

# SECTION **WW**

## WIPER, WASHER & HORN

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# PRECAUTION

## PRECAUTION

PPF:00011

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

NKS001F1

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.

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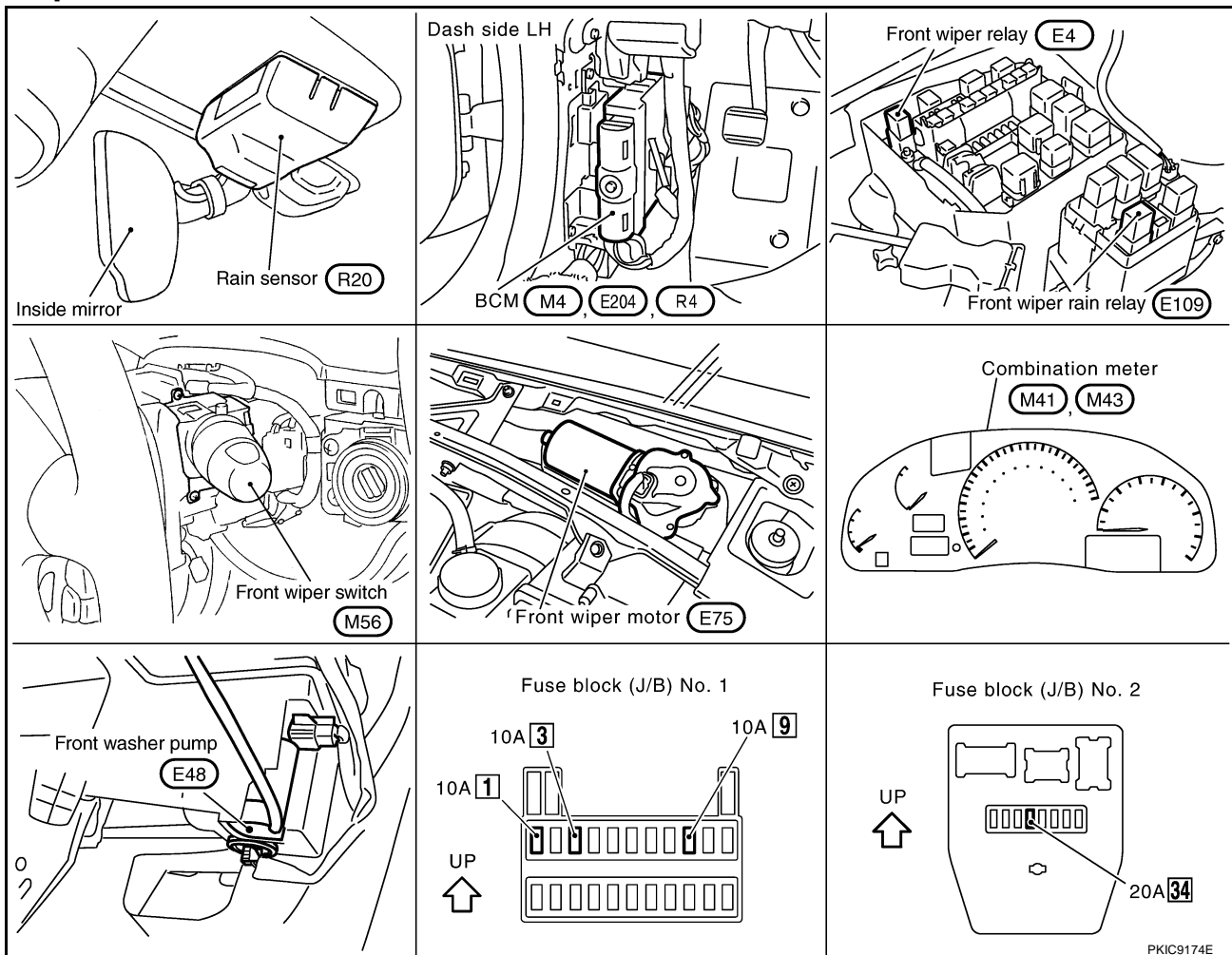
# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

## FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

PF2:28536

### Component Parts and Harness Connector Location

NKS001F3



PKIC9174E

### System Description

NKS001F4

- When front wiper switch is turned to INT position, wiper performs intermittent operation, low-speed operation, and high-speed operation from stop according to water drop increase rate on windshield detected by rain sensor.
- If front wiper switch is turned to INT position when ignition switch is ON, wiper operates once without any relation to the water drop detection. After that, wiper operates according to the amount of rainfall.
- When ignition switch is turned ON with front wiper switch turned to INT position, wiper operates only when rain sensor detects water drops.
- Rain sensitivity can be changed by sensitivity adjustment volume. Change from LO continuous operation to HI continuous operation is decided without any relation to sensitivity adjustment volume.
- If rain sensor malfunctions, rain sensor function will stop. But, the function operates as vehicle speed sensing wiper during driving and operates intermittent operation according to INT-volume switch with vehicle stopped.
- Stop wiper operation when windshield temperature exceeds 70 °C (158 °F).
- It is possible to change from rain sensing wiper to vehicle speed sensing wiper on vehicle information display.
- Through the adoption of vehicle speed detect-type intermittent wiper, Front Wiper System changes wiper's intermittent time when the engine is stopped and while driving.
- Vehicle speed signal is send from the combination meter to BCM (body control module). BCM (body control module) controls intermittent activation time and coupled activation of washer and wiper.

# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

## WIPER OPERATION

### Description

The front wiper switch is controlled by a lever built into the combination switch. There are three wiper switch positions.

- LO speed
- HI speed
- INT (intermittent)

Power is supplied at all times

- through 10A fuse [No. 3, located in fuse block (J/B) No. 1]
- to BCM terminal 105.

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

- through 20A fuse [No. 34, located in fuse block (J/B) No. 2]
- to front wiper motor terminal 4
- to front wiper relay terminal 1
- to front wiper rain relay terminal 1
- through 10A fuse [No. 1, located in fuse block (J/B) No. 1]
- to BCM terminal 68
- to rain sensor terminal 1
- through 10A fuse [No. 9, located in fuse block (J/B) No. 1]
- to combination meter terminal 59.

Ground is supplied

- to front wiper switch terminals 17 and 20
- through 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 front wiper switch terminal 14
- to front wiper rain relay terminal 3
- through front wiper rain relay terminal 4
- 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 front wiper switch terminal 16
- 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 front wiper switch terminal 14
- to front wiper rain relay terminal 3
- through front wiper rain relay terminal 4
- 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 front wiper switch terminal 13
- to front wiper relay terminal 3
- through front wiper relay terminal 4
- to front wiper motor terminal 3
- through front wiper motor terminal 1
- to grounds E24, E42 and E62.

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# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

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

When front wiper switch is turned to INT position, wiper performs intermittent operation, low-speed operation, and high-speed operation according to water drop increase rate on windshield detected by rain sensor. If rain sensor malfunctions, it operates as vehicle speed sensing wiper during driving and operates intermittent operation according to INT-volume switch with vehicle stopped. During this time, BCM controls each operation.

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 grounds M25 and M115.

## LOW SPEED OPERATION (Rain sensing)

When the front wiper switch is turned to INT position, power is supplied

- through 20A fuse [No.34, located in fuse block (J/B) No.2]
- to front wiper relay terminal 1
- through front wiper relay terminal 2
- to BCM terminal 128 and
- to front wiper motor terminal 4.

Ground is supplied

- through front wiper motor terminal 6
- to front wiper rain relay terminal 4
- through front wiper rain relay terminal 3
- to front wiper switch terminal 14
- through front wiper switch terminal 13
- to front wiper relay terminal 3
- through front wiper relay terminal 5
- to grounds E24, E42 and E62.

## HIGH SPEED OPERATION (Rain sensing)

When the front wiper switch is turned to INT position, power is supplied

- through 20A fuse [No.34, located in fuse block (J/B) No.2]
- to front wiper relay terminal 1
- through front wiper relay terminal 2
- to BCM terminal 128, and
- to front wiper rain relay terminal 1
- through front wiper rain relay terminal 2
- to BCM terminal 126 and
- to front wiper motor terminal 4

Ground is supplied

- through front wiper motor terminal 5
- to front wiper rain relay terminal 5
- through front wiper rain relay terminal 3
- to front wiper switch terminal 14
- through front wiper switch terminal 13
- to front wiper relay terminal 3
- through front wiper relay terminal 5
- to grounds E24, E42 and E62.

The desired interval time is input

- to front wiper switch terminal 19
- from BCM terminal 48
- to BCM terminal 49

# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

- from combination meter terminal 18 (vehicle speed signal).

The desired interval time is output

- to front wiper relay terminal 2
- from BCM terminal 128
- through BCM terminals 56 and 113
- to grounds M24 and M114.

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

- to front wiper motor terminal 6
- through front wiper rain relay terminal 4
- to front wiper rain relay terminal 3
- 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 grounds E24, E42 and E62.

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

- Approx. 0.9 - 45 sec. (When vehicle is stopped)
- Approx. 0.4 - 30 sec. (When vehicle is running)

Judgment on vehicle stopped or running

- Stopped → Running: More than 5 km/h (3 MPH)
- Running → 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 fuse block (J/B) No. 2]
- to front washer pump terminal 1.

When the front wiper switch in the WASH position, ground is supplied

- to front washer pump terminal 2
- to BCM terminal 4
- from front wiper switch terminal 18
- through front wiper switch terminal 17
- through grounds M25 and M115.

With power and ground supplied, the front washer pump 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.

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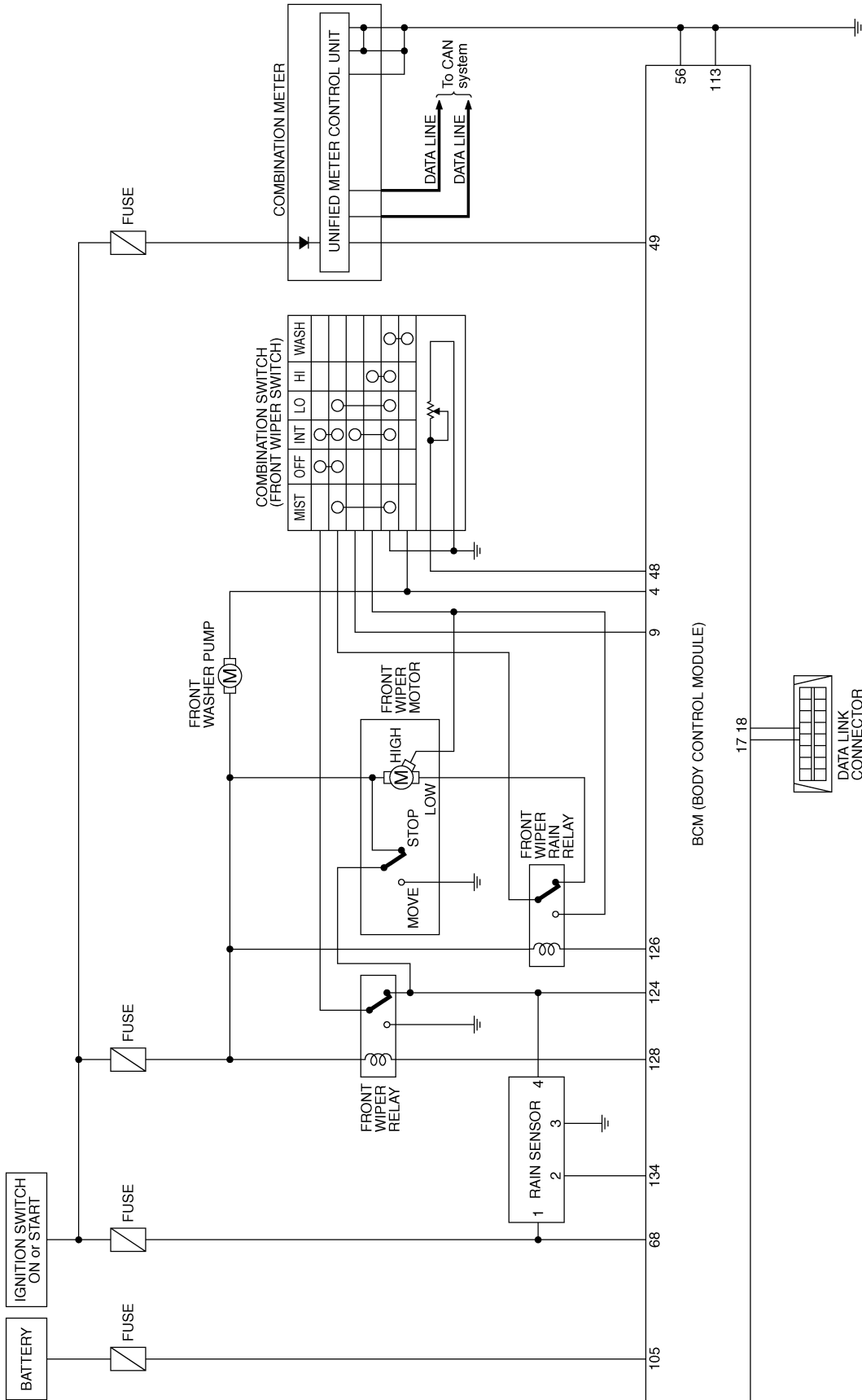
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# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

