

SECTION **BCS**

BODY CONTROL SYSTEM

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BCS

PRECAUTIONS

PRECAUTIONS

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

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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.

Maintenance Information

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If any of following part is replaced, always replace with new* one.

If it's not (or fail to do so), the electrical system may not be operated properly.

*: New one means a virgin control unit that has never been energized on-board.

RHD MODELS

- BCM (Models without Intelligent Key system)
- Intelligent Key unit (Models with Intelligent Key system)
- ECM
- IPDM E/R
- Combination meter
- EPS control unit

LHD MODELS

- BCM (Models without Intelligent Key system)
- Intelligent Key unit (Models with Intelligent Key system)
- ECM

BCM (BODY CONTROL MODULE)

PFP:284B2

System Description

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BCM (Body Control Module) controls the operation of various electrical units installed on the vehicle.

BCM FUNCTION

BCM has a combination switch reading function for reading the operation of combination switches (light, wiper washer, turn signal) in addition to the function for controlling the operation of various electrical components. Also, it functions as an interface that receives signals from the A/C auto amplifier, and sends signals to ECM using CAN communication.

COMBINATION SWITCH READING FUNCTION

BCM reads combination switch (headlamp, wiper and washer, turn signal) status, and controls various electrical components according to the results.

BCM reads information of 20 switches and 5 diagnostic results by combining five output terminals (Output 1 - 5) and five input terminals (Input 1 - 5).

Refer to [LT-114, "COMBINATION SWITCH"](#).

SYSTEMS CONTROLLED BY BCM

- Power door lock system. Refer to [BL-16, "POWER DOOR LOCK SYSTEM"](#).
- Super lock system. Refer to [BL-59, "POWER DOOR LOCK — SUPER LOCK —"](#).
- Multi-remote control system. Refer to [BL-111, "MULTI-REMOTE CONTROL SYSTEM"](#).
- Power window system. Refer to [GW-32, "POWER WINDOW SYSTEM"](#).
- Interior room lamp timer. Refer to [LT-150, "INTERIOR ROOM LAMP"](#).
- Warning chime. Refer to [DI-52, "WARNING CHIME"](#).
- Turn signal and hazard warning lamps. Refer to [LT-98, "TURN SIGNAL AND HAZARD WARNING LAMPS"](#).
- Rear wiper. Refer to [WW-49, "REAR WIPER AND WASHER SYSTEM"](#).
- Rear fog lamp. Refer to [LT-88, "REAR FOG LAMP"](#).

SYSTEMS CONTROLLED BY BCM AND IPDM E/R

- NATS (Nissan Anti-Theft System). Refer to [BL-215, "NATS \(Nissan Anti-Theft System\)"](#).
- Front wiper. Refer to [WW-4, "FRONT WIPER AND WASHER SYSTEM"](#).
- Front washer. Refer to [WW-4, "FRONT WIPER AND WASHER SYSTEM"](#).
- Rear window defogger. Refer to [GW-12, "REAR WINDOW DEFOGGER"](#).
- Front fog lamp. Refer to [LT-73, "FRONT FOG LAMP"](#).
- Headlamp washer. Refer to [WW-73, "HEADLAMP WASHER"](#).

SYSTEMS CONTROLLED BY BCM AND INTELLIGENT KEY UNIT

- Intelligent Key system. Refer to [BL-130, "INTELLIGENT KEY SYSTEM"](#).

BCM (BODY CONTROL MODULE)

INPUT/OUTPUT

System	Input	Output
Multi-remote control system	Remote controller	<ul style="list-style-type: none"> ● Door lock actuator ● Back door release actuator ● Turn signal lamp (LH, RH)
Intelligent Key system	Intelligent Key unit	<ul style="list-style-type: none"> ● Door lock actuator ● Back door release actuator ● Turn signal lamp ● Combination meter
Power door lock system/ Super lock system	<ul style="list-style-type: none"> ● Key switch ● Door lock/unlock switch ● Door switches 	<ul style="list-style-type: none"> ● Door lock actuator ● Back door release actuator
Power supply (IGN) to power window system	Ignition power supply	<ul style="list-style-type: none"> ● Power window main switch ● Front power window switch (passenger side)
Power supply (BAT) to power window system	Battery power supply	<ul style="list-style-type: none"> ● Power window main switch ● Front power window switch (passenger side)
Headlamp	Combination switch	IPDM E/R (headlamp relay)
Tail lamp	Combination switch	IPDM E/R (tail lamp relay)
Rear fog lamp	Combination switch	Rear combination lamp (Refer fog)
Turn signal lamp	Combination switch	<ul style="list-style-type: none"> ● Turn signal lamps ● Combination meter
Hazard warning lamp	Hazard switch	<ul style="list-style-type: none"> ● Turn signal lamps ● Combination meter
Interior room lamp timer	<ul style="list-style-type: none"> ● Key switch ● Intelligent Key unit (key switch signal) ● Remote controller ● Door lock/unlock switch ● Front door switch (driver side) ● Door switches 	Interior room lamp
Ignition key warning chime	<ul style="list-style-type: none"> ● Key switch ● Intelligent Key unit (key switch signal) ● Front door switch (driver side) 	Combination meter (warning buzzer)
Light warning chime	<ul style="list-style-type: none"> ● Combination switch ● Key switch ● Intelligent Key unit (key switch signal) ● Front door switch (driver side) 	Combination meter (warning buzzer)
Front wiper with rain sensor	<ul style="list-style-type: none"> ● Combination switch ● Combination meter ● Rain sensor 	IPDM E/R (front wiper relays)
Front washer	Combination switch	Washer motor
Rear wiper	Combination switch	Rear wiper motor
Rear washer	Combination switch	Washer motor
Headlamp washer	Headlamp washer switch	Headlamp washer relay (via IPDM E/R)
Rear window defogger	<ul style="list-style-type: none"> ● A/C auto amp. (Rear window defogger switch) (with auto amp). ● Heater control panel (Rear window defogger switch) (with manual A/C). 	IPDM E/R (rear window defogger relay)

