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SECTION **WW**

WIPER & WASHER

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PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000007705964

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

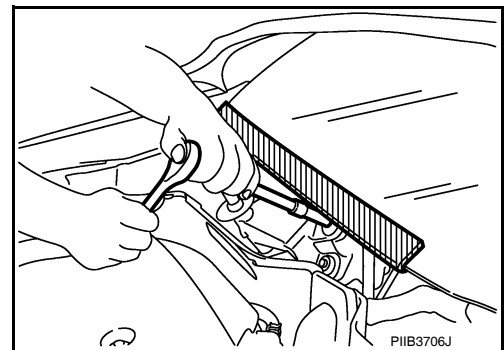
WARNING:

- 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.

Precaution for Procedure without Cowl Top Cover

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



PREPARATION

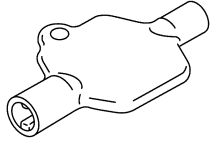
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PREPARATION

PREPARATION

Commercial Service Tool

INFOID:000000007206716

Tool name	Description
<p data-bbox="191 411 435 441">Washer nozzle adjuster.</p>  <p data-bbox="776 630 857 646">JSLIA0149ZZ</p>	<p data-bbox="928 411 1182 441">Adjusting washer nozzle.</p>

COMPONENT PARTS

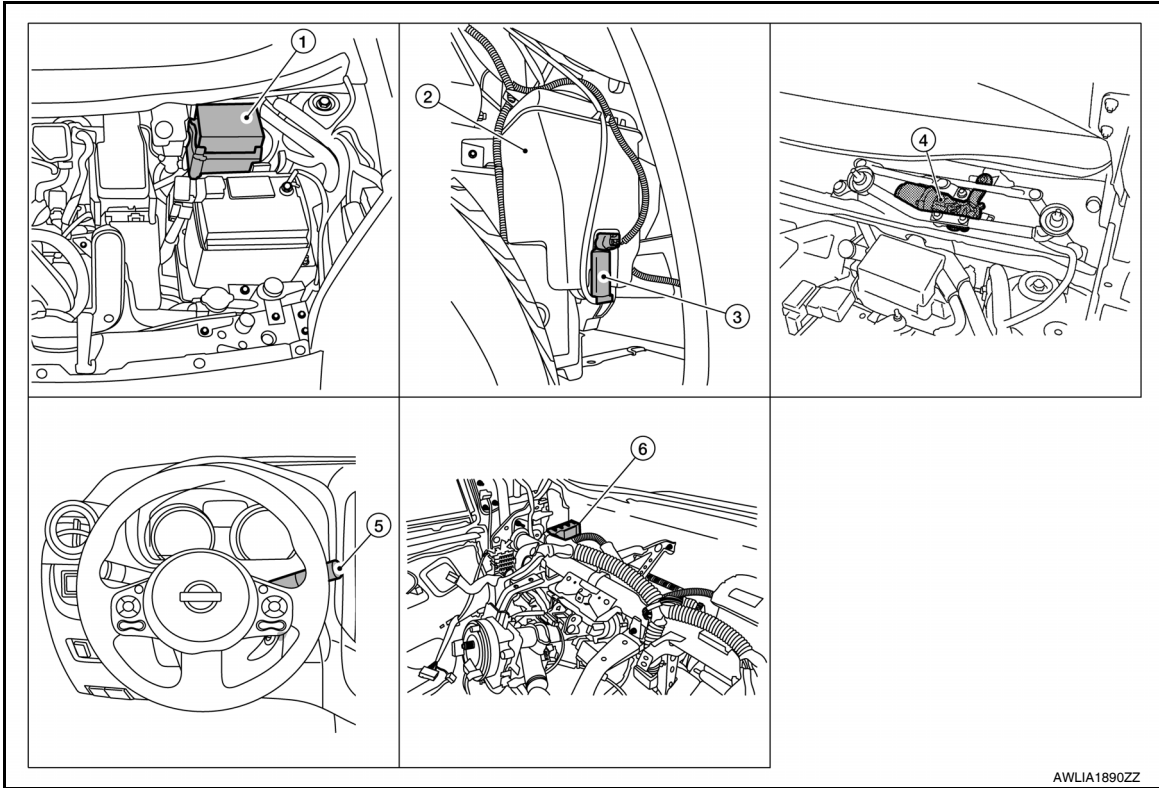
< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

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AWLIA1890ZZ

- | | | |
|--|--|--|
| 1. IPDM E/R | 2. Windshield washer tank
(view with RF fender protector removed) | 3. Front washer motor
(view with RF fender protector removed) |
| 4. Front wiper motor
(view with cowl top removed) | 5. Combination switch (wiper and washer switch) | 6. BCM
(view with instrument panel removed) |

Component Description

INFOID:000000007697698

WW

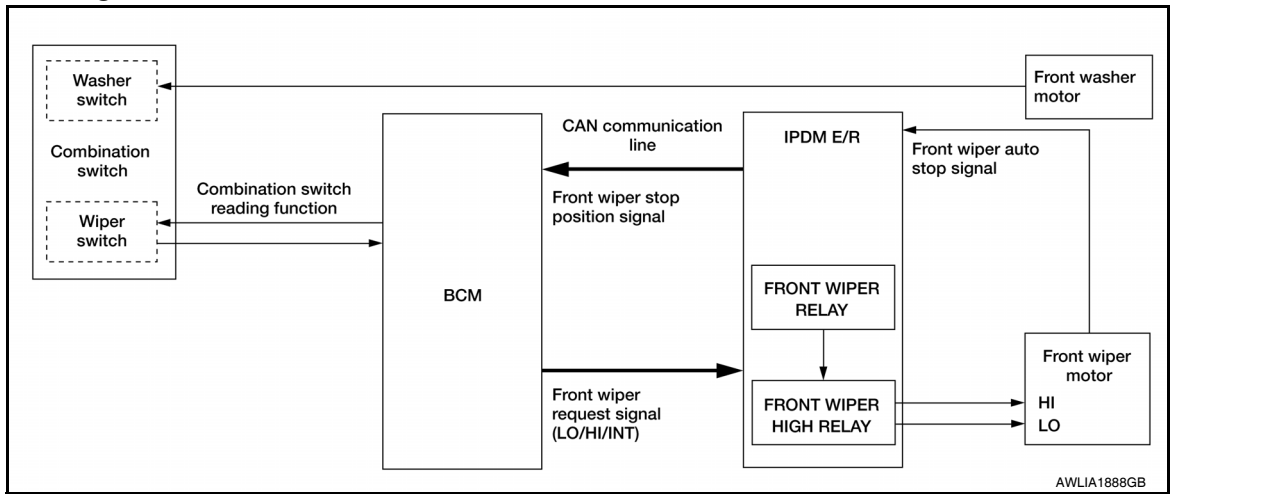
Component	Function
BCM	<ul style="list-style-type: none"> Monitors combination switch status by performing the combination switch reading function. Sends front wiper relay and front wiper high relay ON signals to IPDM E/R.
IPDM E/R	<ul style="list-style-type: none"> Controls front wiper relay and front wiper high relay. Performs the auto stop control of the front wiper.
Combination switch (Wiper and washer switch)	<ul style="list-style-type: none"> Provides input for wiper and washer control to BCM. Refer to WW-6, "System Description" for more information.
Front wiper motor	<ul style="list-style-type: none"> Drives windshield wipers in HI or LO mode. Sends wiper stop signal to IPDM E/R.
Front washer motor	Pumps windshield washer fluid to windshield in wash mode.

SYSTEM

< SYSTEM DESCRIPTION >

SYSTEM

System Diagram



System Description

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FRONT WIPER CONTROL (BASIC)

1. BCM detects the combination switch position by the combination switch reading function.
2. BCM transmits the front wiper request signal to the IPDM E/R using CAN communication.
3. IPDM E/R controls the integrated front wiper relay and front wiper high relay based on the status of the front wiper request signal.
4. IPDM E/R provides power to operate the front wiper motor.

LOW SPEED OPERATION

1. Ignition switch ON.
2. Front wiper switch in LO or MIST position.
3. BCM reads the combination switch position and transmits the front wiper request signal (LO) to IPDM E/R using CAN communication.
4. IPDM E/R turns ON the front wiper relay.

HIGH SPEED OPERATION

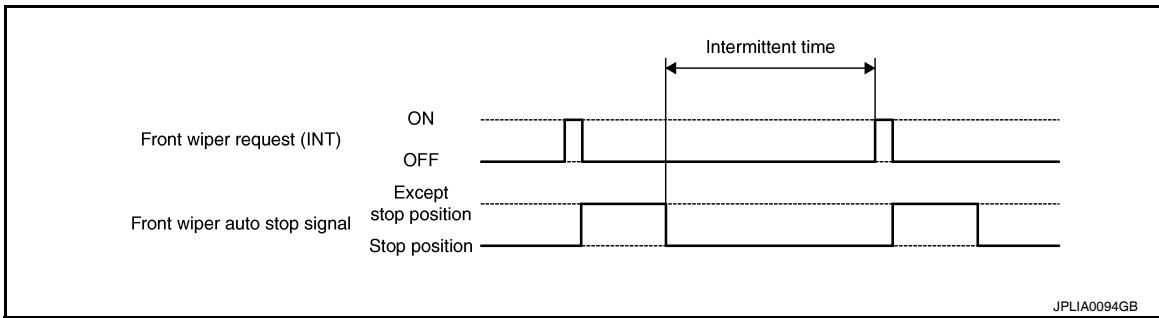
1. Ignition switch ON.
2. Front wiper switch in HI.
3. BCM reads the combination switch position and transmits the front wiper request signal (HI) to IPDM E/R using CAN communication.
4. IPDM E/R turns ON the front wiper relay and the front wiper high relay.

INTERMITTENT OPERATION

1. Ignition switch ON.
2. Front wiper switch INT.
3. BCM reads the combination switch position. BCM calculates the delay interval based on the table below and then transmits the front wiper request signal (INT) to IPDM E/R using CAN communication.
4. IPDM E/R turns ON the front wiper relay only once.
5. BCM detects stop position of the front wiper motor based on the front wiper stop position signal received from the IPDM E/R.
6. BCM transmits the front wiper request signal (INT) again after the delay interval.

