN ON SIG	Blower control dial OFF	Off
	Other than blower control dial OFF	On
AIR COND SW	A/C switch OFF	Off
	A/C switch ON	On
THERMO AMP	Ignition switch ON	Off
	Evaporator is extremely low temperature	On
FR DEF SW	Other than A/C mode defroster ON position	Off
	A/C mode defroster ON position	On
KEYLESS TRUNK	**NOTE:** The item is indicated, but not monitored.	Off

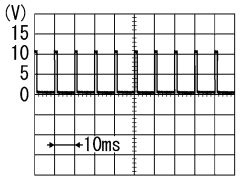
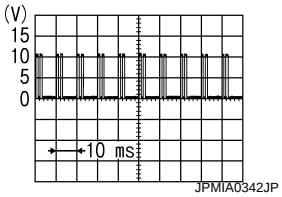
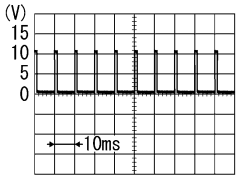
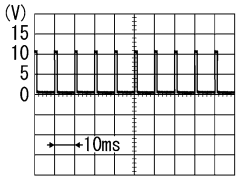
Monitor Item	Condition	Value/Status
TRNK OPNR SW	**NOTE:** The item is indicated, but not monitored.	Off
TRNK OPN MNTR	**NOTE:** The item is indicated, but not monitored.	Off
HOOD SW	Close the hood	Off
	Open the hood	On
TRANSPONDER	Other than the ignition switch is ON by key registered to BCM.	Off
	The ignition switch is ON by key registered to BCM.	On
INTELLI KEY	**NOTE:** The item is indicated, but not used.	Off
AUTO RELOCK	**NOTE:** The item is indicated, but not monitored.	Off
OIL PRESS SW	• Ignition switch OFF or ACC • Engine running	Off
	Ignition switch ON	On
BRAKE SW	Brake pedal is not depressed	Off
	Brake pedal is depressed	On

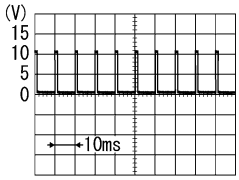
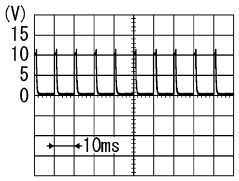
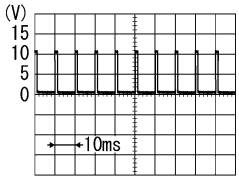
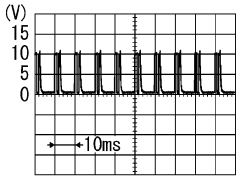
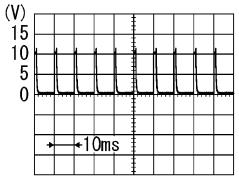
TERMINAL LAYOUT

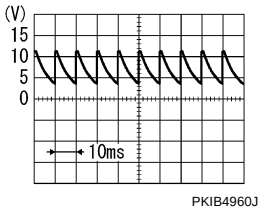
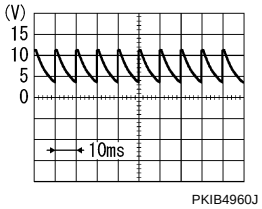
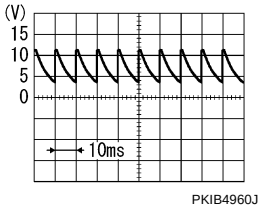


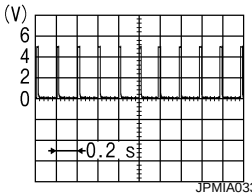
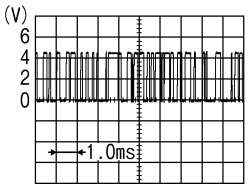
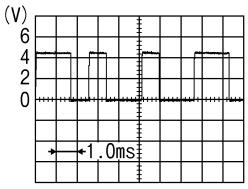
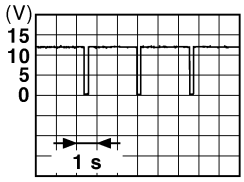
NOTE:
- M65, M66: White
- M67: Black

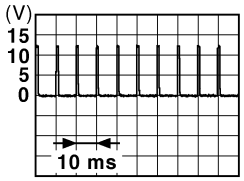
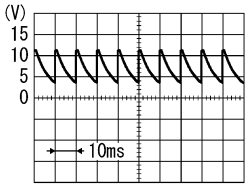
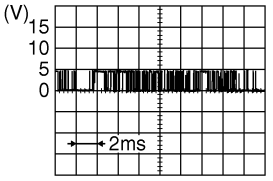
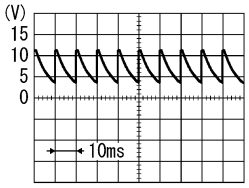
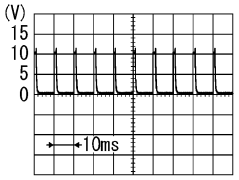
PHYSICAL VALUES

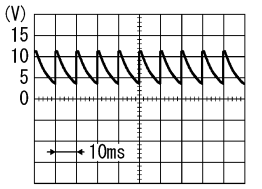
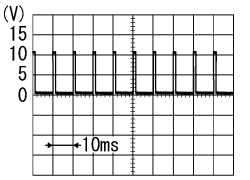
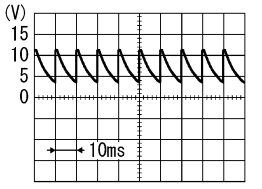
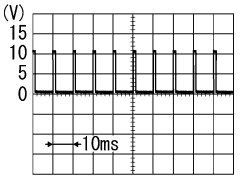
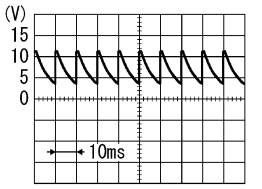
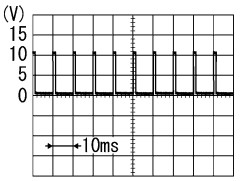
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
2 (BR/W)	Ground	Combination switch INPUT 5	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Turn signal switch RH	 PKIB4958J 1.0 V
					Lighting switch HI	
					Lighting switch 1ST	
					Lighting switch 2ND	 JPMIA0342JP 2.0 V
3 (GR)	Ground	Combination switch INPUT 4	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Turn signal switch LH	 PKIB4958J 1.0 V
					Lighting switch PASS	
					Lighting switch 2ND	
4 (L/Y)	Ground	Combination switch INPUT 3	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Front wiper switch LO	 PKIB4958J 1.0 V
					Front wiper switch MIST	
					Front wiper switch INT	

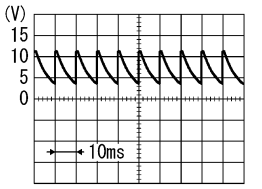
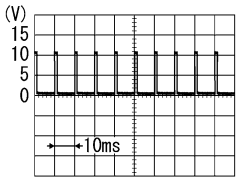
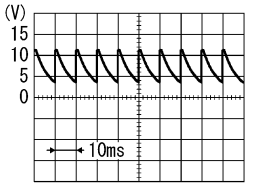
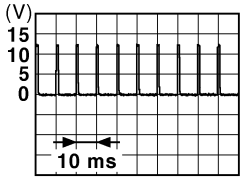
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
5 (G)	Ground	Combination switch INPUT 2	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front washer switch (Wiper intermittent dial 4) Rear washer switch ON (Wiper intermittent dial 4) Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	 PKIB4958J 1.0 V
					Rear wiper switch ON (Wiper intermittent dial 4)	 PKIB4956J 0.8 V
6 (L/R)	Ground	Combination switch INPUT 1	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front wiper switch HI (Wiper intermittent dial 4) Rear wiper switch INT (Wiper intermittent dial 4) Wiper intermittent dial 3 (All switch OFF)	 PKIB4958J 1.0 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2	 PKIB4952J 1.9 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 6 • Wiper intermittent dial 7	 PKIB4956J 0.8 V

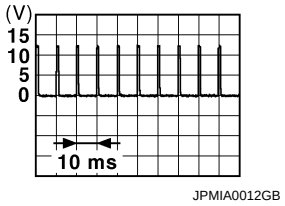
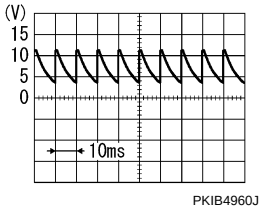
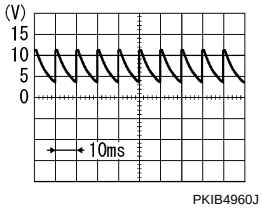
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
7 (W/R)	Ground	Door key cylinder switch UNLOCK	Input	Door key cylinder switch	NEUTRAL position	 7.0 - 8.0 V
					UNLOCK position	0 V
8 (W/B)	Ground	Door key cylinder switch LOCK	Input	Door key cylinder switch	NEUTRAL position	12 V
					LOCK position	0 V
9 (R)	Ground	Stop lamp switch	Input	Stop lamp switch	OFF (Brake pedal is not depressed)	0 V
					ON (Brake pedal is depressed)	Battery voltage
10 (W/L)	Ground	Rear window defogger switch	Input	Rear window defogger switch	OFF (Not pressed)	12 V
					ON (Pressed)	0 V
11 (L/Y)	Ground	Ignition switch ACC	Input	Ignition switch OFF		0 V
				Ignition switch ACC or ON		Battery voltage
12 (SB)	Ground	Passenger door switch	Input	Passenger door switch	OFF (When passenger door closed)	 7.0 - 8.0 V
					ON (When passenger door opened)	0 V
13 (GR/L)	Ground	Rear RH door switch	Input	Rear RH door switch	OFF (When rear RH door closed)	 7.0 - 8.0 V
					ON (When rear RH door opened)	0 V
18 (V)	Ground	Receiver ground	Input	Ignition switch ON		0 V

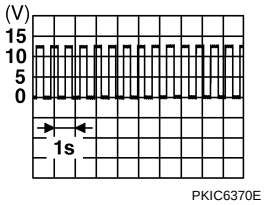
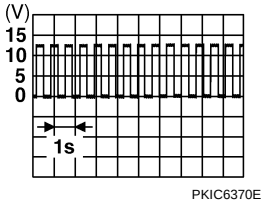
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
19 (BR)	Ground	Remote keyless entry receiver power supply	Input	Ignition switch OFF	Insert mechanical key into ignition key cylinder	0 V
					Remove mechanical key from ignition key cylinder (Any door opened)	5 V
					Remove mechanical key from ignition key cylinder (Any door closed)	 JPMIA0338JP
20 (G/Y)	Ground	Remote keyless entry receiver communication	Input	Ignition switch OFF	Insert mechanical key into ignition key cylinder	0 V
					Waiting	 PIIB7728J
					Signal receiving	 PIIB7729J
21 (P/L)	Ground	NATS antenna amp.	Input/ Output	Just after inserting ignition key in key cylinder		Pointer of tester should move
				Other than above		0 V
23 (R/Y)	Ground	Security indicator	Input	Security indicator	ON	0 V
					Blinking (Ignition switch OFF)	 JPMIA0014GB 11.3 V
					OFF	12 V
25 (LG)	Ground	NATS antenna amp.	Input/ Output	Just after inserting ignition key in key cylinder		Pointer of tester should move
				Other than above		0 V
26 (GR)	Ground	Thermo control amp.	Input	Ignition switch ON		0 V
				Evaporator is extremely low temperature		12 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
27 (Y/G)	Ground	A/C switch	Input	A/C switch	OFF	 JPMIA0012GB 1.0 - 1.5 V
					ON	0 V
28 (G/W)	Ground	Blower fan switch	Input	Fan switch	Blower fan switch OFF	 PKIB4960J 7.0 - 8.0 V
					Blower fan switch ON	0 V
29 (L/W)	Ground	Hazard switch	Input	Hazard switch	OFF	Battery voltage
					ON	0 V
31 (G/Y)	Ground	Front defroster switch	Input	Ignition switch ON	A/C mode defroster ON position	0 V
					Other than A/C mode defroster ON position	 JPMIA0589GB 8.0 - 9.0 V
32 (LG)	Ground	Combination switch OUTPUT 5	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 PKIB4960J 7.0 - 8.0 V
					Rear wiper switch ON (Wiper intermittent dial 4)	 PKIB4956J 1.0 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 6 • Wiper intermittent dial 7	

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
33 (Y/L)	Ground	Combination switch OUTPUT 4	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 PKIB4960J 7.0 - 8.0 V
					Lighting switch 1ST (Wiper intermittent dial 4) Rear wiper switch INT (Wiper intermittent dial 4) Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	 PKIB4958J 1.2 V
34 (W)	Ground	Combination switch OUTPUT 3	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 PKIB4960J 7.0 - 8.0 V
					Lighting switch 2ND (Wiper intermittent dial 4) Lighting switch HI (Wiper intermittent dial 4) Rear washer switch ON (Wiper intermittent dial 4) Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3	 PKIB4958J 1.2 V
35 (R/L)	Ground	Combination switch OUTPUT 2	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	 PKIB4960J 7.0 - 8.0 V
					Lighting switch 2ND Lighting switch PASS Front wiper switch INT Front wiper switch HI	 PKIB4958J 1.2 V

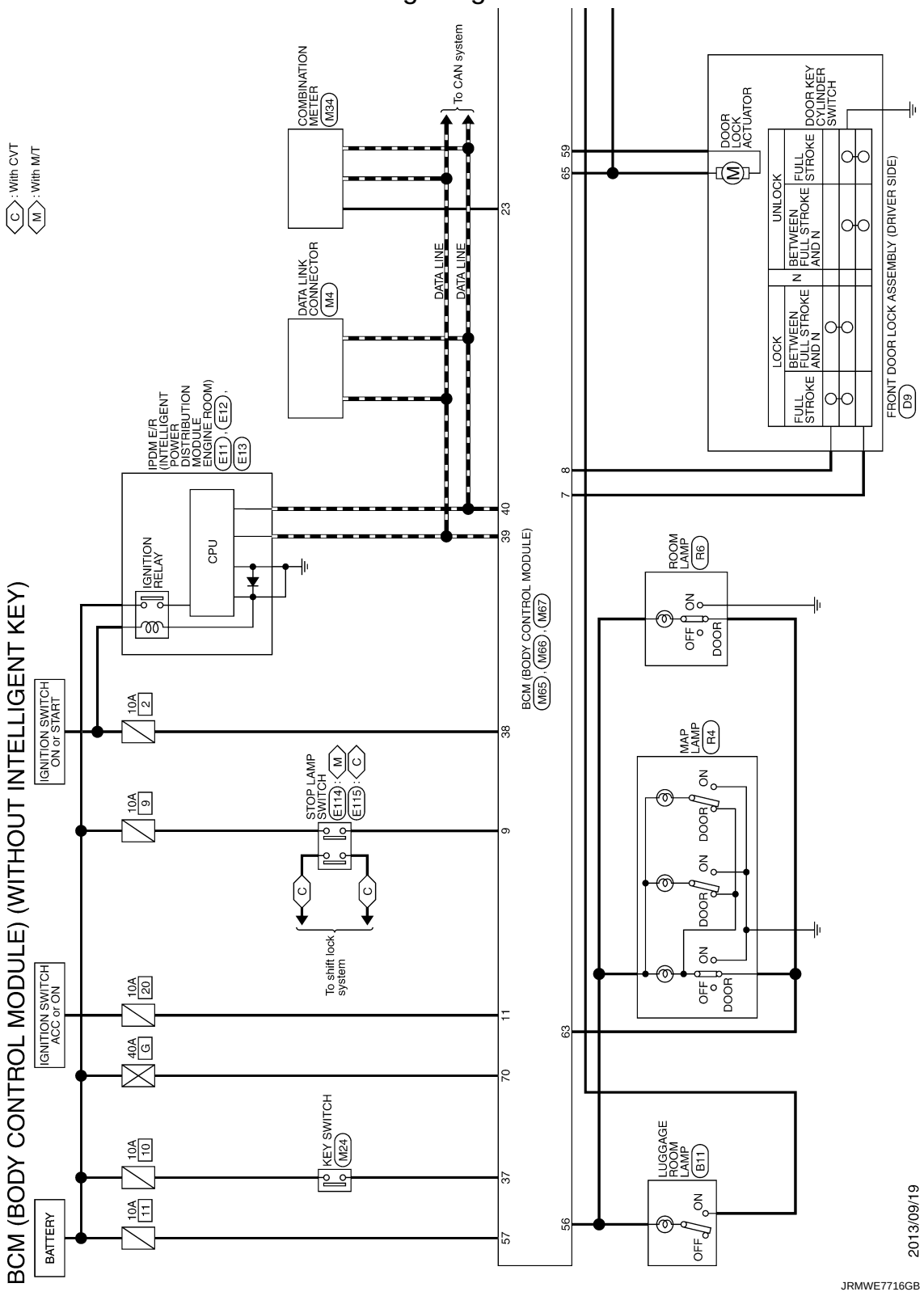
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
36 (L/O)	Ground	Combination switch OUTPUT 1	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	 PKIB4960J 7.0 - 8.0 V
					Turn signal switch RH	 PKIB4958J 1.2 V
					Turn signal switch LH	
					Front wiper switch LO (Front wiper switch MIST)	
					Front washer switch ON	
37 (R/W)	Ground	Key switch	Input	Insert mechanical key into ignition key cylinder		Battery voltage
				Remove mechanical key from ignition key cylinder		0 V
38 (O)	Ground	Ignition switch ON	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
39 (L)	Ground	CAN-H	Input/ Output	—		—
40 (P)	Ground	CAN-L	Input/ Output	—		—
43 (W)	Ground	Back door switch	Input	Back door switch	OFF (When back door closed)	 PKIB4960J 7.0 - 8.0 V
					ON (When back door opened)	0 V
44 (LG)	Ground	Rear wiper stop position	Input	Ignition switch ON	Rear wiper stop position	12 V
					Any position other than rear wiper stop position	0 V
45 (GR)	Ground	Door lock and unlock switch LOCK	Input	Door lock and unlock switch	NEUTRAL position	 JPMIA0012GB 1.0 - 1.5 V
					LOCK position	0 V