## Schematic

NKS001F5



TKWM3773E

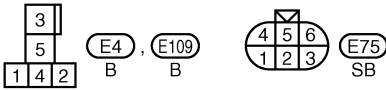
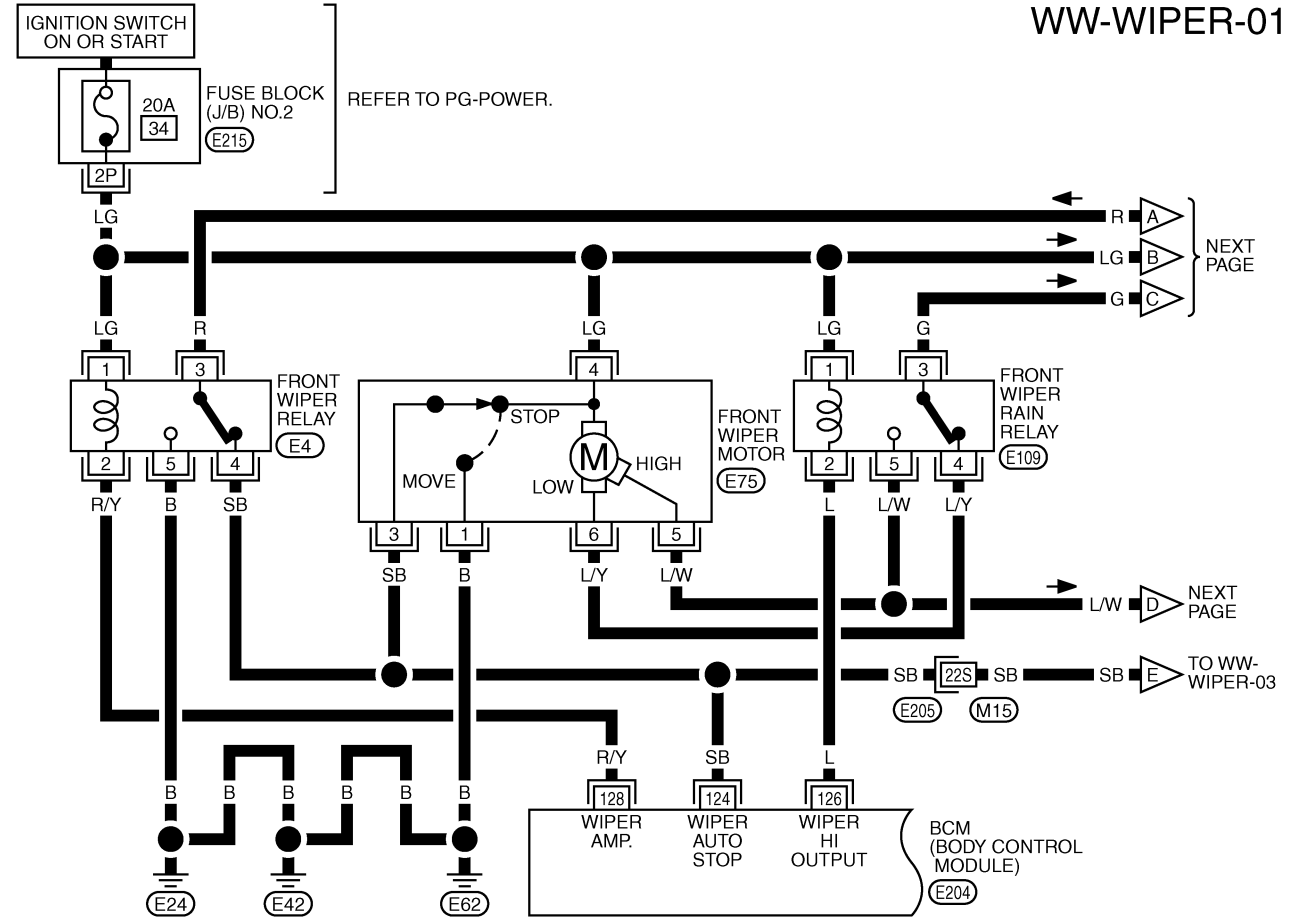


# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

## Wiring Diagram — WIPER —

NKS001F6

WW-WIPER-01



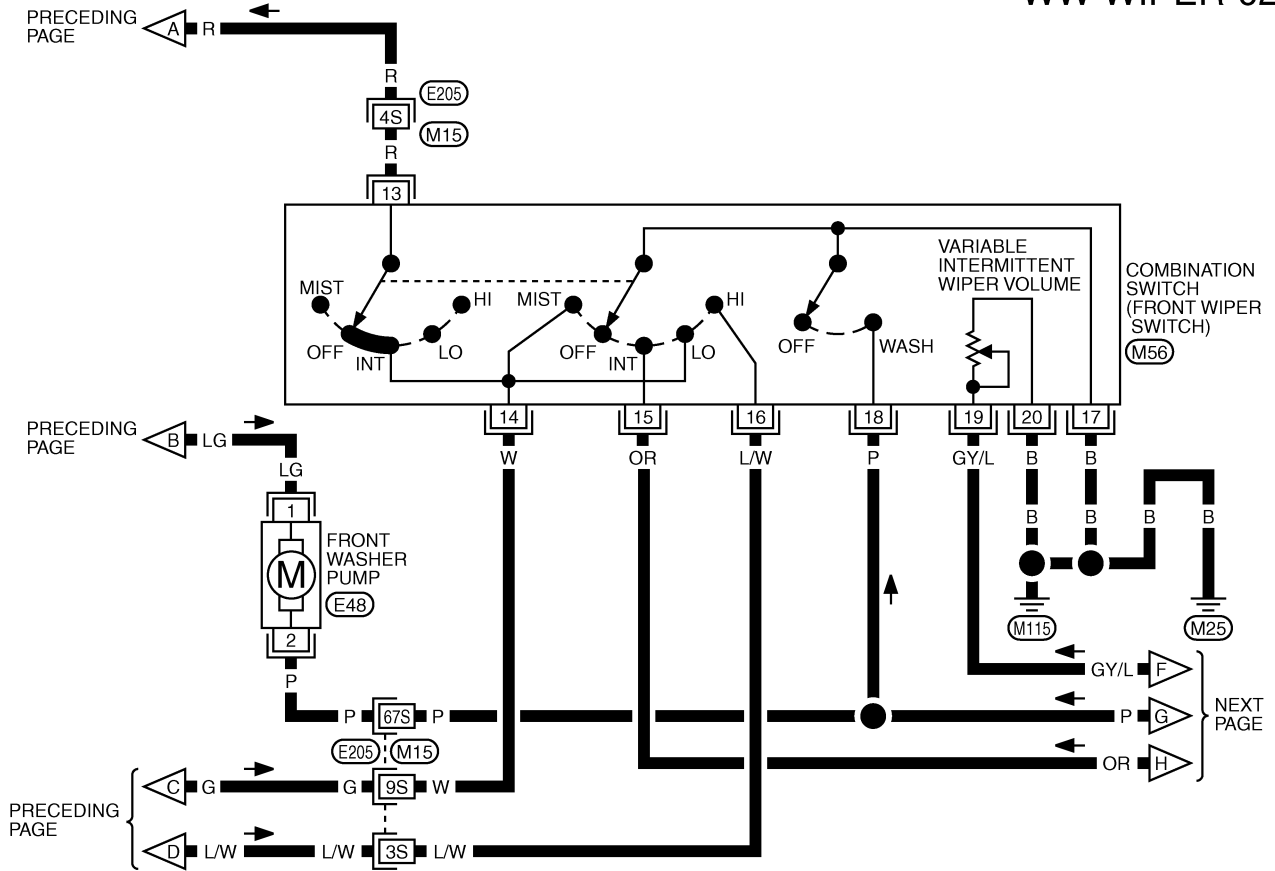
REFER TO THE FOLLOWING.

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

TKWM3774E

# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

WW-WIPER-02



14		18
20	19	16
	17	13
		15

(M56)  
GY

(2 1)

(E48)  
GY

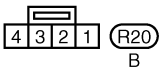
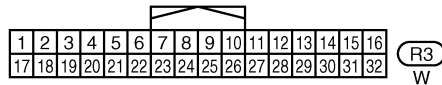
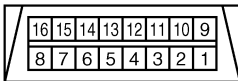
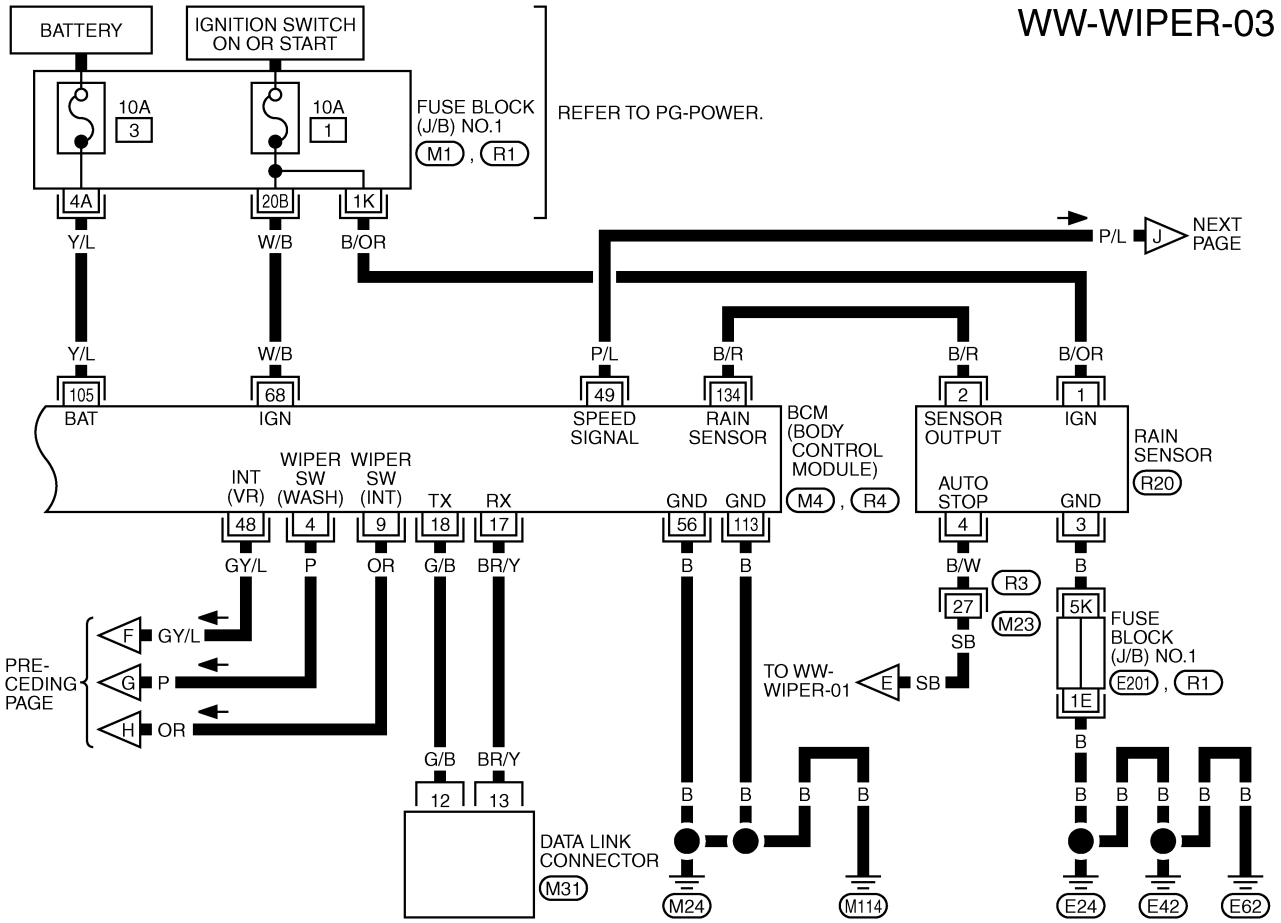
REFER TO THE FOLLOWING.

(E205) -SUPER MULTIPLE  
JUNCTION (SMJ)

TKWM3775E

# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

WW-WIPER-03



REFER TO THE FOLLOWING.

