

SECTION

WW

WIPER, WASHER & HORN

CONTENTS

PRECAUTION	3	
Precautions for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	3	
Precautions for Battery Service	3	
Wiring Diagrams and Trouble Diagnosis	3	
FRONT WIPER AND WASHER SYSTEM	4	
Components Parts and Harness Connector Location	4	
System Description	4	
LOW SPEED WIPER OPERATION	5	
HI SPEED WIPER OPERATION	5	
INTERMITTENT OPERATION	5	
AUTO STOP OPERATION	6	
WASHER OPERATION	6	
MIST OPERATION	6	
FAIL-SAFE FUNCTION	6	
BCM WIPER SWITCH READING FUNCTION	7	
CAN Communication System Description	9	
CAN Communication Unit	9	
TYPE 1	10	
TYPE 2/TYPE3	12	
TYPE 4/TYPE5	13	
TYPE 6/TYPE7	15	
Schematic	17	
Wiring Diagram — WIPER —	18	
Terminals and Reference Values for BCM	21	
Terminals and Reference Values for IPDM E/R	21	
How to Proceed With Trouble Diagnosis	22	
Preliminary Inspection	22	
INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT	22	
CONSULT-II Functions	23	
CONSULT-II OPERATION	23	
DATA MONITOR	24	
ACTIVE TEST	25	
Front Wiper Does Not Operate	25	
Front Wiper Stop Position Is Incorrect	27	
Only Front Wiper Low Does Not Operate	28	
Only Front Wiper Hi Does Not Operate	29	
Only Front Wiper Intermittent Does Not Operate ...	30	
Front Wiper Intermittent Operation Switch Position Cannot Be Adjusted	31	
Wipers Do Not Wipe When Front Washer Operates..	31	
Removal and Installation for Front Wiper Arms, Adjustment for Wiper Arms Stop Location	31	
REMOVAL	31	
INSTALLATION	31	
ADJUSTMENT	32	
Removal and Installation of Front Wiper Motor and Linkage	32	
REMOVAL	32	
INSTALLATION	32	
Disassembly and Assembly Front Wiper Motor and Linkage.	33	
DISASSEMBLY	33	
ASSEMBLY	33	
Washer Nozzle Adjustment	33	
Washer Tube Layout	35	
Removal and Installation for Front Washer Nozzle..	35	
Removal and Installation for Front Washer tube Joint	35	
REMOVAL	35	
INSTALLATION	35	
Inspection for Washer Nozzle	35	
CHECK VALVE	35	
Removal and Installation for Front Wiper and Washer Switch	36	
REMOVAL	36	
INSTALLATION	36	
Removal and Installation for Washer Tank	36	
REMOVAL	36	
INSTALLATION	37	
Removal and Installation for Washer Pump	37	
REMOVAL	37	
INSTALLATION	37	
REAR WIPER AND WASHER SYSTEM	38	
Components Parts and Harness Connector Location	38	
System Description	38	

REAR WIPER OPERATION	39	Adjustment for Wiper Arms Stop Location	49
INTERMITTENT OPERATION	39	Removal and Installation of Rear Wiper Motor	50
AUTO STOP OPERATION	39	REMOVAL	50
WASHER OPERATION	39	INSTALLATION	51
BCM WIPER SWITCH READING FUNCTION ...	39	Washer Nozzle Adjustment	51
Wiring Diagram — WIP/ R —	40	Washer Tube Layout	52
Terminals and Reference Values for BCM	42	Check Valve	52
How to Proceed With Trouble Diagnosis	42	Removal and Installation for Rear Wiper and	
Preliminary Inspection	42	Washer Switch	52
INSPECTION FOR POWER SUPPLY AND		Removal and Installation for Washer Tank	52
GROUND CIRCUIT	42	Removal and Installation for Washer Pump	52
CONSULT-II Functions	43	POWER SOCKET	53
CONSULT-II OPERATION	43	Wiring Diagram — P/SCKT —	53
DATA MONITOR	44	Removal and Installation	54
ACTIVE TEST	45	REMOVAL	54
Rear Wiper Does Not Operate	45	INSTALLATION	54
Rear Wiper Stop Position Is Incorrect	47	HORN	55
Only Rear Wiper Does Not Operate	48	Wiring Diagram — HORN —	55
Only Rear Wiper Intermittent Does Not Operate ...	49	Removal and Installation	56
Wiper Does Not Wipe When Rear Washer Operates..	49	REMOVAL	56
Removal and Installation for Rear Wiper Arm,		INSTALLATION	56

PRECAUTION

PFP:00011

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

AKS003NK

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 harness connectors.

Precautions for Battery Service

AKS003RE

This vehicle is equipped with the automatic window adjusting function. When a door is opened, the window automatically lowers slightly to avoid contact between the window and the side roof panel. After the door is closed, the window will automatically raise slightly.

On vehicles equipped with the automatic window adjusting function, lower both the driver and front passenger side windows before disconnecting the battery cables. This will prevent interference between the side window and the roof panel when either door is opened/closed.

CAUTION:

After the battery cables are disconnected, do not open/close the driver and/or front passenger door with the window in the full up position. The automatic window adjusting function will not work and the side roof panel may be damaged.

Wiring Diagrams and Trouble Diagnosis

AKS000Y5

When You Read Wiring Diagrams, Refer to the Following:

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

When You Perform Trouble Diagnosis, Refer to the Following:

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

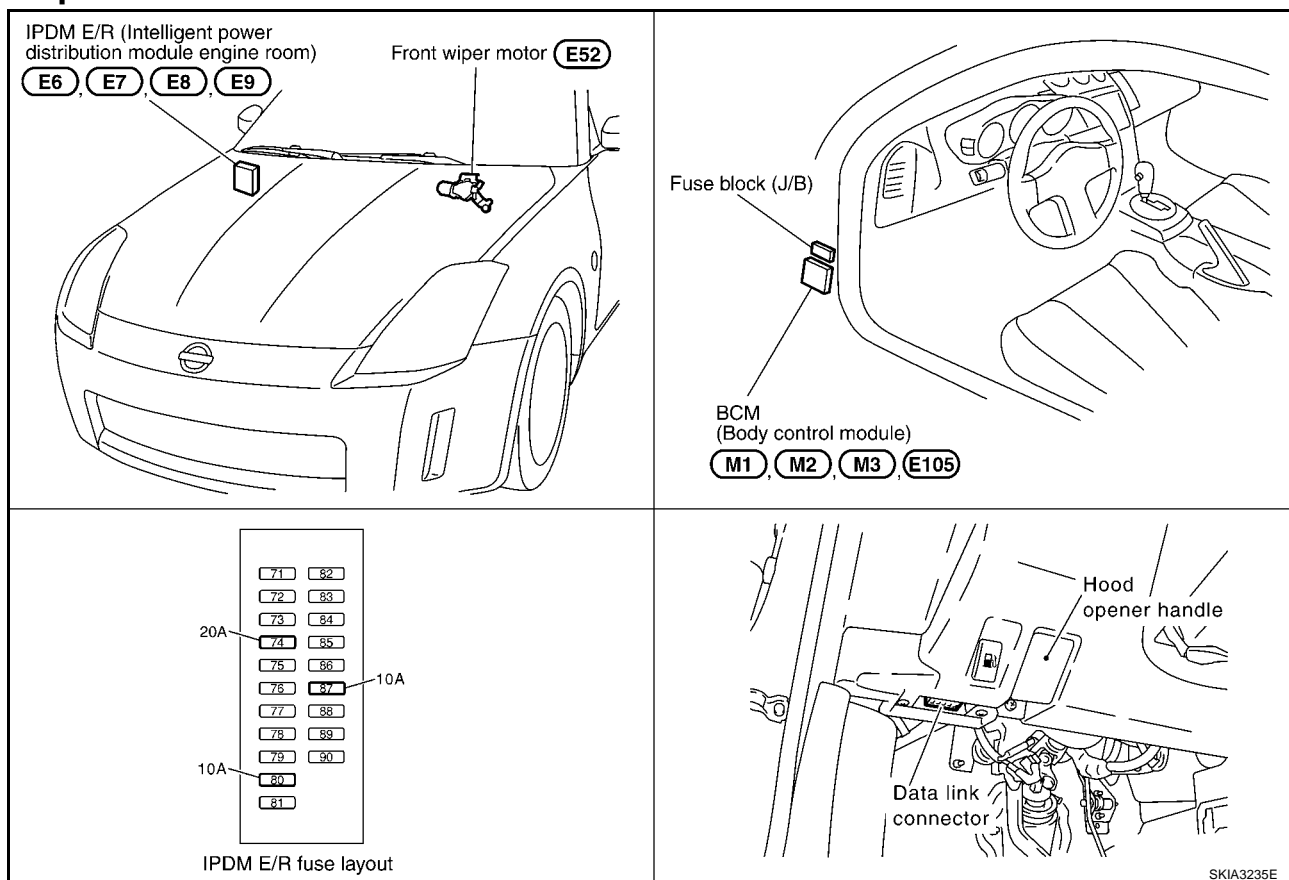
FRONT WIPER AND WASHER SYSTEM

FRONT WIPER AND WASHER SYSTEM

PFP:28810

Components Parts and Harness Connector Location

AKS000Y6



System Description

AKS000Y7

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

Power is supplied at all times

- through 40 A fusible link (letter F, located in fusible link box.)
- to BCM terminal 7,
- through 20 A fuse [No.74 located in IPDM E/R (intelligent power distribution module engine room)]
- to front wiper relay [built in IPDM E/R (intelligent power distribution module engine room)]
- through 15 A fuse [No.73 located in IPDM E/R (intelligent power distribution module engine room)]
- to IPDM E/R (CPU).

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

- through 10 A fuse [No.1 located in fuse block (J/B)]
- to BCM terminal 35 and.
- through 10 A fuse [No.80, located in IPDM E/R (intelligent power distribution module engine room)]
- to front wiper relay [built in IPDM E/R (intelligent power distribution module engine room)] and
- to front wiper high relay [built in IPDM E/R (intelligent power distribution module engine room)] and
- through 10 A fuse [No.87 located in IPDM E/R (intelligent power distribution module engine room)]
- through IPDM E/R terminal 18
- to front washer motor terminal 2.

Ground is supplied

FRONT WIPER AND WASHER SYSTEM

- to BCM terminal 8
- through body grounds E17, E43 and F152,
- to IPDM E/R terminals 14 and 45
- through body grounds E17, E43 and F152.
- to combination switch (wiper switch) terminal 12
- through body grounds M30 and M66.

A

B

C

LOW SPEED WIPER OPERATION

When IPDM E/R wiper switch is in LO position, BCM detect low speed wiper ON signal by BCM wiper switch reading function.

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

D

- from BCM terminals 70 and 71
- to IPDM E/R terminals 48 and 49.

E

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

- to front wiper motor terminal 3
- through IPDM E/R terminal 31 and front wiper relay and front wiper HI relay.

F

Ground is supplied

- to front wiper motor terminal 4
- through body grounds E17, E43 and F152.

G

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

HI SPEED WIPER OPERATION

H

When IPDM E/R wiper switch is in HI position, BCM detect high speed wiper ON signal by BCM wiper switch reading function.

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

I

- from BCM terminals 70 and 71
- to IPDM E/R terminals 48 and 49.

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

J

- to front wiper motor terminal 2
- through IPDM E/R terminal 30 and front wiper relay and front wiper HI relay.

WW

Ground is supplied

- to front wiper motor terminal 4
- through body grounds E17, E43 and F152.

L

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

INTERMITTENT OPERATION

M

The front wiper motor operates the wiper arms one time at low speed at a set interval of wiper volume switch and vehicle speeds, this feature is controlled by the BCM and IPDM E/R.

When front wiper switch is in HI position BCM detect high speed wiper ON signal by BCM wiper switch reading function. BCM performs the following operations

- When BCM detects ON/OFF status of intermittent operation dial positions 1, 2, and 3 it determines wiper dial position status, Refer to [WW-9, "Wiper Dial Position Setting"](#) .
- BCM calculates operation interval from wiper dial position and vehicle speed signal received from combination meter with CAN communications.
- BCM sends front wiper request signal (INT) to IPDM E/R at calculated operation interval.
- When IPDM E/R receives front wiper request signal (INT), it turns ON internal front wiper relay. It then sends

auto-stop signal to BCM, and conducts intermittent front wiper operation.

With power and ground is supplied, rear wiper operates at intermittent.

FRONT WIPER AND WASHER SYSTEM

AUTO STOP OPERATION

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

- from terminal 31 of the IPDM E/R
- to front wiper motor terminal 3, in order to continue wiper motor operation at low speed.

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

- to terminal 38 of IPDM E/R
- through front wiper motor terminal 1 and 4
- through body ground E17, E43 and F152.

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

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

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

WASHER OPERATION

When wiper switch is in front wiper washer position, BCM detect front wiper washer signal by BCM wiper switch reading function (Refer to [WW-7, "BCM Wiper Switch Reading Function"](#)), combination switch (wiper switch) ground is supplied

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

With ground is supplied, front washer motor is operated.

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

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

MIST OPERATION

When the wiper switch is turned to the mist position, wiper low speed operation cycles once and then stops.

For additional information about wiper operation under this condition, Refer to [WW-5, "LOW SPEED WIPER OPERATION"](#) .

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

FAIL-SAFE FUNCTION

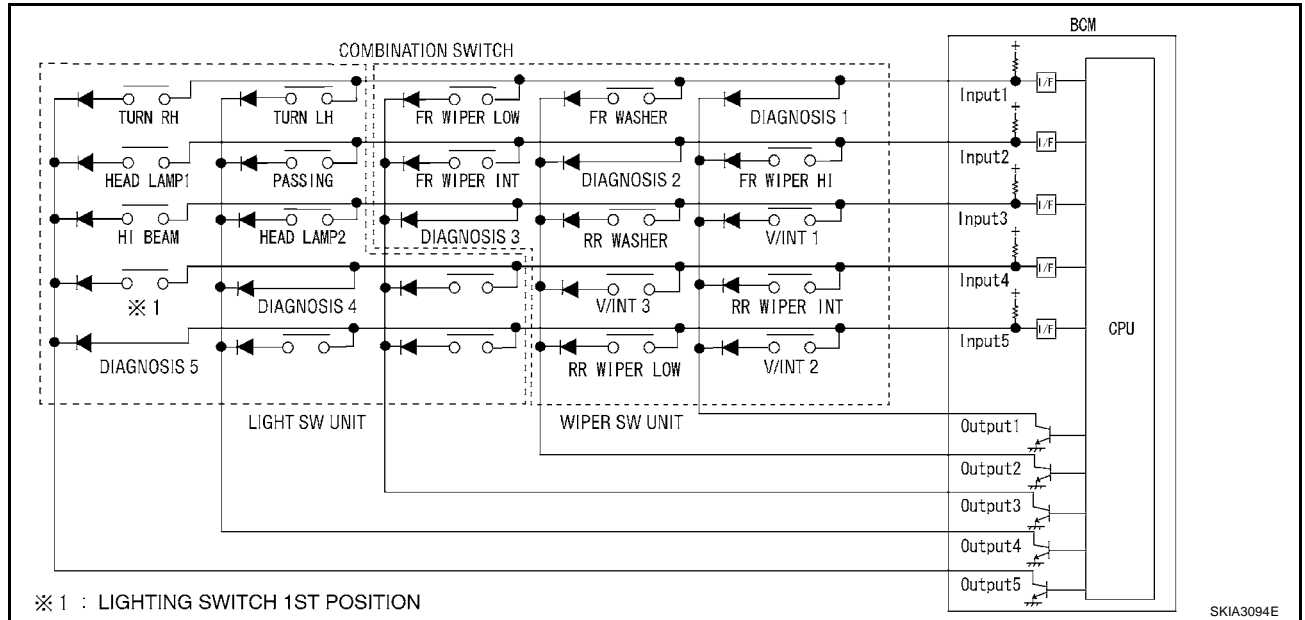
IPDM E/R includes a fail-safe function to prevent malfunction of electrical components controlled by CAN communications in CAN communications occurs.

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

FRONT WIPER AND WASHER SYSTEM

BCM WIPER SWITCH READING FUNCTION

BCM reads combination switch (wiper switch) status, and controls front wipers based on the results. BCM is a combination of 5 output terminals (OUTPUT 1 - 5) and 5 input terminals (INPUT 1 - 5). It reads 20 types of switch data and 5 types of diagnosis data.



OPERATION DESCRIPTION

BCM continuously outputs power voltage from input terminals (INPUT 1 - 5). At this time, output terminals (OUTPUT 1 - 5) operate transistors in sequence and carry current. If any switch (or switches) becomes ON at this time, the input terminal corresponding to that switch detects current flowing, and BCM determines that the switch is ON.

TABLE OF BCM - COMBINATION SWITCH OPERATIONS

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

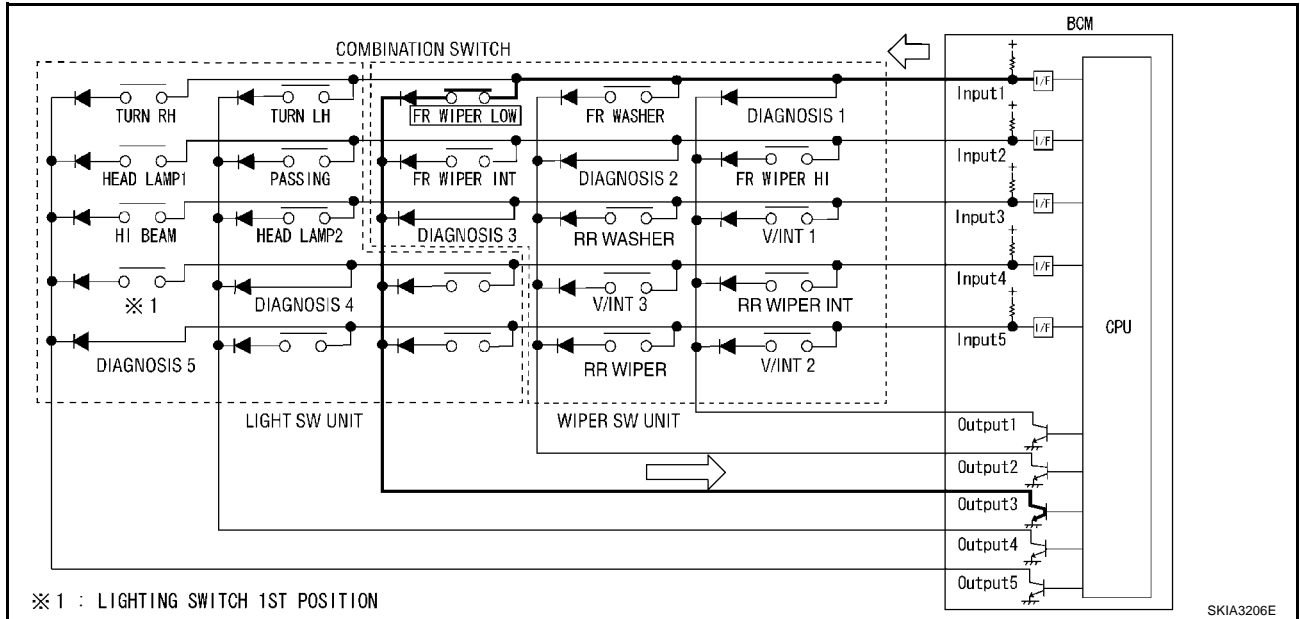
	COMB SW INPUT 1		COMB SW INPUT 2		COMB SW INPUT 3		COMB SW INPUT 4		COMB SW INPUT 5	
	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
COMB SW OUTPUT 1	DIAGNOSIS 1 OK	DIAGNOSIS 1 NG	FR WIPER HI ON	FR WIPER HI OFF	V/INT 1 ON	V/INT 1 OFF	RR WIPER INT ON	RR WIPER INT OFF	V/INT 2 ON	V/INT 2 OFF
COMB SW OUTPUT 2	FR WASHER ON	FR WASHER OFF	DIAGNOSIS 2 OK	DIAGNOSIS 2 NG	RR WASHER ON	RR WASHER OFF	V/INT 3 ON	V/INT 3 OFF	RR WIPER ON	RR WIPER OFF
COMB SW OUTPUT 3	FR WIPER LOW ON	FR WIPER LOW OFF	FR WIPER INT ON	FR WIPER INT OFF	DIAGNOSIS 3 OK	DIAGNOSIS 3 NG	—	—	—	—
COMB SW OUTPUT 4	TURN LH ON	TURN LH OFF	PASSING ON	PASSING OFF	HEAD LAMP 2 ON	HEAD LAMP 2 OFF	DIAGNOSIS 4 OK	DIAGNOSIS 4 NG	—	—
COMB SW OUTPUT 5	TURN RH ON	TURN RH OFF	HEAD LAMP ON	HEAD LAMP OFF	HI BEAM ON	HI BEAM OFF	LIGHTING SWITCH 1ST POSITION ON	LIGHTING SWITCH 1ST POSITION OFF	DIAGNOSIS 5 OK	DIAGNOSIS 5 NG

SKIA3095E

FRONT WIPER AND WASHER SYSTEM

SAMPLE OPERATION: (WIPER SWITCH TURNED TO LO POSITION)

- When wiper switch is turned to LO position, front wiper LO contact inside combination switch becomes ON. At this time, OUTPUT 3 transistor operates and BCM detects flow of current at INPUT 1.
- When OUTPUT 3 transistor is ON and BCM detects current flowing at INPUT 1, BCM determines that wiper switch is at LO. BCM uses CAN communication and sends front wiper signals to IPDM E/R.
- When OUTPUT 3 transistor operates again and BCM again detects current flowing at INPUT 1, it confirms that front wiper LO operation is continuing.



