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SECTION **WW**

WIPER & WASHER

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

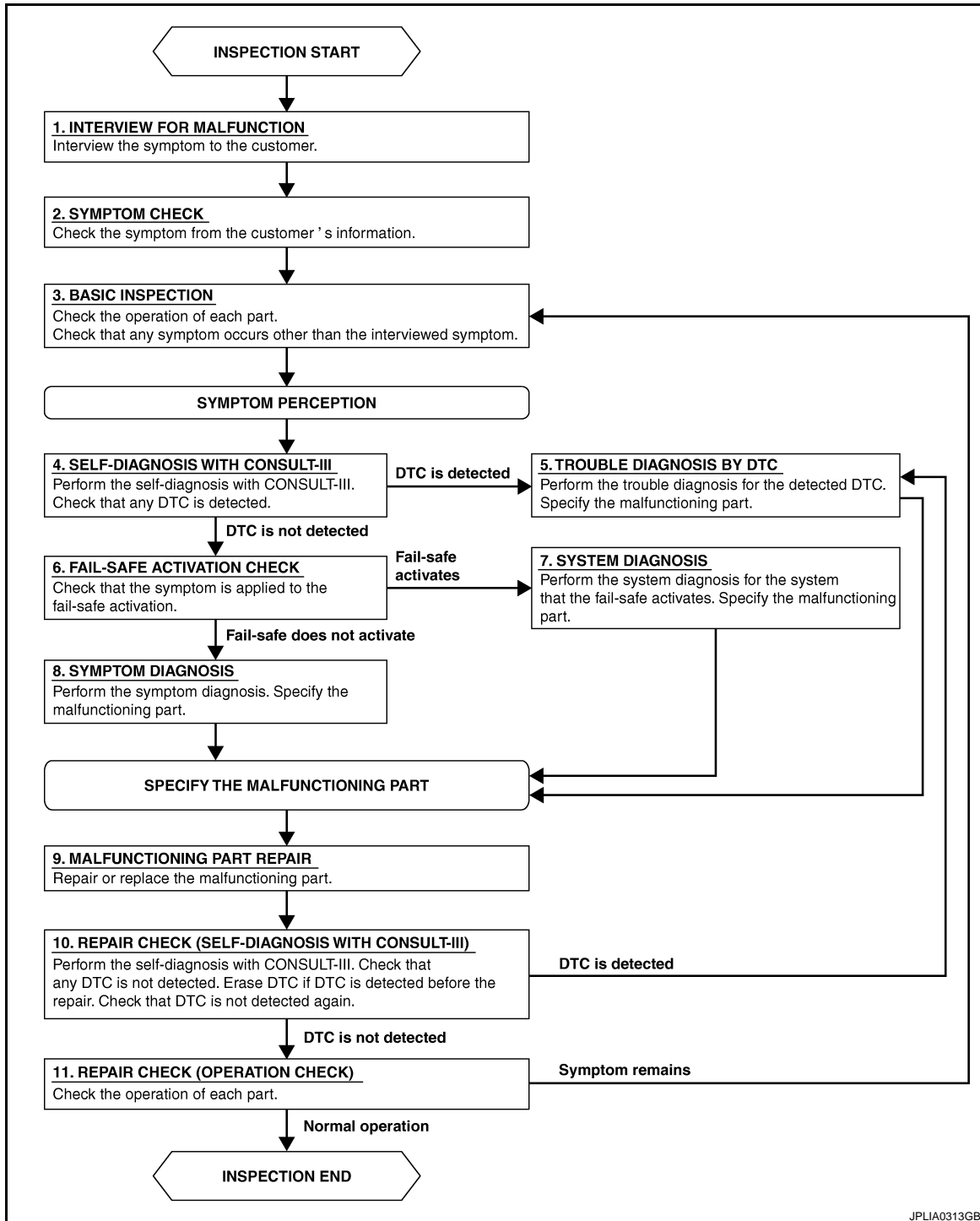
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000005254162

OVERALL SEQUENCE



DETAILED FLOW

1. INTERVIEW FOR MALFUNCTION

Interview the symptom to the customer.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

>> GO TO 2.

2. SYMPTOM CHECK

Check the symptom from the customer's information.

>> GO TO 3.

3. BASIC INSPECTION

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

>> GO TO 4.

4. SELF-DIAGNOSIS WITH CONSULT-III

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

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 6.

5. TROUBLE DIAGNOSIS BY DTC

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

>> GO TO 9.

6. FAIL-SAFE ACTIVATION CHECK

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

Does the fail-safe activate?

YES >> GO TO 7.

NO >> GO TO 8.

7. SYSTEM DIAGNOSIS

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

>> GO TO 9.

8. SYMPTOM DIAGNOSIS

Perform the symptom diagnosis. Specify the malfunctioning part.

>> GO TO 9.

9. MALFUNCTION PART REPAIR

Repair or replace the malfunctioning part.

>> GO TO 10.

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

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

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 11.

11. REPAIR CHECK (OPERATION CHECK)

Check the operation of each part.

Does it operate normally?

YES >> INSPECTION END

NO >> GO TO 3.

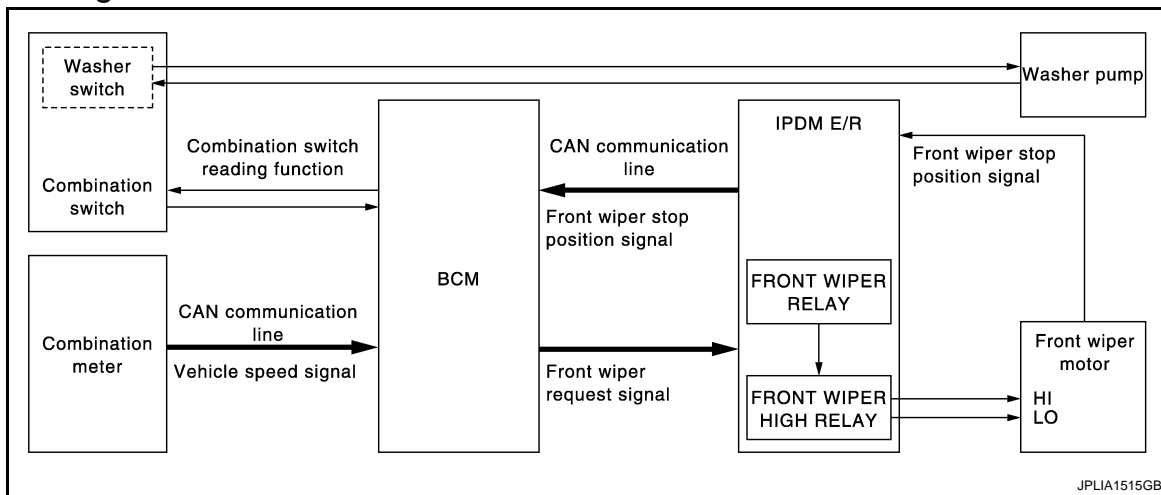
FRONT WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION

FRONT WIPER AND WASHER SYSTEM

System Diagram



System Description

INFOID:000000005254164

OUTLINE

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

Control by BCM

- Combination switch reading function
- Front wiper control function

Control by IPDM E/R

- Front wiper control function
- Relay control function

FRONT WIPER BASIC OPERATION

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

FRONT WIPER LO OPERATION

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

Front wiper LO operating condition

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

FRONT WIPER HI OPERATION

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

Front wiper HI operating condition

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

FRONT WIPER INT OPERATION (LINKED WITH VEHICLE SPEED)

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FRONT WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

- BCM transmits the front wiper request signal (INT) to IPDM E/R with CAN communication according to the front wiper INT operation condition and the intermittent operation delay interval judged value.

Front wiper INT operating condition

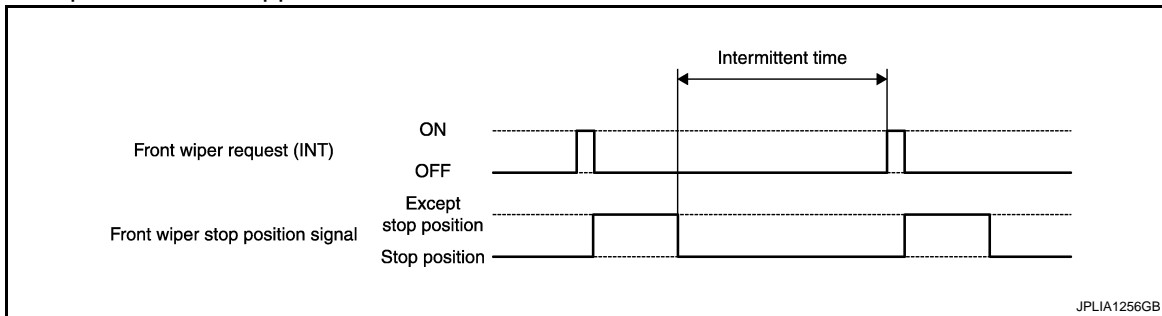
- Ignition switch ON
- Front wiper switch INT

Intermittent operation delay interval judgment

- 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

Wiper intermittent dial position	Intermittent operation interval	Intermittent operation delay Interval (s)			
		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

- IPDM E/R turns the integrated front wiper relay ON 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 after the front wiper motor is stopped.



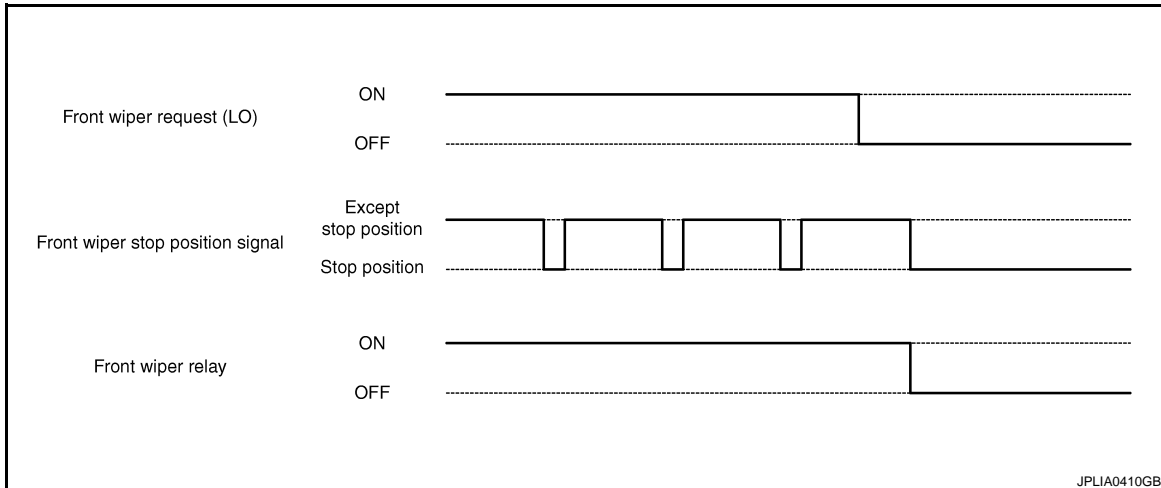
FRONT WIPER AUTO STOP OPERATION

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

FRONT WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

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



NOTE:

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

FRONT WIPER OPERATION LINKED WITH WASHER

- BCM transmits the front wiper request signal (LO) to IPDM E/R with CAN communication according to the washer linked operating condition of the front wiper.
- BCM transmits the front wiper request signal (LO) so that the front wiper operates approximately 3 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 auto stop circuit is malfunctioning. Refer to [PCS-24. "Fail-safe"](#).

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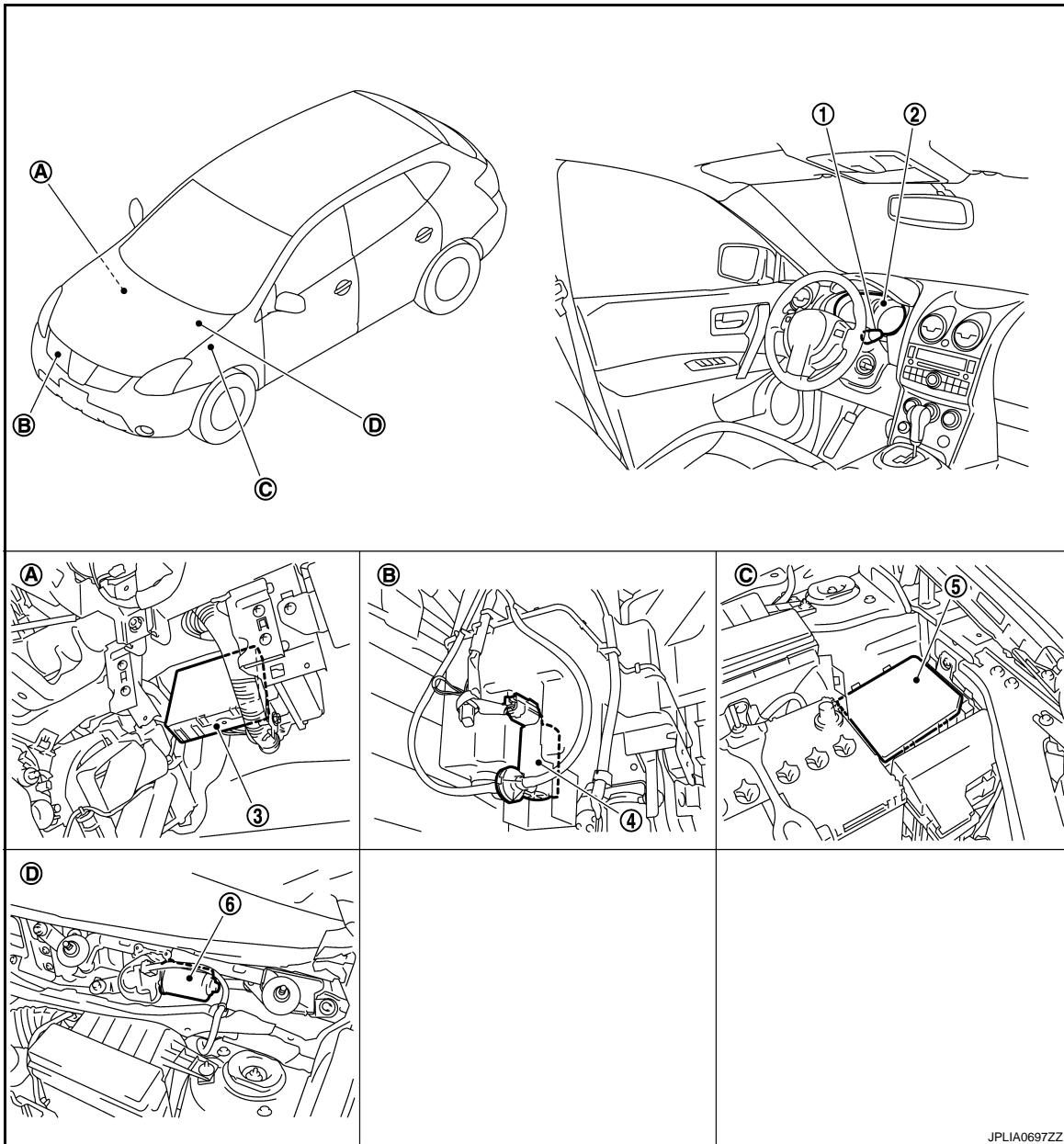
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FRONT WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

Component Parts Location

INFOID:000000005254165



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- | | | |
|---------------------------------------|-------------------------------|----------------------|
| 1. Combination switch | 2. Combination meter | 3. BCM |
| 4. Washer pump | 5. IPDM E/R | 6. Front wiper motor |
| A. Over the glove box | B. Radiator core support (RH) | C. Engine room (LH) |
| D. Cowl top, left side of engine room | | |

Component Description

INFOID:000000005254166

Part	Description
BCM	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Controls the integrated relay according to the request (with CAN communication) from BCM. Performs the auto stop control of the front wiper.

FRONT WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

Part	Description
Combination switch (Wiper & washer switch)	Refer to BCS-9, "System Diagram" .
Combination meter	Transmits the vehicle speed signal to BCM with CAN communication.

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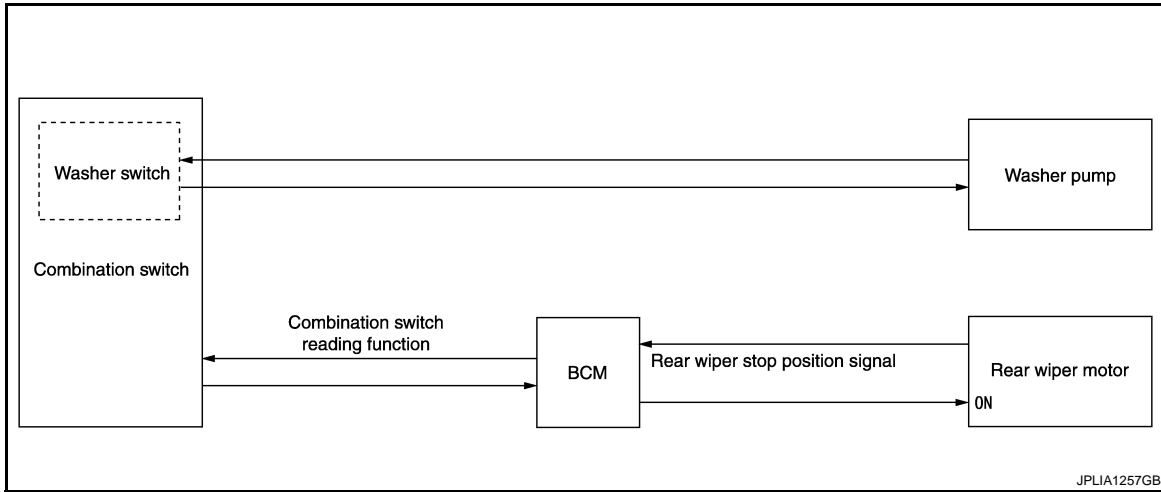
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REAR WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

REAR WIPER AND WASHER SYSTEM

System Diagram



System Description

INFOID:000000005254168

OUTLINE

The rear wiper is controlled by each function of BCM.

Control by BCM

- Combination switch reading function
- Rear wiper control function

REAR WIPER BASIC OPERATION

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

REAR WIPER ON OPERATION

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

Rear wiper ON operating condition

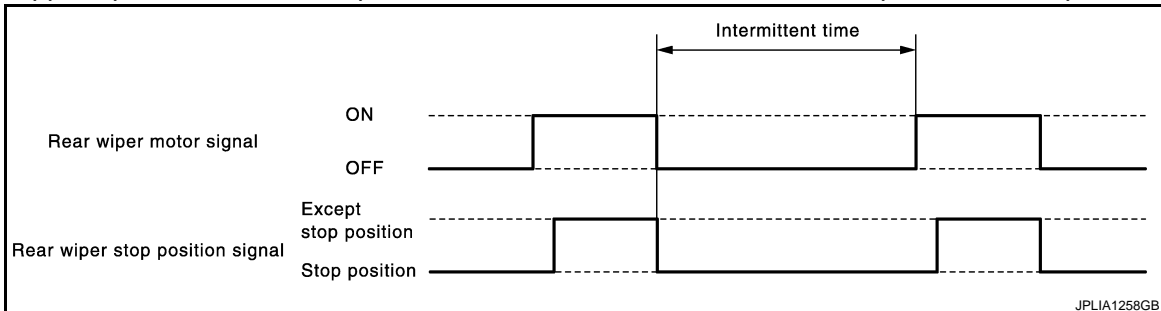
- Ignition switch ON
- Rear wiper switch ON

REAR WIPER INT OPERATION

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

Rear wiper INT operating condition

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



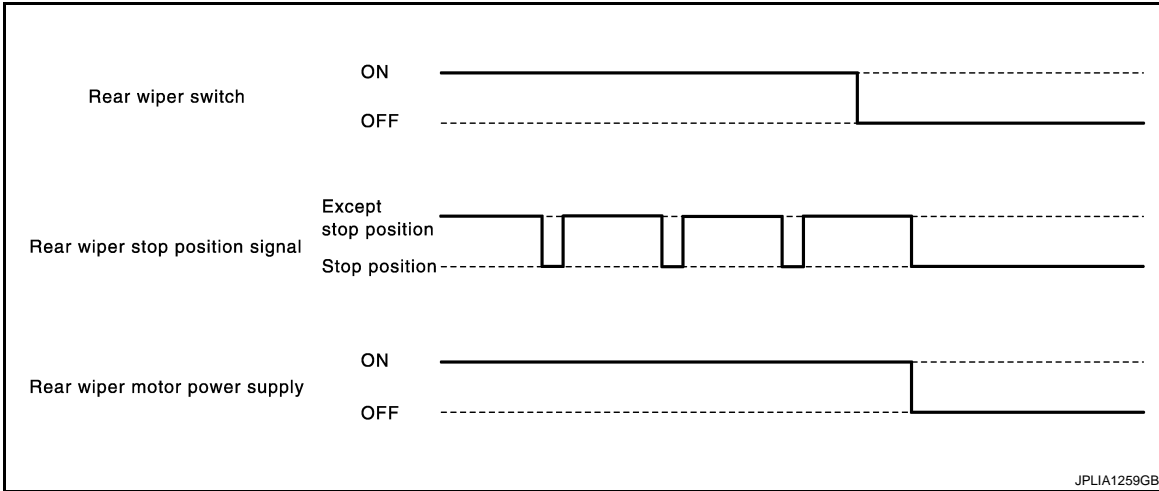
REAR WIPER AUTO STOP OPERATION

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

REAR WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

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



NOTE:

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

REAR WIPER OPERATION LINKED WITH WASHER

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

Washer linked operating condition of rear wiper

- Ignition switch ON
- Rear washer switch ON (0.4 second or more)
- The washer pump is grounded through the combination switch with the rear washer switch ON.

REAR WIPER FAIL-SAFE OPERATION

BCM performs the fail-safe function when the rear wiper auto stop circuit is malfunctioning. Refer to [BCS-61](#), "[Fail-safe](#)".

