

SECTION

WW

WIPER, WASHER & HORN

CONTENTS

PRECAUTION	3	
Precautions for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	3	
Wiring Diagrams and Trouble Diagnosis	3	
FRONT WIPER AND WASHER SYSTEM	4	
Components Parts and Harness Connector Location	4	
System Description	4	
LOW SPEED WIPER OPERATION	5	
HI SPEED WIPER OPERATION	5	
INTERMITTENT OPERATION	6	
AUTO STOP OPERATION	6	
FRONT WASHER OPERATION	6	
MIST OPERATION	7	
FAIL-SAFE FUNCTION	7	
COMBINATION SWITCH READING FUNCTION	8	
CAN Communication System Description	10	
Schematic	11	
Wiring Diagram — WIPER —	12	
Terminals and Reference Values for BCM	15	
Terminals and Reference Values for IPDM E/R	16	
How To Proceed With Trouble Diagnosis	16	
Preliminary Inspection	16	
INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT	16	
CONSULT-II Function (BCM)	18	
CONSULT-II OPERATION	18	
WORK SUPPORT	19	
DATA MONITOR	19	
ACTIVE TEST	20	
CONSULT-II Function (IPDM E/R)	21	
CONSULT-II OPERATION	21	
DATA MONITOR	22	
ACTIVE TEST	22	
Front Wiper Does Not Operate in Rain (Front Wiper Switch Turned to INT Position)	23	
Front Wiper Does Not Operate	25	
Front Wiper Does Not Return to Stop Position (After Front Wiper for 10 Seconds, They Stop for 20 seconds, and After Repeating the Operations Five Times, They Become Inoperative)	28	
Only Front Wiper LO Does Not Operate	29	
Only Front Wiper HI Does Not Operate	31	
Only Front Wiper INT Does Not Operate	32	
Front Wiper Intermittent Operation Switch Position Cannot Be Adjusted	33	
Front Wiper Interval Time Is Not Controlled by Vehicle Speed	33	
Wipers Do Not Wipe When Front Washer Operates	33	
Removal and Installation of Front Wiper Arms, Adjustment of Wiper Arms Stop Location	34	
REMOVAL	34	
INSTALLATION	34	
Removal and Installation of Wiper Motor and Linkage	35	
REMOVAL	35	
INSTALLATION	35	
Washer Nozzle Adjustment	36	
Washer Tube Layout	36	
Removal and Installation of Wiper and Washer Switch	36	
REMOVAL	36	
INSTALLATION	36	
Removal and Installation of Front Washer Tank	37	
REMOVAL	37	
INSTALLATION	37	
Removal and Installation of Front Washer Motor	38	
REMOVAL	38	
INSTALLATION	38	
Removal and Installation of Washer Fluid Level Sensor	38	
REMOVAL	38	
INSTALLATION	38	
HEADLAMP WASHER	39	
Components Parts and Harness Connector Location	39	
System Description	39	
OUTLINE	40	
HEADLAMP WASHER OPERATION	40	

Wiring Diagram — HLC —	41	REMOVAL	53
Terminals and Reference Values for BCM	43	INSTALLATION	53
Terminals and Reference Values for IPDM E/R	43	Washer Tube Layout	54
How to Proceed with Trouble Diagnosis	44	CIGARETTE LIGHTER	55
Preliminary Check	44	Wiring Diagram — CIGAR —	55
CHECK POWER SUPPLY AND GROUND CIR- CUIT	44	Removal and Installation of Cigarette Lighter	56
CONSULT-II Functions (BCM)	45	REMOVAL	56
CONSULT-II BASIC OPERATION	45	INSTALLATION	56
DATA MONITOR	46	POWER SOCKET	57
ACTIVE TEST	47	Wiring Diagram — P/SCKT —	57
CONSULT-II Functions (IPDM E/R)	48	Removal and Installation of Front Power Socket ...	58
CONSULT-II BASIC OPERATION	48	REMOVAL	58
DATA MONITOR	49	INSTALLATION	58
ACTIVE TEST	49	Removal and Installation of Console Power Socket..	58
Headlamp Washer Does Not Operate	50	REMOVAL	58
Removal and Installation of Washer Nozzle	53	INSTALLATION	58
REMOVAL	53	HORN	59
INSTALLATION	53	Wiring Diagram — HORN —	59
Removal and Installation of Washer Tank	53	Removal and Installation of Horn	60
Removal and Installation of Headlamp Washer Motor	53	REMOVAL	60
		INSTALLATION	60

PRECAUTION

PRECAUTION

PFP:00011

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

EKS00N1N

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. 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

EKS00L9V

When you read wiring diagrams, refer to the following:

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

When you perform trouble diagnosis, refer to the following:

- Refer to [GI-11, "How to Follow Trouble Diagnoses"](#) .
- Refer to [GI-24, "How to Perform Efficient Diagnosis for an Electrical Incident"](#) .

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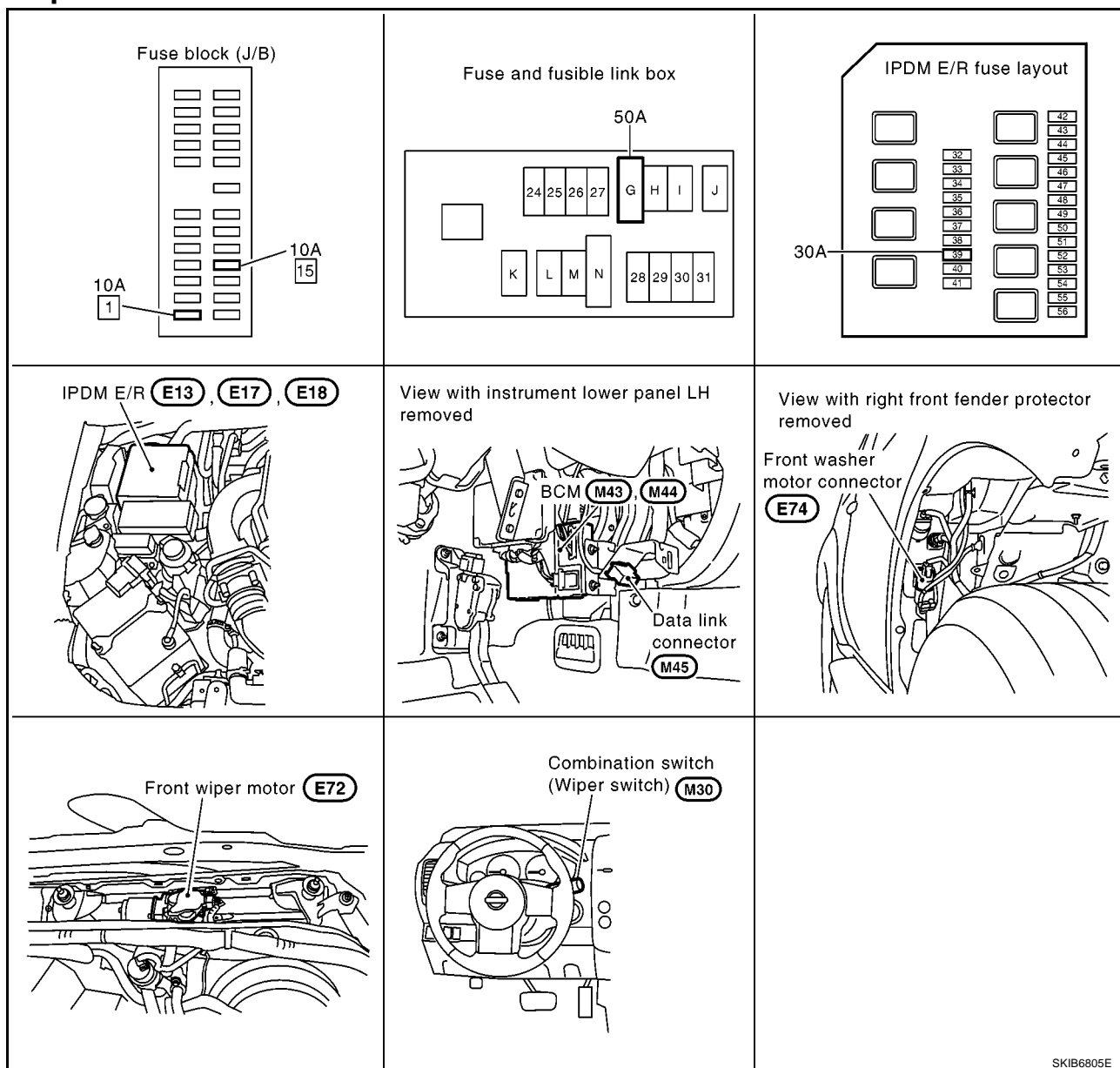
FRONT WIPER AND WASHER SYSTEM

FRONT WIPER AND WASHER SYSTEM

PFP:28810

Components Parts and Harness Connector Location

EKS00P4U



SKIB6805E

System Description

EKS00P4V

- All front wiper relays (MAIN, LOW/HIGH) are located in IPDM E/R (intelligent power distribution module engine room).
- 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 the wiper switch is turned ON.
- BCM controls front wiper LO, HI, and INT (intermittent) operation.
- IPDM E/R operates the wiper motor according to CAN communication signals from the BCM.

Power is supplied at all times

- to ignition relay (located in IPDM E/R), from battery directly,
- through 50A fusible link (letter G, located in fuse and fusible link box)
- to BCM terminal 57,
- through 30A fuse (No. 39, located in IPDM E/R)
- to front wiper main relay (located in IPDM E/R).

FRONT WIPER AND WASHER SYSTEM

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

- through 10A fuse [No. 15, located in fuse block (J/B)]
- to combination switch terminal 2,
- through 10A fuse [No. 1, located in fuse block (J/B)]
- to BCM terminal 3.

Ground is supplied

- to BCM terminal 55 and
- to combination switch terminal 9
- through grounds M21, M80 and M83,
- to IPDM E/R terminals 38 and 59 and
- to front wiper motor terminal 2
- through grounds E21, E41 and E61.

LOW SPEED WIPER OPERATION

When the ignition switch is in the ON or START position, and the front wiper switch is turned to the low position, the BCM detects a low speed wiper ON request through the combination switch (wiper switch) reading function.

The BCM then sends a front wiper (low) request signal with CAN communication.

- from BCM terminals 21 and 22
- to IPDM E/R terminals 39 and 40.

When IPDM E/R receives front wiper (low) request signal, it supplies ground to energize the front wiper main relay.

With the front wiper LOW/ HIGH relay energized, power is supplied

- through front wiper main relay
- through front wiper LOW/HIGH relay
- through IPDM E/R terminal 32
- to front wiper motor terminal 1.

Ground is supplied

- to front wiper motor terminal 2
- through grounds E21, E41 and E61.

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

HI SPEED WIPER OPERATION

When the ignition switch is in the ON or START position, and the front wiper switch is turned to the high position, the BCM detects a high speed wiper ON request through the combination switch (wiper switch) reading function.

The BCM then sends a front wiper (high) request signal with CAN communication.

- from BCM terminals 21 and 22
- to IPDM E/R terminals 39 and 40.

When IPDM E/R receives front wiper (high) request signal, it supplies ground to energize the front wiper main relays.

With the front wiper LOW/HIGH relays energized, power is supplied

- through front wiper main relay
- through front wiper LOW/HIGH relay
- through IPDM E/R terminal 35
- to front wiper motor terminal 4.

Ground is supplied

- to front wiper motor terminal 2
- through grounds E21, E41 and E61.

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

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FRONT WIPER AND WASHER SYSTEM

INTERMITTENT OPERATION

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

The BCM then sends a front wiper (HI or LOW) request signal with CAN communication.

- from BCM terminals 21 and 22
- to IPDM E/R terminals 39 and 40.

When the BCM determines that combination switch status is front wiper intermittent ON, it performs the following operations.

- BCM detects intermittent wiper dial position.
- BCM sends front wiper request signal (HI or LOW) to IPDM E/R at calculated operation interval.

When IPDM E/R receives front wiper request signal (HI or LOW), it supplies ground to energize the front wiper main relay and front wiper LOW/HIGH relay. It then sends an auto-stop signal to the BCM, and conducts intermittent front wiper motor operation.

AUTO STOP OPERATION

When the wiper arms are not located at the base of the windshield, and the wiper switch is turned OFF, the wiper motor will continue to operate until the wiper arms reach the windshield base. When the wiper arms reach the base of windshield, front wiper motor terminals 2 and 5 are connected.

Ground is supplied

- to IPDM E/R terminal 43
- through front wiper motor terminal 5
- through front wiper motor terminal 2
- through grounds E21, E41 and E61.

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

When the BCM receives an auto stop operation signal, the BCM sends wiper stop signal to the IPDM E/R over CAN communication lines. The IPDM E/R then de-energizes the front wiper main relay.

The wiper motor will then stop the wiper arms at the STOP position.

FRONT WASHER OPERATION

When the ignition switch is in the ON or START position, and the front washer switches are OFF, the front washer motor is supplied power

- through 10A fuse [No. 15, located in fuse block (J/B)]
- through combination switch (wiper switch) terminal 2
- through combination switch (wiper switch) terminal 4
- to front washer motor terminal 1.

When the front wiper switch is in the front washer position, the BCM detects a front washer signal request through the combination switch (wiper switch) reading function.

Combination switch ground is supplied

- to front washer motor terminal 2
- through combination switch (wiper switch) terminal 3
- through combination switch (wiper switch) terminal 9
- through grounds M21, M80 and M83.

With ground supplied, the front washer motor is operated in the front direction.

When the BCM detects that front washer motor has operated for 0.4 seconds or longer, the BCM uses CAN communication and sends a wiper request signal to the IPDM E/R for low speed operation of wipers.

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

FRONT WIPER AND WASHER SYSTEM

MIST OPERATION

When the wiper switch is temporarily placed in 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

The BCM includes fail-safe function to prevent malfunction of electrical components controlled by CAN communications if a malfunction in CAN communications occurs.

The BCM uses CAN communications to stop output of electrical components it controls.

Until the ignition switch is turned OFF, the front wiper system remains in same status as just before fail-safe control was initiated. (If wiper was in low speed operation just before fail-safe, it continues low speed operation until ignition switch is turned OFF.)

When fail-safe status is initiated, the BCM remains in standby until normal signals are received.

When normal signals are received, fail-safe status is canceled.

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FRONT WIPER AND WASHER SYSTEM

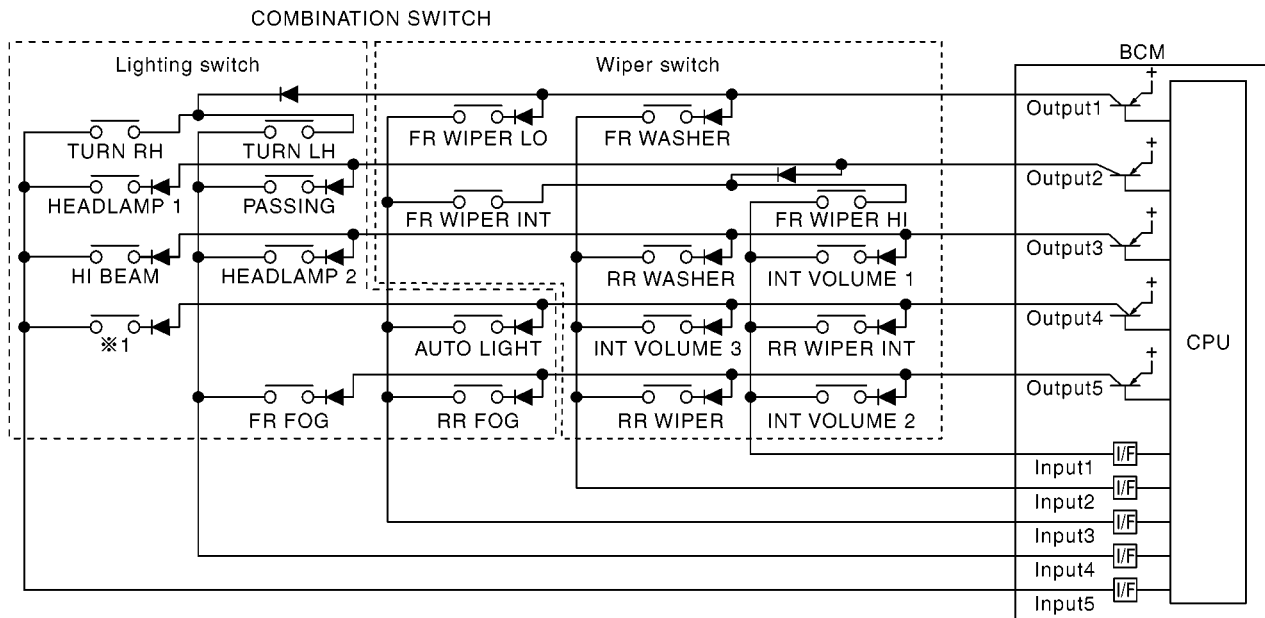
COMBINATION SWITCH READING FUNCTION

Description

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

Operation Description

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



PKIC1724E

FRONT WIPER AND WASHER SYSTEM

BCM - Operation Table of Combination Switches

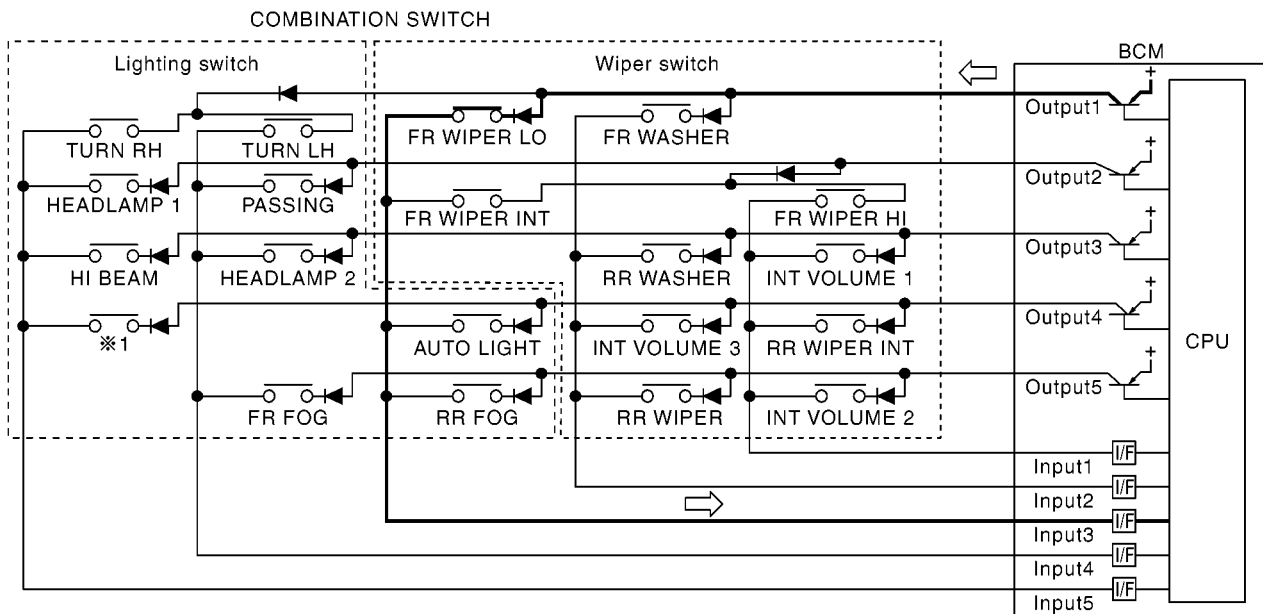
- BCM reads operation status of the combination switch using combinations shown in the table below.