NOTE:

Each OUTPUT terminal transistor operates at 10 ms intervals. Therefore, a delay occurs between the switch becoming ON and operation of the electric load. However, this delay is so small it is undetectable.

OPERATING MODES

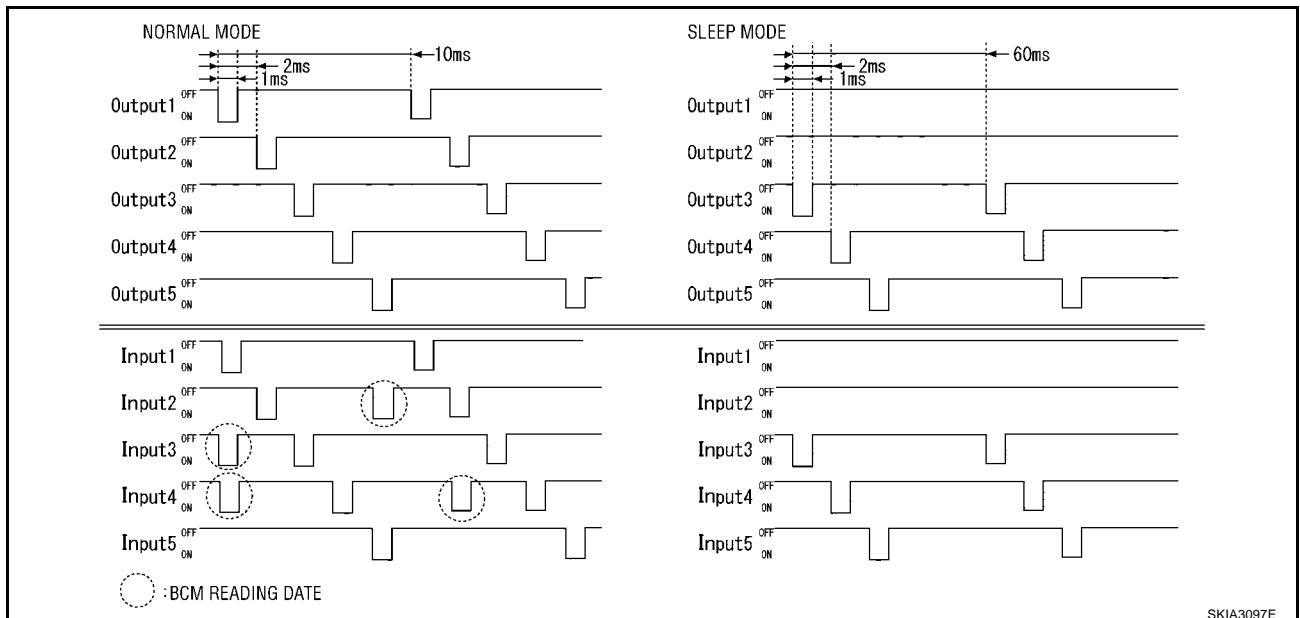
The following operation modes exist for combination switch reading function.

Normal Status

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

Sleep Status

When BCM is in sleep status, output from OUTPUT 1 and 2 transistors stops, with BCM entering a power-saving mode. OUTPUT (3 - 5) turns ON-OFF every 60 ms, and only input from lighting switch system is accepted.



FRONT WIPER AND WASHER SYSTEM

INTERMITTENT OPERATION

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

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

Wiper Dial Position Setting

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

Example: For wiper dial position 1...

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

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

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

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

CAN Communication System Description

AKS000Y8

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

CAN Communication Unit

AKS003M9

Body type	Coupe						
Axle	2WD						
Engine	VQ35DE						
Transmission	A/T	M/T					
Brake control	TCS	ABS		TCS		VDC	
Low tire pressure warning system	Not Applicable	Not Applicable	Applicable	Not Applicable	Applicable	Not Applicable	Applicable
CAN communication unit							
ECM	×	×	×	×	×	×	×
TCM	×						
Data link connector	×	×	×	×	×	×	×
Unified meter and A/C amp.	×	×	×	×	×	×	×
BCM	×	×	×	×	×	×	×
Low tire pressure warning control unit			×		×		×

FRONT WIPER AND WASHER SYSTEM

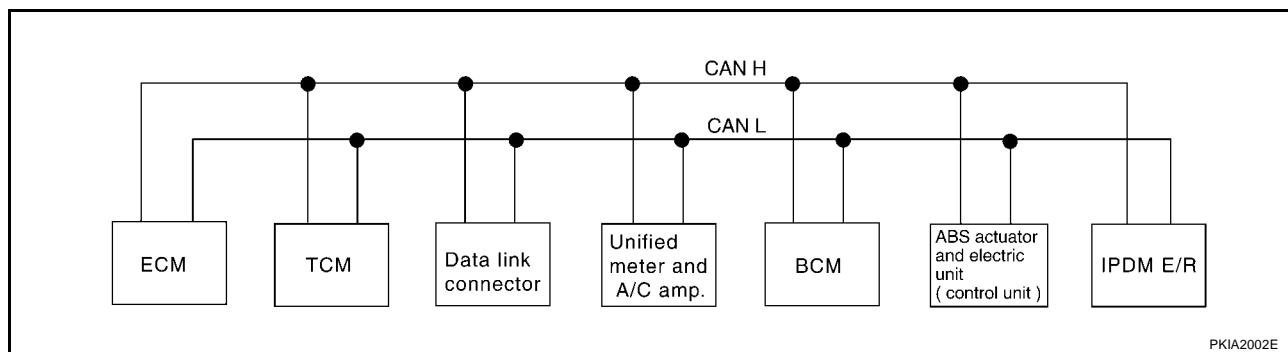
Body type	Coupe						
Axle	2WD						
Engine	VQ35DE						
Transmission	A/T	M/T					
Brake control	TCS	ABS		TCS		VDC	
Low tire pressure warning system	Not Applicable	Not Applicable	Applicable	Not Applicable	Applicable	Not Applicable	Applicable
CAN communication unit							
Steering angle sensor						×	×
ABS actuator and electric unit (control unit)	×	×	×	×	×		
VDC/TCS/ABS control unit						×	×
IPDM E/R	×	×	×	×	×	×	×
CAN communication type	WW-10. "TYPE 1"	WW-12. "TYPE 2/ TYPE3"		WW-13. "TYPE 4/ TYPE5"		WW-15. "TYPE 6/ TYPE7"	

×: Applicable

TYPE 1

System diagram

- Type1



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	Unified meter and A/C amp.	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R	R		R	
Engine torque signal	T	R				
Engine coolant temperature signal	T	R	R			
Accelerator pedal position signal	T	R			R	
Closed throttle position signal	T	R				
Wide open throttle position signal	T	R				
Battery voltage signal	T	R				
Stop lamp switch signal		R	T			
Fuel consumption monitor signal	T		R			
A/T self-diagnosis signal	R	T				
A/T CHECK indicator lamp signal		T	R			
A/T position indicator signal		T	R		R	
ABS operation signal		R			T	

FRONT WIPER AND WASHER SYSTEM

Signals	ECM	TCM	Unified meter and A/C amp.	BCM	ABS actuator and electric unit (control unit)	IPDM E/R	A
A/T shift schedule change demand signal		R			T		B
Air conditioner switch signal	R			T			C
A/C compressor request signal	T					R	D
A/C compressor feedback signal	T		R				E
Blower fan motor switch signal	R			T			F
Cooling fan speed request signal	T					R	G
Position lights request signal			R	T		R	H
Low beam request signal				T		R	I
Low beam status signal	R					T	J
High beam request signal			R	T		R	WW
High beam status signal	R					T	L
Vehicle speed signal			R		T		M
	R	R	T	R			
Sleep request 1 signal			R	T			
Sleep request 2 signal				T		R	
Wake up request 1 signal			R	T			
Door switch signal			R	T		R	
Turn indicator signal			R	T			
Seat belt buckle switch signal			T	R			
Buzzer output signal			R	T			
Fuel level sensor signal	R		T				
Malfunction indicator lamp signal	T		R				
ASCD SET lamp signal	T		R				
ASCD operation signal	T	R					
ASCD CRUISE lamp signal	T		R				
Overdrive cancel signal	T	R					
Output shaft revolution signal	R	T					
Turbine revolution signal	R	T					
Front wiper request signal				T		R	
Front wiper stop position signal				R		T	
Rear window defogger switch signal				T		R	
Rear window defogger control sig- nal	R					T	
Manual mode signal		R	T				
Not manual mode signal		R	T				
Manual mode shift up signal		R	T				
Manual mode shift down signal		R	T				
Manual mode indicator signal		T	R				
Hood switch signal				R		T	
Theft warning horn request signal				T		R	
Horn chirp signal				T		R	
ABS warning lamp signal			R		T		

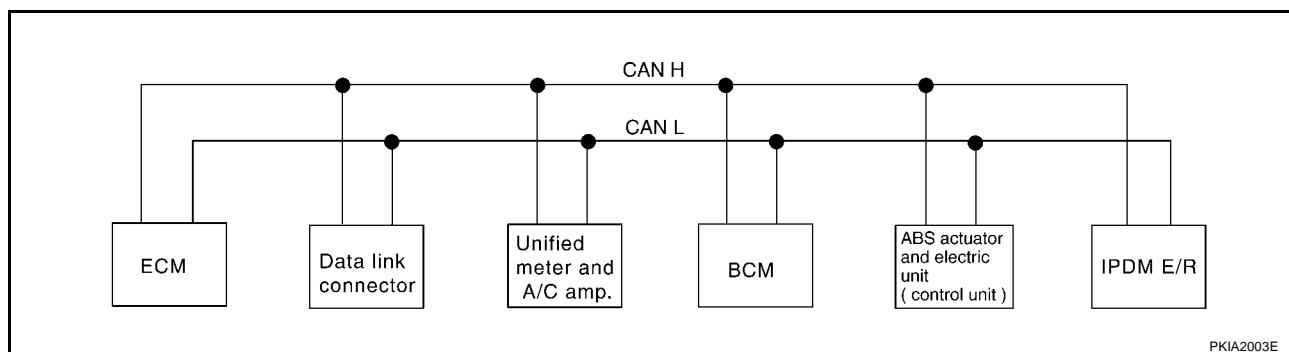
FRONT WIPER AND WASHER SYSTEM

Signals	ECM	TCM	Unified meter and A/C amp.	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
TCS OFF indicator lamp signal			R		T	
SLIP indicator lamp signal			R		T	
Brake (EBD) warning lamp signal			R		T	

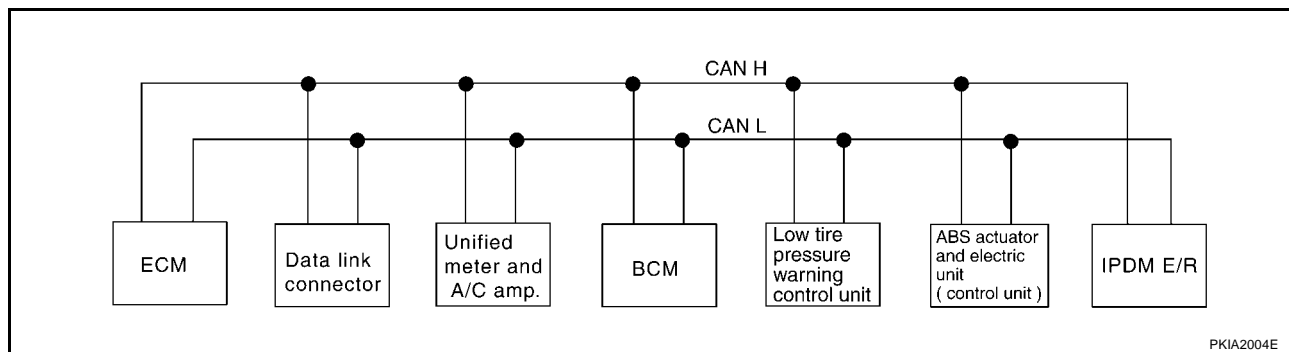
TYPE 2/TYPE3

System diagram

- Type2



- Type3



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Unified meter and A/C amp.	BCM	Low tire pressure warning control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R			R	
Engine coolant temperature signal	T	R				
Accelerator pedal position signal	T				R	
Fuel consumption monitor signal	T	R				
Air conditioner switch signal	R		T			
A/C compressor request signal	T					R
A/C compressor feedback signal	T	R				
Blower fan motor switch signal	R		T			
Cooling fan speed request signal	T					R
Position lights request signal			R	T		R
Low beam request signal			T			R
Low beam status signal	R					T
High beam request signal		R	T			R

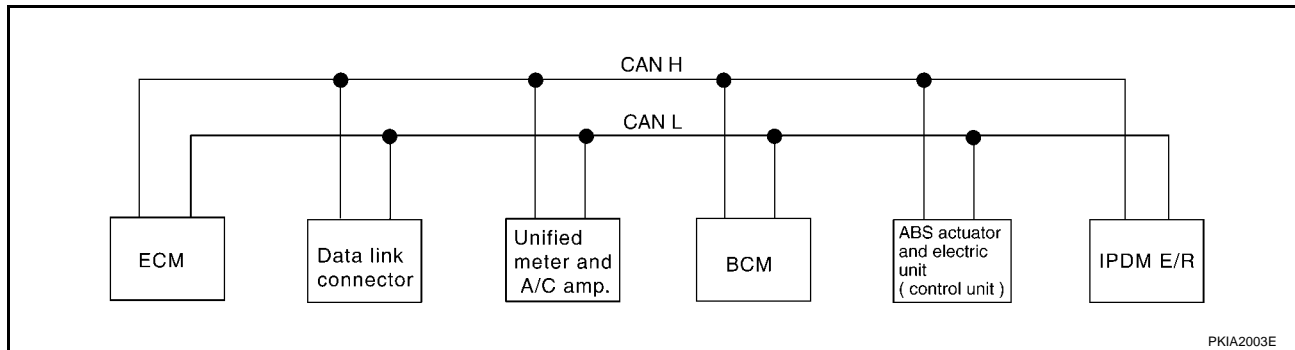
FRONT WIPER AND WASHER SYSTEM

Signals	ECM	Unified meter and A/C amp.	BCM	Low tire pressure warning control unit	ABS actuator and electric unit (control unit)	IPDM E/R
High beam status signal	R					T
Vehicle speed signal		R			T	
	R	T	R	R		
Sleep request 1 signal		R	T			
Sleep request 2 signal			T			R
Wake up request 1 signal		R	T			
Door switch signal		R	T			R
Turn indicator signal		R	T			
Seat belt buckle switch signal		T	R			
Buzzer output signal		R	T			
Fuel level sensor signal	R	T				
Malfunction indicator lamp signal	T	R				
ASCD SET lamp signal	T	R				
ASCD CRUISE lamp signal	T	R				
Front wiper request signal			T			R
Front wiper stop position signal			R			T
Rear window defogger switch signal			T			R
Rear window defogger control signal	R					T
Hood switch signal			R			T
Theft warning horn request signal			T			R
Horn chirp signal			T			R
Tire pressure signal		R		T		
ABS warning lamp signal		R			T	
Brake (EBD) warning lamp signal		R			T	

TYPE 4/TYPE5

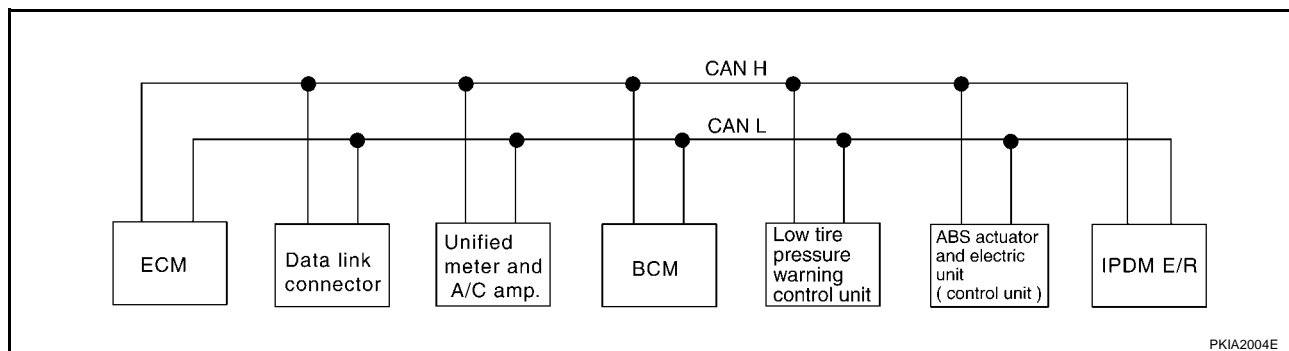
System diagram

- Type4



FRONT WIPER AND WASHER SYSTEM

- Type5



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Unified meter and A/C amp.	BCM	Low tire pressure warning control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R			R	
Engine coolant temperature signal	T	R				
Accelerator pedal position signal	T				R	
Fuel consumption monitor signal	T	R				
Air conditioner switch signal	R		T			
A/C compressor request signal	T					R
A/C compressor feedback signal	T	R				
Blower fan motor switch signal	R		T			
Cooling fan speed request signal	T					R
Position lights request signal		R	T			R
Low beam request signal			T			R
Low beam status signal	R					T
High beam request signal		R	T			R
High beam status signal	R					T
Vehicle speed signal		R			T	
	R	T	R	R		
Sleep request 1 signal		R	T			
Sleep request 2 signal			T			R
Wake up request 1 signal		R	T			
Door switch signal		R	T			R
Turn indicator signal		R	T			
Seat belt buckle switch signal		T	R			
Buzzer output signal		R	T			
Fuel level sensor signal	R	T				
Malfunction indicator lamp signal	T	R				
ASCD SET lamp signal	T	R				
ASCD CRUISE lamp signal	T	R				
Front wiper request signal			T			R
Front wiper stop position signal			R			T
Rear window defogger switch signal			T			R

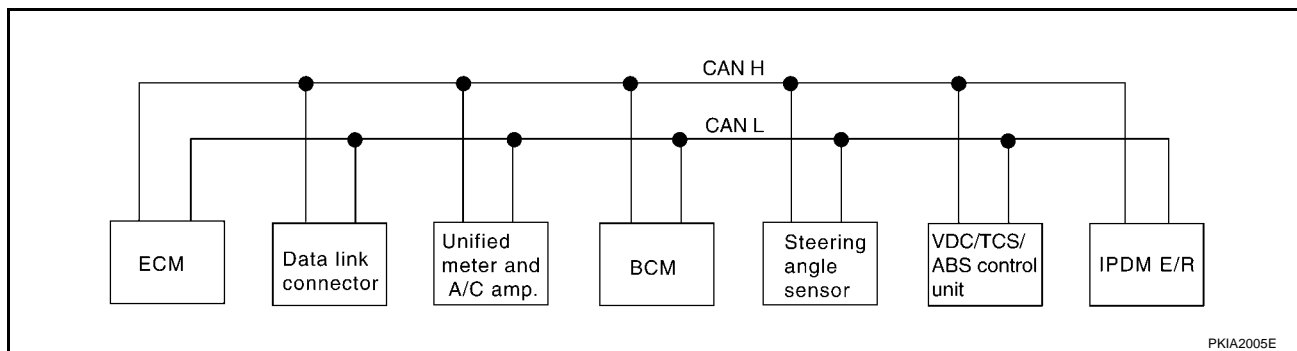
FRONT WIPER AND WASHER SYSTEM

Signals	ECM	Unified meter and A/C amp.	BCM	Low tire pressure warning control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Rear window defogger control signal	R					T
Hood switch signal			R			T
Theft warning horn request signal			T			R
Horn chirp signal			T			R
Tire pressure signal		R		T		
ABS warning lamp signal		R			T	
TCS OFF indicator lamp signal		R			T	
SLIP indicator lamp signal		R			T	
Brake (EBD) warning lamp signal		R			T	