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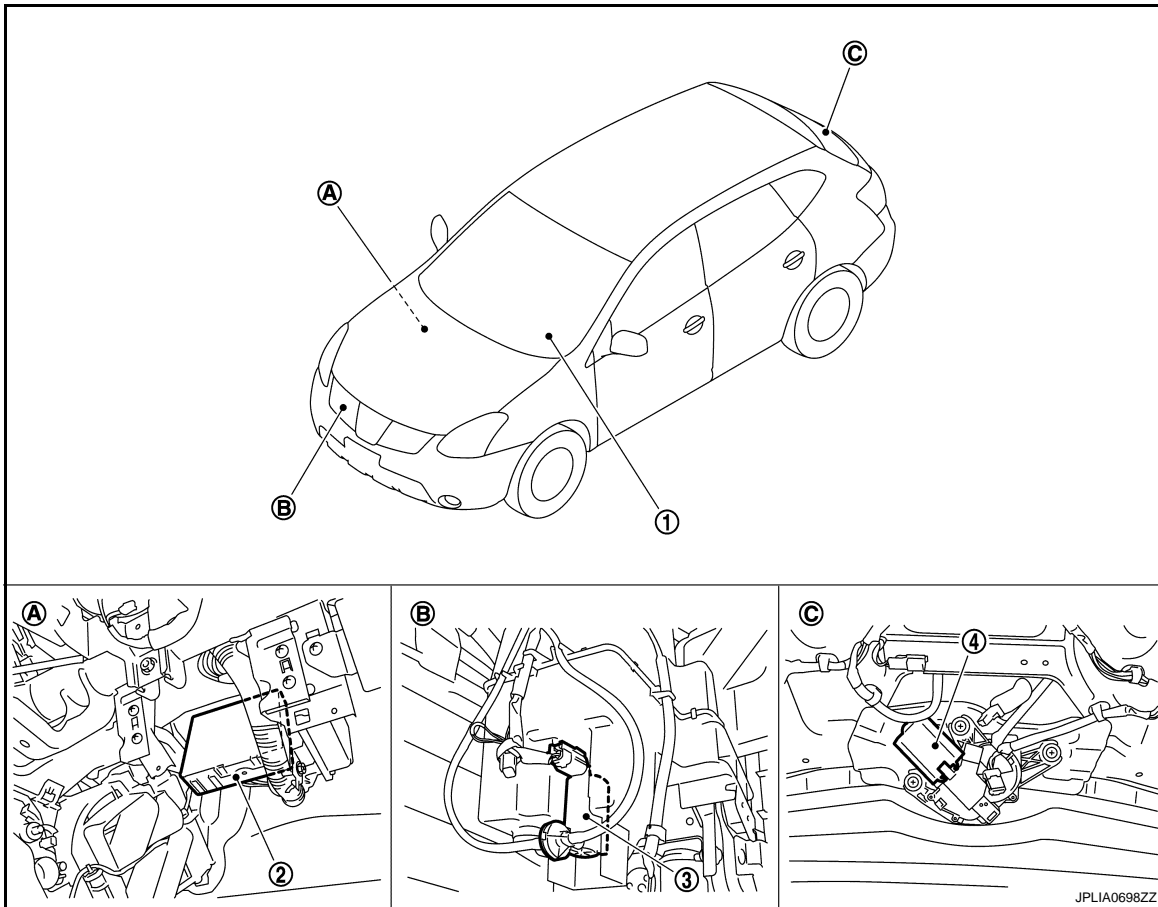
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REAR WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

Component Parts Location

INFOID:000000005254169



1. Combination switch

4. Rear wiper motor

A. Over the glove box

2. BCM

B. Radiator core support (RH)

3. Washer pump

C. Back door trim finisher lower inside

Component Description

INFOID:000000005254170

Part	Description
BCM	<ul style="list-style-type: none"> 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-9, "System Diagram" .

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

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

INFOID:000000005254171

APPLICATION ITEM

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

Diagnosis mode	Function description
ECU Identification	BCM part number is displayed.
Self-Diagnostic Result	Displays the diagnosis results judged by BCM. Refer to WW-64, "DTC Index" .
Data Monitor	BCM input/output signals are displayed.
Active Test	The signals used to activate each device are forcibly supplied from BCM.
Work Support	Changes the setting for each system function.
Configuration	<ul style="list-style-type: none"> Read and save the vehicle specification. Write the vehicle specification when replacing BCM.
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM.

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

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

x: Applicable item

System	CONSULT-III sub system selection item	Diagnosis mode		
		Work Support	Data Monitor	Active Test
Door lock	DOOR LOCK	x	x	x
Rear window defogger	REAR DEFOGGER		x	x
Warning chime	BUZZER		x	x
Interior room lamp control	INT LAMP	x	x	x
Remote keyless entry system	MULTI REMOTE ENT	x	x	x
Exterior lamp	HEAD LAMP	x	x	x
Wiper and washer	WIPER	x	x	x
Turn signal and hazard warning lamps	FLASHER		x	x
Air conditioner	AIR CONDITONER		x	
Intelligent Key system	INTELLIGENT KEY		x	
Combination switch	COMB SW		x	
—	BCM	x		
Immobilizer	IMMU		x	x
Interior room lamp battery saver	BATTERY SAVER	x	x	x
Back door open	TRUNK		x	x
Vehicle security system	THEFT ALM	x	x	x
RAP system	RETAINED PWR	x	x	x
Signal buffer system	SIGNAL BUFFER		x	x
—	FUEL LID*			
TPMS	TPMS (AIR PRESSURE MONITOR)	x	x	x
Panic alarm system	PANIC ALARM			x

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

WIPER

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

WIPER : CONSULT-III Function (BCM - WIPER)

INFOID:000000005254172

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

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]	
RR WIPER STOP [On/Off]	Rear wiper motor (stop position) status input from the rear wiper motor.
H/L WASH SW [On/Off]	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.

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

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

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DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:000000005254173

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
- License plate lamps
- Tail lamps
- Front fog lamps
- Headlamps (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan (LO, MID, HI)

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. Then the horn sounds once and the auto active test starts.

NOTE:

Only a vehicle with the vehicle security system, the horn sounds.

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.**
- **Never 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	<ul style="list-style-type: none">• Parking lamps• License plate lamps• Tail lamps• Front fog lamps• Headlamps HI (daytime running light operation)*	10 seconds
4	Headlamps	LO ↔ HI 5 times
5	A/C compressor (magnet clutch)	ON ↔ OFF 5 times
6	Cooling fan	LO for 5 seconds → MID for 3 seconds → HI for 2 seconds

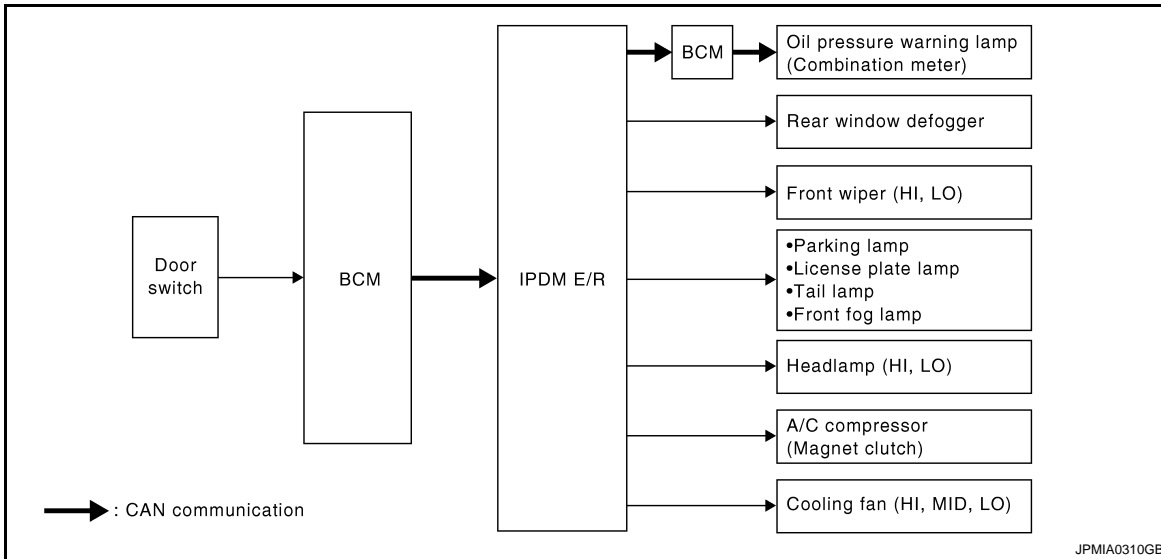
NOTE:

*: With daytime running light system

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Concept of auto active test



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

Diagnosis chart in auto active test mode

Symptom	Inspection contents	Possible cause	
Rear window defogger does not operate	Perform auto active test. Does the rear window defogger operate?	YES	BCM signal input circuit
		NO	<ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • Parking 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	<ul style="list-style-type: none"> • Lamp or motor • Lamp or motor ground circuit • Harness or connector between IPDM E/R and applicable system • IPDM E/R
Headlamps HI (daytime running light operation) do not operate	Perform auto active test. Do headlamps HI (daytime running light operation) operate?	YES	<ul style="list-style-type: none"> • CAN communication signal between ECM and BCM • CAN communication signal between combination meter and BCM • BCM signal input circuit
		NO	<ul style="list-style-type: none"> • Daytime running light relay power supply circuit • Harness or connector between IPDM E/R and daytime running light relay • Daytime running light relay
A/C compressor does not operate	Perform auto active test. Does the magnet clutch operate?	YES	<ul style="list-style-type: none"> • BCM signal input circuit • CAN communication signal between BCM and ECM • CAN communication signal between ECM and IPDM E/R
		NO	<ul style="list-style-type: none"> • Magnet clutch • Harness or connector between IPDM E/R and magnet clutch • IPDM E/R

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Symptom	Inspection contents	Possible cause
Oil pressure warning lamp does not operate	Perform auto active test. Does the oil pressure warning lamp blink?	YES <ul style="list-style-type: none"> • Harness or connector between IPDM E/R and oil pressure switch • Oil pressure switch • IPDM E/R
		NO <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • ECM signal input circuit • CAN communication signal between ECM and IPDM E/R
		NO <ul style="list-style-type: none"> • Cooling fan motor-2 power supply circuit • Cooling fan motor-1 ground circuit • Cooling fan relay-4 or cooling fan relay-5 power supply circuit • Cooling fan relay-5 ground circuit • Harness or connector between IPDM E/R and cooling fan motor • Harness or connector between IPDM E/R, and cooling fan relay-4 or cooling fan relay-5 • Harness or connector between cooling fan motor-2, and cooling fan relay-4 or cooling fan relay-5 • Cooling fan relay-4 or cooling fan relay-5 • Cooling fan motor • IPDM E/R

CONSULT-III Function (IPDM E/R)

INFOID:000000005254174

APPLICATION ITEM

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

Diagnosis mode	Description
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

Refer to [WW-76. "DTC Index"](#).

DATA MONITOR

Monitor item

Monitor Item [Unit]	MAIN SIGNALS	Description
MOTOR FAN REQ [1 - 4]	×	Displays the value of the cooling fan speed signal received from ECM via CAN communication.
AC COMP REQ [Off/On]	×	Displays the status of the A/C compressor request signal received from ECM via CAN communication.
TAIL&CLR REQ [Off/On]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN communication.

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Monitor Item [Unit]	MAIN SIGNALS	Description	A
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.	A
FR FOG REQ [Off/On]	×	Displays the status of the front fog light request signal received from BCM via CAN communication. NOTE: This item is monitored only the vehicle with front fog lamp system.	B
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.	C
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper stop position signal judged by IPDM E/R.	D
WIP PROT [Off/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.	E
ST RLY REQ [Off/On]		Displays the status of the starter request signal.	F
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.	F
RR DEF REQ [Off/On]	×	Displays the status of the rear defogger request signal received from BCM via CAN communication.	G
OIL P SW [Open/Close]		Displays the status of the oil pressure switch judged by IPDM E/R.	G
DTRL REQ [Off/On]		Displays the status of the daytime running light request signal received from BCM via CAN communication. NOTE: This item is monitored only the vehicle with daytime running light system.	H
HOOD SW [Off/On]		Displays the status of the hood switch judged by IPDM E/R. NOTE: This item is monitored only the vehicle for Mexico.	I
THFT HRN REQ [Off/On]		Displays the status of the horn request signal by vehicle security system or panic alarm system received from BCM via CAN communication.	J
HORN CHIRP [Off/On]		Displays the status of the horn request signal by key fob LOCK operation received from BCM via CAN communication.	K

ACTIVE TEST

Test item

Test item	Operation	Description	WW
REAR DEFOGGER	Off	OFF	M
	On	Operates the rear window defogger relay.	M
FRONT WIPER	Off	OFF	N
	Lo	Operates the front wiper relay.	N
	Hi	Operates the front wiper relay and front wiper high relay.	N
MOTOR FAN	1	OFF	O
	2	Operates the cooling fan relay (LO operation).	O
	3	Operates the cooling fan relay (MID operation).	O
	4	Operates the cooling fan relay (HI operation).	P

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Test item	Operation	Description
EXTERNAL LAMPS	Off	OFF
	TAIL	Operates the tail lamp relay and the daytime running light relay. NOTE: Daytime running light relay is with daytime running light system only.
	Lo	Operates the headlamp low relay.
	Hi	Operates the headlamp low relay and ON/OFF the headlamp high relay at 4 seconds intervals.
	Fog	Operates the front fog lamp relay. NOTE: This item can test only the vehicle with front fog lamp system.
HORN	On	Operates horn relay for 20 ms.

WIPER AND WASHER FUSE

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

WIPER AND WASHER FUSE

Description

INFOID:000000005254175

Fuse list

Unit	Location	No.	Capacity
Front wiper motor	IPDM E/R	48	30 A
Washer pump	Fuse block	4	10 A

Diagnosis Procedure

INFOID:000000005254176

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	10 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.

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WW

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

POWER SUPPLY AND GROUND CIRCUIT BCM (BODY CONTROL MODULE)

BCM (BODY CONTROL MODULE) : Diagnosis Procedure

INFOID:000000005254177

1. CHECK FUSES AND FUSIBLE LINK

Check that the following fuses and fusible link are not fusing.

Signal name	Fuses and fusible link No.
Battery power supply	10
	J
ACC power supply	20
Ignition power supply	1

Is the fuse fusing?

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

NO >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT

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

Terminals		(-)	Ignition switch position		
BCM			OFF	ACC	ON
Connector	Terminal				
M67	70	Ground	Battery voltage	Battery voltage	Battery voltage
	57		Battery voltage	Battery voltage	Battery voltage
M65	11		Approx. 0 V	Battery voltage	Battery voltage
	38		Approx. 0 V	Approx. 0 V	Battery voltage

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair the harness or connector.

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and the ground.

BCM		Ground	Continuity
Connector	Terminal		
M67	67		Existed

Does continuity exist?

YES >> INSPECTION END

NO >> Repair the harness or connector.

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

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

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

agnosis Procedure

INFOID:000000005254178

1.CHECK FUSIBLE LINK

Check that the following IPDM E/R fusible link is not blown.

Signal name	Fusible link No.
Battery power supply	C
	E
	K

Is the fusible link fusing?

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

NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

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

Terminals		Voltage (Approx.)
(+)	(-)	
IPDM E/R		Battery voltage
Connector	Terminal	
E9	1	
	2	
E10	6	

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair the harness or connector.

3.CHECK GROUND CIRCUIT

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E11	11		Exist
E13	25		

Does continuity exist?

YES >> INSPECTION END

NO >> Repair the harness or connector.

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FRONT WIPER MOTOR LO CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR LO CIRCUIT

Component Function Check

INFOID:000000005254179

1. CHECK FRONT WIPER LO OPERATION

⊗ IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-8, "Diagnosis Description"](#).
2. Check that the front wiper operates at the LO operation.

Ⓟ CONSULT-III ACTIVE TEST

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

Lo : Front wiper (LO) operation

Off : Stop the front wiper.

Is front wiper (LO) operation normally?

YES >> Front wiper motor LO circuit is normal.

NO >> Refer to [WW-24, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000005254180

1. CHECK FRONT WIPER MOTOR (LO) OUTPUT VOLTAGE

Ⓟ CONSULT-III ACTIVE TEST

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

Terminals		Test item	Voltage (Approx.)
(+)	(-)		
IPDM E/R		FRONT WIPER	Battery voltage
Connector	Terminal		
E14	43	Lo	Battery voltage
		Off	0 V

Is the measurement value normal?

YES >> GO TO 2.

NO >> Replace IPDM E/R.

2. CHECK FRONT WIPER MOTOR (LO) OPEN CIRCUIT

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

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E14	43	E20	3	Existed

Does continuity exist?

YES >> GO TO 3.

NO >> Repair the harness or connector.

3. CHECK FRONT WIPER MOTOR (LO) SHORT CIRCUIT

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

FRONT WIPER MOTOR LO CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

IPDM E/R		Ground	Continuity
Connector	Terminal		
E14	43		Not existed

Does continuity exist?

YES >> Repair the harness or connector.

NO >> Replace front wiper motor.

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FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR HI CIRCUIT

Component Function Check

INFOID:000000005254181

1. CHECK FRONT WIPER HI OPERATION

⊗ IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-8, "Diagnosis Description"](#).
2. Check that the front wiper operates at the HI operation.

Ⓟ CONSULT-III ACTIVE TEST

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

Hi : Front wiper (HI) operation

Off : Stop the front wiper.

Is front wiper (HI) operation normally?

- YES >> Front wiper motor HI circuit is normal.
NO >> Refer to [WW-26, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000005254182

1. CHECK FRONT WIPER MOTOR (HI) OUTPUT VOLTAGE

Ⓟ CONSULT-III ACTIVE TEST

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

Terminals		Test item	Voltage (Approx.)
(+)	(-)		
IPDM E/R		FRONT WIPER	Battery voltage
Connector	Terminal		
E14	42	Hi	Battery voltage
		Off	0 V

Is the measurement value normal?

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

2. CHECK FRONT WIPER MOTOR (HI) OPEN CIRCUIT

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

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E14	42	E20	2	Existed

Does continuity exist?

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

3. CHECK FRONT WIPER MOTOR (HI) SHORT CIRCUIT

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

FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

IPDM E/R		Ground	Continuity
Connector	Terminal		
E14	42		Not existed

Does continuity exist?

YES >> Repair the harness or connector.

NO >> Replace front wiper motor.

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FRONT WIPER AUTO STOP SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER AUTO STOP SIGNAL CIRCUIT

Component Function Check

INFOID:000000005254183

1. CHECK FRONT WIPER (AUTO STOP) SIGNAL CHECK

CONSULT-III DATA MONITOR

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

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

Is the status of item normal?

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

Diagnosis Procedure

INFOID:000000005254184

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

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

Terminals		Voltage (Approx.)
(+)	(-)	
IPDM E/R		Battery voltage
Connector	Terminal	
E13	24	

Is the measurement value normal?

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

2. CHECK FRONT WIPER MOTOR (AUTO STOP) SHORT CIRCUIT

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E13	24		Not existed

Does continuity exist?

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

3. CHECK FRONT WIPER MOTOR (AUTO STOP) CIRCUIT CONTINUITY

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

FRONT WIPER AUTO STOP SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E13	24	E20	4	Existed

Does continuity exist?

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

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FRONT WIPER MOTOR GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR GROUND CIRCUIT

Diagnosis Procedure

INFOID:000000005254185

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		Existed
E20	1		

Does continuity exist?

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

WASHER SWITCH

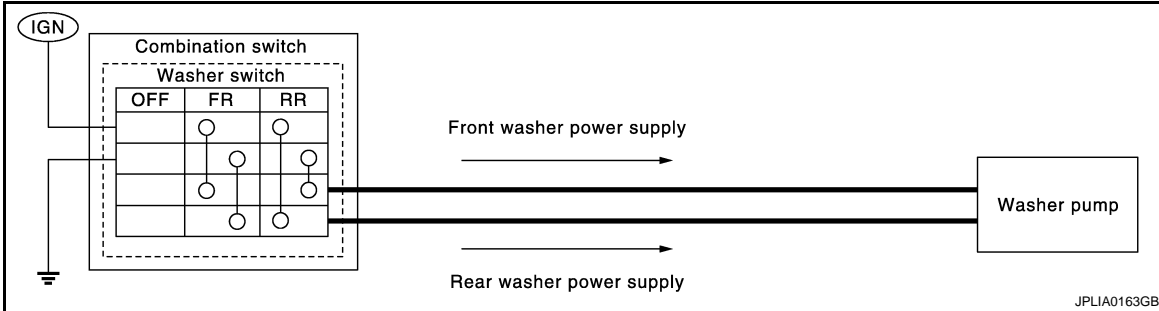
< DTC/CIRCUIT DIAGNOSIS >

WASHER SWITCH

Description

INFOID:000000005254186

- 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

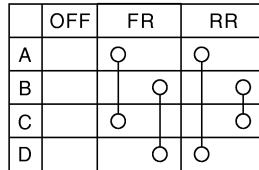
INFOID:000000005254187

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 14
- B : Terminal 12
- C : Terminal 13

- D : Terminal 11



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Combination switch		Condition	Continuity
Terminal			
11	12	Front washer switch ON	Existed
13	14		
11	14	Rear washer switch ON	
12	13		

Does continuity exist?

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

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WW

REAR WIPER MOTOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER MOTOR CIRCUIT

Component Function Check

INFOID:000000005254188

1.CHECK REAR WIPER ON OPERATION

CONSULT-III ACTIVE TEST

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

On : Rear wiper ON operation

Off : Stop the rear wiper.

Is rear wiper operation normally?

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

Diagnosis Procedure

INFOID:000000005254189

1.CHECK REAR WIPER MOTOR OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST

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

Terminals		Test item	Voltage (Approx.)
(+)	(-)		
BCM		REAR WIPER	Battery voltage
Connector	Terminal		
M66	55	On	Battery voltage
		Off	0 V

Is the measurement value normal?

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

2.CHECK REAR WIPER MOTOR SHORT CIRCUIT

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

BCM		Ground	Continuity
Connector	Terminal		
M66	55		Not existed

Does continuity exist?

- YES >> Repair the harness or connector.
NO >> Replace BCM. Refer to [BCS-67, "Exploded View"](#).

3.CHECK REAR WIPER MOTOR OPEN CIRCUIT

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

REAR WIPER MOTOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

BCM		Rear wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
M66	55	D193	1	Existed

Does continuity exist?

YES >> GO TO 4.

NO >> Repair the harness or connector.

4.CHECK REAR WIPER MOTOR GROUND OPEN CIRCUIT

Check continuity between rear wiper motor harness connector and ground.

Rear wiper motor		Ground	Continuity
Connector	Terminal		Existed
D193	3		Existed

Does continuity exist?

YES >> Replace rear wiper motor.

NO >> Repair the harness or connector.

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REAR WIPER AUTO STOP SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER AUTO STOP SIGNAL CIRCUIT

Component Function Check

INFOID:000000005254190

1.CHECK REAR WIPER (AUTO STOP) OPERATION

CONSULT-III DATA MONITOR

1. Select "WIPER" of BCM data monitor item.
2. Operate the rear wiper.
3. 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 auto stop signal circuit is normal.
NO >> Refer to [WW-34, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000005254191

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

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

Terminals		Ground	Voltage (Approx.)
(+)	(-)		
BCM		Ground	Battery voltage
Connector	Terminal		
M66	44		

Is the measurement value normal?

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

2.CHECK REAR WIPER MOTOR (AUTO STOP) SHORT CIRCUIT

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

BCM		Ground	Continuity
Connector	Terminal		
M66	44		Not existed

Does continuity exist?

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

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

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

REAR WIPER AUTO STOP SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

BCM		Rear wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
M66	44	D193	2	Existed

Does continuity exist?