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

PKIC0420E

Sample Operation: (When Wiper Switch is Turned ON)

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



※1 : LIGHTING SWITCH 1ST POSITION

PKIC1726E

FRONT WIPER AND WASHER SYSTEM

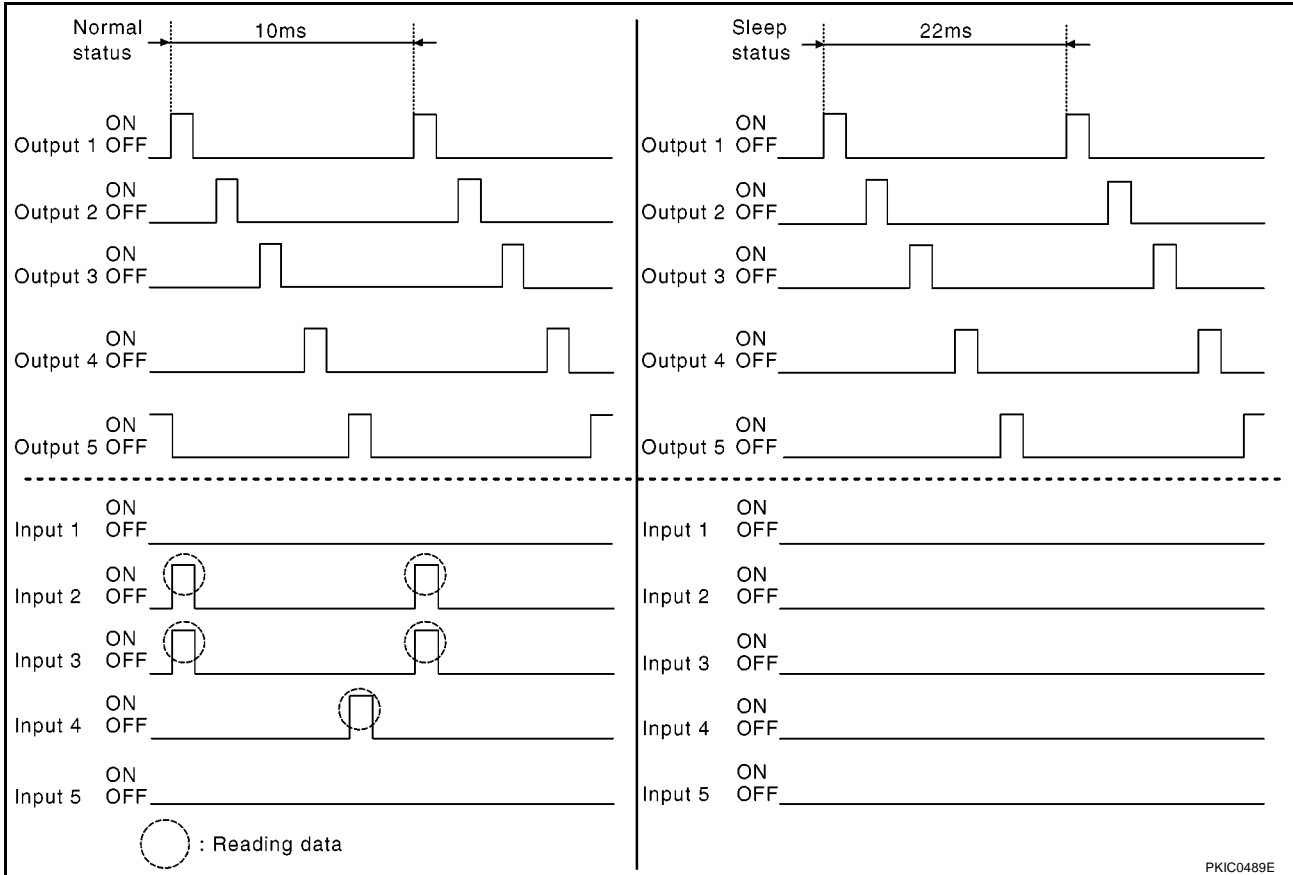
NOTE:

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

Operation Mode

The combination switch reading function has the operation modes shown below.

1. Normal status
 - When BCM is not in sleep status, OUTPUT terminals (1-5) each turn ON-OFF every 10 ms.
2. Sleep status
 - When BCM is in sleep status BCM enters low power mode. OUTPUT (1 - 5) turn ON-OFF every 22 ms, and only input from light switch system is accepted.



CAN Communication System Description

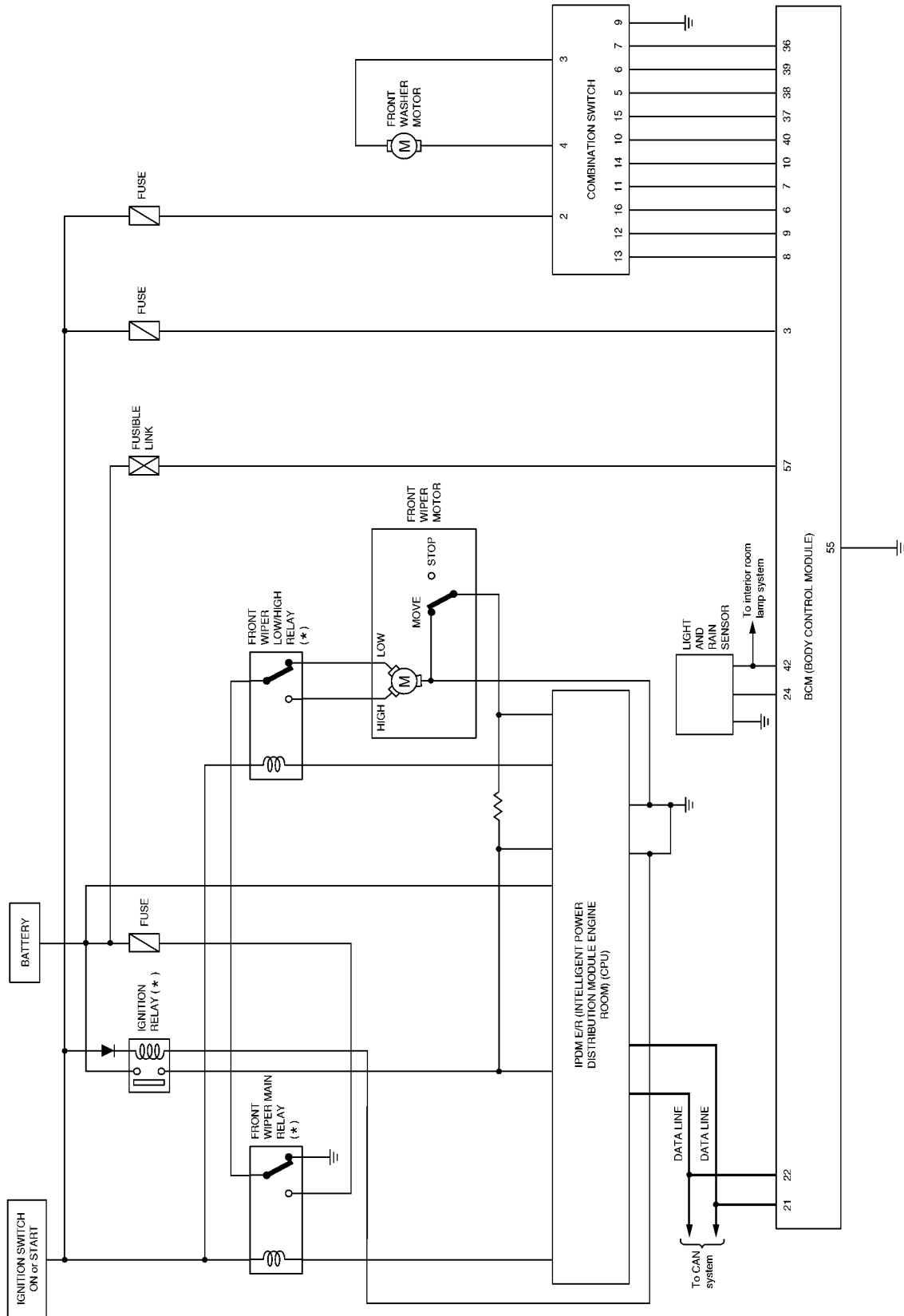
EKS00P4W

Refer to [LAN-23, "CAN COMMUNICATION"](#).

FRONT WIPER AND WASHER SYSTEM

Schematic

EKS00P4X



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

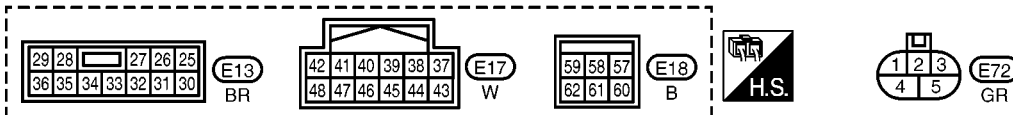
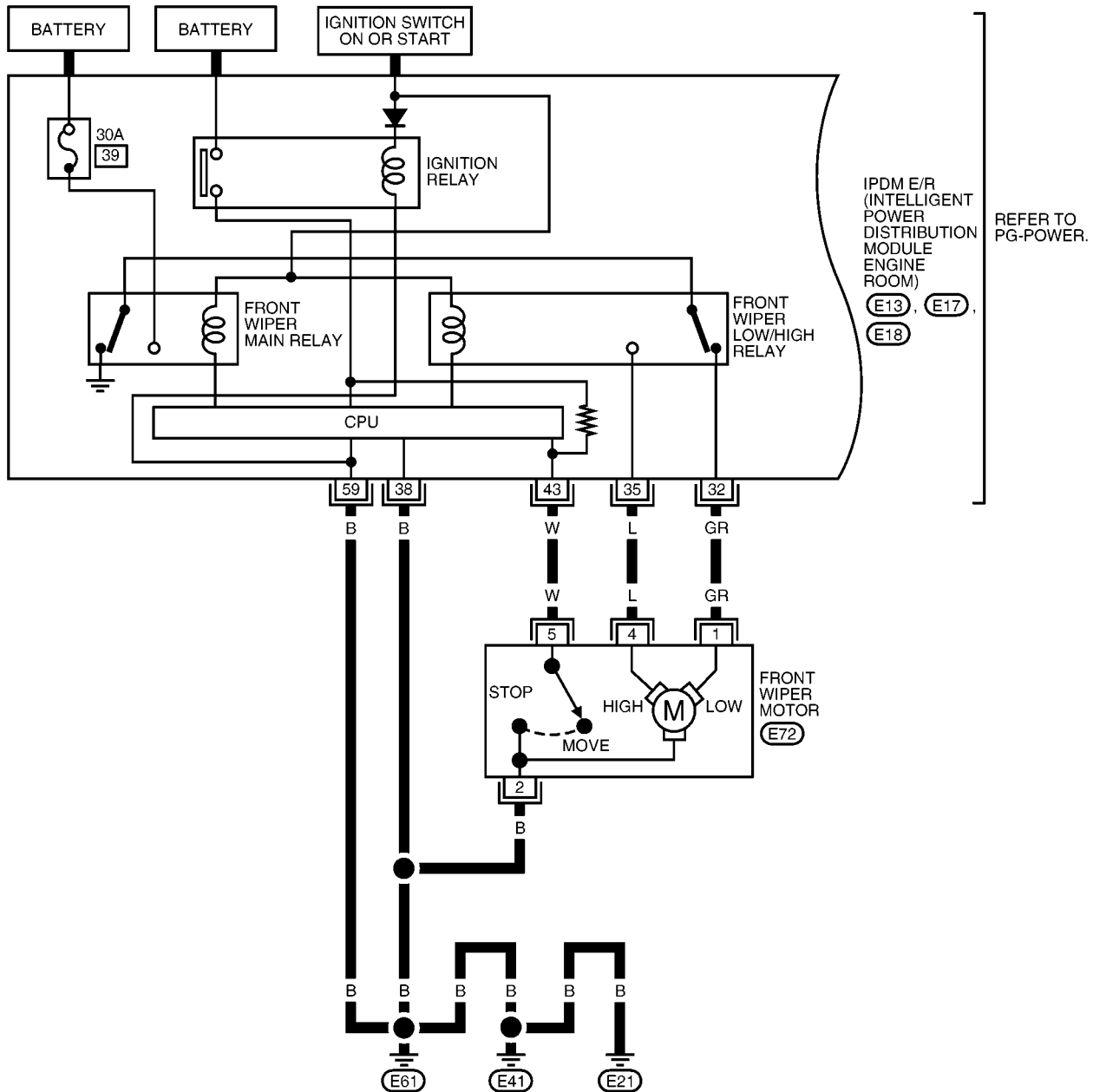
MKWA3595E

FRONT WIPER AND WASHER SYSTEM

Wiring Diagram — WIPER —

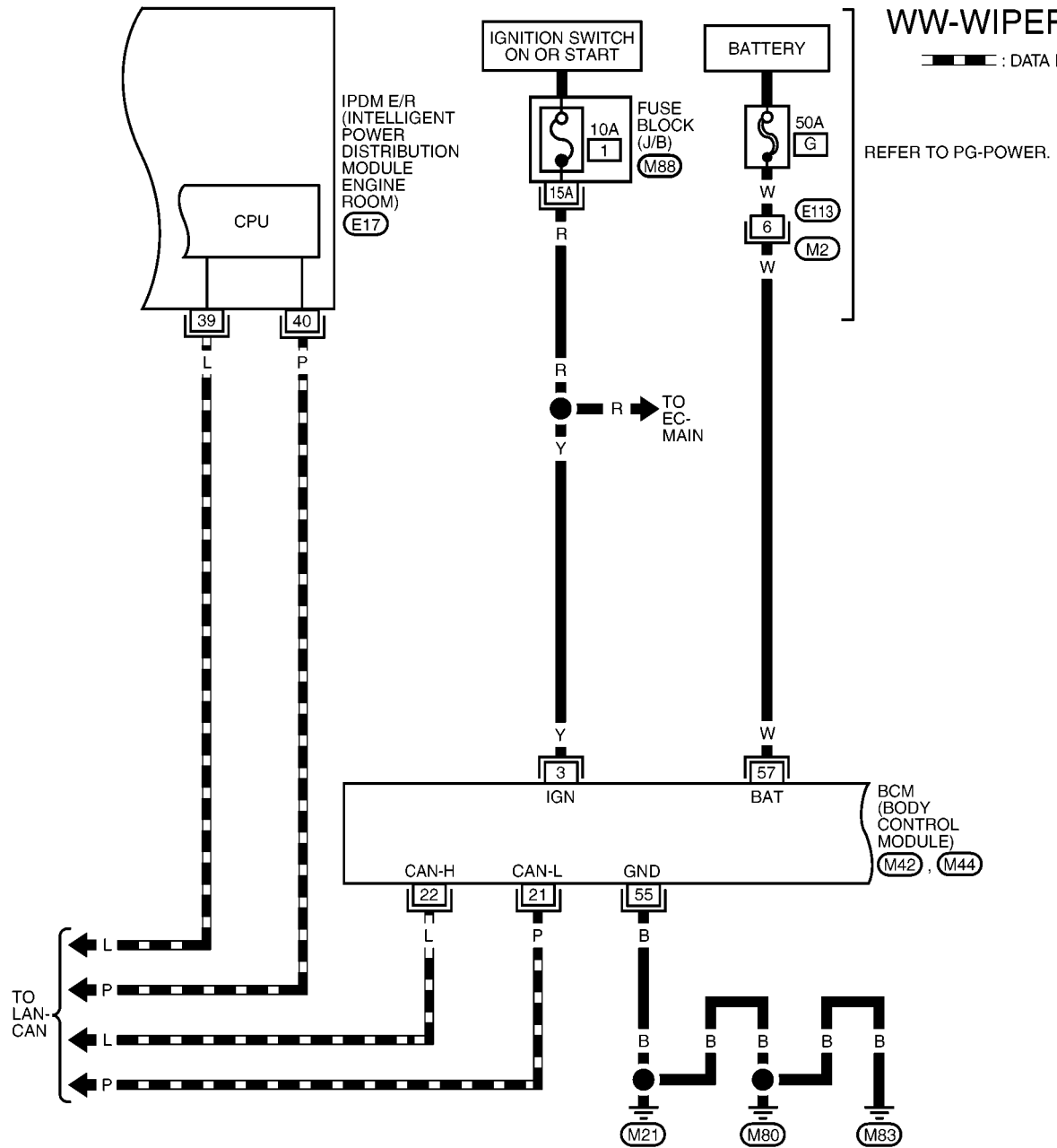
EKS00P4Y

WW-WIPER-01



MKWA3673E

FRONT WIPER AND WASHER SYSTEM



1	2	3
4	5	6

(M2)
W

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40

(M42)
B

60	59	58	57	56	55	54	53
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(M44)



42	41	40	39	38	37
48	47	46	45	44	43

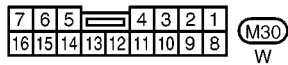
(E17)
W



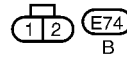
REFER TO THE FOLLOWING.

(M88) - FUSE BLOCK-JUNCTION BOX (J/B)

WW-WIPER-03



M42
B

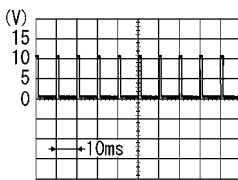
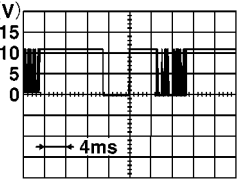


**(M88) -FUSE BLOCK-
JUNCTION BOX (J/B)**

FRONT WIPER AND WASHER SYSTEM

Terminals and Reference Values for BCM

EKS00P4Z

Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
3	Y	Ignition switch (ON)	ON	—	Battery voltage	
6	G	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 PKIB4958J	
7	GR	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4		
8	LG	Combination switch output 1	ON	Lighting, turn, wiper OFF Wiper dial position 4		
9	BR	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4		
10	O	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4		
21	P	CAN- L	—	—	—	
22	L	CAN- H	—	—	—	
24	R	Light and rain sensor signal	—	Ignition switch	ON	 PKIC1618E
				OFF	Battery voltage	
36	P	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	Approx. 0V	
37	L	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4		
38	V	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4		
39	SB	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4		
40	R	Combination switch input 1	ON	Lighting, turn, wiper OFF Wiper dial position 4		
42	V	Room lamp power supply	OFF	—	Battery voltage	
55	B	Ground	ON	—	Approx. 0V	
57	W	Battery power supply (fusible link)	OFF	—	Battery voltage	

FRONT WIPER AND WASHER SYSTEM

Terminals and Reference Values for IPDM E/R

EKS00P50

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
32	GR	Low speed signal	ON	Wiper switch	OFF	Approx. 0V
					LO	Battery voltage
35	L	High speed signal	ON	Wiper switch	OFF	Approx. 0V
					HI	Battery voltage
38	B	Ground	ON	—		Approx. 0V
39	L	CAN- H	—	—		—
40	P	CAN- L	—	—		—
43	W	Wiper auto stop signal	ON	Wiper operating		Battery voltage
				Wiper stopped		Approx. 0V
59	B	Ground	ON	—		Approx. 0V

How To Proceed With Trouble Diagnosis

EKS00P51

1. Confirm the trouble symptom or customer complaint.
2. Understand the operation description and function description. Refer to [WW-4, "System Description"](#) .
3. Perform preliminary inspection. Refer to [WW-16, "Preliminary Inspection"](#) .
4. According to the trouble diagnosis chart, repair or replace the cause of malfunction.
5. Does wiper function operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

Preliminary Inspection

EKS00P52

INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSE OR FUSIBLE LINK

Check for blown fuses or fusible link.