BCM (BODY CONTROL MODULE)

System	Input	Output
A/C switch signal	A/C auto amp.	ECM
Blower fan switch signal	A/C auto amp.	ECM

CAN COMMUNICATION CONTROL

CAN communication is capable of dealing with a lot of information through the two communication lines (CAN L line, CAN H line) connecting control units in the system. Also each control unit functions to transmit and receive data, and reads necessary information only.

BCM STATUS CONTROL

BCM changes its status depending on the operation status in order to save power consumption.

1. CAN communication status
 - With ignition switch ON, CAN communicates with other control units normally.
 - Control by BCM is being operated properly.
 - When ignition switch is OFF, switching to sleep mode is possible.
 - Even when ignition switch is OFF, if CAN communication with IPDM E/R and combination meter is active, CAN communication status is active.
2. Pre-sleep status
 - This is the status to stop CAN communication when ignition switch is turned OFF.
 - It transmits sleep request signal to IPDM E/R and combination meter.
 - Two seconds after CAN communication with another control unit stops, it switches to CAN communication inactive status.
3. CAN communication inactive status
 - With ignition switch OFF, CAN communication is not active.
 - With ignition switch OFF, control performed only by BCM is active.
 - Two seconds after CAN communication with another control unit stops, it switches to CAN communication inactive status.
4. Sleep status
 - BCM is activated with low-current-consumption mode.
 - CAN communication is not active.
 - When CAN communication operation is detected, it switches to CAN communication status.
 - When control performed only by BCM is required by switch, it shifts to CAN communication inactive mode.
 - It changes combination switch reading function.

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CAN Communication SYSTEM DESCRIPTION

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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

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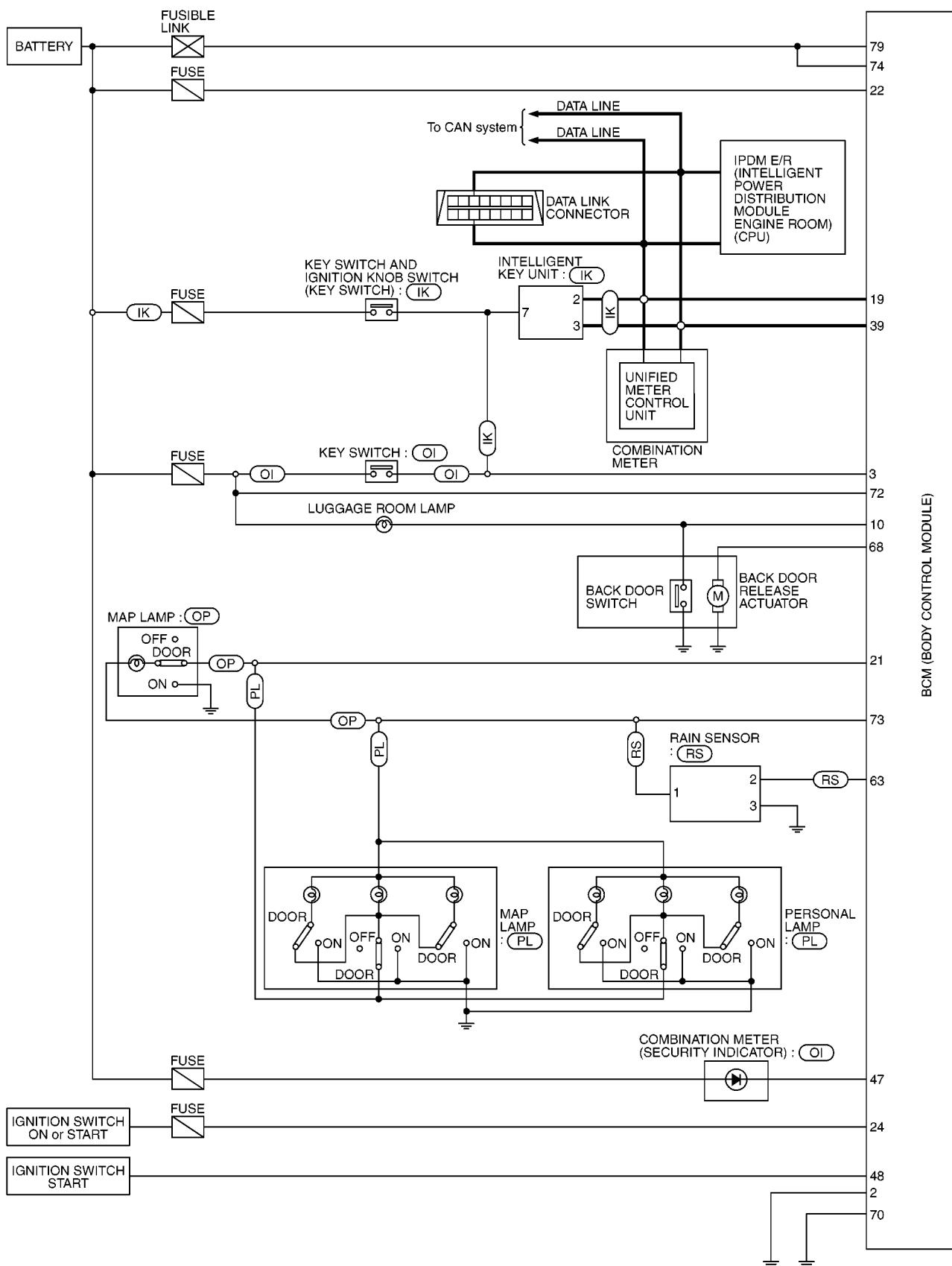
Refer to [LAN-21, "CAN COMMUNICATION"](#) .