SYSTEM

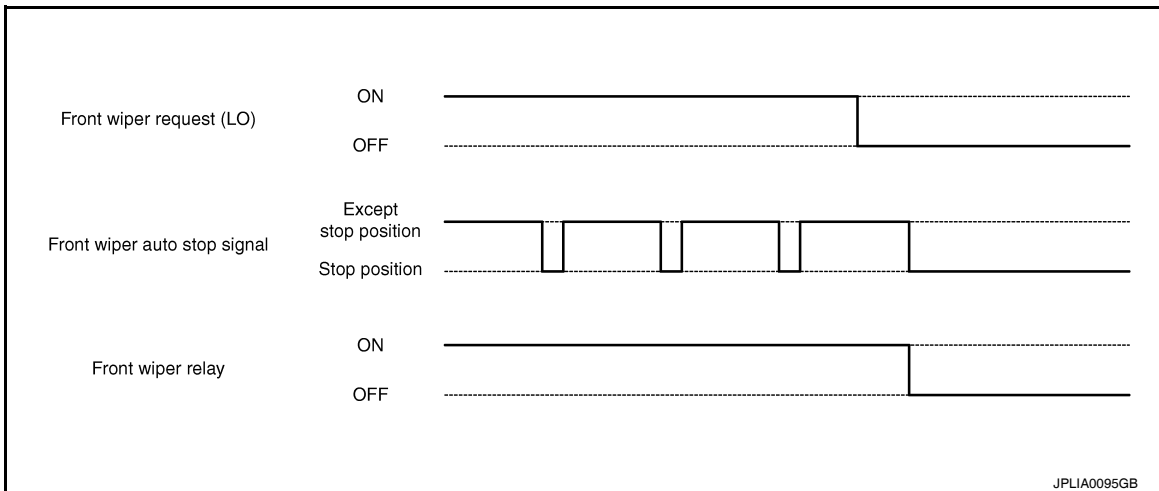
< SYSTEM DESCRIPTION >



Intermittent switch position	Length of delay	Delay interval (s)
7	Short ↑ ↓ Long	0.4
6		1
5		2
4		3
3		5
2		10
1		16

AUTO STOP OPERATION

1. Front wiper switch is turned OFF.
2. BCM monitors wiper switch position by combination switch reading position function.
3. BCM stops transmitting the front wiper request signal to the IPDM E/R.
4. IPDM E/R detects the front wiper auto stop signal from the position of the front wiper motor (stop position/ except stop position).
5. 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.
6. IPDM E/R turns the front wiper relay OFF when the front wiper motor has reached the stop position.



MIST OPERATION

1. Ignition switch ON.
2. Front washer switch in OFF position.
3. Front wiper switch in MIST position.
4. BCM reads the combination switch position and transmits the front wiper request signal (LO) to IPDM E/R using CAN communication.
5. IPDM E/R turns ON the front wiper relay.
6. The front wiper operates once after the front washer operation.

WIPER/WASHER OPERATION

1. Ignition switch ON.

SYSTEM

< SYSTEM DESCRIPTION >

2. Front washer switch ON.
3. The front washer switch provides ground for the front washer motor.
4. BCM reads the combination switch position and transmits the front wiper request signal (LO) to IPDM E/R using CAN communication.
5. BCM transmits the front wiper request signal (LO) to IPDM E/R using CAN communication.
6. IPDM E/R turns ON the front wiper relay.
7. The front wiper operates.

NOTE:

BCM transmits the front wiper request signal (LO) so that the front wiper operates approximately 3 times after front washer switch OFF is detected.

Fail-Safe

INFOID:000000007697701

FAIL-SAFE OPERATION

IPDM E/R performs the fail-safe function when the front wiper auto stop circuit is malfunctioning. Refer to [PCS-14, "Fail-Safe"](#).

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:000000007697729

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

Direct Diagnostic Mode	Description
ECU identification	The BCM part number is displayed.
Self Diagnostic Result	The BCM self diagnostic results are displayed.
Data Monitor	The BCM input/output data is displayed in real time.
Active Test	The BCM activates outputs to test components.
Work support	The settings for BCM functions can be changed.
Configuration	<ul style="list-style-type: none"> • The vehicle specification can be read and saved. • The vehicle specification can be written when replacing BCM.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication is displayed.

SYSTEM APPLICATION

BCM can perform the following functions.

System	Sub System	Direct Diagnostic Mode						
		ECU identification	Self Diagnostic Result	Data Monitor	Active Test	Work support	Configuration	CAN DIAG SUPPORT MNTR
Door lock	DOOR LOCK		×	×	×	×		
Rear window defogger	REAR DEFOGGER			×	×			
Warning chime	BUZZER			×	×			
Interior room lamp timer	INT LAMP			×	×	×		
Remote keyless entry system	MULTI REMOTE ENT			×	×	×		
Exterior lamp	HEAD LAMP			×	×	×		
Wiper and washer	WIPER			×	×	×		
Turn signal and hazard warning lamps	FLASHER			×	×			
Air conditioner	AIR CONDITIONER			×				
Combination switch	COMB SW			×				
BCM	BCM	×	×			×	×	×
Immobilizer	IMMU		×		×	×		
Interior room lamp battery saver	BATTERY SAVER			×	×	×		
Trunk open	TRUNK			×				
RAP system	RETAINED PWR			×		×		
Signal buffer system	SIGNAL BUFFER			×				
TPMS	AIR PRESSURE MONITOR		×	×	×	×		
Panic alarm system	PANIC ALARM				×			

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

WIPER

WIPER : CONSULT Function (BCM - WIPER)

INFOID:000000007697730

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.
IGN SW CAN [On/Off]	Indicates ignition switch ON signal received from IPDM E/R on CAN communication line.
FR WIPER HI [On/Off]	Indicates condition of wiper operation of combination switch.
FR WIPER LOW [On/Off]	
FR WIPER INT [On/Off]	
FR WASHER SW [On/Off]	
INT VOLUME [1 - 7]	Indicates condition of intermittent wiper operation of combination switch.
FR WIPER STOP [On/Off]	Indicates front wiper auto stop signal received from IPDM E/R on CAN communication line.
REVERSE SW CAN [On/Off]	Indicates reverse switch signal received from TCM on CAN communication line.
VEHICLE SPEED [km/h/mph]	Indicates vehicle speed signal received from combination meter on CAN communication line.

ACTIVE TEST

Test Item	Description
FR WIPER	This test is able to check front wiper operation [INT/Lo/Hi/Off].

WORK SUPPORT

Support Item	Setting	Description
WIPER SPEED SETTING	On	Front wiper intermittent time linked with vehicle speed and wiper dial position.
	Off*	Front wiper intermittent time linked with wiper dial position.

* : Initial setting

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (IPDM E/R)

CONSULT Function (IPDM E/R)

INFOID:000000007697731

APPLICATION ITEM

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

Direct Diagnostic Mode	Description
Ecu Identification	The IPDM E/R part number is displayed.
Self Diagnostic Result	The IPDM E/R self diagnostic results are displayed.
Data Monitor	The IPDM E/R input/output data is displayed in real time.
Active Test	The IPDM E/R activates outputs to test components.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication is displayed.

ECU IDENTIFICATION

The IPDM E/R part number is displayed.

SELF DIAGNOSTIC RESULT

Refer to [PCS-15. "DTC Index"](#).

DATA MONITOR

Monitor Item [Unit]	Main Signals	Description
MOTOR FAN REQ [1/2/3/4]	×	Indicates cooling fan speed signal received from ECM on CAN communication line
AC COMP REQ [On/Off]	×	Indicates A/C compressor request signal received from ECM on CAN communication line
TAIL&CLR REQ [On/Off]	×	Indicates position light request signal received from BCM on CAN communication line
HL LO REQ [On/Off]	×	Indicates low beam request signal received from BCM on CAN communication line
HL HI REQ [On/Off]	×	Indicates high beam request signal received from BCM on CAN communication line
FR FOG REQ [On/Off]	×	Indicates front fog light request signal received from BCM on CAN communication line
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Indicates front wiper request signal received from BCM on CAN communication line
WIP AUTO STOP [STOP P/ACT P]	×	Indicates condition of front wiper auto stop signal
WIP PROT [Off/BLOCK]	×	Indicates condition of front wiper fail-safe operation
IGN RLY [On/Off]	×	Indicates condition of ignition relay
INTER/NP SW [On/Off]		Indicates condition of CVT shift position
ST RLY REQ [On/Off]		Indicates starter relay status signal received from BCM on CAN communication line
DTRL REQ [Off]		Indicates daytime light request signal received from BCM on CAN communication line
OIL P SW [Open/Close]		Indicates condition of oil pressure switch
THFT HRN REQ [On/Off]		Indicates theft warning horn request signal received from BCM on CAN communication line
HORN CHIRP [On/Off]		Indicates horn reminder signal received from BCM on CAN communication line

ACTIVE TEST

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DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Test item	Description
HORN	This test is able to check horn operation [On].
FRONT WIPER	This test is able to check wiper motor operation [Hi/Lo/Off].
MOTOR FAN	This test is able to check cooling fan operation [4/3/2/1].
EXTERNAL LAMPS	This test is able to check external lamp operation [Fog/Hi/Lo/TAIL/Off].

CAN DIAG SUPPORT MNTR

Refer to [LAN-11, "CAN Diagnostic Support Monitor"](#).

BCM, IPDM E/R

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION

BCM, IPDM E/R

List of ECU Reference

INFOID:000000007697705

ECU	Reference
BCM	BCS-24, "Reference Value"
	BCS-37, "Wiring Diagram"
	BCS-35, "Fail-safe"
	BCS-35, "DTC Inspection Priority Chart"
	BCS-36, "DTC Index"
IPDM E/R	PCS-10, "Reference Value"
	PCS-16, "Wiring Diagram"
	PCS-14, "Fail-Safe"
	PCS-15, "DTC Index"

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FRONT WIPER AND WASHER SYSTEM

