

SECTION **PG**

**POWER SUPPLY, GROUND & CIRCUIT ELEMENTS**

**CONTENTS**

<b>POWER SUPPLY ROUTING CIRCUIT</b> .....	<b>3</b>	<b>GROUND</b> .....	<b>29</b>
Schematic .....	3	Ground Distribution .....	29
Wiring Diagram — POWER — .....	4	<b>MAIN HARNESS</b> .....	29
BATTERY POWER SUPPLY — IGNITION SW.		ENGINE ROOM HARNESS .....	32
IN ANY POSITION .....	4	ENGINE CONTROL HARNESS .....	34
ACCESSORY POWER SUPPLY — IGNITION		BODY HARNESS .....	35
SW. IN “ACC” OR “ON” .....	9	BODY NO. 2 HARNESS .....	37
IGNITION POWER SUPPLY — IGNITION SW.		<b>HARNESS</b> .....	<b>38</b>
IN “ON” AND/OR “START” .....	10	Harness Layout .....	38
Fuse .....	16	HOW TO READ HARNESS LAYOUT .....	38
Fusible Link .....	16	OUTLINE .....	39
Circuit Breaker .....	16	<b>MAIN HARNESS</b> .....	40
<b>IPDM E/R (INTELLIGENT POWER DISTRIBUTION</b>		ENGINE ROOM HARNESS .....	43
<b>MODULE ENGINE ROOM)</b> .....	<b>17</b>	ENGINE CONTROL HARNESS .....	46
System Description .....	17	BODY HARNESS .....	48
SYSTEMS CONTROLLED BY IPDM E/R .....	17	BODY NO. 2 HARNESS .....	50
CAN COMMUNICATION LINE CONTROL .....	17	ROOM LAMP HARNESS .....	51
IPDM E/R STATUS CONTROL .....	18	FRONT DOOR HARNESS .....	52
CAN Communication System Description .....	18	REAR DOOR HARNESS .....	53
CAN Communication Unit .....	18	BACK DOOR HARNESS .....	54
Function of Detecting Ignition Relay Malfunction ...	18	Wiring Diagram Codes (Cell Codes) .....	55
CONSULT-II Function (IPDM E/R) .....	19	<b>ELECTRICAL UNITS LOCATION</b> .....	<b>58</b>
CONSULT-II INSPECTION PROCEDURE .....	19	Electrical Units Location .....	58
SELF-DIAG RESULTS .....	19	ENGINE COMPARTMENT .....	58
DATA MONITOR .....	19	PASSENGER COMPARTMENT .....	59
ACTIVE TEST .....	21	LUGGAGE COMPARTMENT .....	61
Auto Active Test .....	21	<b>HARNESS CONNECTOR</b> .....	<b>62</b>
DESCRIPTION .....	21	Description .....	62
OPERATION PROCEDURE .....	21	HARNESS CONNECTOR (TAB-LOCKING	
INSPECTION IN AUTO ACTIVE TEST MODE ...	22	TYPE) .....	62
Schematic .....	24	HARNESS CONNECTOR (SLIDE-LOCKING	
IPDM E/R Terminal Arrangement .....	25	TYPE) .....	63
IPDM E/R Power/Ground Circuit Inspection .....	26	<b>ELECTRICAL UNITS</b> .....	<b>64</b>
Inspection with CONSULT-II (Self-Diagnosis) .....	27	Terminal Arrangement .....	64
Removal and Installation of IPDM E/R .....	28	<b>SMJ (SUPER MULTIPLE JUNCTION)</b> .....	<b>66</b>
REMOVAL .....	28	Terminal Arrangement .....	66
INSTALLATION .....	28	<b>STANDARDIZED RELAY</b> .....	<b>67</b>
		Description .....	67
		NORMAL OPEN, NORMAL CLOSED AND	

---

MIXED TYPE RELAYS .....	67	<b>FUSE, FUSIBLE LINK AND RELAY BOX .....</b>	<b>70</b>
TYPE OF STANDARDIZED RELAYS .....	67	Terminal Arrangement .....	70
<b>FUSE BLOCK - JUNCTION BOX (J/B) .....</b>	<b>69</b>		
Terminal Arrangement .....	69		