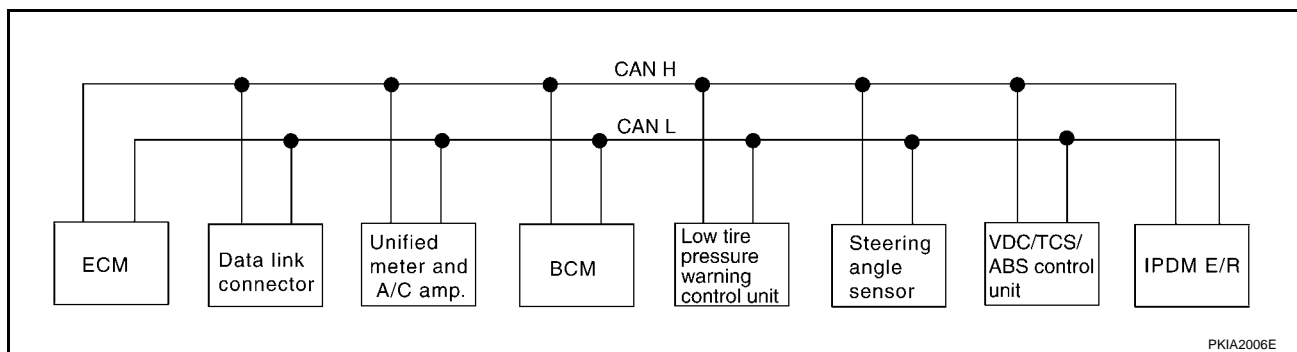
TYPE 6/TYPE7

System diagram

- Type6



- Type7



Input/output signal chart

T: Transmit R: Receive

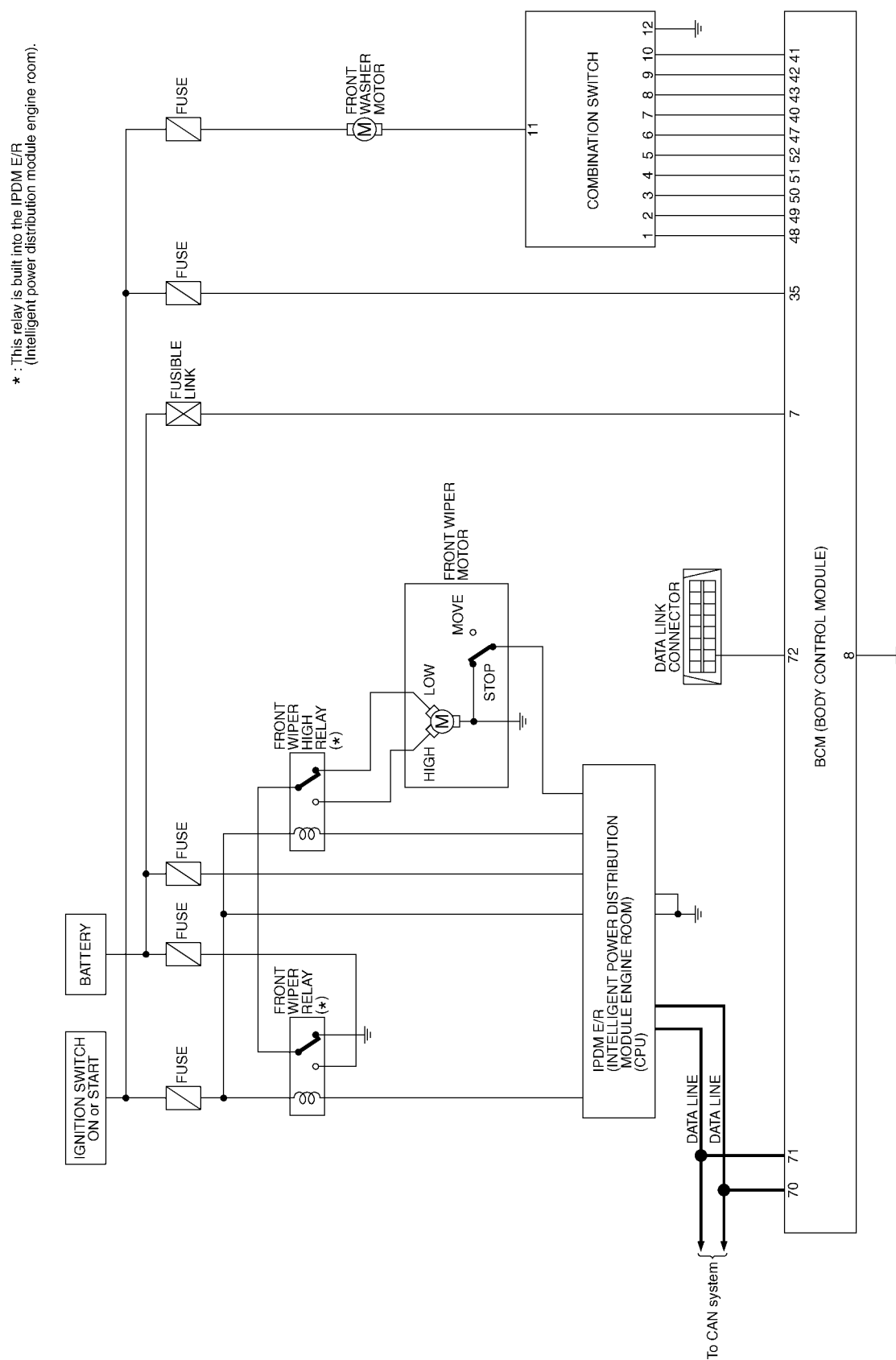
Signals	ECM	Unified meter and A/C amp.	BCM	Low tire pressure warning control unit	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine speed signal	T	R				R	
Engine coolant temperature signal	T	R					
Accelerator pedal position signal	T					R	
Fuel consumption monitor signal	T	R					
Air conditioner switch signal	R		T				
A/C compressor request signal	T						R

FRONT WIPER AND WASHER SYSTEM

Signals	ECM	Unified meter and A/C amp.	BCM	Low tire pressure warning control unit	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
A/C compressor feedback signal	T	R					
Blower fan motor switch signal	R		T				
Cooling fan speed request signal	T						R
Position lights request signal		R	T				R
Low beam request signal			T				R
Low beam status signal	R						T
High beam request signal		R	T				R
High beam status signal	R						T
Vehicle speed signal		R				T	
	R	T	R	R			
Sleep request 1 signal		R	T				
Sleep request 2 signal			T				R
Wake up request 1 signal		R	T				
Door switch signal		R	T				R
Turn indicator signal		R	T				
Seat belt buckle switch signal		T	R				
Buzzer output signal		R	T				
Fuel level sensor signal	R	T					
Malfunction indicator signal	T	R					
ASCD SET lamp signal	T	R					
ASCD CRUISE lamp signal	T	R					
Front wiper request signal			T				R
Front wiper stop position signal			R				T
Rear window defogger switch signal			T				R
Rear window defogger control signal	R						T
Hood switch signal			R				T
Theft warning horn request signal			T				R
Horn chirp signal			T				R
Steering angle sensor signal					T	R	
Tire pressure signal		R		T			
ABS warning lamp signal		R				T	
VDC OFF indicator lamp signal		R				T	
SLIP indicator lamp signal		R				T	
Brake (EBD) warning lamp signal		R				T	

Schematic

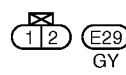
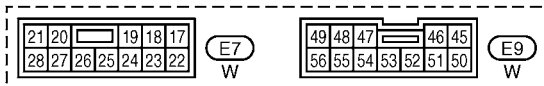
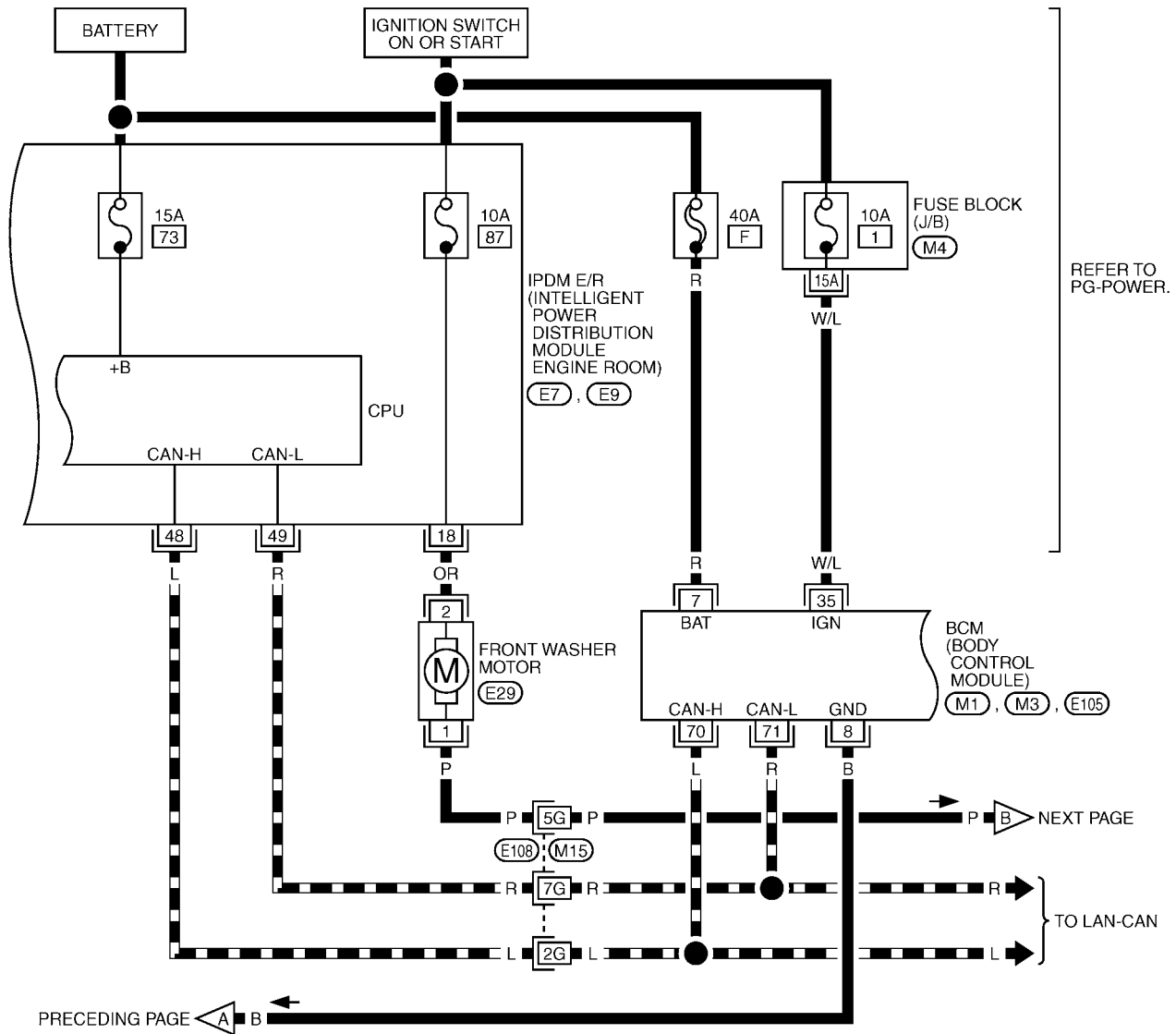
A
B
C
D
E
F
G
H
I
J
K
L
M



FRONT WIPER AND WASHER SYSTEM

WW-WIPER-02

DATA LINE



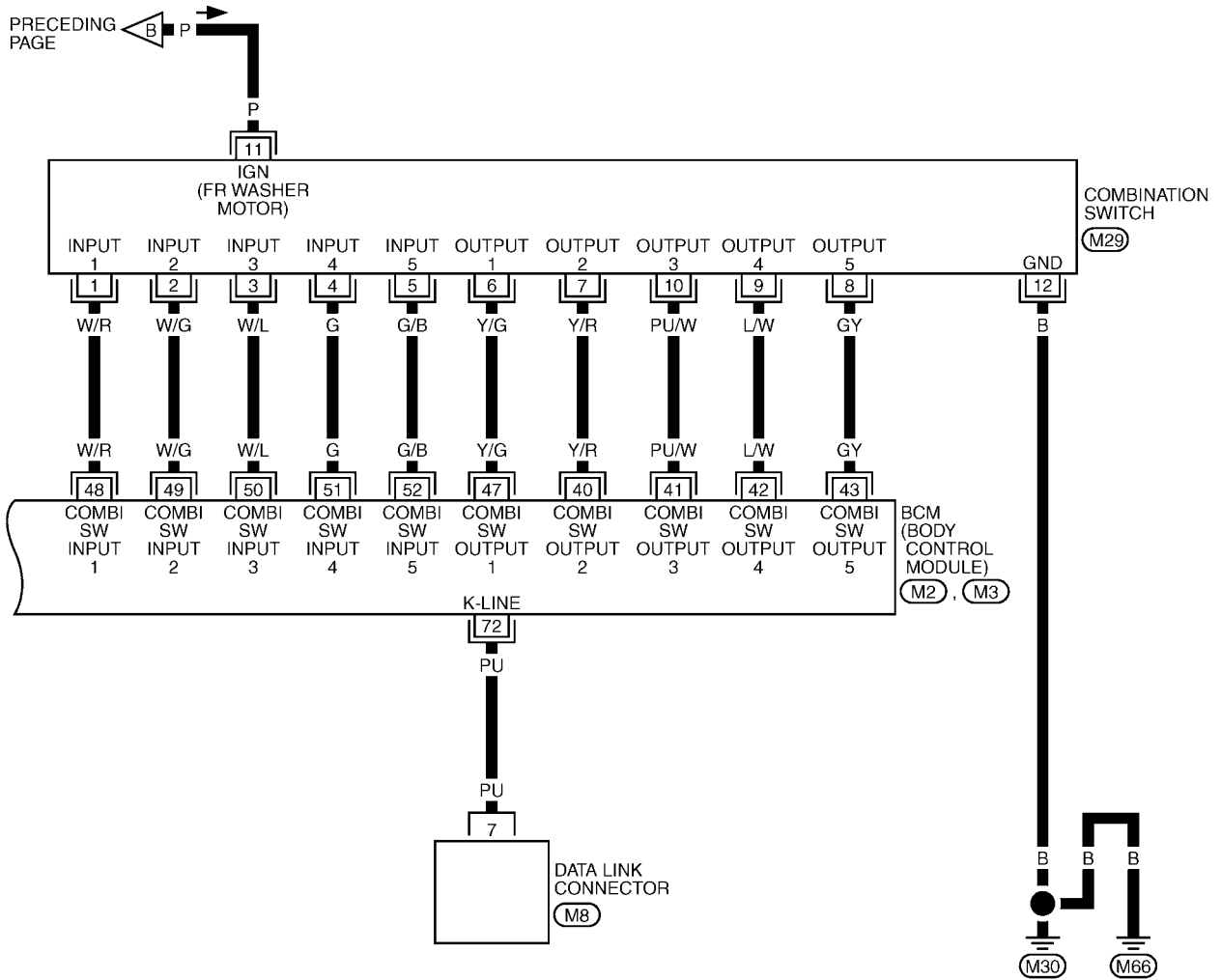
REFER TO THE FOLLOWING.

- (E108) -SUPER MULTIPLE JUNCTION (SMJ)
- (M4) -FUSE BLOCK-JUNCTION BOX (J/B)
- (M1), (M3), (E105) -ELECTRICAL UNITS

TKWT0398E

FRONT WIPER AND WASHER SYSTEM

WW-WIPER-03



16	15	14	13	12	11	10	9
8	7	6	5	4	3	2	1

(M8) W

7	8	9	10	13	12
6	5	4	3	2	1

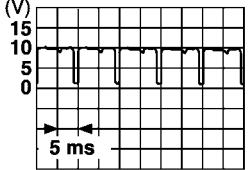
(M29) W

REFER TO THE FOLLOWING.
(M2), (M3) -ELECTRICAL
UNITS

FRONT WIPER AND WASHER SYSTEM

Terminals and Reference Values for BCM

AKS000YB

Terminal No. (Wire color)	Signal name	Measuring condition		Reference value (V)
		Ignition switch	Operation or condition	
7 (R)	Battery power supply	ON	—	Battery voltage
8 (B)	Ground	ON	—	Approx. 0
35 (W/L)	Ignition switch (ON)	ON	—	Battery voltage
40 (Y/R)	Combination switch output 2	ON	Lighting switch and wiper switch OFF	 <p>SKIA1119J</p>
41 (PU/W)	Combination switch output 3			
42 (L/W)	Combination switch output 4			
43 (GY)	Combination switch output 5			
47 (Y/G)	Combination switch output 1			
48 (W/R)	Combination switch input 1	ON	Lighting switch and wiper switch OFF	4.5 or more
49 (W/G)	Combination switch input 2	ON		
50 (W/L)	Combination switch input 3	ON		
51 (G)	Combination switch input 4	ON		
52 (G/B)	Combination switch input 5	ON		
70 (L)	CAN- H	—	—	—
71 (R)	CAN- L	—	—	—
72 (PU)	K-LINE	—	—	—

Terminals and Reference Values for IPDM E/R

AKS000YC

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

FRONT WIPER AND WASHER SYSTEM

How to Proceed With Trouble Diagnosis

AKS000YD

1. Confirm the symptoms and customer complaint.
2. Understand operation description and function description. Refer to [WW-4, "System Description"](#).
3. Carry out the Preliminary Check. Refer to [WW-22, "Preliminary Inspection"](#).
4. Check symptom and repair or replace the cause of malfunction.
5. Does the warning chime operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. Inspection end.

Preliminary Inspection

AKS000YE

INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

Inspection Procedure

1. CHECK FUSE

- Check if wiper and washer fuse is blown.

Unit	Power source	Fuse No.
Front washer motor	Ignition switch ON or START	87
Front wiper motor, front wiper relay, front wiper HI relay	Battery	74
Front wiper relay, front wiper HI relay	Ignition switch ON or START	80

Refer to [WW-18, "Wiring Diagram — WIPER —"](#).

OK or NG

OK >> GO TO 2

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

2. POWER SUPPLY CIRCUIT CHECK

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

Terminals		Ignition switch position	
(+)		(-)	
Connector	Terminal (Wire color)	OFF	ON
E105	7 (R)	Battery voltage	Battery voltage
M1	35 (W/L)	0V	Battery voltage

OK or NG

OK >> GO TO 3.

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

3. GROUND CIRCUIT CHECK

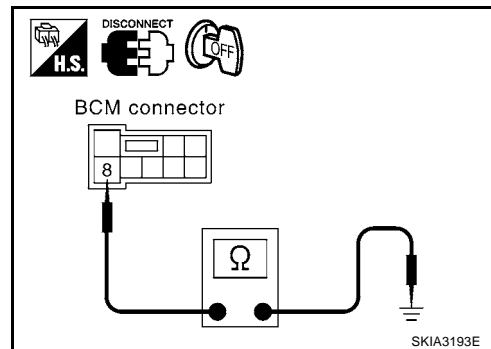
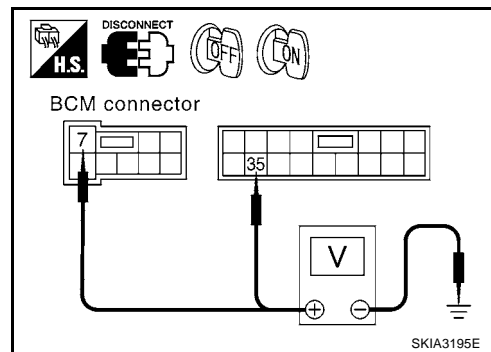
Check continuity between BCM harness connector and ground.