BCM (BODY CONTROL MODULE)

Schematic

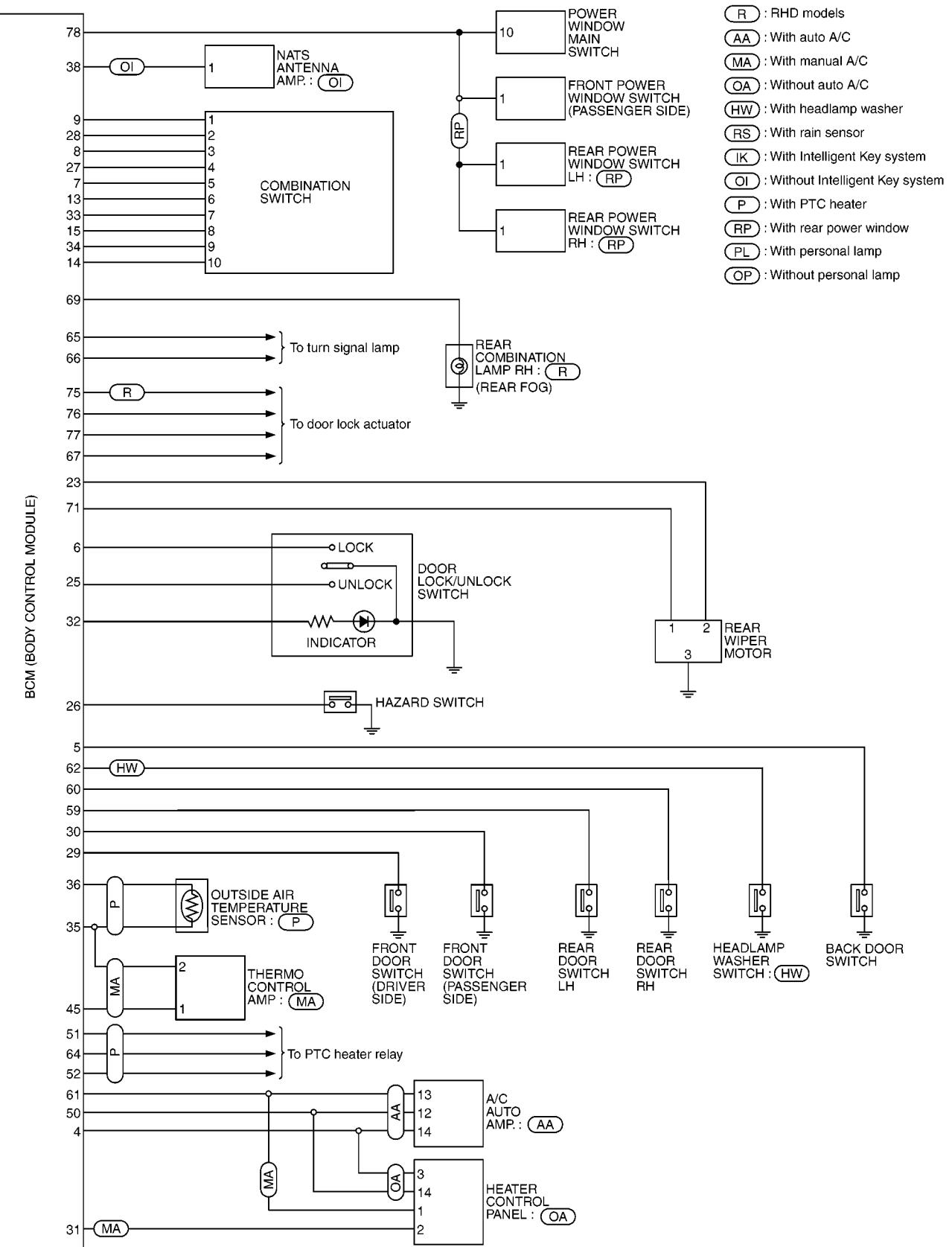
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BCM (BODY CONTROL MODULE)



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BCM (BODY CONTROL MODULE)

CONSULT-II Function (BCM)

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CONSULT-II can display each diagnostic item using the diagnostic modes shown following. Data is received and transmitted via the control module communication line.

