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# SECTION **WW**

## WIPER, WASHER & HORN

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# PRECAUTION

## PRECAUTION

PFP:00011

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

EKS00F57

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.

### Wiring Diagrams and Trouble Diagnosis

EKS0011Q

When you read wiring diagrams, refer to the followings:

- Refer to [GI-14, "How to Read Wiring Diagrams"](#) .
- Refer to [PG-2, "POWER SUPPLY ROUTING"](#) for power distribution circuit.

When you perform trouble diagnosis, refer to the followings:

- Refer to [GI-10, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES"](#) .
- Refer to [GI-26, "How to Perform Efficient Diagnosis for an Electrical Incident"](#) .

## WASHER SYSTEM

PFP:28810

### System Description

EKS001IS

#### WIPER OPERATION

##### Description

With the ignition switch in the ON or START position, power is supplied

- through 20A fuse [No. 34, located in the fuse block (J/B) No. 2]
- to front wiper motor terminal 4 and
- to front wiper relay terminal 1.

Ground is supplied to front wiper switch terminals 17 and 20 through body grounds M25 and M115.

##### Low (MIST) and High Speed Wiper Operation

When the front wiper switch is placed in the LO or MIST position, ground is supplied

- through terminal 14 of front wiper switch
- to front wiper motor terminal 6.

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

When the front wiper switch is placed in the HI position, ground is supplied

- through terminal 16 of front wiper switch
- to front wiper motor terminal 5.

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

##### Auto Stop Operation

When the front wiper switch is placed in the OFF position, the front wiper motor will continue to operate until the wiper arms reach the base of the windshield (Auto stop). When the front wiper switch is placed in the OFF position, ground is supplied

- from terminal 14 of front wiper switch
- to front wiper motor terminal 6, in order to continue front wiper motor operation at low speed.

Ground is also supplied until the wiper arms reaches the base of the windshield

- through terminal 13 of front wiper switch
- to front wiper relay terminal 3
- through terminal 4 of front wiper relay
- to front wiper motor terminal 3
- through terminal 1 of front wiper motor, and
- through body grounds E42 and E62.

When the wiper arms reach the base of the windshield, the switch in the front wiper motor moves to the "STOP" position. The ground path is interrupted and the front wiper motor stops.

##### Intermittent Operation

Intermittent operation is controlled by the BCM. When the front wiper switch is placed in the INT position, ground is supplied

- to BCM terminal 9
- from front wiper switch terminal 15
- through body grounds M25 and M115.

The desired interval time is input

- to front wiper switch terminal 19
- from BCM terminal 48 and
- to BCM terminal 49
- from combination meter terminal 18 (vehicle speed pulse).

The desired interval time is input

- to front wiper relay terminal 2, and
- to BCM terminal 128.

With power and ground supplied, the front wiper relay is activated. When activated, an intermittent ground is supplied

# WASHER SYSTEM

- to front wiper motor terminal 6
- through front wiper switch terminal 14
- to front wiper switch terminal 13
- through front wiper relay terminal 3
- to front wiper relay terminal 5
- through body grounds E24 and E44.

Front wiper motor operates at desired interval with BCM terminal 9 grounded. Intermittent operation can be adjusted from:

- Approx. 0.9 - 45sec. (when vehicle is stopped)
- Approx. 0.4 - 30 sec. (when vehicle is moving)

Judgement on vehicle stopped or moving:

- Stopped → Moving: More than 5 km/h (3 MPH)
- Moving → Stopped: Less than 2 km/h (1 MPH)

## WASHER OPERATION

With the ignition switch in the ON or START position, power is supplied

- through 20A fuse [No. 34, located in the fuse block (J/B) No. 2]
- to front washer motor terminal 1.

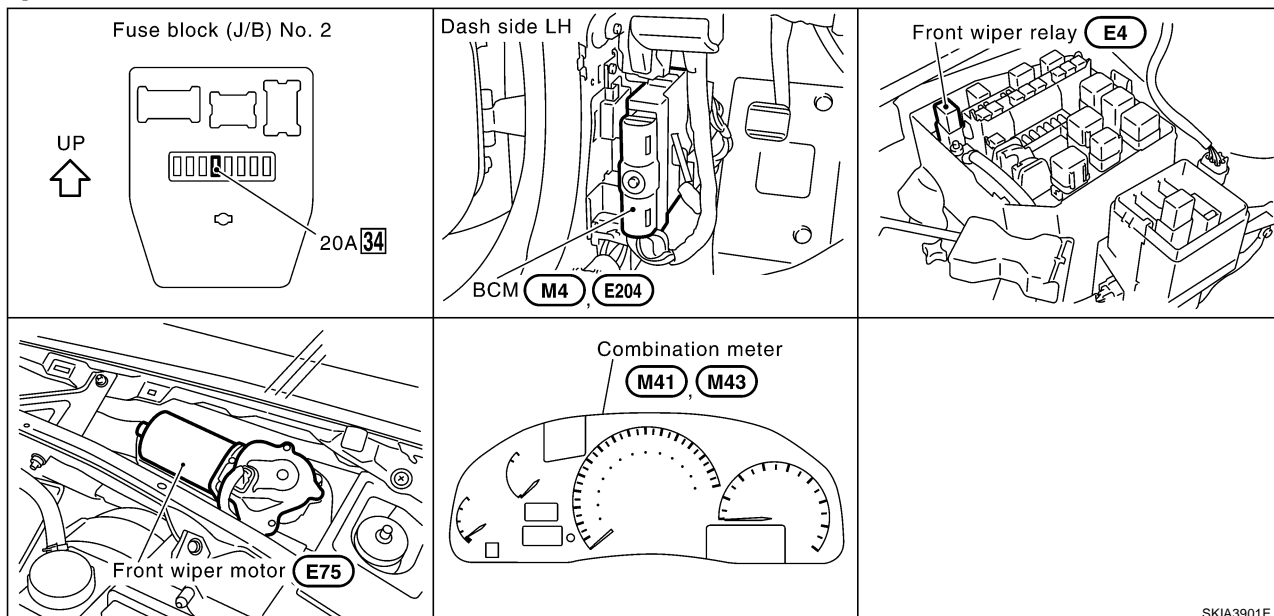
When the lever is pulled to the WASH position, ground is supplied

- to front washer motor terminal 2, and
- to BCM terminal 4
- from terminal 18 of front wiper switch
- through terminal 17 of front wiper switch, and
- through body grounds M25 and M115.

With power and ground supplied, the front washer motor operates. The front wiper motor operates at low speed for about 3 seconds. This feature is controlled by the BCM in the same manner as the intermittent operation.

## Component Parts and Harness Connector Location

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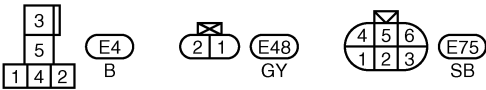
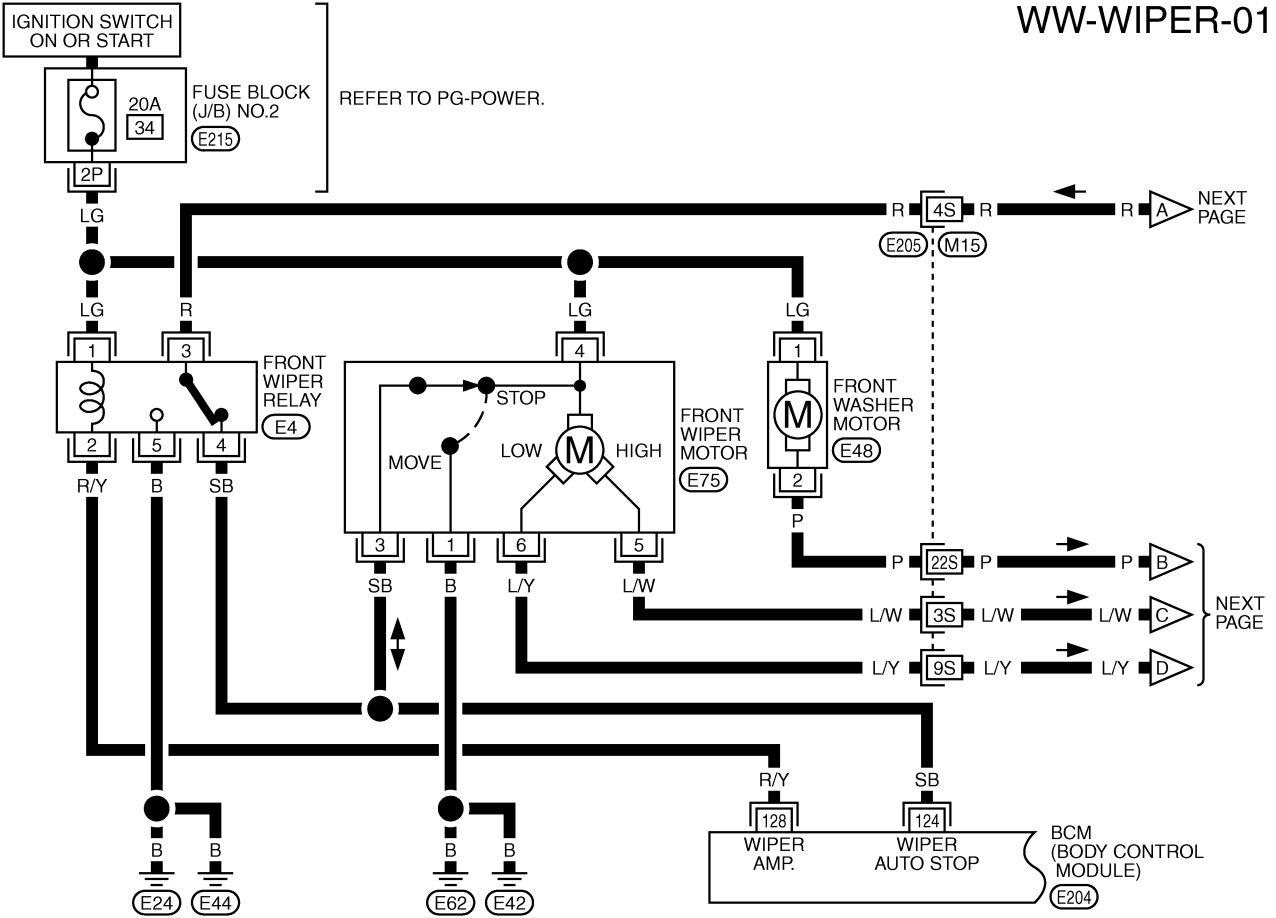