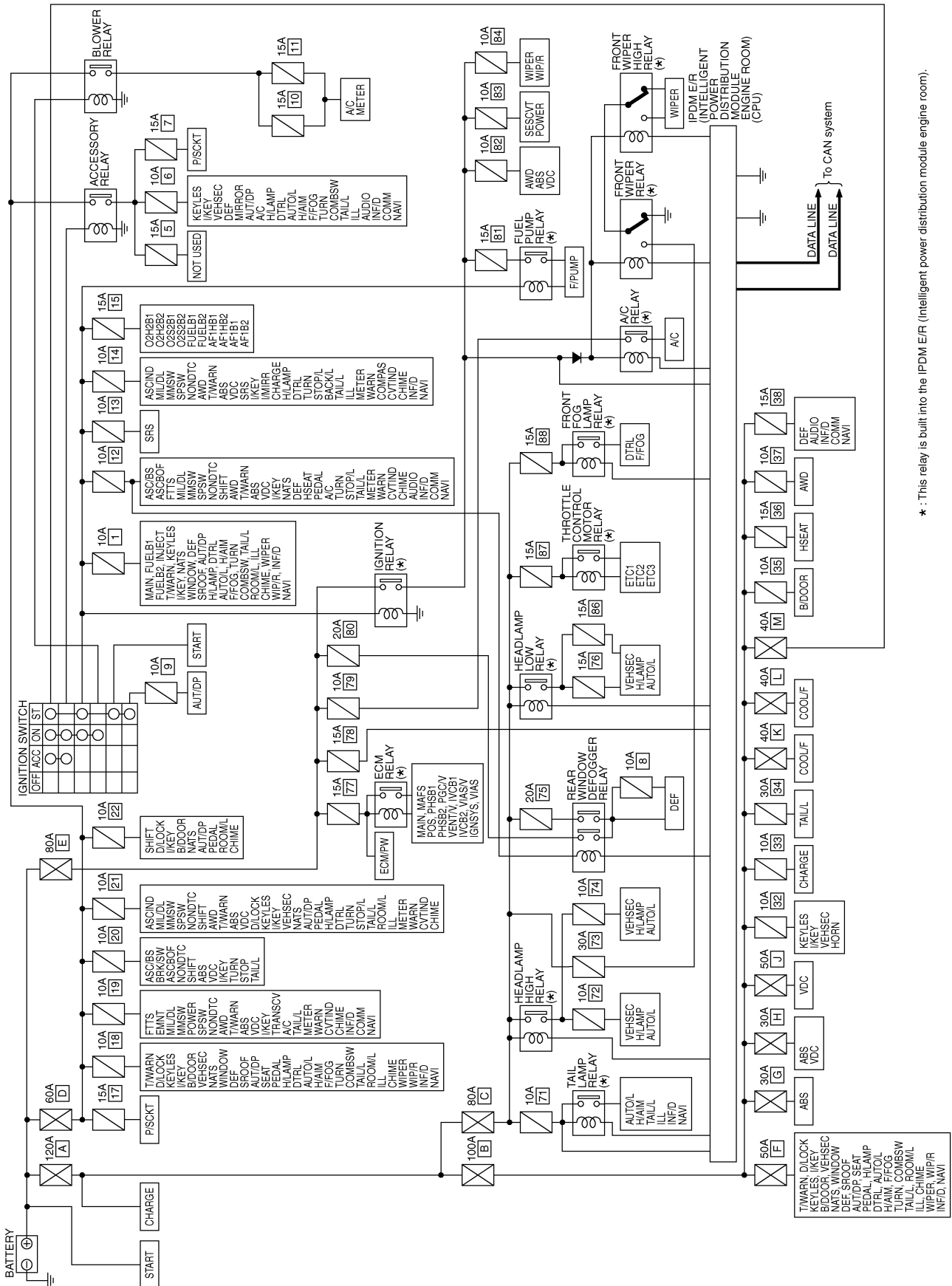
# POWER SUPPLY ROUTING CIRCUIT

PPF:24110

NKS0025A

## POWER SUPPLY ROUTING CIRCUIT

### Schematic



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

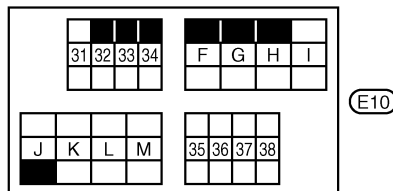
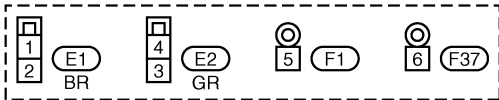