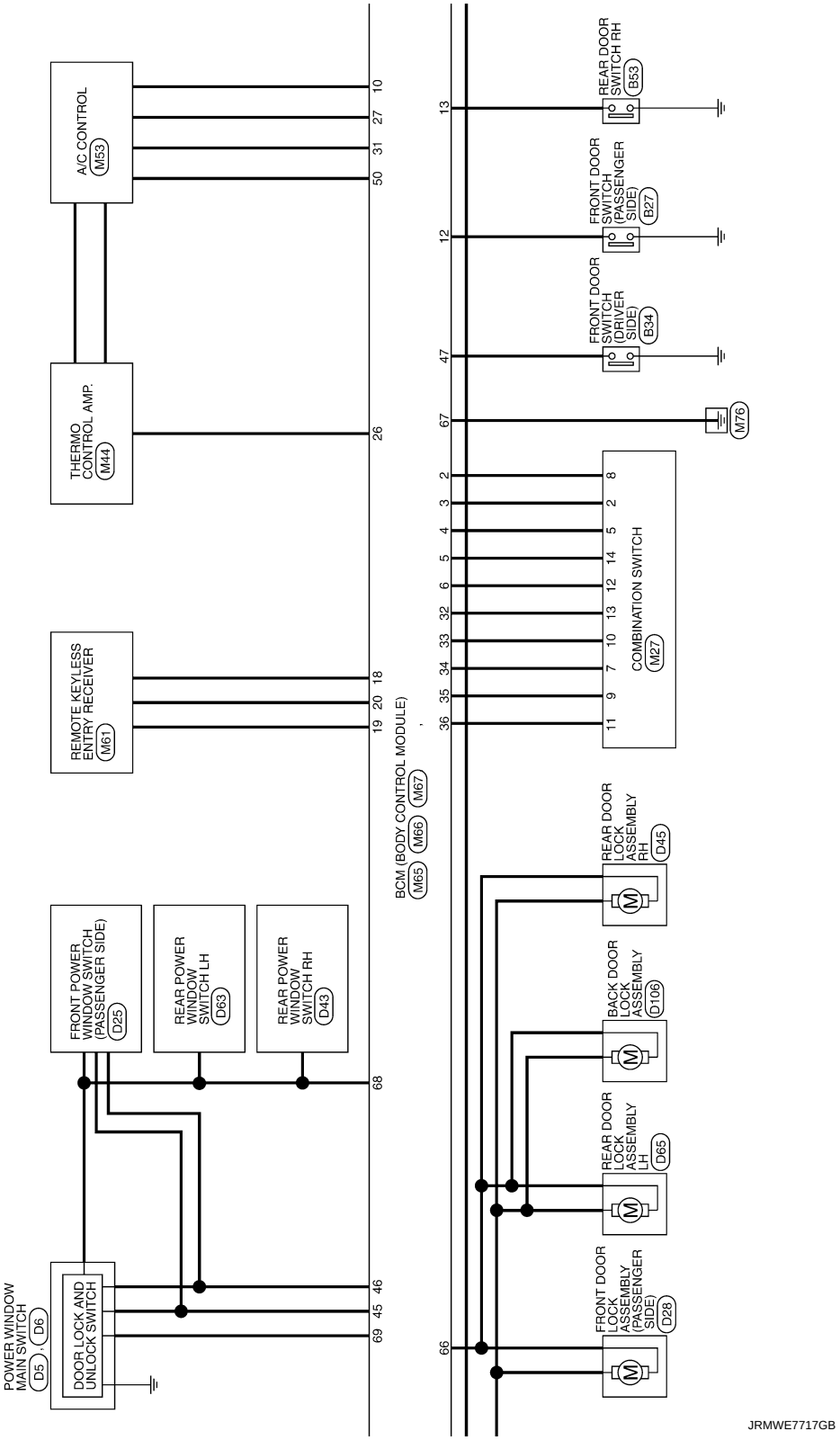
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
46 (BR)	Ground	Door lock and unlock switch UNLOCK	Input	Door lock and unlock switch	NEUTRAL position	 1.0 - 1.5 V
					UNLOCK position	0 V
47 (BR/Y)	Ground	Driver door switch	Input	Driver door switch	OFF (When driver door closed)	 7.0 - 8.0 V
					ON (When driver door opened)	0 V
48 (W/G)	Ground	Rear LH door switch	Input	Rear LH door switch	OFF (When rear LH door closed)	 7.0 - 8.0 V
					ON (When rear LH door opened)	0 V
50 (SB)	Ground	A/C indicator	Output	A/C indicator	OFF	12 V
					ON	0 V
54 (LG)	Ground	Rear wiper	Output	Ignition switch ON	Rear wiper switch OFF	0 V
					Rear wiper switch ON	12 V
56 (L)	Ground	Interior room lamp power supply	Output	Interior room lamp battery saver is activated. (Cuts the interior room lamp power supply)		0 V
				Interior room lamp battery saver is not activated. (Outputs the interior room lamp power supply)		12 V
57 (Y)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
59 (L/B)	Ground	Driver door UNLOCK	Output	Driver door	UNLOCK (Actuator is activated)	12 V
					Other than UNLOCK (Actuator is not activated)	0 V

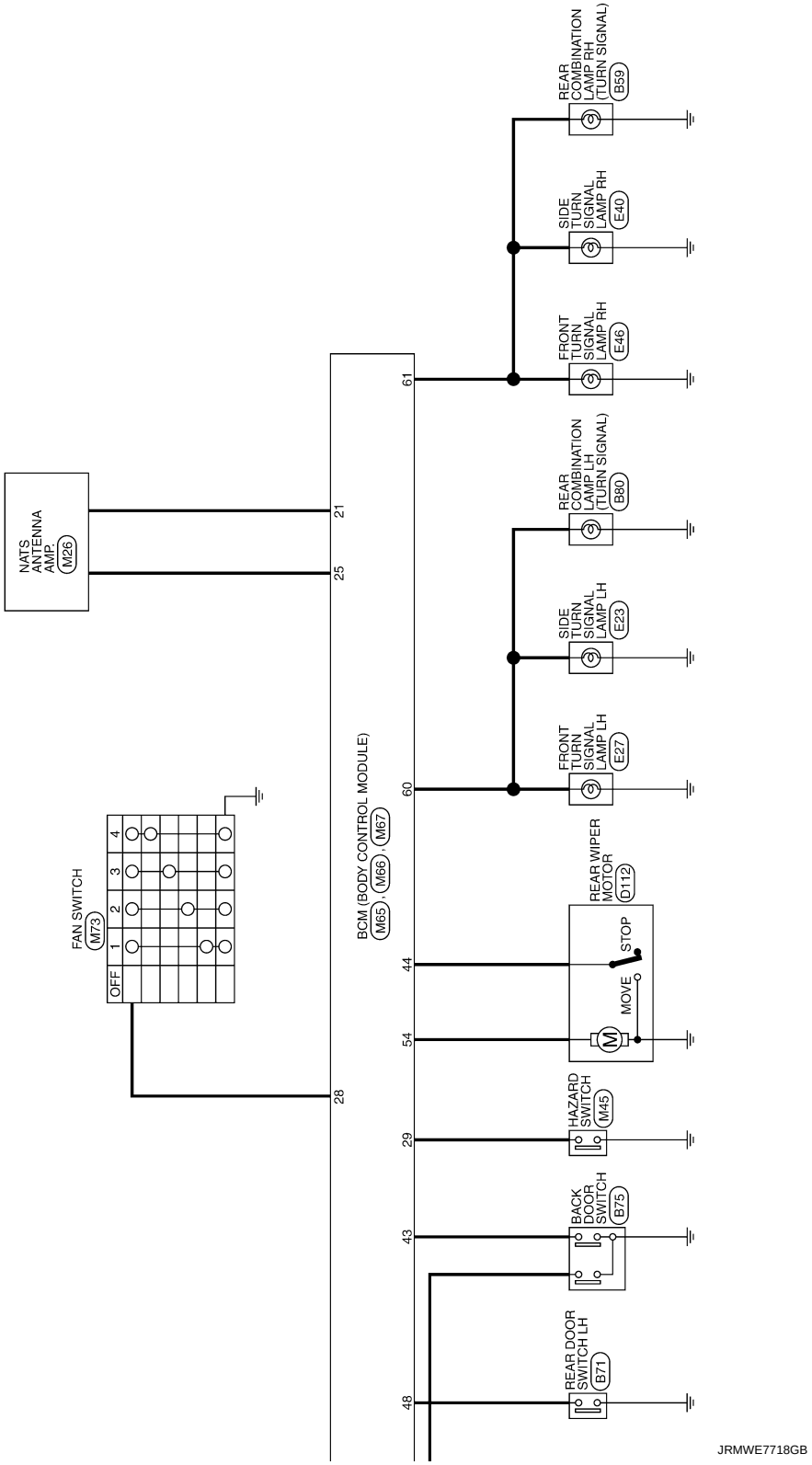
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
60 (W/B)	Ground	Turn signal LH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	 6.0 V
61 (W/L)	Ground	Turn signal RH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	 6.0 V
63 (BR)	Ground	Interior room lamp control signal	Output	Interior room lamp	OFF	12 V
					ON	0 V
65 (V)	Ground	All doors LOCK	Output	All doors	LOCK (Actuator is activated)	12 V
					Other than LOCK (Actuator is not activated)	0 V
66 (G)	Ground	Passenger door and rear door UNLOCK	Output	Passenger door and rear door	UNLOCK (Actuator is activated)	12 V
					Other than UNLOCK (Actuator is not activated)	0 V
67 (B)	Ground	Ground	Output	Ignition switch ON		0 V
68 (L)	Ground	P/W power supply (IGN)	Output	Ignition switch ON		12 V
69 (P)	Ground	P/W power supply (BAT)	Output	Ignition switch OFF		12 V
70 (Y)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage

WITHOUT INTELLIGENT KEY : Wiring Diagram - BCM -

INFOID:0000000010278007




A/C CONTROL
M53
THERMO CONTROL AMP.
M44
REMOTE KEYLESS ENTRY RECEIVER
M61
FRONT POWER WINDOW SWITCH (PASSENGER SIDE)
D25
REAR POWER WINDOW SWITCH LH
D63
REAR POWER WINDOW SWITCH RH
D43
POWER WINDOW MAIN SWITCH
D5
D6
DOOR LOCK AND UNLOCK SWITCH
10
27
31
50
26
18
20
19
68
46
45
69
BCM (BODY CONTROL MODULE)
M65
M66
M67
13
12
47
67
2
3
4
5
6
32
33
34
35
36
66
REAR DOOR SWITCH RH
B53
FRONT DOOR SWITCH (PASSENGER SIDE)
B27
FRONT DOOR SWITCH (DRIVER SIDE)
B34
M76
COMBINATION SWITCH
M27
8
2
5
14
12
13
10
7
9
11
REAR DOOR LOCK ASSEMBLY RH
D45
BACK DOOR LOCK ASSEMBLY
D106
REAR DOOR LOCK ASSEMBLY LH
D65
FRONT DOOR LOCK ASSEMBLY (PASSENGER SIDE)
D28
JRMWE7717GB


NATS ANTENNA AMP. M26
FAN SWITCH M73
OFF
1
2
3
4
BCM (BODY CONTROL MODULE) M65, M66, M67
21
25
28
44
54
29
43
48
60
61
REAR COMBINATION LAMP RH (TURN SIGNAL) B59
SIDE TURN SIGNAL LAMP RH E40
FRONT TURN SIGNAL LAMP RH E46
REAR COMBINATION LAMP LH (TURN SIGNAL) B80
SIDE TURN SIGNAL LAMP LH E23
FRONT TURN SIGNAL LAMP LH E27
REAR WIPER MOTOR D112
STOP
MOVE
HAZARD SWITCH M45
BACK DOOR SWITCH B75
REAR DOOR SWITCH LH B71
JRMWE7718GB

BCM (BODY CONTROL MODULE) (WITHOUT INTELLIGENT KEY)

Connector No.	B11
Connector Name	LUGGAGE ROOM LAMP
Connector Type	CJ04FW

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
3	L	-

Connector No.	B27
Connector Name	FRONT DOOR SWITCH (PASSENGER SIDE)
Connector Type	TH04FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
3	SB	-

Connector No.	B34
Connector Name	FRONT DOOR SWITCH (DRIVER SIDE)
Connector Type	TH04FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	-

Connector No.	B53
Connector Name	REAR DOOR SWITCH RH
Connector Type	TH04FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	-

Connector No.	B59
Connector Name	REAR COMBINATION LAMP RH
Connector Type	RS06FB-PR

H.S.

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

Connector No.	B71
Connector Name	REAR DOOR SWITCH LH
Connector Type	TH04FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
3	W	-

Connector No.	B75
Connector Name	BACK DOOR SWITCH
Connector Type	TH04FW-NH

H.S.

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

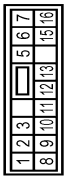
Connector No.	B80
Connector Name	REAR COMBINATION LAMP LH
Connector Type	RS06FB-PR

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
3	B	-
4	P	-
5	R	-
6	GR	-

Connector No.	D5
Connector Name	POWER WINDOW MAIN SWITCH
Connector Type	NS16FW-CS

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	LG	-
3	O	-
5	Y	-
6	V	-
7	LG	-
8	BR	-
9	V	-
10	L	-
11	GR	-
12	SB	-
13	W	-
15	G	-
16	W	-

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BCM (BODY CONTROL MODULE) (WITHOUT INTELLIGENT KEY)

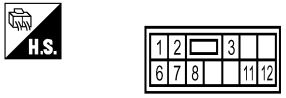
Connector No.	D6
Connector Name	POWER WINDOW MAIN SWITCH
Connector Type	NS03FW-CS

Terminal No.	Color Of Wire	Signal Name [Specification]
17	B	-
18	GR	-
19	P	-

Connector No.	D9
Connector Name	FRONT DOOR LOCK ASSEMBLY (DRIVER SIDE)
Connector Type	E06FGY-RS

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

Connector No.	D25
Connector Name	FRONT POWER WINDOW SWITCH (PASSENGER SIDE)
Connector Type	NS12FW-CS

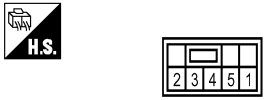


Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	-
2	BR	-
3	B	-
6	Y	-
7	R	-
8	L	-
11	SB	-
12	W	-

Connector No.	D28
Connector Name	FRONT DOOR LOCK ASSEMBLY (PASSENGER SIDE)
Connector Type	E06FGY-RS

Terminal No.	Color Of Wire	Signal Name [Specification]
5	V	-
6	Y	-

Connector No.	D43
Connector Name	REAR POWER WINDOW SWITCH RH
Connector Type	NS08FW-CS



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

Connector No.	D45
Connector Name	REAR DOOR LOCK ASSEMBLY RH
Connector Type	E06FGY-RS

Terminal No.	Color Of Wire	Signal Name [Specification]
5	W	-
6	P	-

Connector No.	D63
Connector Name	REAR POWER WINDOW SWITCH LH
Connector Type	NS08FW-CS

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

Connector No.	D65
Connector Name	REAR DOOR LOCK ASSEMBLY LH
Connector Type	E06FGY-RS

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

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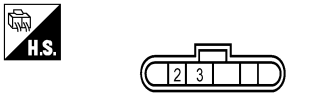
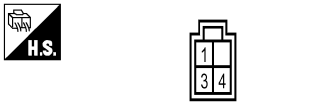
BCM (BODY CONTROL MODULE) (WITHOUT INTELLIGENT KEY)

Connector No.	D106
Connector Name	BACK DOOR LOCK ASSEMBLY
Connector Type	FEA04FB-FHA2-LC



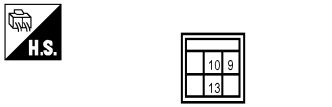
Terminal No.	Color Of Wire	Signal Name [Specification]
2	GR	-
3	Y	-

Connector No.	D112
Connector Name	REAR WIPER MOTOR
Connector Type	CJ04FW-1V



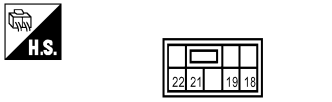
Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
3	BR	-
4	LG	-

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC



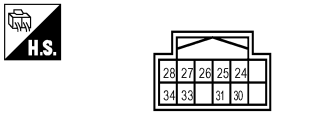
Terminal No.	Color Of Wire	Signal Name [Specification]
9	B/W	-
10	L	-
13	W	-

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS08FBR-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
18	Y	-
19	B/W	-
21	W	-
22	V	-

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH12FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
24	G	-
25	Y	-
26	P	-
27	L	-
28	P	-
30	SB	-
31	W	-
33	O	-
34	R	-

Connector No.	E23
Connector Name	SIDE TURN SIGNAL LAMP LH
Connector Type	STL02FW

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	B/R	-

Connector No.	E27
Connector Name	FRONT TURN SIGNAL LAMP LH
Connector Type	RS02FB

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

Connector No.	E40
Connector Name	SIDE TURN SIGNAL LAMP RH
Connector Type	STL02FW

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	B/Y	-

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BCM (BODY CONTROL MODULE) (WITHOUT INTELLIGENT KEY)

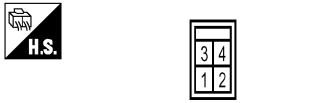
Connector No.	E46
Connector Name	FRONT TURN SIGNAL LAMP RH
Connector Type	RS02FB

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	B/Y	-

Connector No.	E114
Connector Name	STOP LAMP SWITCH
Connector Type	M02FB-LC

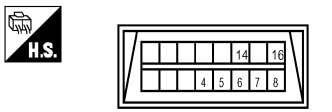
Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	W	-

Connector No.	E115
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC



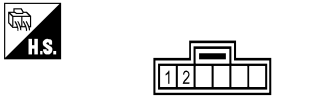
Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	W	-
3	O	-
4	G	-

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color Of Wire	Signal Name [Specification]
4	B	-
5	B	-
6	L	-
7	GR/R	-
8	O	-
14	P	-
16	LG/R	-