# WASHER SYSTEM

EKS001V

## Wiring Diagram — WIPER —

WW-WIPER-01



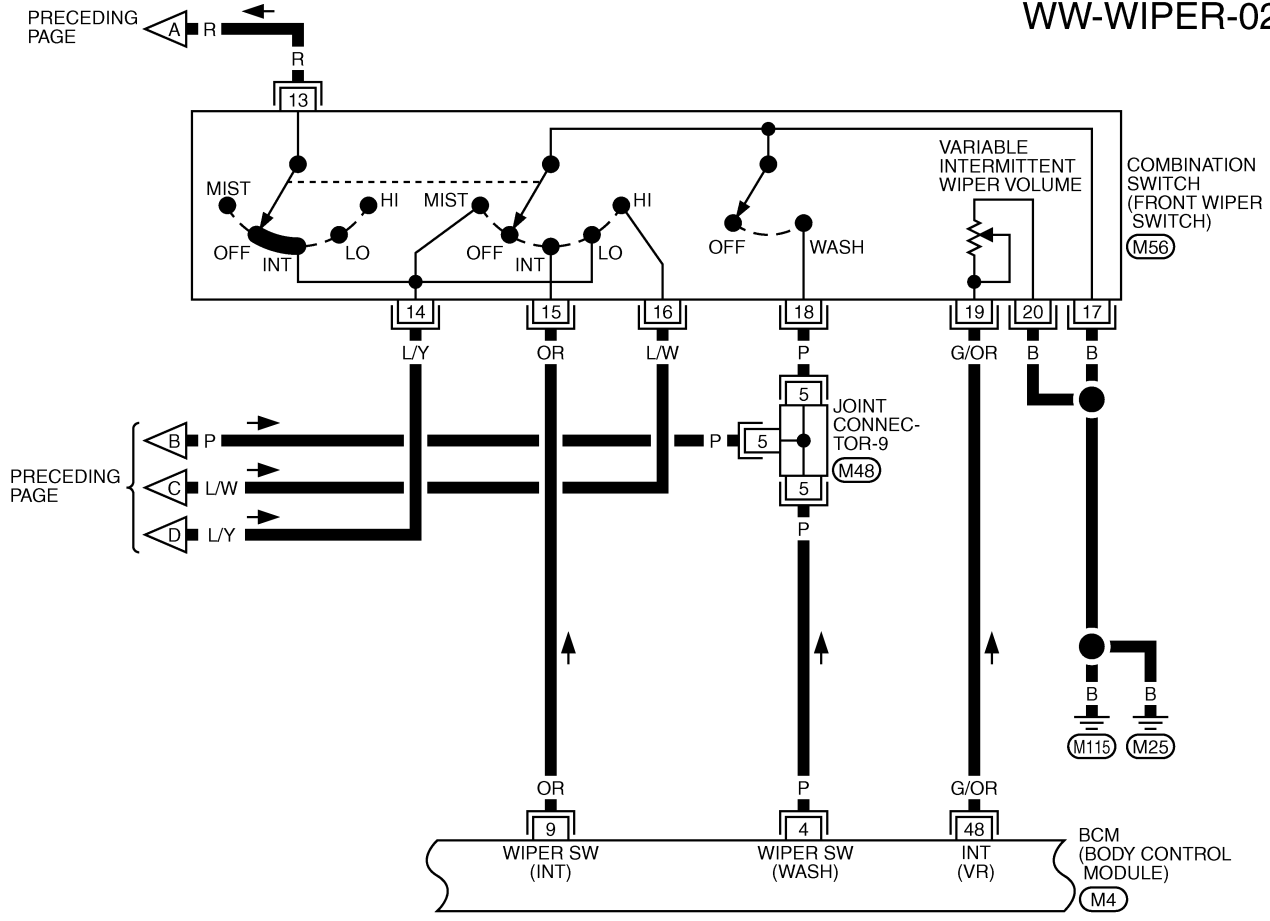
REFER TO THE FOLLOWING.

- (E205) -SUPER MULTIPLE JUNCTION (SMJ)
- (E215) -FUSE BLOCK-JUNCTION BOX (J/B) NO.2
- (E204) -ELECTRICAL UNITS

TKWM0430E

# WASHER SYSTEM

WW-WIPER-02



1	1	2	2	3	3	3	3
4	4	4	4	5	5	5	5

(M48) B

14			18
20	19	16	17
		13	15

(M56) GY

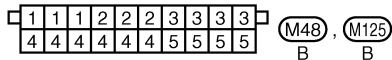
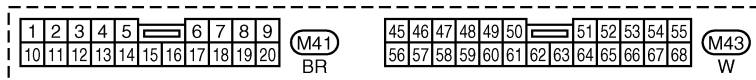
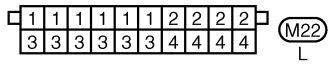
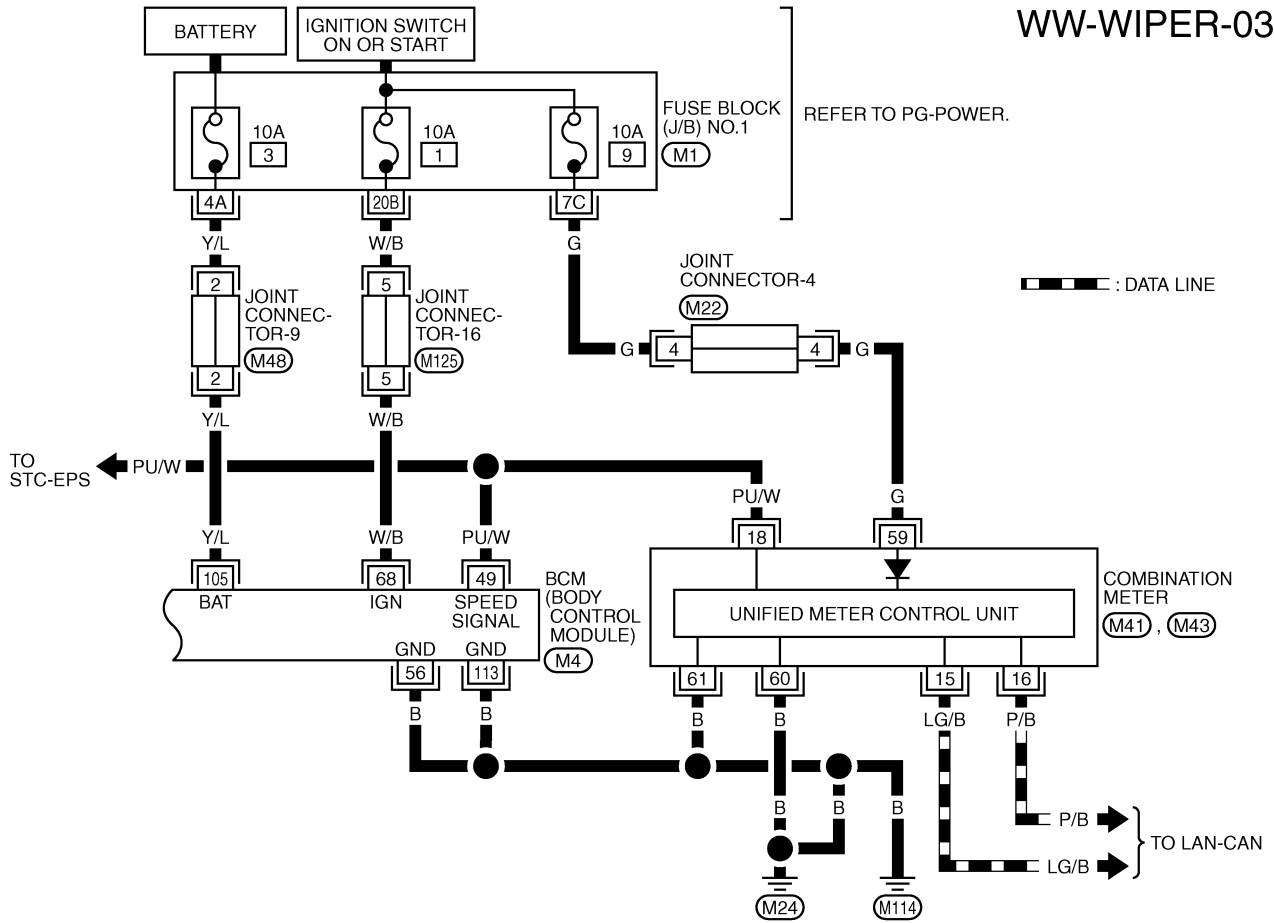
REFER TO THE FOLLOWING.  
(M4) -ELECTRICAL UNITS

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WW

# WASHER SYSTEM

WW-WIPER-03



REFER TO THE FOLLOWING.

(M1) - FUSE BLOCK-JUNCTION BOX (J/B) NO.1

(M4) - ELECTRICAL UNITS

TKWM0432E

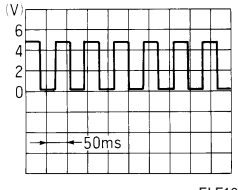
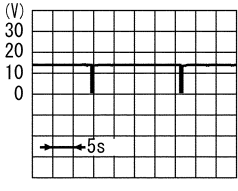
EKS0011W

## Terminals and Reference Values for BCM

Terminal No.	Wire color	Item	Condition			Reference value (V)
			Ignition switch	Operation or condition		
4	P	Washer switch signal	ON	Front wiper switch	WASH	Approx. 0
					OFF	Approx. 12
9	OR	Front wiper switch INT signal	ON	Front wiper switch	INT	Approx. 0
					OFF	Approx. 8
48	G/OR	Intermittent wiper volume signal	ON	Wiper intermittent interval	Long.	Approx. 3.6
					Short.	Approx. 0



# WASHER SYSTEM

Terminal No.	Wire color	Item	Condition		Reference value (V)
			Ignition switch	Operation or condition	
49	PU/W	Vehicle speed signal (2-pulse)	ON	Vehicle speed approx. 40 km/h	
56	B	Ground	ON	–	Approx. 0
68	W/B	ignition on signal	ON	–	Approx. 12
105	Y/L	Battery power supply	OFF	–	Approx. 12
113	B	Ground	ON	–	Approx. 0
124	SB	Front wiper auto stop signal	ON	Front wiper is moving	Approx. 0
				Front wiper while the vehicle is stopped	Approx. 12
128	R/Y	Front wiper motor operation signal	ON	Front wiper switch: INT position	

## Work Flow

1. Confirm the symptom or customer complaint.
2. Understand the system description, refer to [WW-3, "System Description"](#) .
3. Perform preliminary inspection, refer to [WW-9, "Preliminary Inspection"](#) .
4. According to the trouble diagnosis chart, repair or replace the cause of the malfunction.
5. Does wiper function operate normally? If it operates normally, go to 6. If not, go to 4.
6. Inspection end.