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

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FRONT WIPER AND WASHER SYSTEM

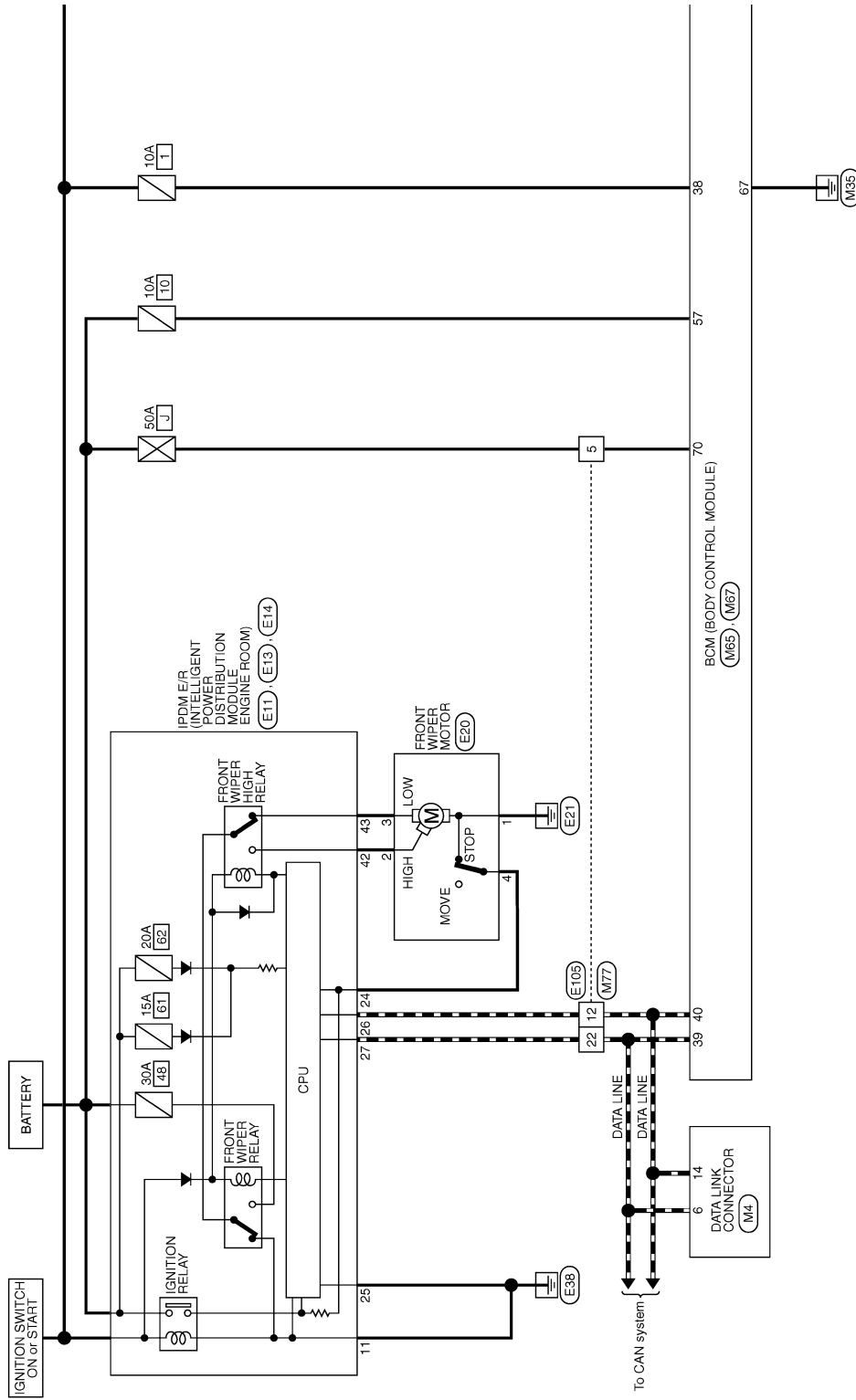
< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER AND WASHER SYSTEM

Wiring Diagram - FRONT WIPER AND WASHER SYSTEM -

INFOID:000000005254192

FRONT WIPER AND WASHER SYSTEM



2008/07/15

JCLWM2558GE

FRONT WIPER AND WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER AND WASHER SYSTEM

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M08FB-1C



11	10	9
14	13	12

Terminal No.	Color of Wire	Signal Name [Specification]
11	B	-

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	T112FW-NH



28	27	26	25	24	23
34	33	32	31	30	29

Terminal No.	Color of Wire	Signal Name [Specification]
24	Y	-
25	B	-
26	P	-
27	L	-

Connector No.	E14
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	N12ZFB-CS



39	38	37	36	35
46	45	44	43	42
41	40			

Terminal No.	Color of Wire	Signal Name [Specification]
42	L	-
43	G	-

Connector No.	E20
Connector Name	FRONT WIPER MOTOR
Connector Type	RS08FGY-PR



3	2	1
4	5	6

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

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



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

Connector No.	E05
Connector Name	WIRE TO WIRE
Connector Type	T180FW-CS16-TM4



1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30
31	32	33	34	35
36	37	38	39	40
41	42	43	44	45
46	47	48	49	50

Terminal No.	Color of Wire	Signal Name [Specification]
2	O	-
3	LG	-
5	Y	-
12	P	-
22	L	-

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



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

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

FRONT WIPER AND WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER AND WASHER SYSTEM

Connector No.	M27
Connector Name	COMBINATION SWITCH
Connector Type	TK16FW



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

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	INPUT 1
2	B	INPUT 2
3	L	INPUT 3
4	GR	INPUT 4
5	BR	INPUT 5
8	P	OUTPUT 1
7	R	OUTPUT 2
8	G	OUTPUT 5
9	Y	OUTPUT 4
10	W	OUTPUT 3
11	LG	WASH FR(-) RR(+)

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



56	57	58	59	60	61	62	63	64
65	66	67	68	69	70			

Terminal No.	Color of Wire	Signal Name [Specification]
57	G	BAT FUSE
67	B	GND
70	Y	BAT FL

I2	B	GND
I3	O	WASH FR(+), RR(-)
I4	BR	IGN

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH46FW-NH



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
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Terminal No.	Color of Wire	Signal Name [Specification]
2	G	INPUT 5
3	Y	INPUT 4
4	W	INPUT 3
5	R	INPUT 2
6	B	INPUT 1
32	BR	OUTPUT 5
33	GR	OUTPUT 4
34	L	OUTPUT 3
35	B	OUTPUT 2
36	V	OUTPUT 1
38	G	IGN

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
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Terminal No.	Color of Wire	Signal Name [Specification]
2	O	-
3	LG	-
5	Y	-
12	P	-
22	L	-

39	L	CAN-H
40	P	CAN-L

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WW

REAR WIPER AND WASHER SYSTEM

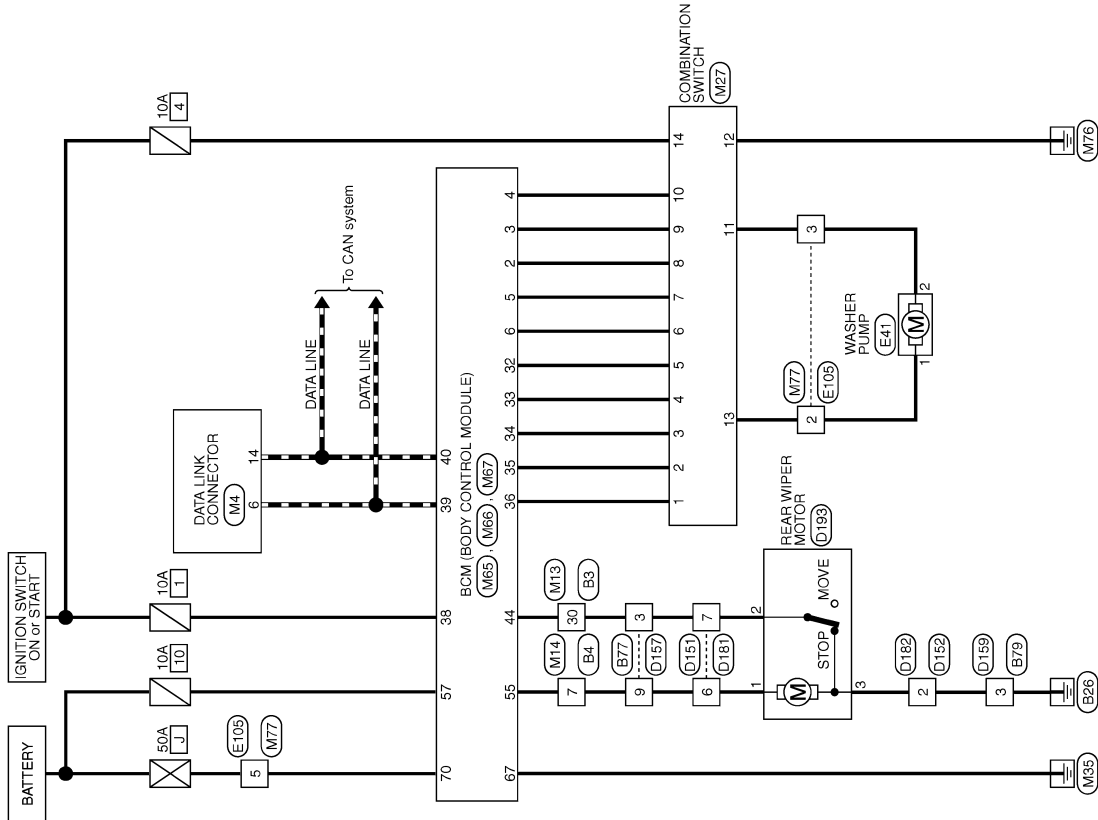
< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER AND WASHER SYSTEM

Wiring Diagram - REAR WIPER AND WASHER SYSTEM -

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REAR WIPER AND WASHER SYSTEM




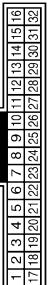











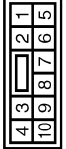


2008/07/15

JCLWM2562GE

REAR WIPER AND WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER AND WASHER SYSTEM

<table border="1"> <tr><td>Connector No.</td><td>B3</td></tr> <tr><td>Connector Name</td><td>WIRE TO WIRE</td></tr> <tr><td>Connector Type</td><td>TH2ZMW-NH</td></tr> </table>   <table border="1"> <tr><td>Terminal No.</td><td>30</td></tr> <tr><td>Color of Wire</td><td>O</td></tr> <tr><td>Signal Name [Specification]</td><td></td></tr> </table>	Connector No.	B3	Connector Name	WIRE TO WIRE	Connector Type	TH2ZMW-NH	Terminal No.	30	Color of Wire	O	Signal Name [Specification]		<table border="1"> <tr><td>Connector No.</td><td>B4</td></tr> <tr><td>Connector Name</td><td>WIRE TO WIRE</td></tr> <tr><td>Connector Type</td><td>NS10MF-CS</td></tr> </table>   <table border="1"> <tr><td>Terminal No.</td><td>7</td></tr> <tr><td>Color of Wire</td><td>SB</td></tr> <tr><td>Signal Name [Specification]</td><td></td></tr> </table>	Connector No.	B4	Connector Name	WIRE TO WIRE	Connector Type	NS10MF-CS	Terminal No.	7	Color of Wire	SB	Signal Name [Specification]		<table border="1"> <tr><td>Connector No.</td><td>B77</td></tr> <tr><td>Connector Name</td><td>WIRE TO WIRE</td></tr> <tr><td>Connector Type</td><td>NS10MF-CS</td></tr> </table>   <table border="1"> <tr><td>Terminal No.</td><td>9</td></tr> <tr><td>Color of Wire</td><td>SB</td></tr> <tr><td>Signal Name [Specification]</td><td></td></tr> </table>	Connector No.	B77	Connector Name	WIRE TO WIRE	Connector Type	NS10MF-CS	Terminal No.	9	Color of Wire	SB	Signal Name [Specification]		<table border="1"> <tr><td>Connector No.</td><td>B79</td></tr> <tr><td>Connector Name</td><td>WIRE TO WIRE</td></tr> <tr><td>Connector Type</td><td>MM4FW-LC</td></tr> </table>   <table border="1"> <tr><td>Terminal No.</td><td>3</td></tr> <tr><td>Color of Wire</td><td>B</td></tr> <tr><td>Signal Name [Specification]</td><td></td></tr> </table>	Connector No.	B79	Connector Name	WIRE TO WIRE	Connector Type	MM4FW-LC	Terminal No.	3	Color of Wire	B	Signal Name [Specification]	
Connector No.	B3																																																		
Connector Name	WIRE TO WIRE																																																		
Connector Type	TH2ZMW-NH																																																		
Terminal No.	30																																																		
Color of Wire	O																																																		
Signal Name [Specification]																																																			
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Connector Type	NS10MF-CS																																																		
Terminal No.	7																																																		
Color of Wire	SB																																																		
Signal Name [Specification]																																																			
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Color of Wire	B																																																		
Signal Name [Specification]																																																			
<table border="1"> <tr><td>Connector No.</td><td>D151</td></tr> <tr><td>Connector Name</td><td>WIRE TO WIRE</td></tr> <tr><td>Connector Type</td><td>NS08FBF-CS</td></tr> </table>   <table border="1"> <tr><td>Terminal No.</td><td>6</td></tr> <tr><td>Color of Wire</td><td>SB</td></tr> <tr><td>Signal Name [Specification]</td><td></td></tr> </table>	Connector No.	D151	Connector Name	WIRE TO WIRE	Connector Type	NS08FBF-CS	Terminal No.	6	Color of Wire	SB	Signal Name [Specification]		<table border="1"> <tr><td>Connector No.</td><td>D152</td></tr> <tr><td>Connector Name</td><td>WIRE TO WIRE</td></tr> <tr><td>Connector Type</td><td>M02FW-GY-LC</td></tr> </table>   <table border="1"> <tr><td>Terminal No.</td><td>2</td></tr> <tr><td>Color of Wire</td><td>B</td></tr> <tr><td>Signal Name [Specification]</td><td></td></tr> </table>	Connector No.	D152	Connector Name	WIRE TO WIRE	Connector Type	M02FW-GY-LC	Terminal No.	2	Color of Wire	B	Signal Name [Specification]		<table border="1"> <tr><td>Connector No.</td><td>D157</td></tr> <tr><td>Connector Name</td><td>WIRE TO WIRE</td></tr> <tr><td>Connector Type</td><td>NS10FW-CS</td></tr> </table>   <table border="1"> <tr><td>Terminal No.</td><td>9</td></tr> <tr><td>Color of Wire</td><td>SB</td></tr> <tr><td>Signal Name [Specification]</td><td></td></tr> </table>	Connector No.	D157	Connector Name	WIRE TO WIRE	Connector Type	NS10FW-CS	Terminal No.	9	Color of Wire	SB	Signal Name [Specification]		<table border="1"> <tr><td>Connector No.</td><td>D159</td></tr> <tr><td>Connector Name</td><td>WIRE TO WIRE</td></tr> <tr><td>Connector Type</td><td>MM4FW-LC</td></tr> </table>   <table border="1"> <tr><td>Terminal No.</td><td>3</td></tr> <tr><td>Color of Wire</td><td>B</td></tr> <tr><td>Signal Name [Specification]</td><td></td></tr> </table>	Connector No.	D159	Connector Name	WIRE TO WIRE	Connector Type	MM4FW-LC	Terminal No.	3	Color of Wire	B	Signal Name [Specification]	
Connector No.	D151																																																		
Connector Name	WIRE TO WIRE																																																		
Connector Type	NS08FBF-CS																																																		
Terminal No.	6																																																		
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Connector Type	M02FW-GY-LC																																																		
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Terminal No.	3																																																		
Color of Wire	B																																																		
Signal Name [Specification]																																																			

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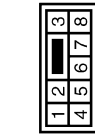
WW

REAR WIPER AND WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER AND WASHER SYSTEM

Connector No.	D181
Connector Name	WIRE TO WIRE
Connector Type	NS38MBR-CS



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

Connector No.	D182
Connector Name	WIRE TO WIRE
Connector Type	M02MW-GY-LC



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

Connector No.	D183
Connector Name	REAR WIPER MOTOR
Connector Type	CEA03FW



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

Connector No.	E41
Connector Name	WASHER PUMP
Connector Type	ED2FGY-RS



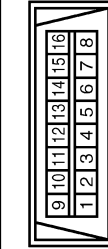
Terminal No.	Color of Wire	Signal Name [Specification]
1	O	-
2	LG	-

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-CS16-TM4



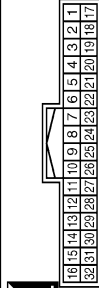
Terminal No.	Color of Wire	Signal Name [Specification]
2	O	-
3	LG	-
5	Y	-

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



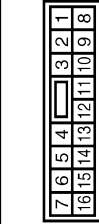
Terminal No.	Color of Wire	Signal Name [Specification]
6	L	-
14	P	-

Connector No.	M13
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-AH



Terminal No.	Color of Wire	Signal Name [Specification]
30	B	-

Connector No.	M14
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS



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

JCLWM2564GE

REAR WIPER AND WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER AND WASHER SYSTEM

Connector No.	M27
Connector Name	COMBINATION SWITCH
Connector Type	TK16FW



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

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	INPUT 1
2	B	INPUT 2
3	L	INPUT 3
4	GR	INPUT 4
5	BR	INPUT 5
8	P	OUTPUT 1
7	R	OUTPUT 2
8	G	OUTPUT 5
9	Y	OUTPUT 4
10	W	OUTPUT 3
11	LG	WASH FR(-) RR(+)

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



41	42	43	44	45	46	47	48	49
50	51	52	53	54	55			

Terminal No.	Color of Wire	Signal Name [Specification]
44	B	RR WIP AUTO STOP
55	SB	RR WIP MTR OUT

12	B	GND
13	O	WASH FR(+), RR(-)
14	BR	IGN

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	THA09FW-NH



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
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Terminal No.	Color of Wire	Signal Name [Specification]
2	G	INPUT 5
3	Y	INPUT 4
4	W	INPUT 3
5	R	INPUT 2
6	B	INPUT 1
32	BR	OUTPUT 5
33	GR	OUTPUT 4
34	L	OUTPUT 3
35	B	OUTPUT 2
36	V	OUTPUT 1
38	G	IGN

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	THB03MW-CS16-TM4



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
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Terminal No.	Color of Wire	Signal Name [Specification]
2	O	-
3	LG	-
5	Y	-

39	L	CAN-H
40	P	CAN-L

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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:000000005575129

VALUES ON THE DIAGNOSIS TOOL

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
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
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
I-KEY LOCK	"LOCK" button of Intelligent Key or door request switch are not pressed	Off
	"LOCK" button of Intelligent Key or door request switch are pressed	On
I-KEY UNLOCK	"UNLOCK" button of Intelligent Key or door request switch are not pressed	Off
	"UNLOCK" button of Intelligent Key or door request switch are pressed	On
ACC ON SW	Ignition switch OFF	Off
	Ignition switch ACC or ON	On
REAR DEF SW	Rear window defogger switch OFF	Off
	Rear window defogger switch ON	On
LIGHT SW 1ST	Lighting switch OFF	Off
	Lighting switch 1ST	On

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Monitor Item	Condition	Value/Status	
BUCKLE SW	The seat belt (driver side) is unfastened. [Seat belt switch (driver side) OFF]	Off	A
	The seat belt (driver side) is fastened. [Seat belt switch (driver side) ON]	On	B
KEYLESS PANIC	PANIC button of key fob is not pressed	Off	C
	PANIC button of key fob is pressed	On	
KEYLESS TRUNK	NOTE: The item is indicated, but not monitored.	Off	
TRNK OPN MNTR	NOTE: The item is indicated, but not monitored.	Off	D
RKE LCK-UNLCK	LOCK/UNLOCK button of key fob is not pressed and held simultaneously	Off	E
	LOCK/UNLOCK button of key fob is pressed and held simultaneously	On	
RKE KEEP UNLK	UNLOCK button of key fob is not pressed	Off	F
	UNLOCK button of key fob is pressed and held	On	
HI BEAM SW	Lighting switch OFF	Off	G
	Lighting switch HI	On	
HEAD LAMP SW 1	Lighting switch OFF	Off	H
	Lighting switch 2ND	On	
HEAD LAMP SW 2	Lighting switch OFF	Off	I
	Lighting switch 2ND	On	
AUTO LIGHT SW	NOTE: The item is indicated, but not monitored.	Off	
PASSING SW	Other than lighting switch PASS	Off	J
	Lighting switch PASS	On	
FR FOG SW	Front fog lamp switch OFF	Off	K
	Front fog lamp switch ON	On	
RR FOG SW	NOTE: The item is indicated, but not monitored.	Off	
TURN SIGNAL R	Turn signal switch OFF	Off	WW
	Turn signal switch RH	On	
TURN SIGNAL L	Turn signal switch OFF	Off	M
	Turn signal switch LH	On	
ENGINE RUN	Engine stopped	Off	N
	Engine running	On	
PKB SW	Parking brake switch is OFF	Off	O
	Parking brake switch is ON	On	
CARGO LAMP SW	NOTE: The item is indicated, but not monitored.	Off	
OPTICAL SENSOR	NOTE: The item is indicated, but not monitored.	0 V	P
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	

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Monitor Item	Condition	Value/Status
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
VEHICLE SPEED	While driving	Equivalent to speedometer reading
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
RR WIPER STP2	NOTE: The item is indicated, but not monitored.	Off
H/L WASH SW	NOTE: The item is indicated, but not monitored.	Off
HAZARD SW	Hazard switch OFF	Off
	Hazard switch ON	On
BRAKE SW	Brake pedal is not depressed	Off
	Brake pedal is depressed	On
FAN ON SIG	Blower fan motor switch OFF	Off
	Blower fan motor switch ON (other than OFF)	On
AIR COND SW	Compressor ON is not requested from auto amp. (A/C indicator OFF, blower fan motor switch OFF or etc.)	Off
	Compressor ON is requested from auto amp. (A/C indicator ON and blower fan motor switch ON).	On
I-KEY TRUNK	NOTE: The item is indicated, but not monitored.	Off
I-KEY PW DWN	UNLOCK button of Intelligent Key is not pressed	Off
	UNLOCK button of Intelligent Key is pressed and held	On
I-KEY PANIC	PANIC button of Intelligent Key is not pressed	Off
	PANIC button of Intelligent Key is pressed	On
PUSH SW	Return to ignition switch to "LOCK" position	Off
	Press ignition switch	On
TRNK OPNR SW	When back door opener switch is not pressed	Off
	When back door opener switch is pressed	On
TRUNK CYL SW	NOTE: The item is indicated, but not monitored.	Off
HOOD SW	Close the hood NOTE: Vehicles of except for Mexico are OFF-fixed	Off
	Open the hood	On

