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SECTION

WIPER, WASHER & HORN

CONTENTS

<p>PRECAUTION 3</p> <p> Precautions for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" 3</p> <p> Precautions for Battery Service 3</p> <p> Wiring Diagrams and Trouble Diagnosis 3</p> <p>FRONT WIPER AND WASHER SYSTEM 4</p> <p> Components Parts and Harness Connector Location 4</p> <p> System Description 4</p> <p> LOW SPEED WIPER OPERATION 5</p> <p> HI SPEED WIPER OPERATION 5</p> <p> INTERMITTENT OPERATION 5</p> <p> AUTO STOP OPERATION 6</p> <p> WASHER OPERATION 6</p> <p> MIST OPERATION 6</p> <p> FAIL-SAFE FUNCTION 7</p> <p> COMBINATION SWITCH READING FUNCTION... 7</p> <p> CAN Communication System Description 9</p> <p> CAN Communication Unit 9</p> <p> Schematic 10</p> <p> Wiring Diagram — WIPER — 11</p> <p> Terminals and Reference Values for BCM 14</p> <p> Terminals and Reference Values for IPDM E/R 15</p> <p> How to Proceed With Trouble Diagnosis 15</p> <p> Preliminary Check 15</p> <p> CHECK POWER SUPPLY AND GROUND CIRCUIT 15</p> <p> CONSULT-II Functions (BCM) 17</p> <p> CONSULT-II OPERATION 17</p> <p> DATA MONITOR 18</p> <p> ACTIVE TEST 19</p> <p> CONSULT-II Functions (IPDM E/R) 19</p> <p> CONSULT-II OPERATION 19</p> <p> SELF-DIAG RESULTS 20</p> <p> DATA MONITOR 20</p> <p> ACTIVE TEST 21</p> <p> Front Wiper Does Not Operate 21</p> <p> Front Wiper Does Not Return to Stop Position 24</p>	<p> Only Front Wiper LO Does Not Operate 25</p> <p> Only Front Wiper HI Does Not Operate 26</p> <p> Only Front Wiper INT Does Not Operate 27</p> <p> Front Wiper Interval Time Is Not Controlled by Vehicle Speed 27</p> <p> Front Wiper Intermittent Operation Switch Position Cannot Be Adjusted 27</p> <p> Wipers Do Not Wipe When Front Washer Operates.. 27</p> <p> After Front Wipers Operate for 10 Seconds, They Stop for 20 Seconds, and After Repeating the Operations Five Times, They Become Inoperative 28</p> <p> Front Wipers Do Not Stop 29</p> <p> Removal and Installation of Front Wiper Arms, Adjustment of Wiper Arms Stop Location 30</p> <p> REMOVAL 30</p> <p> INSTALLATION 30</p> <p> ADJUSTMENT 30</p> <p> Removal and Installation of Front Wiper Motor and Linkage 30</p> <p> REMOVAL 30</p> <p> INSTALLATION 31</p> <p> Disassembly and Assembly of Front Wiper Motor and Linkage 31</p> <p> DISASSEMBLY 31</p> <p> ASSEMBLY 31</p> <p> Washer Nozzle Adjustment 32</p> <p> Washer Tube Layout 33</p> <p> Removal and Installation of Front Washer Nozzle.. 33</p> <p> Removal and Installation of Front Washer Joint 33</p> <p> Inspection of Check Valve 33</p> <p> Removal and Installation of Front Wiper and Washer Switch 33</p> <p> Removal and Installation of Washer Tank 34</p> <p> REMOVAL 34</p> <p> INSTALLATION 34</p> <p> Removal and Installation of Washer Pump 34</p> <p> REMOVAL 34</p> <p> INSTALLATION 35</p> <p>CIGARETTE LIGHTER 36</p>
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Wiring Diagram — CIGAR —	36	INSTALLATION	39
Removal and Installation of Cigarette Lighter	37	Removal and Installation of Console Power Socket (A/T)	39
REMOVAL	37	REMOVAL	39
INSTALLATION	37	INSTALLTION	39
POWER SOCKET	38	HORN	40
Wiring Diagram — P/SCKT —	38	Wiring Diagram — HORN —	40
Removal and Installation of Instrument Power Socket	39	Removal and Installation	41
REMOVAL	39	REMOVAL	41
		INSTALLATION	41

PRECAUTION

PRECAUTION

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Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

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

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Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

Wiring Diagrams and Trouble Diagnosis

AKS00A1M

When You Read Wiring Diagrams, Refer to the Following:

- Refer to [GI-15, "How to Read Wiring Diagrams"](#) .
- Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#) for power distribution circuit.

When You Perform Trouble Diagnosis, Refer to the Following:

- Refer to [GI-11, "How to Follow Trouble Diagnoses"](#) .
- Refer to [GI-27, "How to Perform Efficient Diagnosis for an Electrical Incident"](#) .

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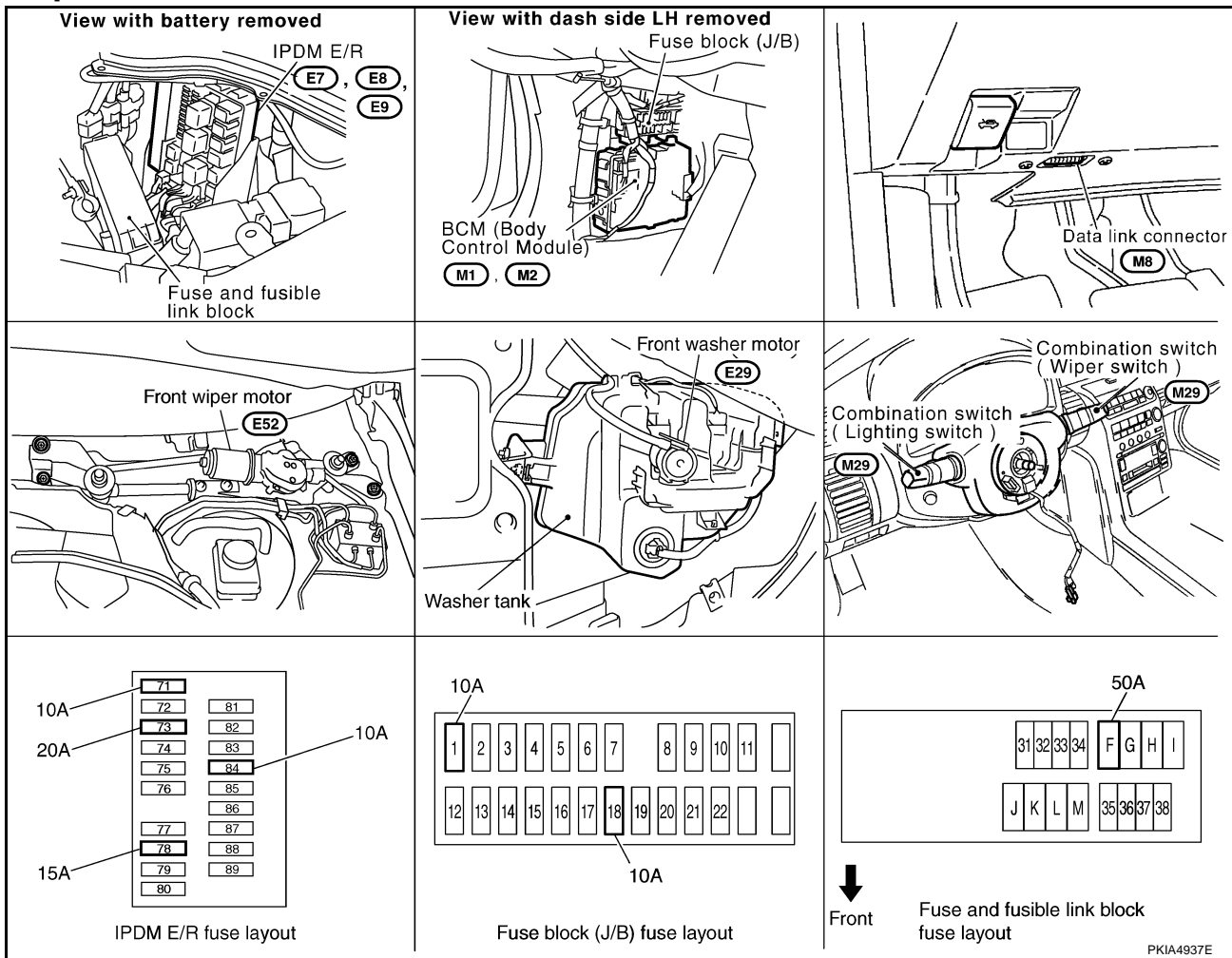
FRONT WIPER AND WASHER SYSTEM

FRONT WIPER AND WASHER SYSTEM

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Components Parts and Harness Connector Location

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System Description

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- All front wiper relays (HI, LO) are included in IPDM E/R (intelligent power distribution module engine room).
- Wiper switch (combination switch) is composed of a combination of 5 output terminals and 5 input terminals. Terminal combination status is read by BCM when switch is turned ON.
- BCM (body control module) controls front wiper LO, HI, and INT (intermittent) operation.
- IPDM E/R (intelligent power distribution module engine room) operates wiper motor according to CAN communication signals from BCM (body control module).

Power is supplied at all times

- through 50 A fusible link (letter F, located in fusible link block)
- to BCM (body control module) terminal 55
- through 10 A fuse [No. 18, located in fuse block (J/B)]
- to BCM (body control module) terminal 42
- through 20 A fuse [No. 73, located in IPDM E/R (intelligent power distribution module engine room)]
- to front wiper relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 15 A fuse [No. 78, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]
- through 10 A fuse [No. 71, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)].

FRONT WIPER AND WASHER SYSTEM

When the ignition switch ON or START position, power is supplied

- through 10 A fuse [No. 1, located in fuse block (J/B)]
- to BCM (body control module) terminal 38
- through ignition relay [located in IPDM E/R (intelligent power distribution module engine room)]
- to front wiper relay [located in IPDM E/R (intelligent power distribution module engine room)] and
- to front wiper high relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 10 A fuse [No. 84, located in IPDM E/R (intelligent power distribution module engine room)] and
- through IPDM E/R (intelligent power distribution module engine room) terminal 44
- to front washer motor terminal 2.

Ground is supplied

- to BCM (body control module) terminal 52
- through grounds M30 and M66,
- to IPDM E/R (intelligent power distribution module engine room) terminals 38 and 60
- through grounds E17 and E43,
- to combination switch (wiper switch) terminal 12
- through grounds M30 and M66.

LOW SPEED WIPER OPERATION

When wiper switch is in LO position, BCM detects low speed wiper ON signal by BCM wiper switch reading function.

BCM sends front wiper request signal (LO) with CAN communication line

- from BCM terminals 39 and 40
- to IPDM E/R terminals 48 and 49.

When IPDM E/R receives front wiper request signal (LO), it turns ON front wiper relay (located in IPDM E/R), power is supplied

- to front wiper motor terminal 3
- through IPDM E/R terminal 21 and front wiper relay and front wiper HI relay.

Ground is supplied

- to front wiper motor terminal 4
- through grounds E17 and E43.

With power and ground supplied, the front wiper motor operates at low speed.

HI SPEED WIPER OPERATION

When wiper switch is in HI position, BCM detects high speed wiper ON signal by BCM wiper switch reading function.

BCM sends front wiper request signal (HI) with CAN communication line

- from BCM terminals 39 and 40
- to IPDM E/R terminals 48 and 49.

When IPDM E/R receives front wiper request signal (HI), it turns ON front wiper relay (located in IPDM E/R), power is supplied

- to front wiper motor terminal 2
- through IPDM E/R terminal 31 and front wiper relay and front wiper HI relay.

Ground is supplied

- to front wiper motor terminal 4
- through grounds E17 and E43.

With power and ground supplied, the front wiper motor operates at high speed.

INTERMITTENT OPERATION

Wiper intermittent operation delay interval is determined from a combination of 3 switches (intermittent operation dial position 1, intermittent operation dial position 2, and intermittent operation dial position 3) and vehicle speed signal.

During each intermittent operation delay interval, BCM sends front wiper request signal to IPDM E/R.

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FRONT WIPER AND WASHER SYSTEM

Wiper Dial Position Setting

Wiper dial position	Intermittent operation interval	Combination switch		
		Intermittent operation dial position 1	Intermittent operation dial position 2	Intermittent operation dial position 3
Wiper dial position 1	Small	ON	ON	ON
Wiper dial position 2		ON	ON	OFF
Wiper dial position 3		ON	OFF	OFF
Wiper dial position 4	↓	OFF	OFF	OFF
Wiper dial position 5		OFF	OFF	ON
Wiper dial position 6		OFF	ON	ON
Wiper dial position 7		Large	OFF	ON

Example: For wiper dial position 1...

Using combination switch reading function, BCM detects ON/OFF status of intermittent operation dial positions 1, 2, and 3.

When combination switch status is as listed below, BCM determines that it is wiper dial position 1.

- Intermittent operation dial position 1: ON (Combination switch output 3 and input 1 are performing.)
- Intermittent operation dial position 2: ON (Combination switch output 5 and input 1 are performing.)
- Intermittent operation dial position 3: ON (Combination switch output 4 and output 2 are performing.)

BCM determines front wiper intermittent operation delay interval from wiper dial position 1 and vehicle speed, and sends wiper request signal (INT) to IPDM E/R.

AUTO STOP OPERATION

With wiper switch turned OFF, wiper motor will continue to operate until wiper arms reach windshield base. When wiper arms are not located at base of windshield with wiper switch OFF, ground is provided

- from IPDM E/R terminal 21
- to front wiper motor terminal 3, in order to continue wiper motor operation at low speed.

When wiper arms reach base of windshield, front wiper motor terminals 1 and 4 are connected, and ground is supplied

- to IPDM E/R terminal 32
- through front wiper motor terminals 1 and 4
- through grounds E17 and E43.

Then the IPDM E/R sends auto stop operation signal to BCM with CAN communication line.

When BCM receives auto-stop operation signal, BCM sends wiper stop signal to IPDM E/R with CAN communication line.

IPDM E/R stops wiper motor. Wiper motor will then stop wiper arms at the STOP position.

WASHER OPERATION

When wiper switch is in front wiper washer position with ignition switch ON, BCM detects front wiper switch is on the washer position by BCM wiper switch reading function (Refer to [WW-7, "COMBINATION SWITCH READING FUNCTION"](#)).

Combination switch (wiper switch) ground is supplied

- to front washer motor terminal 1
- through combination switch (wiper switch) terminal 11
- to combination switch (wiper switch) terminal 12
- through grounds M30 and M66.

With ground supplied, front washer motor is operated.

When BCM detects that front washer motor has operated for 0.4 seconds or longer, BCM operates front wiper motor for low speed.

