

A
B
C

SECTION **WW**

WIPER & WASHER

CONTENTS

BASIC INSPECTION	3		Component Function Check	23	
DIAGNOSIS AND REPAIR WORKFLOW	3		Diagnosis Procedure	23	
Work Flow	3		FRONT WIPER MOTOR GROUND CIRCUIT ...	25	G
FUNCTION DIAGNOSIS	6		Diagnosis Procedure	25	
FRONT WIPER AND WASHER SYSTEM	6		ECU DIAGNOSIS	26	
System Diagram	6		BCM (BODY CONTROL MODULE)	26	H
System Description	6		Reference Value	26	
Component Parts Location	9		Terminal Layout	30	I
Component Description	10		Physical Values	30	
DIAGNOSIS SYSTEM (BCM)	11		Fail Safe	46	J
COMMON ITEM	11		DTC Inspection Priority Chart	47	
COMMON ITEM : Diagnosis Description	11		DTC Index	48	
COMMON ITEM : CONSULT-III Function (BCM -	11		IPDM E/R (INTELLIGENT POWER DISTRI-	51	K
COMMON ITEM)	11		BUTION MODULE ENGINE ROOM)	51	
WIPER	12		Reference Value	51	WW
WIPER : CONSULT - III Function (BCM - WIPER)...	12		Terminal Layout	52	
DIAGNOSIS SYSTEM (IPDM E/R)	13		Physical Values	52	
Diagnosis Description	13		Fail Safe	56	
CONSULT - III Function (IPDM E/R)	16		DTC Index	57	
COMPONENT DIAGNOSIS	18		WIRING DIAGRAM	58	M
WIPER AND WASHER FUSE	18		FRONT WIPER AND WASHER SYSTEM	58	N
Description	18		Wiring Diagram	58	
Diagnosis Procedure	18		SYMPTOM DIAGNOSIS	63	O
FRONT WIPER MOTOR LO CIRCUIT	19		FRONT WIPER AND WASHER SYSTEM	63	P
Component Function Check	19		SYMPTOMS	63	
Diagnosis Procedure	19		Symptom Table	63	
FRONT WIPER MOTOR HI CIRCUIT	21		FRONT WIPER DOES NOT OPERATE	65	
Component Function Check	21		Description	65	
Diagnosis Procedure	21		Diagnosis Procedure	65	
FRONT WIPER AUTO STOP SIGNAL CIR-	23		NORMAL OPERATING CONDITION	67	
CUIT	23		Description	67	
			PRECAUTION	68	

PRECAUTIONS	68	FRONT WASHER	75
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	68	WASHER TUBE	75
		WASHER TUBE : Layout	75
ON-VEHICLE REPAIR	69	FRONT WASHER NOZZLE	75
FRONT WIPER	69	FRONT WASHER NOZZLE : Removal and Installation	75
Exploded View	69	FRONT WASHER NOZZLE : Adjustment	76
FRONT WIPER BLADE REFILL	69	WASHER TANK	76
FRONT WIPER BLADE REFILL : Removal and Installation	69	WASHER TANK : Removal and Installation	76
FRONT WIPER BLADE	72	FRONT WASHER PUMP	77
FRONT WIPER BLADE : Removal and Installation	72	FRONT WASHER PUMP : Removal and Installation	77
FRONT WIPER ARMS	73	FRONT WIPER AND WASHER SWITCH	78
FRONT WIPER ARMS : Removal and Installation..	73	Removal and Installation	78
FRONT WIPER DRIVE ASSEMBLY	73	WASHER LEVEL SWITCH	79
FRONT WIPER DRIVE ASSEMBLY : Removal and Installation	73	Removal and Installation	79

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

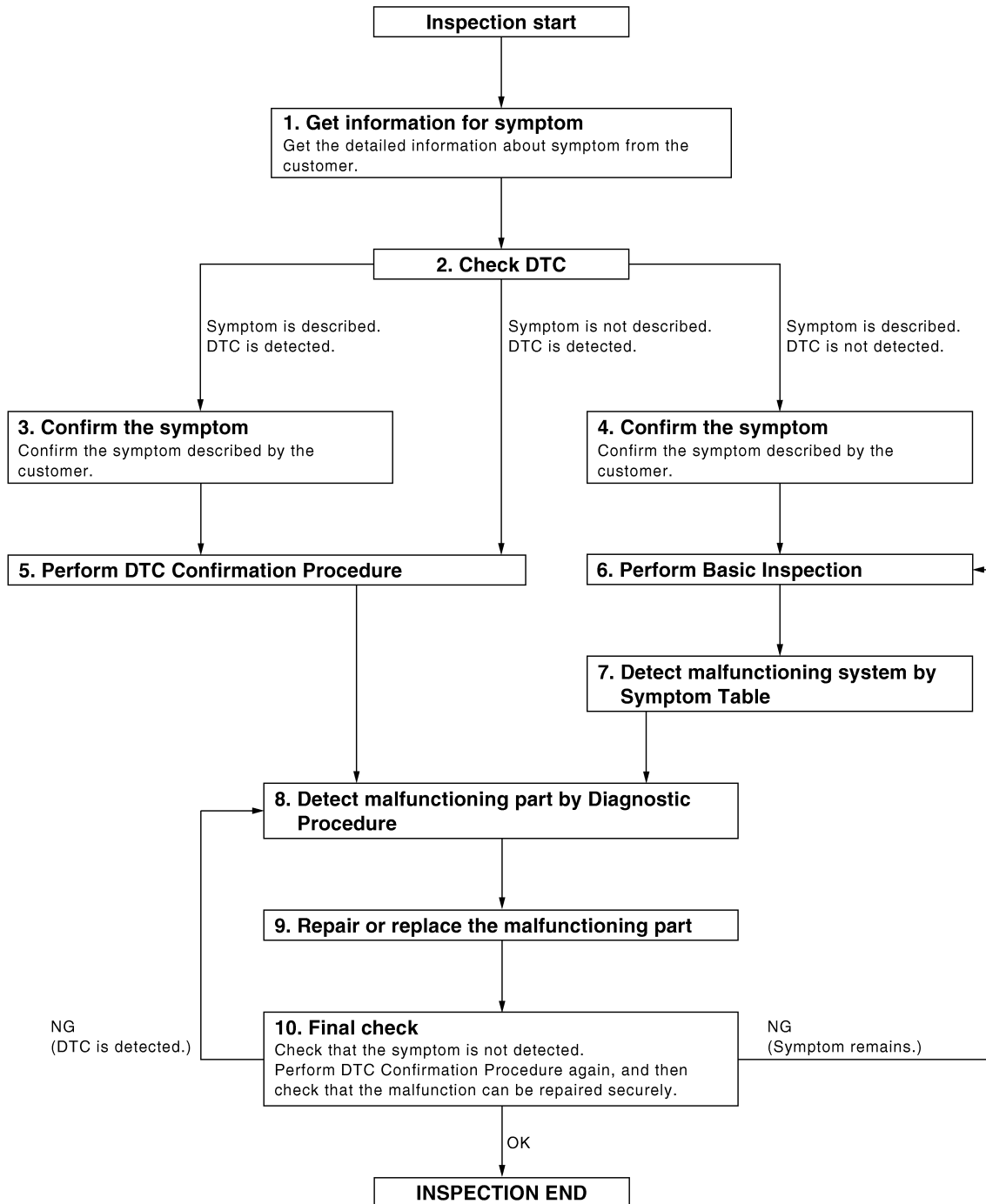
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000005439381

OVERALL SEQUENCE



DETAILED FLOW

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

1. GET INFORMATION FOR SYMPTOM

Get the detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurred).

>> GO TO 2

2. CHECK DTC

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

Is any symptom described and any DTC detected?

Symptom is described, DTC is displayed>>GO TO 3

Symptom is described, DTC is not displayed>>GO TO 4

Symptom is not described, DTC is displayed>>GO TO 5

3. CONFIRM THE SYMPTOM

Confirm the symptom described by the customer.

Connect CONSULT-III to the vehicle in "DATA MONITOR" mode and check real time diagnosis results.

Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5

4. CONFIRM THE SYMPTOM

Confirm the symptom described by the customer.

Connect CONSULT-III to the vehicle in "DATA MONITOR" mode and check real time diagnosis results.

Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6

5. PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC Confirmation Procedure for the displayed DTC, and then check that DTC is detected again.

At this time, always connect CONSULT-III to the vehicle, and check diagnostic results in real time.

If two or more DTCs are detected, refer to [BCS-67. "DTC Inspection Priority Chart"](#) and determine trouble diagnosis order.

NOTE:

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

Is DTC detected?

YES >> GO TO 8

NO >> Refer to [GI-42. "Intermittent Incident"](#).

6. PERFORM BASIC INSPECTION

Perform [WW-3. "Work Flow"](#).

Inspection End>>GO TO 7

7. DETECT MALFUNCTIONING SYSTEM BY SYMPTOM TABLE

Detect malfunctioning system according to [WW-65. "Diagnosis Procedure"](#) based on the confirmed symptom in step 4, and determine the trouble diagnosis order based on possible causes and symptom.

>> GO TO 8

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

8. DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

NOTE:

The Diagnostic Procedure described based on open circuit inspection. A short circuit inspection is also required for the circuit check in the Diagnostic Procedure.

Is malfunctioning part detected?

YES >> GO TO 9

NO >> Check voltage of related BCM terminals using CONSULT-III.

9. REPAIR OR REPLACE THE MALFUNCTIONING PART

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

>> GO TO 10

10. FINAL CHECK

When DTC was detected in step 2, perform DTC Confirmation Procedure or Component Function Check again, and then check that the malfunction have been repaired securely.

When symptom was described from the customer, refer to confirmed symptom in step 3 or 4, and check that the symptom is not detected.

Does the symptom reappear?

YES (DTC is detected)>>GO TO 8

YES (Symptom remains)>>GO TO 6

NO >> Inspection End.

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

WW

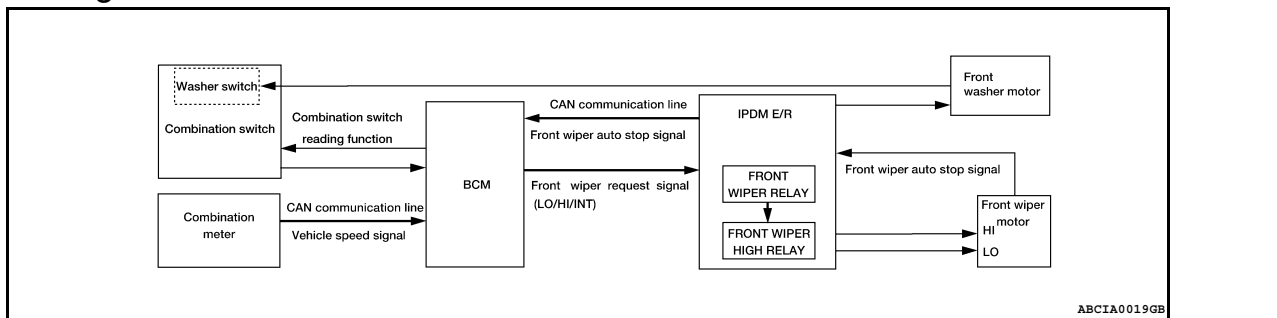
FRONT WIPER AND WASHER SYSTEM

< FUNCTION DIAGNOSIS >

FUNCTION DIAGNOSIS

FRONT WIPER AND WASHER SYSTEM

System Diagram



System Description

INFOID:000000005439383

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

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

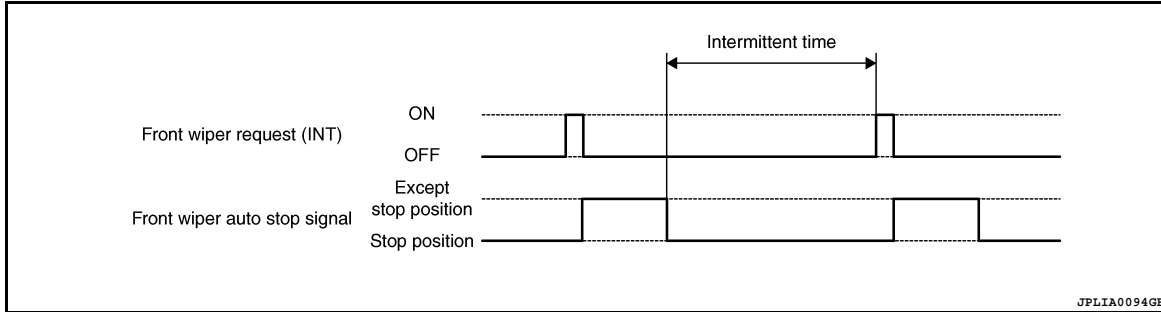
Front wiper INT operating condition

- Ignition switch ON
- Front wiper switch INT

FRONT WIPER AND WASHER SYSTEM

< FUNCTION DIAGNOSIS >

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



NOTE:

Front wiper intermittent operation can be set to the operation with vehicle speed by CONSULT-III. Refer to [BCS-24, "WIPER : CONSULT - III Function \(BCM - WIPER\)"](#).

Front wiper intermittent operation with vehicle speed

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

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

*: When without vehicle speed setting

FRONT WIPER AUTO STOP OPERATION

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

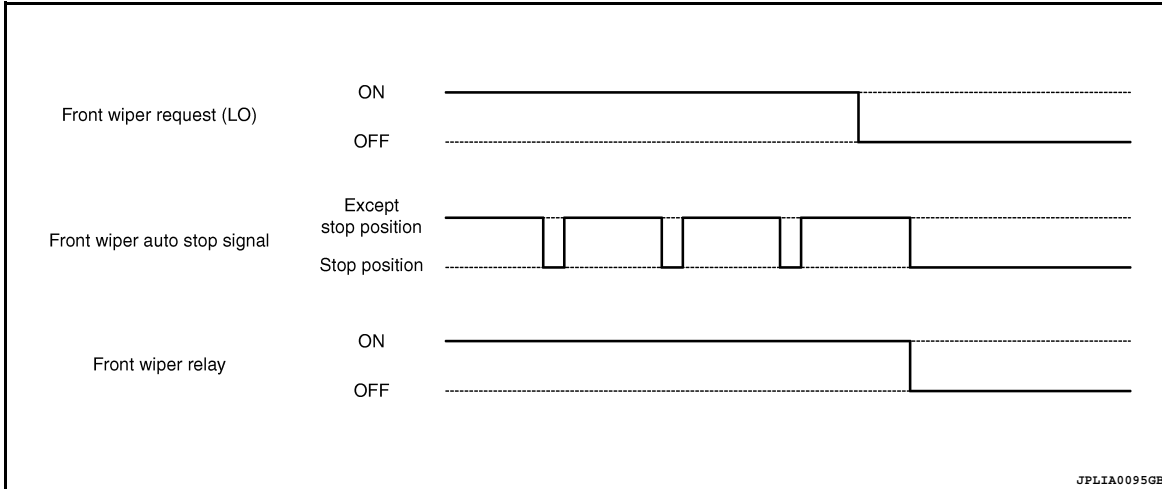
A
B
C
D
E
F
G
H
I
J
K
M
N
O
P

WW

FRONT WIPER AND WASHER SYSTEM

< FUNCTION DIAGNOSIS >

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



NOTE:

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

FRONT WIPER OPERATION LINKED WITH WASHER

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

Washer linked operating condition of front wiper

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

FRONT WIPER FAIL-SAFE OPERATION

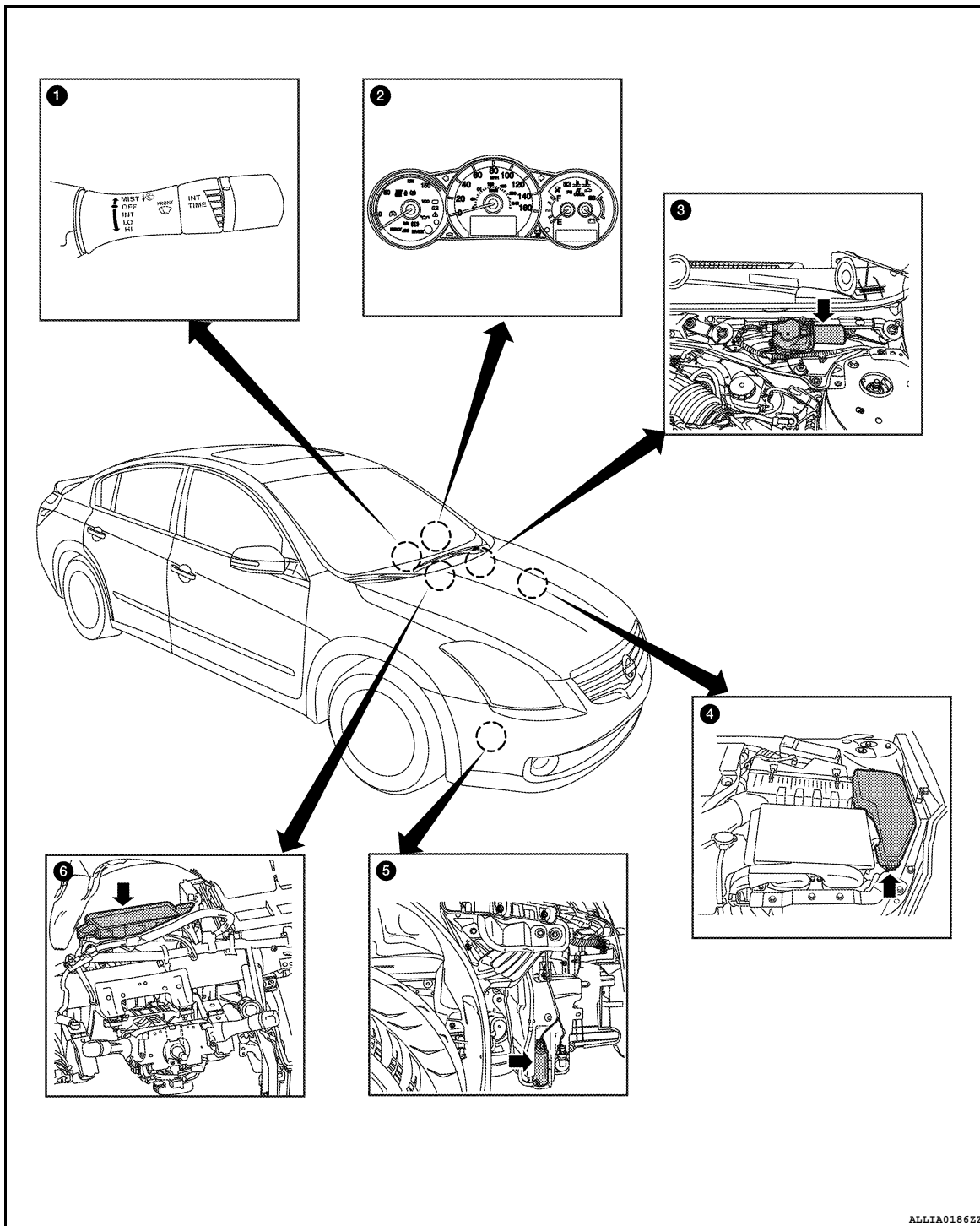
When the front wiper auto stop circuit is malfunctioning, IPDM E/R performs the fail-safe function. Refer to [PCS-27. "Fail Safe"](#).

FRONT WIPER AND WASHER SYSTEM

< FUNCTION DIAGNOSIS >

Component Parts Location

INFOID:000000005439384



1. Combination switch (wiper switch) M28

2. Combination meter M24

3. Front wiper motor E25

4. IPDM E/R E17, E18, E20

5. Front washer motor E226

6. BCM, B16, B17, B18, B19 (view with instrument panel removed)

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

WW

FRONT WIPER AND WASHER SYSTEM

< FUNCTION DIAGNOSIS >

Component Description

INFOID:000000005439385

Part	Description
BCM	<ul style="list-style-type: none">• Judges the 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.
Combination switch (Wiper & washer switch)	Refer to WW-6, "System Description" .
Combination meter	Transmits the vehicle speed signal to BCM with CAN communication.

