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SECTION

WIPER, WASHER & HORN

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PRECAUTION

PRECAUTION

PPF:00011

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

AKS004MP

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

AKS004MR

When You Read Wiring Diagrams, Refer to the Following:

- Refer to [GI-14, "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-10, "How to Follow Trouble Diagnoses"](#) .
- Refer to [GI-26, "How to Perform Efficient Diagnosis for an Electrical Incident"](#) .

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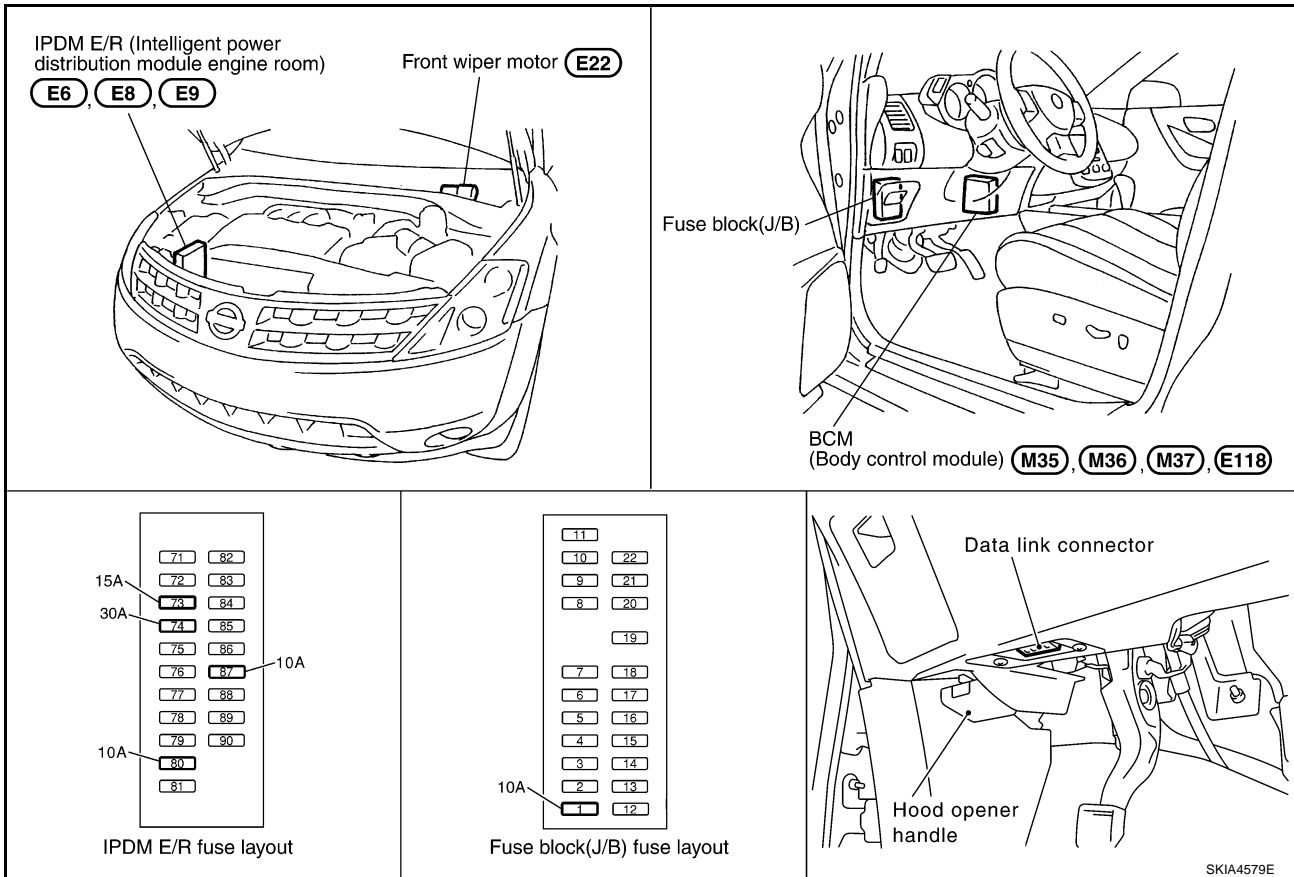
FRONT WIPER AND WASHER SYSTEM

FRONT WIPER AND WASHER SYSTEM

PFP:28810

Components Parts and Harness Connector Location

AKS004MS



System Description

AKS004MT

- 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 (body control module) when switch is turned ON.
- BCM (body control module) controls front wiper LO, HI, and INT (intermittent) operation.
- IPDM E/R (intelligent power distribution module engine room) operates wiper motor according to CAN communication signals from BCM (body control module).

Power is supplied at all times

- through 50 A fusible link (letter F, located in fusible link block)
- to BCM (body control module) terminal 7
- through 30 A fuse [No. 74, located in IPDM E/R (intelligent power distribution module engine room)]
- to front wiper relay [built in IPDM E/R (intelligent power distribution module engine room)]
- through 15 A fuse [No. 73, located in IPDM E/R (intelligent power distribution module engine room)]
- to 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 10 A fuse [No. 1, located in fuse block (J/B)]
- to BCM (body control module) terminal 35
- through 10 A fuse [No. 80, located in IPDM E/R (intelligent power distribution module engine room)]
- to front wiper relay [built in IPDM E/R (intelligent power distribution module engine room)] and
- to front wiper high relay [built in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]
- through 10 A fuse [No. 87, located in IPDM E/R (intelligent power distribution module engine room)]

FRONT WIPER AND WASHER SYSTEM

- through IPDM E/R (intelligent power distribution module engine room) terminal 18
- to combination switch terminal 14.

Ground is supplied

- to BCM (body control module) terminal 8
- through grounds E13, E26 and E28
- to IPDM E/R (intelligent power distribution module engine room) terminals 14 and 45
- through grounds E13, E26 and E28
- to combination switch (wiper switch) terminal 12
- through grounds M14 and M78.

LOW SPEED WIPER OPERATION

When front wiper switch is in LO position, BCM detects the LO position of the wiper switch by BCM wiper switch reading function.

BCM sent front wiper request signal (LO) to IPDM E/R by CAN communication line

- from BCM terminals 70 and 71
- 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 3
- through IPDM E/R terminal 31 and front wiper high relay and front wiper relay.

Ground is supplied

- to front wiper motor terminal 1
- through grounds E13, E26 and E28.

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

HI SPEED WIPER OPERATION

When front wiper switch is in HI position, BCM detects the HI position of the wiper switch by BCM wiper switch reading function.

BCM sent front wiper request signal (HI) to IPDM E/R by CAN communication line

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

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

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

Ground is supplied

- to front wiper motor terminal 1
- through grounds E13, E26 and E28.

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

INTERMITTENT OPERATION

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

When front wiper switch is in INT position BCM detects INT position of the wiper switch by BCM wiper switch reading function. BCM performs the following operations

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

With power is supplied and ground circuit is routed, front wiper operates at intermittent.

FRONT WIPER AND WASHER SYSTEM

AUTO STOP OPERATION

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

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

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

- to IPDM E/R terminal 38
- through front wiper motor terminal 4
- through front wiper motor terminal 1
- through grounds E13, E26 and E28.

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

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

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

WASHER OPERATION

When wiper switch is in front wiper washer position, BCM detects front wiper washer signal by BCM wiper switch reading function (Refer to [WW-7, "BCM WIPER SWITCH READING FUNCTION"](#)), combination switch (wiper switch) ground is supplied

- through combination switch (wiper switch) terminal 13
- to front and rear washer motor terminal 1
- to front and rear washer motor terminal 2
- through combination switch (wiper switch) terminal 11
- to combination switch terminal 12
- through grounds M14 and M78.

With ground is supplied, front and rear washer motor is operated.

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

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

MIST OPERATION

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

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

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

FAIL-SAFE FUNCTION

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

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

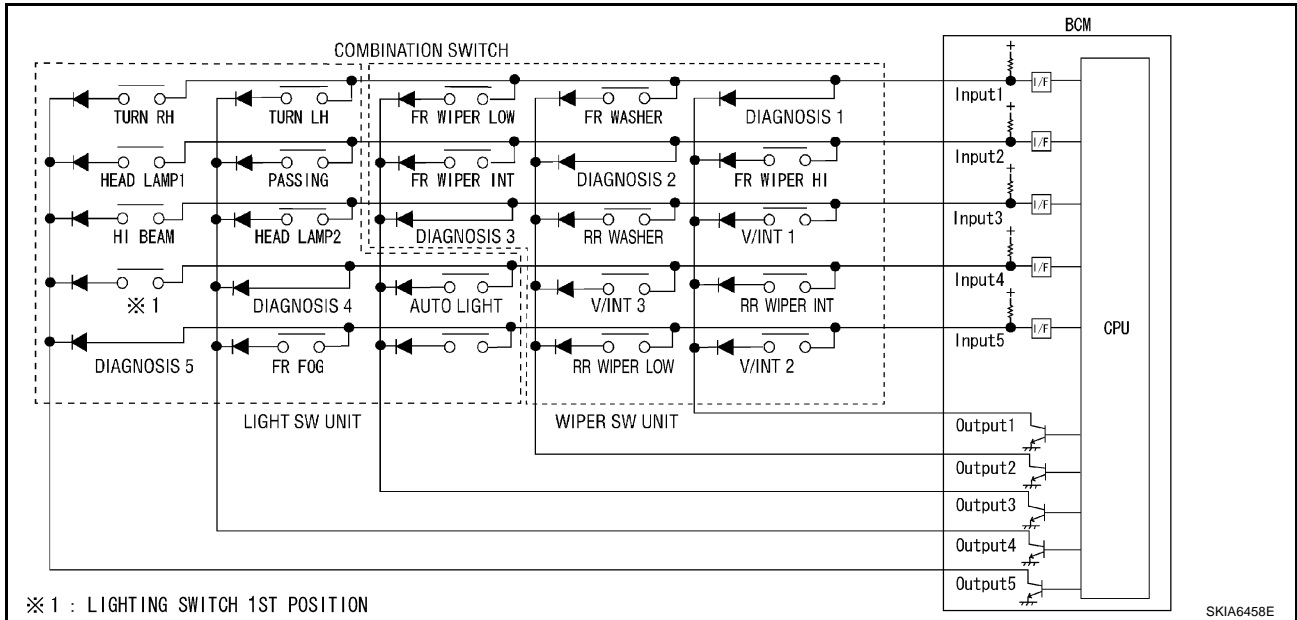
IPDM E/R maintains the condition of which before fail-safe starts until ignition switch is turned on.

After ignition switch is turned off and turned on again, if wipers stop at the different position, fail-safe returns the wipers automatically to the proper position and then stops.

FRONT WIPER AND WASHER SYSTEM

BCM WIPER SWITCH READING FUNCTION

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



Operation Description

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

Table of BCM - COMBINATION SWITCH OPERATIONS

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

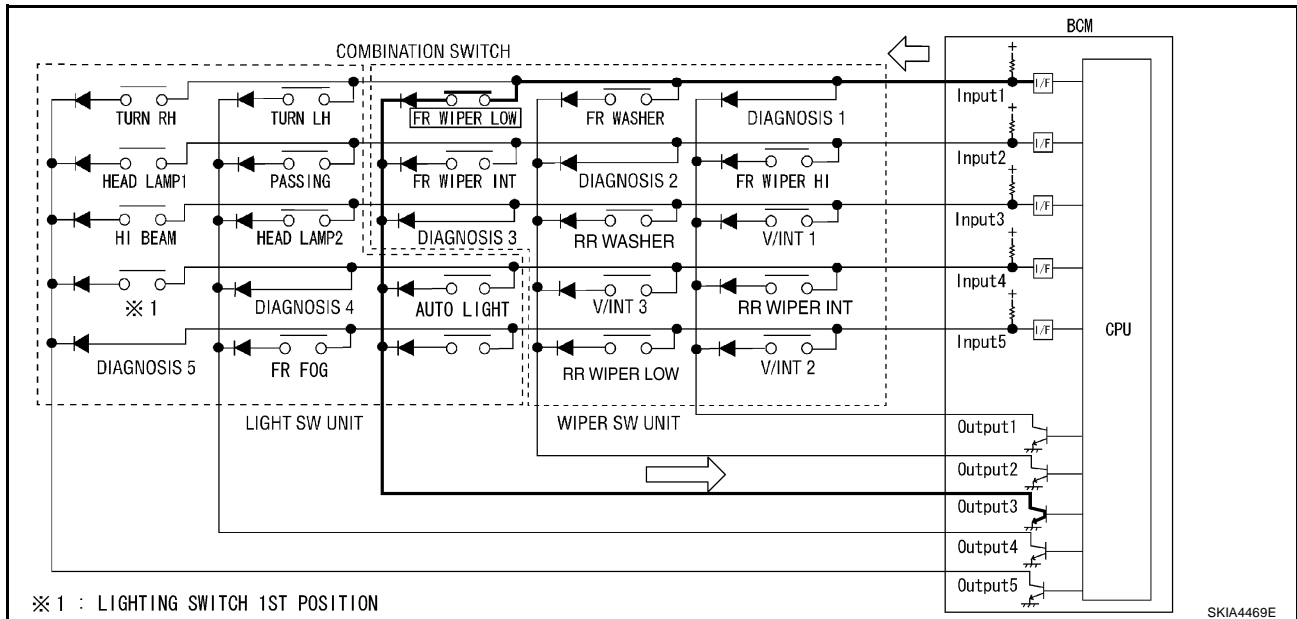
	COMB SW INPUT 1		COMB SW INPUT 2		COMB SW INPUT 3		COMB SW INPUT 4		COMB SW INPUT 5	
	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
COMB SW OUTPUT 1	DIAGNOSIS 1 OK	DIAGNOSIS 1 NG	FR WIPER HI ON	FR WIPER HI OFF	V/INT 1 ON	V/INT 1 OFF	RR WIPER INT ON	RR WIPER INT OFF	V/INT 2 ON	V/INT 2 OFF
COMB SW OUTPUT 2	FR WASHER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

SKIA6458E

FRONT WIPER AND WASHER SYSTEM

Sample Operation: (WIPER SWITCH TURNED TO LO POSITION)

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



NOTE:

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

Operating Modes

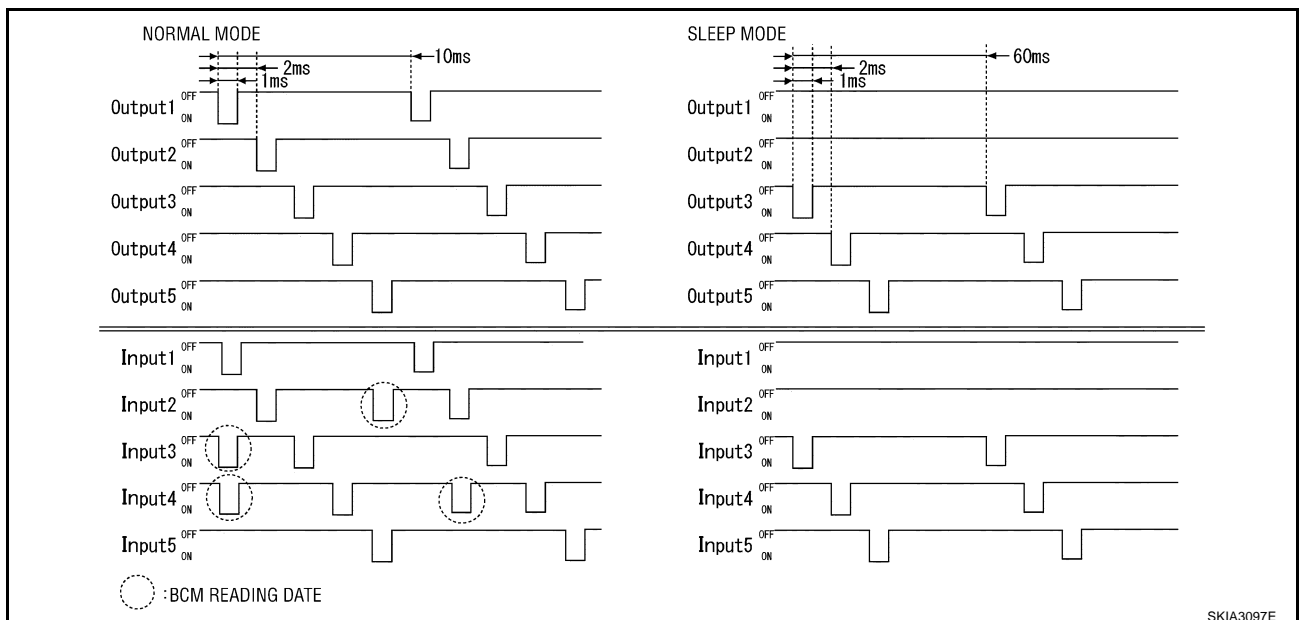
The following operation modes exist for combination switch reading function.

Normal Status

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

Sleep Status

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



FRONT WIPER AND WASHER SYSTEM

Intermittent Operation

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

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

Wiper Dial Position Setting

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

Example: For wiper dial position 1.

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

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

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

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

CAN Communication System Description

AKS005MC

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

CAN Communication Unit For 2WD Models

AKS007R1

Body type	Wagon															
Axle	2WD															
Engine	VQ35DE															
Transmission	CVT															
Brake control	ABS								VDC							
Low tire pressure warning system		×			×	×		×		×			×	×		×
Navigation system			×		×		×	×			×		×		×	×
Automatic drive positioner				×		×	×	×				×		×	×	×
CAN communication unit																
ECM	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
TCM	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Low tire pressure warning control unit		×			×	×		×		×			×	×		×
Display unit	×	×		×		×			×	×		×		×		

FRONT WIPER AND WASHER SYSTEM

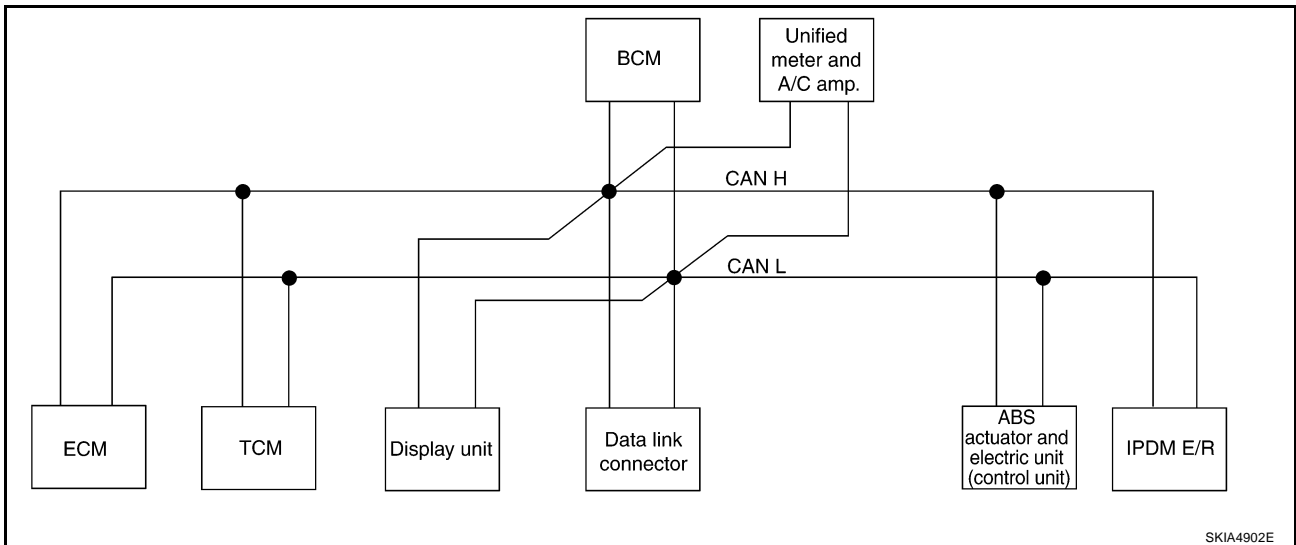
Body type	Wagon															
Axle	2WD															
Engine	VQ35DE															
Transmission	CVT															
Brake control	ABS								VDC							
Low tire pressure warning system		×			×	×		×		×			×	×		×
Navigation system			×		×		×	×			×		×		×	×
Automatic drive positioner				×		×	×	×				×		×	×	×
CAN communication unit																
Display control unit			×		×		×	×			×		×		×	×
Data link connector	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
BCM	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Unified meter and A/C amp.	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Steering angle sensor									×	×	×	×	×	×	×	×
Driver seat control unit				×		×	×	×				×		×	×	×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
IPDM E/R	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
CAN communication type	WW-10. "TYPE 1/TYPE 2/TYPE 3/TYPE 4/TYPE 5/TYPE 6/TYPE 7/TYPE 8"								WW-16. "TYPE 9/TYPE 10/TYPE 11/TYPE 12/TYPE 13/TYPE 14/TYPE 15/TYPE 16"							

