SECTION WW
WIPER, WASHER & HORN

CONTENTS

PRECAUTION

PFP:00011

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

AKS007KQ

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

AKS0056N

When you read Wiring diagrams, refer to the following:

- Refer to GI-15, "How to Read Wiring Diagrams" .
- Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" for power distribution circuit.

When you perform trouble diagnosis, refer to the following:

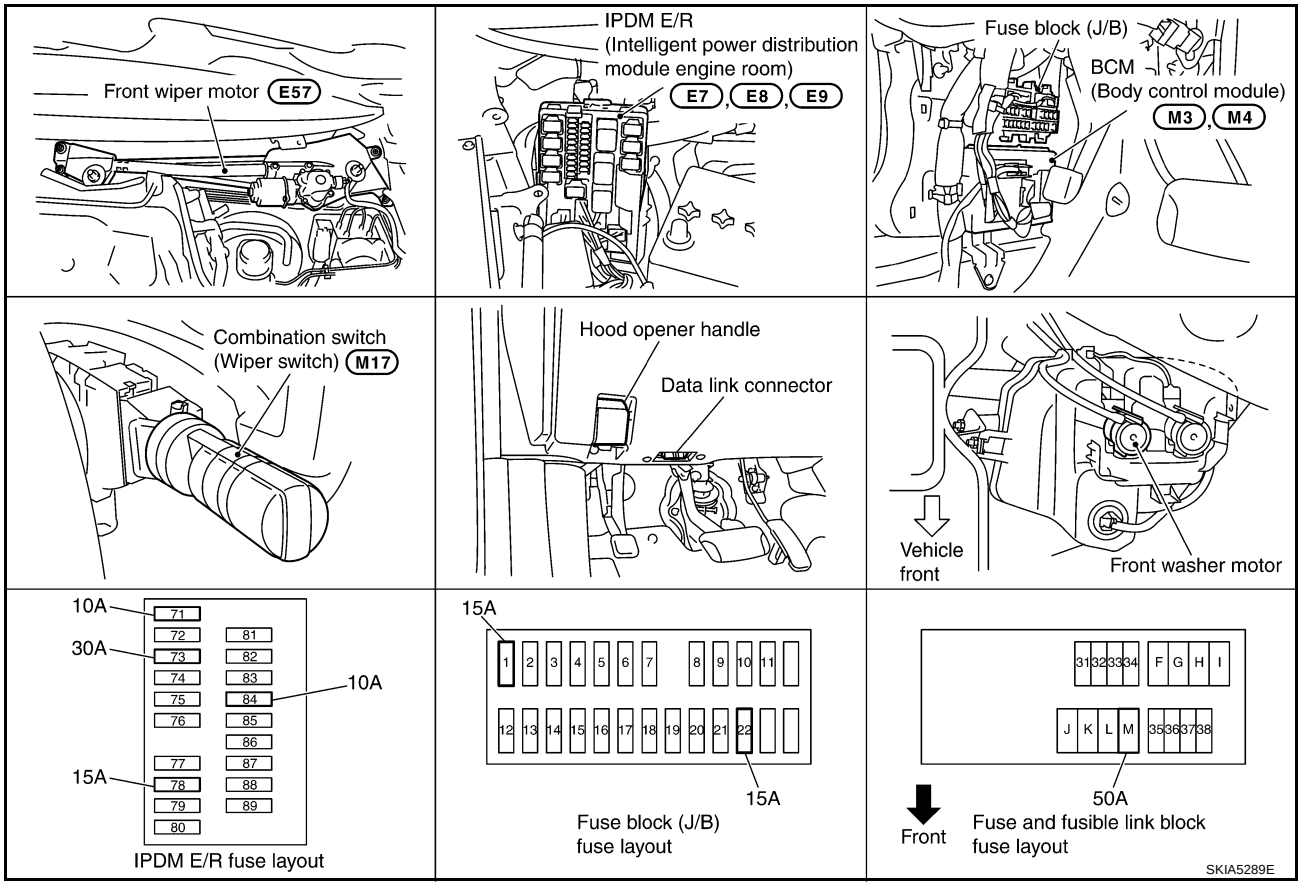
- Refer to GI-11, "How to Follow Trouble Diagnoses" .
- Refer to GI-27, "How to Perform Efficient Diagnosis for an Electrical Incident" .

FRONT WIPER AND WASHER SYSTEM

PFP:28810

Components Parts and Harness Connector Location

AKS0056O



System Description

AKS0056P

- 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 50 A fusible link (letter M, located in fusible link block)
- to BCM terminal 55,
- through 15 A fuse [No. 22, located in fuse block (J/B)]
- to BCM terminal 42,
- through 30 A fuse [No. 73, located in IPDM E/R (intelligent power distribution module engine room)]
- to front wiper relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 15 A fuse [No. 78, located in IPDM E/R (intelligent power distribution module engine room)]
- through 10 A fuse [No. 71, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)].

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

- through 15 A fuse [No. 1, located in fuse block (J/B)]
- to BCM terminal 38 and
- through ignition relay [located in IPDM E/R (intelligent power distribution module engine room)]
- to front wiper relay [located in IPDM E/R (intelligent power distribution module engine room)] and
- to front wiper high relay [located in IPDM E/R (intelligent power distribution module engine room)]

- through 10 A fuse [No. 84, located in IPDM E/R (intelligent power distribution module engine room)]
- through IPDM E/R (intelligent power distribution module engine room) terminal 44
- to front washer motor terminal 1.

Ground is supplied

- to BCM terminals 49 and 52
- through grounds M35, M45 and M85,
- to IPDM E/R terminals 38 and 60
- through grounds E21, E50 and E51,
- to combination switch (wiper switch) terminal 12
- through grounds M35, M45 and M85.

LOW SPEED WIPER OPERATION

When wiper switch is in LO position, BCM detects low speed wiper ON signal by BCM wiper switch reading function.
BCM sends front wiper request signal (LO) with CAN communication line

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

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

- to front wiper motor terminal 1
- through IPDM E/R terminal 21 and front wiper relay and front wiper HI relay.

Ground is supplied

- to front wiper motor terminal 2
- through grounds E21, E50 and E51.

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

HI SPEED WIPER OPERATION

When wiper switch is in HI position, BCM detects high speed wiper ON signal by BCM wiper switch reading function.
BCM sends front wiper request signal (HI) with CAN communication line

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

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

- to front wiper motor terminal 4
- through IPDM E/R terminal 31 and front wiper relay and front wiper HI relay.

Ground is supplied

- to front wiper motor terminal 2
- through grounds E21, E50 and E51.

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

INTERMITTENT OPERATION

Wiper intermittent operation delay interval is determined from a combination of 3 switches (intermittent operation dial position 1, intermittent operation dial position 2, and intermittent operation dial position 3) and vehicle speed signal.
During each intermittent operation delay interval, BCM sends front wiper request signal to IPDM E/R.

Wiper Dial Position Setting

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

Example: For wiper dial position 1...
Using combination switch reading function, BCM detects ON/OFF status of intermittent operation dial positions 1, 2, and 3.
When combination switch status is as listed below, BCM determines that it is wiper dial position 1.

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

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

AUTO STOP OPERATION

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

- from IPDM E/R terminal 21
- to front wiper motor terminal 1, in order to continue wiper motor operation at low speed.

When wiper arms reach base of windshield, front wiper motor terminals 5 and 2 are connected,
and Ground is supplied

- to IPDM E/R terminal 32
- through front wiper motor terminals 5 and 2
- through grounds E21, E50 and E51.

Then the IPDM E/R sends auto stop operation signal to BCM with CAN communication line.
When BCM receives auto-stop operation signal, BCM sends wiper stop signal to IPDM E/R with CAN communication line.
IPDM E/R stops wiper motor. Wiper motor will then stop wiper arms at the STOP position.

WASHER OPERATION

When wiper switch is in front wiper washer position with ignition switch on, BCM detects front wiper switch is on the washer position by BCM wiper switch reading function (Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION"), combination switch (wiper switch) ground is supplied

- to front washer motor terminal 2
- through combination switch (wiper switch) terminal 11
- to combination switch (wiper switch) terminal 12
- through grounds M35, M45 and M85

With ground supplied, front washer motor is operated.
When BCM detects that front washer motor has operated for 0.4 seconds or linger, 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, IPDM E/R remains in steady unit signals are received.

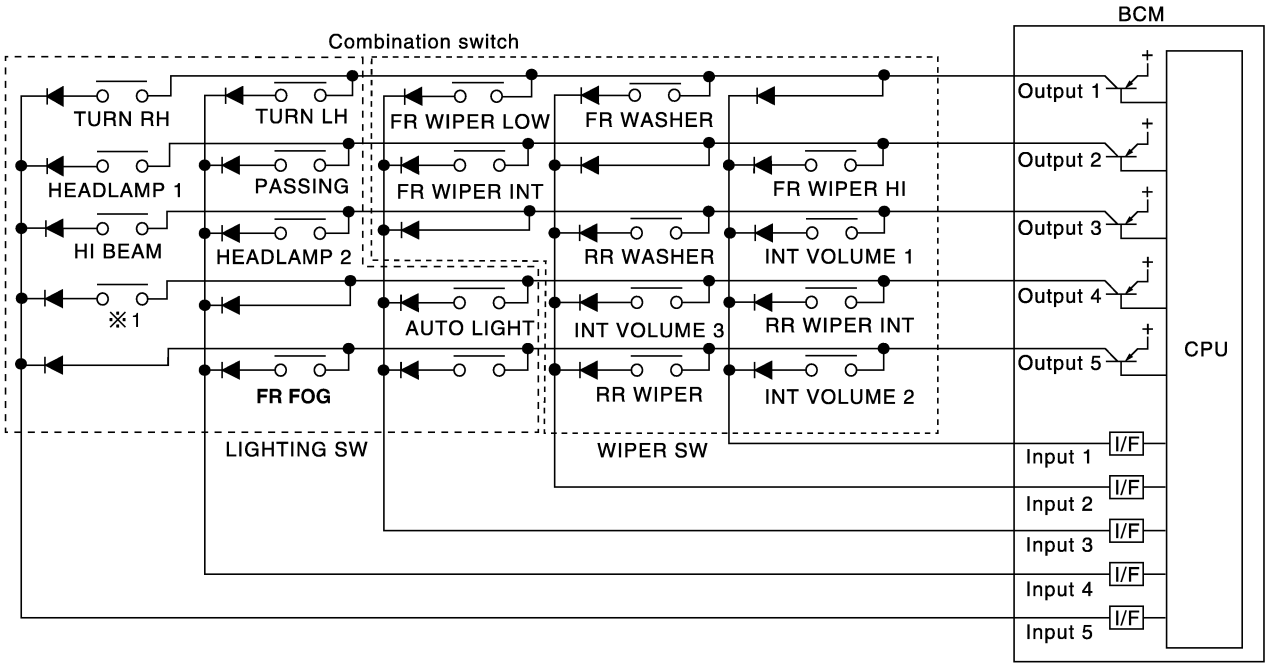
COMBINATION SWITCH READING FUNCTION

Description

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

Operation Description

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



※1 : LIGHTING SWITCH 1ST POSITION

SKIA4958E

BCM - Operation Table of Combination Switches

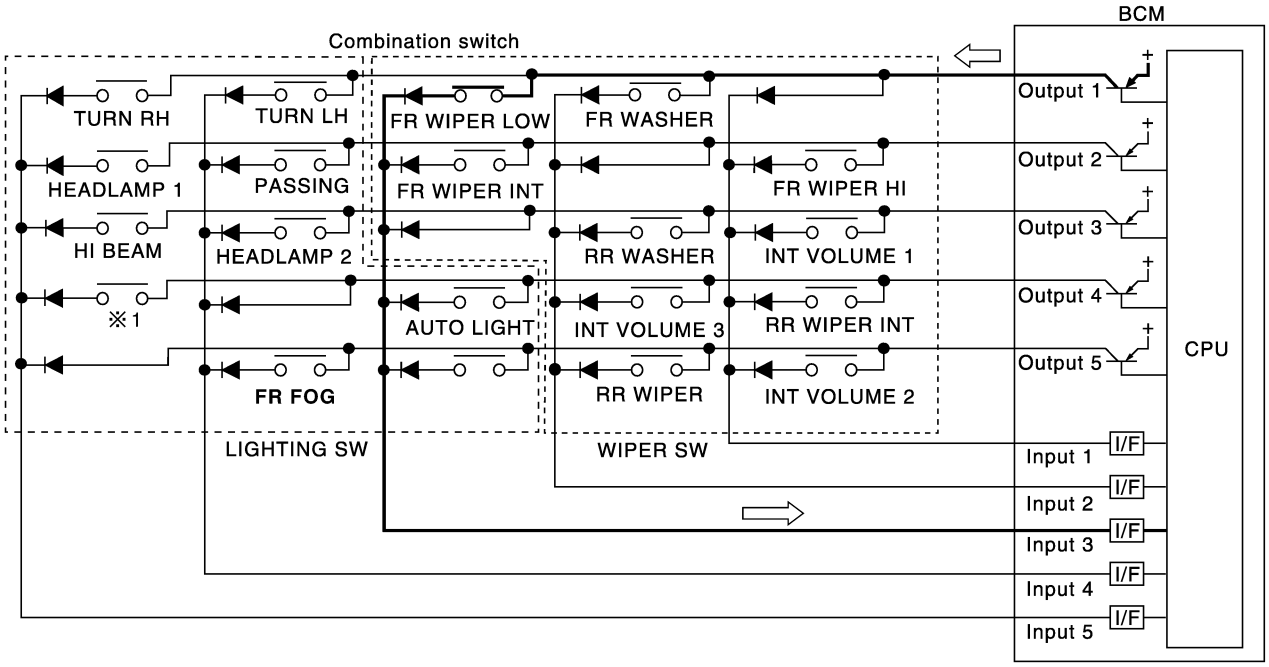
- BCM reads operation status of combination switch using combinations shown in table below.

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

SKIA4959E

Sample Operation: (When Wiper Switch Turned ON)

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



※1 : LIGHTING SWITCH 1ST POSITION

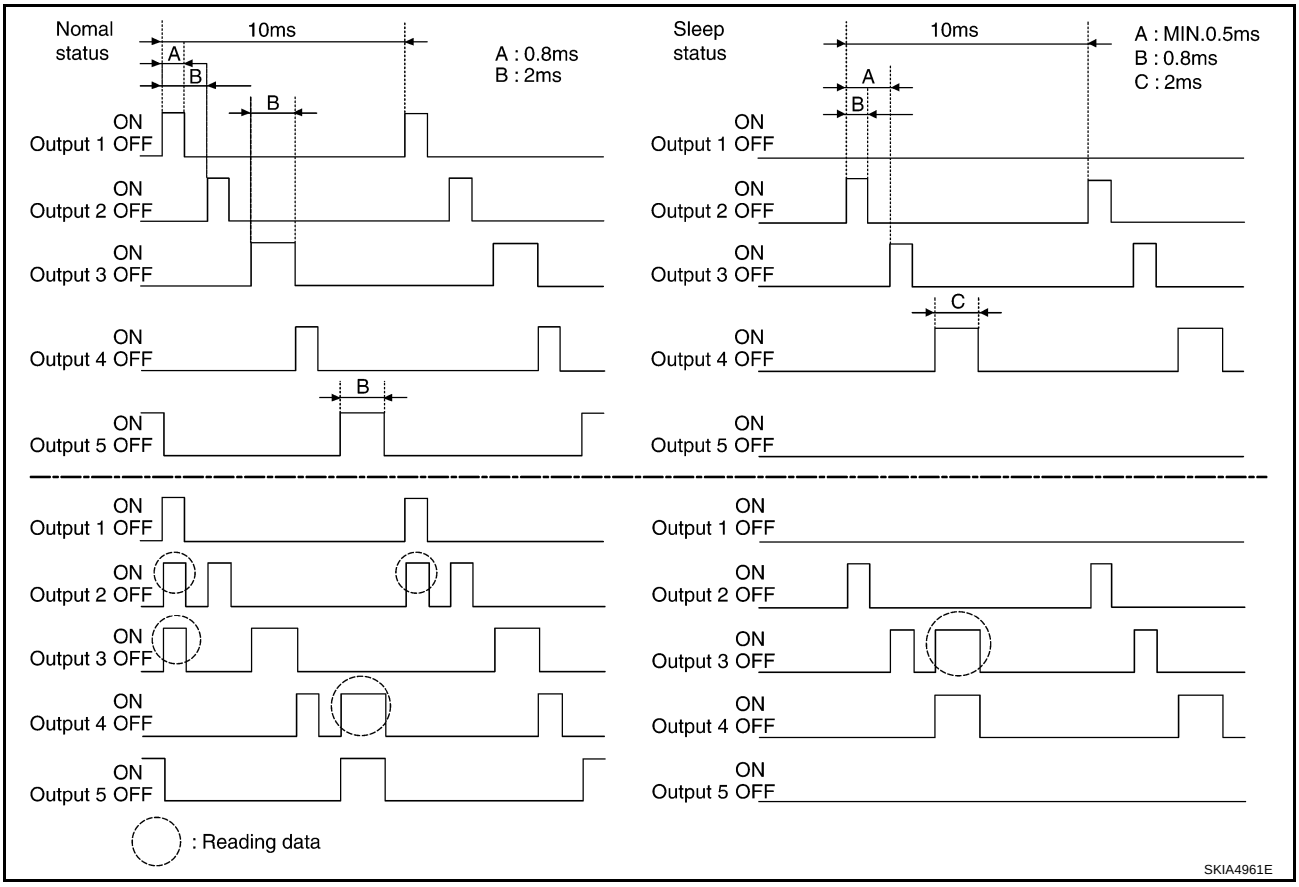
SKIA5290E

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

Operation Mode

Combination switch reading function has operation modes shown below.

1. Normal status
- When BCM is not in sleep status, OUTPUT terminals (1-5) each turn ON-OFF every 10 ms.
2. Sleep status
- When BCM is in sleep status, transistors of OUTPUT (1 and 5) stop the output, and BCM enters low current consumption mode. OUTPUT (2, 3, and 4) turn ON-OFF every 10 ms, and only input from light switch system is accepted.



CAN Communication System Description

AKS0056Q

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

CAN Communication Unit

AKS0080E

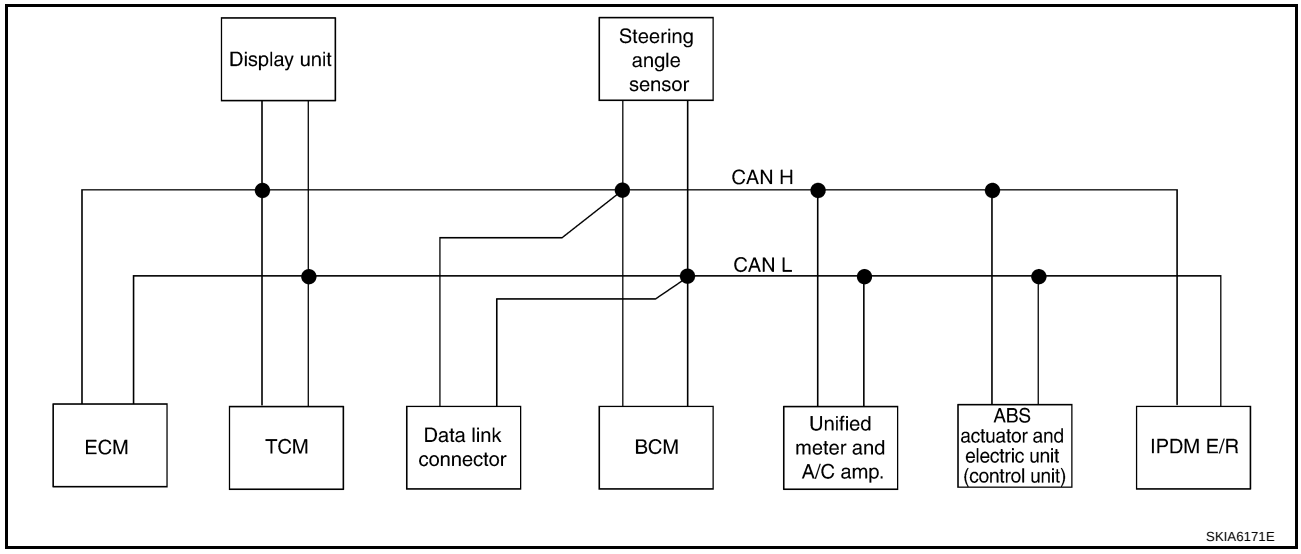
Body type	Wagon					
Axle	2WD			AWD		
Engine	VQ35DE			VQ35DE/VK45DE		
Transmission	A/T					
Brake control	VDC					
Navigation system			×			×
Low tire pressure warning system			×			×
ICC system			×			×
Intelligent Key system			×			×
Automatic drive positioner		×	×		×	×
CAN communication unit						
ECM	×	×	×	×	×	×
TCM	×	×	×	×	×	×
Display unit	×	×		×	×	
Display control unit			×			×
Low tire pressure warning control unit			×			×
AWD control unit				×	×	×
ICC unit			×			×
Intelligent Key unit			×			×
Data link connector	×	×	×	×	×	×
BCM	×	×	×	×	×	×
Steering angle sensor	×	×	×	×	×	×
Unified meter and A/C amp.	×	×	×	×	×	×
ICC sensor			×			×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×
Driver seat control unit		×	×		×	×
IPDM E/R	×	×	×	×	×	×
CAN communication type	WW-11, "TYPE 1/ TYPE2"		WW-14, "TYPE 3"	WW-18, "TYPE 4/ TYPE5"		WW-21, "TYPE 6"