Unit	Power source	Fuse and fusible link No.
Front washer motor	Ignition ON or START	15
Front wiper main relay	Battery	39
BCM	Ignition ON or START	1
	Battery	G

OK or NG

OK >> GO TO 2.

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

FRONT WIPER AND WASHER SYSTEM

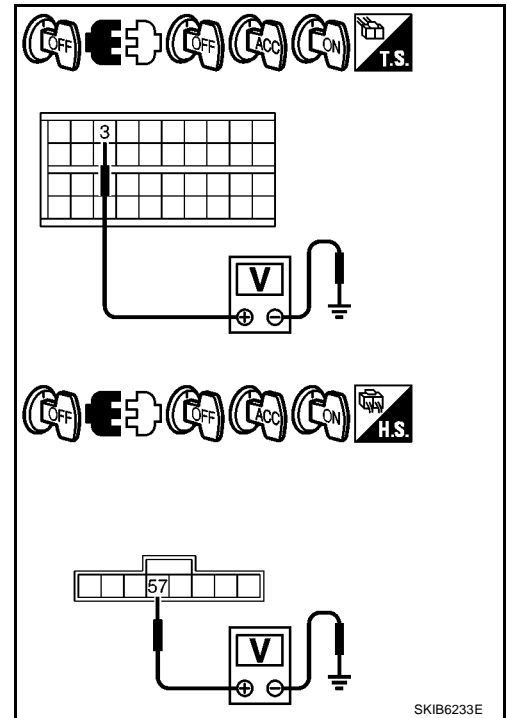
2. CHECK POWER SUPPLY CIRCUIT

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

Terminal		Ignition switch position			
(+) Terminal		(-) Ground	OFF	ACC	ON
BCM connector	Terminal				
M42	3	Ground	0V	0V	Battery voltage
M44	57		Battery voltage	Battery voltage	Battery voltage

OK or NG

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



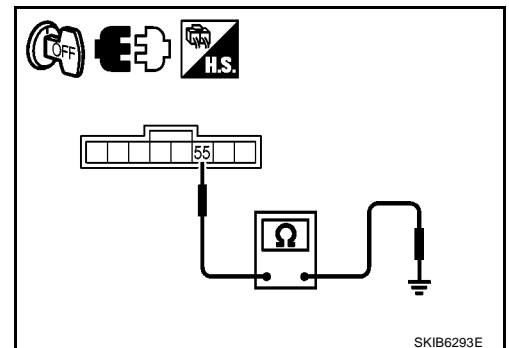
3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

BCM connector	Terminal	Ground	Continuity
M44	55		Yes

OK or NG

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



FRONT WIPER AND WASHER SYSTEM

CONSULT-II Function (BCM)

EKS00P53

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

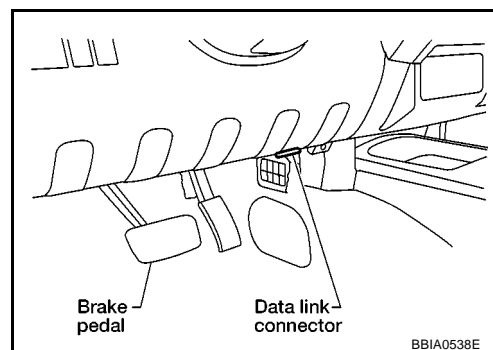
BCM diagnosis position	Diagnosis mode	Description
WIPER	WORK SUPPORT	Changes the setting for wiper speed at intermittent.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Device operation can be checked by applying a drive signal to device.
BCM	SELF-DIAG RESULTS	BCM performs self-diagnosis of CAN communication.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

CONSULT-II OPERATION

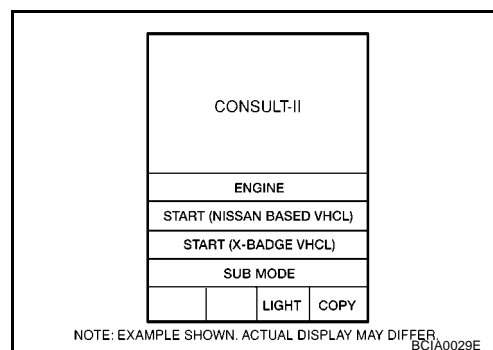
CAUTION:

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

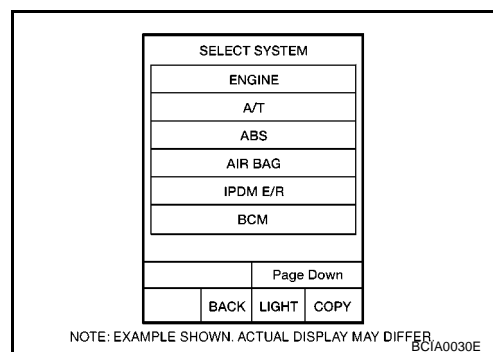
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, and then turn ignition switch ON.



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

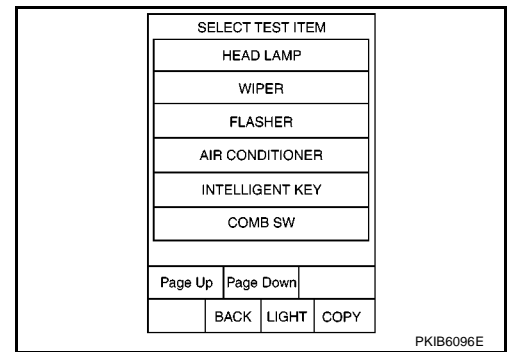


3. Touch "BCM" on "SELECT SYSTEM" screen. If "BCM" is not indicated, refer to [GI-50, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



FRONT WIPER AND WASHER SYSTEM

4. Touch "WIPER" on "SELECT TEST ITEM" screen.



WORK SUPPORT

Operation Procedure

1. Touch "WIPER" on "SELECT TEST ITEM" screen.
2. Touch "WORK SUPPORT" on "SELECT DIAG MODE" screen.
3. Touch "WIPER SPEED SETTING" on "SELECT WORK ITEM" screen.
4. Touch "START".
5. Touch "CHANGE SETT".
6. The setting will be changed and "CUSTOMIZING COMPLETED" will be displayed.
7. Touch "END".

Display Item List

Item	Description	CONSULT-II	Factory setting
WIPER SPEED SETTING	Vehicle speed sensing type wiper control mode can be changed in this mode. Selects vehicle speed sensing type wiper control mode between two ON/OFF.	ON	×
		OFF	—

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 "SELECT MONITOR ITEM" screen.

ALL SIGNALS	Monitors all the items.
SELECTION FROM MENU	Selects and monitors the individual item selected.

4. When "SELECTION FROM MENU" is selected, touch items to be monitored. When "ALL SIGNALS" is selected, all the items will be monitored.
5. Touch "START".
6. Touch "RECORD" while monitoring to record the status of the item being monitored. 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.
IGN SW CAN "ON/OFF"	Displays "IGN switch ON (ON)/Other OFF or ACC (OFF)" status as judged from CAN communications.
FR WIPER HI "ON/OFF"	Displays "Front Wiper HI (ON)/Other (OFF)" status as judged from wiper switch signal.
FR WIPER LOW "ON/OFF"	Displays "Front Wiper LOW (ON)/Other (OFF)" status as judged from wiper switch signal.
FR WIPER INT "ON/OFF"	Displays "Front Wiper INT (ON)/Other (OFF)" status as judged from wiper switch signal.
FR WASHER SW "ON/OFF"	Displays "Front Washer Switch (ON)/Other (OFF)" status as judged from wiper switch signal.
INT VOLUME "1 - 7"	Displays intermittent operation dial position setting (1 - 7) as judged from wiper switch signal.
FR WIPER STOP "ON/OFF"	Displays "Stopped (ON)/Operating (OFF)" status as judged from the auto stop signal.

FRONT WIPER AND WASHER SYSTEM

Monitor item name "OPERATION OR UNIT"		Contents
VEHICLE SPEED	"0.0 km/h"	Displays vehicle speed as received from CAN communication.
RR WIPER ON	"ON/OFF"	Displays "Rear Wiper ON (ON)/Other (OFF)" status as judged from wiper switch signal.
RR WIPER INT	"ON/OFF"	Displays "Rear Wiper INT (ON)/Other (OFF)" status as judged from wiper switch signal.
RR WASHER SW	"ON/OFF"	Displays "Rear Washer Switch (ON)/Other (OFF)" status as judged from wiper switch signal.
RR WIPER STOP	"ON/OFF"	Displays "Rear Wiper Stop (ON)/Other (OFF)" status, as judged from wiper switch signal.

ACTIVE TEST

Operation Procedure

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

Display Item List

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

FRONT WIPER AND WASHER SYSTEM

CONSULT-II Function (IPDM E/R)

EKS00P54

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

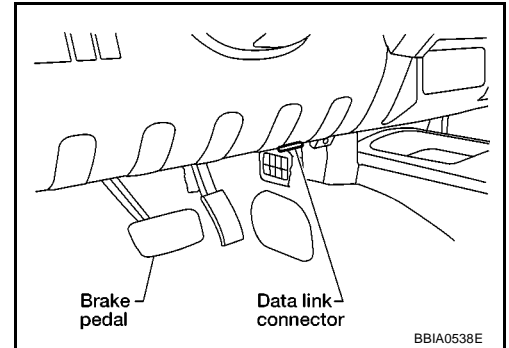
IPDM E/R diagnostic Mode	Description
SELF-DIAG RESULTS	Refer to PG-17, "SELF-DIAGNOSTIC RESULTS" .
DATA MONITOR	Displays IPDM E/R input/output data in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.

CONSULT-II OPERATION

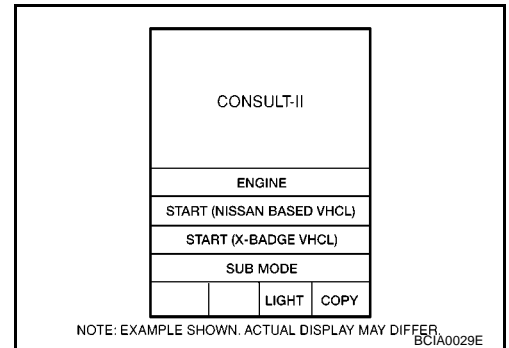
CAUTION:

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

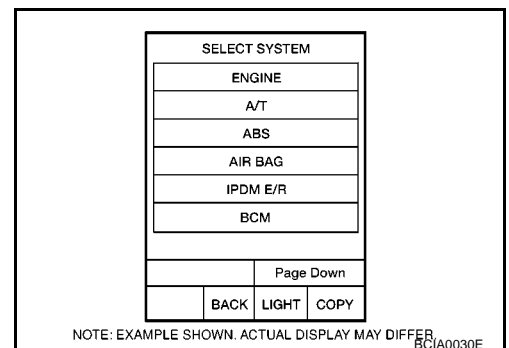
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, and then turn ignition switch ON.



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

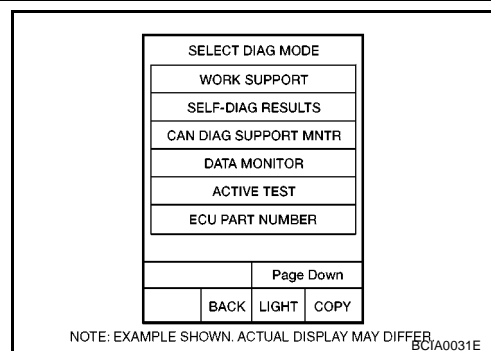


3. Touch "IPDM E/R" on "SELECT SYSTEM" screen.
If "IPDM E/R" is not displayed, refer to [GI-50, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#) .



FRONT WIPER AND WASHER SYSTEM

- Select the desired part to be diagnosed on "SELECT DIAG MODE" screen.



DATA MONITOR

Operation Procedure

- Touch "WIPER" on "SELECT TEST ITEM" screen.
- Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
- Touch "ALL SIGNALS", "MAIN SIGNALS" or "SELECTION FROM MENU" on "SELECT MONITOR ITEM" screen.

ALL SIGNALS	Monitors all the items.
MAIN SIGNALS	Monitors predetermined items.
SELECTION FROM MENU	Selects and monitors the individual item selected.

- When "ALL SIGNALS" is selected, all the items will be monitored. When selecting "MAIN SIGNALS", predetermined items are monitored. When "SELECTION FROM MENU" is selected, touch items to be monitored.
- Touch "START".
- Touch "RECORD" while monitoring to record the status of the item being monitored. To stop recording, touch "STOP".

All Items, Main Items, Selection Item Menu

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

NOTE:

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

ACTIVE TEST

Operation Procedure

- Touch "WIPER" on "SELECT TEST ITEM" screen.
- Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- Touch item(s) to be tested and check operation of the selected item(s).
- During the operation check, touching "BACK" deactivates the operation.

Display Item List

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

FRONT WIPER AND WASHER SYSTEM

Front Wiper Does Not Operate in Rain (Front Wiper Switch Turned to INT Position)

EKS00Q9V

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

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

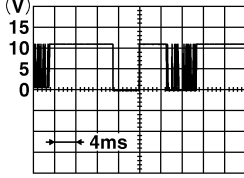
OK or NG

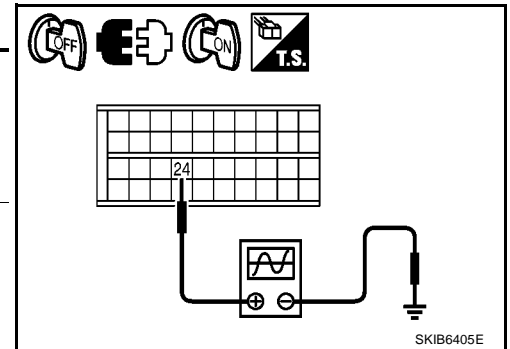
OK >> GO TO 2.

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

2. CHECK LIGHT AND RAIN SENSOR INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Turn ignition switch ON.
4. Check waveform between BCM harness connector and ground.

Terminal		(-)	Condition		Voltage
(+)					
BCM connector	Terminal				
M42	24	Ground	Ignition switch	ON	 <p>PKIC1618E</p>
				OFF	Battery voltage



OK or NG

OK >> Replace light and rain sensor. Refer to [LT-65, "Removal and Installation of Light and Rain Sensor"](#). If front wiper does not operate, replace BCM. Refer to [BCS-17, "Removal and Installation of BCM"](#).

NG >> GO TO 3.

3. CHECK LIGHT AND RAIN SENSOR SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and light and rain sensor connector.
3. Check continuity between BCM harness connector (A) and light and rain sensor harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M42	24	R3	2	Yes

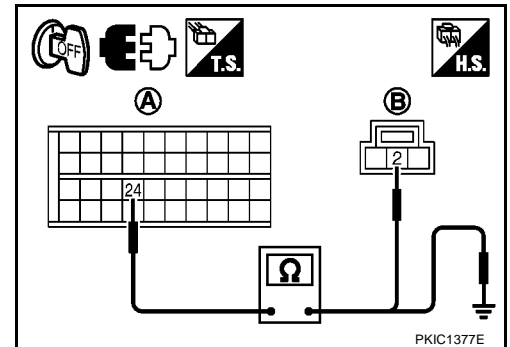
4. Check continuity between BCM harness connector (A) and ground.

A		Ground	Continuity
Connector	Terminal		
M42	24		No

OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.



FRONT WIPER AND WASHER SYSTEM

4. CHECK LIGHT AND RAIN SENSOR GROUND CIRCUIT

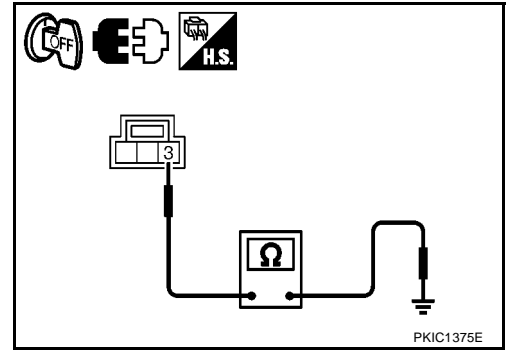
Check continuity between light and rain sensor harness connector and ground.

Light and rain sensor connector	Terminal	Ground	Continuity
R3	3		Yes

OK or NG

OK >> GO TO 5.

NG >> Repair harness or connector.



5. CHECK LIGHT AND RAIN SENSOR POWER SUPPLY CIRCUIT

1. Check continuity between BCM harness connector (A) and light and rain sensor harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M43	42	R3	1	Yes

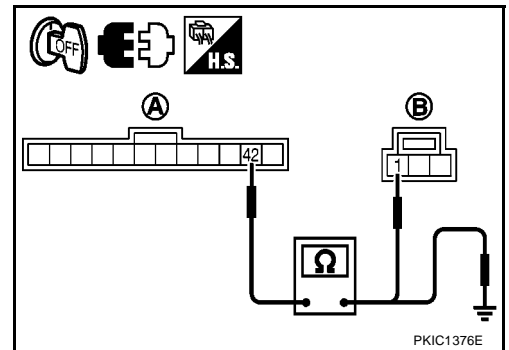
2. Check continuity between BCM harness connector (A) and ground.

A		Ground	Continuity
Connector	Terminal		
M43	42		No

OK or NG

OK >> GO TO 6.

NG >> Repair harness or connector.



6. CHECK LIGHT AND RAIN SENSOR POWER SUPPLY

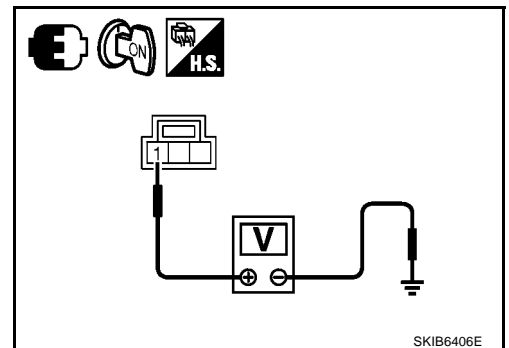
1. Connect BCM connector.
2. Turn ignition switch ON.
3. Check voltage between light and rain sensor harness connector and ground.