- (M1), (E201), (R1) - FUSE BLOCK-JUNCTION BOX (J/B) NO.1
- (M4), (R4) - ELECTRICAL UNITS

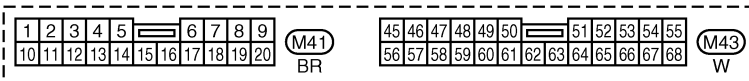
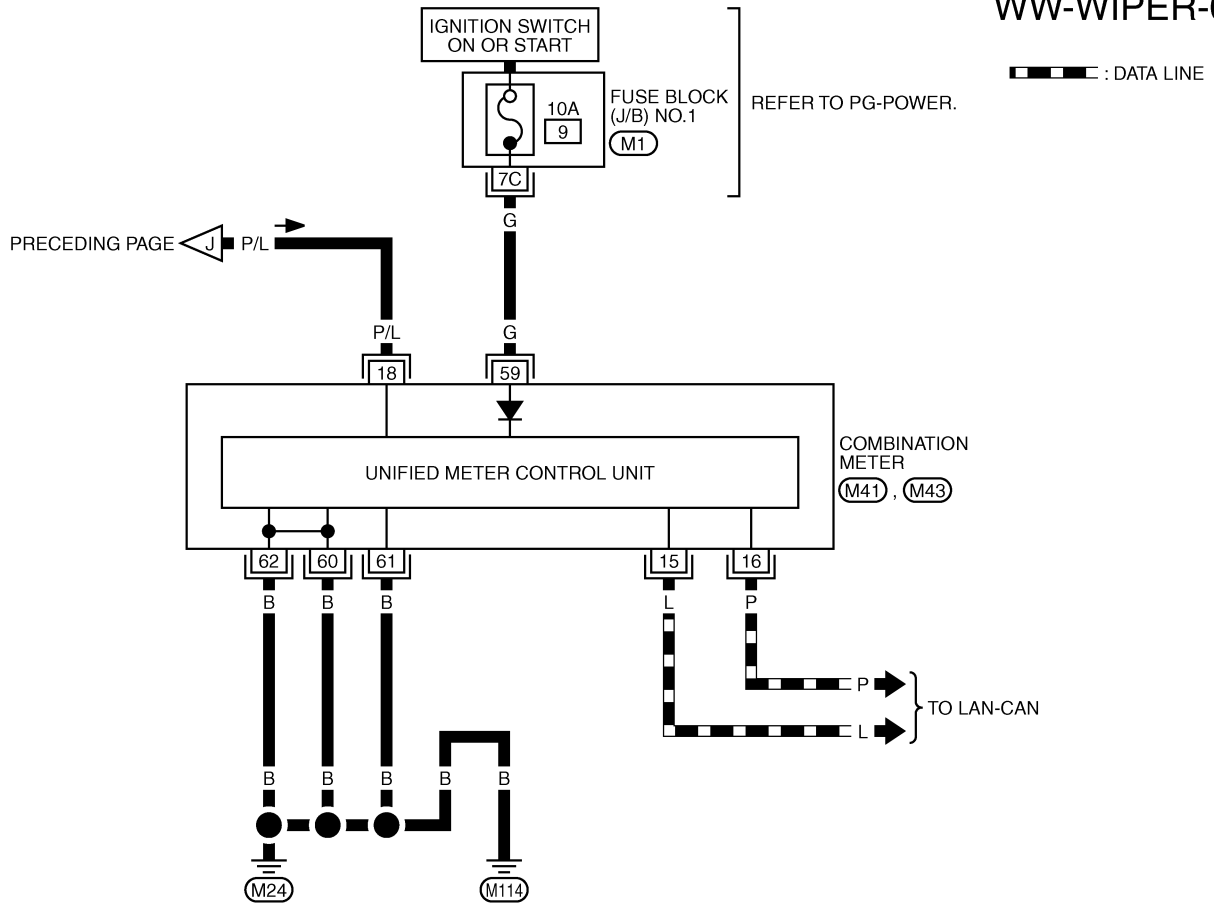
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# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

WW-WIPER-04



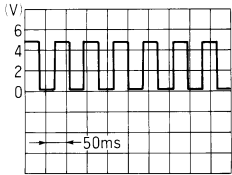
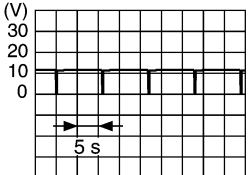
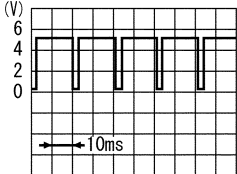
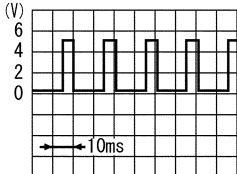
REFER TO THE FOLLOWING.  
 (M1) - FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TKWM3777E

# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

## Terminals and Reference Values for BCM

NKS001F7

Terminal No.	Wire color	Item	Condition		Reference value	
			Ignition switch	Operation or condition		
4	P	Front washer switch signal	ON	Front washer switch	ON	Approx. 0 V
					OFF	Battery voltage
9	OR	Front wiper switch INT signal	ON	Front wiper switch	INT	Approx. 0 V
					OFF	Approx. 8 V
48	GY/L	Intermittent wiper volume signal	ON	Wiper intermittent interval	Long	Approx. 3.6 V
					Short	Approx. 0 V
49	P/L	Vehicle speed signal (2-pulse)	ON	Vehicle speed approx. 40 km/h (25 MPH)	 <p style="text-align: right; font-size: small;">ELF1080D</p>	
56	B	Ground	ON	—	Approx. 0 V	
68	W/B	Ignition switch (ON)	ON	—	Battery voltage	
105	Y/L	Battery power supply	OFF	—	Battery voltage	
113	B	Ground	ON	—	Approx. 0 V	
124	SB	Front wiper auto stop signal	ON	Front wiper is moving.	Approx. 0 V	
				Front wiper is stopped.	Battery voltage	
126	L	Front wiper HI signal	ON	Front wiper switch: INT position (HI operation when water is sprinkled on rain sensor)	Approx. 0 V	
128	R/Y	Front wiper motor operation signal	ON	Front wiper switch: INT position (Wiper dial position 4)	 <p style="text-align: right; font-size: small;">PKIA6250E</p>	
134	B/R	Rain sensor signal	ON	Front wiper switch: INT position (Front wiper is stopped.)	 <p style="text-align: right; font-size: small;">SKIA0207J</p>	
				Front wiper switch: INT position (Wiper is moving when water is sprinkled on rain sensor.)	 <p style="text-align: right; font-size: small;">SKIA0208J</p>	

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# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

NKS001F8

## Work Flow

1. Confirm the symptom or customer complaint.
2. Understand the system description. Refer to [WW-4, "System Description"](#) .
3. Perform Preliminary Check. Refer to [WW-14, "Preliminary Check"](#) .
4. According to the trouble diagnosis chart, repair or replace the cause of the malfunction.
5. Does wiper function operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

## Preliminary Check

NKS001F9

### CHECK POWER SUPPLY AND GROUND CIRCUIT

#### 1. CHECK FUSE

Check for blown fuses.

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

Refer to [WW-9, "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

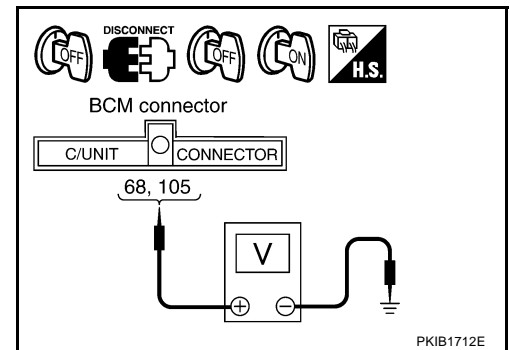
1. Disconnect BCM connector.
2. Check voltage between BCM harness connector and ground.

Terminal		(-)	Ignition switch position	
(+)			OFF	ON
Connector	Terminal	Ground	Battery voltage	Battery voltage
M4	105		Approx. 0 V	Battery voltage
	68			

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



#### 3. CHECK GROUND CIRCUIT

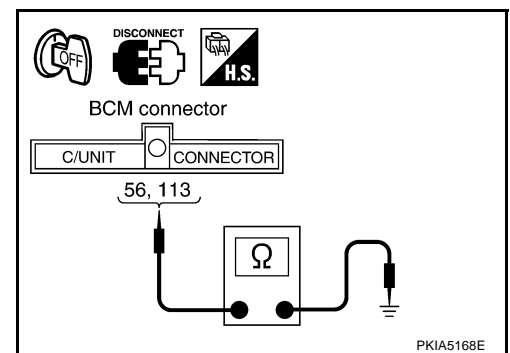
1. Turn ignition switch OFF.
2. Check continuity between BCM harness connector and ground.

Terminal		Ground	Continuity
Connector	Terminal		
M4	56	Ground	Yes
	113		

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

## CONSULT-II Function (IVMS)

NKS001FA

CONSULT-II can display each diagnostic item using the diagnostic test mode shown following.

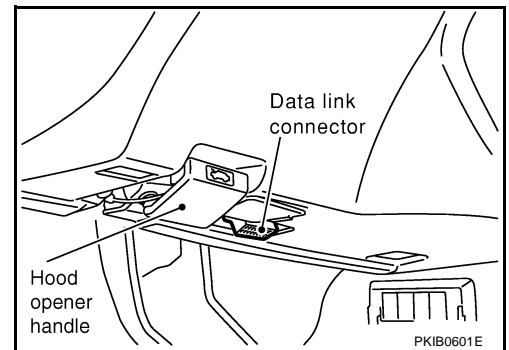
IVMS diagnosis part	Diagnosis mode	Description
WIPER	DATA MONITOR	Displays data relative to BCM input signals and various control related data for each system.
	ACTIVE TEST	Device operation can be checked by applying a drive signal to device.
BCM PART NUMBER		Displays BCM part number.

## CONSULT-II BASIC OPERATION

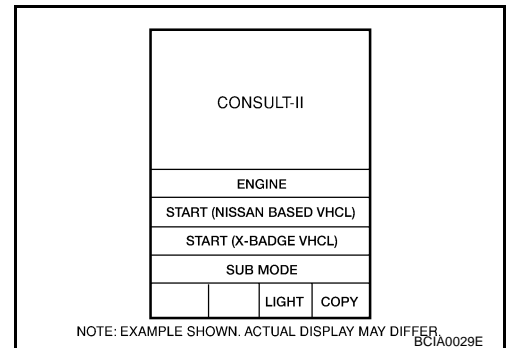
### CAUTION:

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

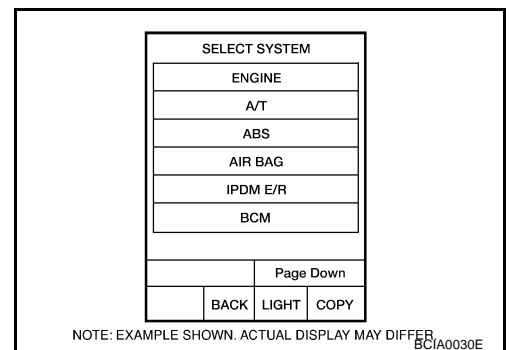
1. With ignition switch OFF, connect "CONSULT-II" and "CONSULT-II CONVERTER" to data link connector, and turn ignition switch ON.



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

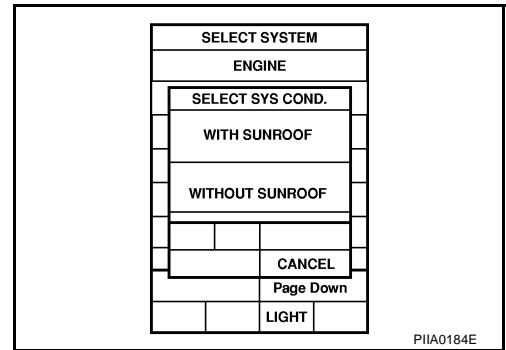


3. Select "IVMS".  
If "IVMS" is not indicated, refer to [GI-37, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

4. Select "WITH SUNROOF" on "SELECT SYS COND" screen.
5. Touch "OK". If the selection is wrong, touch "CANCEL".
6. Select the desired part to be diagnosed on "SELECT TEST ITEM" screen.



## DATA MONITOR

### Operation Procedure

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

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects items and monitors them.

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

### Data Monitor Item

Monitored item	Contents
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 running [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.
INT RESIST	Indicates "Intermittent resistance value [approx. 0 to 1 kohm]" condition of front wiper switch signal.
RAIN SENSOR	Output value of rain sensor is displayed on the duty ratio.

## ACTIVE TEST

### Operation Procedure

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

Test item		Front wiper motor operation
WIPER AMP	ON	Operate (LO)
	OFF	Stop
WIPER MOTOR (HI)	ON	Operate (HI)
	OFF	Stop

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



# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

NKS001FB

## On Board Diagnosis

- 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 on board diagnosis.

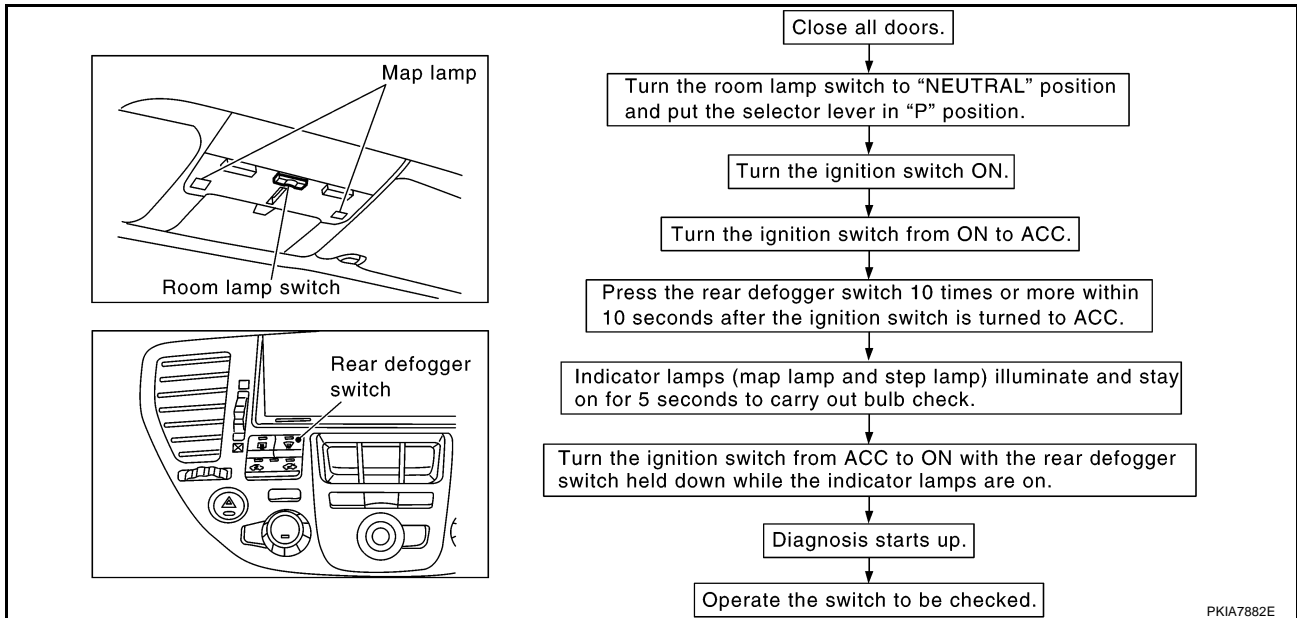
## DIAGNOSIS ITEM

Diagnosis item	Description
Switch monitor	Checks for malfunction in switch systems that input to BCM and each LCU.

