SECTION WW
WIPER, WASHER & HORN

CONTENTS

PRECAUTION

PFP:00011

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

AKS004VC

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

AKS002L7

When you read wiring diagrams, refer to the following:

- 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 following:

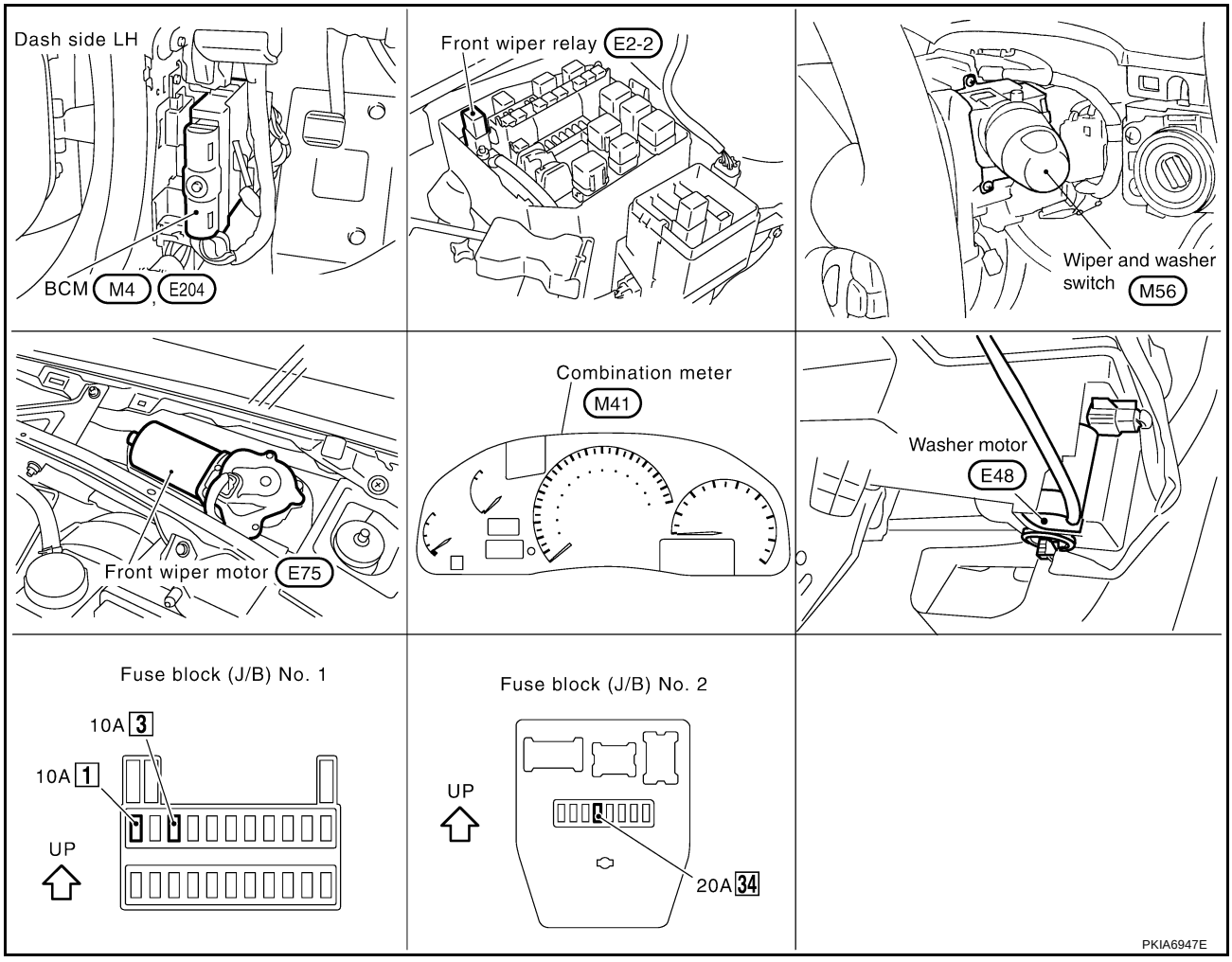
- Refer to GI-10, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES" .
- Refer to GI-26, "How to Perform Efficient Diagnosis for an Electrical Incident" .

FRONT WIPER AND WASHER SYSTEM

PFP:28810

Component Parts and Harness Connector Location

AKS002L9



System Description

AKS002L8

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. BCM controls intermittent activation time and coupled activation of washer and wiper.

WIPER OPERATION

Description

The wiper switch is controlled by a lever built in 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 position, power is supplied

- through 10A fuse [No. 1, located in fuse block (J/B) No.1]
- to BCM terminal 68
- 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 washer motor terminal 1.

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

- through front wiper switch terminal 14
- 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 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, and
- through grounds E24, 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
- through front wiper switch terminal 15
- to grounds M25 and M115
- through front wiper switch terminal 17.

The desired interval time is input

- to BCM terminal 48
- through front wiper switch terminal 19
- to BCM terminal 49
- through combination meter terminal 38 (vehicle speed pulse).

The desired interval time is input

- to front wiper relay terminal 2
- through BCM terminal 128.

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 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 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 position, power is supplied

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

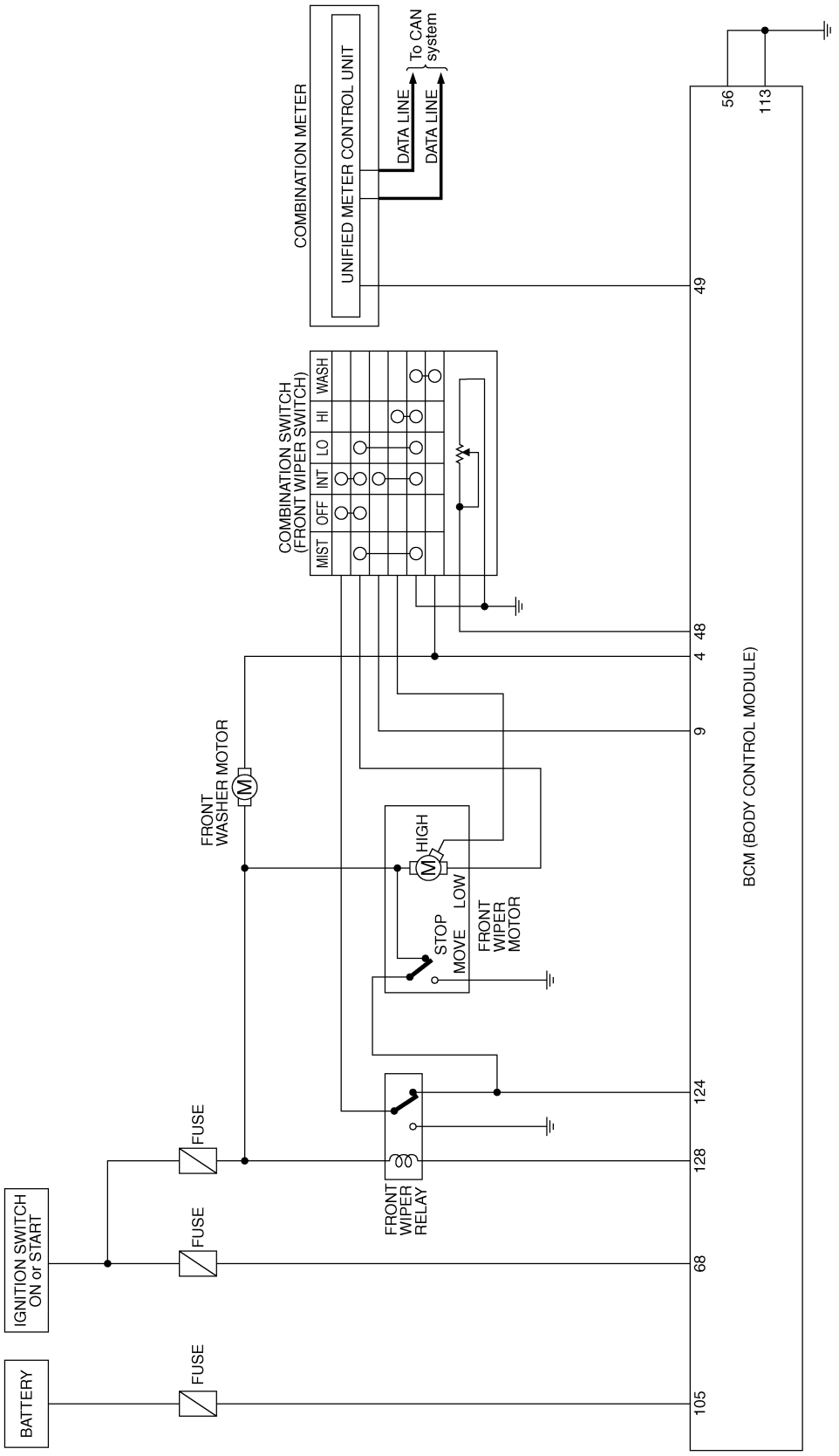
When the lever is pulled to the WASH position, ground is supplied

- to front washer motor terminal 2, and
- to BCM terminal 4
- from front wiper switch terminal 18
- through front wiper switch, terminal 17, and
- through 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.