## Preliminary Inspection

### SETTING CHANGE FUNCTIONS

- With CONSULT-II, each function can be changed in setting, refer to [WW-12, "WORK SUPPORT"](#) .

#### CAUTION:

**After the setting was changed, the new setting will be maintained even if the battery was disconnected.**

Setting change mode	CONSULT-II (WORK SUPPORT)	Description
Wiper intermittent speed control by vehicle speed	ON	Activated
	OFF	Inactivated

# WASHER SYSTEM

## INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

### 1. CHECK FUSE

Check if any of the following fuses in BCM are blown.

Unit	Power source	Fuse No.
BCM	Battery	3
	Ignition switch ON or START	1

Refer to [WW-6. "Wiring Diagram — WIPER —"](#) .

**OK or NG**

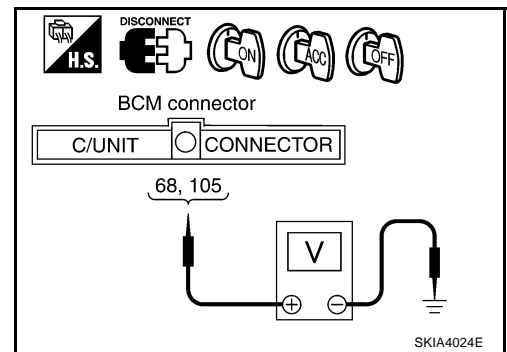
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to [PG-2. "POWER SUPPLY ROUTING"](#) .

### 2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect the BCM connector.
2. Check voltage between BCM harness connector M4 terminals 68 (W/B), 105 (Y/L) and ground.

Terminals		Ignition switch position	Ignition switch position		
(+)			OFF	ACC	ON
Connector	Terminals (Wire color)	(-)			
M4	105 (Y/L)	Ground	Battery voltage	Battery voltage	Battery voltage
	68 (W/B)		0V	0V	Battery voltage



**OK or NG**

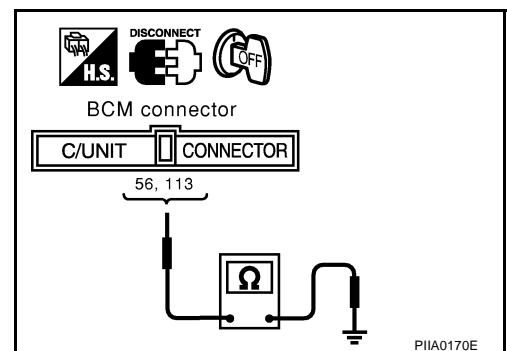
OK >> GO TO 3.

NG >> Check harness for open or short power supply circuit.

### 3. CHECK GROUND CIRCUIT

1. Check continuity between BCM harness connector M4 terminals 56 (B), 113 (B) and ground.

Terminals		Continuity	
(+)			
Connector	Terminal (Wire color)	(-)	
BCM (M4)	56 (B)	Ground	Yes
	113 (B)		



**OK or NG**

OK >> INSPECTION END

NG >> Repair harness.

### CONSULT-II Function

EKS0011Z

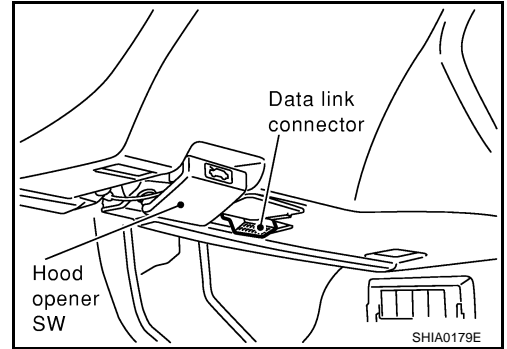
- CONSULT-II executes the following functions by combining data received and command transmitted via the communication line from the BCM. IVMS communication inspection, work support by part, self-diagnosis, data monitor, and active test display.

# WASHER SYSTEM

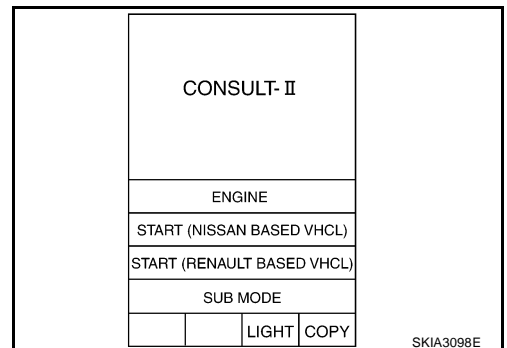
IVMS diagnosis part	Check item and diagnosis mode	Description
WIPER	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays data relative to BCM input signals and various control related data for each system.
	ACTIVE TEST	Gives a drive signal to a load to check the operation.
BCM PART NUMBER.		Displays BCM part No.

## CONSULT-II BASIC OPERATION

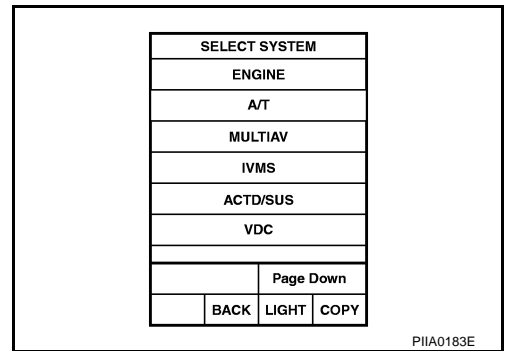
- With the ignition switch OFF, connect "CONSULT-II" and "CONSULT-II CONVERTER" to data link connector, and turn the ignition switch ON.



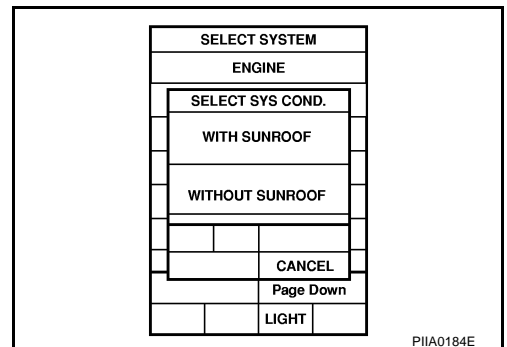
- Touch "START (NISSAN BASED VHCL)".



- Touch "IVMS".  
If "IVMS" is not indicated, go to [GI-38, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



- Check the model specification, and touch either "WITH SUNROOF" or "WITHOUT SUNROOF" on the "SELECT SYS COND" SCREEN.
- Touch "OK". If the selection is wrong, touch "CANCEL".
- Select the desired part to be diagnosed on the "SELECT TEST ITEM" screen.



# WASHER SYSTEM

## WORK SUPPORT

### Operation Procedure

1. Touch "WIPER" on the "SELECT TEST ITEM" screen.
2. Touch "WORK SUPPORT" on the "SELECT DIAG MODE" screen.
3. Touch "WIP INT VHCL SPD ADJ" on the "SELECT WORK ITEM" screen.
4. Touch "START".
  - Wiper intermittent speed control by vehicle speed can be canceled or resumed.
5. Touch "CURRENT SETTING" for changing "CURRENT SETTING".  
For no changing "CURRENT SETTING", touch "END".

"CURRENT SETTING"	Wiper intermittent speed control.
"ON"	Activated
"OFF"	Inactivated

6. Touch "END" after customizing is completed.

## DATA MONITOR

### Operation Procedure

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

### Date Monitor Item

Monitored item	Description
IGN ON SW	Indicates "IGN [ON] / ACC or OFF [OFF]" condition of ignition switch signal.
INT SW	Indicates " INT position [ON] / Others [OFF]" condition of front wiper switch signal.
WASH SW	Indicates "WASH position [ON] / Others [OFF]" condition of front wiper switch signal.
VHCL SPEED SE	Indicates "Vehicle is moving [RUN] / Vehicle stopped [STOP]" condition of vehicle speed signal.
WIPR AUTO STP	Indicates "INT or OFF position [IGN] / LO or HI position [OFF]" condition of front wiper switch signal.
INTRESIST	Indicates " Intermittent resistance value [approx. 0 to 1]" condition front wiper switch signal.

## ACTIVE TEST

### Operation Procedure

1. Touch "WIPER" on the "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on the "SELECT DIAG MODE" screen.
3. Touch the item to be tested, and check the operation.

Test item "WIPER AMP"	Front wiper motor operation
"ON"	Operate
"OFF"	Stop

4. During the operation check, touching "OFF" deactivates the operation.

## On Board Diagnosis

EKS001J0

- IVMS can check communication diagnosis, switch monitor, and central locking system self diagnosis using on board diagnosis.
- Map lamps and step lamps (all seats) act as the indicators for the on board diagnosis.

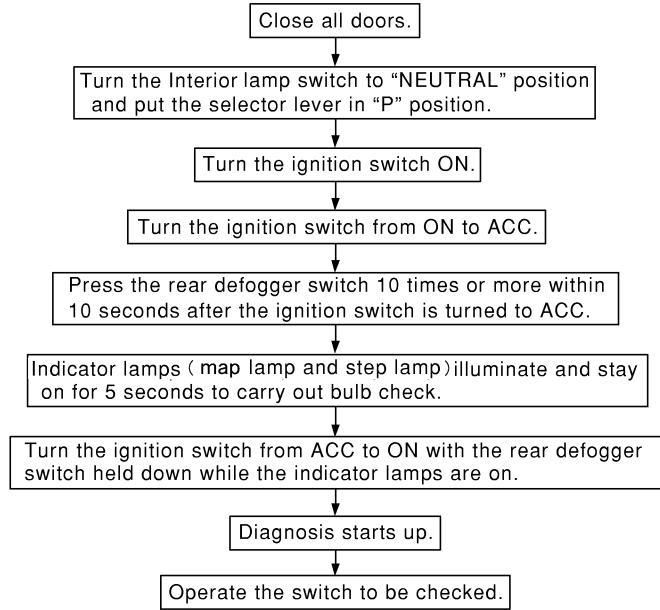
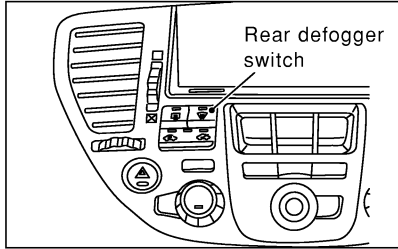
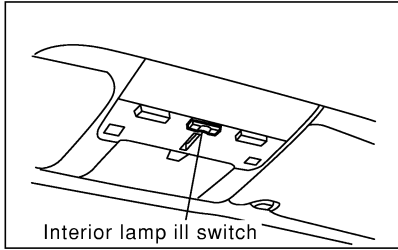
## DIAGNOSIS ITEM FOR FRONT WIPER AND WASHER SYSTEM

Diagnosis item	Description
Switch monitor	It can checks wiper and washer switch.