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

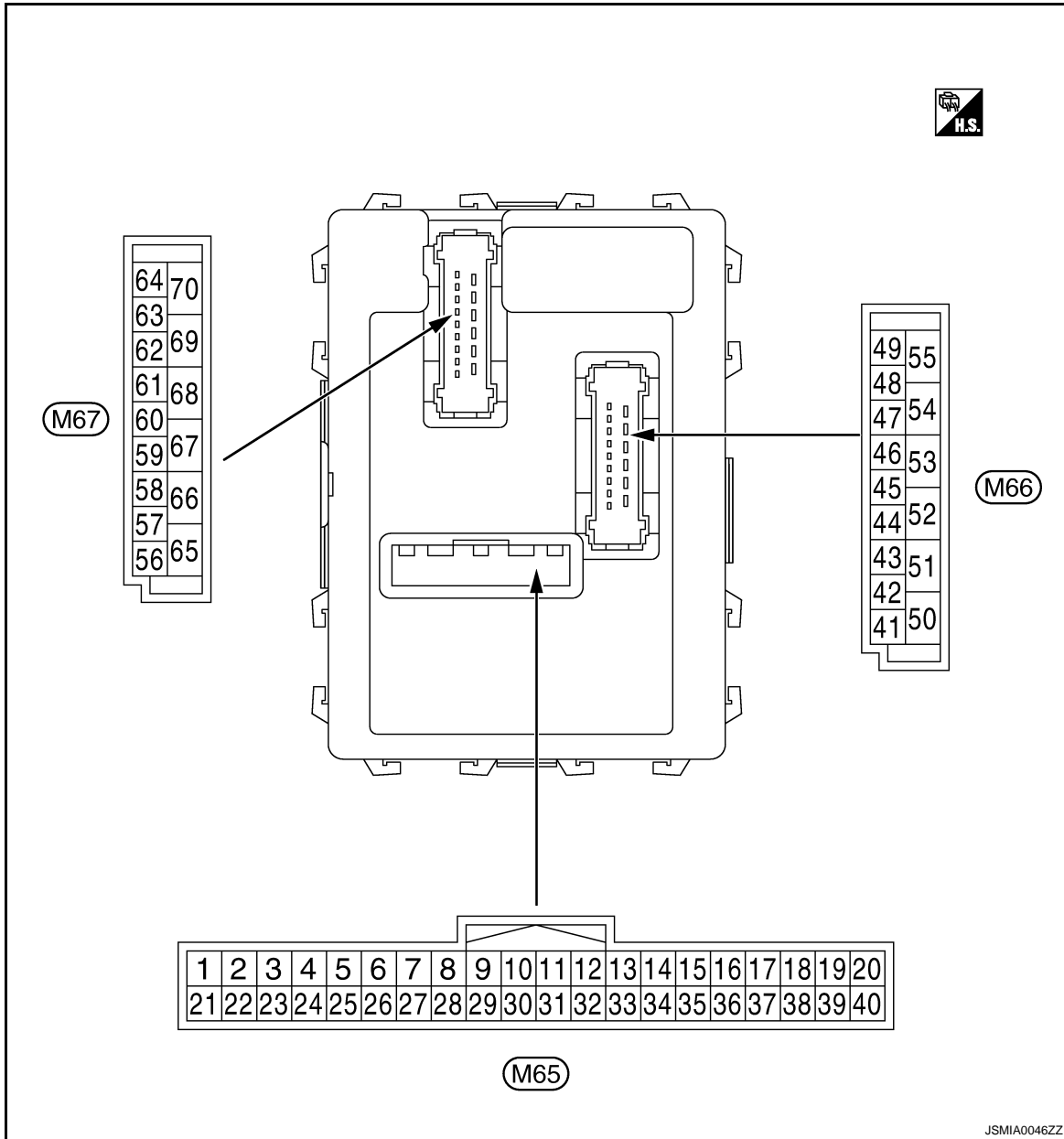
Monitor Item	Condition	Value/Status	
OIL PRESS SW	<ul style="list-style-type: none"> • Ignition switch OFF or ACC • Engine running 	Off	A
	Ignition switch ON	On	B
AIR PRESS FL	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of front LH tire	C
AIR PRESS FR	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of front RH tire	D
AIR PRESS RR	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of rear RH tire	E
AIR PRESS RL	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of rear LH tire	F
ID REGST FL1	ID of front LH tire transmitter is registered	Done	G
	ID of front LH tire transmitter is not registered	Yet	H
ID REGST FR1	ID of front RH tire transmitter is registered	Done	I
	ID of front RH tire transmitter is not registered	Yet	J
ID REGST RR1	ID of rear RH tire transmitter is registered	Done	K
	ID of rear RH tire transmitter is not registered	Yet	L
ID REGST RL1	ID of rear LH tire transmitter is registered	Done	M
	ID of rear LH tire transmitter is not registered	Yet	N
WARNING LAMP	Tire pressure indicator OFF	Off	O
	Tire pressure indicator ON	On	P
BUZZER	Tire pressure warning alarm is not sounding	Off	
	Tire pressure warning alarm is sounding	On	

WW

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

TERMINAL LAYOUT



PHYSICAL VALUES

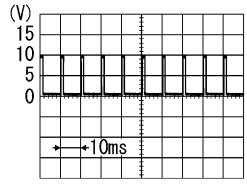
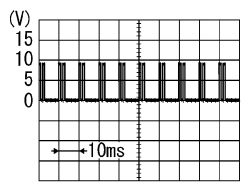
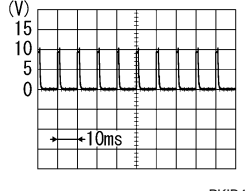
CAUTION:

- Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF is not to be fluctuated by being overloaded.
- Turn wiper intermittent dial position to 4 except when checking waveform or voltage of wiper intermittent dial position. Wiper intermittent dial position can be confirmed on CONSULT-III. Refer to [BCS-27. "COMB SW : CONSULT-III Function \(BCM - COMB SW\)"](#).
- BCM reads the status of the combination switch at 10 ms internal normally. Refer to [BCS-9. "System Diagram"](#).

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output	Ignition key hole illumination	OFF ON	Battery voltage 0 V
1 (V)	Ground	Ignition key hole illumination control	Output	Ignition key hole illumination	OFF ON	Battery voltage 0 V

BCM (BODY CONTROL MODULE)

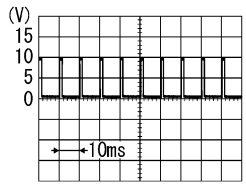
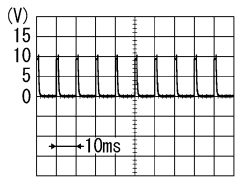
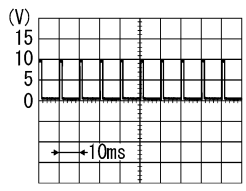
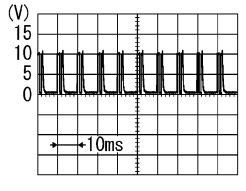
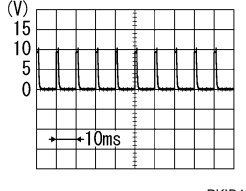
< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)		
		Signal name	Input/ Output				
+	-						
2 (G)	Ground	Combination switch INPUT 5	Input	Combination switch (Wiper intermit- tent dial 4)	All switch OFF	0 V	A
					Turn signal switch RH		B
					Lighting switch HI		C
					Lighting switch 1ST		D
					Lighting switch 2ND		2.0 V
3 (Y)	Ground	Combination switch INPUT 4	Input	Combination switch (Wiper intermit- tent dial 4)	All switch OFF	0 V	F
					Turn signal switch LH		G
					Lighting switch PASS		H
					Lighting switch 2ND		I
					Front fog lamp switch ON		0.8 V
4 (W)	Ground	Combination switch INPUT 3	Input	Combination switch (Wiper intermit- tent dial 4)	All switch OFF	0 V	K
					Front wiper switch LO		M
					Front wiper switch MIST		N
					Front wiper switch INT		1.0 V

WW

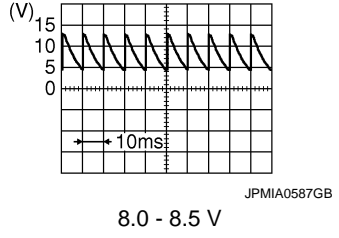
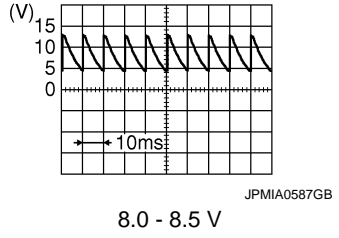
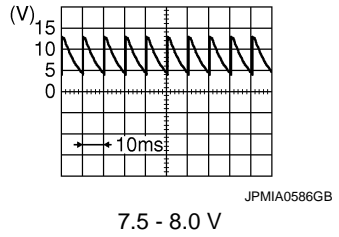
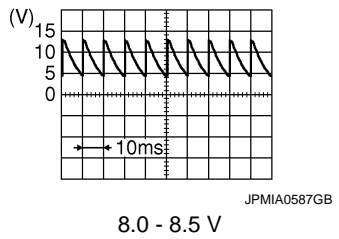
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)	
+	-	Signal name	Input/ Output			
5 (R)	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 <ul style="list-style-type: none"> • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6 	 PKIB4955J 1.0 V
					Rear wiper switch ON (Wiper intermittent dial 4)	 PKIB4955J 0.8 V
6 (P)	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)	 PKIB4959J 1.0 V
					Any of the condition below with all switch OFF <ul style="list-style-type: none"> • Wiper intermittent dial 1 • Wiper intermittent dial 2 	 PKIB4952J 1.7 V
					Any of the condition below with all switch OFF <ul style="list-style-type: none"> • Wiper intermittent dial 6 • Wiper intermittent dial 7 	 PKIB4955J 0.8 V

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

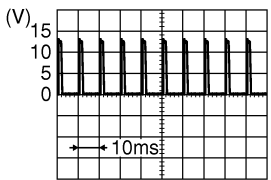
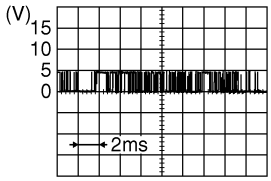
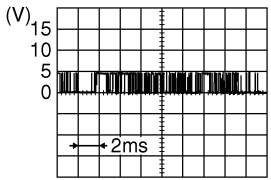
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
7 (L)	Ground	Door key cylinder switch UNLOCK signal	Input	Door key cylinder switch	NEUTRAL position	
					UNLOCK position	0 V
8 (R)	Ground	Door key cylinder switch LOCK signal	Input	Door key cylinder switch	NEUTRAL position	
					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 de- pressed)	Battery voltage
10 (SB)	Ground	Rear window defog- ger switch	Input	Rear window defogger switch	Not pressed	Battery voltage
					Pressed	0 V
11 (SB)	Ground	Ignition switch ACC	Input	Ignition switch OFF	0 V	
				Ignition switch ACC or ON	Battery voltage	
12 (P)	Ground	Passenger door switch	Input	Passenger door switch	OFF (When passenger door closed)	
					ON (When passenger door opened)	0 V
13 (LG)	Ground	Rear door switch RH	Input	Rear door switch RH	OFF (When rear door RH closed)	
					ON (When rear door RH opened)	0 V

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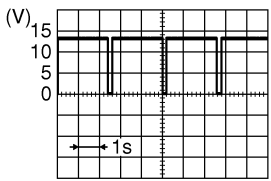
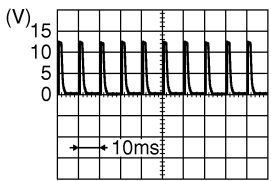
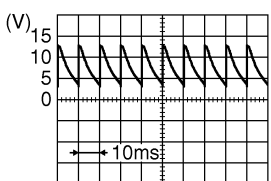
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
15* (O)	Ground	Tire pressure warning check switch	Input	Ignition switch OFF		 <p style="text-align: right; font-size: small;">JPMIA0588GB</p> <p style="text-align: center;">1.5 V</p>
18* (O)	Ground	Remote keyless entry receiver ground	Input	Ignition switch ON		0 V
19* (V)	Ground	Remote keyless entry receiver power supply	Input	Without Intelligent Key system	At any condition	5 V
				With Intelligent Key system	<ul style="list-style-type: none"> Ignition switch OFF For 3 seconds after ignition switch OFF to ON 	0 V
					3 seconds or later after ignition switch OFF to ON	5 V
20* (GR)	Ground	Remote keyless entry receiver signal	Input	Without Intelligent Key system	At any condition	 <p style="text-align: right; font-size: small;">JPMIA0589GB</p> <p>NOTE: The wave form changes according to signal-receiving condition.</p>
					<ul style="list-style-type: none"> Ignition switch OFF For 3 seconds after ignition switch OFF to ON 	0 V
				With Intelligent Key system	3 seconds or later after ignition switch OFF to ON	 <p style="text-align: right; font-size: small;">JPMIA0589GB</p> <p>NOTE: The wave form changes according to signal-receiving condition.</p>
					3 seconds or later after ignition switch OFF to ON	0 V
21 (G)	Ground	Immobilizer antenna signal (Clock)	Input/ Output	Ignition switch OFF		Battery voltage

BCM (BODY CONTROL MODULE)

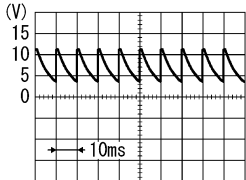
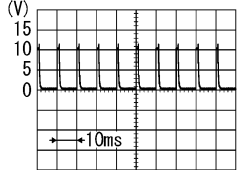
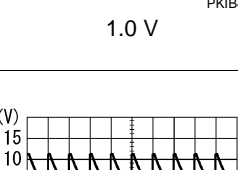
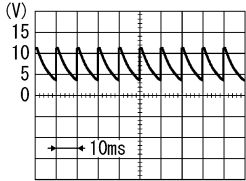
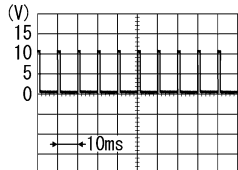
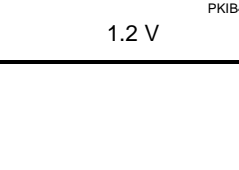
< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)	
+	-	Signal name	Input/ Output			
23 (B)	Ground	Security indicator signal	Input	Security indica- tor	ON	0 V
					Blinking (Ignition switch OFF)	 12.0 V
				OFF	Battery voltage	
25 (BR)	Ground	Immobilizer anten- na signal (Rx, Tx)	Input/ Output	Ignition switch OFF	Battery voltage	
27 (Y)	Ground	A/C switch	Input	Ignition switch OFF		
				Ignition switch ON	A/C switch OFF	 1.6 V
				A/C switch ON	0 V	
28 (LG)	Ground	Blower fan switch	Input	Ignition switch OFF		
				Ignition switch ON	Blower fan switch OFF	 7.0 - 7.5 V
				Blower fan switch ON	0 V	
29 (W)	Ground	Hazard switch	Input	Hazard switch	OFF	Battery voltage
					ON	0 V
30 (G)	Ground	Back door opener switch	Input	Back door opener switch	Not pressed	Battery voltage
					Pressed	0 V

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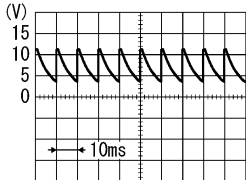
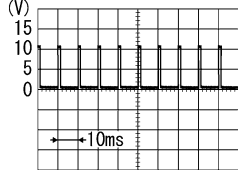
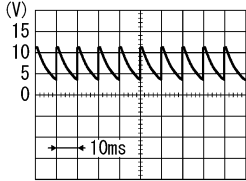
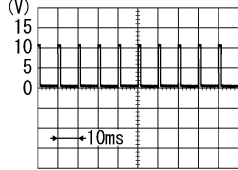
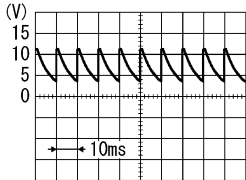
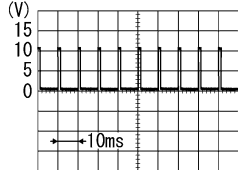
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)	
		Signal name	Input/ Output			
+	-					
32 (BR)	Ground	Combination switch OUTPUT 5	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 <p style="text-align: right; font-size: small;">PKIB4966J</p>
					7.2 V	
					Front fog lamp switch ON (Wiper intermittent dial 4)	 <p style="text-align: right; font-size: small;">PKIB4966J</p>
Rear wiper switch ON (Wiper intermittent dial 4)	 <p style="text-align: right; font-size: small;">PKIB4966J</p>					
Any of the condition below with all switch OFF					<ul style="list-style-type: none"> • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 6 • Wiper intermittent dial 7 	1.0 V
33 (GR)	Ground	Combination switch OUTPUT 4	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 <p style="text-align: right; font-size: small;">PKIB4966J</p>
					7.2 V	
					Lighting switch 1ST (Wiper intermittent dial 4)	 <p style="text-align: right; font-size: small;">PKIB4958J</p>
Rear wiper switch INT (Wiper intermittent dial 4)	 <p style="text-align: right; font-size: small;">PKIB4958J</p>					
Any of the condition below with all switch OFF					<ul style="list-style-type: none"> • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6 	1.2 V

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

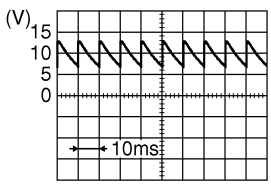
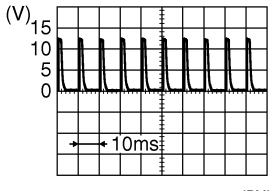
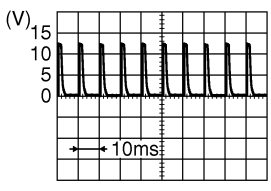
Terminal No. (Wire color)		Description		Condition	Value (Approx.)	
+	-	Signal name	Input/ Output			
34 (L)	Ground	Combination switch OUTPUT 3	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 <p style="text-align: right;">PKIB4960J</p> <p style="text-align: center;">7.2 V</p>
					Lighting switch 2ND (Wiper intermittent dial 4)	 <p style="text-align: right;">PKIB4958J</p> <p style="text-align: center;">1.2 V</p>
					Lighting switch HI (Wiper intermittent dial 4)	
					Rear washer switch ON (Wiper intermittent dial 4)	
Any of the condition below with all switch OFF						
<ul style="list-style-type: none"> • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3 						
35 (B)	Ground	Combination switch OUTPUT 2	Output	Combination switch (Wiper intermit- tent dial 4)	All switch OFF	 <p style="text-align: right;">PKIB4960J</p> <p style="text-align: center;">7.2 V</p>
					Lighting switch 2ND	 <p style="text-align: right;">PKIB4958J</p> <p style="text-align: center;">1.2 V</p>
					Lighting switch PASS	
					Front wiper switch INT	
Front wiper switch HI						
36 (V)	Ground	Combination switch OUTPUT 1	Output	Combination switch (Wiper intermit- tent dial 4)	All switch OFF	 <p style="text-align: right;">PKIB4960J</p> <p style="text-align: center;">7.2 V</p>
					Turn signal switch RH	 <p style="text-align: right;">PKIB4958J</p> <p style="text-align: center;">1.2 V</p>
					Turn signal switch LH	
					Front wiper switch LO (Front wiper switch MIST)	
Front washer switch ON						

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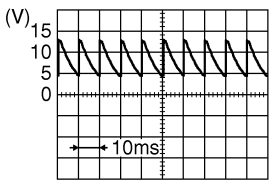
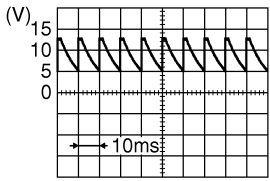
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
37 (LG)	Ground	Key switch	Input	Insert mechanical key into ignition key cylinder	Battery voltage
				Remove mechanical key from ignition key cylinder	0 V
38 (G)	Ground	Ignition switch ON	Input	Ignition switch OFF or ACC	0 V
				Ignition switch ON or START	Battery voltage
39 (L)	Ground	CAN-H	Input/ Output	—	—
40 (P)	Ground	CAN-L	Input/ Output	—	—
43 (V)	Ground	Back door switch	Input	Back door switch OFF (When back door closed)	 9.5 - 10.0 V
				Back door switch ON (When back door opened)	0 V
44 (B)	Ground	Rear wiper auto stop	Input	Ignition switch ON Rear wiper stop position	0 V
				Any position other than rear wiper stop position	Battery voltage
45 (P)	Ground	Door lock and unlock switch LOCK signal	Input	Door lock and unlock switch NEUTRAL position	 1.6 V
				Door lock and unlock switch LOCK position	0 V
46 (BR)	Ground	Door lock and unlock switch UNLOCK signal	Input	Door lock and unlock switch NEUTRAL position	 1.6 V
				Door lock and unlock switch UNLOCK position	0 V

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

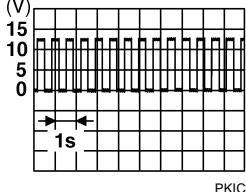
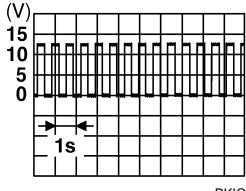
Terminal No. (Wire color)		Description		Condition	Value (Approx.)	
		Signal name	Input/ Output			
+	-					
47 (W)	Ground	Driver door switch	Input	Driver door switch	OFF (When driver door closed)	 <p style="text-align: center;">8.0 - 8.5 V</p>
				ON (When driver door opened)	0 V	
48 (GR)	Ground	Rear door switch LH	Input	Rear door switch LH	OFF (When rear door LH closed)	 <p style="text-align: center;">8.5 - 9.0 V</p>
				ON (When rear door LH opened)	0 V	
49 (L)	Ground	Back door lamp control	Output	Back door lamp switch DOOR position	Back door is closed (Back door lamp turns OFF)	Battery voltage
				Back door is opened (Back door lamp turns ON)	0 V	
53 (V)	Ground	Back door open	Output	Back door opener switch	Not pressed (Back door actuator is activated)	0 V
					Pressed (Back door actuator is activated)	Battery voltage
55 (SB)	Ground	Rear wiper motor	Output	Ignition switch ON	Rear wiper switch OFF	0 V
					Rear wiper switch ON	Battery voltage
56 (Y)	Ground	Interior room lamp power supply	Output	After passing the interior room lamp battery saver operation time	Any other time after passing the interior room lamp battery saver operation time	0 V
					Battery voltage	
57 (G)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage	
59 (L)	Ground	Driver door UN-LOCK	Output	Driver door	UNLOCK (Actuator is activated)	Battery voltage
					Other than UNLOCK (Actuator is not activated)	0 V

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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
60 (BR)	Ground	Turn signal LH	Output	Ignition switch ON	Turn signal switch OFF 0 V
				Turn signal switch LH	
61 (GR)	Ground	Turn signal RH	Output	Ignition switch ON	Turn signal switch OFF 0 V
				Turn signal switch RH	
63 (R)	Ground	Interior room lamp timer control	Output	Interior room lamp	OFF Battery voltage
				ON	0 V
65 (V)	Ground	All doors LOCK	Output	All doors	LOCK (Actuator is activat- ed) Battery voltage
				Other then LOCK (Actua- tor is not activated)	0 V
66 (G)	Ground	Passenger door and rear door UNLOCK	Output	Passenger door and rear door	UNLOCK (Actuator is acti- vated) Battery voltage
				Other then UNLOCK (Ac- tuator is not activated)	0 V
67 (B)	Ground	Ground	Output	Ignition switch ON	0 V
68 (L)	Ground	P/W power supply (RAP)	Output	Ignition switch ON	Battery voltage
69 (P)	Ground	P/W power supply (BAT)	Output	Ignition switch OFF	Battery voltage
70 (Y)	Ground	Battery power sup- ply	Input	Ignition switch OFF	Battery voltage