Terminal			Voltage
(+)		(-)	
Light and rain sensor connector	Terminal		
R3	1	Ground	Battery voltage

OK or NG

OK >> Replace light and rain sensor. Refer to [LT-65, "Removal and Installation of Light and Rain Sensor"](#).

NG >> Replace BCM. Refer to [BCS-17, "Removal and Installation of BCM"](#).



FRONT WIPER AND WASHER SYSTEM

Front Wiper Does Not Operate

EKS00P56

CAUTION:

During IPDM E/R fail-safe control, front wipers may not operate. Refer to [PG-14, "CAN COMMUNICATION LINE CONTROL"](#) to make sure that it is not in fail-safe status.

1. CHECK IPDM E/R TO FRONT WIPERS

☑ With CONSULT-II

1. Select "IPDM E/R" on CONSULT-II. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
3. Touch "LO" or "HI" screen.

☒ Without CONSULT-II

Start up auto active test. Refer to [PG-19, "Auto Active Test"](#).

Does front wiper operate normally?

- YES >> GO TO 2.
NO >> GO TO 4.

ACTIVE TEST					
FRONT WIPER		OFF			
				HI	
				LO	
MODE	BACK	LIGHT	COPY		

SKIA3486E

2. CHECK COMBINATION SWITCH TO BCM (1)

☑ With CONSULT-II

1. Select "BCM" on CONSULT-II. Select "WIPER" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen. Make sure that "FR WIPER INT", "FR WIPER LOW" and "FR WIPER HI" turn ON-OFF according to combination switch (wiper switch) operation.

☒ Without CONSULT-II

Refer to [LT-118, "Combination Switch Inspection"](#).

OK or NG

- OK >> GO TO 3.
NG >> Check combination switch (wiper switch). Refer to [LT-118, "Combination Switch Inspection"](#).

DATA MONITOR			
MONITOR			
IGN ON SW	ON		
IGN SW CAN	ON		
FR WIPER HI	OFF		
FR WIPER LOW	OFF		
FR WIPER INT	OFF		
FR WASHER SW	OFF		
INT VOLUME	7		
FR WIPER STOP	ON		
VEHICLE SPEED	0.0 km/h		
Page Down			
RECORD			
MODE	BACK	LIGHT	COPE

PKIB0110E

3. CHECK COMBINATION SWITCH TO BCM (2)

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

Displayed self-diagnosis results

- NO DTC>> Replace BCM. Refer to [BCS-17, "Removal and Installation of BCM"](#).
- CAN COMM CIRCUIT>> Check CAN communication line of BCM. Refer to [BCS-16, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).

SELF-DIAG RESULTS			
DTC RESULTS	TIME		
CAN COMM CIRCUIT [U1000]			
ERASE	PRINT		
MODE	BACK	LIGHT	COPY

PKIA7627E

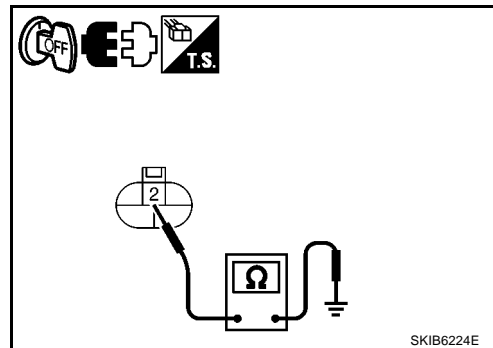
FRONT WIPER AND WASHER SYSTEM

4. CHECK FRONT WIPER MOTOR GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front wiper motor connector.
3. Check continuity between front wiper motor harness connector and ground.

Front wiper motor connector	Terminal	Ground	Continuity
E72	2		Yes

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



5. CHECK FRONT WIPER CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector (A) and front wiper motor harness connector (B).

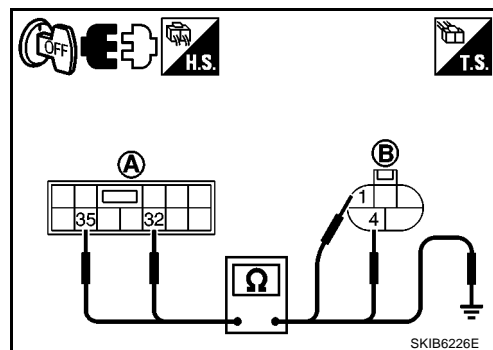
A		B		Continuity
Connector	Terminal	Connector	Terminal	
E13	32	E72	1	Yes
	35		4	

3. Check continuity between IPDM E/R harness connector (A) and Ground.

A		Ground	Continuity
Connector	Terminal		No
E13	32		
	35		

OK or NG

OK >> GO TO 6.
NG >> Repair harness or connector.



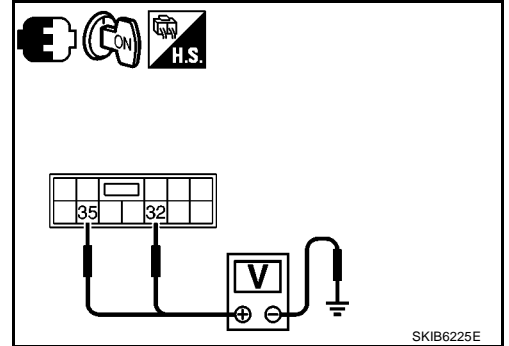
FRONT WIPER AND WASHER SYSTEM

6. CHECK IPDM E/R

 With CONSULT-II

1. Connect IPDM E/R connector.
2. Select "IPDM E/R" on CONSULT-II. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
4. Touch "LO" or "HI" screen.
5. Check voltage between IPDM E/R harness connector and ground while front wiper (HI, LO) is operating.

Terminal			Condition	Voltage
(+)		(-)		
IPDM E/R connector	Terminal			
E13	32	Ground	Stopped	Approx. 0V
			LO operation	Battery voltage
	35		Stopped	Approx. 0V
			HI operation	Battery voltage



 Without CONSULT-II

1. Connect IPDM E/R connector.
2. Start up auto active test. Refer to [PG-19, "Auto Active Test"](#) .
3. Check voltage between IPDM E/R harness connector and ground while front wiper (HI, LO) is operating.

Terminal			Condition	Voltage
(+)		(-)		
IPDM E/R connector	Terminal			
E13	32	Ground	Stopped	Approx. 0V
			LO operation	Battery voltage
	35		Stopped	Approx. 0V
			HI operation	Battery voltage

OK or NG

- OK >> Replace front wiper motor. Refer to [WW-35, "Removal and Installation of Wiper Motor and Linkage"](#) .
- NG >> Replace IPDM E/R. Refer to [PG-26, "Removal and Installation of IPDM E/R"](#) .

FRONT WIPER AND WASHER SYSTEM

Front Wiper Does Not Return to Stop Position (After Front Wiper for 10 Seconds, They Stop for 20 seconds, and After Repeating the Operations Five Times, They Become Inoperative)

EKS00P57

CAUTION:

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

1. CHECK FRONT WIPER STOP SIGNAL

① With CONSULT-II

- Select "BCM" on CONSULT-II. Select "WIPER" on "SELECT TEST ITEM" screen.
- Select "DATA MONITOR" on "SELECT DIAG MODE" screen. Make sure that "WIP AUTO STOP" turns "ACT P" - "STOP P" linked with wiper operation.

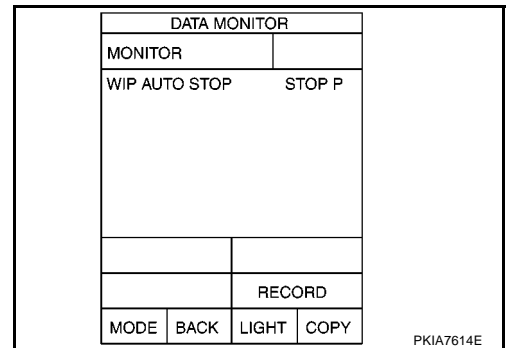
② Without CONSULT-II

GO TO 2.

Does the front wiper operate normally?

YES >> Replace IPDM E/R. Refer to [PG-26, "Removal and Installation of IPDM E/R"](#).

NO >> GO TO 2.



2. CHECK IPDM E/R

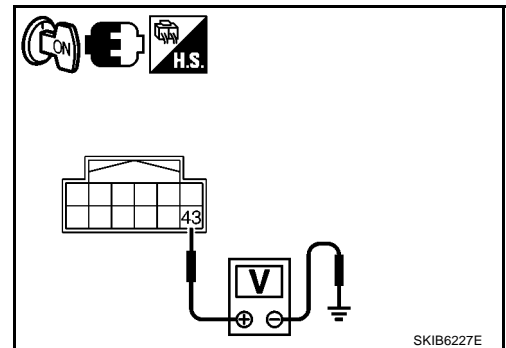
Check voltage between IPDM E/R harness connector and ground while front wiper motor is stopped and while it is operating.

Terminal		(-)	Condition	Voltage
(+)				
IPDM E/R connector	Terminal			
E17	43	Ground	Wiper stopped	Approx. 0V
			Wiper operating	Battery voltage

OK or NG

OK >> Replace IPDM E/R. Refer to [PG-26, "Removal and Installation of IPDM E/R"](#).

NG >> GO TO 3.



FRONT WIPER AND WASHER SYSTEM

3. CHECK FRONT WIPER AUTO STOP 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 (A) and front wiper motor harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
E17	43	E72	5	Yes

4. Check continuity between IPDM E/R harness connector (A) and Ground.

A		Ground	Continuity
Connector	Terminal		
E17	43		No

OK or NG

- OK >> Replace front wiper motor. Refer to [WW-35, "Removal and Installation of Wiper Motor and Linkage"](#).
- NG >> Repair harness or connector.


Only Front Wiper LO Does Not Operate

EKS00P58

1. ACTIVE TEST

 With CONSULT-II

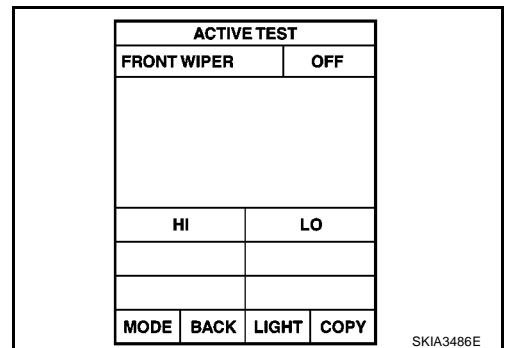
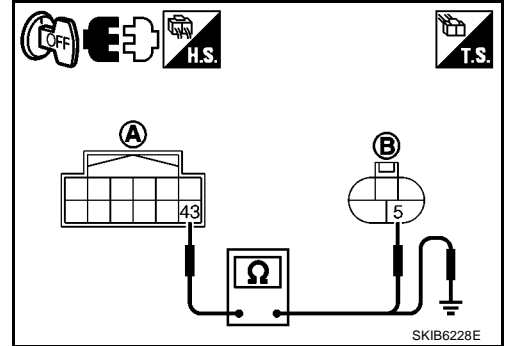
1. Select "IPDM E/R" on CONSULT-II. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
3. Touch "LO" screen.

 Without CONSULT-II

Start up auto active test. Refer to [PG-19, "Auto Active Test"](#).

Does the front wiper operate normally?

- YES >> Refer to [LT-118, "Combination Switch Inspection"](#).
- NO >> 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 (A) and front wiper motor harness (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
E13	32	E72	1	Yes

4. Check continuity between IPDM E/R harness connector (A) and ground.

A		Ground	Continuity
Connector	Terminal		
E13	32		No

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK IPDM E/R

With CONSULT-II

1. Connect IPDM E/R connector.
2. Select "IPDM E/R" on CONSULT-II. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
4. Touch "LO" screen.
5. Check voltage between IPDM E/R harness connector terminal and ground while front wiper LO is operating.

Terminal			Continuity
(+)		(-)	
IPDM E/R connector	Terminal		
E13	32	Ground	Battery voltage

Without CONSULT-II

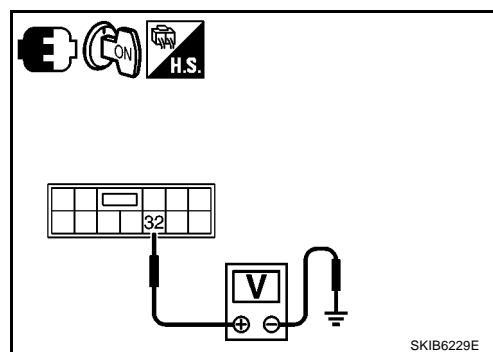
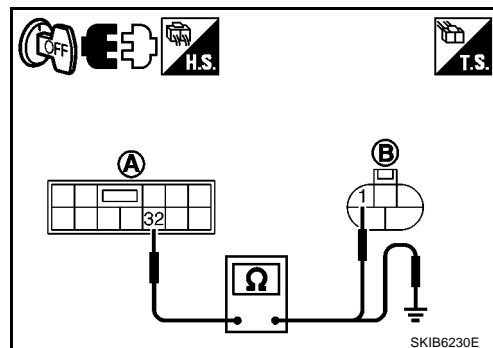
1. Connect IPDM E/R connector.
2. Start up auto active test. Refer to [PG-19, "Auto Active Test"](#).
3. Check voltage between IPDM E/R harness connector terminal and ground while front wiper LO is operating.

Terminal			Continuity
(+)		(-)	
IPDM E/R connector	Terminal		
E13	32	Ground	Battery voltage

OK or NG

OK >> Replace front wiper motor. Refer to [WW-35, "Removal and Installation of Wiper Motor and Linkage"](#).

NG >> Replace IPDM E/R. Refer to [PG-26, "Removal and Installation of IPDM E/R"](#).



FRONT WIPER AND WASHER SYSTEM

Only Front Wiper HI Does Not Operate

EKS00P59

1. ACTIVE TEST

 With CONSULT-II

1. Select "IPDM E/R" on CONSULT-II. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
3. Touch "HI" screen.

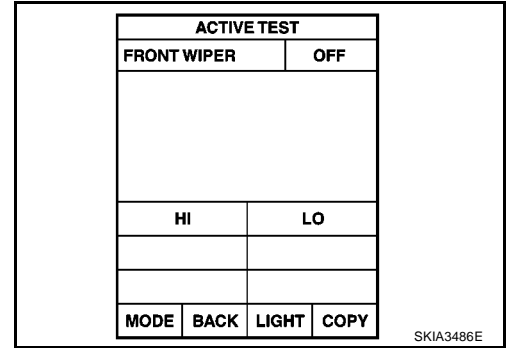
 Without CONSULT-II

Start up auto active test. Refer to [PG-19, "Auto Active Test"](#) .

Does front wiper operate normally?

YES >> Refer to [LT-118, "Combination Switch Inspection"](#) .

NO >> 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 (A) and front wiper motor harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
E13	35	E72	4	Yes

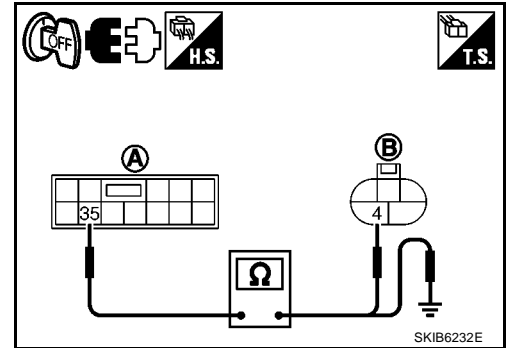
4. Check continuity between IPDM E/R harness connector (A) and ground.

A		Ground	Continuity
Connector	Terminal		
E13	35		No

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



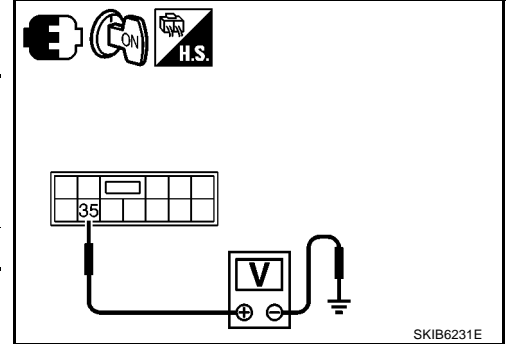
FRONT WIPER AND WASHER SYSTEM

3. CHECK IPDM E/R

With CONSULT-II

1. Connect IPDM E/R connector.
2. Select "IPDM E/R" on CONSULT-II. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
4. Touch "HI" screen.
5. Check voltage between IPDM E/R harness connector and ground while front wiper HI is operating.

Terminal		Continuity
(+)	(-)	
IPDM E/R connector	Terminal	
E13	35	Battery voltage



Without CONSULT-II

1. Connect IPDM E/R connector.
2. Start up auto active test. Refer to [PG-19, "Auto Active Test"](#).
3. Check voltage between IPDM E/R harness connector and ground while front wiper HI is operating.

Terminal		Continuity
(+)	(-)	
IPDM E/R connector	Terminal	
E13	35	Battery voltage

OK or NG

- OK >> Replace front wiper motor. Refer to [WW-35, "Removal and Installation of Wiper Motor and Linkage"](#).
- NG >> Replace IPDM E/R. Refer to [PG-26, "Removal and Installation of IPDM E/R"](#).

Only Front Wiper INT Does Not Operate

EKS00P5A

1. CHECK COMBINATION SWITCH TO BCM

1. Select "BCM" on CONSULT-II.
2. Select "WIPER" on "SELECT TEST ITEM" screen. Then select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Check that "FR WIPER INT" turns ON-OFF according to operation of wiper switch.

OK or NG

- OK >> Replace BCM. Refer to [BCS-17, "Removal and Installation of BCM"](#).
- NG >> Replace wiper switch. Refer to [WW-36, "Removal and Installation of Wiper and Washer Switch"](#).

DATA MONITOR	
MONITOR	
IGN ON SW	ON
IGN SW CAN	ON
FR WIPER HI	OFF
FR WIPER LOW	OFF
FR WIPER INT	OFF
FR WASHER SW	OFF
INT VOLUME	7
FR WIPER STOP	ON
VEHICLE SPEED	0.0 km/h
Page Down	
RECORD	
MODE	BACK
LIGHT	COPE

PKIB0110E

FRONT WIPER AND WASHER SYSTEM

Front Wiper Intermittent Operation Switch Position Cannot Be Adjusted

EKS00P5B

1. CHECK COMBINATION SWITCH TO BCM

1. Select "BCM" on CONSULT-II.
2. Select "WIPER" on "SELECT TEST ITEM" screen. Then select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Check that "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-17, "Removal and Installation of BCM"](#).
- NG >> Replace wiper switch. Refer to [WW-36, "Removal and Installation of Wiper and Washer Switch"](#).