×: Applicable

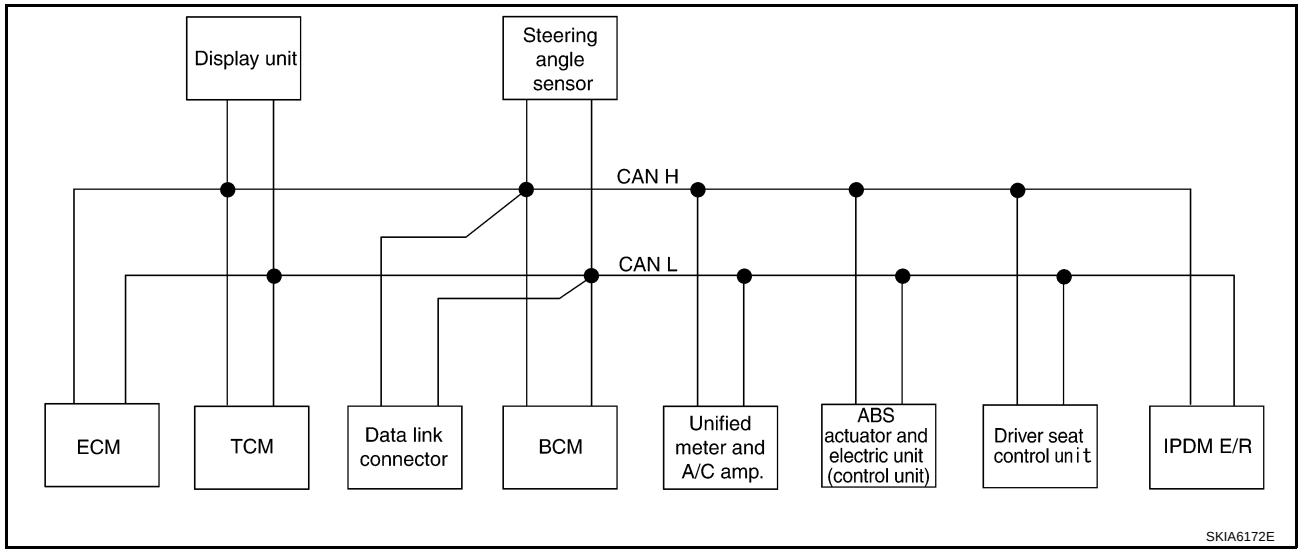
TYPE 1/TYPE2

System Diagram

- Type1



- Type2



Input/output Signal Chart

T: Transmit R: Receive

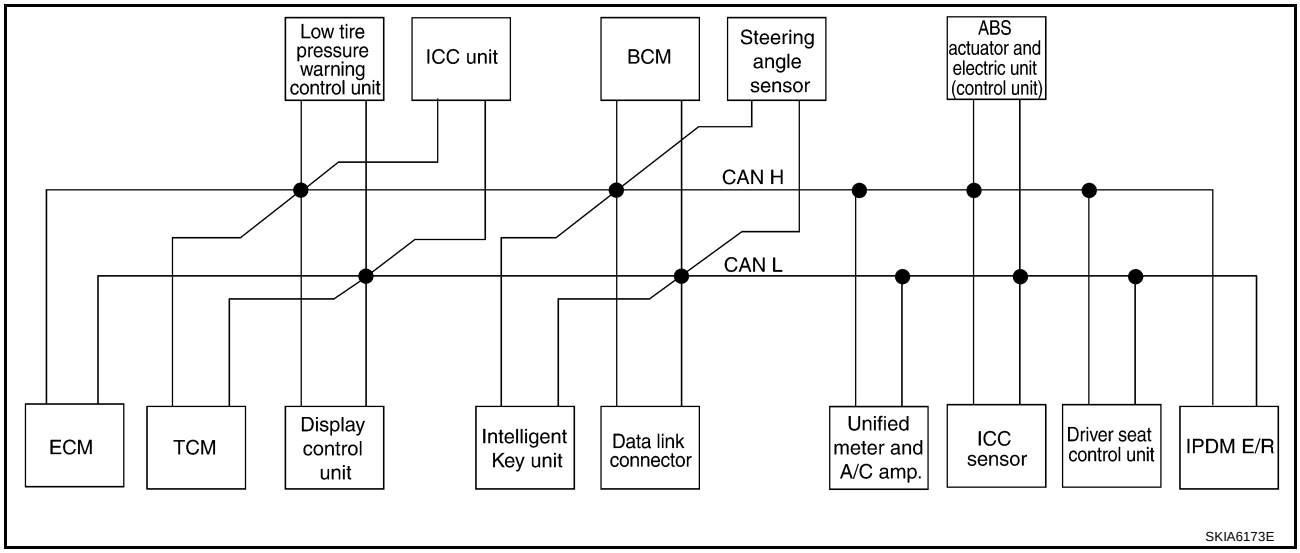
Signals	ECM	TCM	Dis-play unit	BCM	Steer-ing angle sensor	Unified meter and A/C amp.	ABS actua-tor and electric unit (con-trol unit)	Driver seat control unit	IPDM E/R
Engine speed signal	T	R	R			R	R		
Engine status signal	T			R					
Engine coolant temperature signal	T	R				R			
A/T self-diagnosis signal	R	T							
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							
Key switch signal				T				R	
Ignition switch signal				T				R	R
P range signal		T					R	R	
Stop lamp switch signal		R				T			
ABS operation signal	R						T		
TCS operation signal	R						T		
VDC operation signal	R						T		
Fuel consumption monitor signal	T		R			R			
Input shaft revolution signal	R	T							
Output shaft revolution signal	R	T							
A/C switch signal	R			T					
A/C compressor request signal	T								R
A/C relay status signal	R								T
A/C compressor feedback signal	T					R			
Blower fan motor switch signal	R			T					
A/C control signal			T			R			
			R			T			
Cooling fan speed request signal	T								R
Cooling fan speed signal	R								T
Position light request signal			R	T		R			R
Low beam request signal				T					R
Low beam status signal	R								T
High beam request signal				T		R			R
High beam status signal	R								T
Front fog light request signal				T					R
Day time running light request signal				T		R			
Turn LED burnout status signal				R		T			
Vehicle speed signal						R	T		
	R	R	R	R		T		R	
Sleep wake up signal				T		R		R	R

Signals	ECM	TCM	Dis-play unit	BCM	Steer-ing angle sensor	Unified meter and A/C amp.	ABS actua-tor and electric unit (con-trol unit)	Driver seat control unit	IPDM E/R
Door switch signal			R	T		R		R	R
Turn indicator signal				T		R			
Key fob ID signal				T				R	
Key fob door unlock signal				T				R	
Oil pressure switch signal				R					T
				T		R			
Buzzer output signal				T		R			
Fuel level sensor signal	R					T			
Fuel level low warning signal			R			T			
ASCD operation signal	T	R							
ASCD OD cancel request	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		R	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		
ABS warning lamp signal						R	T		
VDC OFF indicator lamp signal						R	T		
SLIP indicator lamp signal						R	T		
Brake warning lamp signal						R	T		
System setting signal			T	R				R	
A/T CHECK indicator lamp signal		T				R			
A/T position indicator lamp signal		T				R			
A/T shift schedule change demand signal		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			
Distance to empty signal			R			T			
Hand brake switch				R		T			

TYPE 3

System Diagram

- Type3



Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Engine speed signal	T	R	R		R				R		R		
Engine status signal	T						R						
Engine coolant temperature signal	T	R			R				R				
A/T self-diagnosis signal	R	T											
Accelerator pedal position signal	T	R			R						R		
Closed throttle position signal	T	R			R								
Wide open throttle position signal	T	R											
Battery voltage signal	T	R											
Key switch signal							T					R	
Ignition switch signal							T					R	R
P range signal		T			R						R	R	
Stop lamp switch signal		R							T				
ABS operation signal	R				R						T		
TCS operation signal	R				R						T		
VDC operation signal	R				R						T		
Fuel consumption monitor signal	T		R						R				

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Input shaft revolution signal	R	T			R								
Output shaft revolution signal	R	T			R								
A/C switch signal	R						T						
A/C compressor request signal	T												R
A/C relay status signal	R												T
A/C compressor feedback signal	T								R				
Blower fan motor switch signal	R						T						
A/C control signal			T						R				
			R						T				
Cooling fan speed signal	R												T
Position light request signal	R						T		R				R
Low beam request signal							T						R
Low beam status signal	R												T
High beam request signal							T		R				R
High beam status signal	R												T
Front fog light request signal							T						R
Day time running light request signal							T		R				
Turn LED burnout status signal							R		T				
Vehicle speed signal					R				R		T		
	R	R	R	R		R	R		T	R		R	
Sleep wake up signal							T		R			R	R
						T	R						
Door switch signal			R			R	T		R			R	R
Turn indicator signal							T		R				
Key fob ID signal							T					R	
Key fob door unlock signal							T					R	
Oil pressure switch signal							R						T
							T		R				
Buzzer output signal							T		R				
						T			R				
					T				R				

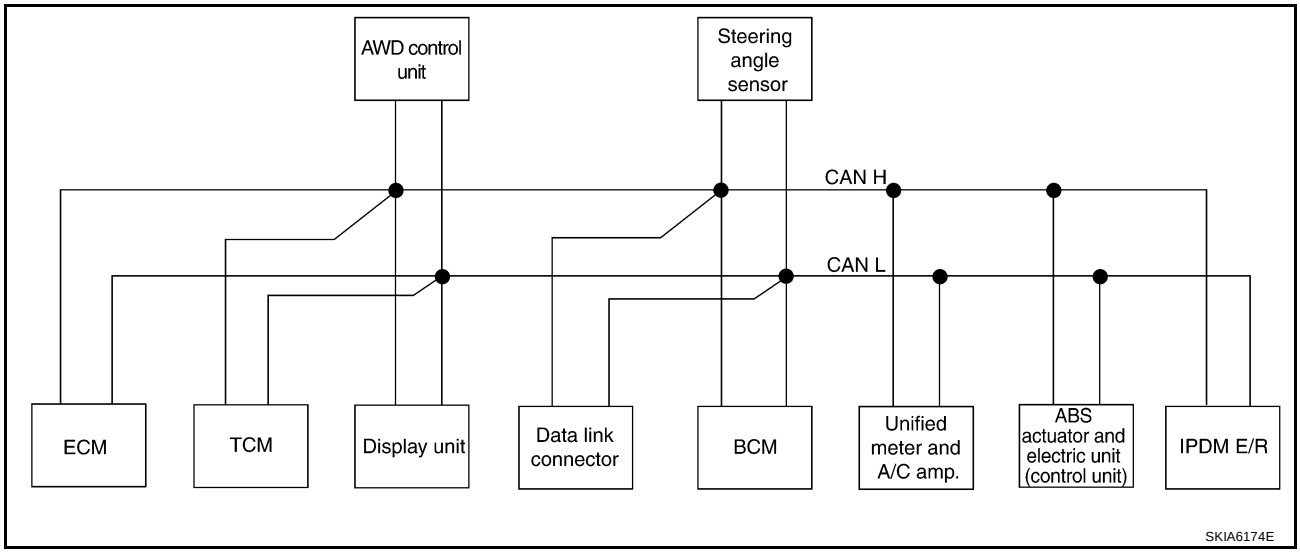
Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Fuel level sensor signal	R								T				
Fuel level low warning signal			R						T				
ICC operation signal	R				T								
Front wiper request signal					R		T						R
Front wiper stop position signal							R						T
Rear window defogger switch signal							T						R
Rear window defogger control signal	R		R				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				T					R				
Tire pressure data signal			R	T									
ABS warning lamp signal					R				R		T		
VDC OFF indicator lamp signal					R				R		T		
SLIP indicator lamp signal									R		T		
Brake warning lamp signal									R		T		
System setting signal			T			R						R	
Distance to empty signal			R						T				
Hand brake switch signal							R		T				
Door lock/unlock request signal						T	R						
Door lock/unlock status signal						R	T						
Starter permission signal						T	R						
Back door open request signal						T	R						
Power window open request signal						T	R						
Alarm request signal						T	R						
Key warning signal						T			R				
ICC sensor signal					R					T			
ICC warning lamp signal					T				R				

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
ICC system display signal					T				R				
Current gear position signal		T			R						R		
Steering switch signal	T				R								
ASCD operation signal	T	R											
ASCD OD cancel request	T	R											
ICC OD cancel request	R	R			T								
A/T CHECK indicator lamp signal		T							R				
A/T position indicator lamp signal		T							R				
A/T shift schedule change demand signal		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				R				
Ignition knob switch signal						T	R						

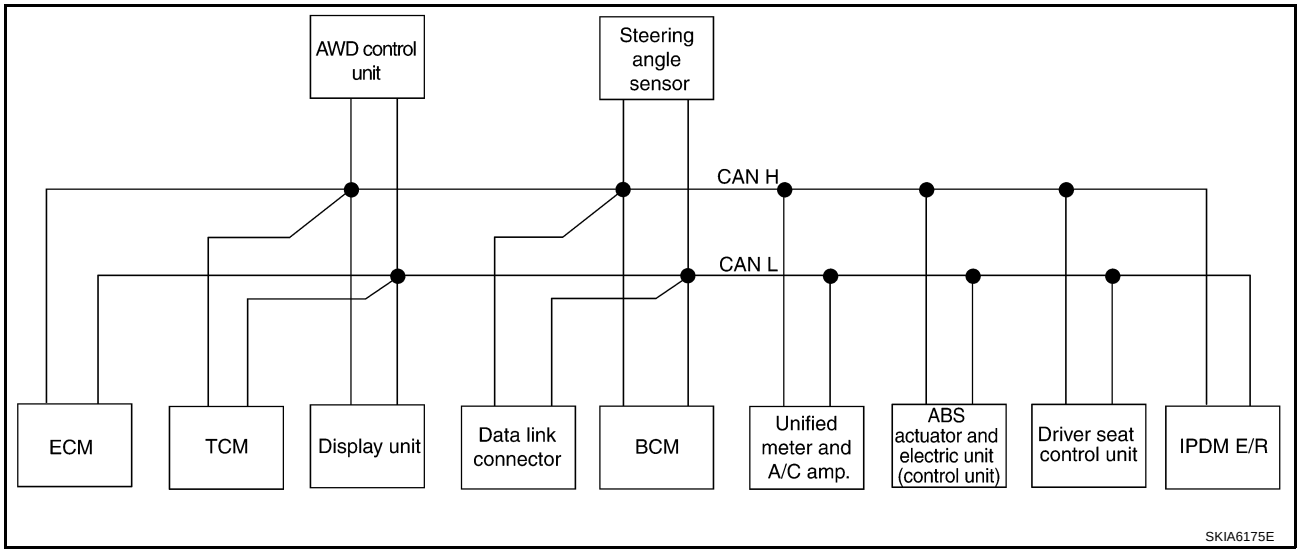
TYPE 4/TYPE5

System Diagram

- Type4



- Type5



Input/output Signal Chart

T: Transmit R: Receive

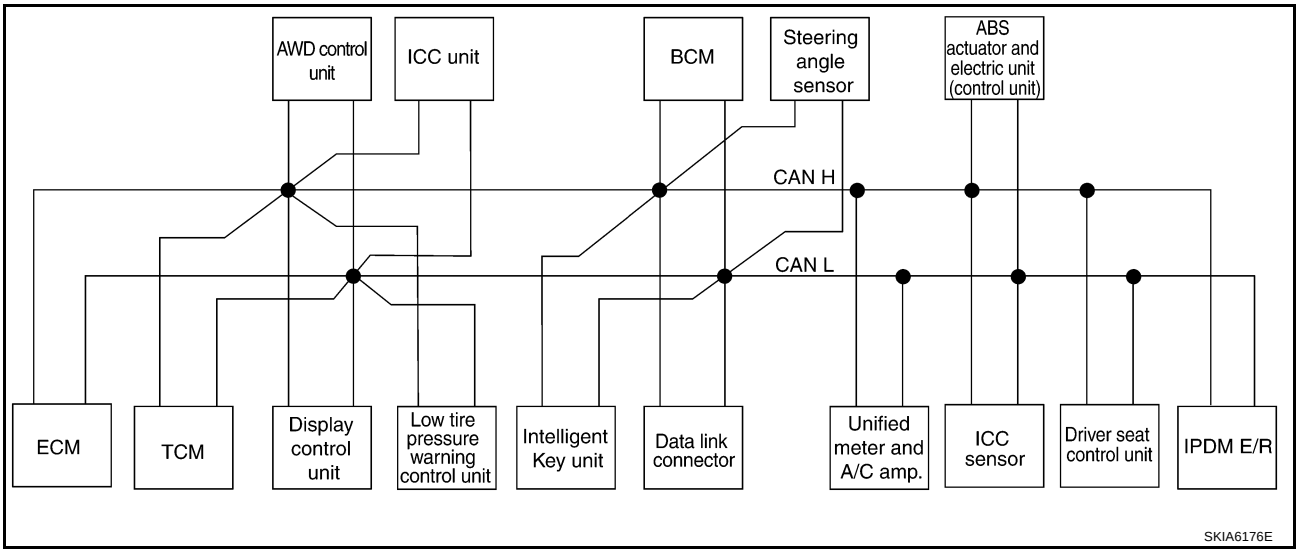
Signals	ECM	TCM	Display unit	AWD control unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
A/T self-diagnosis signal	R	T								
ABS operation signal	R			R				T		
TCS operation signal	R							T		
VDC operation signal	R			R				T		
Stop lamp switch signal		R		R			T			
Battery voltage signal	T	R								
Key switch signal					T				R	
Ignition switch signal					T				R	R
P range signal		T						R	R	
Closed throttle position signal	T	R								
Wide open throttle position signal	T	R								
Engine speed signal	T	R	R	R			R	R		
Engine status signal	T				R					
Engine coolant temperature signal	T	R					R			
Accelerator pedal position signal	T	R		R				R		
Fuel consumption monitor signal	T		R				R			
Input shaft revolution signal	R	T								
Output shaft revolution signal	R	T								
A/C switch signal	R				T					
A/C compressor request signal	T									R
A/C relay status signal	R									T
A/C compressor feedback signal	T						R			
Blower fan motor switch signal	R				T					
A/C control signal			T				R			
			R				T			
Cooling fan speed signal	R									T
Position light request signal			R		T		R			R
Low beam request signal					T					R
Low beam status signal	R									T
High beam request signal					T		R			R
High beam status signal	R									T
Front fog light request signal					T					R
Day time running light request signal					T		R			
Turn LED burnout status signal					R		T			
Vehicle speed signal							R	T		
	R	R	R		R		T		R	
Sleep wake up signal					T		R		R	R

Signals	ECM	TCM	Display unit	AWD control unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Door switch signal			R		T		R		R	R
Turn indicator signal					T		R			
Key fob ID signal					T				R	
Key fob door unlock signal					T				R	
Oil pressure switch signal					R					T
					T		R			
Buzzer output signal					T		R			
Fuel level sensor signal	R						T			
Fuel level low warning 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 signal	R		R		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		
ABS warning lamp signal							R	T		
VDC OFF indicator lamp signal							R	T		
SLIP indicator lamp signal							R	T		
Brake warning lamp signal							R	T		
System setting signal			T		R				R	
AWD warning lamp signal				T			R			
AWD lock indicator lamp signal				T			R			
Distance to empty signal			R				T			
Hand brake switch signal				R	R		T			
ASCD operation signal	T	R								
ASCD OD cancel request	T	R								
A/T CHECK indicator lamp signal		T					R			
A/T position indicator lamp signal		T					R			
A/T shift schedule change demand signal		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			

TYPE 6

System Diagram

- Type6



Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	AWD control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
A/T self-diagnosis signal	R	T												
ABS operation signal	R				R	R						T		
TCS operation signal	R					R						T		
VDC operation signal	R				R	R					R	T		
Stop lamp switch signal		R			R					T				
Battery voltage signal	T	R												
Key switch signal								T					R	
Ignition switch signal								T					R	R
P range signal		T				R						R	R	
Closed throttle position signal	T	R				R								
Wide open throttle position signal	T	R												
Engine speed signal	T	R	R		R	R				R		R		
Engine status signal	T							R						
Engine coolant temperature signal	T	R				R				R				
Accelerator pedal position signal	T	R			R	R						R		
Fuel consumption monitor signal	T		R							R				
A/T self-diagnosis signal	R	T												