When BCM detects washer switch is OFF, low speed operation cycles approximately 3 times and stops.

MIST OPERATION

When the wiper switch is turned to the MIST position, wiper low speed operation cycles once and then stops. For additional information about wiper operation under this condition, refer to [WW-5, "LOW SPEED WIPER OPERATION"](#).

FRONT WIPER AND WASHER SYSTEM

If the switch is held in the MIST position, low speed operation continues.

FAIL-SAFE FUNCTION

IPDM E/R includes a fail-safe function to prevent malfunction of electrical components controlled by CAN communications in CAN communications occurs.

When fail-safe status is initiated, IPDM E/R remains in steady unit signals are received.

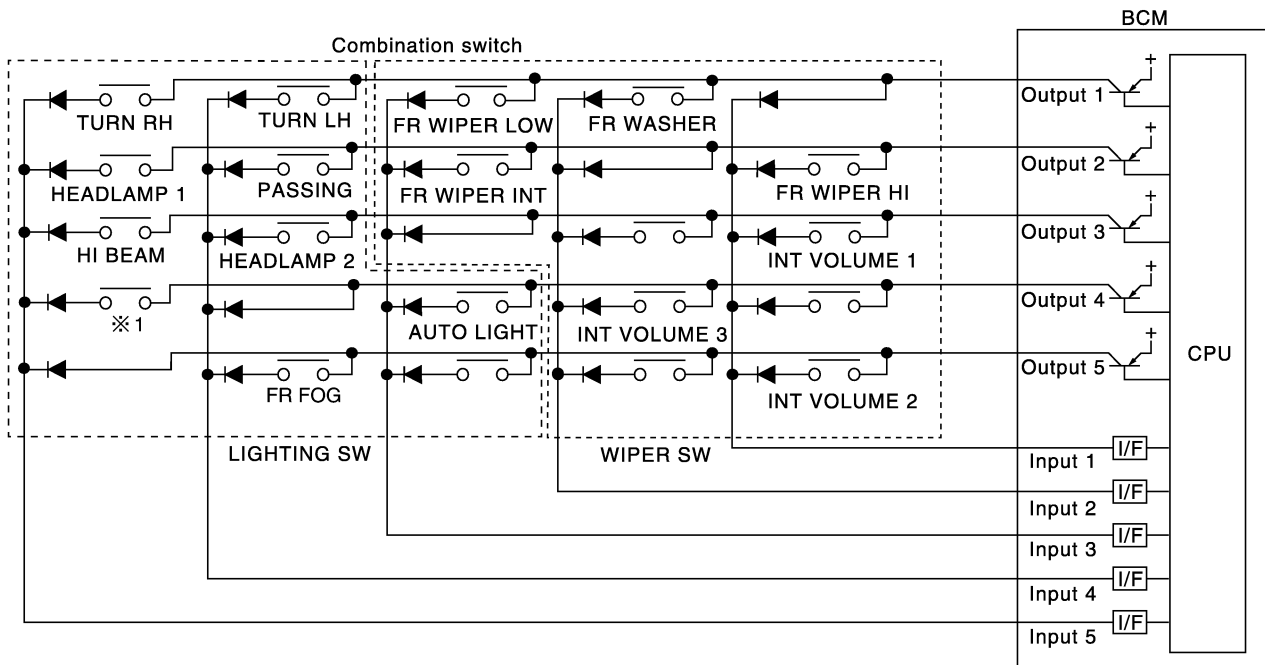
COMBINATION SWITCH READING FUNCTION

Description

- BCM reads combination switch (wiper) status, and controls related systems such as head lamps and wipers, according to the results.
- BCM reads information of a maximum of 20 switches by combining five output terminals (OUTPUT 1-5) and five input terminals (INPUT 1-5).

Operation Description

- BCM activates transistors of output terminals (OUTPUT 1-5) periodically, and allows current to flow in turn.
- If any (1 or more) switches are turned ON, circuit of output terminals (OUTPUT 1-5) and input terminals (INPUT 1-5) becomes active.
- At this time, transistors of output terminals (OUTPUT 1-5) are activated to allow current to flow. When voltage of input terminals (INPUT 1-5) corresponding to that switch changes, interface in BCM detects voltage change, and BCM determines that switch is ON.



※1 : LIGHTING SWITCH 1ST POSITION

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FRONT WIPER AND WASHER SYSTEM

BCM - Operation Table of Combination Switches

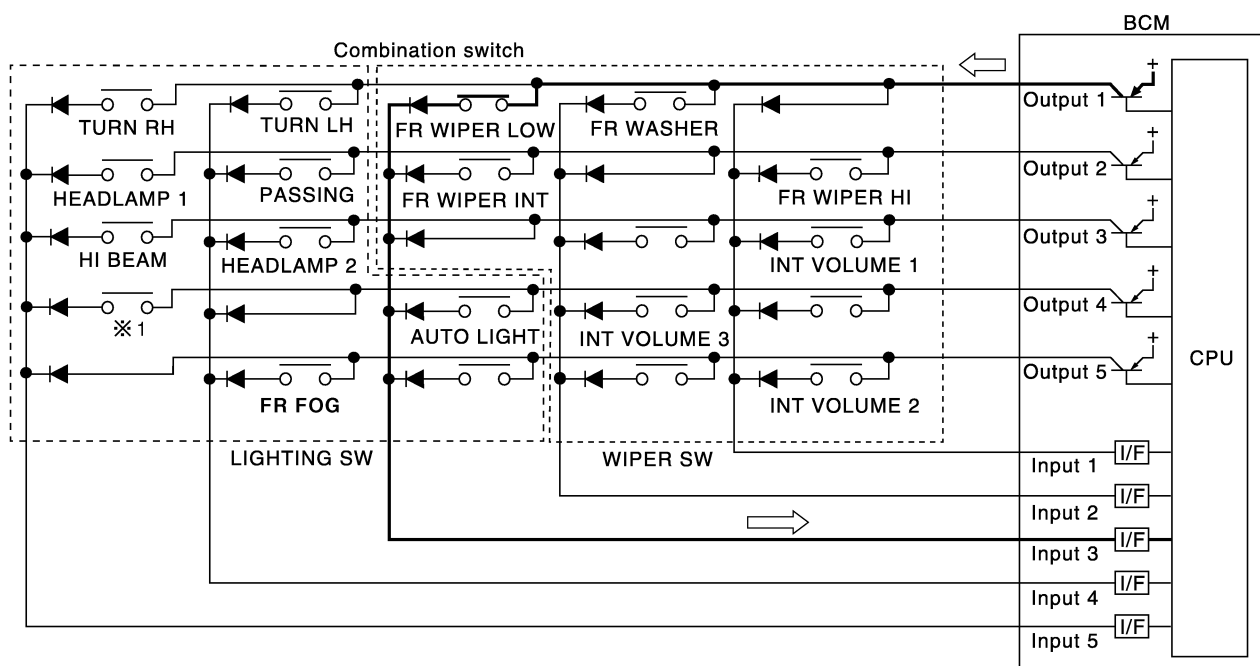
- BCM reads operation status of combination switch using combinations shown in table below.

	COMB SW OUTPUT 1 →		COMB SW OUTPUT 2 →		COMB SW OUTPUT 3 →		COMB SW OUTPUT 4 →		COMB SW OUTPUT 5 →	
	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
COMB SW INPUT 1	—	—	FR WIPER HI ON	FR WIPER HI OFF	INT VOLUME 1 ON	INT VOLUME 1 OFF	—	—	INT VOLUME 2 ON	INT VOLUME 2 OFF
COMB SW INPUT 2	FR WASHER ON	FR WASHER OFF	—	—	—	—	INT VOLUME 3 ON	INT VOLUME 3 OFF	—	—
COMB SW INPUT 3	FR WIPER LOW ON	FR WIPER LOW OFF	FR WIPER INT ON	FR WIPER INT OFF	—	—	AUTO LIGHT ON	AUTO LIGHT OFF	—	—
COMB SW INPUT 4	TURN LH ON	TURN LH OFF	PASSING ON	PASSING OFF	HEAD-LAMP 2 ON	HEAD-LAMP 2 OFF	—	—	FR FOG ON	FR FOG OFF
COMB SW INPUT 5	TURN RH ON	TURN RH OFF	HEAD-LAMP 1 ON	HEAD-LAMP 1 OFF	HI BEAM ON	HI BEAM OFF	LIGHTING SW (1st) ON	LIGHTING SW (1st) OFF	—	—

SKIA8640E

Sample Operation: (When Wiper Switch Turned ON)

- When wiper switch is turned ON, contact in combination switch turns ON. At this time if OUTPUT 1 transistor is activated, BCM detects that voltage changes in INPUT 3.
- When OUTPUT 1 transistor is ON, BCM detects that voltage changes in INPUT 3, and judges that front wiper low is ON. Then BCM sends front wiper request signal (LO) to IPDM E/R using CAN communication.
- When OUTPUT 1 transistor is activated again, BCM detects that voltage changes in INPUT 3, and recognizes that wiper switch is continuously ON.



※ 1 : LIGHTING SWITCH 1ST POSITION

PKIA4848E

FRONT WIPER AND WASHER SYSTEM

NOTE:

Each OUTPUT terminal transistor is activated at 10 ms intervals. Therefore after switch is turned ON, electrical loads are activated with time delay. But this time delay is so short that it cannot be detected by human senses.

Operation Mode

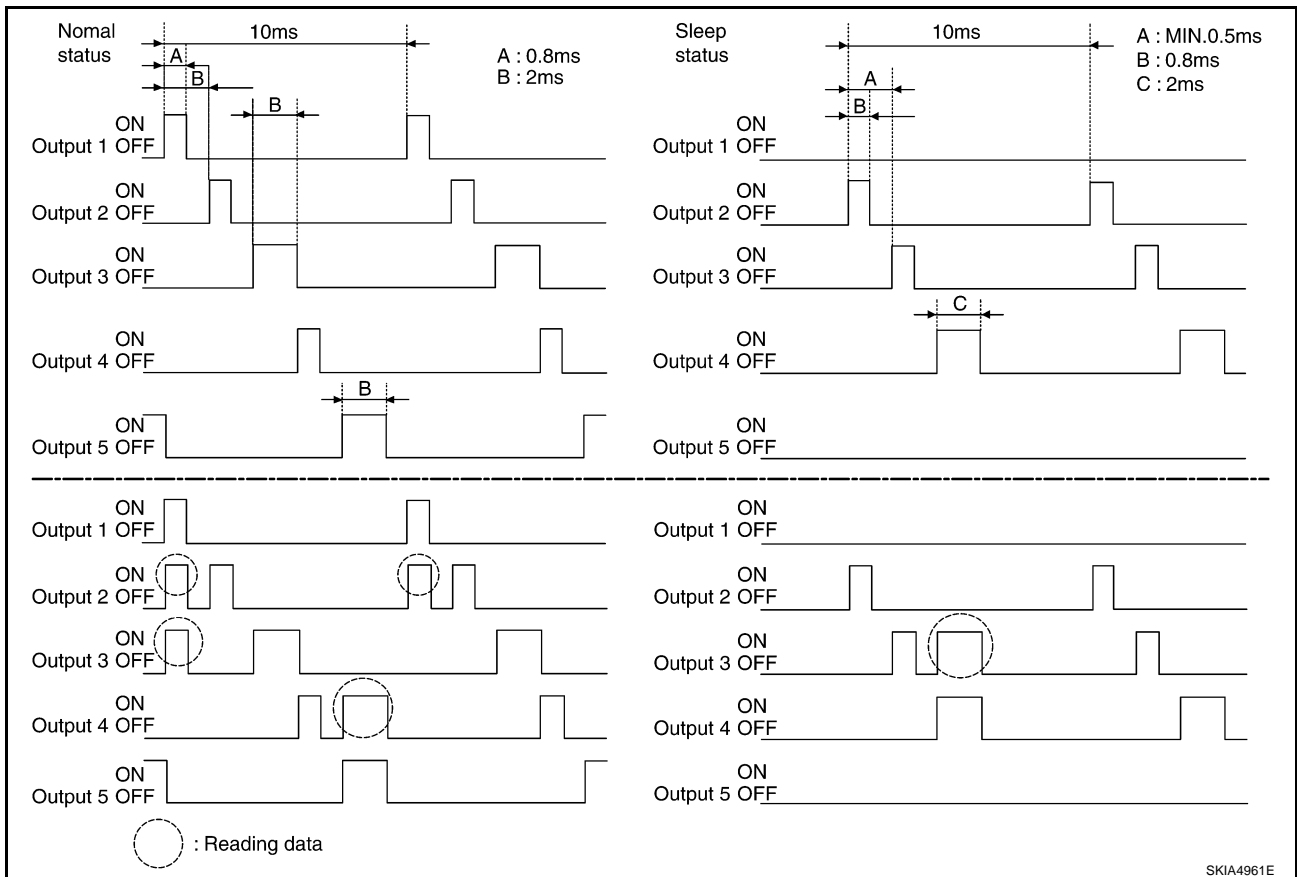
Combination switch reading function has operation modes shown below.

1. Normal status

- When BCM is not in sleep status, OUTPUT terminals (1-5) each turn ON-OFF every 10 ms.

2. Sleep status

- When BCM is in sleep status, transistors of OUTPUT (1 and 5) stop the output, and BCM enters low current consumption mode. OUTPUT (2, 3, and 4) turn ON-OFF every 10 ms, and only input from light switch system is accepted.