×: Applicable

TYPE 1/TYPE 2/TYPE 3/TYPE 4/TYPE 5/TYPE 6/TYPE 7/TYPE 8

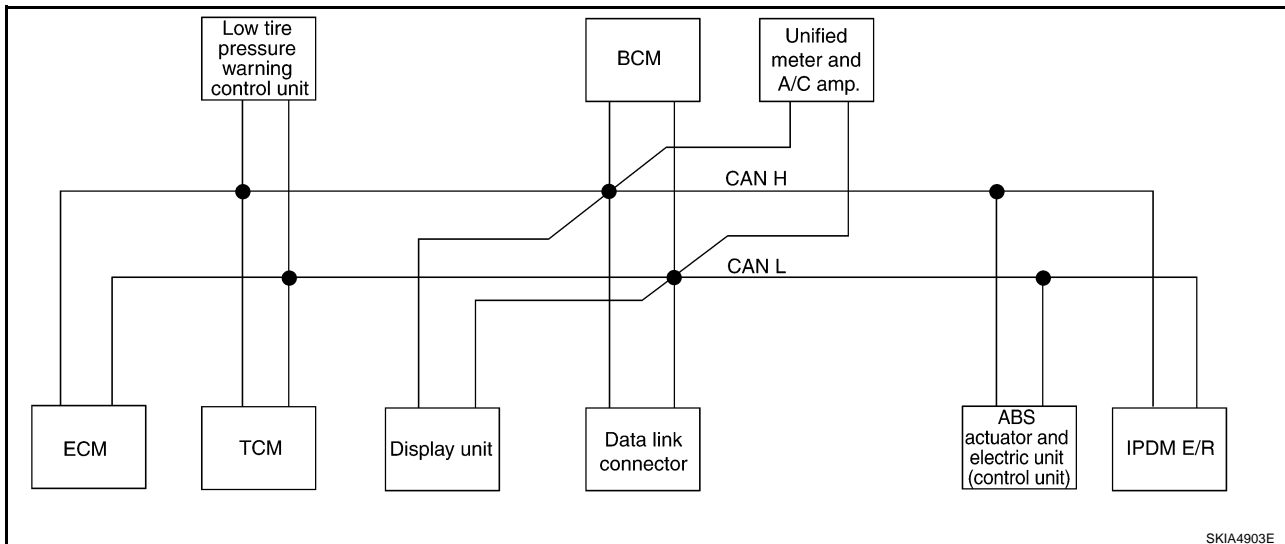
System Diagram

- Type1

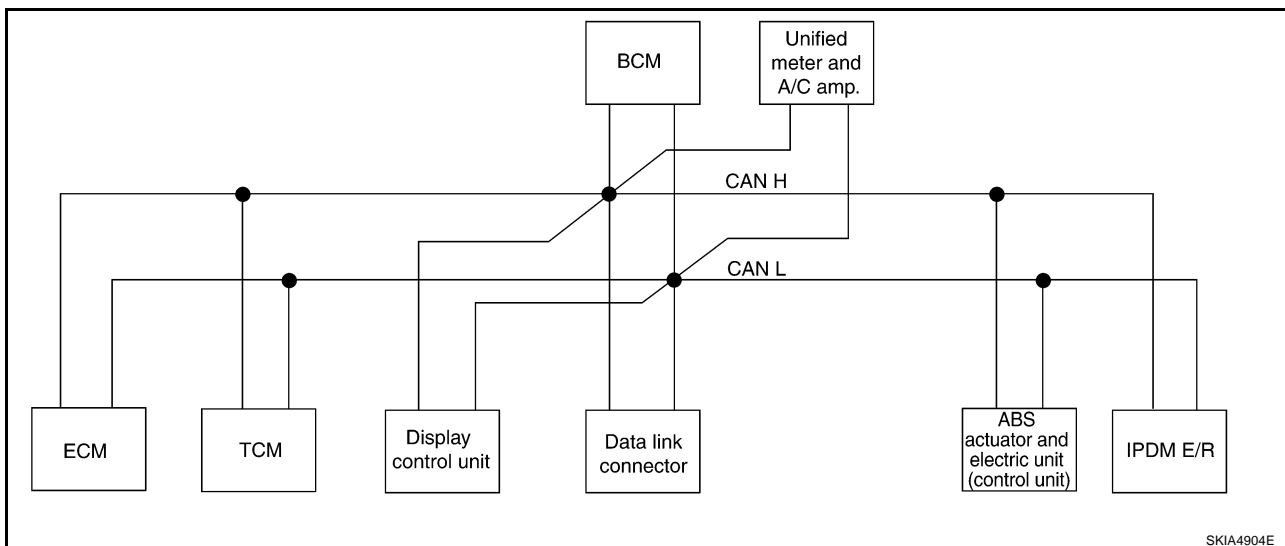


FRONT WIPER AND WASHER SYSTEM

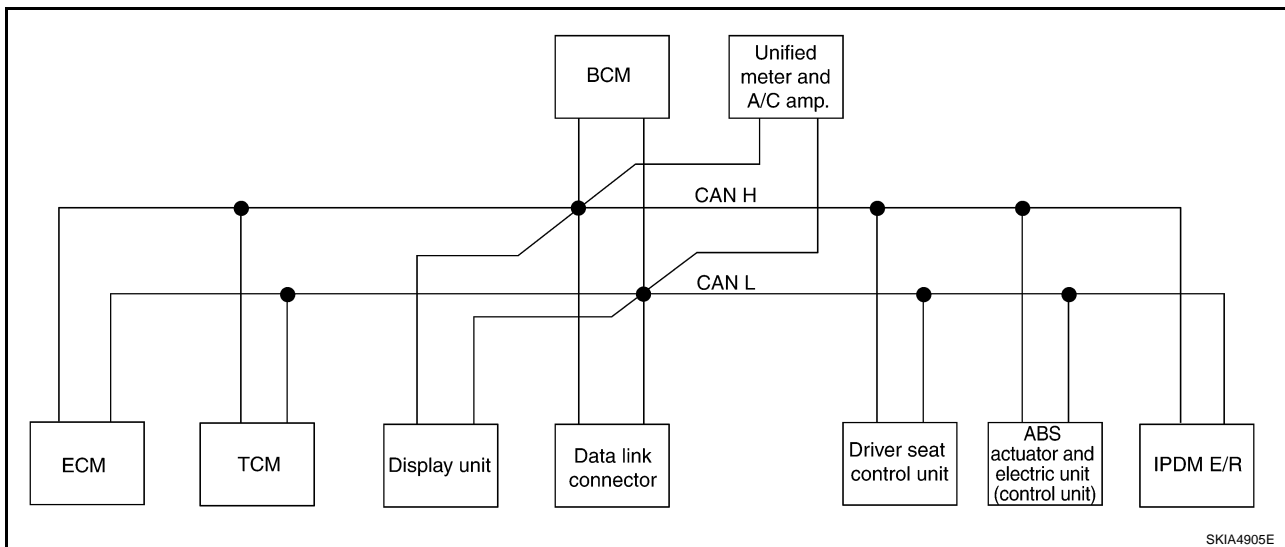
- Type2



- Type3



- Type4

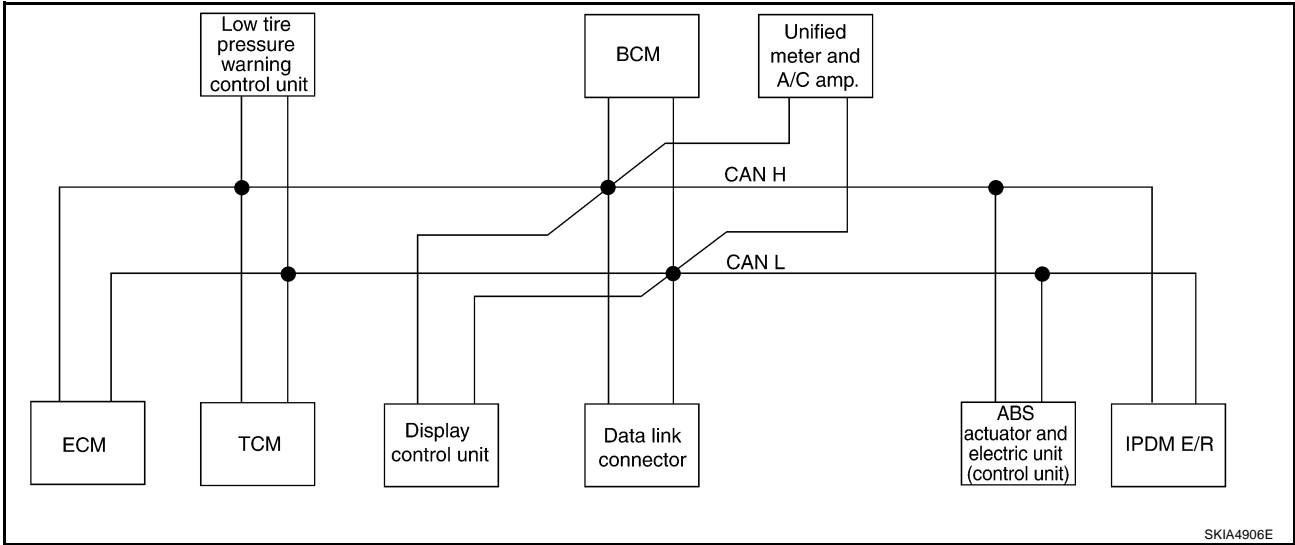


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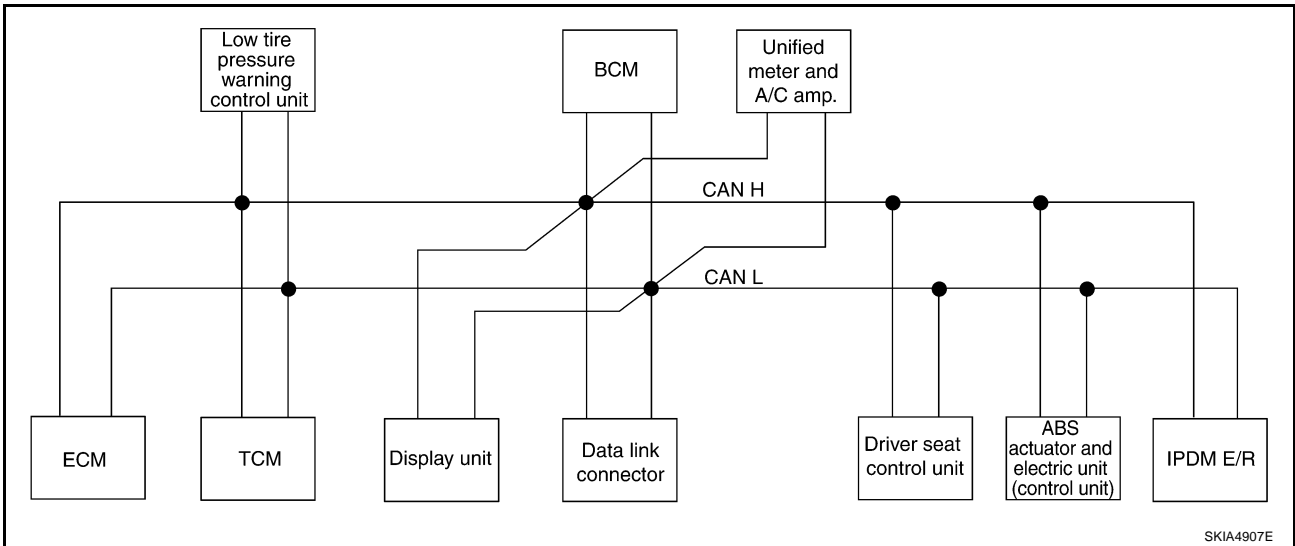


FRONT WIPER AND WASHER SYSTEM

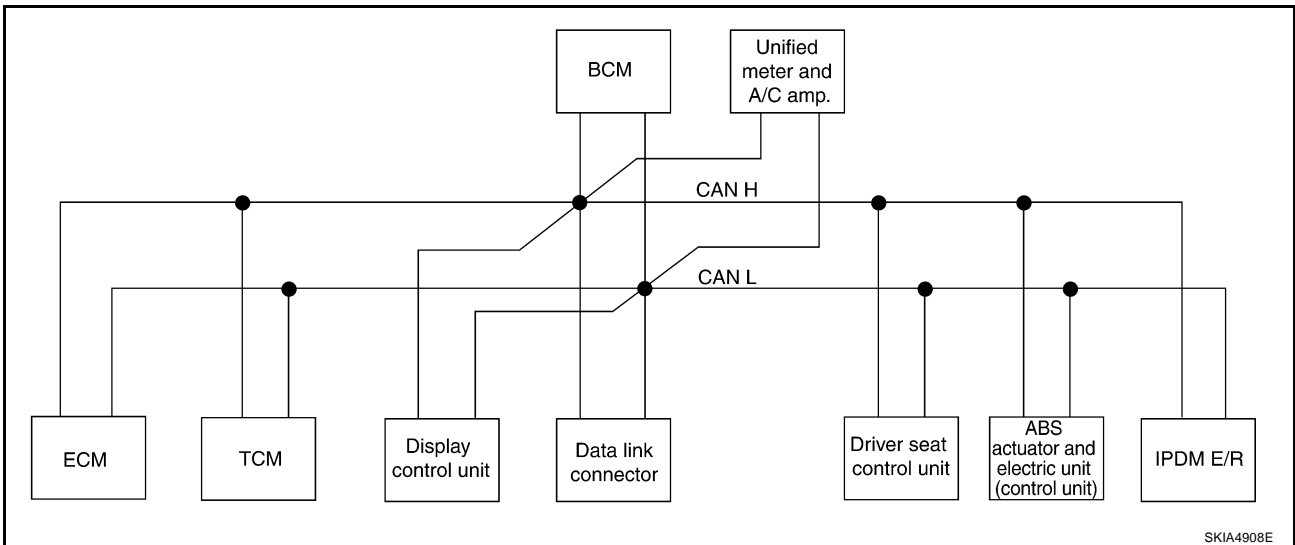
- Type5



- Type6

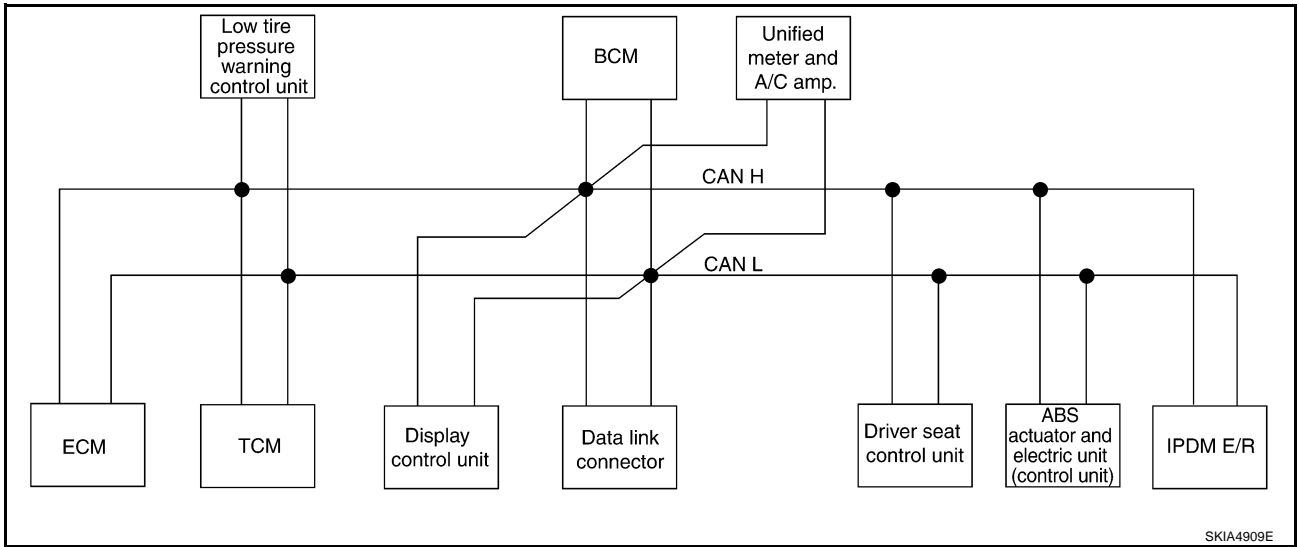


- Type7



FRONT WIPER AND WASHER SYSTEM

- Type8



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WW

FRONT WIPER AND WASHER SYSTEM

Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R			R	R	R			
Engine status signal	T					R				
Engine coolant temperature signal	T						R			
CVT position indicator signal		T					R			
Second position signal		R					T			
Second position indicator signal		T					R			
Engine and CVT integrated control signal	T	R								
	R	T								
Accelerator pedal position signal	T	R								
Closed throttle position signal	T	R								
Wide open throttle position signal	T	R								
Key switch signal						T		R		
Ignition switch signal						T		R		R
P range signal		T						R		
Stop lamp switch signal		R					T			
Fuel consumption monitor signal	T						R			
CVT self-diagnosis signal	R	T								
ABS operation signal		R							T	
Air conditioner switch signal	R					T				
A/C compressor request signal	T									R
A/C compressor feedback signal	T						R			
Blower fan motor switch signal	R					T				
A/C control signal				T	T		R			
				R	R		T			
Cooling fan speed request signal	T									R
Position lights request signal						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 lights request signal						T				R
Vehicle speed signal		R					R		T	
	R		R		R	R	T	R		
Sleep request 1 signal						T	R			
Sleep request 2 signal						T				R
Door switch signal						R	T			
				R	R	T	R	R		R
Turn indicator signal						T	R			

FRONT WIPER AND WASHER SYSTEM

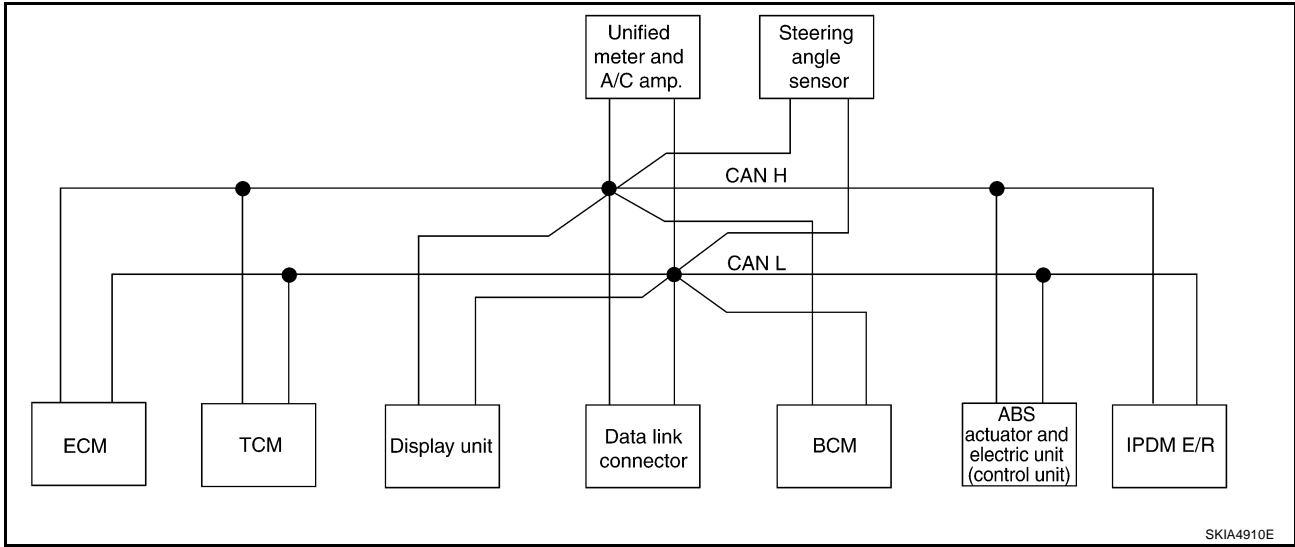
Signals	ECM	TCM	Low tire pres- sure warn- ing control unit	Dis- play unit	Dis- play control unit	BCM	Uni- fied meter and A/ C amp.	Driver seat control unit	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R	A
Key fob ID signal						T		R			C
Key fob door unlock signal						T		R			B
Seat belt buckle switch signal						R	T				D
Oil pressure switch signal						R				T	D
						T	R				E
Buzzer output signal						T	R				E
Fuel level sensor signal	R						T				F
Fuel level low warning signal				R	R		T				F
Malfunction indicator lamp signal	T						R				F
ASCD SET lamp signal	T						R				G
ASCD CRUISE lamp signal	T						R				G
Input shaft revolution signal	R	T									H
Output shaft revolution signal	R	T									H
Front wiper request signal						T				R	H
Front wiper stop position signal						R				T	I
Rear window defogger switch signal						T				R	I
Rear window defogger control signal	R			R	R					T	J
Hood switch signal						R				T	J
Theft warning horn request signal						T				R	J
Horn chirp signal						T				R	J
Tire pressure signal			T				R				WW
Tire pressure data signal			T	R	R						WW
ABS warning lamp signal							R		T		L
Brake warning lamp signal							R		T		L
System setting signal				T	T			R			L
Parking brake switch signal						R	T				M

FRONT WIPER AND WASHER SYSTEM

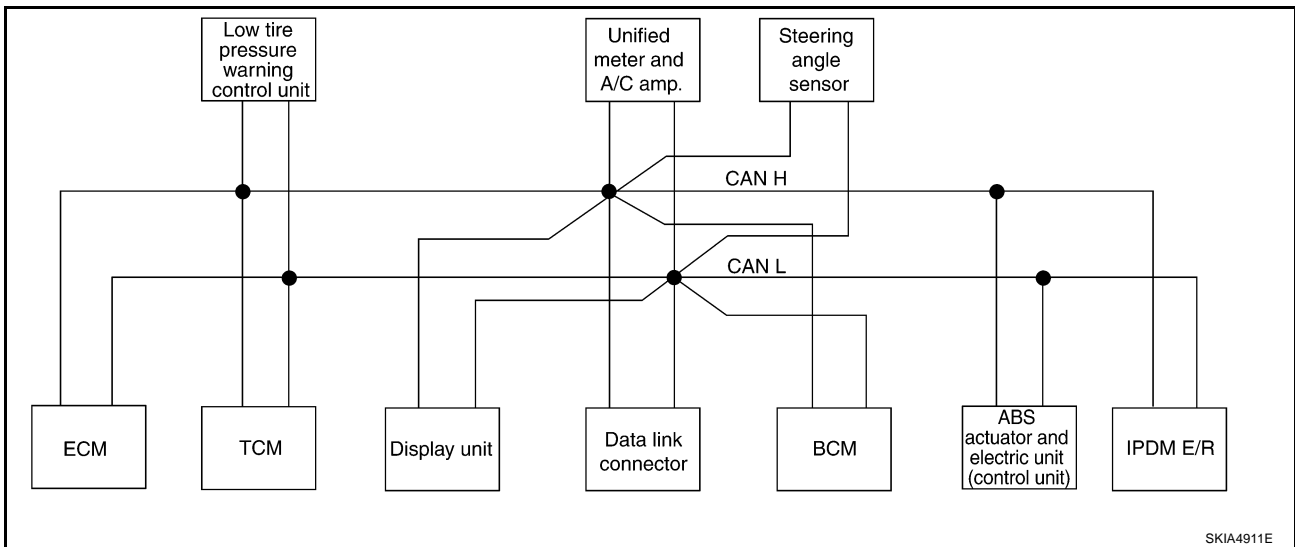
TYPE 9/TYP10/TYP11/TYP12/TYP13/TYP14/TYP15/TYP16

System Diagram

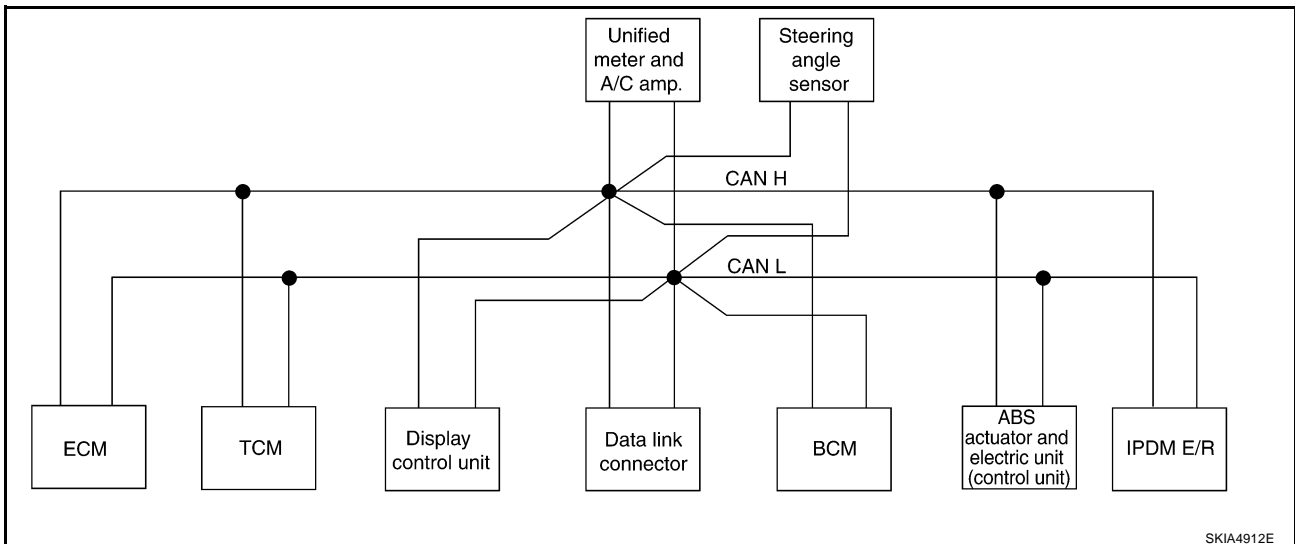
- Type9



- Type10

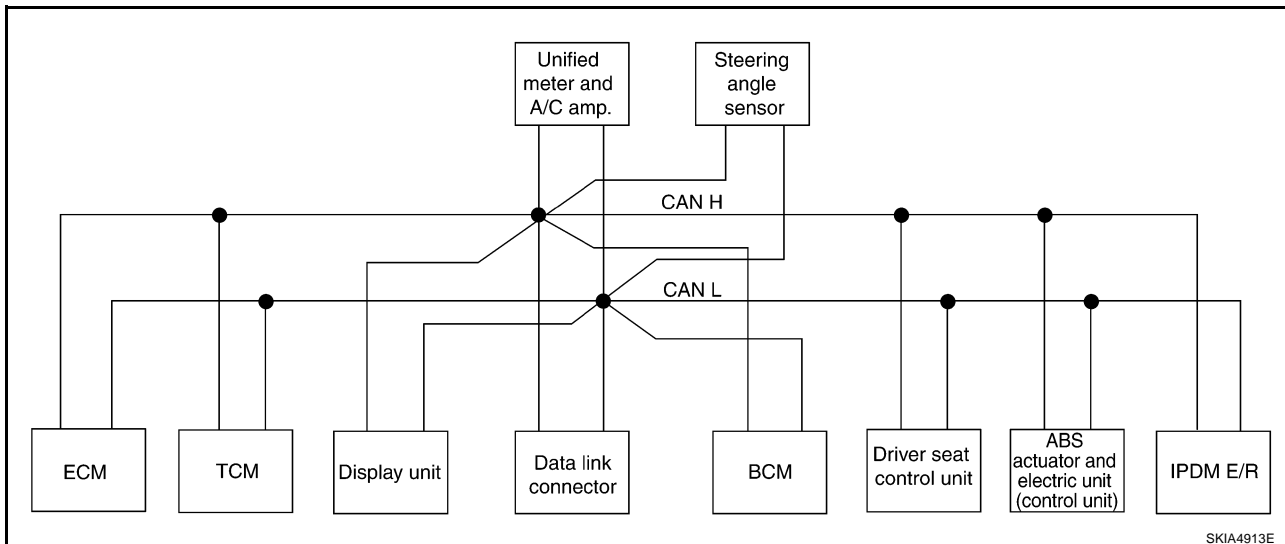


- Type11

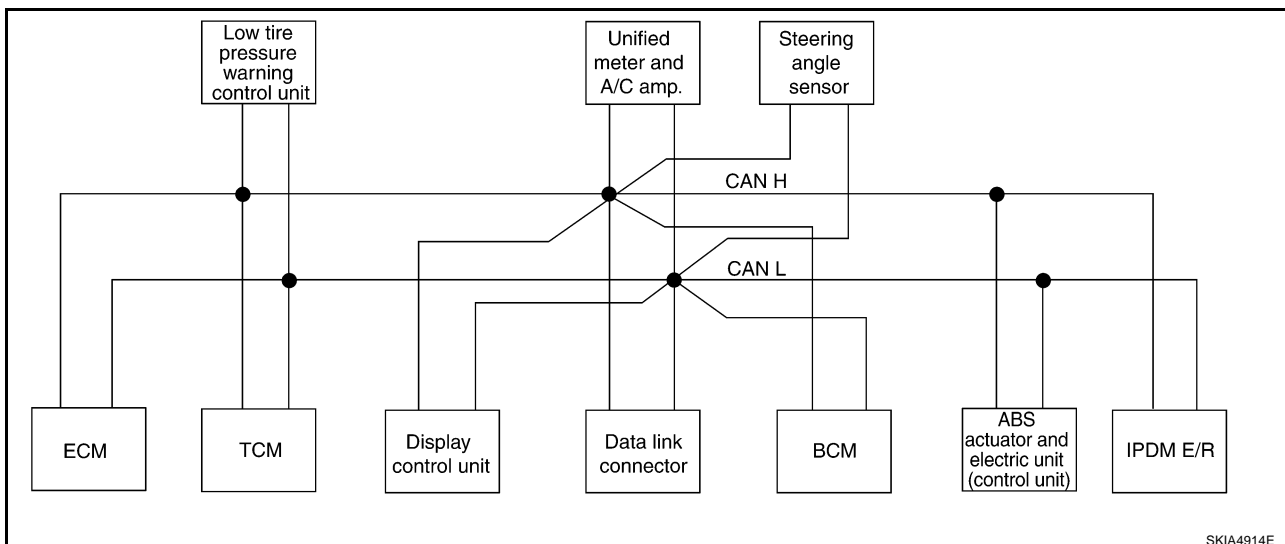


FRONT WIPER AND WASHER SYSTEM

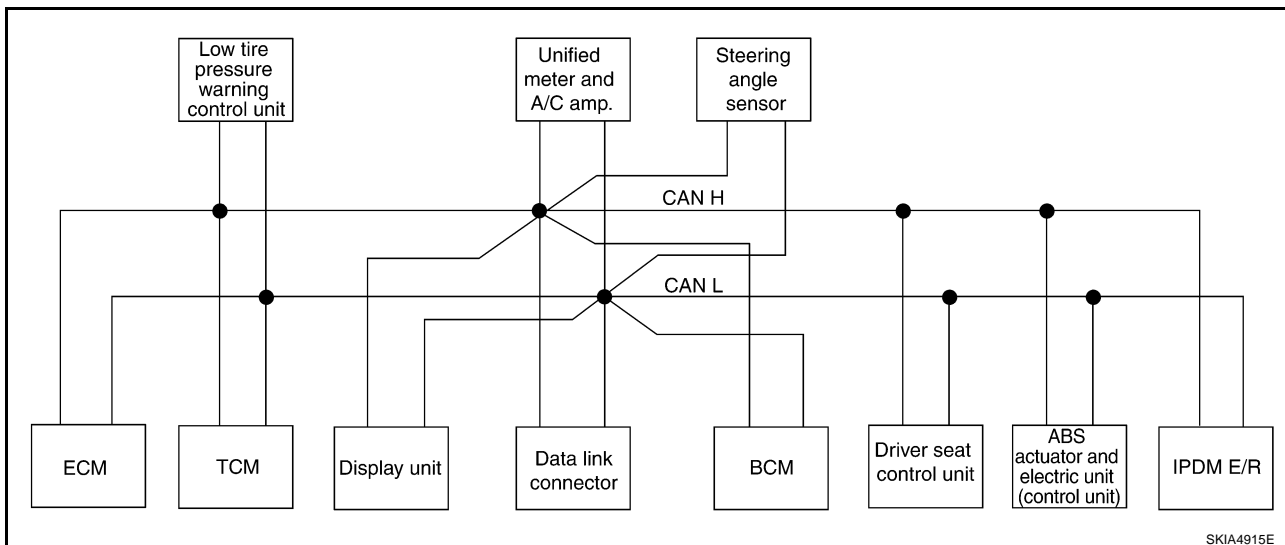
- Type12



- Type13



- Type14

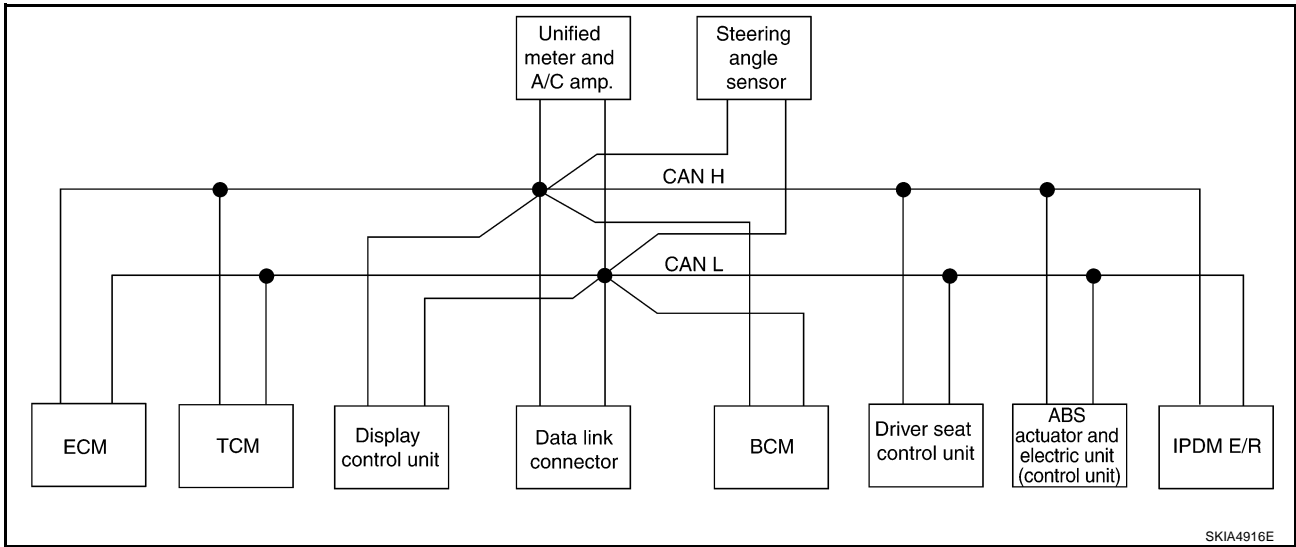


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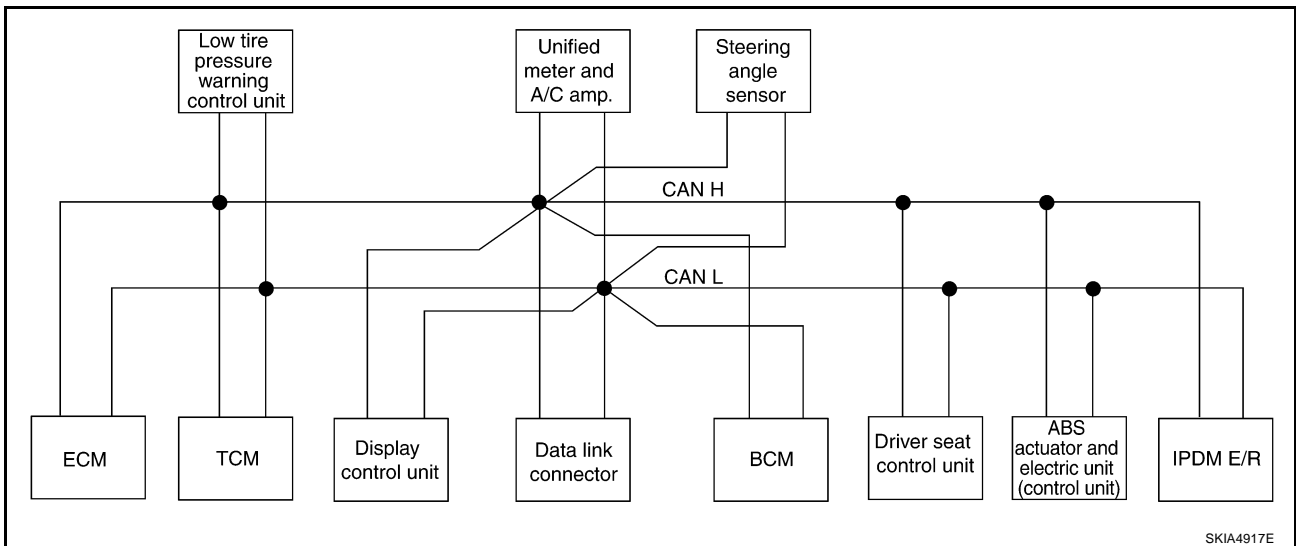