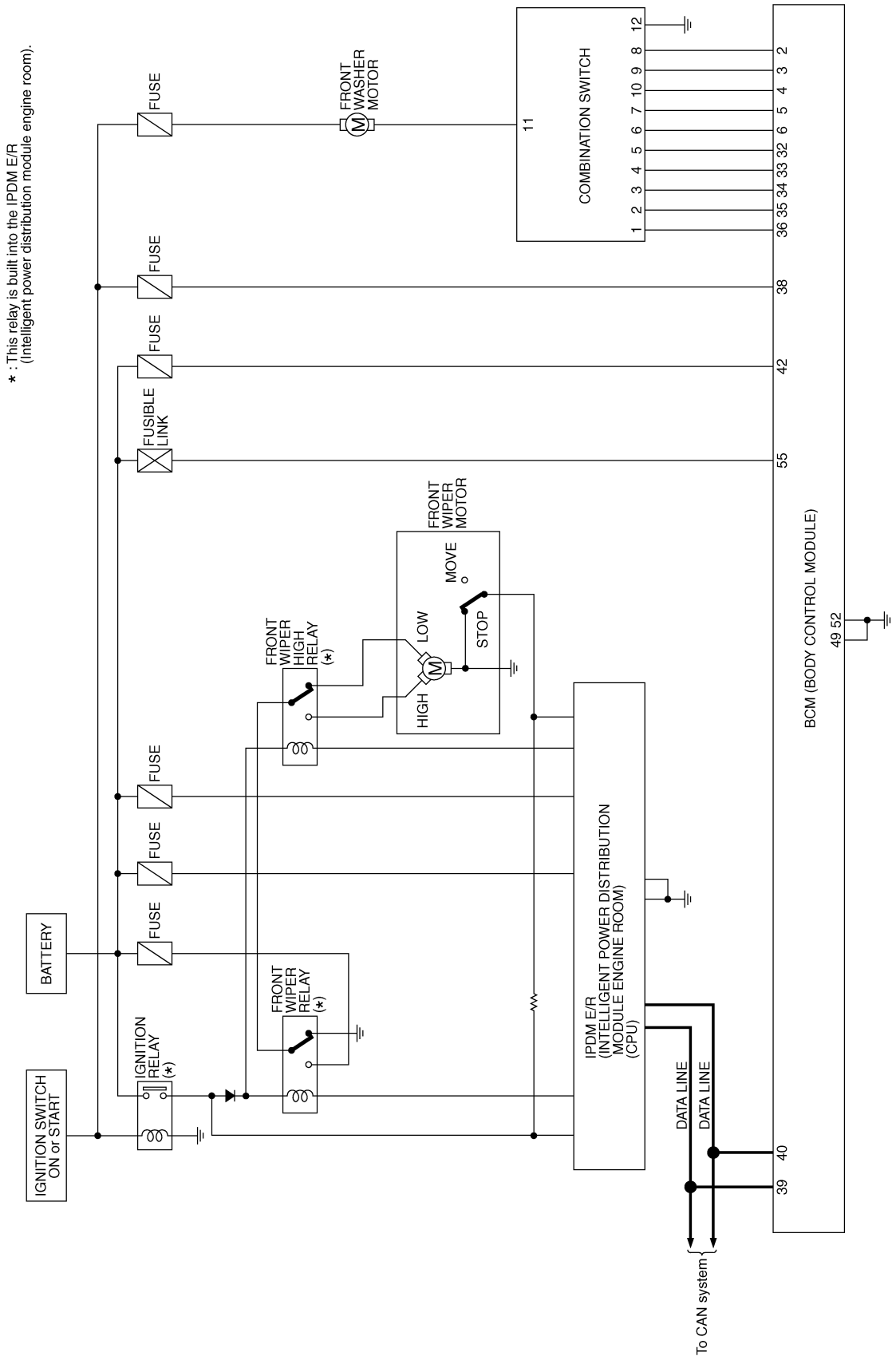
Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	AWD control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Input shaft revolution signal	R	T				R								
Output shaft revolution signal	R	T				R								
A/C switch signal	R							T						
A/C compressor request signal	T													R
A/C relay status signal	R													T
A/C compressor feedback signal	T									R				
Blower fan motor switch signal	R							T						
A/C control signal			T							R				
			R							T				
Cooling fan speed signal	R													T
Position light request signal			R					T		R				R
Low beam request signal								T						R
Low beam status signal	R													T
High beam request signal								T		R				R
High beam status signal	R													T
Front fog light request signal								T						R
Day time running light request signal								T		R				
Turn LED burnout status signal								R		T				
Vehicle speed signal						R				R		T		
	R	R	R	R			R	R		T	R		R	
Sleep wake up signal								T		R			R	R
							T	R						
Door switch signal			R				R	T		R			R	R
Key fob ID signal								T					R	
Key fob door unlock signal								T					R	
Oil pressure switch signal								R						T
								T		R				
Buzzer output signal								T		R				
							T			R				
						T				R				
Fuel level sensor signal	R									T				
Fuel level low warning signal			R							T				
ICC operation signal	R					T								

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	AWD control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Front wiper request signal						R		T						R
Front wiper stop position signal								R						T
Rear window defogger switch signal								T						R
Rear window defogger control signal	R		R					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				T						R				
Tire pressure data signal			R	T										
ABS warning lamp signal						R				R		T		
VDC OFF indicator lamp signal						R				R		T		
SLIP indicator lamp signal										R		T		
Brake warning lamp signal										R		T		
System setting signal			T				R						R	
AWD warning lamp signal					T					R				
AWD lock indicator lamp signal					T					R				
Distance to empty signal			R							T				
Hand brake switch signal					R			R		T				
Door lock/unlock request signal							T	R						
Door lock/unlock status signal							R	T						
Starter permission signal							T	R						
Back door open request signal							T	R						
Power window open request signal							T	R						
Alarm request signal							T	R						
Key warning signal							T			R				
ICC sensor signal						R					T			
ICC warning lamp signal						T				R				
ICC system display signal						T				R				
Current gear position signal		T				R						R		
Steering switch signal	T					R								

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	AWD control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
ASCD operation signal	T	R												
ASCD OD cancel request	T	R												
ICC OD cancel request	R	R				T								
A/T CHECK indicator lamp signal		T								R				
A/T position indicator lamp signal		T								R				
A/T shift schedule change demand signal		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				
Ignition knob switch signal							T	R						

Schematic

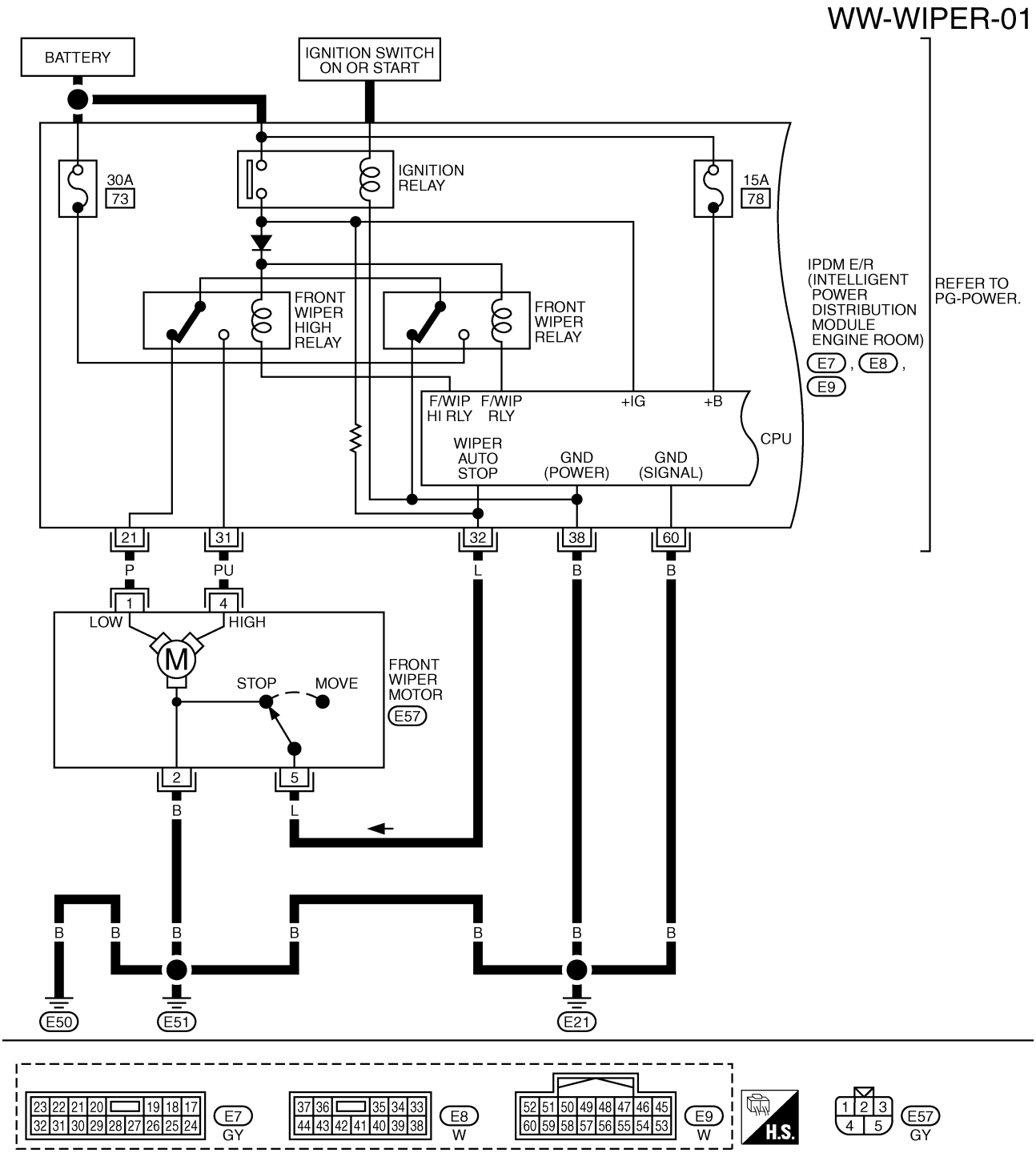
AKS0056S



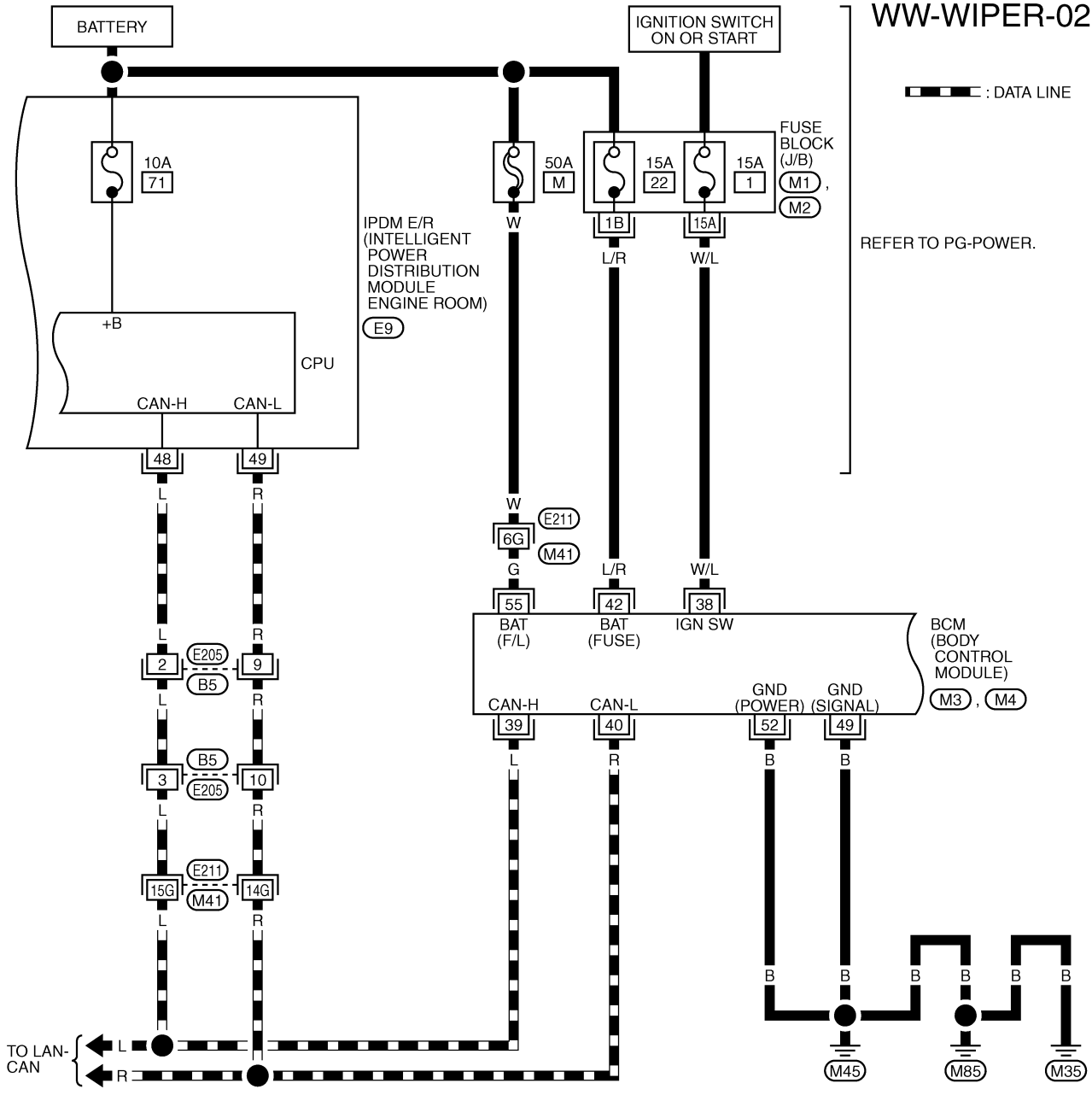
TKWM0940E

Wiring Diagram — WIPER —

AKS0056T



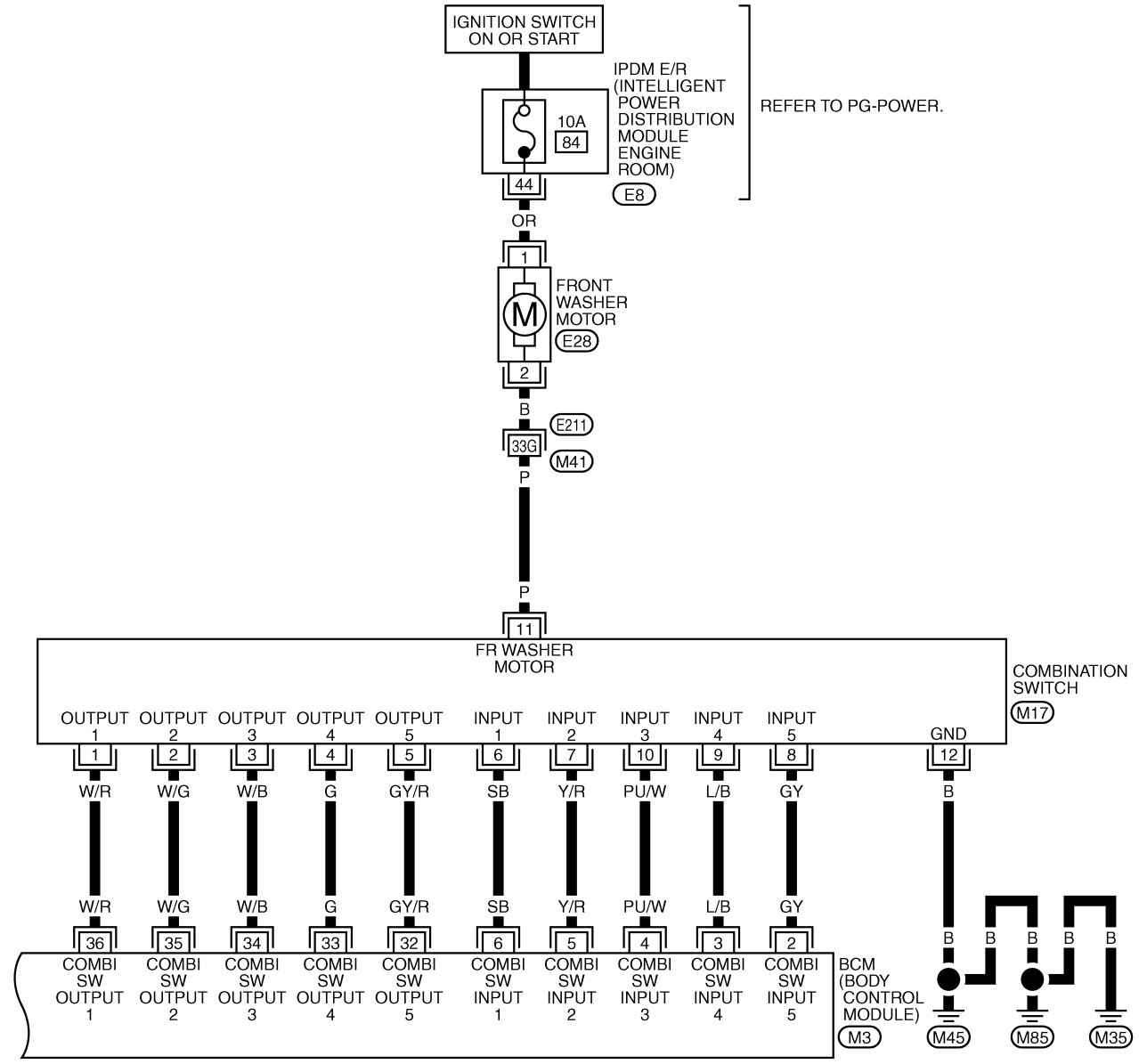
TKWM0663E

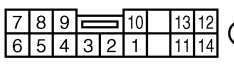


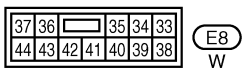
REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)
M1, M2 -FUSE BLOCK-JUNCTION BOX (J/B)
M3, M4 -ELECTRICAL UNITS

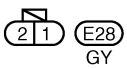
TKWM0664E

WW-WIPER-03







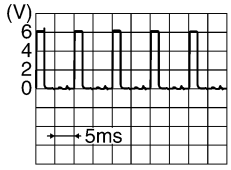
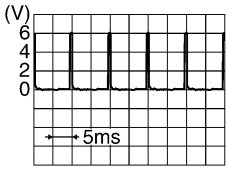
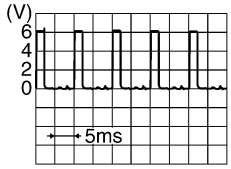
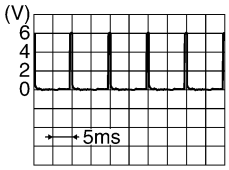
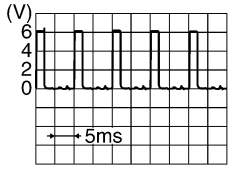
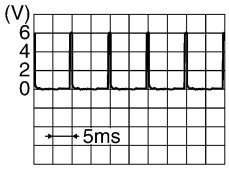
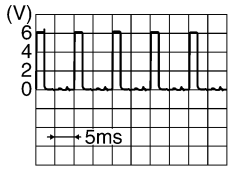


REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)
M3 -ELECTRICAL UNITS

TKWM0827E

Terminals and Reference Values for BCM

AKS0056U

Terminal No. (Wire color)	Signal name	Measuring condition		Reference value
		Ignition switch	Operation or condition	
2 (GY)	Combination switch input 5	ON	● Lighting switch and wiper switch OFF ● Wiper dial position 4	 SKIA5291E
3 (L/B)	Combination switch input 4	ON	● Lighting switch and wiper switch OFF ● Wiper dial position 4	 SKIA5292E
4 (PU/W)	Combination switch input 3	ON	● Lighting switch and wiper switch OFF ● Wiper dial position 4	 SKIA5291E
5 (Y/R)	Combination switch input 2	ON	● Lighting switch and wiper switch OFF ● Wiper dial position 4	 SKIA5292E
6 (SB)	Combination switch input 1	ON		
32 (GY/R)	Combination switch output 5	ON	● Lighting switch and wiper switch OFF ● Wiper dial position 4	 SKIA5291E
33 (G)	Combination switch output 4	ON	● Lighting switch and wiper switch OFF ● Wiper dial position 4	 SKIA5292E
34 (W/B)	Combination switch output 3	ON	● Lighting switch and wiper switch OFF ● Wiper dial position 4	 SKIA5291E

Terminal No. (Wire color)	Signal name	Measuring condition		Reference value
		Ignition switch	Operation or condition	
35 (W/G)	Combination switch output 2	ON	● Lighting switch and wiper switch OFF ● Wiper dial position 4	 SKIA5292E
36 (W/R)	Combination switch output 1			
38 (W/L)	Ignition switch (ON)	ON	—	Battery voltage
39 (L)	CAN H	—	—	—
40 (R)	CAN L	—	—	—
42 (L/R)	Battery power supply	OFF	—	Battery voltage
49 (B)	Ground	ON	—	Approx. 0 V
52 (B)	Ground	ON	—	Approx. 0 V
55 (G)	Battery power supply	OFF	—	Battery voltage

Terminals and Reference Values for IPDM E/R

AKS0056V

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

How to Proceed With Trouble Diagnosis

AKS0056W

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-31, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the front wiper and washer operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

Preliminary Check

AKS0056X

INSPECTION POWER SUPPLY AND GROUND CIRCUIT

Inspection Procedure

1. CHECK FUSE

- Check if wiper and washer fuse is blown.

Unit	Power source	Fuse and fusible link No.
Front washer motor	Ignition switch ON or START	84
Front wiper motor, front wiper relay, front wiper HI relay	Battery	73
BCM	Battery	M
		22
	Ignition switch ON or START	1

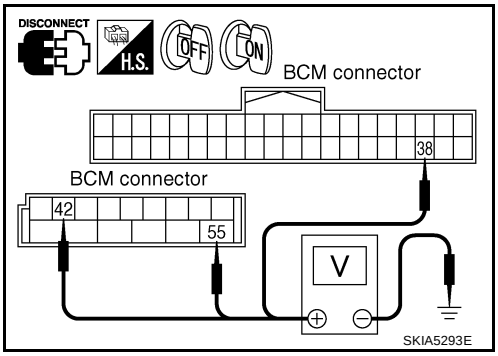
Refer to WW-26, "Wiring Diagram — WIPER —" .

OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

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



Terminals			Ignition switch position	
(+)		(-)	OFF	ON
Connector	Terminal (Wire color)			
M4	42 (L/R)	Ground	Battery voltage	Battery voltage
M4	55 (G)		Battery voltage	Battery voltage
M3	38 (W/L)		0V	Battery voltage

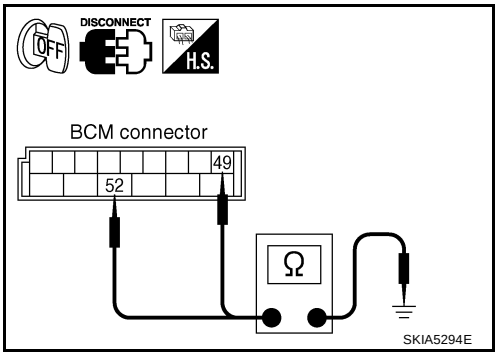
OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short between fuse, fusible link and BCM.

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector M4 terminals 49 (B), 52 (B) and ground.

49 (B), 52 (B) - Ground : Continuity should exist.



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

CONSULT-II Functions (BCM)

AKS007AD

CONSULT-II performs the following functions communicating with BCM.