CAN Communication System Description

AKS009YE

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-board multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Unit

AKS009YF

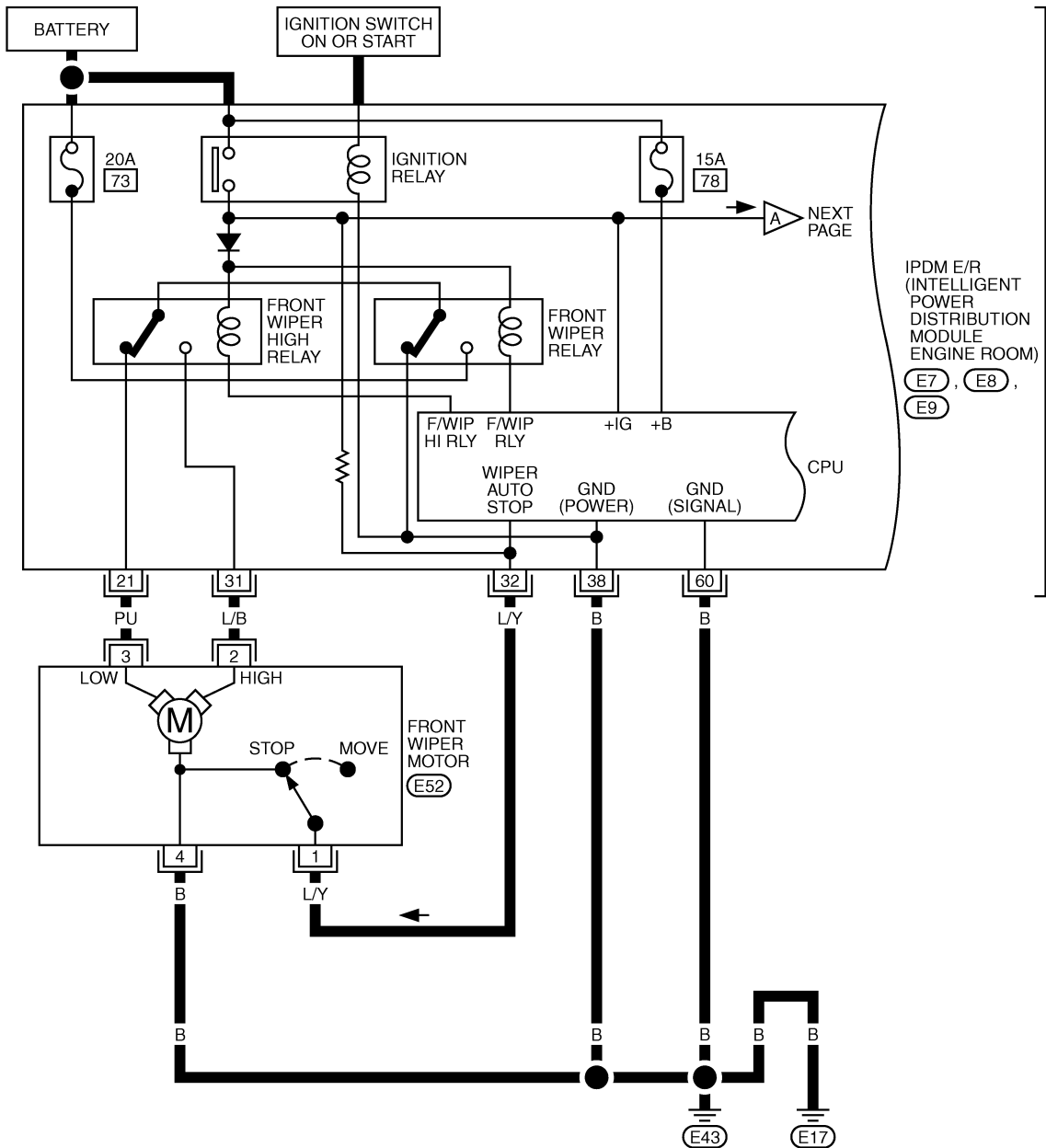
Refer to [LAN-4, "CAN Communication Unit"](#) .

FRONT WIPER AND WASHER SYSTEM

Wiring Diagram — WIPER —

AKS009YH

WW-WIPER-01

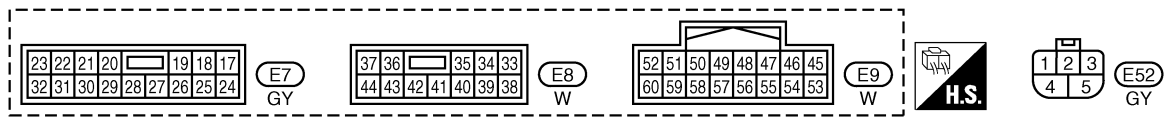


REFER TO PG-POWER.

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MODULE
ENGINE ROOM)
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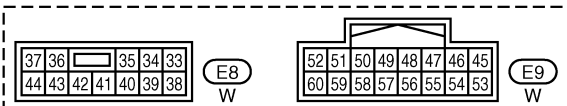
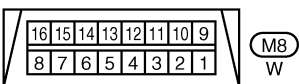
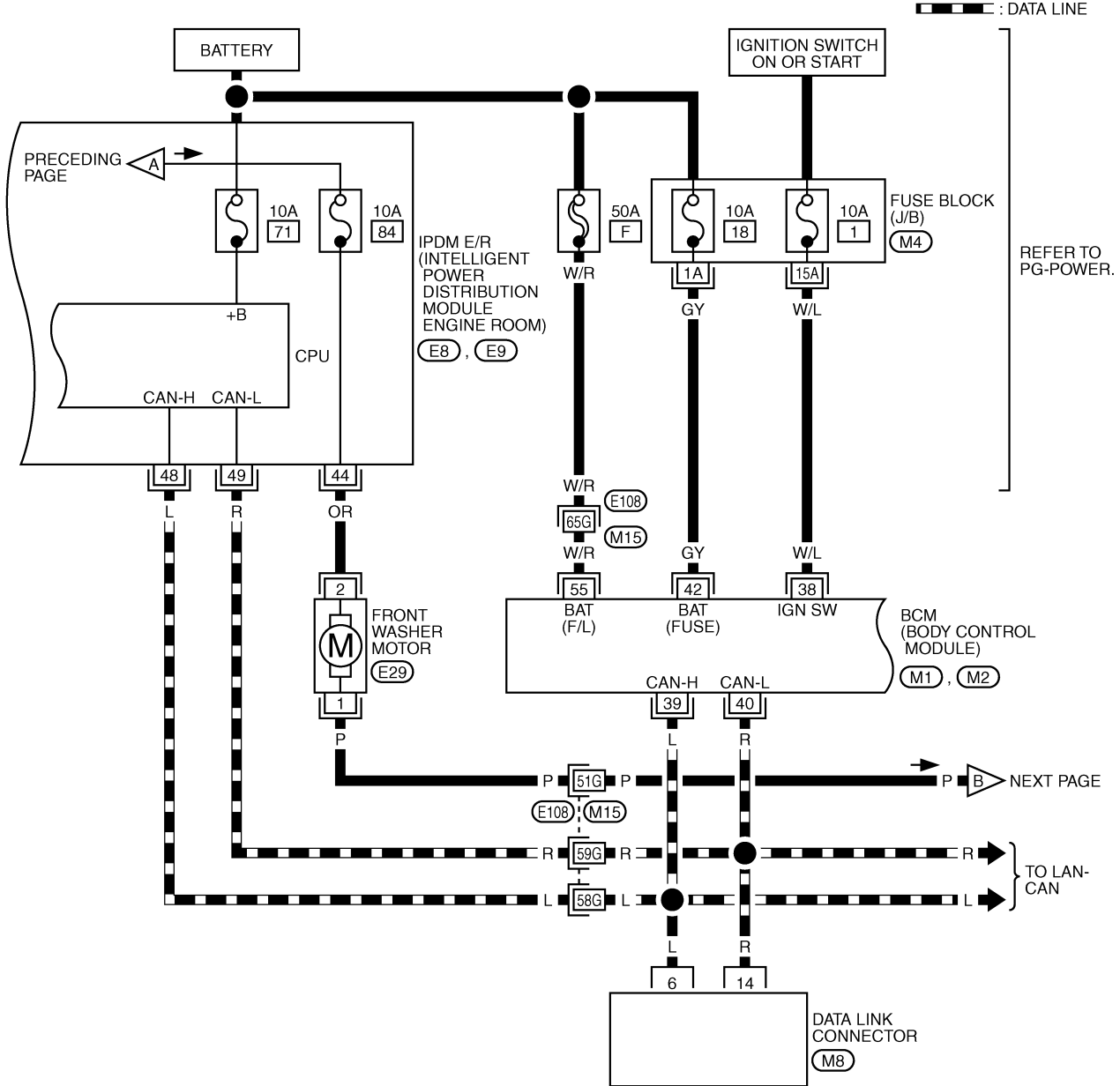
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FRONT WIPER AND WASHER SYSTEM

WW-WIPER-02

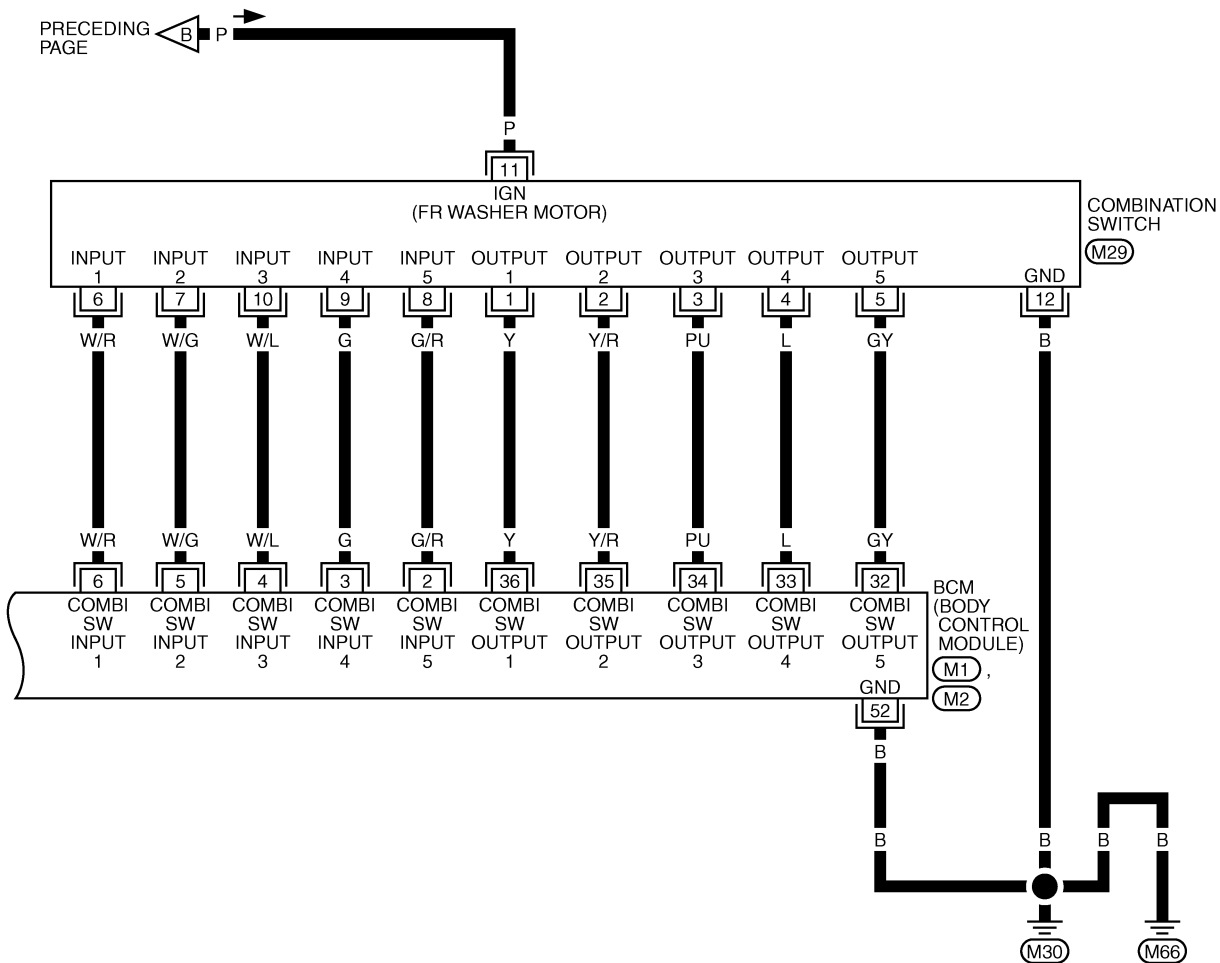


REFER TO THE FOLLOWING.

- (E108) -SUPER MULTIPLE JUNCTION (SMJ)
- (M4) -FUSE BLOCK-JUNCTION BOX (J/B)
- (M1), (M2) -ELECTRICAL UNITS

FRONT WIPER AND WASHER SYSTEM

WW-WIPER-03



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6	5	4	3	2	1

(M29) W

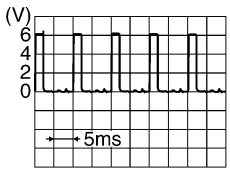
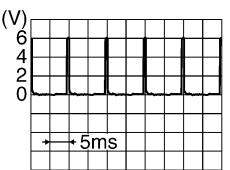
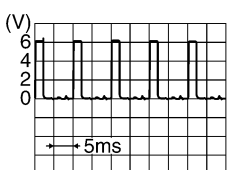


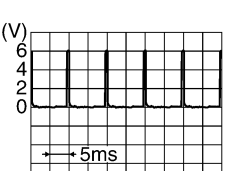

REFER TO THE FOLLOWING.
 (M1), (M2) -ELECTRICAL UNITS

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FRONT WIPER AND WASHER SYSTEM

Terminals and Reference Values for BCM

AKS009Y1

Terminal No. (Wire color)	Signal name	Measuring condition		Reference value
		Ignition switch	Operation or condition	
2 (G/R)	Combination switch input 5	ON	<ul style="list-style-type: none"> ● Lighting switch and wiper switch OFF ● Wiper dial position 4 	 <p style="text-align: right;">SKIA5291E</p>
3 (G)	Combination switch input 4	ON	<ul style="list-style-type: none"> ● Lighting switch and wiper switch OFF ● Wiper dial position 4 	 <p style="text-align: right;">SKIA5292E</p>
4 (W/L)	Combination switch input 3	ON	<ul style="list-style-type: none"> ● Lighting switch and wiper switch OFF ● Wiper dial position 4 	 <p style="text-align: right;">SKIA5291E</p>
5 (W/G)	Combination switch input 2	ON	<ul style="list-style-type: none"> ● Lighting switch and wiper switch OFF ● Wiper dial position 4 	 <p style="text-align: right;">SKIA5292E</p>
6 (W/R)	Combination switch input 1	ON		
32 (GY)	Combination switch output 5	ON	<ul style="list-style-type: none"> ● Lighting switch and wiper switch OFF ● Wiper dial position 4 	 <p style="text-align: right;">SKIA5291E</p>
33 (L)	Combination switch output 4	ON	<ul style="list-style-type: none"> ● Lighting switch and wiper switch OFF ● Wiper dial position 4 	 <p style="text-align: right;">SKIA5292E</p>
34 (PU)	Combination switch output 3	ON	<ul style="list-style-type: none"> ● Lighting switch and wiper switch OFF ● Wiper dial position 4 	 <p style="text-align: right;">SKIA5291E</p>

FRONT WIPER AND WASHER SYSTEM

Terminal No. (Wire color)	Signal name	Measuring condition		Reference value
		Ignition switch	Operation or condition	
35 (Y/R)	Combination switch output 2	ON	<ul style="list-style-type: none"> Lighting switch and wiper switch OFF Wiper dial position 4 	 SKIA5292E
36 (Y)	Combination switch output 1			
38 (W/L)	Ignition switch (ON)	ON	—	Battery voltage
39 (L)	CAN H	—	—	—
40 (R)	CAN L	—	—	—
42 (G/Y)	Battery power supply	OFF	—	Battery voltage
52 (B)	Ground	ON	—	Approx. 0 V
55 (W/R)	Battery power supply	OFF	—	Battery voltage

Terminals and Reference Values for IPDM E/R

AKS009YJ

Terminal No. (Wire color)	Signal name	Measuring condition		Reference value
		Ignition switch	Operation or condition	
21 (PU)	Low speed signal	ON	Wiper switch OFF	Approx. 0 V
			LO	Battery voltage
31 (L/B)	High speed signal	ON	Wiper switch OFF	Approx. 0 V
			HI	Battery voltage
32 (L/Y)	Wiper auto - stop signal	ON	Wiper operating	Battery voltage
			Wiper stopped	Approx. 0 V
38 (B)	Ground	ON	—	Approx. 0 V
44 (OR)	Washer motor power supply	ON	—	Battery voltage
48 (L)	CAN H	—	—	—
49 (R)	CAN L	—	—	—
60 (B)	Ground	ON	—	Approx. 0 V

How to Proceed With Trouble Diagnosis

AKS009YK

1. Confirm the symptoms and customer complaint.
2. Understand operation description and function description. Refer to [WW-4, "System Description"](#).
3. Perform the preliminary check. Refer to [WW-15, "Preliminary Check"](#).
4. Check symptom and repair or replace the cause of malfunction.
5. Does the front wiper and washer operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

Preliminary Check

AKS009YL

CHECK POWER SUPPLY AND GROUND CIRCUIT

Inspection Procedure

1. CHECK FUSE

- Check if wiper and washer fuse is blown.