## SWITCH MONITOR

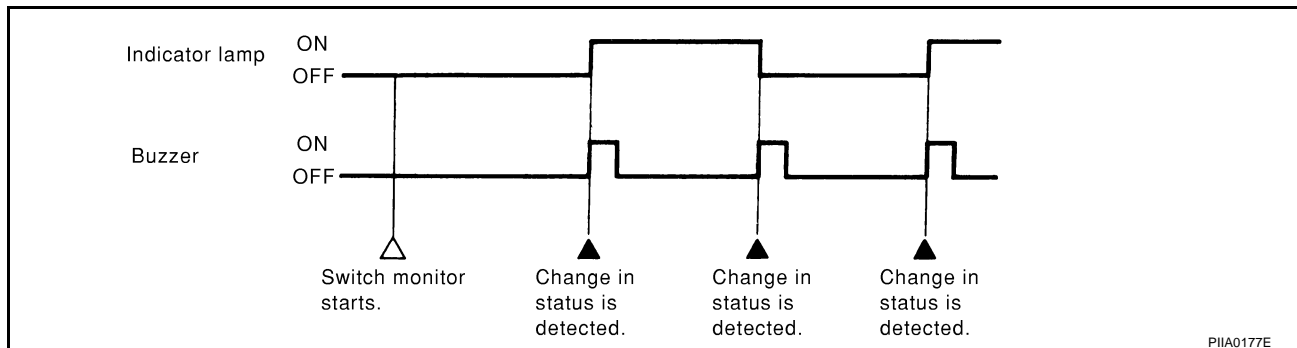
- Performs diagnosis on the switch system to each control unit.

### How to Perform Switch Monitor



### Description

- Detects the status change (switch ON/OFF operation) of switch to be checked, and turns ON/OFF 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.



# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

## Switch Monitor Item

- The status of the switch (except the ignition switch, interior lamp illumination switch, and map lamp switch) as input to each control unit can be monitored.

Control unit	Item
BCM	Wiper and washer switch

## Switch Monitor Cancellation

Either or both the following conditions are satisfied, the communication diagnosis is cancelled.

- Turn ignition switch OFF.
- Drive vehicle more at speed higher than 7 km/h (4 MPH).

# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

NKS001FC

## Front Wiper Operates by Itself in Fine Weather

### 1. CHECK CONDITIONS OF WINDSHIELD (RAIN SENSOR DETECTION AREA)

Check rain sensor detection area of windshield for dirt such as greases.

OK or NG

OK >> GO TO 2.

NG >> Clean rain sensor detection area of windshield fully.

### 2. CHECK RAIN SENSOR OUTPUT SIGNAL

① With CONSULT-II

1. Select "IVMS" on CONSULT-II. And select "WIPER" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Make sure that "RAIN SENSOR" of "DATA MONITOR" is 87 % with no water drops in sensor detection area.

DATA MONITOR	
MONITOR	
IGN ON SW	ON
INT SW	OFF
WASH SW	OFF
VHCL SPEED SE	STOP
WIPR AUTO STP	IGN
INT RESIST	0.710 kohm
RAIN SENSOR	87%
RECORD	
MODE	BACK
LIGHT	COPY

PKIA9814E

⊗ Without CONSULT-II

With no water drops in sensor detection area, check voltage waveform between BCM harness connector R4 terminal 134 and ground when wiper stops.

**134 - Ground** : Refer to [WW-13, "Terminals and Reference Values for BCM"](#) .

OK or NG

OK >> Replace BCM.

NG >> GO TO 3.

### 3. CHECK RAIN SENSOR OUTPUT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and rain sensor connector.
3. Check continuity between rain sensor harness connector R20 terminal 2 and BCM harness connector R4 terminal 134.

**2 - 134** : Continuity should exist.

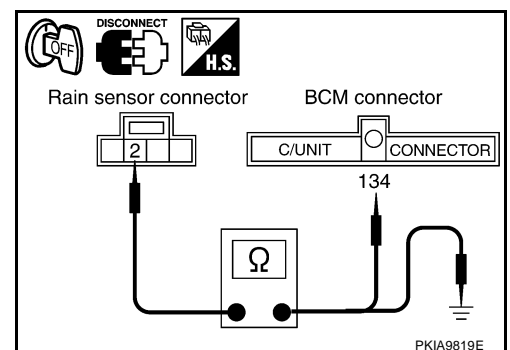
4. Check continuity between rain sensor harness connector R20 terminal 2 and ground.

**2 - Ground** : Continuity should not exist.

OK or NG

OK >> GO TO 4.

NG >> Check harness for open or short between rain sensor and BCM.



# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

## 4. CHECK RAIN SENSOR POWER SUPPLY

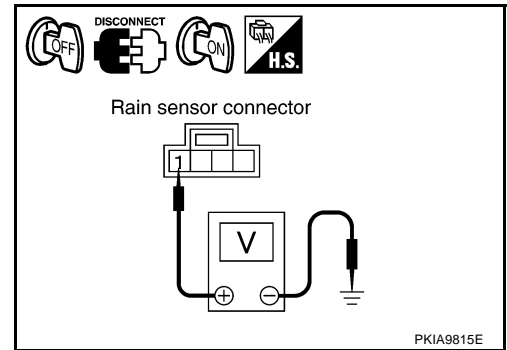
1. Turn ignition switch ON.
2. Check voltage between rain sensor harness connector R20 terminal 1 and ground.

**1 - Ground** : **Battery voltage**

OK or NG

OK >> GO TO 5.

NG >> Check harness for open or short between rain sensor and fuse.



## 5. CHECK RAIN SENSOR GROUND CIRCUIT

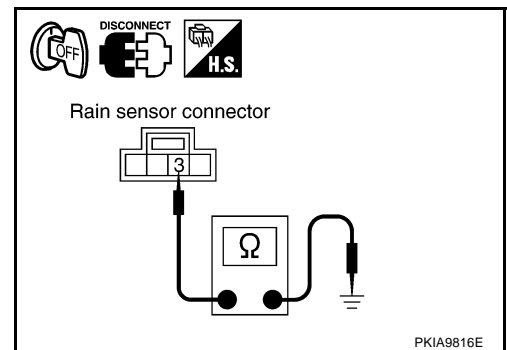
1. Turn ignition switch OFF.
2. Check continuity between rain sensor harness connector R20 terminal 3 and ground.

**3 - Ground** : **Continuity should exist.**

OK or NG

OK >> Replace rain sensor.

NG >> Check harness ground circuit.



# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

NKS001FD

## Front Wiper Does Not Operate in Rain

### 1. CHECK CONDITIONS OF WINDSHIELD (RAIN SENSOR DETECTION AREA)

Make sure that rain sensor detection area of windshield was high temperature [approximately 70 °C (158 °F) or more].

#### OK or NG

- OK >> GO TO 2.
- NG >> Wait for a while until the temperature of windshield falls.

### 2. CHECK RAIN SENSOR OUTPUT SIGNAL

#### ④ With CONSULT-II

1. Select "IVMS" on CONSULT-II. And select "WIPER" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Make sure that the value decreases from 87 % when "RAIN SENSOR" of "DATA MONITOR" sprinkles water with spray.

DATA MONITOR	
MONITOR	
IGN ON SW	ON
INT SW	OFF
WASH SW	OFF
VHCL SPEED SE	STOP
WIPR AUTO STP	IGN
INT RESIST	0.710 kohm
RAIN SENSOR	87%
RECORD	
MODE	BACK LIGHT COPY

PKIA9814E

#### ⊗ Without CONSULT-II

Sprinkle water to sensor detection area using spray, and then check voltage waveform between BCM harness connector R4 terminal 134 and ground when wiper operates.

**134 - Ground** : Refer to [WW-13, "Terminals and Reference Values for BCM"](#) .

#### OK or NG

- OK >> Replace BCM.
- NG >> Replace rain sensor if voltage waveform with wiper stopped is output or if "RAIN SENSOR" of "DATA MONITOR" on CONSULT-II is still 87 %.

## When Ignition Switch Is Turned ON with Front Wiper Switch Turned to INT Position, Front Wiper Operates though There Are No Water Drops

NKS001FE

### 1. CHECK CONDITIONS OF WINDSHIELD (RAIN SENSOR DETECTION AREA)

Check rain sensor detection area of windshield for dirt such as greases.

#### OK or NG

- OK >> Calibration malfunctions. Refer to [WW-36, "Calibration Procedure of Rain Sensor"](#) .
- NG >> Clean rain sensor detection area of windshield fully.

## When Ignition Switch Is Turned ON with Front Wiper Switch Turned to INT Position, Front Wiper Does Not Operate though There Are Remarkable Water Drops

NKS001FF

### 1. CHECK FRONT WIPER OPERATION

1. Sprinkle water to sensor detection area using spray.
2. Turn front wiper switch to INT position.
3. Make sure that wiper operates when ignition switch is turned ON. (Wiper does not operate when there are no remarkable water drops or when moisture is like a film.)

#### OK or NG

- OK >> Normal
- NG >> Calibration malfunctions. Refer to [WW-36, "Calibration Procedure of Rain Sensor"](#) .

# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

## Sensitivity of Rain Sensor Cannot be Controlled

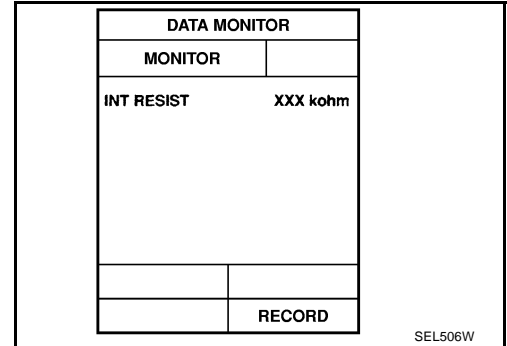
NKS001FG

### 1. CHECK INTERMITTENT WIPER VOLUME INPUT SIGNAL

④ With CONSULT-II

1. Select "IVMS" on CONSULT-II. And select "WIPER" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Make sure that "INT RESIST" changes in order from approx. 0 to 1 kohm according to operation of intermittent wiper volume.

**Short interval** : Approx. 0 kohm  
**Long interval** : Approx. 1 kohm



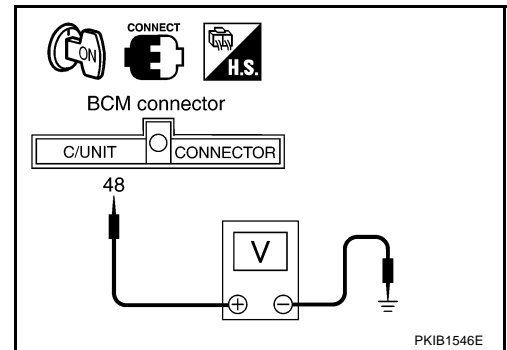
⊗ Without CONSULT-II

1. Turn ignition switch ON.
2. Check voltage between BCM harness connector M4 terminal 48 and ground while turning intermittent wiper volume.

**Short interval** : Approx. 0 V  
**Long interval** : Approx. 3.6 V

OK or NG

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



### 2. CHECK FRONT WIPER SWITCH

Check front wiper switch. Refer to [WW-30, "Front Wiper Switch Inspection"](#) .

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 front wiper switch. Refer to [WW-34, "Removal and Installation of Front Wiper Switch"](#) .

# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

## Intermittent Wiper Does Not Operate When Rain Sensor is Canceled

NKS001FH

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

④ With CONSULT-II

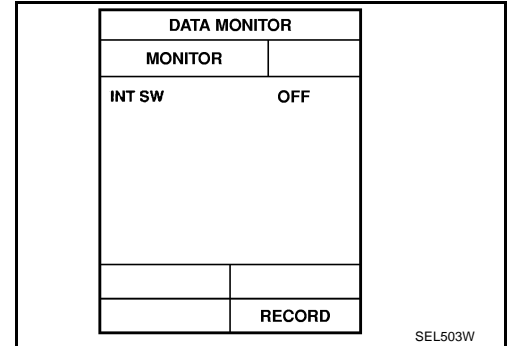
1. Select "IVMS" on CONSULT-II. And select "WIPER" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Make sure that "INT SW" turns ON-OFF according to operation of front wiper switch.

**When front wiper switch is INT : INT SW ON**

**When front wiper switch is OFF : INT SW OFF**

#### NOTE:

When "DATA MONITOR" is operating, intermittent wiper does not operate.



⊗ Without CONSULT-II

Check front wiper switch (INT) in switch monitor mode. Refer to [WW-17, "SWITCH MONITOR"](#).

OK or NG

OK >> GO TO 2.

NG >> Check the following.

- Front wiper switch: Refer to [WW-30, "Front Wiper Switch Inspection"](#).
- Harness for open or short between BCM and front wiper switch
- Front wiper switch ground circuit

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# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

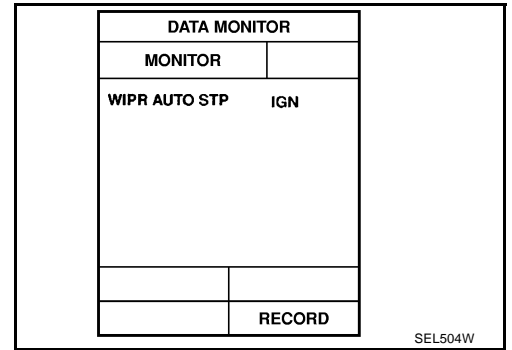
## 2. CHECK FRONT WIPER AUTO STOP SIGNAL

④ With CONSULT-II

Make sure "WIPR AUTO STP" changes from "IGN" to "GND" according to operation of front wiper switch.

**Front wiper is stopped. : WIPR AUTO STP IGN**

**Front wiper is operating. : WIPR AUTO STP GND**



⊗ Without CONSULT-II

1. Turn ignition switch ON.
2. Turn front wiper switch to LO or HI position.
3. Check voltage between BCM harness connector and ground.