FRONT WIPER AND WASHER SYSTEM

- Type15



- Type16



FRONT WIPER AND WASHER SYSTEM

Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Steering angle sensor	Driver seat control unit	ABS actuator and electric unit (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				
Engine and CVT integrated control signal	T	R									
	R	T									
Accelerator pedal position signal	T	R								R	
Closed throttle position signal	T	R									
Wide open throttle position 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				
VDC operation signal		R								T	
Second position indicator signal		T					R			R	
Second position signal		R					T				
Fuel consumption monitor signal	T						R				
CVT self-diagnosis signal	R	T									
Input shaft revolution signal	R	T								R	
Output shaft revolution signal	R	T								R	
Air conditioner switch signal	R					T					
A/C compressor request signal	T										R
A/C compressor feedback signal	T						R				
Blower fan motor switch signal	R					T					
A/C control signal				T	T		R				
				R	R		T				
Cooling fan speed request signal	T										R
Position lights request signal						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 lights request signal						T					R
Vehicle speed signal		R					R			T	
	R		R		R	R	T		R		
Sleep request 1 signal						T	R				
Sleep request 2 signal						T					R

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FRONT WIPER AND WASHER SYSTEM

Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Steering angle sensor	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Door switch signal						R	T				
Turn indicator signal				R	R	T	R		R		R
Key fob ID signal						T			R		
Key fob door unlock signal						T			R		
Seat belt buckle switch signal						R	T				
Oil pressure switch signal						R					T
Buzzer output signal						T	R				
Fuel level sensor signal	R						T				
Fuel level low warning signal				R	R		T				
Malfunction indicator signal	T						R				
ASCD SET lamp signal	T						R				
ASCD CRUISE lamp signal	T						R				
Front wiper request signal						T					R
Front wiper stop position signal						R					T
Rear window defogger switch signal						T					R
Rear window defogger control signal	R			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			T	R	R						
CVT position indicator signal		T					R			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	T				R		
Parking brake switch signal						R	T				

FRONT WIPER AND WASHER SYSTEM

CAN Communication Unit For AWD Models

AKS007R2

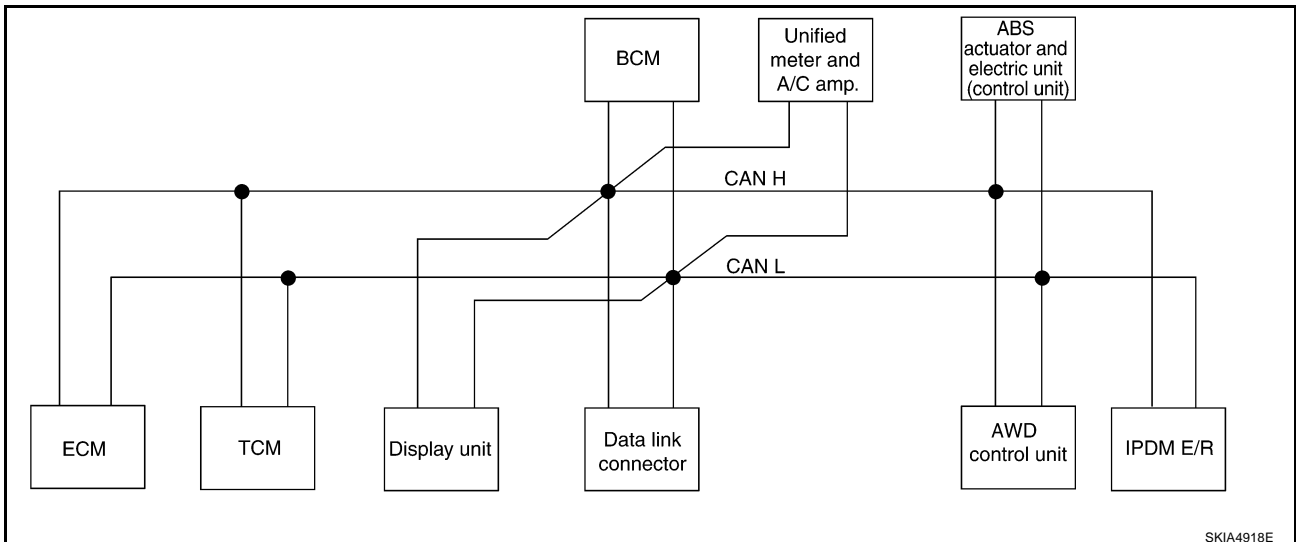
Body type	Wagon															
Axle	AWD															
Engine	VQ35DE															
Transmission	CVT															
Brake control	ABS							VDC								
Low tire pressure warning system		×			×	×		×		×			×	×		×
Navigation system			×		×		×	×			×		×		×	×
Automatic drive positioner				×		×	×	×				×		×	×	×
CAN communication unit																
ECM	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
TCM	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Low tire pressure warning control unit		×			×	×		×		×			×	×		×
Display unit	×	×		×		×			×	×		×		×		
Display control unit			×		×		×	×			×		×		×	×
Data link connector	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
BCM	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Unified meter and A/C amp.	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Steering angle sensor									×	×	×	×	×	×	×	×
Driver seat control unit				×		×	×	×				×		×	×	×
AWD control unit	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
IPDM E/R	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
CAN communication type	<u>WW-21, "TYPE 17/TYPE 18/TYPE 19/TYPE 20/TYPE 21/TYPE 22/TYPE 23/TYPE 24"</u>								<u>WW-27, "TYPE 25/TYPE 26/TYPE 27/TYPE 28/TYPE 29/TYPE 30/TYPE 31/TYPE 32"</u>							

×: Applicable

TYPE 17/TYPE 18/TYPE 19/TYPE 20/TYPE 21/TYPE 22/TYPE 23/TYPE 24

System Diagram

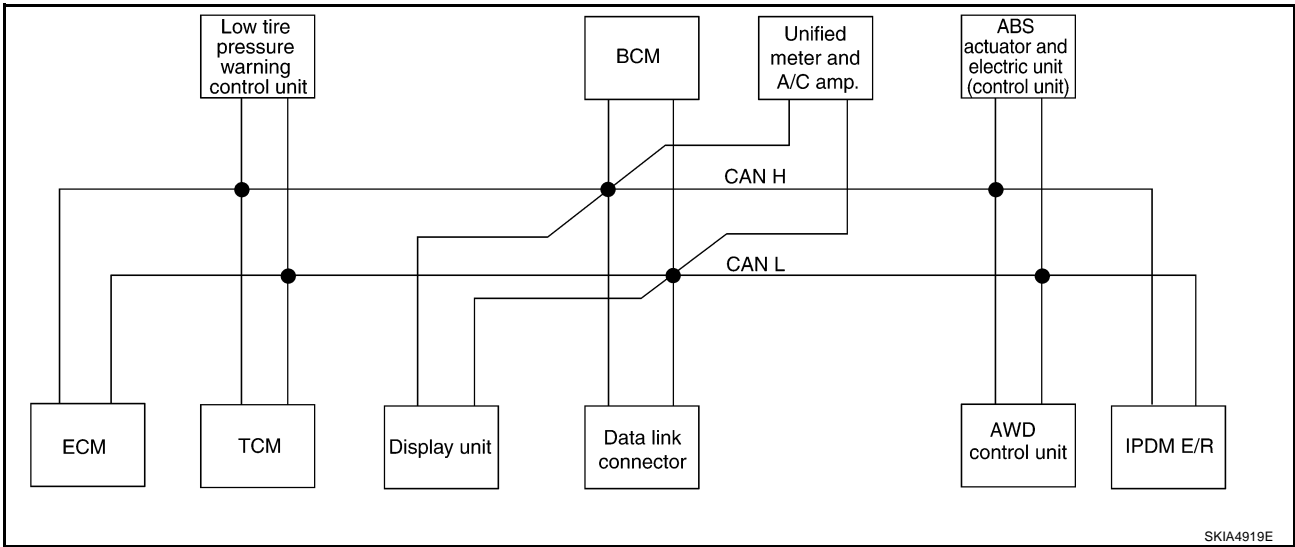
- Type17



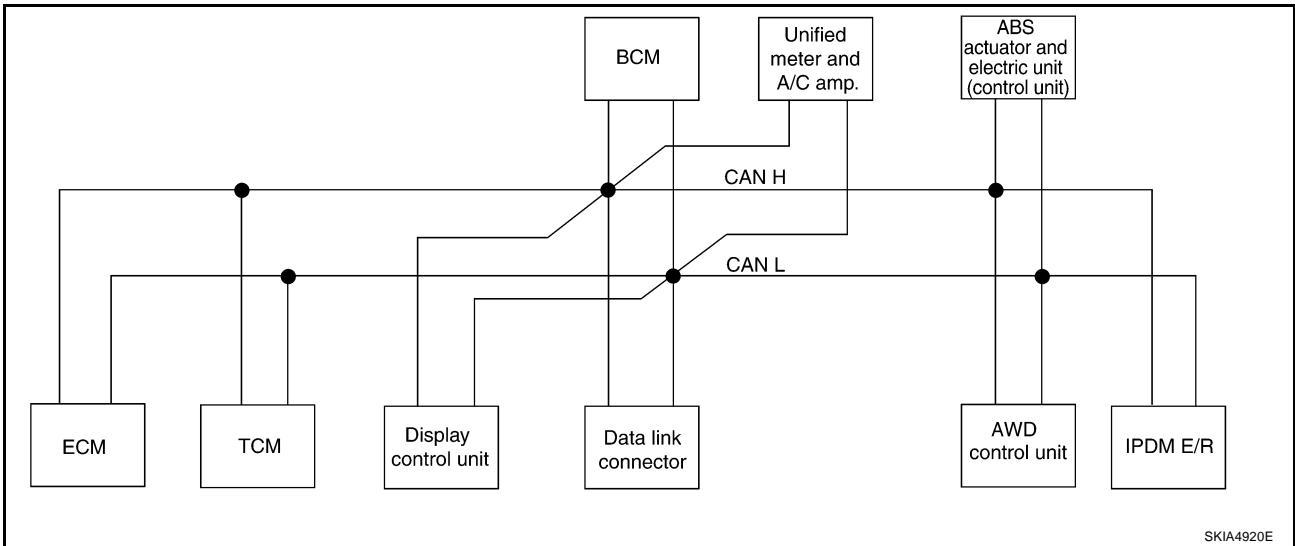
SKIA4918E

FRONT WIPER AND WASHER SYSTEM

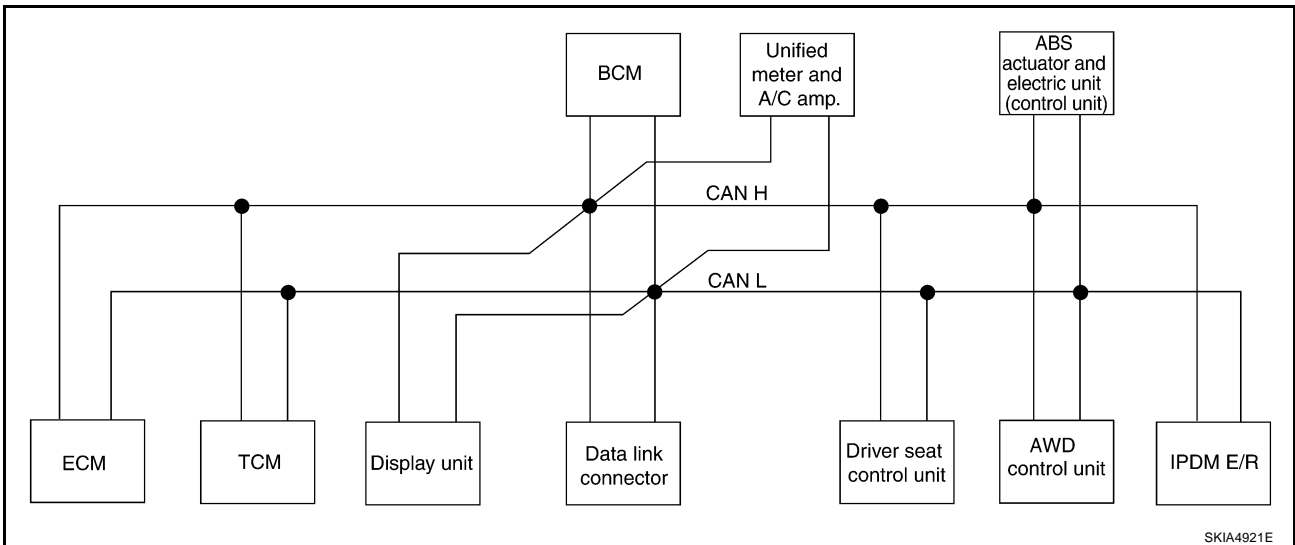
- Type18



- Type19

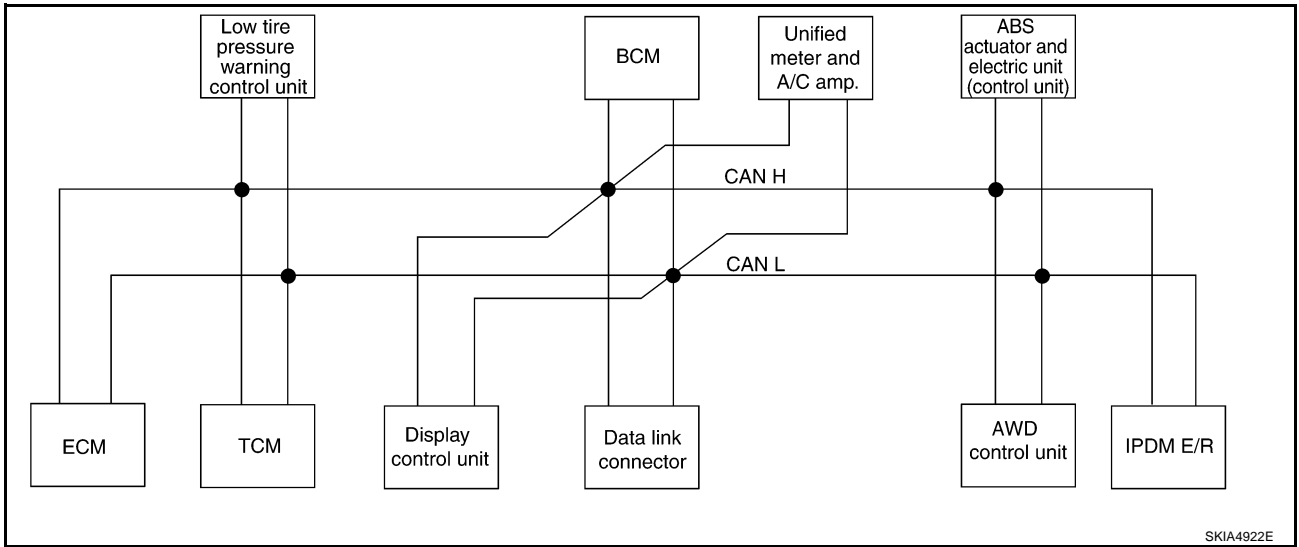


- Type20

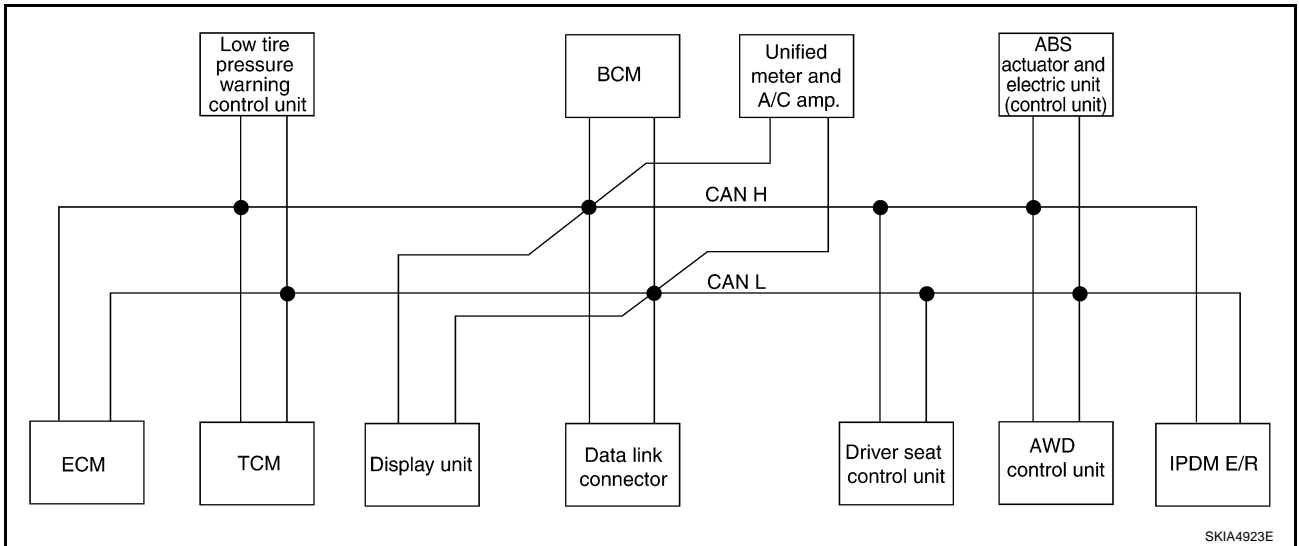


FRONT WIPER AND WASHER SYSTEM

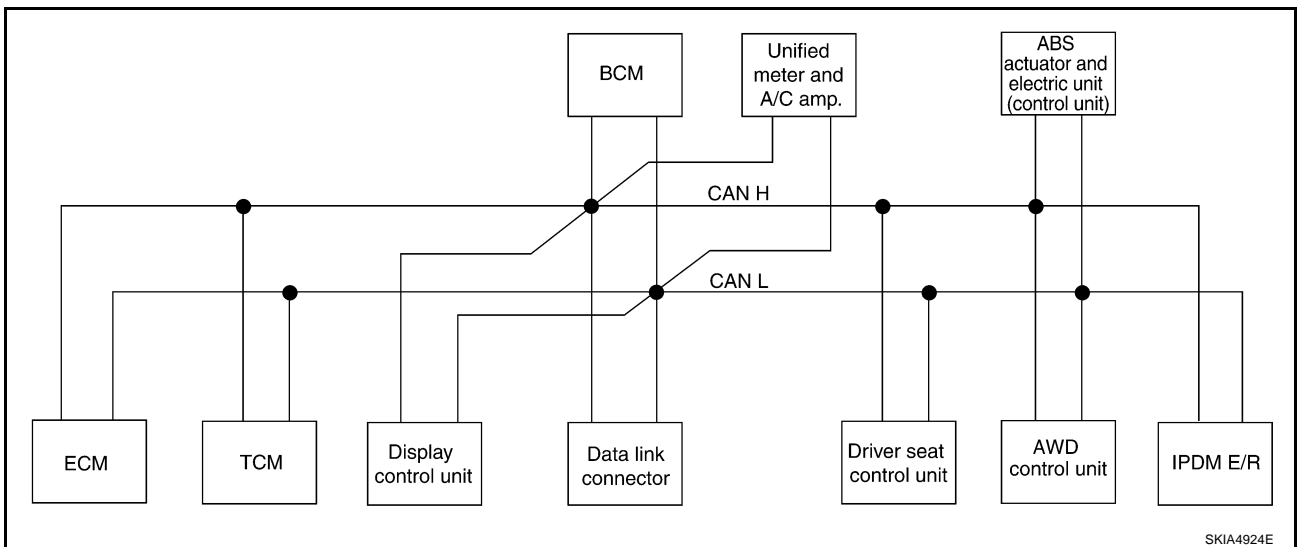
- Type21



- Type22



- Type23

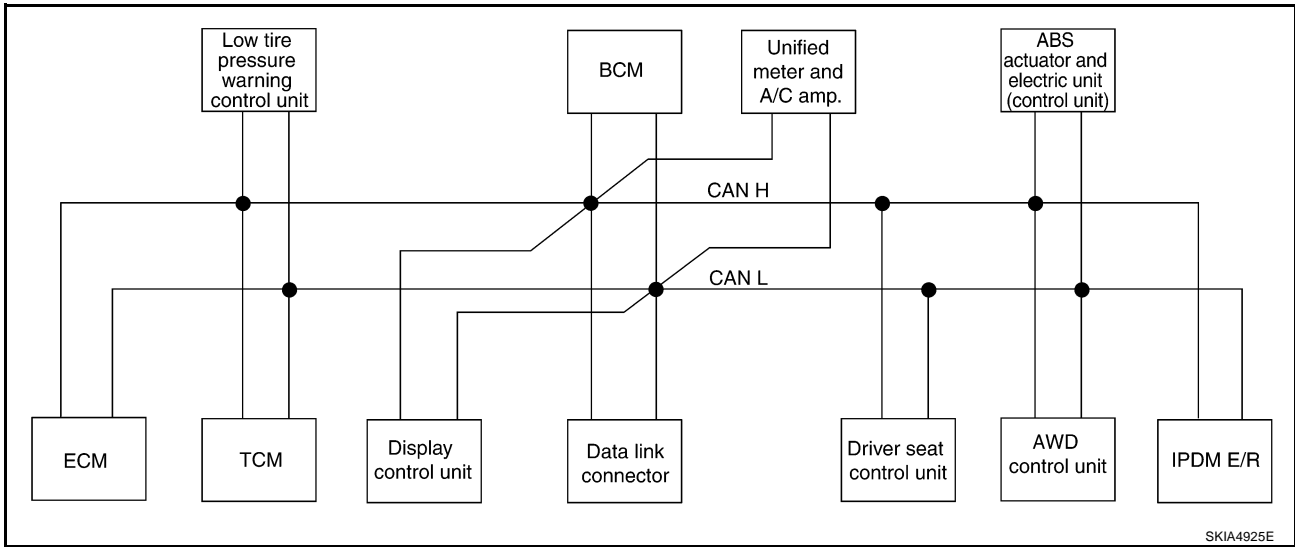


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FRONT WIPER AND WASHER SYSTEM

- Type24



FRONT WIPER AND WASHER SYSTEM

Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Driver seat control unit	AWD control unit	ABS actuator and electric unit (control unit)	IPDM E/R
CVT position indicator signal		T					R				
Second position signal		R					T				
Second position indicator signal		T					R				
Engine speed signal	T	R	R		R	R	R		R		
Engine status signal	T					R					
Engine coolant temperature signal	T						R				
Accelerator pedal position signal	T	R							R		
Closed throttle position signal	T	R									
Wide open throttle position signal	T	R									
Key switch signal						T		R			
Ignition switch signal						T		R			R
P range signal		T						R			
Stop lamp switch signal		R					T		R		
Fuel consumption monitor signal	T						R				
CVT self-diagnosis signal	R	T									
ABS operation signal		R							R	T	
Air conditioner switch signal	R					T					
A/C compressor request signal	T										R
A/C compressor feedback signal	T						R				
Blower fan motor switch signal	R					T					
A/C control signal				T	T		R				
				R	R		T				
Cooling fan speed request signal	T										R
Position lights request signal						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 lights request signal						T					R
Vehicle speed signal		R					R		R	T	
	R		R		R	R	T	R			
Sleep request 1 signal						T	R				
Sleep request 2 signal						T					R
Door switch signal						R	T				
				R	R	T	R	R			R
Key fob ID signal						T		R			
Key fob door unlock signal						T		R			

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FRONT WIPER AND WASHER SYSTEM

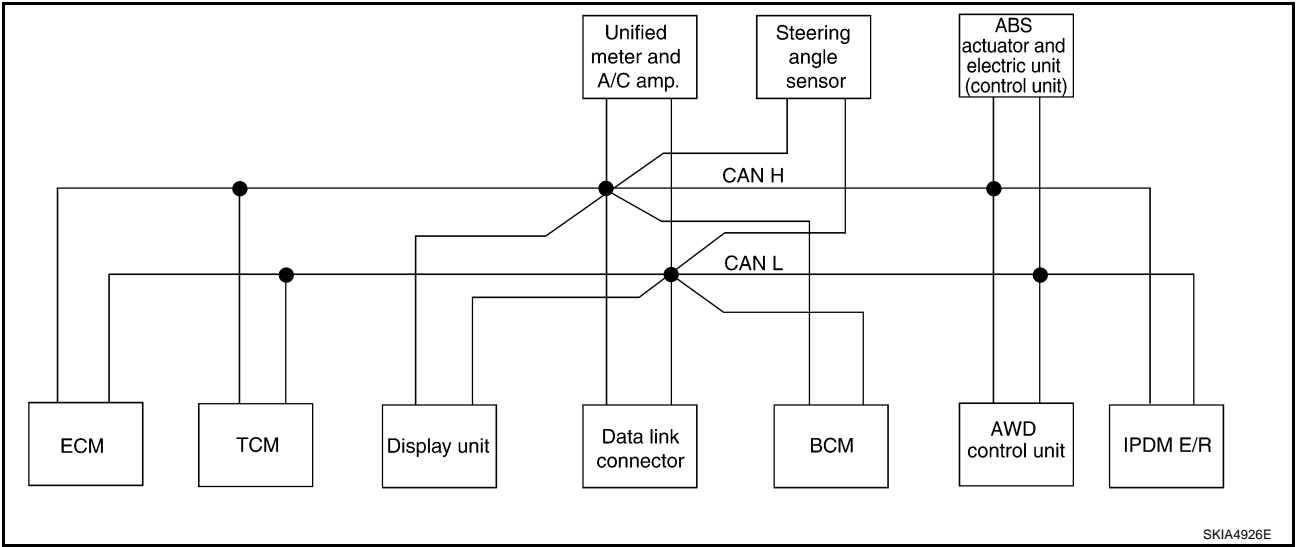
Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Driver seat control unit	AWD control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Turn indicator signal						T	R				
Seat belt buckle switch signal						R	T				
Oil pressure switch signal						R					T
						T	R				
Buzzer output signal						T	R				
Fuel level sensor signal	R						T				
Fuel level low warning signal				R	R		T				
Malfunction indicator lamp signal	T						R				
ASCD SET lamp signal	T						R				
ASCD CRUISE lamp signal	T						R				
Input shaft revolution signal	R	T									
Output shaft revolution signal	R	T									
Front wiper request signal						T					R
Front wiper stop position signal						R					T
Rear window defogger switch signal						T					R
Rear window defogger control signal	R			R	R						T
Engine and CVT integrated control signal	T	R									
	R	T									
Hood switch signal						R					T
Theft warning horn request signal						T					R
Horn chirp signal						T					R
Tire pressure signal			T				R				
Tire pressure data signal			T	R	R						
ABS warning lamp signal							R			T	
Brake warning lamp signal							R			T	
System setting signal				T	T			R			
AWD warning lamp signal							R		T		
AWD lock indicator lamp signal							R		T		
AWD lock switch signal							T		R		
Parking brake switch signal						R	T		R		