Schematic

AKS002LA

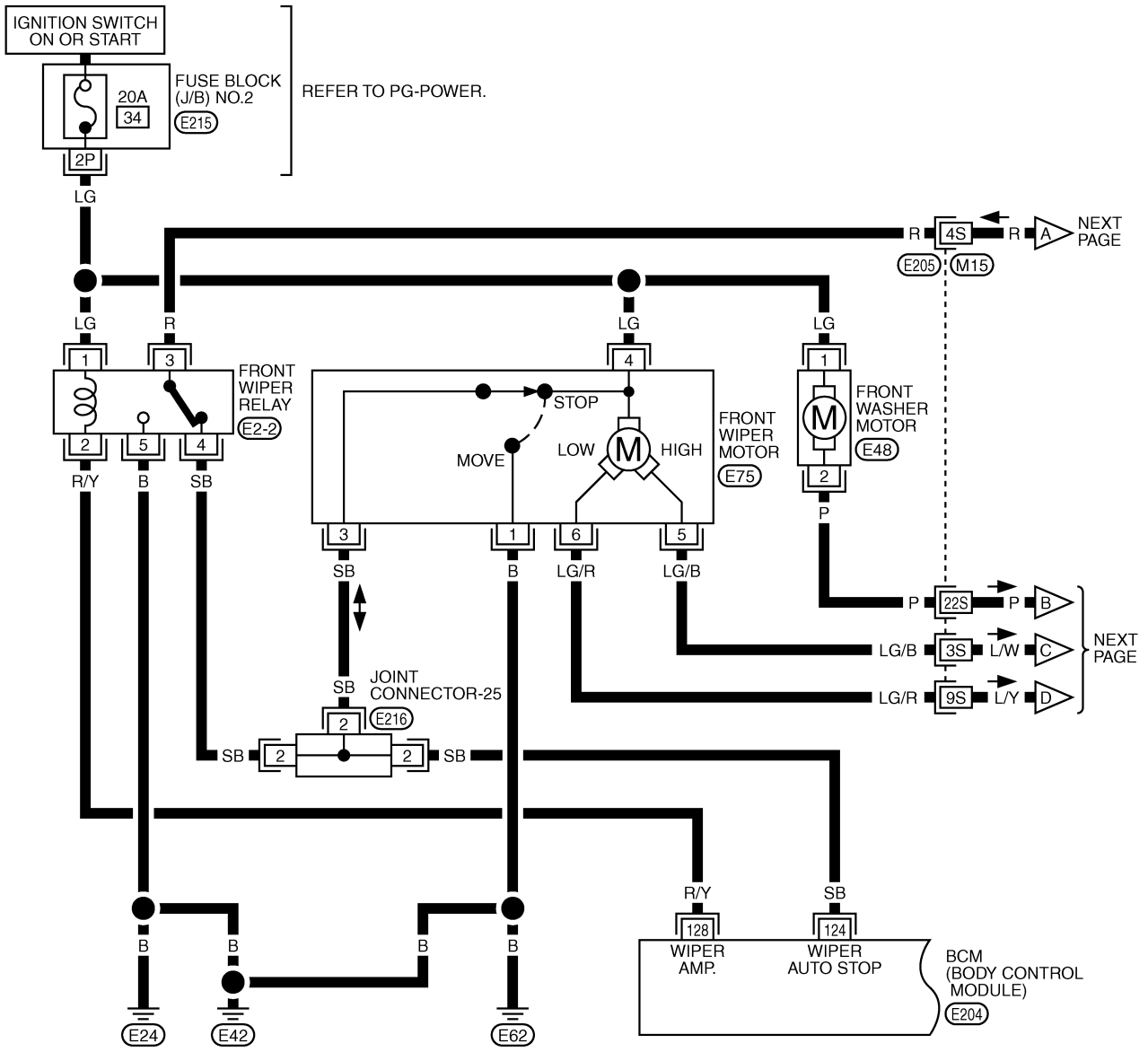


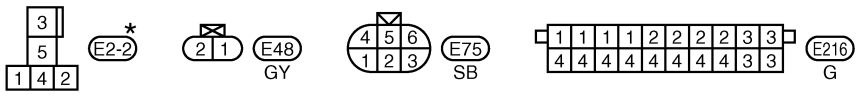
TKWA0626E

Wiring Diagram — WIPER —

AKS002LB

WW-WIPER-01





REFER TO THE FOLLOWING.

E205 -SUPER MULTIPLE JUNCTION (SMJ)

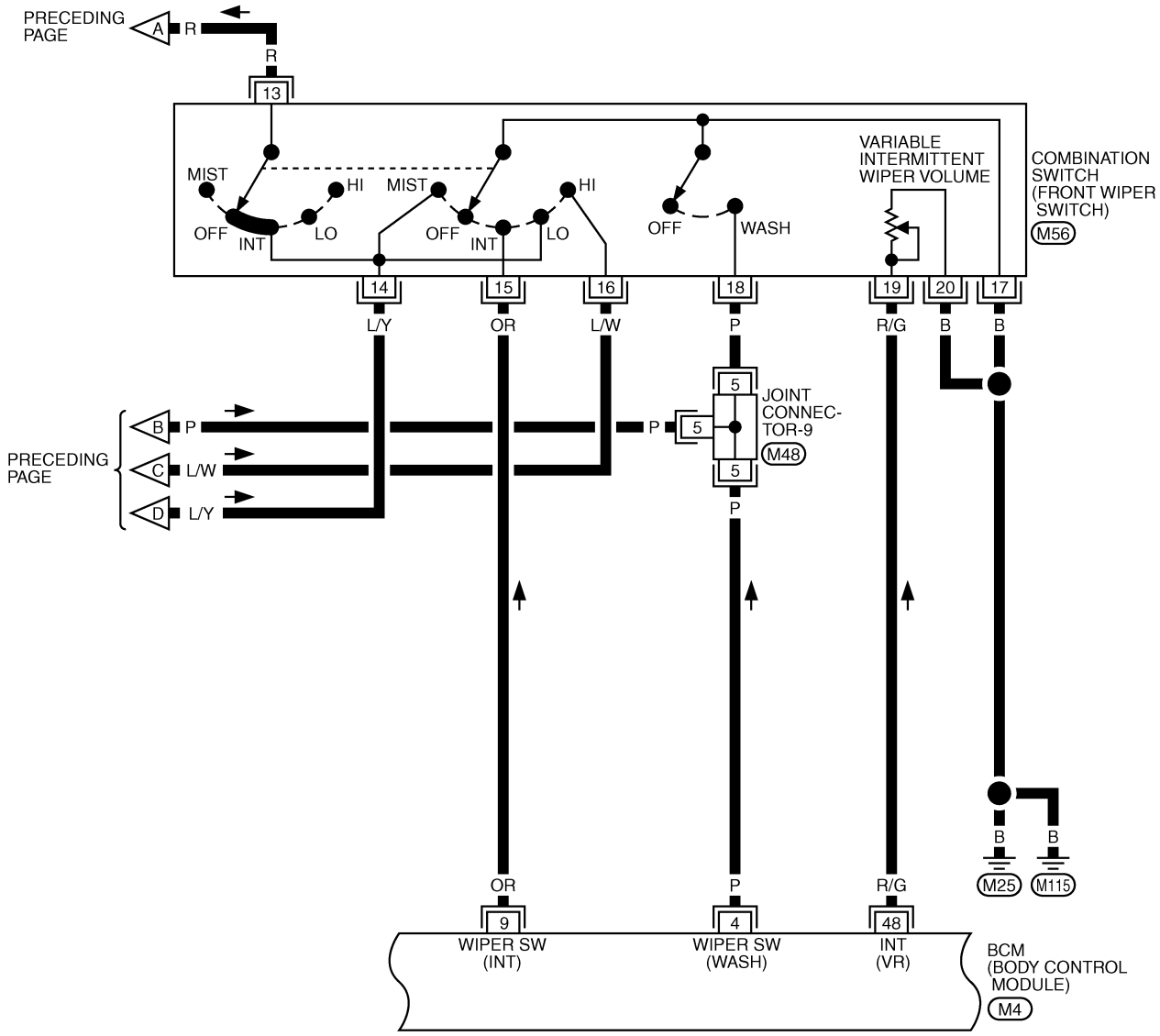
E215 -FUSE BLOCK-JUNCTION BOX (J/B) NO.2

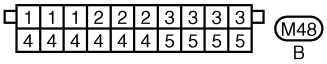
E204 -ELECTRICAL UNITS

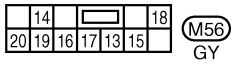
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWA0627E

WW-WIPER-02





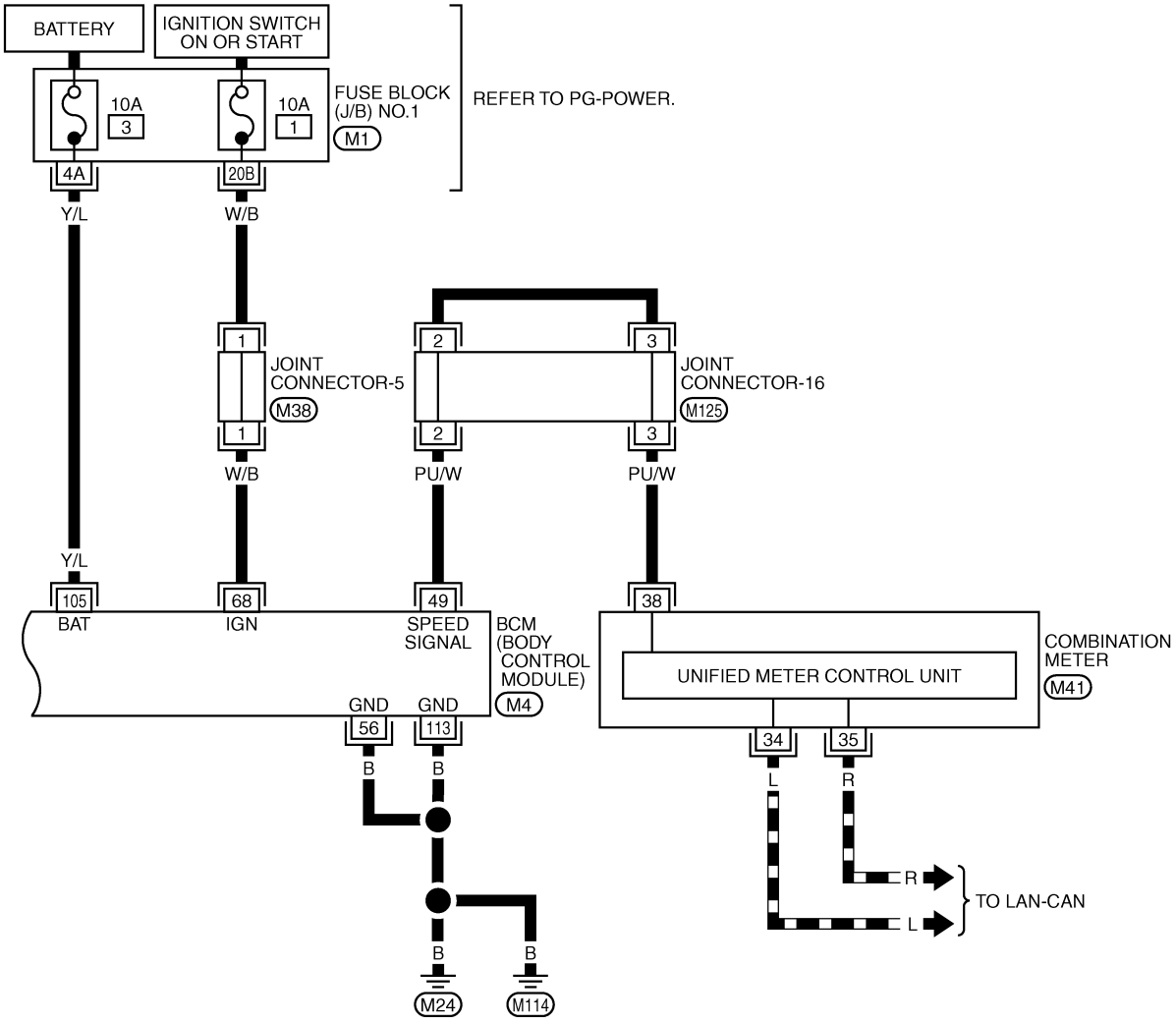


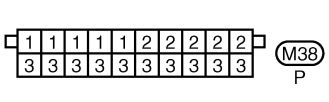
REFER TO THE FOLLOWING.
M4 -ELECTRICAL UNITS

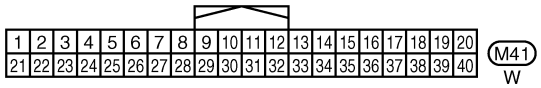
TKWA0628E

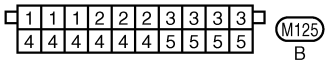
WW-WIPER-03

: DATA LINE









REFER TO THE FOLLOWING.