# WASHER SYSTEM

## SWITCH MONITOR

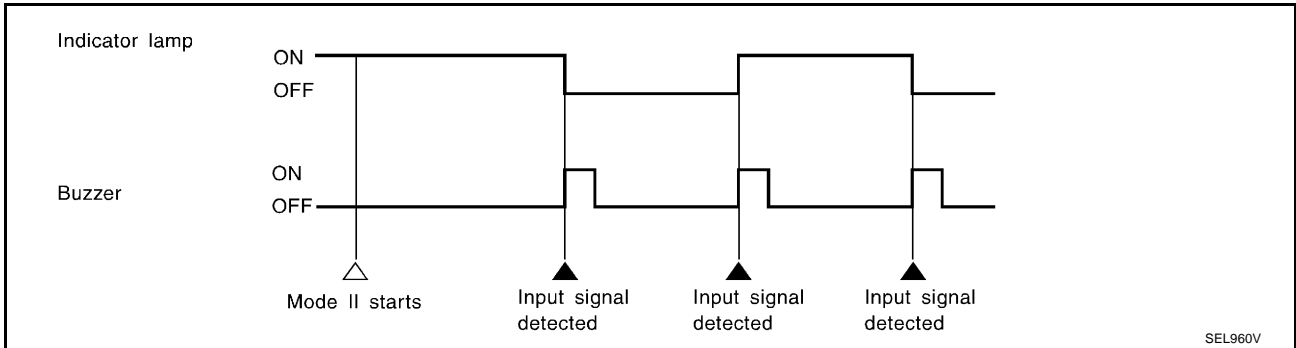
### How to Perform Switch Monitor



SIIA0411E

### Diagnosis Result Display

- Detects the status change (switch ON/OFF operation) of the switch to be checked, and turns on/off the indicator lamps (the map lamp and step lamp). Also sounds the buzzer for 0.5 seconds.
- If a malfunction is detected, no indicator lamp and buzzer react.



### Cancel of Switch Monitor

- The ignition switch is turned OFF.
- Drive the vehicle at more than 7 km/h (4MPH).

# WASHER SYSTEM

EKS001J1

## Intermittent Wiper Does Not Operate

### 1. CHECK INTERMITTENT FRONT WIPER SWITCH INPUT SIGNAL


 With CONSULT-II  
See "INT SW" in "DATA MONITOR" mode.

**When front wiper switch is in INT position : ON**

**When front wiper switch is in OFF position : OFF**

#### NOTE:

When "Data monitor" is operating, intermittent wiper do not operate.

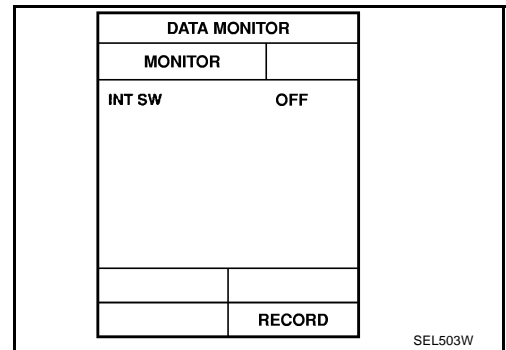
 Without CONSULT-II  
Check front wiper switch (INT) in switch monitor mode, refer to [WW-13. "SWITCH MONITOR"](#).

OK or NG


OK >> GO TO 2.

NG >> Check the following.

- Front wiper switch
- Harness for open or short between BCM and front wiper switch
- Front wiper switch ground circuit

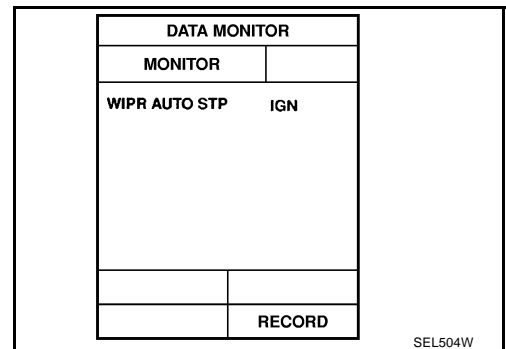


### 2. CHECK WIPER AUTO STOP SIGNAL

 With CONSULT-II  
See "WIPR AUTO STP" in "DATA MONITOR" mode, and turn front wiper switch to LO or HI position.

**When front wiper switch is in INT or OFF position : IGN**

**When front wiper switch is in LO or HI : GND**



 Without CONSULT-II

1. Turn ignition switch to ON position.
2. Turn front wiper switch to LO or HI position.
3. Check voltage between BCM harness connector E204 terminal 124 (SB) and ground.

**Wiper is moving : Approx. 0V**

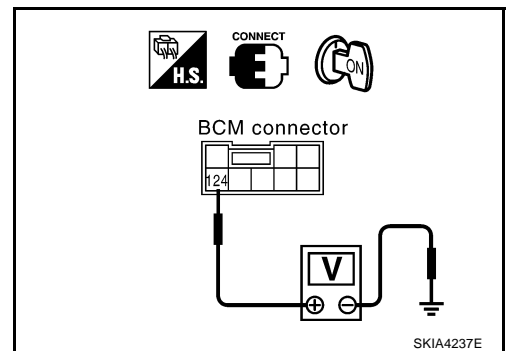
**Wiper is stopped : Approx. 12V**

OK or NG

OK >> GO TO 3.

NG >> Check the following.

- Front wiper motor
- Front wiper motor ground circuit
- Harness for open or short between BCM and front wiper motor



# WASHER SYSTEM


## 3. CHECK IGNITION SWITCH ON SIGNAL

 With CONSULT-II  
See "IGN ON SW" in "DATA MONITOR" mode.

**When ignition switch is ON : ON**  
**When ignition switch is ACC or OFF : OFF**

DATA MONITOR	
MONITOR	
IGN ON SW	ON
RECORD	

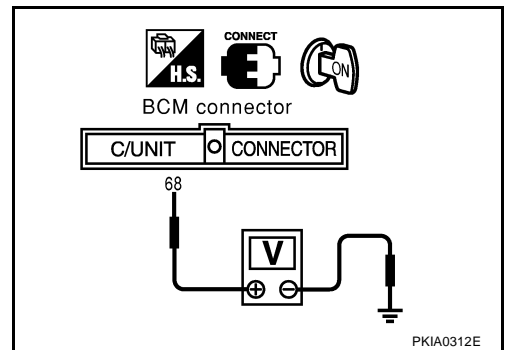
PKIA0311E

 Without CONSULT-II  
Check voltage between BCM harness connector M4 terminal 68 (W/B) and ground.


**Ignition switch is ON : Approx. 12V**  
**Ignition switch is ACC or OFF : Approx. 0V**

OK or NG

- OK >> GO TO 4.  
NG >> Check the following.
- 10A fuse [No. 1, located in the fuse block (J/B) No. 1]
  - Harness for open or short between fuse and BCM



## 4. CHECK WIPER OPERATION

 With CONSULT-II  
See "WIPER AMP" in "ACTIVE TEST" mode. Perform operation shown on display.

**Front wiper motor should operate.**

### NOTE:

If CONSULT-II is not available, skip this procedure and go to [WW-18. "Wiper and Washer Activate Individually but Intermittent Wiper and Washer Combination Does Not Operate"](#).

OK or NG

- OK >> Replace the BCM.  
NG >> Go to [WW-18. "Wiper and Washer Activate Individually but Intermittent Wiper and Washer Combination Does Not Operate"](#).

ACTIVE TEST	
WIPER AMP	OFF
ON	

SEL494W

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

WW

# WASHER SYSTEM

## Intermittent Time of Wiper Cannot be Adjusted

EKS001J2

### 1. CHECK INTERMITTENT WIPER VOLUME INPUT SIGNAL

 With CONSULT-II  
See "INT RESIST" in "DATA MONITOR" mode while turning intermittent wiper volume.

**Short interval : Approx. 0kohm**

**Long interval : Approx. 1kohm**

DATA MONITOR	
MONITOR	
INT RESIST	XXX kohm
RECORD	

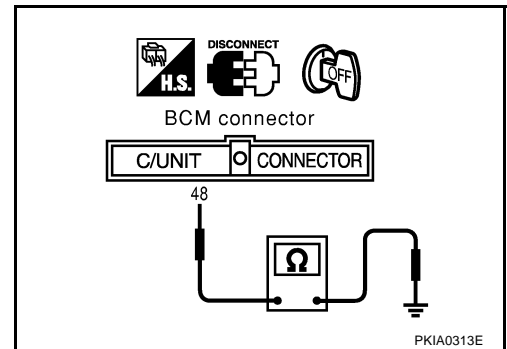
SEL506W

 Without CONSULT-II

1. Disconnect the BCM connector.
2. Measure resistance between BCM harness connector M4 terminal 48 (G/OR) and ground while turning intermittent wiper volume.

**Short interval : Approx. 0Ω**

**Long interval : Approx. 1Ω**



OK or NG

- OK >> Replace the BCM.  
NG >> GO TO 2.

### 2. CHECK FRONT WIPER SWITCH

Check front wiper switch, refer to [WW-22, "Wiper and Washer Switch Circuit Check"](#).


OK or NG

- OK >> Check the following.
- Harness for open or short between BCM and intermittent wiper volume
  - Front wiper switch ground circuit
- NG >> Replace the front wiper switch.

## Wiper and Washer Activate Individually but Not In Combination


EKS001J3

### 1. CHECK WASHER SWITCH INPUT SIGNAL

 With CONSULT-II  
See "WASH SW" in "DATA MONITOR" mode.

**When front washer switch is ON : ON**

**When front washer switch is OFF : OFF**

 Without CONSULT-II  
Check front wiper switch (WASH) in switch monitor mode, refer to [WW-13, "SWITCH MONITOR"](#).

OK or NG

- OK >> Replace the BCM.  
NG >> Check harness for open or short between BCM and front wiper switch.

DATA MONITOR	
MONITOR	
WASH SW	OFF
RECORD	

SEL507W



# WASHER SYSTEM

## Intermittent Wiper Operates, but There Is No Change In Intermittent Time Between When Vehicle Is Stopped and Moving

EKS001J4

### 1. CHECK THE SYMPTOM

Check that the speedometer in the combination meter operates normally.

OK or NG

OK >> GO TO 2.

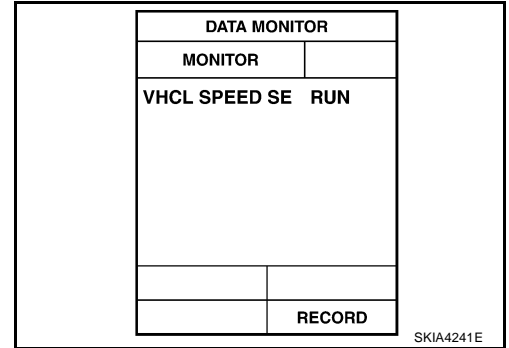
NG >> Check the vehicle speed signal. Refer to [DI-19, "Work Flow"](#) in DI section.