BCM diagnostic test item	Check item, diagnostic test mode	Content
Inspection by part	WORK SUPPORT	Setting of each function can be changed.
	SELF-DIAGNOSTIC RESULTS	BCM performs self-diagnosis of CAN communication.
	DATA MONITOR	Displays the input data of BCM in real time.
	CAN DIAG SUPPORT MNTR	The results of transmit/receive diagnosis of CAN communication can be read.
	ACTIVE TEST	Gives a drive signal to a load to check the operation.
	ECU PART NUMBER	Displays BCM parts number
	CONFIGURATION	Performs BCM configuration read/write functions.

CONSULT-II INSPECTION PROCEDURE

Refer to [GI-36, "CONSULT-II Start Procedure"](#).

ITEMS OF EACH PART

x:Applicable

System and item	"TEST ITEM" screen	Diagnostic test mode (Inspection by part)					
		WORK SUP-PORT	SELF-DIAG RESULT S	DATA MONI-ITOR	CAN DIAG SUP-PORT MNTR	ACTIVE TEST	ECU PARTS NUMBER
Power door lock system	DOOR LOCK	x		x		x	
Rear window defogger	REAR DEFOGGER			x		x	
Ignition key warning chime	BUZZER	KEY WARN ALM		x		x	
Light warning chime		LIGHT WARN ALM		x		x	
Back door warning chime		BACK DR OPEN WARN		x		x	
Door warning indicator		DOOR WARN-ING IND		x		x	
Interior room lamp timer	INT LAMP			x		x	
Multi-remote control system	MULTI REMOTE ENT			x			
Headlamp	HEAD LAMP	x		x		x	
Wiper	WIPER	x		x		x	
Turn signal lamp Hazard warning lamp	FLASHER	x		x		x	
A/C switch signal Blower fan switch signal	AIR CONDITIONER			x		x	
Intelligent Key system	INTELLIGENT KEY			x			
Combination switch	COMB SW			x			
Theft warning system (Dealer option)	THEFT ALM	x					
BCM	BCM		x	x	x		x

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BCM (BODY CONTROL MODULE)

Configuration DESCRIPTION

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There are two CONFIGURATION functions, as follows.

READ CONFIGURATION is a function for confirming vehicle configuration written on BCM.

WRITE CONFIGURATION is a function for writing a vehicle configuration to BCM.

CAUTION:

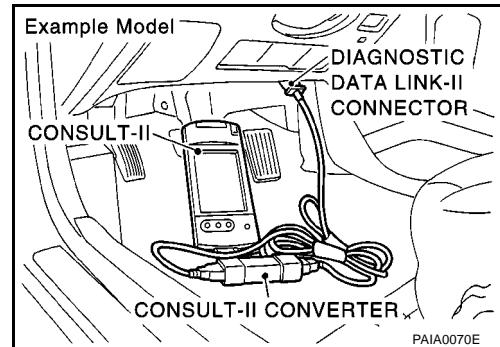
- When replacing BCM, completely perform WRITE CONFIGURATION with CONSULT-II.
- Orderly complete the procedure of WRITE CONFIGURATION.
- If you set incorrect WRITE CONFIGURATION, vehicle operation will not be correct.
- Configuration is different by each vehicle model, confirm configuration in each case.

READ CONFIGURATION PROCEDURE

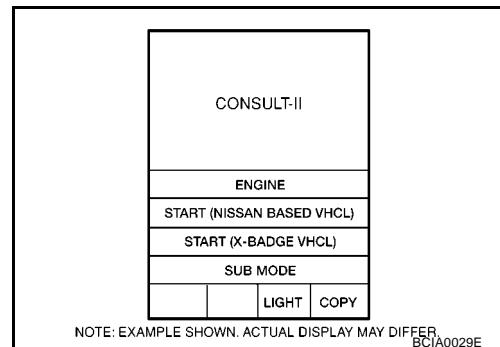
CAUTION:

If CONSULT-II is used with no connection of CONSULT 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 the data link connector, then turn the ignition switch ON.

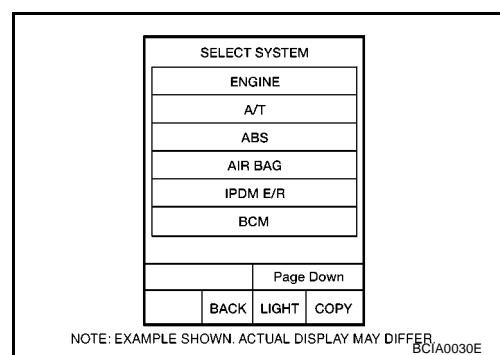


- Touch "START(NISSAN BASED VHCL)".