Connector No.	M24
Connector Name	KEY SWITCH
Connector Type	TK06MGY

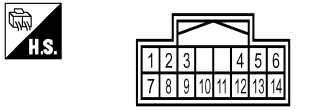


Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/W	-
2	LG/R	-

Connector No.	M26
Connector Name	NATS ANTENNA AMP.
Connector Type	TH04FW-NH

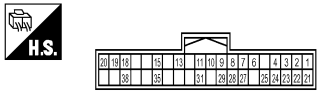
Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	BAT
2	P/L	CLK
3	B	GND [Without Intelligent Key]
3	LG	DATA [With Intelligent Key]
4	B	GND [With Intelligent Key]
4	LG	DATA [Without Intelligent Key]

Connector No.	M27
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	O/B	WASHER (RR)
2	GR	OUTPUT 4
3	R/G	WASHER (FR)
4	W	IGN
5	L/Y	OUTPUT 3
6	B	GROUND
7	W	INPUT 3
8	BR/W	OUTPUT 5
9	R/L	INPUT 2
10	Y/L	INPUT 4
11	L/O	INPUT 1
12	L/R	OUTPUT 1
13	LG	INPUT 5
14	G	OUTPUT 2

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-H
2	P	CAN-L
3	V	VEHICLE SPEED SIGNAL (2-PULSE)
4	L	VEHICLE SPEED SIGNAL (8-PULSE) [Without NAVI]
4	V/R	VEHICLE SPEED SIGNAL (8-PULSE) [With NAVI]
6	BR/Y	FUEL LEVEL SENSOR SIGNAL

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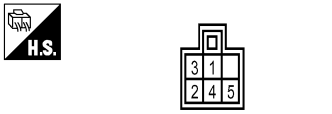
BCM (BODY CONTROL MODULE) (WITHOUT INTELLIGENT KEY)

7	R/G	AIR BAG SIGNAL
8	P	OVERDRIVE CONTROL SWITCH SIGNAL
9	O	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)
10	SB	PARKING BRAKE SWITCH SIGNAL
11	G/R	BRAKE FLUID LEVEL SWITCH SIGNAL
13	B/R	ILLUMINATION CONTROL SIGNAL
15	L/Y	ACC POWER SUPPLY
18	R/Y	SECURITY SIGNAL
19	PU/W	AMBIENT SENSOR SIGNAL
20	R/W	AMBIENT SENSOR GROUND
21	B	GROUND
22	B	GROUND
23	B	GROUND
24	PU	FUEL LEVEL SENSOR GROUND
25	B	VDC GROUND
27	LG/R	BATTERY POWER SUPPLY
28	GR	IGNITION SIGNAL
29	BR	PASSENGER SEAT BELT WARNING SIGNAL
31	R	A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL
35	BR	ENGINE COOLANT TEMPERATURE SIGNAL
38	GR	ALTERNATOR SIGNAL

Connector No.	M44
Connector Name	THERMO CONTROL AMP.
Connector Type	S06FW

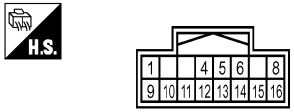


Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	GR	-
3	B	-
4	V	-
5	B/W	-

Connector No.	M45
Connector Name	HAZARD SWITCH
Connector Type	TK04FW

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

Connector No.	M53
Connector Name	A/C CONTROL
Connector Type	TH16FW-NH

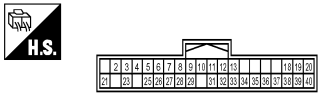


Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
4	R	-
5	W/L	-
6	G/Y	-
8	G	-
9	B/R	-
10	B/W	-
11	V	-
12	Y/R	-
13	SB	-
14	Y	-
15	B	-
16	L	-

Connector No.	M61
Connector Name	REMOTE KEYLESS ENTRY RECEIVER
Connector Type	TK04FW

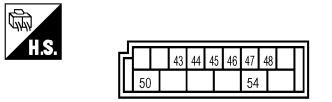
Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	G/Y	-
4	BR	-

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
2	BR/W	COMBI SW INPUT 5
3	GR	COMBI SW INPUT 4
4	L/Y	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	L/R	COMBI SW INPUT 1
7	W/R	KEY CYL UNLOCK SW
8	W/B	KEY CYL LOCK SW
9	R	STOP LAMP SW
10	W/L	REAR WINDOW DEFOGGER SW
11	L/Y	ACC POWER SUPPLY
12	SB	PASSENGER DOOR SW
13	GR/L	REAR RH DOOR SW
18	V	RECEIVER / SENSOR GND
19	BR	KEYLESS ENTRY RECEIVER POWER SUPPLY
20	G/Y	KEYLESS ENTRY RECEIVER COMM
21	P/L	NATS ANTENNA AMP.
23	R/Y	SECURITY INDICATOR LAMP
25	LG	NATS ANTENNA AMP.
26	GR	THERMO CONTROL AMP.
27	Y/G	A/C SW
28	G/W	BLOWER FAN SW
29	L/W	HAZARD SW
31	G/Y	FR DEFROSTER SW
32	LG	COMBI SW OUTPUT 5
33	Y/L	COMBI SW OUTPUT 4
34	W	COMBI SW OUTPUT 3
35	R/L	COMBI SW OUTPUT 2
36	L/O	COMBI SW OUTPUT 1
37	R/W	KEY SWITCH
38	O	IGNITTION POWER SUPPLY
39	L	CAN-H
40	P	CAN-L

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FW-FHA6-SA



Terminal No.	Color Of Wire	Signal Name [Specification]
43	W	BACK DOOR SW
44	LG	REAR WIPER STOP POSITION
45	GR	CENTRAL DOOR LOCK SW
46	BR	CENTRAL DOOR UNLOCK SW
47	BR/Y	DRIVER DOOR SW
48	W/G	REAR LH DOOR SW
50	SB	A/C INDICATOR OUTPUT
54	LG	REAR WIPER OUTPUT

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BCM (BODY CONTROL MODULE) (WITHOUT INTELLIGENT KEY)

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA06FB-FHA6-SA

H.S.

56 57 59 60 61 63
65 66 67 68 69 70

Terminal No.	Color Of Wire	Signal Name [Specification]
56	L	INTERIOR ROOM LAMP POWER SUPPLY
57	Y	BAT (FUSE)
59	L/B	DRIVER DOOR UNLOCK OUTPUT
60	W/B	TURN SIGNAL LH OUTPUT
61	W/L	TURN SIGNAL RH OUTPUT
63	BR	ROOM LAMP TIMER CONTROL
65	V	ALL DOOR LOCK OUTPUT
66	G	PASSENGER DOOR, REAR DOOR UNLOCK OUTPUT
67	B	GROUND
68	L	POWER WINDOW POWER SUPPLY (IGN)
69	P	POWER WINDOW POWER SUPPLY (BAT)
70	Y	BAT (F/L)

Connector No.	R4
Connector Name	IMAP LAMP
Connector Type	GAA06FW

H.S.

4 3 2

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

Connector No.	R6
Connector Name	ROOM LAMP
Connector Type	C02FW

H.S.

0
2 1

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

Connector No.	M73
Connector Name	FAN SWITCH
Connector Type	M06FW-LC

H.S.

1 2 3
4 5 6

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

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WITHOUT INTELLIGENT KEY : Fail-safe

INFOID:0000000010278008

FAIL-SAFE CONTROL BY DTC

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

Display contents of CONSULT	Fail-safe	Cancellation
B2190: NATS ANTENNA AMP	Inhibit engine cranking	Erase DTC
B2191: DIFFERENCE OF KEY	Inhibit engine cranking	Erase DTC
B2192: ID DISCORD BCM-ECM	Inhibit engine cranking	Erase DTC
B2193: CHAIN OF BCM-ECM	Inhibit engine cranking	Erase DTC
B2195: ANTI SCANNING	Inhibit engine cranking	Ignition switch ON → OFF

REAR WIPER MOTOR PROTECTION

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

Condition of cancellation
1. Pass more than 1 minute after the rear wiper stop.
2. Turn rear wiper switch OFF.
3. Operate the rear wiper switch or rear washer switch.

WITHOUT INTELLIGENT KEY : DTC Inspection Priority Chart

INFOID:0000000010278009

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

Priority	DTC
1	• U1000: CAN COMM • U1010: CONTROL UNIT (CAN)
2	• B2190: NATS ANTENNA AMP • B2191: DIFFERENCE OF KEY • B2192: ID DISCORD BCM-ECM • B2193: CHAIN OF BCM-ECM • B2195: ANTI SCANNING
3	C1735: IGN CIRCUIT OPEN
4	• 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 • C1716: [PRESSDATA ERR] FL • C1717: [PRESSDATA ERR] FR • C1718: [PRESSDATA ERR] RR • C1719: [PRESSDATA ERR] RL • C1729: VHCL SPEED SIG ERR

WITHOUT INTELLIGENT KEY : DTC Index

INFOID:0000000010278010

NOTE:
Details of time display
- CRNT: Displays when there is a malfunction now or after returning to the normal condition until turning ignition switch OFF → ON again.
- 1 - 39: Displayed if any previous malfunction is present when current condition is normal. It increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. The counter remains at 39 even if the number of cycles exceeds it. It is counted from 1 again when turning ignition switch OFF → ON after returning to the normal condition if the malfunction is detected again.

CONSULT display	Fail-safe	Tire pressure monitor warning lamp ON	Reference
U1000: CAN COMM	—	—	BCS-120
U1010: CONTROL UNIT (CAN)	—	—	BCS-121
B2190: NATS ANTENNA AMP	×	—	SEC-197
B2191: DIFFERENCE OF KEY	×	—	SEC-200
B2192: ID DISCORD BCM-ECM	×	—	SEC-201
B2193: CHAIN OF BCM-ECM	×	—	SEC-202
B2195: ANTI SCANNING	×	—	SEC-203
C1704: LOW PRESSURE FL	—	×	WT-26
C1705: LOW PRESSURE FR	—	×	
C1706: LOW PRESSURE RR	—	×	
C1707: LOW PRESSURE RL	—	×	
C1708: [NO DATA] FL	—	×	WT-28
C1709: [NO DATA] FR	—	×	
C1710: [NO DATA] RR	—	×	
C1711: [NO DATA] RL	—	×	
C1716: [PRESS DATA ERR] FL	—	×	WT-31
C1717: [PRESS DATA ERR] FR	—	×	
C1718: [PRESS DATA ERR] RR	—	×	
C1719: [PRESS DATA ERR] RL	—	×	
C1729: VHCL SPEED SIG ERR	—	×	WT-33
C1735: IGN CIRCUIT OPEN	—	—	BCS-122

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

WITH INTELLIGENT KEY

WITH INTELLIGENT KEY : Reference Value

INFOID:0000000010262854

VALUES ON THE DIAGNOSIS TOOL

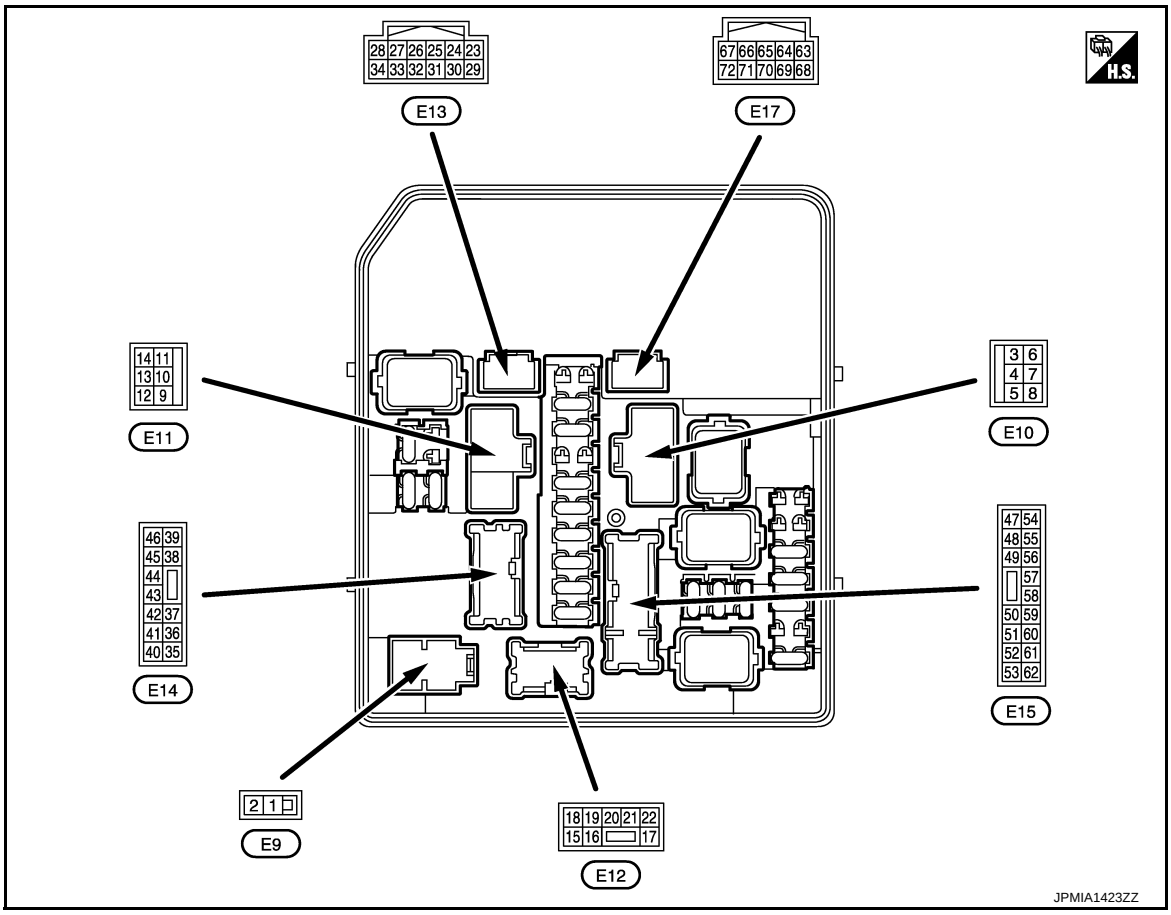
NOTE:

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

Monitor Item	Condition		Value/Status
MOTOR FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	1/2/3/4
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	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 (CVT models) • Release clutch pedal (M/T models)	Off
		• Selector lever in P or N position (CVT models) • Depress clutch pedal (M/T models)	On

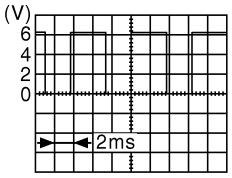
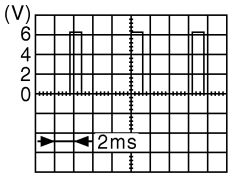
Monitor Item	Condition		Value/Status
ST RLY CONT	Ignition switch ON		Off
	At engine cranking		On
IHBT RLY -REQ	Ignition switch ON		Off
	At engine cranking		On
ST/INHI RLY	Ignition switch ON		Off
	At engine cranking		INHI ON → ST ON
	The status of starter relay or starter control relay cannot be recognized 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	• Pull the selector lever with selector lever in P position • Selector lever in any position other than P	Off
	Release the selector lever with selector lever in P position **NOTE:** Fixed On for M/T models		On
S/L RLY -REQ	**NOTE:** The item is indicated, but not monitored.		Off
S/L STATE	**NOTE:** The item is indicated, but not monitored.		UNLOCK
DTRL REQ	**NOTE:** The item is indicated, but not monitored.		Off
OIL P SW	Ignition switch OFF, ACC or engine running		Open
	Ignition switch ON		Close
HOOD SW	**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

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal NO. (Wire color)		Description		Condition	Value (Approx.)
+	–	Signal name	Input/ Output		
1 (R)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
2 (G)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
3 (BR)	Ground	Starter motor	Output	Ignition switch ON	0 V
				At engine cranking	Battery voltage
4 (P)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
5 (LG)	Ground	Cooling fan relay-1 power supply	Output	Cooling fan OFF	0 V
				Cooling fan operated	Battery voltage
7 (Y)	Ground	Cooling fan relay-2 power supply	Output	Cooling fan OFF	0 V
				Cooling fan LO operated	9.0 V
				Cooling fan HI operated	Battery voltage
8 (V)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
9 (B/W)	Ground	Ground	—	Ignition switch ON	0 V
10 (L)	Ground	Cooling fan motor ground	Output	Cooling fan OFF	0 V
				Cooling fan LO operated	5.0 V
				Cooling fan HI operated	0 V

Terminal NO. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
13 (W)	Ground	Rear window defogger	Output	Ignition switch ON	Rear window defogger switch OFF	0 V
					Rear window defogger switch ON	Battery voltage
19 (B/W)	Ground	Ground	—	Ignition switch ON		0 V
21 (W)	Ground	Front fog lamp (RH)	Output	Lighting switch 2ND	Front fog lamp switch OFF	0 V
					Front fog lamp switch ON	Battery voltage
22 (V)	Ground	Front fog lamp (LH)	Output	Lighting switch 2ND	Front fog lamp switch OFF	0 V
					Front fog lamp switch ON	Battery voltage
24 (G)	Ground	Oil pressure switch	Input	Ignition switch ON	Engine stopped	0 V
					Engine running	Battery voltage
25 (Y)	Ground	Front wiper auto stop	Input	Ignition switch ON	Front wiper stop position	0 V
					Any position other than front wiper stop position	Battery voltage
26 (P)	Ground	CAN-L	Input/ Output	—		—
27 (L)	Ground	CAN-H	Input/ Output	—		—
30 (SB)	Ground	Starter relay control	Output	At engine cranking		0 V
				Ignition switch ON		Battery voltage
31 (W)	Ground	Fuel pump relay control	Output	• Approximately 1 second after turning the ignition switch ON • Engine running		0 - 1.5 V
				Approximately 1 second or more after turning the ignition switch ON		Battery voltage
33 (O)	Ground	Power generation command signal	Output	Ignition switch ON		Battery voltage
				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
34 (R)	Ground	Horn relay control	Output	The horn is deactivated		Battery voltage
				The horn is activated		0 V