DATA MONITOR			
MONITOR			
IGN ON SW	ON		
IGN SW CAN	ON		
FR WIPER HI	OFF		
FR WIPER LOW	OFF		
FR WIPER INT	OFF		
FR WASHER SW	OFF		
INT VOLUME	7		
FR WIPER STOP	ON		
VEHICLE SPEED	0.0 km/h		
		Page Down	
		RECORD	
MODE	BACK	LIGHT	COPE

PKIB0110E

Front Wiper Interval Time Is Not Controlled by Vehicle Speed

EKS00P5C

1. CHECK FUNCTION OF COMBINATION METER

Confirm that speedometer operates normally.

Does the front wiper operate normally?

- YES >> GO TO 2.
- NO >> Combination meter vehicle speed system malfunction. Refer to [DI-20, "Vehicle Speed Signal Inspection"](#).

2. CHECK CAN COMMUNICATION BETWEEN BCM AND COMBINATION METER

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

Displayed self-diagnosis results

- NO DTC>>Replace BCM. Refer to [BCS-17, "Removal and Installation of BCM"](#).
- CAN COMM CIRCUIT>>Check CAN communication line of BCM. Refer to [BCS-16, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).

SELF-DIAG RESULTS			
DTC RESULTS		TIME	
CAN COMM CIRCUIT [U1000]			
ERASE		PRINT	
MODE	BACK	LIGHT	COPY

PKIA7627E

Wipers Do Not Wipe When Front Washer Operates

EKS00P5D

1. CHECK COMBINATION SWITCH TO BCM

1. Select "BCM" on CONSULT-II.
2. Select "WIPER" on "SELECT TEST ITEM" screen. Then select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Check that "FR WASHER SW" turns ON-OFF according to operation of front washer switch.

OK or NG

- OK >> Replace BCM. Refer to [BCS-17, "Removal and Installation of BCM"](#).
- NG >> Replace wiper switch. Refer to [WW-36, "Removal and Installation of Wiper and Washer Switch"](#).

DATA MONITOR			
MONITOR			
IGN ON SW	ON		
IGN SW CAN	ON		
FR WIPER HI	OFF		
FR WIPER LOW	OFF		
FR WIPER INT	OFF		
FR WASHER SW	OFF		
INT VOLUME	7		
FR WIPER STOP	ON		
VEHICLE SPEED	0.0 km/h		
		Page Down	
		RECORD	
MODE	BACK	LIGHT	COPE

PKIB0110E

FRONT WIPER AND WASHER SYSTEM

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

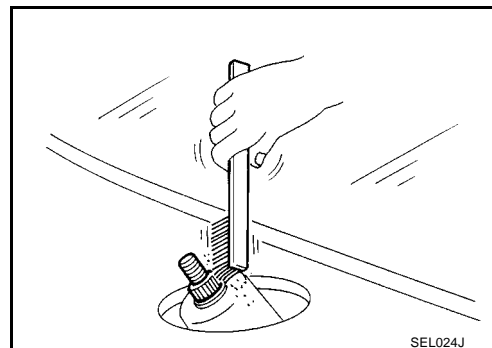
EKS00P5E

REMOVAL

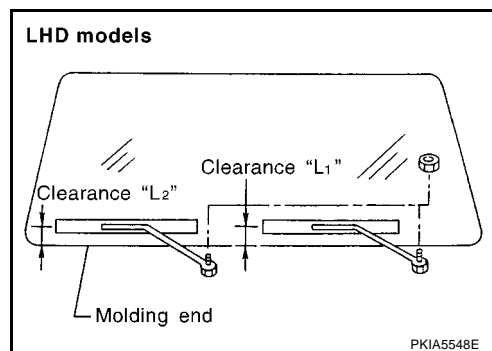
1. Operate wiper motor, and stop it at the auto stop position.
2. Remove wiper arm mounting nuts covers.
3. Remove wiper arm mounting nuts, then remove wiper arms.

INSTALLATION

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



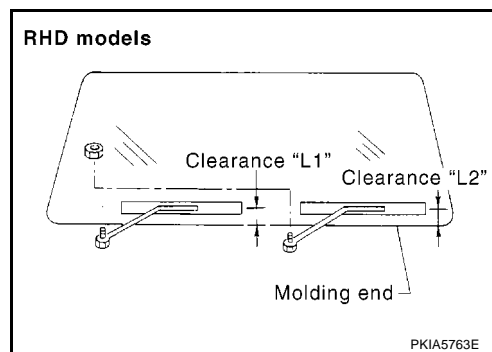
2. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it "OFF" (auto stop).
3. Lift the blade up and then set it down onto glass surface to set the blade center to clearance "L1" and "L2" immediately before tightening nut.
4. Eject washer fluid. Turn on wiper switch to operate wiper motor and then turn it "OFF".



5. Ensure that wiper blades stop within clearance "L1" and "L2".

Clearance "L1" : 32 ± 7.5 mm (1.26 ± 0.295 in)

Clearance "L2" : 31 ± 7.5 mm (1.22 ± 0.295 in)



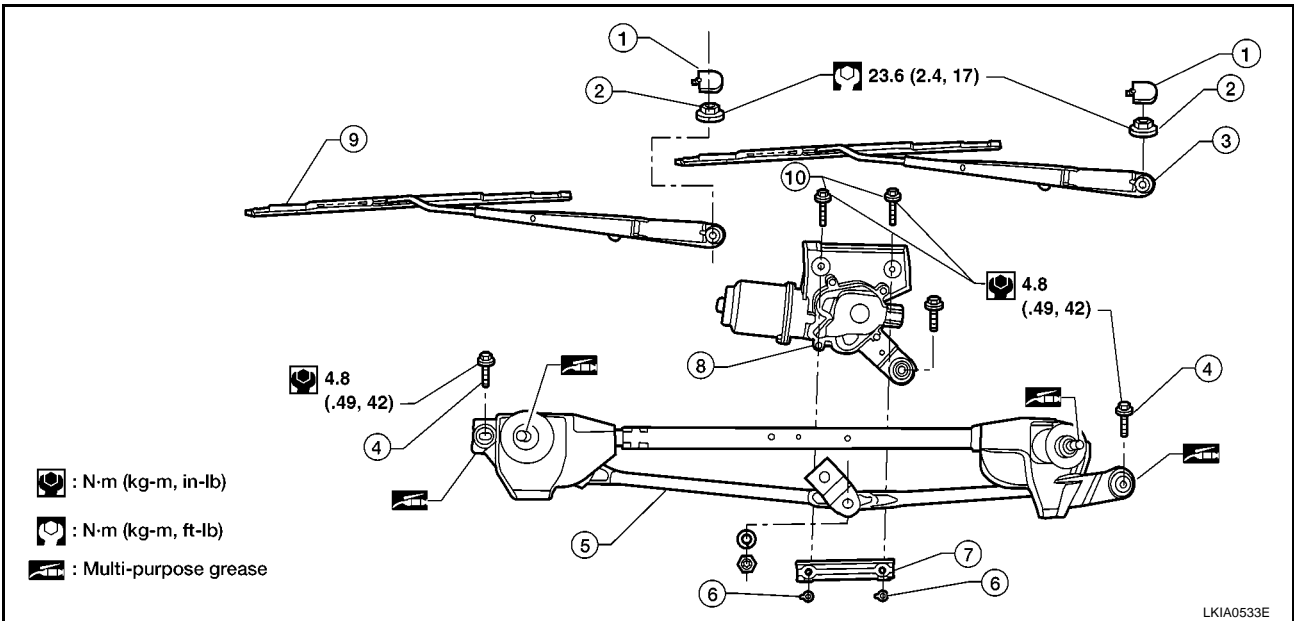
- Tighten wiper arm mounting nuts to specified torque.

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

FRONT WIPER AND WASHER SYSTEM

Removal and Installation of Wiper Motor and Linkage

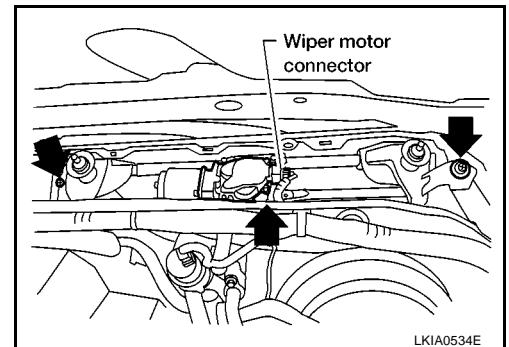
EKS00P5F



- | | | |
|---|----------------------------|--|
| 1. Wiper arm mounting nut covers | 2. Wiper arm mounting nuts | 3. Front LH wiper arm and blade assembly |
| 4. Wiper frame mounting bolts | 5. Wiper frame assembly | 6. Wiper motor to frame mounting nuts |
| 7. Wiper motor mounting spacer | 8. Wiper motor | 9. Front RH wiper arm and blade assembly |
| 10. Wiper motor to frame mounting bolts | | |

REMOVAL

1. Turn wiper switch ON to operate wiper motor, then turn wiper switch OFF (auto stop).
2. Remove cowl top cover. Refer to [EI-20, "COWL TOP"](#).
3. Disconnect front wiper motor connector.
4. Remove wiper frame assembly mounting bolts, and remove wiper frame assembly.
5. Remove wiper motor to linkage nut and washer from wiper motor pivot.
6. Remove wiper motor from wiper frame assembly.



INSTALLATION

CAUTION:

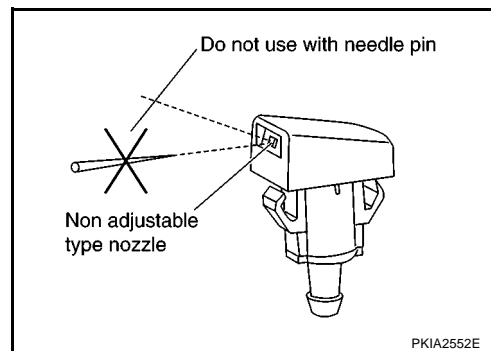
- Never drop the wiper motor or cause it to contact other parts.
 - Check the grease conditions of the motor arm and wiper link joint(s). Apply grease if necessary.
1. Connect wiper motor to connector. Turn wiper switch ON to operate wiper motor, then turn wiper switch OFF (auto stop).
 2. Disconnect wiper motor connector.
 3. Install link to wiper motor pivot with nut and washer.
 4. Install wiper motor to wiper frame assembly, and install assembly into the vehicle.
 5. Connect wiper motor connector. Turn wiper switch ON to operate wiper motor, then turn wiper switch OFF (auto stop).
 6. Install cowl top cover. Refer to [EI-20, "COWL TOP"](#).

FRONT WIPER AND WASHER SYSTEM

Washer Nozzle Adjustment

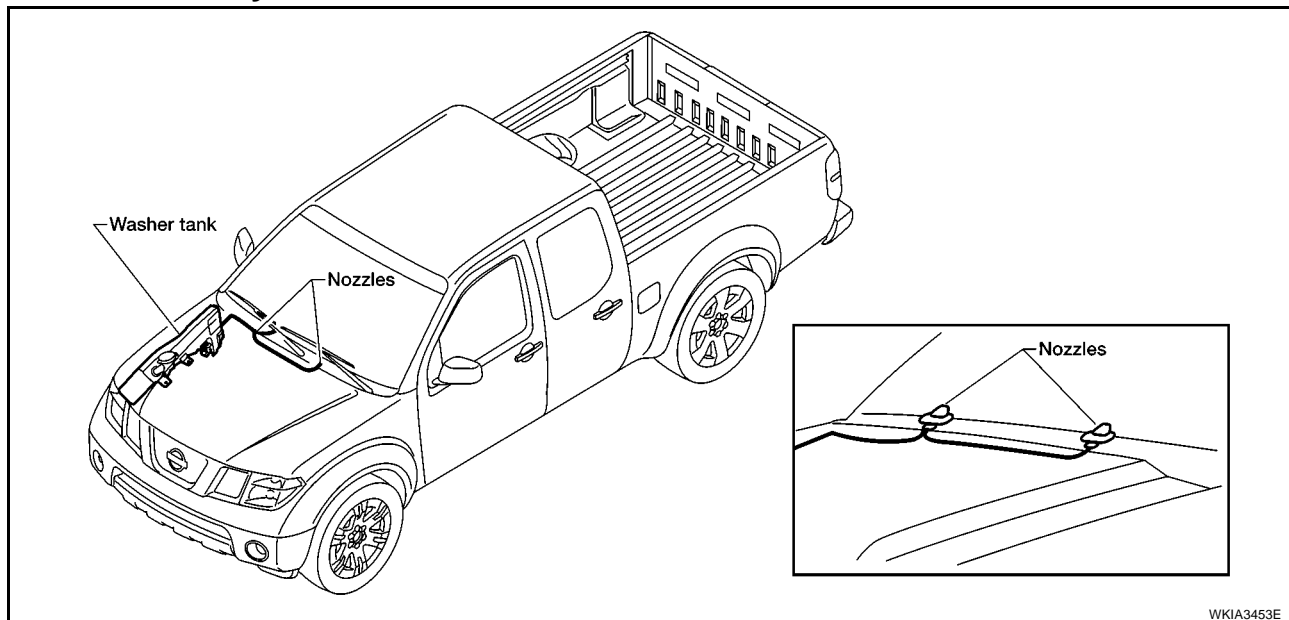
EKS00P5G

- This vehicle is equipped with non-adjustable washer nozzles.
- If not satisfied with washer fluid spray coverage, confirm that the washer nozzle is installed correctly.
- If the washer nozzle is installed correctly, and the washer fluid spray coverage is not satisfactory, replace washer nozzle.



Washer Tube Layout

EKS00P5H

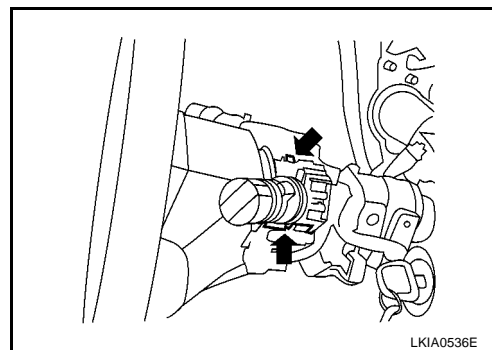


Removal and Installation of Wiper and Washer Switch

EKS00P5I

REMOVAL

1. Remove steering column covers. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#).
2. Remove wiper washer switch connector.
3. Pinch tabs at wiper and washer switch base and slide switch away from steering column to remove.



INSTALLATION

Installation is the reverse order of removal.

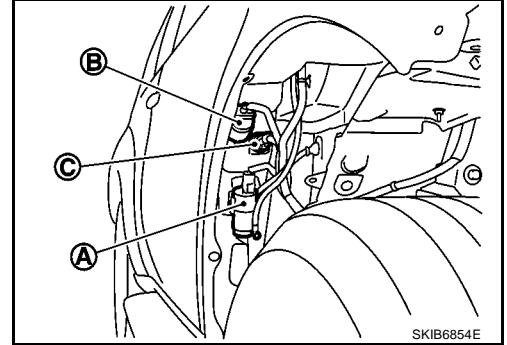
FRONT WIPER AND WASHER SYSTEM

Removal and Installation of Front Washer Tank

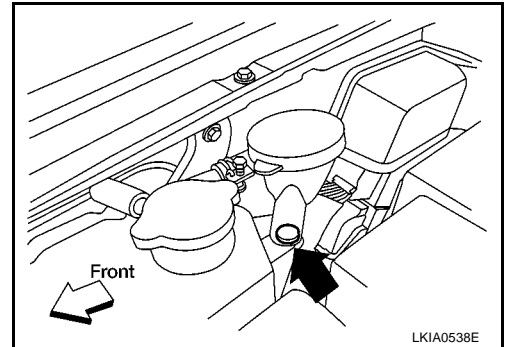
EKS00P5J

REMOVAL

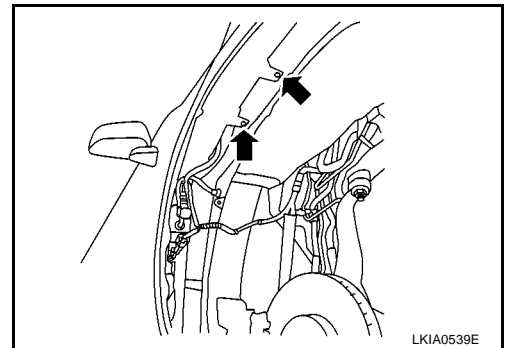
1. Remove front fender protector. Refer to [EI-22, "Removal and Installation of Front Fender Protector"](#) .
2. Remove front washer hoses from washer motor (A) and headlamp washer hose from headlamp washer motor (B); allow washer fluid to drain.
3. Disconnect front washer motor (A) connector, headlamp washer motor (B) connector and washer fluid level sensor (C) connector.



4. Remove clip, then remove washer tank filler neck from washer tank.



5. Remove washer tank screws and remove washer tank.



INSTALLATION

CAUTION:

After installation, add water up to the upper level of the washer tank inlet, and check for water leaks. Installation is the reverse order of removal.

Washer tank mounting screws  : 5.5 N·m (0.56 kg-m, 49 in-lb)

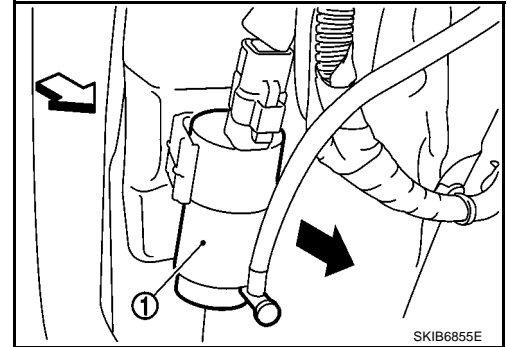
FRONT WIPER AND WASHER SYSTEM

Removal and Installation of Front Washer Motor REMOVAL

EKS00P5K

⇐: Vehicle front

1. Remove washer tank. Refer to [WW-37, "Removal and Installation of Front Washer Tank"](#) .
2. Pull out front washer motor (1) and remove from washer tank.



INSTALLATION

Installation is the reverse order of removal.

CAUTION:

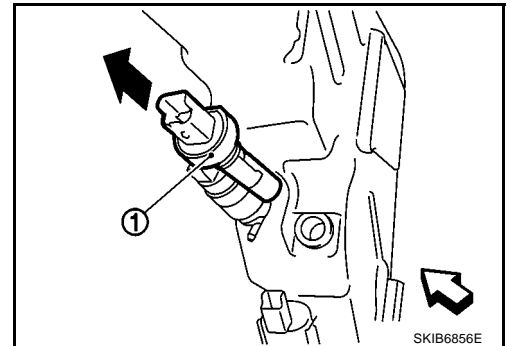
When installing front washer motor, there should be no packing twist, etc.

Removal and Installation of Washer Fluid Level Sensor REMOVAL

EKS00P5L

⇐: Vehicle front

1. Remove washer tank. Refer to [WW-37, "Removal and Installation of Front Washer Tank"](#) .
2. Pull out washer fluid level sensor (1) and remove from washer tank in the direction of the arrow as shown.



INSTALLATION

Installation is the reverse order of removal.

CAUTION:

When installing washer fluid level sensor, there should be no packing twist, etc.