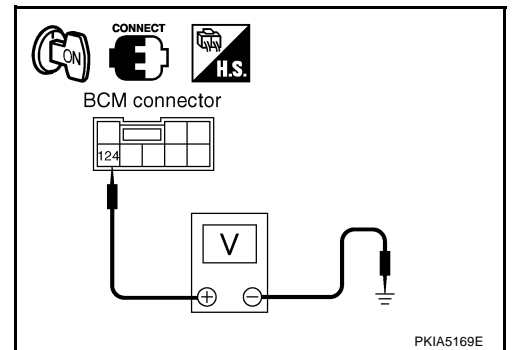
Terminal		Condition	Voltage
(+)	(-)		
Connector	Terminal		
E204	124	Moving	Approx. 0 V
		Stopped	Battery voltage

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



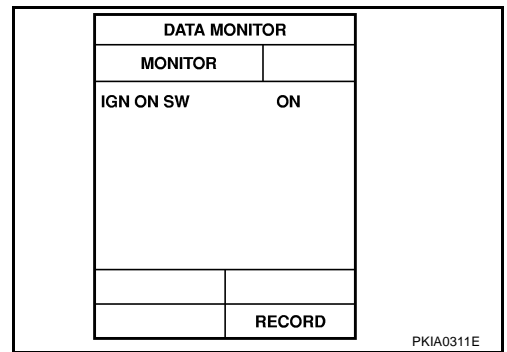


# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

## 3. CHECK IGNITION SWITCH ON SIGNAL

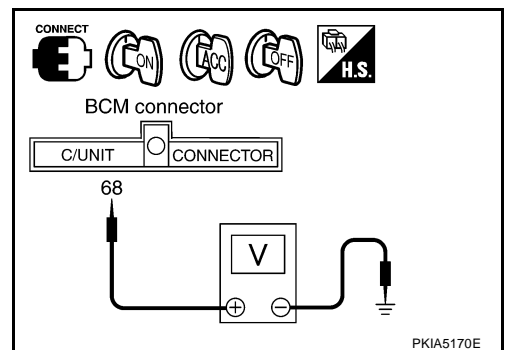
④ With CONSULT-II  
Make sure that "IGN ON SW" turns ON-OFF according to operation of ignition switch.

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



⊗ Without CONSULT-II  
Check voltage between BCM harness connector M4 terminal 68 and ground.

**When ignition switch is ON : Battery voltage**  
**When ignition switch is ACC or OFF : Approx. 0 V**



OK or NG

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

## 4. CHECK FRONT WIPER OPERATION

- ④ With CONSULT-II
1. Select "IVMS" on CONSULT-II. And select "WIPER" on "SELECT TEST ITEM" screen.
  2. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
  3. Touch "ON" screen.
  4. Make sure that front wiper motor operates.

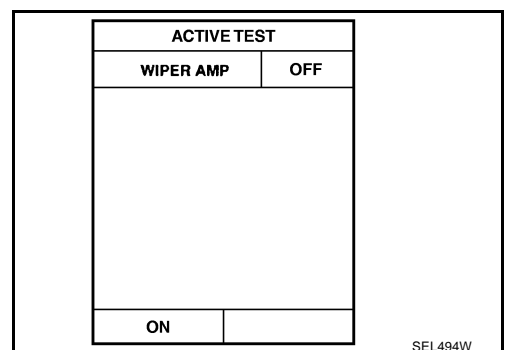
**Front wiper motor should operate.**

### NOTE:

If CONSULT-II is not available, skip this procedure and refer to [WW-27, "Front Wiper and Washer Activate Individually but Not in Combination"](#).

OK or NG

- OK >> Replace BCM.  
NG >> Refer to [WW-29, "Front Wiper and Washer Activate Individually but Intermittent Wiper and Washer Combination Does Not Operate"](#).



# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

## Intermittent Time of Front Wiper Cannot be Controlled When Rain Sensor is Canceled

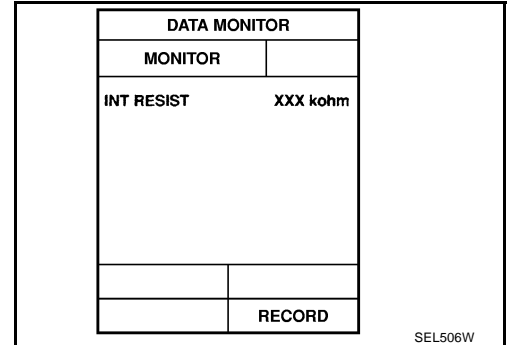
NKS001FI

### 1. CHECK INTERMITTENT WIPER VOLUME INPUT SIGNAL

Ⓟ With CONSULT-II

1. Select "IVMS" on CONSULT-II. And select "WIPER" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Make sure that "INT RESIST" changes in order from approx. 0 to 1 kohm according to operation of intermittent wiper volume.

**Short interval** : Approx. 0 kohm  
**Long interval** : Approx. 1 kohm



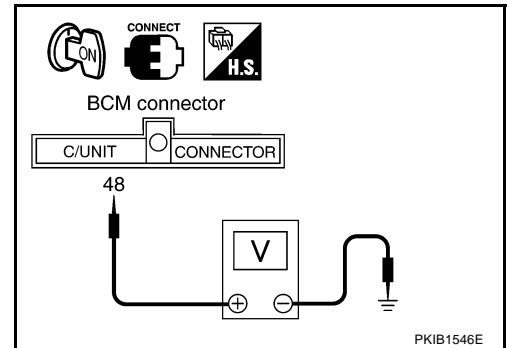
⊗ Without CONSULT-II

1. Turn ignition switch ON.
2. Check voltage between BCM harness connector M4 terminal 48 and ground while turning intermittent wiper volume.

**Short interval** : Approx. 0 V  
**Long interval** : Approx. 3.6 V

OK or NG

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



### 2. CHECK FRONT WIPER SWITCH

Check front wiper switch. Refer to [WW-30, "Front Wiper Switch Inspection"](#) .

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 front wiper switch. Refer to [WW-34, "Removal and Installation of Front Wiper Switch"](#) .

# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

## Front Wiper and Washer Activate Individually but Not in Combination

NKS001FJ

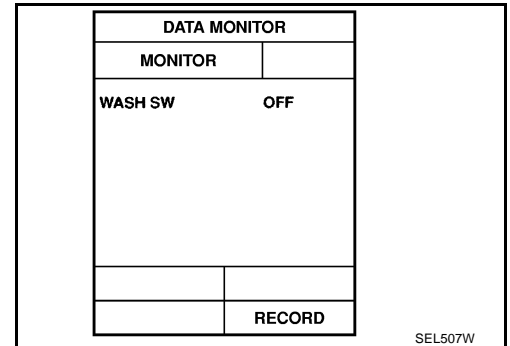
### 1. CHECK WASHER SWITCH INPUT SIGNAL

④ With CONSULT-II

1. Select "IVMS" on CONSULT-II. And select "WIPER" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Make sure that "WASH SW" turns ON-OFF according to operation of intermittent wiper switch.

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

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



⊗ Without CONSULT-II

Check front wiper switch (WASH) in switch monitor mode. Refer to [WW-17, "SWITCH MONITOR"](#).

OK or NG

OK >> Replace BCM.

NG >> Check harness for open or short between BCM and front wiper switch.

## Intermittent Wiper Operates, but There Is No Change in Intermittent Time between When Vehicle Is Stopped and Running

NKS001FK

### 1. CHECK SYMPTOM

Check that speedometer in combination meter operates normally.

OK or NG

OK >> GO TO 2.

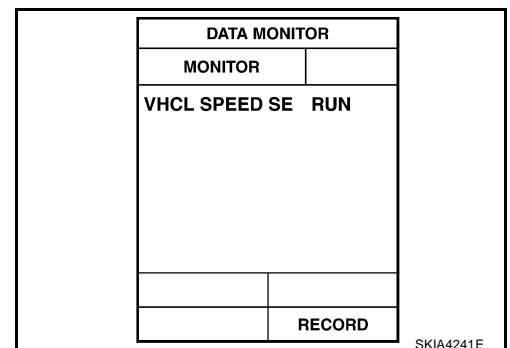
NG >> Check the vehicle speed signal. Refer to [DI-16, "Trouble Diagnosis"](#).

### 2. CHECK FUNCTION

④ With CONSULT-II

1. Select "IVMS" on CONSULT-II. And select "WIPER" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Make sure of the vehicle speed signal in "VHCL SPEED SE".

Monitor item [OPERATION]	Contents
VHCL SPEED SE "RUN/STOP"	<ul style="list-style-type: none"> <li>● "RUN" is displayed when the present vehicle speed is 5 km/h (3.10 MPH) and more.</li> <li>● "STOP" is displayed when the present vehicle speed is less than or equal to 2 km/h (1.24 MPH).</li> </ul>



⊗ Without CONSULT-II

GO TO 3.

OK or NG

OK >> System is OK.

NG >> GO TO 3.

# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

## 3. CHECK VEHICLE SPEED INPUT/OUTPUT

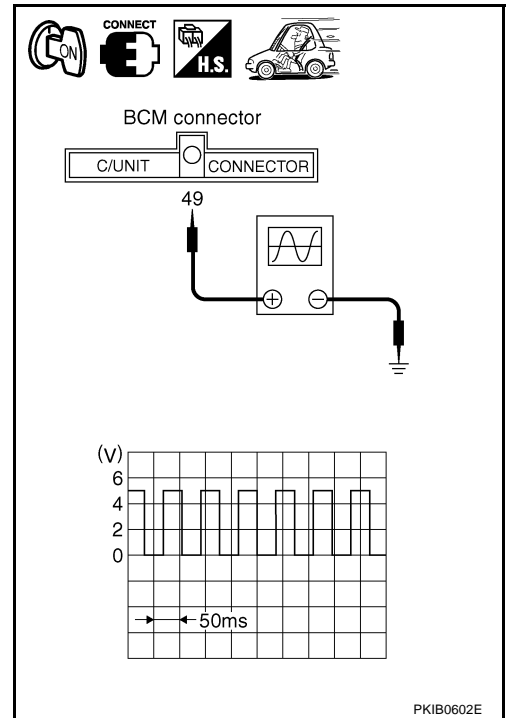
Start the engine, and check voltage between BCM harness connector M4 terminal 49 and ground, using an oscilloscope.

### Voltage waveform

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

OK or NG

- OK >> Replace BCM.
- NG >> GO TO 4.



## 4. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM connectors and combination meter connector.
3. Check continuity between BCM harness connector M4 terminal 49 and combination meter harness connector M41 terminal 18.

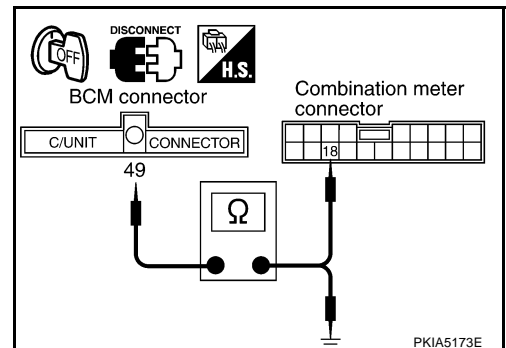
**49 - 18 : Continuity should exist.**

4. Check continuity between BCM harness connector M4 terminal 49 and ground.

**49 - Ground : Continuity should not exist.**

OK or NG

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



# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

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

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

1. Turn ignition switch OFF.
2. Remove front wiper relay.
3. Turn ignition switch ON.
4. Check voltage between front wiper relay harness connector E4 terminal 1 and ground.

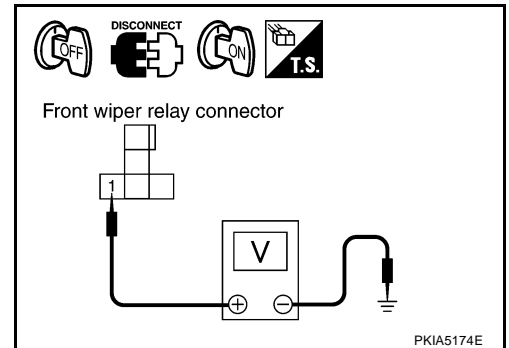
**1 - Ground** : **Battery voltage**

OK or NG

OK >> GO TO 2.

NG >> Check the following.

- 20A fuse [No. 34, located in 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

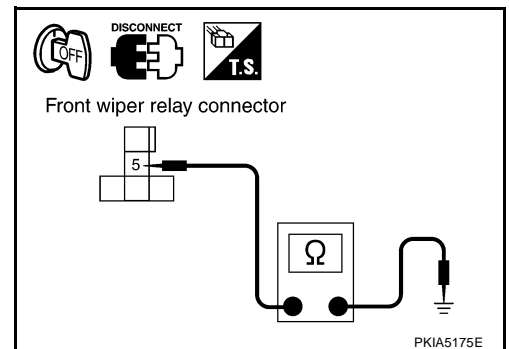
1. Turn ignition switch OFF.
2. Check continuity between front wiper relay harness connector E4 terminal 5 and ground.

**5 - Ground** : **Continuity should exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness ground circuit.



### 3. CHECK FRONT WIPER RELAY

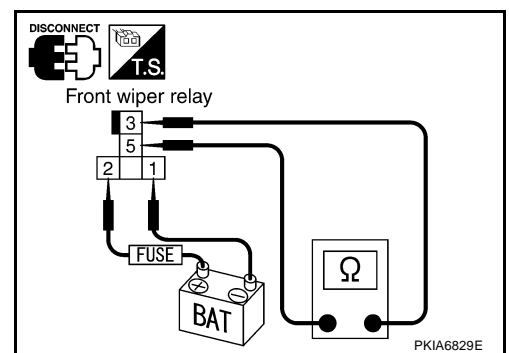
Apply battery voltage to between front wiper relay terminal 1 and 2, and check continuity between terminal 3 and 5.