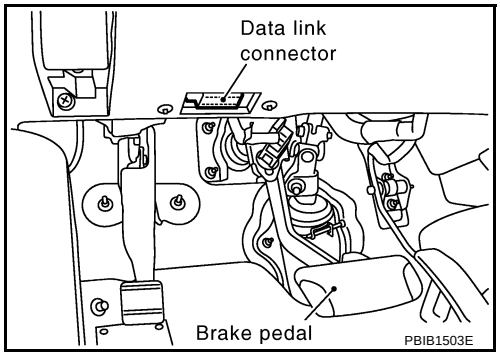
BCM diagnosis position	Check item, Diagnosis mode	Description
Wiper	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Device operation can be checked by applying a drive signal to device.
BCM	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

CONSULT-II OPERATION

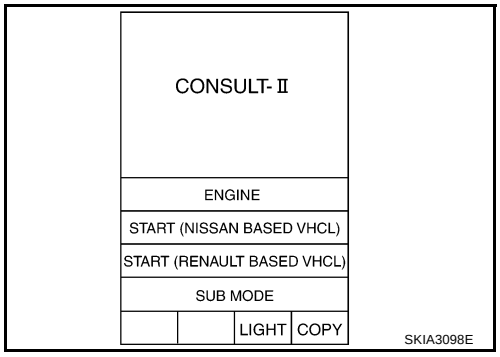
CAUTION:

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

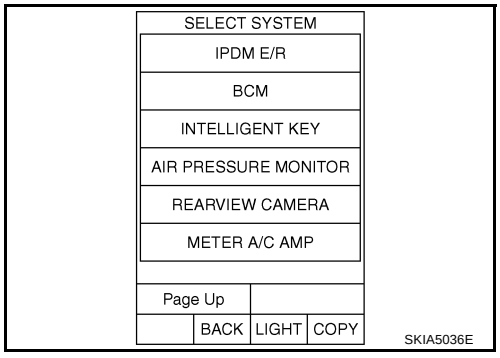
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn the ignition switch ON.



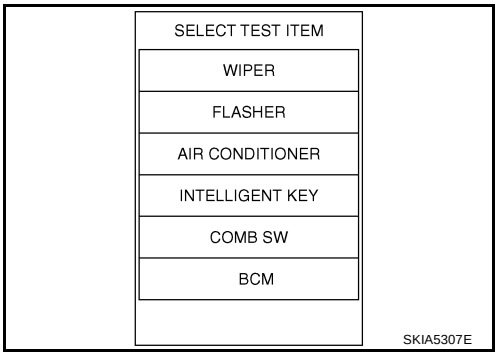
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “BCM” on “SELECT SYSTEM” screen.
If “BCM” is not indicated, refer to GI-40, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Touch “WIPER”.



DATA MONITOR

Operation Procedure

1. Touch “WIPER” on the “SELECT TEST ITEM” screen.
2. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.
3. Touch either “ALL ITEMS” or “SELECT ITEM MENU” on “DATA MONITOR” screen.

All Items	All items will be monitored.
Select Item Menu	Selects and monitors individual items.

4. Touch “START”.
5. When “SELECT ITEM MENU” is selected, touched items to be monitored. If “ALL ITEMS” is selected, all items will be monitored.
6. Touch “RECORDING START” while monitoring to record the status of the item being monitored. To stop recording, touch “RECORDING STOP”.

Display Item List

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

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	Indication on CONSULT-II display	Description
Front wiper output	FRONT WIPER	With a certain operation (OFF, HI, LO, INT), the front wiper can be operated.
Rear wiper output	RR WIPER	Rear wiper can be operated by any ON-OFF operation.

CONSULT-II Functions (IPDM E/R)

AKS007AE

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

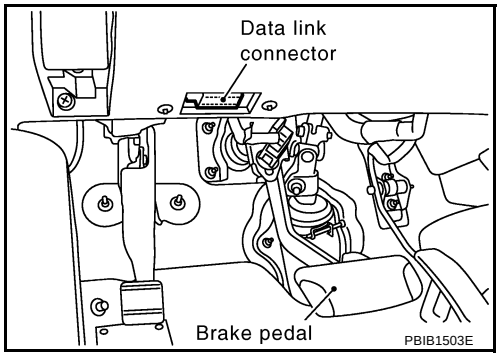
Inspection Item, Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	IPDM E/R performs self-diagnosis of CAN communication.
DATA MONITOR	The input/output data of the IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE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

CONSULT-II OPERATION

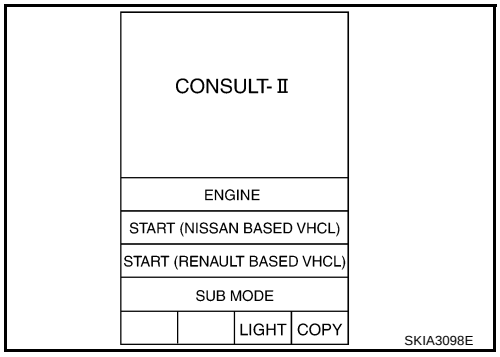
CAUTION:

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

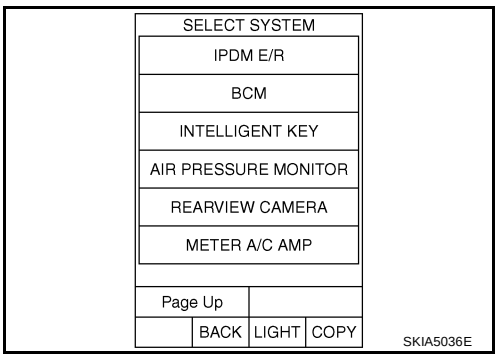
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn the ignition switch ON.



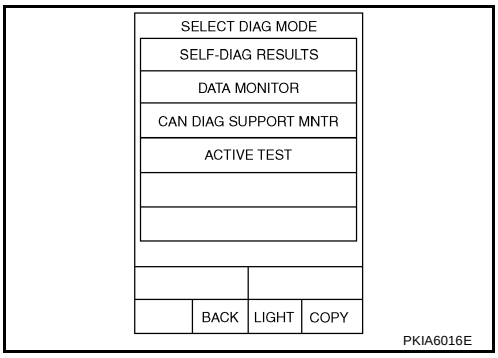
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “IPDM E/R” on “SELECT SYSTEM” screen.
If “IPDM E/R” is not displayed, print “SELECT SYSTEM” screen, then refer to GI-40, "CONSULT-II Data Link Connector (DLC) Circuit" .



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



DATA MONITOR

Operation Procedure

1. Touch “DATA MONITOR” on “SELECT DIAG MODE ” screen.
2. Touch “ALL SIGNALS”, “MAIN SIGNALS” or “SELECT FROM MENU” on the “DATA MONITOR” screen.

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

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

All Items, Main Items, Select Item Menu

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

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

ACTIVE TEST

Operation Procedure

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

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

Front Wiper Does Not Operate

AKS0079W

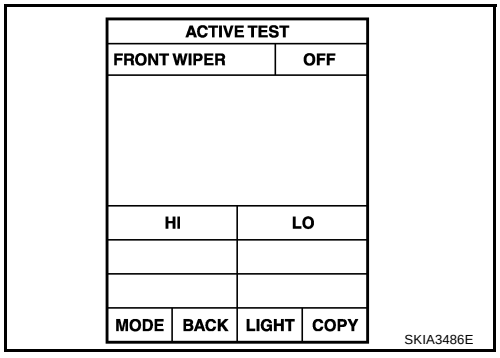
CAUTION:

- **During IPDM E/R fail-safe control, front wipers may not operate. Refer to PG-18, "CAN COMMUNICATION LINE CONTROL" in “PG IPDM E/R” to make sure that it is not in fail-safe status.**

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

With CONSULT-II

1. Select “IPDM E/R” by CONSULT-II, and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
2. Select “FRONT WIPER” on “SELECT TEST ITEM” screen.



Without CONSULT-II

Start up auto active test. Refer to PG-39, "Auto Active Test" .

Does the front wiper operate normally?

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

2. CHECK FUSE

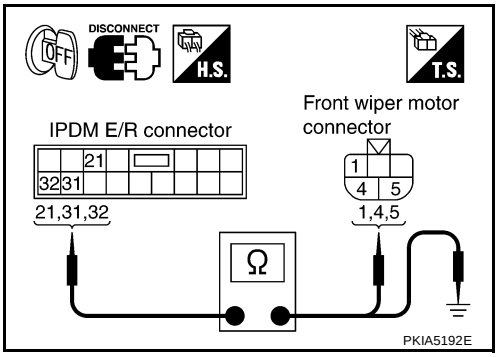
1. Turn ignition switch OFF.
2. Check fuse No. 73 of IPDM E/R.

OK or NG

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

3. CHECK IPDM E/R TO FRONT WIPERS (2)

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



Terminals				Continuity
IPDM E/R		Front wiper motor		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
E7	21 (P)	E57	1 (P)	Yes
	31 (PU)		4 (PU)	
	32 (L)		5 (L)	

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

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

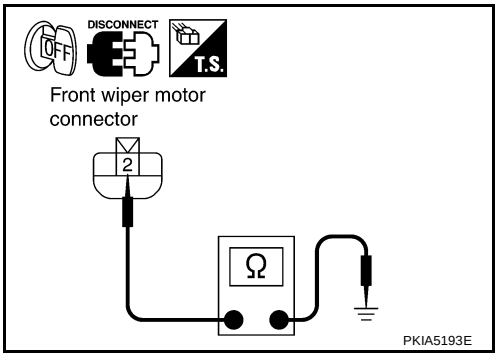
OK or NG

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

4. CHECK CIRCUIT BETWEEN FRONT WIPERS AND GROUND

Check continuity between front wiper motor harness connector E57 terminal 2 (B) and ground.

2 (B) - Ground : Continuity should exist.



OK or NG

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

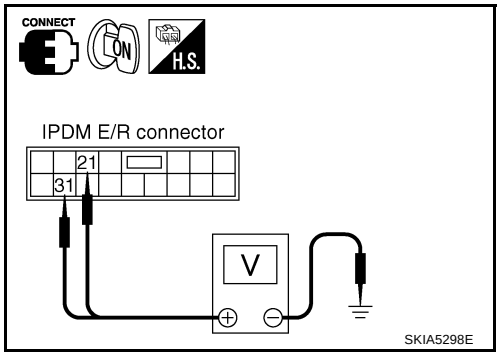
5. CHECK IPDM E/R

With CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Using active test, check voltage between IPDM E/R harness connector terminal and ground while front wiper (HI, LO) is operating.

Without CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Start up auto active test, and check voltage between IPDM E/R harness connector terminal and ground while front wiper (HI, LO) is operating.



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

OK or NG

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

6. CHECK CIRCUIT BETWEEN COMBINATION SWITCH AND BCM

With CONSULT-II

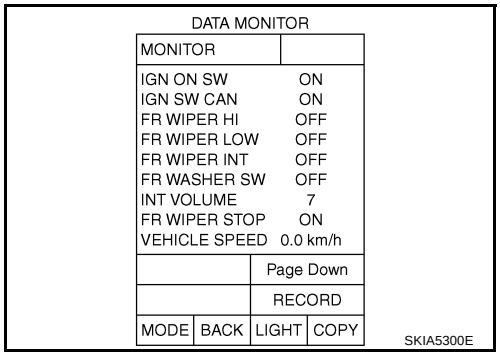
Select “BCM” on CONSULT-II. With “WIPER” on “DATA MONITOR”, confirm that “FRONT WIPER INT”, “FRONT WIPER LOW”, and “FRONT WIPER HI” turn ON-OFF according to wiper switch operation.

Without CONSULT-II

Refer to LT-182, "Combination Switch Inspection" .

OK or NG

OK >> GO TO 7.
NG >> Check wiper Switch. Refer to LT-182, "Combination Switch Inspection" .

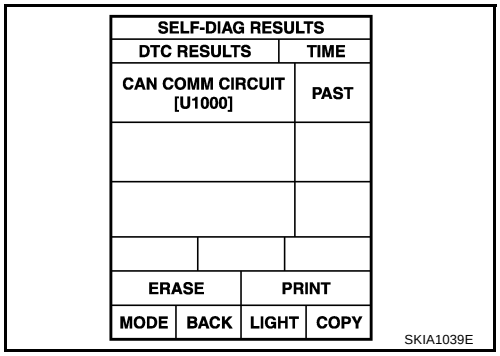


7. CHECK CIRCUIT BETWEEN IPDM E/R AND BCM

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

Displayed self-diagnosis results

NO DTC>>Replace BCM. Refer to BCS-28, "Removal and Installation of BCM" .
CAN COMM CIRCUIT>>Check CAN communication line of BCM. GO TO BCS-27, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .



Front Wiper Does Not Return to Stop Position

AKS0079X

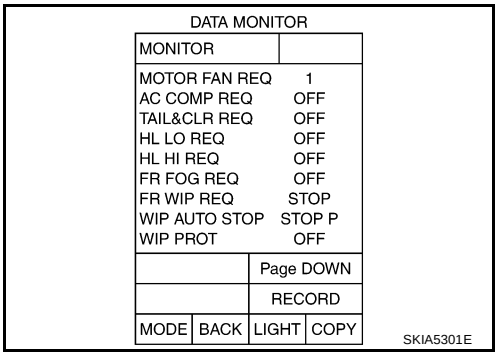
1. CHECK CIRCUIT BETWEEN IPDM E/R AND WIPER MOTOR (1)

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

Without CONSULT-II
GO TO 2.

OK or NG

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



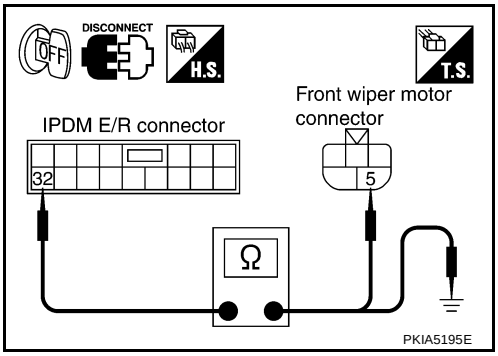
2. CHECK CIRCUIT BETWEEN IPDM E/R AND WIPER MOTOR (2)

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front wiper motor connector.
3. Check continuity between IPDM E/R harness connector E7 terminal 32 (L) and front wiper motor harness connector E57 terminal 5 (L).

32 (L) - 5 (L) : Continuity should exist.

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

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



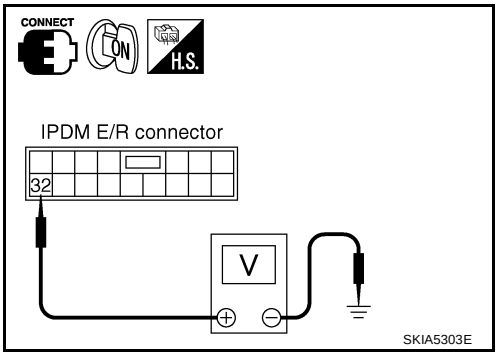
OK or NG

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

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

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

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



OK or NG

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

Only Front Wiper LO Does Not Operate

AKS0079Y

Refer to LT-182, "Combination Switch Inspection" .

Only Front Wiper HI Does Not Operate

AKS0079Z

1. CHECK CIRCUIT BETWEEN IPDM E/R AND FRONT WIPERS (1)

With CONSULT-II

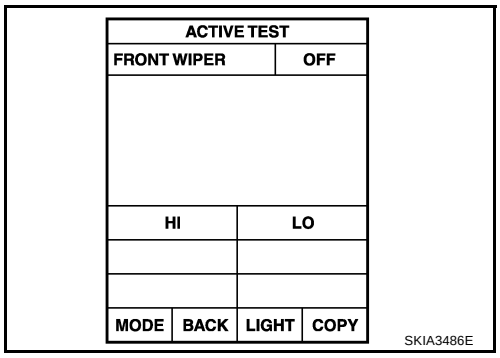
1. Select “IPDM E/R” by CONSULT-II, and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
2. Select “FRONT WIPER” on “SELECT TEST ITEM” screen.

Without CONSULT-II

Start up auto active test. Refer to PG-39, "Auto Active Test"

Does the front wiper operate normally?

YES >> GO TO LT-182, "Combination Switch Inspection" .
NO >> GO TO 2.



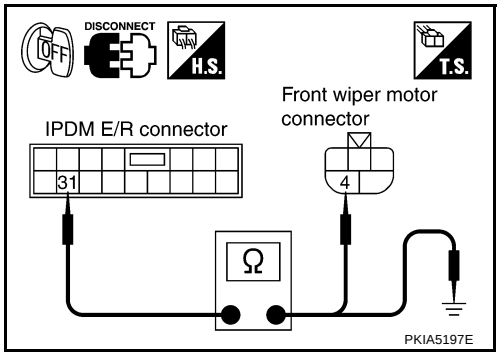
2. CHECK CIRCUIT BETWEEN IPDM E/R AND FRONT WIPERS (2)

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front wiper motor connector.
3. Check continuity between IPDM E/R harness connector E7 terminal 31 (PU) and front wiper motor harness E57 connector terminal 4(PU).

31 (PU) - 4 (PU) : Continuity should exist.

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

31 (PU) - Ground : Continuity should not exist.



OK or NG

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

3. CHECK IPDM E/R

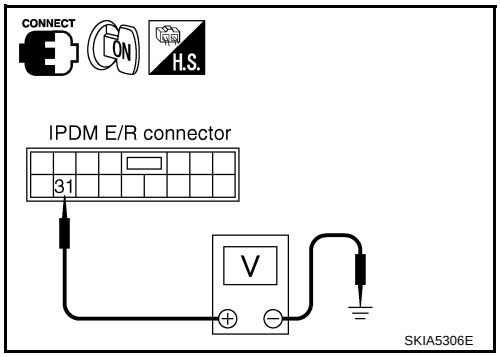
With CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Using active test, check voltage between IPDM E/R harness connector E7 terminal 31 (PU) and ground while front wiper (HI) is operating.

Without CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Start up auto active test, and check voltage between IPDM E/R harness connector E7 terminal 31(PU) and ground while front wiper HI is operating.

31 (PU) - Ground : Battery voltage



OK or NG

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

Only Front Wiper INT Does Not Operate

AKS007A0

Refer to LT-182, "Combination Switch Inspection" .

Front Wiper Interval Time Is Not Controlled by Vehicle Speed

AKS007A1

1. CHECK FUNCTION OF COMBINATION METER

Confirm that speedometer operates normally.

Does the front wiper operate normally?

YES >> GO TO 2.

NO >> Combination meter vehicle speed system malfunction. GO TO DI-18, "Vehicle Speed Signal Inspection" .

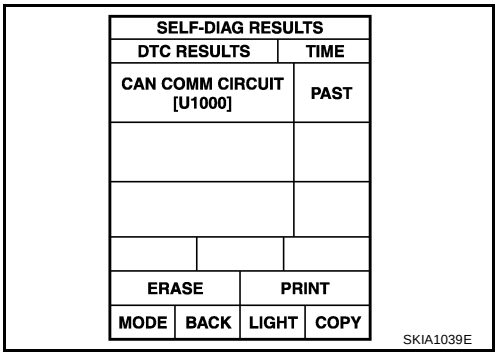
2. CHECK CAN COMMUNICATION BETWEEN BCM AND COMBINATION METER

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

Displayed self-diagnosis results

NO DTC>>Replace BCM. Refer to BCS-28, "Removal and Installation of BCM" .

CAN COMM CIRCUIT>>Check CAN communication line of BCM. GO TO BCS-27, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .



Front Wiper Intermittent Operation Switch Position Cannot Be Adjusted

AKS007YW

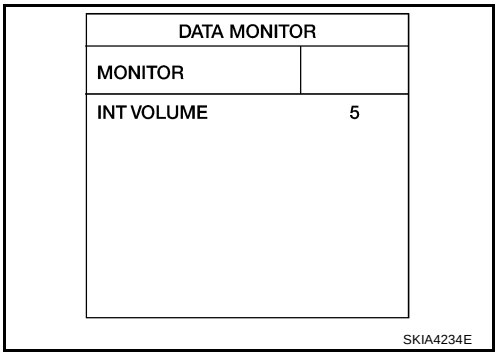
1. CHECK COMBINATION SWITCH INPUT SIGNAL

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

OK or NG

OK >> Replace BCM. Refer to LT-182, "Combination Switch Inspection" .

NG >> Replace wiper switch.



Wipers Do Not Wipe When Front Washer Operates

AKS00575

1. CHECK CIRCUIT BETWEEN COMBINATION SWITCH AND BCM

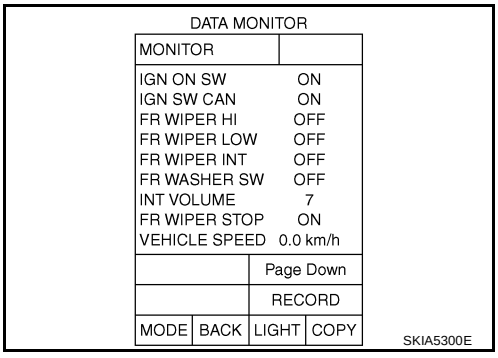
Select “BCM” on CONSULT-II. With “WIPER” on “DATA MONITOR”, make sure “FR WASHER SW” turns ON-OFF according to operation of front washer switch.

When front wiper switch washer position : FR WASHER SW ON

OK or NG

OK >> Replace BCM. Refer to BCS-28, "Removal and Installation of BCM" .

NG >> Replace wiper switch.



After Front Wipers Operate for 10 Seconds, They Stop for 20 Seconds, and after repeating the operations five times, they become inoperative

AKS007A2

CAUTION:

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

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

With CONSULT-II

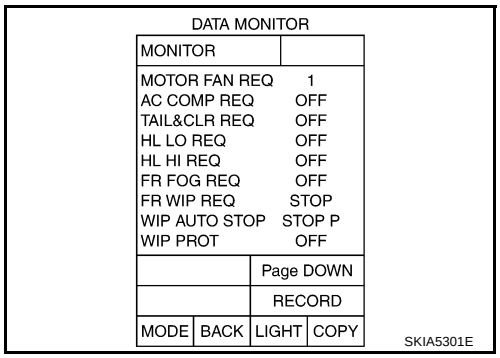
Select “IPDM E/R” by CONSULT-II. With “DATA MONITOR”, confirm that “WIP AUTO STOP” turns “ACT P” - “STOP P” linked with wiper operation.

Without CONSULT-II

GO TO 2.

OK or NG

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



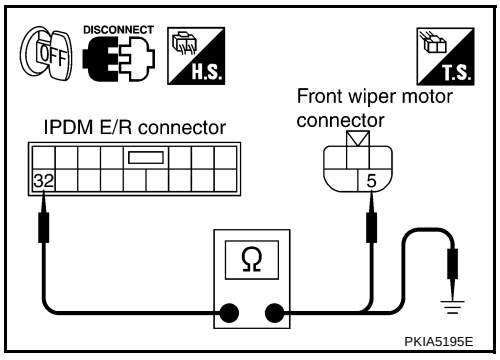
2. CHECK CIRCUIT BETWEEN IPDM E/R AND WIPER MOTOR (2)

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front wiper motor connector.
3. Check continuity between IPDM E/R harness connector E7 terminal 32 (L) and front wiper motor harness connector E57 terminal 5(L).