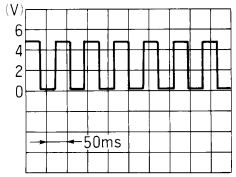
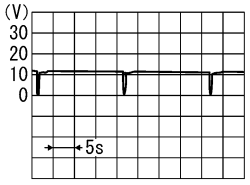
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

M4 -ELECTRICAL UNITS

TKWA0629E

Terminal and Reference Values for BCM

AKS002LC

Terminal No.	Wire color	Item	Measuring condition			Reference value
			Ignition switch	Operation or condition		
4	P	Washer switch signal	ON	Wiper switch	WASH	Approx. 0 V
					OFF	Battery voltage
9	OR	Wiper switch INT signal	ON	Wiper switch	INT	Approx. 0 V
					OFF	Approx. 8 V
48	R/G	Intermittent wiper volume signal	ON	Wiper intermittent interval	Long	Approx. 3.6 V
					Short	Approx. 0 V
49	PU/W	Vehicle speed signal (2-pulse)	ON	Vehicle speed approx. 40 km/h (25 MPH)		 ELF1080D
56	B	Ground	ON	-		Approx. 0 V
68	W/B	Ignition on signal	ON	-		Battery voltage
105	Y/L	Battery power supply	OFF	-		Battery voltage
113	B	Ground	ON	-		Approx. 0 V
124	SB	Wiper auto stop signal	ON	Wiper is moving.		Approx. 0 V
				Wiper is stopped.		Battery voltage
128	R/Y	Wiper motor operation signal	ON	Wiper switch: INT position		 SKIA3507E

Work Flow

AKS002LD

1. Confirm the symptom or customer complaint.
2. Understand the system description. Refer to WW-4, "System Description" .
3. Perform preliminary inspection. Refer to WW-11, "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

AKS002LE

SETTING CHANGE FUNCTIONS

- With CONSULT-II, each function can be changed in setting. Refer to WW-13, "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	Disactivated

INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

Inspection procedure

1. CHECK FUSE

- Make sure wiper and washer fuse is blown.

Unit	Power source	Fuse No.
Front wiper motor, Front washer motor, Front wiper relay	Ignition ON or START position	34

CAUTION:

For fuse number, refer to WW-4, "Component Parts and Harness Connector Location" .

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 front wiper motor, front washer motor and front wiper relay connector.
2. Check voltage between the following connector terminals and ground.

Unit (Connector)	Terminals (wire color)		Ignition switch condition	Voltage
	(+)	(-)		
Front wiper motor (E75)	4 (LG)	Ground	ON	Battery voltage
Front washer motor (E48)	1 (LG)			
Front wiper relay (E2-2)	1 (LG)			

OK or NG

OK >> GO TO 3.

NG >> Replace harness of wiper and washer power supply circuit.

3. CHECK GROUND CIRCUIT (BCM)

Check for continuity between the following BCM connector terminals and ground.

Unit (Connector)	Terminals (wire color)		Ignition switch condition	Continuity
BCM (M4)	56 (B)	Ground	OFF	Yes
	113 (B)			

OK or NG

OK >> INSPECTION END

NG >> Replace harness BCM ground circuit.

CONSULT-II Function

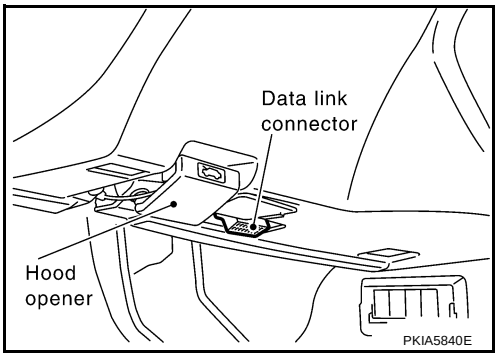
AKS002LF

- 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.

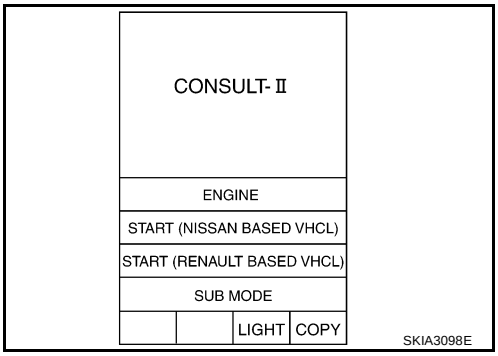
IVMS diagnosis part	Check item and diagnosis mode	Description
WIPER	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays data relative to BCM input signals and various control related data for each system.
	ACTIVE TEST	Gives a drive signal to a load to check the operation.
BCM PART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

CONSULT-II BASIC OPERATION PROCEDURE

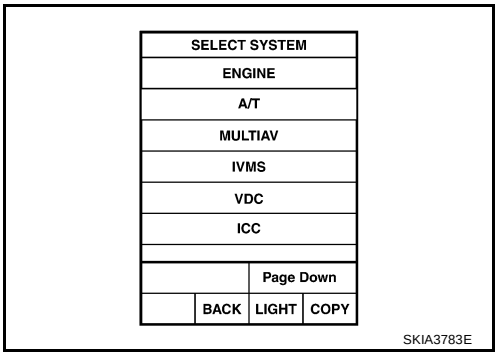
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



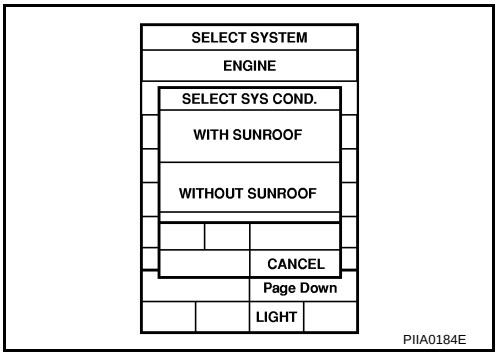
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “IVMS” on “SELECT SYSTEM” screen. If “IVMS” is not indicated, refer to GI-38, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Check the model specification, touch either “WITH SUNROOF” or “WITHOUT SUNROOF”.
5. Touch “OK”. If the selection is wrong, touch “CANCEL”.
6. Select the desired part to be diagnosed on “SELECT TEST ITEM” screen.



WORK SUPPORT

Operation Procedure

1. Touch “WIPER” on “SELECT TEST ITEM” screen.
2. Touch “WORK SUPPORT” on “SELECT DIAG MODE” screen.
3. Touch “WIP INT VHCL SPD ADJ”on “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”	Disactivated

6. Touch “END” after customizing is completed.

DATA MONITOR

Operation Procedure

1. Touch “WIPER” on “SELECT TEST ITEM” screen.
2. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.
3. Touch either “ALL SIGNALS” or “SELECTION FROM MENU” on “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 wiper switch signal.
WASH SW	Indicates “WASH Position [ON] / Others [OFF]” condition of 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 wiper switch signal.
INTRESIST	Indicates “ Intermittent Resistance Value [approx. 0 to 1]” condition wiper switch signal.

ACTIVE TEST

Operation Procedure

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

Test item “WIPER AMP”	Wiper motor operation
“ON”	Operate
“OFF”	Stop

4. During the operation check, touching “OFF” deactivates the operation.

On Board Diagnosis

AKS002LG

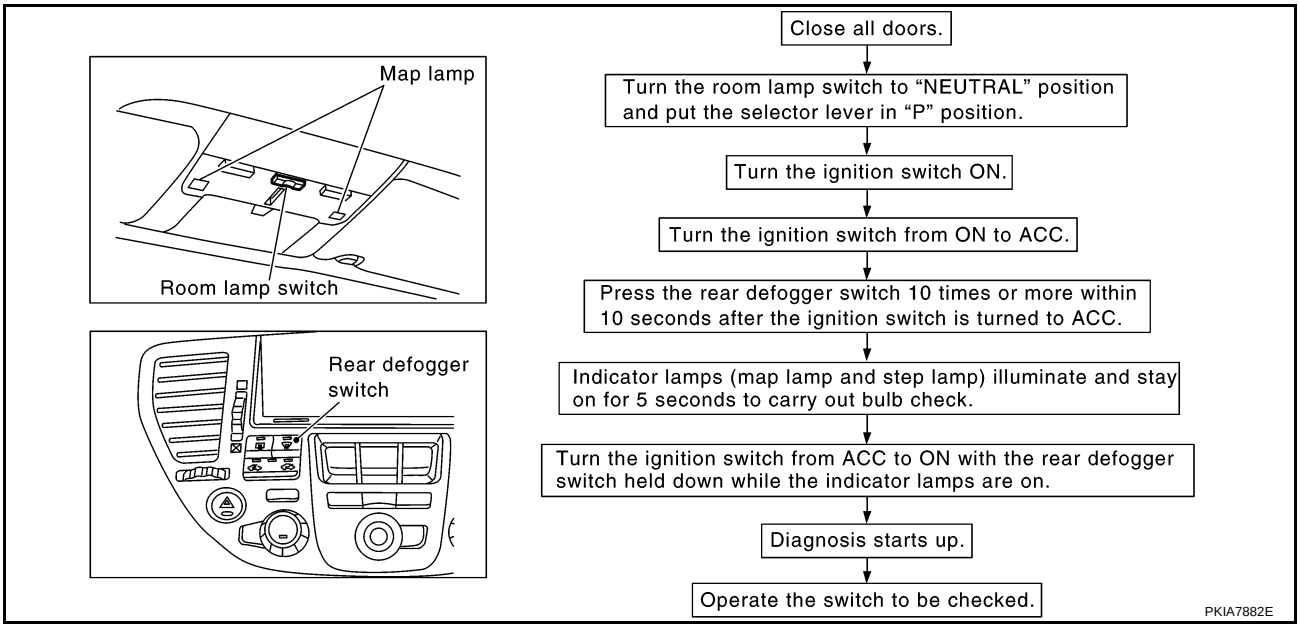
- IVMS can check communication diagnosis, switch monitor, and power door lock system self-diagnosis using on board diagnosis.
- Map lamps and step lamps (all seats) act as the indicators for the on board diagnosis.