FRONT WIPER AND WASHER SYSTEM

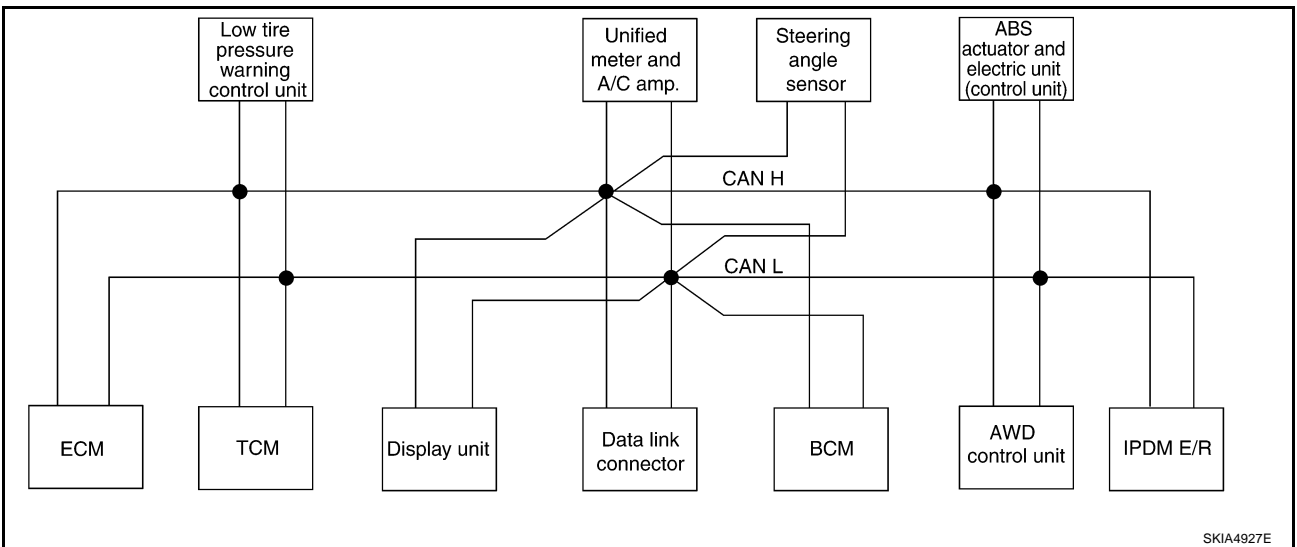
TYPE 25/TYPE26/TYPE 27/TYPE 28/TYPE 29/TYPE 30/TYPE 31/TYPE 32

System Diagram

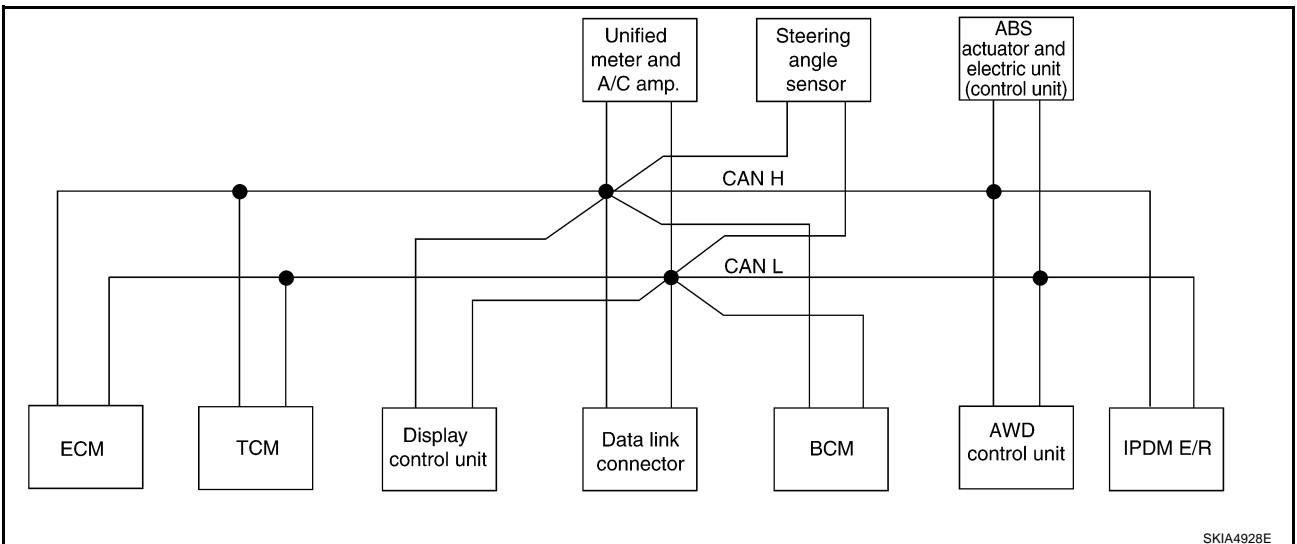
- Type25



- Type26



- Type27

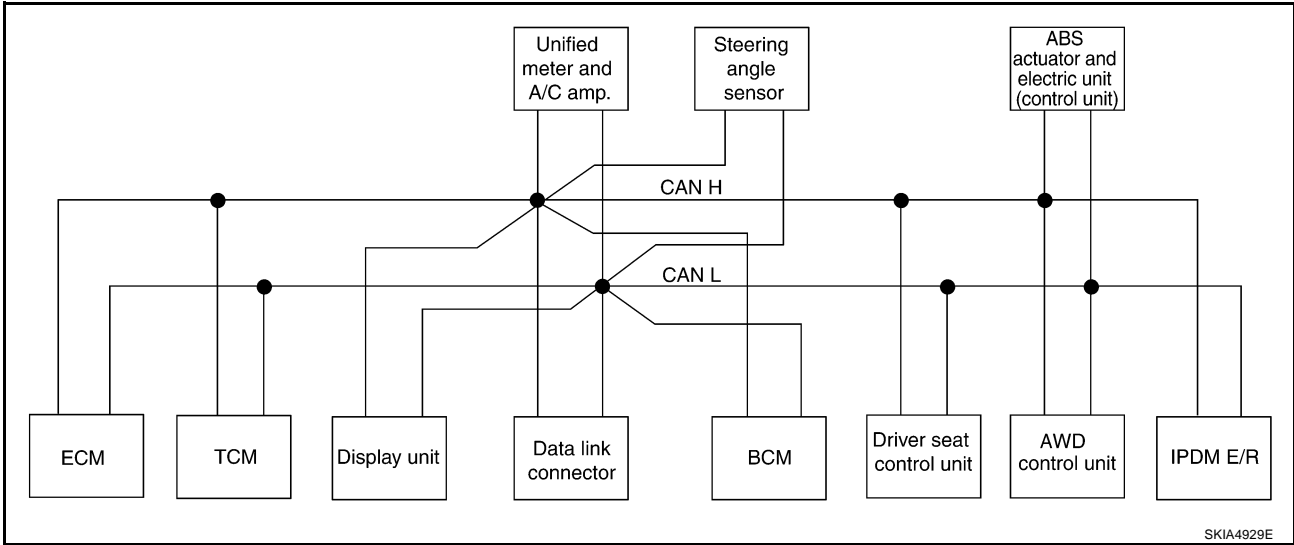


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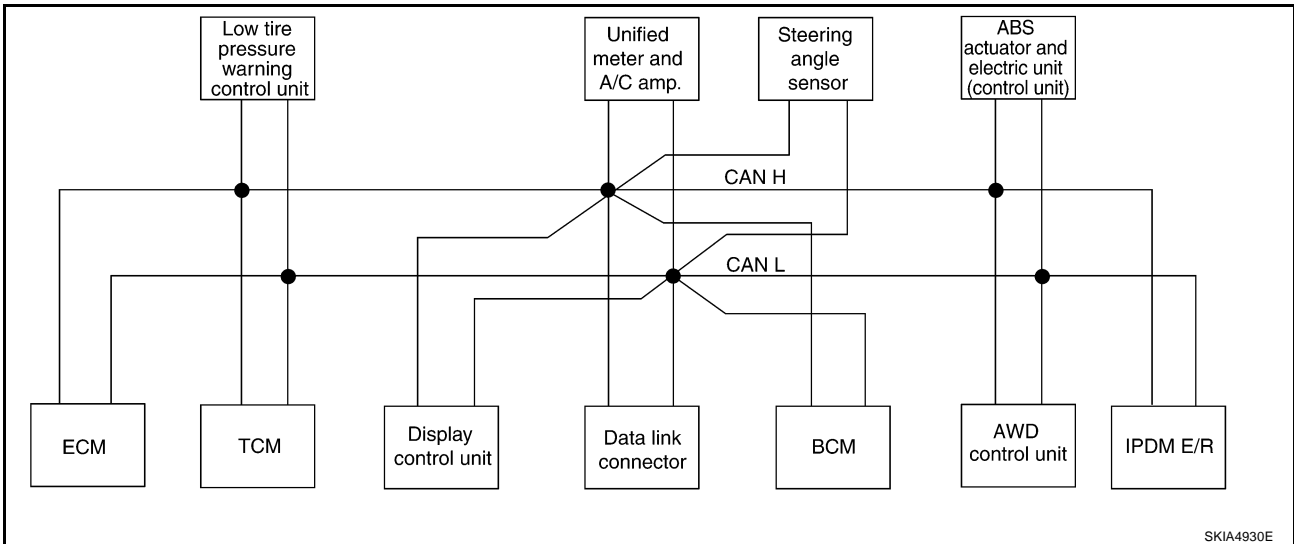
WW

FRONT WIPER AND WASHER SYSTEM

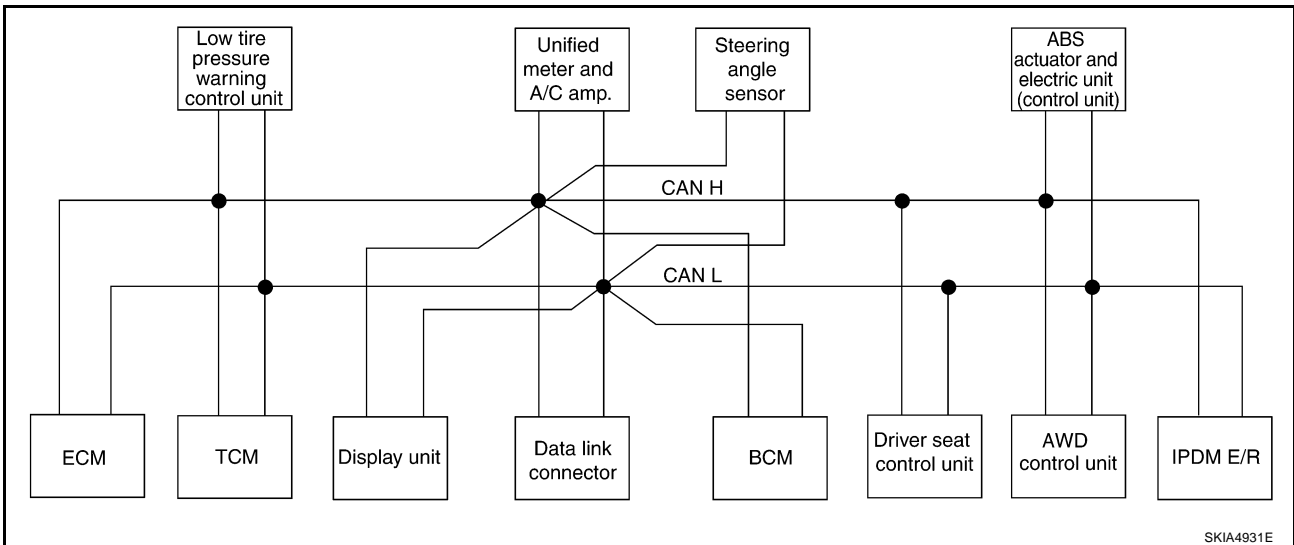
- Type28



- Type29

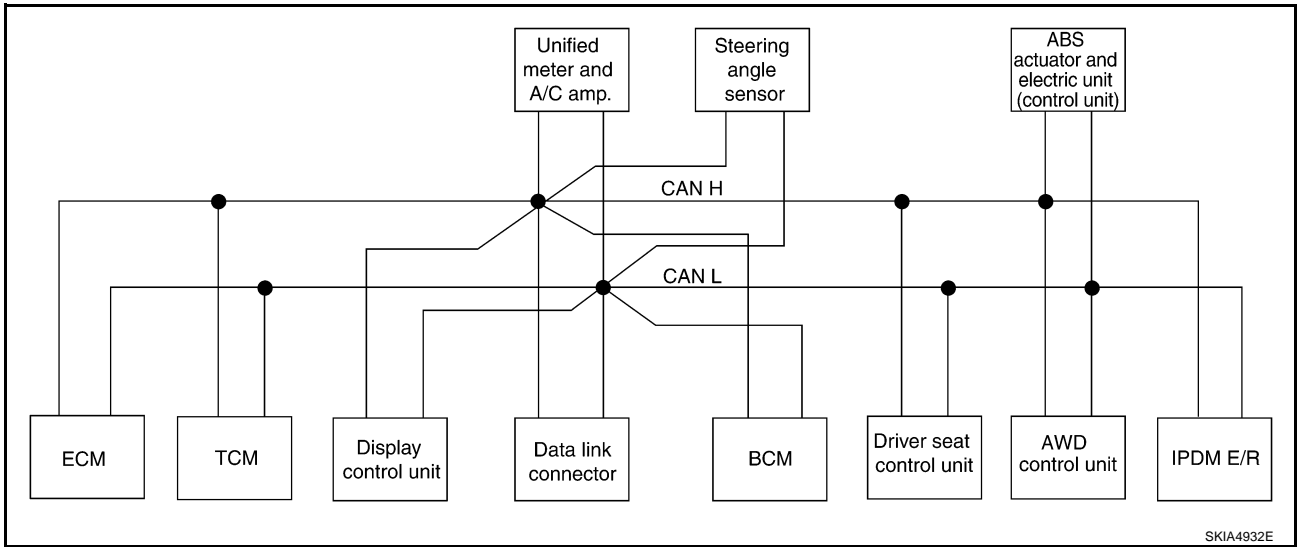


- Type30

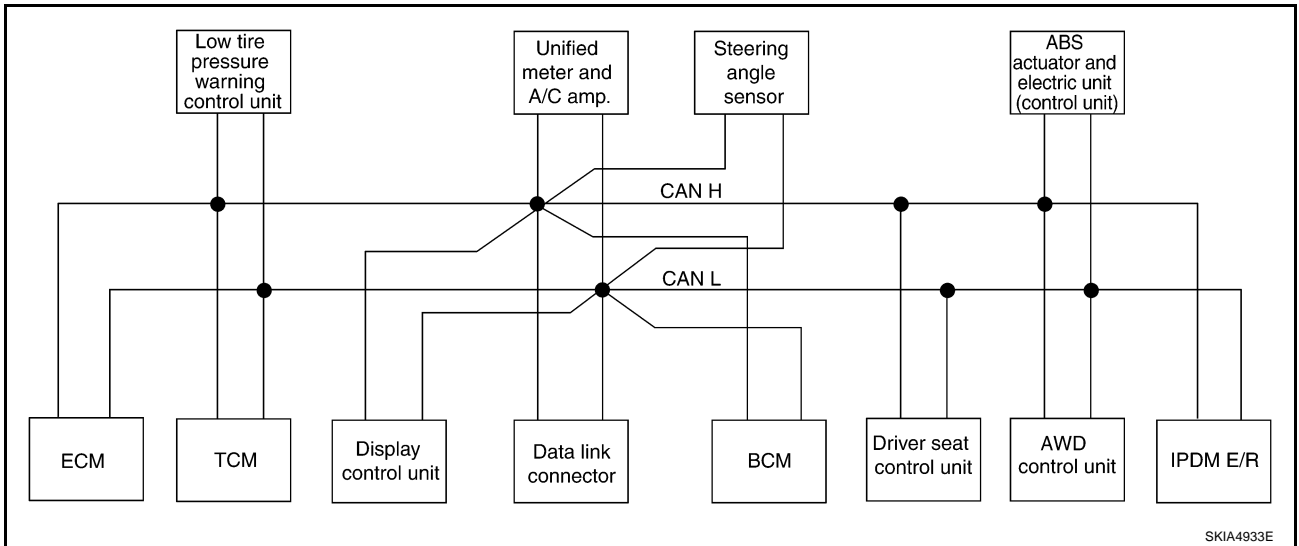


FRONT WIPER AND WASHER SYSTEM

- Type31



- Type32



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FRONT WIPER AND WASHER SYSTEM

Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Steering angle sensor	Driver seat control unit	AWD control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Engine and CVT integrated control signal	T	R										
	R	T										
Second position signal		R					T					
VDC operation signal		R								R	T	
Stop lamp switch signal		R					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										
Second position indicator signal		T					R				R	
Engine speed signal	T	R			R	R	R			R	R	
Engine status signal	T					R						
Engine coolant temperature signal	T						R					
Accelerator pedal position signal	T	R								R	R	
Fuel consumption monitor signal	T						R					
CVT self-diagnosis signal	R	T										
Input shaft revolution signal	R	T									R	
Output shaft revolution signal	R	T									R	
Air conditioner switch signal	R					T						
A/C compressor request signal	T											R
A/C compressor feedback signal	T						R					T
Blower fan motor switch signal	R					T						
A/C control signal				T	T		R					
				R	R		T					
Cooling fan speed request signal	T											R
Position lights request signal						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 lights request signal						T						R
Vehicle speed signal		R					R			R	T	
	R		R		R	R	T		R			
Sleep request 1 signal						T	R					
Sleep request 2 signal						T						R

FRONT WIPER AND WASHER SYSTEM

Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Steering angle sensor	Driver seat control unit	AWD control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Door switch signal						R	T					
Turn indicator signal				R	R	T	R		R			R
Key fob ID signal						T			R			
Key fob door unlock signal						T			R			
Seat belt buckle switch signal						R	T					
Oil pressure switch signal						R						T
Buzzer output signal						T	R					
Fuel level sensor signal	R						T					
Fuel level low warning signal				R	R		T					
Malfunction indicator signal	T						R					
ASCD SET lamp signal	T						R					
ASCD CRUISE lamp signal	T						R					
Front wiper request signal						T						R
Front wiper stop position signal						R						T
Rear window defogger switch signal						T						R
Rear window defogger control signal	R			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			T	R	R							
CVT position indicator signal		T					R				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	T				R			
AWD warning lamp signal							R			T		
AWD lock indicator lamp signal							R			T		
AWD lock switch signal							T			R		
Parking brake switch signal						R	T			R		

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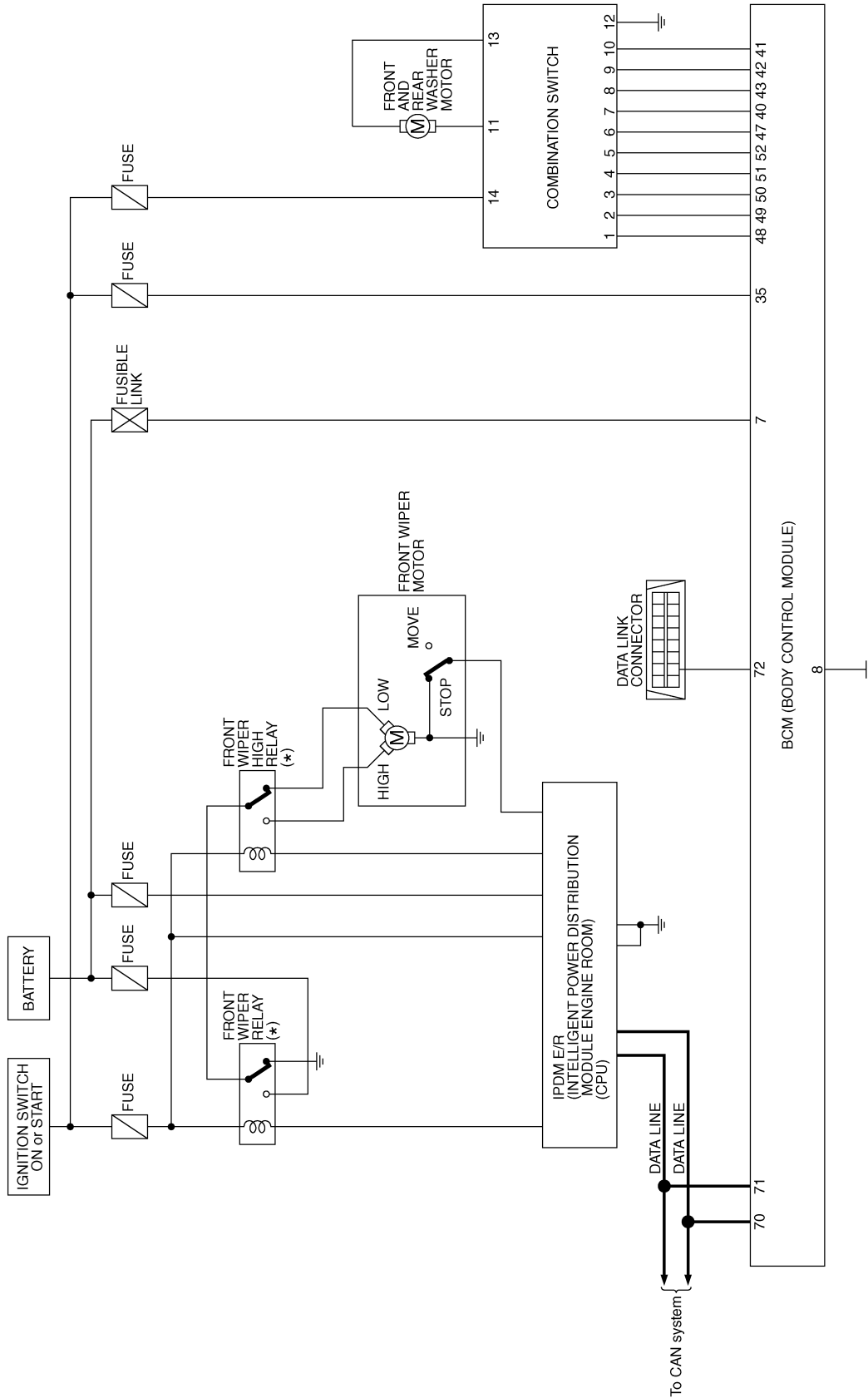
WW

FRONT WIPER AND WASHER SYSTEM

Schematic

AKS004MV

* : This relay is built into the IPDM E/R
(Intelligent power distribution module engine room).



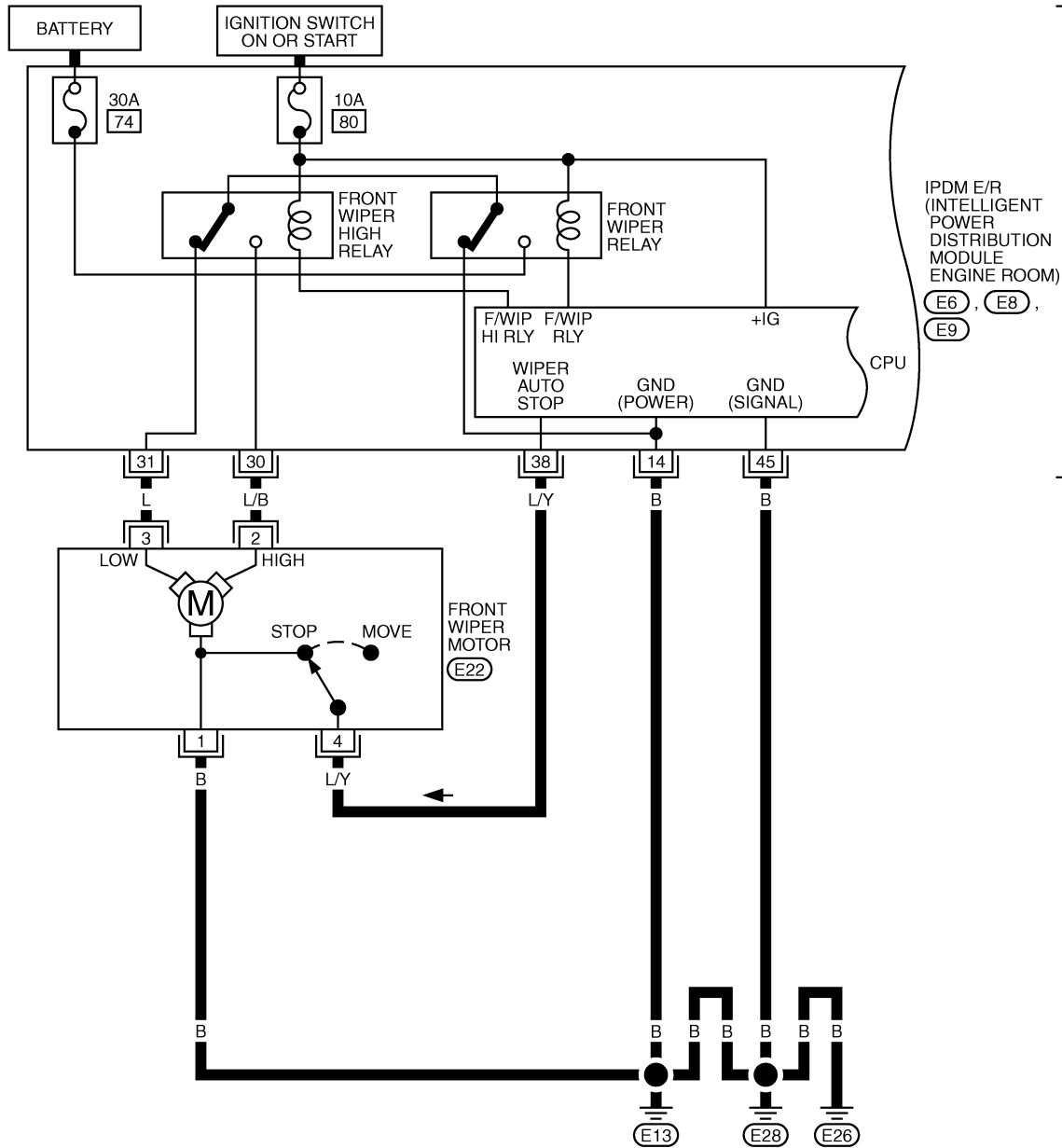
TKWA0781E

FRONT WIPER AND WASHER SYSTEM

Wiring Diagram — WIPER —

AKS004MW

WW-WIPER-01

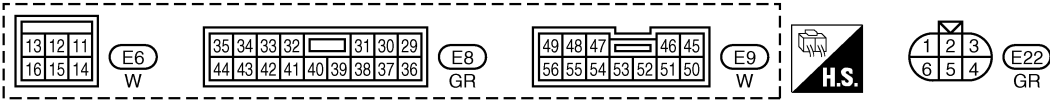


REFER TO PG-POWER.