Unit	Power source	Fuse and fusible link No.
Front washer motor	Ignition switch ON or START	84
Front wiper motor, front wiper relay, front wiper HI relay	Battery	73

FRONT WIPER AND WASHER SYSTEM

Unit	Power source	Fuse and fusible link No.
BCM	Battery	F
		18
	Ignition switch ON or START	1

Refer to [WW-11, "Wiring Diagram — WIPER —"](#).

OK or NG

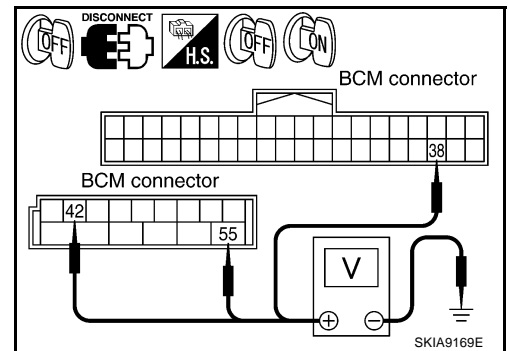
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#).

2. CHECK POWER SUPPLY CIRCUIT

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

Terminals		Ignition switch position	
(+)		(-)	
Connector	Terminal (Wire color)	OFF	ON
M2	42 (GY)	Ground	Battery voltage
M2	55 (W/R)		Battery voltage
M1	38 (W/L)		0V



OK or NG

OK >> GO TO 3.

NG >> Check harness for open or short between fuse, fusible link and BCM.

3. CHECK GROUND CIRCUIT

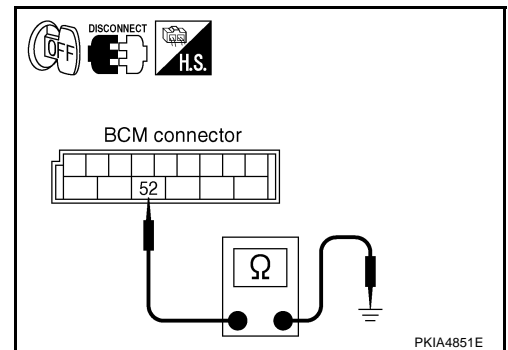
Check continuity between BCM harness connector and ground.

Terminals			Continuity
Connector	Terminal (Wire color)	Ground	
M2	52 (B)	Ground	Yes

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



FRONT WIPER AND WASHER SYSTEM

CONSULT-II Functions (BCM)

AKS009YM

CONSULT-II performs the following functions communicating with BCM.

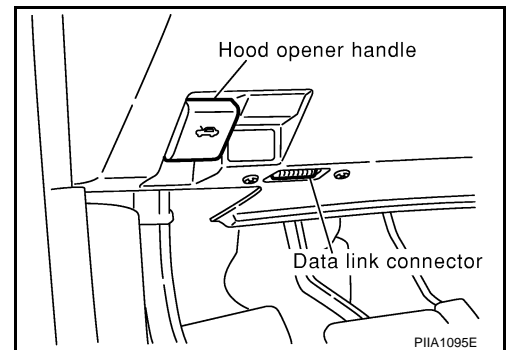
BCM diagnosis position	Check item, Diagnosis mode	Description
Wiper	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Device operation can be checked by applying a drive signal to device.
BCM	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

CONSULT-II OPERATION

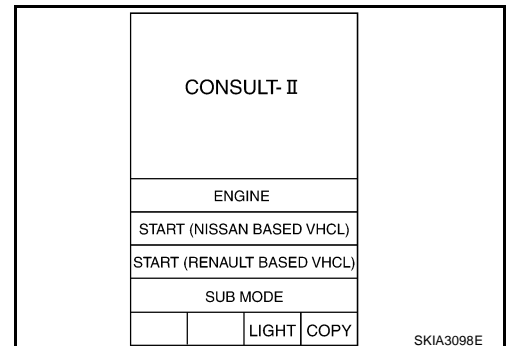
CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.

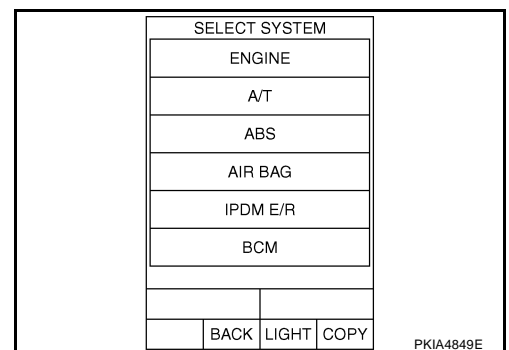
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn the ignition switch ON.



2. Touch "START (NISSAN BASED VHCL)".

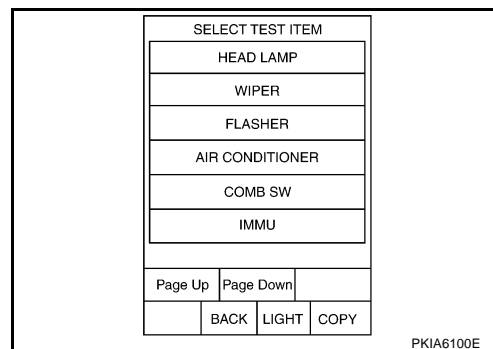


3. Touch "BCM" on "SELECT SYSTEM" screen. If "BCM" is not indicated, refer to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



FRONT WIPER AND WASHER SYSTEM

4. Touch "WIPER".



DATA MONITOR

Operation Procedure

1. Touch "WIPER" on "SELECT TEST ITEM" screen.
2. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Touch either "ALL SIGNALS" or "SELECT FROM MENU" on "DATA MONITOR" screen.

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects and monitors individual signal.

4. Touch "START".
5. When "SELECTION FROM MENU" is selected, touched items to be monitored. If "ALL SIGNALS" is selected, all items will be monitored.
6. Touch "RECORDING START" while monitoring to record the status of the item being monitored. To stop recording, touch "RECORDING STOP".

Display Item List

Monitor item [operation or unit]	Display content
IGN ON SW [ON/OFF]	Displays "ignition switch ON (ON)/Other OFF or ACC (OFF)" status as judged from ignition switch signal.
IGN SW CAN [ON/OFF]	Displays "ignition switch ON (ON)/Other OFF or ACC (OFF)" status as judged from CAN communication signal.
FR WIPER HI [ON/OFF]	Displays "FRONT WIPER HI (ON)/Other (OFF)" status as judged from wiper switch signal.
FR WIPER LOW [ON/OFF]	Displays "FRONT WIPER LOW (ON)/Other (OFF)" status as judged from wiper switch signal.
FR WIPER INT [ON/OFF]	Displays "FRONT WIPER INT (ON)/Other (OFF)" status as judged from wiper switch signal.
FR WASHER SW [ON/OFF]	Displays "FRONT WASHER Switch (ON)/Other (OFF)" status as judged from wiper switch signal.
INT VOLUME [1 - 7]	Displays intermittent operation dial position setting (1 - 7) as judged from wiper switch signal.
FR WIPER STOP [ON/OFF]	Displays "Stopped (ON)/Operating (OFF)" status as judged from the auto-stop signal.
VEHICLE SPEED [km/h]	Displays vehicle speed status as judged from vehicle speed signal.
RR WIPER ON ^{NOTE} [ON/OFF]	—
RR WIPER INT ^{NOTE} [ON/OFF]	—
RR WASHER SW ^{NOTE} [ON/OFF]	—
RR WIPER STOP ^{NOTE} [ON/OFF]	—

NOTE:

This item is displayed, but cannot monitor it.

FRONT WIPER AND WASHER SYSTEM

ACTIVE TEST

Operation Procedure

1. Touch "WIPER" on the "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Touch items to be tested, and check operation.
4. During operation check, touching "STOP" deactivates operation.

Display Item List

Test item	Indication on CONSULT-II display	Description
Front wiper output	FR WIPER	With a certain operation (OFF, HI, LO, INT), the front wiper can be operated.
Rear wiper output ^{NOTE}	RR WIPER	—

NOTE:

This item is displayed, but cannot test it.

CONSULT-II Functions (IPDM E/R)

AKS009YV

CONSULT-II performs the following functions communicating with IPDM E/R.

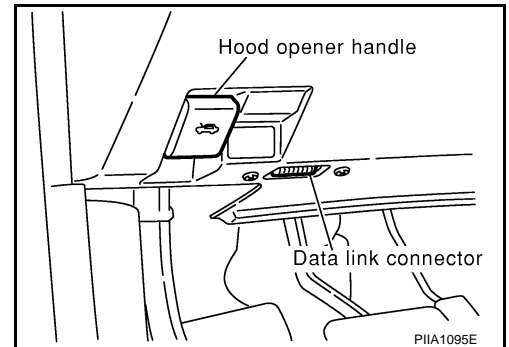
Check Item, Diagnosis Mode	Description
SELF-DIAG RESULTS	The IPDM E/R performs diagnosis of the CAN communication and self-diagnosis.
DATA MONITOR	The input/output data of the IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	The IPDM E/R sends a drive signal to electronic components to check their operation.

CONSULT-II OPERATION

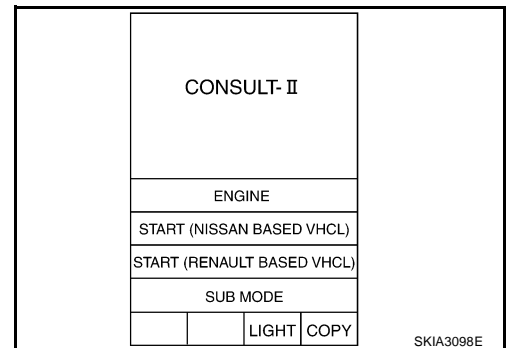
CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.

1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn the ignition switch ON.

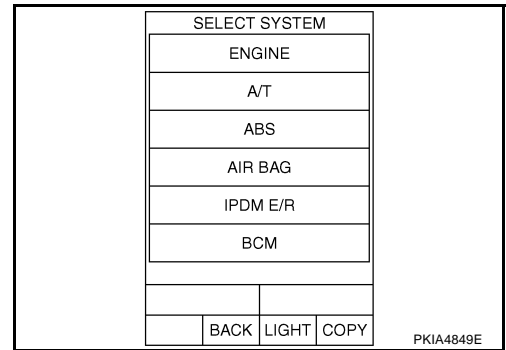


2. Touch "START (NISSAN BASED VHCL)".

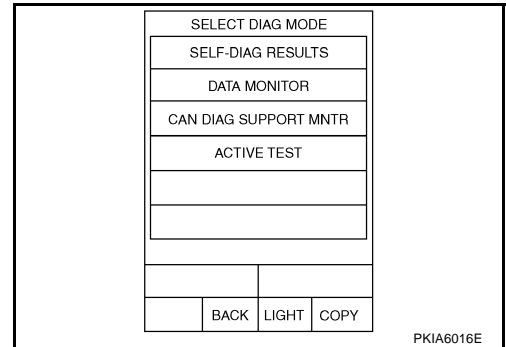


FRONT WIPER AND WASHER SYSTEM

3. Touch "IPDM E/R" on "SELECT SYSTEM" screen.
If "IPDM E/R" is not displayed, print "SELECT SYSTEM" screen, then refer to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



4. Select the desired part to be diagnosed on the "SELECT DIAG MODE" screen.



SELF-DIAG RESULTS

Refer to [PG-20, "SELF-DIAG RESULTS"](#).

DATA MONITOR

Operation Procedure

1. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
2. Touch "ALL SIGNALS", "MAIN SIGNALS" or "SELECTION FROM MENU" on "DATA MONITOR" screen.

ALL SIGNALS	All items will be monitored.
MAIN SIGNALS	Monitor the predetermined item.
SELECTION FROM MENU	Select any item for monitoring.

3. Touch "START".
4. Touch the required monitoring item on "SELECTION FROM MENU". In "ALL SIGNALS", all items are monitored. In "MAIN SIGNALS", predetermined items are monitored.
5. Touch "RECORD" while monitoring to record the status of the item being monitored. To stop recording, touch "STOP".

All Signals, Main Signals, Selection From Menu

Item name	CONSULT-II screen display	Display or unit	Monitor item selection			Description
			ALL SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
FR wiper request	FR WIP REQ	STOP/1LOW/LOW/HI	×	×	×	Signal status input from BCM
Wiper auto stop	WIP AUTO STOP	ACT P/STOP P	×	×	×	Output status of IPDM E/R
Wiper protection	WIP PROT	OFF/Block	×	×	×	Control status of IPDM E/R

NOTE:

Perform monitoring of IPDM E/R data with the ignition switch ON. When the ignition switch is at ACC, the display may not be correct.

FRONT WIPER AND WASHER SYSTEM

ACTIVE TEST

Operation Procedure

1. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Touch item to be tested, and check operation.
3. Touch "START".
4. Touch "STOP" while testing to stop the operation.

Test item	CONSULT-II screen display	Description
Front wiper (HI, LO) output	FRONT WIPER	With a certain operation (OFF, HI ON, LO ON), the front wiper relay (Lo, Hi) can be operated.