DIAGNOSIS ITEM FOR FRONT WIPER AND WASHER SYSTEM

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

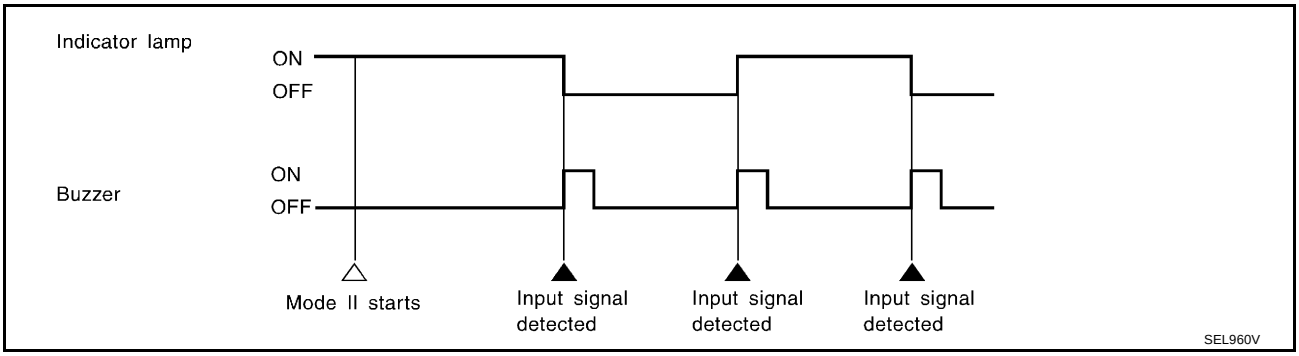
SWITCH MONITOR

How to Perform Switch Monitor



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

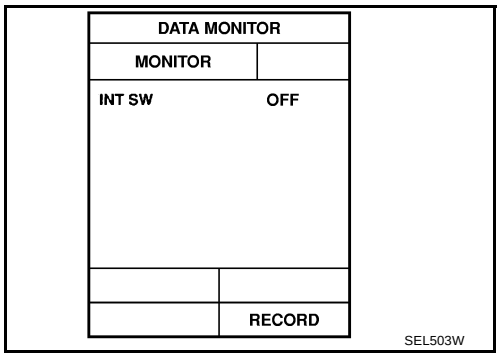
- Turn ignition switch OFF.
- Drive the vehicle at more than 7 km/h (4 MPH).

Intermittent Wiper Does Not Operate

AKS002LH

1. CHECK INTERMITTENT WIPER SWITCH INPUT SIGNAL

With CONSULT-II
See “INT SW” in “DATA MONITOR” mode.
When wiper switch is in INT position: ON
When wiper switch is in OFF position: OFF



NOTE:
When “DATA MONITOR” is operating, intermittent wiper does not operate.

Without CONSULT-II
Check wiper switch (INT) in switch monitor mode. Refer to WW-15, "SWITCH MONITOR" .

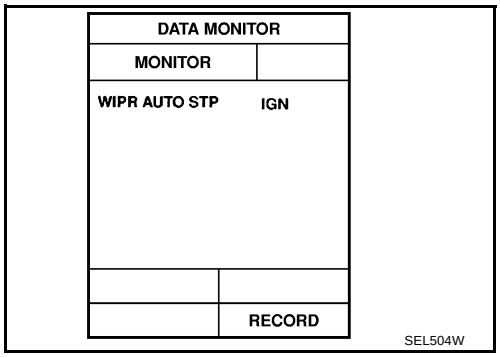
OK or NG

OK >> GO TO 2
NG >> Check the following.

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

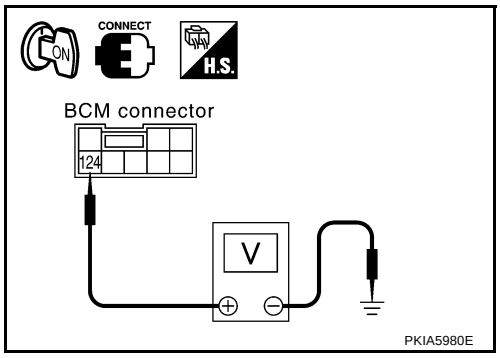
2. CHECK WIPER AUTO STOP SIGNAL

With CONSULT-II
See “WIP AUTO STOP” in “DATA MONITOR” mode, and turn wiper switch to LO or HI position.
When wiper switch is in INT or OFF position: IGN
When wiper switch is in LO or HI: GND



Without CONSULT-II

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



Terminals				Voltage
(+)		(-)	Condition	
Connector	Terminal (Wire color)			
E204	124 (SB)	Ground	Moving	Approx. 0V
			Stopped	Battery voltage

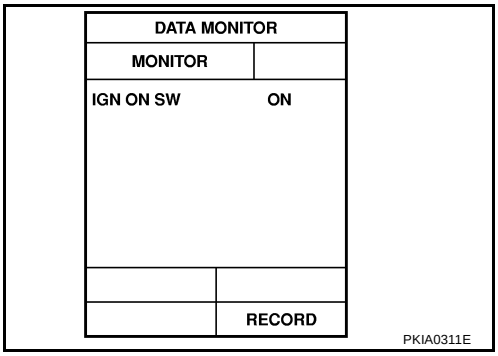
OK or NG

OK >> GO TO 3
NG >> Check the following.

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

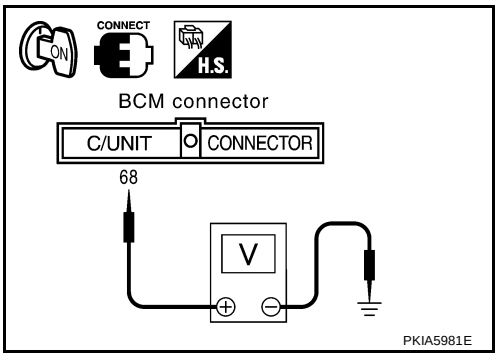
3. CHECK IGNITION SWITCH ON SIGNAL

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



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

Terminals				Voltage
(+)		(-)	Condition	
Connector	Terminal (Wire color)			
M4	68 (W/B)	Ground	Ignition switch ON or START	Battery voltage
			Ignition switch ACC or ON	Approx. 0V



OK or NG

OK >> GO TO 4
NG >> Check the following.

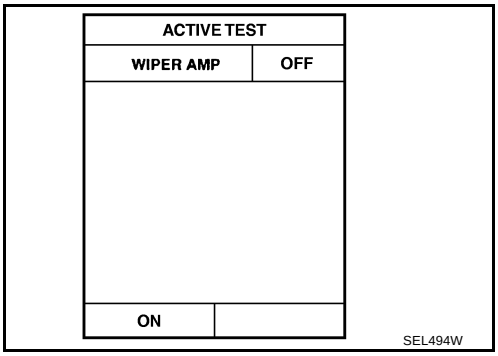
- 10A fuse [No. 1, located in fuse block (J/B) No.1]
- Harness for open or short between fuse and BCM

4. CHECK WIPER OPERATION

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

Wiper motor should operate.

NOTE:
If CONSULT-II is not available, skip this procedure and refer to WW-20, "Wiper and Washer Activate Individually But Intermittent Wiper and Washer Combination Does Not Operate" .



OK or NG

OK >> Replace BCM.
NG >> GO TO WW-20, "Wiper and Washer Activate Individually But Intermittent Wiper and Washer Combination Does Not Operate" .

Intermittent Time of Wiper Cannot be Adjusted

AKS002LI

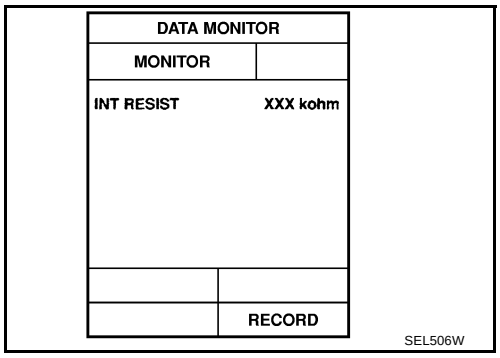
1. CHECK INTERMITTENT WIPER VOLUME INPUT SIGNAL

With CONSULT-II

See “INT RESIST” in “DATA MONITOR” mode while turning intermittent wiper volume.

Short interval : Approx. 0 kohm

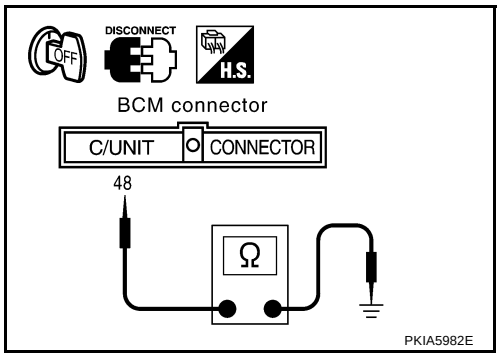
Long interval : Approx. 1 kohm



Without CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Measure resistance between BCM harness connector M4 terminal 48 (R/G) and ground while turning intermittent wiper volume.

Terminals				Resistance
Connector	Terminal (Wire color)	Ground	Condition	
M4	48 (R/G)		Short interval	Approx. 0Ω
			Long interval	Approx. 1kΩ



OK or NG

OK >> Replace BCM.

NG >> GO TO 2

2. CHECK FRONT WIPER SWITCH

Check front wiper switch. Refer to WW-21, "Wiper and Washer Switch Circuit Check" .

OK or NG

OK >> Check the following.

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

NG >> Replace front wiper switch.

Wiper and Washer Activate Individually But Not in Combination

AKS002LJ

1. CHECK WASHER SWITCH INPUT SIGNAL

With CONSULT-II

See “WASH SW” in “DATA MONITOR” mode.

When washer switch is ON: ON

When washer switch is OFF: OFF

Without CONSULT-II

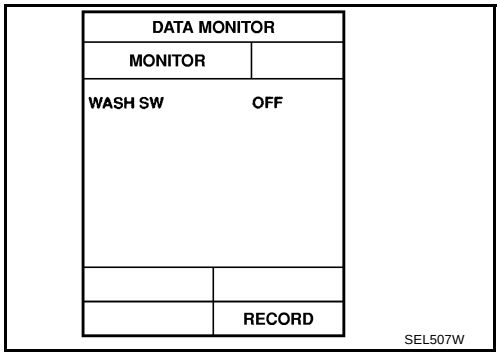
Check wiper switch (WASH) in switch monitor mode. Refer to WW-15, "SWITCH MONITOR" .