**3 - 5** : **Continuity should exist.**

OK or NG

OK >> GO TO 4.

NG >> Replace front wiper relay.



WW

# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

## 4. CHECK BCM OUTPUT SIGNAL

1. Connect front wiper relay.
2. Turn ignition switch ON.
3. Check voltage between BCM harness connector E204 terminal 128 and ground.

**When front wiper switch is WASH : Approx. 0 V (for 0.7 sec.)**

**When front wiper switch is OFF : Battery voltage**

OK or NG

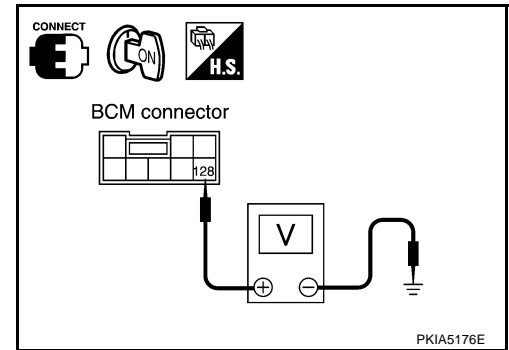
OK >> Repair harness between front wiper relay and BCM.

NG >> Replace BCM.

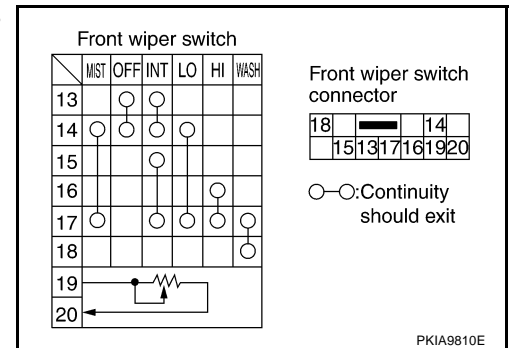
### Front Wiper Switch Inspection FRONT WIPER SWITCH CIRCUIT

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

Operation interval (intermittent wiper with vehicle speed detection function)	Resistance value (kΩ)
1 [Interval (Long)]	Approx. 1
2	Approx. 0.6
3	Approx. 0.3
4 [Interval (Short)]	Approx. 0



NKS001FM



### Removal and Installation of Front Wiper Arms, Adjustment of 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 "A" and "B" 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 "A" and "B".

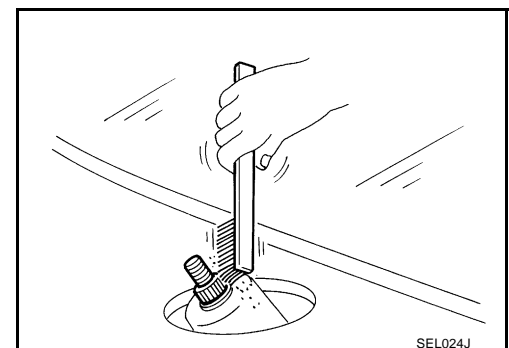
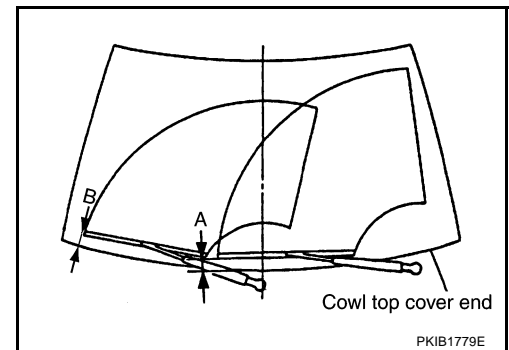
**Clearance "A" : 32.5 - 47.5 mm (1.280 - 1.870 in)**

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

- Tighten wiper arm nuts to specified torque.

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

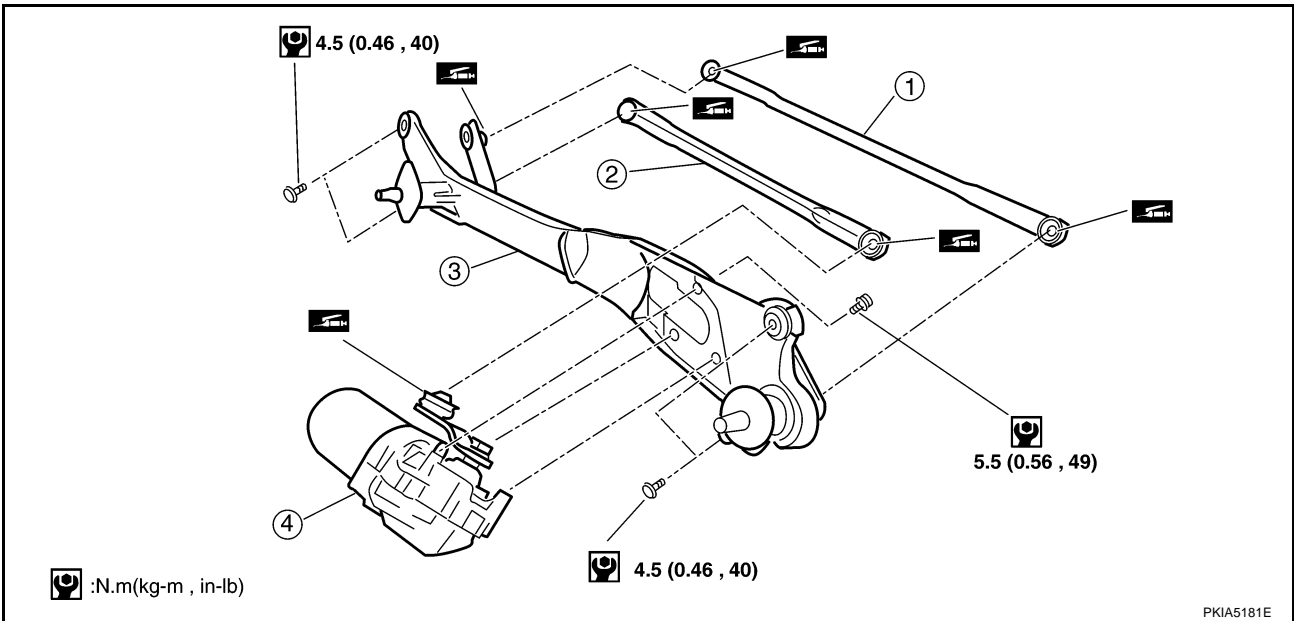
- Before reinstalling wiper arm, clean up the pivot area as illustrated. This will reduce possibility of wiper arm looseness.



# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

## Removal and Installation of Front Wiper Drive Assembly

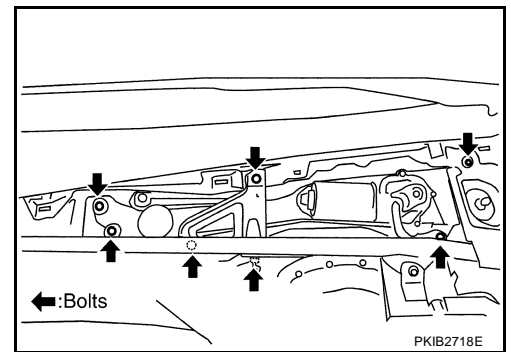
NKS001FO



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

### REMOVAL

1. Operate 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-23, "COWL TOP"](#) .
4. Disconnect front wiper motor connector.
5. Remove bolts (7) and remove front wiper drive assembly from the vehicle.
6. Remove wiper link from wiper frame.
7. Remove front wiper motor from wiper frame.



### INSTALLATION

1. Connect front wiper motor to connector. Turn front wiper switch ON to operate front wiper motor, and then turn front wiper switch OFF (auto stop).
2. Disconnect front wiper motor connector.
3. Install front wiper motor to wiper frame.
4. Install wiper link to wiper frame and motor arm.
5. Install front wiper drive assembly to the vehicle.
6. Connect front wiper motor connector. Turn front wiper switch ON to operate front wiper motor, and then turn front wiper switch OFF (auto stop).
7. Install bracket to the vehicle.
8. Install cowl top cover. Refer to [EI-23, "COWL TOP"](#) .
9. Install wiper arm. Refer to [WW-30, "Removal and Installation of Front Wiper Arms, Adjustment of Front Wiper Arms Stop Location"](#) .

Front wiper drive assembly mounting bolt  : 4.5 N-m (0.46 kg-m, 40 in-lb)

# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

## CAUTION:

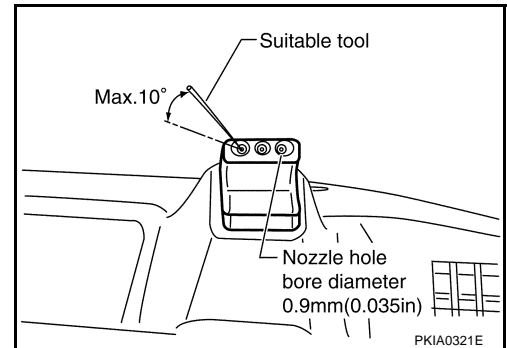
- Never drop front wiper motor or cause it to contact other parts.
- Check the grease conditions of motor arm and wiper link joint (at retainer). Apply grease if necessary.

## Washer Nozzle Adjustment

NKS001FP

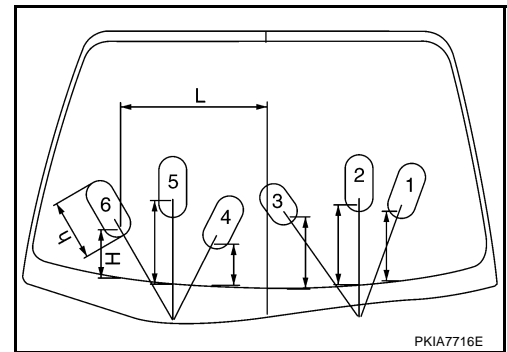
- Adjust washer nozzle with suitable tool as shown in the figure.

Adjustable range :  $\pm 10^\circ$



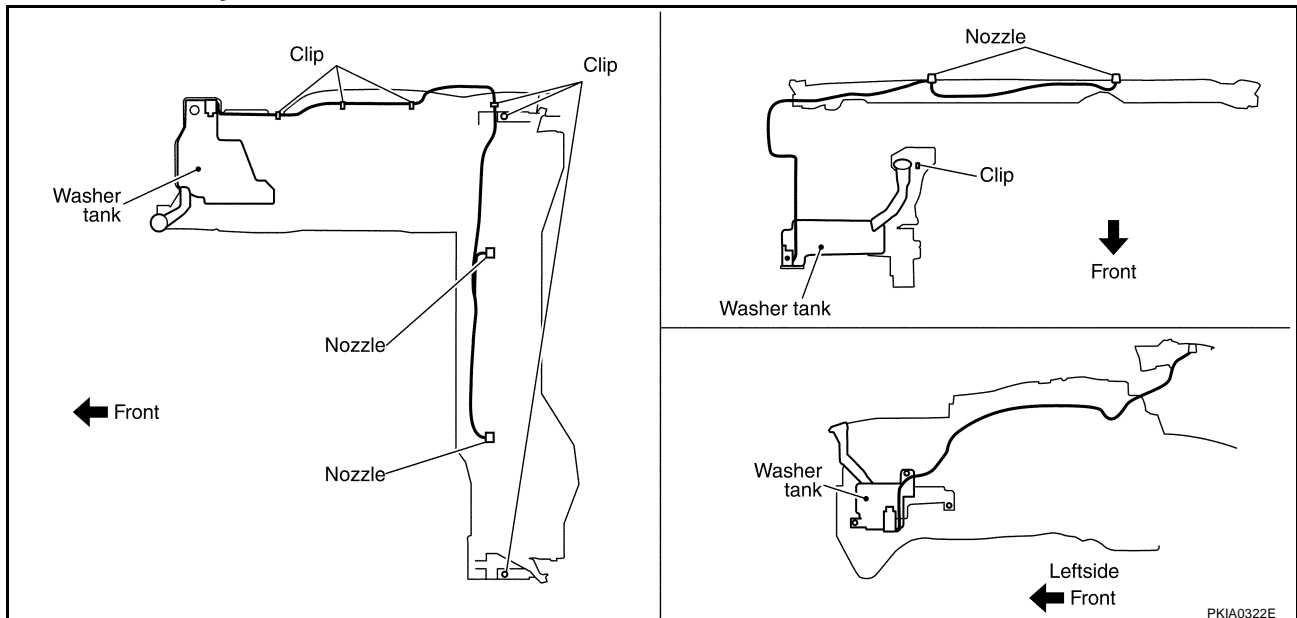
Unit: mm (in)

Spray position	H (height)	L (length)	h (spray point area)
1	192.7 (7.59)	420.4 (16.55)	165.3 (6.51)
2	226.9 (8.93)	293.8 (11.57)	172.3 (6.78)
3	204.9 (8.07)	69.3 (2.73)	133.8 (5.27)
4	120.6 (4.75)	174.8 (6.88)	164.5 (6.48)
5	246.8 (9.72)	299.2 (11.78)	179.2 (7.06)
6	140.5 (5.53)	458 (18.03)	190.6 (7.50)



## Washer Tube Layout

NKS001FO





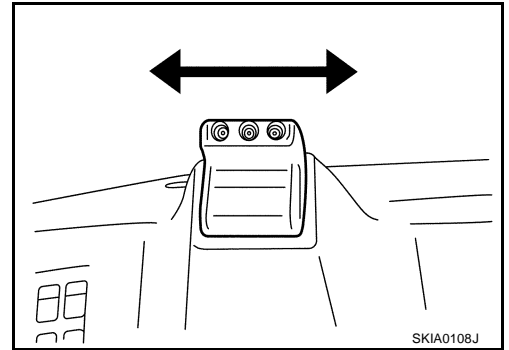
# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

## Removal and Installation of Washer Nozzle

### REMOVAL

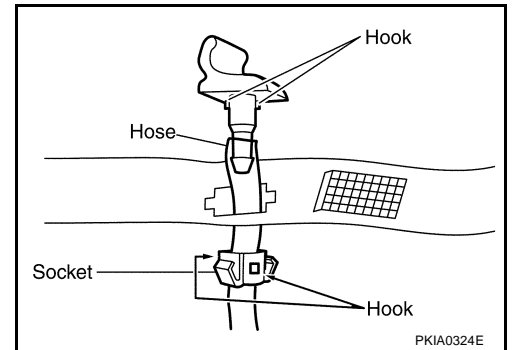
1. Push washer nozzle firmly toward either left or right to pull out.
2. Remove washer hose from washer nozzle.