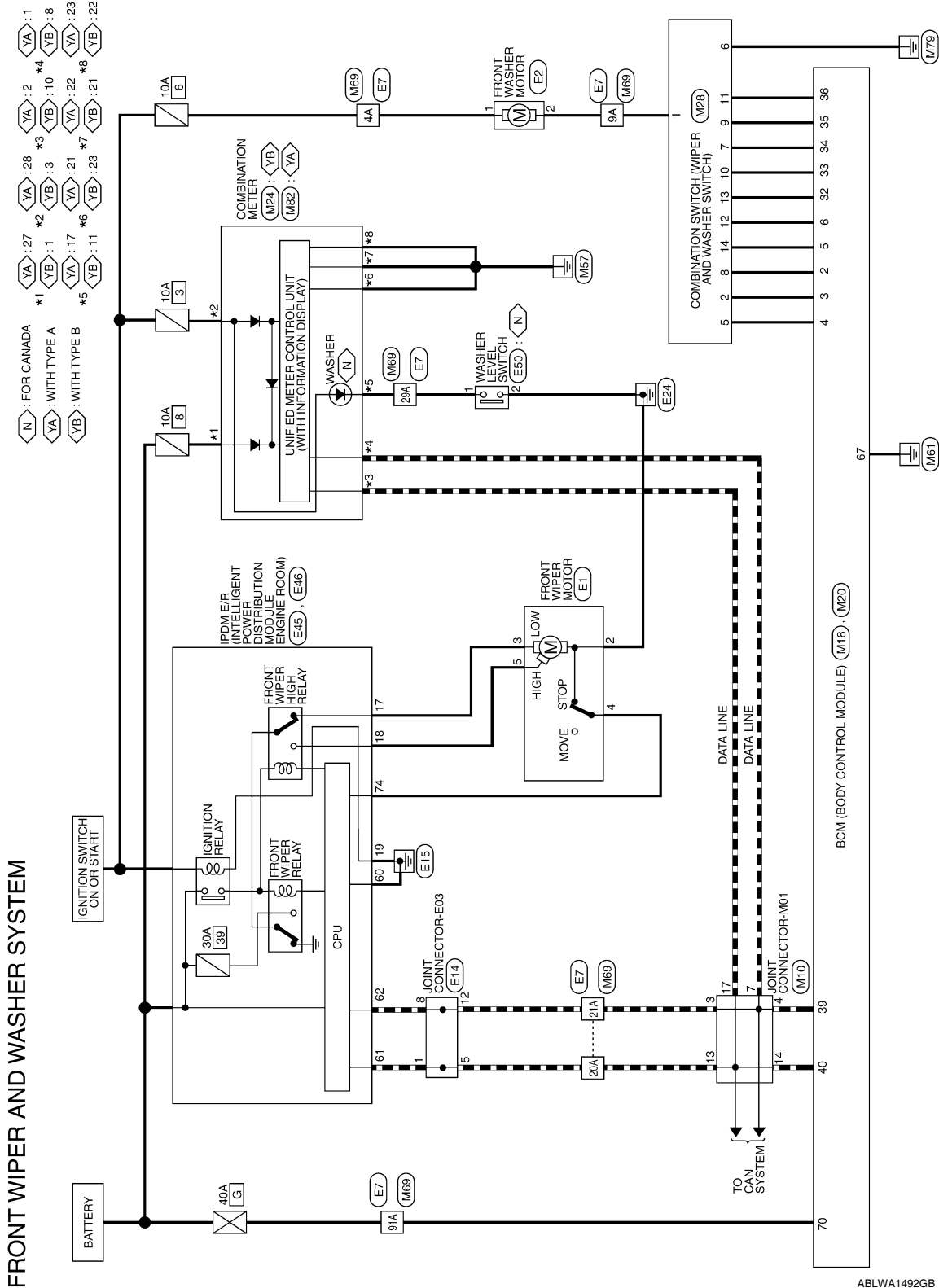
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WIRING DIAGRAM

FRONT WIPER AND WASHER SYSTEM

Wiring Diagram

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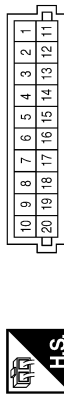
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FRONT WIPER AND WASHER SYSTEM

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FRONT WIPER AND WASHER SYSTEM CONNECTORS

Connector No.	M10
Connector Name	JOINT CONNECTOR-M01
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
3	L	-
4	L	-
7	L	-
13	P	-
14	P	-
17	P	-

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

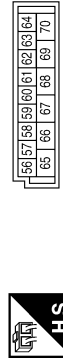


1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
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Terminal No.	Color of Wire	Signal Name
2	BR	INPUT 5
3	Y	INPUT 4
4	L	INPUT 3
5	G	INPUT 2

Terminal No.	Color of Wire	Signal Name
6	R	INPUT 1
32	P	OUTPUT 5
33	V	OUTPUT 4
34	W	OUTPUT 3
35	GR	OUTPUT 2
36	LG	OUTPUT 1
39	L	CAN-H
40	P	CAN-L

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
67	B	GND
70	G	BATTERY (F/L)

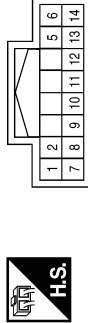
Connector No.	M24
Connector Name	COMBINATION METER (WITH TYPE B)
Connector Color	WHITE



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
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Terminal No.	Color of Wire	Signal Name
1	R	BAT
3	GR	IGN
8	L	CAN-H
10	P	CAN-L
11	V	WASHER SW
21	B	GND (POWER)
22	B	GND (CIRCUIT)
23	B/W	GND (ILL)

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	O	WASH MOTOR
2	Y	OUTPUT 4
5	L	OUTPUT 3
6	B	GND
7	W	INPUT 3
8	BR	OUTPUT 5
9	GR	INPUT 2
10	V	INPUT 4
11	LG	INPUT 1
12	R	OUTPUT 1
13	P	INPUT 5
14	G	OUTPUT 2

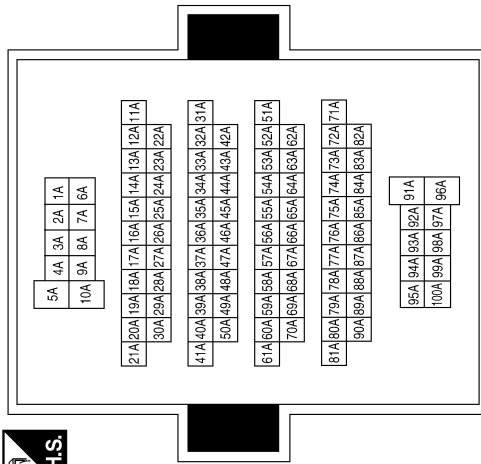
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FRONT WIPER AND WASHER SYSTEM

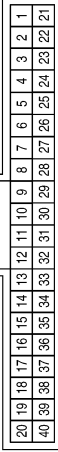
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Connector No.	M69
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
4A	SB	-
9A	L	-
20A	P	-
21A	L	-
29A	V	-
91A	G	-

Connector No.	M82
Connector Name	COMBINATION METER (WITH TYPE A)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	L	CAN-H
2	P	CAN-L
17	V	WASHER SW
21	BW	GND (ILL)
22	B	GND (POWER)
23	B	GND (CIRCUIT)
27	R	BAT
28	GR	IGN

Connector No.	E1
Connector Name	FRONT WIPER MOTOR
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
2	B	-
3	LG	-
4	V	-
5	GR	-

Connector No.	E2
Connector Name	FRONT WASHER MOTOR
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	SB	-
2	Y	-

FRONT WIPER AND WASHER SYSTEM

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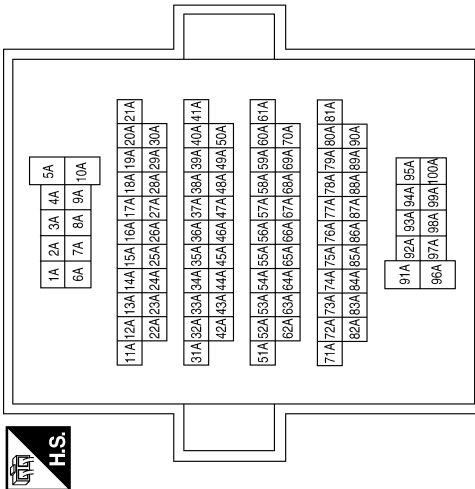
Connector No.	E14
Connector Name	JOINT CONNECTOR-E03
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
1	P	-
5	P	-
8	L	-
12	L	-

Terminal No.	Color of Wire	Signal Name
4A	SB	-
9A	Y	-
20A	P	-
21A	L	-
29A	R	-
91A	Y	-

Connector No.	E7
Connector Name	WIRE TO WIRE
Connector Color	WHITE

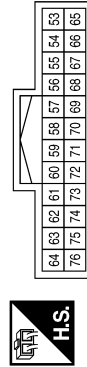


Connector No.	E50
Connector Name	WASHER LEVEL SWITCH
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
1	R	-
2	B	-

Connector No.	E46
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
60	B	GND (SIGNAL)
61	P	CAN-L
62	L	CAN-H
74	V	WIPER AUTOSTOP

Connector No.	E45
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
17	LG	FR WIPER LO
18	GR	FR WIPER HI
19	B	GND (POWER)

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

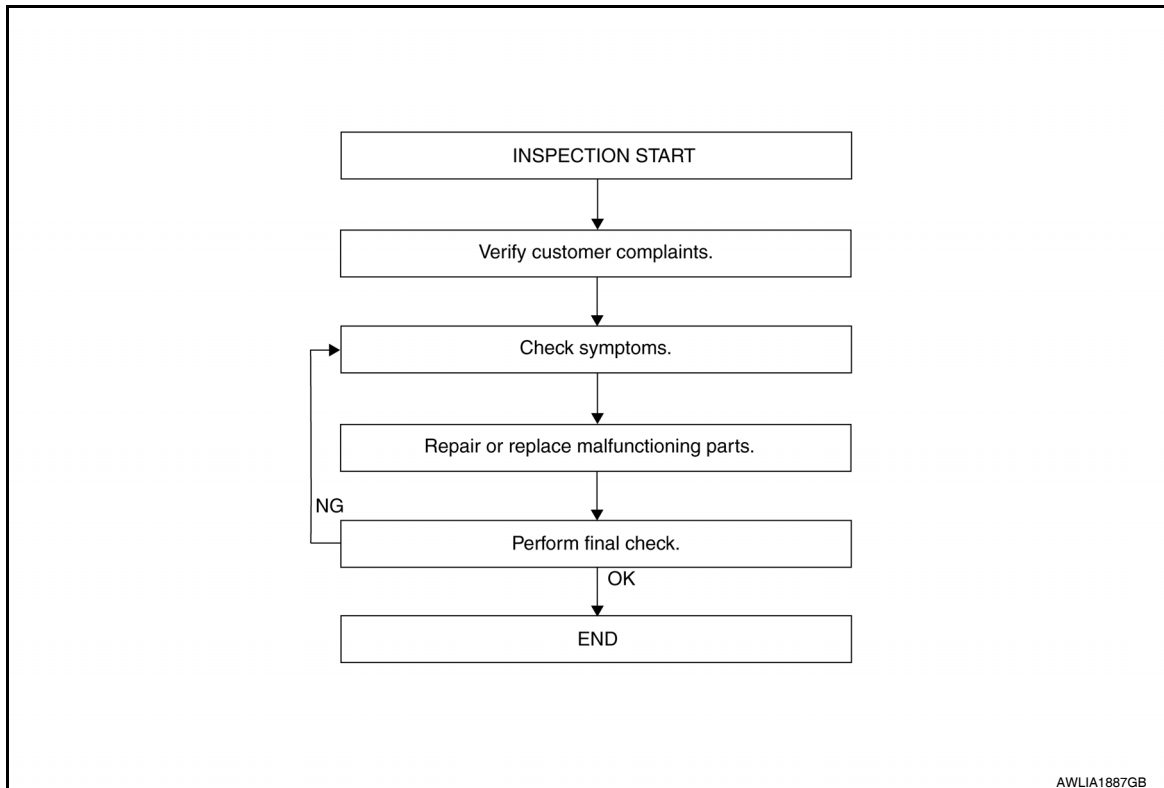
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000007697707

WORK FLOW



DETAILED FLOW

1. REVIEW CUSTOMER COMPLAINT

Review customer complaint. Try to obtain detailed information about the conditions when the symptom occurs.

>> GO TO 2

2. VERIFY THE SYMPTOM

Verify the symptom by performing an operational check. Refer to [WW-6. "System Description"](#).

>> GO TO 3

3. PERFORM TROUBLE DIAGNOSIS BY SYMPTOM

Diagnose the vehicle by performing the appropriate trouble diagnosis. Refer to [WW-30. "Symptom Table"](#).