   32 (L) - 5 (L) : Continuity should exist.

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

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



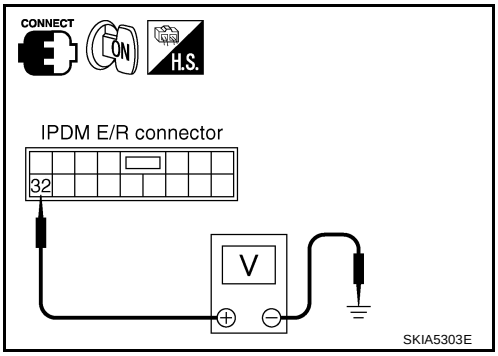
OK or NG

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

3. CHECK CIRCUIT BETWEEN IPDM E/R AND WIPER MOTOR (3)

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

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



OK or NG

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

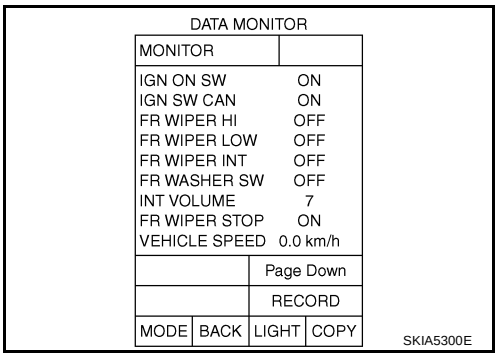
Front Wipers Do Not Stop

AKS007A3

1. CHECK CIRCUIT BETWEEN COMBINATION SWITCH AND BCM

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

Without CONSULT-II
Refer to LT-182, "Combination Switch Inspection" .



OK or NG

OK >> Replace IPDM E/R.
NG >> Check wiper Switch. Refer to LT-182, "Combination Switch Inspection" .

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

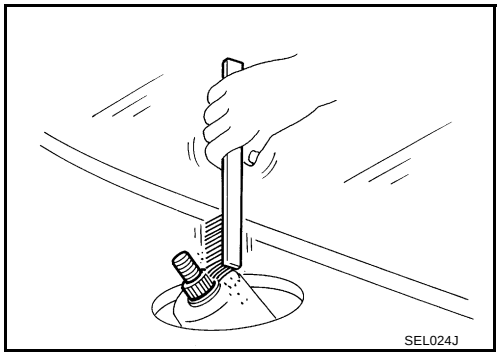
AKS00576

REMOVAL

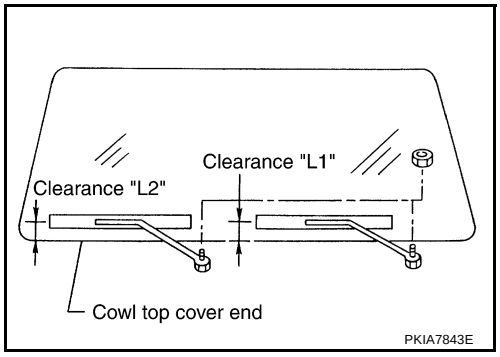
1. Operate wiper motor, and stop it at the auto stop position.
2. Remove washer tube from washer tube joint.
3. Remove wiper arm mounting nuts and wiper arm from vehicle.

INSTALLATION

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



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



Clearance “L1” : 44.4 - 54.4 mm (1.75 - 2.14 in)

Clearance “L2” : 38 - 48 mm (1.50 - 1.89 in)

- Tighten wiper arm nuts to specified torque.

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

ADJUSTMENT

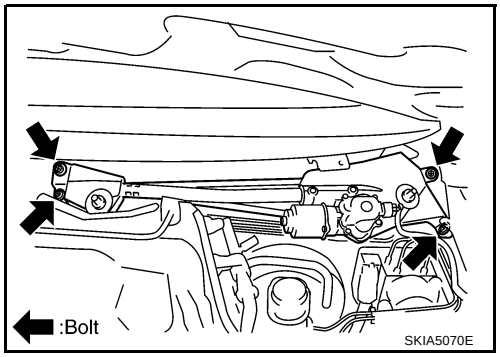
Refer to WW-44, "INSTALLATION" .

Removal and Installation of Front Wiper Motor and Linkage

AKS00577

REMOVAL

1. Prior to wiper motor and linkage removal, turn ON wiper switch to operate wiper motor and then turn it “OFF” (auto stop).
2. Remove wiper arm. Refer to WW-44, "REMOVAL" .
3. Remove cowl top cover. Refer to EI-24, "Removal and Installation" in “EI” section.
4. Remove washer tube.
5. Disconnect wiper motor connector.
6. Remove wiper motor and linkage mounting bolts, and remove wiper motor and linkage.



INSTALLATION

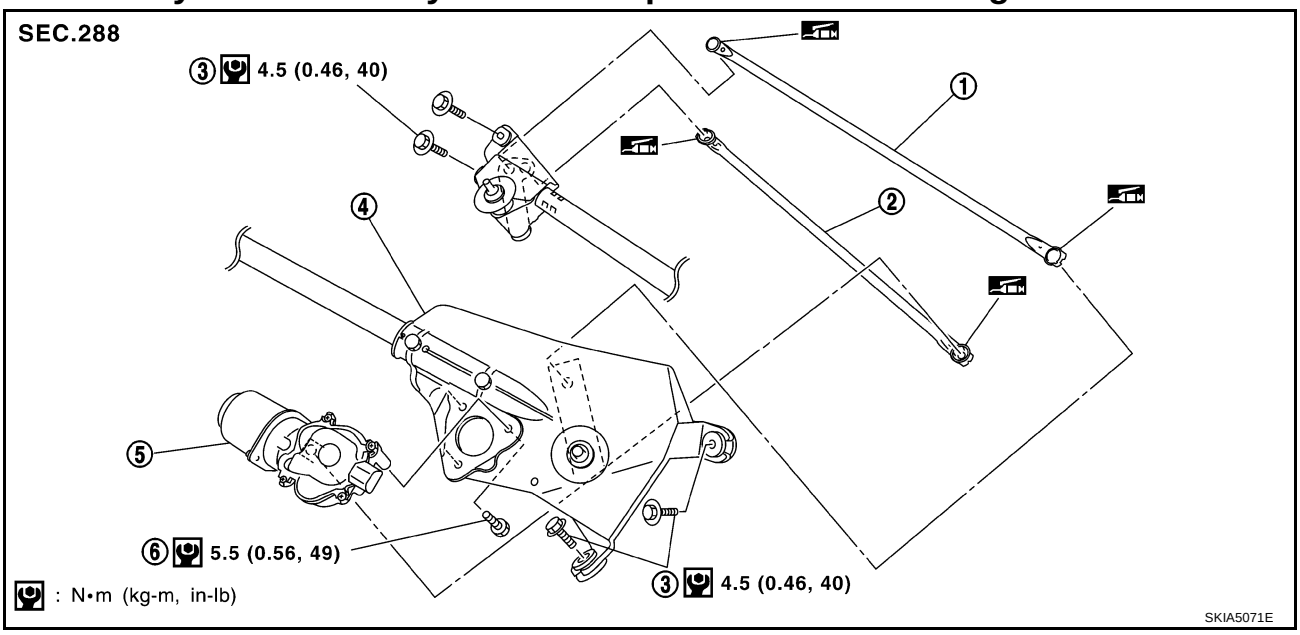
1. Install wiper motor and linkage to the vehicle.
2. Connect wiper motor assembly to the connector. Turn wiper switch ON to operate wiper motor, then turn wiper switch OFF (auto stop).
3. Attach washer tube to washer tube joint.
4. Install cowl top cover. Refer to EI-24, "Removal and Installation" in “EI” section.
5. Install wiper arms. Refer toWW-44, "Removal and Installation of Front Wiper Arms, Adjustment of Wiper Arms Stop Location" .
6. Attach wiper arm washer tube.

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

AKS00578



1. Wiper link 2
2. Wiper link 1
3. Wiper motor frame mounting bolt
4. Wiper motor mounting frame
5. Wiper motor
6. Wiper motor mounting bolt

DISASSEMBLY

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

ASSEMBLY

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

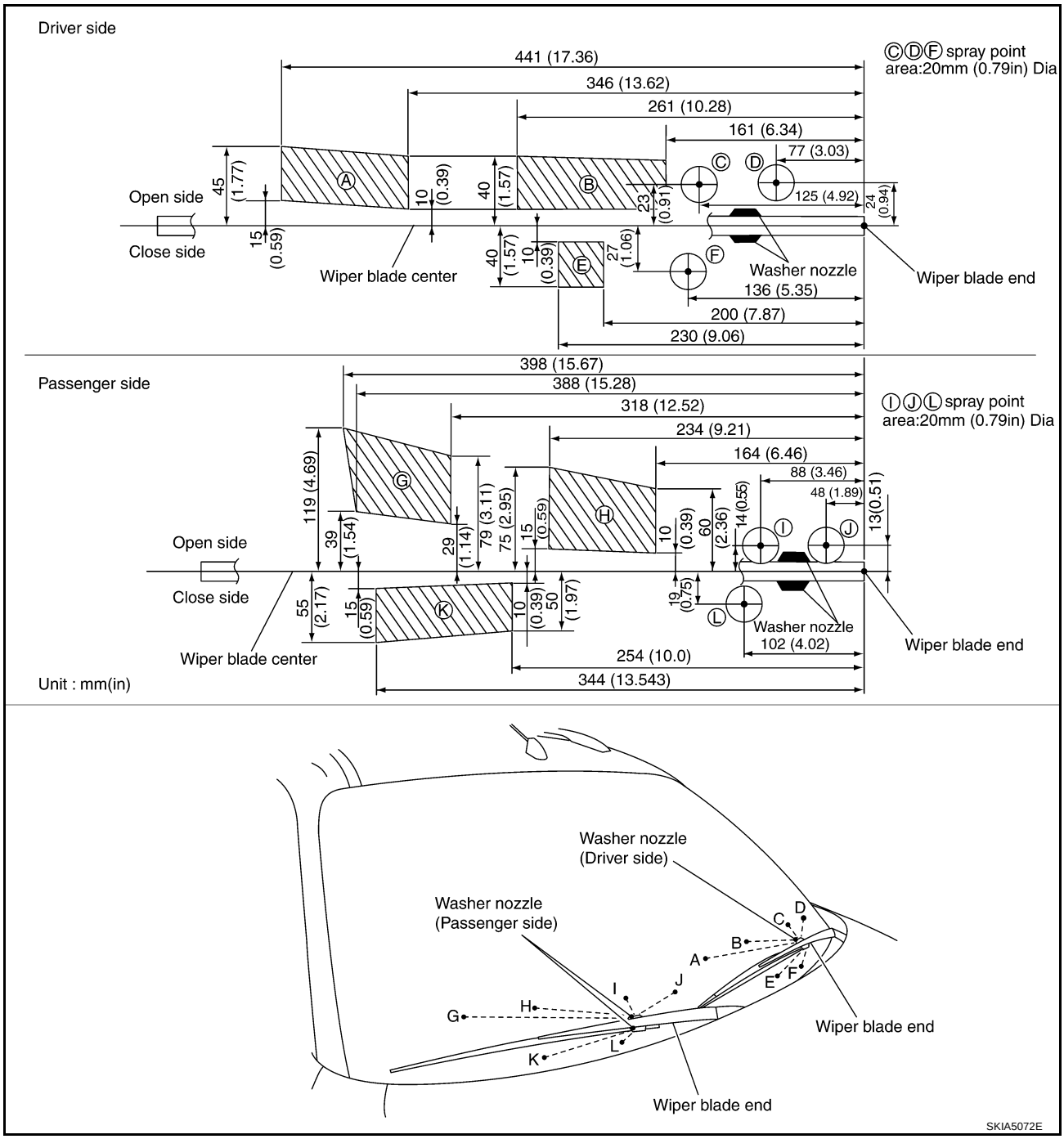
Washer Nozzle Adjustment

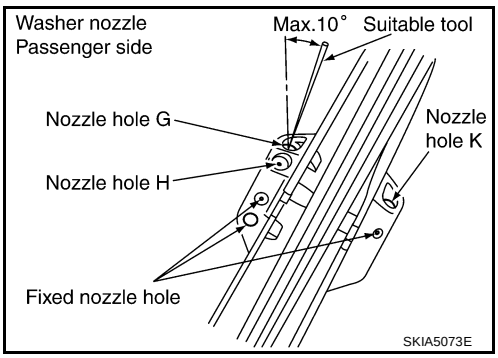
AKS00579

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, G, H, and K) so that spray positions are in the range of shaded parts.

CAUTION:

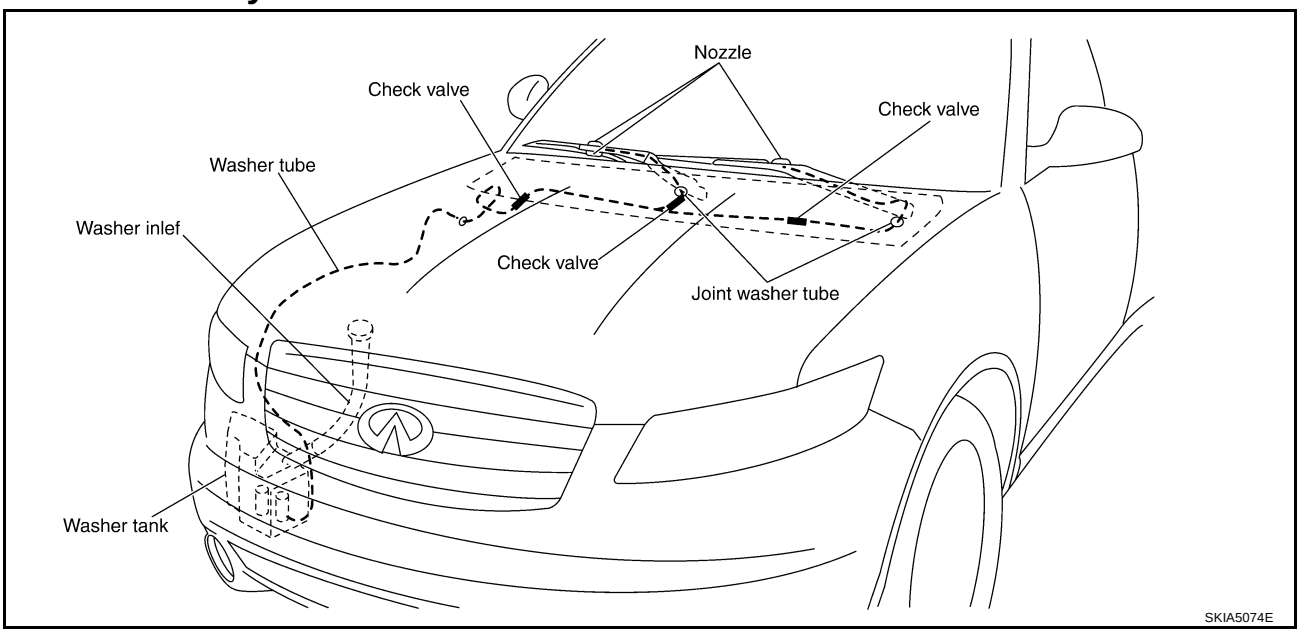
Only washer nozzles (A, B, E, G, H, and K) can be adjusted. Washer nozzles (C, D, F, I, J, and L) cannot be adjusted because of fixed nozzles.





Washer Tube Layout

AKS0057A



Removal and Installation of Front Washer Nozzle

AKS0057B

Replace wiper arm assembly. Refer to WW-44, "Removal and Installation of Front Wiper Arms, Adjustment of Wiper Arms Stop Location" .

CAUTION:

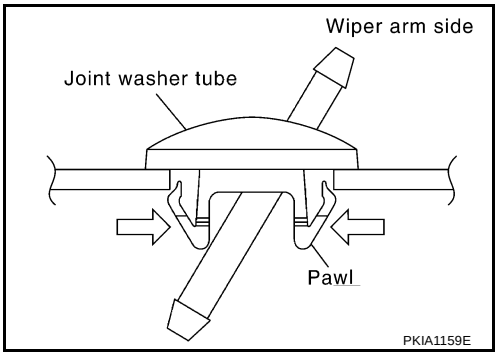
Removal/installation of the washer nozzle as a unit must not be done.

Removal and Installation of Front Washer tube Joint

AKS0057C

REMOVAL

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



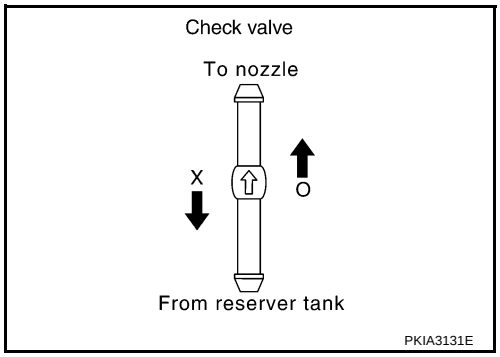
INSTALLATION

Install in the reverse order of removal.

Check Valve Inspection

AKS0057D

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

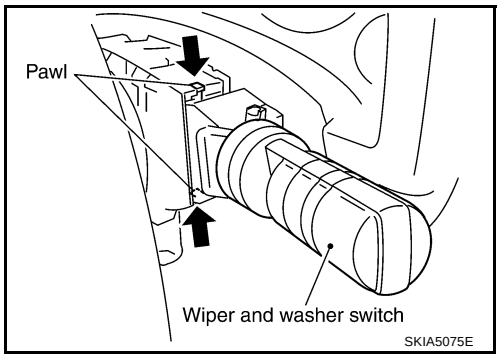


Removal and Installation of Front Wiper and Washer Switch

AKS0057E

REMOVAL

1. Remove steering column upper cover. Refer to IP-14, "(N) Steering Column Upper Cover" 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

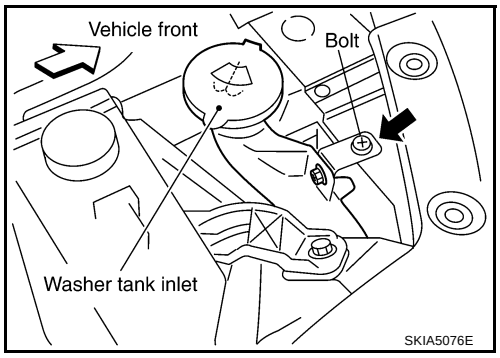
Install in the reverse order of removal.

Removal and Installation of Washer Tank

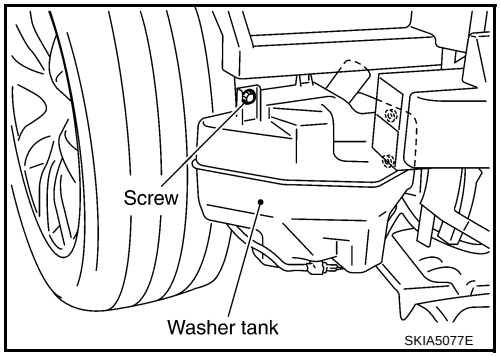
AKS0057F

REMOVAL

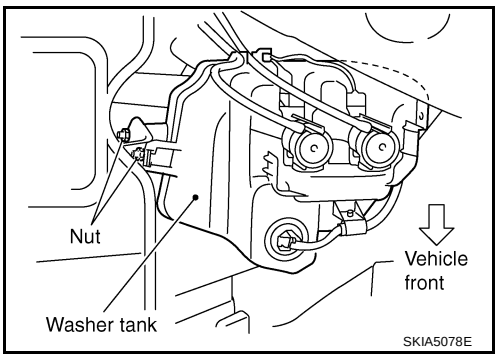
1. Remove bolt and pull out washer tank inlet.



2. Remove fillet molding (RH) and fender protector (RH). Refer to EI-14, "Removal and Installation" , EI-25, "Removal and Installation" in “EI” section.
3. Remove bumper fascia assembly. Refer to EI-14, "Removal and Installation" in “EI” section.
4. Disconnect washer pump connector and wash fluid level sensor connector.
5. Remove washer tank mounting screw and nuts.



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



INSTALLATION

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

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

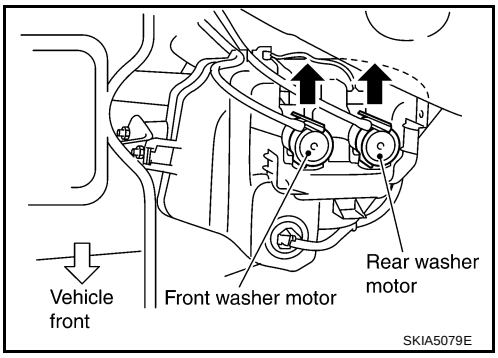
Washer tank mounting screw	**: 5.8 N·m (0.59 kg-m, 51 in-lb)**
Washer tank mounting nut	**: 5.8 N·m (0.59 kg-m, 51 in-lb)**
Washer tank inlet mounting bolt	**: 6.9 N·m (0.70 kg-m, 61 in-lb)**

Removal and Installation of Washer Motor

AKS0057G

REMOVAL

1. Remove fillet molding (RH) and fender protector (RH). Refer toEI-14, "Removal and Installation" , EI-25, "Removal and Installation" in “EI” section.
2. Disconnect washer motor connector and tube.
3. Pull out washer motor in direction shown by the arrow in the figure. Remove washer motor from washer tank.