Front Wiper Does Not Operate

AKS009Y0

CAUTION:

- During IPDM E/R fail-safe control, front wipers may not operate. Refer to [PG-17, "CAN COMMUNICATION LINE CONTROL"](#) in "PG IPDM E/R" to make sure that it is not in fail-safe status.

1. ACTIVE TEST

 With CONSULT-II

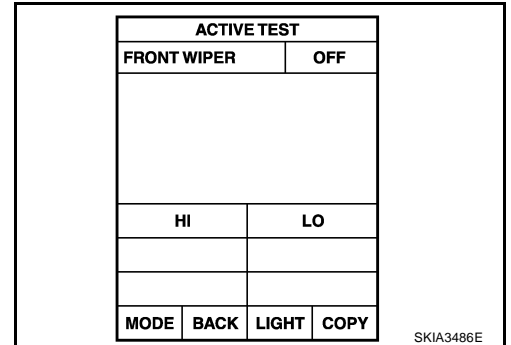
1. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
3. Touch "LO" or "HI" screen.

 Without CONSULT-II

Start up auto active test. Refer to [PG-23, "Auto Active Test"](#).

Does the front wiper operate normally?

- YES >> GO TO 6.
NO >> GO TO 2.



2. CHECK FUSE

1. Turn ignition switch OFF.
2. Check fuse No.73 of IPDM E/R.

OK or NG

- OK >> GO TO 3.
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#).

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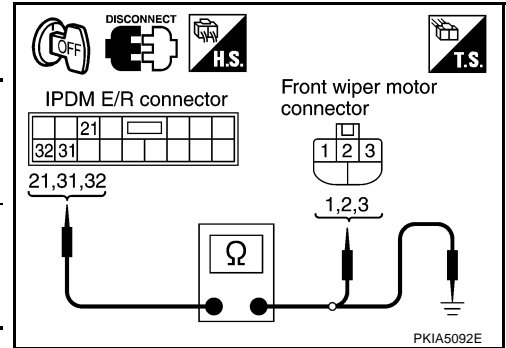
WW

FRONT WIPER AND WASHER SYSTEM

3. CHECK FRONT WIPER CIRCUIT

1. Disconnect IPDM E/R connector and front wiper motor connector.
2. Check continuity between IPDM E/R harness connector and front wiper motor harness connector terminal.

Terminals				Continuity
IPDM E/R		Front wiper motor		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	Yes
E7	21 (PU)	E52	3 (PU)	
	31 (L/B)		2 (L/B)	
	32 (L/Y)		1 (L/Y)	



3. Check continuity between IPDM E/R harness connector terminal and Ground.

Terminals			Continuity
IPDM E/R		Ground	
Connector	Terminal (Wire color)		No
E7	21 (PU)		
	31 (L/B)		
	32 (L/Y)		

OK or NG

- OK >> GO TO 4.
 NG >> Repair harness or connector.

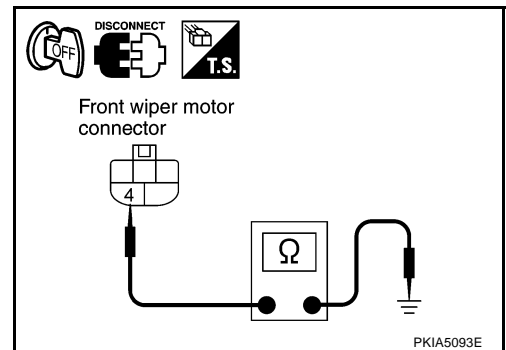
4. CHECK GROUND CIRCUIT

Check continuity between front wiper motor harness connector E52 terminal 4 (B) and ground.

4 (B) – Ground : Continuity should exist.

OK or NG

- OK >> GO TO 5.
 NG >> Repair harness or connector.

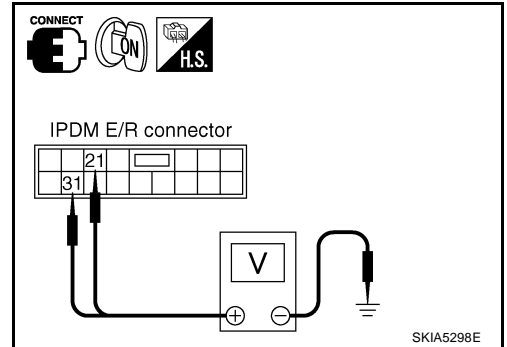


FRONT WIPER AND WASHER SYSTEM

5. CHECK IPDM E/R

With CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Select "IPDM E/R" by CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
4. Touch "LO" or "HI" screen.
5. Check voltage between IPDM E/R harness connector E7 terminal 21 (PU) or 31 (L/B) and ground while front wiper (HI, LO) is operating.



Without CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Start up auto active test. Refer to [PG-23, "Auto Active Test"](#).
3. Check voltage between IPDM E/R harness connector E7 terminal 21 (PU) or 31 (L/B) and ground while front wiper (HI, LO) is operating.

Terminals		Condition	Voltage
IPDM E/R (+)			
Connector	Terminal (Wire color)	(-)	
E7	21 (PU)	Stopped	Approx. 0V
		LO operation	Battery voltage
	31 (L/B)	Stopped	Approx. 0V
		HI operation	Battery voltage

OK or NG

- OK >> Replace front wiper motor.
 NG >> Replace IPDM E/R.

6. CHECK CIRCUIT BETWEEN COMBINATION SWITCH AND BCM

With CONSULT-II

Select "BCM" on CONSULT-II. With "WIPER" on "DATA MONITOR", confirm that "FRONT WIPER INT", "FRONT WIPER LOW", and "FRONT WIPER HI" turn ON-OFF according to wiper switch operation.

Without CONSULT-II

Refer to [LT-128, "Combination Switch Inspection"](#).

OK or NG

- OK >> GO TO 7.
 NG >> Check wiper Switch. Refer to [LT-128, "Combination Switch Inspection"](#).

DATA MONITOR	
MONITOR	
IGN ON SW	ON
IGN SW CAN	ON
FR WIPER HI	OFF
FR WIPER LOW	OFF
FR WIPER INT	OFF
FR WASHER SW	OFF
INT VOLUME	7
FR WIPER STOP	ON
VEHICLE SPEED	0.0 km/h
Page Down	
RECORD	
MODE	BACK LIGHT COPY

SKIA5300E

7. CHECK CIRCUIT BETWEEN IPDM E/R AND BCM

Select "BCM" on CONSULT-II, and perform self-diagnosis for "BCM".

Displayed self-diagnosis results

- NO DTC>>Replace BCM. Refer to [BCS-15, "Removal and Installation of BCM"](#).
 CAN COMM CIRCUIT>>Check CAN communication line of BCM. GO TO [BCS-14, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).

SELF-DIAG RESULTS			
DTC RESULTS		TIME	
CAN COMM CIRCUIT [U1000]		PAST	
ERASE		PRINT	
MODE	BACK	LIGHT	COPY

SKIA1039E

FRONT WIPER AND WASHER SYSTEM

AKS009YP

Front Wiper Does Not Return to Stop Position

1. CHECK CIRCUIT BETWEEN IPDM E/R AND WIPER MOTOR

④ With CONSULT-II

Select "IPDM E/R" on CONSULT-II. With data monitor, confirm that "WIP AUTO STOP" turns "ACT P" - "STOP P" linked with wiper operation.

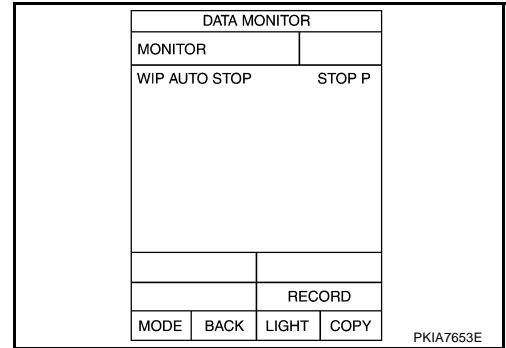
⊗ Without CONSULT-II

GO TO 2.

OK or NG

OK >> Replace IPDM E/R.

NG >> GO TO 2.



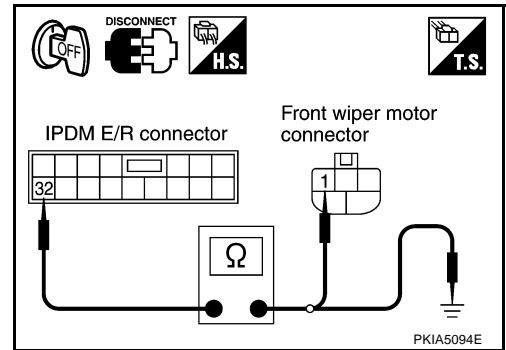
2. CHECK WIPER AUTO STOP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front wiper motor connector.
3. Check continuity between IPDM E/R harness connector E7 terminal 32 (L/Y) and front wiper motor harness connector E52 terminal 1 (L/Y).

32 (L/Y) – 1 (L/Y) : Continuity should exist.

4. Check continuity between IPDM E/R harness connector E7 terminal 32 (L/Y) and Ground.

32 (L/Y) – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK IPDM E/R

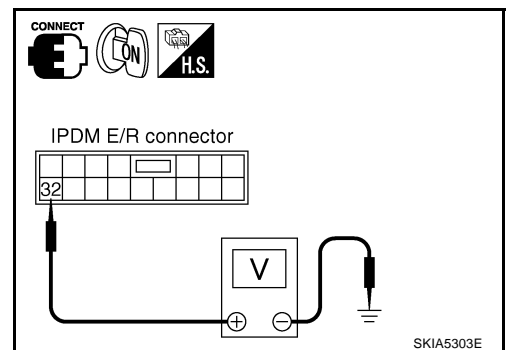
1. Connect IPDM E/R connector and front wiper motor connector.
2. Turn ignition switch ON.
3. Check voltage between IPDM E/R harness connector E7 terminal 32 (L/Y) and ground while front wiper motor is stopped and while it is operating.

Terminals			Condition	Voltage
IPDM E/R (+)		(-)		
Connector	Terminal (Wire color)			
E7	32 (L/Y)	Ground	Wiper stopped	Approx. 0V
			Wiper operating	Battery voltage

OK or NG

OK >> Replace IPDM E/R.

NG >> Replace front wiper motor.



FRONT WIPER AND WASHER SYSTEM

AKS009YQ

Only Front Wiper LO Does Not Operate

1. ACTIVE TEST

With CONSULT-II

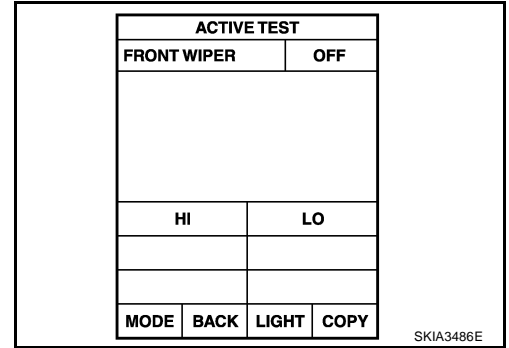
1. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
3. Touch "LO" screen.

Without CONSULT-II

Start up auto active test. Refer to [PG-23, "Auto Active Test"](#)

Does the front wiper operate normally?

- YES >> GO TO [LT-128, "Combination Switch Inspection"](#) .
NO >> GO TO 2.



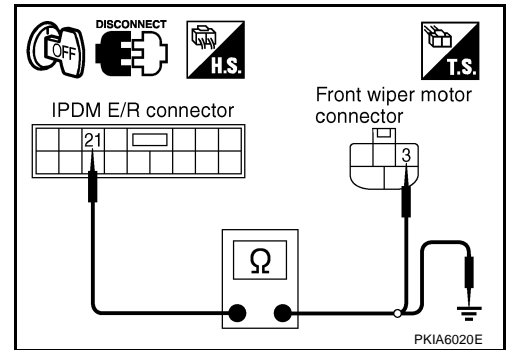
2. CHECK FRONT WIPER MOTOR CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front wiper motor connector.
3. Check continuity between IPDM E/R harness connector E7 terminal 21 (PU) and front wiper motor harness E52 connector terminal 2 (PU).

21 (PU) – 2 (PU) : Continuity should exist.

4. Check continuity between IPDM E/R harness connector E7 terminal 21 (PU) and ground.

21 (PU) – Ground : Continuity should not exist.



OK or NG

- OK >> GO TO 3.
NG >> Repair harness or connector.

3. CHECK IPDM E/R

With CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
4. Touch "LO" screen.
5. Check voltage between IPDM E/R harness connector E7 terminal 21 (PU) and ground while front wiper LO is operating.

21 (PU) – Ground : Battery voltage should exist.

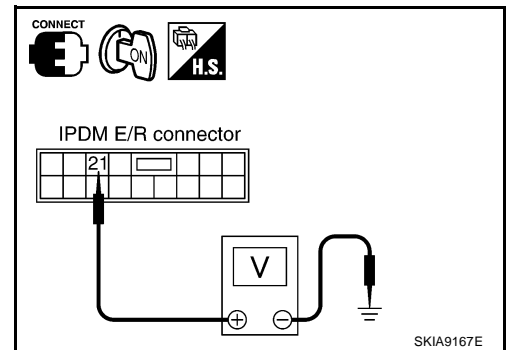
Without CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Start up auto active test. Refer to [PG-23, "Auto Active Test"](#) .
3. Check voltage between IPDM E/R harness connector E7 terminal 21 (PU) and ground while front wiper LO is operating.

21 (PU) – Ground : Battery voltage should exist.

OK or NG

- OK >> Replace front wiper motor.
NG >> Replace IPDM E/R.



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FRONT WIPER AND WASHER SYSTEM

AKS009YR

Only Front Wiper HI Does Not Operate

1. ACTIVE TEST

With CONSULT-II

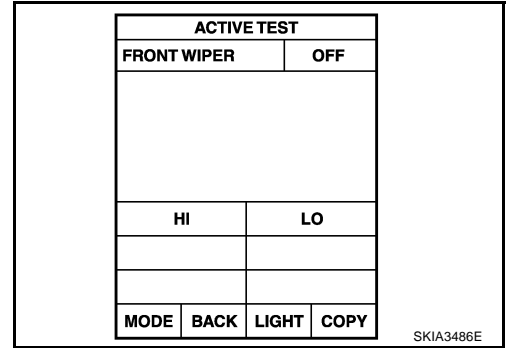
1. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
3. Touch "HI" screen.

Without CONSULT-II

Start up auto active test. Refer to [PG-23, "Auto Active Test"](#)

Does the front wiper operate normally?

- YES >> GO TO [LT-128, "Combination Switch Inspection"](#) .
 NO >> GO TO 2.