Terminal NO. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
36 (O)	Ground	Parking lamp (LH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 1ST	Battery voltage
37 (V)	Ground	Parking lamp (RH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 1ST	Battery voltage
38 (G)	Ground	Tail lamp (RH) & illuminations	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 1ST	Battery voltage
39 (V)	Ground	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch HI	Battery voltage
40 (R)	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
41 (SB)	Ground	Tail lamp (LH) & license plate lamps	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 1ST	Battery voltage
43 (G)	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
44 (P)	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
45 (Y)	Ground	TCM power supply	Output	Ignition switch OFF		Battery voltage
46 (O)	Ground	Front wiper LO	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch LO	Battery voltage
47 (BR)	Ground	Transmission range switch*1	Input	Select lever in any position other than P or N (Ignition switch ON)		0 V
				Select lever P or N (Ignition switch ON)		Battery voltage
		Clutch interlock switch*2		Release the clutch pedal		0 V
				Depress the clutch pedal		Battery voltage
49 (W)	Ground	Headlamp HI (RH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					• Lighting switch HI • Lighting switch PASS	Battery voltage
50 (GR)	Ground	Headlamp HI (LH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					• Lighting switch HI • Lighting switch PASS	Battery voltage

Terminal NO. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
51 (R)	Ground	Headlamp LO (LH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 2ND	Battery voltage
52 (P)	Ground	Headlamp LO (RH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 2ND	Battery voltage
54 (GR)	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 (P)	Ground	Fuel pump power supply	Output	Approximately 1 second or more than after turning the ignition switch ON		0 V
				• Approximately 1 second after turning the ignition switch ON • Engine running		Battery voltage
56 (SB)	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
57 (G)	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
58 (R)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
59 (Y)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
60 (V)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
61 (W)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
62 (L)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
64*1 (R)	Ground	CVT shift selector (Detention switch)	Input	Ignition switch ON	Select lever P	0 V
					Select lever in any position other than P	Battery voltage
66 (L)	Ground	Push-button ignition switch	Input	Press the push-button ignition switch		0 V
				Release the push-button ignition switch		Battery voltage
69 (O)	Ground	Ignition relay monitor	Input	Ignition switch OFF or ACC		Battery voltage
				Ignition switch ON		0 V

*1: CVT models
*2: M/T models

WITH INTELLIGENT KEY : Wiring Diagram — IPDM E/R —

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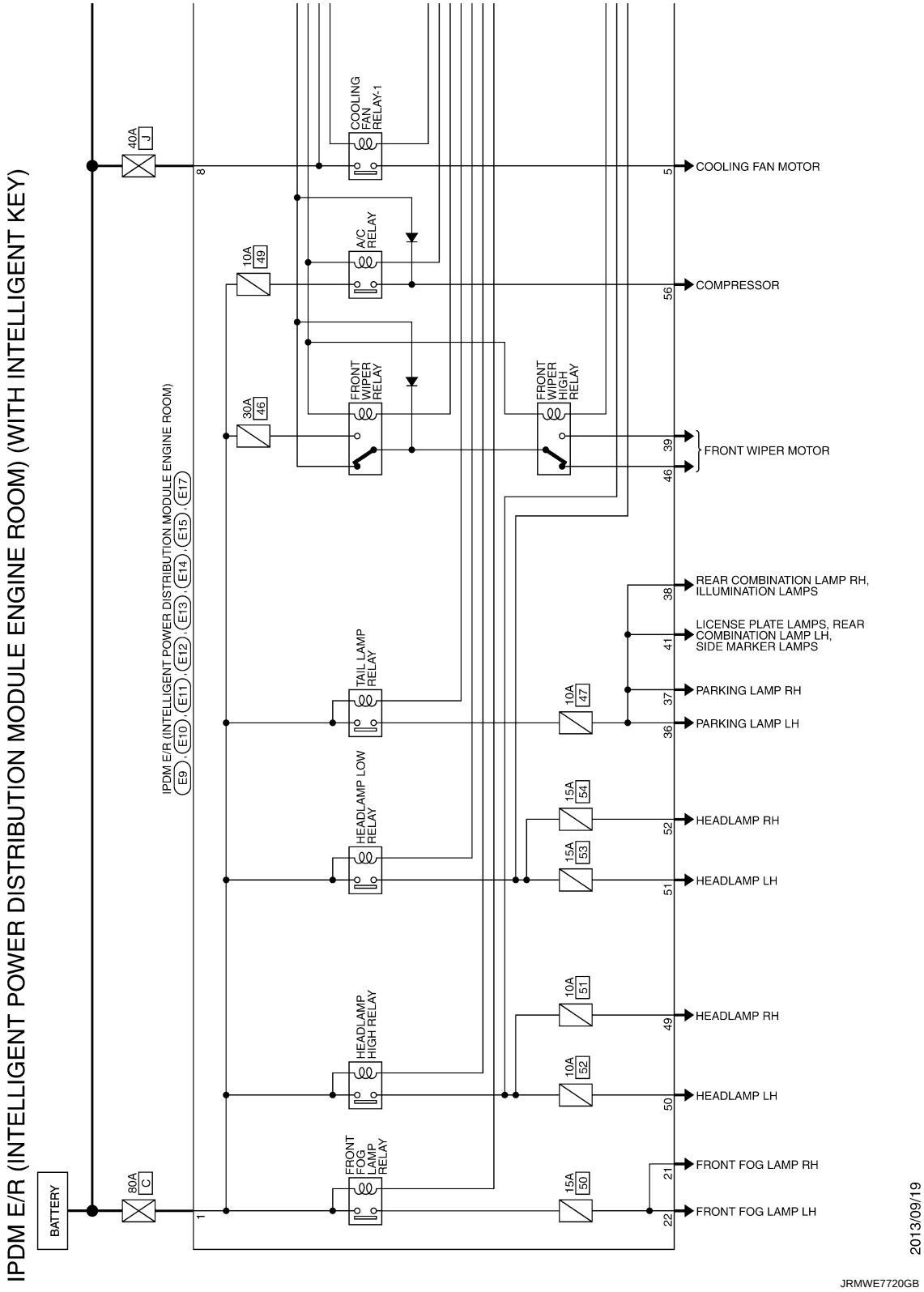
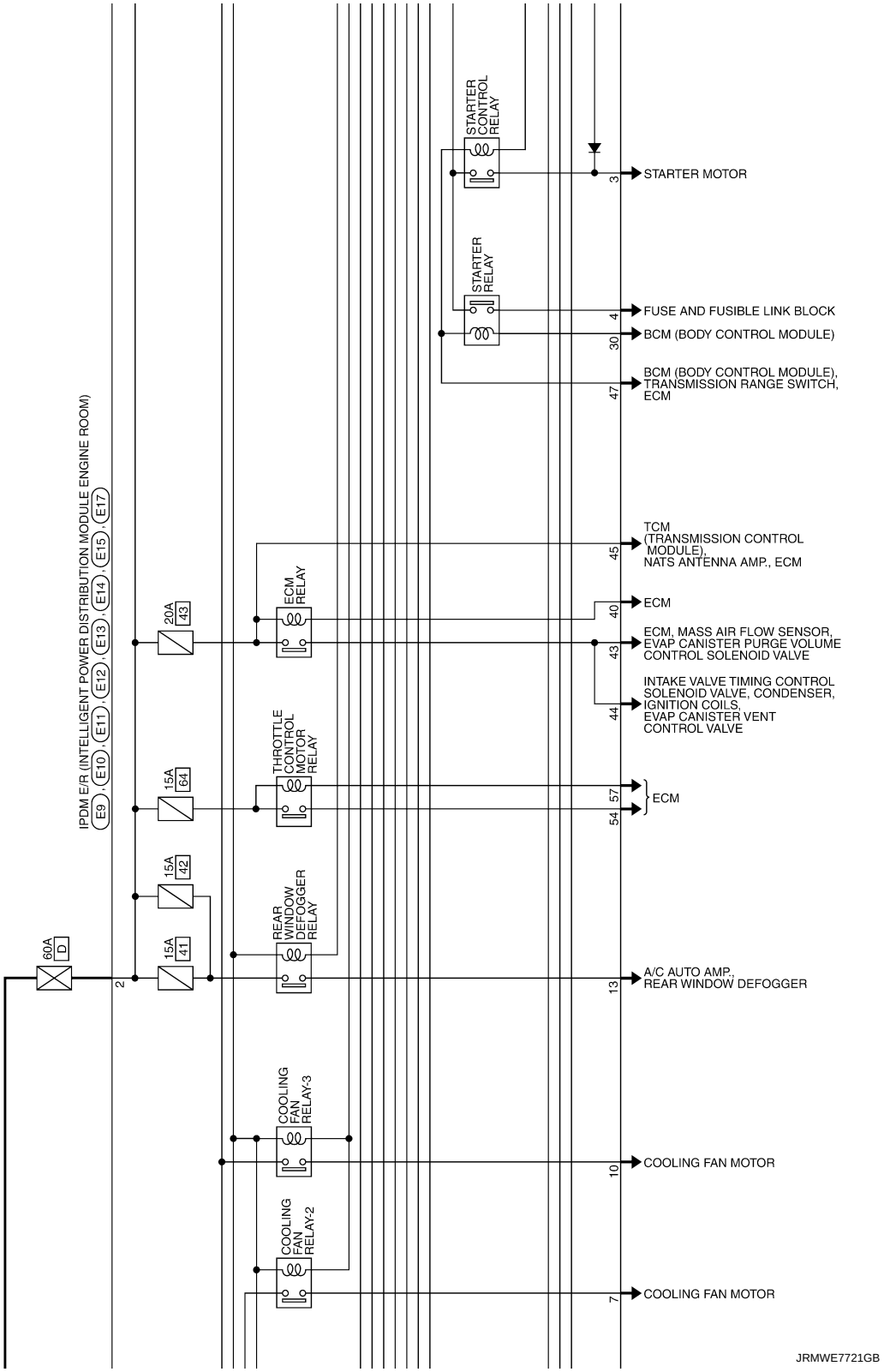
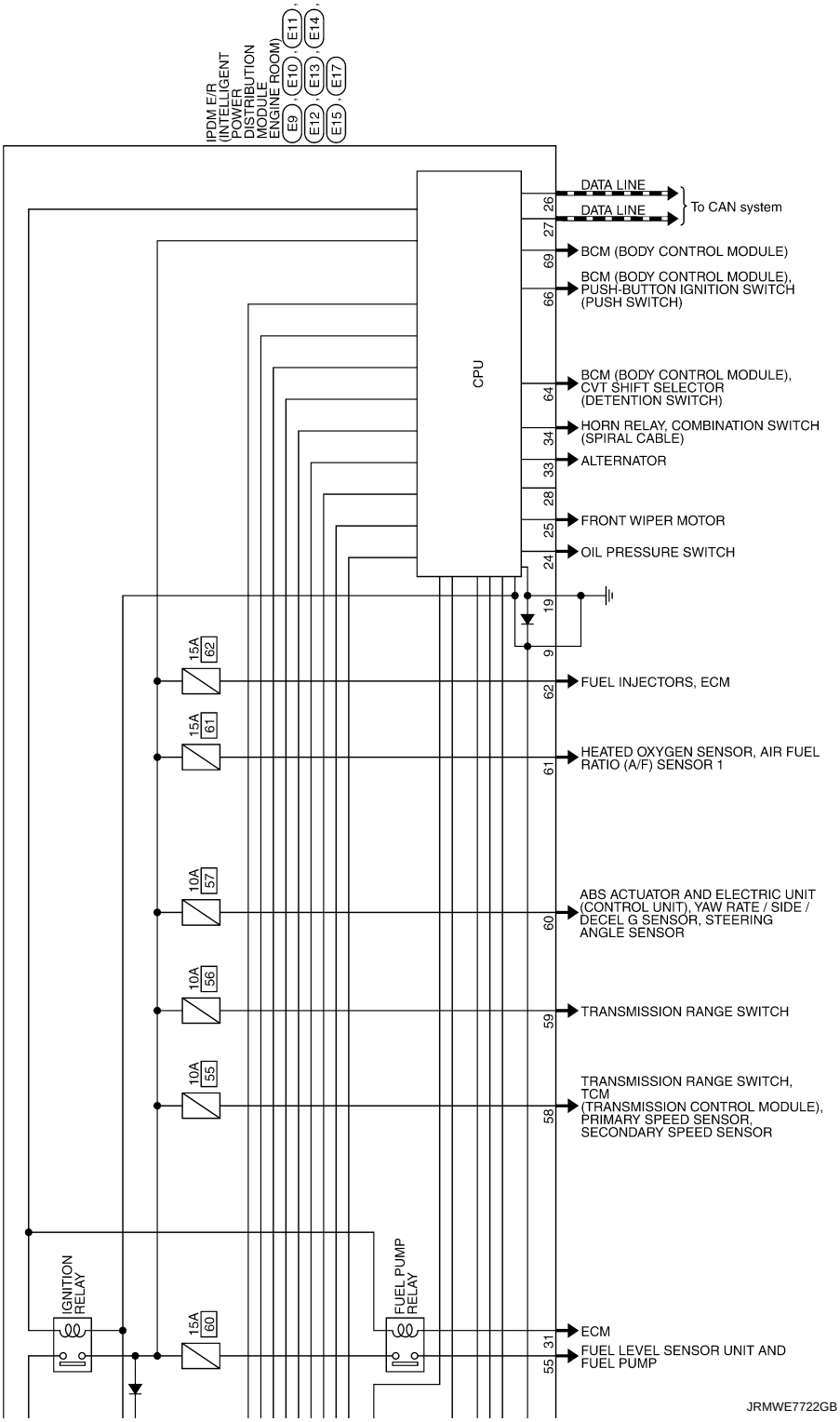



IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E9, E10, E11, E12, E13, E14, E15, E17
60A D
2
20A 43
15A 64
15A 42
15A 41
ECM RELAY
THROTTLE CONTROL MOTOR RELAY
REAR WINDOW DEFOGGER RELAY
COOLING FAN RELAY-3
COOLING FAN RELAY-2
STARTER CONTROL RELAY
STARTER RELAY
3 STARTER MOTOR
4 FUSE AND FUSIBLE LINK BLOCK
30 BCM (BODY CONTROL MODULE)
47 BCM (BODY CONTROL MODULE), TRANSMISSION RANGE SWITCH, ECM
45 TCM (TRANSMISSION CONTROL MODULE), NATS ANTENNA AMP., ECM
40 ECM
43 ECM, MASS AIR FLOW SENSOR, EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE
44 INTAKE VALVE TIMING CONTROL SOLENOID VALVE, CONDENSER, IGNITION COILS, EVAP CANISTER VENT CONTROL VALVE
57 54 ECM
13 A/C AUTO AMP., REAR WINDOW DEFOGGER
10 COOLING FAN MOTOR
7 COOLING FAN MOTOR
JRMWE7721GB


IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E9, E10, E11, E12, E13, E14, E15, E17
CPU
DATA LINE
DATA LINE
To CAN system
BCM (BODY CONTROL MODULE)
BCM (BODY CONTROL MODULE), PUSH-BUTTON IGNITION SWITCH (PUSH SWITCH)
BCM (BODY CONTROL MODULE), CVT SHIFT SELECTOR (DETENTION SWITCH)
HORN RELAY, COMBINATION SWITCH (SPIRAL CABLE)
ALTERNATOR
FRONT WIPER MOTOR
OIL PRESSURE SWITCH
FUEL INJECTORS, ECM
HEATED OXYGEN SENSOR, AIR FUEL RATIO (A/F) SENSOR 1
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT), YAW RATE / SIDE / DECEL G SENSOR, STEERING ANGLE SENSOR
TRANSMISSION RANGE SWITCH
TRANSMISSION RANGE SWITCH, TCM (TRANSMISSION CONTROL MODULE), PRIMARY SPEED SENSOR, SECONDARY SPEED SENSOR
ECM
FUEL LEVEL SENSOR UNIT AND FUEL PUMP
26
27
69
66
64
34
33
28
25
24
19
9
62
61
60
59
58
31
55
15A 62
15A 61
10A 57
10A 56
10A 55
15A 60
IGNITION RELAY
FUEL PUMP RELAY
JRMWE7722GB

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

Connector No.	E9
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	L02FB-MC

H.S.

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

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FW-LC

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
3	BR	-
4	P	-
5	LG	-
6	SB	-
7	Y	-
8	V	-

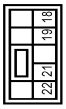
Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
9	B/W	-
10	L	-
13	W	-

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS08FBR-CS

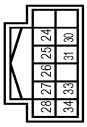
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
18	Y	-
19	B/W	-
21	W	-
22	V	-

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH12FW-NH

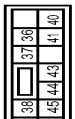
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
24	G	-
25	Y	-
26	P	-
27	L	-
28	P	-
30	SB	-
31	W	-
33	O	-
34	R	-

Connector No.	E14
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FBR-CS

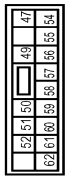
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
36	O	-
37	V	-
38	G	-
39	V	-
40	R	-
41	SB	-
43	G	-
44	P	-
45	Y	-
46	O	-

Connector No.	E15
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS16FW-CS

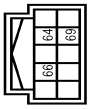
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
47	BR	-
49	W	-
50	GR	-
51	R	-
52	P	-
54	GR	-
55	P	-
56	SB	-
57	G	-
58	LG	- [With M/T] - [With CVT]
58	R	
59	Y	-
60	V	-
61	W	-
62	L	-

Connector No.	E17
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH10FB-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
64	R	-
66	L	-
69	O	-

JRMWE7835GB

WITH INTELLIGENT KEY : Fail-Safe

INFOID:0000000010262856

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	• The cooling fan relay-1, the cooling fan relay-2 and the cooling fan relay-3 turn ON when the ignition switch is turned ON (Cooling fan HI operation) • The cooling fan relay-1, the cooling fan relay-2 and the cooling fan relay-3 turn OFF 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 • Side marker lamps • License plate lamps • Illuminations • Tail lamps	• Turns ON the tail lamp relay when the ignition switch is turned ON • Turns OFF the tail lamp relay when the ignition switch is turned OFF
Front wiper	• The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed. • The wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the INT mode and the front wiper motor is operating.
Front fog lamps	Front fog lamp relay OFF
Horn	Horn OFF
Ignition relay	The status just before activation of fail-safe is maintained.
Starter motor	Starter control relay OFF

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

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

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

FRONT WIPER CONTROL

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

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

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.