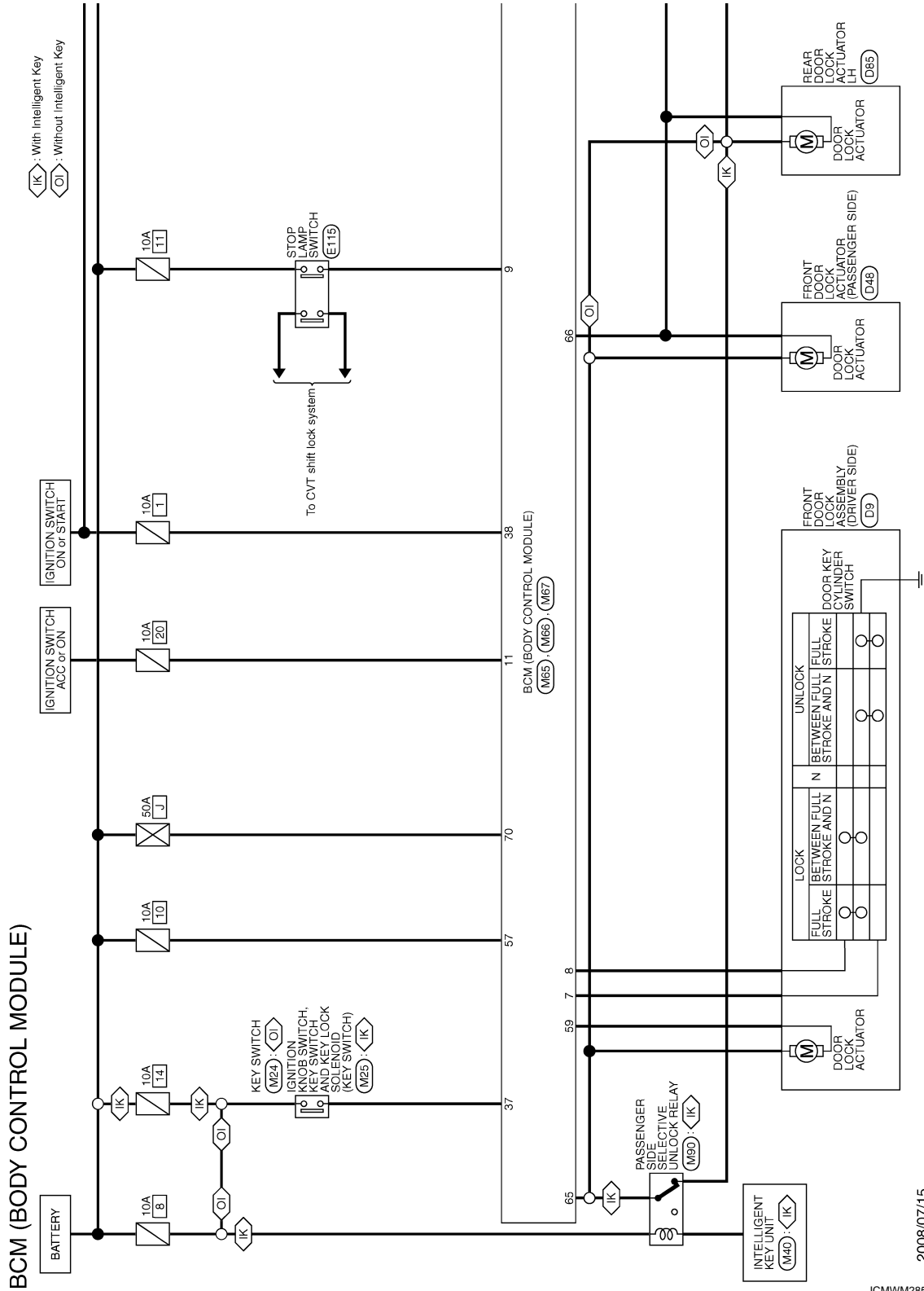
*: Except for Mexico

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Wiring Diagram - BCM -

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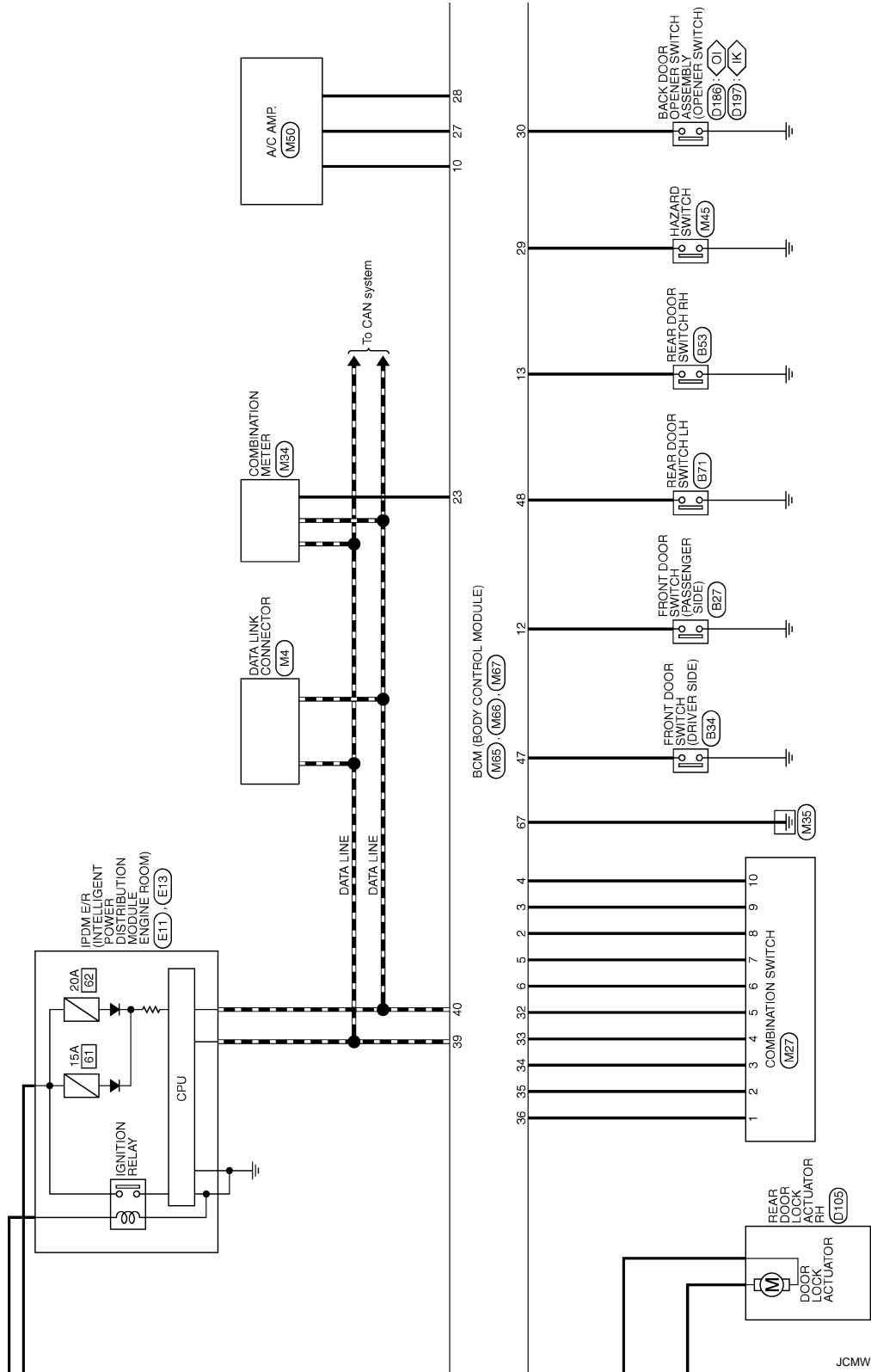
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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

IK : With Intelligent Key
OI : Without Intelligent Key

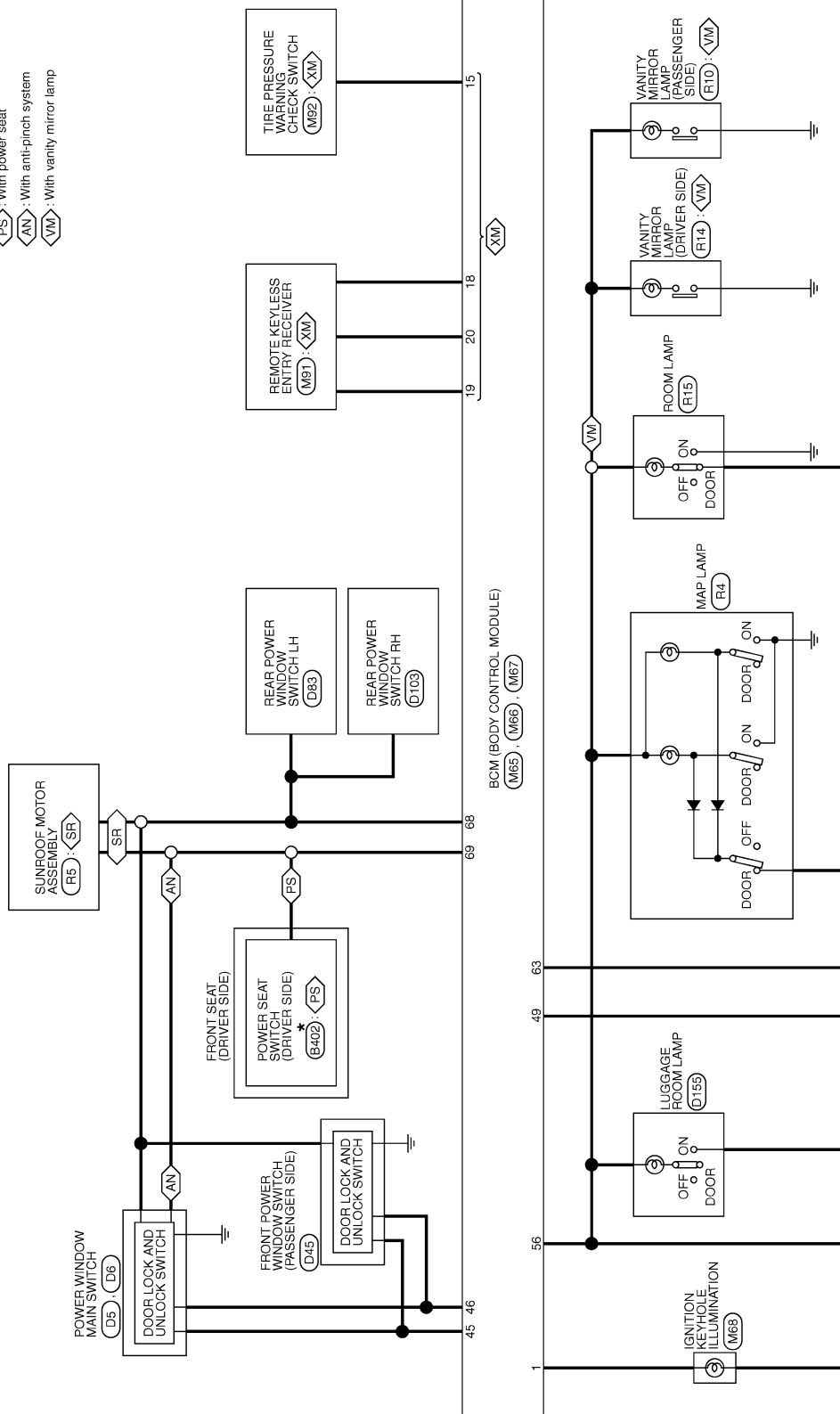


JCMWM2851G

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

- <XM> : Except for Mexico
- <SR> : With sunroof
- <PS> : With power seat
- <AN> : With anti-pinch system
- <VM> : With vanity mirror lamp



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

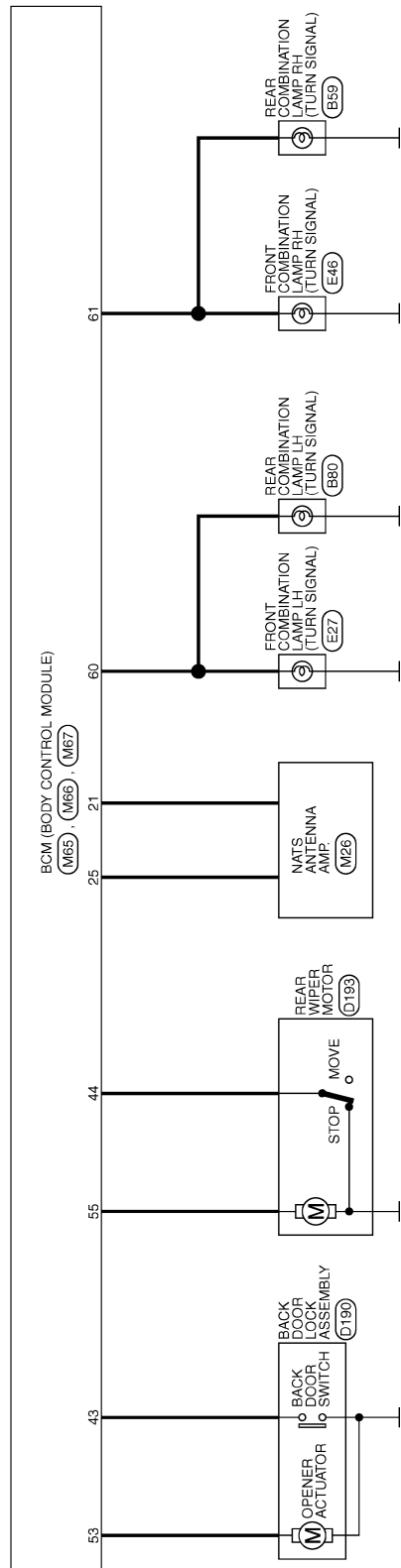
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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >



JCMWM2853G

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

BCM (BODY CONTROL MODULE)

Connector No.	M27
Connector Name	COMBINATION SWITCH
Connector Type	TK16FW



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

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	INPUT 1
2	B	INPUT 2
3	L	INPUT 3
4	GR	INPUT 4
5	BR	INPUT 5
6	P	OUTPUT 1
7	R	OUTPUT 2
8	G	OUTPUT 5
9	Y	OUTPUT 4
10	W	OUTPUT 3

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



56	57	58	59	60	61	62	63	64
65	66	67	68	69	70			

Terminal No.	Color of Wire	Signal Name [Specification]
56	Y	BATTERYSAVEROUTPUT
57	G	BAT FUSE
58	L	D/L UNLOCK DR
60	BR	FLASHER OUT PUT (LEFT)
61	GR	FLASHER OUT PUT (RIGHT)
63	R	ROOMLAMPOUTPUT
65	V	D/L LOCK ALL
66	G	D/L UNLOCK OTHER
67	B	GND
68	L	POWER WDW OUTPUT(GAP)
68	P	POWER WDW OUTPUT(BAT)

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FTV-NH



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
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Terminal No.	Color of Wire	Signal Name [Specification]
1	V	KEY RING OUTPUT
2	G	INPUT 5
3	Y	INPUT 4
4	W	INPUT 3
5	R	INPUT 2
6	P	INPUT 1
7	L	KEY CYL UNLOCK
8	R	KEY CYL LOCK SW
9	R	BRAKE SW
10	SB	RR DEF SW
11	SB	ACC

70	Y	BAT FL
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Terminal No.	Color of Wire	Signal Name [Specification]
12	P	DR SW AS
13	LG	DR SW RR
15	O	TPMS MODE TRIGGER SW
18	O	KEYLESS TUNER SECS GND
19	V	KEYLESS TUNER POWER
20	GR	KEYLESS TUNER SIGNAL
21	G	IMMOBILIZANT(GLOCK)
23	B	SECURITY IND OUT PUT
25	BR	IMMOBILIZANT(RX.TX)
27	Y	AIRCON SW
28	LG	BLOWER FAN SW
29	W	HAZARD SW
30	G	BACK DOOR OPEN SW
32	BR	OUTPUT 5
33	GR	OUTPUT 4
34	L	OUTPUT 3
35	B	OUTPUT 2
36	V	OUTPUT 1
37	LG	KEY SW
38	G	IGN
39	L	CAN-H
40	P	CAN-L

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



41	42	43	44	45	46	47	48	49
50	51	52	53	54	55			

Terminal No.	Color of Wire	Signal Name [Specification]
43	V	BACK DOOR SW
44	B	RR WIP AUTO STOP
45	P	GDL LOCKSW
46	BR	GDL UNLOCKSW
47	W	DR SW DR
48	GR	DR SW RL
49	L	LUGGAGE LAMP OUTPUT
53	V	BACKDOORPENEROUTPUT
55	SB	RR WIP MTR OUT

Fail-safe

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 more than 5 seconds while driving the rear wiper, BCM stops power supply to protect the rear wiper motor.

Condition of cancellation

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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

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

HIGH FLASHER OPERATION

BCM detects the turn signal lamp circuit status by the current value.
 BCM increases the turn signal lamp blinking speed if the bulb or harness open is detected with the turn signal lamp operating.

NOTE:

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

DTC Inspection Priority Chart

INFOID:000000005575132

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 CIRCUIT
2	C1735: IGN CIRCUIT OPEN
3	<ul style="list-style-type: none"> • 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: [PRESS DATA ERR] FL • C1717: [PRESS DATA ERR] FR • C1718: [PRESS DATA ERR] RR • C1719: [PRESS DATA ERR] RL • C1729: VHCL SPEED SIG ERR

DTC Index

INFOID:000000005575133

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	Tire pressure monitor warning lamp ON	Reference
U1000: CAN COMM CIRCUIT	—	BCS-34
C1704: LOW PRESSURE FL	×	WT-15
C1705: LOW PRESSURE FR	×	
C1706: LOW PRESSURE RR	×	
C1707: LOW PRESSURE RL	×	
C1708: [NO DATA] FL	×	WT-17
C1709: [NO DATA] FR	×	
C1710: [NO DATA] RR	×	
C1711: [NO DATA] RL	×	

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

CONSULT display	Tire pressure monitor warning lamp ON	Reference	
C1716: [PRESS DATA ERR] FL	×	WT-20	A
C1717: [PRESS DATA ERR] FR	×		B
C1718: [PRESS DATA ERR] RR	×		
C1719: [PRESS DATA ERR] RL	×	WT-22	C
C1729: VHCL SPEED SIG ERR	×		
C1735: IGN CIRCUIT OPEN	—	BCS-35	

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

< ECU DIAGNOSIS INFORMATION >

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

Reference Value

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VALUES ON THE DIAGNOSIS TOOL

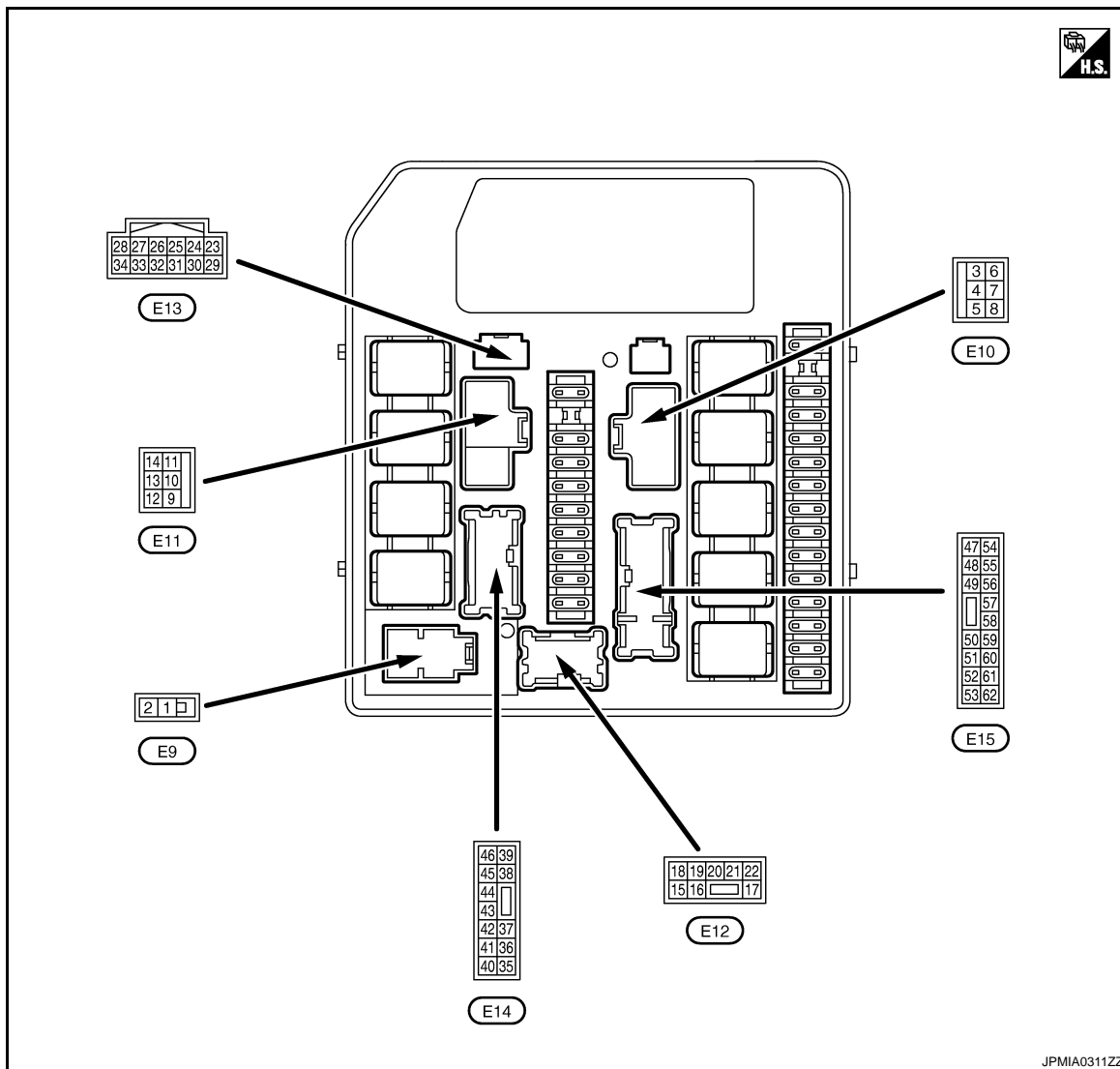
Monitor Item	Condition		Value/Status
MOTOR FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	1 - 4
AC COMP REQ	Engine running	A/C switch OFF	Off
		A/C switch ON (Compressor is operating)	On
TAIL&CLR REQ	Lighting switch OFF		Off
	Lighting switch 1ST or 2ND		On
HL LO REQ	Lighting switch OFF		Off
	Lighting switch 2ND		On
HL HI REQ	Lighting switch OFF		Off
	Lighting switch HI (Light is illuminated)		On
FR FOG REQ NOTE: This item is monitored only on the vehicle with front fog lamp.	Lighting switch 2ND	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
ST RLY REQ NOTE: Vehicle without Intelligent Key system indicates only "ON", and it does not change.	When Intelligent Key is outside the vehicle, and the push switch is pushed		Off
	When Intelligent Key is inside the vehicle, and the push switch is pushed		On
IGN RLY	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
RR DEF REQ	Ignition switch ON	Rear window defogger switch OFF	Off
		Rear window defogger switch ON (Rear window defogger is operating)	On
OIL P SW	Ignition switch OFF, ACC or engine running		Open
	Ignition switch ON		Close
DTRL REQ NOTE: This item is monitored only on the vehicle with the daytime running light system.	Daytime running light system is not operated.		Off
	Daytime running light system is operated.		On

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

< ECU DIAGNOSIS INFORMATION >

Monitor Item	Condition	Value/Status
HOOD SW NOTE: This item is monitored only the vehicle for Mexico.	Close the hood	Off
	Open the hood	On
THFT HRN REQ	Not operation	Off
	Horn is activated with vehicle security system or panic alarm system.	On
HORN CHIRP	Not operation	Off
	Horn is activated with key fob LOCK operation.	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