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : Diagnosis Description

INFOID:000000005803253

BCM CONSULT-III FUNCTION

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

Diagnosis mode	Function Description
WORK SUPPORT	Changes the setting for each system function.
SELF-DIAGNOSTIC RESULT	Displays the diagnosis results judged by BCM.
CAN DIAG SUPPORT MNTR	Monitors the reception status of CAN communication viewed from BCM.
DATA MONITOR	The BCM input/output signals are displayed.
ACTIVE TEST	The signals used to activate each device are forcibly supplied from BCM.
ECU IDENTIFICATION	The BCM part number is displayed.
CONFIGURATION	<ul style="list-style-type: none"> Read and save the vehicle specification. Write the vehicle specification when replacing BCM.

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

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

System	Sub system selection item	Diagnosis mode		
		WORK SUPPORT	DATA MONITOR	ACTIVE TEST
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp timer	INT LAMP	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER	×	×	×
Air conditioner	AIR CONDITONER		×	
Intelligent Key system	INTELLIGENT KEY	×	×	×
Combination switch	COMB SW		×	
BCM	BCM	×		
Immobilizer	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Trunk open	TRUNK		×	×
Vehicle security system	THEFT ALM	×	×	×
RAP system	RETAINED PWR		×	
Signal buffer system	SIGNAL BUFFER		×	×
TPMS	AIR PRESSURE MONITOR	×	×	×

WW

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

INFOID:000000005803254

ECU IDENTIFICATION

Displays the BCM part No.

SELF-DIAG RESULT

Refer to [BCS-68, "DTC Index"](#).

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

WIPER

WIPER : CONSULT - III Function (BCM - WIPER)

INFOID:000000005803256

WORK SUPPORT

Work item	Setting item	Description
WIPER SPEED SETTING	ON	With vehicle speed (Front wiper intermittent time linked with the vehicle speed and wiper dial position)
	OFF*	Without vehicle speed (Front wiper intermittent time linked with the wiper dial position)

* : Initial setting

DATA MONITOR

Monitor Item [Unit]	Description
PUSH SW [ON/OFF]	Displays the status of the push-button ignition switch judged by BCM.
VEH SPEED 1 [km/h]	Displays the value of the vehicle speed signal received from combination meter with CAN communication.
FR WIPER HI [OFF/ON]	Status of each switch judged by BCM using the combination switch reading function
FR WIPER LOW [OFF/ON]	
FR WASHER SW [OFF/ON]	
FR WIPER INT [OFF/ON]	
FR WIPER STOP [OFF/ON]	Displays the status of the front wiper auto stop signal received from IPDM E/R with CAN communication.
INT VOLUME [1 - 7]	Status of each switch judged by BCM using the combination switch reading function

ACTIVE TEST

Test item	Operation	Description
FR WIPER	INT	Transmits the front wiper request signal (INT) to IPDM E/R with CAN communication to operate the front wiper INT operation.
	LO	Transmits the front wiper request signal (LO) to IPDM E/R with CAN communication to operate the front wiper LO operation.
	HI	Transmits the front wiper request signal (HI) to IPDM E/R with CAN communication to operate the front wiper HI operation.
	OFF	Stops transmitting the front wiper request signal to stop the front wiper operation.

DIAGNOSIS SYSTEM (IPDM E/R)

< FUNCTION DIAGNOSIS >

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:000000005803259

AUTO ACTIVE TEST

Description

In auto active test mode, the IPDM E/R sends a drive signal to the following systems to check their operation.

- Oil pressure warning lamp
- Front wiper (LO, HI)
- Parking lamps
- Side marker lamps
- License plate lamps
- Tail lamps
- Headlamps (LO, HI)
- Heater pump
- Cooling fans

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 before hand.

2. Turn ignition switch OFF.
3. Turn the ignition switch ON, and within 20 seconds, press the front door switch LH 10 times. Then turn the ignition switch OFF.

CAUTION:

Close front door RH.

4. Turn the ignition switch ON within 10 seconds. After that the horn sounds once and the auto active test starts.
5. The oil pressure warning lamp starts blinking when the auto active test starts.
6. After a series of the following operations is repeated 3 times, auto active test is completed.

NOTE:

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

CAUTION:

- If auto active test mode cannot be actuated, check door switch system. Refer to [DLK-62, "Component Function Check"](#).
- Do not start the engine.

Inspection in Auto Active Test Mode

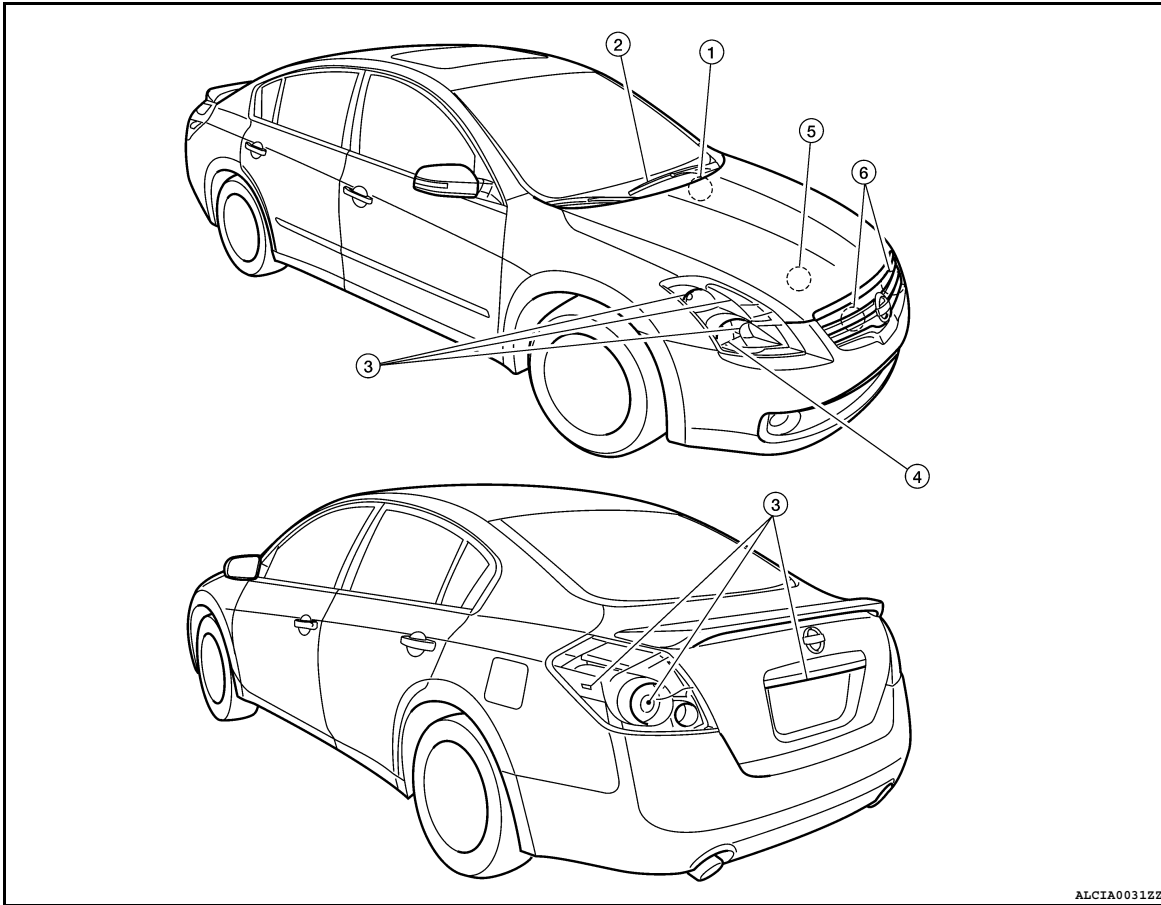
A
B
C
D
E
F
G
H
I
J
K
M
N
O
P

WW

DIAGNOSIS SYSTEM (IPDM E/R)

< FUNCTION DIAGNOSIS >

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



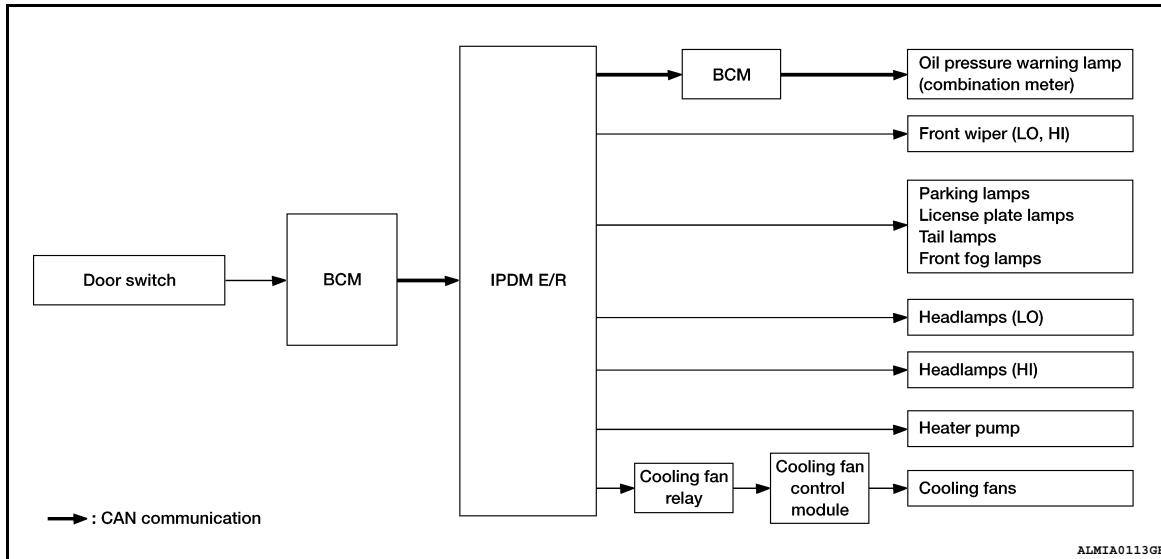
Operation sequence	Inspection Location	Operation
1	Oil pressure warning lamp	Blinks continuously during operation of auto active test
2	Front wiper	LO for 5 seconds → HI for 5 seconds
3	<ul style="list-style-type: none"> • Parking lamps • Side marker lamps • License plate lamps • Tail lamps 	10 seconds
4	Headlamps	LO ↔ HI 5 times
5	Heater pump	ON ↔ OFF 5 times
6*	Cooling fans	MID for 5 seconds → HI for 5 seconds

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

DIAGNOSIS SYSTEM (IPDM E/R)

< FUNCTION DIAGNOSIS >

Concept of auto active test



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

Diagnosis chart in auto active test mode

Symptom	Inspection contents	Possible cause
Any of the following components do not operate <ul style="list-style-type: none"> • Parking lamps • Side marker lamps • License plate lamps • Tail lamps • Headlamp (HI, LO) • Front wiper 	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
Heater pump does not operate	Perform auto active test. Does the heater pump operate?	YES <ul style="list-style-type: none"> • Combination meter signal input circuit • CAN communication signal between combination meter and ECM • CAN communication signal between ECM and IPDM E/R
		NO <ul style="list-style-type: none"> • Heater pump • Harness or connector between IPDM E/R and magnet clutch • IPDM E/R

DIAGNOSIS SYSTEM (IPDM E/R)

< FUNCTION DIAGNOSIS >

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 • Harness or connector between cooling fan and cooling fan relays • Cooling fan relays • Harness or connector between IPDM E/R and cooling fan relays • IPDM E/R

CONSULT - III Function (IPDM E/R)

INFOID:000000005803260

APPLICATION ITEM

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

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

SELF DIAGNOSTIC

Refer to [PCS-28. "DTC Index"](#).

DATA MONITOR

Monitor item

Monitor Item [Unit]	MAIN SIG- NALS	Description
RADFAN REQ [%]	×	Displays the value of the cooling fan speed signal received from ECM via CAN communication.
TAIL&CLR REQ [OFF/ON]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [OFF/ON]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [OFF/ON]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR WIP REQ [STOP/1LOW/LOW/HI]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.

DIAGNOSIS SYSTEM (IPDM E/R)

< FUNCTION DIAGNOSIS >

Monitor Item [Unit]	MAIN SIG- NALS	Description
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper auto stop signal judged by IPDM E/R.
WIP PROT [OFF/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.
IGN RLY1 -REQ [OFF/ON]		Displays the status of the ignition switch ON signal received from BCM via CAN communication.
IGN RLY [OFF/ON]	×	Displays the status of the ignition relay judged by IPDM E/R.
PUSH SW [OFF/ON]		Displays the status of the push-button ignition switch judged by IPDM E/R.
DETENT SW [OFF/ON]		Displays the status of the CVT shift selector (detention switch) judged by IPDM E/R.
DTRL REQ [OFF]		Displays the status of the daytime light request signal received from BCM via CAN communication.
OIL P SW [OPEN/CLOSE]		Displays the status of the oil pressure switch judged by IPDM E/R.
THFT HRN REQ [OFF/ON]		Displays the status of the theft warning horn request signal received from BCM via CAN communication.
HORN CHIRP [OFF/ON]		Displays the status of the horn reminder signal received from BCM via CAN communication.

ACTIVE TEST

Test item

Test item	Operation	Description
HORN	ON	Operates horn relay for 20 ms.
FRONT WIPER	OFF	OFF
	LO	Operates the front wiper relay.
	HI	Operates the front wiper relay and front wiper high relay.
MOTOR FAN	1	OFF
	2	Outputs 50% pulse duty signal (PWM signal) to the cooling fan control module.
	3	Outputs 80% pulse duty signal (PWM signal) to the cooling fan control module.
	4	Outputs 100% pulse duty signal (PWM signal) to the cooling fan control module.
EXTERNAL LAMPS	OFF	OFF
	TAIL	Operates the tail lamp relay.
	LO	Operates the headlamp low relay.
	HI	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.

WIPER AND WASHER FUSE

< COMPONENT DIAGNOSIS >

COMPONENT DIAGNOSIS

WIPER AND WASHER FUSE

Description

INFOID:000000005439391

Fuse list

Unit	Location	Fuse No.	Capacity
Front wiper motor	IPDM E/R	55	30 A
Front washer motor	IPDM E/R	38	10 A

Diagnosis Procedure

INFOID:000000005439392

1. CHECK FUSES

Check that the following fuses are not blown.

Unit	Location	Fuse No.	Capacity
Front wiper motor	IPDM E/R	55	30 A
Front washer motor	IPDM E/R	38	10 A

Is the fuse blown?

- YES >> Replace the blown fuse after repairing the affected circuit.
- NO >> The fuse is normal.

FRONT WIPER MOTOR LO CIRCUIT

< COMPONENT DIAGNOSIS >

FRONT WIPER MOTOR LO CIRCUIT

Component Function Check

INFOID:000000005439393

1. CHECK FRONT WIPER LO OPERATION

⊗ IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-13, "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. While operating the test item, check that front wiper LO operation and OFF.

Lo : Front wiper LO operation

Off : Stop the front wiper.

Does the front wiper operate?

- YES >> Front wiper motor LO circuit is normal.
 NO >> Refer to [WW-19, "Diagnosis Procedure"](#).

Diagnosis Procedure

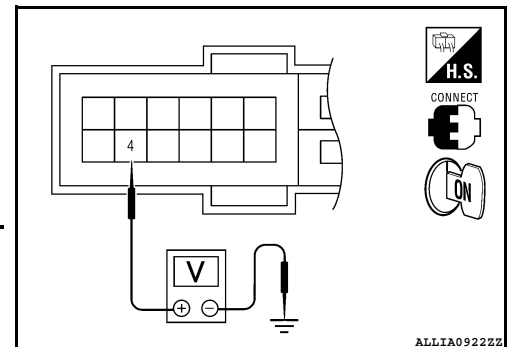
INFOID:000000005439394

Regarding Wiring Diagram information, refer to [WW-58, "Wiring Diagram"](#).

1. CHECK FRONT WIPER MOTOR (LO) OUTPUT VOLTAGE

Ⓜ CONSULT-III ACTIVE TEST

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



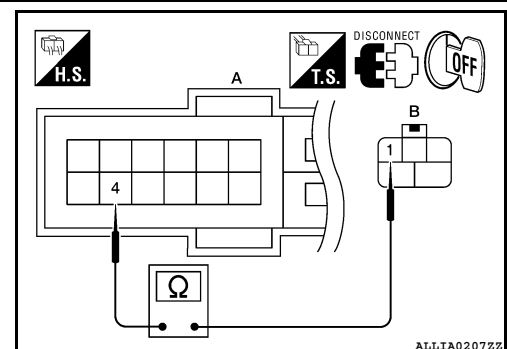
Terminals		Test item	Voltage (V) (Approx.)
(+)	(-)		
IPDM E/R		FRONT WIPER	Battery voltage
Connector	Terminal		
E18	4		
		Lo	Battery voltage
		Off	0V

Is the measurement normal?

- YES >> GO TO 2
 NO >> Replace IPDM E/R. Refer to [PCS-36, "Removal and Installation"](#).

2. CHECK FRONT WIPER MOTOR (LO) OPEN CIRCUIT

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



IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E18 (A)	4	E25 (B)	1	Yes

Does continuity exist?

FRONT WIPER MOTOR LO CIRCUIT

< COMPONENT DIAGNOSIS >

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

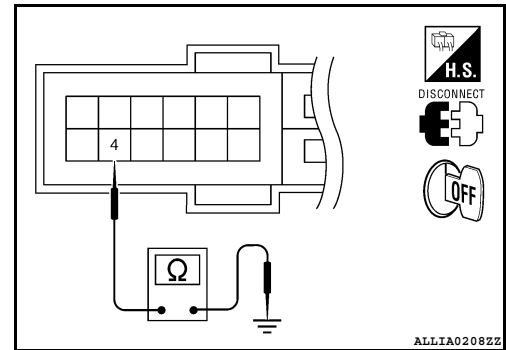
3. CHECK FRONT WIPER MOTOR (LO) SHORT CIRCUIT

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E18	4		No

Does continuity exist?

- YES >> Repair or replace harness.
- NO >> Replace front wiper motor. Refer to [WW-73. "FRONT WIPER DRIVE ASSEMBLY : Removal and Installation"](#).



FRONT WIPER MOTOR HI CIRCUIT

< COMPONENT DIAGNOSIS >

FRONT WIPER MOTOR HI CIRCUIT

Component Function Check

INFOID:000000005439395

1. CHECK FRONT WIPER HI OPERATION

⊗ IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-13, "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. While operating the test item, check that front wiper HI operation and OFF.

Hi : Front wiper HI operation

Off : Stop the front wiper.

Does the front wiper operate?

- YES >> The front wiper motor HI circuit is normal.
 NO >> Refer to [WW-19, "Diagnosis Procedure"](#).

Diagnosis Procedure

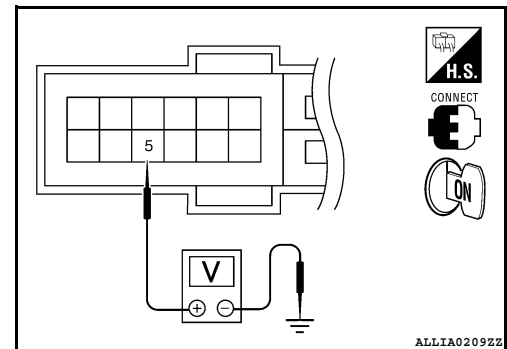
INFOID:000000005439396

Regarding Wiring Diagram information, refer to [WW-58, "Wiring Diagram"](#).