NKS001FR



### INSTALLATION

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

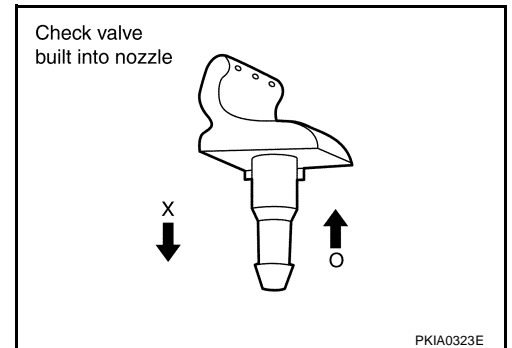


## Washer Nozzle Inspection

### 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.

NKS001FS



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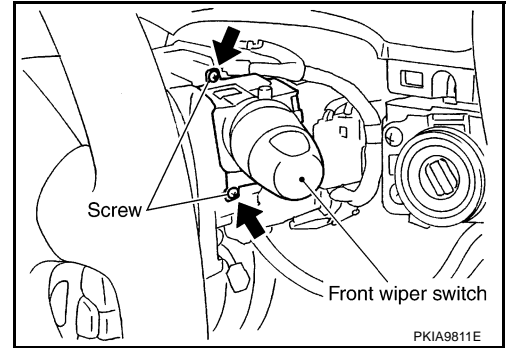
# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

## Removal and Installation of Front Wiper Switch

NKS001FT

### REMOVAL

1. Remove steering column cover. Refer to [IP-10, "Removal and Installation"](#).
2. Disconnect front wiper switch connector.
3. Remove screws (2) and then remove front wiper switch from the base.



### INSTALLATION

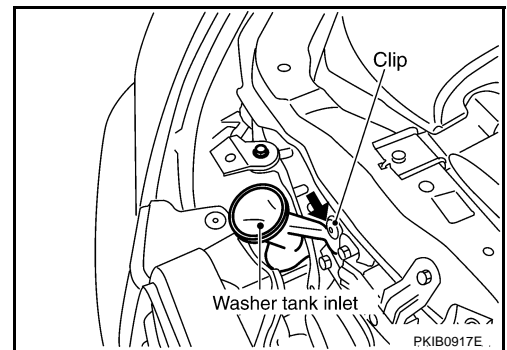
Installation is the reverse order of removal.

## Removal and Installation of Washer Tank

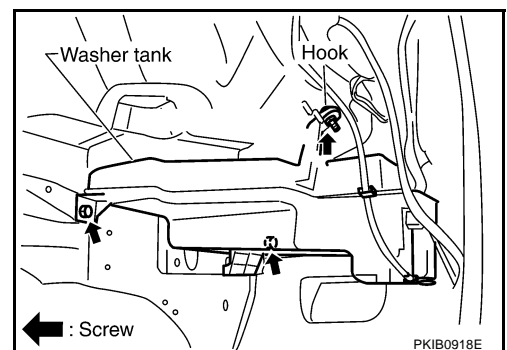
NKS001FU

### REMOVAL

1. Remove front air guide. Refer to [EM-13, "ENGINE ROOM COVER"](#).
2. Remove clip. Shown by the arrow in the figure.
3. Pull out washer tank inlet.




4. Remove fender protector. Refer to [EI-24, "FENDER PROTECTOR"](#).
5. Disconnect front washer pump connector and washer level switch connector.
6. Remove washer tank mounting screws (3) and pawl.
7. Remove washer hose, and remove washer tank from the vehicle.



### INSTALLATION

- Installation is the reverse order of removal.
- Tighten washer tank mounting screw to specified torque.

**Washer tank mounting screw**  : 4.5 N·m (0.46 kg-m, 40 in-lb)

### CAUTION:

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

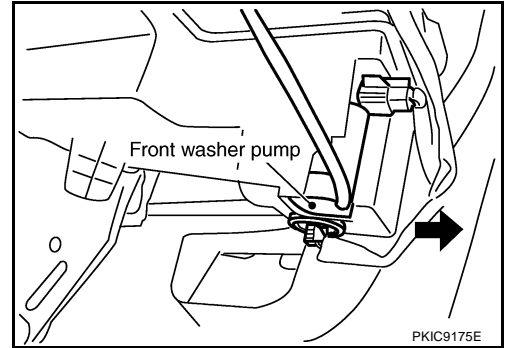
# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

## Removal and Installation of Front Washer Pump

NKS001FV

### REMOVAL

1. Remove fender protector. Refer to [EI-24, "FENDER PROTECTOR"](#) .
2. Disconnect front washer pump connector and remove washer hose.
3. Pull out washer pump in the direction of the arrow in the figure, and remove front washer pump from washer tank.



### INSTALLATION

Installation is the reverse order of removal.

#### **CAUTION:**

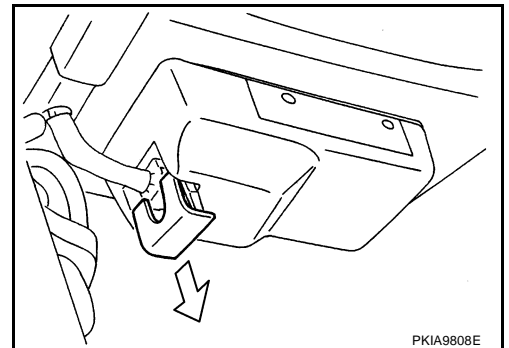
When installing front washer pump, there should be no packing twists, etc.

## Removal and Installation of Rain Sensor

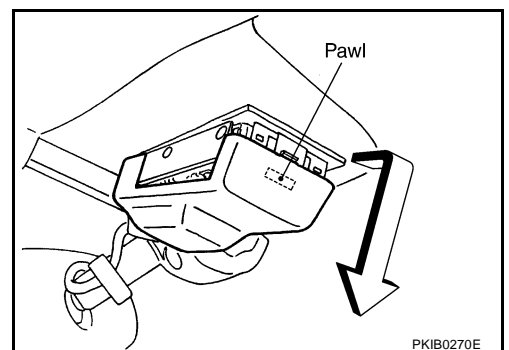
NKS001FW

### REMOVAL

1. Pull rain sensor connector cover in the direction of the arrow in the figure, and then remove it.



2. Disconnect rain sensor connector.
3. Pull rain sensor cover in the direction of the arrow in the figure, and then remove the pawl.
4. Remove fitting on the connector side, and then remove rain sensor cover.



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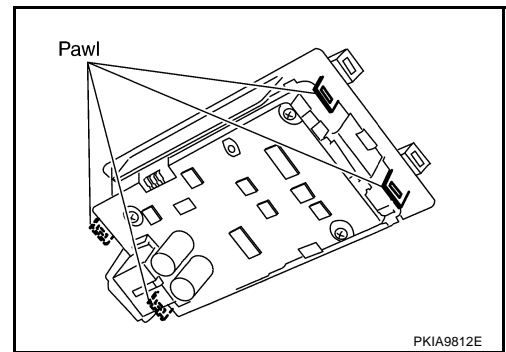
WW

## FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

5. Insert a screwdriver under the pawls (4) of rain sensor substrate, and then remove the substrate from prism of rain sensor.

### CAUTION:

- Be careful not to bend metal parts of the pawls (4) when removing substrate.
- Be careful not to touch prism attached to windshield.



## INSTALLATION

1. Install substrate to prism attached to windshield.

### CAUTION:

**Make sure that pawls (4) are securely installed when installation.**

2. Connect rain sensor connector.
3. Perform calibration according to calibration procedure. Refer to [WW-36, "Calibration Procedure of Rain Sensor"](#).
4. Disconnect rain sensor connector.
5. Install rain sensor cover.

### CAUTION:

**Fit the connector side to substrate first, and then fit the opposite side to it.**

6. Connect rain sensor connector.
7. Install rain sensor connector cover.

## Calibration Procedure of Rain Sensor

NKS001FX

- It is necessary to perform calibration when either windshield or rain sensor is replaced due to damage of windshield or malfunction of rain sensor.
- If wiper is operated in unnecessary situation caused by remarkable deterioration of light transmittance of windshield, operation improves by performing this initialization again.

1. Fully clean around the position equipped with rain sensor of windshield using Genuine NISSAN Cleaner.
2. Turn ignition switch OFF.
3. Remove rain sensor cover, and then turn ignition switch OFF → ON while pressing calibration button on substrate.

4. Calibration starts when calibration button is turned to OFF.
5. When calibration is completed successfully, red LED blinks at cycle of 4 times a second (256 msec.) and green LED blinks at cycle of 16 times a second (64 msec.).

When calibration was not completed successfully, both green LED and red LED blink at the cycle of 10 times a second.

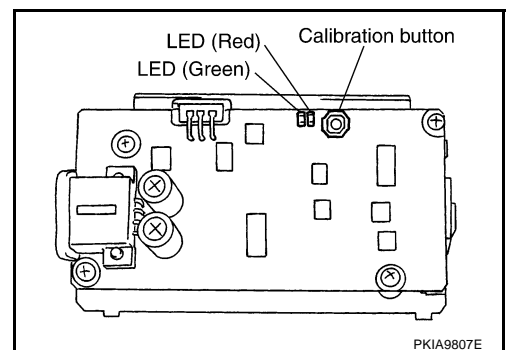
### CAUTION:

**If calibration is not completed successfully even when it is performed again or windshield was cleaned thoroughly, replace rain sensor and then perform calibration. After doing so, if calibration is yet to complete successfully, replace windshield.**

6. Turn ignition switch OFF.
7. Disconnect rain sensor connector.
8. Install rain sensor cover and connect rain sensor connector.

### CAUTION:

**This procedure is performed when the temperature of windshield and rain sensor is 10 to 40 °C (50 to 104 °F) with wiper retracted.**



# CIGARETTE LIGHTER

PPF:35330

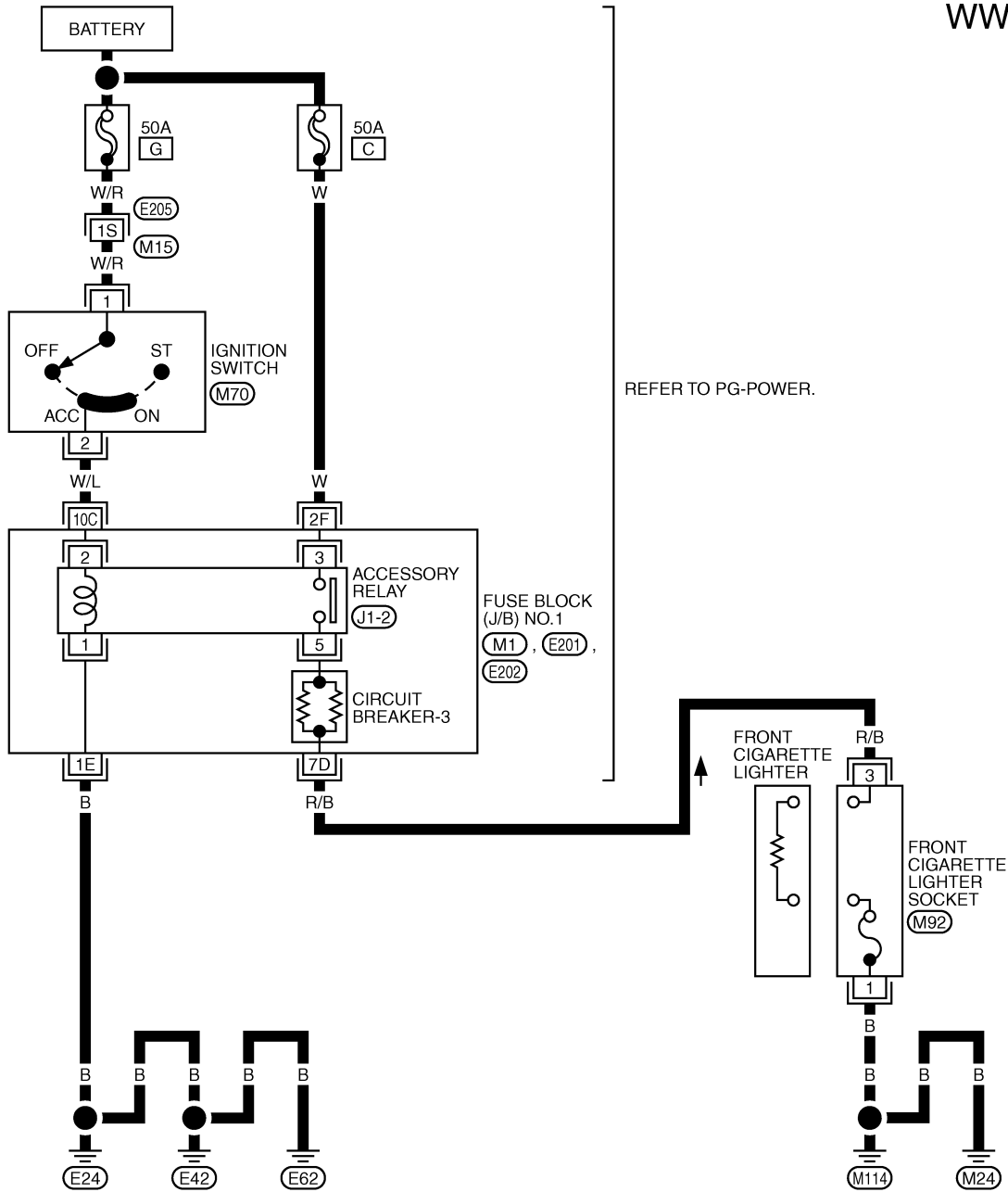
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## CIGARETTE LIGHTER

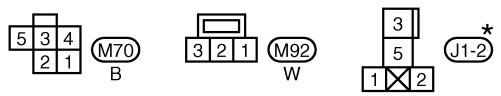
### Wiring Diagram — CIGAR —

NKS001FY

## WW-CIGAR-01



REFER TO PG-POWER.