WITH INTELLIGENT KEY : DTC Index

INFOID:0000000010262857

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

×: Applicable

CONSULT display	Fail-safe	Refer to
No DTC is detected. further testing may be required.	—	—
U1000: CAN COMM CIRCUIT	×	PCS-15
B2098: IGN RELAY ON CIRC	×	PCS-16
B2099: IGN RELAY OFF CIRC	—	PCS-18
B210B: STR CONT RLY ON CIRC	—	SEC-76
B210C: STR CONT RLY OFF CIRC	—	SEC-77
B210D: STARTER RLY ON CIRC	—	SEC-78
B210E: STARTER RLY OFF CIRC	—	SEC-79
B210F: INTRLCK/PNP SW ON	—	SEC-81
B2110: INTRLCK/PNP SW OFF	—	SEC-83

WITHOUT INTELLIGENT KEY

WITHOUT INTELLIGENT KEY : Reference Value

INFOID:0000000010262858

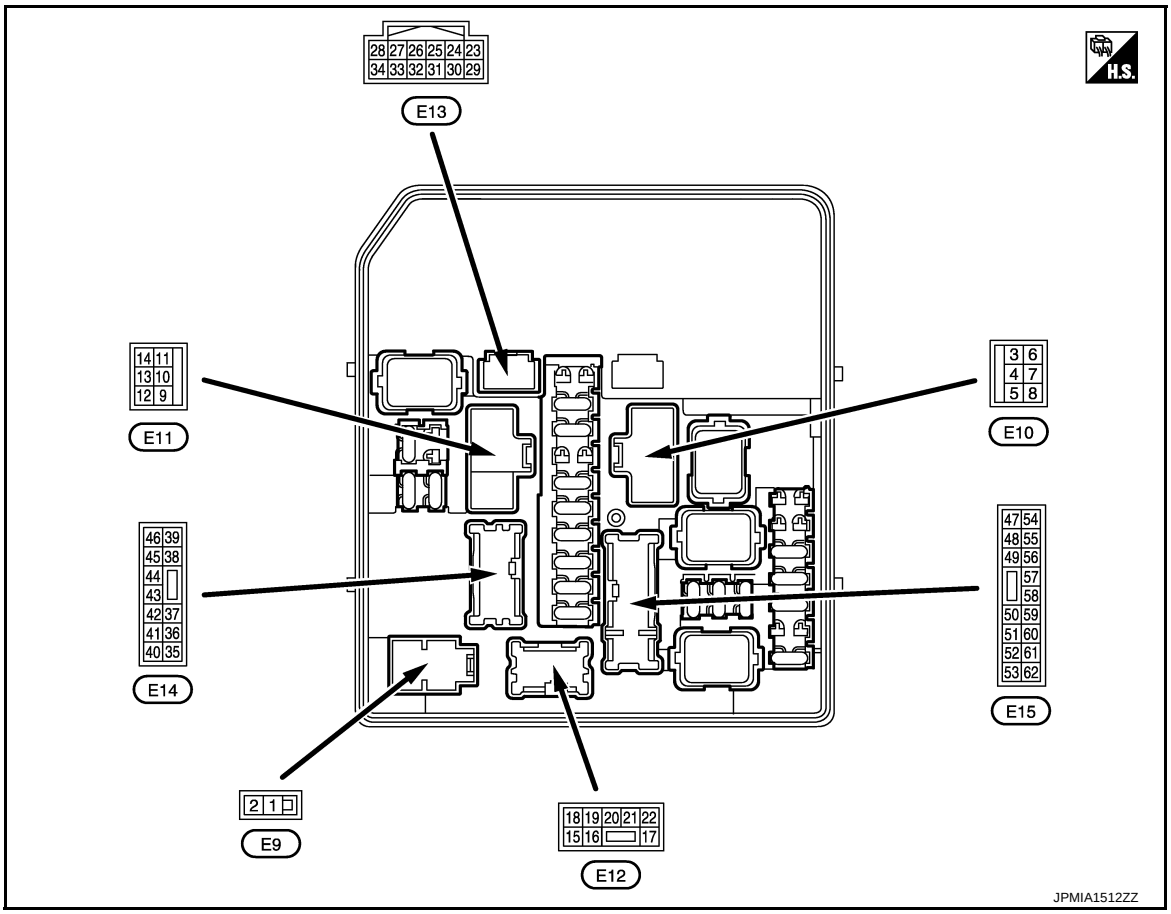
VALUES ON THE DIAGNOSIS TOOL

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

Monitor Item	Condition		Value/Status
MOTOR FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	1/2/3/4
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

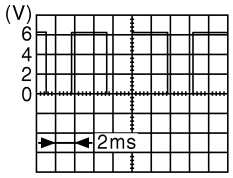
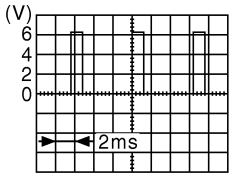
Monitor Item	Condition		Value/Status
HL HI REQ	Lighting switch OFF		Off
	Lighting switch HI		On
FR FOG REQ	Lighting switch 2ND or AUTO (Light is illuminated)	Front fog lamp switch OFF	Off
		Front fog lamp switch ON	On
FR WIP REQ	Ignition switch ON	Front wiper switch OFF	Stop
		Front wiper switch INT	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 RLY	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
INTER/NP SW	Ignition switch ON	Selector lever in any position other than P or N (CVT models)	Off
		Selector lever in P or N position (CVT models)	On
ST RLY -REQ	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
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	**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 key fob (horn chirp mode)		On

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal NO. (Wire color)		Description		Condition	Value (Approx.)
+	–	Signal name	Input/ Output		
1 (R)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
2 (G)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
3 (BR)	Ground	Starter motor	Output	Ignition switch ON	0 V
				At engine cranking	Battery voltage
5 (LG)	Ground	Cooling fan relay-1 power supply	Output	Cooling fan OFF	0 V
				Cooling fan operated	Battery voltage
6 (SB)	Ground	Ignition switch START	Output	Any position other ignition switch START	0 V
				Ignition switch START	Battery voltage
7 (Y)	Ground	Cooling fan relay-2 power supply	Output	Cooling fan OFF	0 V
				Cooling fan LO operated	9.0 V
				Cooling fan HI operated	Battery voltage
8 (V)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
9 (B/W)	Ground	Ground	—	Ignition switch ON	0 V

Terminal NO. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
10 (L)	Ground	Cooling fan motor ground	Output	Cooling fan OFF		0 V
				Cooling fan LO operated		5.0 V
				Cooling fan HI operated		0 V
13 (W)	Ground	Rear window defogger	Output	Ignition switch ON	Rear window defogger switch OFF	0 V
					Rear window defogger switch ON	Battery voltage
18 (Y)	Ground	Ignition switch	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
19 (B/W)	Ground	Ground	—	Ignition switch ON		0 V
21 (W)	Ground	Front fog lamp (RH)	Output	Lighting switch 2ND	Front fog lamp switch OFF	0 V
					Front fog lamp switch ON	Battery voltage
22 (V)	Ground	Front fog lamp (LH)	Output	Lighting switch 2ND	Front fog lamp switch OFF	0 V
					Front fog lamp switch ON	Battery voltage
24 (G)	Ground	Oil pressure switch	Input	Ignition switch ON	Engine stopped	0 V
					Engine running	Battery voltage
25 (Y)	Ground	Front wiper auto stop	Input	Ignition switch ON	Front wiper stop position	0 V
					Any position other than front wiper stop position	Battery voltage
26 (P)	Ground	CAN-L	Input/ Output	—		—
27 (L)	Ground	CAN-H	Input/ Output	—		—
31 (W)	Ground	Fuel pump relay control	Output	• Approximately 1 second after turning the ignition switch ON • Engine running		0 - 1.5 V
				Approximately 1 second or more after turning the ignition switch ON		Battery voltage
33 (O)	Ground	Power generation command signal	Output	Ignition switch ON		Battery voltage
				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

Terminal NO. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
34 (R)	Ground	Horn relay control	Output	The horn is deactivated		Battery voltage
				The horn is activated		0 V
36 (O)	Ground	Parking lamp (LH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 1ST	Battery voltage
37 (V)	Ground	Parking lamp (RH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 1ST	Battery voltage
38 (G)	Ground	Tail lamp (RH) & illuminations	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 1ST	Battery voltage
39 (V)	Ground	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch HI	Battery voltage
40 (R)	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
41 (SB)	Ground	Tail lamp (LH) & license plate lamps	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 1ST	Battery voltage
43 (G)	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
44 (P)	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
45 (Y)	Ground	TCM power supply	Output	Ignition switch OFF		Battery voltage
46 (O)	Ground	Front wiper LO	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch LO	Battery voltage
47 (BR)	Ground	Transmission range switch*1	Input	Select lever in any position other than P or N (Ignition switch ON)		0 V
				Select lever P or N (Ignition switch ON)		Battery voltage
		Clutch interlock switch*2	Input	Release the clutch pedal		0 V
				Depress the clutch pedal		Battery voltage
49 (W)	Ground	Headlamp HI (RH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					• Lighting switch HI • Lighting switch PASS	Battery voltage

Terminal NO. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
50 (GR)	Ground	Headlamp HI (LH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					• Lighting switch HI • Lighting switch PASS	Battery voltage
51 (R)	Ground	Headlamp LO (LH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 2ND	Battery voltage
52 (P)	Ground	Headlamp LO (RH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 2ND	Battery voltage
54 (GR)	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 (P)	Ground	Fuel pump power supply	Output	Approximately 1 second or more than after turning the ignition switch ON		0 V
				• Approximately 1 second after turning the ignition switch ON • Engine running		Battery voltage
56 (SB)	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
57 (G)	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
58 (R)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
59 (Y)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
60 (V)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
61 (W)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
62 (L)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage

*2: CVT models
*3: M/T models

WITHOUT INTELLIGENT KEY : Wiring Diagram — IPDM E/R —

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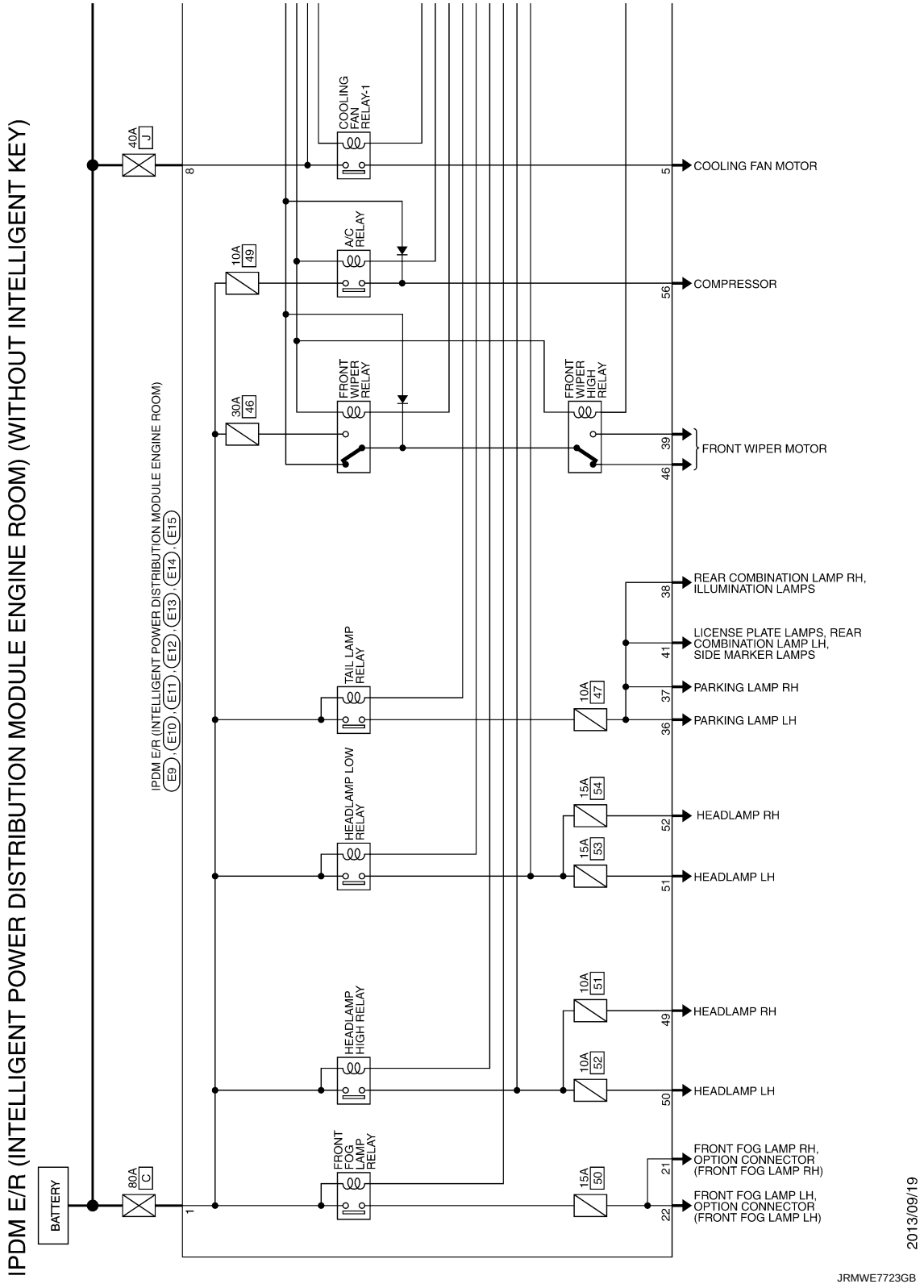