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

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
3 (O)	Ground	Starter relay power supply	Output	When engine is clanking		Battery voltage
				When engine is not clanking		0 V
4 (W)	Ground	Cooling fan relay-1 power supply	Output	Cooling fan operation	OFF	0 V
					MID or HI	Battery voltage
5 (R)	Ground	Ignition switch START	Input	Ignition switch OFF, ACC or ON		0 V
				Ignition switch START		Battery voltage
6 (BR)	Ground	Battery power supply (Cooling fan relay)	Input	Ignition switch OFF		Battery voltage
7 (P)	Ground	Cooling fan motor-2 (HI) ground	—	Cooling fan operation	OFF	Battery voltage
					HI	0 V
8 (G)	Ground	Cooling fan relay-2 power supply	Output	Cooling fan operation	OFF	0 V
					HI	Battery voltage
11 (B)	Ground	Ground	—	Ignition switch ON		0 V
12 (O)	Ground	Rear window defogger relay power supply	Output	Ignition switch ON	Rear window defogger switch OFF	0 V
					Rear window defogger switch ON	Battery voltage
15*1 (SB)	Ground	Daytime running light relay control	Output	Daytime running light system	Not operated	Battery voltage
					Operated	0 V
16*2 (Y)	Ground	Front fog lamp (LH)	Output	Lighting switch 2ND	Front fog lamp switch OFF	0 V
					Front fog lamp switch ON	Battery voltage
17*2 (W)	Ground	Front fog lamp (RH)	Output	Lighting switch 2ND	Front fog lamp switch OFF	0 V
					Front fog lamp switch ON	Battery voltage
18 (L)	Ground	Headlamp LO (LH)	Output	Lighting switch OFF		0 V
				Lighting switch 2ND		Battery voltage
20 (SB)	Ground	Headlamp LO (RH)	Output	Lighting switch OFF		0 V
				Lighting switch 2ND		Battery voltage
21 (G)	Ground	Headlamp HI (LH)	Output	Lighting switch OFF		0 V
				<ul style="list-style-type: none"> • Lighting switch 2ND and HI • Lighting switch PASS 		Battery voltage
				Daytime running light system Operated*1		7.0 V
22 (LG)	Ground	Headlamp HI (RH)	Output	Lighting switch OFF		0 V
				<ul style="list-style-type: none"> • Lighting switch 2ND and HI • Lighting switch PASS 		Battery voltage
				Daytime running light system Operated*1		7.0 V
23 (W)	Ground	Oil pressure switch	Input	Ignition switch ON	Engine stopped	0 V
					Engine running	Battery voltage
24 (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
25 (B)	Ground	Ground	—	Ignition switch ON		0 V
26 (P)	—	CAN-L	Input/ Output	—		—

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

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
27 (L)	—	CAN-H	Input/ Output	—		—
31 (LG)	Ground	Cooling fan relay-4 control	Output	Cooling fan operation	OFF	Battery voltage
					LO	0 - 1.0 V
32 (V)	Ground	Throttle control motor relay control	Input	After passing approximately 2 seconds or more after turning the ignition switch from ON to OFF		Battery voltage
				<ul style="list-style-type: none"> Ignition switch ON For approximately 2 seconds after turning ignition switch from ON to OFF 		0 - 1.0 V
33 (GR)	Ground	Fuel pump relay control	Input	Ignition switch OFF		0 V
				Ignition switch ON	Engine stopped	Battery voltage
					Engine running	0.8 V
34*3 (W)	Ground	Hood switch	Input	Close the hood		Battery voltage
				Open the hood		0 V
37 (R)	Ground	Tail, license plate lamps and illuminations	Output	Lighting switch OFF		0 V
				Lighting switch 1ST		Battery voltage
38 (R)	Ground	Parking lamp (LH)	Output	Lighting switch OFF		0 V
				Lighting switch 1ST		Battery voltage
39 (GR)	Ground	Parking lamp (RH)	Output	Lighting switch OFF		0 V
				Lighting switch 1ST		Battery voltage
40 (BR)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
41 (O)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
42 (L)	Ground	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch HI	Battery voltage
43 (G)	Ground	Front wiper LO	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch LO	Battery voltage
45 (Y)	Ground	Starter relay power supply	Input	Ignition switch ON	Selector lever "P" or "N"	Battery voltage
					Selector lever in any position other than "P" or "N"	0 V
46 (W)	Ground	Fuel pump relay power supply	Output	<ul style="list-style-type: none"> Ignition switch OFF or ACC After passing approximately 1 second or more after turning the ignition switch ON 		0 V
				<ul style="list-style-type: none"> For approximately 1 second after turning the ignition switch ON Engine running 		Battery voltage
47 (BR)	Ground	ECM relay power supply	Output	After passing approximately 4 seconds or more after turning the ignition switch from ON to OFF		0 V
				<ul style="list-style-type: none"> Ignition switch ON For approximately 4 seconds after turning ignition switch from ON to OFF 		Battery voltage
48 (R)	Ground	ECM relay power supply	Output	After passing approximately 4 seconds or more after turning the ignition switch from ON to OFF		0 V
				<ul style="list-style-type: none"> Ignition switch ON For approximately 4 seconds after turning ignition switch from ON to OFF 		Battery voltage

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

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
50 (G)	Ground	Cooling fan relay-5 control	Output	Cooling fan operation	OFF	Battery voltage
					MID or HI	0 - 1.0 V
51 (L)	Ground	ECM relay control	Output	After passing approximately 4 seconds or more after turning the ignition switch from ON to OFF		Battery voltage
				<ul style="list-style-type: none"> Ignition switch ON For approximately 4 seconds after turning ignition switch from ON to OFF 		0 - 1.0 V
52 (P)	Ground	Throttle control motor relay power supply	Output	After passing approximately 2 seconds or more after turning the ignition switch from ON to OFF		0 V
				<ul style="list-style-type: none"> Ignition switch ON For approximately 2 seconds after turning ignition switch from ON to OFF 		Battery voltage
55 (O)	Ground	A/C relay power supply	Output	Engine stopped		0 V
				Engine running	A/C switch OFF	0 V
					A/C switch ON (A/C compressor is operating)	Battery voltage
56 (SB)	Ground	Ignition switch ON	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
57 (V)	Ground	Horn relay control	Output	The horn is not activated		Battery voltage
				The horn is activated		0 V
58 (LG)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
59 (BR)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
60 (SB)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
61 (R)	Ground	ECM power supply	Output	Ignition switch OFF		Battery voltage

*1: With daytime running light system

*2: With front fog lamp system

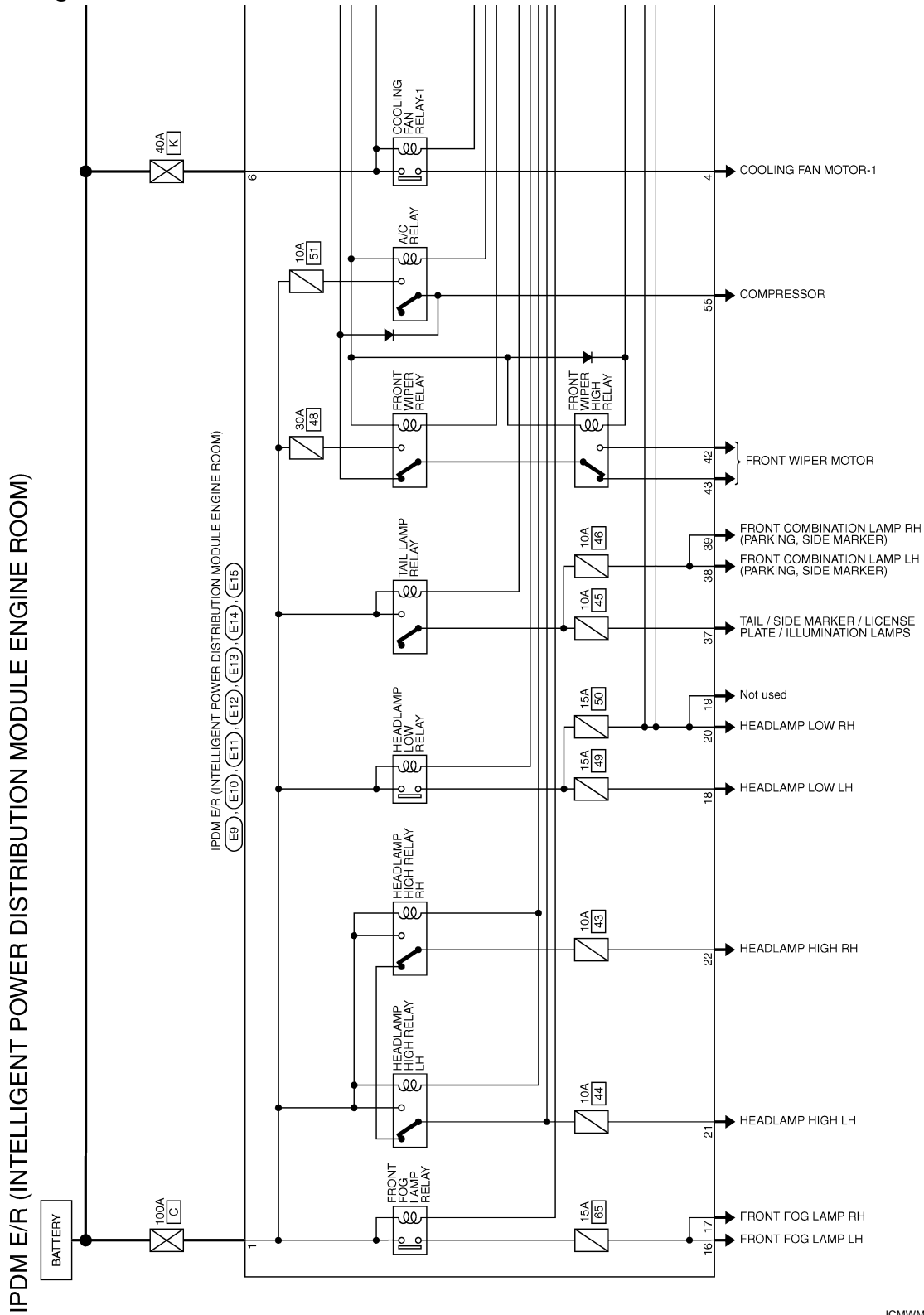
*3: For Mexico

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

< ECU DIAGNOSIS INFORMATION >

Wiring Diagram - IPDM E/R -

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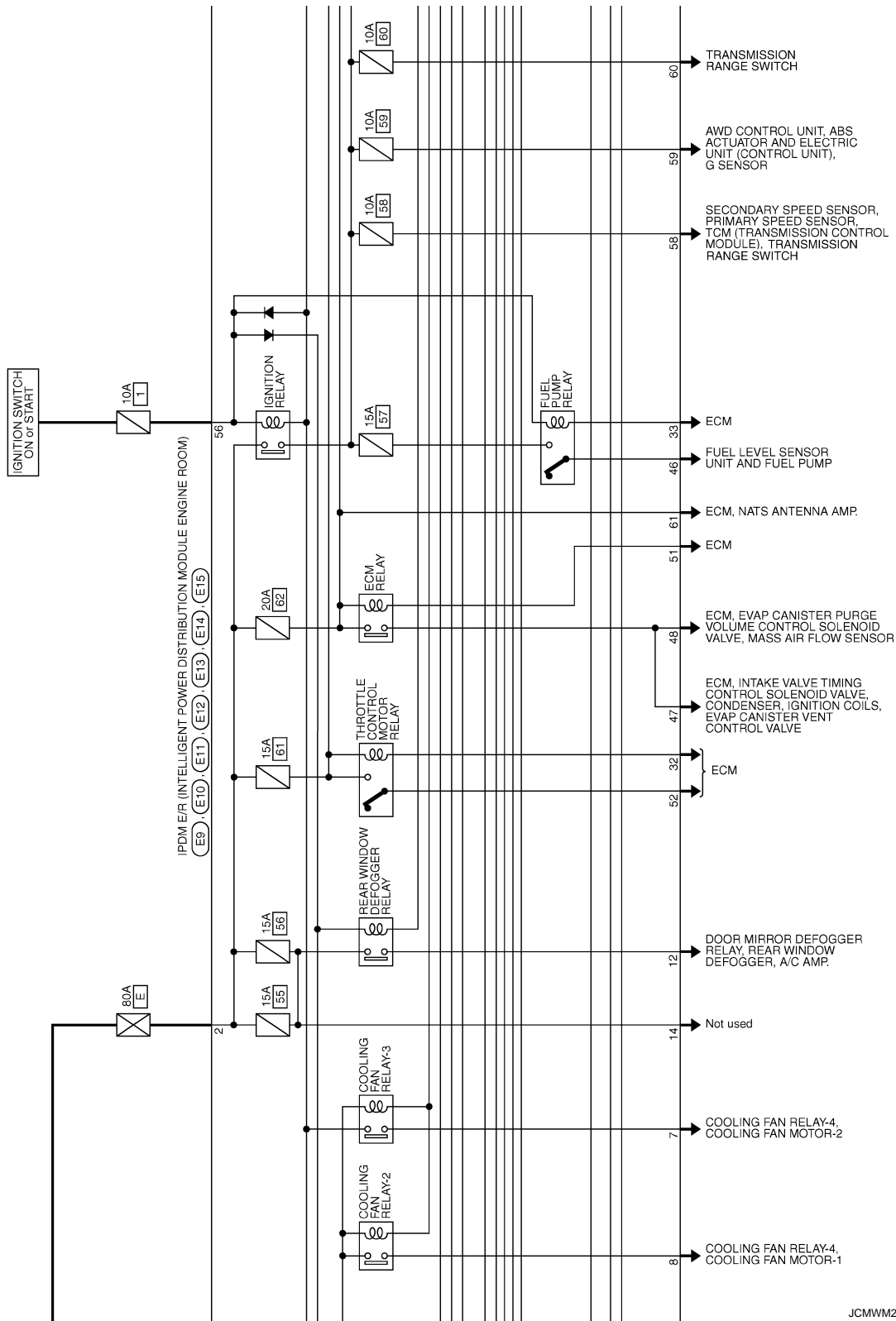
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JCMWM2858G

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

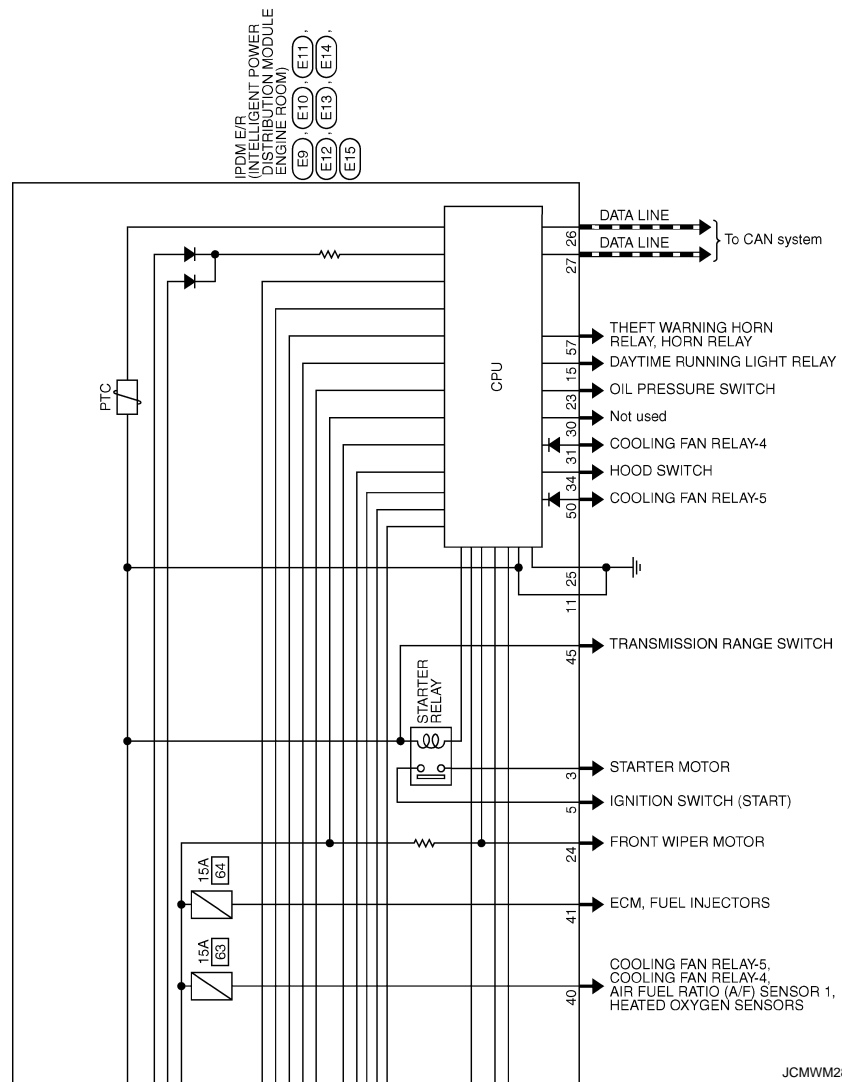
< ECU DIAGNOSIS INFORMATION >



JCMWM2859G

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

< ECU DIAGNOSIS INFORMATION >



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

< ECU DIAGNOSIS INFORMATION >

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)		
Connector No.	Connector Name	Connector Type
E9	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)	LOPEB-MC
E10	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)	MOBEV-LC
E11	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)	MOBEV-LC
E12	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)	NS30FBR-GS
E13	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)	TH12FV-NH
E14	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)	NS12FBR-GS
E15	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)	NS18FW-GS
Terminal No.	Color of Wire	Signal Name [Specification]
1	R	-
2	G	-
3	O	-
4	W	-
5	R	-
6	BR	-
7	P	-
8	G	-
9	-	-
10	-	-
11	B	-
12	O	-
13	-	-
14	-	-
15	SB	-
16	Y	-
17	W	-
18	L	-
19	SR	-
20	SB	-
21	G	-
22	LG	-
23	W	-
24	Y	-
25	B	-
26	P	-
27	L	-
31	LG	-
32	V	-
33	GR	-
34	W	-
37	R	-
38	R	-
39	GR	-
40	BR	-
41	O	-
42	L	-
43	G	-
45	Y	-
46	W	-
47	BR	-
48	R	-
50	G	-
51	L	-
52	P	-
55	O	-
56	SB	-
57	V	-
58	LG	-
59	BR	-
60	SB	-

Fail-safe

CAN COMMUNICATION CONTROL

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

If no CAN communication is available with ECM

JCMWM2861G

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

< ECU DIAGNOSIS INFORMATION >

Control part	Fail-safe in operation
Cooling fan	<ul style="list-style-type: none"> The cooling fan relay-1, the cooling fan relay-2, the cooling fan relay-3 and the cooling fan relay-5 turn ON when the ignition switch is turned ON The cooling fan relay-1, the cooling fan relay-2, the cooling fan relay-3 and the cooling fan relay-5 turn OFF when the ignition switch is turned OFF Cooling fan relay-4 OFF
A/C compressor	A/C relay OFF

If no CAN communication is available with BCM

Control part	Fail-safe in operation
Headlamp	<ul style="list-style-type: none"> The headlamp low relay turns ON when the ignition switch is turned ON The headlamp low relay turns OFF when the ignition switch is turned OFF Headlamp high relay OFF
<ul style="list-style-type: none"> Parking lamps License plate lamps Tail lamps Illuminations 	<ul style="list-style-type: none"> The tail lamp relay and the daytime running light relay* turn ON when the ignition switch is turned ON The tail lamp relay and the daytime running light relay* turn OFF when the ignition switch is turned OFF
Front wiper	<ul style="list-style-type: none"> 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 front 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
Starter motor	Starter relay OFF
Rear window defogger	Rear window defogger relay OFF
Horn	Horn relay OFF

NOTE:

*: With daytime running light system

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

- IPDM E/R monitors status of ignition relay by the voltage at ignition relay contact circuit inside it.
- IPDM E/R judges that the ignition relay is error, if status of the ignition relay and ignition switch ON signal (CAN).
- If the ignition relay cannot turn OFF due to contact seizure, it activates the tail lamp relay and daytime running light relay* for 10 minutes to alert the user to the ignition relay malfunction when the ignition switch is turned OFF.

Detection		IPDM E/R judgment	Operation
Ignition switch ON signal	Ignition relay		
ON	ON	Ignition relay normal	—
OFF	OFF	Ignition relay normal	—
OFF	ON	Ignition relay ON stuck	Turn on the tail lamp relay and daytime running light relay* for 10 minutes
ON	OFF	Ignition relay OFF stuck	Detect DTC "B2099: IGN RELAY OFF"

NOTE:

*: With daytime running light system

FRONT WIPER CONTROL

IPDM E/R detects the front wiper stop position with the front wiper stop position signal.

When the front wiper stop position signal is in the conditions listed below, IPDM E/R repeats a front wiper 10 seconds operation and 20 seconds stop five times.

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

< ECU DIAGNOSIS INFORMATION >

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.

DTC Index

INFOID:000000005254202

CONSULT display	Fail-safe	Timing ^{NOTE}		Reference page
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	×	CRNT	PAST	PCS-13
B2099: IGN RELAY OFF	—	CRNT	PAST	PCS-14

NOTE:

The details of time display are as follows.

- CRNT: The malfunctions that are detected now.
- PAST: The number is indicated when it is normal at present and a malfunction was detected in the past.

WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

WIPER AND WASHER SYSTEM SYMPTOMS

Symptom Table

INFOID:000000005254203

CAUTION:

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

Symptom	Probable malfunction location	Inspection item	
Front wiper does not operate.	HI only	<ul style="list-style-type: none"> Combination switch Harness between combination switch and BCM BCM 	Combination switch Refer to BCS-66, "Symptom Table" .
		<ul style="list-style-type: none"> IPDM E/R Harness between IPDM E/R and front wiper motor Front wiper motor 	Front wiper motor (HI) circuit Refer to WW-26, "Component Function Check" .
		Front wiper request signal <ul style="list-style-type: none"> BCM IPDM E/R 	IPDM E/R DATA MONITOR "FR WIP REQ"
	LO and INT	<ul style="list-style-type: none"> Combination switch Harness between combination switch and BCM BCM 	Combination switch Refer to BCS-66, "Symptom Table" .
		<ul style="list-style-type: none"> IPDM E/R Harness between IPDM E/R and front wiper motor Front wiper motor 	Front wiper motor (LO) circuit Refer to WW-24, "Component Function Check" .
		Front wiper request signal <ul style="list-style-type: none"> BCM IPDM E/R 	IPDM E/R DATA MONITOR "FR WIP REQ"
	INT only	<ul style="list-style-type: none"> Combination switch Harness between combination switch and BCM BCM 	Combination switch Refer to BCS-66, "Symptom Table" .
		Front wiper request signal <ul style="list-style-type: none"> 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-81, "Diagnosis Procedure" .	

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WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

Symptom	Probable malfunction location	Inspection item	
Front wiper does not stop.	HI only	<ul style="list-style-type: none"> • Combination switch • BCM 	Combination switch Refer to BCS-66, "Symptom Table" .
		<ul style="list-style-type: none"> Front wiper request signal • BCM • IPDM E/R 	IPDM E/R DATA MONITOR "FR WIP REQ"
		IPDM E/R	—
	LO only	<ul style="list-style-type: none"> • Combination switch • BCM 	Combination switch Refer to BCS-66, "Symptom Table" .
		<ul style="list-style-type: none"> Front wiper request signal • BCM • IPDM E/R 	IPDM E/R DATA MONITOR "FR WIP REQ"
		IPDM E/R	—
	INT only	<ul style="list-style-type: none"> • Combination switch • BCM 	Combination switch Refer to BCS-66, "Symptom Table" .
		<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> • Combination switch • Harness between combination switch and BCM • BCM
BCM			—
Intermittent control linked with vehicle speed cannot be performed.		Check the vehicle speed detection wiper setting. Refer to WW-14, "WIPER : CONSULT-III Function (BCM - WIPER)" .	
Wiper is not linked to the washer operation.		<ul style="list-style-type: none"> • Combination switch • Harness between combination switch and BCM • BCM 	Combination switch Refer to BCS-66, "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)]	<ul style="list-style-type: none"> • IPDM E/R • Harness between IPDM E/R and front wiper motor • Front wiper motor 	Front wiper auto stop signal circuit Refer to WW-28, "Component Function Check" .	
Rear wiper does not operate.	ON only	<ul style="list-style-type: none"> • Combination switch • Harness between combination switch and BCM • BCM 	Combination switch Refer to BCS-66, "Symptom Table" .
	INT only	<ul style="list-style-type: none"> • Combination switch • Harness between combination switch and BCM • BCM 	Combination switch Refer to BCS-66, "Symptom Table" .
	ON and INT	<ul style="list-style-type: none"> • Combination switch • Harness between combination switch and BCM • BCM 	Combination switch Refer to BCS-66, "Symptom Table" .
		<ul style="list-style-type: none"> • BCM • Harness between rear wiper motor and BCM • Harness between rear wiper motor and ground • Rear wiper motor 	Combination switch Refer to BCS-66, "Symptom Table" .

WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

Symptom		Probable malfunction location	Inspection item
Rear wiper does not stop.	ON only	<ul style="list-style-type: none"> • Combination switch • BCM 	Rear wiper motor circuit Refer to WW-32, "Component Function Check" .
	INT only	<ul style="list-style-type: none"> • Combination switch • BCM 	Combination switch Refer to BCS-66, "Symptom Table" .
Rear wiper does not operate normally.	Wiper is not linked to the washer operation.	<ul style="list-style-type: none"> • Combination switch • Harness between rear wiper motor and BCM • BCM 	Combination switch Refer to BCS-66, "Symptom Table" .
		BCM	—
	Rear wiper does not return to the stop position. [Stops after a five-second operation. (Fail-safe)]	<ul style="list-style-type: none"> • BCM • Harness between rear wiper motor and BCM • Rear wiper motor 	Rear wiper auto stop signal circuit Refer to WW-34, "Component Function Check" .

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NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description

INFOID:000000005254204

FRONT WIPER MOTOR PROTECTION FUNCTION

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

REAR WIPER MOTOR PROTECTION FUNCTION

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

FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

FRONT WIPER DOES NOT OPERATE

Description

INFOID:000000005254205

The front wiper does not operate under any operation conditions.

Diagnosis Procedure

INFOID:000000005254206

1.CHECK WIPER RELAY OPERATION

IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-8, "Diagnosis Description"](#).
2. Check that the front wiper operates at the LO/Hi operation.

CONSULT-III ACTIVE TEST

1. Select "FRONT WIPER" of IPDM E/R active test item.
2. With operating the test item, check 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 5.

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

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

Front wiper motor		Ground	Continuity
Connector	Terminal		
E20	1		Existed

Does continuity exist?

YES >> GO TO 4.

NO >> Repair the harness or connector.

4.CHECK FRONT WIPER MOTOR OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST

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

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FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

Terminals		Test item	Voltage (Approx.)		
(+)	(-)				
IPDM E/R		FRONT WIPER			
Connector	Terminal				
E14	43			Lo	Battery voltage
	42			Off	0 V
Ground		Hi	Battery voltage		
		Off	0 V		

Is the measurement value normal?

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

5.CHECK FRONT WIPER REQUEST SIGNAL INPUT

ⓅCONSULT-III DATA MONITOR

1. Select "FR WIP REQ" of IPDM E/R data monitor item.
2. Switch the front wiper switch to HI and LO.
3. With operating the front wiper switch, check the 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 6.

6.CHECK COMBINATION SWITCH

Perform the inspection of the combination switch. Refer to [BCS-66. "Symptom Table"](#).

Is combination switch normal?

- YES >> Replace BCM. Refer to [BCS-67. "Exploded View"](#).
 NO >> Repair or replace the applicable parts.

PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS FOR USA AND CANADA

FOR USA AND CANADA : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000005254207

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

WARNING:

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

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

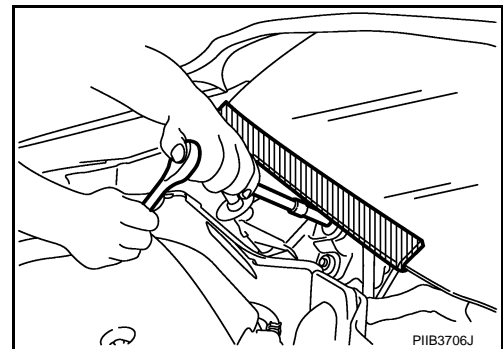
WARNING:

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

FOR USA AND CANADA : Precaution for Procedure without Cowl Top Cover

INFOID:000000005254208

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



FOR MEXICO

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

INFOID:000000005254209

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. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

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PRECAUTIONS

< PRECAUTION >

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

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

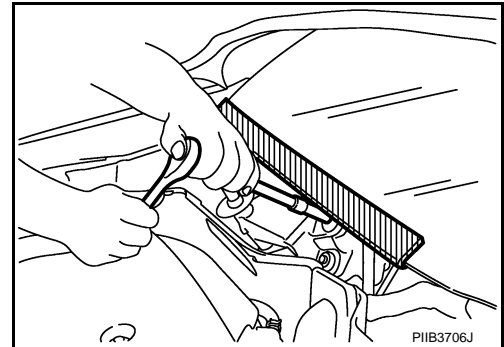
WARNING:

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

FOR MEXICO : Precaution for Procedure without Cowl Top Cover

INFOID:000000005254210

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



PI1B3706J

WASHER TANK

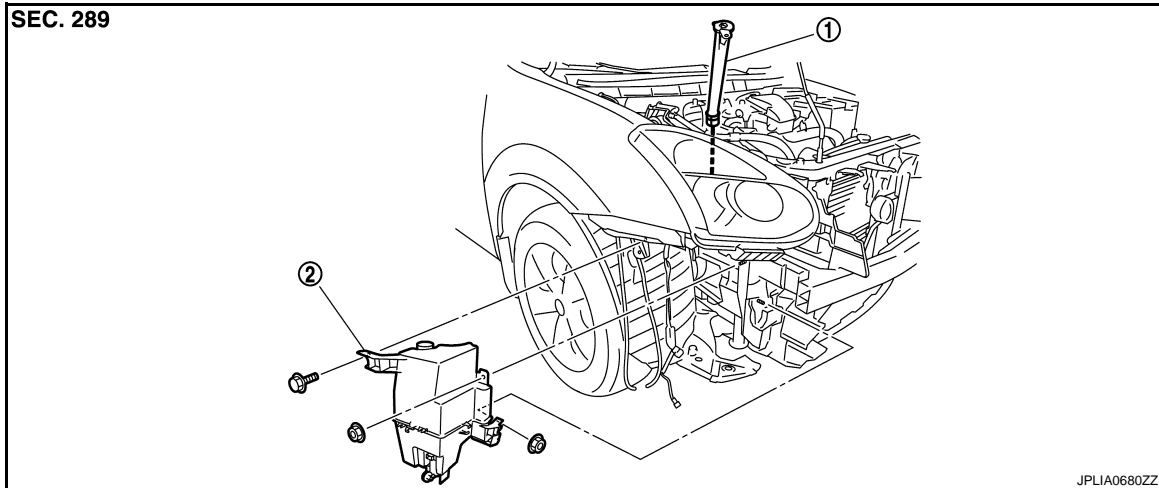
< REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION

WASHER TANK

Exploded View

INFOID:000000005254211



1. Washer tank inlet

2. Washer tank

Removal and Installation

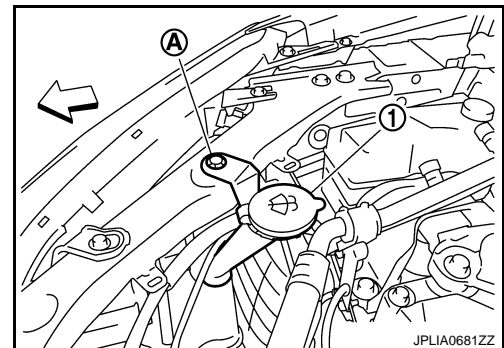
INFOID:000000005254212

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-22, "Exploded View"](#).
4. Disconnect washer pump connector.
5. Disconnect washer level switch connector. (for Canada models)
6. Remove front washer tube and rear washer tube.
7. Remove washer tank mounting nuts and bolt.
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.

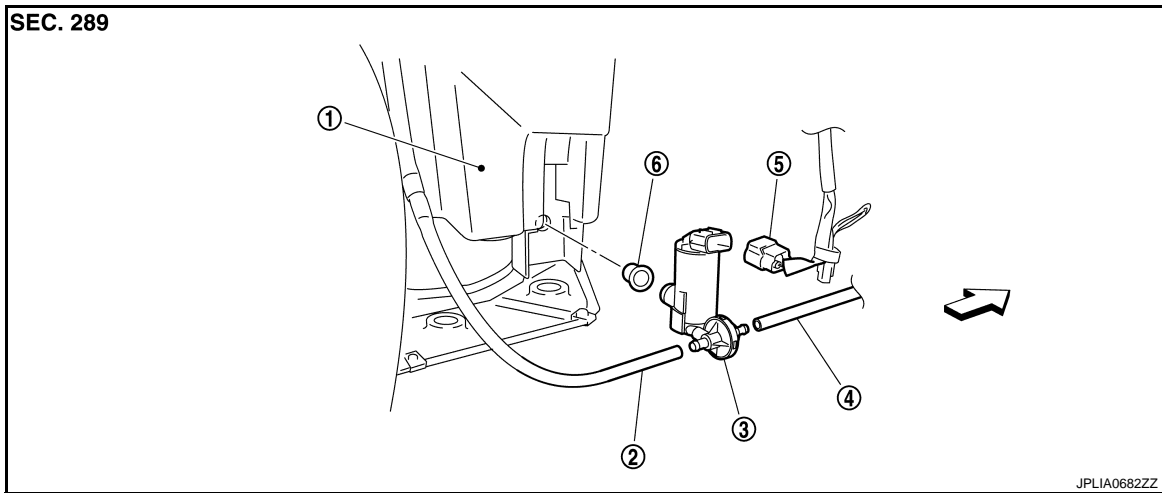
WASHER PUMP

< REMOVAL AND INSTALLATION >

WASHER PUMP

Exploded View

INFOID:000000005254213



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

⇨ : Vehicle front

Removal and Installation

INFOID:000000005254214

REMOVAL

1. Remove the fender protector RH (front). Refer to [EXT-22, "Exploded View"](#).
2. Disconnect washer pump connector.
3. Remove front washer tube and rear washer tube.
4. Remove washer pump from the washer tank.
5. Remove the packing from the washer tank.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

Never twist the packing when installing the washer pump.

WASHER LEVEL SWITCH

< REMOVAL AND INSTALLATION >

WASHER LEVEL SWITCH

Removal and Installation

INFOID:000000005254215

The washer level switch must be replaced together with the washer tank as an assembly. Refer to [WW-85](#), "[Removal and Installation](#)".

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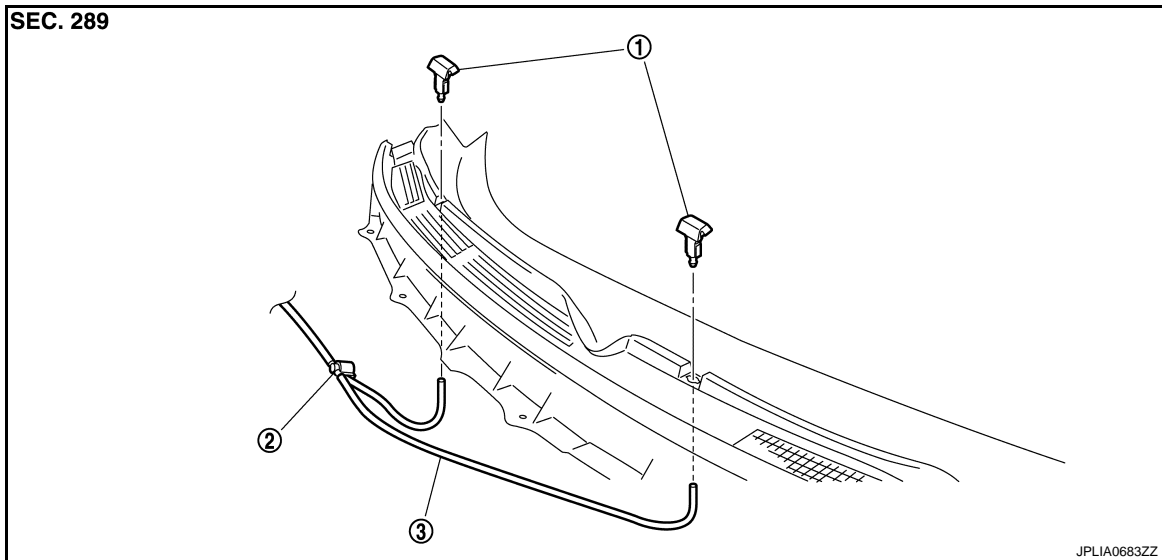
FRONT WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

FRONT WASHER NOZZLE AND TUBE

Exploded View

INFOID:0000000052542.16



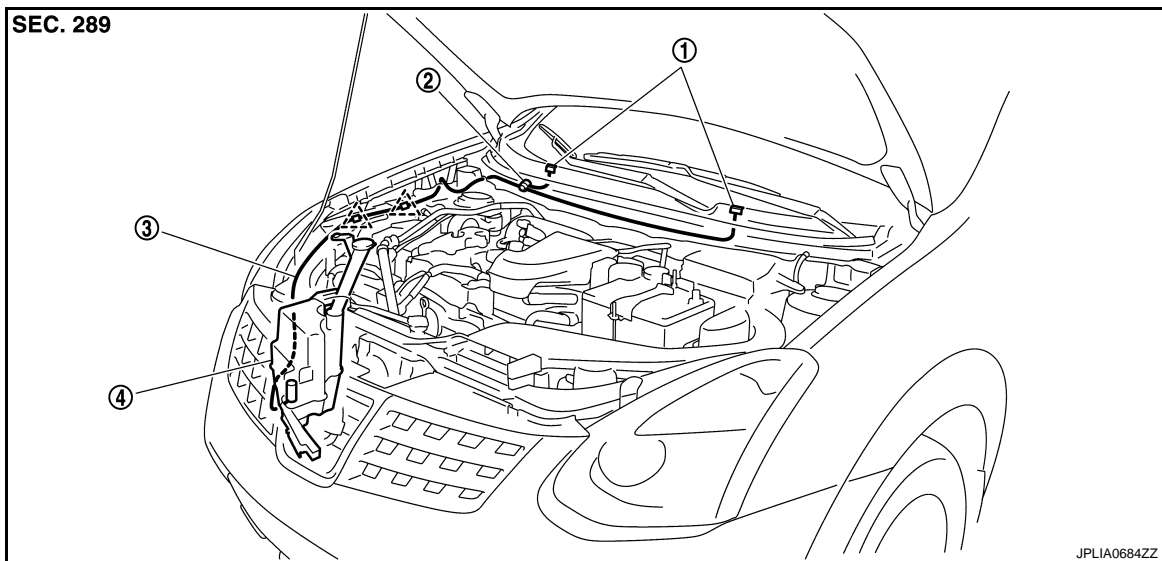
1. Front washer nozzle

2. Check valve

3. Front washer tube

Hydraulic Layout

INFOID:0000000052542.17




1. Front washer nozzle

2. Check valve

3. Front washer tube

4. Washer tank

 : Clip

Removal and Installation

INFOID:0000000052542.18

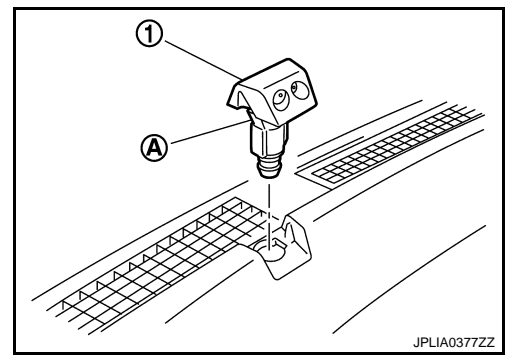
REMOVAL

1. Remove cowl top cover. Refer to [EXT-20. "Exploded View"](#).
2. Disconnect front washer tube from front washer nozzle.

FRONT WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

- While pressing pawl (A) on the cowl top cover front side of front washer nozzle (1), 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.

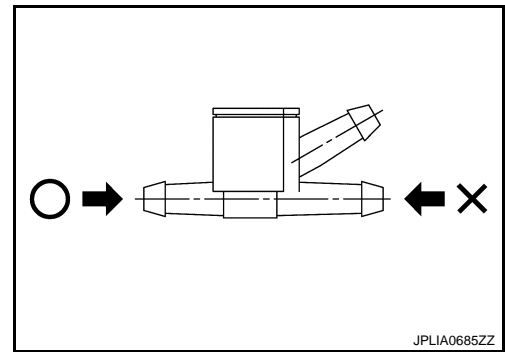
Inspection and Adjustment

INFOID:000000005254219

INSPECTION

Check valve Inspection

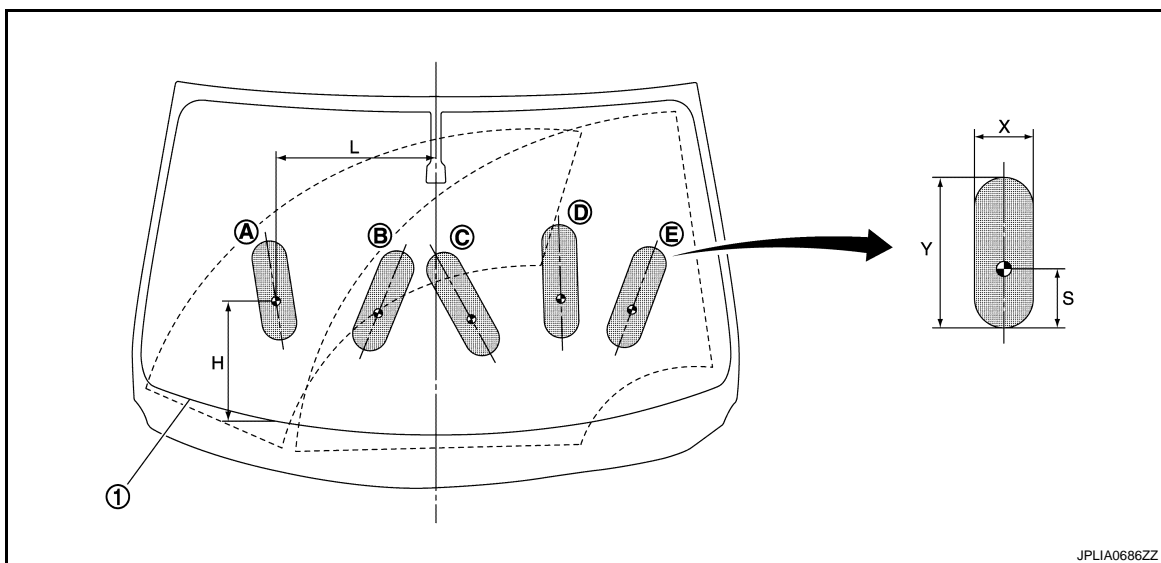
Check that air can pass through the hose by blowing forward (toward the nozzle), and check that air cannot pass through by sucking.



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

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FRONT WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

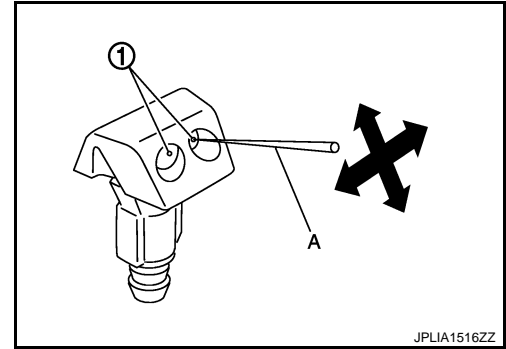
Unit: mm (in)

Spray position	H	L	X	Y	S
A	285 (11.22)	360 (14.17)	80 (3.15)	250 (9.84)	80 (3.15)
B	285 (11.22)	135 (5.31)	80 (3.15)	260 (10.24)	80 (3.15)
C	275 (10.83)	90 (3.54)	80 (3.15)	265 (10.43)	80 (3.15)
D	305 (12.01)	285 (11.22)	80 (3.15)	265 (10.43)	80 (3.15)
E	245 (9.65)	440 (17.32)	80 (3.15)	260 (10.24)	80 (3.15)

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.