Terminals			Continuity
(+)		(-)	
Connector	Terminal (wire color)		
E105	8 (B)	Ground	Yes

OK or NG

OK >> INSPECTION END.

NG >> Check harness ground circuit.



FRONT WIPER AND WASHER SYSTEM

CONSULT-II Functions

AKS000YF

CONSULT-II executes the following functions by combining data reception and command transmission via the communication line from BCM. Work support, self-diagnosis, data monitor, and active test display.

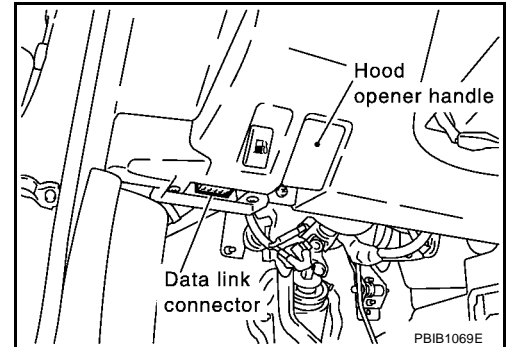
BCM diagnosis position	Check item, Diagnosis mode	Description
Wiper	Data monitor	Displays BCM input data in real time.
	Active test	Device operation can be checked by applying a drive signal to device.
BCM C/U	Self-diagnosis	BCM performs self-diagnosis of CAN communication and combination switch.

CONSULT-II OPERATION

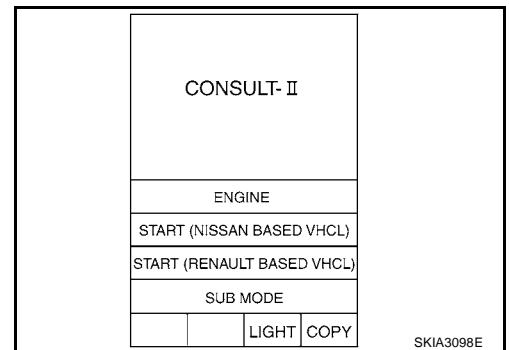
CAUTION:

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

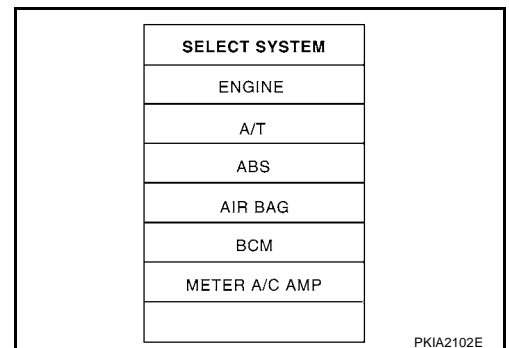
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn the ignition switch ON.



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

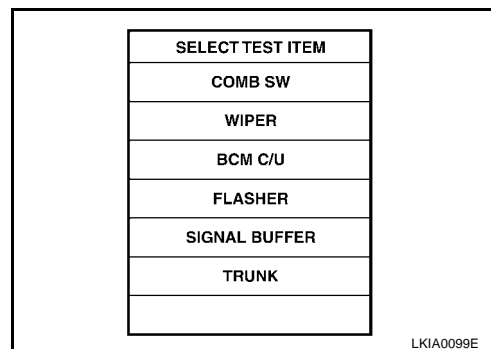


3. Touch "BCM" on "SELECT SYSTEM" screen.
If "BCM" is not indicated, go to [GI-40, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#) .



FRONT WIPER AND WASHER SYSTEM

4. Touch "WIPER".



DATA MONITOR

Operation Procedure

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

All signals	Monitors all the items.
Selection from menu	Selects and monitors the individual item selected.

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

Display Item List

Monitor item name "operation or unit"	Contents
IGN ON SW "ON/OFF"	Displays "IGN Position (ON)/OFF, ACC Position (OFF)" status as judged from ignition switch signal.
FR WIPER INT "ON/OFF"	Displays "Front Wiper INT (ON)/Other (OFF)" status as judged from wiper switch signal.
FR WIPER LOW "ON/OFF"	Displays "Front Wiper LOW (ON)/Other (OFF)" status as judged from wiper switch signal.
FR WIPER HI "ON/OFF"	Displays "Front Wiper HI (ON)/Other (OFF)" status as judged from wiper switch signal.
FR WASHER SW "ON/OFF"	Displays "Front Washer Switch (ON)/Other (OFF)" status as judged from wiper switch signal.
INT VOLUME (1 - 7)	Displays intermittent operation dial position setting (1 - 7) as judged from wiper switch signal.
VHCL SPEED SEN "ON/OFF"	Displays "Driving (ON)/Stopped (OFF)" status as judged from vehicle speed signal.
FR WIPER STOP "ON/OFF"	Displays "Stopped (ON)/Operating (OFF)" status as judged from the auto-stop signal.
RR WIPER INT "ON/OFF"	Displays "rear Wiper INT (ON)/Other (OFF)" status as judged from wiper switch signal.
RR WIPER ON "ON/OFF"	Displays "rear Wiper (ON)/Other (OFF)" status as judged from wiper switch signal.
RR WASHER SW "ON/OFF"	Displays "rear Washer Switch (ON)/Other (OFF)" status as judged from wiper switch signal.
RR WIPER STOP "ON/OFF"	Displays "Stopped (OFF)/Operating (ON)" status as judged from the auto-stop signal.

FRONT WIPER AND WASHER SYSTEM

ACTIVE TEST

Operation Procedure

1. Touch "WIPERS" on the "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on the "SELECT DIAG MODE" screen.
3. Touch item to be tested and check operation of the selected item.
4. During the operation check, touching "BACK" deactivates the operation.

Display Item List

Test item	Display on CONSULT-II screen	Description
Front wiper HI output	FR WIPER (HI)	Front wiper HI can be operated by any ON-OFF operation.
Front wiper LO output	FR WIPER (LO)	Front wiper LO can be operated by any ON-OFF operation.
Front wiper INT output	FR WIPER (INT)	Front wiper INT can be operated by any ON-OFF operation.
Rear wiper output	RR WIPER	Rear wiper can be operated by any ON-OFF operation.

Front Wiper Does Not Operate

AKS000YG

1. IPDM E/R TO FRONT WIPERS (1) INSPECTION

1. Turn on front wipers using active test. Refer to [PG-24, "Auto Active Test"](#).
2. Confirm front wiper operation.

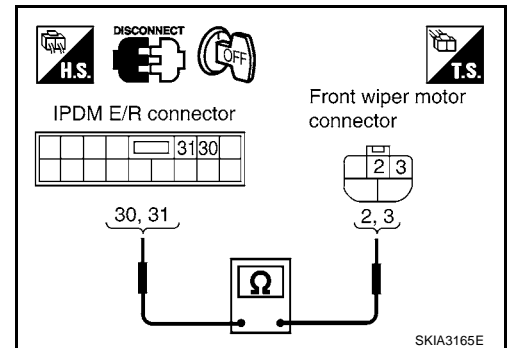
Wiper operation should operate

OK or NG

- OK >> GO TO 4.
NG >> GO TO 2.

2. IPDM E/R TO FRONT WIPERS CIRCUIT

1. Disconnect IPDM E/R connector and front wiper motor connector.
2. Check continuity between IPDM E/R harness connector E8 terminal 30(L/B) and front wiper motor harness connector E52 terminal 2(L/B).
3. Check continuity between IPDM E/R harness connector E8 terminal 31(PU) and front wiper motor harness connector E52 terminal 3(PU).

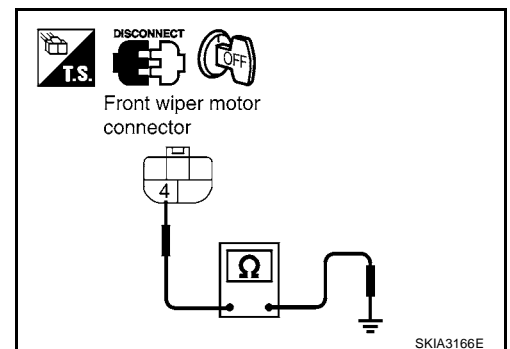


4. Check continuity between front wiper motor harness connector E52 terminal 4(B) and ground.

Continuity should exist

OK or NG

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



FRONT WIPER AND WASHER SYSTEM

3. IPDM E/R INSPECTION

1. Connect IPDM E/R connector and front wiper motor connector.
2. Select "FR WIPER HI" during active test. Refer to [PG-24, "Auto Active Test"](#). When front wiper relay, and front wiper HI relay are operating, check voltage between IPDM E/R harness connector terminals and ground.

Terminals				Voltage
(+)		(-)	Wiper relay Condition	
Connector	Terminal (wire color)			
E8	31 (PU)	Ground	Stopped	Approx. 0V
			LOW operation	Battery voltage
	30 (L/B)		Stopped	Approx. 0V
			HI operation	Battery voltage

OK or NG

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

4. COMBINATION SWITCH TO BCM (1) INSPECTION

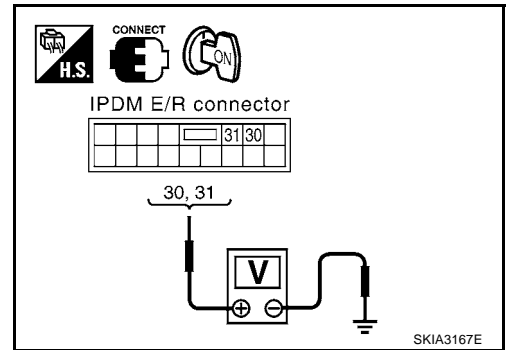
Select BCM on CONSULT-II. Carry out self-diagnosis of "BCM C/U".

Displayed self-diagnosis results

No malfunction detected>>GO TO 5.

CAN communications or CAN system>>Inspect the BCM CAN communications system. Go to [BCS-18, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#)

OPEN DETECT 1 - 5>>Combination switch system malfunction. Go to [LT-164, "Combination Switch Inspection According to Self-Diagnostic Results"](#).



5. COMBINATION SWITCH TO BCM (2) INSPECTION

Select BCM on CONSULT-II. With "WIPER" data monitor, check that "FR WIPER INT", "FR WIPER LOW" and "FR WIPER HI" turn ON-OFF according to operation of wiper switch.

When front wiper is low position :FR WIPER LOW ON

When front wiper is HI position :FR WIPER HI ON

When front wiper is INT position :FR WIPER INT ON

OK or NG

- OK >> Replace BCM.
NG >> Replace front wiper switch.

SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	

DATA MONITOR	
MONITOR	
IGN ON SW	ON
FR WIPER INT	OFF
FR WIPER LOW	OFF
FR WIPER HI	OFF
FR WASHER SW	OFF
INT VOLUME	5
VHCL SPEED SEN	OFF
FR WIPER STOP	ON
RR WIPER INT	OFF

FRONT WIPER AND WASHER SYSTEM

Front Wiper Stop Position Is Incorrect

AKS000YH

1. IPDM E/R TO WIPER MOTOR (1) INSPECTION

Select BCM on CONSULT-II. With "WIPER" data monitor, check that "FR WIPER STOP" turns ON-OFF according to wiper operation.

When wiper switch OFF :FR WIPER STOP ON

OK or NG

- OK >> Replace IPDM E/R.
NG >> GO TO 2.

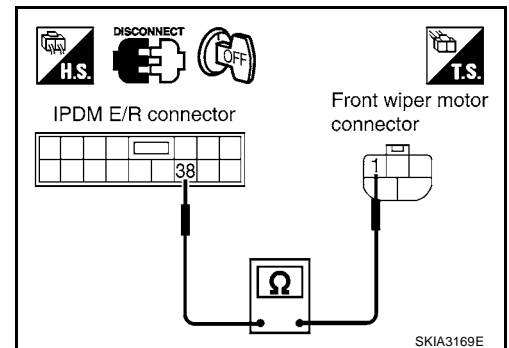
DATA MONITOR	
MONITOR	
IGN ON SW	ON
FR WIPER INT	OFF
FR WIPER LOW	OFF
FR WIPER HI	OFF
FR WASHER SW	OFF
INT VOLUME	5
VHCL SPEED SEN	OFF
FR WIPER STOP	ON
RR WIPER INT	OFF

SKIA3168E

2. IPDM E/R TO WIPER MOTOR (2) INSPECTION

1. Disconnect IPDM E/R connector and front wiper motor connector.
2. Check continuity between IPDM E/R harness connector E8 terminal 38(L/Y) and front wiper motor harness connector E52 terminal 1(L/Y).

Continuity should exist

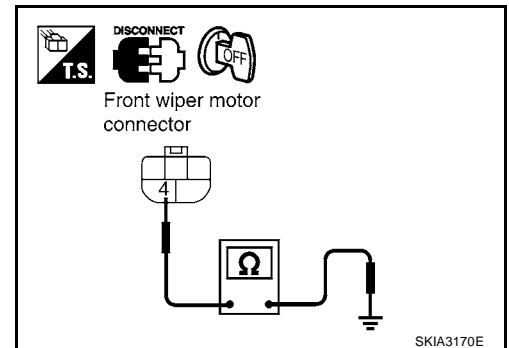


3. Check continuity between front wiper motor harness connector E52 terminal 4(B) and ground.

Continuity should exist

OK or NG

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

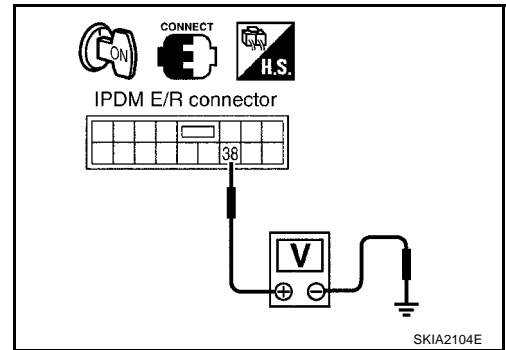


FRONT WIPER AND WASHER SYSTEM

3. IPDM E/R TO WIPER MOTOR (3) INSPECTION

1. Connect IPDM E/R connector and front wiper motor connector.
2. While front wiper motor is stopped and while operating, measure voltage between IPDM E/R harness connector terminal and ground.

Terminals				Voltage
(+)		(-)	Condition	
Connector	Terminal (wire color)			
E8	38 (L/Y)	Ground	Wiper operating	Battery volt- age
			Wiper stopped	Approx. 0V



OK or NG

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

Only Front Wiper Low Does Not Operate

AKS000YI

1. IPDM E/R TO FRONT WIPERS (1) INSPECTION

1. Select "FR WIPER LOW" during active test. Refer to [PG-24, "Auto Active Test"](#).
2. Verify that front wipers operate in LOW operation mode.

Wiper LOW operation should operate

OK or NG

- OK >> GO TO 4.
NG >> GO TO 2.

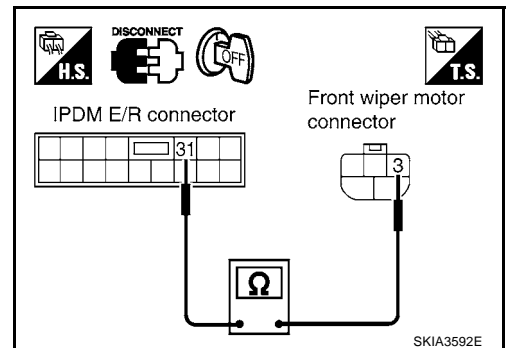
2. IPDM E/R TO FRONT WIPERS (2) INSPECTION

1. Disconnect IPDM E/R connector and front wiper motor connector.
2. Check continuity between IPDM E/R harness connector E8 terminal 31(PU) and front wiper motor harness connector E52 terminal 3(PU).

Continuity should exist

OK or NG

- OK >> GO TO 3.
NG >> Check harness for open or short IPDM E/R and front wiper motor.



FRONT WIPER AND WASHER SYSTEM

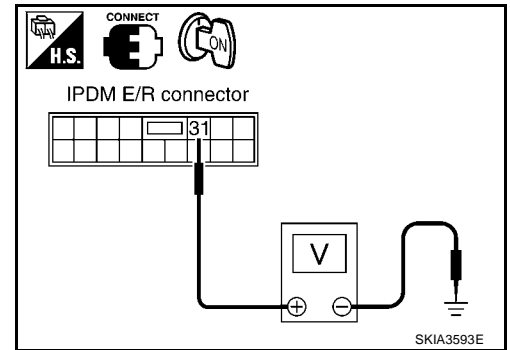
3. IPDM E/R INSPECTION

1. Connect IPDM E/R connector and front wiper motor connector.
2. Select "FR WIPER LOW" during active test. Refer to [PG-24, "Auto Active Test"](#). When front wiper relay are operating, check voltage between IPDM E/R harness connector terminals and ground.

Terminals				Voltage
(+)		(-)	Condition	
Connector	Terminal (wire color)			
E8	31 (PU)	Ground	Stopped	Approx. 0V
			LOW operation	Battery voltage

OK or NG

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



4. COMBINATION SWITCH TO BCM INSPECTION

Select BCM on CONSULT-II. With "WIPER" data monitor, check that "FR WIPER LOW" turns ON-OFF according to operation of wiper switch.

When wiper switch LOW position :FR WIPER LOW ON

OK or NG

- OK >> Replace BCM.
 NG >> Replace wiper switch.

DATA MONITOR	
MONITOR	
IGN ON SW	ON
FR WIPER INT	OFF
FR WIPER LOW	OFF
FR WIPER HI	OFF
FR WASHER SW	OFF
INT VOLUME	5
VHCL SPEED SEN	OFF
FR WIPER STOP	ON
RR WIPER INT	OFF

Only Front Wiper Hi Does Not Operate

1. IPDM E/R TO FRONT WIPERS (1) INSPECTION

1. Select "FR WIPER HI" during active test. Refer to [PG-24, "Auto Active Test"](#).
2. Verify that front wipers operate in HI operation mode.

Wiper HI operation should operate

OK or NG

- OK >> GO TO 4.
 NG >> GO TO 2.

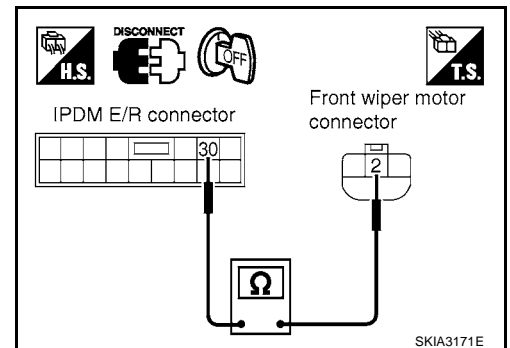
2. IPDM E/R TO FRONT WIPERS (2) INSPECTION

1. Disconnect IPDM E/R connector and front wiper motor connector.
2. Check continuity between IPDM E/R harness connector E8 terminal 30(L/B) and front wiper motor harness connector E52 terminal 2(L/B).

Continuity should exist

OK or NG

- OK >> GO TO 3.
 NG >> Check harness for open or short IPDM E/R and front wiper motor.

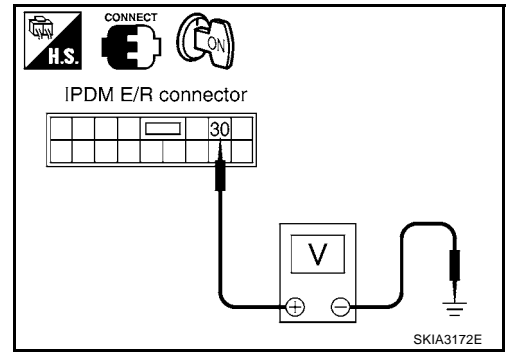


FRONT WIPER AND WASHER SYSTEM

3. IPDM E/R INSPECTION

1. Connect IPDM E/R connector and front wiper motor connector.
2. Select "FR WIPER HI" during active test. Refer to [PG-24, "Auto Active Test"](#). When front wiper relay, and front wiper HI relay are operating, check voltage between IPDM E/R harness connector terminals and ground.

Terminals				Voltage
(+)		(-)	Condition	
Connector	Terminal (wire color)			
E8	30 (L/B)	Ground	Stopped	Approx. 0V
			HI operation	Battery voltage



OK or NG

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

4. COMBINATION SWITCH TO BCM INSPECTION

Select BCM on CONSULT-II. With "WIPER" data monitor.