INSTALLATION

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

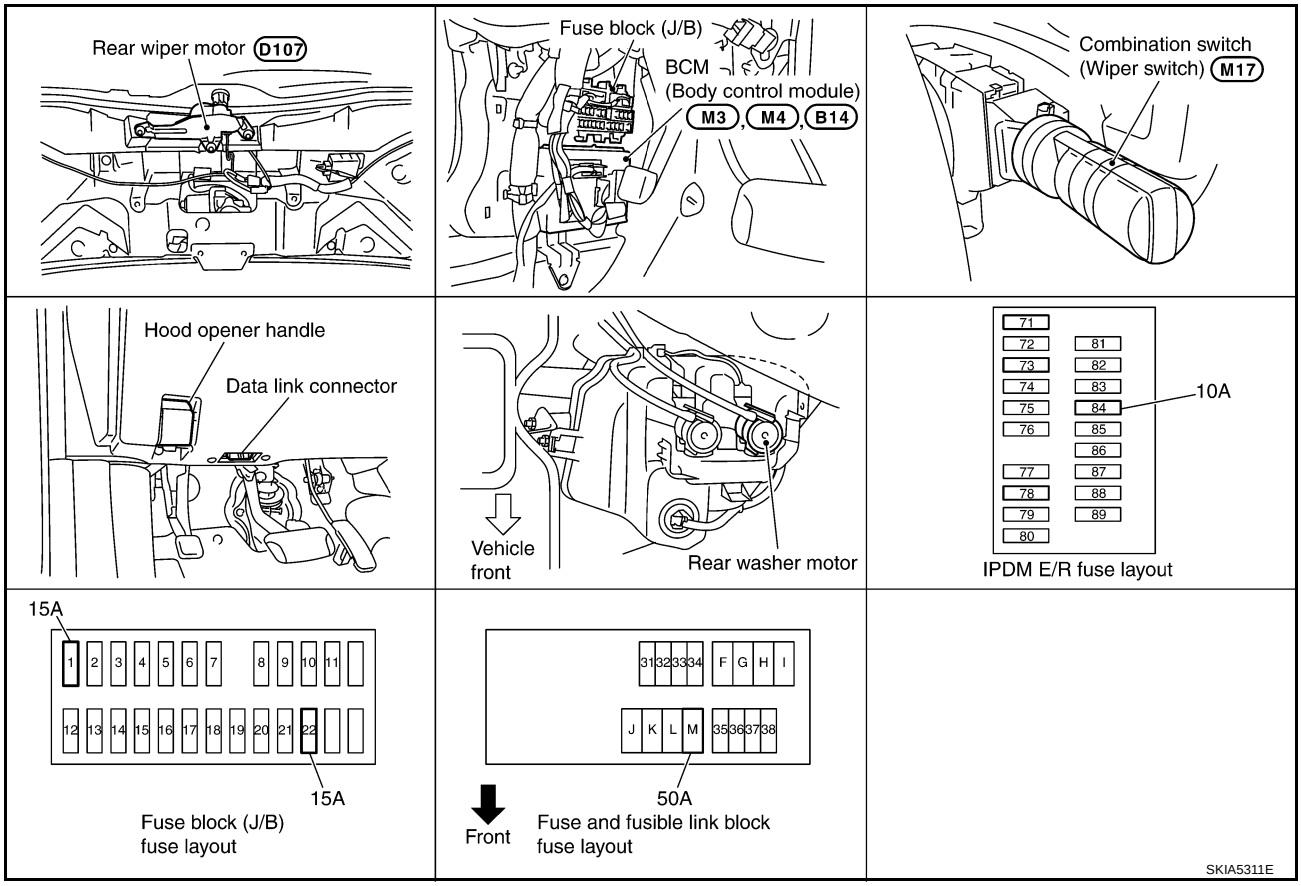
NOTE:
When installing washer motor, there should be no packing twists, etc.

REAR WIPER AND WASHER SYSTEM

PFP:28710

Component Parts and Harness Connector Location

AKS0057H



System Description

AKS0057I

- 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 50 A fusible link (letter M, located in fusible link block)
- to BCM terminal 55
- through 15 A fuse [No. 22, located in fuse block (J/B)]
- to BCM terminal 42.

When ignition switch ON or START position, power is supplied

- through 15 A fuse [No.1, located in fuse block (J/B)]
- to BCM terminal 38,
- through 10 A fuse [No. 84, located in IPDM E/R (intelligent power distribution module engine room)]
- to rear washer motor terminal 1.

Ground is supplied

- to BCM terminals 49 and 52
- through grounds M35, M45 and M85
- to combination switch (wiper switch) terminal 12
- through grounds M35, M45 and M85.

REAR WIPER OPERATION

When wiper switch is in rear wiper ON position, BCM detects rear wiper ON signal by BCM wiper switch reading function.
BCM operates rear wiper motor, power is supplied

- through BCM terminal 70
- to rear wiper motor 4.

Ground is supplied

- to rear wiper motor terminal 2
- through grounds B15 and B45.

With power and ground 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 detects rear wiper INT signal by BCM wiper switch reading function (Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION").
BCM operates rear wiper motor, power supplied

- through BCM terminal 70
- to rear wiper motor terminal 4.

Ground is supplied

- to rear wiper motor terminal 2
- through grounds B15 and B45.

With power and ground 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 detects rear wiper washer signal by BCM wiper switch reading function (Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION"), and combination switch (wiper switch) ground is supplied

- to rear washer motor terminal 2
- through combination switch (wiper switch) terminal 13
- to combination switch (wiper switch) terminal 12
- through grounds M35, M45 and M85.

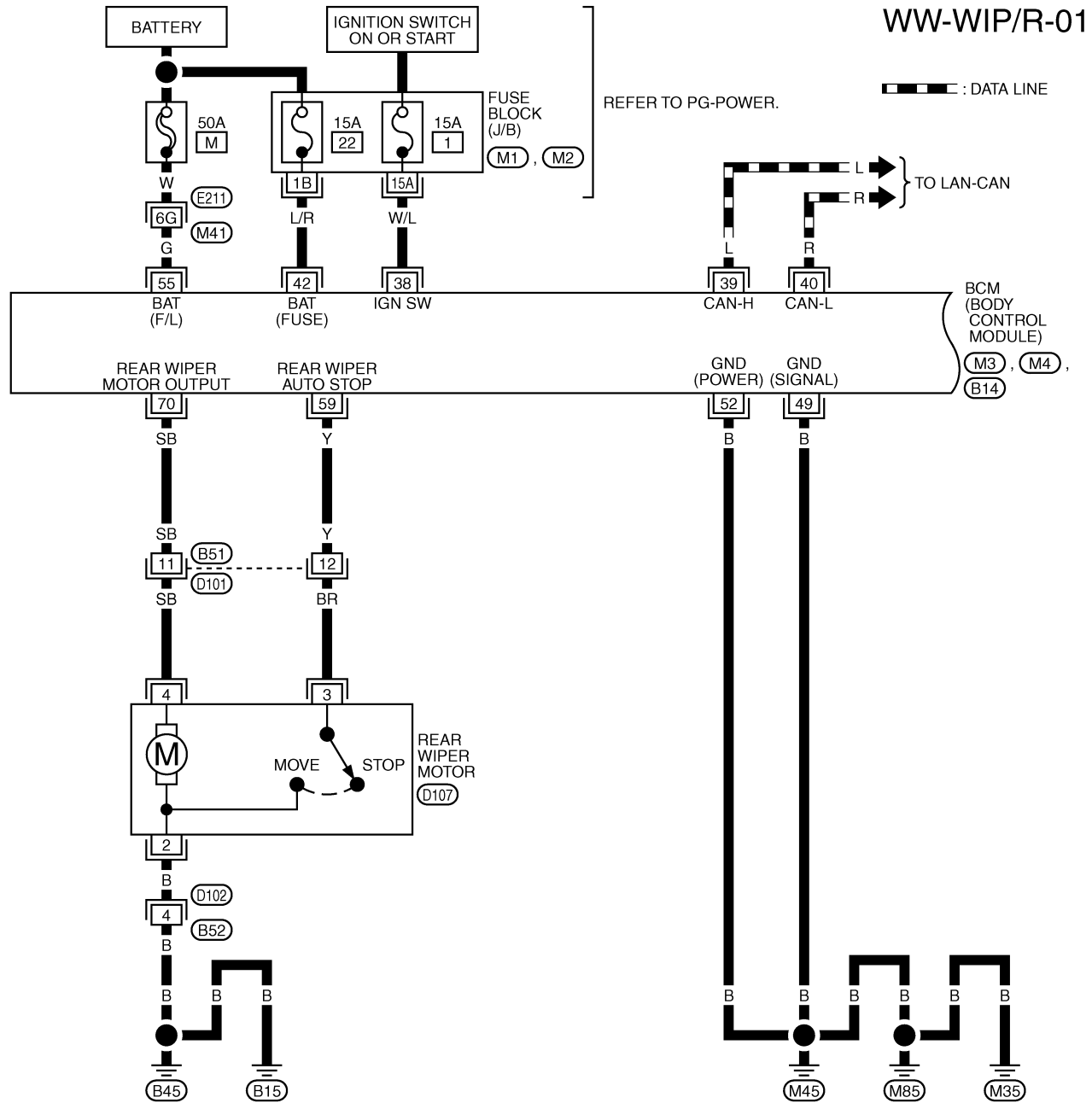
With ground supplied, rear washer motor is operated.
When BCM detects that rear washer motor has operated for 0.4 seconds or longer, BCM operates rear wiper motor at low speed.
When BCM detects washer switch is OFF, low speed operation cycles approximately 3 times and then stops.

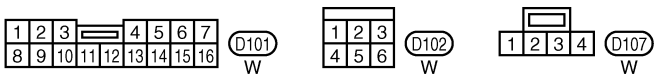
BCM WIPER SWITCH READING FUNCTION

Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" in BODY CONTROL SYSTEM.

Wiring Diagram — WIP/ R —

AKS0057J





REFER TO THE FOLLOWING.

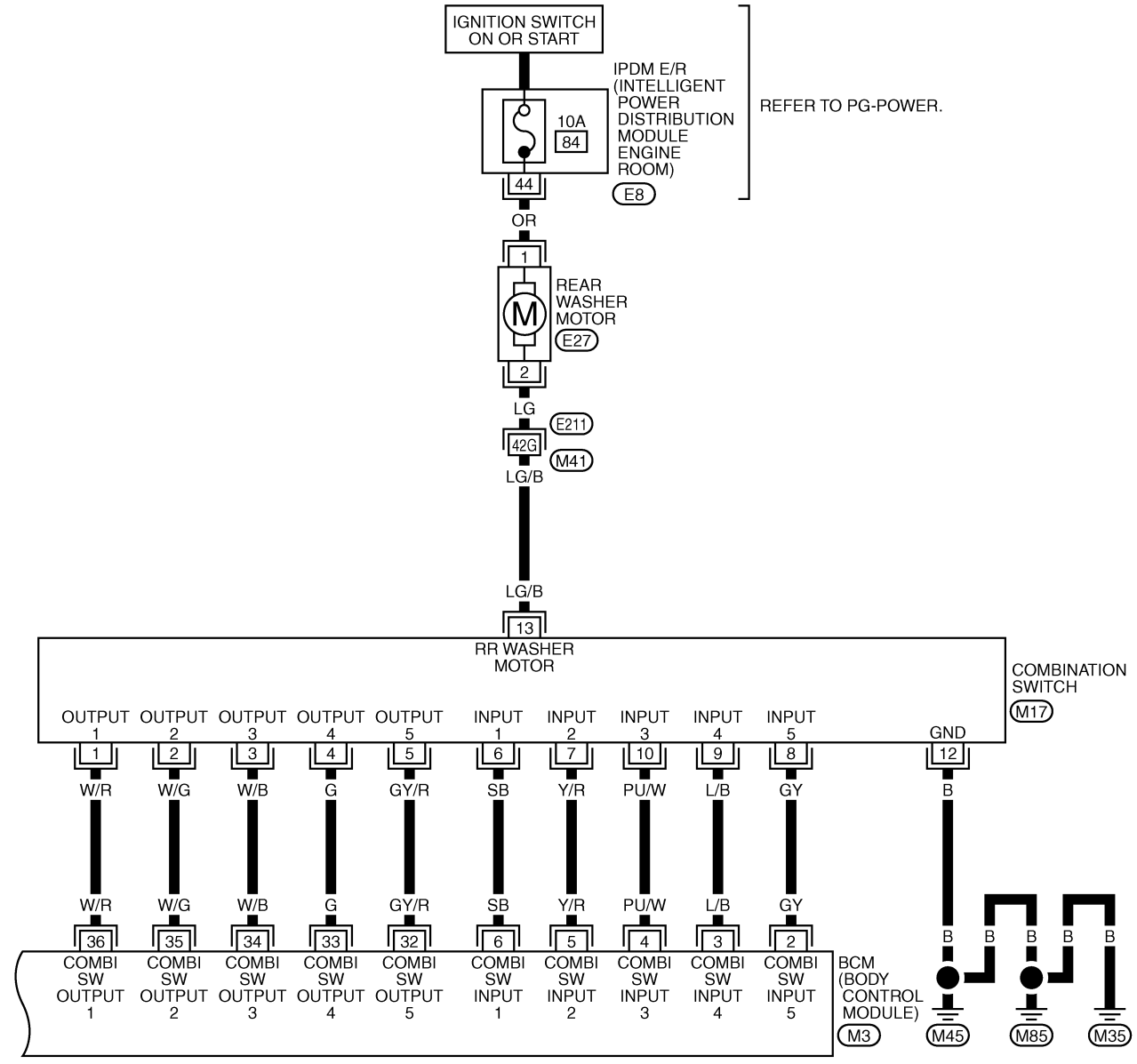
E211 -SUPER MULTIPLE JUNCTION (SMJ)

M1 , M2 -FUSE BLOCK-JUNCTION BOX (J/B)

M3 , M4 , B14 -ELECTRICAL UNITS

TKWM0666E

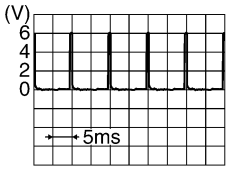
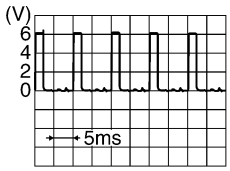
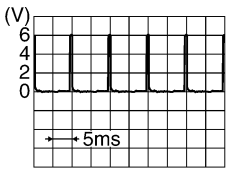
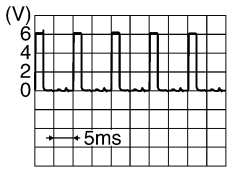
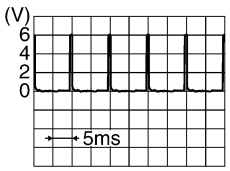
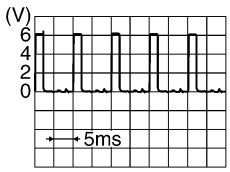
WW-WIP/R-02

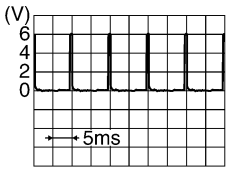


TKWM0828E

Terminals and Reference Values for BCM

AKS0079S

Terminal No. (Wire color)	Signal name	Measuring condition		Reference value
		Ignition switch	Operation or condition	
2 (GY)	Combination switch input 5	ON	● Lighting switch and wiper switch OFF ● Wiper dial position 4	 SKIA5291E
3 (L/B)	Combination switch input 4	ON	● Lighting switch and wiper switch OFF ● Wiper dial position 4	 SKIA5292E
4 (PU/W)	Combination switch input 3	ON	● Lighting switch and wiper switch OFF ● Wiper dial position 4	 SKIA5291E
5 (Y/R)	Combination switch input 2	ON	● Lighting switch and wiper switch OFF ● Wiper dial position 4	 SKIA5292E
6 (SB)	Combination switch input 1			
32 (GY/R)	Combination switch output 5	ON	● Lighting switch and wiper switch OFF ● Wiper dial position 4	 SKIA5291E
33 (G)	Combination switch output 4	ON	● Lighting switch and wiper switch OFF ● Wiper dial position 4	 SKIA5292E
34 (W/B)	Combination switch output 3	ON	● Lighting switch and wiper switch OFF ● Wiper dial position 4	 SKIA5291E

Terminal No. (Wire color)	Signal name	Measuring condition			Reference value
		Ignition switch	Operation or condition		
35 (W/G)	Combination switch output 2	ON	● Lighting switch and wiper switch OFF ● Wiper dial position 4		 SKIA5292E
36 (W/R)	Combination switch output 1				
38 (W/L)	Ignition switch (ON)	ON	—		Battery voltage
39 (L)	CAN H	—	—		—
40 (R)	CAN L	—	—		—
42 (L/R)	Battery power supply	OFF	—		Battery voltage
49 (B)	Ground	ON	—		Approx. 0 V
52 (B)	Ground	ON	—		Approx. 0 V
55 (G)	Battery power supply	OFF	—		Battery voltage
59 (Y)	Rear wiper auto stop signal	ON	Wiper operating		Approx. 0 V
			Wiper stopped		Battery voltage
70 (SB)	Rear wiper motor output signal	ON	Wiper switch	OFF	Approx. 0 V
				ON	Battery voltage

How to Proceed With Trouble Diagnosis

AKS0057L

1. Confirm the symptoms and customer complaint.
2. Understand operation description and function description. Refer to WW-50, "System Description" .
3. Perform the Preliminary Check. Refer to WW-56, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the rear wiper and washer operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

Preliminary Check

AKS0057M

INSPECTION POWER SUPPLY AND GROUND CIRCUIT

Inspection Procedure

1. CHECK FUSE

- Check if wiper and washer fusible link and fuse is blown.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	M
	Battery	22
	Ignition ON or START	1
Rear washer motor	Ignition ON or START	84

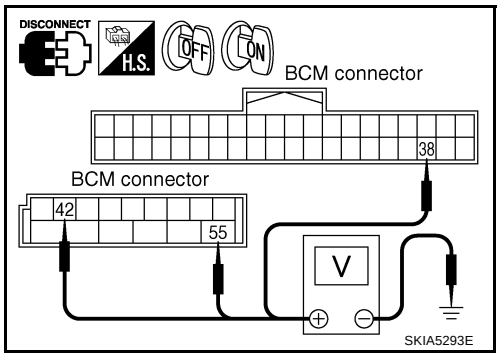
Refer to WW-52, "Wiring Diagram — WIP/ R —" .

OK or NG

OK >> GO TO 2.
NG >> If fuse or fusible link is blown, be sure to eliminate cause of malfunction before installing new fuse or fusible link, refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

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



Terminals			Ignition switch position	
(+)		(-)	OFF	ON
Connector	Terminal (Wire color)			
M4	42 (L/R)	Ground	Battery voltage	Battery voltage
M4	55 (G)		Battery voltage	Battery voltage
M3	38 (W/L)		0V	Battery voltage

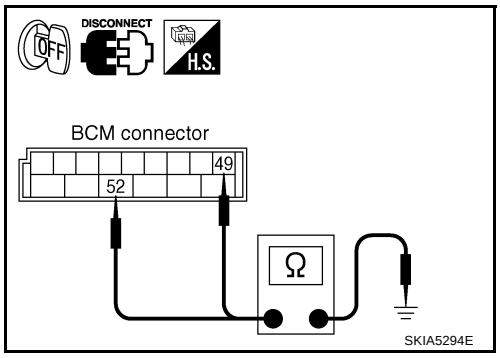
OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short between fuse, fusible link and BCM.

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector M4 terminal 49(B), 52(B) and ground.

49 (B), 52 (B) - Ground : Continuity should exist.



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

CONSULT-II Functions

AKS007AG

CONSULT-II performs the following functions communicating with BCM.

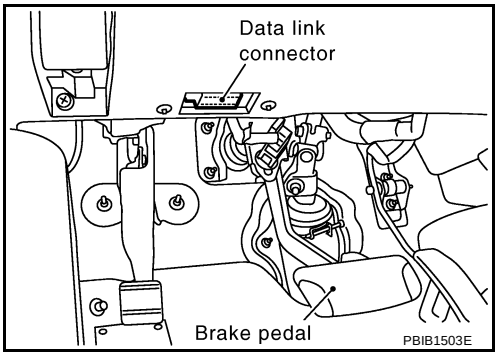
BCM diagnosis position	Check item, Diagnosis mode	Description
Wiper	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Device operation can be checked by applying a drive signal to device.
BCM	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

CONSULT-II OPERATION

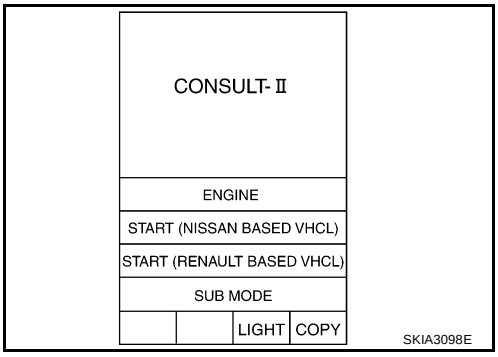
CAUTION:

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

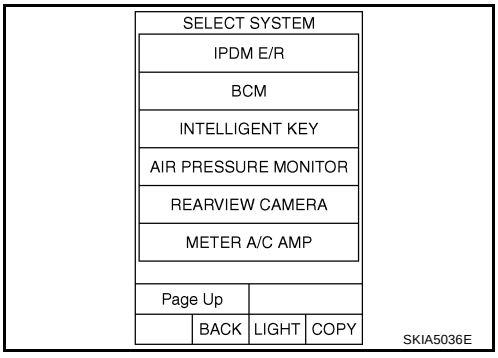
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn the ignition switch ON.



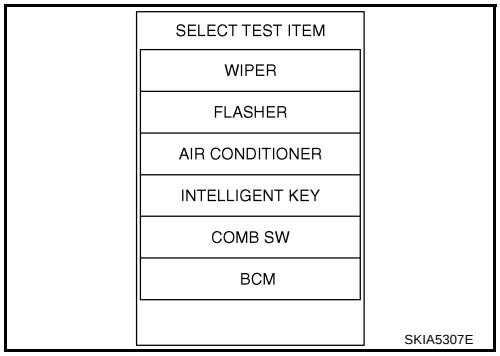
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “BCM”.
If “BCM” is not indicated, refer to GI-40, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Touch “WIPER”.



DATA MONITOR

Operation Procedure

1. Touch “WIPER” on the “SELECT TEST ITEM” screen.
2. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.
3. Touch either “ALL ITEMS” or “SELECT ITEM MENU” on “DATA MONITOR” screen.

All Items	All items will be monitored.
Select Item Menu	Selects and monitors individual items.