OK or NG

OK >> Replace BCM.

NG >> Check the following.

- 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 Moving

AKS002LK

1. CHECK THE SYMPTOM

Check that the speedometer in the combination meter operates normally.

OK or NG?

OK >> GO TO 2
NG >> Check vehicle speed signal. Refer to “Work Flow” in DI section.

2. CHECK VEHICLE SPEED SENSOR PULL UP VOLTAGE

With CONSULT-II

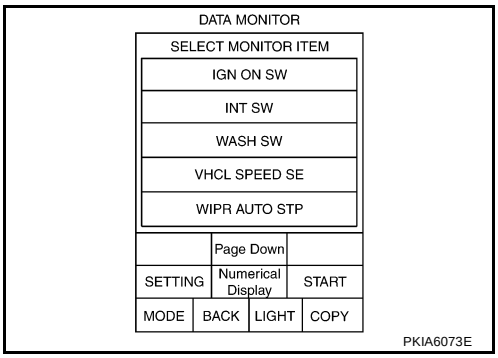
- With “VHCL SPEED SE” on “DATAMONITOR”, check the vehicle speed signal. Refer to SE-44, "DATA MONITOR" .

Without CONSULT-II

- GO TO 3

OK or NG

OK >> System is OK.
NG >> GO TO 3.



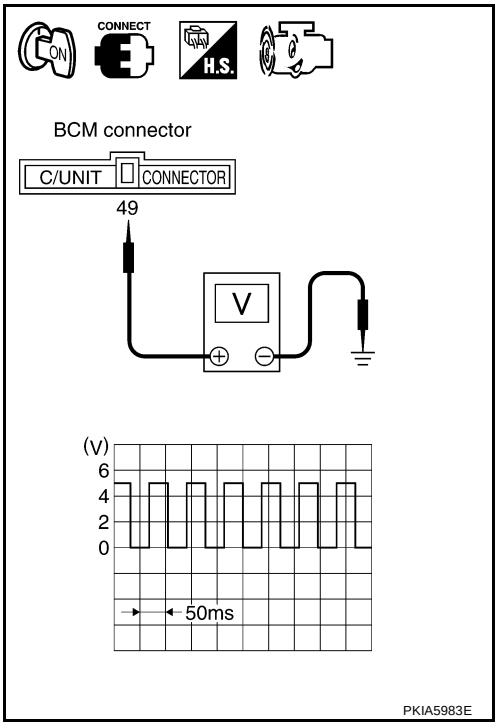
3. VEHICLE SPEED INPUT/OUTPUT INSPECTION

1. Start engine.
2. Check voltage between BCM harness connector M4 terminal 49 (PU/W) and body ground, using an oscilloscope.

49 (PU/W) - Ground : Voltage waveform (When vehicle speed is approx. 40 km/h (25 MPH))

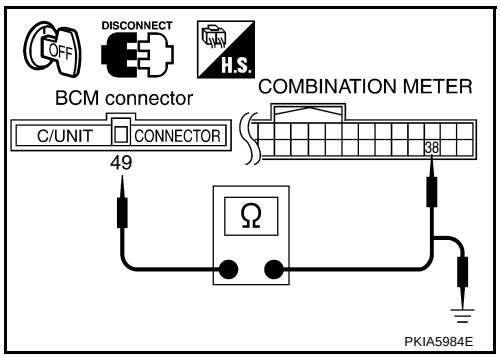
OK or NG?

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



4. HARNESS CONTINUITY INSPECTION

1. Turn ignition switch OFF.
2. Disconnect BCM and combination meter.
3. Check continuity between BCM harness connector M4 terminal 49 (PU/W) and combination meter M41 terminal 38 (PU/W), and between BCM harness connector M4 terminal 49 (PU/W) and ground.



Terminals				Continuity
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M4	49 (PU/W)	M41	38 (PU/W)	Yes
	49 (PU/W)	Ground		No

OK or NG?

OK >> Replace meter control unit.
NG >> Repair or replace harness.

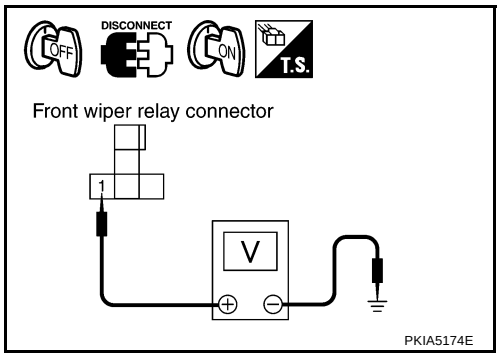
Wiper and Washer Activate Individually But Intermittent Wiper and Washer Combination Does Not Operate

AKS002LL

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 E2-2 terminal 1 (LG) and ground.

1 (LG) - Ground : Battery voltage should exist.



OK or NG

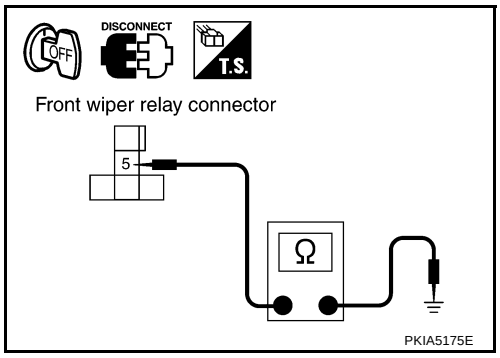
OK >> GO TO 2
NG >> Check the following.

- 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 E2-2 terminal 5 (B) and ground.

5 (B) - Ground : Continuity should exist.



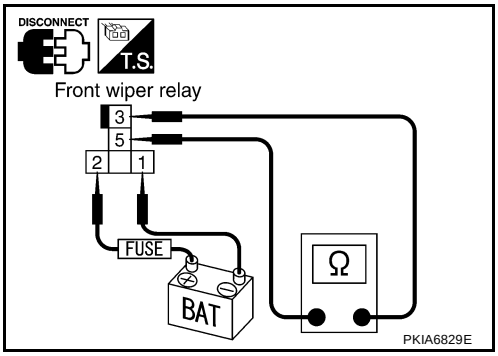
OK or NG

OK >> GO TO 3
NG >> Repair harness.

3. CHECK FRONT WIPER RELAY

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

3 - 5 : Continuity should exist.

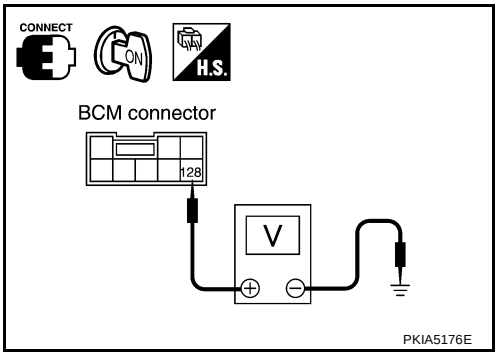


OK or NG

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

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 (R/Y) and ground.



Terminals				Voltage
(+)		(-)	Condition	
Connector	Terminal (Wire color)			
E204	128 (R/Y)	Ground	Wash	Approx. 0V (for 0.7 sec.)
			OFF	Battery voltage

OK or NG

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

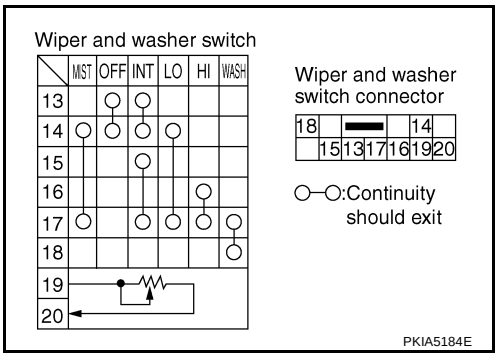
Wiper and Washer Switch Circuit Check

AKS004YS

INSPECTION OF SWITCH CIRCUIT

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
1, interval (Max.)	Approx. 1.0 kΩ
2,	Approx. 0.6 kΩ
3,	Approx. 0.3 kΩ
4, interval (Min.)	Approx. 0 kΩ



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

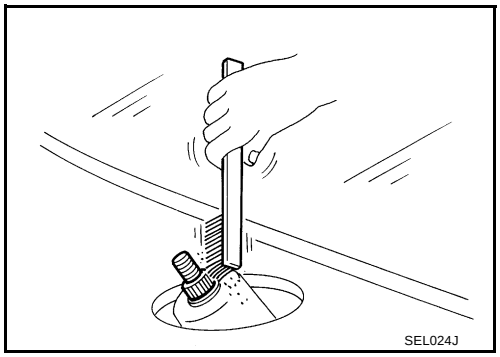
AKS003WD

REMOVAL

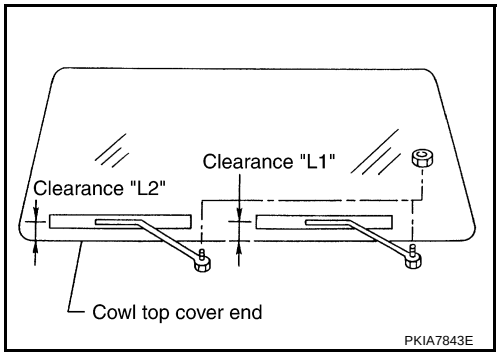
1. Operate wiper motor, and stop it at the auto stop position.
2. Remove wiper arm mounting nuts and wiper arm from vehicle.

INSTALLATION

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



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



Clearance “L1” : 44.1 – 59.1 mm (1.736 – 2.327 in)
Clearance “L2” : 30.9 – 45.9 mm (1.217 – 1.807 in)

- Tighten wiper arm nuts to the specified torque.

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

ADJUSTMENT

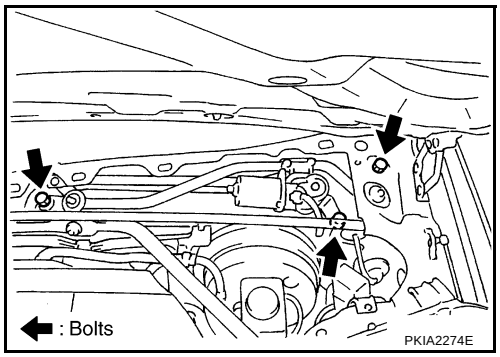
Refer to WW-22, "INSTALLATION" .