When wiper switch is HI operation :FR WIPER HI ON

OK or NG

- OK >> Replace BCM.
NG >> Replace wiper switch.

DATA MONITOR	
MONITOR	
IGN ON SW	ON
FR WIPER INT	OFF
FR WIPER LOW	OFF
FR WIPER HI	OFF
FR WASHER SW	OFF
INT VOLUME	5
VHCL SPEED SEN	OFF
FR WIPER STOP	ON
RR WIPER INT	OFF

SKIA3168E

Only Front Wiper Intermittent Does Not Operate

1. COMBINATION SWITCH TO BCM INSPECTION

Select BCM on CONSULT-II. With "WIPER" data monitor, check that "FR WIPER INT" turns ON-OFF according to operation of wiper switch.

When wiper switch INT position :FR WIPER INT ON

OK or NG

- OK >> Replace BCM.
NG >> Replace wiper switch.

DATA MONITOR	
MONITOR	
IGN ON SW	ON
FR WIPER INT	OFF
FR WIPER LOW	OFF
FR WIPER HI	OFF
FR WASHER SW	OFF
INT VOLUME	5
VHCL SPEED SEN	OFF
FR WIPER STOP	ON
RR WIPER INT	OFF

SKIA3168E

FRONT WIPER AND WASHER SYSTEM

Front Wiper Intermittent Operation Switch Position Cannot Be Adjusted

AKS000YL

1. COMBINATION SWITCH TO BCM INSPECTION

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

Wiper dial position	Intermittent operation interval	DATA MONITOR "INT VOLUME"
Wiper dial position 1	Small	ON
Wiper dial position 2		OFF
Wiper dial position 3		OFF
Wiper dial position 4		OFF
Wiper dial position 5	↓	ON
Wiper dial position 6		ON
Wiper dial position 7		OFF

DATA MONITOR	
MONITOR	
IGN ON SW	ON
FR WIPER INT	OFF
FR WIPER LOW	OFF
FR WIPER HI	OFF
FR WASHER SW	OFF
INT VOLUME	5
VHCL SPEED SEN	OFF
FR WIPER STOP	ON
RR WIPER INT	OFF

SKIA3168E

OK or NG

- OK >> Replace BCM.
NG >> Replace wiper switch.

Wipers Do Not Wipe When Front Washer Operates

AKS000YM

1. COMBINATION SWITCH TO BCM INSPECTION

Select BCM on CONSULT-II. With "WIPER" data monitor, check that "FR WASHER SW" turns ON-OFF according to operation of front washer switch.

When wiper switch washer position :FR WASHER SW ON

OK or NG

- OK >> Replace BCM.
NG >> Replace wiper switch.

DATA MONITOR	
MONITOR	
IGN ON SW	ON
FR WIPER INT	OFF
FR WIPER LOW	OFF
FR WIPER HI	OFF
FR WASHER SW	OFF
INT VOLUME	5
VHCL SPEED SEN	OFF
FR WIPER STOP	ON
RR WIPER INT	OFF

SKIA3168E

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

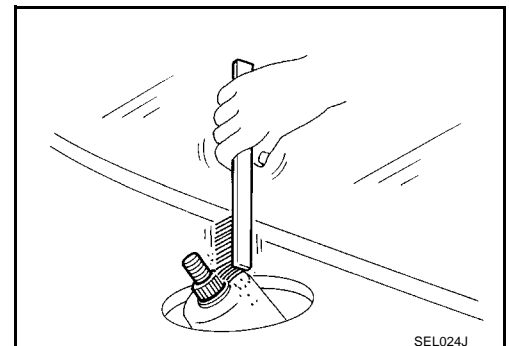
AKS000YN

REMOVAL

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

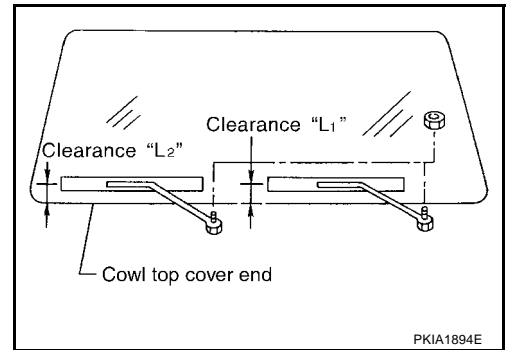
INSTALLATION

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



FRONT WIPER AND WASHER SYSTEM


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



Clearance "L1" : 56.5 - 71.5 mm (2.22 - 2.82 in)

Clearance "L2" : 25 - 38 mm (0.98 - 1.50 in)

- Tighten wiper arm nuts to specified torque.

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

ADJUSTMENT

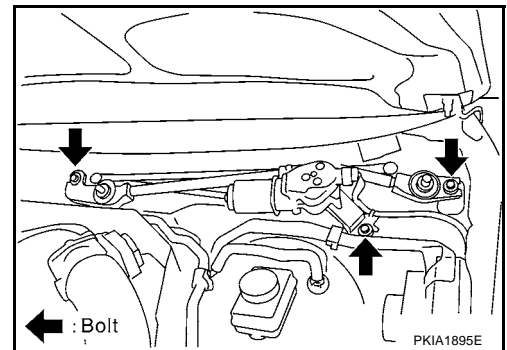
Refer to [WW-31, "INSTALLATION"](#)

Removal and Installation of Front Wiper Motor and Linkage

AKS000YO

REMOVAL

1. Remove wiper arm. Refer to [WW-31, "REMOVAL"](#)
2. Remove cowl top cover. Refer to [EI-20, "COWL TOP"](#) in "EI" section.
3. Remove washer tube.
4. Disconnect wiper motor connector.
5. 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. Attach washer tube to washer tube joint.
4. Install cowl top cover. Refer to [EI-20, "COWL TOP"](#) in "EI" section.
5. Install wiper arms. Refer to [WW-31, "Removal and Installation for Front Wiper Arms, Adjustment for Wiper Arms Stop Location"](#)
6. Attach wiper arm washer tube.

Wiper motor and linkage mounting bolts

 : 4.4 - 6.6 N·m (0.45 - 0.67 kg·m, 39 - 58 in·lb)

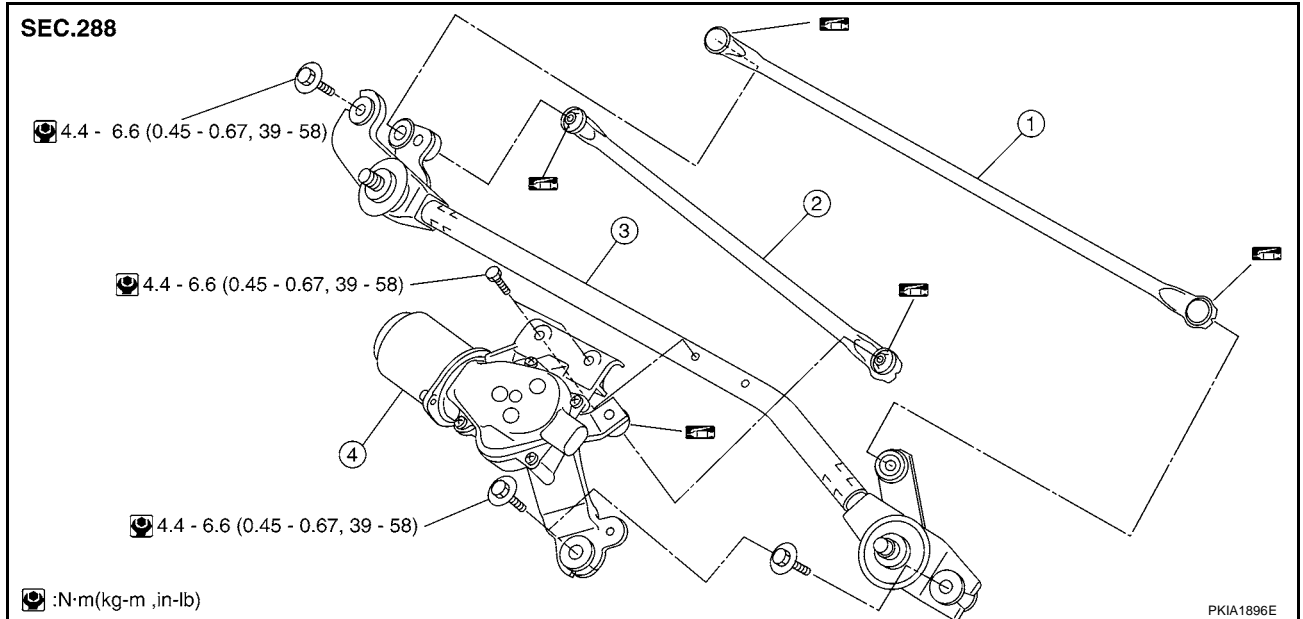
CAUTION:

- 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.

FRONT WIPER AND WASHER SYSTEM

Disassembly and Assembly Front Wiper Motor and Linkage.

AKS000YP



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

DISASSEMBLY

1. Remove wiper link from wiper frame and the 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:

 : 4.4 - 6.6 N·m (0.45 - 0.67 kg-m, 39 - 58 in-lb)

Washer Nozzle Adjustment

AKS000YQ

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

CAUTION:

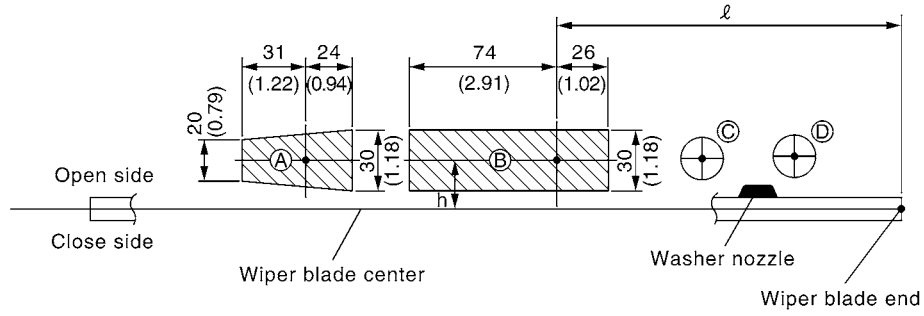
Only washer nozzles (A, B, E, F, and G) can be adjusted. Washer nozzles (C, D, H, I, and J) cannot be adjusted because of fixed nozzles.

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

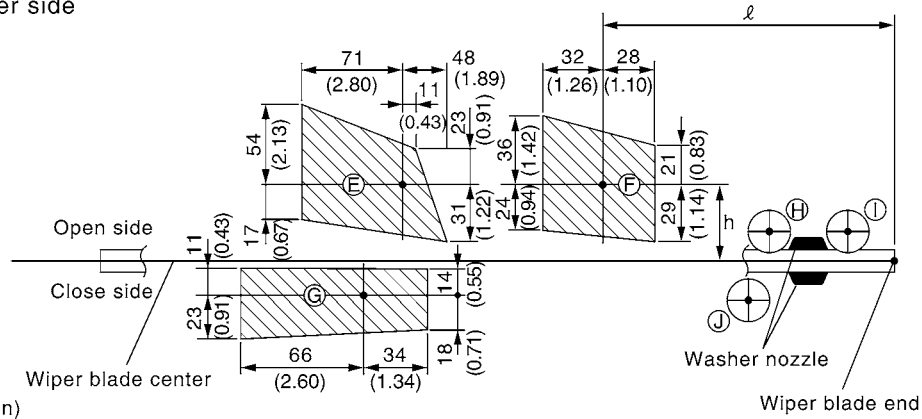
WW

FRONT WIPER AND WASHER SYSTEM

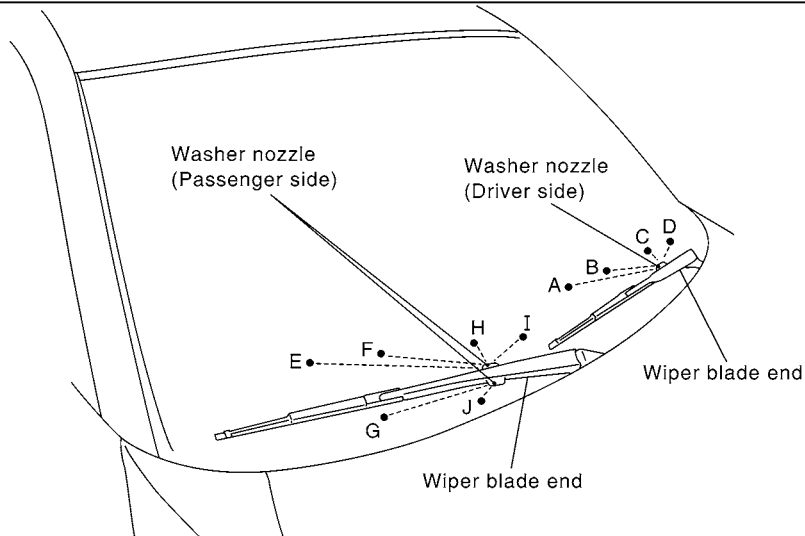
Driver side



Passenger side



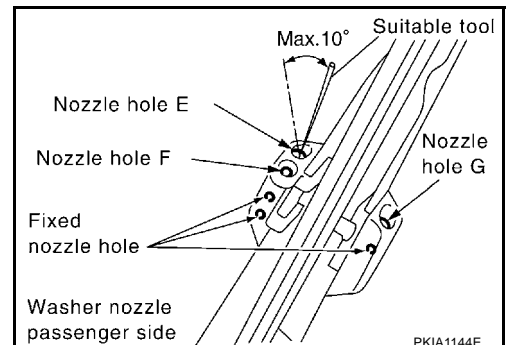
Unit : mm(in)



PKIA1897E

Unit: mm (in)

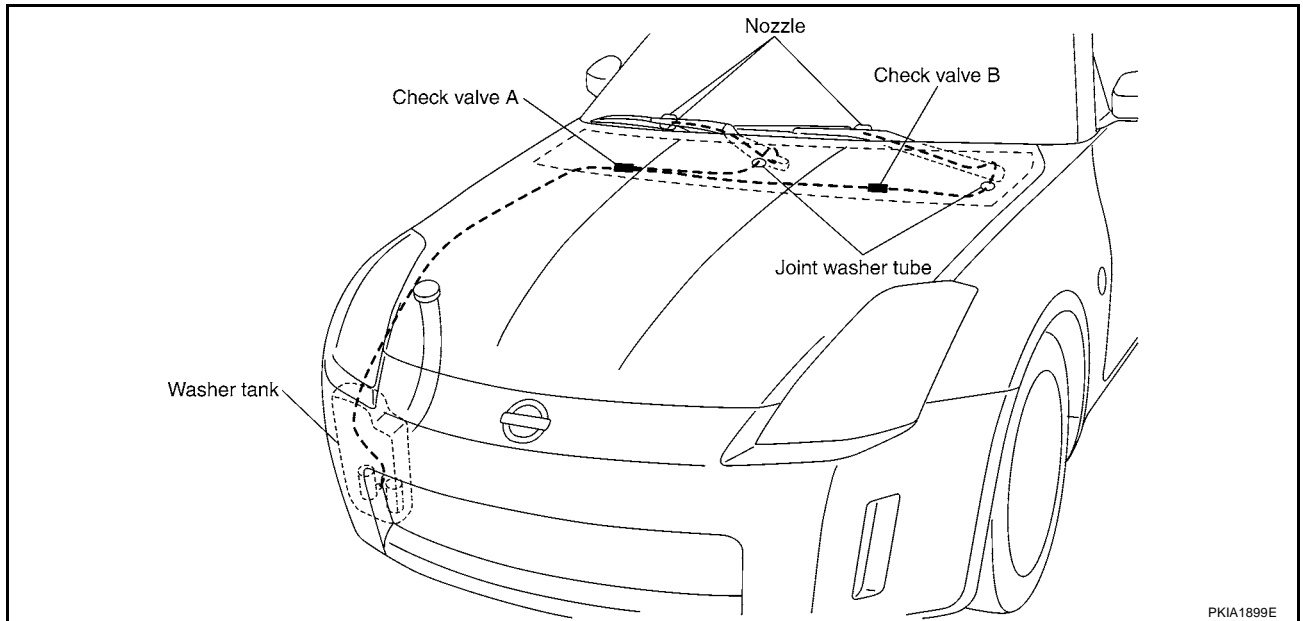
Spray position	h (height)	ℓ (width)
A	24 (0.94)	296 (11.65)
B	25 (0.98)	174 (6.85)
(C)	—	—
(D)	—	—
E	42 (1.65)	248 (9.76)
F	39 (1.54)	158 (6.22)
G	-19 (-0.75)	244 (9.61)
(H,I,J)	—	—



PKIA1144E

FRONT WIPER AND WASHER SYSTEM

Washer Tube Layout



Removal and Installation for Front Washer Nozzle

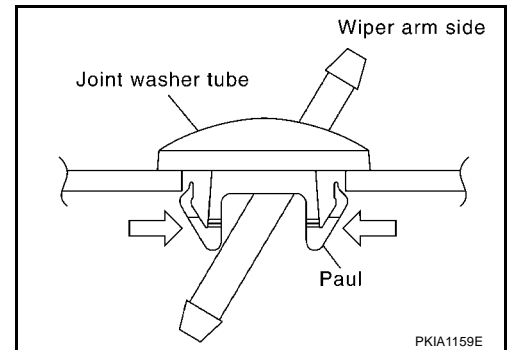
Replace wiper arm assembly. Refer to [WW-31, "Removal and Installation for Front Wiper Arms, Adjustment for Wiper Arms Stop Location"](#).

CAUTION:

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

Removal and Installation for Front Washer tube Joint

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

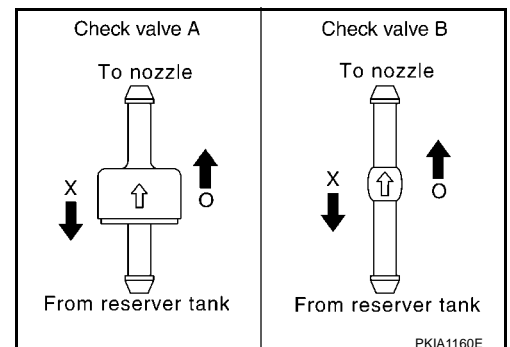


INSTALLATION

Install in reverse order removal.

Inspection for Washer Nozzle

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



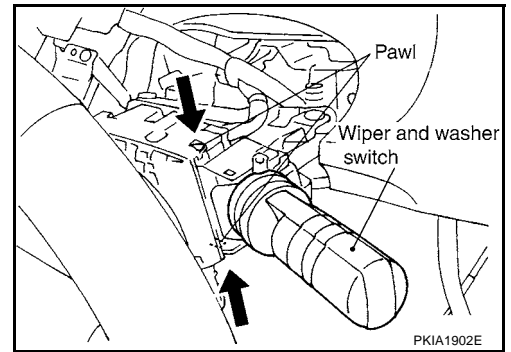
FRONT WIPER AND WASHER SYSTEM

Removal and Installation for Front Wiper and Washer Switch

AKS000YV

REMOVAL

1. Remove steering column lower cover and combination meter. Refer to [IP-11, "INSTRUMENT PANEL ASSEMBLY"](#) in "IP" section.
2. Disconnect wiper and washer switch connector.
3. Pull wiper and washer switch toward the passenger door while pressing pawls in direction shown by the arrow in the figure, and remove it from the base.



INSTALLATION

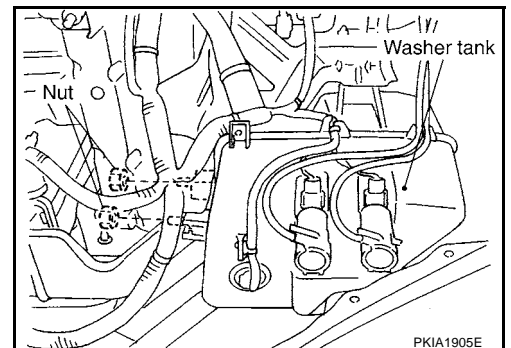
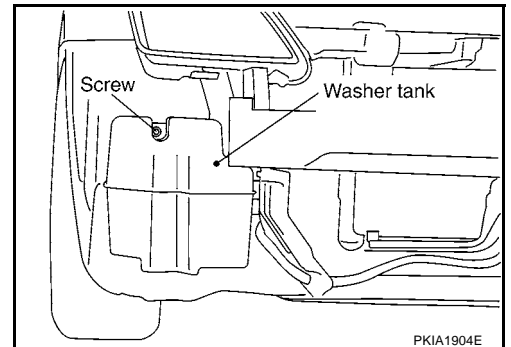
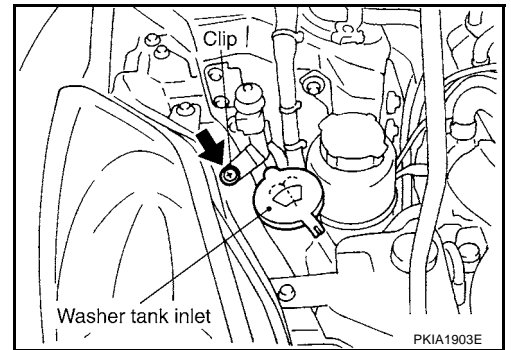
Install in reverse order removal.