2. CHECK FRONT WIPER MOTOR CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front wiper motor connector.
3. Check continuity between IPDM E/R harness connector E7 terminal 31 (L/B) and front wiper motor harness E52 connector terminal 2 (L/B).

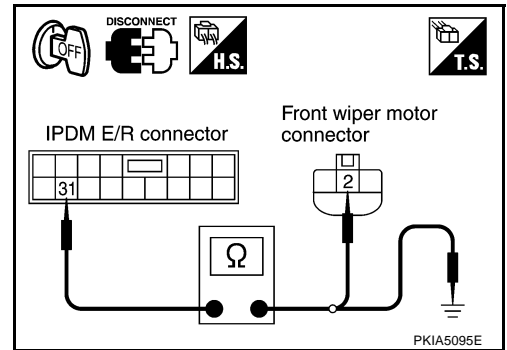
31 (L/B) – 2 (L/B) : Continuity should exist.

4. Check continuity between IPDM E/R harness connector E7 terminal 31(L/B) and ground.

31 (L/B) – Ground : Continuity should not exist.

OK or NG

- OK >> GO TO 3.
 NG >> Repair harness or connector.



3. CHECK IPDM E/R

With CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
4. Touch "HI" screen.
5. Check voltage between IPDM E/R harness connector E7 terminal 31 (L/B) and ground while front wiper HI is operating.

31 (L/B) - Ground : Battery voltage should exist.

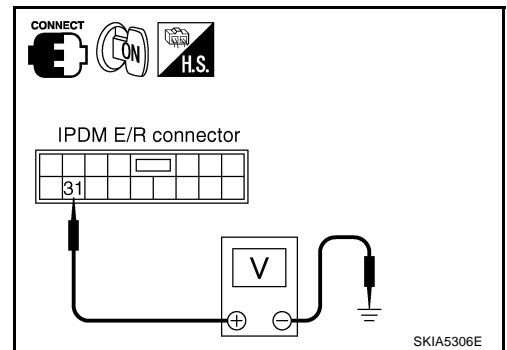
Without CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Start up auto active test. Refer to [PG-23, "Auto Active Test"](#) .
3. Check voltage between IPDM E/R harness connector E7 terminal 31 (L/B) and ground while front wiper HI is operating.

31 (L/B) - Ground : Battery voltage should exist.

OK or NG

- OK >> Replace front wiper motor.
 NG >> Replace IPDM E/R.



FRONT WIPER AND WASHER SYSTEM

Only Front Wiper INT Does Not Operate

AKS009YS

Refer to [LT-128, "Combination Switch Inspection"](#) .

Front Wiper Interval Time Is Not Controlled by Vehicle Speed

AKS009YT

1. CHECK FUNCTION OF COMBINATION METER

Confirm that speedometer operates normally.

Does the front wiper operate normally?

YES >> GO TO 2.

NO >> Combination meter vehicle speed system malfunction. GO TO [DI-15, "Inspection/Vehicle Speed Signal"](#) .

2. CHECK CAN COMMUNICATION BETWEEN BCM AND COMBINATION METER

Select "BCM" on CONSULT-II, and perform self-diagnosis for "BCM".

Displayed self-diagnosis results

NO DTC>>Replace BCM. Refer to [BCS-15, "Removal and Installation of BCM"](#) .

CAN COMM CIRCUIT>>Check CAN communication line of BCM. GO TO [BCS-14, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#) .

SELF-DIAG RESULTS			
DTC RESULTS		TIME	
CAN COMM CIRCUIT [U1000]		PAST	
ERASE		PRINT	
MODE	BACK	LIGHT	COPY

SKIA1039E

Front Wiper Intermittent Operation Switch Position Cannot Be Adjusted

AKS009YU

1. CHECK COMBINATION SWITCH INPUT SIGNAL

Select "BCM" on CONSULT-II. With "WIPER" data monitor, make sure "INT VOLUME" changes in order from 1 to 7 according to operation of the intermittent switch dial position.

OK or NG

OK >> Replace BCM. Refer to [LT-128, "Combination Switch Inspection"](#) .

NG >> Replace wiper switch.

DATA MONITOR			
MONITOR		NO DTC	
INT VOLUME		4	
		RECORD	
MODE	BACK	LIGHT	COPY

PKIA7772E

Wipers Do Not Wipe When Front Washer Operates

AKS009YV

1. CHECK CIRCUIT BETWEEN COMBINATION SWITCH AND BCM

Select "BCM" on CONSULT-II. With "WIPER" on "DATA MONITOR", make sure "FR WASHER SW" turns ON-OFF according to operation of front washer switch.

When front wiper switch washer position : FR WASHER SW ON

OK or NG

OK >> Replace BCM. Refer to [BCS-15, "Removal and Installation of BCM"](#) .

NG >> Replace wiper switch.

DATA MONITOR			
MONITOR		NO DTC	
FR WASHER SW		ON	
		RECORD	
MODE	BACK	LIGHT	COPY

PKIA7613E

FRONT WIPER AND WASHER SYSTEM

After Front Wipers Operate for 10 Seconds, They Stop for 20 Seconds, and After Repeating the Operations Five Times, They Become Inoperative

AKS009YW

CAUTION:

- When auto-stop signal has not varied for 10 seconds or longer while IPDM E/R is operating front wipers, IPDM E/R considers that front wipers are locked, and stops wiper output. That causes this symptom.
- This status can be checked by “DATA MONITOR” of “IPDM E/R” on which “WIPER PROTECTION” item shows “BLOCK”.

1. CHECK WIPER MOTOR SIGNAL

④ With CONSULT-II

Select “IPDM E/R” on CONSULT-II. With “DATA MONITOR”, confirm that “WIP AUTO STOP” turns “ACT P” - “STOP P” linked with wiper operation.

⊗ Without CONSULT-II

GO TO 2.

OK or NG

OK >> Replace IPDM E/R.

NG >> GO TO 2.

DATA MONITOR			
MONITOR			
WIP AUTO STOP		STOP P	
RECORD			
MODE	BACK	LIGHT	COPY

PKIA7653E

2. CHECK WIPER AUTO STOP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front wiper motor connector.
3. Check continuity between IPDM E/R harness connector E7 terminal 32 (L/Y) and front wiper motor harness connector E52 terminal 1 (L/Y).

32 (L/Y) - 1 (L/Y) : Continuity should exist.

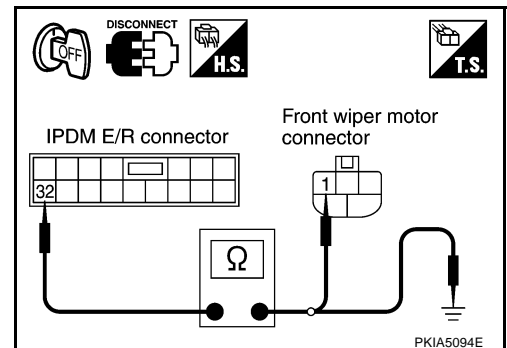
4. Check continuity between IPDM E/R harness connector E7 terminal 32 (L/Y) and ground.

32 (L/Y) - Ground : Continuity should not exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

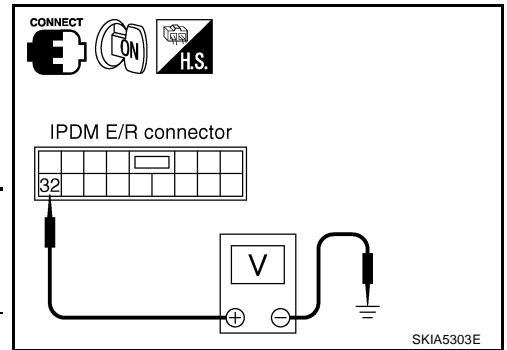


FRONT WIPER AND WASHER SYSTEM

3. CHECK FRONT WIPER MOTOR

1. Connect IPDM E/R connector and front wiper connector.
2. Turn ignition switch ON.
3. Check voltage between IPDM E/R harness connector E7 terminal 32 (L/Y) and ground while front wiper motor is stopped and while it is operating.

Terminals		(-)	Condition	Voltage
IPDM E/R (+)				
Connector	Terminal (Wire color)			
E7	32 (L/Y)	Ground	Wiper stopped	Approx. 0V
			Wiper operating	Approx. 12V



OK or NG

- OK >> Replace IPDM E/R.
- NG >> Replace front wiper motor.

Front Wipers Do Not Stop

1. CHECK CIRCUIT BETWEEN COMBINATION SWITCH AND BCM

With CONSULT-II
Select "BCM" on CONSULT-II. With "WIPER" on "DATA MONITOR", confirm that "FRONT WIPER INT", "FRONT WIPER LOW", "FRONT WIPER HI", and "FRONT WASHER SW" turn ON-OFF according to wiper switch operation.

Without CONSULT-II
Refer to [LT-128. "Combination Switch Inspection"](#) .

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Check wiper Switch. Refer to [LT-128. "Combination Switch Inspection"](#) .

DATA MONITOR	
MONITOR	
IGN ON SW	ON
IGN SW CAN	ON
FR WIPER HI	OFF
FR WIPER LOW	OFF
FR WIPER INT	OFF
FR WASHER SW	OFF
INT VOLUME	7
FR WIPER STOP	ON
VEHICLE SPEED	0.0 km/h
	Page Down
	RECORD
MODE	BACK LIGHT COPY

SKIA5300E

A
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C
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M

WW

FRONT WIPER AND WASHER SYSTEM

Removal and Installation of Front Wiper Arms, Adjustment of Wiper Arms Stop Location

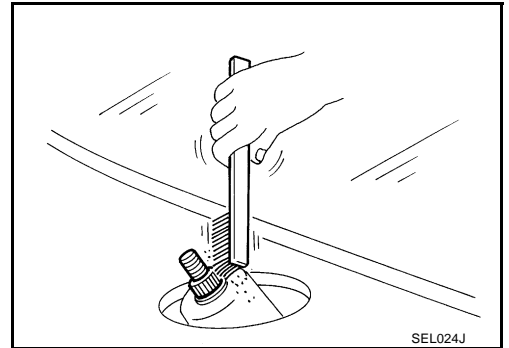
AKS009YY

REMOVAL

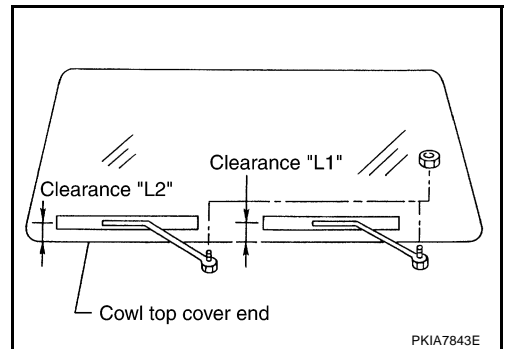
1. Operate wiper motor, and stop it at the auto stop position.
2. Remove washer tube from washer tube joint.
3. Remove wiper arm mounting nuts and wiper arm from vehicle.

INSTALLATION

1. Clean up the pivot area as illustrated. This will reduce possibility of wiper arm looseness.



2. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it "OFF" (auto stop).
3. Push wiper arm onto pivot shaft, paying attention to blind spline.
4. Attach washer tube to washer tube joint.
5. Lift the blade up and then set it down onto glass surface to set the blade center to clearance "L1" & "L2" immediately before tightening nut.
6. Eject washer fluid. Turn on wiper switch to operate wiper motor and then turn it "OFF".
7. Ensure that wiper blades stop within clearance "L1" & "L2".



Clearance "L1" : 47.1 - 62.1 mm (1.854 - 2.445 in)

Clearance "L2" : 32.1 - 47.1 mm (1.264 - 1.854 in)

- Tighten wiper arm nuts to specified torque.

Front wiper arm nuts : **23.6 N-m (2.4 kg-m, 17 ft-lb)**

ADJUSTMENT

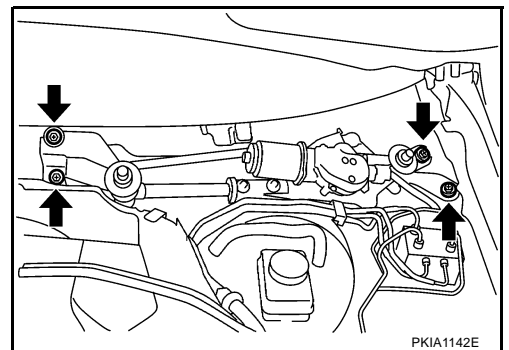
Refer to [WW-30, "INSTALLATION"](#) .

Removal and Installation of Front Wiper Motor and Linkage

AKS009YZ

REMOVAL

1. Prior to wiper motor and linkage removal, turn ON wiper switch to operate wiper motor and then turn it "OFF" (auto stop).
2. Remove wiper arm. Refer to [WW-30, "REMOVAL"](#) .
3. Remove cowl top cover. Refer to [EI-20, "Removal and Installation"](#) in "EI" section.
4. Remove washer tube.
5. Disconnect wiper motor connector.
6. Remove wiper motor and linkage mounting bolts, and remove wiper motor and linkage.



FRONT WIPER AND WASHER SYSTEM

INSTALLATION

1. Install wiper motor and linkage to the vehicle.
2. Connect wiper motor assembly to the connector. Turn wiper switch ON to operate wiper motor, then turn wiper switch OFF (auto stop).
3. Attach washer tube to washer tube joint.
4. Install cowl top cover. Refer to [EI-20, "Removal and Installation"](#) in "EI" section.
5. Install wiper arms. Refer to [WW-30, "Removal and Installation of Front Wiper Arms, Adjustment of Wiper Arms Stop Location"](#).
6. Attach wiper arm washer tube.