Removal and Installation of Front Wiper Motor and Linkage

AKS003WE

REMOVAL

1. Remove wiper arm. Refer to WW-21, "Removal and Installation of Front Wiper Arms, Adjustment of Wiper Arms Stop Location" .
2. Remove cowl top cover. Refer to EI-20, "COWL TOP" in “EI” section.
3. Disconnect wiper motor connector.
4. Remove wiper motor and linkage mounting bolts, and remove wiper motor and linkage.



INSTALLATION

1. Install wiper motor and linkage to the vehicle.
2. Connect wiper motor assembly to the connector. Turn wiper switch ON to operate wiper motor, then turn wiper switch OFF (auto stop).
3. Install cowl top cover. Refer to EI-20, "COWL TOP" in “EI” section.
4. Install wiper arms. Refer to WW-21, "Removal and Installation of Front Wiper Arms, Adjustment of Wiper Arms Stop Location" .

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

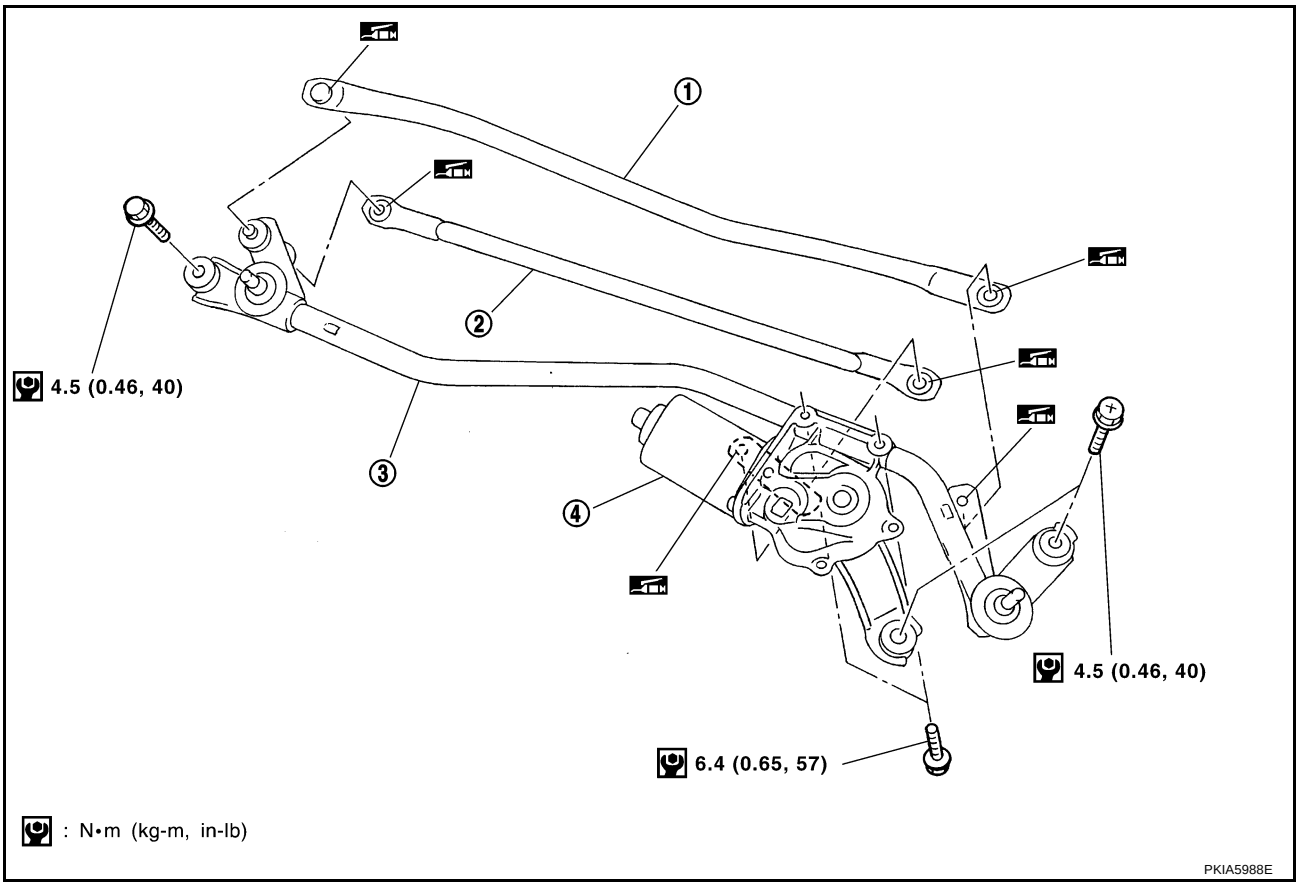
CAUTION:

- **Do not drop the wiper motor or cause it to contact other parts.**

- **Check grease conditions of the motor arm and wiper link joint (at retainer). Apply grease if necessary.**

Disassembly and Assembly of Front Wiper Motor and Linkage

AKS003WF



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

DISASSEMBLY

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

ASSEMBLY

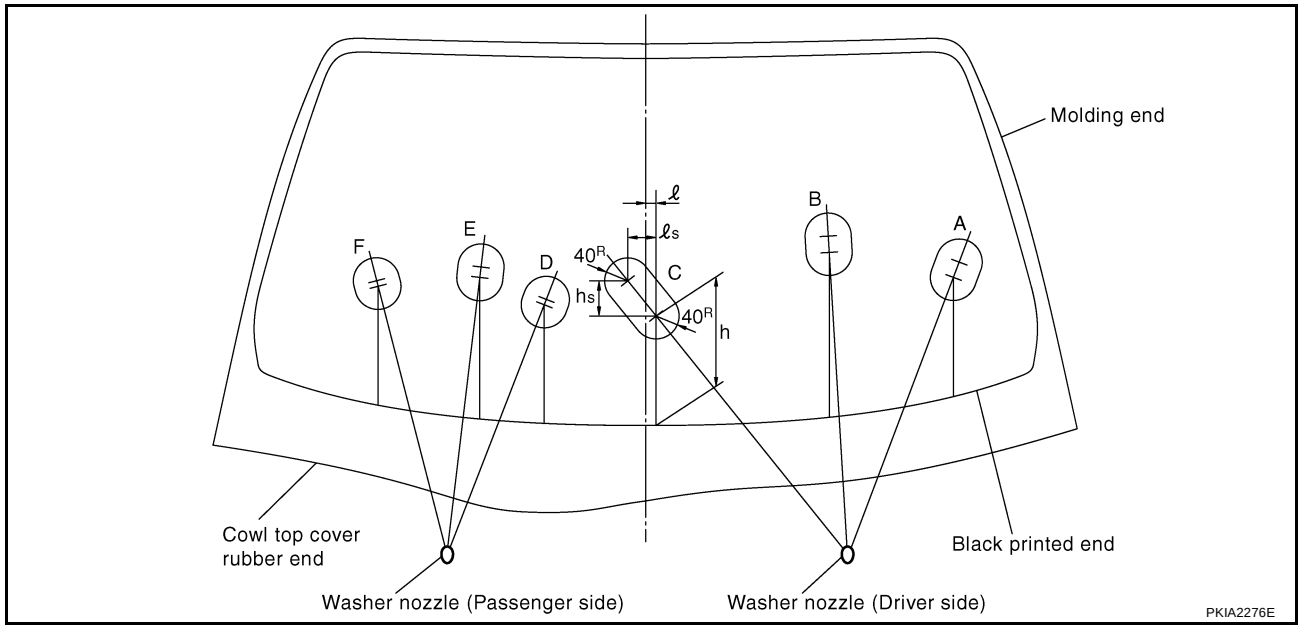
Paying attention to the work listed below, assemble in reverse order of disassembly.

Wiper motor mounting bolts : 6.4 N·m (0.65 kg-m, 57 in-lb)

Washer Nozzle Adjustment

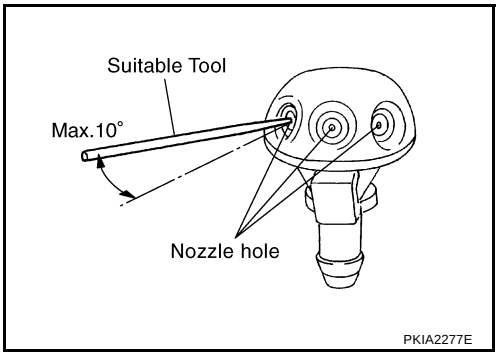
AKS003WG

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



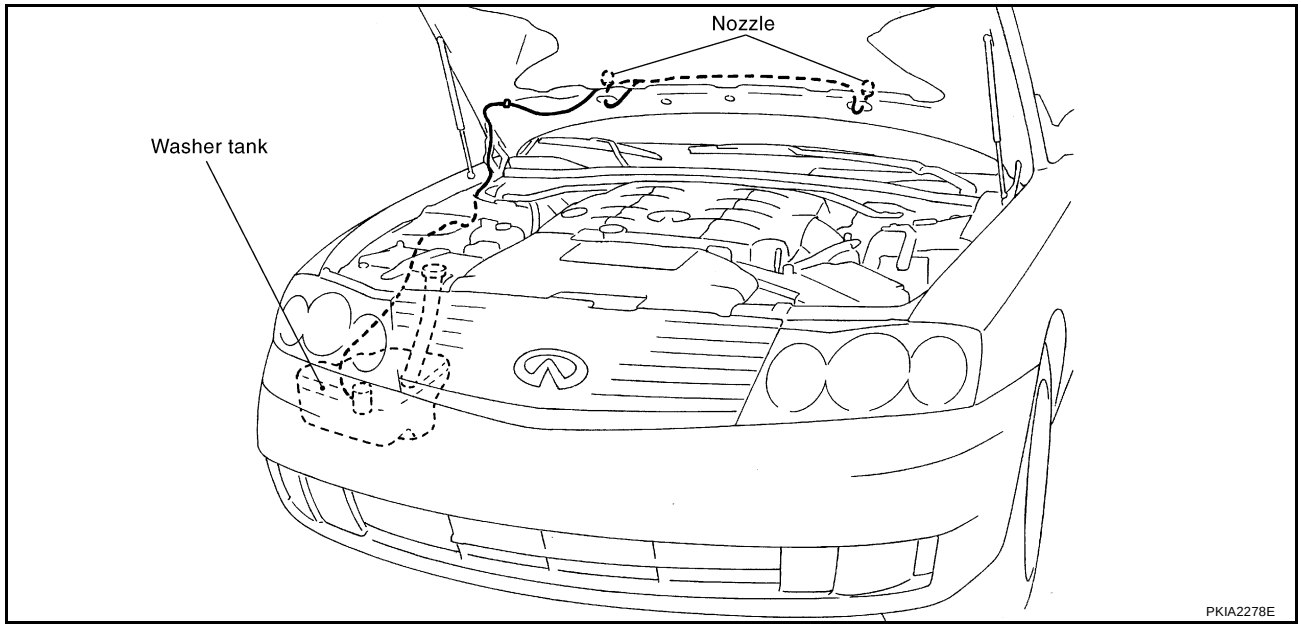
Unit: mm (in)