Removal and Installation for Washer Tank

AKS000YV

REMOVAL

1. Remove the clip and pull out washer tank inlet.
2. Remove fender protector. Refer to [EI-21, "FENDER PROTECTOR"](#) in "EI" section.
3. Remove front bumper fascia. Refer to [EI-14, "FRONT BUMPER"](#) in "EI" section.
4. Disconnect washer pump connector.
5. Remove washer tank mounting screw and nuts.
6. Remove washer tube, and remove washer tank from the vehicle.



FRONT WIPER AND WASHER SYSTEM

INSTALLATION

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

CAUTION:

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

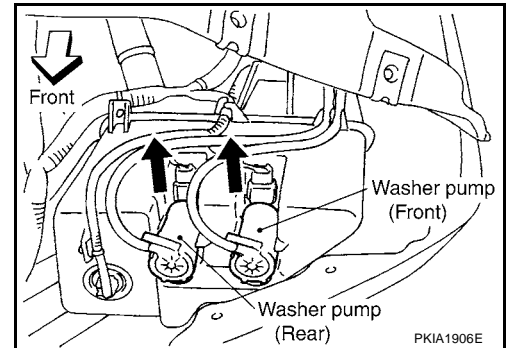


: 4.4 - 6.6 N·m (0.45 - 0.67 kg-m, 39 - 58 in-lb)

Removal and Installation for Washer Pump

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 reverse order of removal.

CAUTION:

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

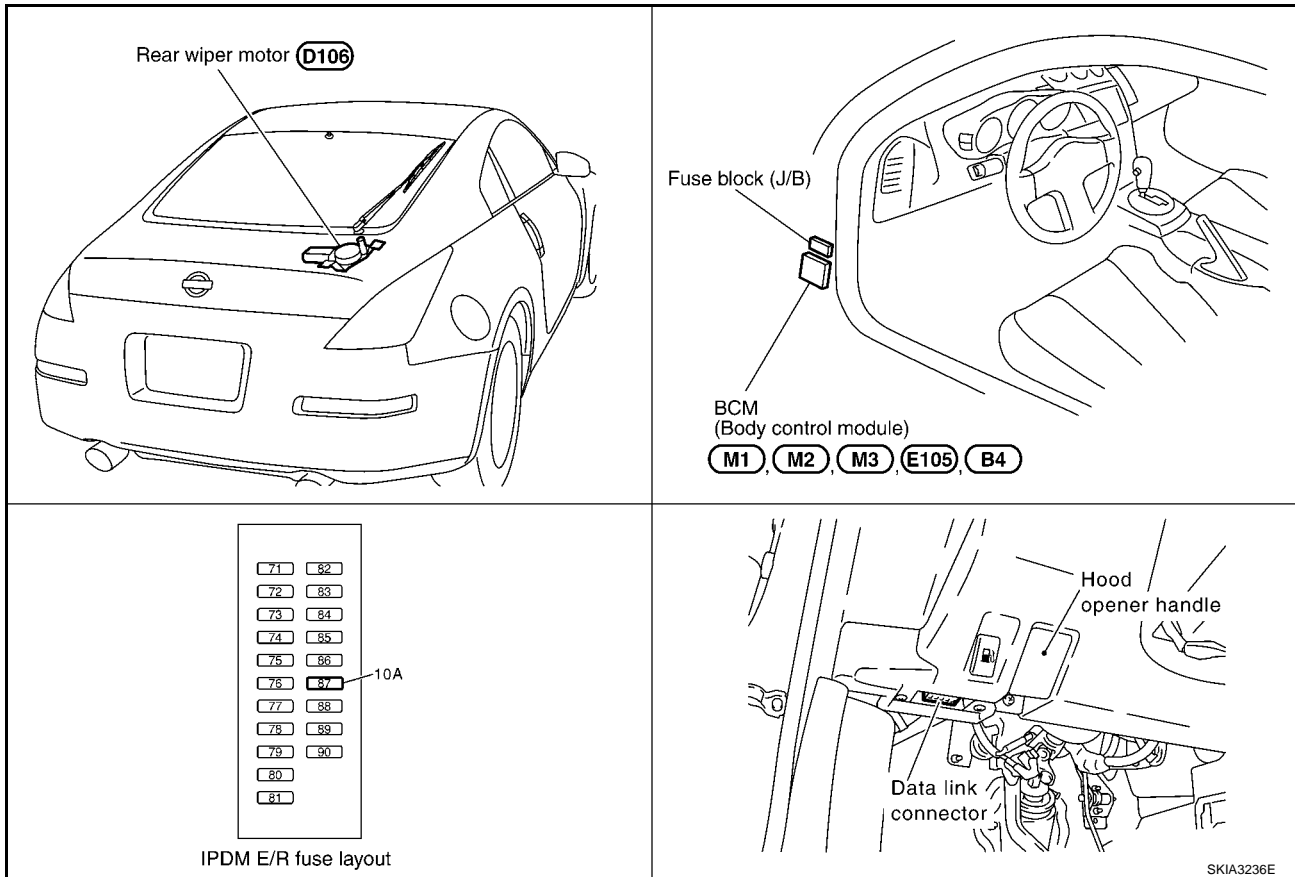
REAR WIPER AND WASHER SYSTEM

REAR WIPER AND WASHER SYSTEM

PFP:28710

Components Parts and Harness Connector Location

AKS0032M



System Description

AKS0032N

- Wiper switch (combination switch) is composed of a combination of 5 output terminals and 5 input terminals. Terminal combination status is read by BCM when switch is turned ON.
- BCM controls rear wiper ON and INT (intermittent) operation.

Power supplied all time

- through 40 A fusible link (letter F, located in fusible link box.)
- to BCM terminal 7

When ignition switch ON or START position, power is supplied

- through 10 A fuse[No.1, located in fuse block (J/B)]
- to BCM terminal 35, and
- through 10 A fuse [NO.87, located in IPDM E/R (intelligent power distribution module engine room)]
- to rear washer motor terminal 2.

Ground is supplied

- to BCM terminal 8
- through body ground E17, E43 and F152, and
- to combination switch (wiper switch) terminal 12
- through body ground M30 and M66.

REAR WIPER AND WASHER SYSTEM

REAR WIPER OPERATION

When wiper switch is in rear wiper ON position, BCM detect rear wiper ON signal by BCM wiper switch reading function.

BCM operate rear wiper motor, power is supplied

- through BCM terminal 20
- to rear wiper motor 4.

Ground is supplied

- to rear wiper motor terminal 1
- through body grounds B5, B6, D105 and T14.

With power and ground is supplied, the rear wiper operates.

INTERMITTENT OPERATION

The rear wiper motor operates the wiper arms at low speed approximately every 7 seconds.

When wiper switch is in rear wiper INT position, BCM detect rear wiper INT signal by BCM wiper switch reading function (Refer to [WW-7, "BCM Wiper Switch Reading Function"](#))

BCM operate rear wiper motor, power supplied

- through BCM terminal 20
- to rear wiper motor 4.

Ground is supplied

- to rear wiper motor terminal 1
- through body grounds B5, B6, D105 and T14.

With power and ground is supplied. Rear wiper operates at intermittent.

AUTO STOP OPERATION

With rear wiper switch turned OFF, rear wiper motor will continue to operate until wiper arm reaches rear wiper stopper.

Then wiper motor turns the other way and wiper arm moves once until wiper arm reaches stopper.

WASHER OPERATION

When wiper switch is in rear wiper washer position, BCM detect rear wiper washer signal by BCM wiper switch reading function (Refer to [WW-7, "BCM Wiper Switch Reading Function"](#)), and combination switch (wiper switch) ground supplied

- to rear washer motor terminal 1
- through combination switch (wiper switch) terminal 13
- to combination switch (wiper switch) terminal 12
- through body grounds M30 and M66

With ground is supplied, rear washer motor is operated.

When BCM detects that rear washer motor has operated for. 04 seconds or longer, BCM operates rear wiper motor low speed.

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

BCM WIPER SWITCH READING FUNCTION

Refer to [WW-7, "BCM Wiper Switch Reading Function"](#) in FRONT WIPER AND WASHER SYSTEM

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

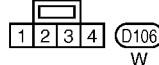
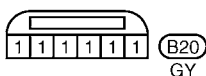
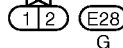
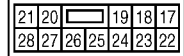
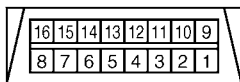
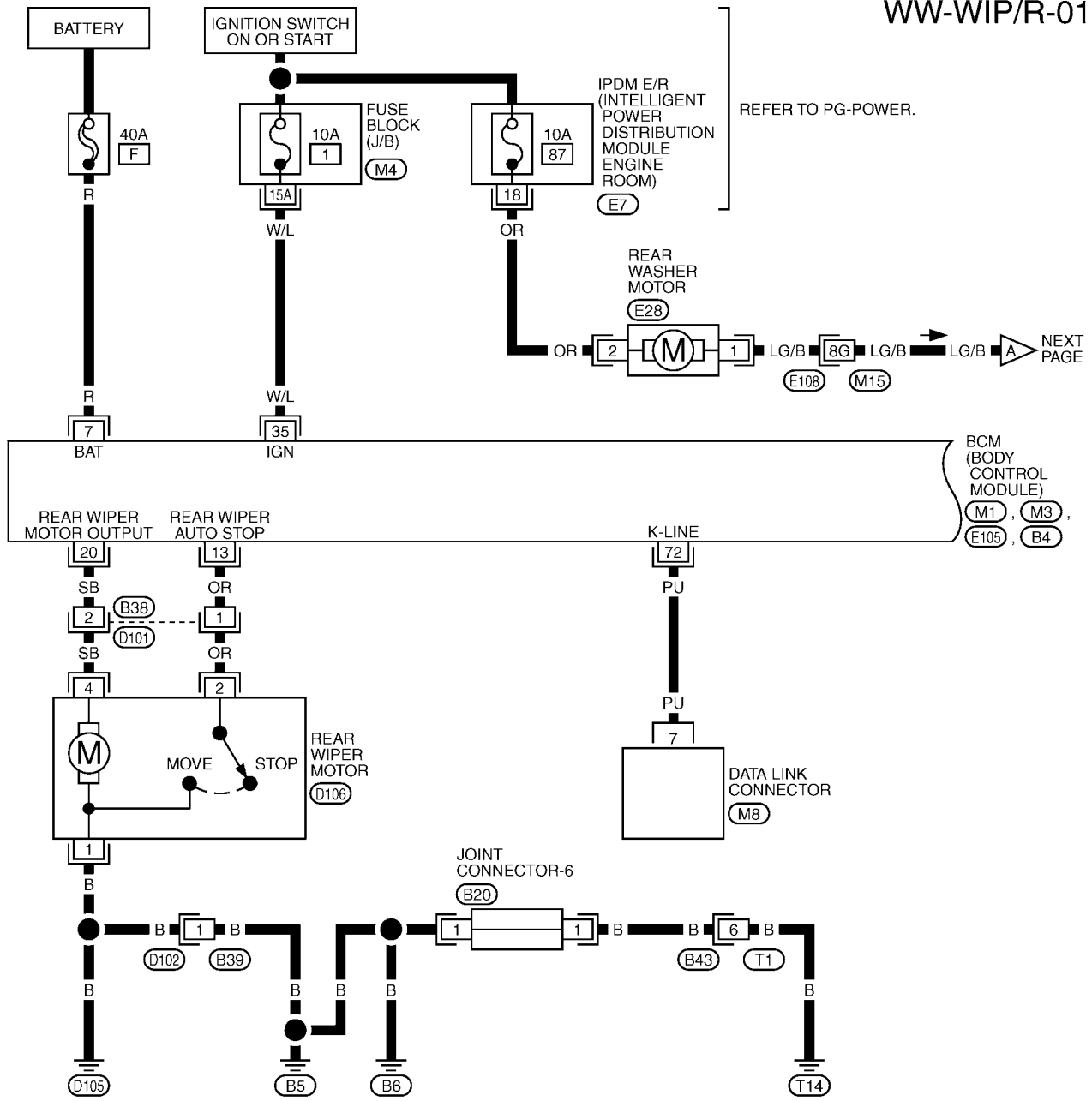
WW

REAR WIPER AND WASHER SYSTEM

Wiring Diagram — WIP/ R —

AKS0032Q

WW-WIP/R-01



REFER TO THE FOLLOWING.

(E108) -SUPER MULTIPLE JUNCTION (SMJ)

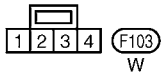
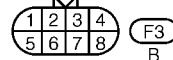
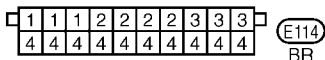
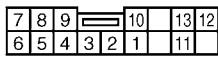
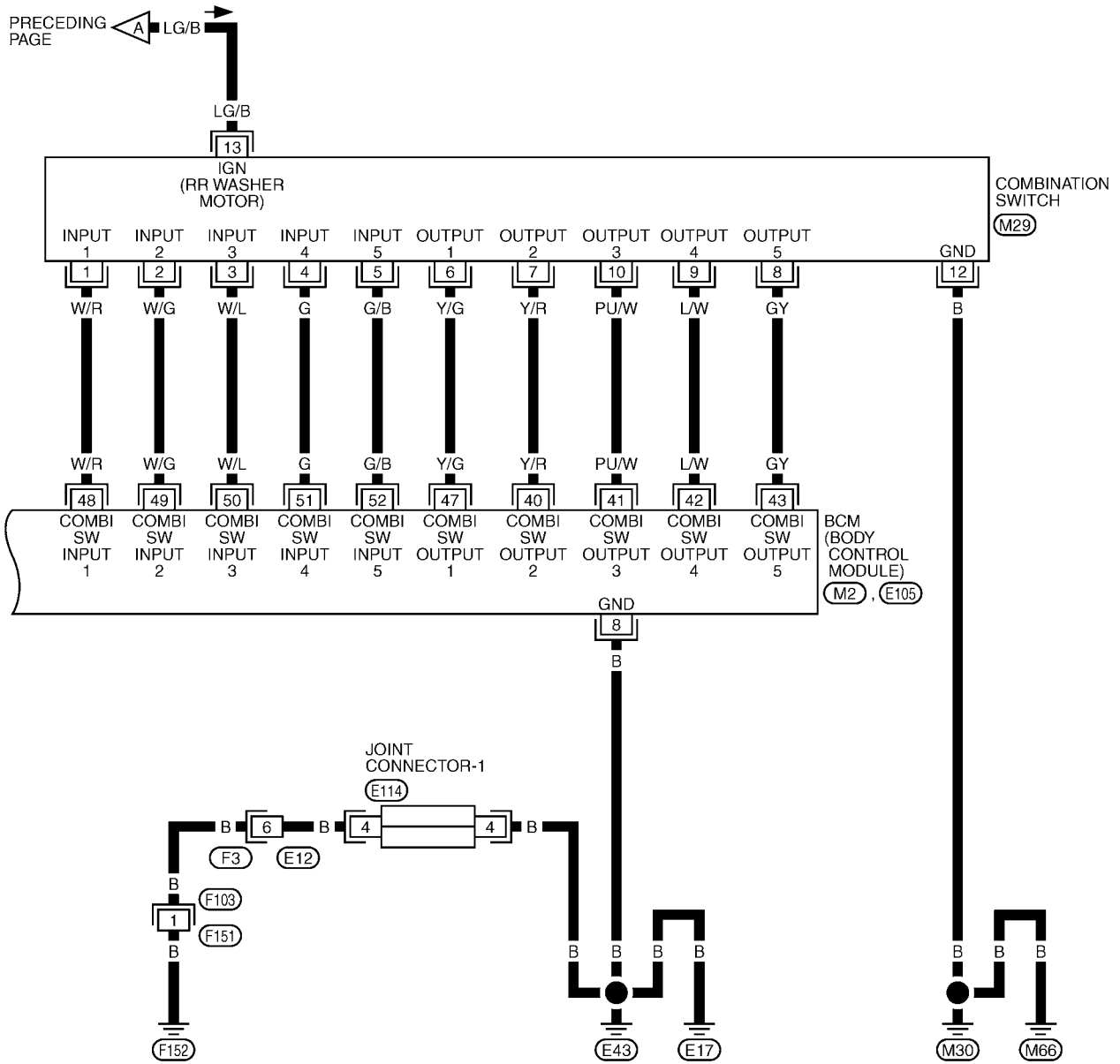
M4 -FUSE BLOCK-JUNCTION
BOX (J/B)

M1, M3, E105, B4

-ELECTRICAL UNITS

REAR WIPER AND WASHER SYSTEM

WW-WIP/R-02

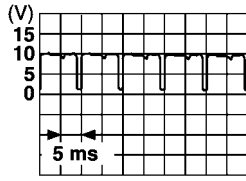


REFER TO THE FOLLOWING.
(M2), (E105) -ELECTRICAL
UNITS

REAR WIPER AND WASHER SYSTEM

Terminals and Reference Values for BCM

AKS0032R

Terminal No. (Wire color)	Signal name	Measuring condition		Reference value (V)
		Ignition switch	Operation or condition	
7 (R)	Battery power supply	ON	—	Battery voltage
8 (B)	Ground	ON	—	Approx. 0
13 (OR)	Rear Wiper auto- stop signal	ON	Wiper operating	Approx. 0
			Wiper stopped	Battery voltage
20 (SB)	Rear wiper motor output signal	ON	Wiper switch OFF	Approx. 0
			Wiper switch ON	Battery voltage
35 (W/L)	Ignition switch (ON)	ON	—	Battery voltage
40 (Y/R)	Combination switch output 2	ON	Lighting switch and wiper switch OFF	
41 (PU/W)	Combination switch output 3			
42 (L/W)	Combination switch output 4			
43 (GY)	Combination switch output 5			
47 (Y/G)	Combination switch output 1			
48 (W/R)	Combination switch input 1	ON	Lighting switch and wiper switch OFF	4.5 or more
49 (W/G)	Combination switch input 2	ON		
50 (W/L)	Combination switch input 3	ON		
51 (G)	Combination switch input 4	ON		
52 (G/R)	Combination switch input 5	ON		
72 (PU)	K-LINE	—	—	—

SKIA1119J

How to Proceed With Trouble Diagnosis

AKS0032T

1. Confirm the symptoms and customer complaint.
2. Understand operation description and function description. Refer to [WW-38, "System Description"](#)
3. Carry out the Preliminary Check. Refer to [WW-42, "Preliminary Inspection"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the warning chime operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection end.

Preliminary Inspection

AKS0032U

INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

Inspection Procedure

1. CHECK FUSE

- Check if wiper and washer fuse is blown.

Unit	Power source	Fuse No.
Rear washer motor	Ignition ON or START	87
BCM	Ignition ON or START	1

Refer to. [WW-40, "Wiring Diagram — WIP/ R —"](#) .

OK or NG

OK >> GO TO 2.

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

REAR WIPER AND WASHER SYSTEM

2. POWER SUPPLY CIRCUIT CHECK

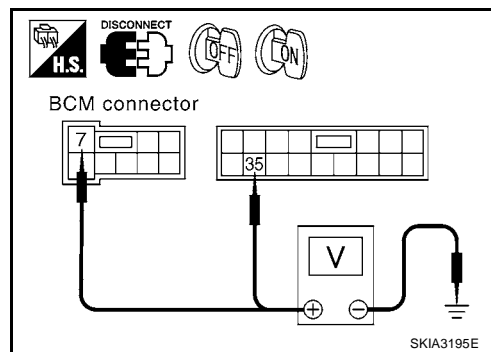
1. Disconnect BCM connector.
2. Check voltage between BCM harness connector and ground.