### 2. FUNCTIONAL INSPECTION

Ⓟ With CONSULT-II

With "VHCL SPEED SE" on the DATA MONITOR, check the vehicle speed signal. Refer to [WW-12, "DATA MONITOR"](#).

Monitor item [OPERATION or UNIT]	Contents
VHCL SPEED SE "<7km/>7km"	The present vehicle speed (less than 7 km/h (4 MPH), or 7 km/h (4 MPH) or higher) is displayed.



ⓧ Without CONSULT-II

GO TO 3.

OK or NG

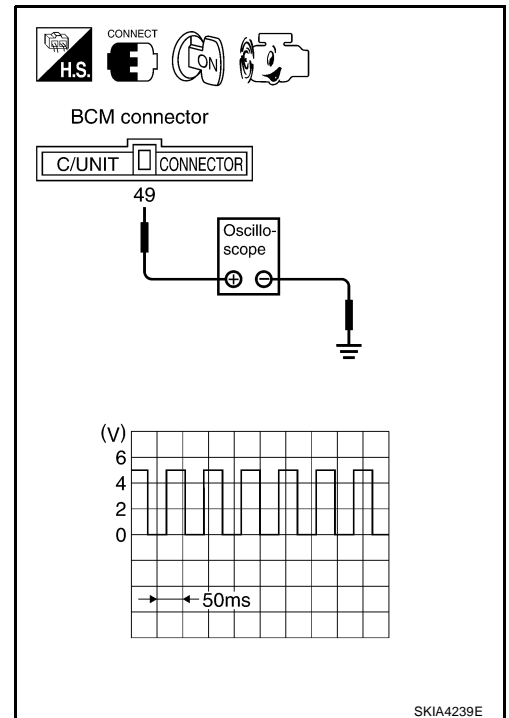
OK >> System is OK.

NG >> GO TO 3.

### 3. VEHICLE SPEED INPUT/OUTPUT INSPECTION

Start the engine, and check voltage between BCM harness connector M4 terminal 49 (PU/W) and ground, using an oscilloscope.

**Voltage waveform [When vehicle speed is approx. 40km/h (25MPH)]**



OK or NG

OK >> Replace the BCM.

NG >> GO TO 4.

# WASHER SYSTEM

## 4. HARNESS CONTINUITY INSPECTION

1. Turn ignition switch to OFF position.
2. Disconnect the BCM connectors and the combination meter connector.
3. Check continuity between BCM harness connector M4 terminal 49 (PU/W) and combination meter harness connector M41 terminal 18 (PU/W).

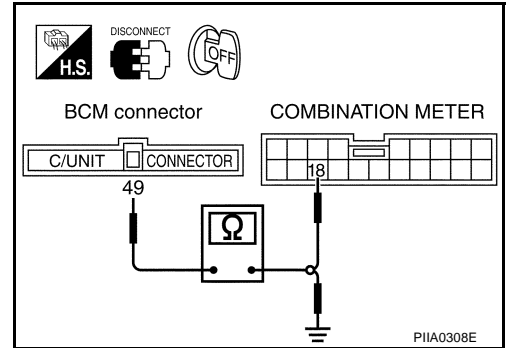
**Continuity should exist.**

4. Check continuity between BCM harness connector M4 terminal 49 (PU/W) and ground.

**Continuity should not exist.**

OK or NG

- OK >> Replace the combination meter.  
NG >> Repair harness or connector.



## Wiper and Washer Activate Individually but Intermittent Wiper and Washer Combination Does Not Operate

EKS001J5

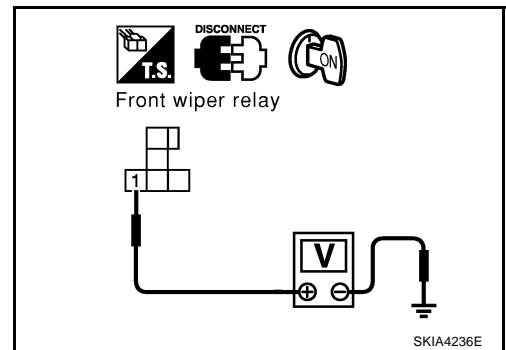
### 1. CHECK POWER SUPPLY CIRCUIT FOR FRONT WIPER RELAY

1. Remove the front wiper relay.
2. Turn ignition switch to ON position.
3. Check voltage between front wiper relay harness connector E4 terminal 1 (LG) and ground.

**Battery voltage should exist.**

OK or NG

- OK >> GO TO 2.  
NG >> Check the following.
- 20A fuse [No. 34, located in the fuse block (J/B) No.2]
  - Harness for open or short between front wiper relay and fuse



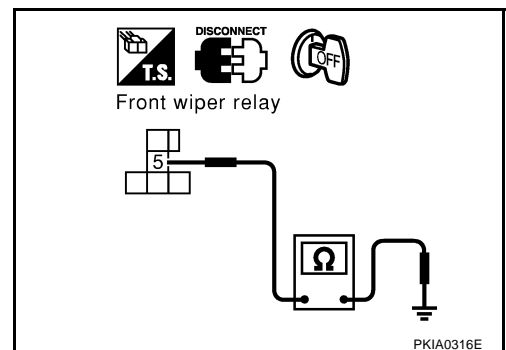
### 2. CHECK GROUND CIRCUIT FOR FRONT WIPER RELAY

1. Turn ignition switch to OFF position.
2. Check continuity between front wiper relay harness connector E4 terminal 5 (B) and ground.

**Continuity should exist.**

OK or NG

- OK >> GO TO 3.  
NG >> Repair harness ground circuit.



### 3. CHECK FRONT WIPER RELAY

Check front wiper relay.

OK or NG

- OK >> GO TO 4.  
NG >> Replace the front wiper relay.

# WASHER SYSTEM

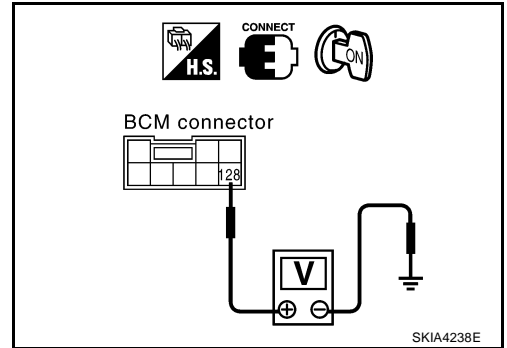
## 4. CHECK BCM OUTPUT SIGNAL

1. Connect the front wiper relay.
2. Turn ignition switch to ON position.
3. Check voltage between BCM harness connector E204 terminal 128 (R/Y) and ground.

**Wash** : 0V (for 0.7sec.)  
**OFF** : Approx. 12V

### OK or NG

- OK >> Repair harness between front wiper relay and BCM.  
NG >> Replace the BCM.



## Removal and Installation for Front Wiper Arms, Adjustment for Front Wiper Arms Stop Location

1. Prior to wiper arm installation, turn on front wiper switch to operate front wiper motor and then turn it "OFF" (Auto stop).
2. Lift the blade up and then set it down onto glass surface to set the blade center to clearance "L1" and "L2" immediately before tightening nut.
3. Eject washer fluid. Turn on front wiper switch to operate front wiper motor and then turn it "OFF".
4. Ensure that wiper blades stop within clearance "L1" and "L2".

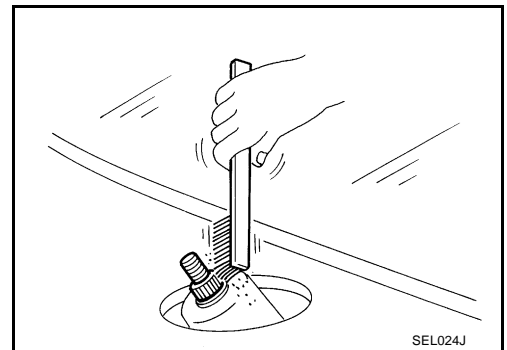
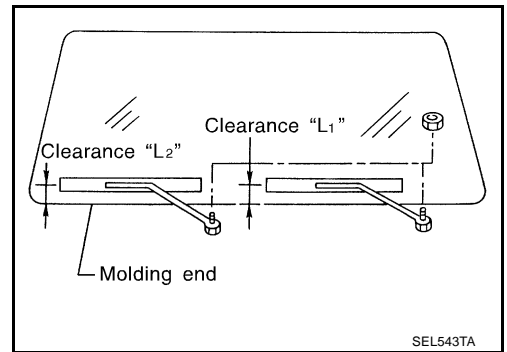
**Clearance "L1"** : 32.5 - 47.5 mm (1.280 - 1.870 in)

**Clearance "L2"** : 24.5 - 39.5 mm (0.965 - 1.555 in)

- Tighten wiper arm nuts to specified torque.

**Front wiper arm mounting nuts** : 20.6 - 26.5 N-m (2.1 - 2.7 kg-m, 16 - 19 ft-lb)

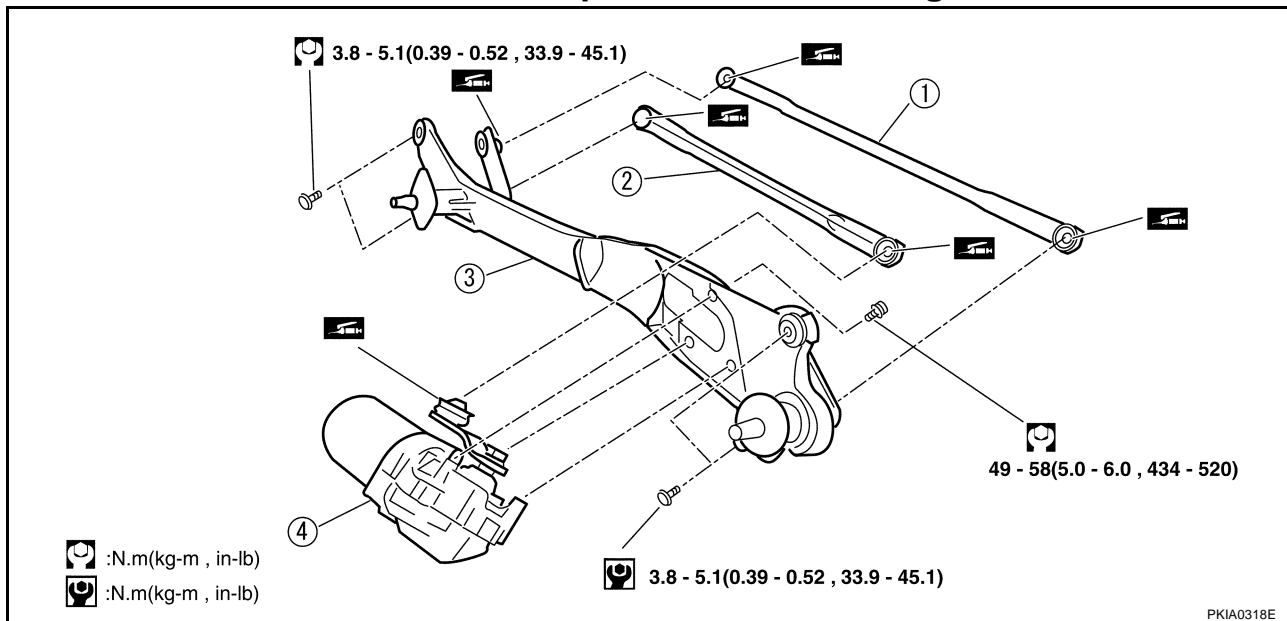
- Before reinstalling wiper arm, clean up the pivot area as illustrated. This will reduce possibility of wiper arm looseness.