Spray position	h (height)	hs	ℓ (width)	ℓs
A	212 (8.35)	26 (1.02)	539 (21.22)	10.5 (0.41)
B	290 (11.42)	30 (1.18)	319 (12.56)	–1.7 (0.07)
C	192 (7.56)	63 (2.48)	19 (0.75)	–49.5 (1.95)
D	153 (6.02)	3.4 (0.13)	151 (5.94)	5.1 (0.20)
E	246 (9.69)	19.9 (0.78)	290 (11.42)	2.4 (0.09)
F	208 (8.19)	9.7 (0.38)	474 (18.66)	–2.4 (0.09)



Washer Tube Layout

AKS003WH

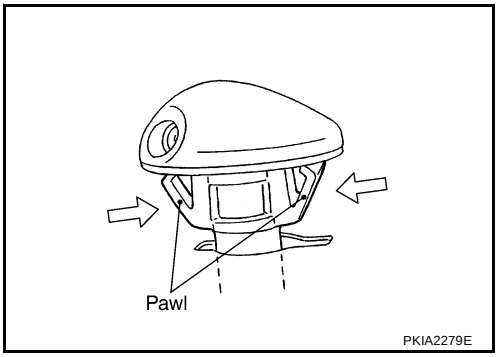


Removal and Installation of Front Washer Nozzle

AKS003WJ

REMOVAL

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



INSTALLATION

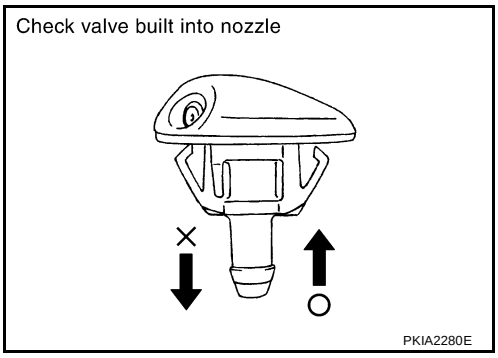
Install in the reverse order of removal.

Inspection of Washer Nozzle

AKS003WK

CHECK VALVE

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

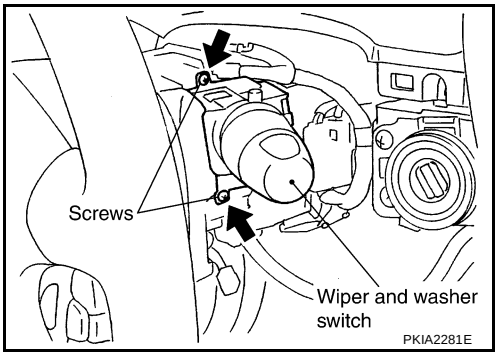


Removal and Installation of Front Wiper and Washer Switch

AKS003WL

REMOVAL

1. Remove steering column cover. Refer to IP-11, "WORK STEPS" in “IP” section.
2. Disconnect wiper and washer switch connector.
3. Pull wiper and washer switch toward the passenger door while removing screws in direction shown by the arrow in the figure, and remove it from the base.



INSTALLATION

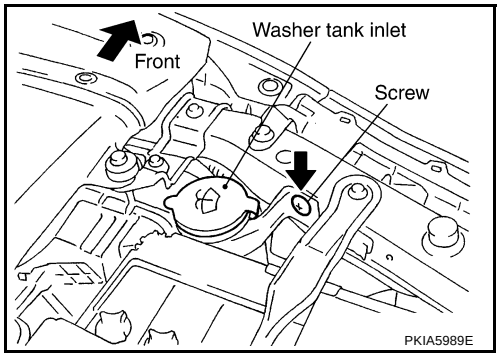
Install in the reverse order of removal.

Removal and Installation of Washer Tank

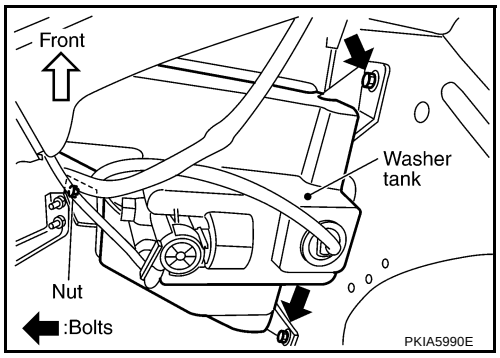
AKS003WM

REMOVAL

1. Remove screw and pull out washer tank inlet.



2. Remove fender protector. Refer to EI-21, "FENDER PROTECTOR" in “EI” section.
3. Disconnect washer pump and water level sensor connector.
4. Remove washer tank mounting bolts and nut.
5. Remove washer tube, and remove washer tank from the vehicle.



INSTALLATION

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

CAUTION:

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

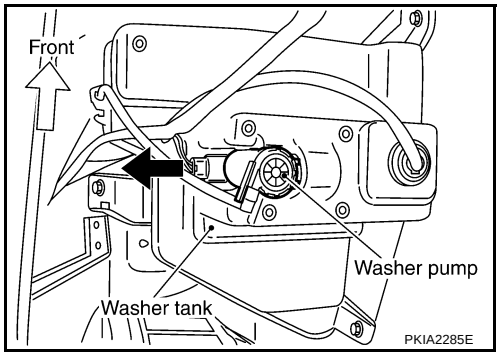
Washer tank mounting screw **: 4.5 N·m (0.46 kg-m, 40 in-lb)**

Removal and Installation of Washer Pump

AKS003WN

REMOVAL

1. Remove fender protector. Refer to EI-21, "FENDER PROTECTOR" in “EI” section.
2. Disconnect washer pump connector and tube.
3. Pull out washer pump in direction shown by the arrow in the figure. Remove washer pump from washer tank.



INSTALLATION

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

CAUTION:

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

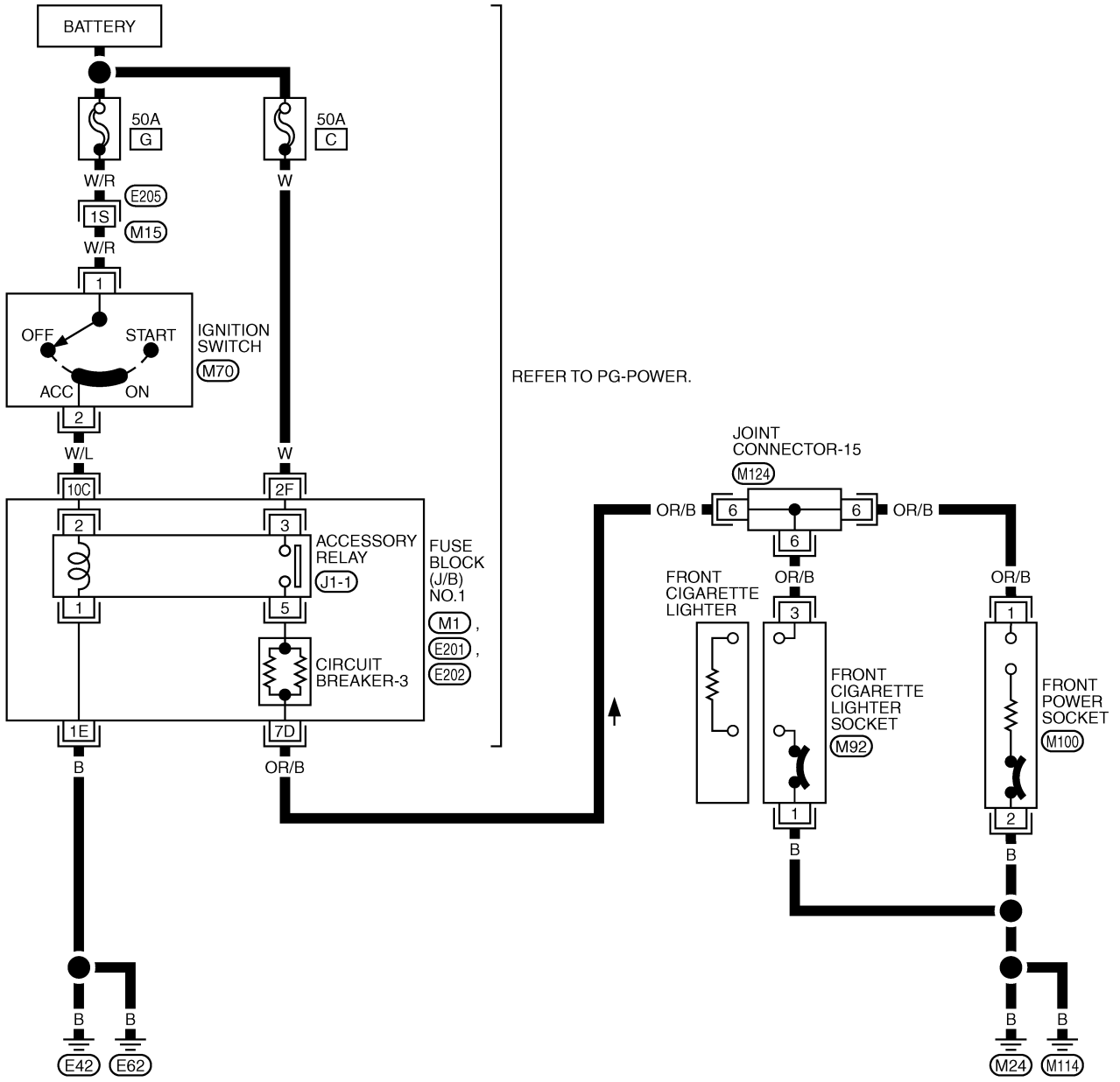
CIGARETTE LIGHTER

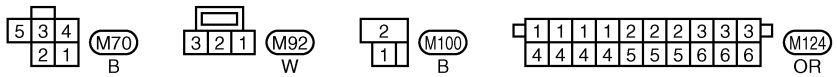
PFP:35330

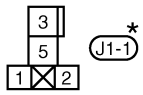
Wiring Diagram — CIGAR —

AKS002LW

WW-CIGAR-01







*: 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

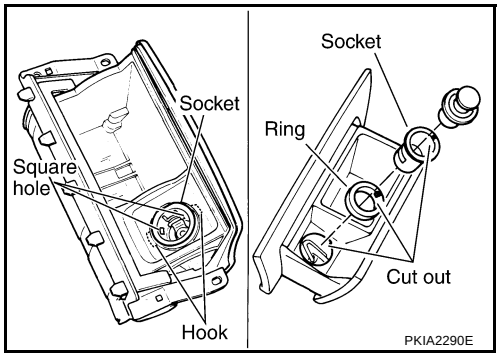
TKWA0631E

Removal and Installation

AKS002LX

REMOVAL

1. Remove A/T console finisher. Refer to IP-11, "WORK STEPS" in “IP” section.
2. Pull out cigarette lighter.
3. Remove socket from the ring, while pressing the hook on the ring out from square hole.
4. Press out ring from the back of ashtray.