IPDM E/R
(INTELLIGENT
POWER
DISTRIBUTION
MODULE
ENGINE ROOM)
E6, E8,
E9

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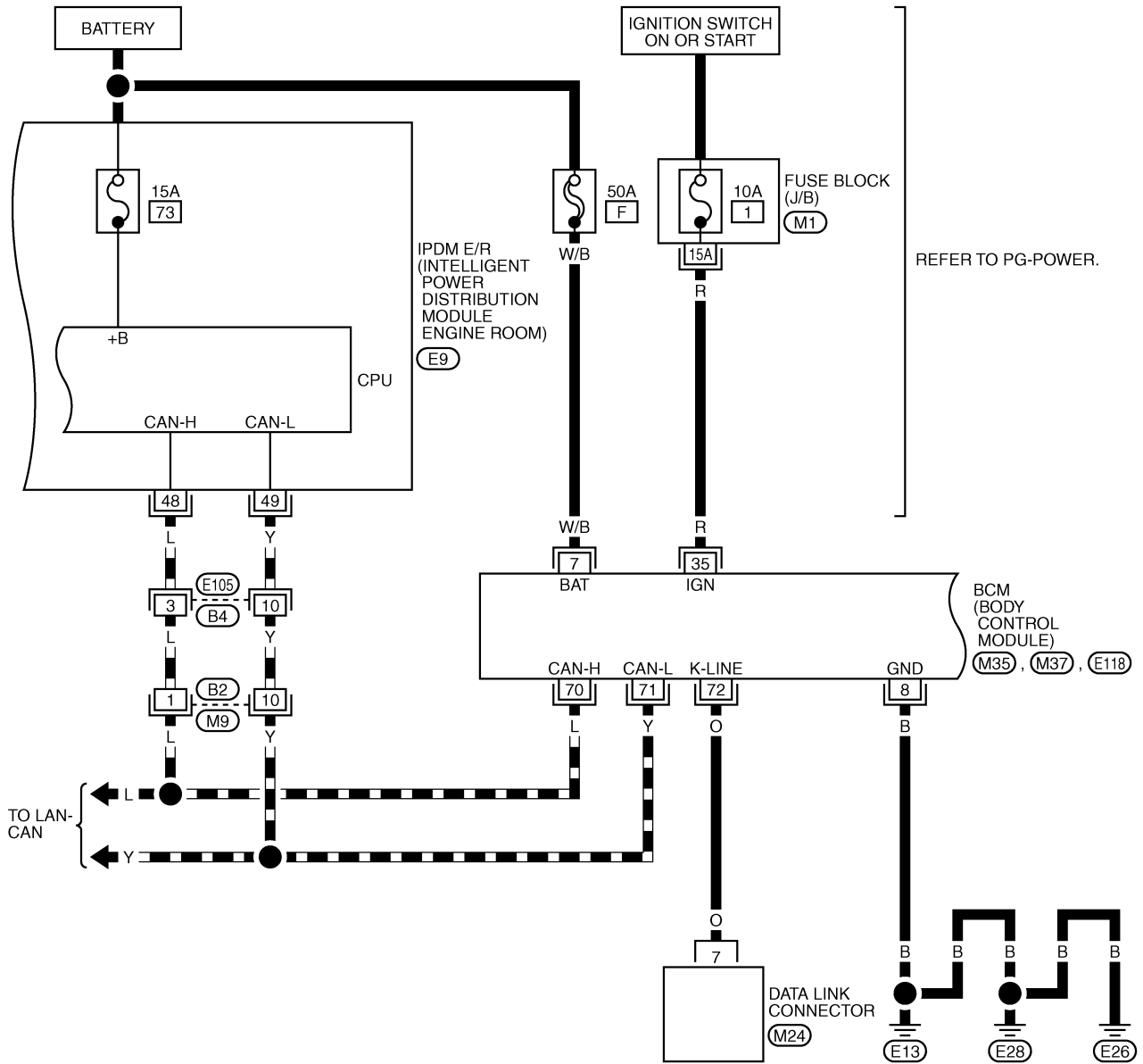


TKWA0782E

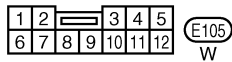
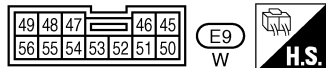
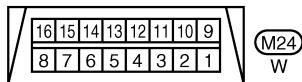
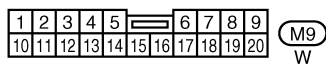
FRONT WIPER AND WASHER SYSTEM

WW-WIPER-02

▬ : DATA LINE



REFER TO PG-POWER.



REFER TO THE FOLLOWING.

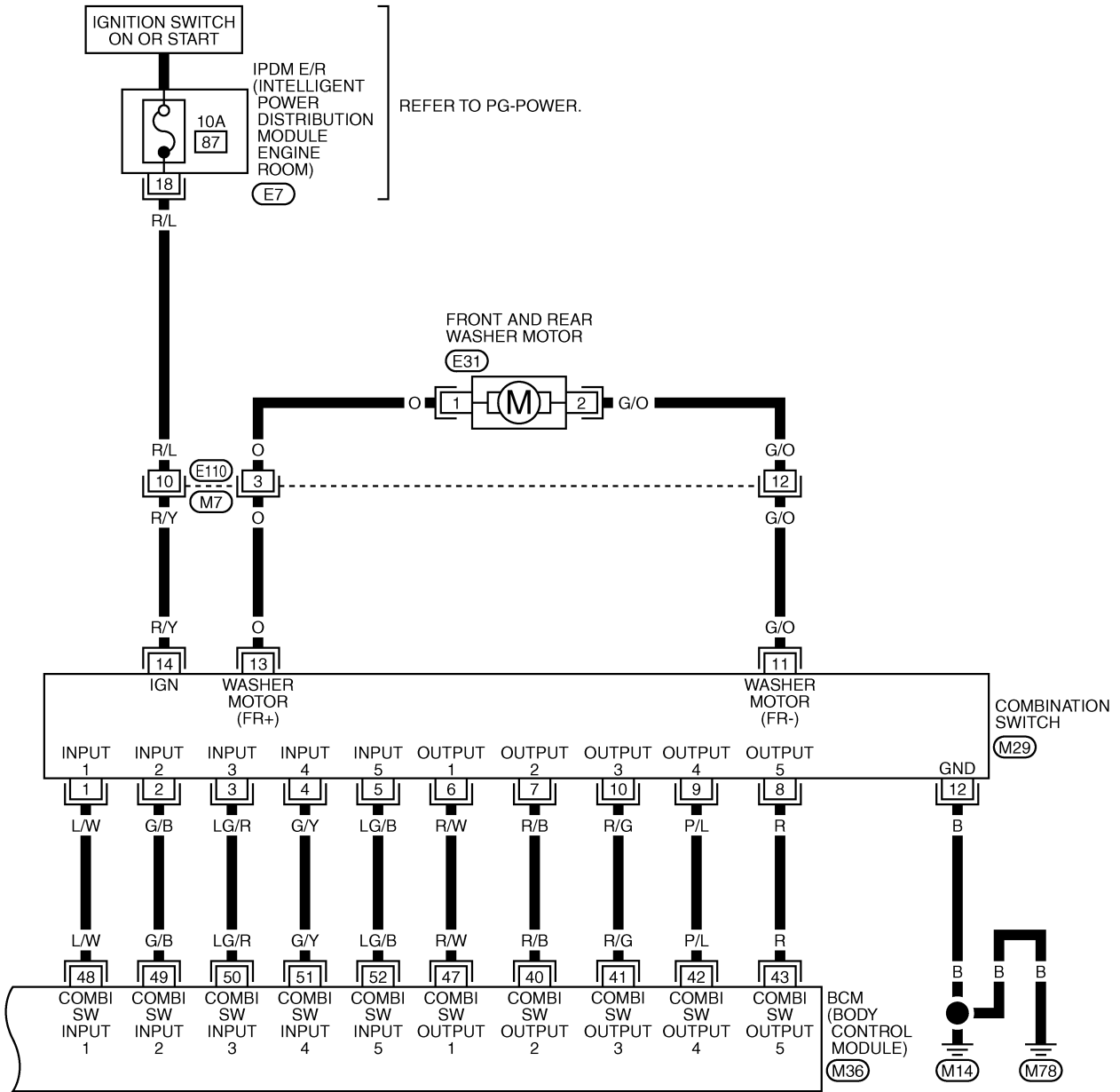
(M1) - FUSE BLOCK-JUNCTION BOX (J/B)

(M35), (M37), (E118) - ELECTRICAL UNITS

TKWA0783E

FRONT WIPER AND WASHER SYSTEM

WW-WIPER-03



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

(M7) GR

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

(M29) W

21	20	19	18	17	
28	27	26	25	24	
23	22				

(E7) W



REFER TO THE FOLLOWING.
(M36) -ELECTRICAL UNITS

TKWA0784E

FRONT WIPER AND WASHER SYSTEM

Terminals and Reference Values for BCM

AKS004XO

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

SKIA1119J

Terminals and Reference Values for IPDM E/R

AKS004XP

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

How to Proceed With Trouble Diagnosis

AKS004MZ

1. Confirm the symptoms and customer complaint.
2. Understand operation description and function description. Refer to [WW-4, "System Description"](#) .
3. Perform the Preliminary Check. Refer to [WW-37, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the warning chime operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

FRONT WIPER AND WASHER SYSTEM

AKS004N0

Preliminary Check CHECK POWER SUPPLY AND GROUND CIRCUIT

Inspection Procedure

1. CHECK FUSE

- Check if wiper and washer fuse is blown.

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

Refer to [WW-33, "Wiring Diagram — WIPER —"](#) .

OK or NG

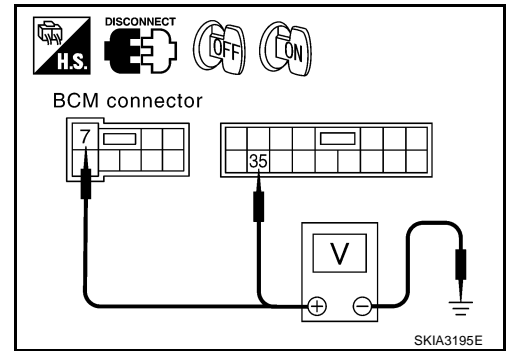
OK >> GO TO 2.

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

Terminals		(-)	Ignition switch position	
Connector	Terminal (Wire color)		OFF	ON
E118	7 (W/B)	Ground	Battery voltage	Battery voltage
M35	35 (R)		0V	Battery voltage



OK or NG

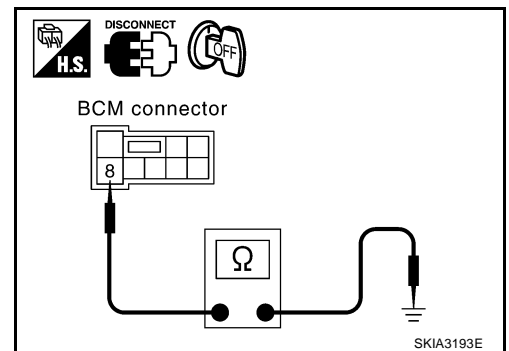
OK >> GO TO 3.

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM and ground.

Terminals		Ground	Continuity
Connector	Terminal (Wire color)		Yes
E118	8 (B)		Yes



OK or NG

OK >> INSPECTION END

NG >> Check harness ground circuit.

CONSULT-II Functions

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 C/U	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

AKS004N1

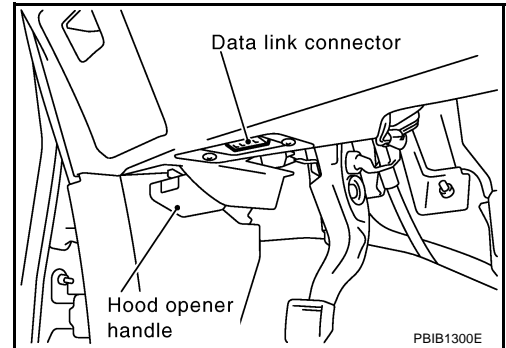
FRONT WIPER AND WASHER SYSTEM

CONSULT-II OPERATION

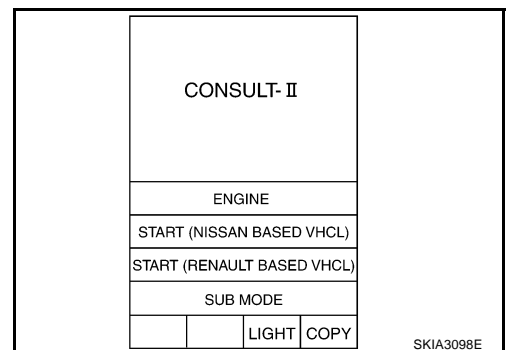
CAUTION:

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.

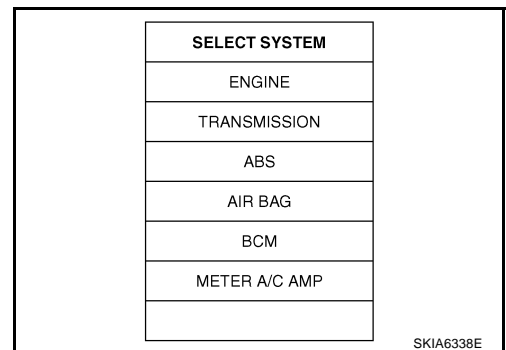
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



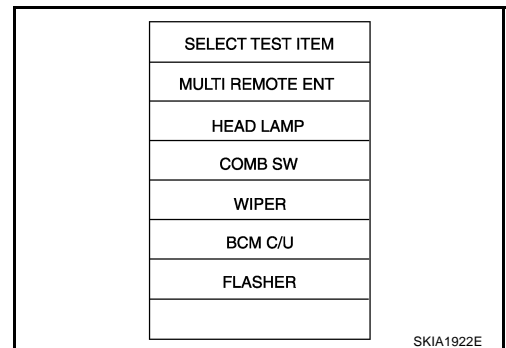
2. Touch "START (NISSAN BASED VHCL)".



3. Touch "BCM" on "SELECT SYSTEM" screen.
If "BCM" is not indicated, refer to [GI-38, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



4. Touch "WIPER".



FRONT WIPER AND WASHER SYSTEM

DATA MONITOR

Operation Procedure

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

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

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

Display Item List

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

ACTIVE TEST

Operation Procedure

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

Display Item List

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

FRONT WIPER AND WASHER SYSTEM

AKS004N2

Front Wiper Does Not Operate

1. FRONT WIPER ACTIVE TEST

1. Select "FR WIPER (HI)" or "FR WIPER (LOW)" during active test. Refer to [WW-39, "ACTIVE TEST"](#).
2. Make sure front wiper operation.

Front wiper operation should operate.

OK or NG

- OK >> GO TO 5.
NG >> GO TO 2.

2. CHECK FRONT WIPER MOTOR CIRCUIT

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 E8 terminal 30 (L/B) and front wiper motor harness connector E22 terminal 2 (L/B).

Continuity should exist.

4. Check continuity between IPDM E/R harness connector E8 terminal 31 (L) and front wiper motor harness connector E22 terminal 3 (L).

Continuity should exist.

OK or NG

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

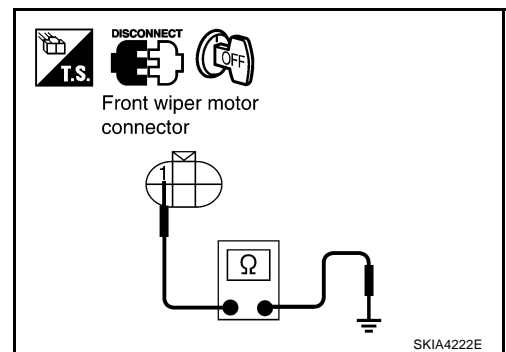
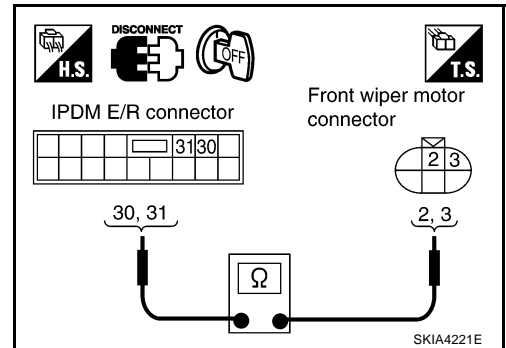
3. CHECK FRONT WIPER MOTOR GROUND

Check continuity between front wiper motor harness connector E22 terminal 1 (B) and ground.

Continuity should exist.

OK or NG

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



FRONT WIPER AND WASHER SYSTEM

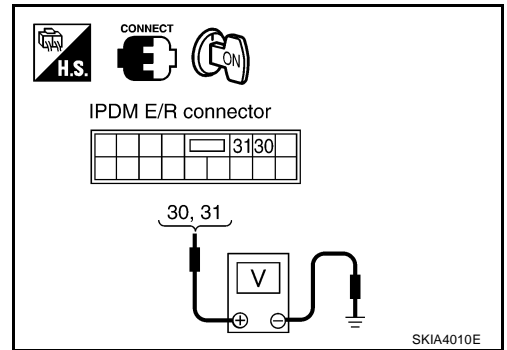
4. CHECK IPDM E/R OUTPUT SIGNAL

1. Connect IPDM E/R connector and front wiper motor connector.
2. Select "FR WIPER (HI)" or "FR WIPER (LOW)" during active test. Refer to [WW-39, "ACTIVE TEST"](#) . When front wiper relay, and front wiper HI relay are operating, check voltage between IPDM E/R harness connector and ground.

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

OK or NG

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



5. CHECK COMBINATION SWITCH CIRCUIT

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

Displayed results of self-diagnosis

- No malfunction detected>>GO TO 6.
 CAN communications or CAN system>>Check BCM CAN communication system. Refer to [BCS-34, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#) .
 OPEN DETECT 1 - 5>>Combination switch system malfunction. Go to [LT-257, "Combination Switch Inspection According to Self-Diagnostic Results"](#) .

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

6. CHECK COMBINATION SWITCH INPUT SIGNAL

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

- When front wiper switch is low position : FR WIPER LOW ON**
When front wiper switch is HI position : FR WIPER HI ON

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#) .
 NG >> Replace wiper switch.

DATA MONITOR	
MONITOR	
FR WIPER LOW	ON
FR WIPER HI	ON

FRONT WIPER AND WASHER SYSTEM

AKS004N3

Front Wiper Stop Position Is Incorrect

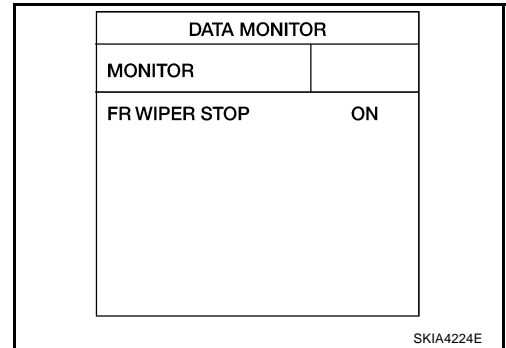
1. CHECK FRONT WIPER MOTOR AUTO STOP SIGNAL

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

**When front wiper switch is : FR WIPER STOP ON
OFF position**

OK or NG

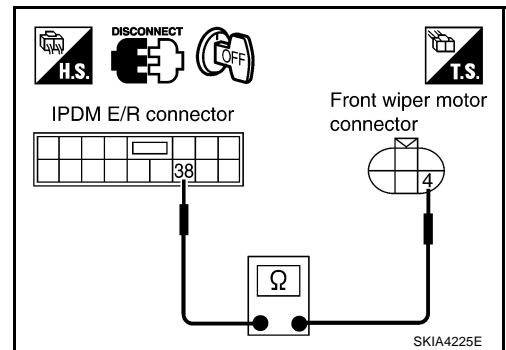
- OK >> Replace IPDM E/R.
- NG >> GO TO 2.



2. CHECK FRONT WIPER MOTOR CIRCUIT

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 E8 terminal 38 (L/Y) and front wiper motor harness connector E22 terminal 4 (L/Y).

Continuity should exist.



OK or NG

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

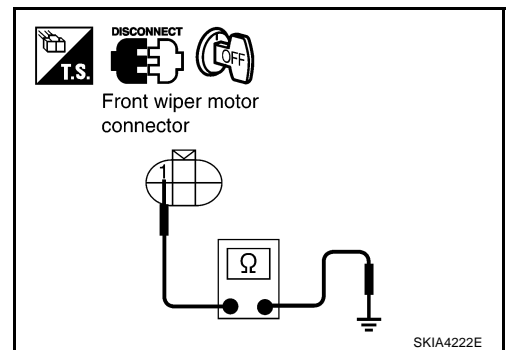
3. CHECK FRONT WIPER MOTOR GROUND CIRCUIT

Check continuity between front wiper motor harness connector E22 terminal 1 (B) and ground.

Continuity should exist.

OK or NG

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



FRONT WIPER AND WASHER SYSTEM

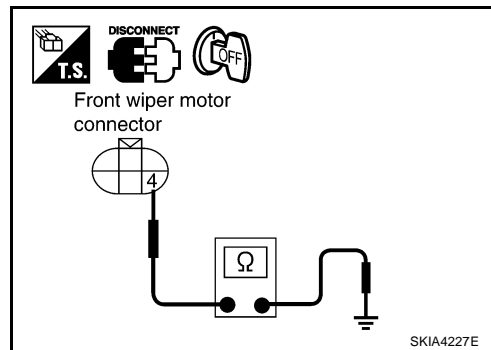
4. CHECK FRONT WIPER MOTOR CIRCUIT (SHORT CIRCUIT)

Check continuity between front wiper motor harness connector E22 terminal 4 (L/Y) and ground.

Continuity should not exist.

OK or NG

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



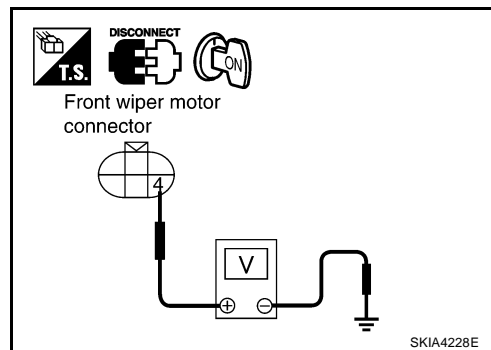
5. CHECK IPDM E/R OUTPUT SIGNAL

1. Connect IPDM E/R connector.
2. Turn ignition switch ON.
3. Check voltage between front wiper motor harness connector E22 terminal 4 (L/Y) and ground.

Battery voltage should exist.

OK or NG

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



Only Front Wiper Low Does Not Operate

1. FRONT WIPER ACTIVE TEST

1. Select "FR WIPER (LOW)" during active test. Refer to [WW-39, "ACTIVE TEST"](#).
2. Make sure front wipers operate in LOW operation mode.

Front wiper LOW operation should operate.

OK or NG

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

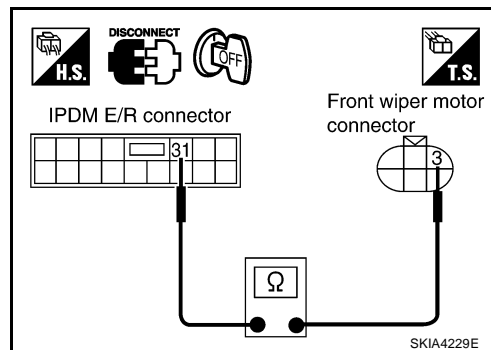
2. CHECK FRONT WIPER MOTOR CIRCUIT

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 E8 terminal 31 (L) and front wiper motor harness connector E22 terminal 3 (L).

Continuity should exist.

OK or NG

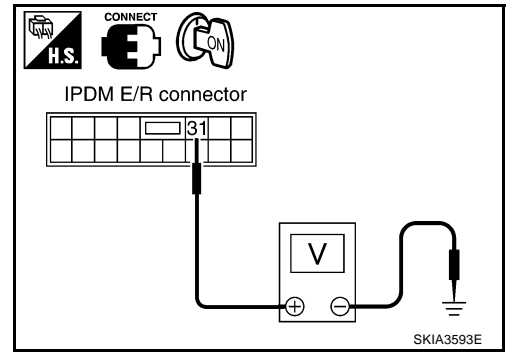
- OK >> GO TO 3.
- NG >> Repair harness or connector.



FRONT WIPER AND WASHER SYSTEM

3. CHECK IPDM E/R

1. Connect IPDM E/R connector and front wiper motor connector.
2. Select "FR WIPER (LOW)" during active test. Refer to [WW-39, "ACTIVE TEST"](#). When front wiper relay are operating, check voltage between IPDM E/R harness connector E8 terminal 31(L) and ground.



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

OK or NG

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

4. CHECK COMBINATION SWITCH CIRCUIT

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

Displayed results of self-diagnosis

- No malfunction detected>>GO TO 5.
 CAN communication or CAN system>>Check BCM CAN communications system. Refer to [BCS-34, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).
 OPEN DETECT 1 - 5>>Combination switch system malfunction. Refer to [LT-257, "Combination Switch Inspection According to Self-Diagnostic Results"](#).

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

LKIA0073E

5. CHECK COMBINATION SWITCH INPUT SIGNAL

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

When front wiper switch is : FR WIPER LOW ON low position

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).
 NG >> Replace wiper switch.

DATA MONITOR	
MONITOR	
FR WIPER LOW	ON

SKIA4230E

Only Front Wiper Hi Does Not Operate

1. ACTIVE TEST

1. Select "FR WIPER (HI)" during active test. Refer to [WW-39, "ACTIVE TEST"](#).
2. Make sure front wipers operate in HI operation mode.

Front wiper HI operation should operate.

OK or NG

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

FRONT WIPER AND WASHER SYSTEM

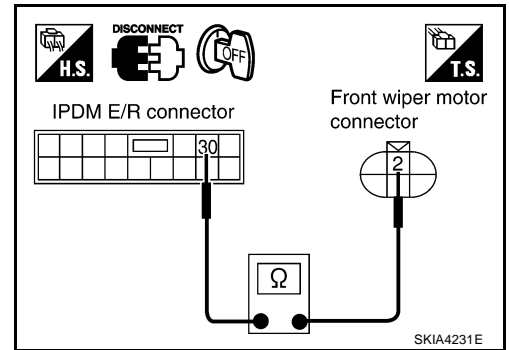
2. CHECK FRONT WIPER MOTOR CIRCUIT

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 E8 terminal 30 (L/B) and front wiper motor harness connector E22 terminal 2 (L/B).

Continuity should exist.

OK or NG

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



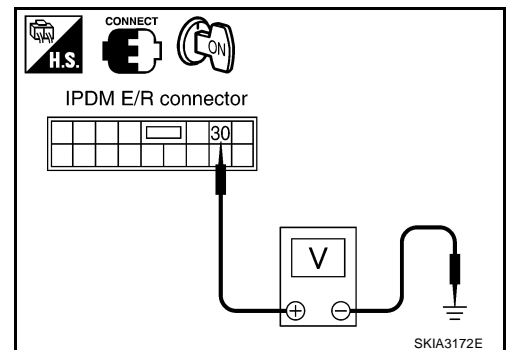
3. CHECK IPDM E/R

1. Connect IPDM E/R connector and front wiper motor connector.
2. Select "FR WIPER (HI)" during active test. Refer to [WW-39, "ACTIVE TEST"](#). When front wiper relay, and front wiper high relay are operating, check voltage between IPDM E/R harness connector E8 terminal 30 (L/B) and ground.