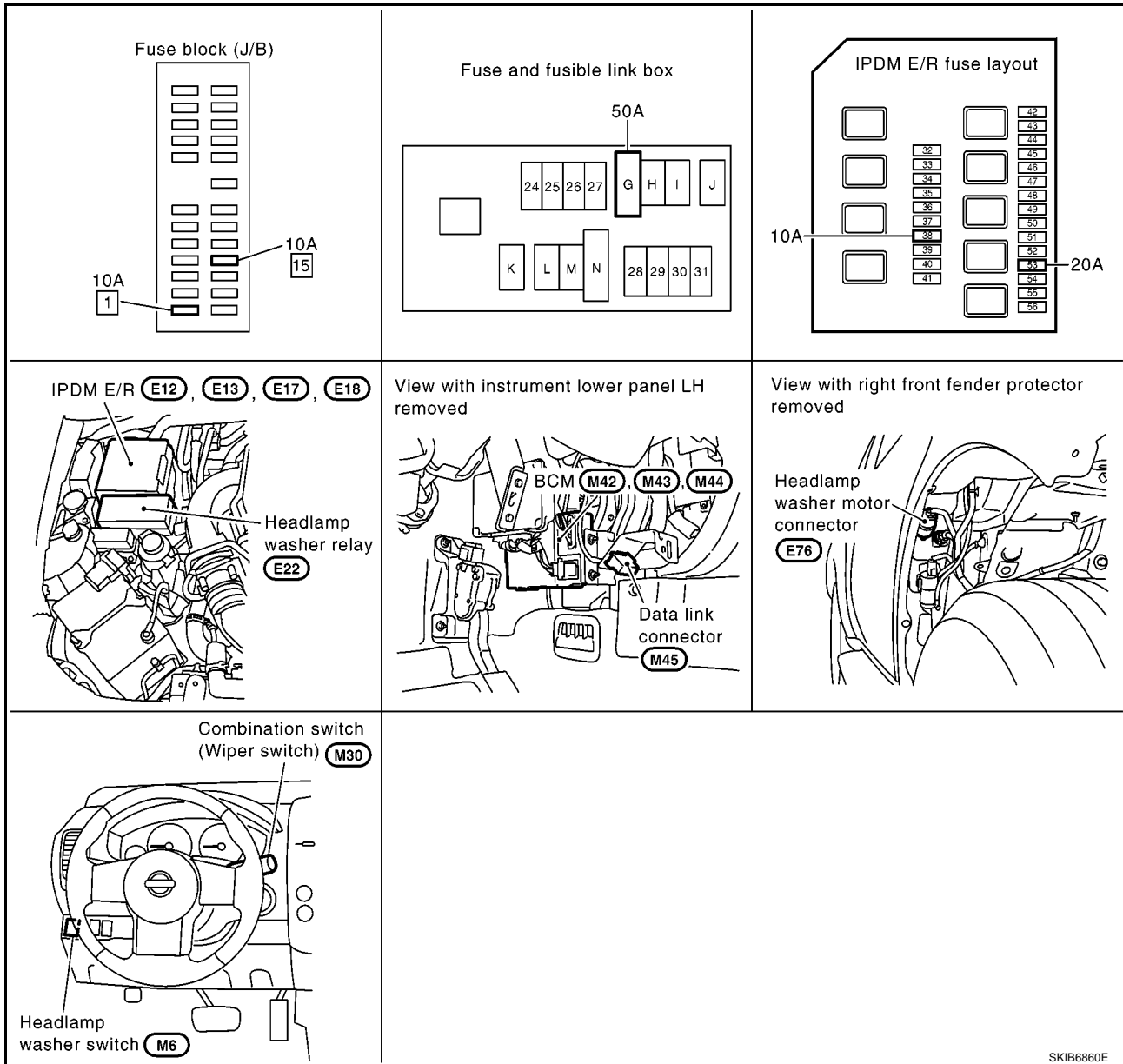
HEADLAMP WASHER

HEADLAMP WASHER

PFP:28620

Components Parts and Harness Connector Location

EKS00P67



SKIB6860E

System Description

EKS00P68

Headlamp washer operates under the following conditions.

- When lighting switch is in 1ST position
- When daytime light system is operating
- When auto light system is operating (LOW beam is ON)

When the headlamp washer switch is ON position the BCM (body control module) receives input signal requesting the headlamp washer operates. The CPU (central processing unit) of the IPDM E/R (intelligent power distribution module engine room) controls the headlamp washer relay coil. When activated this relay directs power headlamp washer motor.

HEADLAMP WASHER

OUTLINE

Power is supplied at all times

- to ignition relay (located in IPDM E/R), from battery directly,
- through 50A fusible link (letter G, located in fuse and fusible link box),
- to BCM terminal 57,
- through 20A fuse (No. 53, located in IPDM E/R)
- to CPU (central processing unit) (located in IPDM E/R).

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

- to ignition relay (located in IPDM E/R),
- through 10A fuse [No. 1, located in fuse block (J/B)]
- to BCM terminal 3,
- through 10A fuse [No. 15, located in fuse block (J/B)]
- to combination switch terminal 2.

Ground is supplied

- to BCM terminal 55 and
- to combination switch terminal 9
- through grounds M21, M80 and M83,
- to IPDM E/R terminals 38 and 59
- through grounds E21, E41 and E61.

When the headlamp washer switch is ON, ground is supplied

- to BCM terminal 35
- through headlamp washer switch terminal 1
- through headlamp washer switch terminal 2
- through ground M21, M80 and M83.

HEADLAMP WASHER OPERATION

With the headlamp washer switch in the ON position, the BCM receives input signal requesting. This input signal is communicated to the IPDM E/R via the CAN communication. The CPU located in the IPDM E/R controls the headlamp washer relay coil, which when energized, power is supplied

- through 10A fuse (No. 38, located in IPDM E/R)
- through IPDM E/R terminal 27
- to headlamp washer relay terminals 2 and 5,
- through headlamp washer relay terminal 1
- to IPDM E/R terminal 5,
- through headlamp washer relay terminal 3
- to headlamp washer motor terminal 1.

Ground is supplied

- to headlamp washer motor terminal 2
- through grounds E21, E41 and E61.

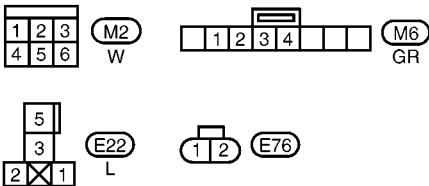
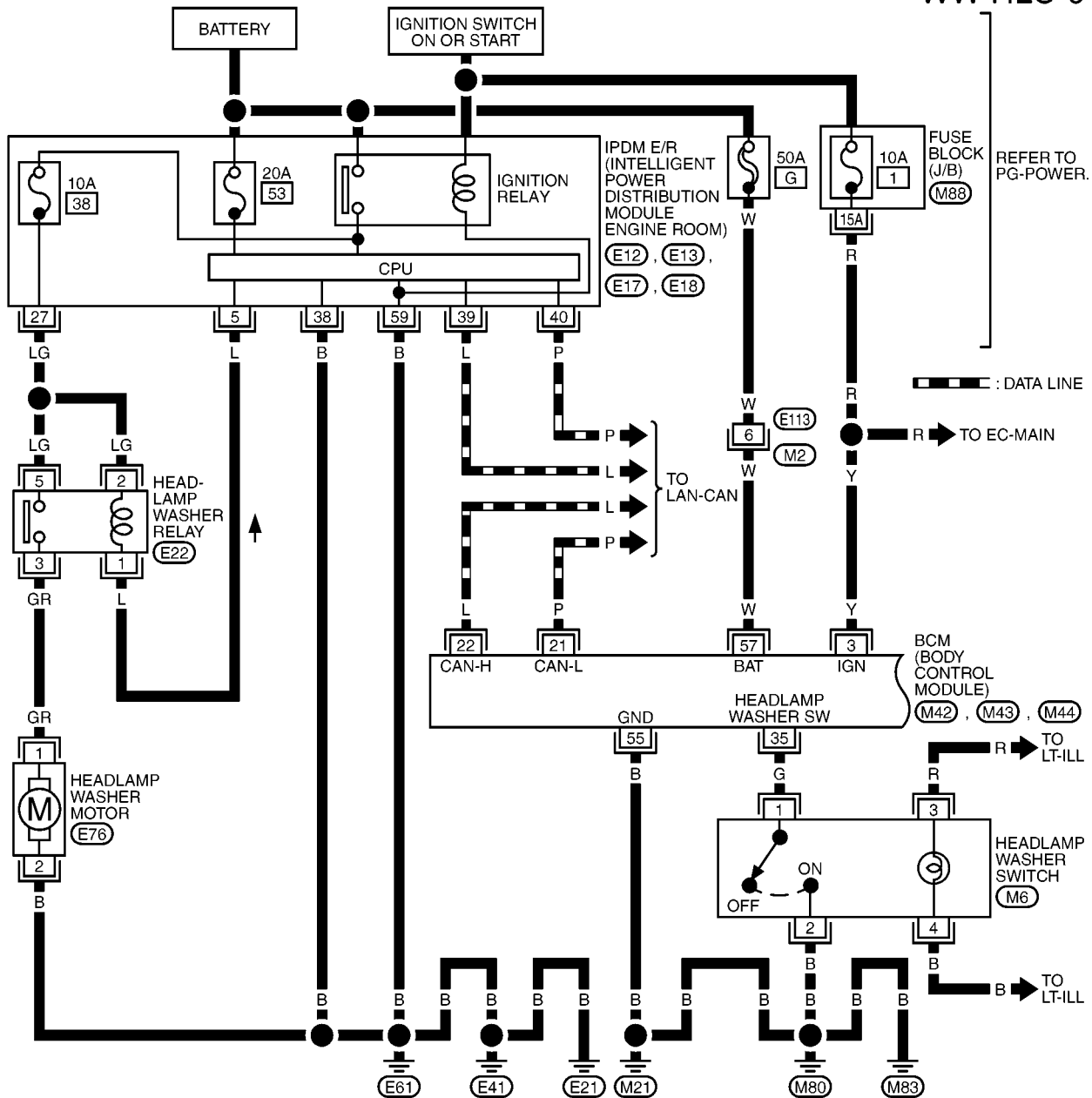
With power and ground supplied, headlamp washer operates.

HEADLAMP WASHER

Wiring Diagram — HLC —

EKS00P69

WW-HLC-01



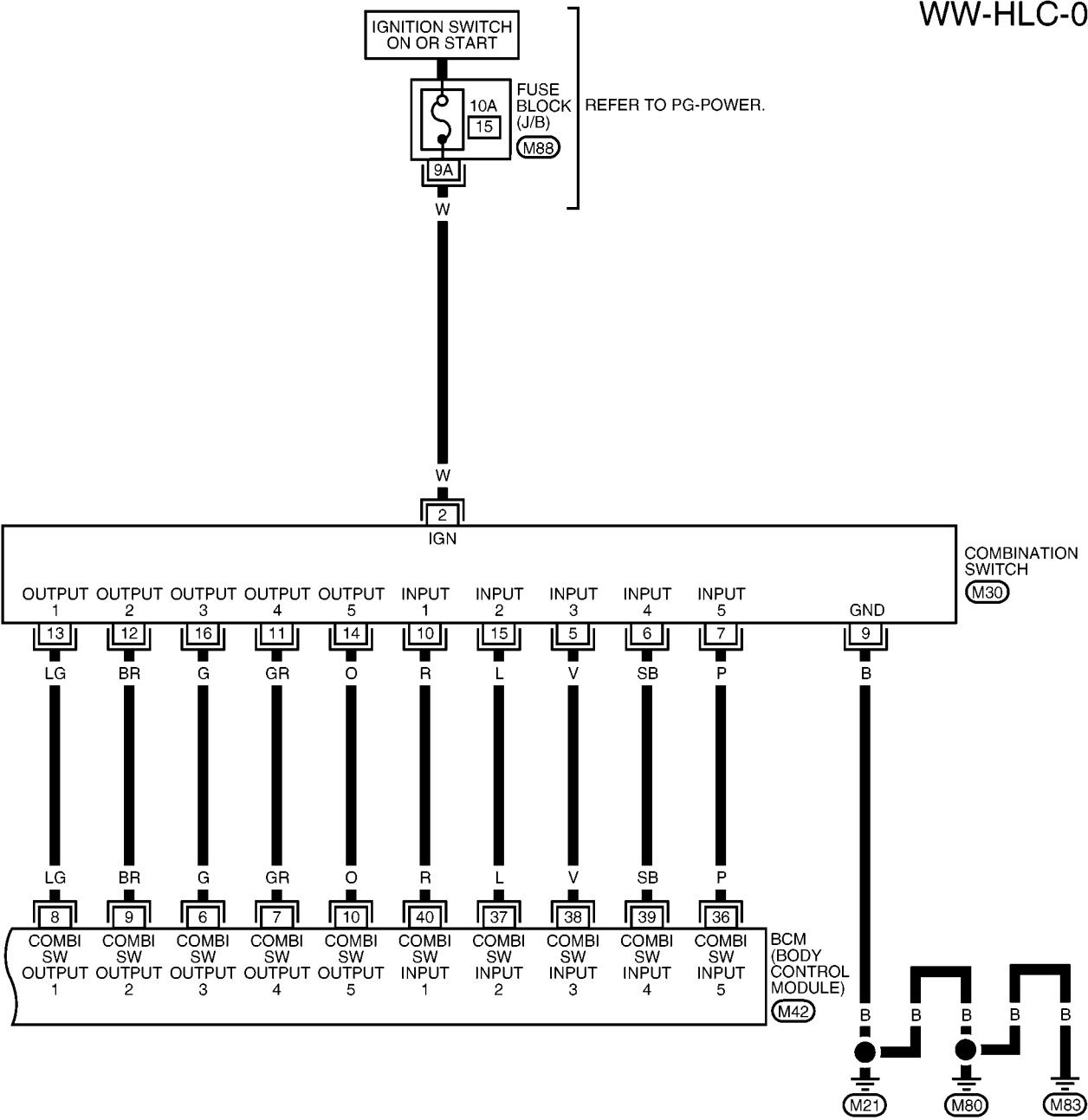
REFER TO THE FOLLOWING.

(M88) -FUSE BLOCK-
JUNCTION BOX (J/B)
(M42, M43, M44)
-ELECTRICAL UNITS

MKWA3270E

HEADLAMP WASHER

WW-HLC-02



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

(M30)
W

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40

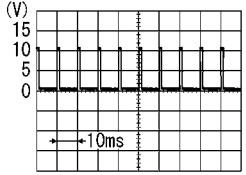
(M42)
B

REFER TO THE FOLLOWING.
(M88) - FUSE BLOCK-
JUNCTION BOX (J/B)

HEADLAMP WASHER

Terminals and Reference Values for BCM

EKS00P6A

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
3	Y	Ignition switch (ON)	ON	—	Battery voltage
6	G	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	
7	GR	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	
8	LG	Combination switch output 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	
9	BR	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	
10	O	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	
21	P	CAN- L	—	—	—
22	L	CAN- H	—	—	—
35	G	Headlamp washer switch signal	ON	Headlamp washer switch	ON Approx. 0V
				OFF	Approx. 5V
36	P	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	Approx. 0V
37	L	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	
38	V	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	
39	SB	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	
40	R	Combination switch input 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	
55	B	Ground	ON	—	Approx. 0V
57	W	Battery power supply (fusible link)	OFF	—	Battery voltage

Terminals and Reference Values for IPDM E/R

EKS00P6B

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
5	L	Headlamp washer relay signal	ON	Headlamp washer switch	OFF Battery voltage
				ON	Approx. 0V
27	LG	Headlamp washer relay power supply	ON	—	Battery voltage
38	B	Ground	ON	—	Approx. 0V
39	L	CAN- H	—	—	—
40	P	CAN- L	—	—	—
59	B	Ground	ON	—	Approx. 0V

HEADLAMP WASHER

How to Proceed with Trouble Diagnosis

EKS00P6C

1. Confirm the symptoms and customer complaint.
2. Understand operation description and function description. Refer to [WW-39, "System Description"](#) .
3. Perform the Preliminary Check. Refer to [WW-44, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Does headlamp washer operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

Preliminary Check

EKS00P6D

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES OR FUSIBLE LINK

Check for blown fuses or fusible link.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	G
	Ignition switch ON or START position	1
Combination switch	Ignition switch ON or START position	15
IPDM E/R	Battery	53
	Ignition switch ON or START position	38

Refer to [WW-41, "Wiring Diagram — HLC —"](#) .

OK or NG

OK >> GO TO 2

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

2. CHECK POWER SUPPLY CIRCUIT

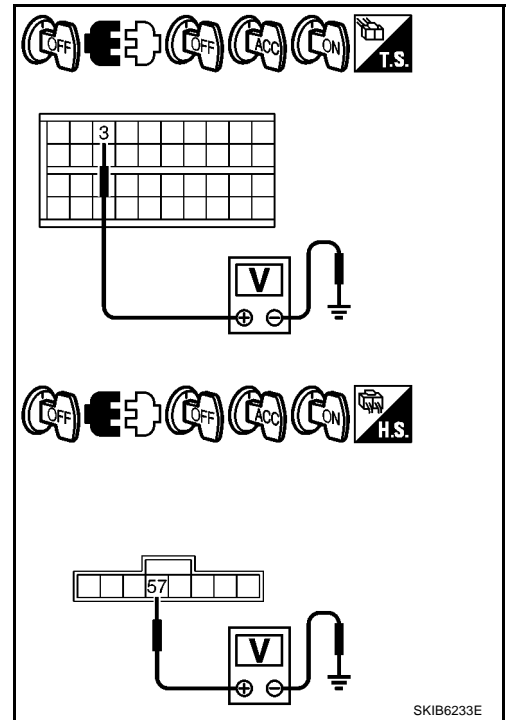
1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

Terminal		Ignition switch position			
(+) Terminal		(-) Ground	OFF	ACC	ON
BCM connector					
M42	3	Ground	0V	0V	Battery voltage
M44	57		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3

NG >> Repair harness or connector.