INSTALLATION

Install in the reverse order of removal.

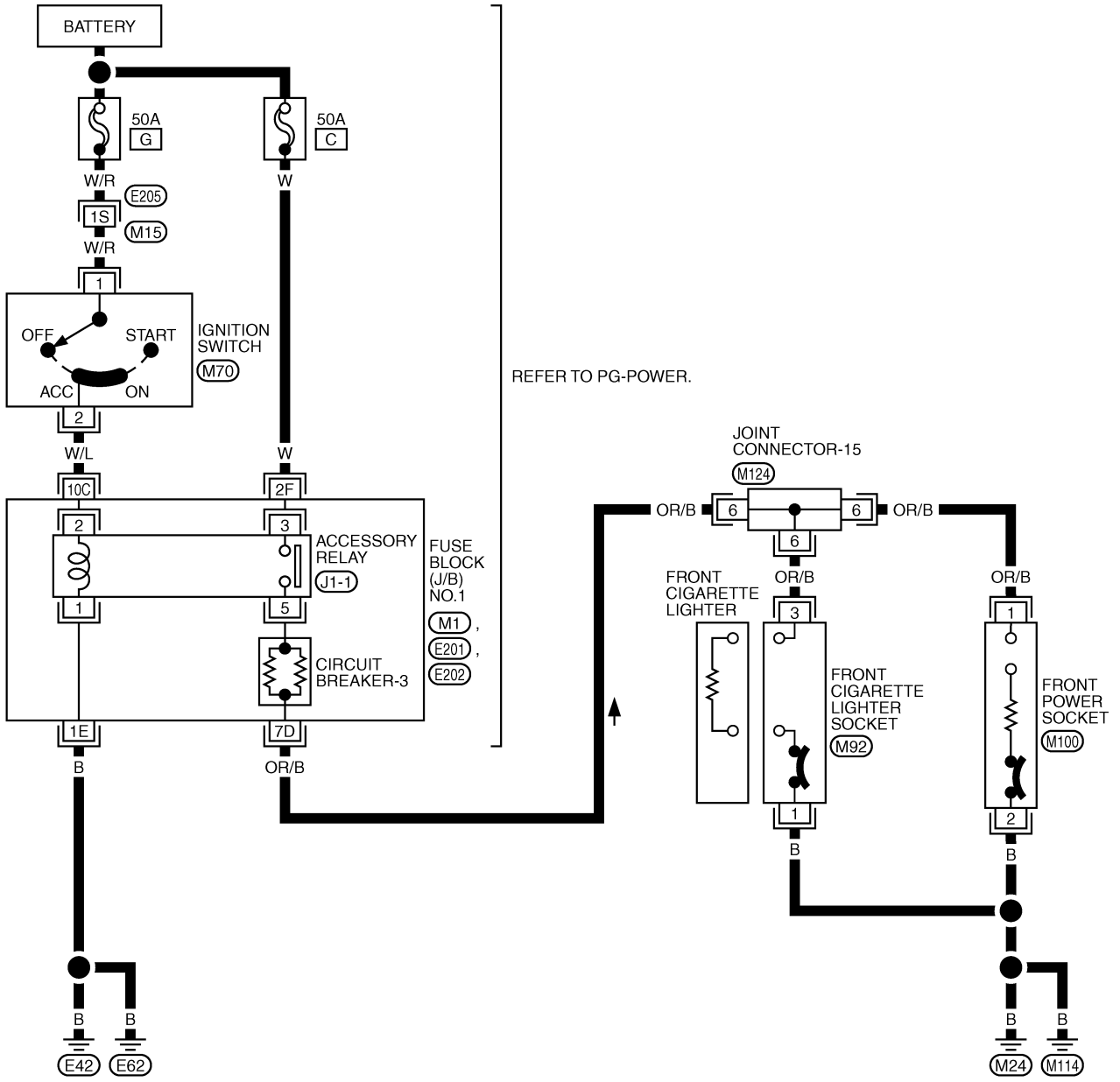
POWER SOCKET

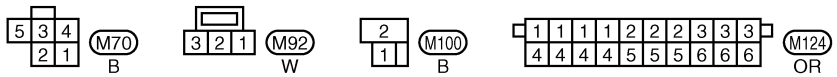
PFP:253A2

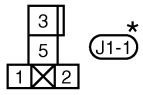
Wiring Diagram — CIGAR —

AKS002LY

WW-CIGAR-01







*: 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

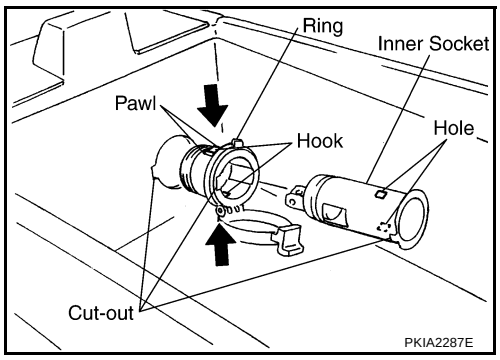
TKWA0631E

Removal and Installation

AKS002LZ

REMOVAL

1. Remove console box assembly. Refer to IP-11, "WORK STEPS" in “IP” section.
2. Disconnect power socket connector.
3. Remove inner socket from the ring, while pressing the hook on the ring out from square hole.
4. Remove ring from console box while pressing pawls.



INSTALLTION

Install in the reverse order of removal.

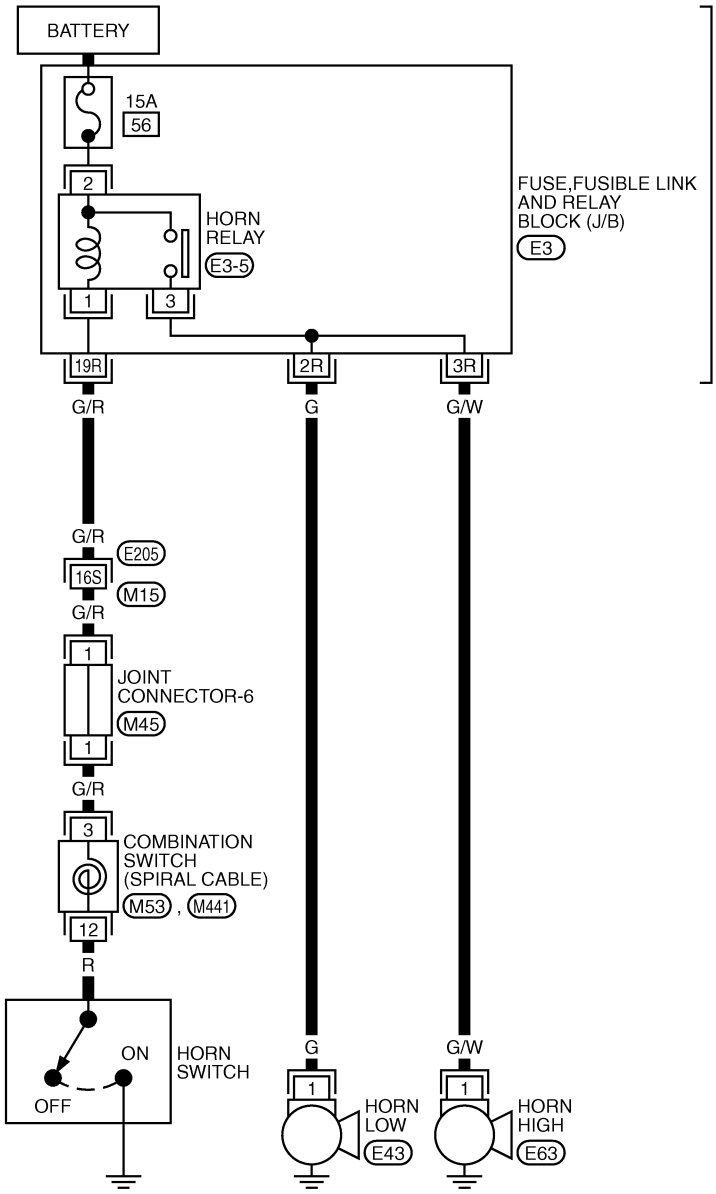
HORN

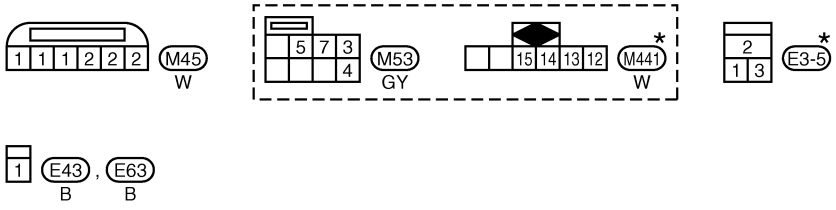
PFP:25610

Wiring Diagram — HORN —

AKS002M0

WW-HORN-01





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

REFER TO THE FOLLOWING.

E205 -SUPER MULTIPLE JUNCTION (SMJ)

E3 -FUSE,FUSIBLE LINK AND RELAY BLOCK (J/B)

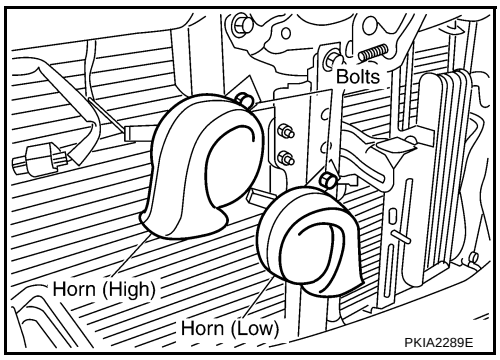
TKWA0630E

Removal and Installation

AKS002M1

REMOVAL

1. Remove front grille. Refer to EI-19, "FRONT GRILLE" in “EL” section.
2. Disconnect horn connectors.
3. Remove horn mounting bolts and remove horn from vehicle.



INSTALLATION

Tighten horn bolts to the specified torque.

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