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

OK or NG

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



4. CHECK COMBINATION SWITCH CIRCUIT

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

Displayed results of self-diagnosis

- No malfunction detected >> GO TO 5.
 CAN communication or CAN system >> Check BCM CAN communications system. Refer to [BCS-34, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).
 OPEN DETECT 1 - 5 >> Combination switch system malfunction. Refer to [LT-257, "Combination Switch Inspection According to Self-Diagnostic Results"](#).

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

LKIA0073E

A
B
C
D
E
F
G
H
I
J

WW

L
M

FRONT WIPER AND WASHER SYSTEM

5. CHECK COMBINATION SWITCH INPUT SIGNAL

Select "BCM" on CONSULT-II. With "WIPER" data monitor, make sure "FR WIPER (HI)" turns ON-OFF according to operation of wiper switch.

When front wiper switch is : FR WIPER HI ON HI position

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).
- NG >> Replace wiper switch.

DATA MONITOR	
MONITOR	
FR WIPER HI	ON

SKIA4232E

AKS004N6

Only Front Wiper Intermittent Does Not Operate

1. CHECK COMBINATION SWITCH INPUT SIGNAL

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

When front wiper switch is : FR WIPER INT ON INT position

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).
- NG >> Replace wiper switch.

DATA MONITOR	
MONITOR	
FR WIPER INT	ON

SKIA4233E

AKS004N7

Front Wiper Intermittent Operation Switch Position Cannot Be Adjusted

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 [BCS-36, "Removal and Installation of BCM"](#).
- NG >> Replace wiper switch.

DATA MONITOR	
MONITOR	
INT VOLUME	5

SKIA4234E

AKS004N8

Wipers Do Not Wipe When Front Washer Operates

1. CHECK COMBINATION SWITCH INPUT SIGNAL

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

When front wiper switch is : FR WASHER SW ON WASHER position

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).
- NG >> Replace wiper switch.

DATA MONITOR	
MONITOR	
FR WASHER SW	ON

SKIA4235E

FRONT WIPER AND WASHER SYSTEM

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

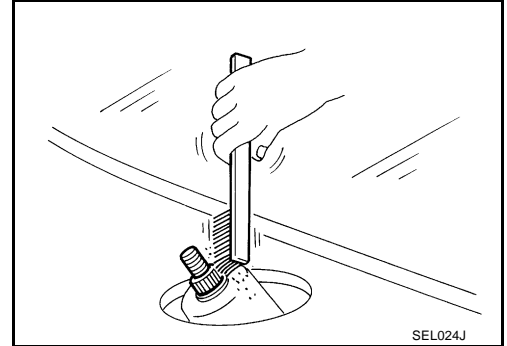
AKS005H6

REMOVAL

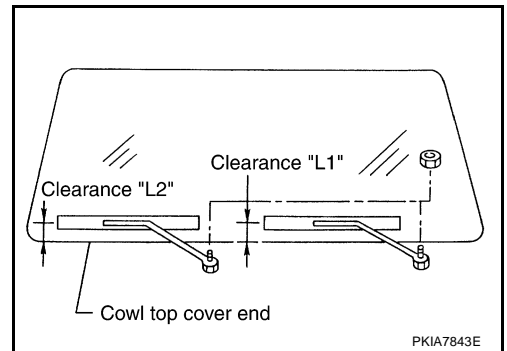
1. Operate wiper motor, and stop it at the auto stop position.
2. Remove wiper arm caps and mounting nuts, and remove wiper arms from vehicle.

INSTALLATION

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



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



Clearance "L1" : 36.6 - 51.6 mm (1.44 - 2.03 in)

Clearance "L2" : 40.4 - 55.4 mm (1.59 - 2.18 in)

- Tighten wiper arm nuts to specified torque.

Front wiper arm nuts  : **23.5 N·m**
(2.4 kg·m, 17 ft·lb)

7. Attach wiper arm caps.

ADJUSTMENT

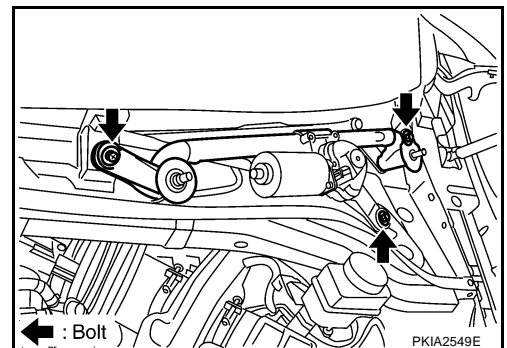
Refer to [WW-47, "INSTALLATION"](#)

Removal and Installation of Front Wiper Motor and Linkage

AKS005H7

REMOVAL

1. Remove wiper arms. Refer to [WW-47, "REMOVAL"](#)
2. Remove cowl top cover. Refer to [EI-21, "COWL TOP"](#) in "EI" section.
3. Remove washer tube.
4. Disconnect wiper motor connector.
5. Remove wiper motor and linkage mounting bolts, and remove wiper motor and linkage.



FRONT WIPER AND WASHER SYSTEM

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-21, "COWL TOP"](#) in "EI" section.
5. Install wiper arms. Refer to [WW-47, "Removal and Installation of Front Wiper Arms, Adjustment of Wiper Arms Stop Location"](#)

Wiper motor and linkage mounting bolts

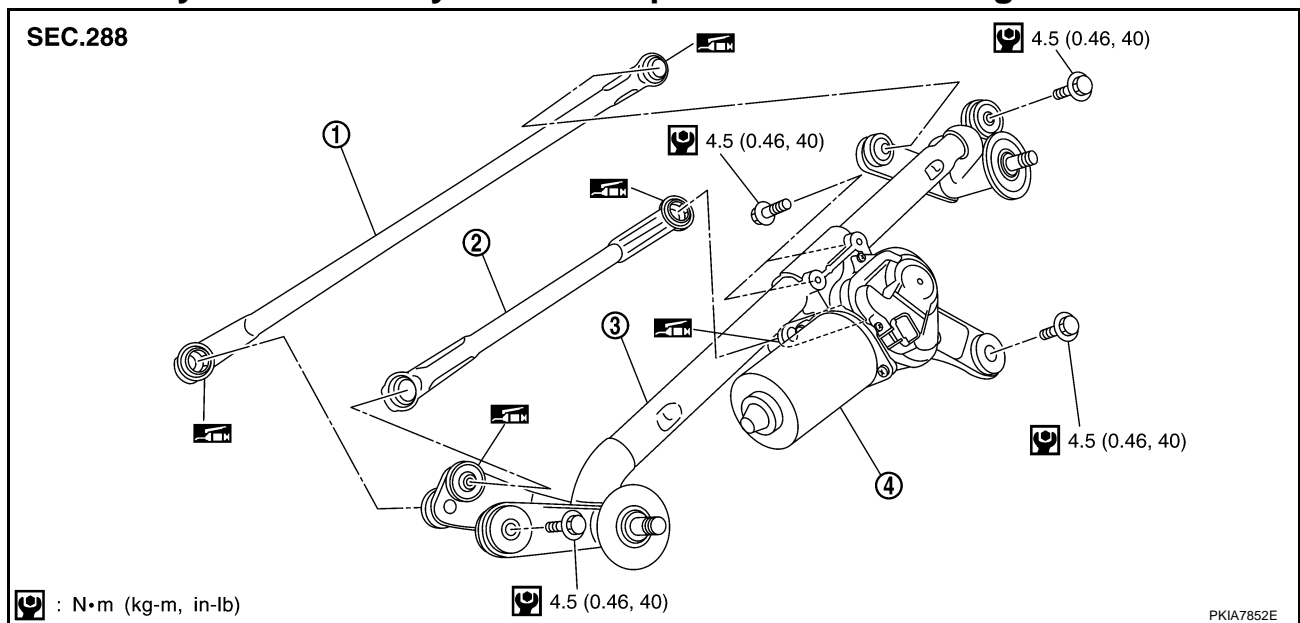
 : 4.5 N·m (0.46 kg-m, 40 in-lb)

CAUTION:

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

Disassembly and Assembly of Front Wiper Motor and Linkage

AKS005H8



1. Wiper link 1
4. Wiper motor

2. Wiper link 2

3. Wiper frame

DISASSEMBLY

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

ASSEMBLY

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

Wiper motor mounting bolts:

 : 4.5 N·m (0.46 kg-m, 40 in-lb)

FRONT WIPER AND WASHER SYSTEM

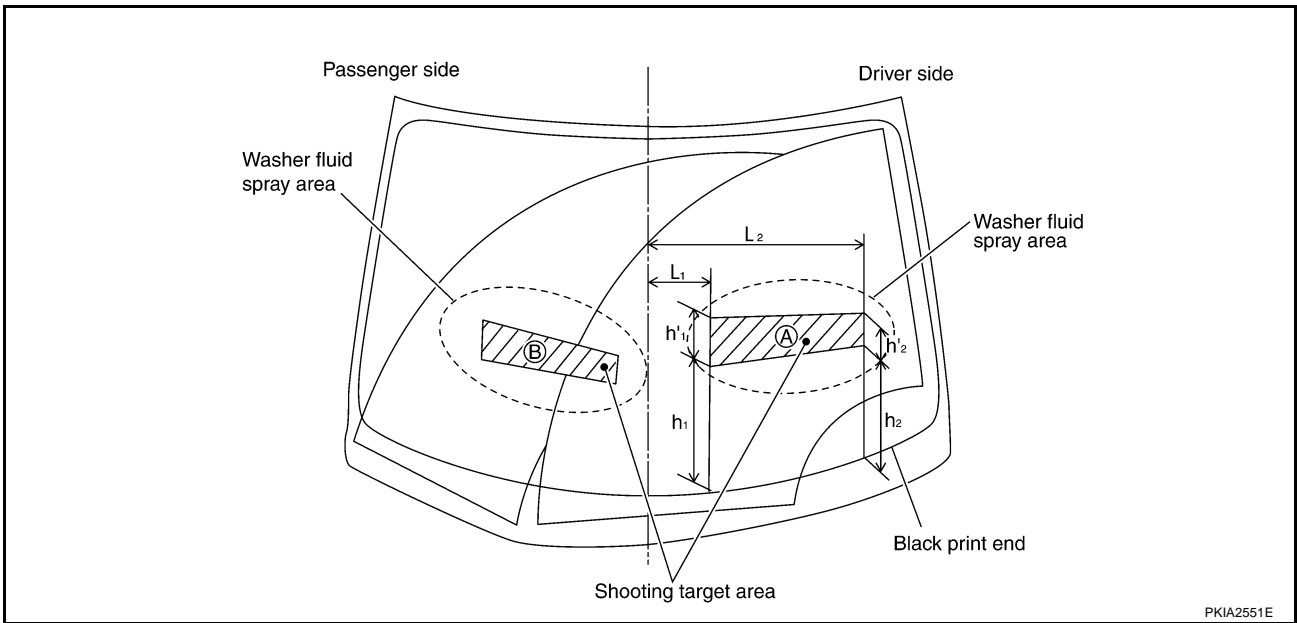
AKS005H9

Washer Nozzle Adjustment

- In this model, the washer nozzle has a non-adjustment nozzle and requires no adjusting.
- If necessary, ensure that washer fluid spray covers at least the area "A" and "B" as shown in the figure. (See the illustration)
- If the above is not satisfied, confirm that the washer nozzle is installed correctly on the cowl top cover and/or cowl top cover is installed correctly on the body.
- If they are installed correctly, and the fluid is still spraying out of the shooting target areas, replace them with new washer nozzle and/or cowl top cover.

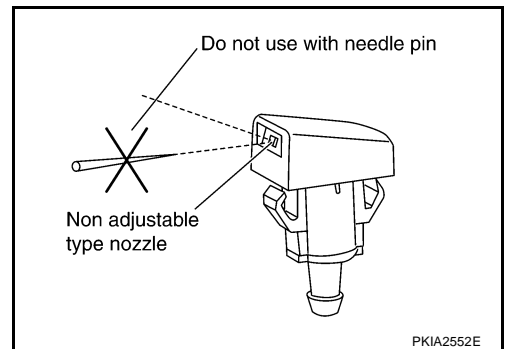
Unit: mm (in)

Spray position	h ₁	h' ₁	h ₂	h' ₂	L ₁	L ₂
A	290 (11.42)	110 (4.33)	250 (9.84)	85 (3.35)	150 (5.91)	530 (20.87)
B	200 (7.87)	90 (3.54)	230 (9.06)	120 (4.72)	75 (2.95)	445 (17.52)



CAUTION:

Do not adjust the washer nozzle with needle pin. If attempts are made to adjust the washer nozzle with needle pin, damage may occur.



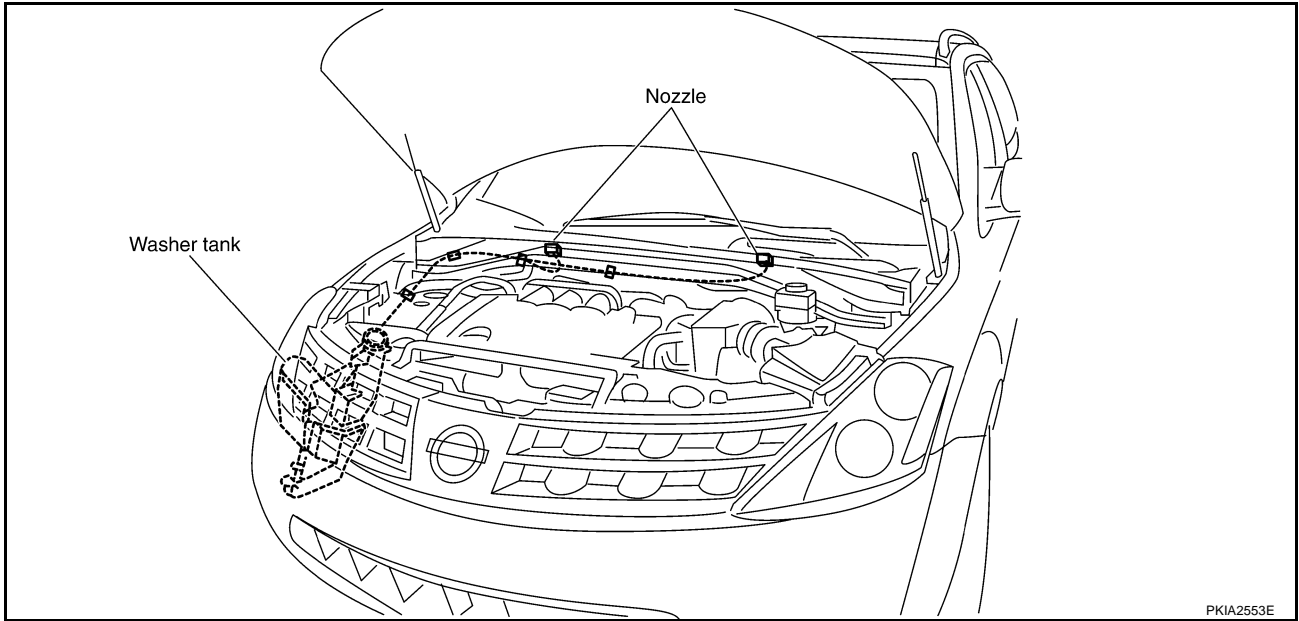
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FRONT WIPER AND WASHER SYSTEM

Washer Tube Layout

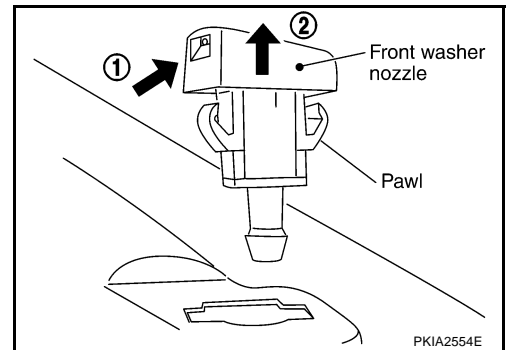
AKS005HA



Removal and Installation of Front Washer Nozzle

AKS005HB

1. Push Washer nozzle in direction by the arrow as shown in the figure and remove it.
2. Remove washer tube.



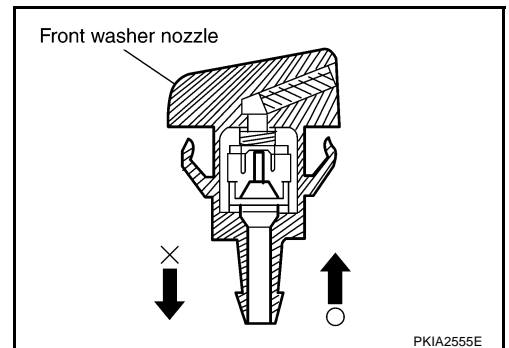
INSTALLATION

Install in the reverse order of removal.

Inspection for Washer Nozzle CHECK VALVE

AKS005HD

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



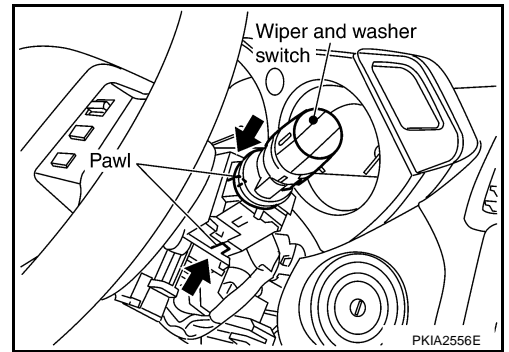
FRONT WIPER AND WASHER SYSTEM

Removal and Installation of Front Wiper and Washer Switch

AKS005HE

REMOVAL

1. Remove instrument driver lower panel, steering column lower cover and combination meter. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) in "EI" 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

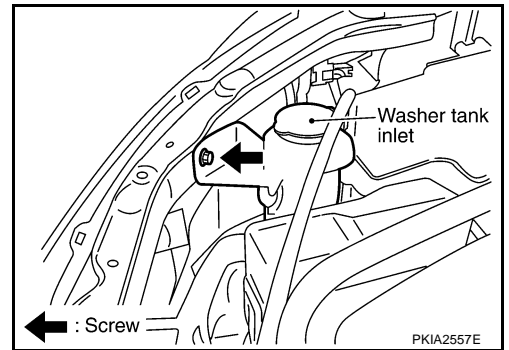
Install in the reverse order of removal.

Removal and Installation of Washer Tank

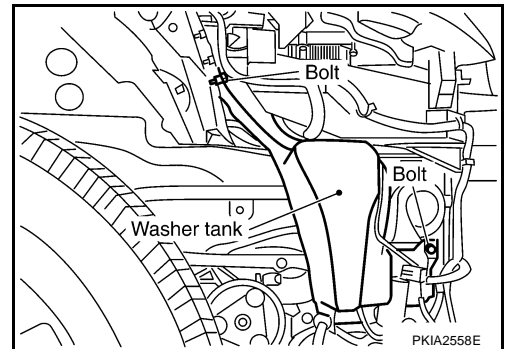
REMOVAL

1. Remove washer tank inlet mounting screw.

AKS005HF



2. Remove fender protector (front). Refer to [EI-22, "FENDER PROTECTOR"](#) in "EI" section.
3. Remove front bumper. Refer to [EI-14, "FRONT BUMPER"](#) in "EI" section.
4. Disconnect washer pump connector.
5. Remove washer tank mounting bolt.
6. Remove washer tube, and remove washer tank from the vehicle.



INSTALLATION

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

CAUTION:

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

Washer tank mounting bolt



: 4.5 N·m (0.46 kg·m, 40 in·lb)

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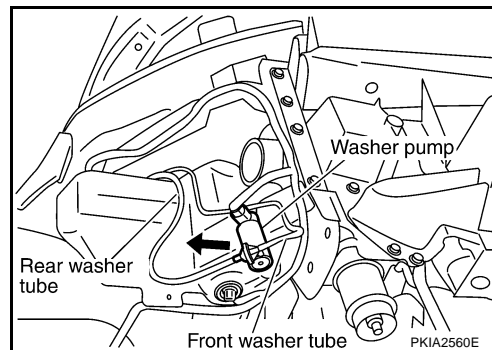
FRONT WIPER AND WASHER SYSTEM

AKS005HG

Removal and Installation of Washer Pump

REMOVAL

1. Remove fender protector (front). Refer to [EI-22, "FENDER PROTECTOR"](#) in "EI" section.
2. Remove the right side of front bumper. Refer to [EI-14, "FRONT BUMPER"](#) in "EI" section.
3. Disconnect washer pump connector and tube.
4. Pull out washer pump in direction shown by the arrow in the figure. Remove washer pump from washer tank.



INSTALLATION

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

CAUTION:

- When installing washer pump, there should be no packing twists, etc.
- Do not misconnect the front tube and the rear tube to each side when the washer tube is being connected to the washer pump.

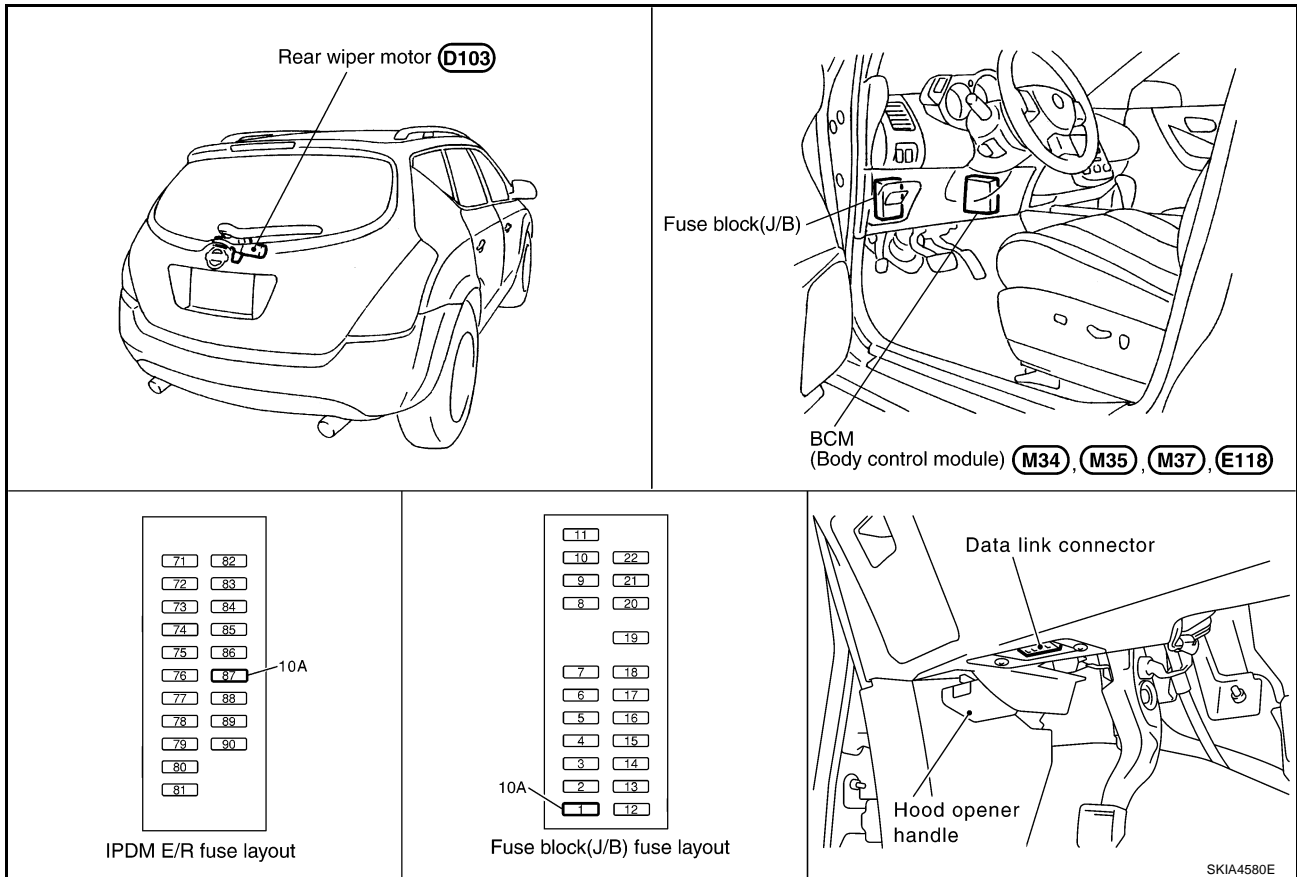
REAR WIPER AND WASHER SYSTEM

REAR WIPER AND WASHER SYSTEM

PFP:28710

Components Parts and Harness Connector Location

AKS004X3



System Description

AKS004X4

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

Power supplied all time

- through 50 A fusible link (letter F, located in fusible link block)
- to BCM (body control module) terminal 7

When ignition switch ON or START position, power is supplied

- through 10 A fuse [No. 1, located in fuse block (J/B)]
- to BCM (body control module) terminal 35, and
- through 10 A fuse [NO. 87, located in IPDM E/R (intelligent power distribution module engine room)]
- through IPDM E/R (intelligent power distribution module engine room) terminal 18
- to combination switch terminal 14.

Ground is supplied

- to BCM (body control module) terminal 8
- through grounds E13, E26 and E28, and
- to combination switch (wiper switch) terminal 12
- through grounds M14 and M78.

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REAR WIPER AND WASHER SYSTEM

REAR WIPER OPERATION

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

When BCM operates rear wiper motor, power is supplied

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

Ground is supplied

- to rear wiper motor terminal 2
- through grounds B7 and B20.

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 [WW-7, "BCM WIPER SWITCH READING FUNCTION"](#))

When BCM operates rear wiper motor, power supplied

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

Ground is supplied

- to rear wiper motor terminal 2
- through grounds B7 and B20.

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 [WW-7, "BCM WIPER SWITCH READING FUNCTION"](#)), and combination switch (wiper switch) ground is supplied

- through combination switch (wiper switch) terminal 11
- to front and rear washer motor terminal 2
- to front and rear washer motor terminal 1
- through combination switch (wiper switch) terminal 13
- to combination switch (wiper switch) terminal 12
- through grounds M14 and M78.

With ground supplied, front and rear washer motor is operated.