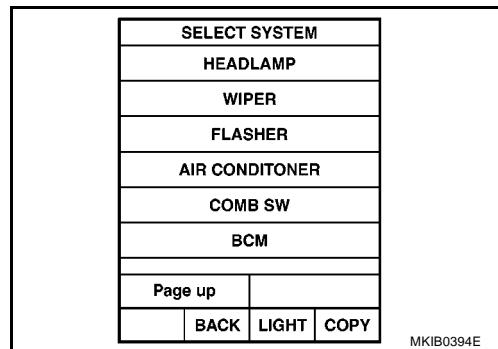
- Touch "BCM" on "SELECT SYSTEM" screen.

If "BCM" is not indicated, go to [GI-38, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



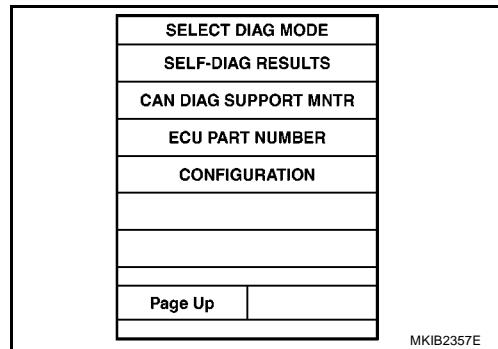
BCM (BODY CONTROL MODULE)

4. Touch “BCM” on “SELECT TEST SYSTEM” screen.



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5. Touch “CONFIGURATION” on “SELECT DIAG MODE” screen.

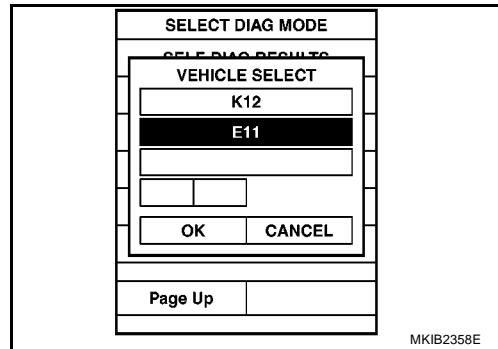


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6. Touch “E11”, and “OK” on “VEHICLE SELECT” screen.
For canceling, touch “CANCEL” on “VEHICLE SELECT” screen.

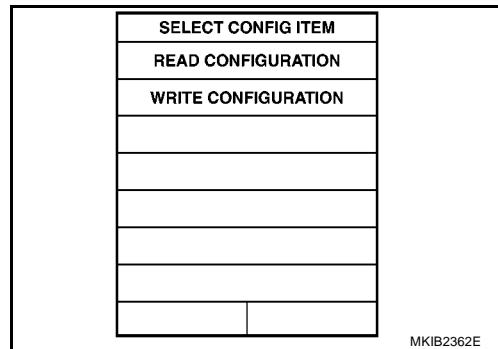
NOTE:

Confirm vehicle model on [GI-47, "IDENTIFICATION PLATE"](#) .



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7. Touch “READ CONFIGURATION” on “SELECT CINFIG ITEM” screen.



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BCM (BODY CONTROL MODULE)

8. Configuration of brand-new BCM are printed out automatically.
 Configuration of brand-new BCM before executing "WRITE CONFIGURATION" is as follows.

MANUAL SET ITEM	
ITEM	SET VAL
HANDLE	LHD
DTRL	OFF
I-KEY	WITHOUT
RAIN SENSOR	WITHOUT
AIR COND	HEATER
PTC HEATER	WITHOUT
THEFT ALARM	WITHOUT
RETRACT H/TOP	WITHOUT

AUTO SET ITEM	
RR DEF SET	YET
H/L WASH FREQ	5
DONGLE	OFF
SUPER LOCK	WITH
DOOR LCK SET 1	5
DOOR LCK SET 2	7
LIT OFF TIMER	ON
AUTO LT BEEP	WITH
AUTO LT TIMER	—
TURN SIG TIME	WITHOUT
DTRL SW LBEAM	WITHOUT
DTRL SW RELAY	WITH
RR ADD WIPE	WITHOUT

NISSAN CONSULT-II READ CONFIGURATION	
SYSTEM	BCM
DATE	MM/DD/YYYY HH:MM:SS
P/#	284B2-XXXXX
VEHICLE	XX
MANUAL SETTING ITEM	
Items	Setting Value
HANDLE	LHD
DTRL	OFF
I-KEY	WITHOUT
RAIN SENSOR	WITHOUT
AIR COND	MANUAL A/C
PTC HEATER	WITH
THEFT ALARM	WITHOUT
RETRACT H/TOP	WITHOUT
AUTO SETTING ITEM	
Items	Setting Value
RR DEF SET	YET

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9. Touch "BACK" on "READ CONFIGURATION" screen.