1. CHECK FRONT WIPER MOTOR (HI) OUTPUT VOLTAGE

Ⓜ CONSULT-III ACTIVE TEST

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



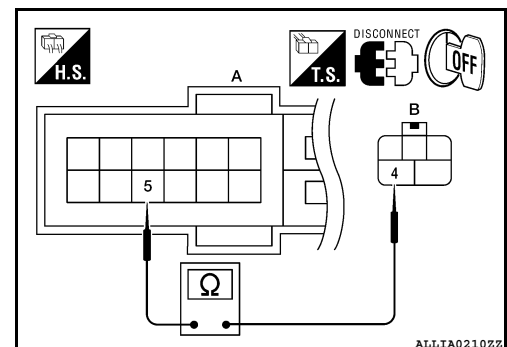
Terminals		Test item	Voltage (V) (Approx.)
(+)	(-)		
IPDM E/R		FRONT WIPER	Battery voltage
Connector	Terminal		
E18	5		
		Hi	Battery voltage
		Off	0V

Is the measurement normal?

- YES >> GO TO 2
 NO >> Replace IPDM E/R. Refer to [PCS-36, "Removal and Installation"](#).

2. CHECK FRONT WIPER MOTOR (HI) OPEN CIRCUIT

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



IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E18 (A)	5	E25 (B)	4	Yes

Does continuity exist?

FRONT WIPER MOTOR HI CIRCUIT

< COMPONENT DIAGNOSIS >

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

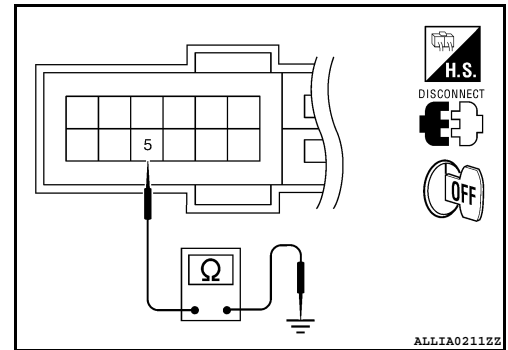
3. CHECK FRONT WIPER MOTOR (HI) SHORT CIRCUIT

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E18	5		No

Does continuity exist?

- YES >> Repair or replace harness.
- NO >> Replace front wiper motor. Refer to [WW-73. "FRONT WIPER DRIVE ASSEMBLY : Removal and Installation"](#).



FRONT WIPER AUTO STOP SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

FRONT WIPER AUTO STOP SIGNAL CIRCUIT

Component Function Check

INFOID:000000005439397

1. CHECK FRONT WIPER (AUTO STOP) OPERATION

CONSULT-III DATA MONITOR

1. Select "FRONT WIPER 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	ACT P

Is the status of item normal?

- YES >> Auto stop signal circuit is normal.
 NO >> Refer to [WW-23, "Diagnosis Procedure"](#).

Diagnosis Procedure

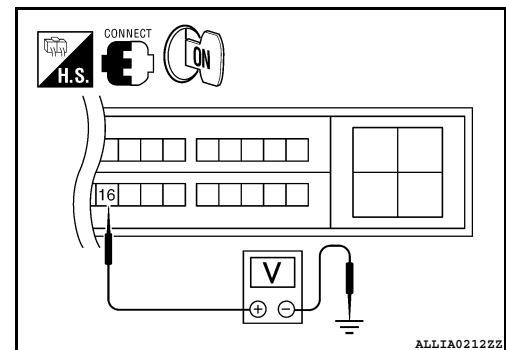
INFOID:000000005439398

Regarding Wiring Diagram information, refer to [WW-58, "Wiring Diagram"](#).

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

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

Terminals		Voltage (V) (Approx.)
(+)	(-)	
IPDM E/R		Ground
Connector	Terminal	
E18	16	
		Battery voltage



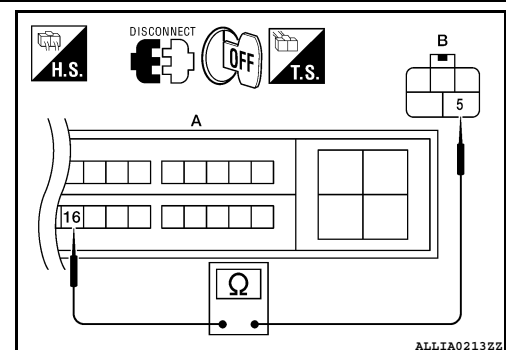
Is the measurement normal?

- YES >> GO TO 2
 NO >> Replace IPDM E/R. Refer to [PCS-36, "Removal and Installation"](#).

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

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

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E18 (A)	16	E25 (B)	5	Yes



Does continuity exist?

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

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

FRONT WIPER AUTO STOP SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

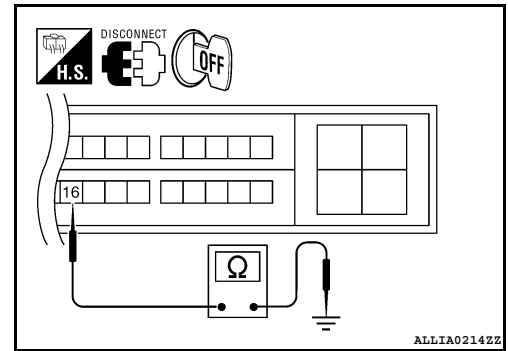
Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E18	16		No

Does continuity exist?

YES >> Repair or replace harness.

NO >> Replace front wiper motor. Refer to [WW-73. "FRONT WIPER DRIVE ASSEMBLY : Removal and Installation"](#).



FRONT WIPER MOTOR GROUND CIRCUIT

< COMPONENT DIAGNOSIS >

FRONT WIPER MOTOR GROUND CIRCUIT

Diagnosis Procedure

INFOID:000000005439399

Regarding Wiring Diagram information, refer to [WW-58. "Wiring Diagram"](#).

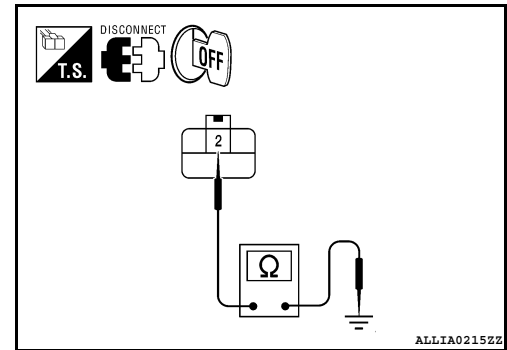
1. CHECK FRONT WIPER MOTOR (GND) OPEN CIRCUIT

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

Front wiper motor		Ground	Continuity
Connector	Terminal		
E25	2		Yes

Does continuity exist?

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



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

WW

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:000000005804657

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
FR WIPER HI	Other than front wiper switch HI	OFF
	Front wiper switch HI	ON
FR WIPER LOW	Other than front wiper switch LO	OFF
	Front wiper switch LO	ON
FR WASHER SW	Front washer switch OFF	OFF
	Front washer switch ON	ON
FR WIPER INT	Other than front wiper switch INT	OFF
	Front wiper switch INT	ON
FR WIPER STOP	Front wiper is not in STOP position	OFF
	Front wiper is in STOP position	ON
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	Wiper intermittent dial position
TURN SIGNAL R	Other than turn signal switch RH	OFF
	Turn signal switch RH	ON
TURN SIGNAL L	Other than turn signal switch LH	OFF
	Turn signal switch LH	ON
TAIL LAMP SW	Other than lighting switch 1ST and 2ND	OFF
	Lighting switch 1ST or 2ND	ON
HI BEAM SW	Other than lighting switch HI	OFF
	Lighting switch HI	ON
HEAD LAMP SW 1	Other than lighting switch 2ND	OFF
	Lighting switch 2ND	ON
HEAD LAMP SW 2	Other than lighting switch 2ND	OFF
	Lighting switch 2ND	ON
PASSING SW	Other than lighting switch PASS	OFF
	Lighting switch PASS	ON
AUTO LIGHT SW	Other than lighting switch AUTO	OFF
	Lighting switch AUTO	ON
DOOR SW-DR	Front door LH closed	OFF
	Front door LH opened	ON
DOOR SW-AS	Front door RH closed	OFF
	Front door RH opened	ON
DOOR SW-RR	Rear door RH closed	OFF
	Rear door RH opened	ON
DOOR SW-RL	Rear door LH closed	OFF
	Rear door LH opened	ON
CDL LOCK SW	Other than power door lock switch LOCK	OFF
	Door lock/unlock switch LOCK	ON

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Monitor Item	Condition	Value/Status	
CDL UNLOCK SW	Other than door lock/unlock switch UNLOCK	OFF	A
	Door lock/unlock switch UNLOCK	ON	
KEY CYL LK-SW	Other than front door LH key cylinder LOCK position	OFF	B
	Front door LH key cylinder LOCK position	ON	
KEY CYL UN-SW	Other than front door LH key cylinder UNLOCK position	OFF	C
	Front door LH key cylinder UNLOCK position	ON	
HAZARD SW	When hazard switch is not pressed	OFF	D
	When hazard switch is pressed	ON	
REAR DEF SW	When rear window defogger switch is pressed	ON	
FAN ON SIG	When AUTO switch or fan switch is pressed	ON	
AIR COND SW	When A/C switch is pressed	ON	E
TR CANCEL SW	Trunk lid opener cancel switch OFF	OFF	
	Trunk lid opener cancel switch ON	ON	F
TR/BD OPEN SW	Trunk lid opener switch OFF	OFF	
	While the trunk lid opener switch is turned ON	ON	
TRNK/HAT MNTR	Trunk lid closed	OFF	G
	Trunk lid opened	ON	
RKE-LOCK	When LOCK button of Intelligent Key is not pressed	OFF	H
	When LOCK button of Intelligent Key is pressed	ON	
RKE-UNLOCK	When UNLOCK button of Intelligent Key is not pressed	OFF	I
	When UNLOCK button of Intelligent Key is pressed	ON	
RKE-TR/BD	When TRUNK OPEN button of Intelligent Key is not pressed	OFF	J
	When TRUNK OPEN button of Intelligent Key is pressed	ON	
RKE-PANIC	When PANIC button of Intelligent Key is not pressed	OFF	K
	When PANIC button of Intelligent Key is pressed	ON	
RKE-P/W OPEN	When UNLOCK button of Intelligent Key is not pressed and held	OFF	
	When UNLOCK button of Intelligent Key is pressed and held	ON	
RKE-MODE CHG	When LOCK/UNLOCK button of Intelligent Key is not pressed and held simultaneously	OFF	WW
	When LOCK/UNLOCK button of Intelligent Key is pressed and held simultaneously	ON	
OPTICAL SENSOR	When outside of the vehicle is bright	Close to 5 V	M
	When outside of the vehicle is dark	Close to 0 V	
REQ SW-DR	When front door LH request switch is not pressed	OFF	N
	When front door LH request switch is pressed	ON	
REQ SW-AS	When front door RH request switch is not pressed	OFF	O
	When front door RH request switch is pressed	ON	
REQ SW-BD/TR	When trunk request switch is not pressed	OFF	P
	When trunk request switch is pressed	ON	
PUSH SW	When push-button ignition switch is not pressed	OFF	
	When push-button ignition switch is pressed	ON	
IGN RLY -F/B	Ignition switch OFF or ACC	OFF	
	Ignition switch ON	ON	
ACC RLY -F/B	Ignition switch OFF	OFF	
	Ignition switch ACC or ON	ON	

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Monitor Item	Condition	Value/Status
BRAKE SW 1	When the brake pedal is not depressed	ON
	When the brake pedal is depressed	OFF
DETE/CANCL SW	When selector lever is in P position	OFF
	When selector lever is in any position other than P	ON
SFT PN/N SW	When selector lever is in any position other than P or N	OFF
	When selector lever is in P or N position	ON
UNLK SEN-DR	Front door LH UNLOCK status	OFF
	Front door LH LOCK status	ON
PUSH SW -IPDM	When push-button ignition switch is not pressed (IPDM E/R sends via CAN)	OFF
	When push-button ignition switch is pressed (IPDM E/R sends via CAN)	ON
IGN RLY1 F/B	Ignition switch OFF or ACC	OFF
	Ignition switch ON	ON
DETE SW -IPDM	When selector lever is in P position (IPDM E/R sends via CAN)	OFF
	When selector lever is in any position other than P (IPDM E/R sends via CAN)	ON
SFT PN -IPDM	When selector lever is in any position other than P or N (IPDM E/R sends via CAN)	OFF
	When selector lever is in P or N position (IPDM E/R sends via CAN)	ON
SFT P -MET	When selector lever is in any position other than P (combination meter sends via CAN)	OFF
	When selector lever is in P position (combination meter sends via CAN)	ON
SFT N -MET	When selector lever is in any position other than N (combination meter sends via CAN)	OFF
	When selector lever is in N position (combination meter sends via CAN)	ON
ENGINE STATE	Engine stopped	STOP
	While the engine stalls	STALL
	At engine cranking	CRANK
	Engine running	RUN
VEH SPEED 1	While driving	Equivalent to speedometer reading
VEH SPEED 2	While driving	Equivalent to speedometer reading
DR DOOR STATE	Front door LH LOCK status	LOCK
	Wait with selective UNLOCK operation (5 seconds)	READY
	Front door LH UNLOCK status	UNLK
AS DOOR STATE	Front door RH LOCK status	LOCK
	Wait with selective UNLOCK operation (5 seconds)	READY
	Front door RH UNLOCK status	UNLK
ID OK FLAG	Ignition switch ACC or ON	RESET
	Ignition switch OFF	SET
PRMT ENG STAT	When the hybrid system start is prohibited	RESET
	When the hybrid system start is permitted	SET
KEY SW -SLOT	When Intelligent Key is not inserted into key slot	OFF
	When Intelligent Key is inserted into key slot	ON
RKE OPE COUN1	During the operation of Intelligent Key	Operation frequency of Intelligent Key

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Monitor Item	Condition	Value/Status	
AIR PRESS FL	Ignition switch ON (only when the signal from the transmitter is received)	Air pressure of front LH tire	A
AIR PRESS FR	Ignition switch ON (only when the signal from the transmitter is received)	Air pressure of front RH tire	B
AIR PRESS RR	Ignition switch ON (only when the signal from the transmitter is received)	Air pressure of rear RH tire	C
AIR PRESS RL	Ignition switch ON (only when the signal from the transmitter is received)	Air pressure of rear LH tire	
ID REGST FL1	When ID of front LH tire transmitter is registered (refer to WT-6. "ID Registration Procedure")	DONE	D
	When ID of front LH tire transmitter is not registered (refer to WT-6. "ID Registration Procedure")	YET	
ID REGST FR1	When ID of front RH tire transmitter is registered (refer to WT-6. "ID Registration Procedure")	DONE	E
	When ID of front RH tire transmitter is not registered (refer to WT-6. "ID Registration Procedure")	YET	F
ID REGST RR1	When ID of rear RH tire transmitter is registered (refer to WT-6. "ID Registration Procedure")	DONE	G
	When ID of rear RH tire transmitter is not registered (refer to WT-6. "ID Registration Procedure")	YET	
ID REGST RL1	When ID of rear LH tire transmitter is registered (refer to WT-6. "ID Registration Procedure")	DONE	H
	When ID of rear LH tire transmitter is not registered (refer to WT-6. "ID Registration Procedure")	YET	
WARNING LAMP	Tire pressure indicator OFF	OFF	I
	Tire pressure indicator ON	ON	
BUZZER	Tire pressure warning alarm is not sounding	OFF	J
	Tire pressure warning alarm is sounding	ON	

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

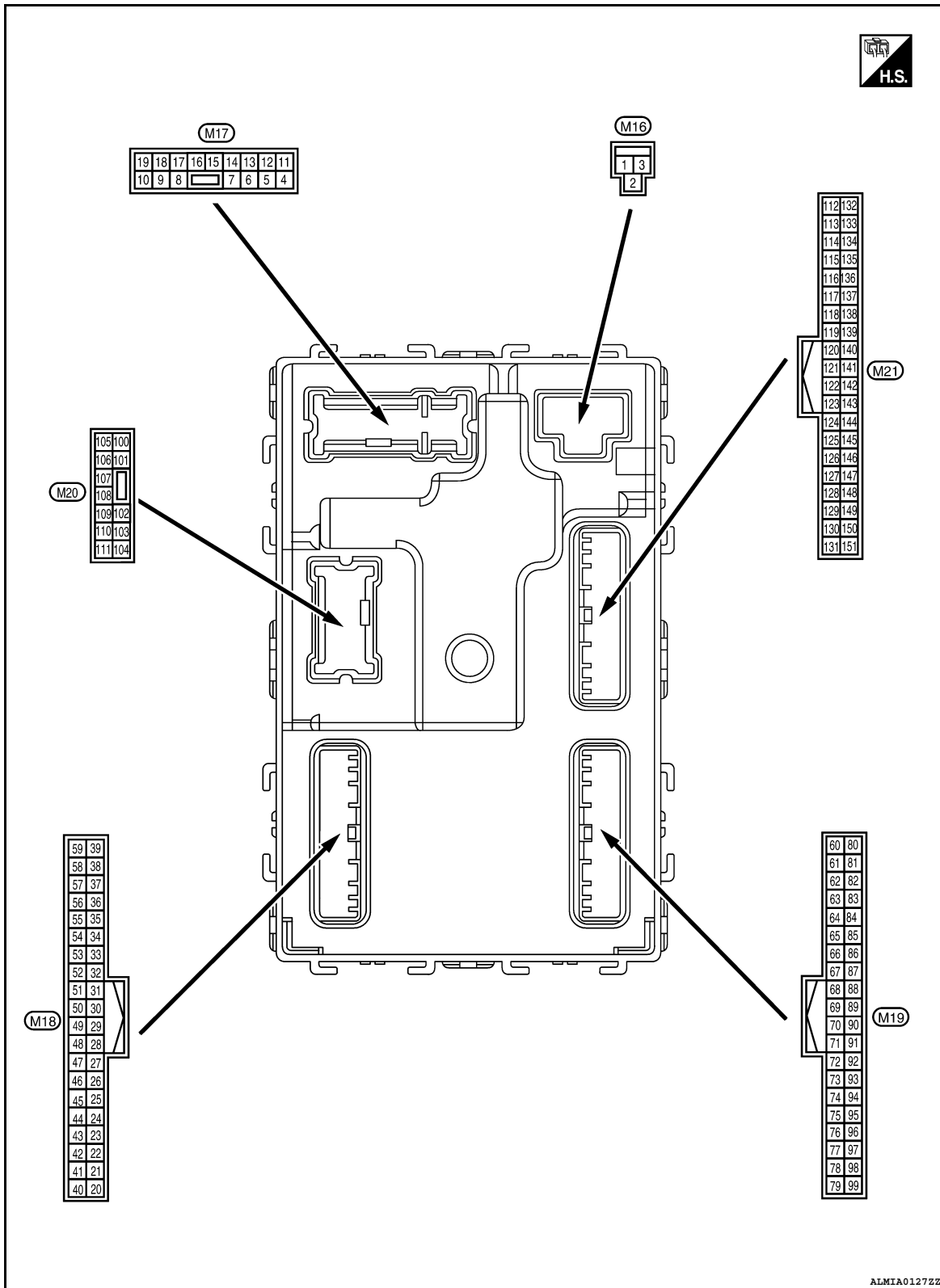
WW

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal Layout

INFOID:000000005804658

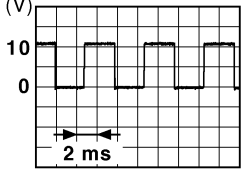


Physical Values

INFOID:000000005804659

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
(+)	(-)					
1 (W/B)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
2 (R/Y)	Ground	Battery power supply output	Output	Ignition switch OFF		Battery voltage
3 (L/W)	Ground	Ignition power supply output	Output	Ignition switch ON		Battery voltage
4 (P/W)	Ground	Interior room lamp power supply	Output	After passing the interior room lamp battery saver operation time		0V
				Any other time after passing the interior room lamp battery saver operation time		Battery voltage
5 (G/Y)	Ground	Front door RH UNLOCK	Output	Front door RH	UNLOCK (actuator is activated)	Battery voltage
					Other than UNLOCK (actuator is not activated)	0V
7 (R/W)	Ground	Step lamp	Output	Room lamp timer	ON	Battery voltage
					OFF	0V
8 (V)	Ground	All doors LOCK	Output	All doors	LOCK (actuator is activated)	Battery voltage
					Other than LOCK (actuator is not activated)	0V
9 (G)	Ground	Front door LH UNLOCK	Output	Front door LH	UNLOCK (actuator is activated)	Battery voltage
					Other than UNLOCK (actuator is not activated)	0V
10 (G/Y)	Ground	Rear door RH and rear door LH UNLOCK	Output	Rear door RH and rear door LH	UNLOCK (actuator is activated)	Battery voltage
					Other than UNLOCK (actuator is not activated)	0V
11 (Y/R)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
13 (B)	Ground	Ground	—	Ignition switch ON		0V
14 (R/Y)	Ground	Push-button ignition switch illumination ground	Input	Tail lamp	OFF	0V
					ON	NOTE: When the illumination brightening/dimming level is in the neutral position 
15 (Y/L)	Ground	ACC indicator lamp	Output	Ignition switch	OFF	Battery voltage
					ACC	0V