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

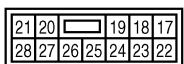
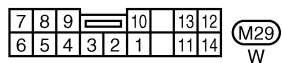
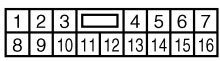
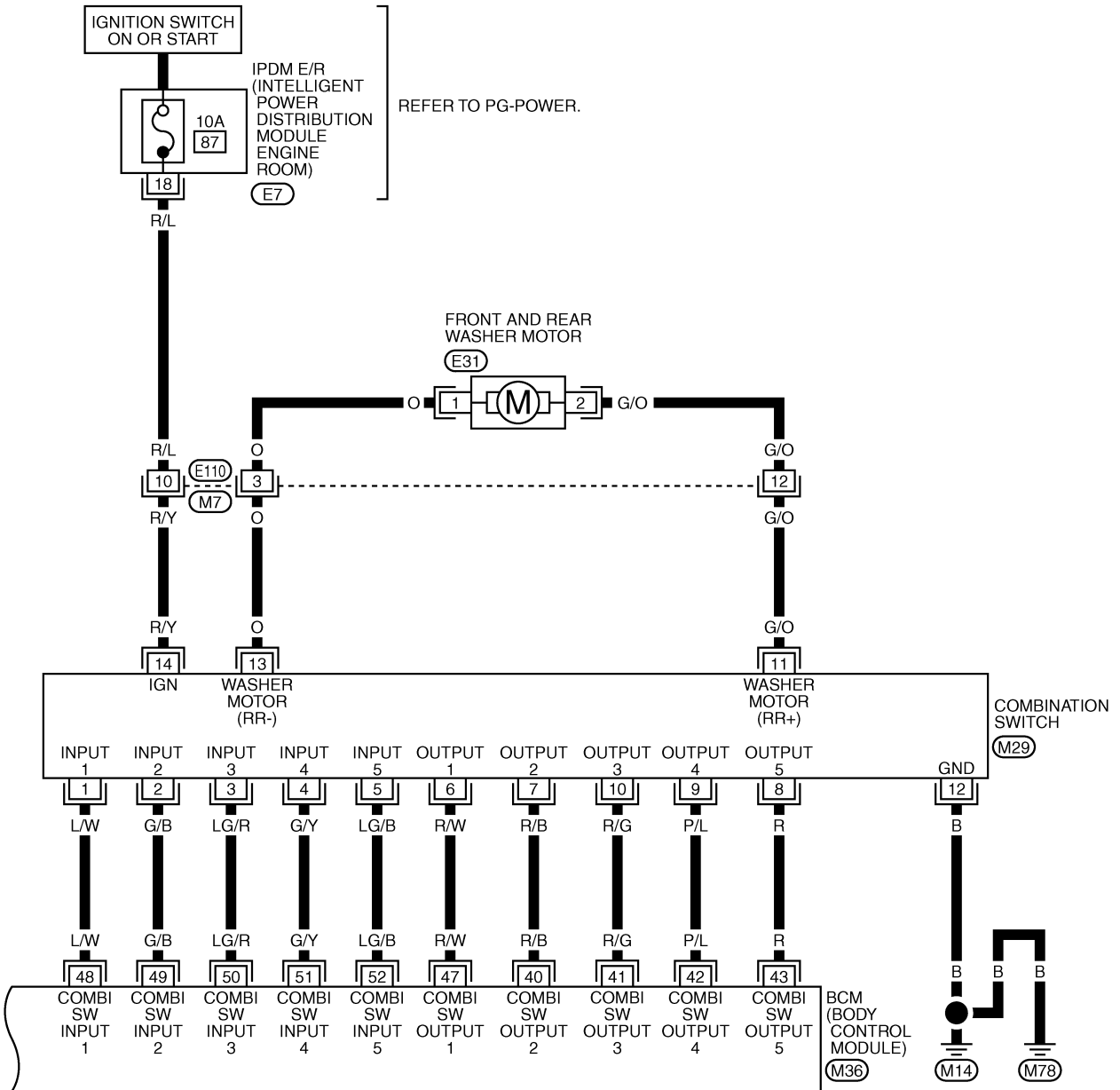
When BCM detects washer switch is OFF, low speed operation cycles approximately 3 times and then stops.

BCM WIPER SWITCH READING FUNCTION

Refer to [WW-7, "BCM WIPER SWITCH READING FUNCTION"](#) in FRONT WIPER AND WASHER SYSTEM.

REAR WIPER AND WASHER SYSTEM

WW-WIP/R-02



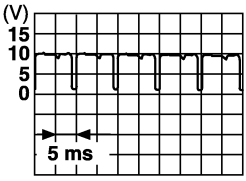
REFER TO THE FOLLOWING.
M36 -ELECTRICAL UNITS

TKWA0786E

REAR WIPER AND WASHER SYSTEM

Terminals and Reference Values for BCM

AKS004X6

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

SKIA1119J

Terminals and Reference Values for IPDM E/R

AKS005EU

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
18	R/L	Front and rear washer motor power supply	ON	—	Battery voltage

How to Proceed With Trouble Diagnosis

AKS004X7

1. Confirm the symptoms and customer complaint.
2. Understand operation description and function description. Refer to [WW-53, "System Description"](#).
3. Perform the Preliminary Check. Refer to [WW-57, "Preliminary Check"](#).
4. Check symptom and repair or replace the cause of malfunction.
5. Does the warning chime operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

Preliminary Check

AKS004X8

CHECK POWER SUPPLY AND GROUND CIRCUIT

Inspection Procedure

1. CHECK FUSE

- Check if wiper and washer fuse is blown.

Unit	Power source	Fuse No.
Front and rear washer motor	Ignition ON or START	87
BCM	Ignition ON or START	1

REAR WIPER AND WASHER SYSTEM

Refer to [WW-55, "Wiring Diagram — WIP/ R —"](#) .

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

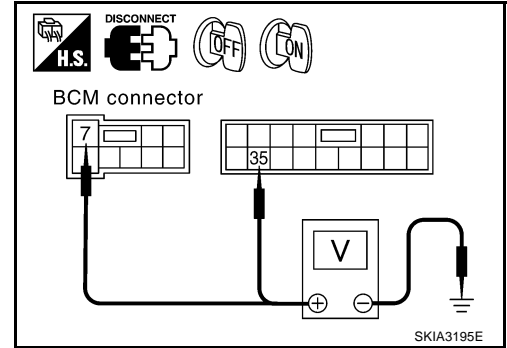
1. Disconnect BCM connector.
2. Check voltage between BCM harness connector and ground.

Terminals		Ignition switch position	
(+)		(-)	
Connector	Terminal (Wire color)	OFF	ON
E118	7 (W/B)	Battery voltage	Battery voltage
M35	35 (R)	0V	Battery voltage

OK or NG

OK >> GO TO 3.

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



3. CHECK GROUND CIRCUIT

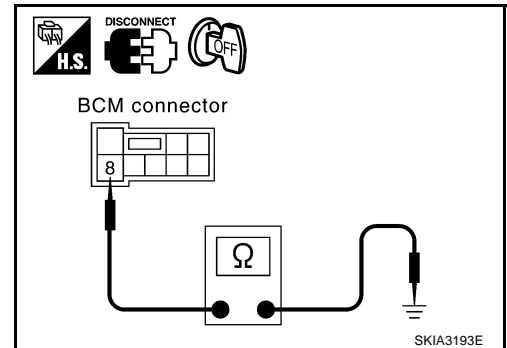
Check continuity between BCM harness connector and ground.

Terminals		Continuity	
Connector	Terminal (Wire color)	Ground	Yes
E118	8 (B)		

OK or NG

OK >> INSPECTION END

NG >> Check harness ground circuit.



REAR WIPER AND WASHER SYSTEM

CONSULT-II Functions

AKS004X9

CONSULT-II performs the following functions communicating with BCM.

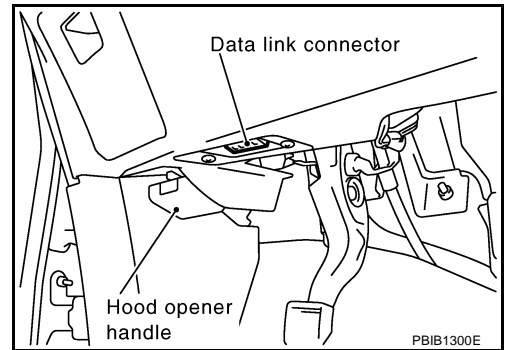
BCM diagnosis position	Check item, Diagnosis mode	Description
Wiper	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Device operation can be checked by applying a drive signal to device.
BCM C/U	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be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

CONSULT-II OPERATION

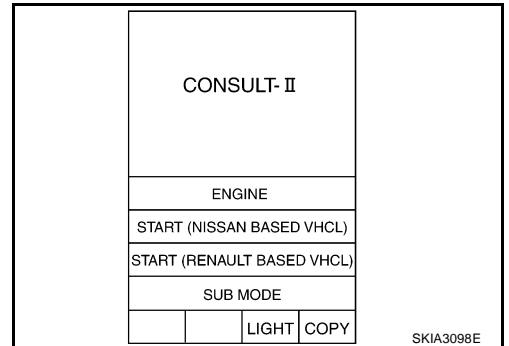
CAUTION:

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.

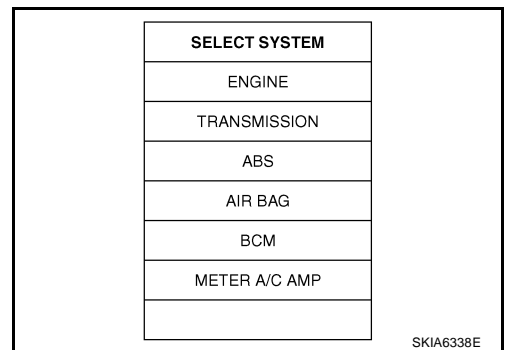
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



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



3. Touch "BCM" on "SELECT SYSTEM" screen. If "BCM" is not indicated, refer to [GI-38, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).

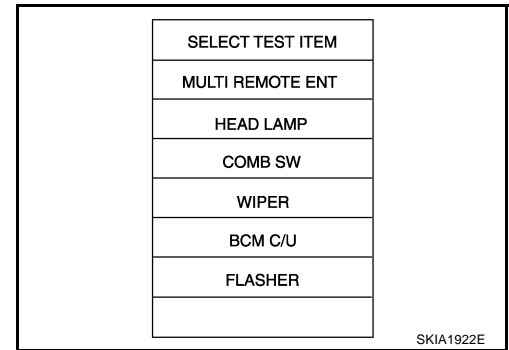


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REAR WIPER AND WASHER SYSTEM

4. Touch "WIPER".



DATA MONITOR

Operation Procedure

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

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

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

Display Item List

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

ACTIVE TEST

Operation Procedure

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

REAR WIPER AND WASHER SYSTEM

Display Item List

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

Rear Wiper Does Not Operate

AKS004XA

1. REAR WIPER ACTIVE TEST

1. Turn to rear wiper using active test. Refer to [WW-60, "ACTIVE TEST"](#).
2. Make sure rear wiper operates.

Rear wiper operation should operate.

OK or NG

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

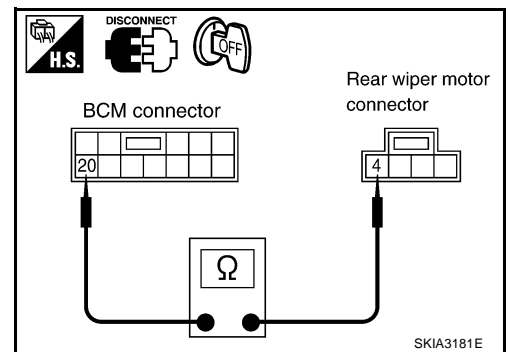
2. CHECK REAR WIPER MOTOR CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and rear wiper motor connector.
3. Check continuity between BCM harness connector M34 terminal 20 (G) and rear wiper motor harness connector D103 terminal 4 (G).

Continuity should exist.

OK or NO

- OK >> GO TO 3.
 NO >> Repair harness or connector.



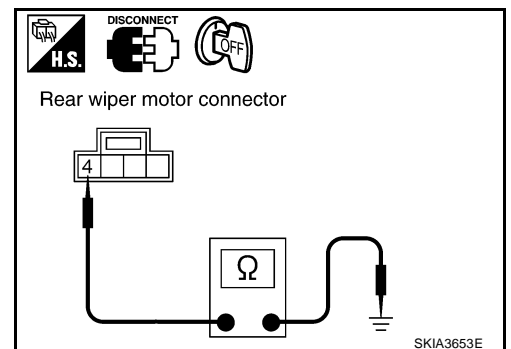
3. CHECK REAR WIPER MOTOR SHORT CIRCUIT

Check continuity between rear wiper motor harness connector D103 terminal 4 (G) and ground.

Continuity should not exist.

OK or NG

- OK >> GO TO 4.
 NG >> After repairing harness, be sure to disconnect battery negative cable, and then reconnect it.



REAR WIPER AND WASHER SYSTEM

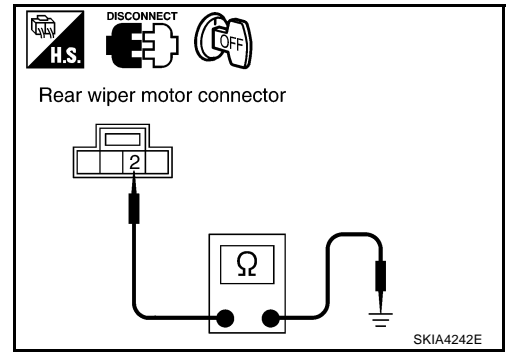
4. CHECK GROUND CIRCUIT

Check continuity between rear wiper motor harness connector D103 terminal 2 (B) and ground.

Continuity should exist.

OK or NG

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



5. CHECK REAR WIPER OPERATING

1. Connect "BCM" connector and rear wiper motor connector.
2. Select "RR WIPER" during active test. Refer to [WW-60, "ACTIVE TEST"](#). When rear wiper operating, check voltage between BCM harness connector M34 terminal 20 (G) and ground.

Terminals			Condition	Voltage
(+)	(-)			
Connector	Terminal (Wire color)			
M34	20 (G)	Ground	Stopped	Approx. 0V
			ON operation	Battery voltage

OK or NG

- OK >> Replace rear wiper motor.
- NG >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).

6. CHECK COMBINATION SWITCH INPUT SIGNAL

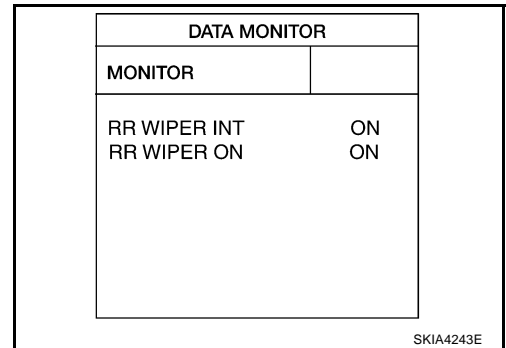
Select "BCM" on CONSULT-II. With "WIPER" data monitor, make sure "RR WIPER INT", "RR WIPER ON" turn ON-OFF according to operation of wiper switch.

When wiper switch is INT position : RR WIPER INT ON

When wiper switch is ON position : RR WIPER ON ON

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).
- NG >> Replace wiper switch.



REAR WIPER AND WASHER SYSTEM

AKS004XB

Rear Wiper Stop Position Is Incorrect

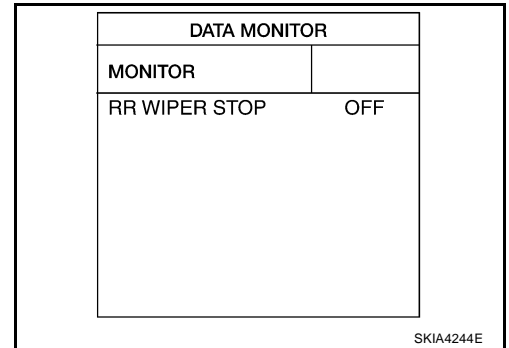
1. CHECK COMBINATION SWITCH INPUT SIGNAL

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

When wiper switch is OFF : RR WIPER STOP OFF

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).
- NG >> GO TO 2.



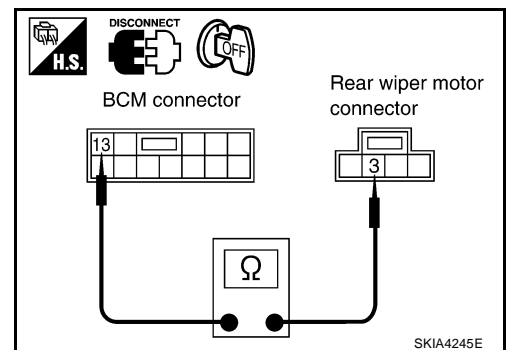
2. CHECK REAR WIPER MOTOR CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and rear wiper motor connector.
3. Check continuity between BCM harness connector M34 terminal 13 (O) and rear wiper motor harness connector D103 terminal 3 (O).

Continuity should exist.

OK or NG

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



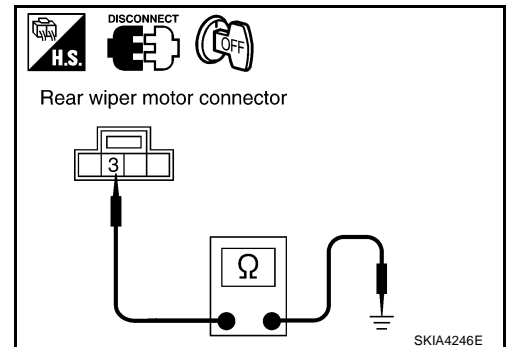
3. CHECK REAR WIPER MOTOR SHORT CIRCUIT

Check continuity between rear wiper motor harness connector D103 terminal 3 (O) and ground.

Continuity should not exist.

OK or NG

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



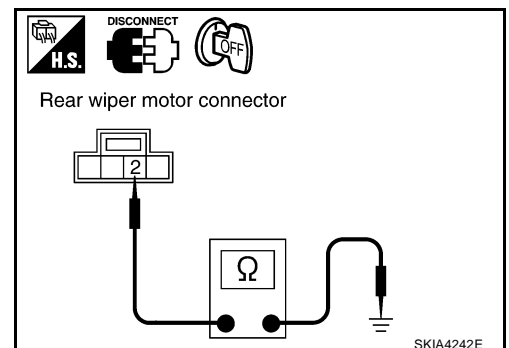
4. CHECK GROUND CIRCUIT

Check continuity between rear wiper motor harness connector D103 terminal 2 (B) and ground.

Continuity should exist.

OK or NG

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



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REAR WIPER AND WASHER SYSTEM

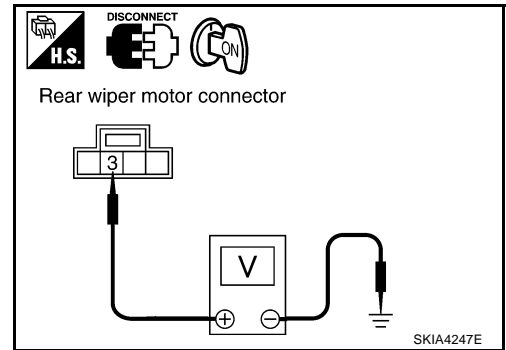
5. CHECK AUTO STOP SIGNAL

1. Connect BCM connector.
2. Turn ignition switch ON.
3. Check voltage between rear wiper motor harness connector D103 terminal 3 (O) and ground.

Battery voltage should exist.

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).
- NG >> Replace rear wiper motor.



AKS004XC

Only Rear Wiper Does Not Operate

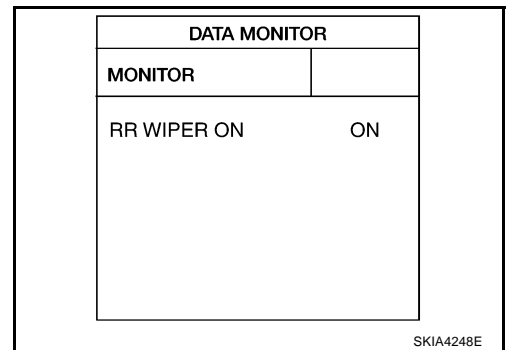
1. CHECK COMBINATION SWITCH INPUT SIGNAL

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

When rear wiper switch is ON : RR WIPER ON ON position

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).
- NG >> Replace wiper switch.



AKS004XD

Only Rear Wiper Intermittent Does Not Operate

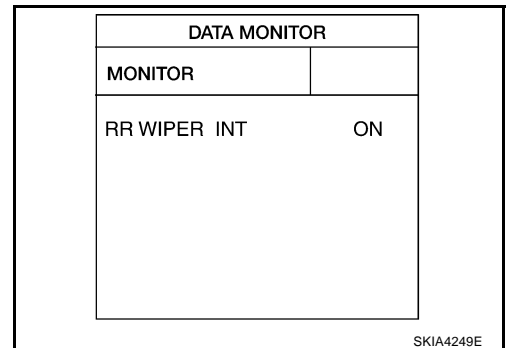
1. CHECK COMBINATION SWITCH INPUT SIGNAL

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

When rear wiper switch is INT : RR WIPER INT ON position

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).
- NG >> Replace wiper switch.



AKS004XE

Wiper Does Not Wipe When Rear Washer Operates

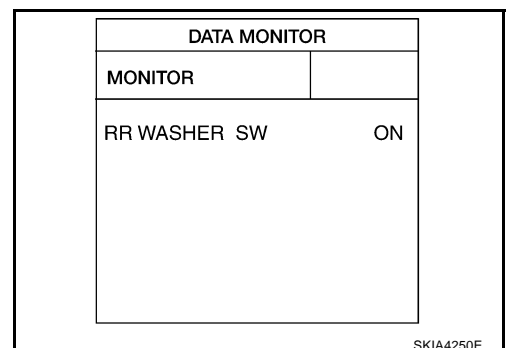
1. CHECK COMBINATION SWITCH INPUT SIGNAL

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

When rear wiper switch is WASHER position : RR WASHER SW ON

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).
- NG >> Replace wiper switch.



REAR WIPER AND WASHER SYSTEM

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

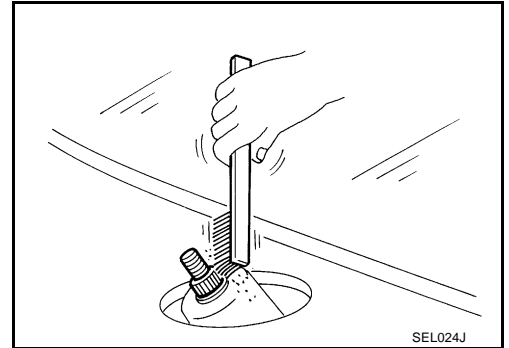
AKS004XF

REMOVAL

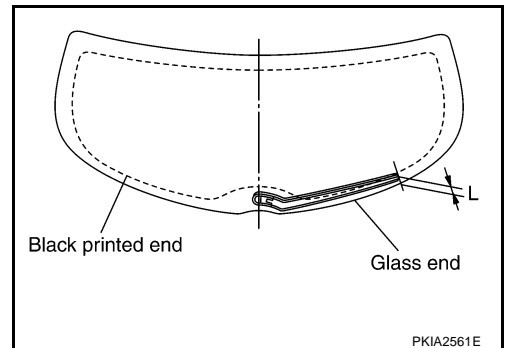
1. Operate wiper motor, and stop it at the auto stop position.
2. Remove wiper arm cover and mounting nut, and then remove wiper arm from vehicle.

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. Lift the blade up and then set it down onto glass surface to set the blade center to clearance "L" immediately before tightening nut.
4. Eject washer fluid. Turn on wiper switch to operate wiper motor and then turn it "OFF".
5. Ensure that wiper blades stop within clearance "L".



Clearance "L" : 20.5 - 35.5 mm (0.807 - 1.398 in)

- Tighten wiper arm nut to specified torque.

Rear wiper arm : 8.8 N·m
mounting nut (0.9 kg·m, 78 in·lb)

ADJUSTMENT

Refer to [WW-65, "INSTALLATION"](#) .

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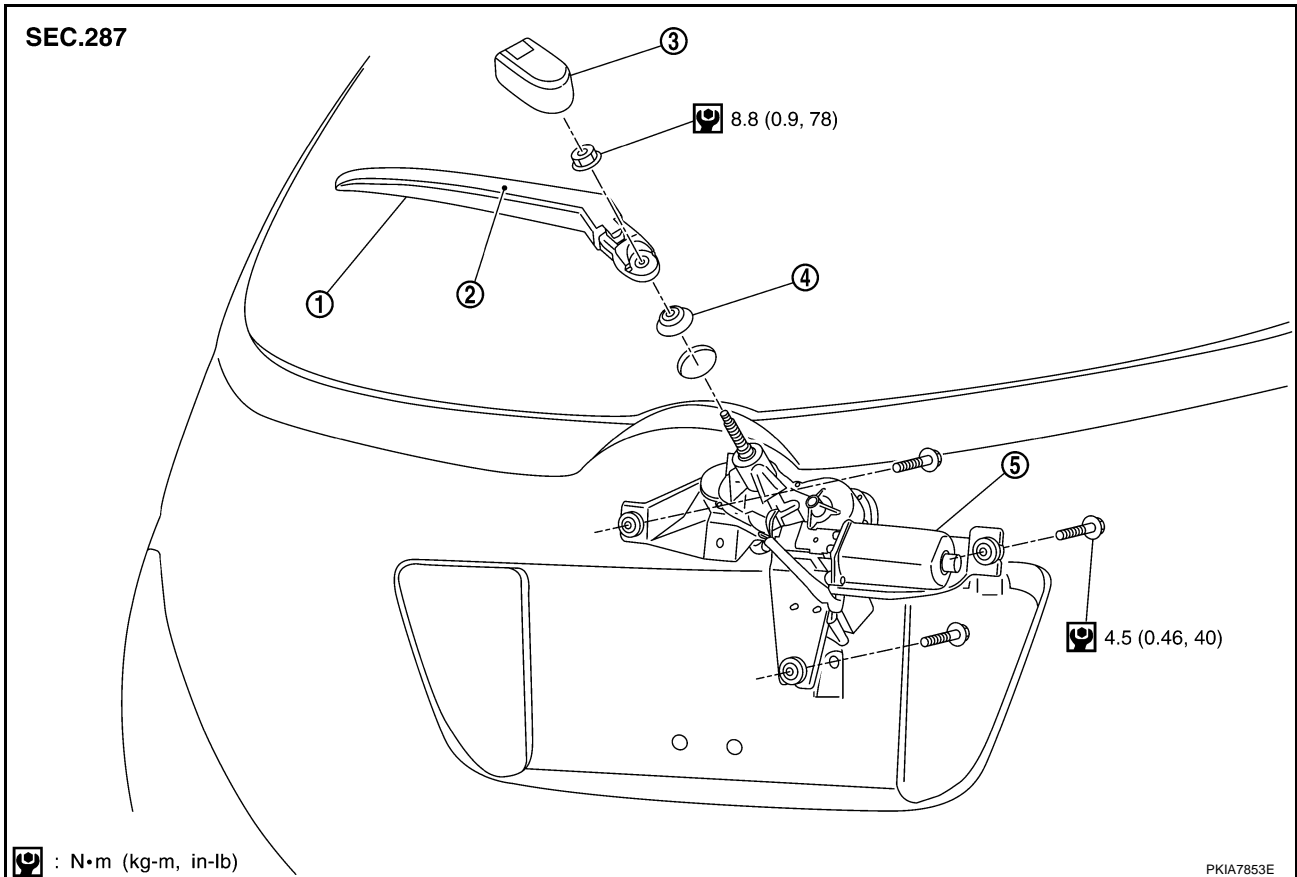
L

M

REAR WIPER AND WASHER SYSTEM

Removal and Installation of Rear Wiper Motor

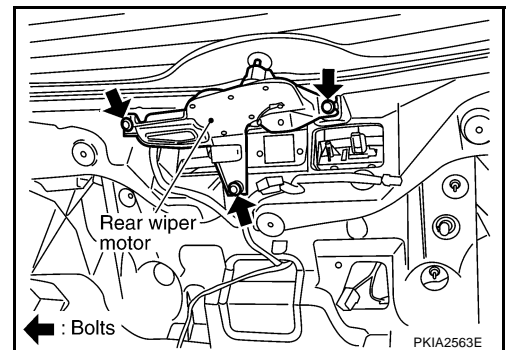
AKS004XG



1. Wiper blade
2. Wiper arm
3. Wiper arm cover
4. Pivot cap
5. Rear wiper motor

REMOVAL

1. Remove wiper arm. Refer to [WW-65, "Removal and Installation of Rear Wiper Arm, Adjustment of Wiper Arms Stop Location"](#).
2. Remove pivot cap.
3. Remove back door finisher. Refer to [EI-40, "BACK DOOR TRIM"](#) in "EI" section.
4. Disconnect rear wiper motor connector.
5. Remove rear wiper motor mounting bolts and remove rear wiper motor.



INSTALLATION

1. Attach pivot cap.
2. Install rear wiper motor to the vehicle.

Rear wiper motor mounting bolts

⊙ : 4.5 N·m (0.46 kg-m, 40 in-lb)

3. Connect rear wiper motor to the connector. Turn rear wiper switch ON to operate rear wiper motor, then turn wiper switch OFF (auto stop).
4. Install back door finisher. Refer to [EI-40, "BACK DOOR TRIM"](#) in "EI" section.
5. Attach wiper arm. Refer to [WW-65, "Removal and Installation of Rear Wiper Arm, Adjustment of Wiper Arms Stop Location"](#).