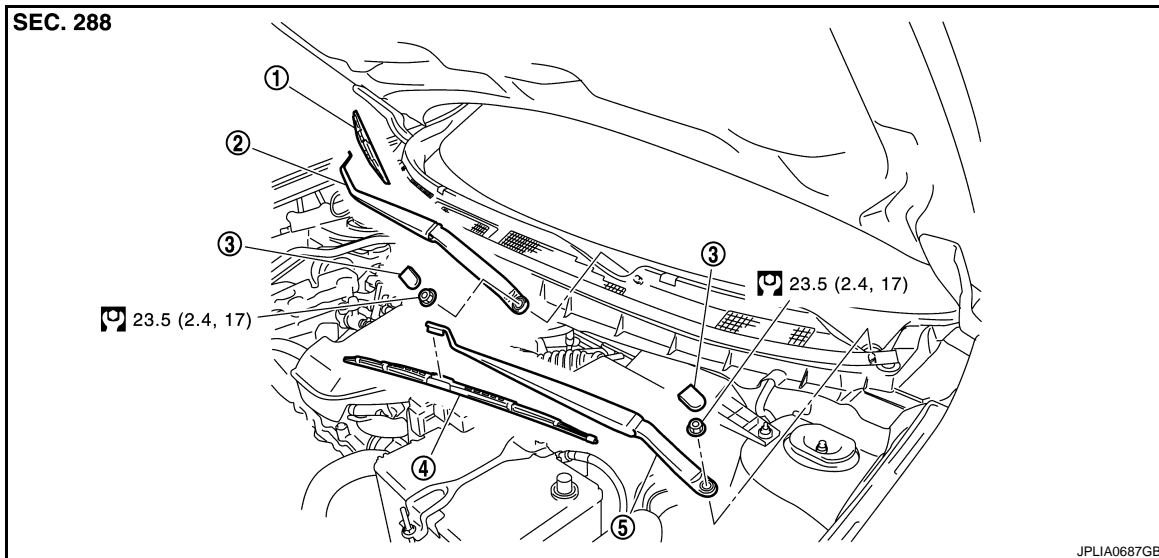
FRONT WIPER ARM

< REMOVAL AND INSTALLATION >

FRONT WIPER ARM

Exploded View

INFOID:000000005254220



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

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

Removal and Installation

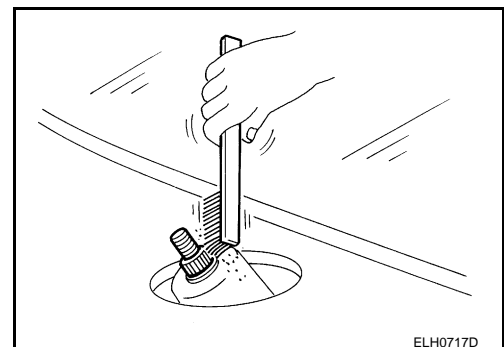
INFOID:000000005254221

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-91, "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:000000005254222

WIPER BLADE POSITION ADJUSTMENT

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

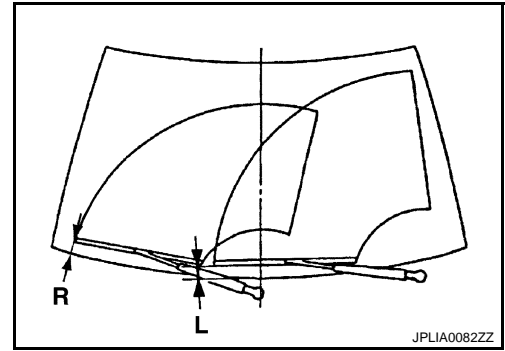
FRONT WIPER ARM

< REMOVAL AND INSTALLATION >

Standard clearance

R : $34.5 \pm 7.5 \text{ mm}$ ($1.358 \pm 0.295 \text{ in}$)

L : $41.3 \pm 7.5 \text{ mm}$ ($1.626 \pm 0.295 \text{ in}$)



FRONT WIPER DRIVE ASSEMBLY

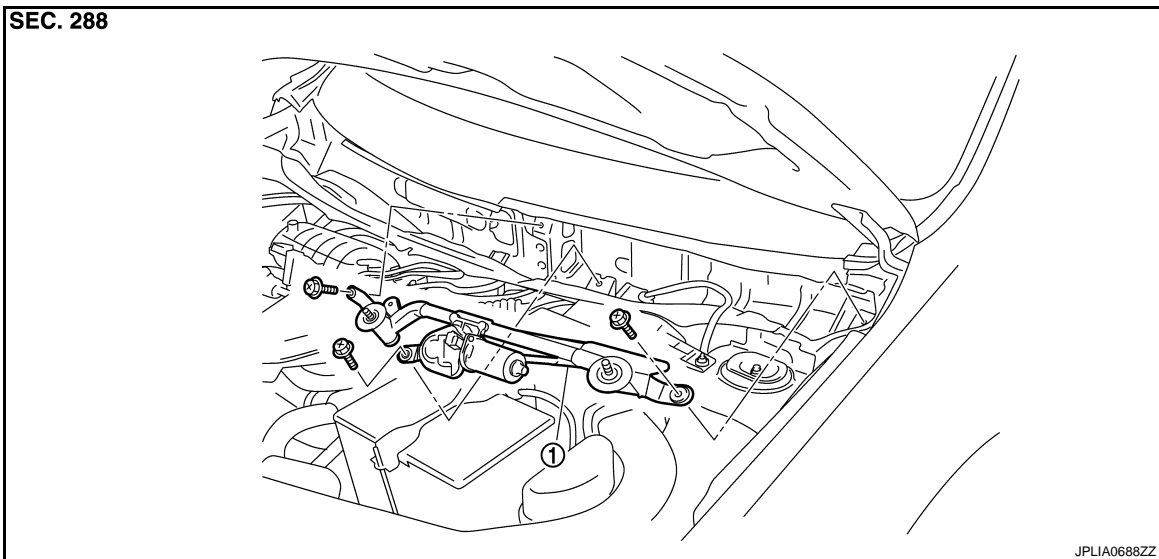
< REMOVAL AND INSTALLATION >

FRONT WIPER DRIVE ASSEMBLY

Exploded View

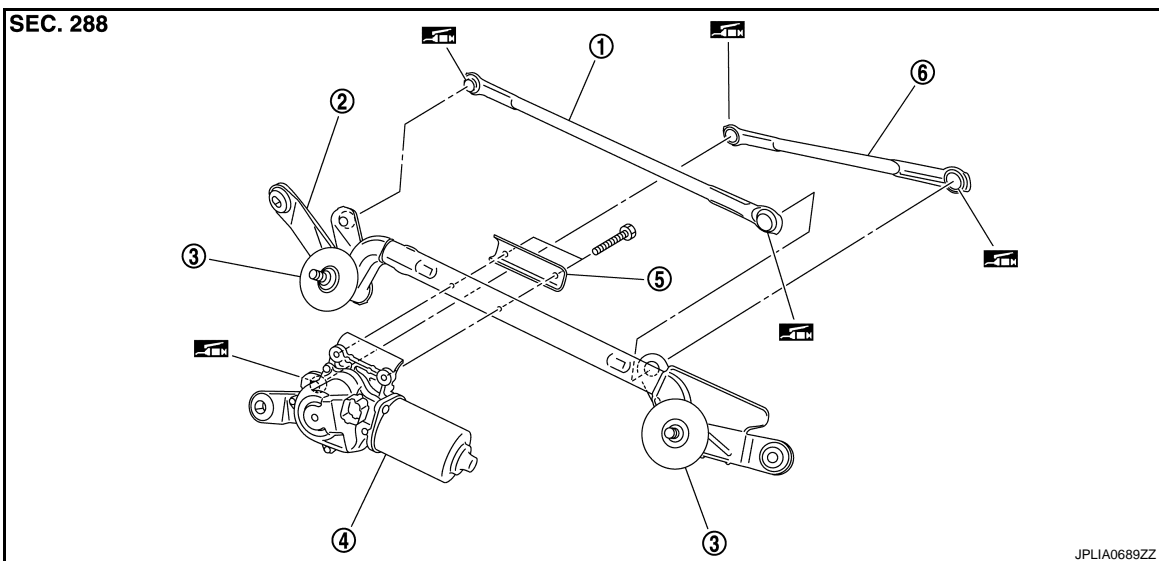
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REMOVAL VIEW




1. Front wiper drive assembly

DISASSEMBLY VIEW



- | | | |
|--------------------------|----------------------|--------------------------|
| 1. Front wiper linkage 2 | 2. Front wiper frame | 3. Shaft seal |
| 4. Front wiper motor | 5. Bracket | 6. Front wiper linkage 1 |

: Multi-purpose grease or an equivalent

Removal and Installation

INFOID:000000005254224

REMOVAL

1. Remove front wiper arm. Refer to [WW-91, "Exploded View"](#).
2. Remove cowl top cover. Refer to [EXT-20, "Exploded View"](#).
3. Remove bolts from the front wiper drive assembly.

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FRONT WIPER DRIVE ASSEMBLY

< REMOVAL AND INSTALLATION >

4. Disconnect the front wiper motor connector.
5. Remove 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-20, "Exploded View"](#).
5. Install front wiper arms. Refer to [WW-91, "Exploded View"](#).

Disassembly and Assembly

INFOID:000000005254225

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.**

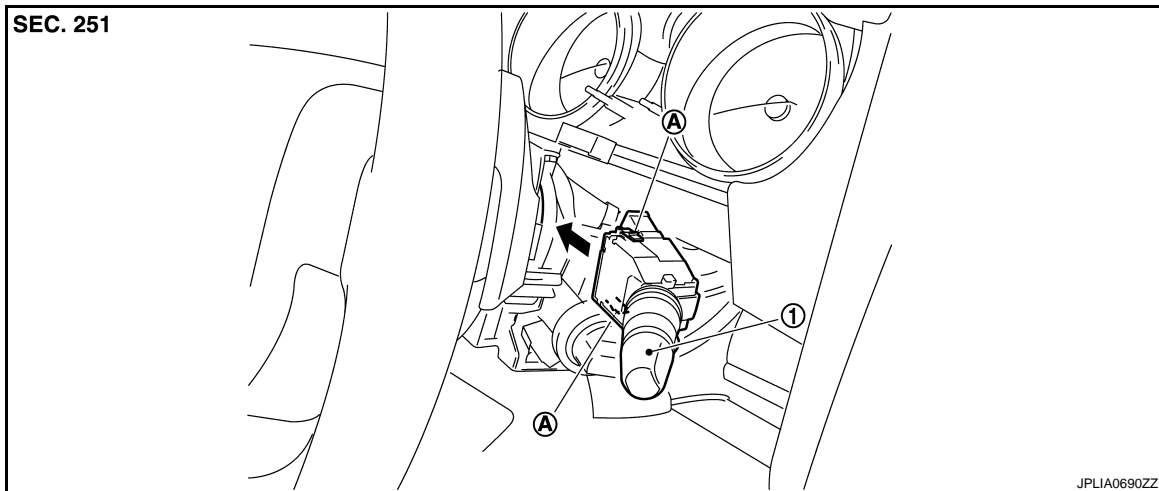
WIPER AND WASHER SWITCH

< REMOVAL AND INSTALLATION >

WIPER AND WASHER SWITCH

Exploded View

INFOID:000000005254226



- 1. Wiper & washer switch
- A. Pawl

Removal and Installation

INFOID:000000005254227

REMOVAL

1. Remove steering column cover. Refer to [IP-12. "Exploded View"](#).
2. While pressing pawls, pull the wiper & washer switch. And disconnect it from the switch base.

INSTALLATION

Install in the reverse order of removal.

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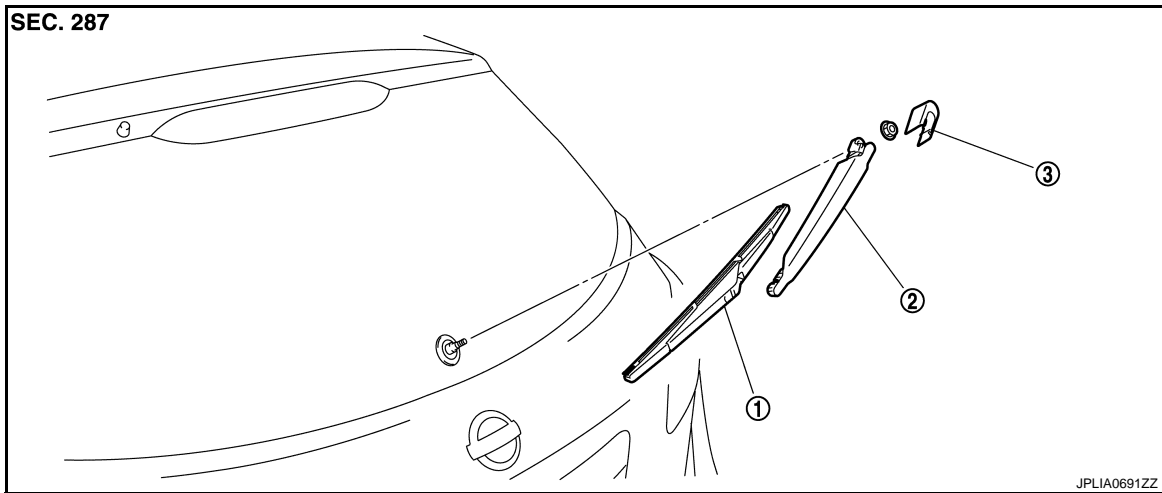
REAR WIPER ARM

< REMOVAL AND INSTALLATION >

REAR WIPER ARM

Exploded View

INFOID:000000005254228



1. Rear wiper blade

2. Rear wiper arm

3. Rear wiper arm cover

Removal and Installation

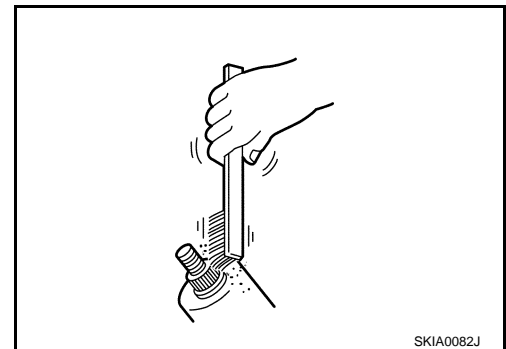
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REMOVAL

1. Operate the rear wiper to the auto stop position.
2. Remove the rear wiper arm cover.
3. Remove the rear wiper arm mounting nut.
4. 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-96, "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

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REAR WIPER BLADE POSITION ADJUSTMENT

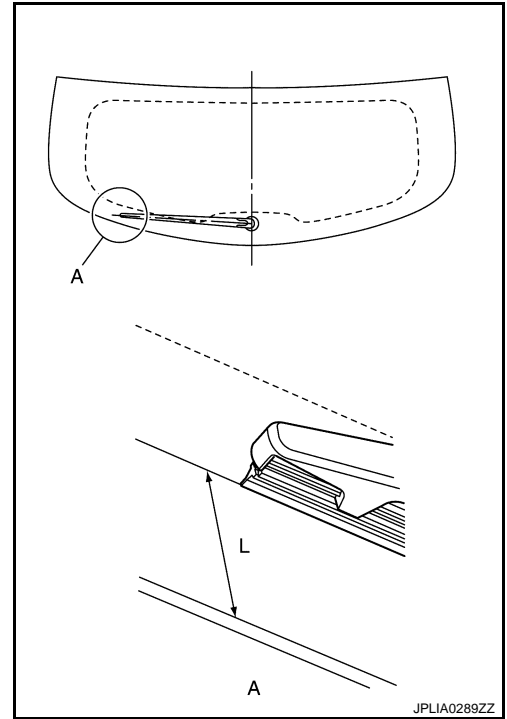
Clearance between the end of back door glass and the top of wiper blade center.

REAR WIPER ARM

< REMOVAL AND INSTALLATION >

Standard clearance

L : 28.0 ± 7.5 mm (1.102 ± 0.295 in)



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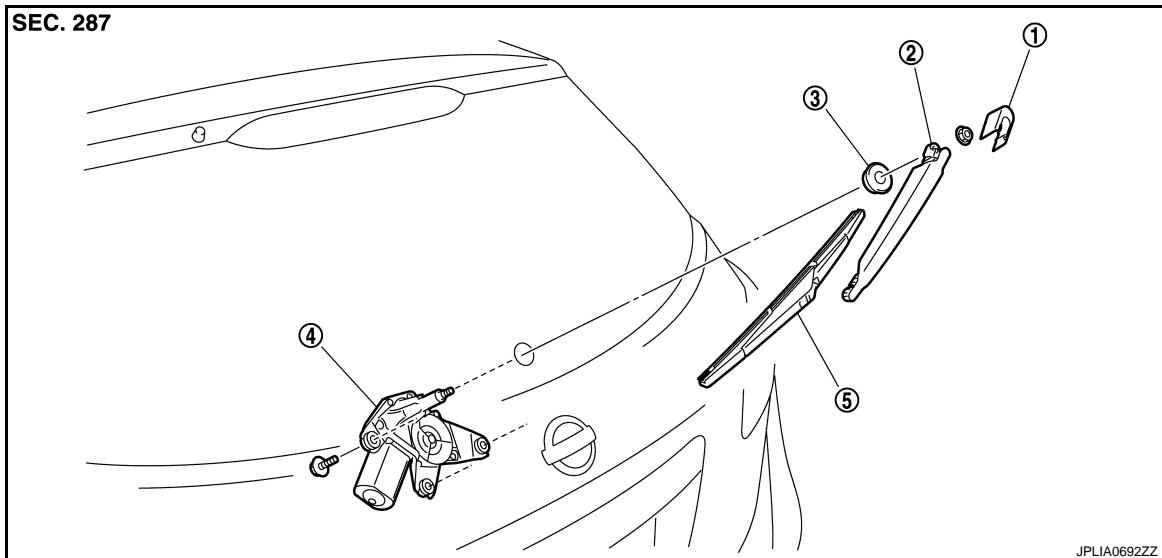
REAR WIPER MOTOR

< REMOVAL AND INSTALLATION >

REAR WIPER MOTOR

Exploded View

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

Removal and Installation

INFOID:000000005254232

REMOVAL

1. Remove rear wiper arm cover and rear wiper arm. Refer to [WW-96, "Exploded View"](#).
2. Remove back door trim finisher lower. Refer to [INT-34, "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 trim finisher lower. Refer to [INT-34, "Exploded View"](#).
6. Install rear wiper arm cover and rear wiper arm. Refer to [WW-96, "Exploded View"](#).

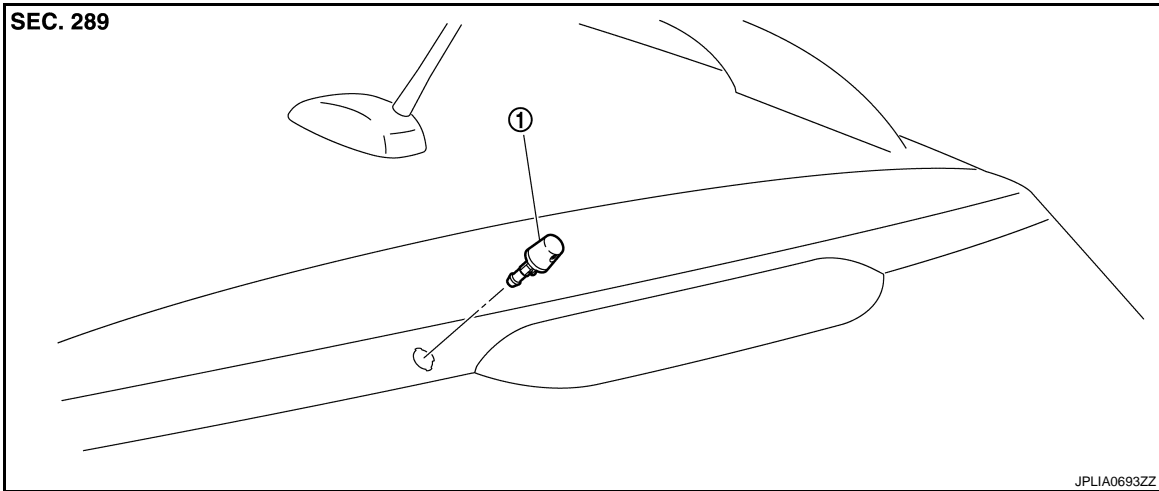
REAR WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

REAR WASHER NOZZLE AND TUBE

Exploded View

INFOID:000000005254233



1. Rear washer nozzle

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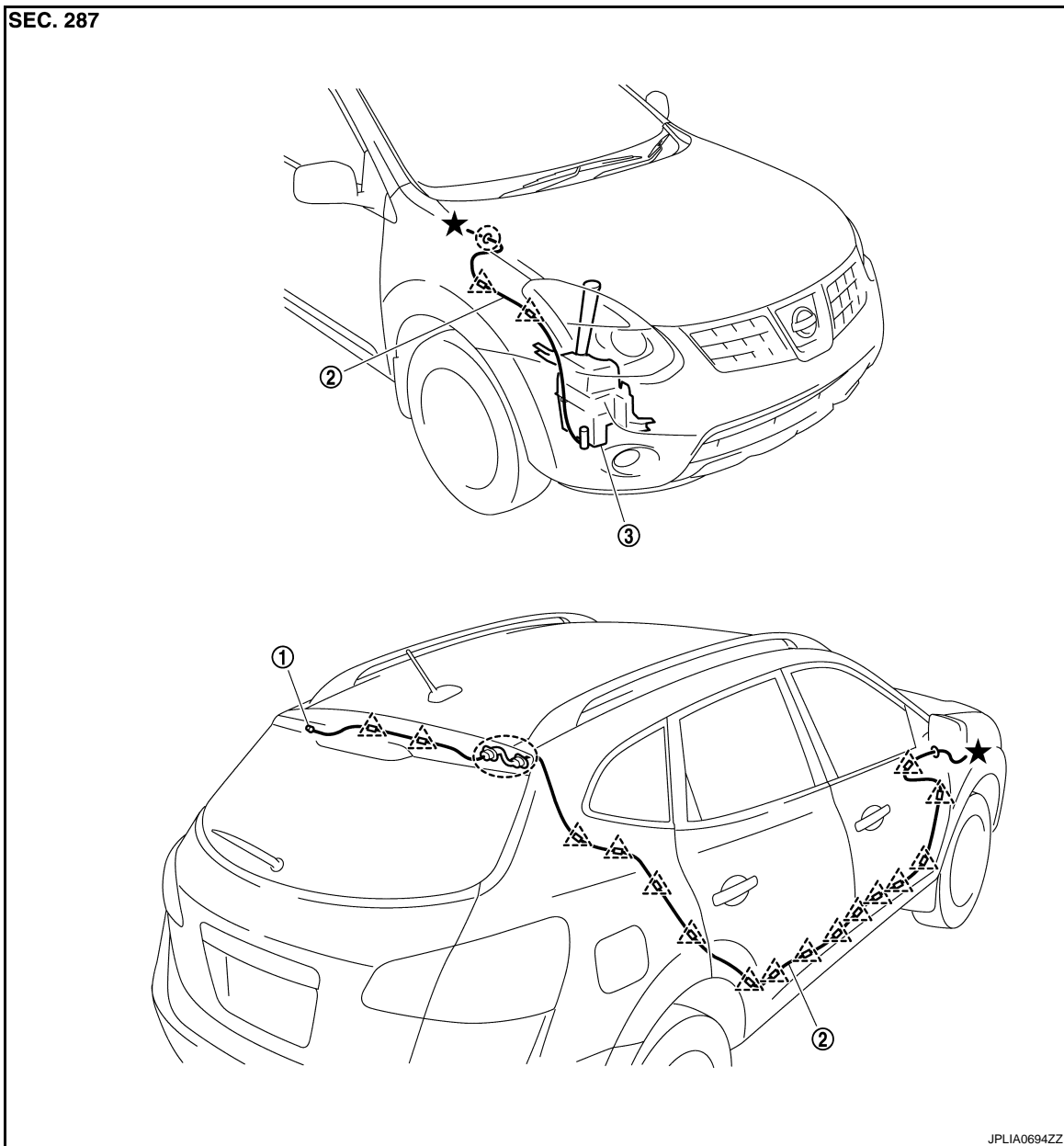
WW

REAR WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

Hydraulic Layout

INFOID:000000005254234



1. Rear washer nozzle

2. Rear washer tube

3. Washer tank

△ : Clip

○ : Grommet

Removal and Installation

INFOID:000000005254235

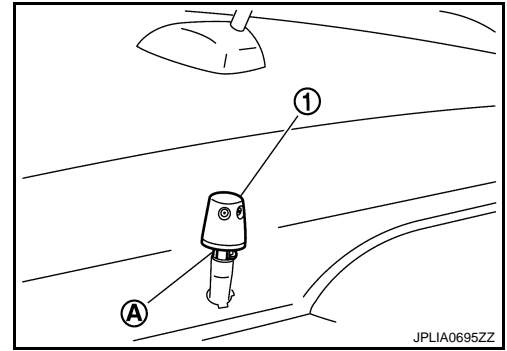
REMOVAL

1. Remove the back door inner finisher. Refer to [INT-34, "Exploded View"](#).
2. Remove the rear washer tube from the rear washer nozzle.

REAR WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

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



INSTALLATION

Install in the reverse order of removal.

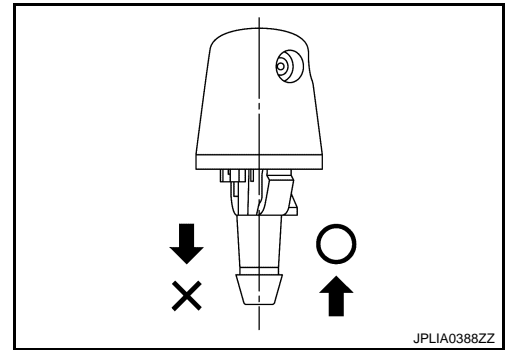
Inspection and Adjustment

INFOID:000000005254236

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

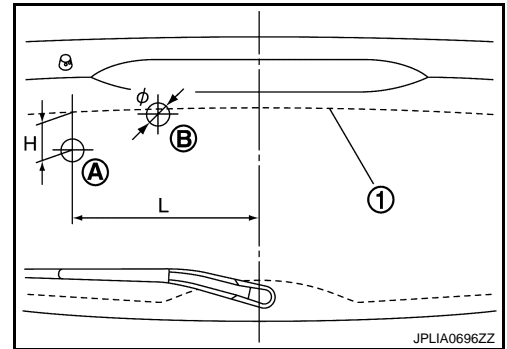
Washer Nozzle Spray Position adjustment

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	48.9 (1.93)	240.7 (9.48)	30 (1.18)
B	6.8 (0.27)	130.8 (5.15)	30 (1.18)



Insert a needle or similar object (B) into the spray opening (A) 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.