4. Touch “START”.
5. When “SELECT ITEM MENU” is selected, touched items to be monitored. If “ALL ITEMS” is selected, all items will be monitored.
6. Touch “RECORDING START” while monitoring to record the status of the item being monitored. To stop recording, touch “RECORDING STOP”.

Display Item List

Monitor item [operation or unit]		Display content
IGN ON SW	[ON/OFF]	Displays “ignition switch ON (ON)/Other OFF or ACC (OFF)” status as judged from ignition switch signal.
IGN SW CAN	[ON/OFF]	Displays “ignition switch ON (ON)/Other OFF or ACC (OFF)” status as judged from CAN communication signal.
FR WIPER HI	[ON/OFF]	Displays “Front Wiper HI (ON)/Other (OFF)” status as judged from wiper switch signal.
FR WIPER LOW	[ON/OFF]	Displays “Front Wiper LOW (ON)/Other (OFF)” status as judged from wiper switch signal.
FR WIPER INT	[ON/OFF]	Displays “Front Wiper INT (ON)/Other (OFF)” status as judged from wiper switch signal.
FR WASHER SW	[ON/OFF]	Displays “Front Washer Switch (ON)/Other (OFF)” status as judged from wiper switch signal.
INT VOLUME	[1 - 7]	Displays intermittent operation dial position setting (1 - 7) as judged from wiper switch signal.
FR WIPER STOP	[ON/OFF]	Displays “Stopped (ON)/Operating (OFF)” status as judged from the auto-stop signal.
VEHICLE SPEED	[km/h]	Displays vehicle speed status as judged from vehicle speed signal.
RR WIPER ON	[ON/OFF]	Displays “Rear Wiper ON (ON)/Other (OFF)” status as judged from wiper switch signal.
RR WIPER INT	[ON/OFF]	Displays “Rear Wiper INT (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 “Rear Wiper Stop (ON)/Other (OFF)” status, as judged from wiper switch signal.

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	Indication on CONSULT-II display	Description
Front wiper HI output	FRONT WIPER	With a certain operation (OFF, HI, LO, INT), the front wiper can be operated.
Rear wiper output	RR WIPER	Rear wiper can be operated by any ON-OFF operation.

Rear Wiper Does Not Operate

AKS007A4

1. CHECK FUSE AND FUSIBLE LINK

Check fuse No.1, 84 and fusible link No. M.

OK or NG

OK >> GO TO 2.
NG >> If fuse or fusible link is blown, be sure to eliminate cause of malfunction before installing new fuse or fusible link, refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

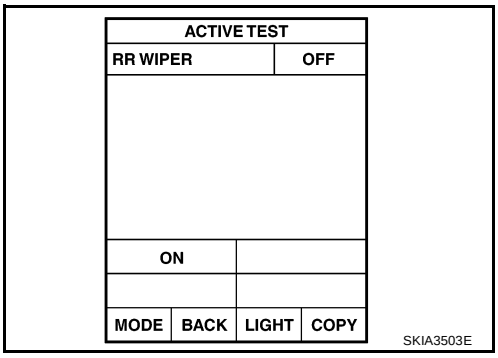
2. CHECK CIRCUIT BETWEEN BCM AND REAR WIPER

With CONSULT-II

1. Select “BCM” on CONSULT-II, and select “WIPER” on “SELECT SYSTEM” screen.
2. Select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
3. Select “REAR WIPER” on “SELECT TEST ITEM” screen.
4. Confirm that rear wiper operates normally.

Without CONSULT-II

GO TO 3.



Does rear wiper operate normally?

YES >> GO TO LT-182, "Combination Switch Inspection" .
NO >> GO TO 3.

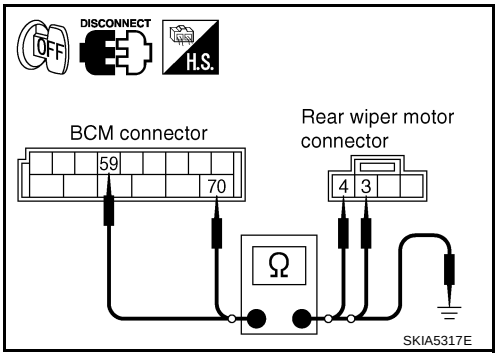
3. CHECK CIRCUIT BETWEEN BCM AND REAR WIPER

1. Turn ignition switch OFF.
2. Disconnect BCM connector and rear wiper motor connector.
3. Check continuity between BCM harness connector B14 terminals 59 (Y), 70 (SB) and rear wiper motor harnes connector D107 terminals 3 (BR), 4 (SB).

   59 (Y) - 3 (BR) :Continuity should exist.
   70 (SB) - 4 (SB) :Continuity should exist.

4. Check continuity between BCM harness connector B14 terminals 59 (Y), 70 (SB) and ground.

   59 (Y), 70 (SB) - Ground : Continuity should not exist.



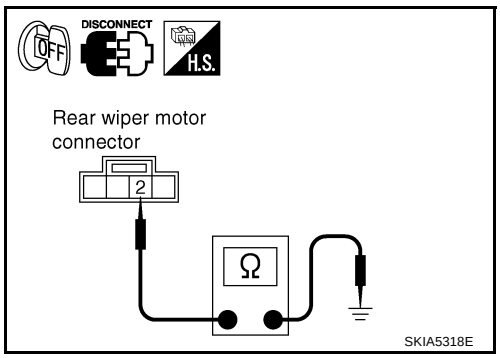
OK or NG

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

4. CHECK REAR WIPER TO GROUND

Check continuity between rear wiper motor harness connector D107 terminal 2 (B) and ground.

2 (B) - Ground **Continuity should exist.**

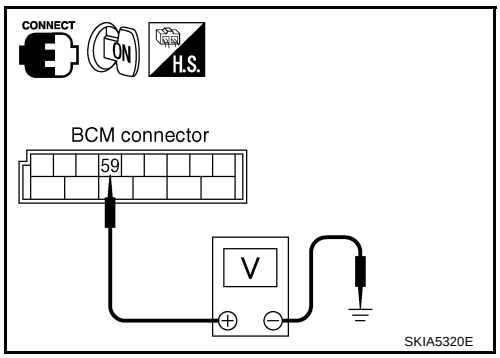


OK or NG

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

5. CHECK BCM

1. Connect BCM connector and rear wiper motor connector.
2. Turn ignition switch ON.
3. With rear wiper switch ON, check voltage between BCM harness connector B14 terminal 59 (Y) and ground.



Terminals			Condition	Voltage
BCM(+)		(−)		
Connector	Terminal (Wire color)			
B14	59 (Y)	Ground	Wiper stopped	Approx. 0V
			Wiper operating	Approx. 12V

OK or NG

OK >> Replace rear wiper motor.
NG >> Replace BCM. Refer to BCS-28, "Removal and Installation of BCM" .

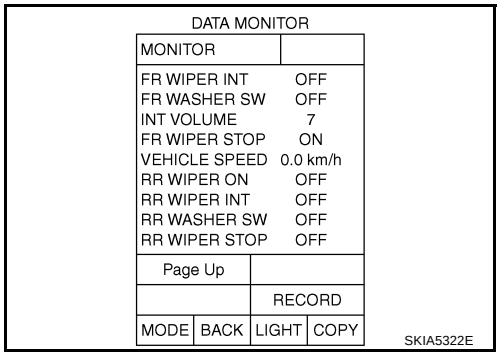
Rear Wiper Does Not Return to Stop Position

AKS007A5

1. CHECK CIRCUIT BETWEEN BCM AND REAR WIPER (1)

With CONSULT-II
Select “BCM” on CONSULT-II. With “WIPER” on “DATA MONITOR”, confirm that “RR WIPER STOP” turns ON-OFF linked with wiper operation.

Without CONSULT-II
GO TO 2.



OK or NG

OK >> Replace BCM. Refer to BCS-28, "Removal and Installation of BCM" .
NG >> GO TO 2.

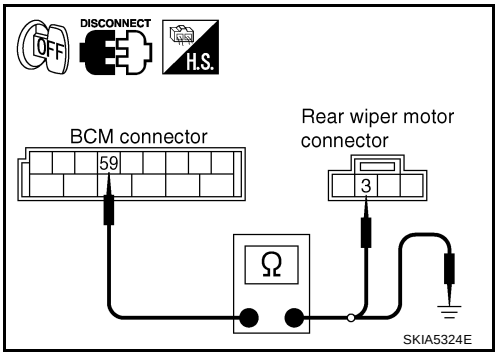
2. CHECK CIRCUIT BETWEEN BCM AND REAR WIPER (2)

1. Turn ignition switch OFF.
2. Disconnect BCM connector and rear wiper motor connector.
3. Check continuity between BCM harness connector B14 terminal 59 (Y) and rear wiper motor harness connector D107 terminal 3(BR).

   59 (Y) - 3 (BR) : Continuity should exist.

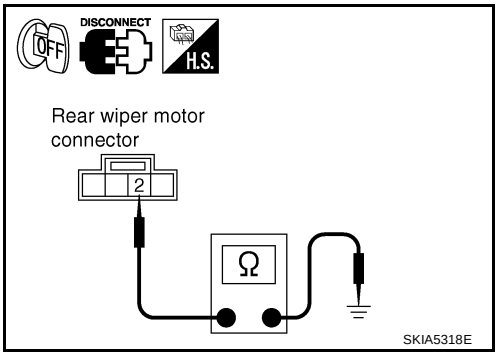
4. Check continuity between BCM harness connector B14 terminal 59 (Y) and ground.

   59 (Y) - Ground : Continuity should not exist.



5. Check continuity between rear wiper motor harness connector D107 terminal 2 (B) and ground.

   2 (B) - Ground : Continuity should exist.

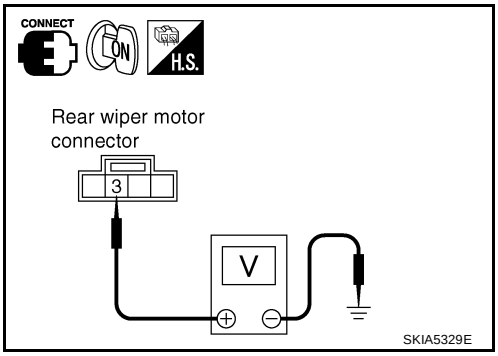


OK or NG

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

3. CHECK CIRCUIT BETWEEN BCM AND REAR WIPER (3)

1. Connect BCM connector and rear wiper motor connector.
2. Turn ignition switch ON.
3. Check voltage between rear wiper motor harness connector terminal and ground while rear wiper motor is stopped and while it is operating.



Terminals			Condition	Voltage
Rear wiper motor(+)		(–)		
Connector	Terminal (Wire color)			
D107	3 (BR)	Ground	Wiper stopped	Approx. 0V
			Wiper operating	Battery voltage

OK or NG

OK >> Replace BCM. Refer to BCS-28, "Removal and Installation of BCM" .
NG >> Replace rear wiper motor.

Only Rear Wiper ON Does Not Operate

AKS007A7

Refer to LT-182, "Combination Switch Inspection" , and inspect it.

Only Rear Wiper INT Does Not Operate

AKS007A6

Refer to LT-182, "Combination Switch Inspection" , and inspect it.

Wiper Does Not Wipe When Rear Washer Operates

AKS007A9

Refer to LT-182, "Combination Switch Inspection" , and inspect it.

Rear Wipers Do Not Stop

AKS007G0

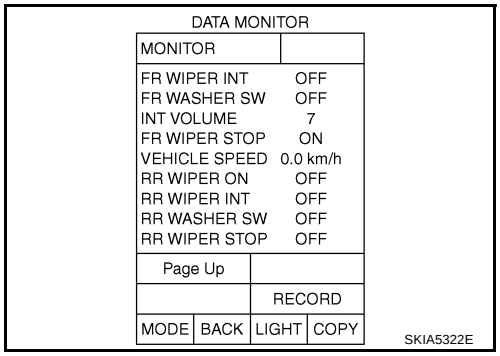
1. CHECK CIRCUIT BETWEEN COMBINATION SWITCH AND BCM

With CONSULT-II

Select “BCM” on CONSULT-II. With “WIPER” on “DATA MONITOR”, confirm that “RR WIPER INT”, “RR WIPER ON”, and “RR WASHER SW” turn ON-OFF according to wiper switch operation.

Without CONSULT-II

Refer to LT-182, "Combination Switch Inspection" .



OK or NG

OK >> Replace BCM. Refer to BCS-28, "Removal and Installation of BCM" .

NG >> Check wiper Switch. Refer to LT-182, "Combination Switch Inspection" .

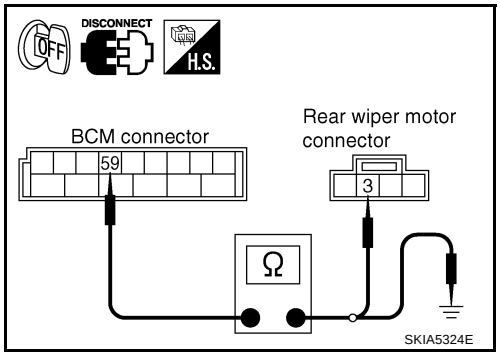
2. CHECK CIRCUIT BETWEEN BCM AND REAR WIPER (2), AND BETWEEN REAR WIPER AND GROUND

1. Turn ignition switch OFF.
2. Disconnect BCM connector and rear wiper motor connector.
3. Check continuity between BCM connector B14 terminal 59 (Y) and rear wiper motor connector D107 terminal 3 (BR).

   59 (Y) - 3 (BR) : Continuity should exist.

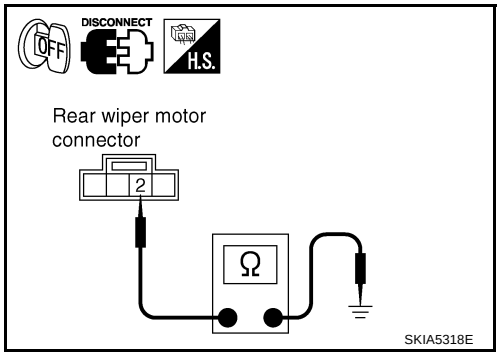
4. Check continuity between BCM connector B14 terminals 59 (Y) and Ground.

   59 (Y) - Ground : Continuity should not exist.



5. Check continuity between rear wiper motor connector D107 terminal 2 (B) and ground.

   2 (B) - Ground : Continuity should exist.



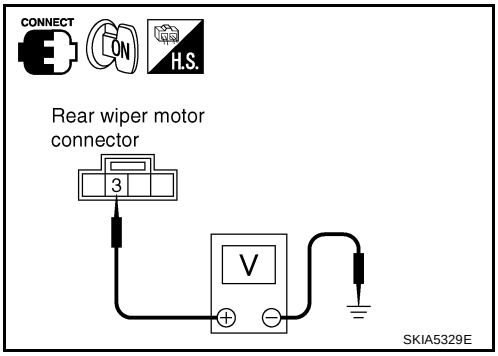
OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK CIRCUIT BETWEEN BCM AND REAR WIPER (3)

1. Connect BCM connector and rear wiper motor connector.
2. Turn ignition switch ON.
3. Check voltage between rear wiper motor harness connector terminal and ground while rear wiper motor is stopped and while it is operating.



Terminals			Condition	Voltage
Rear wiper motor(+)		(–)		
Connector	Terminal (Wire color)			
D107	3 (BR)	Ground	Wiper stopped	Approx. 0V
			Wiper operating	Battery voltage

OK or NG

OK >> Replace BCM. Refer to BCS-28, "Removal and Installation of BCM" .
NG >> Replace rear wiper motor.

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

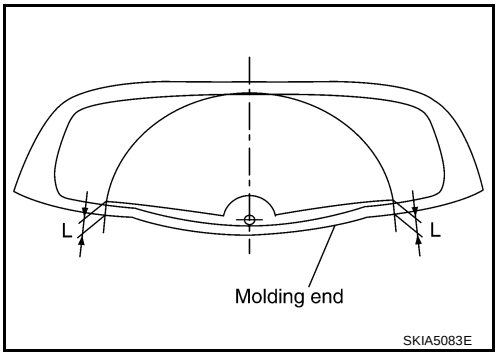
AKS0057T

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.

INSTALLATION

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” : 45 - 60 mm (1.77 - 2.36 in)

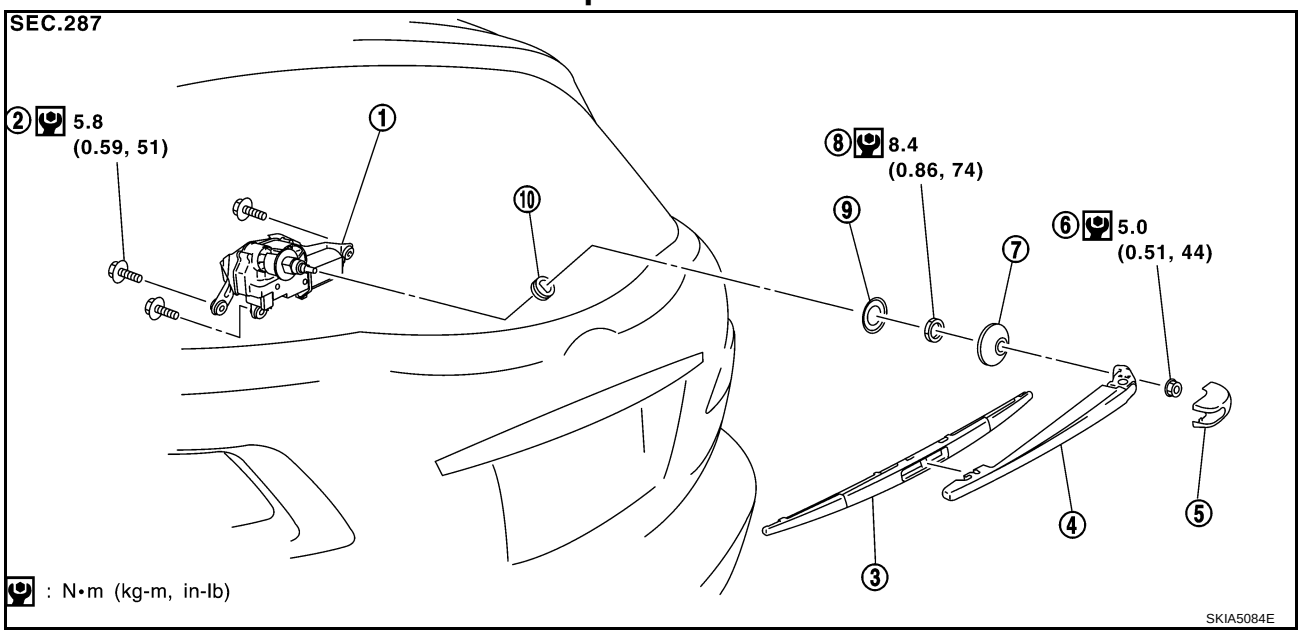
- Tighten wiper arm nuts to specified torque.

Rear wiper arm nut : 5.0 N·m (0.51 kg-m, 44 in-lb)

Install in the reverse order of removal.

Removal and Installation of Rear Wiper Motor

AKS0057U

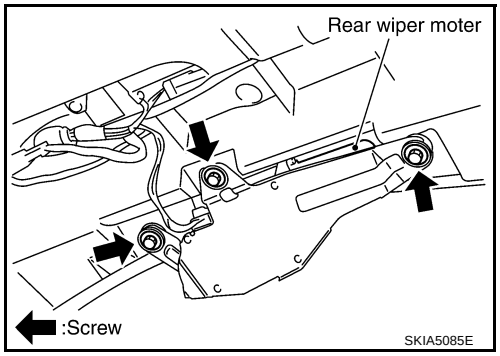


1. Rear wiper motor
2. Screw
3. Wiper blade
4. Wiper arm
5. Cover wiper arm
6. Nut
7. Pivot cap
8. Nut
9. Washer
10. Cushion rubber

REMOVAL

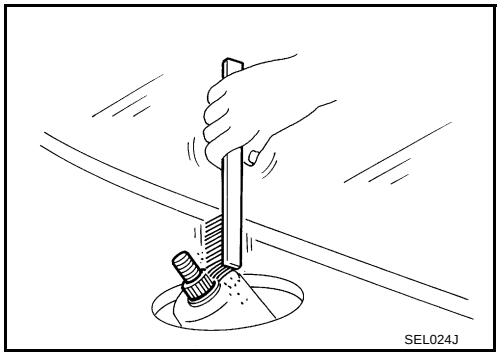
1. Remove wiper arm. Refer to WW-63, "REMOVAL" .
2. Remove pivot cap, and remove nut and nozzle or tube from vehicle.
3. Remove back door finisher. Refer to EI-46, "Removal and Installation" in “EI” section.
4. Disconnect wiper motor connector.
5. Remove rear wiper motor mounting screws and remove rear wiper motor.

   CAUTION:
   Do not remove cushion rubber.



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 connector. Turn rear wiper switch ON to operate rear wiper motor, then turn wiper switch OFF (auto stop).
5. Install back door finisher. Refer to EI-46, "Removal and Installation" in “EI” section.
6. Attach wiper arm.



CAUTION:

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

Removal and Installation of Rear Wiper Blade

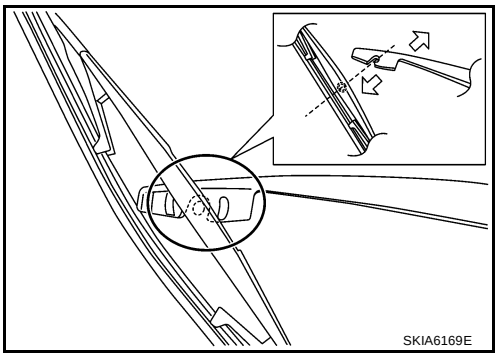
AKS007NV

REMOVAL

Turn wiper blade 90 degrees against wiper arm, and pull it out downward for removal.

CAUTION:

Replace wiper blade as wiper blade assembly.



INSTALLATION

Install in the reverse order of removal.