>> GO TO 4

4. REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace the specific parts.

>> GO TO 5

5. FINAL CHECK

Perform a final inspection of the system.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

Is the inspection result normal?

YES >> Inspection End.

NO >> GO TO 2.

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WIPER AND WASHER FUSE

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

WIPER AND WASHER FUSE

Description

INFOID:000000007697708

Component	Capacity	Fuse No.	Location
Front wiper motor	30 A	39	IPDM E/R
Front washer motor	10 A	6	Fuse block (J/B)

Diagnosis Procedure

INFOID:000000007697709

1. CHECK FUSES

Check that the following fuses are not blown.

Component	Capacity	Fuse No.	Location
Front wiper motor	30 A	39	IPDM E/R
Front washer motor	10 A	6	Fuse block (J/B)

Is the fuse blown?

- YES >> Replace the fuse after repairing the affected circuit.
- NO >> Inspection End.

FRONT WIPER MOTOR LO CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR LO CIRCUIT

Component Function Check

INFOID:000000007697710

1. CHECK FRONT WIPER LO OPERATION

IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-7, "Diagnosis Description"](#).
2. Check that the front wiper operates on LO operation.

CONSULT ACTIVE TEST

1. Select FR WIPER of BCM (WIPER) active test item.
2. Check front wiper operation.

LO : Front wiper (LO) operation

OFF : Front wiper OFF

Is front wiper (LO) operation normal?

- YES >> Front wiper motor LO circuit is normal.
NO >> Refer to [WW-21, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000007697711

Regarding Wiring Diagram information, refer to [WW-14, "Wiring Diagram"](#).

1. CHECK FRONT WIPER MOTOR FUSE

1. Turn the ignition switch OFF.
2. Check that the following fuse is not blown.

Component	Capacity	Fuse No.	Location
Front wiper motor	30 A	39	IPDM E/R

Is the fuse blown?

- YES >> Replace the fuse after repairing the affected circuit.
NO >> GO TO 2

2. CHECK FRONT WIPER MOTOR (LO) OUTPUT VOLTAGE

1. Turn the ignition switch ON.
2. Select FR WIPER of BCM (WIPER) active test item.
3. While performing the active test, check voltage between IPDM E/R harness connector and ground.

Terminals		FRONT WIPER	Voltage (Approx.)
(+)	(-)		
IPDM E/R		LO	Battery voltage
Connector	Terminal		
E45	17		
Ground		OFF	0V

Is the inspection result normal?

- YES >> GO TO 3
NO >> Replace IPDM E/R. Refer to [PCS-25, "Removal and Installation"](#).

3. CHECK FRONT WIPER MOTOR (LO) OPEN CIRCUIT

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

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FRONT WIPER MOTOR LO CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E45	17	E1	3	Yes

Does continuity exist?

- YES >> Replace front wiper motor. Refer to [WW-37, "WIPER DRIVE ASSEMBLY : Removal and Installation"](#).
- NO >> Repair or replace harness.

FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR HI CIRCUIT

Component Function Check

INFOID:000000007697712

1. CHECK FRONT WIPER HI OPERATION

IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-7, "Diagnosis Description"](#).
2. Check that the front wiper operates on HI operation.

CONSULT ACTIVE TEST

1. Select FR WIPER of BCM (WIPER) active test item.
2. Check front wiper operation.

HI : Front wiper (HI) operation

OFF : Front wiper OFF

Is front wiper (HI) operation normal?

- YES >> Front wiper motor HI circuit is normal.
NO >> Refer to [WW-21, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000007697713

Regarding Wiring Diagram information, refer to [WW-14, "Wiring Diagram"](#).

1. CHECK FRONT WIPER MOTOR FUSE

1. Turn the ignition switch OFF.
2. Check that the following fuse is not blown.

Component	Capacity	Fuse No.	Location
Front wiper motor	30 A	39	IPDM E/R

Is the fuse blown?

- YES >> Replace the fuse after repairing the affected circuit.
NO >> GO TO 2

2. CHECK FRONT WIPER MOTOR (HI) OUTPUT VOLTAGE

1. Turn the ignition switch ON.
2. Select FR WIPER of BCM (WIPER) active test item.
3. While performing the active test, check voltage between IPDM E/R harness connector and ground.

Terminals		FRONT WIPER	Voltage (Approx.)
(+)	(-)		
IPDM E/R		HI	Battery voltage
Connector	Terminal		
E45	18		
Ground		OFF	0V

Is the inspection result normal?

- YES >> GO TO 3
NO >> Replace IPDM E/R. Refer to [PCS-25, "Removal and Installation"](#).

3. CHECK FRONT WIPER MOTOR (HI) OPEN CIRCUIT

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

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FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E45	18	E1	5	Yes

Does continuity exist?

- YES >> Replace front wiper motor. Refer to [WW-37, "WIPER DRIVE ASSEMBLY : Removal and Installation"](#).
- NO >> Repair or replace harness.

FRONT WIPER AUTO STOP SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER AUTO STOP SIGNAL CIRCUIT

Component Function Check

INFOID:000000007697714

1. CHECK FRONT WIPER (AUTO STOP) SIGNAL

1. Select FR WIPER STOP of BCM (WIPER) data monitor item.
2. Operate the front wiper.
3. Check that FR WIPER STOP changes from ON to OFF according to the wiper position.

Data monitor	Condition		Status
FR WIPER STOP	Front wiper motor	Stop position	ON
		Except stop position	OFF

Is the inspection result normal?

- YES >> Front wiper auto stop signal circuit is normal.
NO >> Refer to [WW-25. "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000007697715

Regarding Wiring Diagram information, refer to [WW-14. "Wiring Diagram"](#).

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

1. Turn the ignition switch ON.
2. Check voltage between IPDM E/R harness connector and ground.

Terminals		FRONT WIPER	Voltage (Approx.)
(+)	(-)		
IPDM E/R		Ground	Battery voltage
Connector	Terminal		
E46	74		Except stop position
		Stop position	0 V

Is the inspection result normal?

- YES >> Check for intermittent failure.
NO >> GO TO 2

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

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E46	74		No

Does continuity exist?

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

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

Check continuity between IPDM E/R harness connector and front wiper motor harness connector.

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FRONT WIPER AUTO STOP SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E46	74	E1	4	Yes

Does continuity exist?

- YES >> Replace front wiper motor. Refer to [WW-37, "WIPER DRIVE ASSEMBLY : Removal and Installation"](#).
- NO >> Repair or replace harness.

FRONT WIPER MOTOR GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR GROUND CIRCUIT

Diagnosis Procedure

INFOID:000000007697716

Regarding Wiring Diagram information, refer to [WW-14. "Wiring Diagram"](#).

1. CHECK FRONT WIPER MOTOR GROUND 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		
E1	2		Yes

Does continuity exist?

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

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WASHER MOTOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

WASHER MOTOR CIRCUIT

Diagnosis Procedure

INFOID:000000007697717

Regarding Wiring Diagram information, refer to [WW-14. "Wiring Diagram"](#).

1. CHECK FRONT WASHER MOTOR FUSE

1. Turn the ignition switch OFF.
2. Check that the following fuse is not blown.

Component	Capacity	Fuse No.	Location
Front washer motor	10A	6	Fuse block (J/B)

Is the fuse blown?

- YES >> Replace the fuse after repairing the affected circuit.
NO >> GO TO 2.

2. CHECK FRONT WASHER MOTOR POWER SUPPLY

1. Disconnect front washer motor.
2. Turn ignition switch ON.
3. Check voltage between front washer motor harness connector and ground.

Terminals		Voltage (Approx.)
(+)	(-)	
Front washer motor		Ground
Connector	Terminal	
E2	1	
		Battery voltage

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair harness between fuse and front washer motor.

3. CHECK FRONT WASHER MOTOR GROUND CIRCUIT

Check continuity between front washer motor harness connector and ground while operating washer switch.

Front washer motor		Ground	Washer switch	Continuity
Connector	Terminal		ON	Yes
E2	2	OFF	No	

Is the inspection result normal?

- YES >> Replace front washer motor. Refer to [WW-41. "Removal and Installation"](#).
NO >> GO TO 4.

4. CHECK WASHER SWITCH

Check washer switch. Refer to [WW-29. "Component Inspection"](#).

Is the inspection result normal?

- YES >> Repair harness between front washer motor washer switch.
NO >> Replace washer switch. Refer to [WW-46. "Removal and Installation"](#).

WASHER SWITCH

< DTC/CIRCUIT DIAGNOSIS >

WASHER SWITCH

Description

INFOID:000000007697718

- Washer switch is integrated with combination switch.
- Washer switch supplies ground for the front washer motor.

Component Inspection

INFOID:000000007697719

1. CHECK WASHER SWITCH

1. Turn the ignition switch OFF.
2. Disconnect combination switch (wiper and washer switch).
3. Check continuity between the combination switch (wiper and washer switch) terminals.

Combination switch (washer switch)		Condition	Continuity
Terminals			
1	6	Washer switch ON	Yes
		Washer switch OFF	No

Is the inspection result normal?

YES >> Washer switch is normal.

NO >> Replace combination switch (wiper and washer switch). Refer to [WW-46, "Removal and Installation"](#).

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WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

WIPER AND WASHER SYSTEM SYMPTOMS

Symptom Table

INFOID:000000007697720

CAUTION:

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

Symptom		Possible malfunction	Reference
Front wiper does not operate in . . .	HI only	<ul style="list-style-type: none"> • Combination switch (wiper and washer switch) • Harness between combination switch (wiper and washer switch) and BCM • BCM 	Combination switch (wiper and washer switch) Refer to BCS-51, "Symptom Table" .
		<ul style="list-style-type: none"> • IPDM E/R • Harness between IPDM E/R and front wiper motor • Front wiper motor 	Front wiper motor (HI) circuit Refer to WW-23, "Component Function Check" .
		Front wiper request signal (IPDM E/R)	Check FR WIP REQ in DATA MONITOR of IPDM E/R. Refer to PCS-8, "CONSULT Function (IPDM E/R)" .
	LO and INT	<ul style="list-style-type: none"> • Combination switch (wiper and washer switch) • Harness between combination switch (wiper and washer switch) and BCM • BCM 	Combination switch (wiper and washer switch) Refer to BCS-51, "Symptom Table" .
		<ul style="list-style-type: none"> • IPDM E/R • Harness between IPDM E/R and front wiper motor • Front wiper motor 	Front wiper motor (LO) circuit Refer to WW-21, "Component Function Check" .
		Front wiper request signal (IPDM E/R)	Check FR WIP REQ in DATA MONITOR of IPDM E/R. Refer to PCS-8, "CONSULT Function (IPDM E/R)" .
	INT only	<ul style="list-style-type: none"> • Combination switch (wiper and washer switch) • Harness between combination switch (wiper and washer switch) and BCM • BCM 	Combination switch (wiper and washer switch) Refer to BCS-51, "Symptom Table" .
		Front wiper request signal (IPDM E/R)	Check FR WIP REQ in DATA MONITOR of IPDM E/R. Refer to PCS-8, "CONSULT Function (IPDM E/R)" .
	Any mode	—	Refer to WW-32, "Diagnosis Procedure" .
	Front wiper does not stop in . . .	Any mode	Front wiper auto stop signal (IPDM E/R)
<ul style="list-style-type: none"> • Combination switch (wiper and washer switch) • BCM 			Combination switch (wiper and washer switch) Refer to BCS-51, "Symptom Table" .

WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

Symptom		Possible malfunction	Reference
Front wiper operates abnormally because . . .	Intermittent adjustments cannot be made.	<ul style="list-style-type: none"> • Combination switch (wiper and washer switch) • Harness between combination switch (wiper and washer switch) and BCM • BCM 	Combination switch (wiper and washer switch) Refer to BCS-51, "Symptom Table" .
	Wiper/washer will not operate together.	<ul style="list-style-type: none"> • Combination switch (wiper and washer switch) • Harness between combination switch (wiper and washer switch) and BCM • BCM 	Combination switch (wiper and washer switch) Refer to BCS-51, "Symptom Table" .
	Wipers will not return to stop position (repeatedly operates for 10 seconds and then stops for 20 seconds. Wipers then stop operating).	<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-25, "Component Function Check" .
Front washer motor does not operate . . .	When washer switch is pressed.	<ul style="list-style-type: none"> • Low washer fluid • Obstructed or disconnected washer hose or nozzle 	Refer to WW-43, "Exploded View" .
		<ul style="list-style-type: none"> • Front washer motor • Harness between combination switch (wiper and washer switch) and front washer motor 	Refer to WW-28, "Diagnosis Procedure" (washer motor). Refer to WW-29, "Component Inspection" (washer switch).
		Combination switch (wiper and washer switch)	Combination switch (wiper and washer switch) Refer to BCS-51, "Symptom Table" .

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FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

FRONT WIPER DOES NOT OPERATE

Description

INFOID:000000007697721

The front wiper does not operate under any operation conditions.

Diagnosis Procedure

INFOID:000000007697722

Regarding Wiring Diagram information, refer to [WW-14, "Wiring Diagram"](#).

1. CHECK WIPER RELAY OPERATION

⊗ IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-8, "CONSULT Function \(IPDM E/R\)"](#).
2. Check that the front wiper operates on LO and HI operation.

Ⓞ CONSULT ACTIVE TEST

1. Select FR WIPER of BCM (WIPER) active test item.
2. Check front wiper operation.

LO : Front wiper LO operation
HI : Front wiper HI operation
OFF : Front wiper stop

Is the inspection result normal?

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

2. CHECK FRONT WIPER MOTOR FUSE

Refer to [WW-20, "Diagnosis Procedure"](#).

Is the fuse blown?

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

3. CHECK FRONT WIPER MOTOR GROUND CIRCUIT

Refer to [WW-27, "Diagnosis Procedure"](#).

Is the inspection result normal?

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

4. CHECK FRONT WIPER MOTOR OUTPUT VOLTAGE

1. Turn the ignition switch ON.
2. With CONSULT, select FRONT WIPER of IPDM E/R ACTIVE TEST item.
3. Check voltage between IPDM E/R harness connector and ground while wipers are operating.

Terminals		FRONT WIPER	Voltage (Approx.)		
(+)	(-)				
IPDM E/R		Ground			
Connector	Terminal				
E45	17			LO	Battery voltage
	18			OFF	0 V
		HI	Battery voltage		
		OFF	0 V		

FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

Is the inspection result normal?

YES >> Replace front wiper motor. Refer to [WW-37, "WIPER DRIVE ASSEMBLY : Removal and Installation"](#).

NO >> Replace IPDM E/R. Refer to [PCS-25, "Removal and Installation"](#).

5. CHECK FRONT WIPER REQUEST SIGNAL INPUT

1. With CONSULT, select FR WIP REQ in DATA MONITOR of IPDM E/R.
2. Switch the front wiper switch to HI and LO.
3. Check the status of FR WIP REQ while operating the switch.

Data monitor	Condition	Status
FR WIP REQ	Front wiper switch OFF	STOP
	Front wiper switch LO	LOW
	Front wiper switch HI	HI

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to [PCS-25, "Removal and Installation"](#).

NO >> GO TO 6

6. CHECK COMBINATION SWITCH (WIPER AND WASHER SWITCH)

Check combination switch (wiper and washer switch). Refer to [BCS-51, "Symptom Table"](#).

Is the inspection result normal?

YES >> Replace BCM. Refer to [BCS-52, "Removal and Installation"](#).

NO >> Repair or replace the applicable parts.

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NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description

INFOID:000000007697723

FRONT WIPER PROTECTION FUNCTION

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

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

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

NOTE:

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

FRONT WIPER

< REMOVAL AND INSTALLATION >

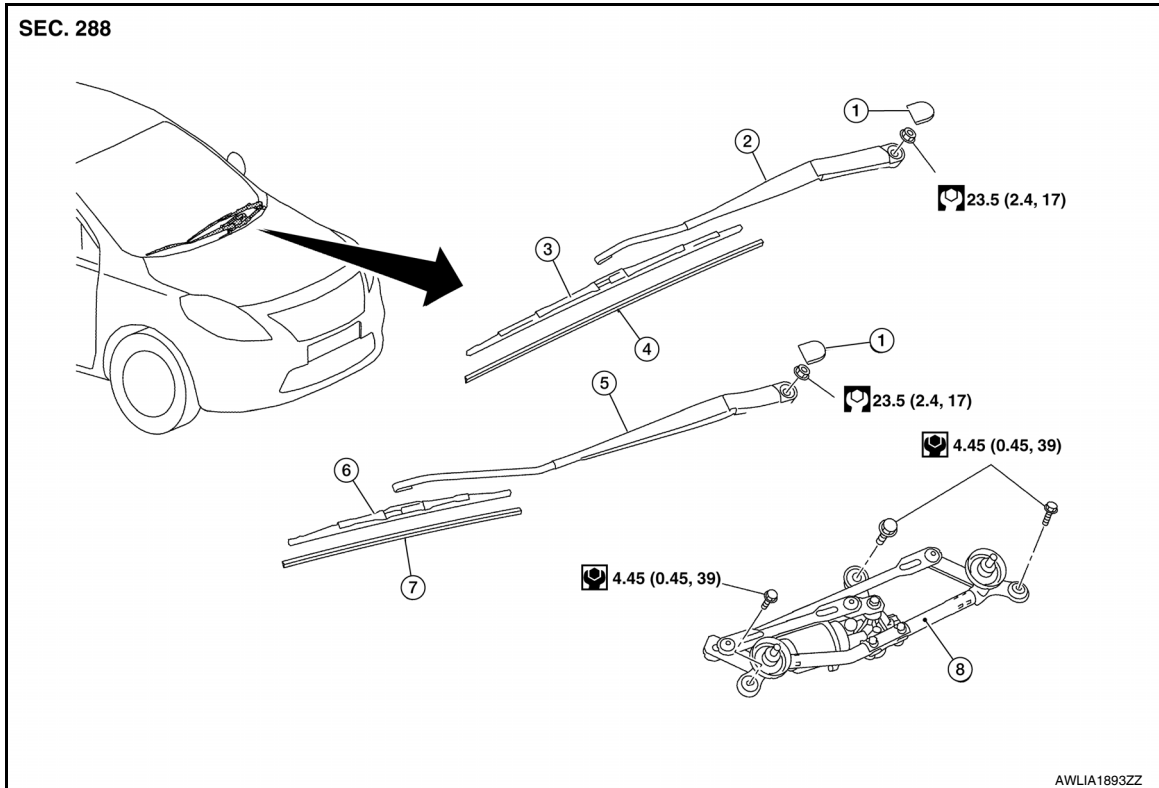
REMOVAL AND INSTALLATION

FRONT WIPER

Exploded View

INFOID:000000007206743

EXPLODED VIEW



- 1. Wiper arm cap
- 4. Wiper refill LH
- 7. Wiper refill RH

- 2. Wiper arm LH
- 5. Wiper arm RH
- 8. Wiper drive assembly

- 3. Wiper blade LH
- 6. Wiper blade RH

WIPER ARM

WIPER ARM : Removal and Installation

INFOID:000000007206744

REMOVAL

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

INSTALLATION

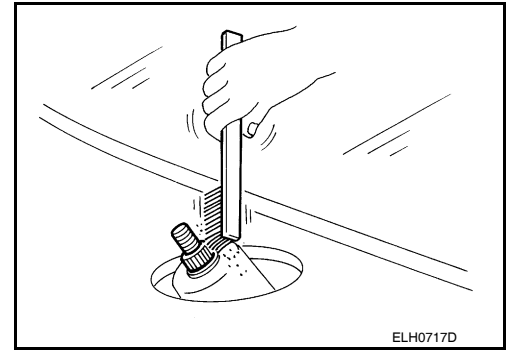
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FRONT WIPER

< REMOVAL AND INSTALLATION >

1. Clean wiper arm mount as shown in the figure to prevent nuts from being loosened.



2. Operate wiper motor to move the wiper to the auto stop position.
3. Install wiper arm to wiper drive assembly. Temporarily tighten nut.
4. Adjust wiper blade position. Refer to [WW-36, "WIPER ARM : Adjustment"](#).
5. Tighten wiper arm nuts to specification.
6. Operate wiper to move it to the auto stop position.

CAUTION:

Before operating wiper, inject washer fluid so that windshield glass damage by wiper operation is prevented.

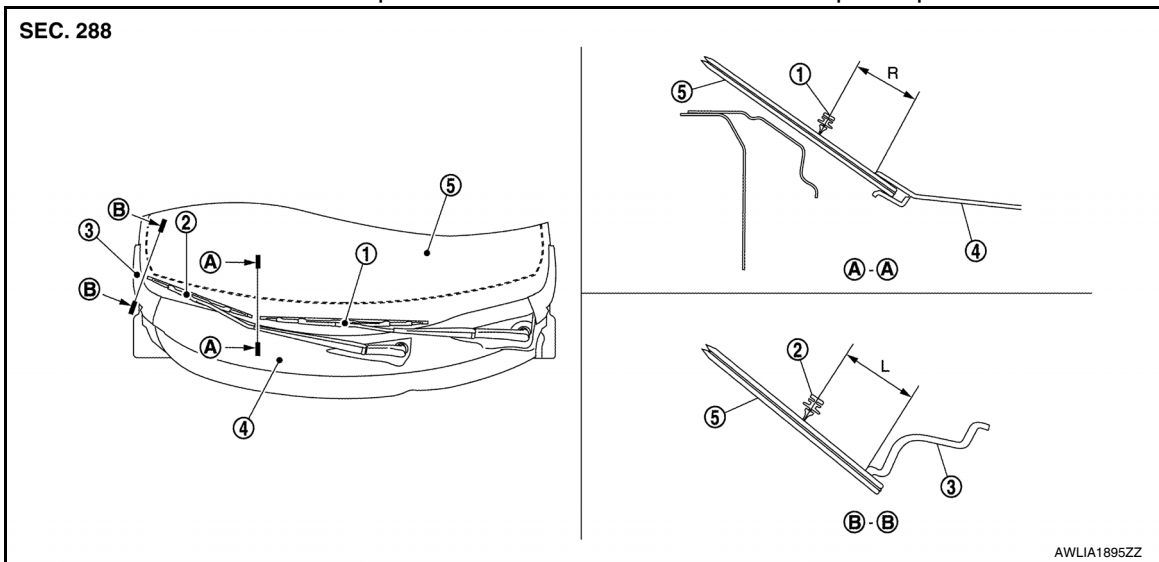
7. Check that wiper blades stop at the specified position.
8. Install wiper arm caps.