Terminals		Ignition switch position	
(+)		(-)	
Connector	Terminal (Wire color)	OFF	ON
E105	7 (R)	Battery voltage	Battery voltage
M1	35 (W/L)	0V	Battery voltage

OK or NG

OK >> GO TO 3.

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



3. GROUND CIRCUIT CHECK

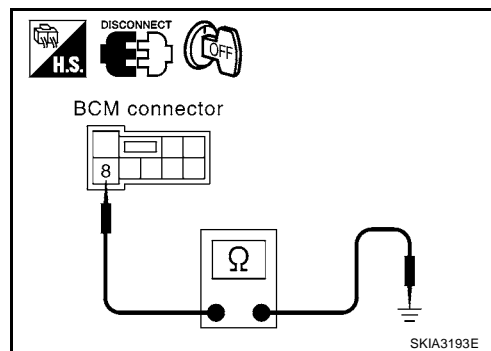
Check continuity between BCM harness connector and ground.

Terminals			Continuity
(+)		(-)	
Connector	Terminal (wire color)		
E105	8 (B)	Ground	Yes

OK or NG

OK >> INSPECTION END.

NG >> Check harness ground circuit.



CONSULT-II Functions

AKS0032V

CONSULT-II executes the following functions by combining data reception and command transmission via the communication line from BCM. Work support, self-diagnosis, data monitor, and active test display.

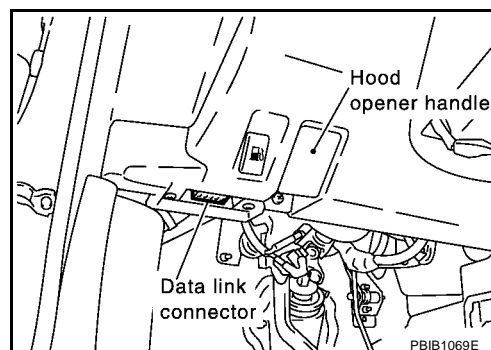
BCM diagnosis position	Check item, Diagnosis mode	Description
Wiper	Data monitor	Displays BCM input data in real time.
	Active test	Device operation can be checked by applying a drive signal to device.

CONSULT-II OPERATION

CAUTION:

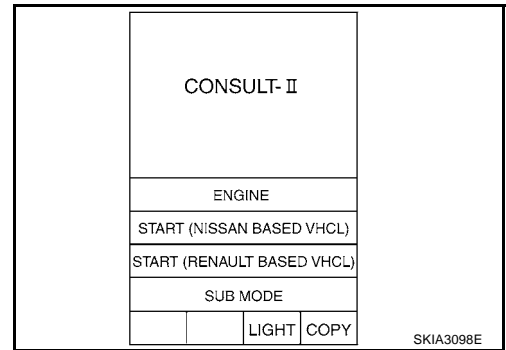
If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.

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

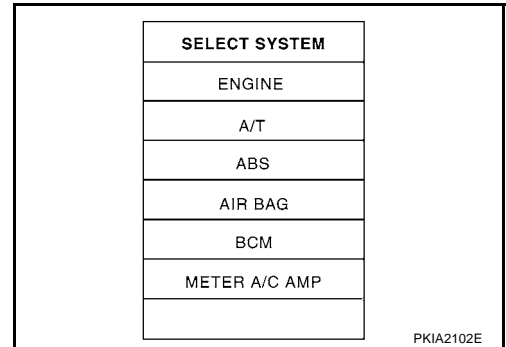


REAR WIPER AND WASHER SYSTEM

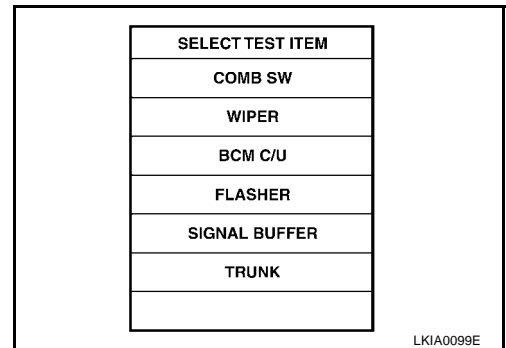
2. Touch "START(NISSAN BASED VHCL)".



3. Touch "BCM".
If "BCM" is not indicated, go to [GI-40, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#) .



4. Touch "WIPER".



DATA MONITOR

Operation Procedure

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

All signals	Monitors all the items.
Selection from menu	Selects and monitors the individual item selected.

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

REAR WIPER AND WASHER SYSTEM

Display Item List

Monitor item name "operation or unit"	Contents
IGN ON SW "ON/OFF"	Displays "IGN Position (ON)/OFF, ACC Position (OFF)" status as judged from ignition switch signal.
FR WIPER INT "ON/OFF"	Displays "Front Wiper INT (ON)/Other (OFF)" status as judged from wiper switch signal.
FR WIPER LOW "ON/OFF"	Displays "Front Wiper LOW (ON)/Other (OFF)" status as judged from wiper switch signal.
FR WIPER HI "ON/OFF"	Displays "Front Wiper HI (ON)/Other (OFF)" status as judged from wiper switch signal.
FR WASHER SW "ON/OFF"	Displays "Front Washer Switch (ON)/Other (OFF)" status as judged from wiper switch signal.
INT VOLUME (1 - 7)	Displays intermittent operation dial position setting (1 - 7) as judged from wiper switch signal.
VHCL SPEED SEN "ON/OFF"	Displays "Driving (ON)/Stopped (OFF)" status as judged from vehicle speed signal.
FR WIPER STOP "ON/OFF"	Displays "Stopped (ON)/Operating (OFF)" status as judged from the auto-stop signal.
RR WIPER INT "ON/OFF"	Displays "rear Wiper INT (ON)/Other (OFF)" status as judged from wiper switch signal.
RR WIPER ON "ON/OFF"	Displays "rear Wiper (ON)/Other (OFF)" status as judged from wiper switch signal.
RR WASHER SW "ON/OFF"	Displays "rear Washer Switch (ON)/Other (OFF)" status as judged from wiper switch signal.
RR WIPER STOP "ON/OFF"	Displays "Stopped (OFF)/Operating (ON)" status as judged from the auto-stop signal.

ACTIVE TEST

Operation Procedure

1. Touch "WIPERS" on the "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on the "SELECT DIAG MODE" screen.
3. Touch item to be tested and check operation of the selected item.
4. During the operation check, touching "BACK" deactivates the operation.

Display Item List

Test item	Display on CONSULT-II screen	Description
Front wiper HI output	FR WIPER (HI)	Front wiper HI can be operated by any ON-OFF operation.
Front wiper LO output	FR WIPER (LO)	Front wiper LO can be operated by any ON-OFF operation.
Front wiper INT output	FR WIPER (INT)	Front wiper INT can be operated by any ON-OFF operation.
Rear wiper output	RR WIPER	Rear wiper can be operated by any ON-OFF operation.

Rear Wiper Does Not Operate

AKS0032W

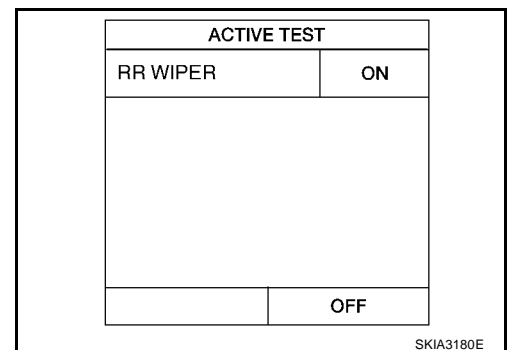
1. BCM TO REAR WIPER INSPECTION

1. Select "BCM" on CONSULT-II. Select "RR WIPER" active test.
2. Verify that rear wiper operates.

Wiper operation should operate

OK or NG

- OK >> GO TO 6.
NG >> GO TO 2.



SKIA3180E

REAR WIPER AND WASHER SYSTEM

2. CHECK REAR WIPER MOTOR CIRCUIT

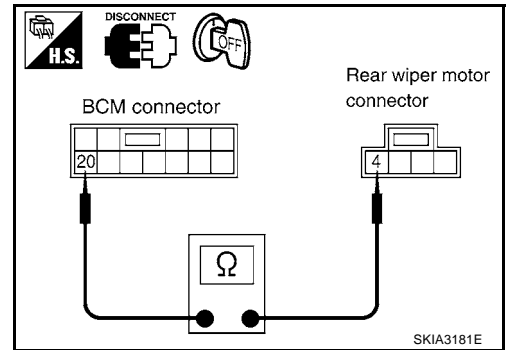
1. Disconnect BCM connector and rear wiper motor connector.
2. Check continuity between BCM harness connector B4 terminal 20(SB) and rear wiper motor harness connector D106 terminal 4(SB).

Continuity should exist

OK or NO

OK >> GO TO 3.

NO >> Repair harness or connector.



3. CHECK REAR WIPER MOTOR SHORT CIRCUIT

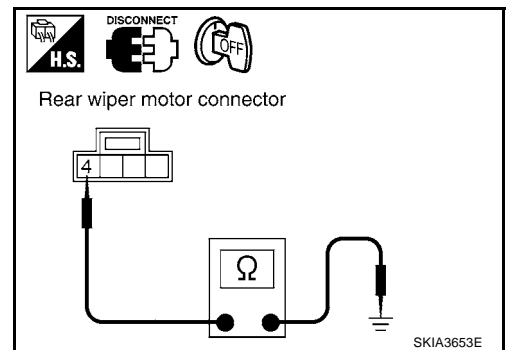
Check continuity between rear wiper motor harness connector D106 terminal 4(SB) and ground.

Continuity should not exist

OK or NG

OK >> GO TO 4.

NG >> After repairing harness, be sure to disconnect battery negative cable, and then reconnect it.



4. GROUND CIRCUIT CHECK

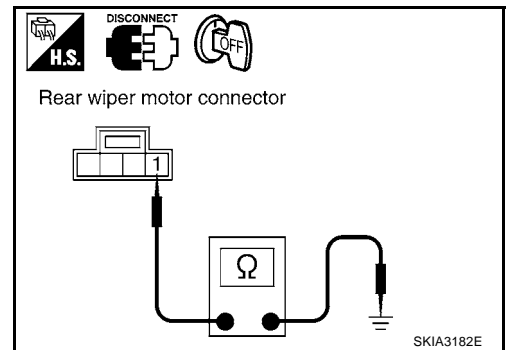
Check continuity between rear wiper motor harness connector D106 terminal 1(B) and ground.

Continuity should exist

OK or NG

OK >> GO TO 5.

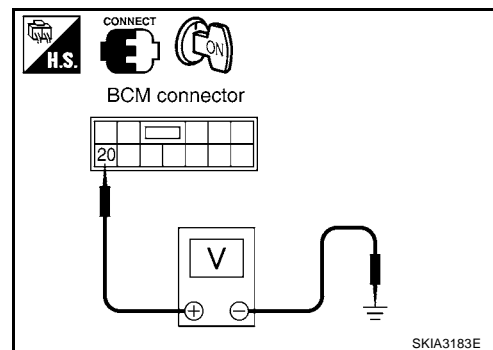
NG >> Repair harness or connector.



REAR WIPER AND WASHER SYSTEM

5. CHECK REAR WIPER OPERATING

1. Connect BCM connector and rear wiper motor connector.
2. Select "BCM" on CONSULT-II. Select "RR WIPER" active test rear wiper is operated.
3. When rear wiper is operated, check voltage between BCM harness connector B4 terminal 20(SB) and ground.



Terminals				Voltage
(+)		(-)	Condition	
Connector	Terminal (wire color)	Ground		
B4	20 (SB)			
			Stopped	Approx. 0V
		ON operation	Battery voltage	

OK or NG

- OK >> Replace rear wiper motor.
NG >> Replace BCM.

6. COMBINATION SWITCH TO BCM INSPECTION

Select BCM on CONSULT-II. With "WIPER" data monitor, check that "RR WIPER INT", "RR WIPER ON" turn ON-OFF according to operation of wiper switch.

When wiper switch is INT position :RR WIPER INT ON

When wiper switch is ON position :RR WIPER ON ON

OK or NG

- OK >> Replace BCM.
NG >> Replace wiper switch.

DATA MONITOR	
MONITOR	
FR WIPER HI	OFF
FR WASHER SW	OFF
INT VOLUME	7
VHCL SPEED SEN	OFF
RR WIPER STOP	ON
RR WIPER INT	OFF
RR WIPER ON	OFF
RR WASHER SW	OFF
RR WIPER STOP	OFF

SKIA3184E

Rear Wiper Stop Position Is Incorrect

1. COMBINATION SWITCH TO BCM(1) INSPECTION

Select BCM on CONSULT-II. With "WIPER" data monitor, check that "RR WIPER STOP" turns ON-OFF according to wiper operation.

When wiper switch is OFF :RR WIPER STOP OFF

OK or NG

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

DATA MONITOR	
MONITOR	
FR WIPER HI	OFF
FR WASHER SW	OFF
INT VOLUME	7
VHCL SPEED SEN	OFF
RR WIPER STOP	ON
RR WIPER INT	OFF
RR WIPER ON	OFF
RR WASHER SW	OFF
RR WIPER STOP	OFF

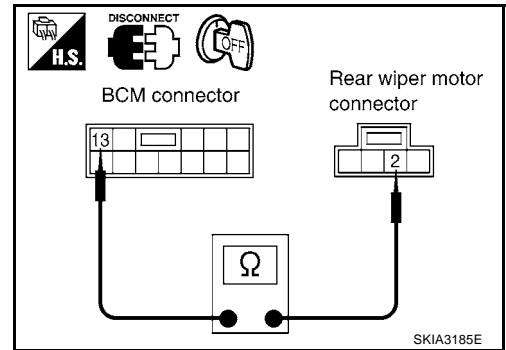
SKIA3184E

REAR WIPER AND WASHER SYSTEM

2. BCM TO REAR WIPER MOTOR(2) INSPECTION

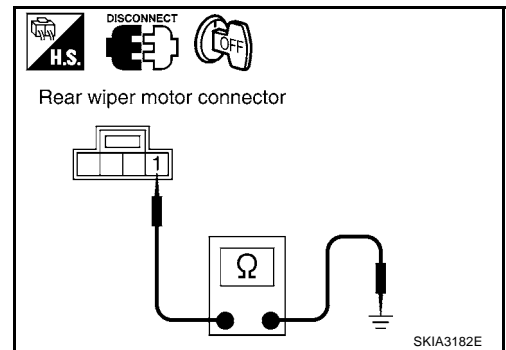
1. Disconnect BCM connector and rear wiper motor connector.
2. Check continuity between BCM harness connector B4 terminal 13(OR) and rear wiper motor harness connector D106 terminal 2(OR).

Continuity should exist



3. Check continuity between rear wiper motor harness connector D106 terminal 1(B) and ground.

Continuity should exist



OK or NG

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

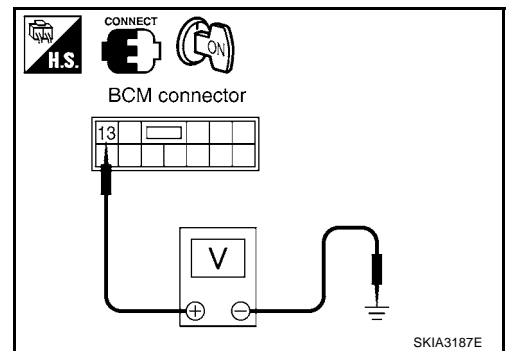
3. AUTO STOP SIGNAL CHECK

1. Connect BCM connector.
2. While rear wiper motor is stopped and while operating, measure voltage between BCM harness connector B4 terminal 13(OR) and ground.

Terminals				Voltage
(+)		(-)	Rear wiper condition	
Connector	Terminal (wire color)			
B4	13 (OR)	Ground	ON operating	Approx. 0V
			stopped	Battery voltage

OK or NG

- OK >> Replace BCM.
NG >> Replace rear wiper motor.



Only Rear Wiper Does Not Operate

AKS0032Y

1. COMBINATION SWITCH TO BCM INSPECTION

Select BCM on CONSULT-II. With "WIPER" data monitor, check that "RR WIPER ON" turns ON-OFF according to operation of wiper switch.

When wiper switch is ON position :RR WIPER ON ON

OK or NG

- OK >> Replace BCM.
NG >> Replace wiper switch.

DATA MONITOR	
MONITOR	
FR WIPER HI	OFF
FR WASHER SW	OFF
INT VOLUME	7
VHCL SPEED SEN	OFF
RR WIPER STOP	ON
RR WIPER INT	OFF
RR WIPER ON	OFF
RR WASHER SW	OFF
RR WIPER STOP	OFF

SKIA3184E

REAR WIPER AND WASHER SYSTEM

Only Rear Wiper Intermittent Does Not Operate

AKS00330

1. COMBINATION SWITCH TO BCM INSPECTION

Select BCM on CONSULT-II. With "WIPER" data monitor, check that "RR WIPER INT" turns ON-OFF according to operation of wiper switch.

When wiper switch is INT position :RR WIPER INT ON

OK or NG

- OK >> Replace BCM.
- NG >> Replace wiper switch.

DATA MONITOR	
MONITOR	
FR WIPER HI	OFF
FR WASHER SW	OFF
INT VOLUME	7
VHCL SPEED SEN	OFF
RR WIPER STOP	ON
RR WIPER INT	OFF
RR WIPER ON	OFF
RR WASHER SW	OFF
RR WIPER STOP	OFF

SKIA3184E

Wiper Does Not Wipe When Rear Washer Operates

AKS00332

1. COMBINATION SWITCH TO BCM INSPECTION

Select BCM on CONSULT-II. With "WIPER" data monitor, check that "RR WASHER SW" turns ON-OFF according to operation of rear washer switch.

When wiper switch is WASHER :RR WASHER ON position

OK or NG

- OK >> Replace BCM.
- NG >> Replace wiper switch.

DATA MONITOR	
MONITOR	
FR WIPER HI	OFF
FR WASHER SW	OFF
INT VOLUME	7
VHCL SPEED SEN	OFF
RR WIPER STOP	ON
RR WIPER INT	OFF
RR WIPER ON	OFF
RR WASHER SW	OFF
RR WIPER STOP	OFF

SKIA3184E

Removal and Installation for Rear Wiper Arm, Adjustment for Wiper Arms Stop Location

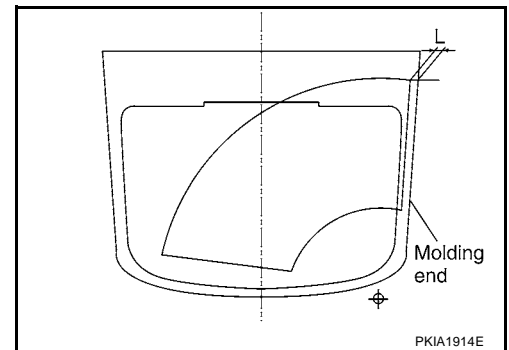
AKS00333

1. Prior to wiper arm installation, turn on wiper switch to operate 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 "L" immediately before tightening nut.
3. Eject washer fluid. Turn on wiper switch to operate wiper motor and then turn it "OFF".
4. Ensure that wiper blades stop within clearance "L".

Clearance "L" : 22.5 - 37.5 mm (0.886 - 1.476 in)

- Tighten wiper arm nuts to specified torque.