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
(+)	(-)	Signal name	Input/ Output		
17 (G/B)	Ground	Turn signal (RH)	Output	Ignition switch ON	Turn signal switch OFF
				Turn signal switch RH	0V
					6.5V
18 (G/Y)	Ground	Turn signal (LH)	Output	Ignition switch ON	Turn signal switch OFF
				Turn signal switch LH	0V
					6.5V
19 (Y)	Ground	Room lamp timer control	Output	Interior room lamp	Lamps fully OFF
				Lamps fully ON	Battery voltage
21 (P/B)	Ground	Optical sensor signal	Input	Ignition switch ON	When outside of the vehicle is bright
				When outside of the vehicle is dark	Close to 0V
24 (R/W)	Ground	Stop lamp switch 1	Input	—	Battery voltage
26 (O/L)	Ground	Stop lamp switch 2	Input	Stop lamp switch	OFF (brake pedal is not depressed)
				ON (brake pedal is depressed)	Battery voltage
27 (G/W)	Ground	Front door lock assembly LH (unlock sensor)	Input	Front door LH	LOCK status
				UNLOCK status	0V
					11.8V
29 (Y)	Ground	Key slot switch	Input	When Intelligent Key is inserted into key slot	Battery voltage
				When Intelligent Key is not inserted into key slot	0V
30 (V/Y)	Ground	ACC feedback signal	Input	Ignition switch	OFF
				ACC or ON	Battery voltage
31 (G)	Ground	Ignition relay-2 feedback signal	Input	Ignition switch	OFF
				ON	Battery voltage

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
(+)	(-)	Signal name	Input/ Output			
32 (R/B)	Ground	Front door RH switch	Input	Front door RH switch	OFF (when front door RH closes)	<p style="text-align: right; font-size: small;">JPMIA0011GB</p> <p style="text-align: center;">11.8V</p>
					ON (when front door RH opens)	0V
33 (SB)	Ground	Compressor ON signal	Input	A/C switch	OFF	Battery voltage
					ON	0V
34* (L/R)	Ground	Front door lock assembly LH (key cylinder switch) (unlock)	Input	Front door lock assembly LH (key cylinder switch)	OFF (neutral)	Battery voltage
					ON (unlock)	0V
36* (GR)	Ground	Lock switch signal	Input	Door lock/unlock switch	Lock	Battery Voltage
					Unlock	0V
37 (O)	Ground	Trunk lid opener cancel switch	Input	Trunk lid opener cancel switch	CANCEL	<p style="text-align: right; font-size: small;">JPMIA0012GB</p> <p style="text-align: center;">1.1V</p>
					ON	0V
38 (GR/W)	Ground	Rear window defogger ON signal	Input	Rear window defogger switch	OFF	Battery Voltage V
					ON	0V
39* (GR/R)	Ground	Unlock switch signal	Input	Door lock/unlock switch	Unlock	Battery Voltage
					Lock	0V
40* (Y/G)	Ground	Power window serial link	Input/ Output	Ignition switch ON	<p style="text-align: right; font-size: small;">JPMIA0013GB</p> <p style="text-align: center;">10.2V</p>	
				Ignition switch OFF or ACC	0V	
41 (W)	Ground	Push-button ignition switch illumination	Output	Engine switch (push switch) illumination	ON	5.5V
				OFF	0V	
42 (R)	Ground	LOCK indicator lamp	Output	LOCK indicator lamp	ON	0V
				OFF	Battery voltage	
45 (P)	Ground	Receiver & sensor ground	Input	Ignition switch ON	0V	

A

B

C

D

E

F

G

H

I

J

K

WW

M

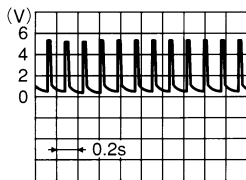
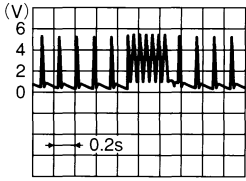
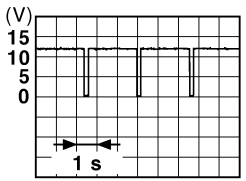
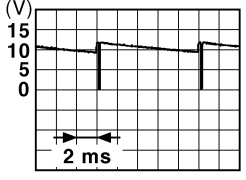
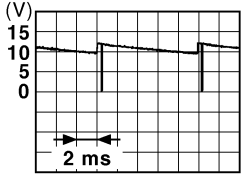
N

O

P

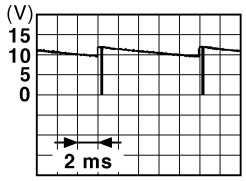
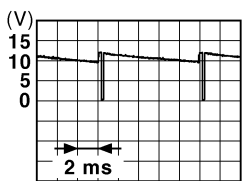
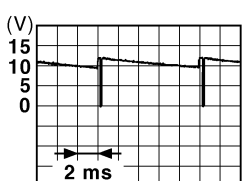
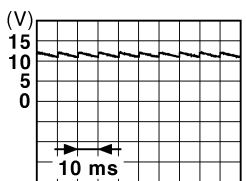
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)	
		Signal name	Input/ Output			
(+)	(-)					
46 (V/W)	Ground	Receiver & sensor power supply output	Output	Ignition switch	OFF	0V
					ACC or ON	5.0V
47 (G/O)	Ground	Tire pressure receiver signal	Input/ Output	Ignition switch ON	Standby state	 OCC3881D
					When receiving the signal from the transmitter	 OCC3880D
48 (R/B)	Ground	Selector lever P/N position signal	Input	Selector lever	P or N position	12.0V
					Except P and N positions	0V
49 (L/O)	Ground	Security indicator signal	Output	Security indicator	Blinking	 JPMIA0014GB 11.3V
					OFF	Battery voltage
50 (LG/ B)	Ground	Combination switch OUTPUT 5	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0V
					Lighting switch 1ST	 JPMIA0031GB 10.7V
					Lighting switch high-beam	
					Lighting switch 2ND	
Turn signal switch RH						
51 (L/W)	Ground	Combination switch OUTPUT 1	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	0V
					Front wiper switch HI (Wiper intermittent dial 4)	 JPMIA0032GB 10.7V
		Any of the conditions below with all switch OFF				
					<ul style="list-style-type: none"> • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3 • Wiper intermittent dial 6 • Wiper intermittent dial 7 	

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)	
(+)	(-)	Signal name	Input/ Output			
52 (G/B)	Ground	Combination switch OUTPUT 2	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	0V
				Front washer switch ON (Wiper intermittent dial 4)	Any of the conditions below with all switch OFF	
53 (LG/ R)	Ground	Combination switch OUTPUT 3	Output	Combination switch (Wiper intermit- tent dial 4)	All switch OFF	0V
				Lighting switch AUTO	Front wiper switch INT	
					Front wiper switch LO	
54 (G/Y)	Ground	Combination switch OUTPUT 4	Output	Combination switch (Wiper intermit- tent dial 4)	All switch OFF	0V
				Turn signal switch LH	Lighting switch flash-to- pass	
55 (BR/ W)	Ground	Front blower monitor	Input	Front blower mo- tor switch	ON	Battery voltage
56 (L/B)	Ground	Front door lock as- sembly LH (key cylin- der switch) (lock)	Input	Front door lock assembly LH (key cylinder switch)	OFF (neutral)	Battery voltage
					ON (lock)	0V
57 (W)	Ground	Tire pressure warn- ing check switch	Input	—	—	Battery voltage
58 (SB)	Ground	Front door LH switch	Input	Front door LH switch	OFF (front door LH CLOSE)	
					ON (front door LH OPEN)	0V
59 (G/R)	Ground	Rear window defog- ger relay	Output	Rear window de- fogger	Active	Battery voltage
				Not activated	0V	

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

WW

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
(+)	(-)	Signal name	Input/ Output		
60 (B/R)	Ground	Front console antenna 2 (-)	Output	Ignition switch OFF	<p>JMKIA0062GB</p>
				When Intelligent Key is not in the passenger compartment	<p>JMKIA0063GB</p>
61 (W/R)	Ground	Center console antenna 2 (+)	Output	Ignition switch OFF	<p>JMKIA0062GB</p>
				When Intelligent Key is not in the passenger compartment	<p>JMKIA0063GB</p>
62 (B/Y)	Ground	Front outside handle RH antenna (-)	Output	When the front door RH request switch is operated with ignition switch OFF	<p>JMKIA0062GB</p>
				When Intelligent Key is not in the antenna detection area	<p>JMKIA0063GB</p>

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

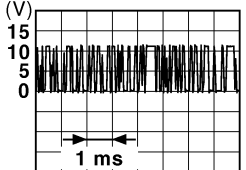
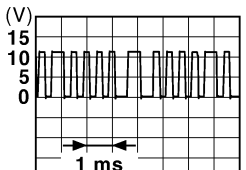



Terminal No. (Wire color)		Description		Condition	Value (Approx.)
(+)	(-)	Signal name	Input/ Output		
63 (LG)	Ground	Front outside handle RH antenna (+)	Output	When Intelligent Key is in the antenna detection area	<p style="text-align: right; font-size: small;">JMKIA0062GB</p>
				When the front door RH request switch is operat- ed with ignition switch OFF	<p style="text-align: right; font-size: small;">JMKIA0063GB</p>
64 (V)	Ground	Front outside handle LH antenna (-)	Output	When Intelligent Key is in the antenna detection area	<p style="text-align: right; font-size: small;">JMKIA0062GB</p>
				When the front door LH request switch is operat- ed with ignition switch OFF	<p style="text-align: right; font-size: small;">JMKIA0063GB</p>
65 (P)	Ground	Front outside handle LH antenna (+)	Output	When Intelligent Key is in the antenna detection area	<p style="text-align: right; font-size: small;">JMKIA0062GB</p>
				When the front door LH request switch is operat- ed with ignition switch OFF	<p style="text-align: right; font-size: small;">JMKIA0063GB</p>

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

WW

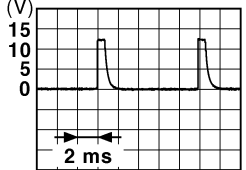
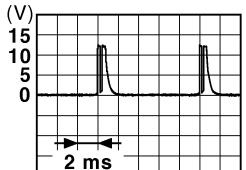

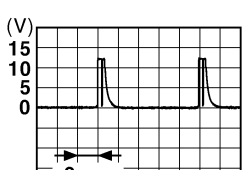
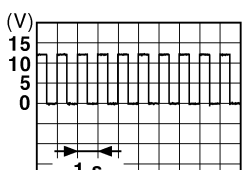
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
(+)	(-)					
68 (G/O)	Ground	NATS antenna amp (built in key slot)	Input/ Output	During waiting	Ignition switch is pressed while inserting the Intelli- gent Key into the key slot.	Just after pressing ignition switch. Pointer of tester should move.
69 (O)	Ground	NATS antenna amp (built in key slot)	Input/ Output	During waiting	Ignition switch is pressed while inserting the Intelli- gent Key into the key slot.	Just after pressing ignition switch. Pointer of tester should move.
70 (R/B)	Ground	Ignition relay-2 con- trol	Output	Ignition switch	OFF or ACC	0V
					ON	Battery voltage
71 (L/O)	Ground	Remote keyless entry receiver signal	Input/ Output	During waiting		 <p style="text-align: right; font-size: small;">JMKIA0064GB</p>
				When operating either button on Intelligent Key		 <p style="text-align: right; font-size: small;">JMKIA0065GB</p>
75 (R/Y)	Ground	Combination switch INPUT 5	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 <p style="text-align: right; font-size: small;">JPMIA0041GB</p> <p style="text-align: center;">1.4V</p>
				Combination switch	Wiper intermittent dial 4	 <p style="text-align: right; font-size: small;">JPMIA0037GB</p> <p style="text-align: center;">1.3V</p>
				Combination switch	Any of the conditions 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 	 <p style="text-align: right; font-size: small;">JPMIA0040GB</p> <p style="text-align: center;">1.3V</p>

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)	
		Signal name	Input/ Output			
(+)	(-)					
76 (R/G)	Ground	Combination switch INPUT 3	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 <small>JPMIA0041GB</small> 1.4V
					Lighting switch high-beam (Wiper intermittent dial 4)	 <small>JPMIA0036GB</small> 1.3V
					Lighting switch 2ND (Wiper intermittent dial 4)	 <small>JPMIA0037GB</small> 1.3V
					Any of the conditions below with all switch OFF <ul style="list-style-type: none"> • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3 	 <small>JPMIA0040GB</small> 1.3V
78 (P)	Ground	CAN-L	Input/ Output	—	—	
79 (L)	Ground	CAN-H	Input/ Output	—	—	
80 (R/L)	Ground	Key slot illumination	Output	Key slot illumina- tion	OFF	0V
					Blinking	 <small>JPMIA0015GB</small> 6.5V
81 (LG)	Ground	ON indicator lamp	Output	Ignition switch	ON	Battery voltage
					OFF or ACC	Battery voltage
					ON	0V

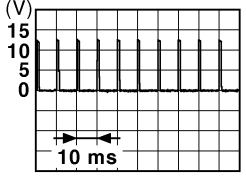
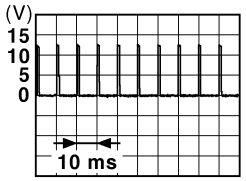
A
B
C
D
E
F
G
H
I
J
K

WW

M
N
O
P

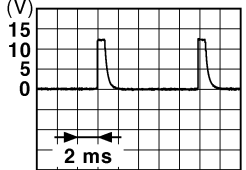
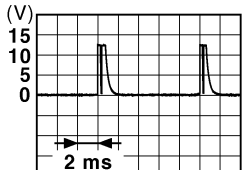

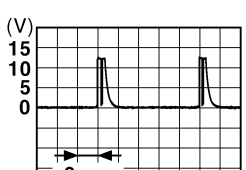

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
(+)	(-)	Signal name	Input/ Output			
83 (L)	Ground	ACC relay control	Output	Ignition switch	OFF	0V
					ACC or ON	Battery voltage
84 (Y/R)	Ground	CTV shift selector (detent switch)	Output	—		Battery voltage
87 (G/B)	Ground	CTV shift selector (detent switch)	Input	Selector lever	P position	0V
					Any position other than P	Battery voltage
88 (P/L)	Ground	Front door RH re- quest switch	Input	Front door RH re- quest switch	ON (pressed)	0V
					OFF (not pressed)	 <p style="text-align: right; margin-right: 20px;">JPMIA0016GB</p>
89 (B/W)	Ground	Front door LH re- quest switch	Input	Front door LH re- quest switch	ON (pressed)	0V
					OFF (not pressed)	 <p style="text-align: right; margin-right: 20px;">JPMIA0016GB</p>
90 (Y)	Ground	Front blower motor relay control	Output	Ignition switch	OFF or ACC	0V
					ON	Battery voltage
91 (L/R)	Ground	Remote keyless entry receiver power sup- ply	Output	Ignition switch OFF		Battery voltage

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

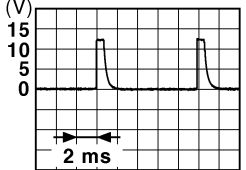
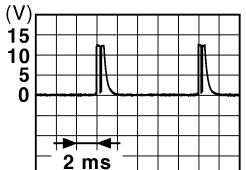
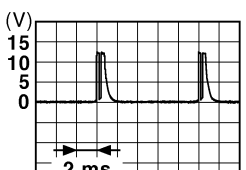
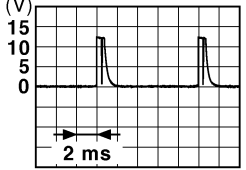
Terminal No. (Wire color)		Description		Condition	Value (Approx.)	
(+)	(-)	Signal name	Input/ Output			
95 (R/W)	Ground	Combination switch INPUT 1	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	 <p style="text-align: center;">1.4V</p>
					Turn signal switch LH	 <p style="text-align: center;">1.3V</p>
					Turn signal switch RH	 <p style="text-align: center;">1.3V</p>
					Front wiper switch LO	 <p style="text-align: center;">1.3V</p>
					Front washer switch ON	 <p style="text-align: center;">1.3V</p>

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

WW

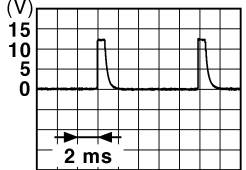
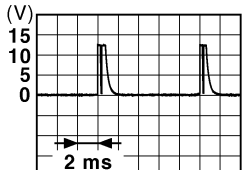

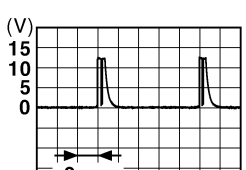

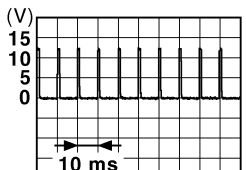
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
(+)	(-)	Signal name	Input/ Output		
96 (P/B)	Ground	Combination switch INPUT 4	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)  <p style="text-align: right; font-size: small;">JPMIA0041GB</p> <p style="text-align: center;">1.4V</p>
					Lighting switch AUTO (Wiper intermittent dial 4)  <p style="text-align: right; font-size: small;">JPMIA0038GB</p> <p style="text-align: center;">1.3V</p>
					Lighting switch 1ST (Wiper intermittent dial 4)  <p style="text-align: right; font-size: small;">JPMIA0036GB</p> <p style="text-align: center;">1.3V</p>
					Any of the conditions below with all switch OFF <ul style="list-style-type: none"> • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6  <p style="text-align: right; font-size: small;">JPMIA0039GB</p> <p style="text-align: center;">1.3V</p>

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)	
(+)	(-)	Signal name	Input/ Output			
97 (R/B)	Ground	Combination switch INPUT 2	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	 1.4V
					Lighting switch flash-to-pass	 1.3V
					Lighting switch 2ND	 1.3V
					Front wiper switch INT	 1.3V
					Front wiper switch HI	 1.3V
					Pressed	0 V
98 (G/O)	Ground	Hazard switch	Input	Hazard switch	Not pressed	 1.1V

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

WW

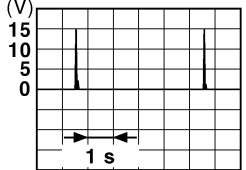
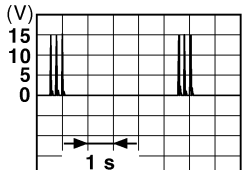
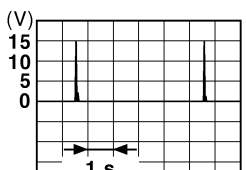