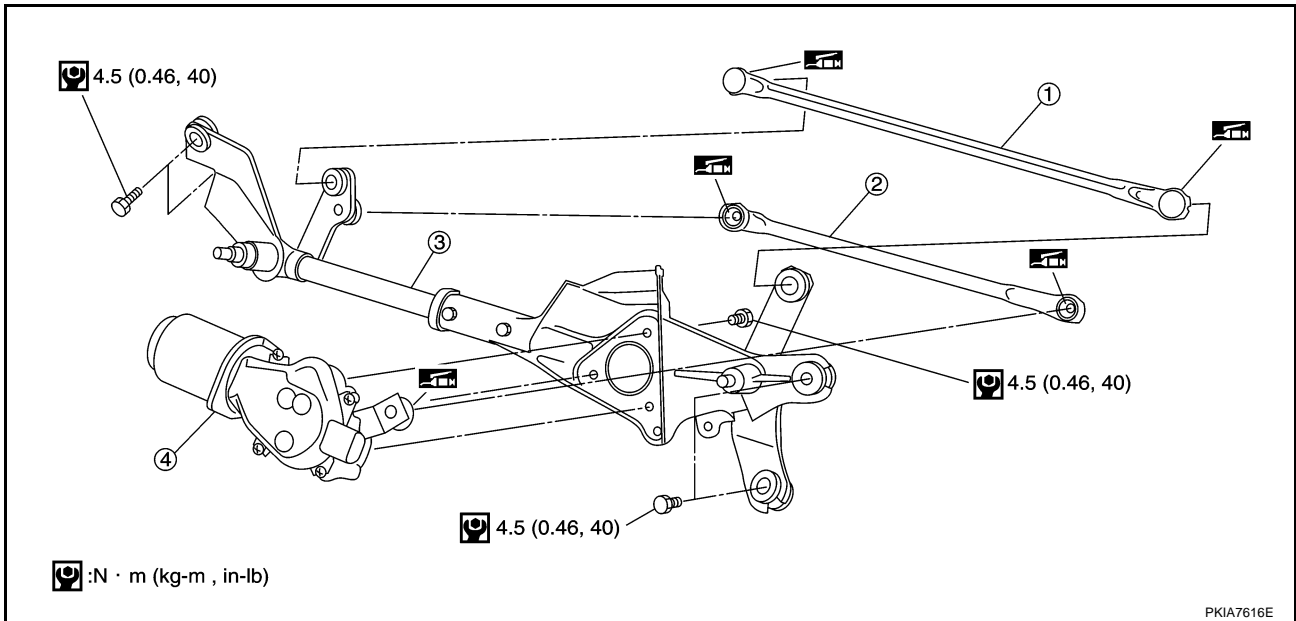
Wiper motor assembly bolts : 4.5 N·m (0.46 kg-m, 40 in-lb)

CAUTION:

- Do not drop the wiper motor or cause it to contact other parts.
- Check grease conditions of the motor arm and wiper link joint (at retainer). Apply grease if necessary.

Disassembly and Assembly of Front Wiper Motor and Linkage

AKS009Z0



1. Wiper link
2. Wiper link
3. Wiper frame
4. Wiper motor

DISASSEMBLY

1. Remove wiper link from wiper frame and wiper motor arm.
2. Remove wiper motor mounting bolts, and remove wiper motor from wiper frame.

ASSEMBLY

Paying attention to the work listed below, assemble in reverse order of disassembly.

Wiper motor bolts : 4.5 N·m (0.46 kg-m, 40 in-lb)

FRONT WIPER AND WASHER SYSTEM

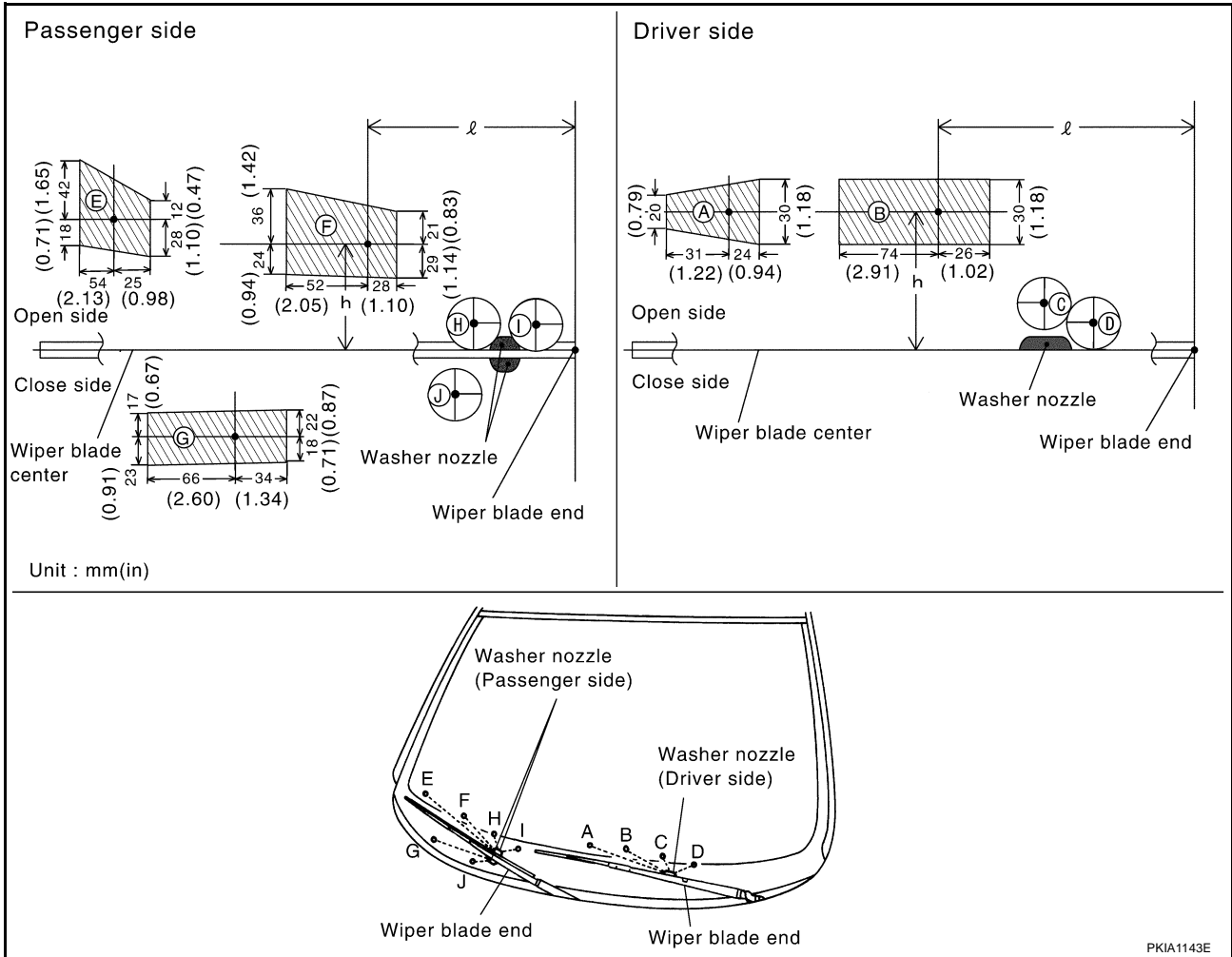
AKS00A0Q

Washer Nozzle Adjustment

1. When wiper blade position is in auto stop condition, remove wiper motor connector to ensure wiper arms do not move.
2. Adjust each nozzle position (A, B, E, F, and G) so that spray positions are in the range of shaded parts.

CAUTION:

Only washer nozzles (A, B, E, F, and G) can be adjusted. Washer nozzles (C, D, H, I, and J) cannot be adjusted because of fixed nozzles.

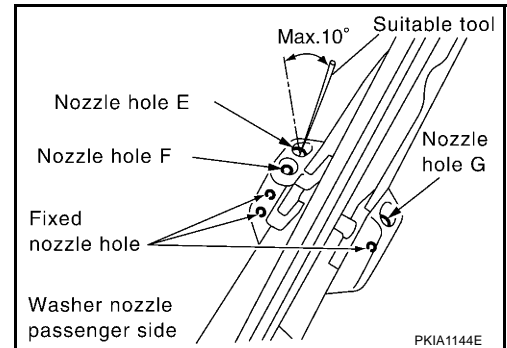


Unit : mm(in)

PKIA1143E

Unit: mm (in)

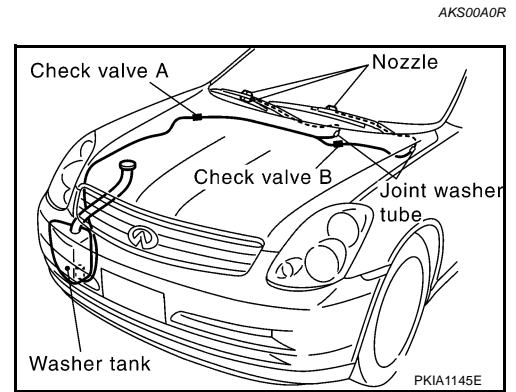
Spray position	h (height)	ℓ (width)
A	25 (0.98)	339 (13.35)
B	25 (0.98)	176 (6.93)
(C)	—	—
(D)	—	—
E	53 (2.09)	306 (12.05)
F	39 (1.54)	158 (6.22)
G	-32 (-1.26)	244 (9.61)
(H)	—	—
(I)	—	—
(J)	—	—



PKIA1144E

FRONT WIPER AND WASHER SYSTEM

Washer Tube Layout



Removal and Installation of Front Washer Nozzle

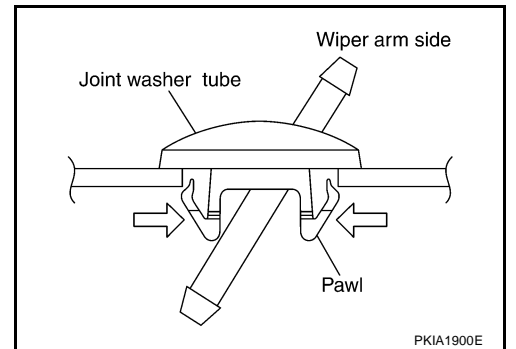
Replace wiper arm assembly. Refer to [WW-30, "Removal and Installation of Front Wiper Arms, Adjustment of Wiper Arms Stop Location"](#).

CAUTION:

Removal/installation of the washer nozzle as a unit must not be done.

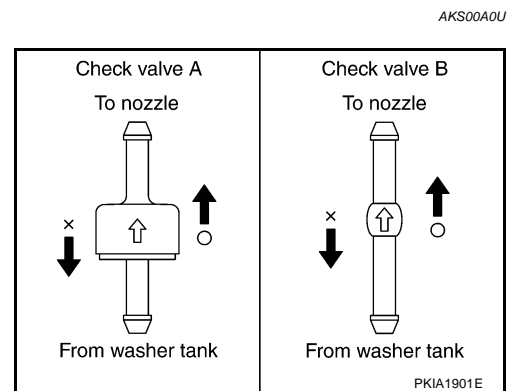
Removal and Installation of Front Washer Joint

1. Remove upwards while pressing the tab on reverse side.
2. Remove washer tube.



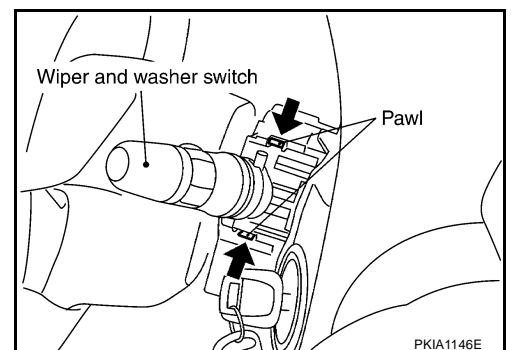
Inspection of Check Valve

Blow air in the injection direction, and check that air flows only one way. Make sure that the reverse direction (inhale) is not possible.



Removal and Installation of Front Wiper and Washer Switch

1. Remove steering column cover. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) in "IP" section.
2. Remove mounting bolts of clusterlid A and combination meter. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) in "IP" section.
3. Pull wiper and washer switch toward the passenger door while pressing pawls in direction shown by the arrow in the figure, and remove it from the base.
4. Remove wiper and washer switch connector.

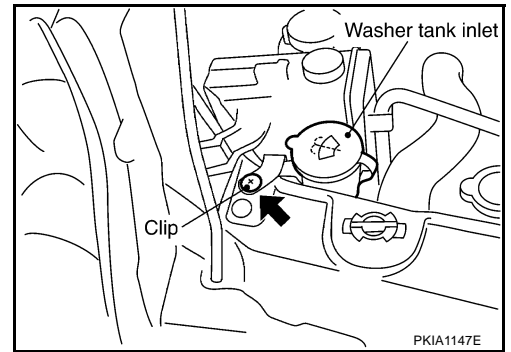


FRONT WIPER AND WASHER SYSTEM

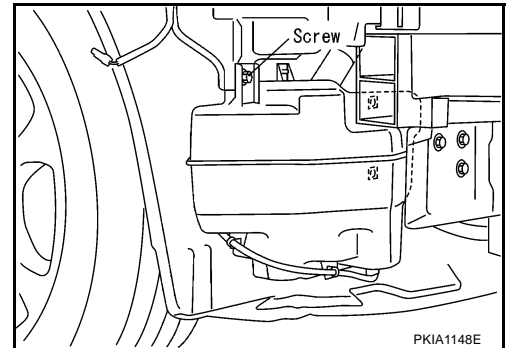
Removal and Installation of Washer Tank REMOVAL

AKS00A0W

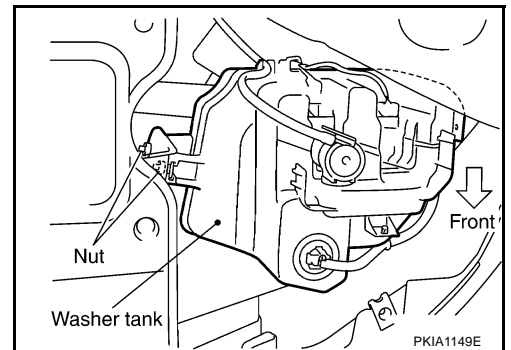
1. Pull out washer tank inlet.



2. Remove fender protector in the right side. Refer to [EI-21](#), "[FENDER PROTECTOR](#)" in "EI" section.
3. Remove right half of front bumper fascia. Refer to [EI-14](#), "[FRONT BUMPER](#)" in "EI" section.
4. Remove washer pump connector.
5. Remove washer tank installation screw and nuts.



6. Remove washer tube, and remove washer tank from the vehicle.



INSTALLATION

Note the following, and install in reverse order of removal.

CAUTION:

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

Washer tank installation screw

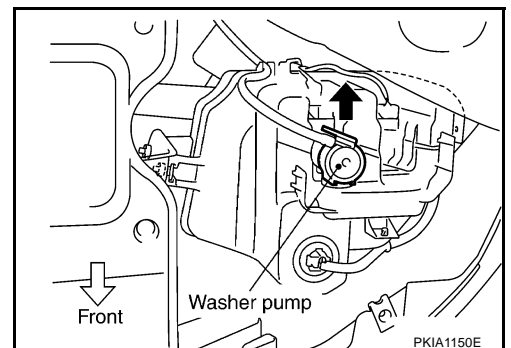
Tightening torque

: 5.7 N·m (0.58 kg·m, 50 in·lb)

Removal and Installation of Washer Pump REMOVAL

AKS00A0X

1. Remove fender protector in the right side. Refer to [EI-21](#), "[FENDER PROTECTOR](#)" in "EI" section.
2. Remove washer pump connector and tube.
3. Pull out washer pump in direction shown by the arrow in the figure. Remove washer pump from washer tank.