WIPER ARM : Adjustment

INFOID:000000007206745

WIPER BLADE POSITION ADJUSTMENT

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



- | | | |
|------------------------------|---------------------------------|--------------------------|
| 1. Wiper blade (driver side) | 2. Wiper blade (passenger side) | 3. Front fender cover RH |
| 4. Cowl top cover | 5. Windshield glass | |

Standard clearance

R : 44.2 ± 7.5 mm (2.642 ± 0.295 in)

L : 67.1 ± 7.5 mm (2.642 ± 0.295 in)

WIPER BLADE

WIPER BLADE : Removal and Installation

INFOID:000000007206746

REMOVAL

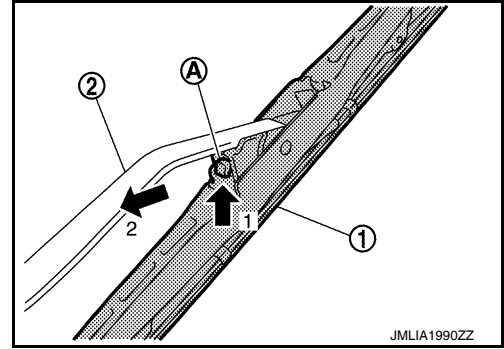
FRONT WIPER

< REMOVAL AND INSTALLATION >

1. Lift up wiper arm, and set to the position where wiper arm can be locked back.
2. Press and hold lever (A) of wiper blade (1). Pull in the direction indicated by the arrow as shown in the figure, and remove wiper blade from wiper arm (2).

CAUTION:

Wrap wiper arm using a shop cloth so that wiper blade does not damage windshield glass.



INSTALLATION

Installation is in the reverse order of removal.

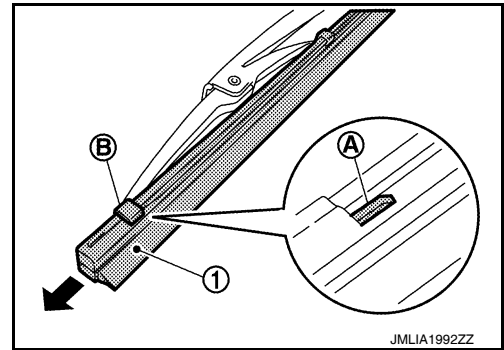
WIPER REFILL

WIPER REFILL : Removal and Installation

INFOID:000000007206747

REMOVAL

1. Remove wiper blade from the wiper arm. Refer to [WW-36, "WIPER BLADE : Removal and Installation"](#).
2. From portion (A) of wiper refill (1), disengage wiper blade portion (B) and remove wiper refill in the direction indicated by the arrow as shown in the figure.



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

- For installation of wiper refill, check that wiper refill was not twisted while installing.
- Check that wiper refill was inserted normally from the correct direction.

WIPER DRIVE ASSEMBLY

WIPER DRIVE ASSEMBLY : Removal and Installation

INFOID:000000007206748

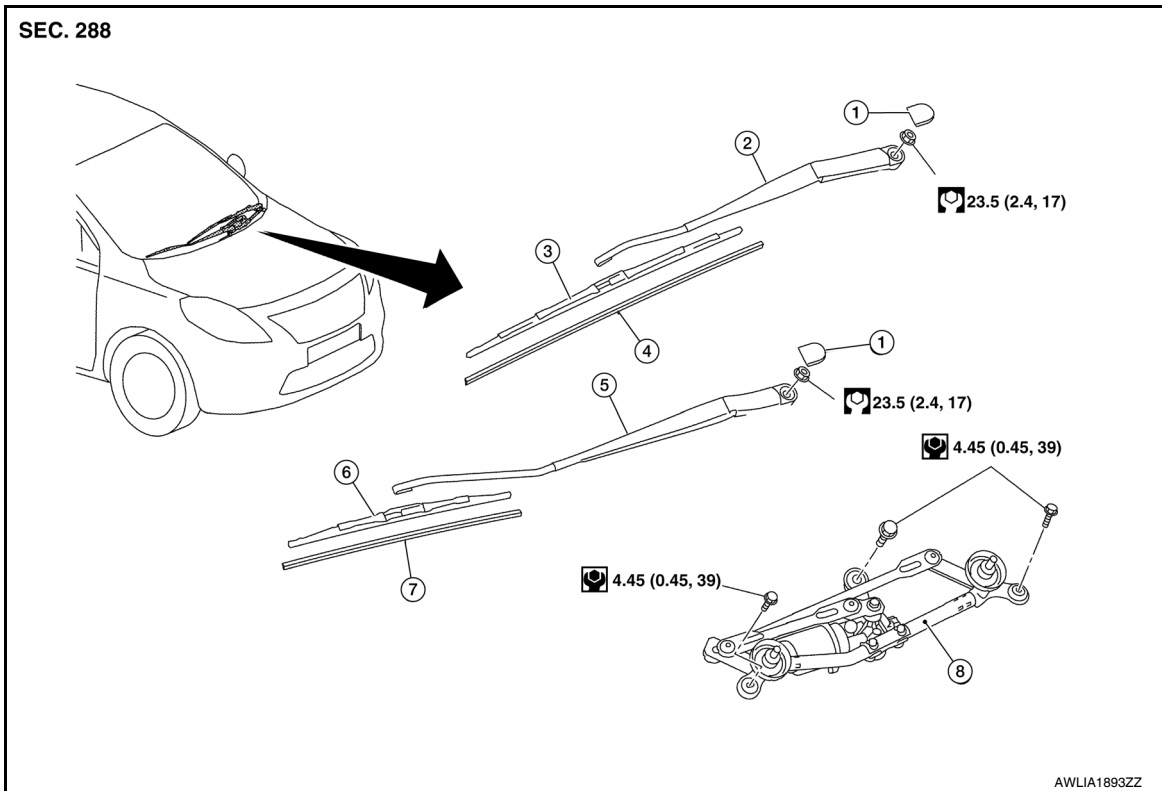
EXPLODED VIEW

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FRONT WIPER

< REMOVAL AND INSTALLATION >



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|--------------------|-------------------------|-------------------|
| 1. Wiper arm cap | 2. Wiper arm LH | 3. Wiper blade LH |
| 4. Wiper refill LH | 5. Wiper arm RH | 6. Wiper blade RH |
| 7. Wiper refill RH | 8. Wiper drive assembly | |

REMOVAL

1. Remove cowl top cover. Refer to [EXT-24, "Removal and Installation"](#).
2. Disconnect wiper motor harness connector.
3. Remove the wiper drive assembly bolts.
4. Remove wiper drive assembly from the vehicle.

INSTALLATION

Installation is in the reverse order of removal.

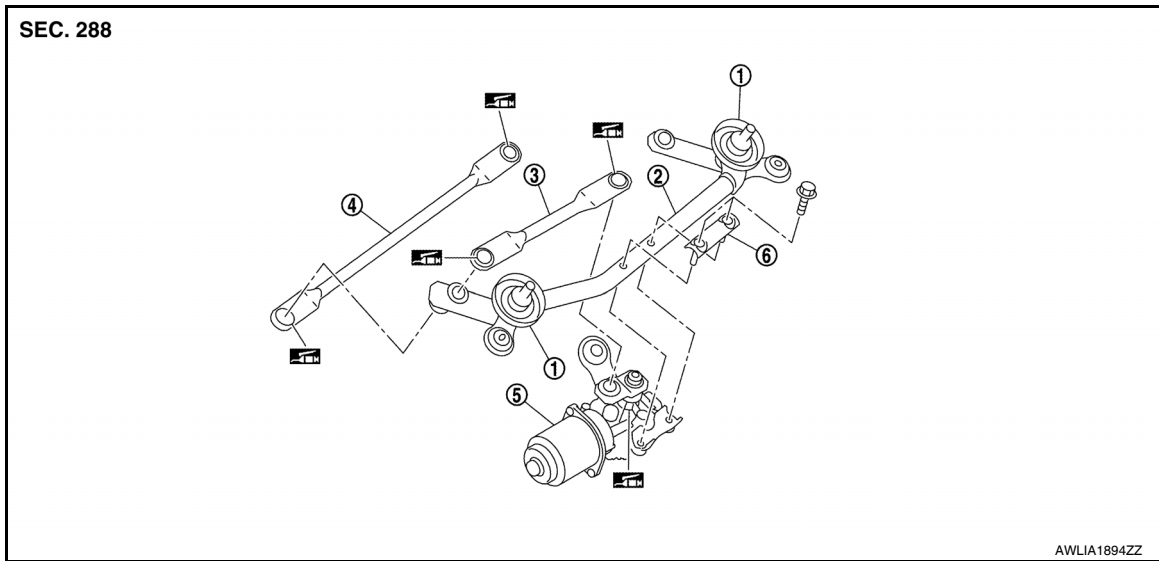
WIPER DRIVE ASSEMBLY : Disassembly and Assembly

INFOID:000000007206749

EXPLODED VIEW

FRONT WIPER

< REMOVAL AND INSTALLATION >



- | | | |
|--------------------|-------------------------|---------------------------------|
| 1. Shaft seal | 2. Wiper frame | 3. Wiper linkage 1 |
| 4. Wiper linkage 2 | 5. Wiper motor assembly | 6. Wiper motor assembly bracket |

DISASSEMBLY

1. Remove wiper linkage 1 and 2 from the wiper frame.

CAUTION:

Never bend the linkage or damage the plastic part of the ball joint when removing the wiper linkage.

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

ASSEMBLY

1. Connect wiper motor connector.
2. Operate wiper to move it to the auto stop position.
3. Disconnect wiper motor connector.
4. Install wiper motor to wiper frame.
5. Install wiper linkage 1 to the wiper motor and the wiper frame.
6. Install wiper linkage 2 to the wiper frame.