**Rear wiper : 12.7 - 17.6 N-m
(1.3 - 1.7 kg-m, 10 - 12 ft-lb)**



WW

L

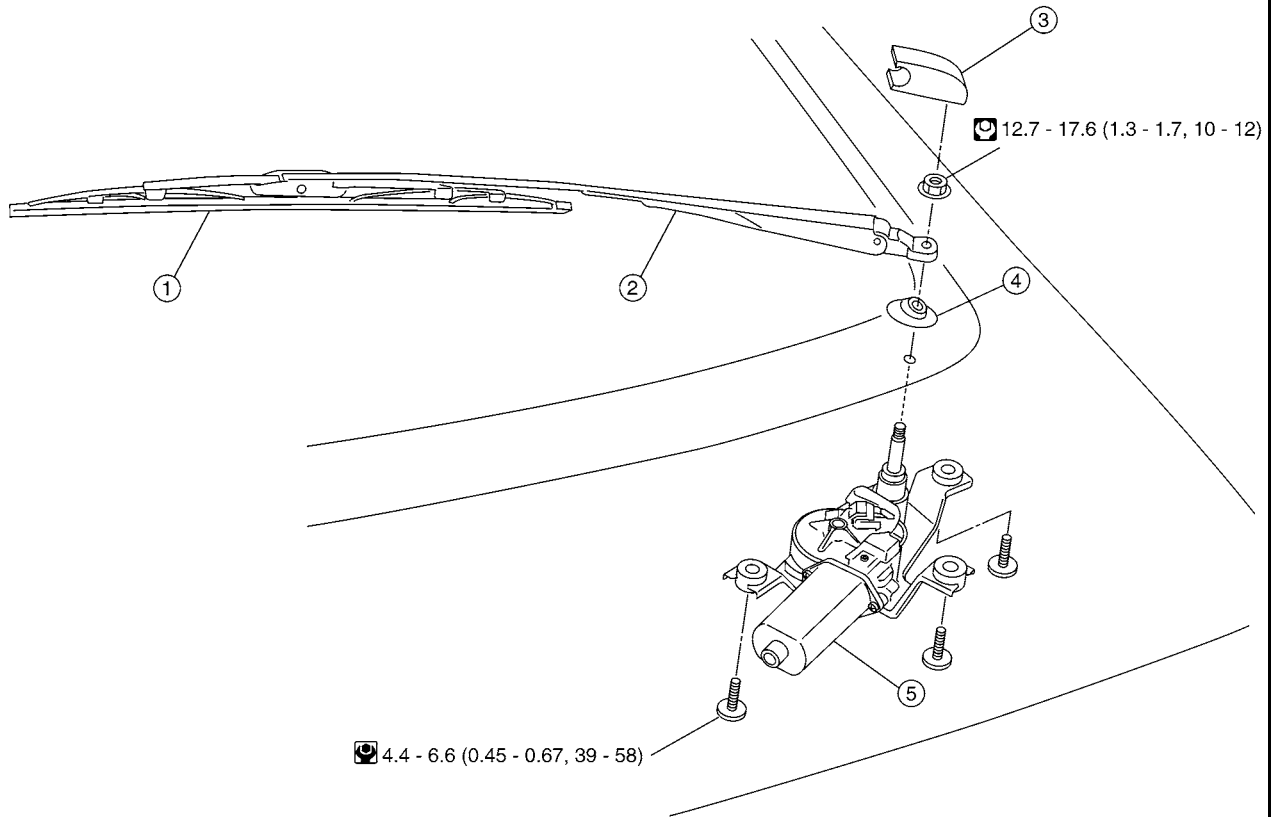
M

REAR WIPER AND WASHER SYSTEM

Removal and Installation of Rear Wiper Motor

AKS00334

SEC.287



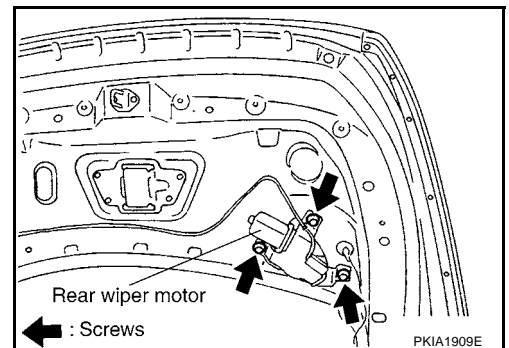
:N·m(kg-m ,ft-lb)
 :N·m(kg-m ,in-lb)

PKIA1908E

- | | | |
|----------------|---------------------|--------------------|
| 1. Wiper blade | 2. Wiper arm | 3. Cover wiper arm |
| 4. Pivot cap | 5. Rear wiper motor | |

REMOVAL

1. Operate wiper motor, and stop it at the auto stop position.
2. Remove cover wiper arm.
3. Remove wiper arm nut, and remove wiper arm from vehicle.
4. Remove pivot cap.
5. Remove back door finisher lower. Refer to [EI-36, "BACK DOOR"](#) in "EI" section.
6. Remove wiper motor connector.
7. Disconnect rear wiper motor mounting screws and remove rear wiper motor.

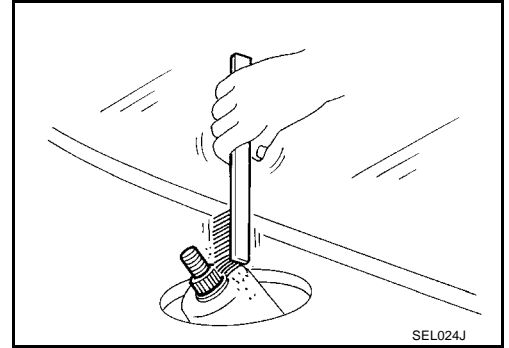


PKIA1909E

REAR WIPER AND WASHER SYSTEM

INSTALLATION

1. Clean up the pivot area as illustrated. This will reduce possibility of wiper arm looseness.
2. Attach pivot cap.
3. Install rear wiper motor to the vehicle.
4. Connect rear wiper motor to the connector. Turn rear wiper switch ON to operate rear wiper motor, then turn wiper switch OFF (auto stop).
5. Install back door finisher lower. Refer to [EI-36, "BACK DOOR"](#) in "EI" section.
6. Attach wiper arm.



Rear wiper motor mounting screw



: 4.4 - 6.6 N·m (0.45 - 0.67 kg-m, 39 - 58 in-lb)

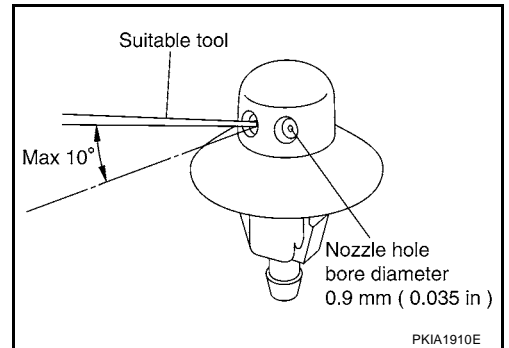
CAUTION:

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

Washer Nozzle Adjustment

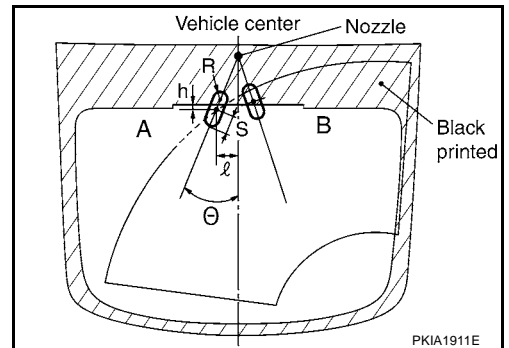
- Adjust washer nozzle with suitable tool as shown in the figure.

Adjustable range : $\pm 10^\circ$ (In any direction)



Unit : mm (in)

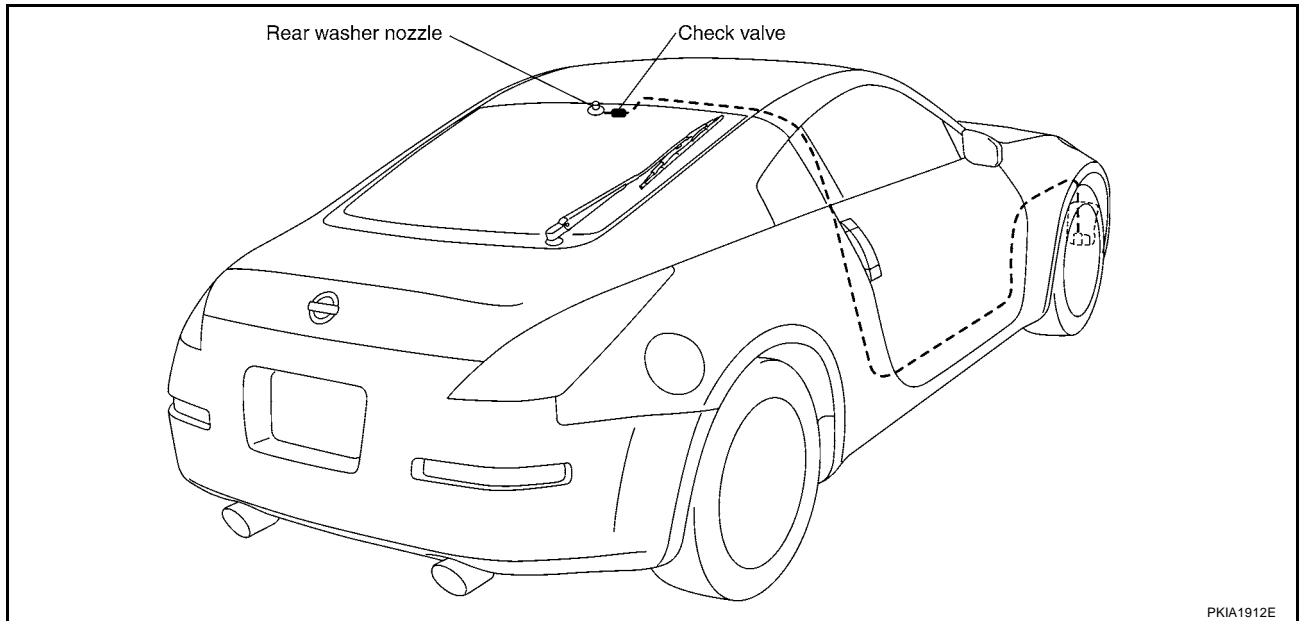
Spray position	h (height)	ℓ (width)	S	θ°	Spray position range
A	2	62	45	20	30x80
B	-17	40	45	17.5	30x80



REAR WIPER AND WASHER SYSTEM

Washer Tube Layout

AKS00337

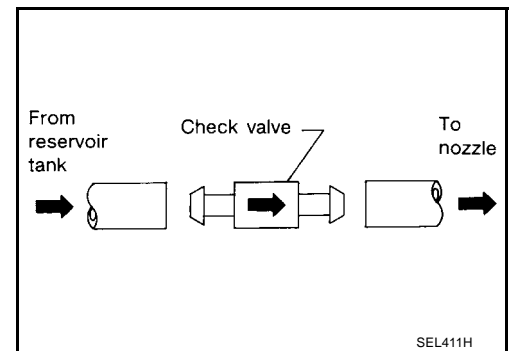


PKIA1912E

Check Valve

AKS0033A

- A check valve is provided in the washer fluid line. Be careful not to connect check valve to washer tube in the wrong direction.



SEL411H

Removal and Installation for Rear Wiper and Washer Switch

AKS0033B

Refer to [WW-52, "Removal and Installation for Rear Wiper and Washer Switch"](#) .

Removal and Installation for Washer Tank

AKS0033C

Refer to [WW-52, "Removal and Installation for Washer Tank"](#) .

Removal and Installation for Washer Pump

AKS0033D

Refer to [WW-52, "Removal and Installation for Washer Pump"](#) .

POWER SOCKET

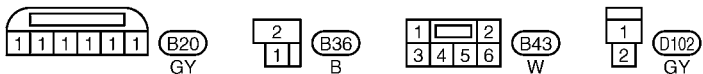
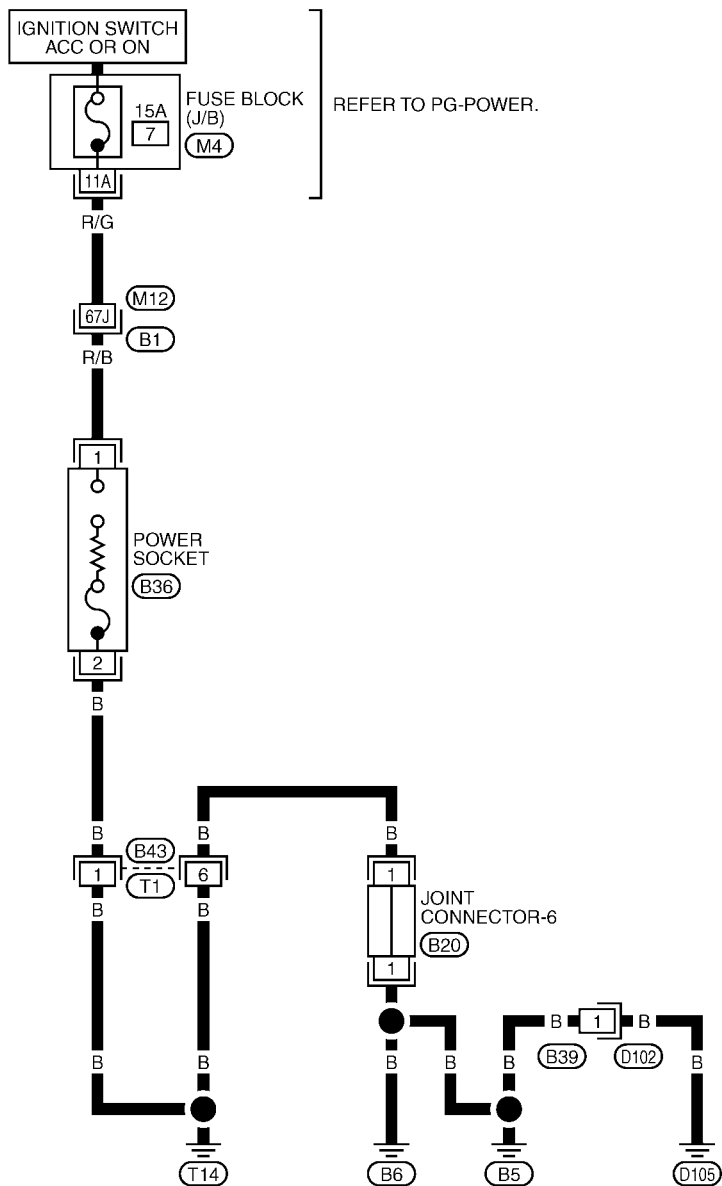
POWER SOCKET

PFP:253A2

Wiring Diagram — P/SCKT —

AKS0033M

WW-P/SCKT-01



REFER TO THE FOLLOWING.

(B1) -SUPER MULTIPLE JUNCTION (SMJ)

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

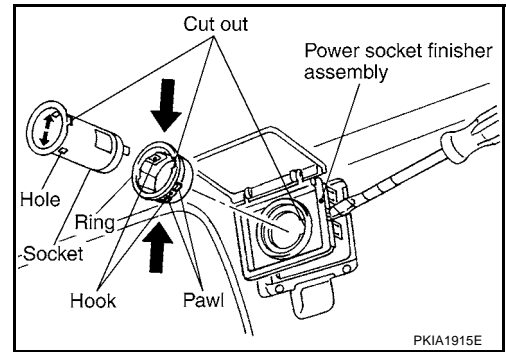
POWER SOCKET

Removal and Installation

AKS0033N

REMOVAL

1. Remove the power socket finisher assembly using a clip driver or a suitable tool.
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 power socket finisher while pressing pawls.



INSTALLATION

Instal in reverse order of removal.

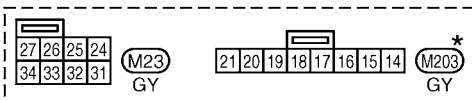
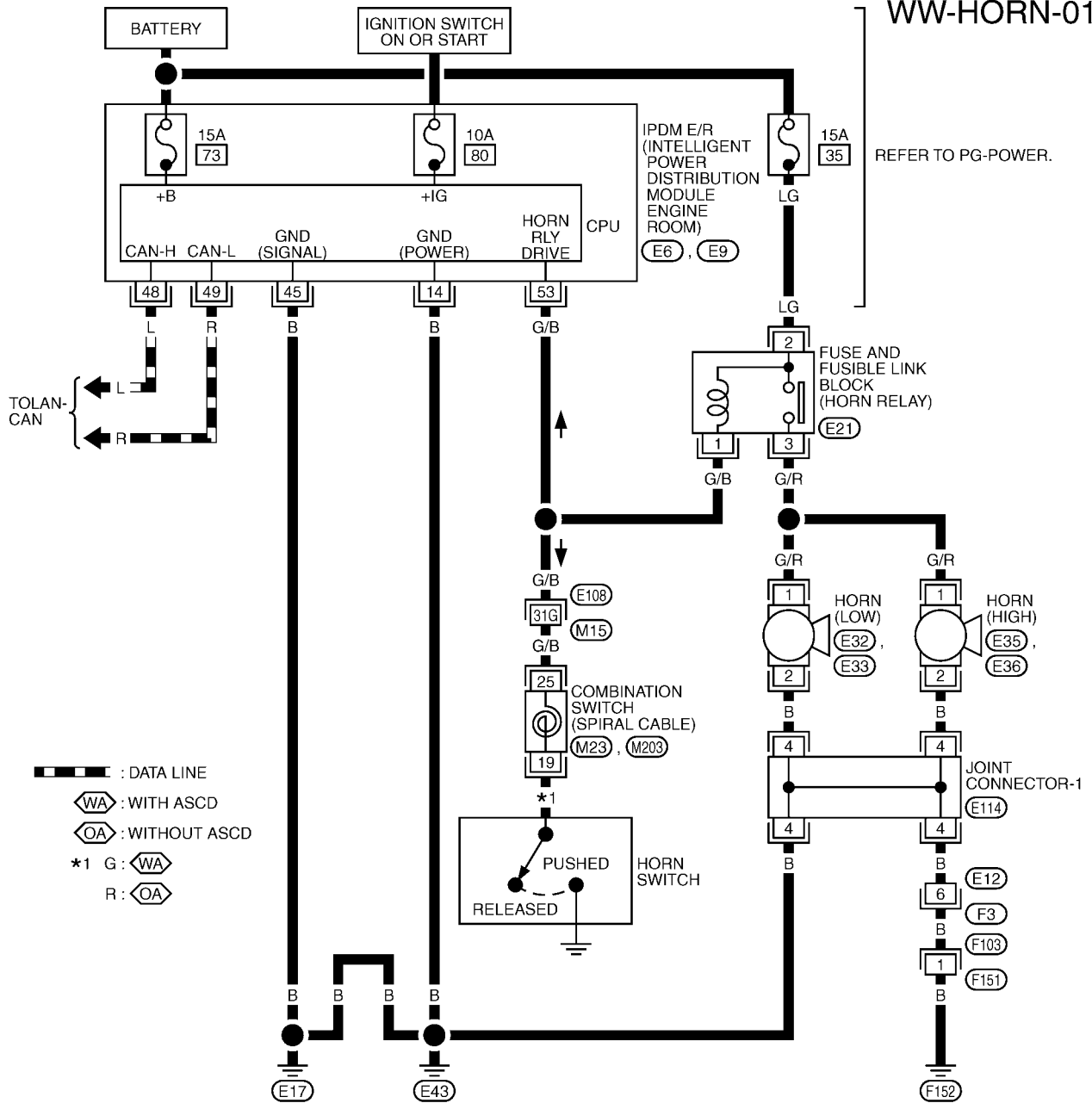
HORN

PFP:25610

Wiring Diagram — HORN —

AKS00020

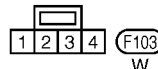
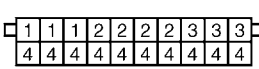
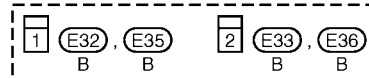
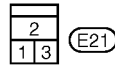
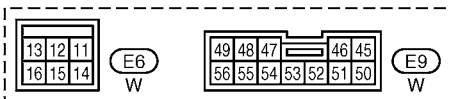
WW-HORN-01



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

REFER TO THE FOLLOWING.

E108 -SUPER MULTIPLE JUNCTION (SMJ)



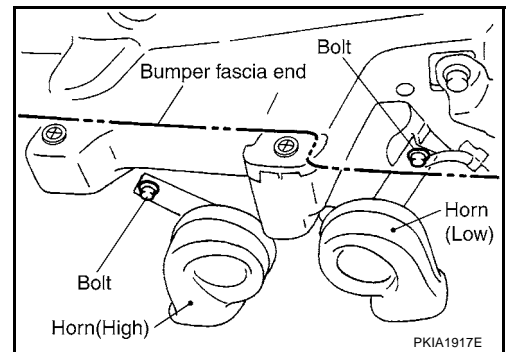
HORN

Removal and Installation

REMOVAL

1. Disconnect all horn connectors.
2. Remove horn mounting bolt and remove horn from vehicle.

AKS000Z1



INSTALLATION

Tighten horn bolt to specified torque.

Horn mounting bolt



: 4.4 - 6.6 N·m (0.45 - 0.67 kg·m, 39 - 58 in-lb)