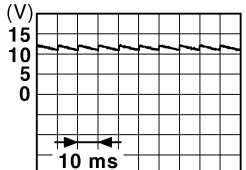
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
(+)	(-)	Signal name	Input/ Output			
103 (V)	Ground	Trunk lid opening	Output	Trunk lid	Open (trunk lid opener actuator is activated)	Battery voltage
					Close (trunk lid opener actuator is not activated)	0V
110 (V/W)	Ground	Trunk room lamp	Output	Trunk room lamp	ON	0V
					OFF	Battery voltage
114 (B)	Ground	Trunk room antenna 1 (-)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	<p style="text-align: right; font-size: small;">JMKIA0062GB</p>
					When Intelligent Key is not in the passenger compartment	<p style="text-align: right; font-size: small;">JMKIA0063GB</p>
115 (W)	Ground	Trunk room antenna 1 (+)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	<p style="text-align: right; font-size: small;">JMKIA0062GB</p>
					When Intelligent Key is not in the passenger compartment	<p style="text-align: right; font-size: small;">JMKIA0063GB</p>

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
(+)	(-)	Signal name	Input/ Output		
118 (L/O)	Ground	Rear bumper antenna (-)	Output	When the trunk lid request switch is operated with ignition switch OFF	 <p style="text-align: right; font-size: small;">JMKIA0062GB</p>
				When Intelligent Key is not in the antenna detection area	 <p style="text-align: right; font-size: small;">JMKIA0063GB</p>
119 (BR/W)	Ground	Rear bumper antenna (+)	Output	When the trunk lid request switch is operated with ignition switch OFF	 <p style="text-align: right; font-size: small;">JMKIA0062GB</p>
				When Intelligent Key is not in the antenna detection area	 <p style="text-align: right; font-size: small;">JMKIA0063GB</p>
127 (BR/W)	Ground	Ignition relay (IPDM E/R) control	Output	Ignition switch	OFF or ACC Battery voltage ON 0V
130 (Y/G)	Ground	Trunk room lamp switch	Input	Trunk room lamp switch	 <p style="text-align: right; font-size: small;">JPMIA0011GB</p> <p style="text-align: center;">11.8V</p>
				OFF (trunk is closed)	0V
132 (R)	Ground	Start signal	Output	Ignition switch ON	When selector lever is in P or N position and the brake peddle is not depressed 0V When selector lever is in P or N position and the brake peddle is depressed Battery voltage

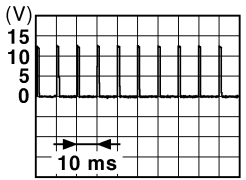
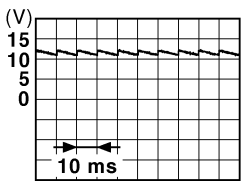
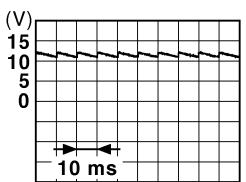
A
B
C
D
E
F
G
H
I
J
K

WW

M
N
O
P

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
(+)	(-)	Signal name	Input/ Output			
140 (BR)	Ground	Push-button ignition switch	Input	Engine switch (push switch)	Pressed	0V
					Not pressed	Battery voltage
141 (G/R)	Ground	Trunk request switch	Input	Trunk request switch	ON (pressed)	0V
					OFF (not pressed)	 1.0V
144 (GR)	Ground	Request switch buzzer	Output	Request switch buzzer	Sounding	0V
					Not sounding	Battery voltage
147 (L/R)	Ground	Trunk lid opener switch	Input	Trunk lid opener switch	Pressed	0V
					Not pressed	Battery voltage
148 (R/W)	Ground	Rear door RH switch	Input	Rear door RH switch	OFF (when rear door RH closes)	 11.8V
					ON (when rear door RH opens)	0V
149 (R/B)	Ground	Rear door LH switch	Input	Rear door LH switch	OFF (when rear door LH closes)	 11.8V
					ON (when rear door LH opens)	0V

*: With LH and RH front window anti-pinch system

Fail Safe

INFOID:000000005804661

Display contents of CONSULT	Fail-safe	Cancellation
B2190: NATS ANTENNA AMP	Inhibit hybrid system cranking	Erase DTC
B2191: DIFFERENCE OF KEY	Inhibit hybrid system cranking	Erase DTC
B2192: ID DISCORD BCM-ECM	Inhibit hybrid system cranking	Erase DTC
B2193: CHAIN OF BCM-ECM	Inhibit hybrid system cranking	Erase DTC

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Display contents of CONSULT	Fail-safe	Cancellation
B2195: ANTI-SCANNING	Inhibit hybrid system cranking	Erase DTC
B2562: LOW VOLTAGE	Inhibit hybrid system cranking	100 ms after the power supply voltage increases to more than 8.8 V
B2563: HI VOLTAGE	Inhibit hybrid system cranking	500 ms after the power supply voltage decreases to less than 18 V
B260A: IGNITION RELAY	Inhibit hybrid system cranking	500 ms after the following conditions are fulfilled <ul style="list-style-type: none"> IGN relay (IPDM E/R) control signal: OFF (Battery voltage) Ignition ON signal (CAN to IPDM E/R): OFF (Request signal) Ignition ON signal (CAN from IPDM E/R): OFF (Condition signal)
B260F: ENG STATE SIG LOST	Maintains the power supply position attained at the time of DTC detection	When any of the following conditions is fulfilled <ul style="list-style-type: none"> Power position changes to ACC Receives hybrid system status signal (CAN)
B2617: STARTER RELAY CIRC	Inhibit hybrid system cranking	1 second after the starter motor relay control inside BCM becomes normal
B2618: BCM	Inhibit hybrid system cranking	1 second after the ignition relay (IPDM E/R) control inside BCM becomes normal
B261E: VEHICLE TYPE	Inhibit hybrid system cranking	BCM initialization
B26E1: ENG STATE NO RECIV	Inhibit hybrid system cranking	When any of the following conditions is fulfilled <ul style="list-style-type: none"> Power position changes to ACC Receives hybrid system status signal (CAN)

DTC Inspection Priority Chart

INFOID:000000005804662

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

Priority	DTC
1	<ul style="list-style-type: none"> B2562: LOW VOLTAGE B2563: HI VOLTAGE B261E: VEHICLE TYPE
2	<ul style="list-style-type: none"> U1000: CAN COMM CIRCUIT U1010: CONTROL UNIT (CAN)
3	<ul style="list-style-type: none"> B2190: NATS ANTENNA AMP B2191: DIFFERENCE OF KEY B2192: ID DISCORD BCM-ECM B2193: CHAIN OF BCM-ECM B2195: ANTI SCANNING

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Priority	DTC
4	<ul style="list-style-type: none"> • B2553: IGNITION RELAY • B2555: STOP LAMP • B2556: PUSH-BTN IGN SW • B2557: VEHICLE SPEED • B2601: SHIFT POSITION • B2602: SHIFT POSITION • B2603: SHIFT POSI STATUS • B2604: TRANSMISSION RANGE SWITCH • B260A: IGNITION RELAY • B260F: ENG STATE SIG LOST • B2611: ACC RELAY • B2614: ACC RELAY CIRC • B2615: BLOWER RELAY CIRC • B2616: IGN RELAY CIRC • B2617: STARTER RELAY CIRC • B2618: BCM • B261A: PUSH-BTN IGN SW • B261E: VEHICLE TYPE • B26E1: ENG STATE NO RECIV • B26EA: KEY REGISTRATION • C1729: VHCL SPEED SIG ERR • U0415: VEHICLE SPEED SIG
5	<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 • C1712: [CHECKSUM ERR] FL • C1713: [CHECKSUM ERR] FR • C1714: [CHECKSUM ERR] RR • C1715: [CHECKSUM ERR] RL • C1716: [PRESSDATA ERR] FL • C1717: [PRESSDATA ERR] FR • C1718: [PRESSDATA ERR] RR • C1719: [PRESSDATA ERR] RL • C1720: [CODE ERR] FL • C1721: [CODE ERR] FR • C1722: [CODE ERR] RR • C1723: [CODE ERR] RL • C1724: [BATT VOLT LOW] FL • C1725: [BATT VOLT LOW] FR • C1726: [BATT VOLT LOW] RR • C1727: [BATT VOLT LOW] RL • C1734: CONTROL UNIT
6	<ul style="list-style-type: none"> • B2622: INSIDE ANTENNA • B2623: INSIDE ANTENNA

DTC Index

INFOID:000000005804663

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.

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

CONSULT display	Fail-safe	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	—	—	—	BCS-36
U1010: CONTROL UNIT (CAN)	—	—	—	BCS-37
U0415: VEHICLE SPEED SIG	—	—	—	BCS-38
B2190: NATS ANTENNA AMP	×	—	—	SEC-30
B2191: DIFFERENCE OF KEY	×	—	—	SEC-33
B2192: ID DISCORD BCM-ECM	×	—	—	SEC-34
B2193: CHAIN OF BCM-ECM	×	—	—	SEC-35
B2195: ANTI SCANNING	×	—	—	SEC-36
B2553: IGNITION RELAY	—	—	—	PCS-50
B2555: STOP LAMP	—	—	—	SEC-37
B2556: PUSH-BTN IGN SW	—	×	—	SEC-40
B2557: VEHICLE SPEED	×	×	—	SEC-42
B2562: LOW VOLTAGE	—	—	—	BCS-39
B2563: HI VOLTAGE	×	×	—	BCS-40
B2601: SHIFT POSITION	×	×	—	SEC-43
B2602: SHIFT POSITION	×	×	—	SEC-46
B2603: SHIFT POSI STATUS	×	×	—	SEC-49
B2604: TRANSMISSION RANGE SWITCH	×	×	—	SEC-52
B260A: IGNITION RELAY	×	×	—	PCS-52
B260F: ENG STATE SIG LOST	×	×	—	SEC-54
B2611: ACC RELAY	—	—	—	PCS-53
B2614: ACC RELAY CIRC	—	×	—	PCS-55
B2615: BLOWER RELAY CIRC	—	×	—	PCS-58
B2616: IGN RELAY CIRC	—	×	—	PCS-61
B2617: STARTER RELAY CIRC	×	×	—	SEC-56
B2618: BCM	×	×	—	PCS-64
B261A: PUSH-BTN IGN SW	—	×	—	SEC-58
B261E: VEHICLE TYPE	×	× (Turn ON for 15 seconds)	—	SEC-60
B2622: INSIDE ANTENNA	—	—	—	DLK-55
B2623: INSIDE ANTENNA	—	—	—	DLK-58
B26EA: KEY REGISTRATION	×	× (Turn ON for 15 seconds)	—	SEC-55. "Descrip- tion"
C1704: LOW PRESSURE FL	—	—	×	WT-8
C1705: LOW PRESSURE FR	—	—	×	WT-8
C1706: LOW PRESSURE RR	—	—	×	WT-8
C1707: LOW PRESSURE RL	—	—	×	WT-8
C1708: [NO DATA] FL	—	—	×	WT-14
C1709: [NO DATA] FR	—	—	×	WT-14
C1710: [NO DATA] RR	—	—	×	WT-14
C1711: [NO DATA] RL	—	—	×	WT-14

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

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

CONSULT display	Fail-safe	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
C1712: [CHECKSUM ERR] FL	—	—	×	WT-16
C1713: [CHECKSUM ERR] FR	—	—	×	WT-16
C1714: [CHECKSUM ERR] RR	—	—	×	WT-16
C1715: [CHECKSUM ERR] RL	—	—	×	WT-16
C1716: [PRESSDATA ERR] FL	—	—	×	WT-18
C1717: [PRESSDATA ERR] FR	—	—	×	WT-18
C1718: [PRESSDATA ERR] RR	—	—	×	WT-18
C1719: [PRESSDATA ERR] RL	—	—	×	WT-18
C1720: [CODE ERR] FL	—	—	×	WT-16
C1721: [CODE ERR] FR	—	—	×	WT-16
C1722: [CODE ERR] RR	—	—	×	WT-16
C1723: [CODE ERR] RL	—	—	×	WT-16
C1724: [BATT VOLT LOW] FL	—	—	×	WT-16
C1725: [BATT VOLT LOW] FR	—	—	×	WT-16
C1726: [BATT VOLT LOW] RR	—	—	×	WT-16
C1727: [BATT VOLT LOW] RL	—	—	×	WT-16
C1729: VHCL SPEED SIG ERR	—	—	×	WT-19
C1734: CONTROL UNIT	—	—	×	WT-20

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

< ECU DIAGNOSIS >

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

Reference Value

INFOID:000000005804664

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition		Value/Status
RADFAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	0 - 100 %
TAIL&CLR REQ	Lighting switch OFF		OFF
	Lighting switch 1ST, 2ND, HI or AUTO (Light is illuminated)		ON
HL LO REQ	Lighting switch OFF		OFF
	Lighting switch 2ND HI or AUTO (Light is illuminated)		ON
HL HI REQ	Lighting switch OFF		OFF
	Lighting switch HI		ON
FR WIP REQ	Ignition switch ON	Front wiper switch OFF	STOP
		Front wiper switch INT	1LOW
		Front wiper switch LO	LOW
		Front wiper switch HI	HI
WIP AUTO STOP	Ignition switch ON	Front wiper stop position	STOP P
		Any position other than front wiper stop position	ACT P
WIP PROT	Ignition switch ON	Front wiper operates normally	OFF
		Front wiper stops at fail-safe operation	BLOCK
IGN RLY1 -REQ	Ignition switch OFF or ACC		OFF
	Ignition switch ON		ON
IGN RLY	Ignition switch OFF or ACC		OFF
	Ignition switch ON		ON
PUSH SW	Release the push-button ignition switch		OFF
	Press the push-button ignition switch		ON
DETENT SW	Ignition switch ON	<ul style="list-style-type: none"> Press the selector button with CVT selector lever in P position CVT selector lever in any position other than P 	OFF
		Release the CVT selector button with CVT selector lever in P position	
DTRL REQ	DTRL OFF		Off
	DTRL ON		On
OIL P SW	Ignition switch OFF, ACC or engine running		OPEN
	Ignition switch ON		CLOSE
THFT HRN REQ	Not operated		OFF
	<ul style="list-style-type: none"> Panic alarm is activated Horn is activated with VEHICLE SECURITY (THEFT WARNING) SYSTEM 		ON
HORN CHIRP	Not operated		OFF
	Door locking with Intelligent Key (horn chirp mode)		ON

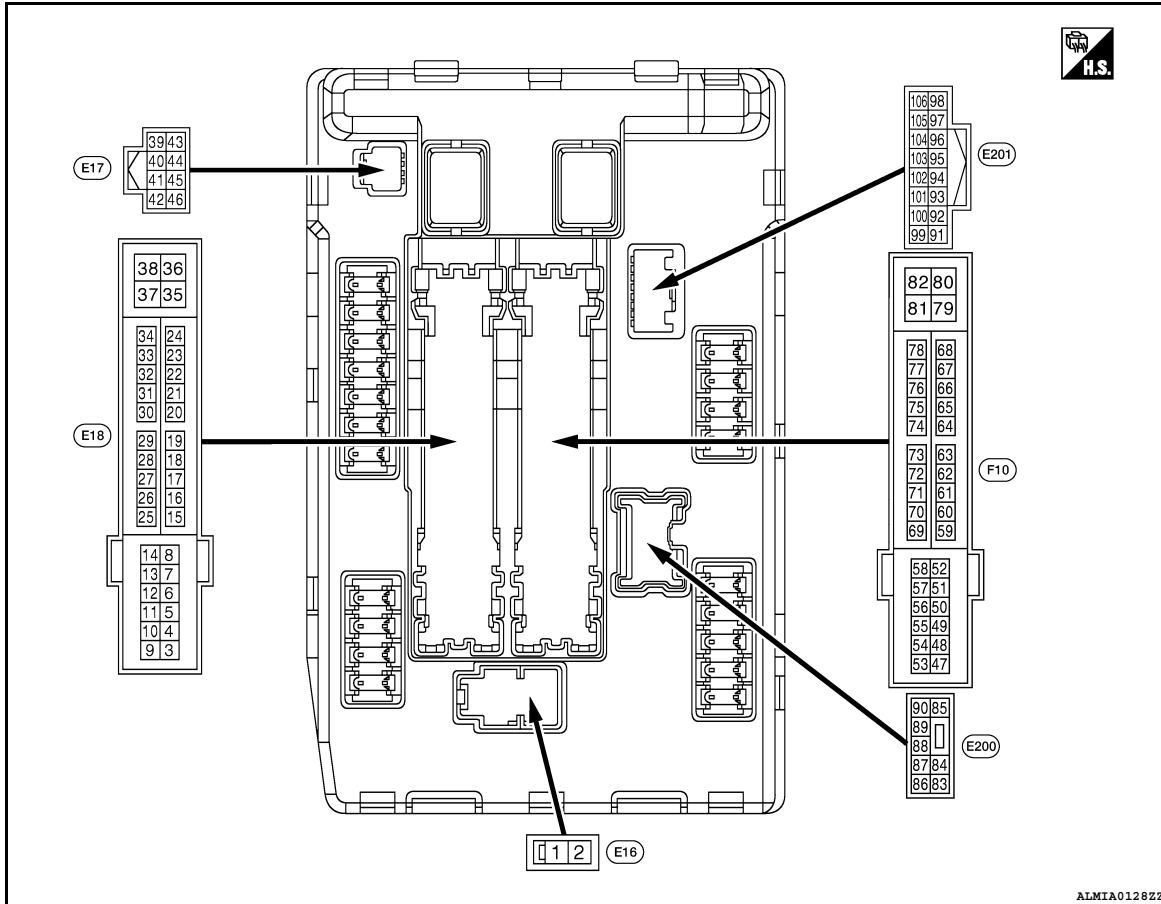
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

< ECU DIAGNOSIS >

Terminal Layout

INFOID:000000005804665

TERMINAL LAYOUT



Physical Values

INFOID:000000005804666

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 (L)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
4 (LG)	Ground	Front wiper LO	Output	Ignition switch ON	Front wiper switch OFF	0V
					Front wiper switch LO	Battery voltage
5 (Y)	Ground	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0V
					Front wiper switch HI	Battery voltage
6 (SB)	Ground	Daytime light relay power supply (Canada models only)	Output	Ignition switch OFF		Battery voltage
7 (GR)	Ground	Tail, license plate lamps & interior lamps	Output	Ignition switch ON	Lighting switch OFF	0V
					Lighting switch 1ST	Battery voltage

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

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)	
+	-	Signal name	Input/ Output			
10 (BR)	Ground	ECM relay power supply	Output	Ignition switch OFF (For a few seconds after turning ignition switch OFF)	0V	A
				<ul style="list-style-type: none"> Ignition switch ON Ignition switch OFF (More than a few seconds after turning ignition switch OFF) 	Battery voltage	B C
12 (B)	Ground	Ground	—	Ignition switch ON	0V	D
13 (SB)	Ground	Fuel pump power supply	Output	Approximately 1 second or more after turning the ignition switch ON	0V	E
				<ul style="list-style-type: none"> Approximately 1 second after turning the ignition switch ON Engine running 	Battery voltage	F
15 (V)	Ground	Ignition relay-1 power supply	Output	Ignition switch OFF	0V	F
				Ignition switch ON	Battery voltage	G
16 (L/Y)	Ground	Front wiper auto stop	Input	Ignition switch ON	0V	G
				Any position other than front wiper stop position	Battery voltage	H
19 (Y)	Ground	Ignition relay-1 power supply	Output	Ignition switch OFF	0V	H
				Ignition switch ON	Battery voltage	I
20 (L)	Ground	Ambient sensor ground	—	Ignition switch ON	0V	I
21 (LG)	Ground	Ambient sensor	—	Ignition switch ON	5V	J
22 (W/R)	Ground	Refrigerant pressure sensor ground	—	Ignition switch ON	0V	J
23 (B/R)	Ground	Refrigerant pressure sensor	—	<ul style="list-style-type: none"> Ignition switch ON (READY) Both A/C switch and blower motor switch ON (electric compressor operates) 	1.0 - 4.0V	K
24 (BR/W)	Ground	Refrigerant pressure sensor power supply	—	Ignition switch ON	5V	WW
25 (R)	Ground	Ignition relay-1 power supply	Output	Ignition switch OFF	0V	M
				Ignition switch ON	Battery voltage	N
27 (W)	Ground	Ignition relay monitor	Input	Ignition switch OFF or ACC	Battery voltage	O
				Ignition switch ON	0V	P
28 (SB)	Ground	Push-button ignition switch	Input	Press the push-button ignition switch	0V	N
				Release the push-button ignition switch	Battery voltage	O
31 (B)	Ground	Ignition relay power supply	Output	Ignition switch OFF	0V	O
				Ignition switch ON	Battery voltage	P
39 (P)	—	CAN-L	Input/ Output	—	—	P
40 (L)	—	CAN-H	Input/ Output	—	—	
41 (B)	Ground	Ground	—	Ignition switch ON	0V	
42 (SB)	Ground	Cooling fan relay-1 control	Input	Ignition switch OFF or ACC	0V	
				Ignition switch ON	0.7V	