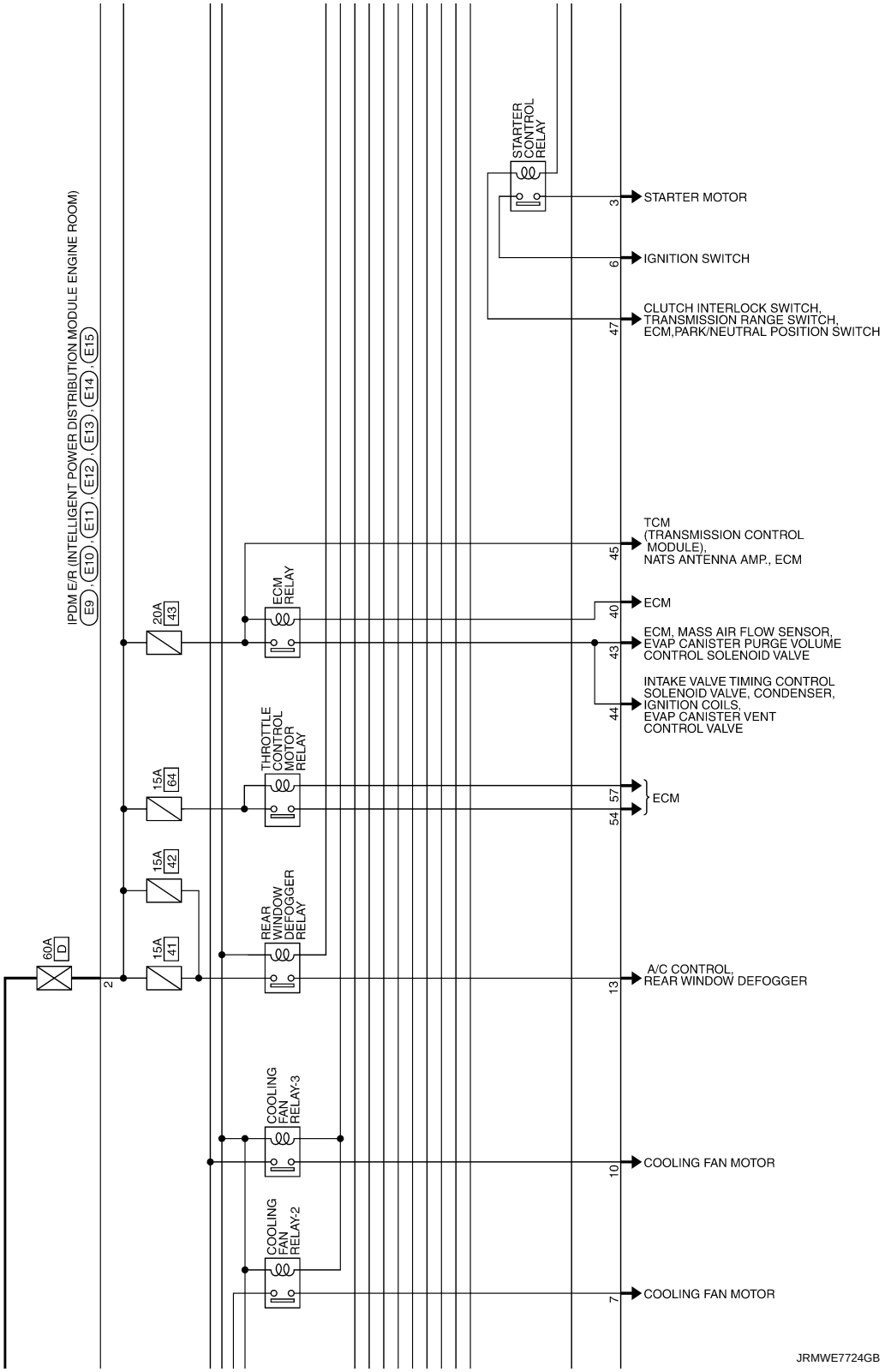
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E9, E10, E11, E12, E13, E14, E15
60A D
2
20A 43
15A 64
15A 42
15A 41
ECM RELAY
THROTTLE CONTROL MOTOR RELAY
REAR WINDOW DEFOGGER RELAY
COOLING FAN RELAY-3
COOLING FAN RELAY-2
STARTER CONTROL RELAY
3
STARTER MOTOR
6
IGNITION SWITCH
47
CLUTCH INTERLOCK SWITCH, TRANSMISSION RANGE SWITCH, ECM,PARK/NEUTRAL POSITION SWITCH
45
TCM (TRANSMISSION CONTROL MODULE), NATS ANTENNA AMP., ECM
40
ECM
43
ECM, MASS AIR FLOW SENSOR, EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE
44
INTAKE VALVE TIMING CONTROL SOLENOID VALVE, CONDENSER, IGNITION COILS, EVAP CANISTER VENT CONTROL VALVE
57
54
ECM
13
A/C CONTROL, REAR WINDOW DEFOGGER
10
COOLING FAN MOTOR
7
COOLING FAN MOTOR
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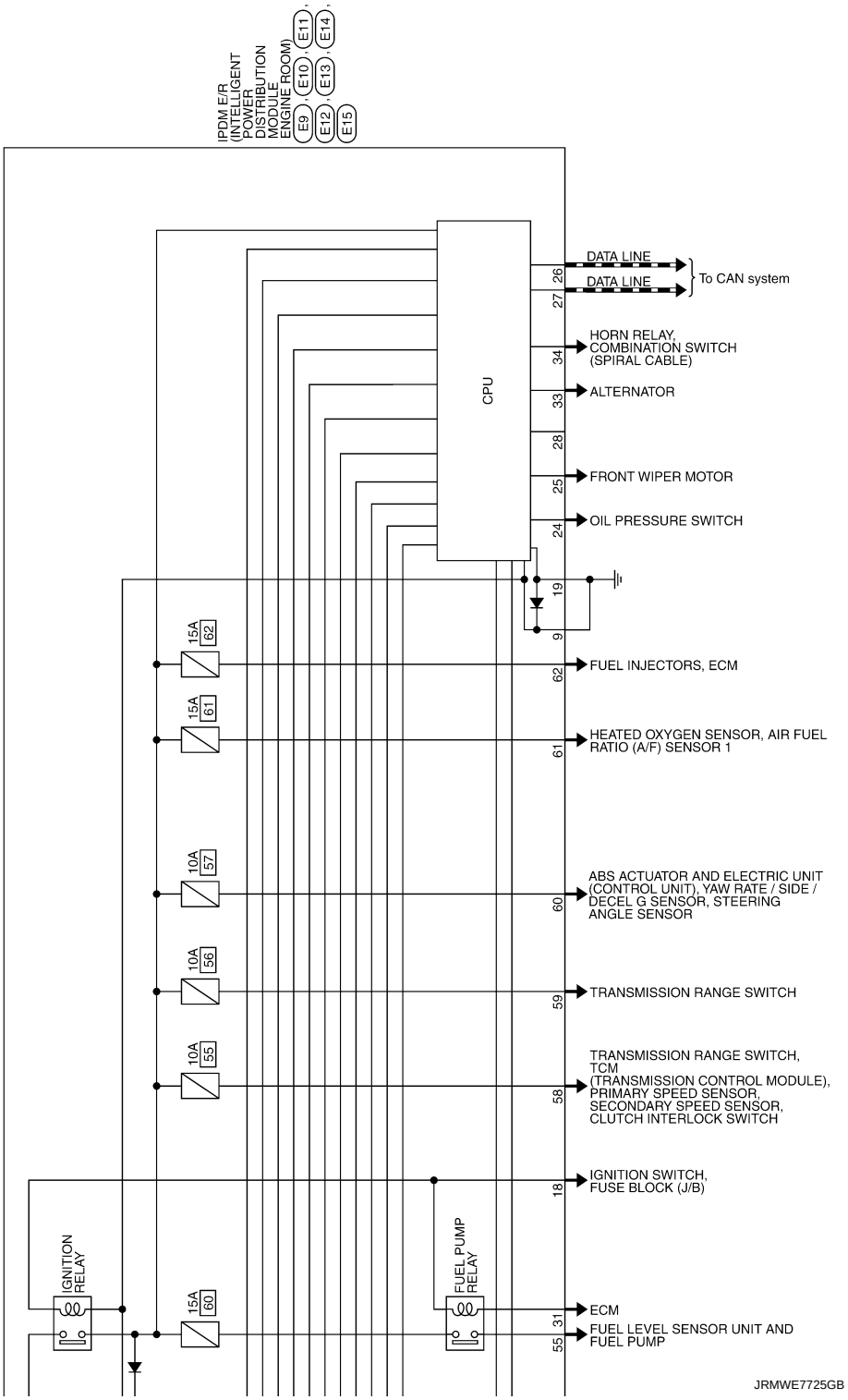
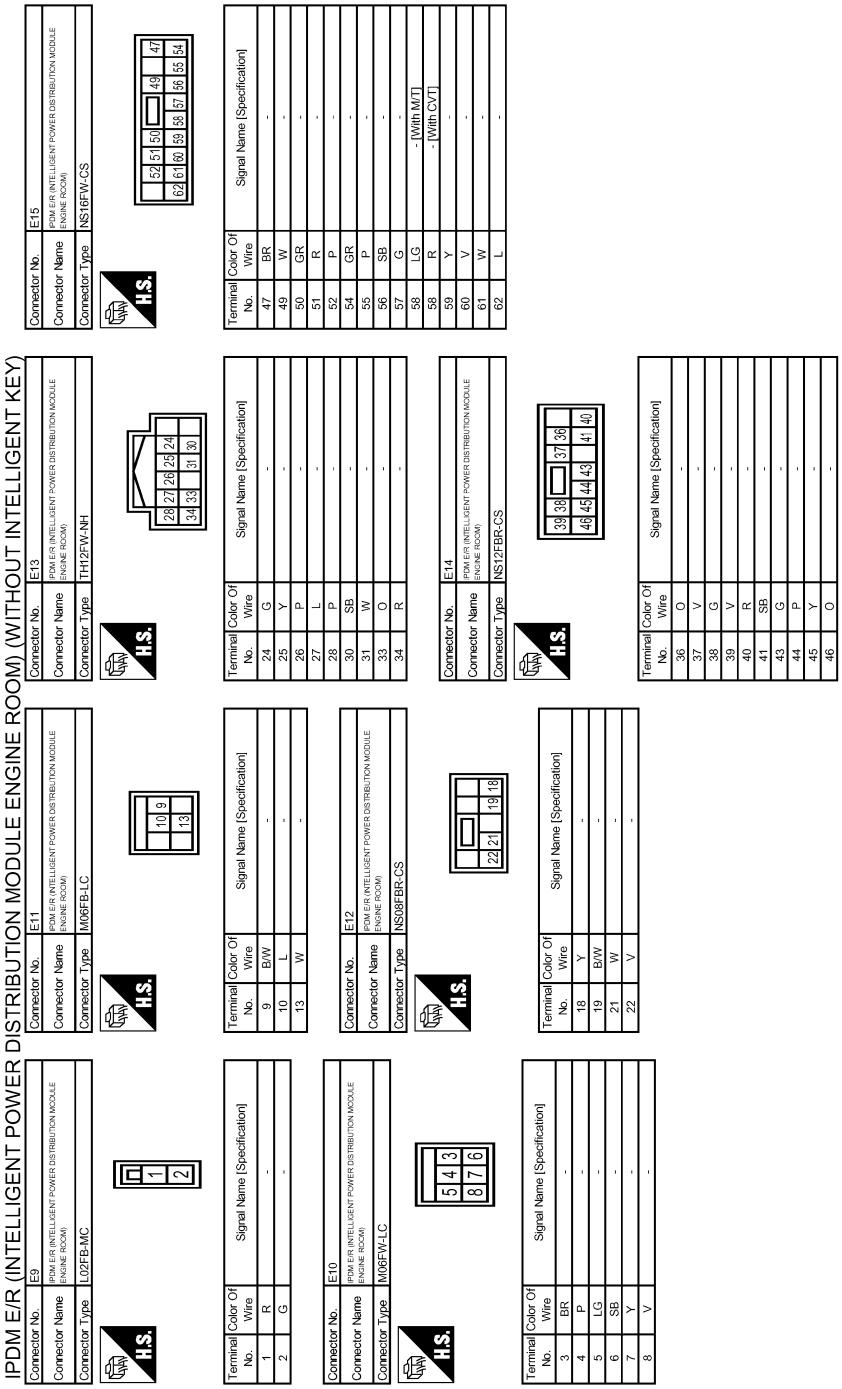

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E9, E10, E11, E12, E13, E14, E15
CPU
DATA LINE
DATA LINE
To CAN system
26
27
HORN RELAY, COMBINATION SWITCH (SPIRAL CABLE)
34
ALTERNATOR
33
28
FRONT WIPER MOTOR
25
OIL PRESSURE SWITCH
24
19
9
15A 62
FUEL INJECTORS, ECM
62
15A 61
HEATED OXYGEN SENSOR, AIR FUEL RATIO (A/F) SENSOR 1
61
10A 57
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT), YAW RATE / SIDE / DECEL G SENSOR, STEERING ANGLE SENSOR
60
10A 56
TRANSMISSION RANGE SWITCH
59
10A 55
TRANSMISSION RANGE SWITCH, TCM (TRANSMISSION CONTROL MODULE), PRIMARY SPEED SENSOR, SECONDARY SPEED SENSOR, CLUTCH INTERLOCK SWITCH
58
IGNITION SWITCH, FUSE BLOCK (J/B)
18
IGNITION RELAY
FUEL PUMP RELAY
15A 60
ECM
31
FUEL LEVEL SENSOR UNIT AND FUEL PUMP
55
JRMWE7725GB



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WITHOUT INTELLIGENT KEY : Fail-Safe

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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	• The cooling fan relay-1, the cooling fan relay-2 and the cooling fan relay-3 turn ON when the ignition switch is turned ON (Cooling fan HI operation) • The cooling fan relay-1, the cooling fan relay-2 and the cooling fan relay-3 turn OFF 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 • Side marker lamps • License plate 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
Rear window defogger relay	Rear window defogger relay OFF
Horn	Horn OFF

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

- IPDM E/R monitors the voltage at the contact circuit of the ignition relay inside and ignition switch status from BCM via CAN communication.
- IPDM E/R judges the ignition relay error if the voltage differs between the contact circuit and the ignition switch status from BCM via CAN communication.
- 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 switch status from BCM		
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.

WITHOUT INTELLIGENT KEY : DTC Index

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

×: Applicable

CONSULT display	Fail-safe	Refer to
No DTC is detected. further testing may be required.	—	—
U1000: CAN COMM CIRCUIT	×	PCS-15
B2098: IGN RELAY ON CIRC	×	PCS-16
B2099: IGN RELAY OFF CIRC	—	PCS-47

SYMPTOM DIAGNOSIS

WIPER AND WASHER SYSTEM SYMPTOMS

Symptom Table

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

Symptom		Probable malfunction location	Inspection item
Front wiper does not operate.	HI only	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-85, "Symptom Table".
		• IPDM E/R • Harness between IPDM E/R and front wiper motor • Front wiper motor	Front wiper motor (HI) circuit Refer to WW-31, "Component Function Check".
		Front wiper request signal • BCM • IPDM E/R	IPDM E/R DATA MONITOR “FR WIP REQ”
	LO and INT	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-85, "Symptom Table".
		• IPDM E/R • Harness between IPDM E/R and front wiper motor • Front wiper motor	Front wiper motor (LO) circuit Refer to WW-29, "Component Function Check".
		Front wiper request signal • BCM • IPDM E/R	IPDM E/R DATA MONITOR “FR WIP REQ”
	INT only	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-85, "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-137, "Diagnosis Procedure".	

Symptom		Probable malfunction location	Inspection item
Front wiper does not stop.	HI only	• Combination switch • BCM	Combination switch Refer to BCS-85, "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-85, "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-85, "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-85, "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 Function (BCM - WIPER)".	
	Wiper is not linked to the washer operation.	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-85, "Symptom Table".
		BCM	—
	Does not return to stop position. [Repeatedly operates for 10 seconds and then stops for 20 seconds. After that, it stops the operation. (Fail-safe)]	• IPDM E/R • Harness between IPDM E/R and front wiper motor • Front wiper motor	Front wiper stop position signal circuit Refer to WW-33, "Component Function Check".
Rear wiper does not operate.	ON only	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-85, "Symptom Table".
	INT only	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-85, "Symptom Table".
	ON and INT	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-85, "Symptom Table".
		• BCM • Harness between rear wiper motor and BCM • Harness between rear wiper motor and ground • Rear wiper motor	Rear wiper motor circuit Refer to WW-37, "Component Function Check".

Symptom		Probable malfunction location	Inspection item
Rear wiper does not stop.	ON only	• Combination switch • BCM	Combination switch Refer to BCS-85, "Symptom Table".
	INT only	• Combination switch • BCM	Combination switch Refer to BCS-85, "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-85, "Symptom Table".
		BCM	—
	Rear wiper does not return to the stop position. [Stops after a five-second operation. (Fail-safe)]	• BCM • Harness between rear wiper motor and BCM • Rear wiper motor	Rear wiper stop position signal circuit Refer to WW-39, "Component Function Check".

NORMAL OPERATING CONDITION

Description

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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:0000000009945868

The front wiper does not operate under any operation conditions.

Diagnosis Procedure

INFOID:0000000009945869

1. CHECK WIPER RELAY OPERATION

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

CONSULT ACTIVE TEST
1. Select “FRONT WIPER” of IPDM E/R active test item.
2. With operating the test item, check front wiper operation.

Lo : Front wiper LO operation
Hi : Front wiper HI operation
Off : Stop the front wiper.

Is front wiper operation normally?

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

2. CHECK FRONT WIPER MOTOR FUSE

1. Turn the ignition switch OFF.
2. Check that the front wiper motor 30 A (#48) 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 GROUND OPEN CIRCUIT

Refer to WW-35, "Diagnosis Procedure".

Does continuity exist?

YES >> GO TO 4.
NO >> Repair the harness or connector.

4. CHECK FRONT WIPER REQUEST SIGNAL INPUT

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

Monitor item	Condition		Monitor status
FR WIP REQ	Front wiper switch HI	ON	Hi
		OFF	Stop
	Front wiper switch LO	ON	Low
		OFF	Stop

Is the status of item normal?

YES >> Replace IPDM E/R.
NO >> GO TO 5.

5. CHECK COMBINATION SWITCH

Perform the inspection of the combination switch. Refer to BCS-85, "Symptom Table" (with Intelligent Key system) or BCS-153, "Symptom Table" (without Intelligent Key system).

Is combination switch normal?

YES >> Replace BCM. Refer to BCS-88, "Exploded View" (with Intelligent Key system) or BCS-155, "Exploded View" (without Intelligent Key system).

NO >> Repair or replace the applicable parts.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000009945870

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

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

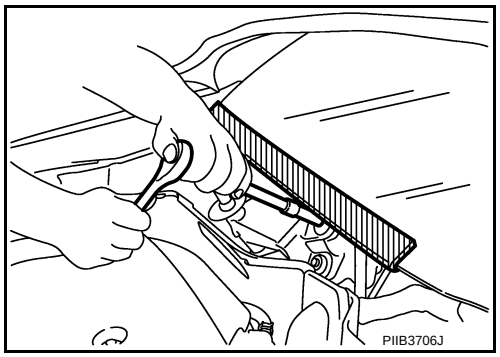
PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

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

Precaution for Procedure without Cowl Top Cover

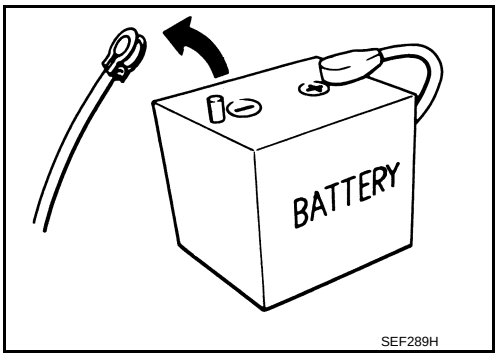
INFOID:0000000010232211

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



Precautions for Removing of Battery Terminal

INFOID:0000000010232212



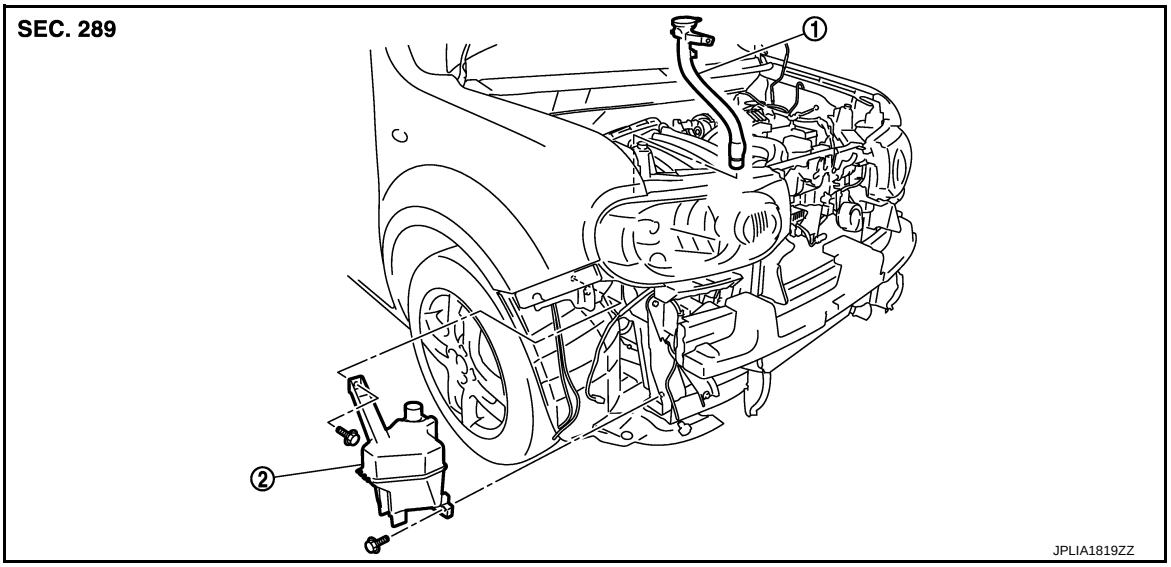
- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
  NOTE:
  ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.
- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.