REAR WIPER AND WASHER SYSTEM

CAUTION:

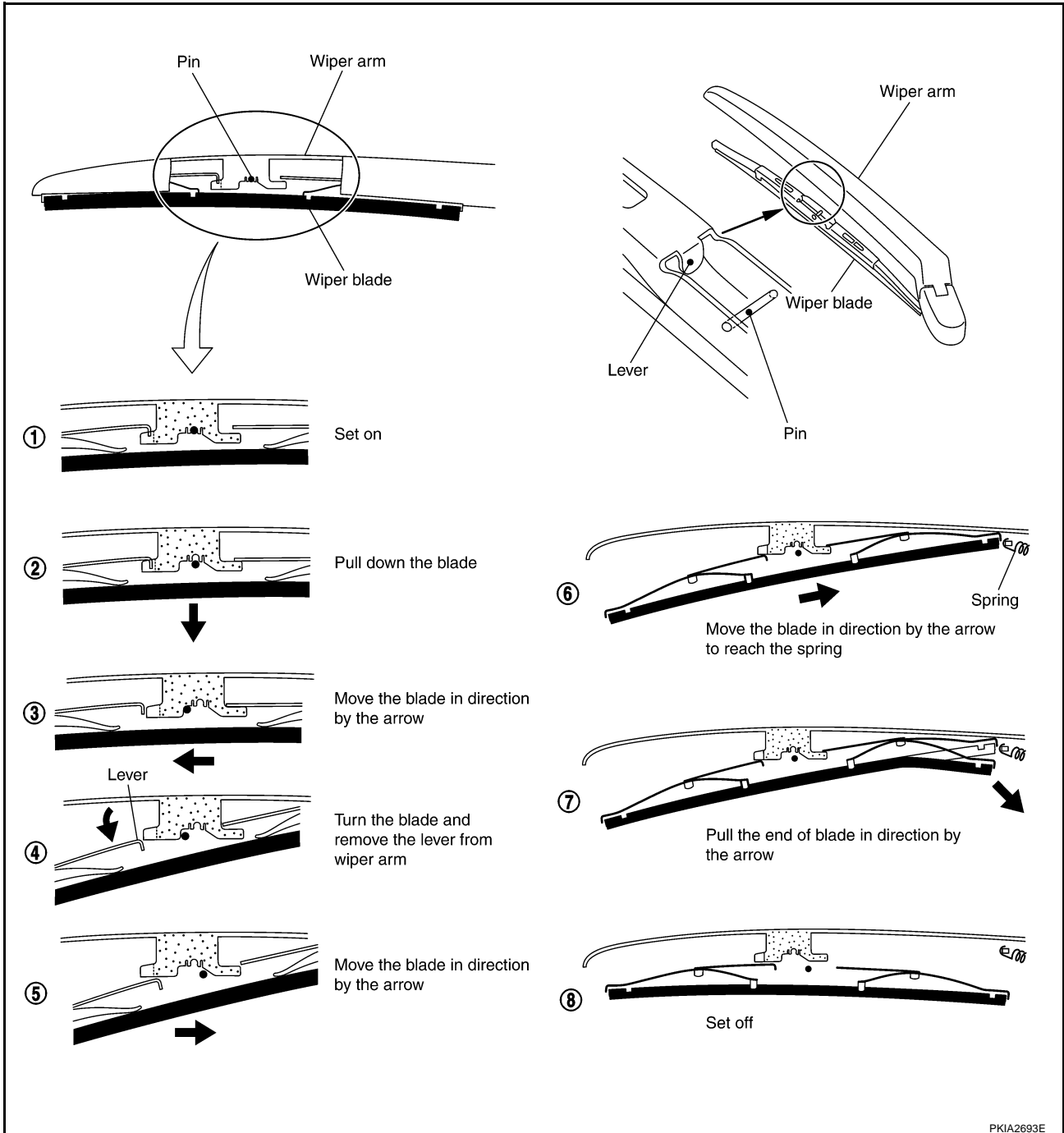
- Do not drop the wiper motor or cause it to contact other parts.

Removal and Installation of Rear Wiper Blade

AKS0050T

REMOVAL

Remove the wiper blade as following the procedure below. (As shown No.1 to 8 in the illustration.)



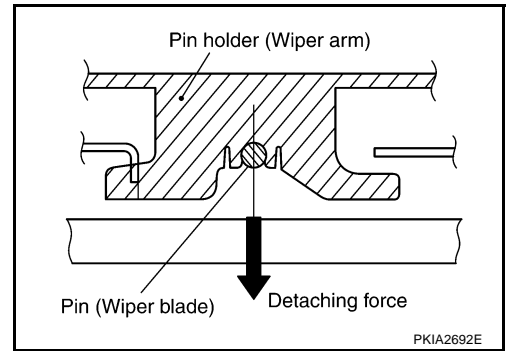
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REAR WIPER AND WASHER SYSTEM

CAUTION:

- If the detaching force in the arrowed direction (see the illustration) is less than 68.6N-m (7.0kg-m, 51ft-lb), replace rear wiper blade and rear wiper arm with new ones.
- When replacing the rear wiper blade, blow air and remove shaving of plastic or dust.



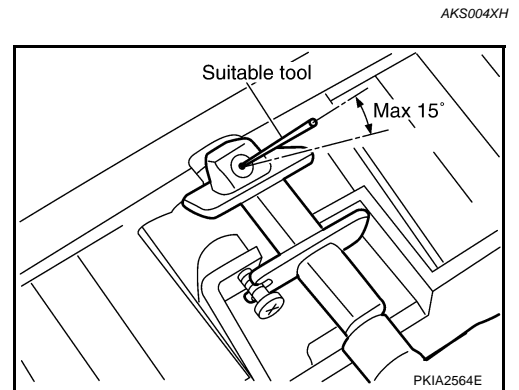
INSTALLATION

Install in the reverse order of removal.

Washer Nozzle Adjustment

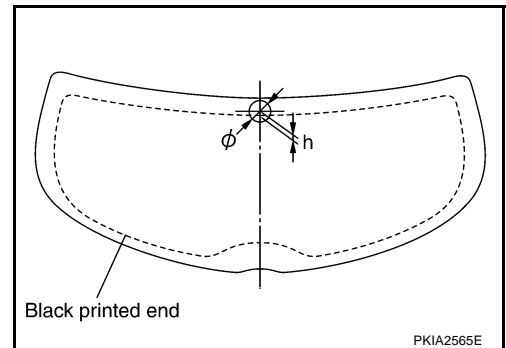
- Adjust washer nozzle with suitable tool as shown in the figure.

Adjustable range : $\pm 15^\circ$ (in any direction)



Unit : mm (in)

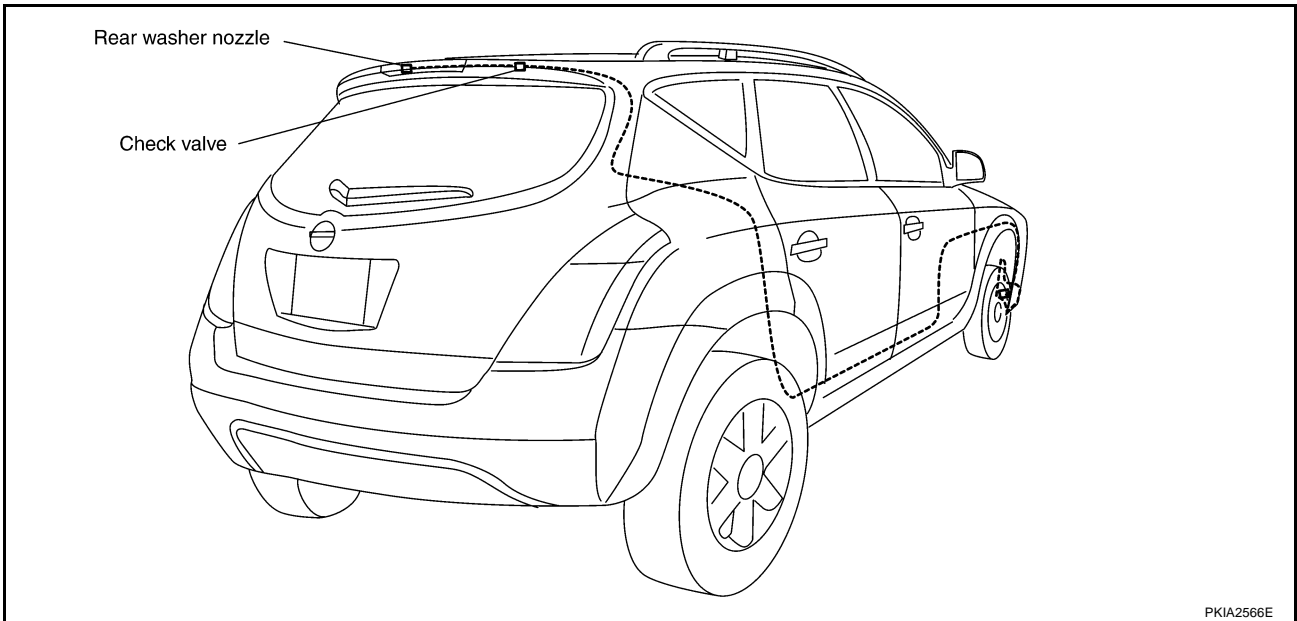
h (height)	23.3 (0.91)
ϕ (spray position range)	30 (1.18)



REAR WIPER AND WASHER SYSTEM

Washer Tube Layout

AKS004X1



PKIA2566E

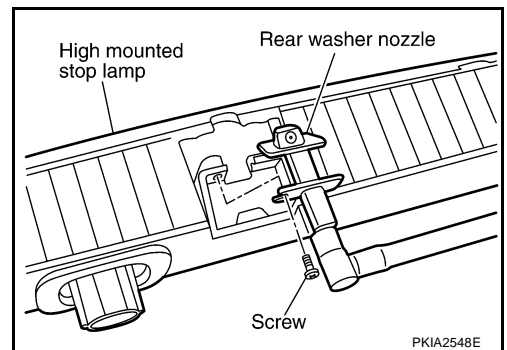
Removal and Installation of Rear Washer Nozzle

AKS005HH

1. Remove high-mounted stop lamp. Refer to [LT-266, "High-Mounted Stop Lamp"](#) in "LT" section.
2. Remove rear washer nozzle mounting screw and remove it.
3. Note the following, and install in the reverse order of removal.
 - Tighten rear washer nozzle mounting screw to specified torque.

Rear washer nozzle mounting screw

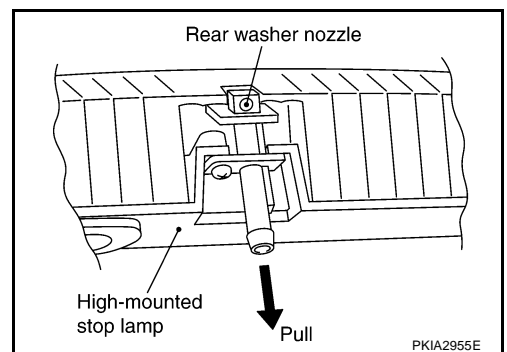
 :0.4 N·m (0.04 kg-m, 4 in-lb)



PKIA2548E

CAUTION:

- After tightened rear washer nozzle mounting screw, make sure that the rear washer nozzle does not come off when it is pulled downward at 49N-m (5kg-m, 36ft-lb) as shown in the figure. If the washer nozzle come off, replace it together with a new high-mounted stop lamp assembly.



PKIA2955E

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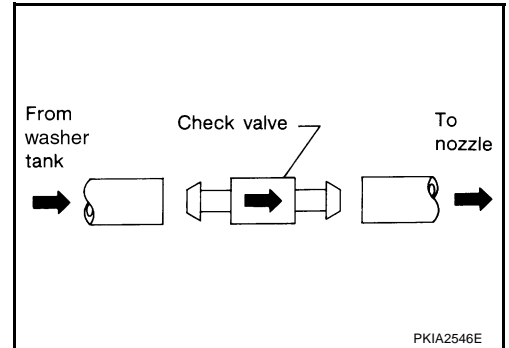
WW

REAR WIPER AND WASHER SYSTEM

Check Valve

AKS004XJ

- 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

AKS004XK

Refer to [WW-51, "Removal and Installation of Front Wiper and Washer Switch"](#) .

Removal and Installation of Washer Tank

AKS004XL

Refer to [WW-51, "Removal and Installation of Washer Tank"](#) .

Removal and Installation of Washer Pump

AKS004XM

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

POWER SOCKET

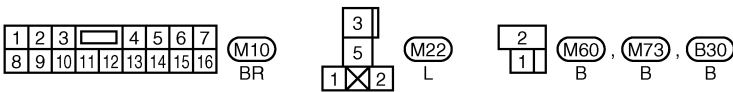
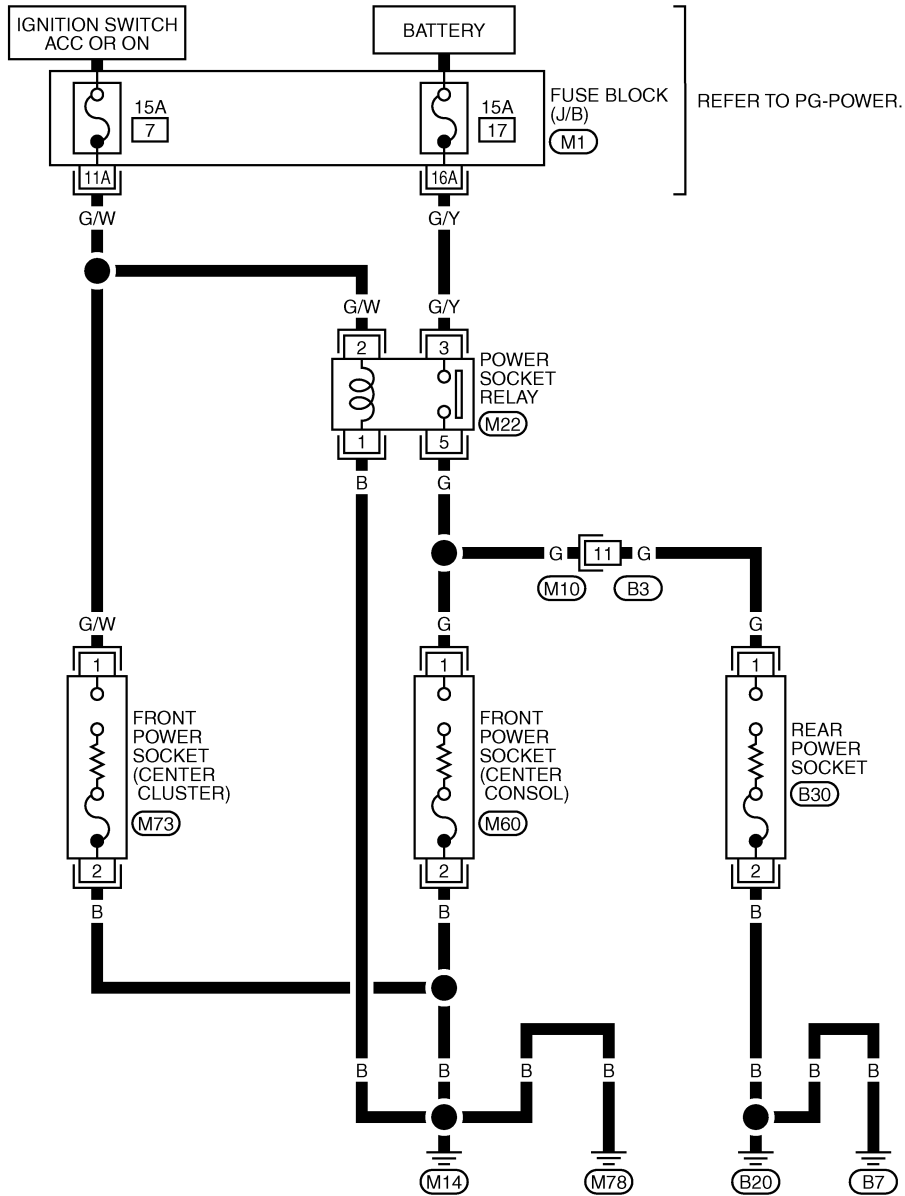
POWER SOCKET

PPF:253A2

Wiring Diagram — P/SCKT —

AKS004NM

WW-P/SCKT-01



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

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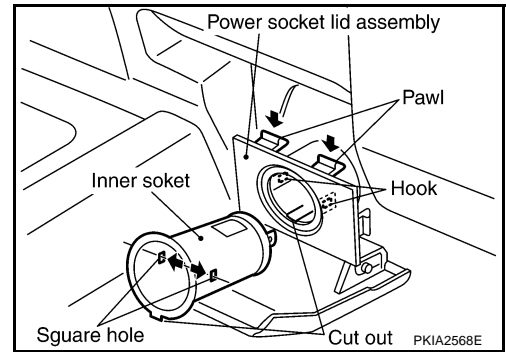
POWER SOCKET

Removal and Installation of Instrument Power Socket

AKS004NN

REMOVAL

1. Remove inner socket with power socket lid assembly from instrument panel, while pressing the pawls.
2. Disconnect power socket connector.
3. Remove inner socket from power socket lid assembly, while pressing the hook out from square hole.



INSTALLATION

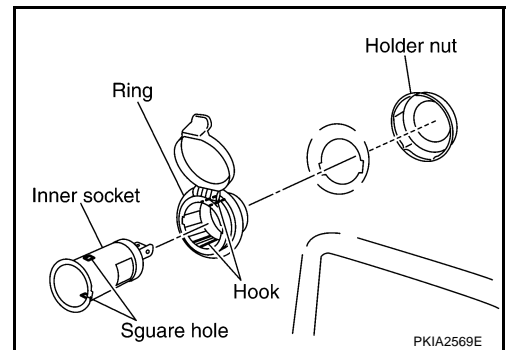
Install in the reverse order of removal.

Removal and Installation of Luggage Room Power Socket

AKS005I6

REMOVAL

1. Remove inner socket from the ring, while pressing the hook on the ring out from square hole.
2. Remove luggage side finisher lower (right). Refer to [EI-38, "LUGGAGE FLOOR TRIM"](#) in "EI" section.
3. Turn holder nut counterclockwise and unlock it.
4. Remove the ring from inner trim.



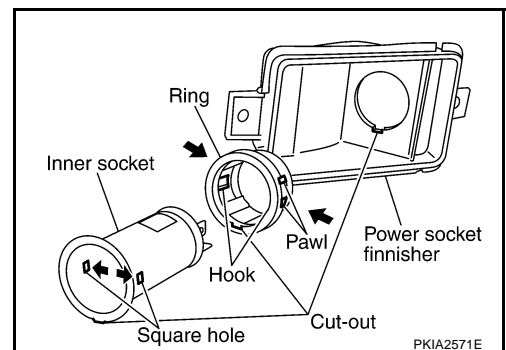
INSTALLATION

Install in the reverse order of removal.

Removal and Installation of Console Power Socket

AKS005I5

1. Remove console box. Refer to [IP-17, "CENTER CONSOLE ASSEMBLY"](#) in "IP" section.
2. Remove inner socket from the ring, while pressing the hook on the ring out from square hole.
3. Remove power socket finisher assembly mounting screws and remove it.
4. Remove the ring from power socket finisher while pressing pawls.



HORN

PFP:25610

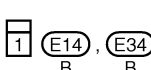
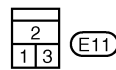
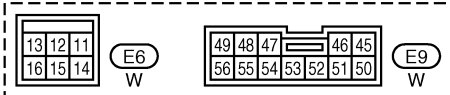
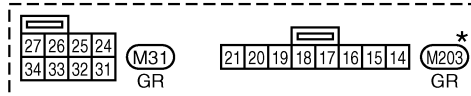
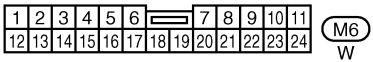
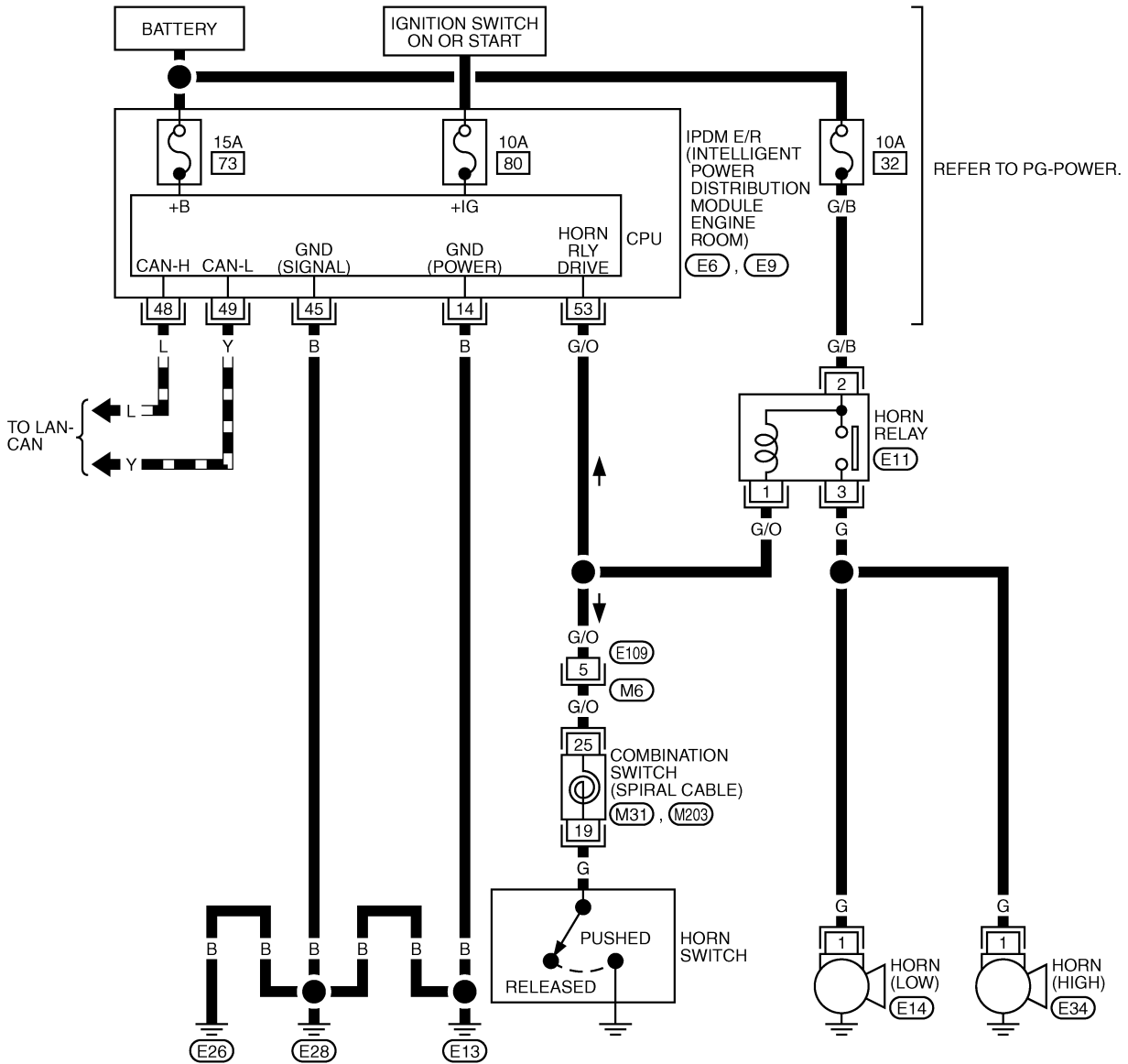
HORN

Wiring Diagram — HORN —

AKS004NO

WW-HORN-01

▬ : DATA LINE



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

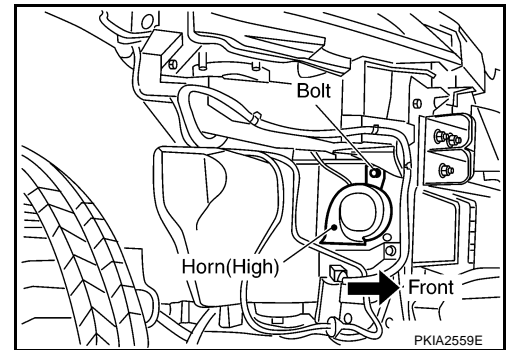
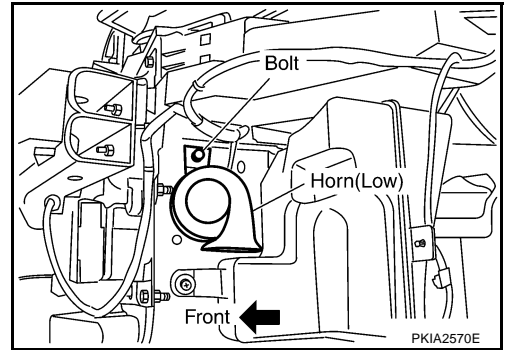
HORN

AKS004NP

Removal and Installation

REMOVAL

1. Remove front bumper. Refer to [EI-14, "FRONT BUMPER"](#) in "EI" section.
2. Disconnect horn connector.
3. Remove horn bolt and remove horn from vehicle.



INSTALLATION

Tighten horn bolt to specified torque.

Horn mounting bolt

: 17.1 N·m (1.7 kg-m, 13 ft-lb)

CIGARETTE LIGHTER

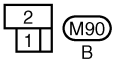
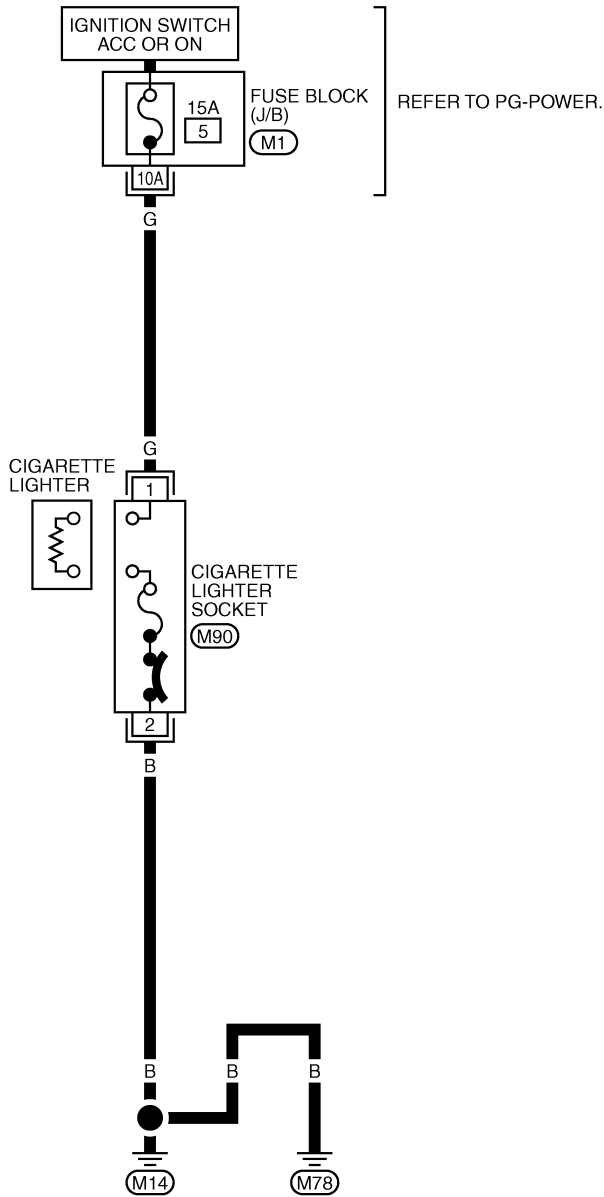
CIGARETTE LIGHTER

Wiring Diagram — CIGAR —

PFP:35330

AKS00702

WW-CIGAR-01



REFER TO THE FOLLOWING.

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

TKWA1057E

CIGARETTE LIGHTER