# WASHER SYSTEM

## Removal and Installation for Front Wiper Motor and Linkage

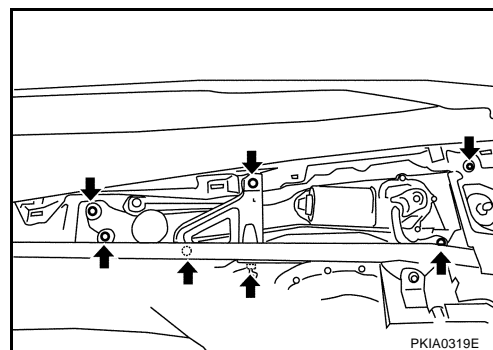
EKS001J7



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

### REMOVAL

1. Operate the front wiper motor, and stop it at the auto stop position.
2. Remove wiper arm from the vehicle.
3. Remove cowl top cover, refer to [EI-20, "COWL TOP"](#).
4. Disconnect front wiper motor connector.
5. Remove bracket and front wiper motor assembly.



6. Remove wiper link from wiper frame.
7. Remove front wiper motor from the wiper frame.

### INSTALLATION

1. Connect front wiper motor to connector. Turn the front wiper switch ON to operate front wiper motor, then turn the front wiper switch OFF (auto stop).
2. Disconnect front wiper motor connector.
3. Install front wiper motor to the wiper frame.
4. Install wiper link to the wiper frame and motor arm.
5. Install front wiper motor assembly to the vehicle.
6. Connect front wiper motor connector. Turn the front wiper switch ON to operate the front wiper motor, then turn front wiper switch OFF (auto stop).
7. Install bracket to the vehicle.
8. Install cowl top cover, refer to [EI-20, "COWL TOP"](#).

# WASHER SYSTEM

9. Install wiper arm.

**CAUTION:**

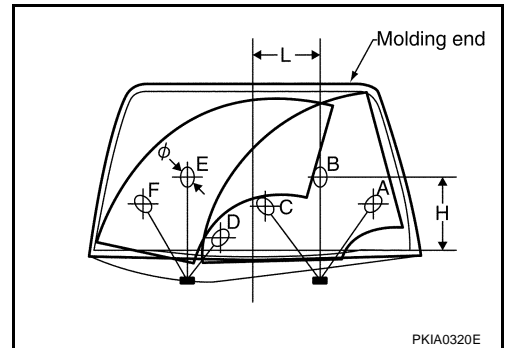
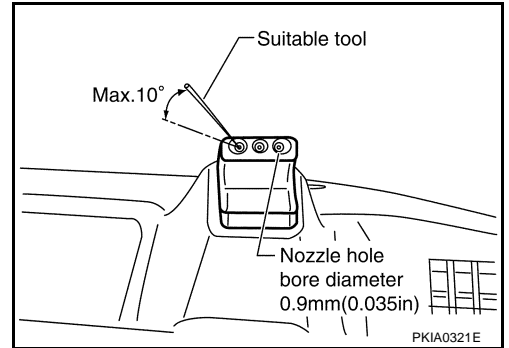
- Do not drop the front wiper motor or cause it to contact other parts.
- Check the grease conditions of the motor arm and wiper link joint (at retainer). Apply grease if necessary.

## Washer Nozzle Adjustment

EKS001J8

- Adjust washer nozzle with suitable tool as shown in the figure at left.

**Adjustable range :  $\pm 10^\circ$**

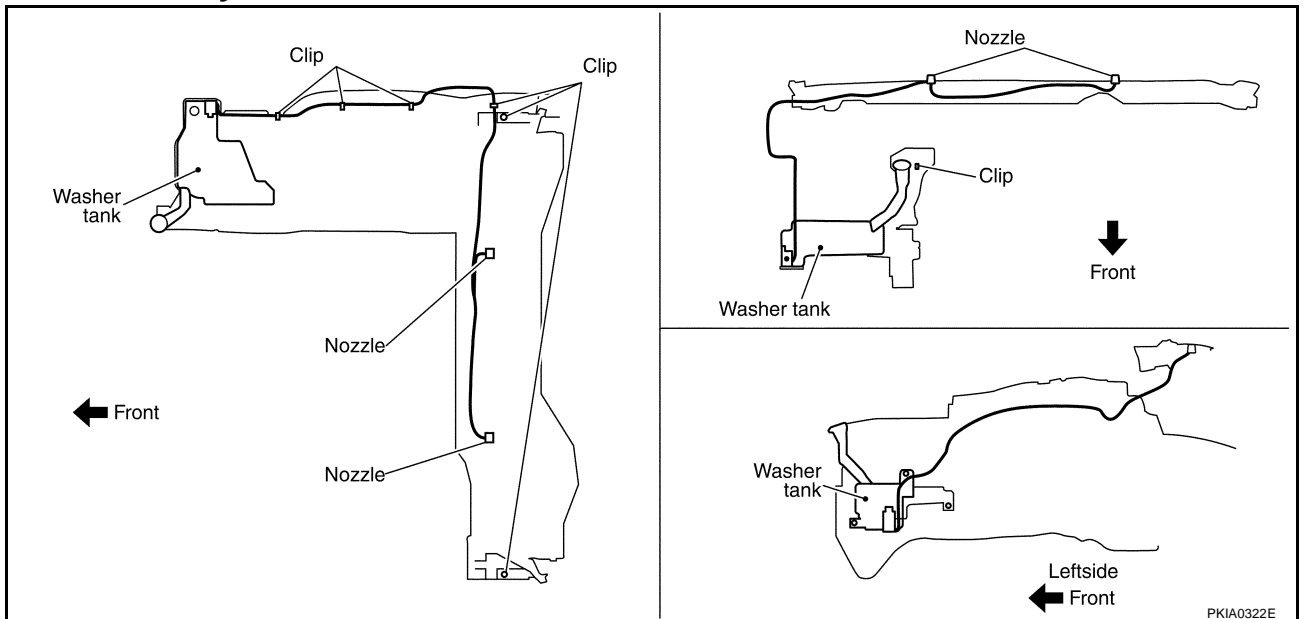


Unit: mm (in)

Spray position	H (height)	L (length)	$\phi$ (spray point area)
A	202 (7.95)	548 (21.57)	80 (3.15)
B	313 (12.32)	301 (11.85)	80 (3.15)
C	260 (10.24)	27 (1.06)	80 (3.15)
D	172 (6.77)	146 (5.75)	80 (3.15)
E	339 (13.35)	302 (11.89)	80 (3.15)
F	181 (7.13)	500 (19.69)	80 (3.15)

## Washer Tube Layout

EKS001J9



A  
B  
C  
D  
E  
F  
G  
H  
I  
J

WW

L  
M

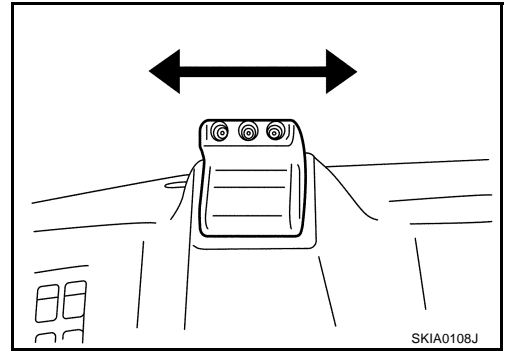
# WASHER SYSTEM

## Removal and Installation for Washer Nozzle

EKS001JA

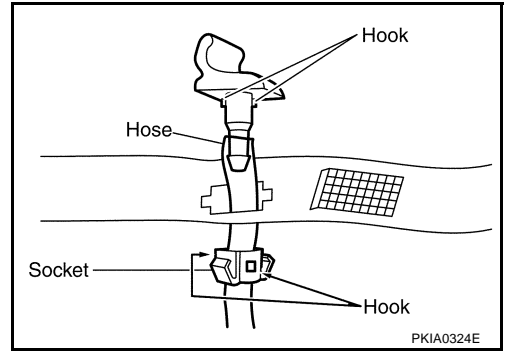
### REMOVAL

1. Push washer nozzle firmly toward either left or right to pull out.
2. Remove washer hose from washer nozzle.



### INSTALLATION

1. After connecting washer hose, press nozzle from cowl top cover surface.
2. Assemble nozzle and socket.
3. Adjust nozzle injection position.

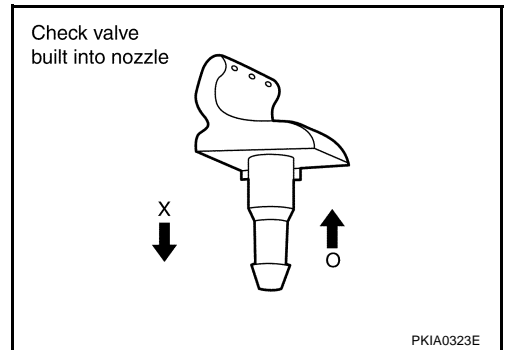


## Inspection for Washer Nozzle

### CHECK VALVE

EKS001JB

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



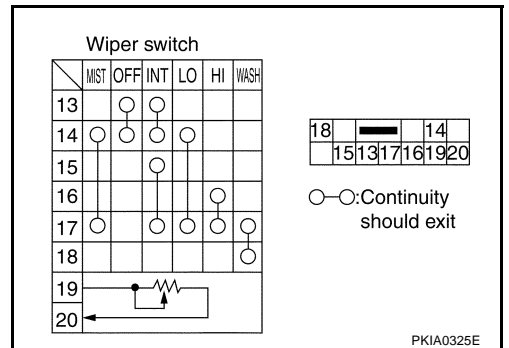
## Wiper and Washer Switch Circuit Check

### INSPECTION OF SWITCH CIRCUIT

EKS001JC

Check continuity between each terminal when wiper washer switch is operating using a circuit tester.