REMOVAL AND INSTALLATION

WASHER TANK

Exploded View

INFOID:0000000009945871



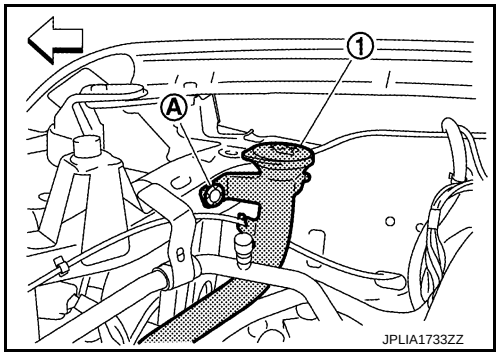
1. Washer tank inlet
2. Washer tank

Removal and Installation

INFOID:0000000009945872

REMOVAL

1. Remove the clip (A).



⇦ : Vehicle front

2. Pull out the washer tank inlet (1) from the washer tank.
3. Remove the fender protector RH. Refer to EXT-21, "FENDER PROTECTOR : Exploded View".
4. Disconnect washer pump connector.
5. Disconnect washer level switch connector.
6. Remove front washer tube and rear washer tube.
7. Remove washer tank mounting bolts.
8. Remove the washer tank from the vehicle.

INSTALLATION

Install in the reverse order of removal.

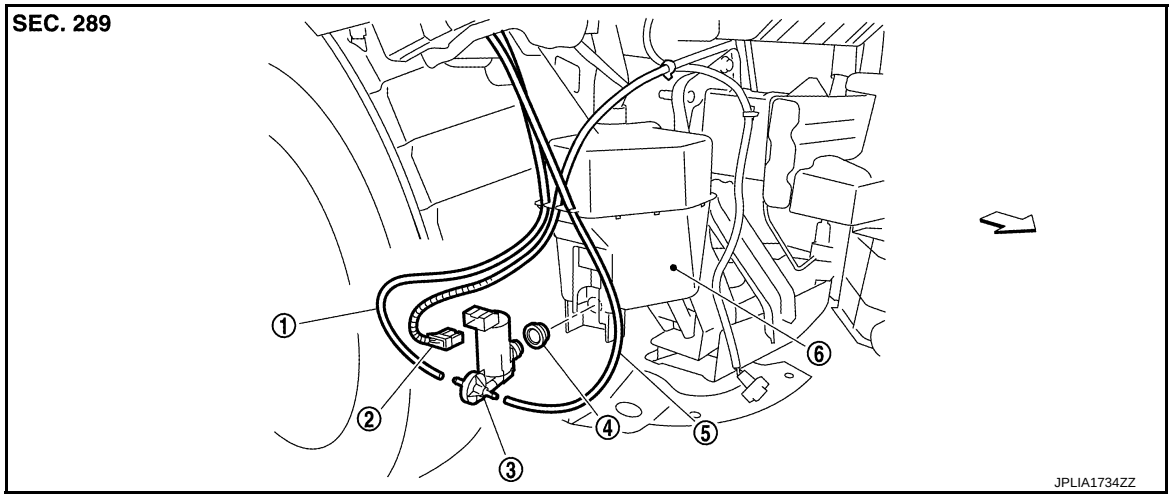
CAUTION:

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

WASHER PUMP

Exploded View

INFOID:0000000009945873



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

⇦ : Vehicle front

Removal and Installation

INFOID:0000000009945874

REMOVAL

1. Remove the fender protector RH (front). Refer to EXT-21, "FENDER PROTECTOR : Exploded View".
2. Disconnect washer pump connector.
3. Disconnect washer level switch connector. (For Canada models)
4. Remove front washer tube and rear washer tube.
5. Remove washer pump from the washer tank.
6. Remove the packing from the washer tank.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

Never twist the packing when installing the washer pump.

WASHER LEVEL SWITCH

Removal and Installation

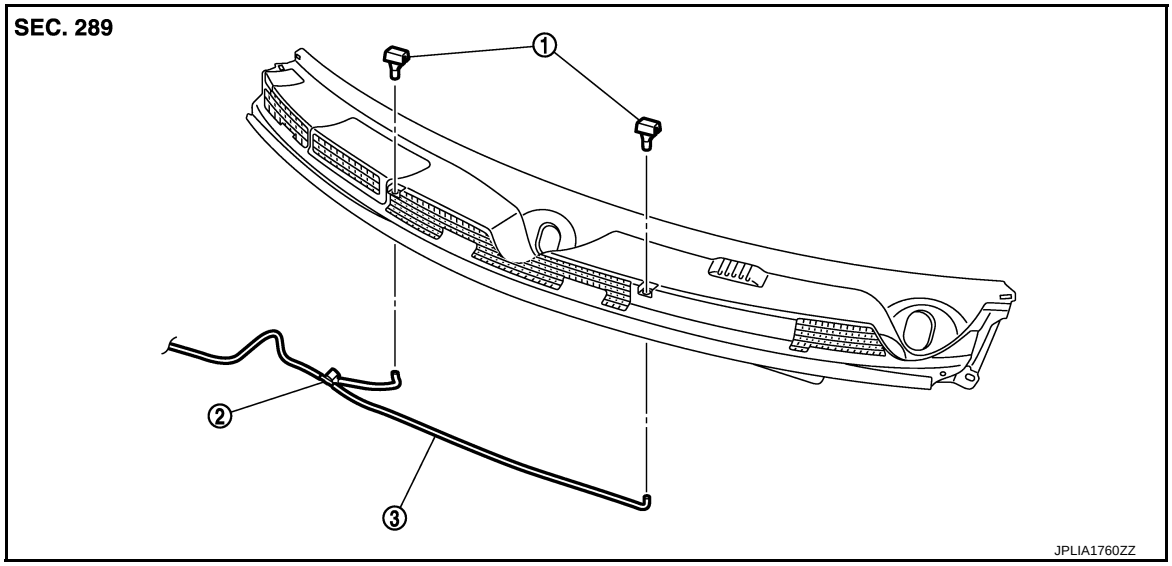
INFOID:0000000009945875

The washer level switch must be replaced together with the washer tank as an assembly. Refer to WW-141, "Removal and Installation".

FRONT WASHER NOZZLE AND TUBE

Exploded View

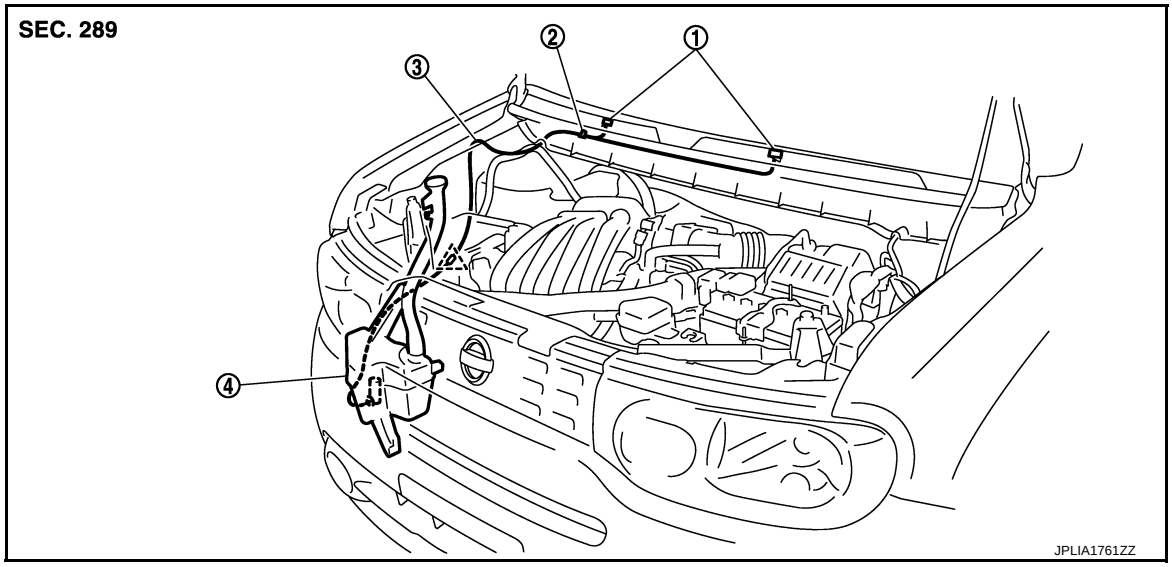
INFOID:0000000009945876



1. Front washer nozzle
2. Check valve
3. Front washer tube

Hydraulic Layout

INFOID:0000000009945877



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

: Clip

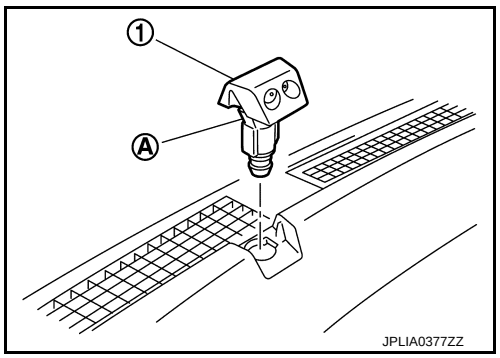
Removal and Installation

INFOID:0000000009945878

REMOVAL

1. Remove cowl top cover. Refer to EXT-19, "Exploded View".

2. Disconnect front washer tube from front washer nozzle (1).
3. While pressing pawl (A) on the cowl top cover front side of front washer nozzle, remove front washer nozzle from cowl top cover.



INSTALLATION

Install in the reverse order of removal.

CAUTION:

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

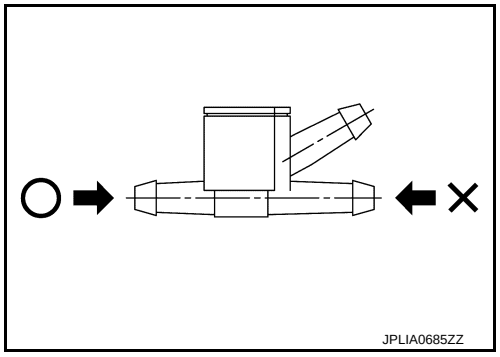
Inspection and Adjustment

INFOID:0000000009945879

INSPECTION

Check valve Inspection

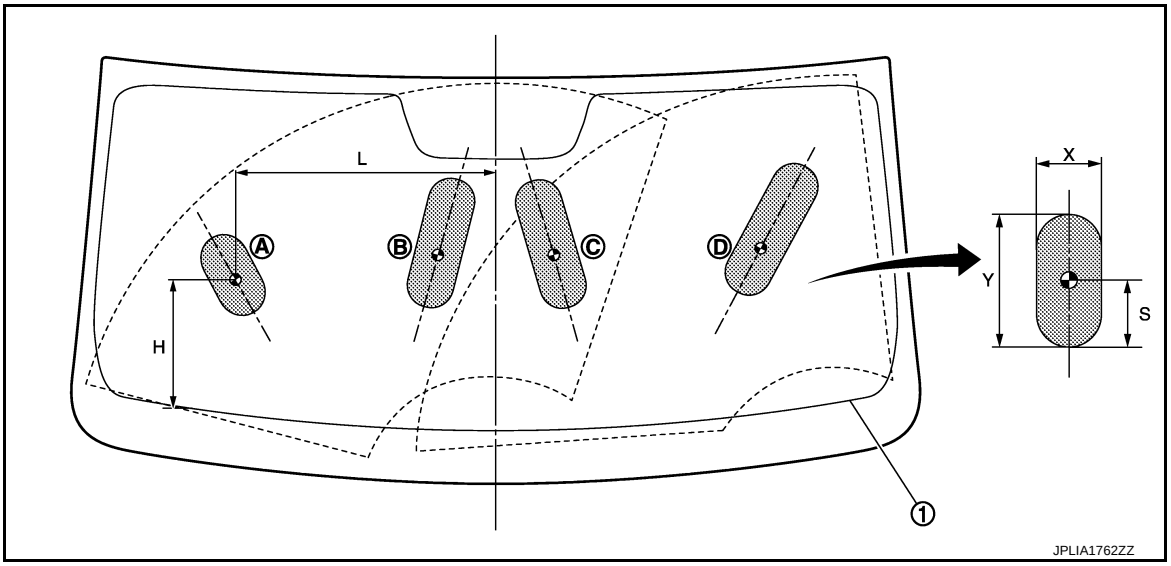
Check that air can pass through the hose by blowing forward (toward the nozzle), and check that air cannot pass through by sucking.



ADJUSTMENT

Washer Nozzle Spray Position Adjustment

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



1. Black printed frame line

: Spray area

: Target spray position

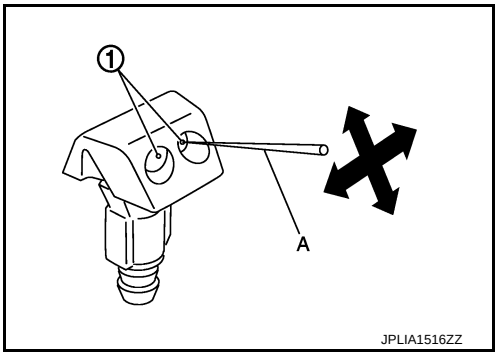
Unit: mm (in)

Spray position	H	L	X	Y	S
A	222 (8.74)	440 (17.32)	80 (3.15)	146 (5.75)	63 (2.48)
B	298 (11.73)	99 (3.90)	80 (3.15)	230 (9.06)	95 (3.74)
C	298 (11.73)	99 (3.90)	80 (3.15)	230 (9.06)	95 (3.74)
D	288 (11.34)	463 (18.23)	80 (3.15)	249 (9.80)	95 (3.74)

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:

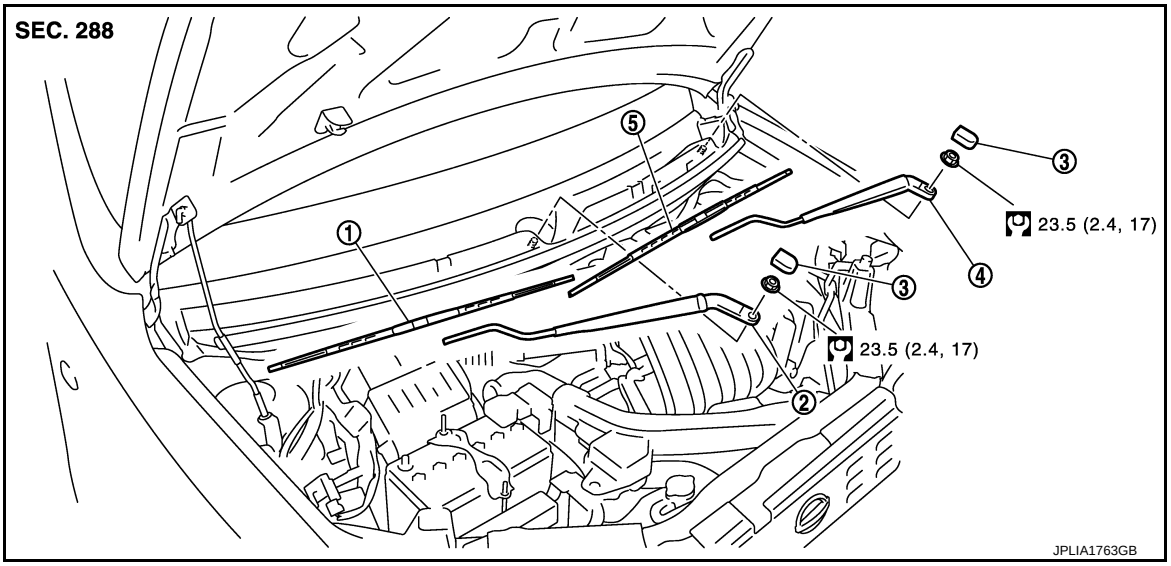
If wax or dust gets into the nozzle, remove wax or dust with a needle or small pin.



FRONT WIPER ARM

Exploded View

INFOID:0000000009945880



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

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

Removal and Installation

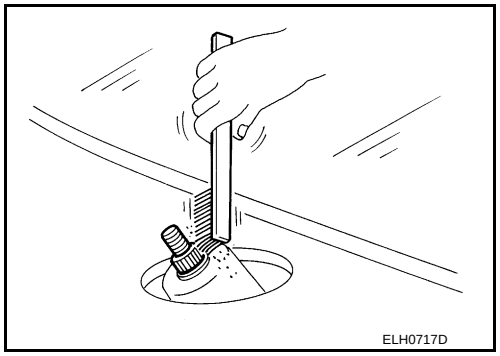
INFOID:0000000009945881

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-147, "Adjustment".
4. Install the front wiper arms by tightening the mounting nuts.
5. Inject the washer fluid.
6. Operate the front wiper to move it to the auto stop position.
7. Check that the front wiper blades stop at the specified position.
8. Install front wiper arm caps.