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

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
43 (G/B)	Ground	CVT shift selector (Detention switch)	Input	Ignition switch ON	Press the CVT selector button (CVT selector lever P)	Battery voltage
					<ul style="list-style-type: none"> CVT selector lever in any position other than P Release the CVT selec- tor button (CVT selector lever P) 	0V
44 (G/W)	Ground	Horn relay control	Input	The horn is deactivated		Battery voltage
				The horn is activated		0V
45 (L/O)	Ground	Anti theft horn relay control	Input	The horn is deactivated		Battery voltage
				The horn is activated		0V
48 (R)	Ground	Heater pump relay power supply	Output	Engine running	Heater pump OFF	0V
					Heater pump ON (Heater pump is operating)	Battery voltage
49 (v)	Ground	ECM relay power supply	Output	Ignition switch OFF (For a few seconds after turning ignition switch OFF)		0V
				<ul style="list-style-type: none"> Ignition switch ON Ignition switch OFF (More than a few seconds after turn- ing ignition switch OFF) 		Battery voltage
51 (SB)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0V
				Ignition switch ON		Battery voltage
53 (V)	Ground	ECM relay power supply	Output	Ignition switch OFF (For a few seconds after turning ignition switch OFF)		0V
				<ul style="list-style-type: none"> Ignition switch ON Ignition switch OFF (More than a few seconds after turn- ing ignition switch OFF) 		Battery voltage
54 (GR)	Ground	Throttle control motor re- lay power supply	Output	Ignition switch OFF (For a few seconds after turning ignition switch OFF)		0V
				<ul style="list-style-type: none"> Ignition switch ON Ignition switch OFF (More than a few seconds after turn- ing ignition switch OFF) 		Battery voltage
55 (LG)	Ground	ECM power supply	Output	Ignition switch OFF		Battery voltage
56 (R)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0V
				Ignition switch ON		Battery voltage
57 (O)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0V
				Ignition switch ON		Battery voltage
69 (SB)	Ground	ECM relay control	Output	Ignition switch OFF (For a few seconds after turning ignition switch OFF)		Battery voltage
				<ul style="list-style-type: none"> Ignition switch ON Ignition switch OFF (More than a few seconds after turn- ing ignition switch OFF) 		0 - 1.5V

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

< ECU DIAGNOSIS >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)	
+	-	Signal name	Input/ Output				
70 (G)	Ground	Throttle control motor re- lay control	Output	Ignition switch ON → OFF		0 - 1.0V ↓ Battery voltage ↓ 0V	A
				Ignition switch ON		0 - 1.0V	B
75 (LG)	Ground	Oil pressure switch	Input	Ignition switch ON	Engine stopped	0V	C
					Engine running	Battery voltage	D
77 (GR)	Ground	Fuel pump relay control	Output	<ul style="list-style-type: none"> • Approximately 1 second after turning the ignition switch ON • Engine running 		0 - 1.0V	E
				Approximately 1 second or more after turning the ignition switch ON		Battery voltage	
83 (R/Y)	Ground	Headlamp LO (RH)	Output	Ignition switch ON	Lighting switch OFF	0V	F
					Lighting switch 2ND	Battery voltage	
84 (L)	Ground	Headlamp LO (LH)	Output	Ignition switch ON	Lighting switch OFF	0V	G
					Lighting switch 2ND	Battery voltage	
88 (R/W)	Ground	Washer pump power supply	Output	Ignition switch ON		Battery voltage	H
89 (L/W)	Ground	Headlamp HI (RH)	Output	Ignition switch ON	<ul style="list-style-type: none"> • Lighting switch HI • Lighting switch PASS 	Battery voltage	I
					Lighting switch OFF	0V	
90 (G)	Ground	Headlamp HI (LH)	Output	Ignition switch ON	<ul style="list-style-type: none"> • Lighting switch HI • Lighting switch PASS 	Battery voltage	J
					Lighting switch OFF	0V	
91 (LG/R)	Ground	Parking lamp (RH)	Output	Ignition switch ON	Lighting switch 1ST	Battery voltage	K
					Lighting switch OFF	0V	
92 (LG/B)	Ground	Parking lamp (LH)	Output	Ignition switch ON	Lighting switch 1ST	Battery voltage	
					Lighting switch OFF	0V	
97 (V)	Ground	Cooling fan control	Output	Engine idling		0-5V	WW
99 (BR/W)	Ground	Ambient sensor ground	—	Ignition switch ON		0V	M
100 (SB)	Ground	Ambient sensor	—	Ignition switch ON		5V	
101 (W)	Ground	Refrigerant pressure sensor ground	—	Ignition switch ON		0V	N
102 (R)	Ground	Refrigerant pressure sensor	—	<ul style="list-style-type: none"> • Ignition switch ON (READY) • Both A/C switch and blower motor switch ON (electric compressor operates) 		1.0 - 4.0V	O
103 (P)	Ground	Refrigerant pressure sensor power supply	—	Ignition switch ON		5V	P
105 (V)	Ground	Daytime light relay control (Canada only)	Output	Ignition switch ON	Daytime light system active	Battery voltage	
				Ignition switch ON	Daytime light system inactive	0V	

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

< ECU DIAGNOSIS >

Fail Safe

INFOID:000000005804668

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With ECM

Control part	Fail-safe in operation
Cooling fan	<ul style="list-style-type: none"> • Signals cooling fans ON when the ignition switch is turned ON • Signals cooling fans OFF when the ignition switch is turned OFF
Heater pump	Heater pump relay OFF

If No CAN Communication Is Available With BCM

Control part	Fail-safe in operation
Headlamp	<ul style="list-style-type: none"> • Turns ON the headlamp low relay when the ignition switch is turned ON • Turns OFF the headlamp low relay when the ignition switch is turned OFF • Headlamp high relay OFF
<ul style="list-style-type: none"> • Parking lamps • Side marker lamps • License plate lamps • Illuminations • Tail lamps 	<ul style="list-style-type: none"> • Turns ON the tail lamp relay when the ignition switch is turned ON • Turns OFF the tail lamp relay when the ignition switch is turned OFF
Front wiper	<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 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.
Horn	Horn OFF
Ignition relay	The status just before activation of fail-safe is maintained.

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

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

DTC	Ignition switch	Ignition relay	Tail lamp relay
—	ON	ON	—
—	OFF	OFF	—
B2098: IGN RELAY ON	OFF	ON	ON (10 minutes)
B2099: IGN RELAY OFF	ON	OFF	—

NOTE:

The tail lamp turns OFF when the ignition switch is turned ON.

FRONT WIPER CONTROL

IPDM E/R detects front wiper stop position by a front wiper auto stop signal.

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

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

NOTE:

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

< ECU DIAGNOSIS >

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

STARTER MOTOR PROTECTION FUNCTION

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

DTC Index

INFOID:000000005804669

CONSULT-III display	Fail-safe	TIME ^{NOTE}		Refer to
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	×	CRNT	1 – 39	PCS-18
B2098: IGN RELAY ON	×	CRNT	1 – 39	PCS-19
B2099: IGN RELAY OFF	—	CRNT	1 – 39	PCS-20

NOTE:

The details of TIME display are as follows.

- CRNT: The malfunctions that are detected now
- 1 - 39: The number is indicated when it is normal at present and a malfunction was detected in the past. It increases like 0 → 1 → 2 ... 38 → 39 after returning to the normal condition whenever IGN OFF → ON. It is fixed to 39 until the self-diagnosis results are erased if it is over 39. It returns to 0 when a malfunction is detected again in the process.

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

WW

FRONT WIPER AND WASHER SYSTEM

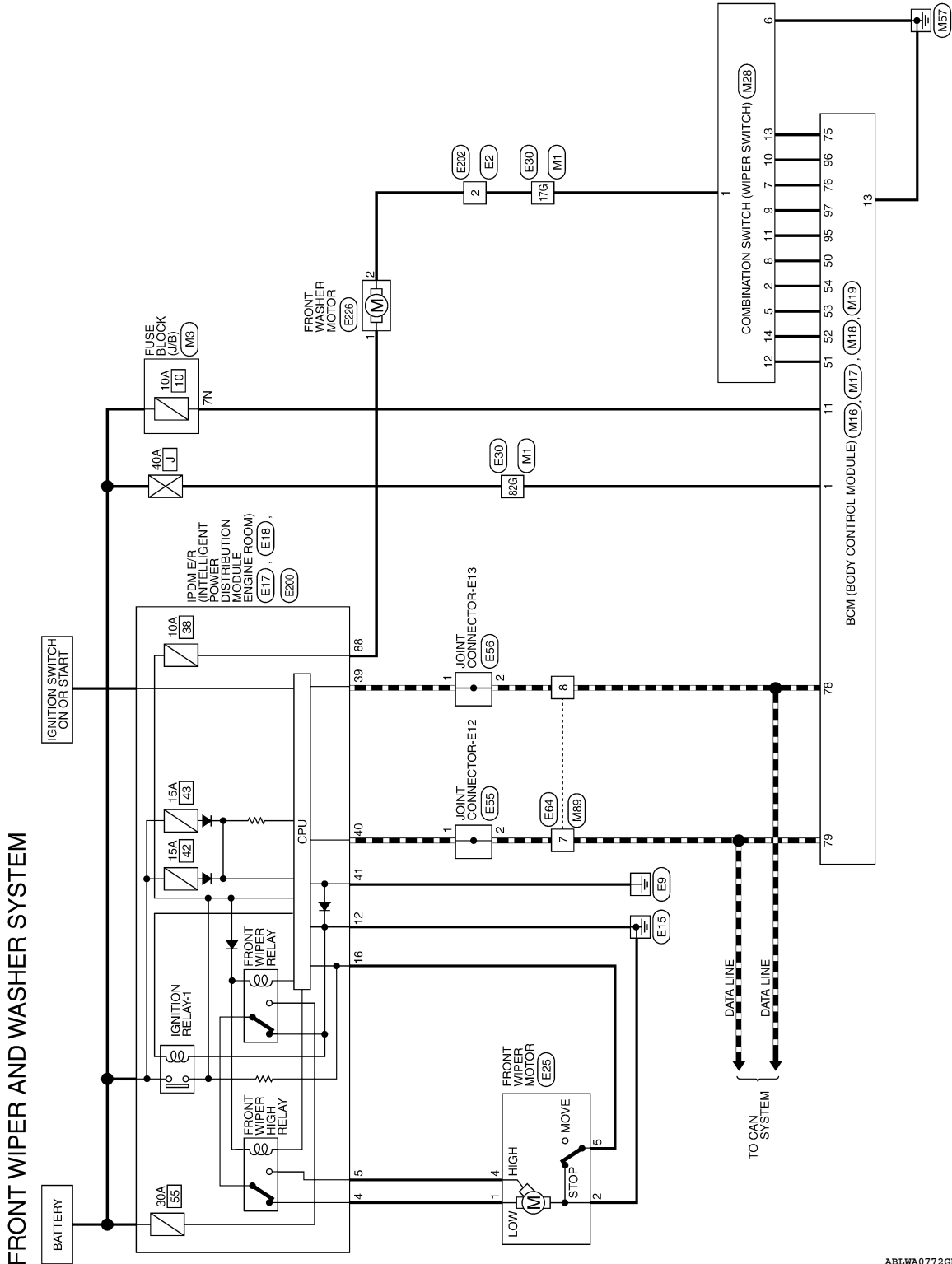
< WIRING DIAGRAM >

WIRING DIAGRAM

FRONT WIPER AND WASHER SYSTEM

Wiring Diagram

INFOID:000000005806156



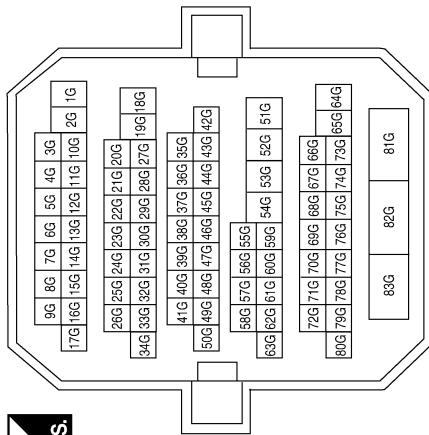
ABLWA0772GB

FRONT WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

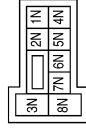
FRONT WIPER AND WASHER SYSTEM CONNECTORS

Connector No.	M1
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
17G	R/L	-
82G	W/B	-

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



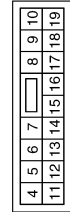
Terminal No.	Color of Wire	Signal Name
7N	Y/R	-

Connector No.	M16
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	W/B	BAT_POWER_F/L

Connector No.	M17
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
11	Y/R	BAT_BCM_FUSE
13	B	GND1

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GREEN



Terminal No.	Color of Wire	Signal Name
50	LG/B	INPUT_5
51	L/W	INPUT_1
52	G/B	INPUT_2
53	LG/R	INPUT_3
54	G/Y	INPUT_4

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

WW

FRONT WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60
59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40

Terminal No.	Color of Wire	Signal Name
75	R/Y	OUTPUT_5
76	R/G	OUTPUT_3
78	P	CAN-L
79	L	CAN-H
95	R/W	OUTPUT_1
96	P/B	OUTPUT_4
97	R/B	OUTPUT_2

1	2	3
4	5	6
7	8	



Connector No.	E2
Connector Name	WIRE TO WIRE
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
2	GR	-

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE



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

Terminal No.	Color of Wire	Signal Name
1	R/L	WASH_MTR
2	G/Y	OUTPUT_4
5	LG/R	OUTPUT_3
6	B	GND
7	R/G	INPUT_3
8	LG/B	OUTPUT_5
9	R/B	INPUT_2
10	P/B	INPUT_4
11	R/W	INPUT_1
12	L/W	OUTPUT_1
13	R/Y	INPUT_5
14	G/B	OUTPUT_2



42	41	40	39
46	45	44	43

Connector No.	E17
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
39	P	CAN-L
40	L	CAN-H
41	B/Y	GND (SIGNAL)

Connector No.	M89
Connector Name	WIRE TO WIRE
Connector Color	WHITE



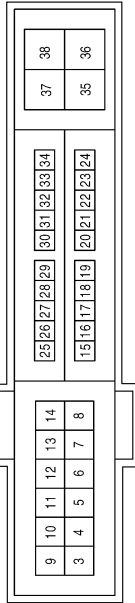
5	4	3	2	1
12	11	10	9	8
7	6			

Terminal No.	Color of Wire	Signal Name
7	L	-
8	P	-

FRONT WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

Connector No.	E18
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



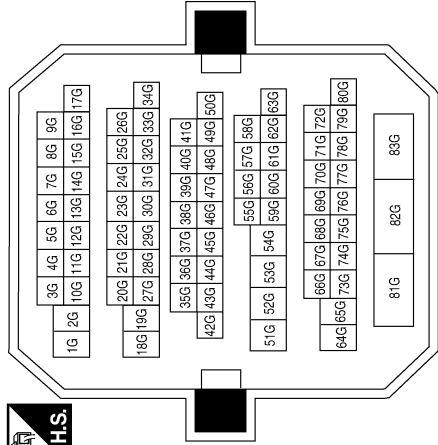
Terminal No.	Color of Wire	Signal Name
4	LG	FR WIPER LO
5	Y	FR WIPER HI
12	B	GND (POWER)
16	L/Y	WIPER AUTOSTOP

Connector No.	E25
Connector Name	FRONT WIPER MOTOR
Connector Color	GRAY



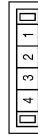
Terminal No.	Color of Wire	Signal Name
1	L/R	-
2	B/Y	-
4	L/B	-
5	L/Y	-

Connector No.	E30
Connector Name	WIRE TO WIRE
Connector Color	WHITE



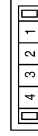
Terminal No.	Color of Wire	Signal Name
17G	GR	-
82G	LG	-

Connector No.	E55
Connector Name	JOINT CONNECTOR-E12
Connector Color	WHITE



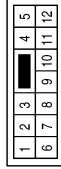
Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-

Connector No.	E56
Connector Name	JOINT CONNECTOR-E13
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	P	-
2	P	-

Connector No.	E64
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7	L	-
8	P	-

ABL1A2191GB

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

WW

FRONT WIPER AND WASHER SYSTEM

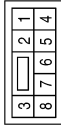
< WIRING DIAGRAM >

Connector No.	E226
Connector Name	FRONT WASHER MOTOR
Connector Color	BLACK



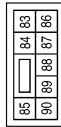
Terminal No.	Color of Wire	Signal Name
1	R/W	-
2	R/L	-

Connector No.	E202
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	R/L	-

Connector No.	E200
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
88	R/W	WASHER_MTR

ABLI2A2192GB

FRONT WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

FRONT WIPER AND WASHER SYSTEM SYMPTOMS

Symptom Table

INFOID:000000005439414

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-10, "System Description" .
		<ul style="list-style-type: none"> • IPDM E/R • Harness between IPDM E/R and wiper motor • Front wiper motor 	Front wiper motor (HI) circuit Refer to WW-21, "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-10, "System Description" .
		<ul style="list-style-type: none"> • IPDM E/R • Harness between IPDM E/R and wiper motor • Front wiper motor 	Front wiper motor (LO) circuit Refer to WW-19, "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-10, "System Description" .
		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 Refer to WW-65, "Diagnosis Procedure" .	

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

WW

FRONT 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-10, "System Description" .
		Front wiper request signal <ul style="list-style-type: none"> 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-10, "System Description" .
		Front wiper request signal <ul style="list-style-type: none"> 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-10, "System Description" .
		Front wiper request signal <ul style="list-style-type: none"> 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 BCS-24, "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-10, "System Description" .
		BCM	—
Does not return to stop position (Repeatedly operates for 10 seconds and then stops for 20 seconds. After that, it stops the operation.)	<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-23, "Component Function Check" .	

FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

FRONT WIPER DOES NOT OPERATE

Description

INFOID:000000005439415

The front wiper does not operate under any operation conditions

Diagnosis Procedure

INFOID:000000005439416

Regarding Wiring Diagram information, refer to [WW-58, "Wiring Diagram"](#).

1. CHECK WIPER RELAY OPERATION

⊗ IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-13, "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. While operating the test item, check that front wiper LO/HI operation and OFF.

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

Does the front wiper operate?

- YES >> GO TO 5
- NO >> GO TO 2

2. CHECK FRONT WIPER MOTOR FUSE

1. Turn the ignition switch OFF.
2. Check that the front wiper motor fuse 30A (No. 55, located in the IPDM E/R) is not blown.

Is the fuse blown?

- YES >> Replace the fuse after repairing the affected circuit.
- NO >> GO TO 3

3. CHECK FRONT WIPER MOTOR (GND) OPEN CIRCUIT

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

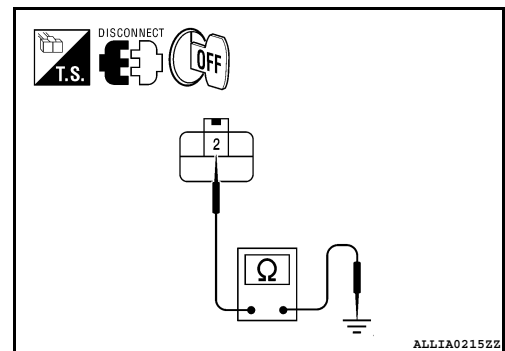
Front wiper motor		Ground	Continuity
Connector	Terminal		
E25	2		Yes

Does continuity exist?