Operation interval (intermittent wiper with vehicle speed detection function)	Resistance value (kΩ)
1 [Interval (Max.)]	0.964
2	0.659
3	0.325
4 [Interval (Min.)]	0.008



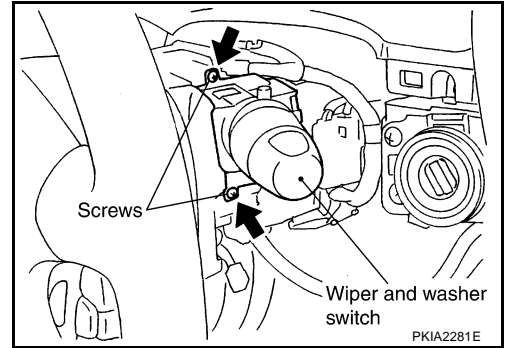
# WASHER SYSTEM

## Removal and Installation for Front Wiper and Washer Switch

EKS001JD

### REMOVAL

1. Remove steering column cover. Refer to [IP-11, "WORK STEPS"](#) in IP section.
2. Remove front wiper and washer switch connector.
3. Remove two screws then remove wiper washer switch from the base.



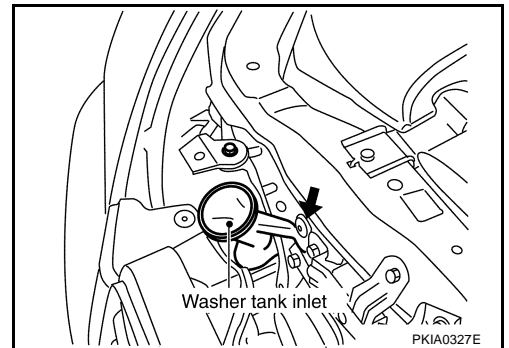
### INSTALLATION

Installation is in the reverse order of removal.

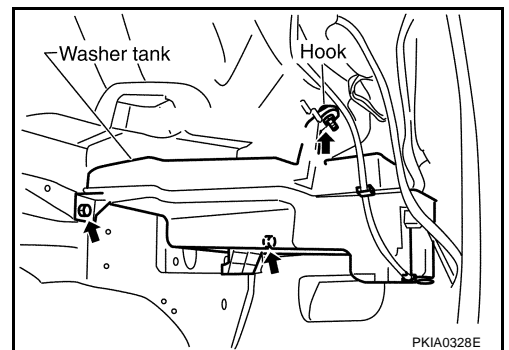
## Removal and Installation for Washer Tank

### REMOVAL

1. Pull out washer tank inlet.



2. Remove fender protector, refer to [EI-21, "FENDER PROTECTOR"](#).
3. Remove washer motor connector.
4. Remove washer tank installation screw and pawl.
5. Remove washer hose, and remove the washer tank from the vehicle.



### INSTALLATION

Tighten washer tank screw to specified torque.

**Washer tank screw : 3.9 - 5.0 N-m (0.39 - 0.52 kg-m)**

### CAUTION:

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

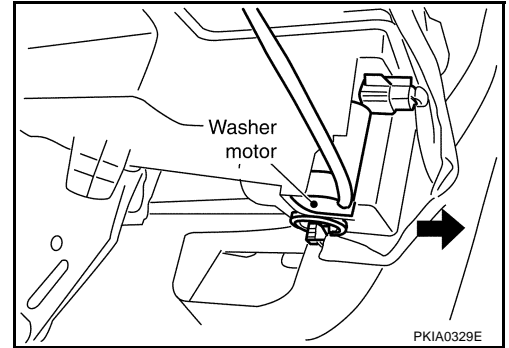
# WASHER SYSTEM

## Removal and Installation for Washer Motor

EKS001JF

### REMOVAL

1. Remove fender protector, refer to [EI-21, "FENDER PROTECTOR"](#) .
2. Remove washer motor connector and hose.
3. Pull out washer motor in the direction of the arrow in the figure, and remove the washer motor from the washer tank.



### INSTALLATION

Installation is in the reverse order of removal.

#### **CAUTION:**

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



# CIGARETTE LIGHTER

PFP:35330

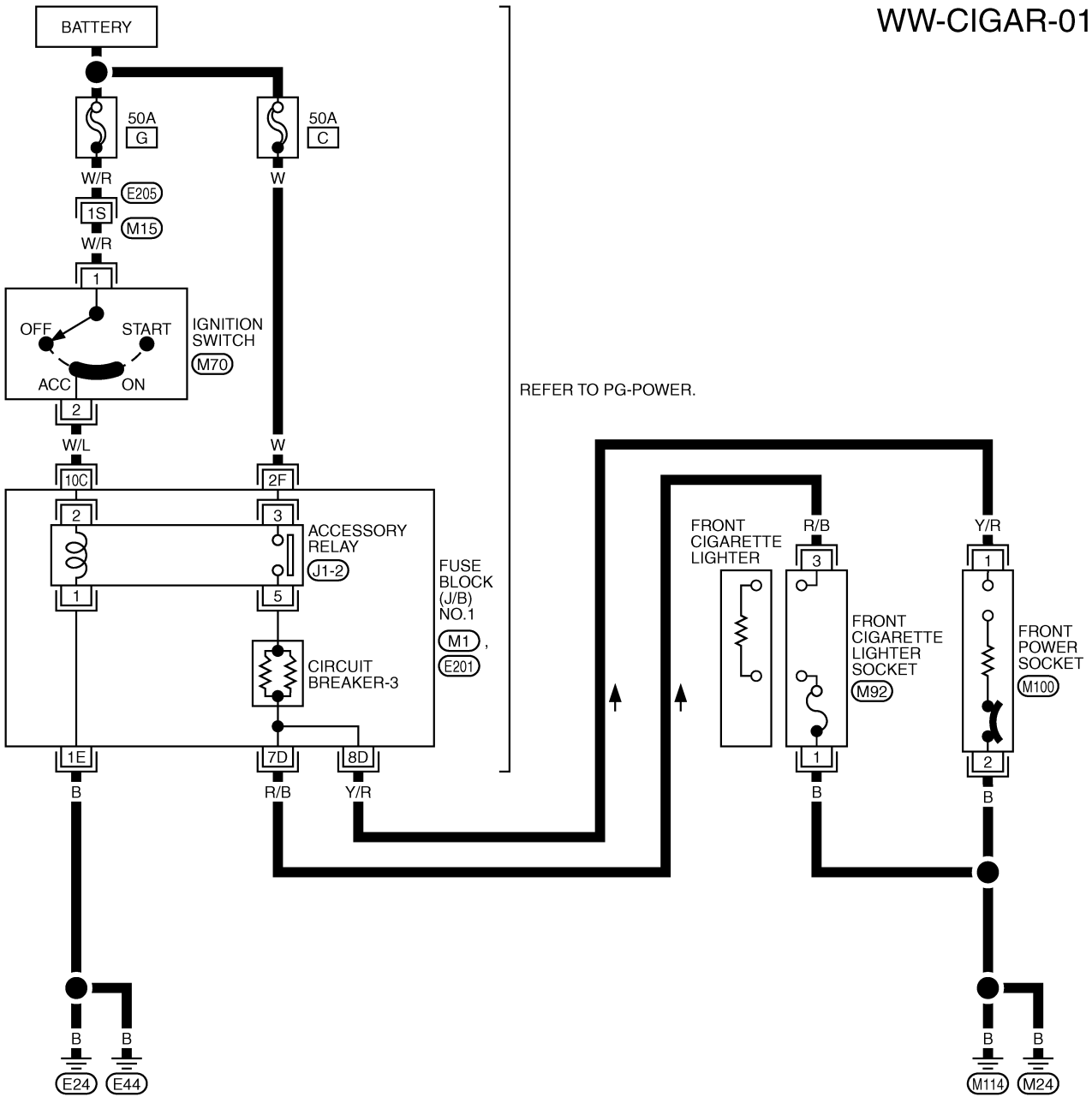
A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M

## WW-CIGAR-01

EKS001JG

### CIGARETTE LIGHTER

### Wiring Diagram — CIGAR —



REFER TO PG-POWER.

WW



REFER TO THE FOLLOWING.

- (E205) -SUPER MULTIPLE JUNCTION (SMJ)
- (M1) , (E201) -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

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

TKWM0433E

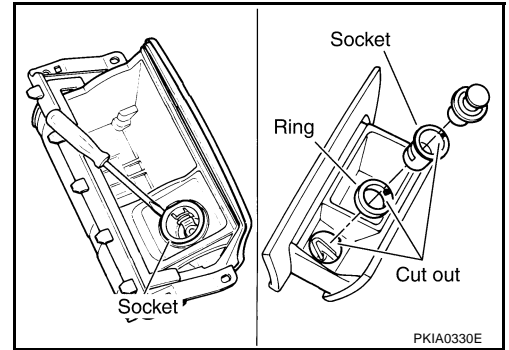
# CIGARETTE LIGHTER

EKS001JH

## Removal and Installation

### REMOVAL

1. Remove A/T console finisher, refer to [IP-11, "WORK STEPS"](#) in IP section.
2. Pull out the cigarette lighter.
3. Remove socket.
4. Press out ring from the back of ashtray.



### INSTALLATION

Installation is in the reverse order of removal.