Adjustment

INFOID:0000000009945882

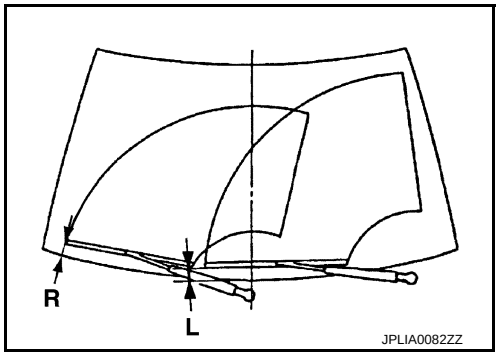
WIPER BLADE POSITION ADJUSTMENT

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

Standard clearance

R : 37.1 ± 7.5 mm (1.461 ± 0.295 in)

L : 28.4 ± 7.5 mm (1.118 ± 0.295 in)

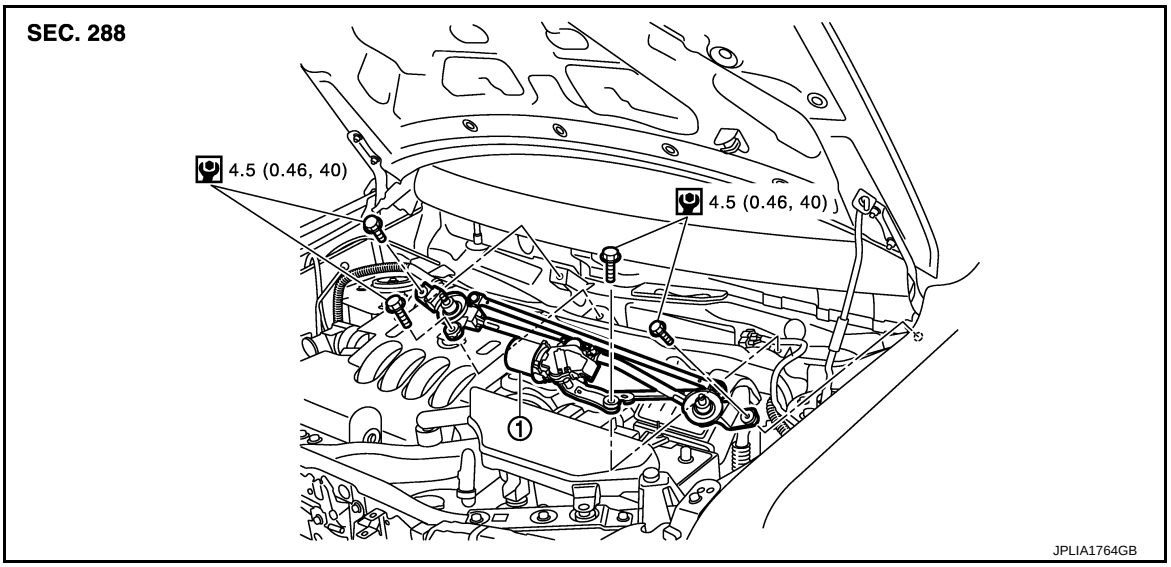


FRONT WIPER DRIVE ASSEMBLY

Exploded View

INFOID:0000000009945883

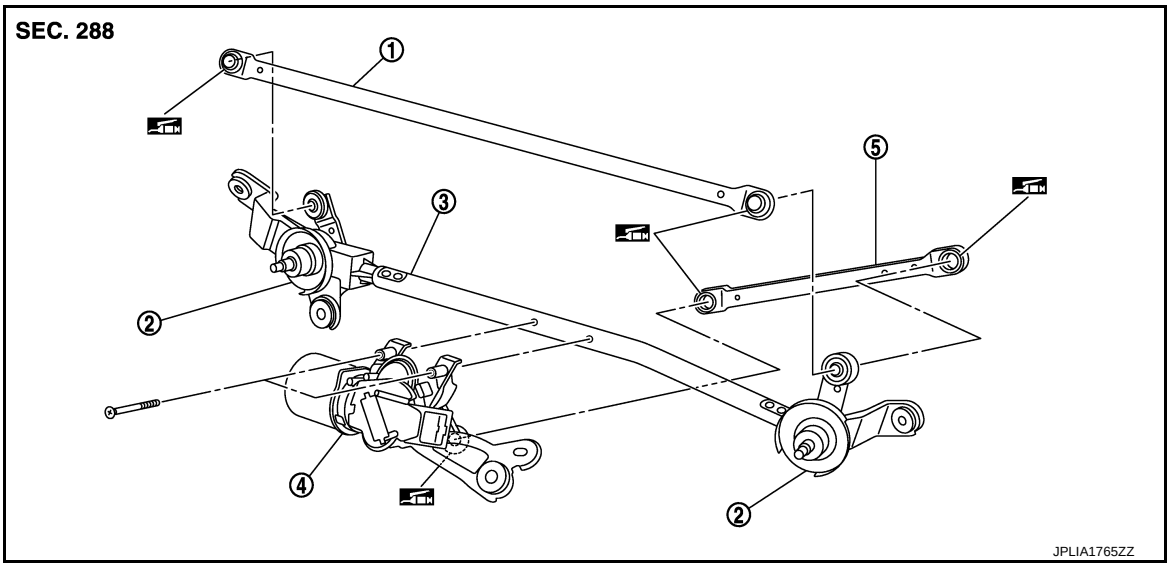
REMOVAL VIEW



1. Front wiper drive assembly

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

DISASSEMBLY VIEW



1. Front wiper linkage 2
2. Front wiper frame
3. Shaft seal
4. Front wiper motor
5. Front wiper linkage 1

: Multi–purpose grease or an equivalent

Removal and Installation

INFOID:0000000009945884

REMOVAL

1. Remove front wiper arm. Refer to WW-147, "Exploded View".
2. Remove cowl top cover. Refer to EXT-19, "Exploded View".

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-19, "Exploded View".
5. Install front wiper arms. Refer to WW-147, "Exploded View".

Disassembly and Assembly

INFOID:0000000009945885

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 front 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 1 to the front wiper motor and the front wiper frame.
6. Install the front wiper linkage 2 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

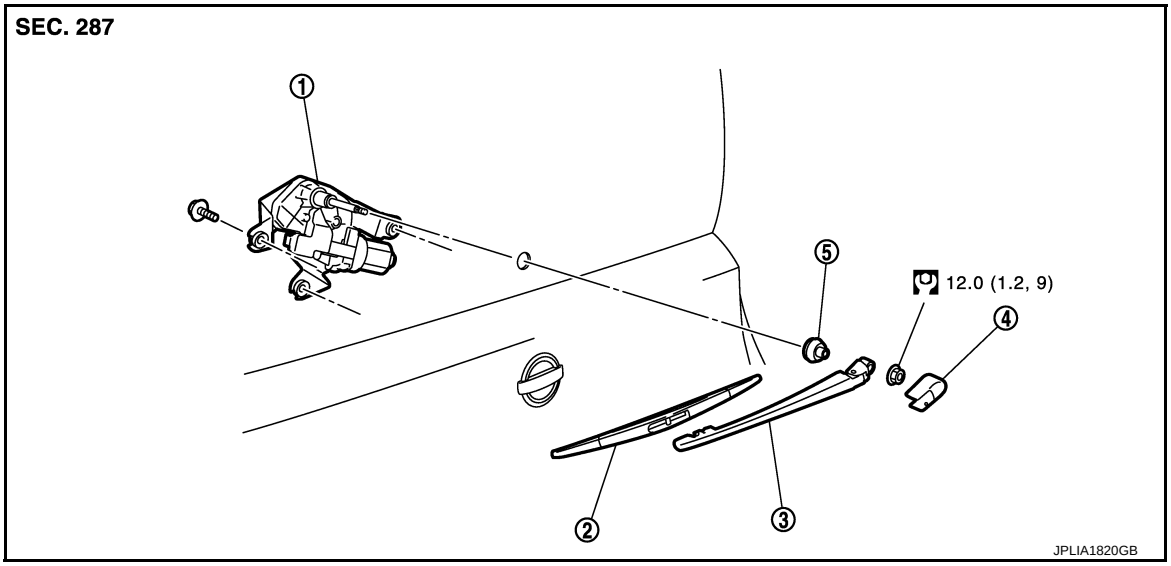
INFOID:0000000009945886

Refer to BCS-89, "Exploded View".

REAR WIPER ARM

Exploded View

INFOID:0000000009945887



1. Rear wiper motor
2. Rear wiper blade
3. Rear wiper arm
4. Rear wiper arm cover
5. pivot seal

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

Removal and Installation

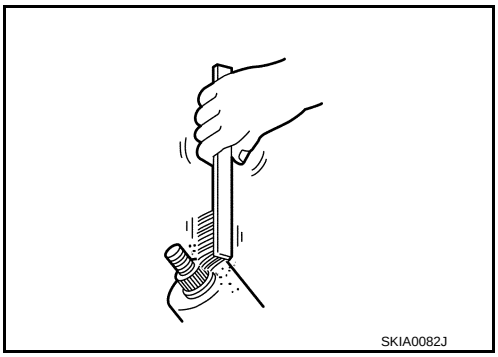
INFOID:0000000009945888

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-152, "Adjustment".
4. Install the rear wiper arm by tightening the mounting nut.
5. Inject the washer fluid.
6. Operate the rear wiper to the auto stop position.
7. Check that the rear wiper blades stop at the specified position.
8. Install the rear wiper arm cover.



Adjustment

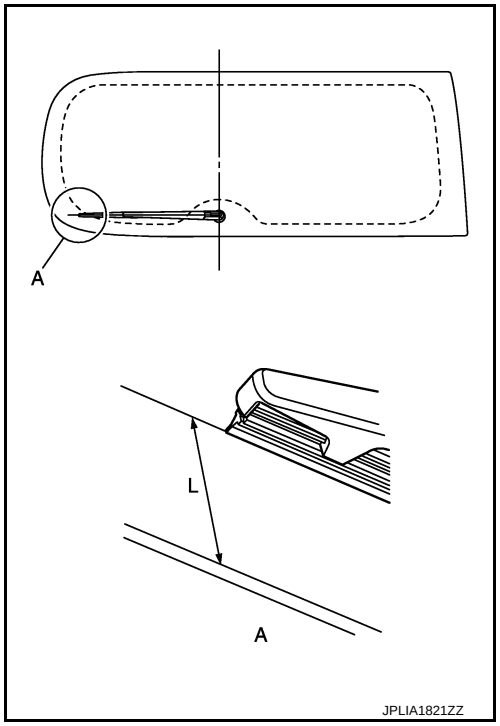
INFOID:0000000009945889

REAR WIPER BLADE POSITION ADJUSTMENT

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

Standard clearance

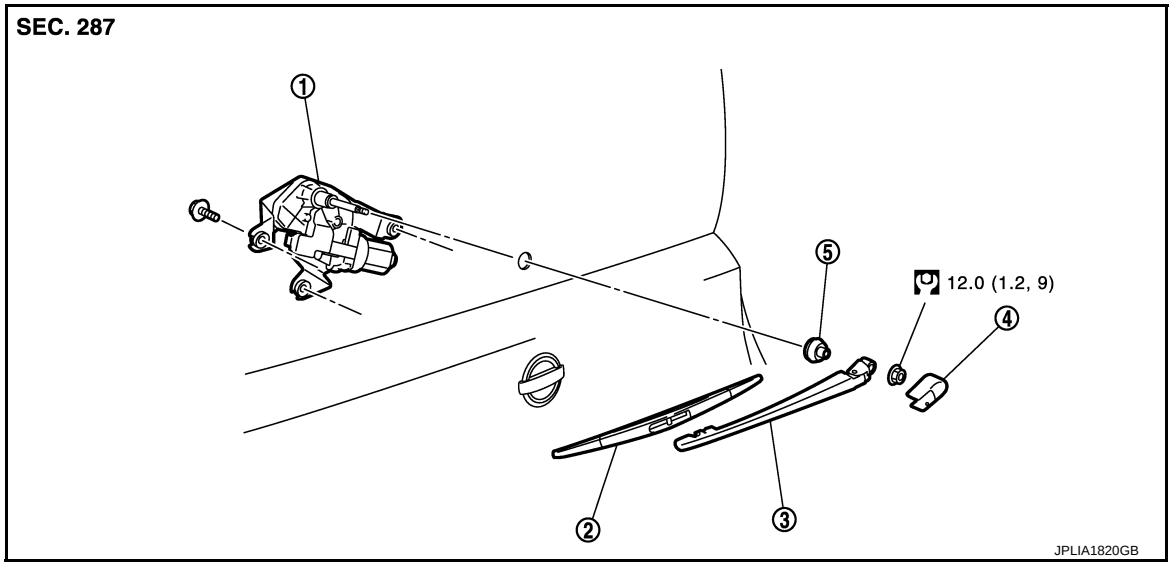
L : 54.5 ± 7.5 mm (2.146 ± 0.295 in)



REAR WIPER MOTOR

Exploded View

INFOID:0000000009945890



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

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

Removal and Installation

INFOID:0000000009945891

REMOVAL

1. Remove rear wiper arm cover and rear wiper arm. Refer to WW-152, "Exploded View".
2. Remove back door finisher lower. Refer to INT-27, "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.

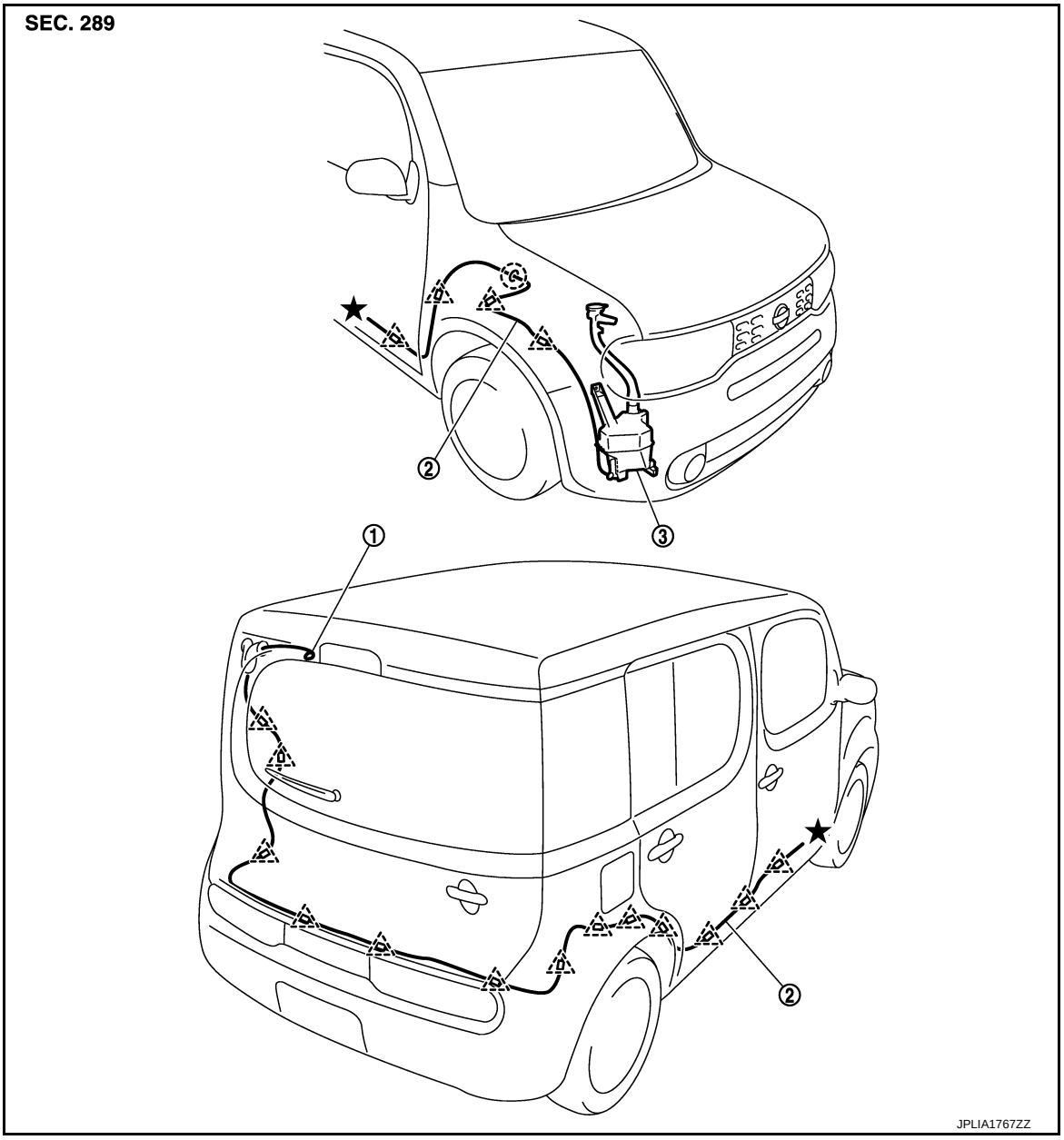
INSTALLATION

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 lower. Refer to INT-27, "Exploded View".
6. Install rear wiper arm cover and rear wiper arm. Refer to WW-152, "Exploded View".

REAR WASHER NOZZLE AND TUBE

Hydraulic Layout

INFOID:0000000009945892



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

: Clip

: Grommet

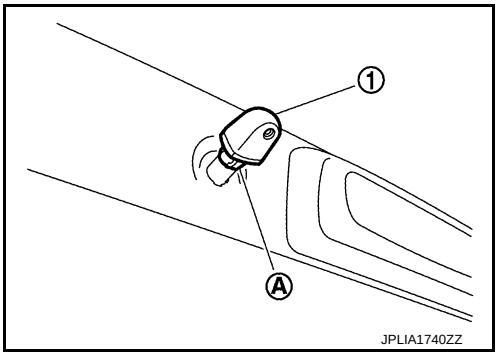
Removal and Installation

INFOID:0000000009945893

REMOVAL

1. Remove the back door finisher upper. Refer to INT-27, "Exploded View".

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



INSTALLATION

Install in the reverse order of removal.

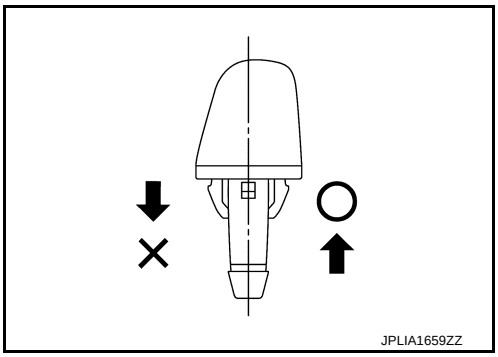
Inspection and Adjustment

INFOID:0000000009945894

INSPECTION

Washer Nozzle Inspection

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



ADJUSTMENT

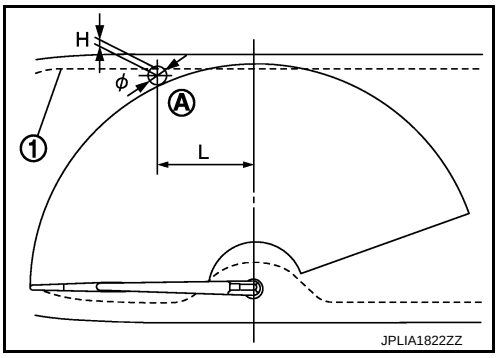
Washer Nozzle Spray Position adjustment

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

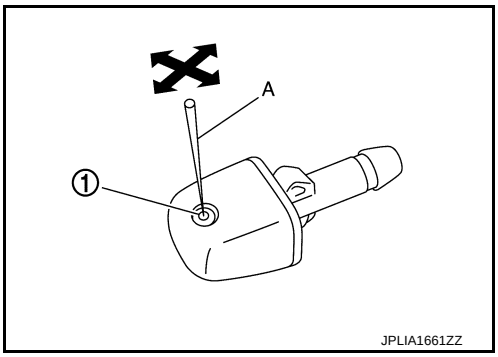
1 : Black printed frame line

Unit: mm (in)

Spray position	H : Height	L : Length	ϕ : Spray position area
A	1 (0.04)	164.8 (6.49)	30 (1.18)



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

NOTE:

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