- YES >> GO TO 4
- NO >> Repair or replace harness.

4. CHECK FRONT WIPER MOTOR OUTPUT VOLTAGE

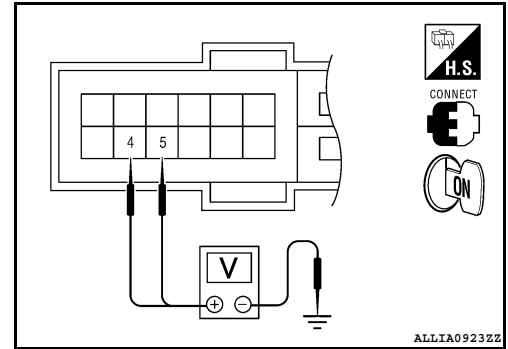
Ⓜ CONSULT-III ACTIVE TEST



FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

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



Terminals		Test item	Voltage (V) (Approx.)		
(+)	(-)				
IPDM E/R		FRONT WIPER			
Connector	Terminal				
E18	4			Lo	Battery voltage
	5			Off	0 V
		Hi	Battery voltage		
		Off	0 V		

Is the measurement normal?

YES LO Circuit>> Refer to [WW-19, "Diagnosis Procedure"](#).

YES HI Circuit>> Refer to [WW-21, "Diagnosis Procedure"](#).

NO >> Replace IPDM E/R. Refer to [PCS-36, "Removal and Installation"](#).

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. While operating the front wiper switch, check the monitor status.

Monitor item	With operating the front wiper switch 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. Refer to [PCS-36, "Removal and Installation"](#).

NO >> GO TO 6

6. CHECK COMBINATION SWITCH

1. Perform the inspection of the combination switch. Refer to [BCS-10, "System Description"](#).

Is combination switch normal?

YES >> Replace BCM. Refer to [BCS-83, "Removal and Installation"](#).

NO >> Repair or replace the malfunctioning parts.

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description

INFOID:000000005439417

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.

A

B

C

D

E

F

G

H

I

J

K

WW

M

N

O

P

PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000005809575

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 SR and SB section 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 SR section.
- 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 Airbag Diagnosis Sensor Unit or other Airbag 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.

FRONT WIPER

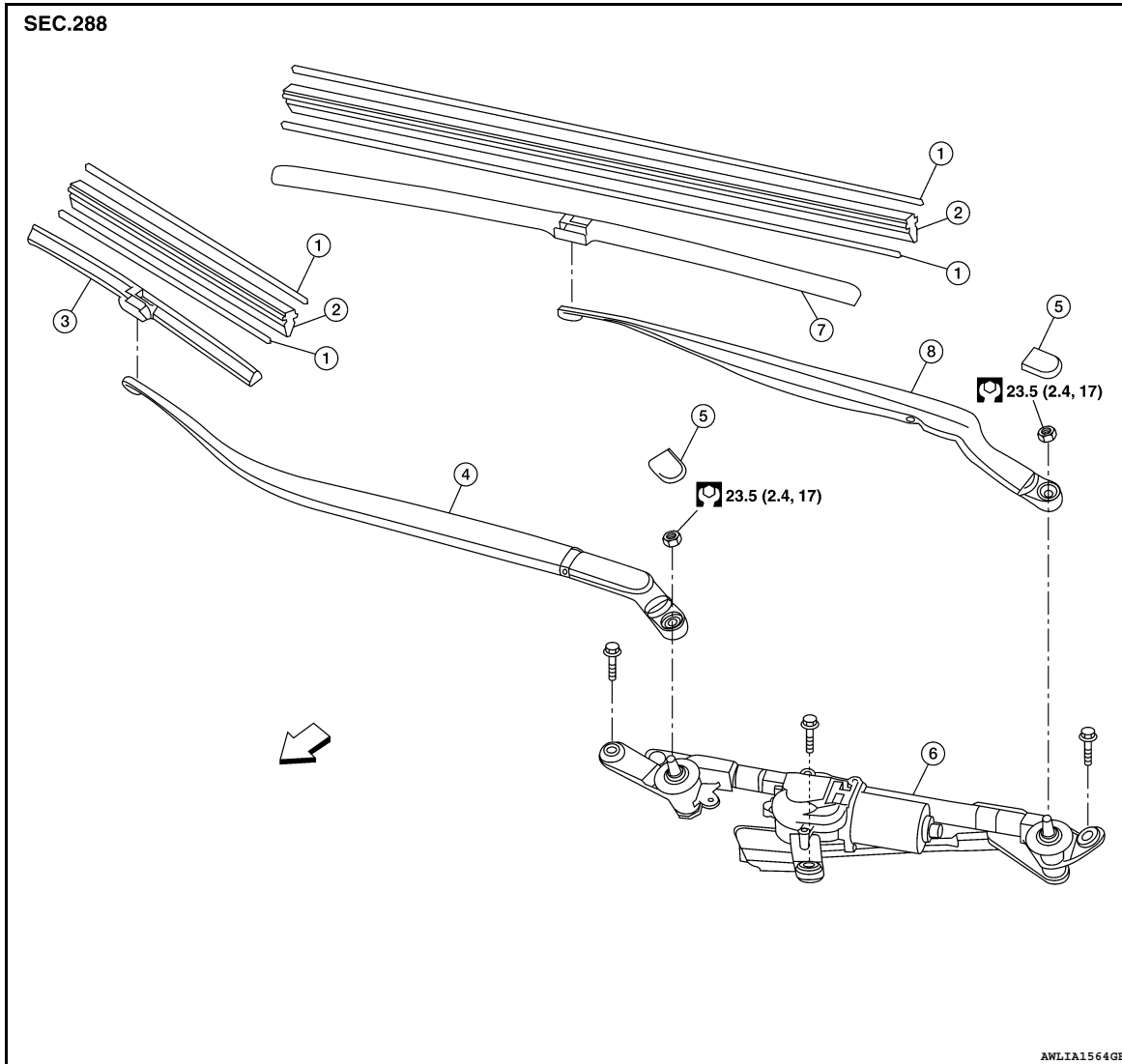
< ON-VEHICLE REPAIR >

ON-VEHICLE REPAIR

FRONT WIPER

Exploded View

INFOID:000000005439419



- | | | |
|--|-----------------------|--|
| 1. Rib (part of wiper blade refill) | 2. Wiper blade refill | 3. Front RH wiper blade assembly (includes wiper blade refill) |
| 4. Front RH wiper arm | 5. Wiper arm cap | 6. Front wiper drive assembly |
| 7. Front LH wiper blade assembly (includes wiper blade refill) | 8. Front LH wiper arm | ⇐ Front |

FRONT WIPER BLADE REFILL

FRONT WIPER BLADE REFILL : Removal and Installation

INFOID:000000005439420

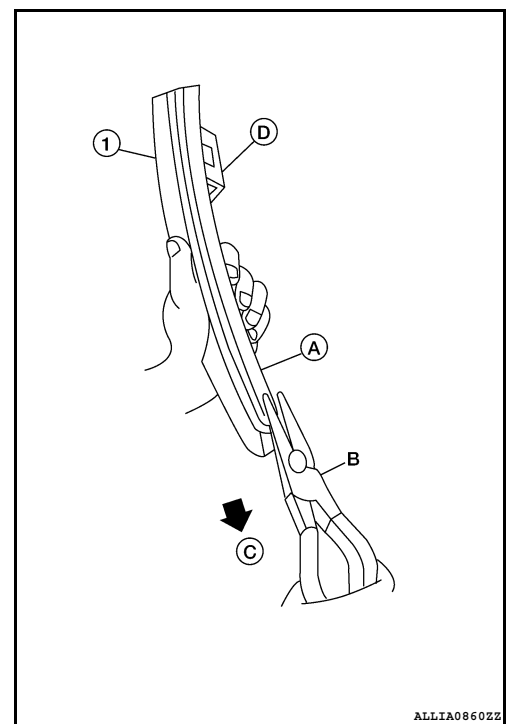
REMOVAL

1. Remove the front wiper blade. Refer to [WW-72, "FRONT WIPER BLADE : Removal and Installation"](#).

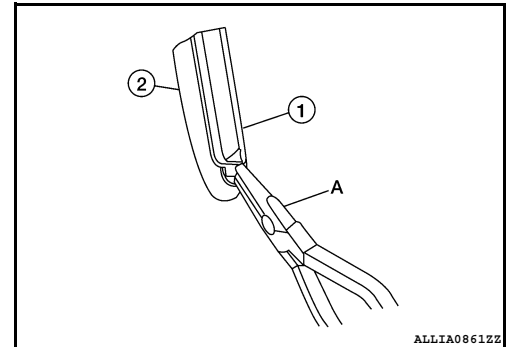
FRONT WIPER

< ON-VEHICLE REPAIR >

2. Hold the wiper blade refill lip at the end (A) of the front wiper blade (1) with a suitable tool (B) as shown, and pull it firmly in the direction (C).
 - U clip (part of the front wiper blade assembly) (D)

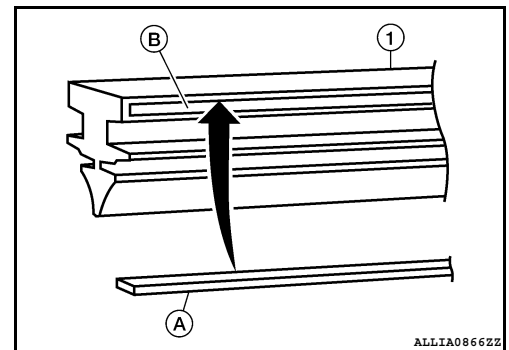


- If the wiper blade refill lip is torn due to wear, insert a suitable tool (A) into the space between the end of the wiper blade refill (1) and the front wiper blade (2) and pull the wiper blade refill (1) out as shown.



INSTALLATION

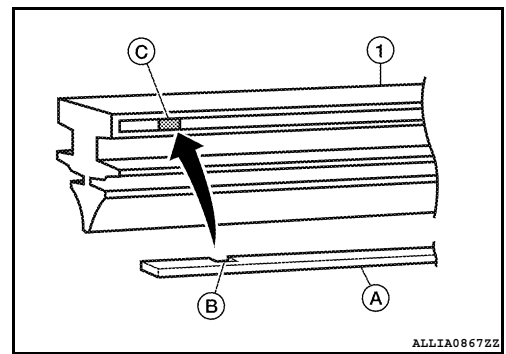
1. If the rib (A) has become detached from the wiper blade refill (1), check that the curve of the rib (A) is in the same direction as the curve of the wiper blade refill (1) and insert the rib (A) into the slit (B) in the wiper blade refill (1) as shown.



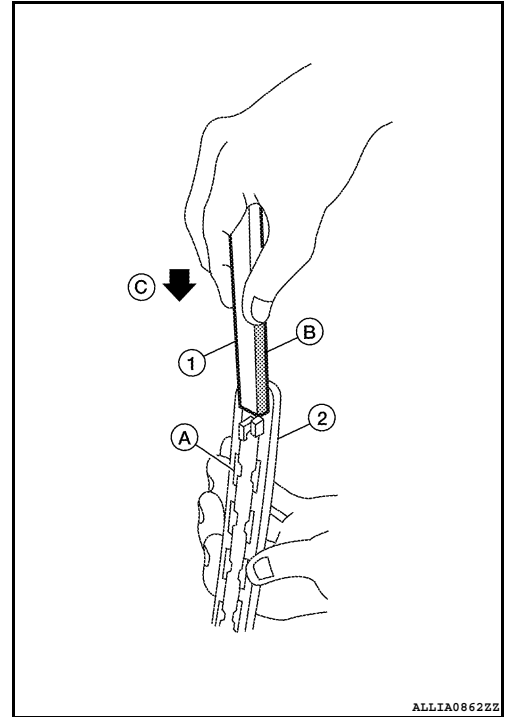
FRONT WIPER

< ON-VEHICLE REPAIR >

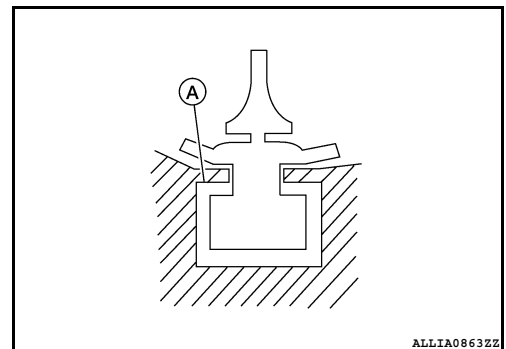
- If the rib (A) has a notch (B), insert the rib (A) into the wiper blade refill (1) so the notch (B) fits over the protrusion (C) in the wiper blade refill (1) as shown.



2. Insert the wiper blade refill (1) tip into the end of the front wiper blade (2) in the direction (C). Push the wiper blade refill (1) in while pressing it into the end of the front wiper blade (2) as shown. After the wiper blade refill is fully inserted, remove the holder (B).
- Tab [part of front wiper blade (2)] (A)



- Make sure to slide the refill into the front wiper blade so that the wiper blade refill is held by the tabs (A) on the front wiper blade as shown.

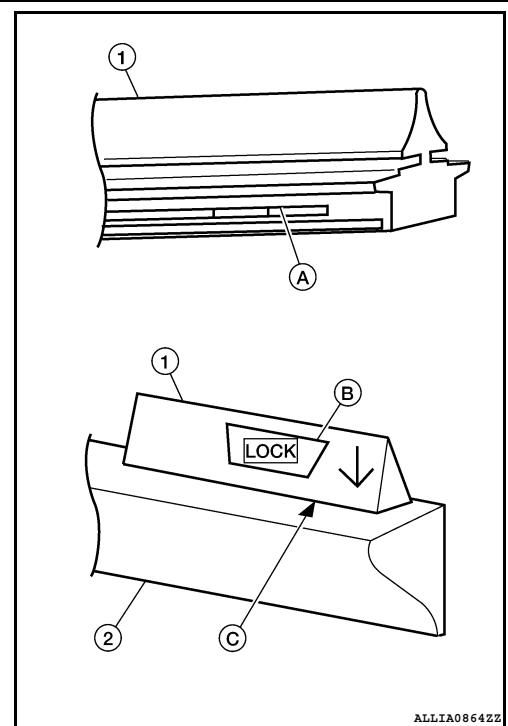


A
B
C
D
E
F
G
H
I
J
K
WW
M
N
O
P

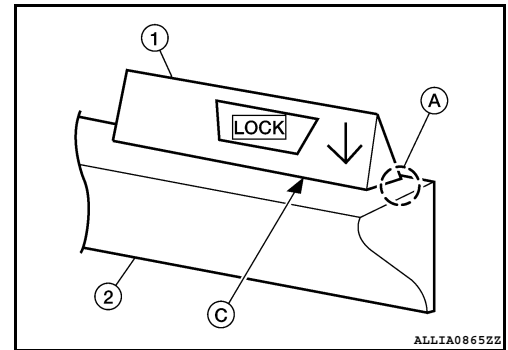
FRONT WIPER

< ON-VEHICLE REPAIR >

3. Push the wiper blade refill (1) until the tabs on the front wiper blade (2) fit into the stoppers (A) in the end of the wiper blade refill (1). Make sure the LOCK mark (B) on the wiper blade refill (1) is aligned with the lock point symbol (C) on the front wiper blade (2) as shown.



4. Before installing the front wiper blade assembly, make sure that the wiper blade refill (1) end is fully covered by the front wiper blade (2) in area (A) as shown.



5. Install the front wiper blade. Refer to [WW-72. "FRONT WIPER BLADE : Removal and Installation"](#).

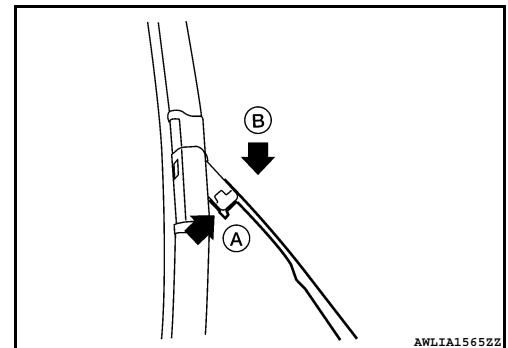
FRONT WIPER BLADE

FRONT WIPER BLADE : Removal and Installation

INFOID:000000005439421

REMOVAL

1. Lift the front wiper arm and wiper blade assembly away from the windshield.
2. Rotate the front wiper blade assembly and push the release tab (A), then move the front wiper blade assembly down (B) the front wiper arm.
3. Remove the front wiper blade assembly.



INSTALLATION

CAUTION:

- After the front wiper blade assembly installation, return the front wiper arm to the original position on the windshield to prevent damage when the hood is opened.

FRONT WIPER

< ON-VEHICLE REPAIR >

- Check that the front wiper blade assembly contacts the windshield properly; otherwise the front wiper arm may be damaged from wind pressure while driving.
1. Insert the front wiper blade assembly onto the front wiper arm and slide it up until it clicks into place.
 2. Rotate the front wiper blade assembly so the dimple is in the groove.
 3. Lay the front wiper arm and front wiper blade assembly back down on the windshield.

FRONT WIPER ARMS

FRONT WIPER ARMS : Removal and Installation

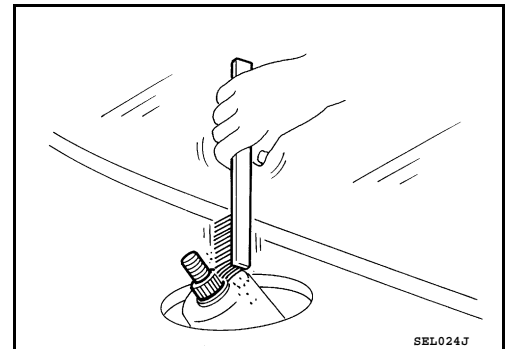
INFOID:000000005439422

REMOVAL

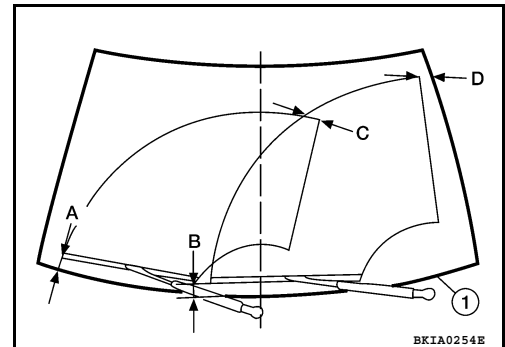
1. Turn wiper switch ON to operate wiper motor, and then turn wiper switch OFF (auto stop).
2. Open hood, remove wiper arm caps, and remove wiper arm nuts.
3. Raise wiper arm, and remove wiper arm from the pivot shaft.

INSTALLATION

1. Clean up the pivot shaft as shown. This will reduce possibility of wiper arm looseness.



2. Prior to wiper arm installation, turn wiper switch ON to operate wiper motor and then turn it OFF (auto stop).
3. Push wiper arm onto pivot shaft, paying attention to blind spline.
4. Lift the blade up and then set it down onto glass surface (1) to set the blade center to clearance (A), (B), (C) and (D) immediately before temporarily tightening the wiper arm nuts.
5. Spray washer fluid. Turn wiper switch ON to operate wiper motor and then turn it OFF.
6. Make sure that wiper blades stop within clearance (A), (B), (C) and (D).