# POWER SOCKET

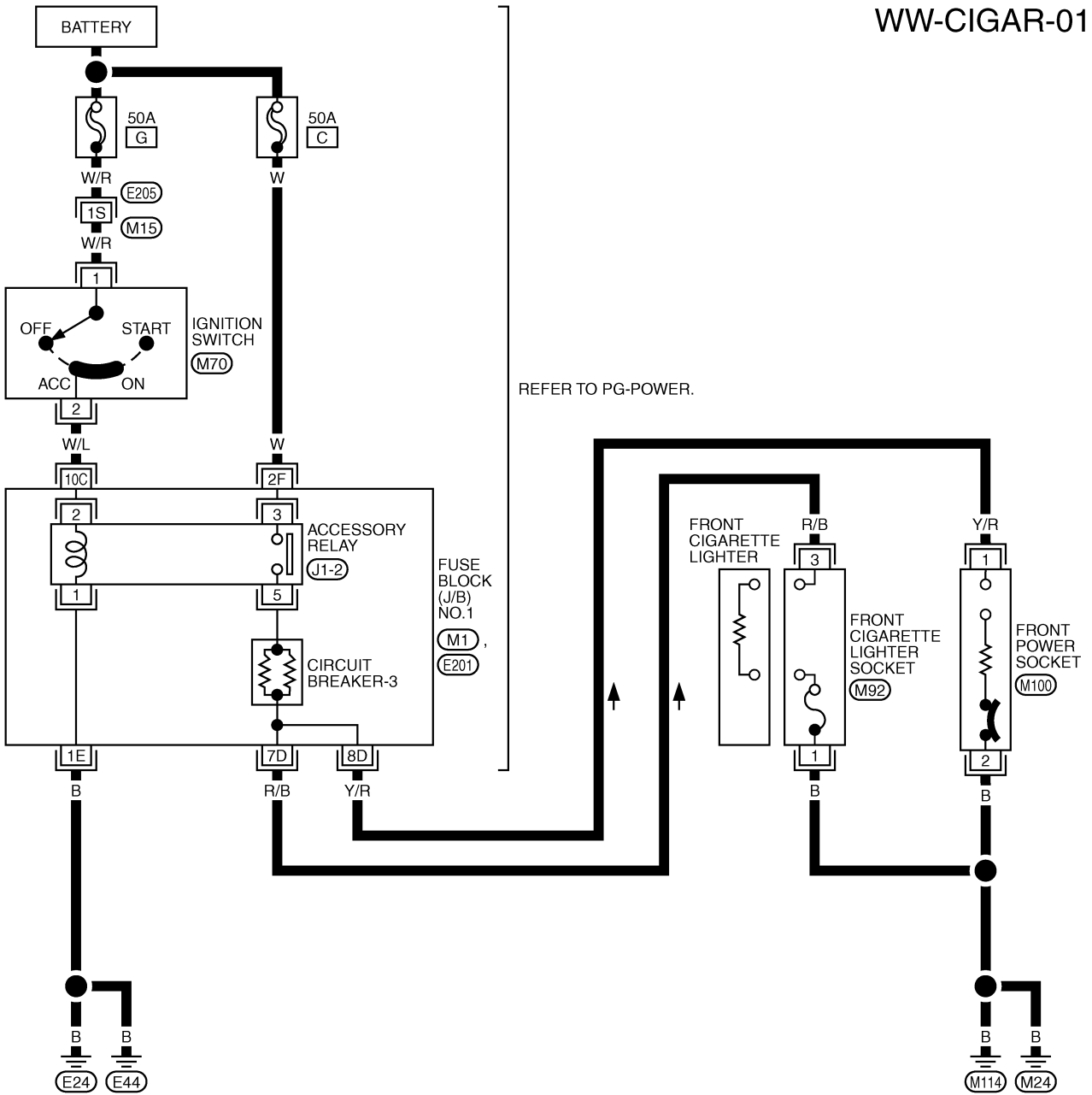
PPF:253A2

## POWER SOCKET

### Wiring Diagram — CIGAR —

EKS001JI

## WW-CIGAR-01



REFER TO PG-POWER.

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

WW



REFER TO THE FOLLOWING.

- E205 -SUPER MULTIPLE JUNCTION (SMJ)
- M1, E201 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

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

TKWM0433E

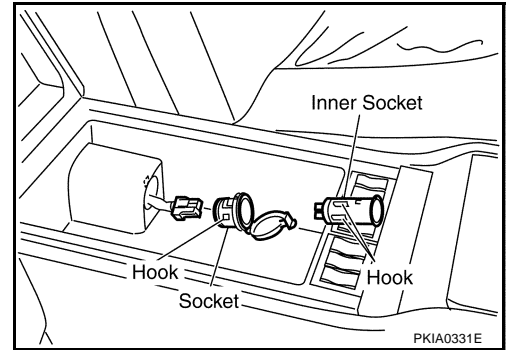
# POWER SOCKET

EKS00145

## Removal and Installation

### REMOVAL

1. Remove console box assembly, refer to [IP-11, "WORK STEPS"](#) in IP section.
2. Disconnect power socket connector.
3. Remove inner socket and socket from the console finisher while pressing hook on inner socket.
4. Remove socket from inner socket while pressing hook.



### INSTALLATION

Installation is in the reverse order of removal.

# HORN

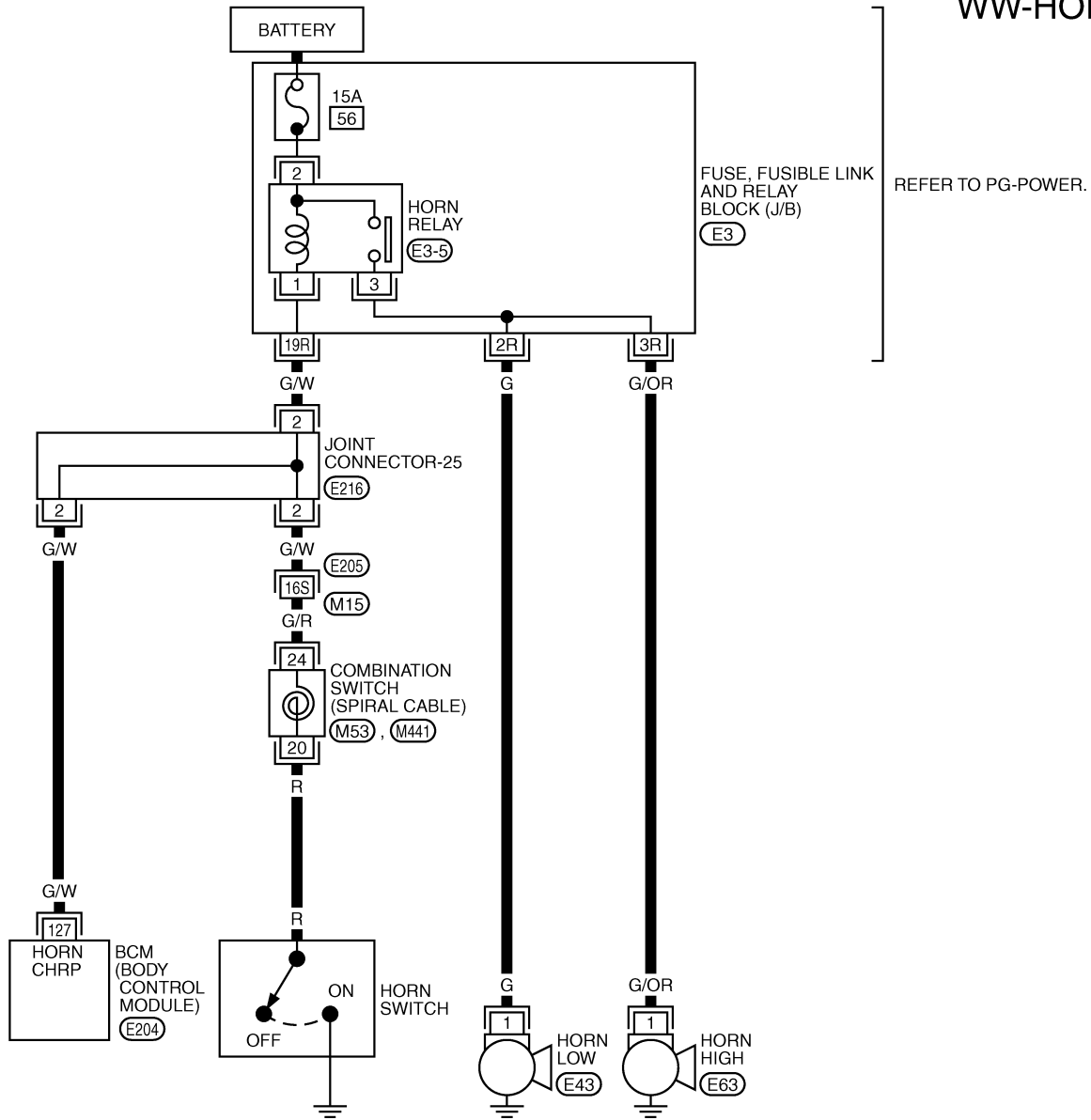
PPF:25610

## HORN

### Wiring Diagram — HORN —

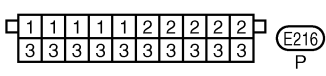
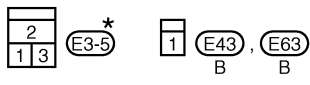
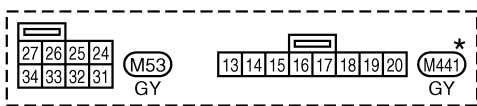
EKS001JK

## WW-HORN-01



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

WW



- REFER TO THE FOLLOWING.
- (E205) -SUPER MULTIPLE JUNCTION (SMJ)
  - (E3) -FUSE, FUSIBLE LINK AND RELAY BLOCK (J/B)
  - (E204) -ELECTRICAL UNITS

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

TKWM0109E

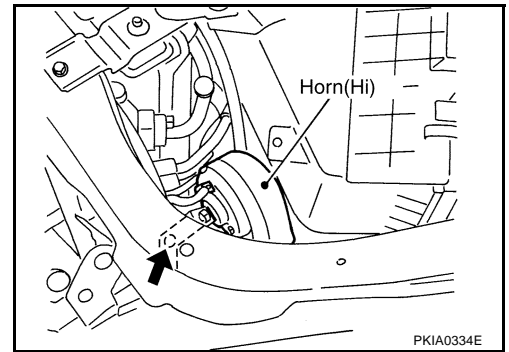
# HORN

EKS001JL

## Removal and installation

### REMOVAL (HORN HI)

1. Remove mass air flow sensor cover, refer to [EM-11, "ENGINE ROOM COVER"](#) .
2. Disconnect horn connector.
3. Remove horn.



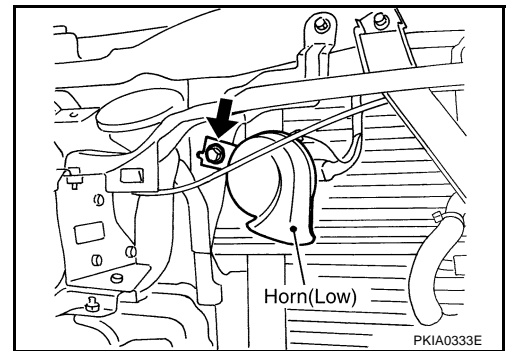
### INSTALLATION (HORN HI)

Tighten horn bolt to specified torque.

**Horn bolt : 16 - 18 N·m (1.6 - 1.8 kg·m, 12 - 13 ft·lb)**

### REMOVAL (HORN LOW)

1. Remove front grille, refer to [EI-19, "FRONT GRILLE"](#) .
2. Disconnect horn connector.
3. Remove horn.



### INSTALLATION (HORN LOW)

Tighten horn bolt to specified torque.

**Horn bolt : 16 - 18 N·m (1.6 - 1.8 kg·m, 12 - 13 ft·lb)**