CAUTION:

- **Never drop wiper motor or cause it to come into contact with other parts.**
- **Be careful of the grease condition at the wiper motor and wiper linkage joint (retainer). Apply multi-purpose grease or an equivalent if necessary.**

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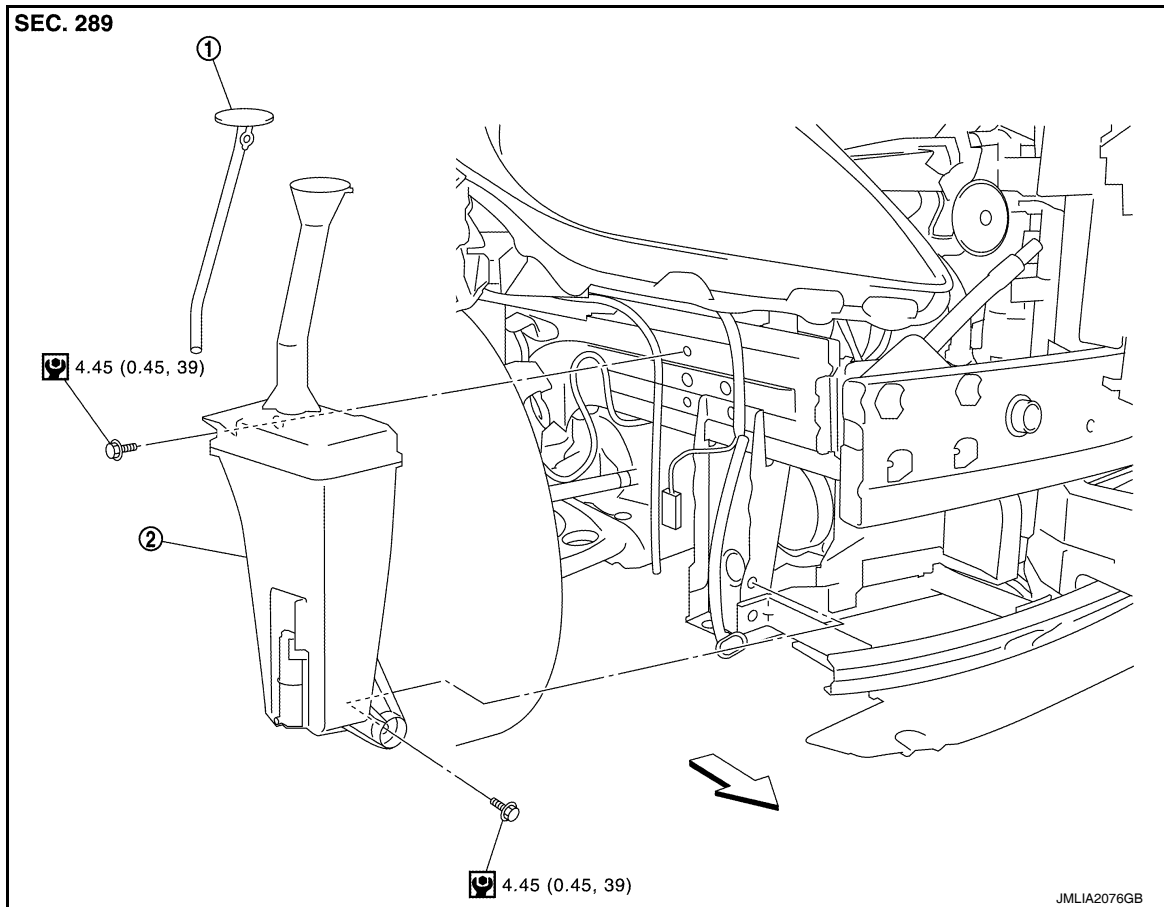
WASHER TANK

< REMOVAL AND INSTALLATION >

WASHER TANK

Exploded View

INFOID:000000007206750



1. Washer tank inlet cap

2. Washer tank assembly

← Vehicle front

Removal and Installation

INFOID:000000007206751

REMOVAL

1. Remove fender protector. Refer to [EXT-26, "Removal and Installation"](#).
2. Remove engine front under cover protector.
3. Disconnect washer pump harness connector.
4. Remove front washer tube.
5. Remove washer tank assembly bolts.
6. Remove washer tank assembly from the vehicle.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

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

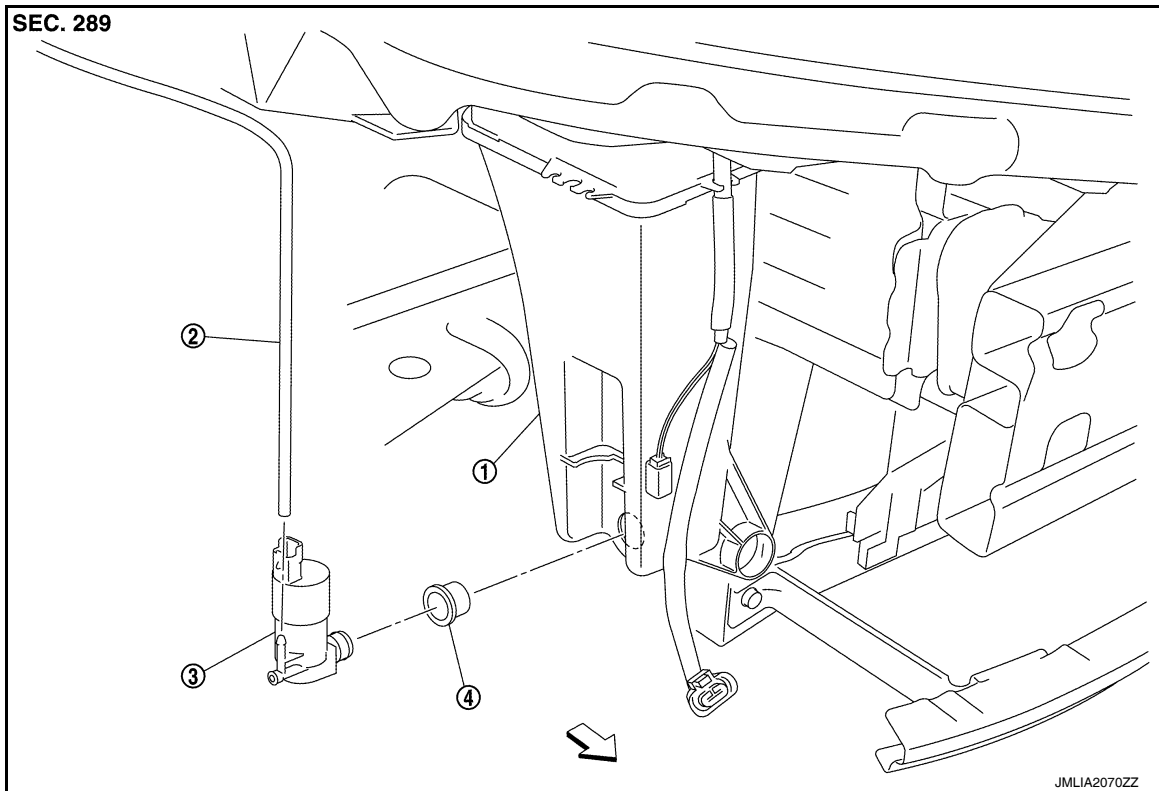
WASHER PUMP

< REMOVAL AND INSTALLATION >

WASHER PUMP

Exploded View

INFOID:000000007206752



- 1. Washer tank
 - 2. Front washer tube
 - 3. Washer pump
 - 4. Packing
- ← Vehicle front

Removal and Installation

INFOID:000000007206753

REMOVAL

1. Remove fender protector. Refer to [EXT-26. "Removal and Installation"](#).
2. Remove front engine protector.
3. Disconnect the washer pump harness connector.
4. Remove front washer tube.
5. Remove washer pump from the washer tank assembly.
6. Remove packing from the washer tank assembly.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Never twist the packing when installing the washer pump.

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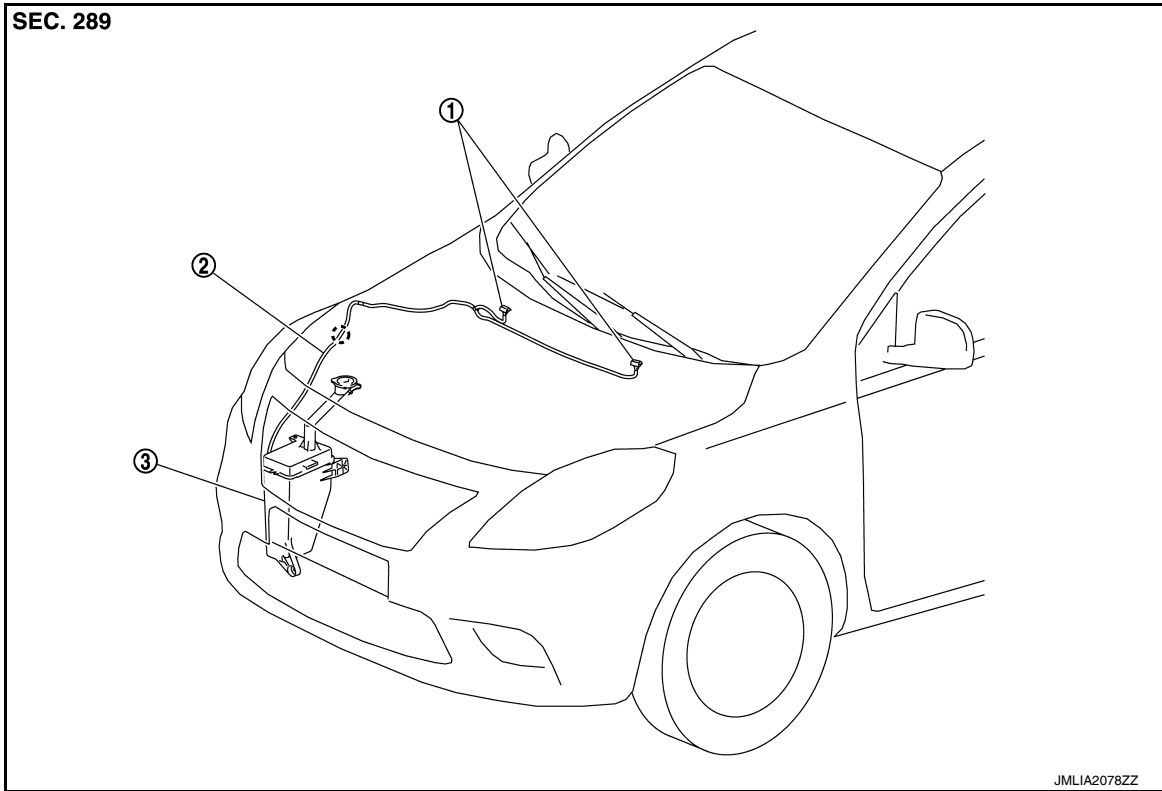
WASHER NOZZLE & TUBE