READ CONFIGURATION	
ITEM	SET VAL
HANDLE	LHD
DTRL	OFF
I-KEY	WITHOUT
RAIN SENSOR	WITHOUT
AIR COND	MANUAL A/C
PTC HEATER	WITH
MODE	BACK
BACK	LIGHT
LIGHT	COPY

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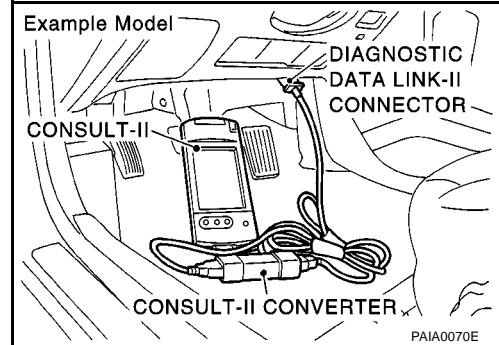
BCM (BODY CONTROL MODULE)

WRITE CONFIGURATION PROCEDURE

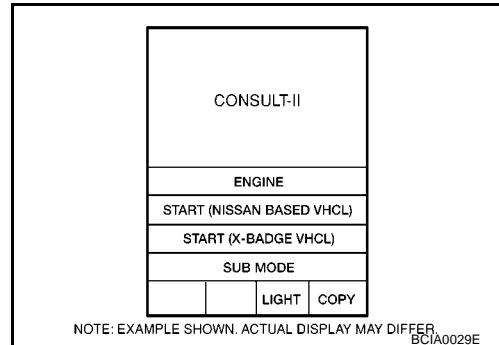
CAUTION:

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

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

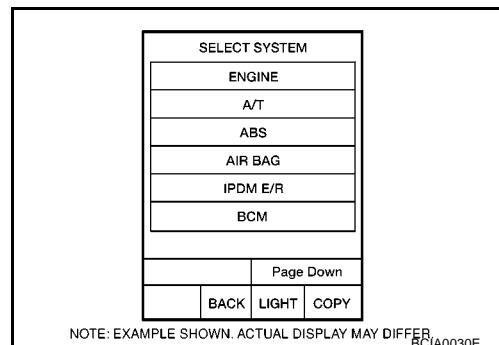


2. Touch "START(NISSAN BASED VHCL)".

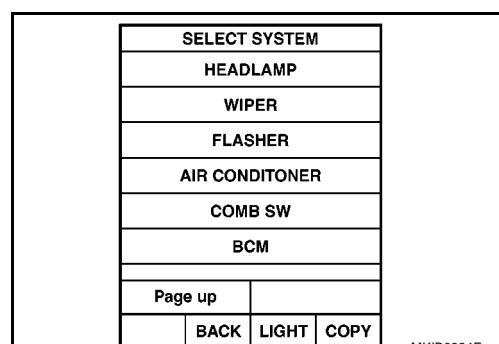


3. Touch "BCM" on "SELECT SYSTEM" screen.

If "BCM" is not indicated, go to [GI-38, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#) .

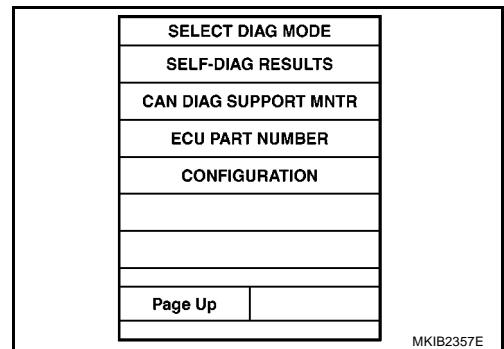


4. Touch "BCM" on "SELECT TEST SYSTEM" screen.



BCM (BODY CONTROL MODULE)

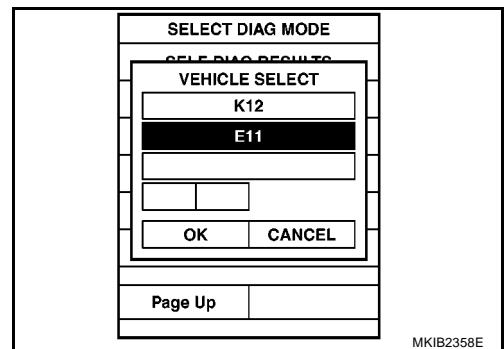
5. Touch “CONFIGURATION” on “SELECT DIAG MODE” screen.



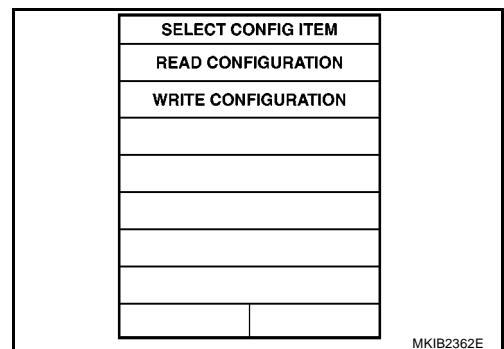
6. Touch “E11”, and “OK” on “VEHICLE SELECT” screen.
For canceling, touch “CANCEL” on “VEHICLE SELECT” screen.