Clearance (A)	: 41.3 ± 7.5 mm (1.626 ± 0.295 in)
Clearance (B)	: 65.5 ± 7.5 mm (2.579 ± 0.295 in)
Clearance (C)	: 27.8 mm (1.094 in)
Clearance (D)	: 53.7 mm (2.114 in)

7. Tighten wiper arm nuts to specification. Refer to [WW-69, "Exploded View"](#).
8. Attach wiper arm caps.

ADJUSTMENT

To adjust the wiper arm stop location, the wiper arm must be removed and installed. Refer to [WW-73, "FRONT WIPER ARMS : Removal and Installation"](#).

FRONT WIPER DRIVE ASSEMBLY

FRONT WIPER DRIVE ASSEMBLY : Removal and Installation

INFOID:000000005439423

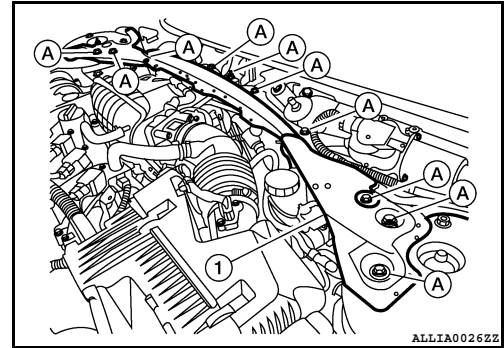
REMOVAL

1. Turn wiper switch ON to operate wiper motor, and then turn wiper switch OFF (auto stop).

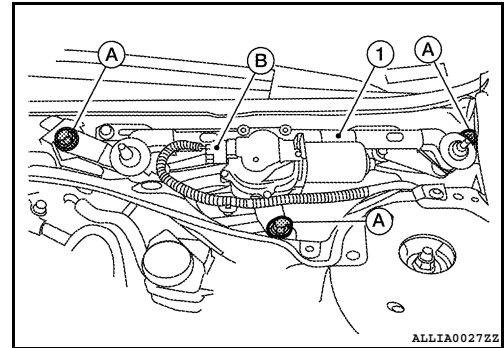
FRONT WIPER

< ON-VEHICLE REPAIR >

2. Remove wiper arms. Refer to [WW-73. "FRONT WIPER ARMS : Removal and Installation"](#).
3. Remove the cowl top cover. Refer to [EXT-18. "Removal and Installation"](#).
4. Remove the strut brace bolts (A), detach the wiper drive assembly harness clips, then remove the strut brace (1).

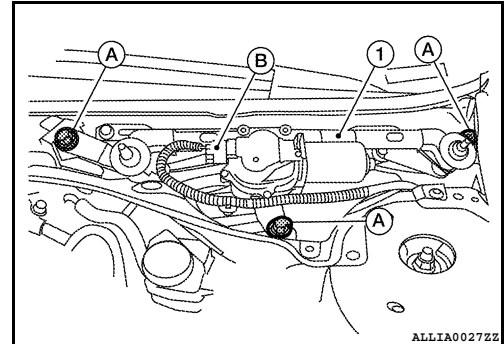


5. Detach the wiper drive harness clip from the wiper drive assembly frame.
6. Remove the front wiper drive assembly bolts (A), disconnect the wiper drive motor connector (B) and remove the front wiper drive assembly (1).

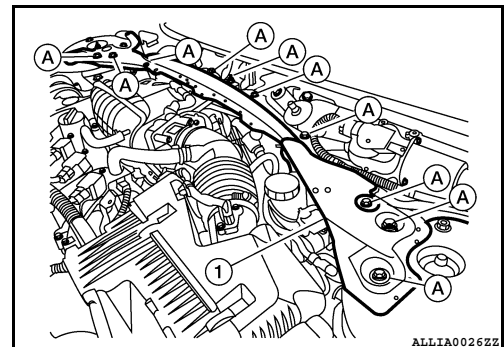


INSTALLATION

1. Install the front wiper drive assembly (1), connect the wiper drive motor connector (B) and install the front wiper drive assembly bolts (A).



2. Turn wiper switch ON to operate wiper motor, then turn wiper switch OFF (auto stop).
3. Attach the wiper drive harness clip to the wiper drive assembly frame.
4. Install the strut brace (1), then attach the wiper drive assembly harness clips and install the strut brace bolts (A).



5. Install the cowl top cover. Refer to [EXT-18. "Removal and Installation"](#).
6. Attach the wiper arms and adjust the wiper arm stop location. Refer to [WW-73. "FRONT WIPER ARMS : Removal and Installation"](#).

FRONT WASHER

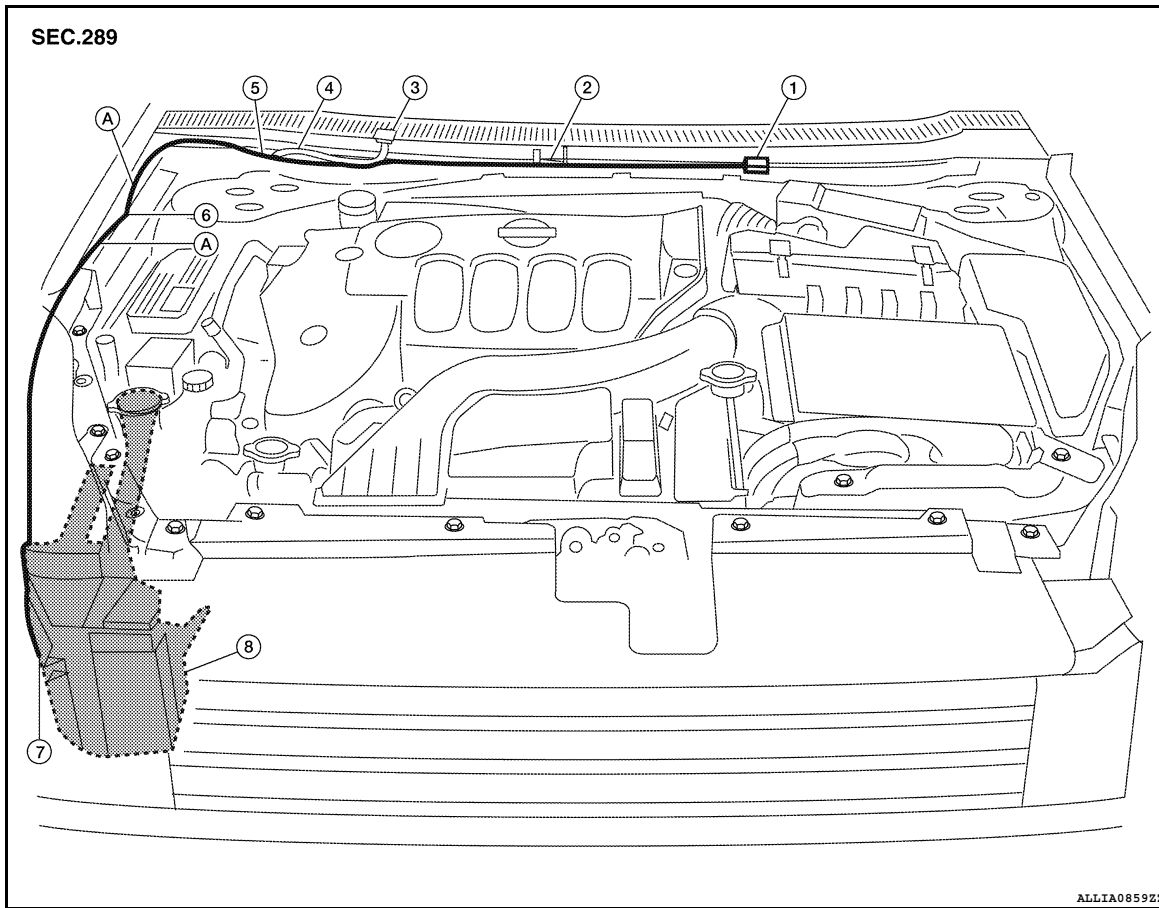
< ON-VEHICLE REPAIR >

FRONT WASHER

WASHER TUBE

WASHER TUBE : Layout

INFOID:000000005439424



- | | | |
|--------------------------|--------------------------|---------------------|
| 1. Washer nozzle LH | 2. Washer nozzle hose LH | 3. Washer nozzle RH |
| 4. Washer nozzle hose RH | 5. Y-tube connector | 6. Clip |
| 7. Washer tank hose | 8. Washer tank | A. Tube connectors |

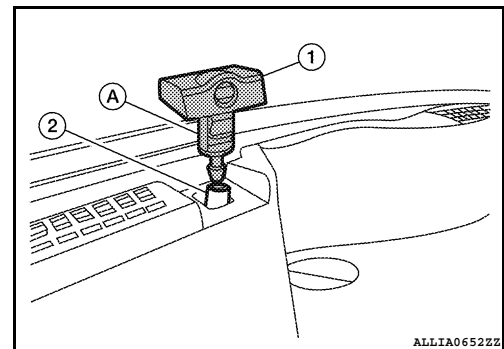
FRONT WASHER NOZZLE

FRONT WASHER NOZZLE : Removal and Installation

INFOID:000000005439425

REMOVAL

1. Remove the cowl top cover. Refer to [EXT-18, "Removal and Installation"](#).
2. Push washer nozzle tab (A), to release the washer nozzle (1) from the cowl top cover, then disconnect the washer nozzle hose (2) from the washer nozzle (1).



INSTALLATION

A
B
C
D
E
F
G
H
I
J
K

WW

M
N
O
P

FRONT WASHER

< ON-VEHICLE REPAIR >

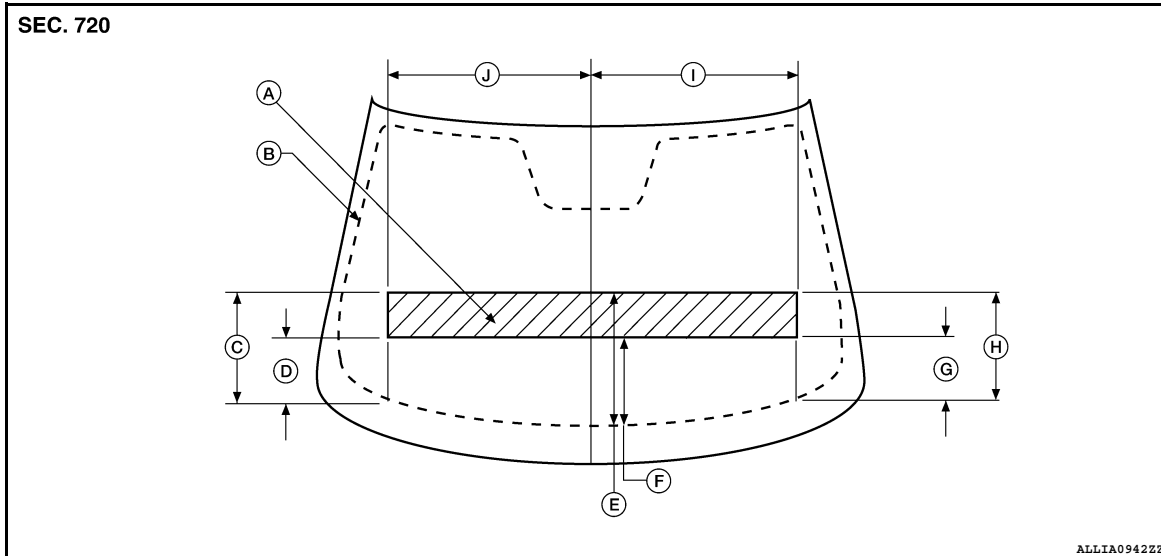
Installation is in the reverse order of removal.

- Adjust the washer nozzle spray position on windshield. Refer to [WT-60, "Adjustment"](#).

FRONT WASHER NOZZLE : Adjustment

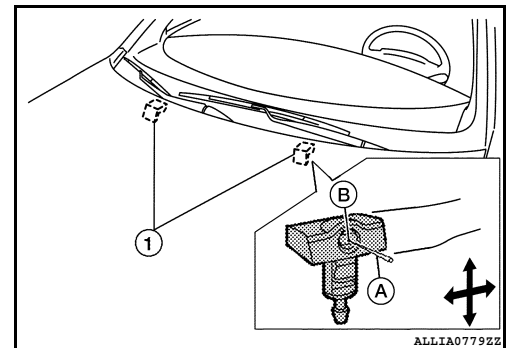
INFOID:000000005809611

Adjust spray positions to match the dimensions as shown.



- | | | |
|-----------------------|----------------------|----------------------|
| A. Aiming target zone | B. Black print edge | C. 210 mm (8.27 in) |
| D. 80 mm (3.15 in) | E. 276 mm (10.87 in) | F. 148 mm (5.83 in) |
| G. 70 mm (2.76 in) | H. 200 mm (7.87 in) | I. 580 mm (22.83 in) |
| J. 550 mm (21.65 in) | | |

Insert a suitable tool (A) into the nozzle hole (B) and move up/down and left/right to adjust the spray position of the nozzle (1).



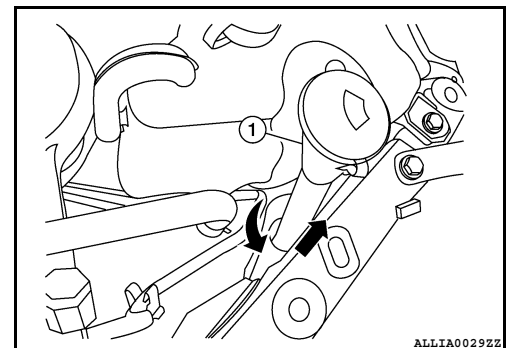
WASHER TANK

WASHER TANK : Removal and Installation

INFOID:000000005439427

REMOVAL

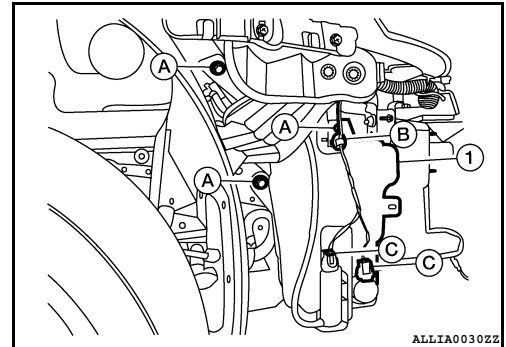
- Remove the washer tank filler tube (1).



FRONT WASHER

< ON-VEHICLE REPAIR >

2. Remove engine under cover.
3. Position the RH fender protector back. Refer to [EXT-19, "Removal and Installation"](#).
4. Disconnect the washer pump and washer fluid level sensor connectors (C), then detach the connector harness clip (B).
5. Remove the washer tank nuts (A), disconnect the washer pump hose and remove the washer tank (1).



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

After installation, add water up to the upper level of washer tank inlet, and check for water leaks.

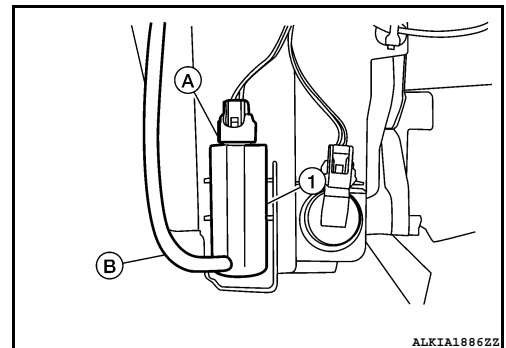
FRONT WASHER PUMP

FRONT WASHER PUMP : Removal and Installation

INFOID:000000005809577

REMOVAL

1. Position the RH fender protector back. Refer to [EXT-19, "Removal and Installation"](#).
2. Disconnect the front washer pump connector (A) and washer pump hose (B).
3. Remove the front washer pump (1).



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

After installation, add Nissan specified fluid up to the upper level of washer tank inlet, and check for leaks. Refer to [MA-11, "Fluids and Lubricants"](#)

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

WW

FRONT WIPER AND WASHER SWITCH

< ON-VEHICLE REPAIR >

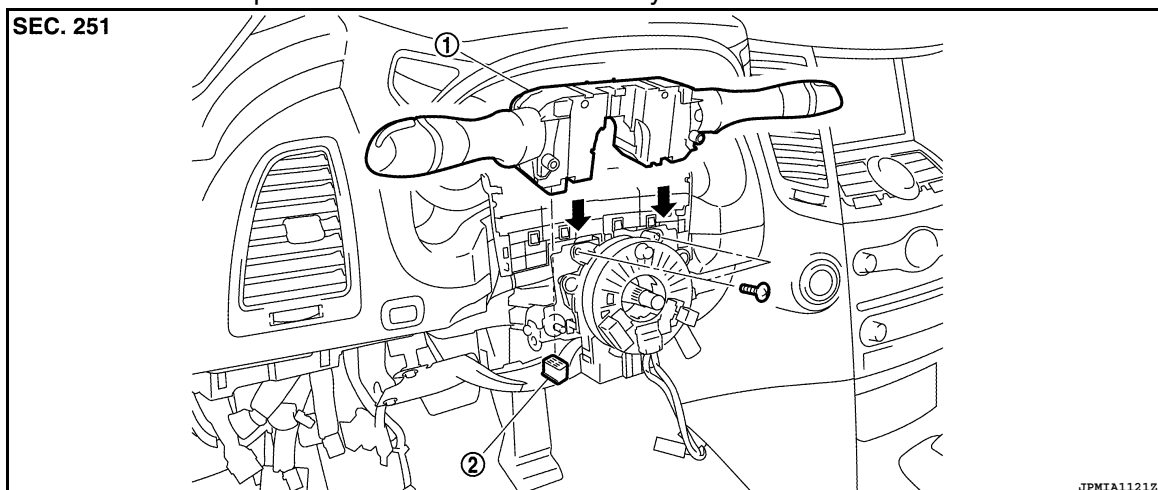
FRONT WIPER AND WASHER SWITCH

Removal and Installation

INFOID:000000005818913

NOTE:

The wiper washer switch is part of the combination assembly.



1. Combination switch
2. Combination switch connector

NOTE:

Shown with steering wheel removed for clarity only.

REMOVAL

1. Unlock steering wheel.
2. Disconnect battery.

CAUTION:

- Before servicing, disconnect both battery terminals and wait at least three minutes.
- Do not use air tools or electric tools for servicing.
- After the work is completed, make sure no system malfunction is detected by air bag warning lamp.
- In case a malfunction is detected by the air bag warning lamp, reset with the self-diagnosis function and delete the memory with CONSULT-III.
- If a malfunction is still detected after the above operation, perform self-diagnosis to repair malfunctions. Refer to [SRC-12, "SRS Operation Check"](#).

3. Remove steering column covers. Refer to [IP-10, "Exploded View"](#).
4. Rotate steering wheel clockwise to access first combination switch mounting bolt. Remove bolt.
5. Rotate steering wheel counter-clockwise to access second combination switch mounting bolt. Remove bolt, disconnect electrical connectors and combination switch.

INSTALLATION

Installation is in the reverse order of removal.

WASHER LEVEL SWITCH

< ON-VEHICLE REPAIR >

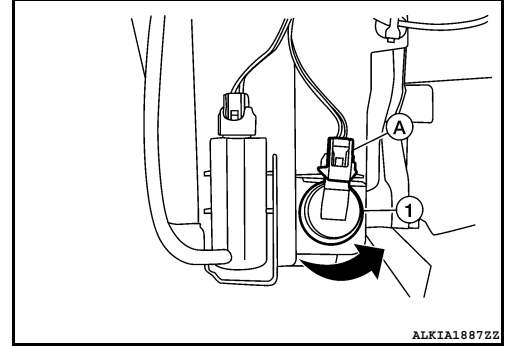
WASHER LEVEL SWITCH

Removal and Installation

INFOID:000000005809578

REMOVAL

1. Position the RH fender protector back. Refer to [EXT-19, "Removal and Installation"](#).
2. Disconnect the front washer level switch connector (A).
3. Rotate washer level switch (1) counterclockwise and remove.



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

After installation, add Nissan specified fluid up to the upper level of washer tank inlet, and check for leaks. Refer to [MA-11, "Fluids and Lubricants"](#).

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