FRONT WIPER AND WASHER SYSTEM

INSTALLATION

Paying attention to the following, install in reverse order of removal.

CAUTION:

When installing washer pump, there should be no packing twists, etc.

A

B

C

D

E

F

G

H

I

J

WW

L

M

CIGARETTE LIGHTER

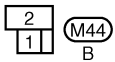
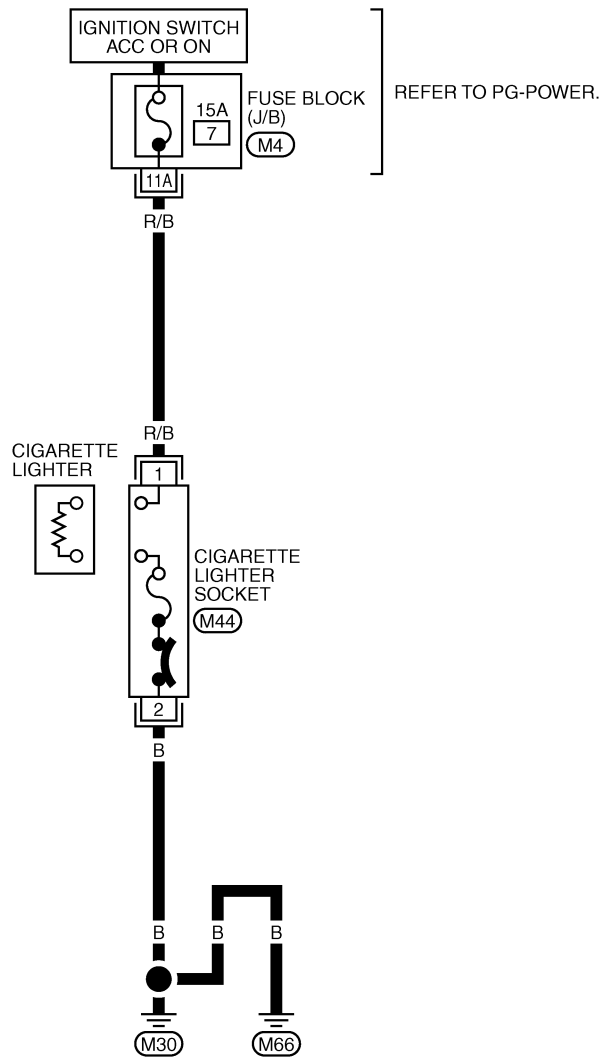
PFP:35330

CIGARETTE LIGHTER

Wiring Diagram — CIGAR —

AKS009ZW

WW-CIGAR-01



REFER TO THE FOLLOWING.

(M4) -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT0567E

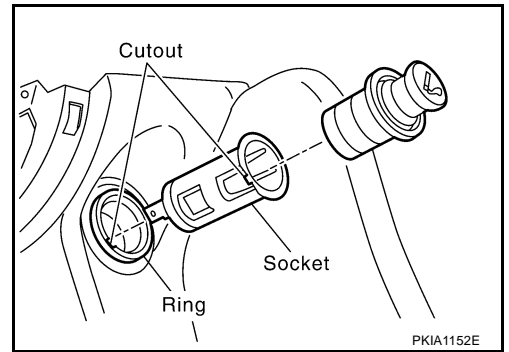
CIGARETTE LIGHTER

Removal and Installation of Cigarette Lighter

AKS00A0Y

REMOVAL

1. Remove the instrument side panel. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) in "IP" section.
2. Pull out cigarette lighter.
3. Remove socket.
4. Press out ring from the back of instrument side panel.



INSTALLATION

Install in the reverse order of removal.

A
B
C
D
E
F
G
H
I
J
L
M

WW

POWER SOCKET

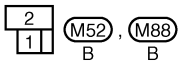
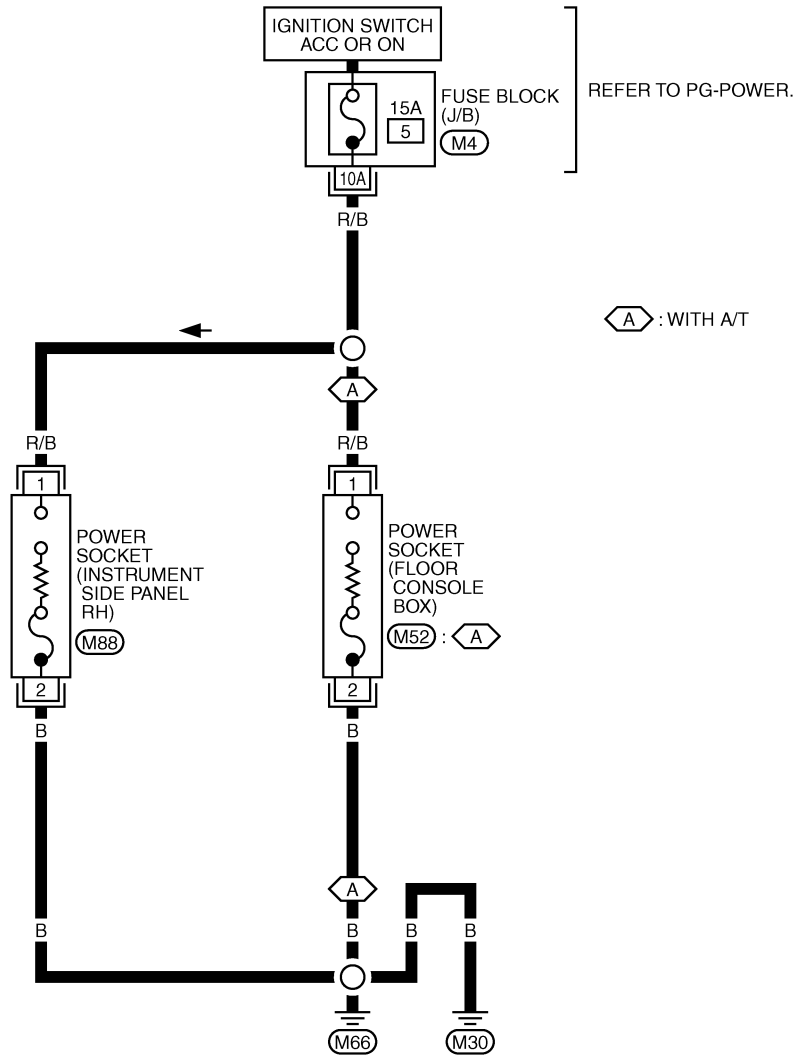
PF2:253A2

POWER SOCKET

Wiring Diagram — P/SCKT —

AKS009ZY

WW-P/SCKT-01



REFER TO THE FOLLOWING.
M4 - FUSE BLOCK-JUNCTION
BOX (J/B)

TKWT0568E

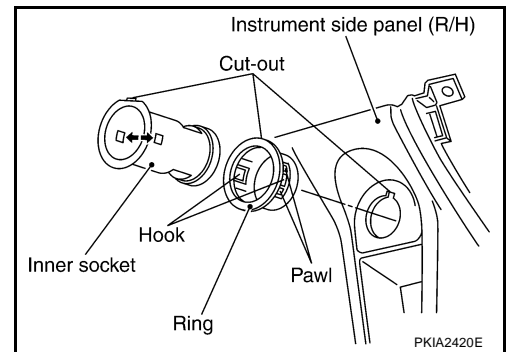
POWER SOCKET

Removal and Installation of Instrument Power Socket

AKS00A0F

REMOVAL

1. Remove the instrument side panel (RH). Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) in "IP" section.
2. Disconnect power socket connector.
3. Remove inner socket from ring. While pressing the hook on the ring out from square hole.
4. Remove ring from instrument side panel while pressing pawls.



INSTALLATION

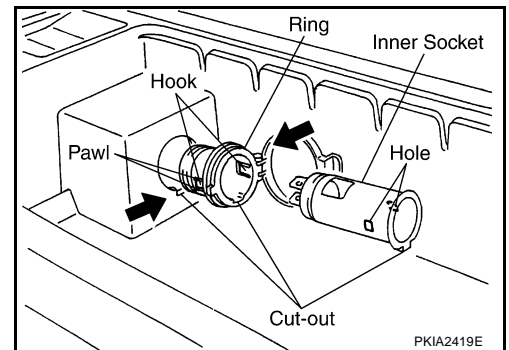
Instal in reverse order of removal.

Removal and Installation of Console Power Socket (A/T)

AKS00A0G

REMOVAL

1. Remove the console box assembly. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) in "IP" section.
2. Disconnect power socket connector.
3. Remove inner socket from ring, while pressing the hook on ring out from square hole.
4. Remove ring from console box while pressing pawls.



INSTALLTION

Install in the reverse order of removal.

A
B
C
D
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WW

HORN

PF2:25610

AKS00A02

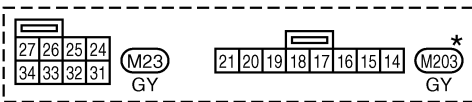
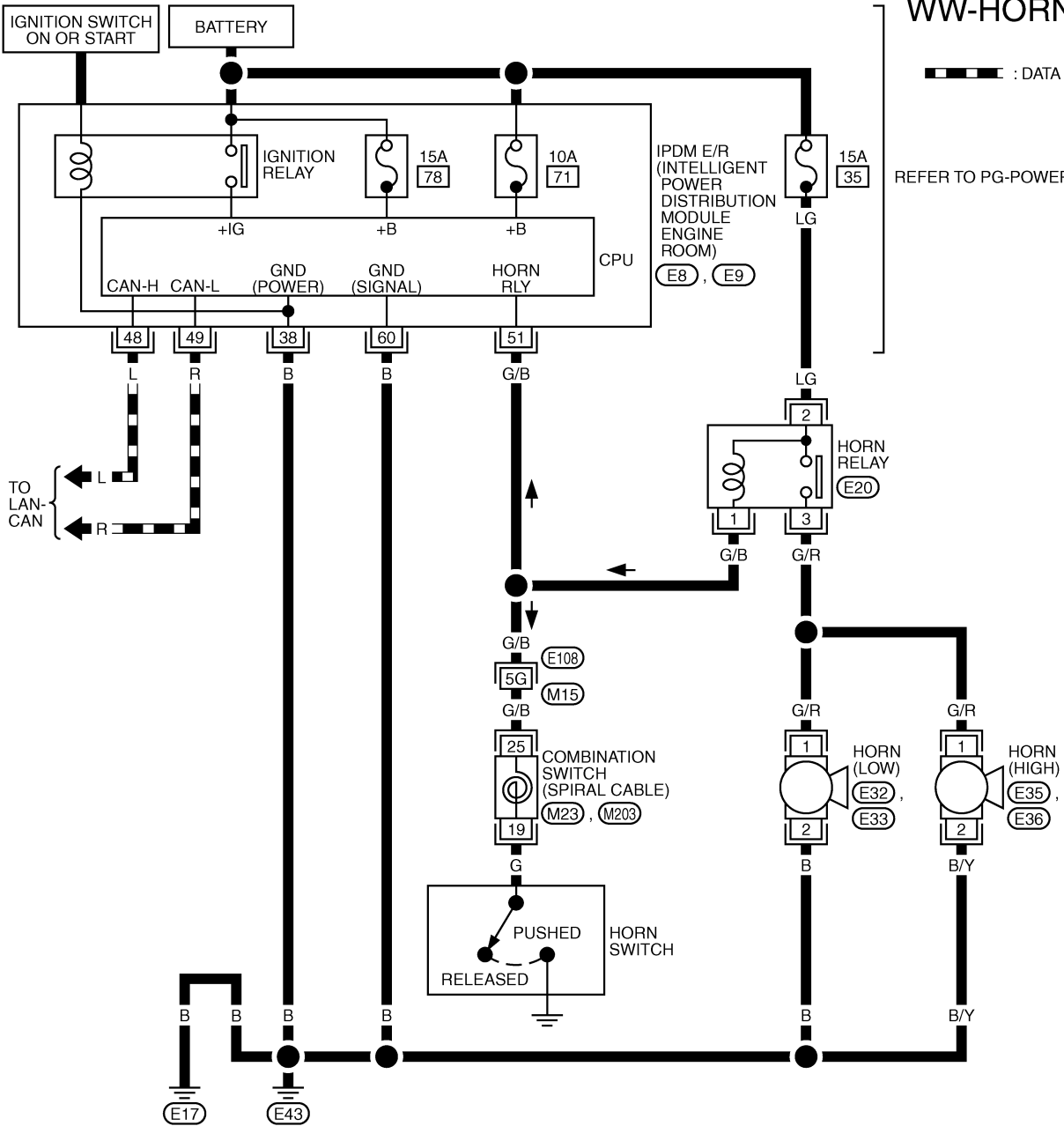
HORN

Wiring Diagram — HORN —

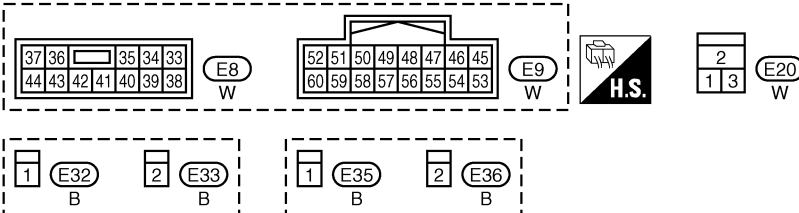
WW-HORN-01

DATA LINE

REFER TO PG-POWER.



*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.



REFER TO THE FOLLOWING.

E108 -SUPER MULTIPLE JUNCTION (SMJ)

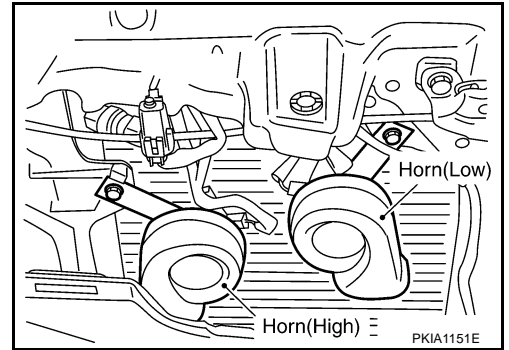
HORN

AKS00A03

Removal and Installation

REMOVAL

1. Remove front grille. Refer to [EI-19, "Removal and Installation"](#) in "EI" section.
2. Disconnect all horn connectors.
3. Remove horn mounting bolt and remove horn from vehicle.



INSTALLATION

Tighten horn bolt to specified torque.

Horn mounting bolt : 5.7 N·m (0.58 kg·m, 50 in·lb)

A
B
C
D
E
F
G
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I
J

WW

L
M

HORN