NOTE:

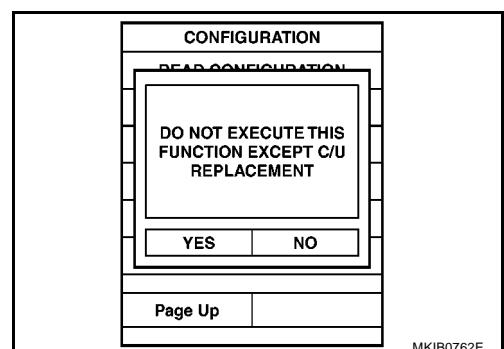
Confirm vehicle model on [GI-47, "IDENTIFICATION PLATE"](#) .



7. Touch “WRITE CONFIGURATION” on “SELECT CONFIG ITEM” screen.



8. Touch “YES”.
For canceling, touch “NO”.



BCM (BODY CONTROL MODULE)

9. Select the configuration for the vehicle on "WRITE CONFIGURATION" screen based on the following ITEM LIST.
 < ITEM LIST >

ITEM	SET VAL	NOTE
HANDLE	LHD	For LHD models
	RHD	For RHD models
DTRL (Day time Running Light)	ON	With day time light system*1
	OFF	Without day time light system*1
I-KEY (Intelligent Key system)	WITH	With Intelligent Key system
	WITHOUT	Without Intelligent Key system
RAIN SENSOR	WITH	With rain sensor*1
	WITHOUT	Without rain sensor*1
AIR COND	AUTO A/C	With auto A/C*1
	MANUAL A/C	With manual A/C*1
	HEATER	Heater*1
PTC HEATER	WITH	With PTC heater*2
	WITHOUT	Without PTC heater*2
THEFT ALARM	WITH	With theft warning system*3
	WITHOUT	Without theft warning system*3
RETRACT H/TOP*4	WITH	With retractable hard top
	WITHOUT	Without retractable hard top

WRITE CONFIGURATION			
PLEASE CHANGE THE BELOW SETTING VALUE TO CONNECTED VEHICLE CONFIGURATION, REFERRING TO S.M.			
ITEM	SET VAL		
HANDLE	LHD		
DTRL	OFF		
I-KEY	WITHOUT		
RAIN SENSOR	WITHOUT		
	Page Down		
CHNG SETTING	CANCEL		
MODE	BACK	LIGHT	COPY

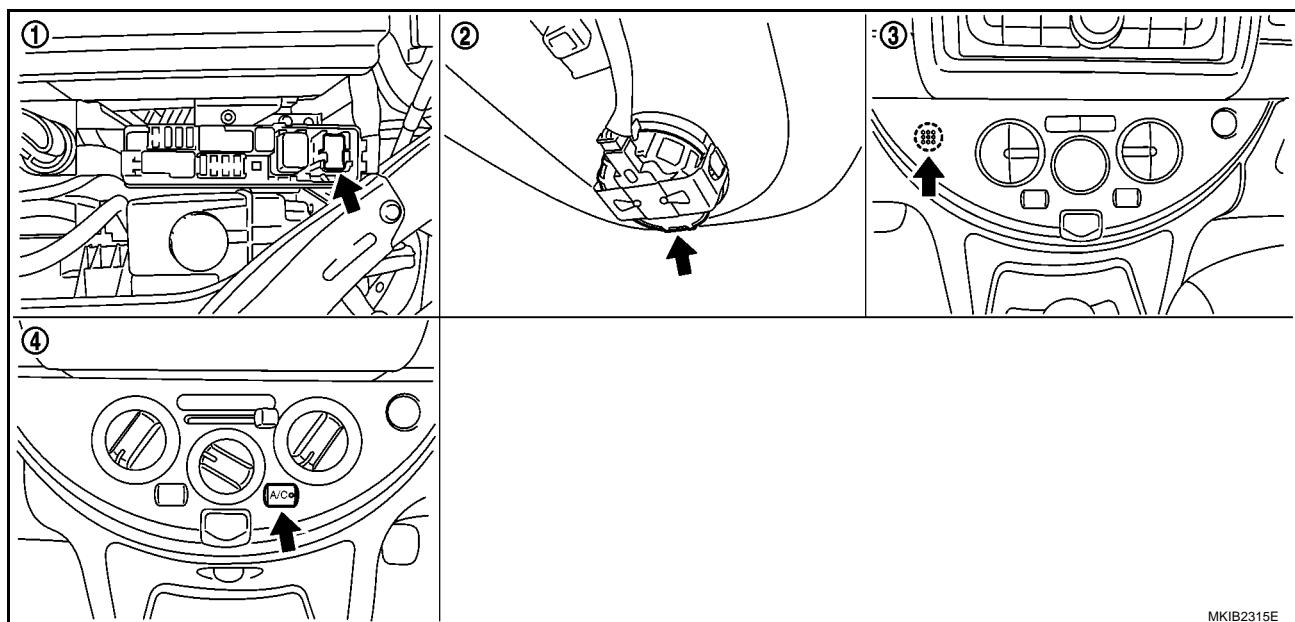
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*1: Refer to bottom illustration to specify the items for "SET VAL".