SKIB6233E

HEADLAMP WASHER

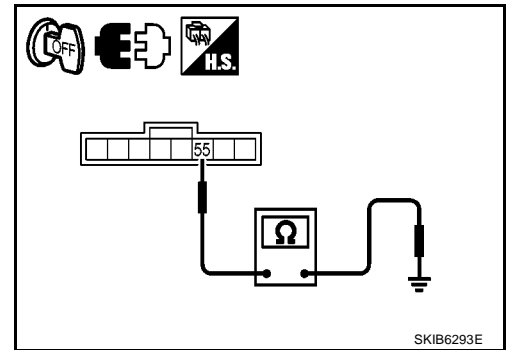
3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

BCM connector	Terminal	Ground	Continuity
M44	55		Yes

OK or NG

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



CONSULT-II Functions (BCM)

EKS00P6E

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

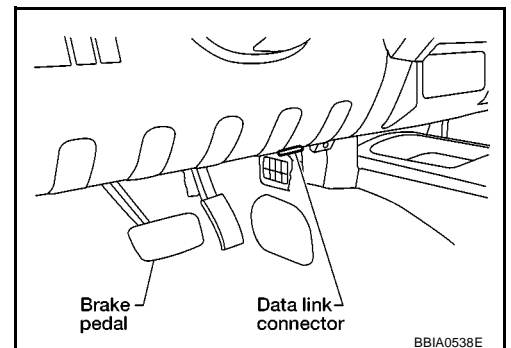
BCM diagnosis position	Diagnosis mode	Description
WIPER	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM	SELF-DIAG RESULTS	BCM performs self-diagnosis of CAN communication and combination switch.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

CONSULT-II BASIC OPERATION

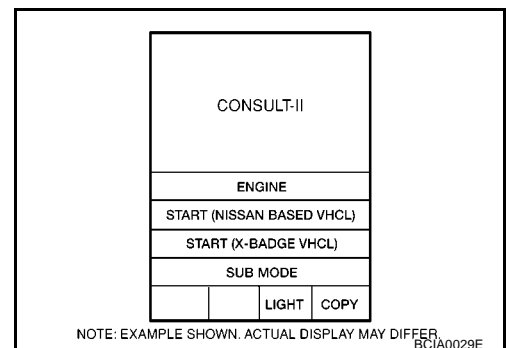
CAUTION:

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

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

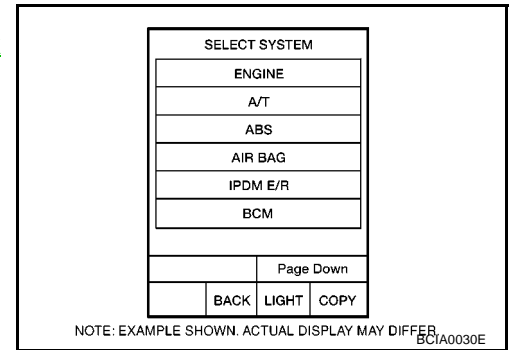


- Touch "START (NISSAN BASED VHCL)".

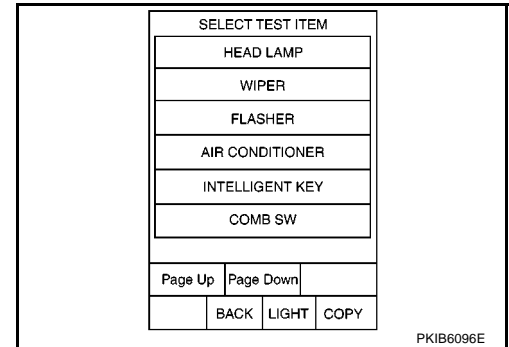


HEADLAMP WASHER

- Touch "BCM" on "SELECT SYSTEM" screen.
If "BCM" is not indicated, refer to [GI-50, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



- Touch "WIPER" on "SELECT TEST ITEM" screen.



DATA MONITOR

Operation Procedure

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

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

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

Display Item List

Monitor item		Contents
IGN ON SW	"ON/OFF"	Displays status (ignition switch IGN position: ON/other: OFF) of ignition switch judged from the ignition switch signal.
FR WIPER INT	"ON/OFF"	Displays status (front wiper switch intermittent position: ON/other: OFF) of front wiper intermittent switch judged from the wiper switch signal.
FR WIPER LOW	"ON/OFF"	Displays status (front wiper switch low position: ON/other: OFF) of front wiper low switch judged from the wiper switch signal.
FR WIPER HI	"ON/OFF"	Displays status (front wiper switch high position: ON/other: OFF) of front wiper high switch judged from the wiper switch signal.
FR WASHER SW	"ON/OFF"	Displays status (front washer switch ON position: ON/other: OFF) of front washer switch judged from the wiper switch signal.
INT VOLUME	"1 - 7"	Displays status (wiper intermittent dial position setting 1-7) of intermittent volume switch judged from the wiper switch signal.
VEHICLE SPEED	"ON/OFF"	Displays status (run: ON/stop: OFF) vehicle speed as judged from vehicle speed signal.
FR WIPER STOP	"ON/OFF"	Displays status (front wiper stop position: ON/move: OFF) of front wiper motor stop judged from the front wiper auto stop signal.

HEADLAMP WASHER

Monitor item		Contents
RR WIPER INT	"ON/OFF"	Displays status (rear wiper switch intermittent position: ON/other: OFF) of rear wiper intermittent switch judged from the wiper switch signal.
RR WIPER ON	"ON/OFF"	Displays status (rear wiper switch ON position: ON/other: OFF) of rear wiper switch judged from the wiper switch signal.
RR WASHER SW	"ON/OFF"	Displays status (rear washer switch ON position: ON/other: OFF) of rear washer switch judged from the wiper switch signal.
RR WIPER STOP	"ON/OFF"	Displays status (rear wiper move: ON/stop position: OFF) of rear wiper motor stop judged from the rear wiper auto stop signal.
HL WASHER SW	"ON/OFF"	Displays status (headlamp washer switch ON position: ON/other: OFF) of headlamp washer switch judged from headlamp washer switch signal.
HEAD LAMP SW 1	"ON/OFF"	Displays status (lighting switch 2ND position: ON/other: OFF) of headlamp 1 switch judged from the lighting switch signal.
HEAD LAMP SW 2	"ON/OFF"	Displays status (lighting switch 2ND position: ON/other: OFF) of headlamp 2 switch judged from the lighting switch signal.

ACTIVE TEST

Operation Procedure

1. Touch "WIPER" on "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Touch item to be tested and check operation of the selected item.
4. During the operation check, touching "OFF" 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 LOW output	FR WIPER (LOW)	Front wiper LOW 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 (1.5 second)-OFF operation.
Headlamp washer output	HEAD LAMP WASHER	Headlamp washer can be operated by any ON-OFF operation.

HEADLAMP WASHER

CONSULT-II Functions (IPDM E/R)

EKS00P6F

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

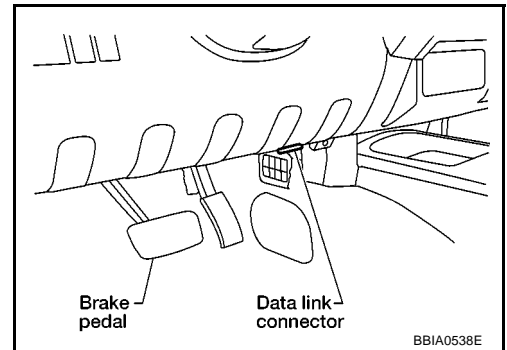
Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	Refer to PG-17, "SELF-DIAGNOSTIC RESULTS" .
DATA MONITOR	The input/output data of the IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	The IPDM E/R sends a drive signal to electronic components to check their operation.

CONSULT-II BASIC OPERATION

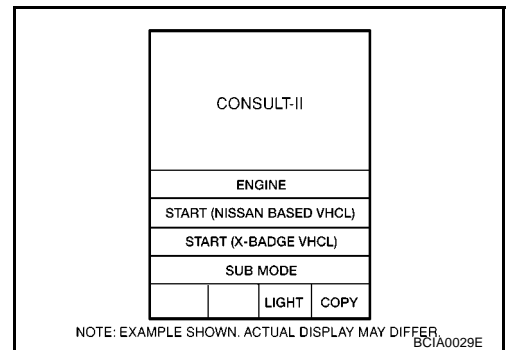
CAUTION:

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

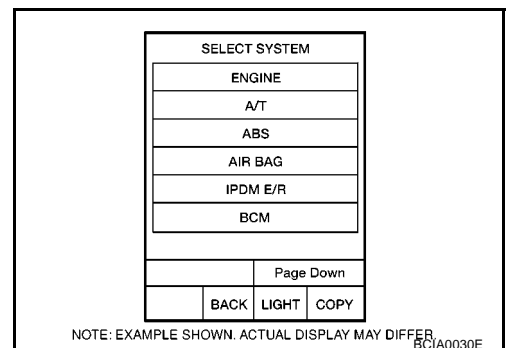
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, and then turn ignition switch ON.



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

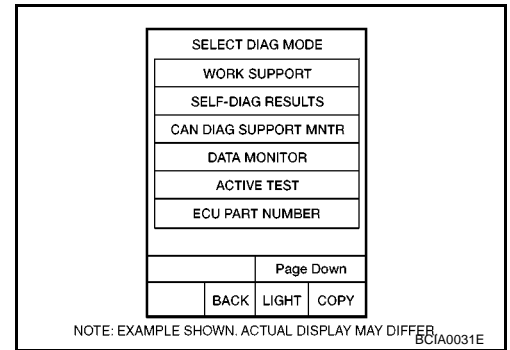


3. Touch "IPDM E/R" on "SELECT SYSTEM" screen.
If "IPDM E/R" is not indicated, refer to [GI-50, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#) .



HEADLAMP WASHER

- Select the desired part to be diagnosed on "SELECT DIAG MODE" screen.



DATA MONITOR

Operation Procedure

- Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
- Touch "ALL SIGNALS", "MAIN SIGNALS" or "SELECTION FROM MENU" on "SELECT MONITOR ITEM" screen.

ALL SIGNALS	Monitors all signal.
MAIN SIGNALS	Monitor the predetermined item.
SELECTION FROM MENU	Select items and monitor them.

- When "SELECTION FROM MENU" is selected, touch items to be monitored. When selecting "ALL SIGNALS", all items are monitored. When selecting "MAIN SIGNALS", predetermined items are monitored.
- Touch "START".
- Touch "RECORD" while monitoring to record the status of the item being monitored. To stop recording, touch "STOP".

All Signals, Main Signals, Selection From Menu

Item name	CONSULT-II screen display	Display or unit	Monitor item selection			Description
			ALL SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
Low beam request	HL LO REQ	OFF/ON	×	×	×	Signal status input from BCM
Headlamp washer request	HL WASHER REQ	OFF/ON	×	—	×	Signal status input from BCM

NOTE:

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

ACTIVE TEST

Operation Procedure

- Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- Touch item to be tested, and check operation.
- Touch "START".
- Touch "STOP" while testing to stop the operation.

Test item	CONSULT-II screen display	Description
Headlamp washer (ON/OFF) output	HEAD LAMP WASHER	With a certain operation (OFF/ON), the headlamp washer relay can be operated.

HEADLAMP WASHER

Headlamp Washer Does Not Operate

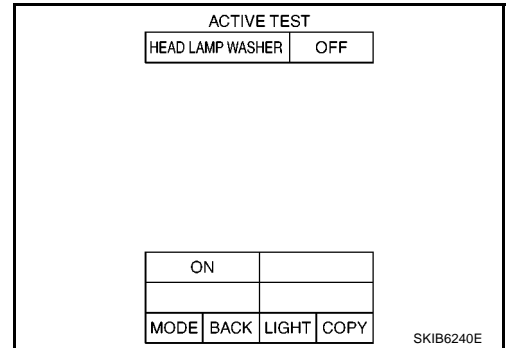
EKS00P6G

1. ACTIVE TEST

1. Select "BCM" on CONSULT-II. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "HEAD LAMP WASHER" on "SELECT TEST ITEM" screen.
3. Touch "ON" screen.

Does headlamp washer operate normally?

- YES >> GO TO 8.
NO >> GO TO 2.



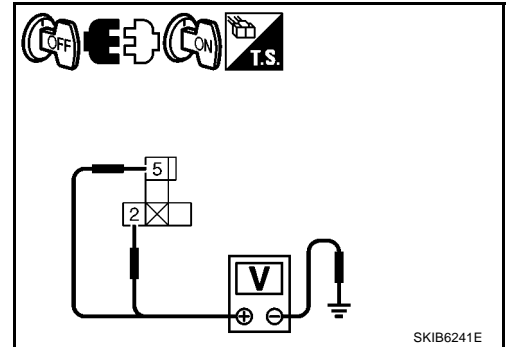
2. CHECK POWER SUPPLY CIRCUIT TO HEADLAMP WASHER RELAY

1. Turn ignition switch OFF.
2. Remove headlamp washer relay.
3. Turn ignition switch ON.
4. Check voltage between headlamp washer relay harness connector and ground.

Terminal		Voltage
(+)	(-)	
Headlamp washer relay connector	Terminal	
E22	2	Ground
	5	
		Battery voltage

OK or NG

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



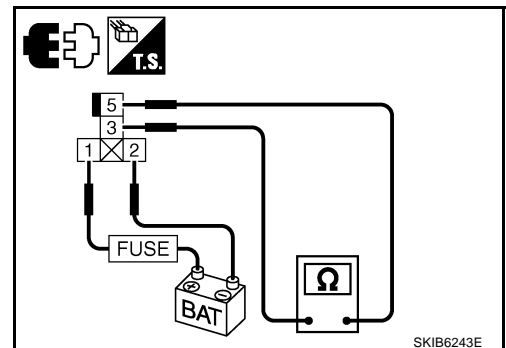
3. CHECK HEADLAMP WASHER RELAY

1. Apply battery voltage to between headlamp washer relay terminal 1 and 2.
2. Check continuity between terminal 3 and 5.

3 – 5 : Continuity should exist.

OK or NG

- OK >> GO TO 4.
NG >> Replace headlamp washer relay.

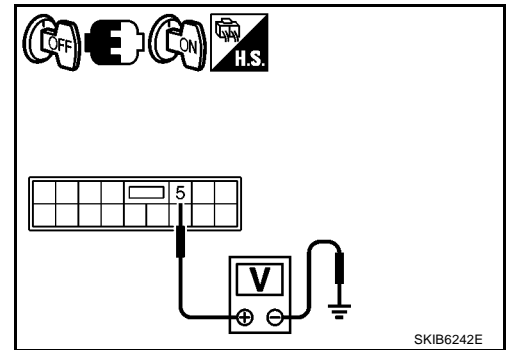


HEADLAMP WASHER

4. CHECK IPDM E/R

1. Install headlamp washer relay.
2. Select "IPDM E/R" on CONSULT-II. Select "HEAD LAMP WASHER" active test. Refer to [WW-49, "ACTIVE TEST"](#) . When headlamp washer operating, check voltage between IPDM E/R harness connector and ground.

Terminal		Headlamp washer condition	Voltage
(+)	(-)		
IPDM E/R connector	Terminal		
E12	5	OFF	Battery voltage
		ON	Approx. 0V



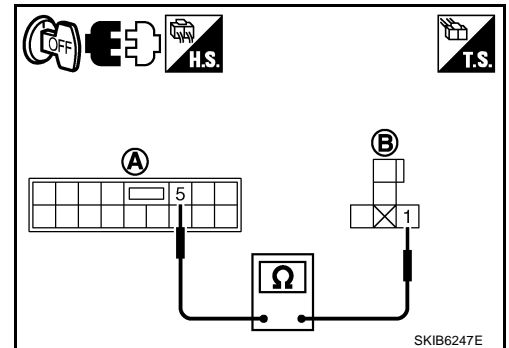
OK or NG

- OK >> GO TO 6.
NG >> GO TO 5.

5. CHECK CONTINUITY BETWEEN IPDM E/R AND HEADLAMP WASHER RELAY

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R harness connector and remove headlamp washer relay.
3. Check continuity between IPDM E/R harness connector (A) and headlamp washer relay harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
E12	5	E22	1	Yes



- OK >> Replace IPDM E/R. Refer to [PG-26, "Removal and Installation of IPDM E/R"](#) .
NG >> Repair harness or connector.

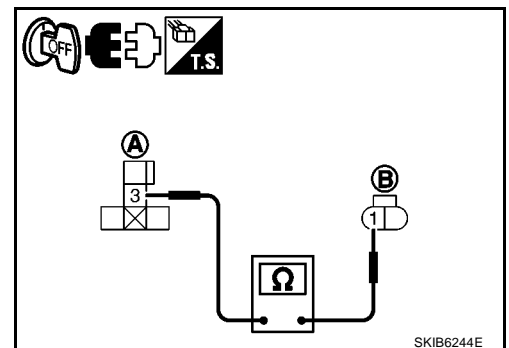
6. CHECK HEADLAMP WASHER MOTOR CIRCUIT

1. Disconnect headlamp washer motor connector.
2. Check continuity between headlamp washer relay harness connector (A) and headlamp washer motor harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
E22	3	E76	1	Yes

OK or NO

- OK >> GO TO 7.
NO >> Repair harness or connector.



HEADLAMP WASHER

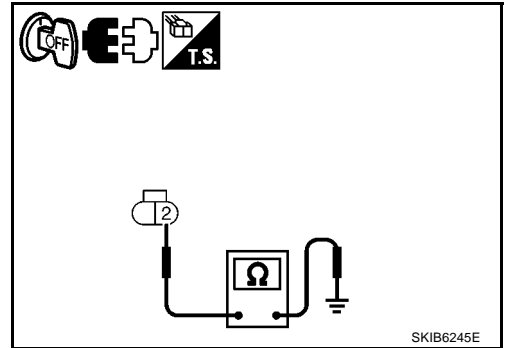
7. CHECK HEADLAMP WASHER MOTOR GROUND CIRCUIT

Check continuity between headlamp washer motor harness connector and ground.

Headlamp washer motor connector	Terminal	Ground	Continuity
E76	2		Yes

OK or NG

- OK >> Replace headlamp washer motor. Refer to [WW-53, "Removal and Installation of Headlamp Washer Motor"](#).
- NG >> Repair harness or connector.



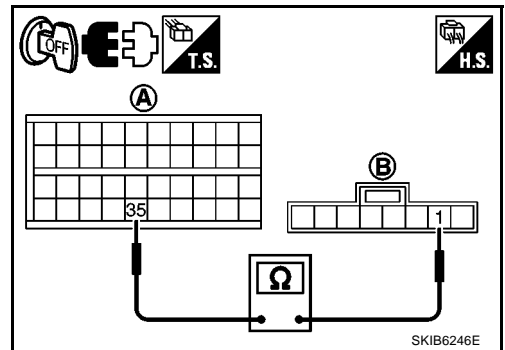
8. CHECK HEADLAMP WASHER SWITCH CIRCUIT

- Turn ignition switch OFF.
- Disconnect BCM connector and headlamp washer switch connector.
- Check continuity between BCM harness connector (A) and headlamp washer switch harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M42	35	M6	1	Yes

OK or NO

- OK >> GO TO 9.
- NO >> Repair harness or connector.



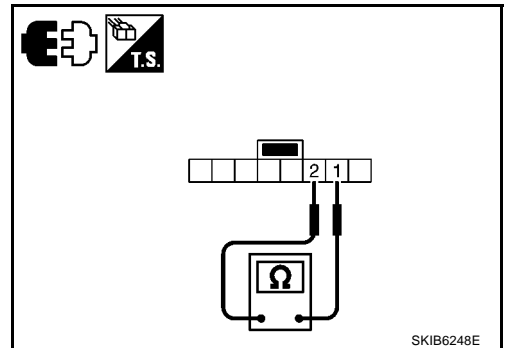
9. CHECK HEADLAMP WASHER SWITCH

Check continuity between headlamp washer switch terminals 1 and 2.