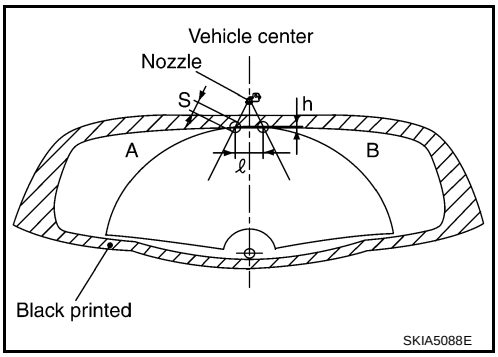
Washer Nozzle Adjustment

AKS0057V

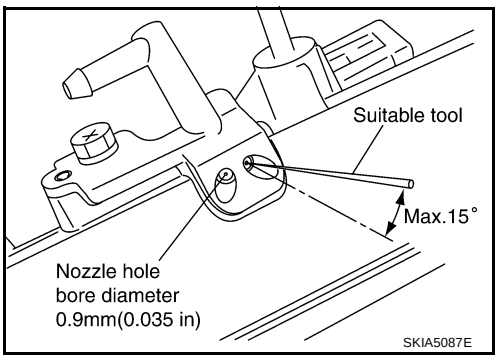
- Adjust washer nozzle with suitable tool as shown in the figure.

Unit: mm (in)

Spray position	h (height)	ℓ (width)	ϕS
A, B	2.5 (0.098)	40 (1.57)	30 (1.18)



Adjustable range : -15°– +15° (In any direction)

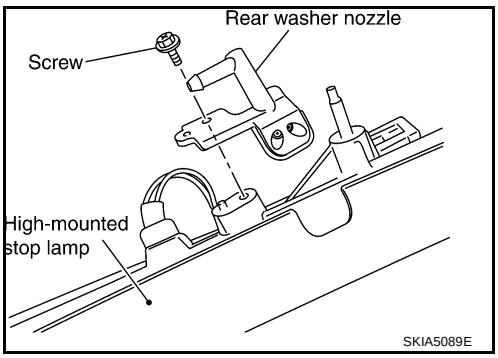


Removal and Installation of Washer Nozzle

AKS007AJ

REMOVAL

1. Remove high-mounted stop lamp. Refer to LT-192, "High-Mounted Stop Lamp" in “LT” section.
2. Remove screw and remove washer nozzle from high-mounted stop lamp.

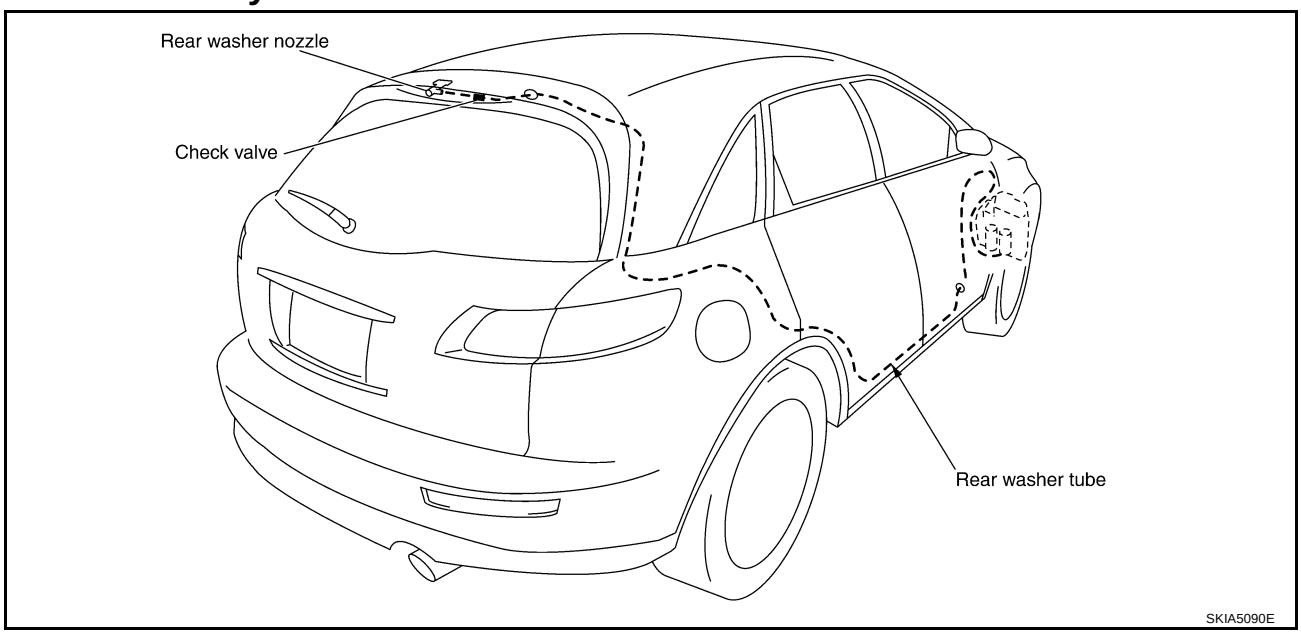


INSTALLATION

Install in the reverse order of removal.

Washer Tube Layout

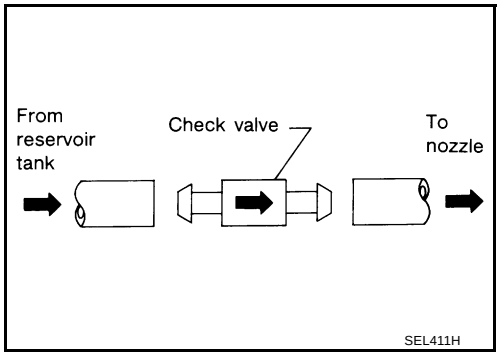
AKS0057W



Check Valve Inspection

AKS0057X

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



Removal and Installation of Rear Wiper and Washer Switch

AKS0057Y

Refer to WW-48, "Removal and Installation of Front Wiper and Washer Switch" .

Removal and Installation of Washer Tank

AKS0057Z

Refer to WW-48, "Removal and Installation of Washer Tank" .

Removal and Installation of Washer Motor

AKS00580

Refer to WW-49, "Removal and Installation of Washer Motor" .

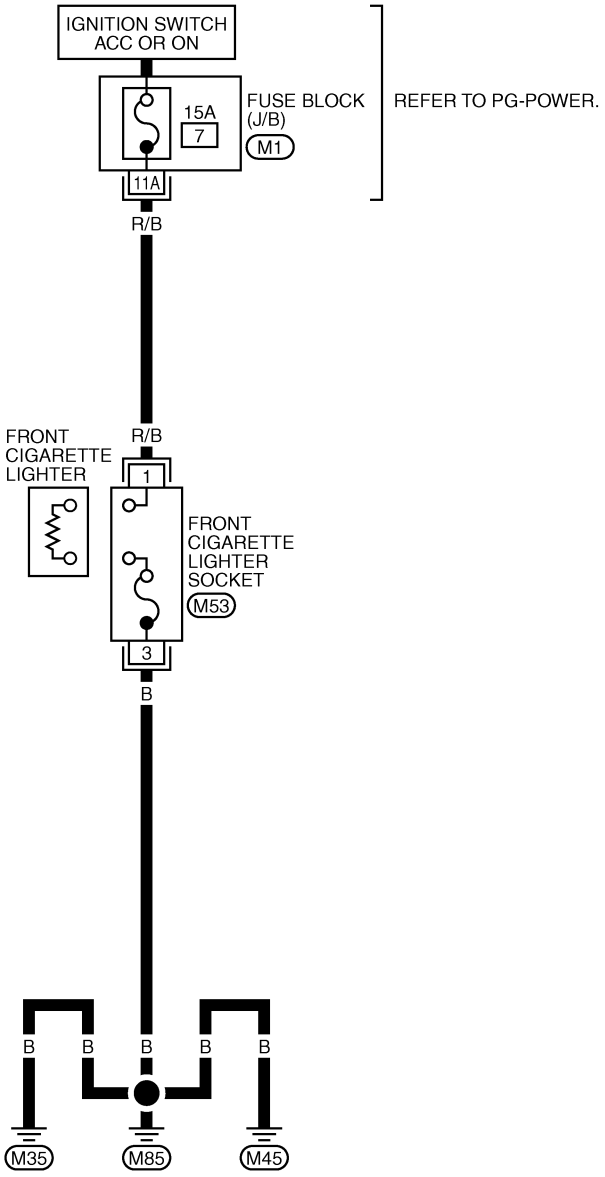
CIGARETTE LIGHTER

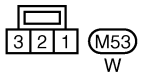
PFP:35330

Wiring Diagram — CIGAR —

AKS007AA

WW-CIGAR-01





REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

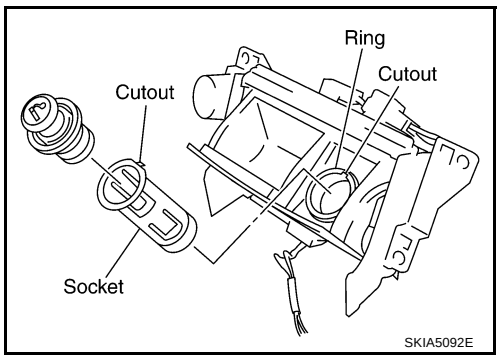
TKWM0668E

Removal and Installation of Cigarette Lighter

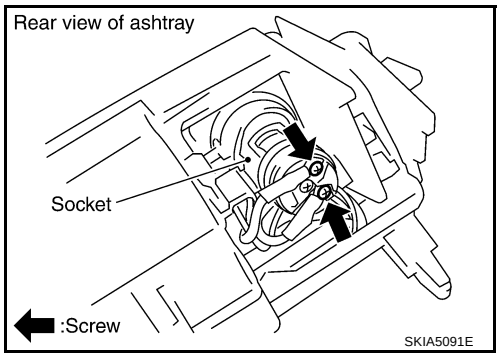
AKS007AB

REMOVAL

1. Remove A/T console finisher. Refer to IP-12, "(F) A/T Console Finisher" in “IP” section.
2. Remove instrument ashtray and hazard switch. Refer to IP-16, "A/T CONSOLE FINISHER" in “IP” section.
3. Pull out the cigarette lighter.



4. Use a screwdriver to undo ashtray finisher hooks.
5. Remove screws and remove socket.



INSTALLATION

Install in the reverse order of removal.

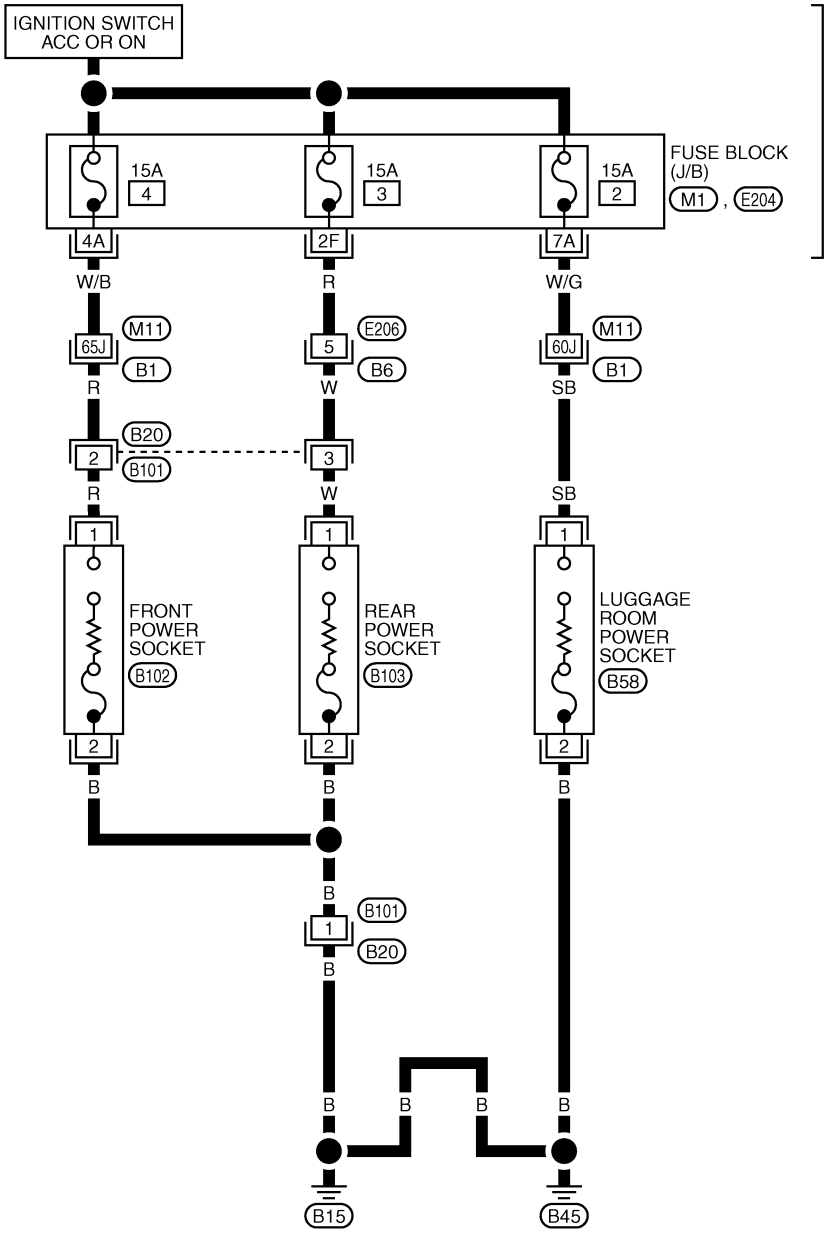
POWER SOCKET

PFP:253A2

Wiring Diagram — P/SCKT —

AKS00581

WW-P/SCKT-01



B6 W

B20 W

B58 B , B102 B , B103 B

REFER TO THE FOLLOWING.

B1 -SUPER MULTIPLE JUNCTION (SMJ)

M1 , E204 -FUSE BLOCK-JUNCTION BOX (J/B)

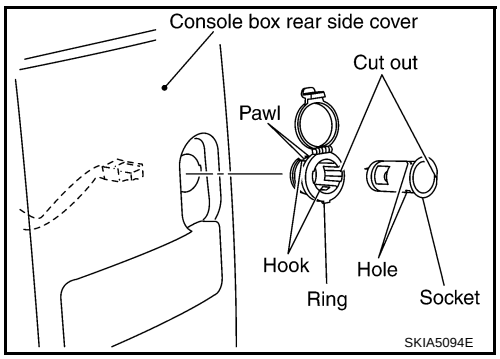
TKWM0762E

Removal and Installation of Center Console Box Rear Side Power Socket

AKS007AK

REMOVAL

1. Remove console rear finisher. Refer to IP-17, "CENTER CONSOLE" .
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

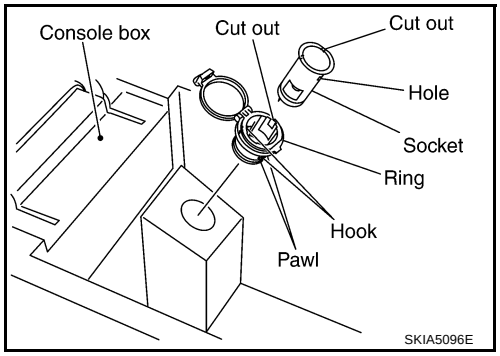
Install in the reverse order of removal.

Removal and Installation of Center Console Box Power Socket

AKS007AL

REMOVAL

1. Remove inner socket from the ring. While pressing the hook on the ring out from square hole.
2. Remove ring from power socket finisher while pressing pawls.
3. Disconnect power socket connector.



INSTALLATION

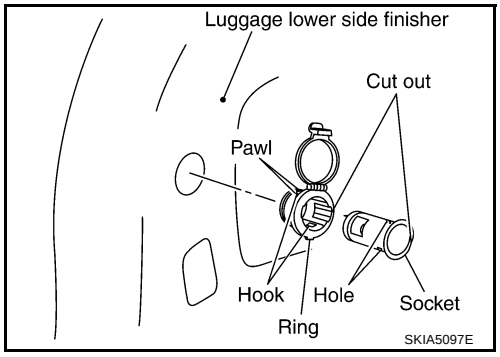
Install in the reverse order of removal.

Removal and Installation of Luggage Room Power Socket

AKS007AM

REMOVAL

1. Remove inner socket from the ring. While pressing the hook on the ring out from square hole.
2. Remove ring from power socket finisher while pressing pawls.
3. Disconnect power socket connector.



INSTALLATION

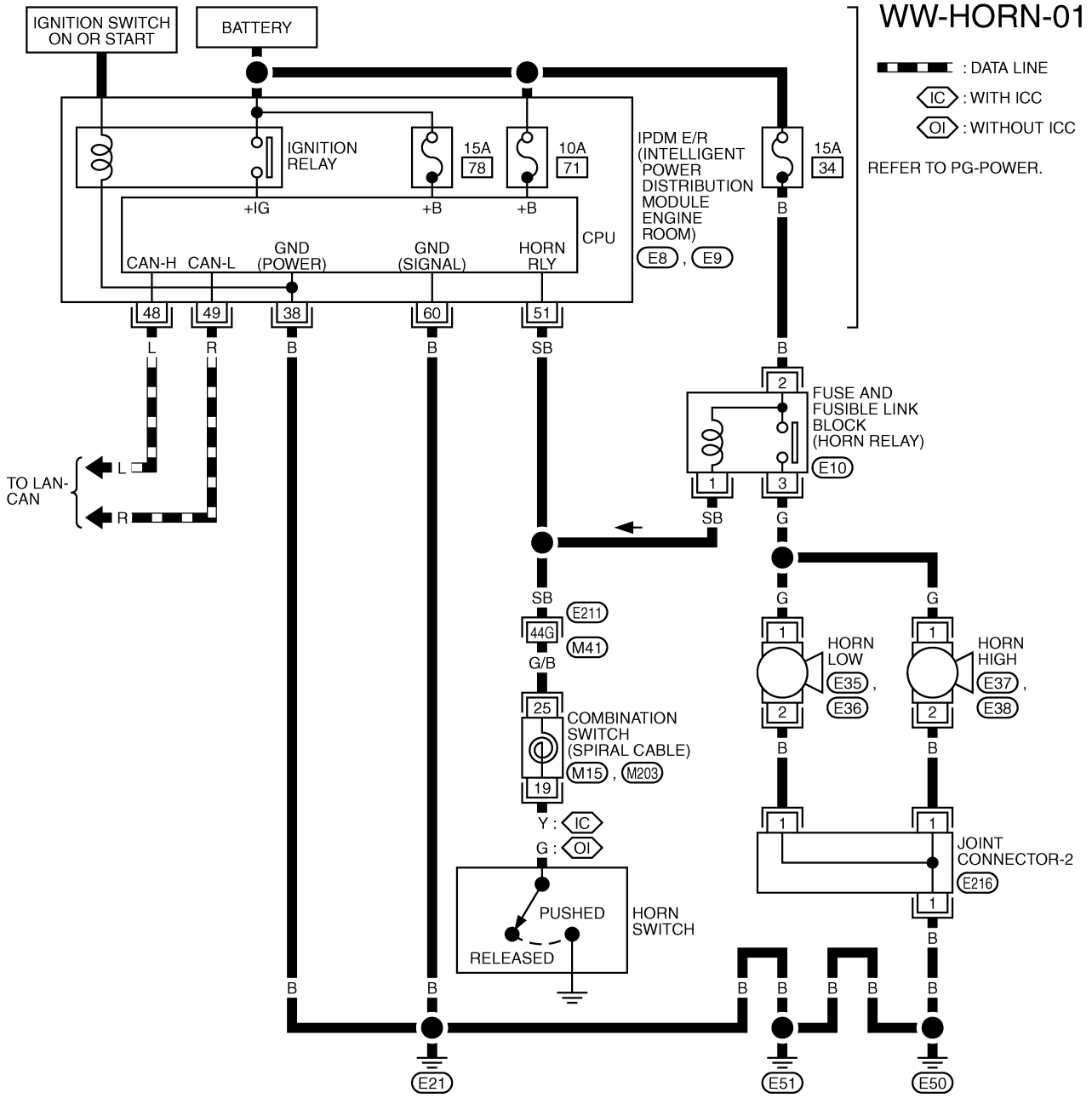
Install in the reverse order of removal.

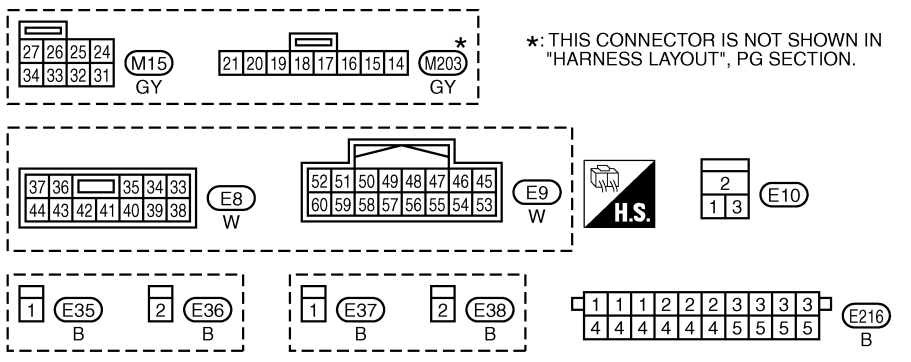
HORN

PFP:25610

Wiring Diagram — HORN —

AKS00583





REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)

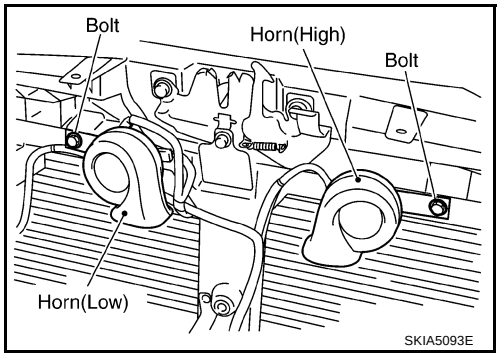
TKWM0669E

Removal and Installation

AKS00584

REMOVAL

1. Remove front grille. Refer to EI-23, "Removal and Installation" in “EI” section.
2. Disconnect all horn connectors.
3. Remove horn mounting bolt and remove horn from vehicle.



INSTALLATION

Tighten horn bolt to specified torque.

Horn mounting bolt	**: 5.8 N·m (0.59 kg-m, 51 in-lb)**