*2: Models with PTC heater have PTC heater relays. Refer to Harness Layout, [PG-59. "ENGINE ROOM HARNESS/K9K ENGINE MODELS"](#), to confirm whether PTC heater relays are equipped or not.

*3: Confirm with the customer if the vehicle is equipped with the optional parts.

*4: Always select "WITHOUT", because retractable hard top is not equipped to E11.



1. Daytime light relay

2. Light and rain sensor

3. In-vehicle sensor (for Auto A/C)

4. A/C button

For canceling, touch "CANCEL".

10. Touch "CONFIG" on "WRITE CONFIGURATION" screen.

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BCM (BODY CONTROL MODULE)

CAUTION:

Make sure to touch “CONFIG” even if the indicated configuration of brand new BCM is same as the desirable configuration.

If not, configuration which is set automatically by selecting vehicle model can not be memorized.

11. Touch “OK” on “WRITE CONFIGURATION” screen.
When touched “CANCEL”, go to previous screen.

WRITE CONFIGURATION	
ARE YOU SURE TO CHANGE THE SETTING? PRESS 'OK' THEN SETTING VALUE IS CHANGED.	
ITEM	SET VAL
I-KEY	WITH
RAIN SENSOR	WITHOUT
AIR COND	MANUAL A/C
PTC HEATER	WITH
Page Up	
OK	CANCEL
MODE	BACK
	LIGHT
	COPY

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12. Wait until the next screen during setting.

WRITE CONFIGURATION	
NOW SETTING...	
ITEM	SET VAL
HANDLE	LHD
DTRL	OFF
I-KEY	WITH
RAIN SENSOR	WITHOUT
	Page Down
OK	
	LIGHT
	COPY

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13. WRITE CONFIGURATION results are printed out automatically.
Check “WRITE CONFIGURATION” is correctly executed by comparing sheet automatically printed out with desirable configuration.

NISSAN CONSULT-II WRITE CONFIGURATION	
SYSTEM	BCM
DATE	MM/DD/YYYY HH:MM:SS
P/#	284B2-XXXXX
VEHICLE	XX
MANUAL SETTING ITEM	
Items	Setting Value
HANDLE	LHD
DTRL	OFF
I-KEY	WITHOUT
RAIN SENSOR	WITHOUT
AIR COND	MANUAL A/C
PTC HEATER	WITH
THEFT ALARM	WITHOUT
RETRACT H/TOP	WITHOUT
AUTO SETTING ITEM	
Items	Setting Value
RR DEF SET	

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BCM (BODY CONTROL MODULE)

14. Touch "OK" on "WRITE CONFIGURATION" screen.
WRITE CONFIGURATION is completed.

WRITE CONFIGURATION	
PLEASE CHECK THE PRINTOUT AND PRESS 'OK' TO RETURN SYSTEM SELECTION SCREEN.	
ITEM	SET VAL
HANDLE	LHD
DTRL	OFF
I-KEY	WITH
RAIN SENSOR	WITHOUT
	Page Down
OK	
	LIGHT COPY

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CAN Communication Inspection With CONSULT-II (Self-Diagnosis)

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1. CHECK SELF-DIAGNOSTIC RESULT

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. Connect to CONSULT-II, and select "BCM" on "SELECT SYSTEM" screen.
2. Select "BCM" on "SELECT TEST ITEM" screen.
3. Touch "SELF-DIAG RESULTS", on "SELECT DIAG MODE" screen.
4. Check display content in self-diagnostic results.

CONSULT-II display code	Diagnosis item
U1000	TRANSMIT DIAG
	ECM
	IPDM E/R
	METER / M&A
	I-KEY
	VDC / TCS / ABS

Contents displayed

No malfunction>>INSPECTION END

Malfunction in CAN communication system>>After printing the monitor items, go to "CAN System". Refer to [LAN-3, "Precautions When Using CONSULT-II"](#).

BCS

Removal and Installation of BCM

BKS0026Y

CAUTION:

Always replace with new* BCM when the BCM replacement is required.

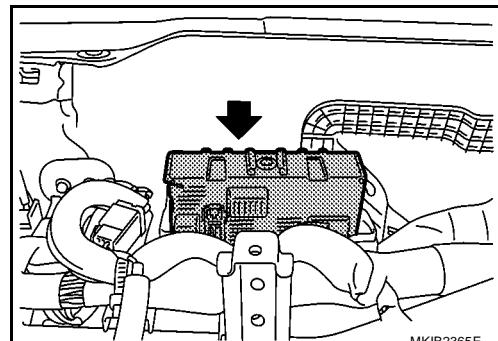
*: New one means virgin control unit that has never been energized on-board.

REMOVAL

NOTE:

If possible, before removing BCM, retrieve current BCM configuration to use for reference when configuring brand-new BCM after installation. Refer to [BCS-10, "Configuration"](#).

1. Remove instrument upper panel. Refer to [IP-4, "INSTRUMENT PANEL ASSEMBLY"](#).
2. Disconnect BCM connector.
3. Remove BCM.



MKIB2365E

BCM (BODY CONTROL MODULE)

INSTALLATION

- Install in the reverse order of removal.