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

REFER TO THE FOLLOWING.  
 (E205) -SUPER MULTIPLE JUNCTION (SMJ)  
 (M1), (E201), (E202) -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

WW

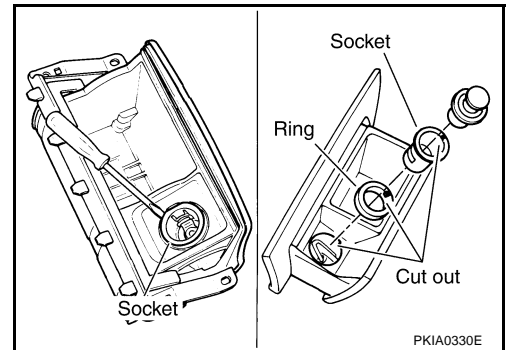
# CIGARETTE LIGHTER

NKS001FZ

## Removal and Installation

### REMOVAL

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



### INSTALLATION

Installation is the reverse order of removal.

# POWER SOCKET

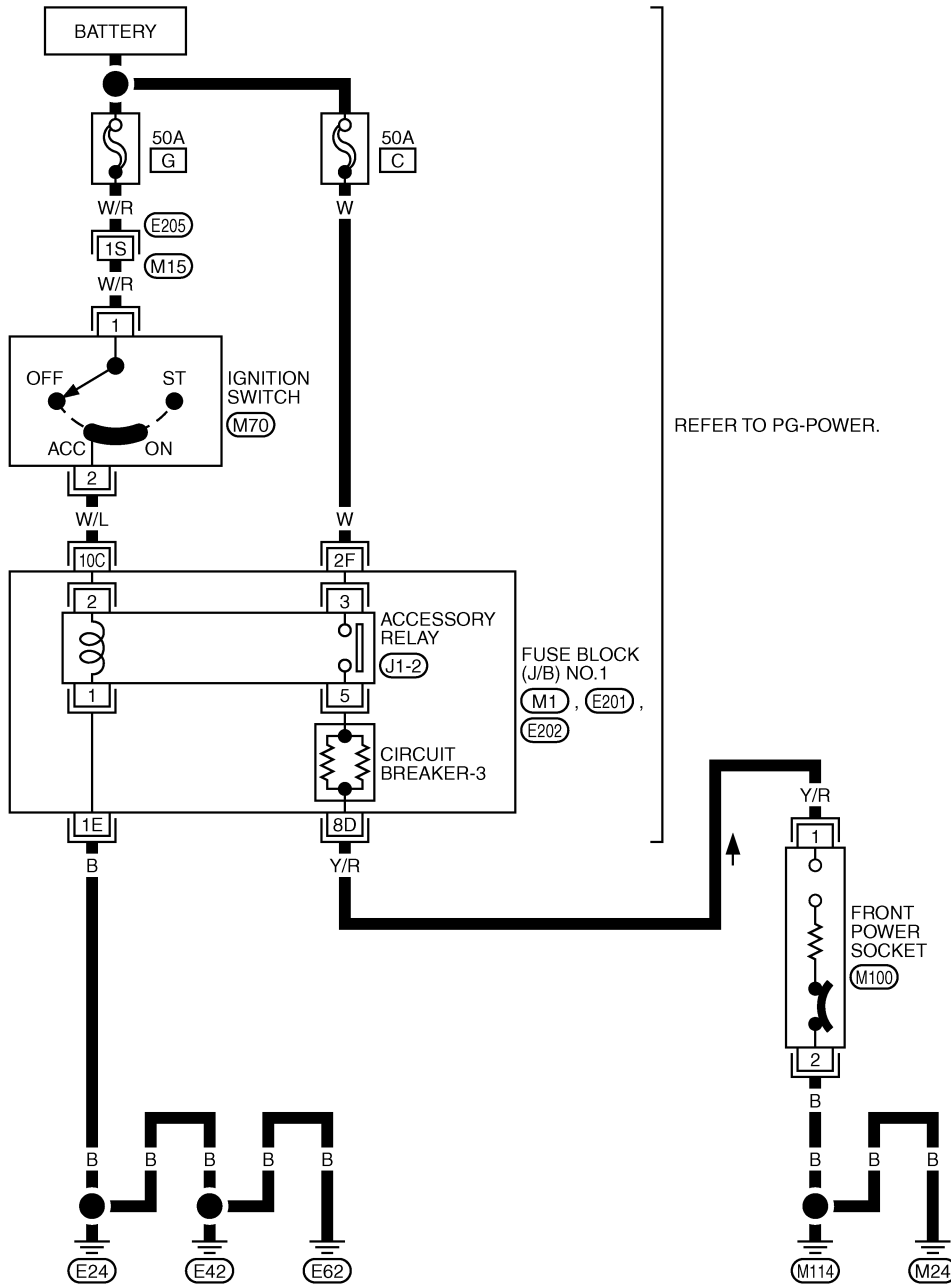
PFP:253A2

## POWER SOCKET

### Wiring Diagram — CIGAR —

NKS001G0

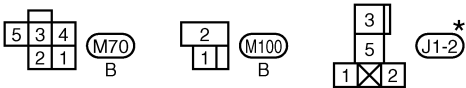
WW-P/SCKT-01



REFER TO PG-POWER.

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

REFER TO THE FOLLOWING.  
 (E205) -SUPER MULTIPLE JUNCTION (SMJ)  
 (M1), (E201), (E202) -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TKWM1592E

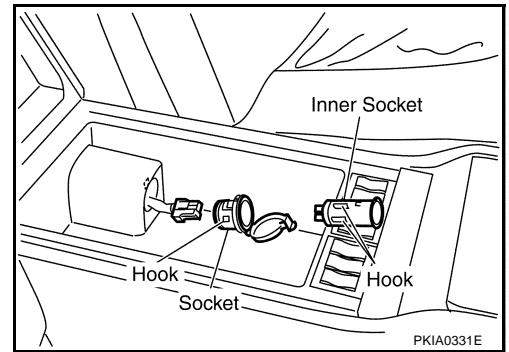
# POWER SOCKET

NKS001G1

## Removal and Installation

### REMOVAL

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



### INSTALLATION

Installation is the reverse order of removal.



# HORN

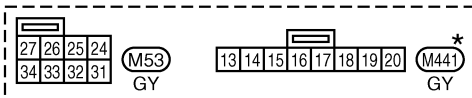
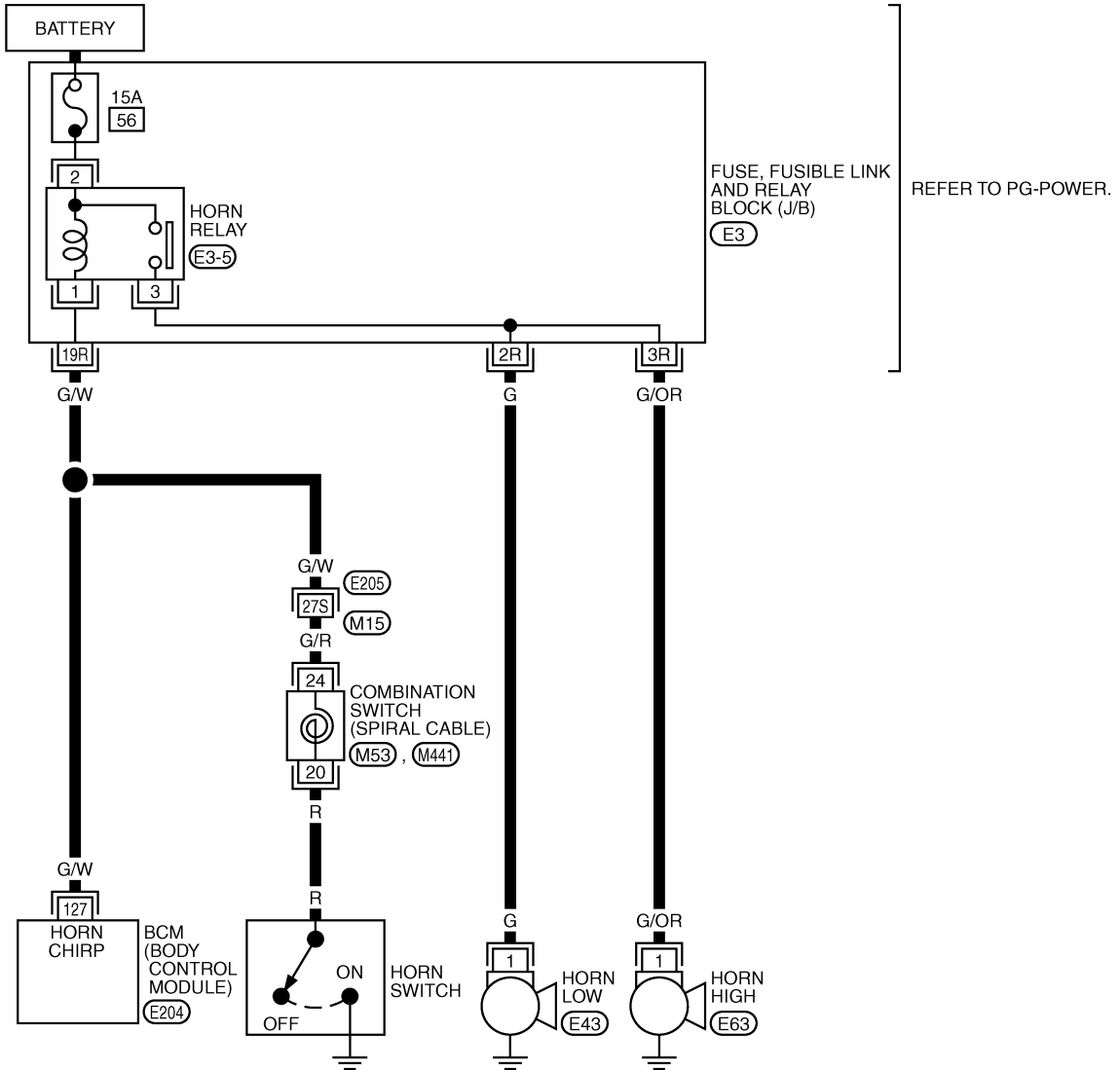
PPF:25610

## HORN

### Wiring Diagram — HORN —

NKS001G2

## WW-HORN-01



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

REFER TO THE FOLLOWING.

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

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TKWWM1440E

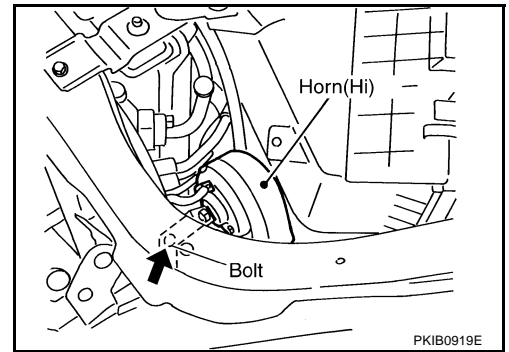
# HORN

NKS001G3

## Removal and installation

### REMOVAL (HORN HI)


1. Remove mass air flow sensor cover. Refer to [EM-13, "ENGINE ROOM COVER"](#) .
2. Disconnect horn connector.
3. Remove horn mounting bolt.
4. Remove horn.



### INSTALLATION (HORN HI)

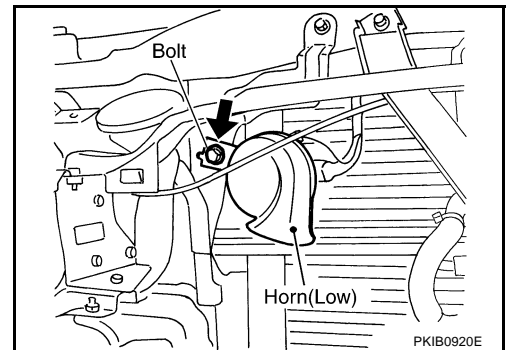
Installation is the reverse order of removal.

- Tighten horn mounting bolt to specified torque.

**Horn mounting bolt**  : 6.8 N-m (0.69 kg-m, 60 in-lb)

### REMOVAL (HORN LOW)

1. Remove front grille. Refer to [EI-21, "FRONT GRILLE"](#) .
2. Disconnect horn connector.
3. Remove horn mounting bolt.
4. Remove horn.



### INSTALLATION (HORN LOW)

Installation is the reverse order of removal.

- Tighten horn mounting bolt to specified torque.

**Horn mounting bolt**  : 17.1 N-m (1.7 kg-m, 13 ft-lb)