< REMOVAL AND INSTALLATION >

WASHER NOZZLE & TUBE

Hydraulic Layout

INFOID:000000007206755



1. Front washer nozzle

2. Front washer tube

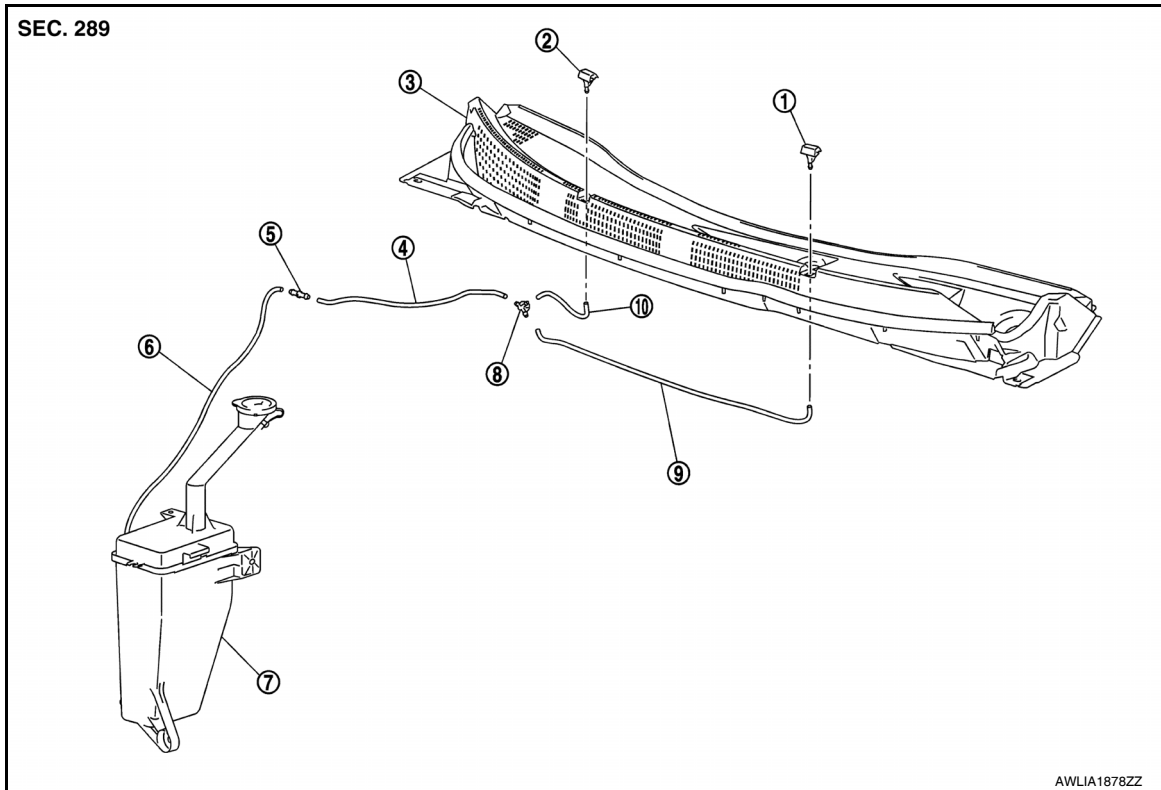
3. Washer tank

WASHER NOZZLE & TUBE

< REMOVAL AND INSTALLATION >

Exploded View

INFOID:000000007206754



- | | | |
|---------------------------|---------------------------|------------------------|
| 1. Front washer nozzle LH | 2. Front washer nozzle RH | 3. Cowl top cover |
| 4. Front washer tube B | 5. Joint | 6. Front washer tube A |
| 7. Washer tank assembly | 8. Check valve | 9. Front washer tube C |
| 10. Front washer tube D | | |

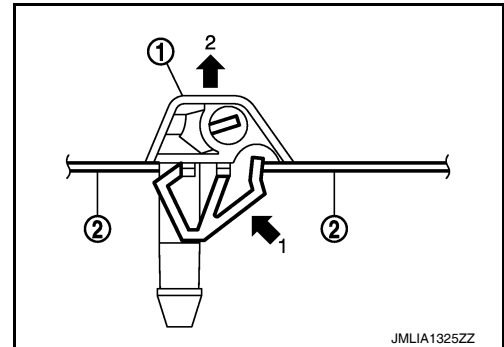
WASHER NOZZLE

WASHER NOZZLE : Removal and Installation

INFOID:000000007206756

REMOVAL

1. Remove cowl top cover. Refer to [EXT-24. "Removal and Installation"](#).
2. Disconnect front washer tube from front washer nozzle (1).
3. Place cowl top cover (2) up side down, then press front washer nozzle pawl to remove in numerical order as shown by the figure.



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

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

WASHER NOZZLE & TUBE

< REMOVAL AND INSTALLATION >

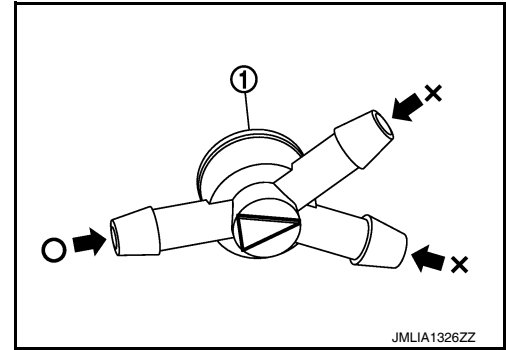
WASHER NOZZLE : Inspection and Adjustment

INFOID:000000007206757

INSPECTION

Check valve Inspection

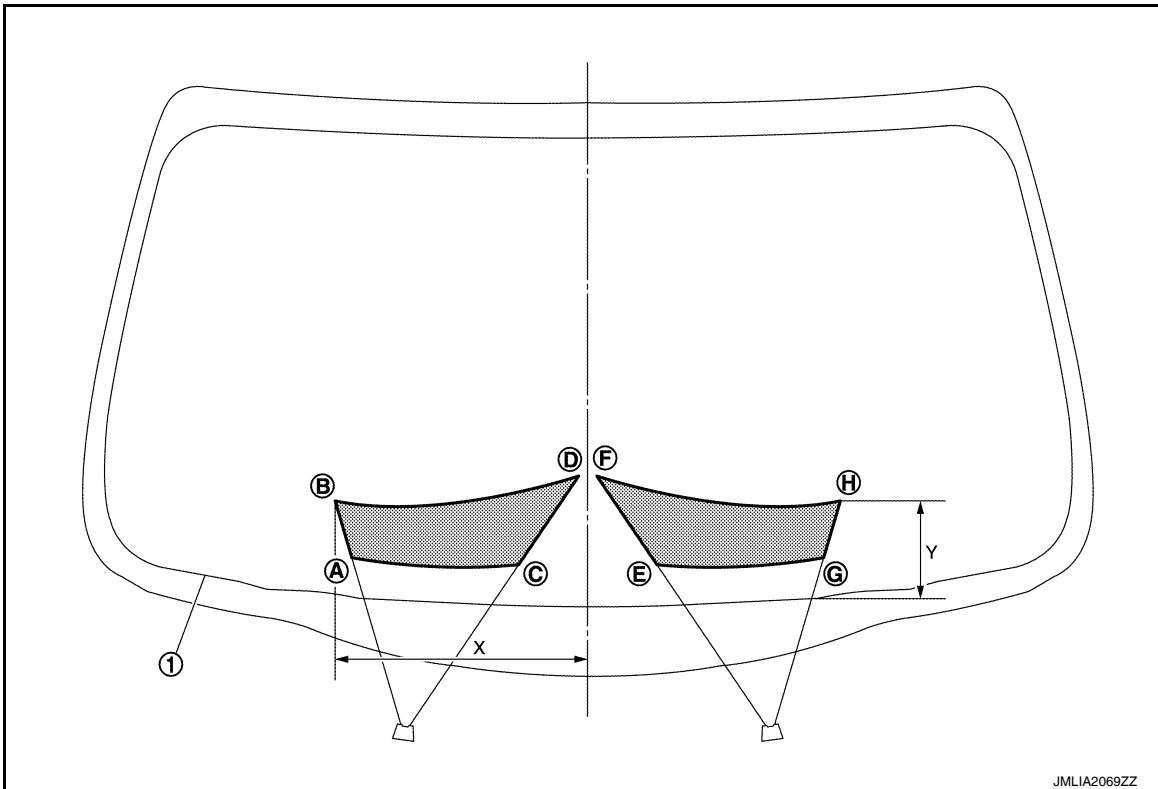
Check that air can pass through the hose of check valve (1) by blowing forward (toward the nozzle), and check that air cannot pass through by sucking.



ADJUSTMENT

Washer Nozzle Spray Position Adjustment

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



1. Black printed frame line

Spray area

Unit: mm (in)

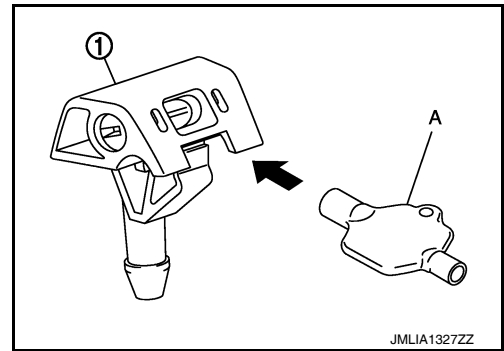
	Passenger side				Driver side			
	A	B	C	D	E	F	G	H
X	321 (12.64)	343 (13.50)	60 (2.36)	5 (0.20)	60 (2.36)	5 (0.20)	321 (12.64)	343 (13.50)
Y	62 (2.44)	129 (5.08)	80 (3.15)	184 (7.24)	80 (3.15)	184 (7.24)	62 (2.44)	129 (5.08)

CAUTION:

WASHER NOZZLE & TUBE

< REMOVAL AND INSTALLATION >

1. If washer nozzle (1) spray pattern is not within specification adjust using suitable tool (A).



CAUTION:

Never use needle or small pin to adjust the washer nozzle.

NOTE:

- Washer nozzle adjuster is included with shipment of washer nozzle.
- If wax or dust gets into the nozzle, remove wax or dust with a needle or small pin.

WASHER TUBE

WASHER TUBE : Removal and Installation

INFOID:000000007206758

REMOVAL

1. Fully open hood.
2. Remove front washer tube from the washer pump. Refer to [WW-40, "Removal and Installation"](#).
3. Remove front washer tube from the front washer nozzle. Refer to [WW-43, "WASHER NOZZLE : Removal and Installation"](#).
4. Remove front washer tube clip. Remove front washer tube from the vehicle.

INSTALLATION

Installation is in the reverse order of removal.

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WW

WIPER AND WASHER SWITCH

< REMOVAL AND INSTALLATION >

WIPER AND WASHER SWITCH

Removal and Installation

INFOID:000000007206759

The wiper and washer switch is integrated in the combination switch. Refer to [EXL-85. "Removal and Installation"](#).

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Specifications

INFOID:000000007706006

WINDSHIELD WASHER FLUID

Windshield washer fluid capacity	4.5 ℓ (4 3/4 US qt, 4 Imp qt)
Windshield washer fluid specification	Refer to MA-12. "Fluids and Lubricants" (United States and Canada), MA-12. "Fluids and Lubricants" (Mexico).

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