Headlamp washer switch terminal	Switch condition	Continuity
1	2	OFF
		ON
		Yes

OK or NG

- OK >> GO TO 10.
- NG >> Replace headlamp washer switch.



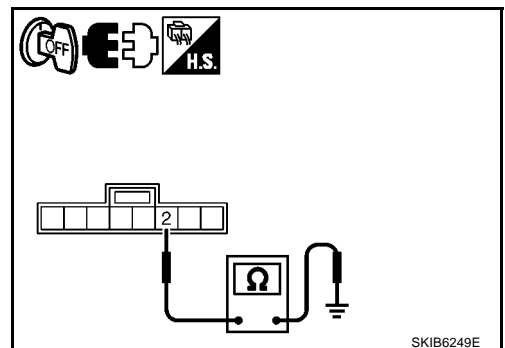
10. CHECK HEADLAMP WASHER SWITCH GROUND CIRCUIT

Check continuity between headlamp washer switch harness connector and ground.

Headlamp washer switch connector	Terminal	Ground	Continuity
M6	2		Yes

OK or NG

- OK >> Replace BCM. Refer to [BCS-17, "Removal and Installation of BCM"](#).
- NG >> Repair harness or connector.

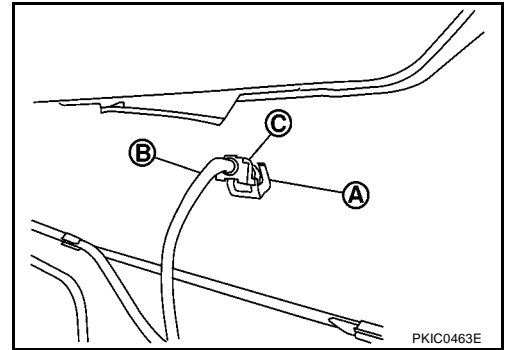


HEADLAMP WASHER

Removal and Installation of Washer Nozzle

REMOVAL

1. Remove front bumper fascia. Refer to [EI-15, "FRONT BUMPER"](#).
2. Remove headlamp washer tube (B).
3. Remove headlamp washer nozzle clip (A).
4. Remove headlamp washer nozzle (C) from front bumper.



INSTALLATION

Installation is the reverse order of removal.

Removal and Installation of Washer Tank

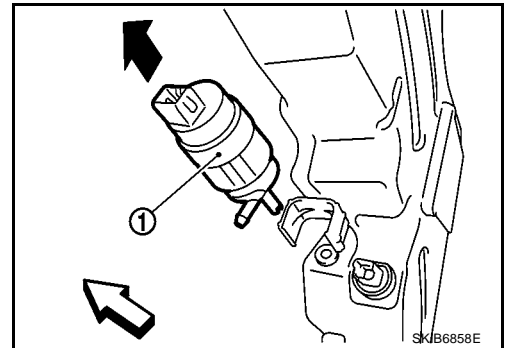
Refer to [WW-37, "Removal and Installation of Front Washer Tank"](#).

Removal and Installation of Headlamp Washer Motor

REMOVAL

⇐: Vehicle front

1. Remove front washer tank. Refer to [WW-37, "Removal and Installation of Front Washer Tank"](#).
2. Remove headlamp washer motor (1) from front washer tank.



INSTALLATION

Installation is the reverse order of removal.

CAUTION:

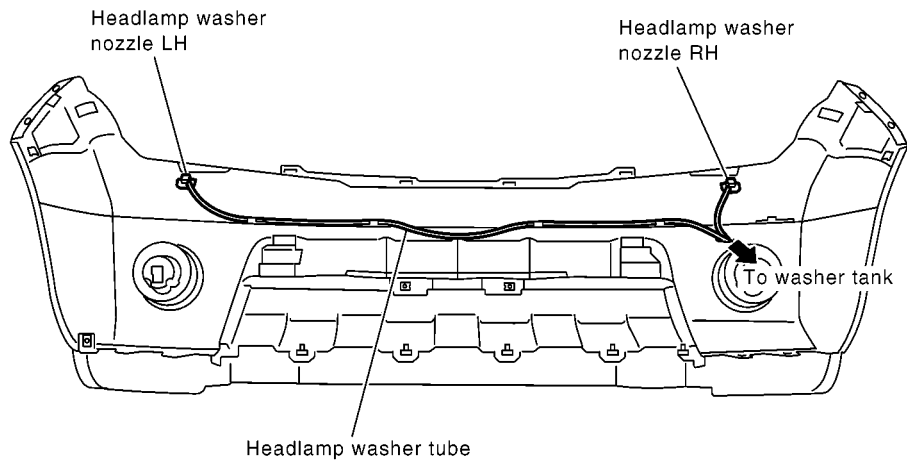
When installing headlamp washer motor, there should be no packing twist, etc.

HEADLAMP WASHER

Washer Tube Layout

EKS00P6K

Back side of the front bumper facia assembly



PKIC0464E

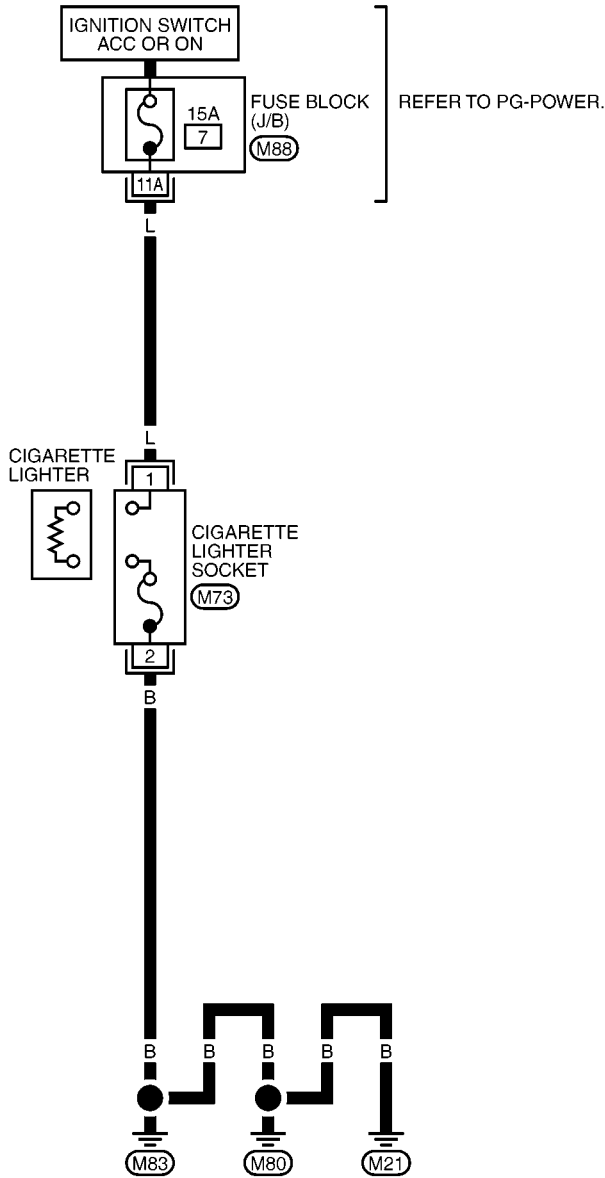
CIGARETTE LIGHTER

CIGARETTE LIGHTER
Wiring Diagram — CIGAR —

PDF:35330

EKS00P6L

WW-CIGAR-01



2
11
B

REFER TO THE FOLLOWING.
M88 - FUSE BLOCK-
JUNCTION BOX (J/B)

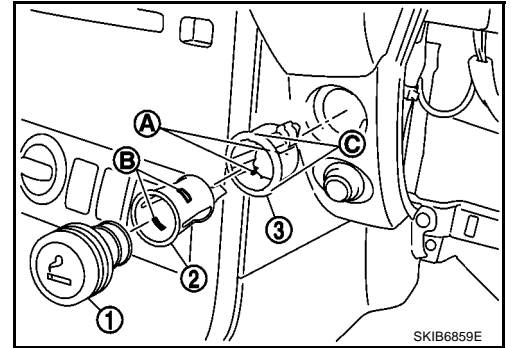
CIGARETTE LIGHTER

Removal and Installation of Cigarette Lighter

EKS00P6M

REMOVAL

1. Remove lower glove box assembly. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) .
2. Disconnect cigarette lighter connector.
3. Remove cigarette lighter (1).
4. Remove inner socket (2) from ring (3), while pressing hook (A) on ring (3) out from square hole (B).
5. Remove ring (3) from cluster lid D, while pressing pawls (C).



INSTALLATION

Note the following, and installation is the reverse order of removal.

CAUTION:

Align notches of ring and cluster lid D when installing.

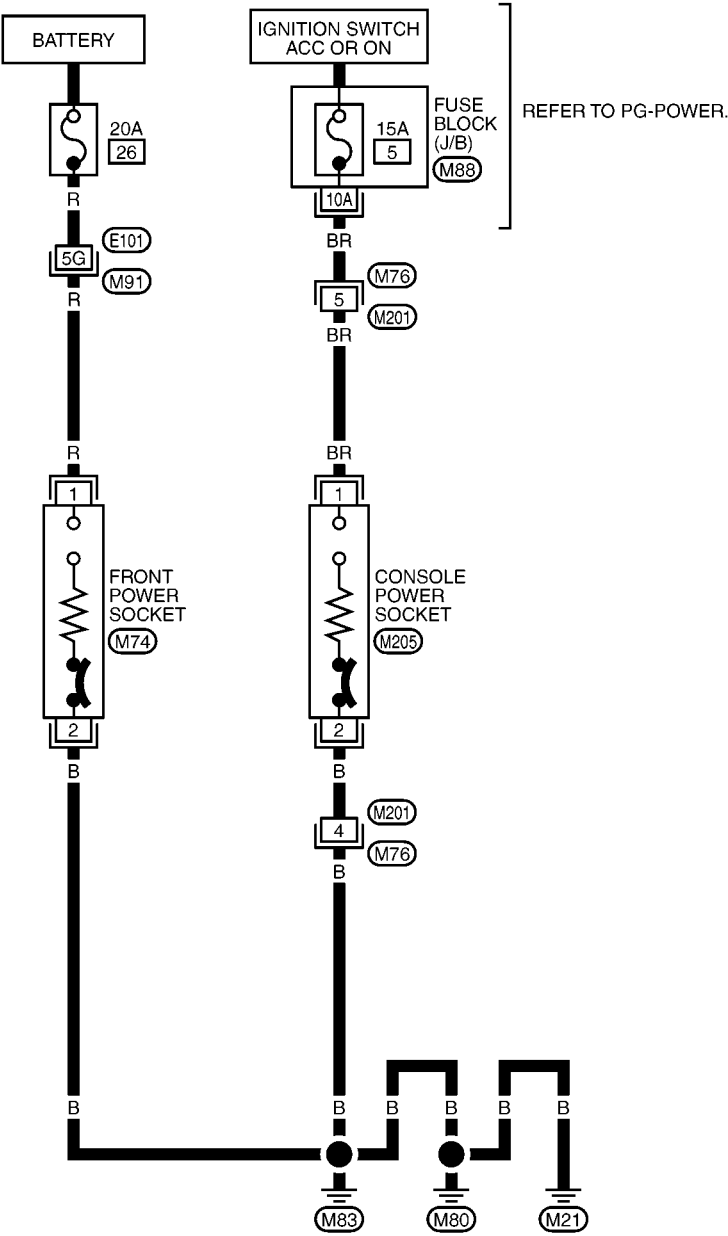
POWER SOCKET

POWER SOCKET
Wiring Diagram — P/SCKT —

PFP:253A2

EKS00P6N

WW-P/SCKT-01



(M76)
W



(M74)
B



(M205)

REFER TO THE FOLLOWING.
(M91) -SUPER MULTIPLE
JUNCTION (SMJ)
(M88) -FUSE BLOCK-
JUNCTION BOX (J/B)

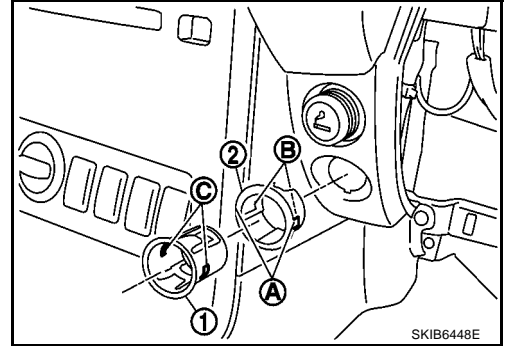
POWER SOCKET

Removal and Installation of Front Power Socket

EKS00P6O

REMOVAL

1. Remove lower glove box assembly. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#).
2. Disconnect power socket connector.
3. Remove inner socket (1) and ring (2) from cluster lid D, while pressing pawls (A).
4. Remove inner socket (1) from ring (2), while pressing the hook (B) on ring (2) out from square hole (C).



INSTALLATION

Note the following, and installation is the reverse order of removal.

CAUTION:

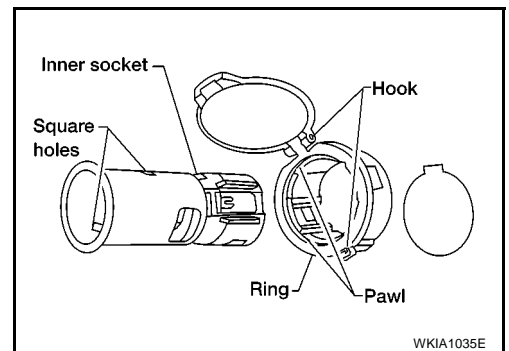
Align notches of ring and cluster lid D when installing.

Removal and Installation of Console Power Socket

EKS00P6P

REMOVAL

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



INSTALLATION

Note the following, and installation is the reverse order of removal.

CAUTION:

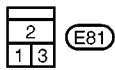
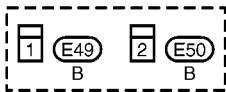
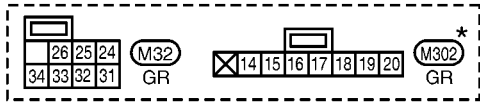
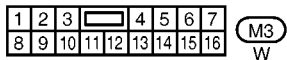
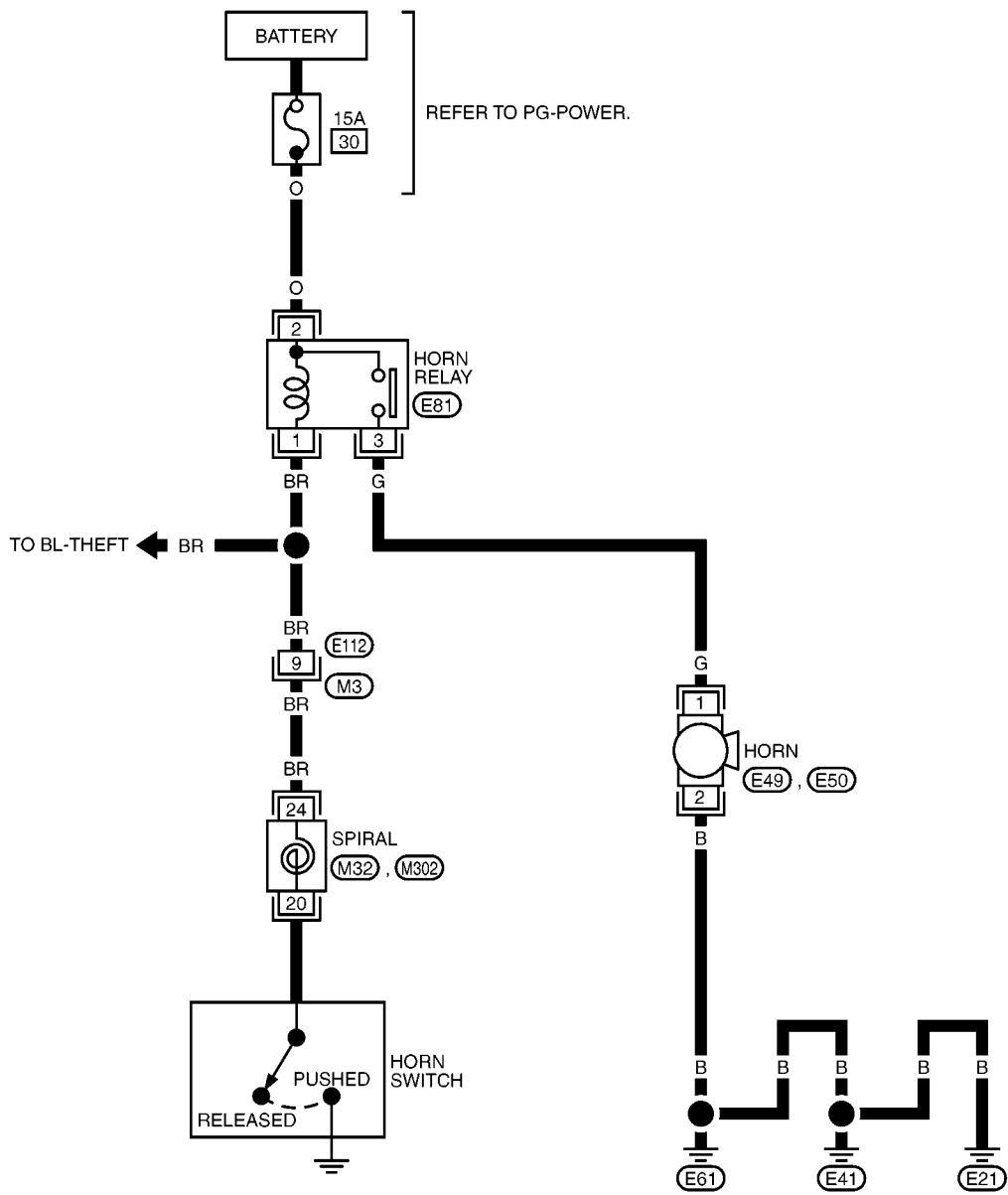
Align notches of ring and cluster lid D when installing.

HORN
Wiring Diagram — HORN —

PFP:25610

EKS00P6Q

WW-HORN-01



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

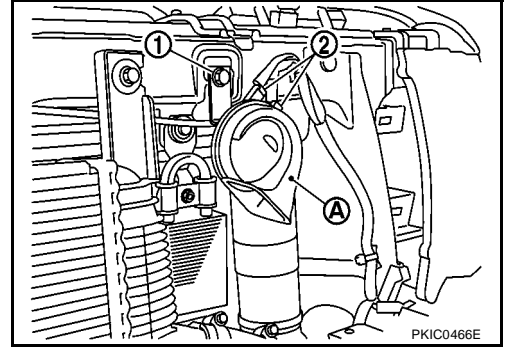
HORN

EKS00P6R

Removal and Installation of Horn

REMOVAL

1. Remove front grille. Refer to [EI-19, "FRONT GRILLE"](#) .
2. Disconnect horn connectors (2).
3. Remove horn mounting bolt (1) and remove horn (A) from vehicle.



INSTALLATION

Installation is the reverse order of removal.

Horn mounting bolt  : 17 N·m (1.7 kg-m, 13 ft-lb)