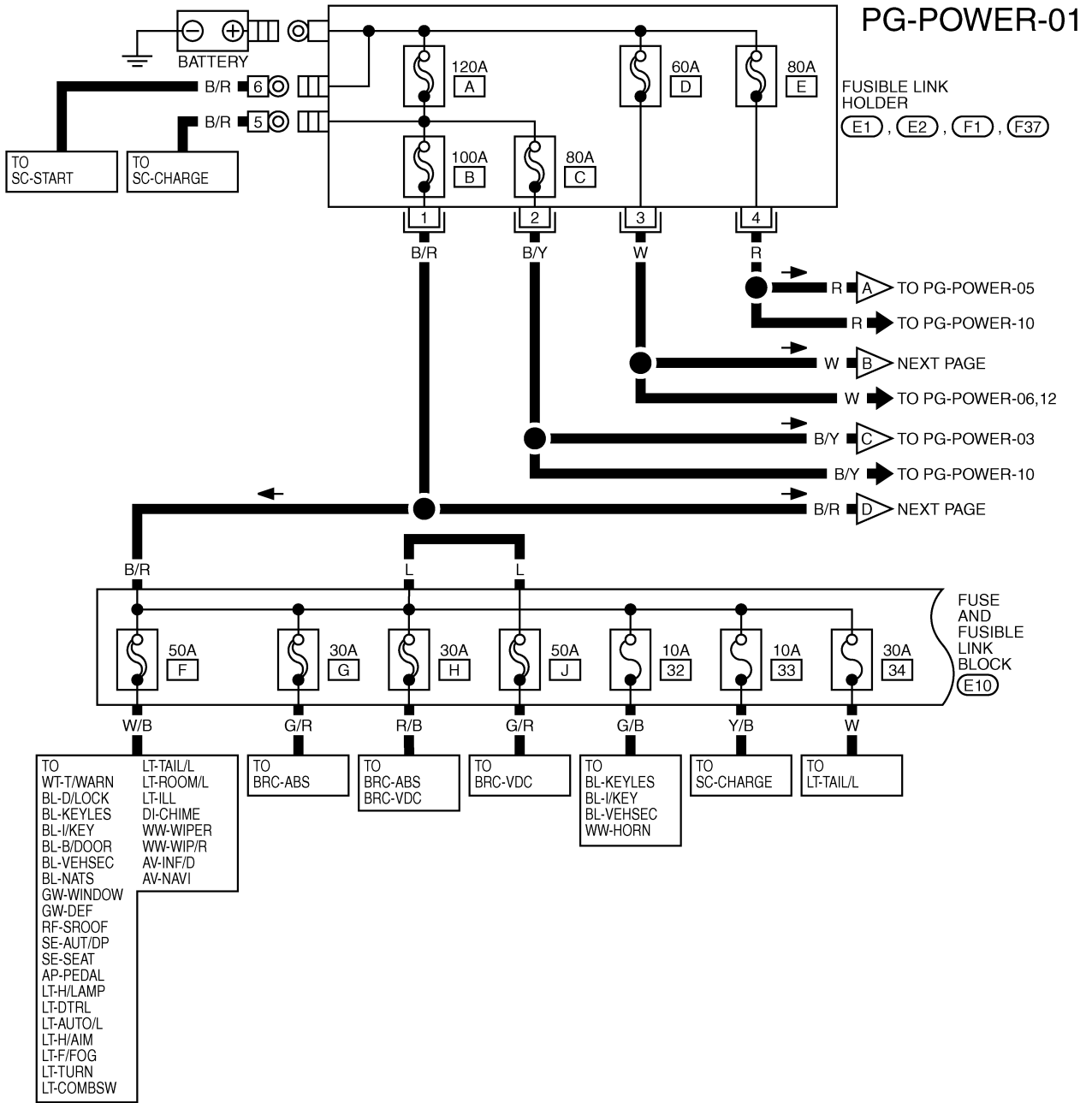
A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P  
Q  
R  
S  
T  
U  
V  
W  
X  
Y  
Z

PG

# POWER SUPPLY ROUTING CIRCUIT

NKS0025B

## Wiring Diagram — POWER — BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION

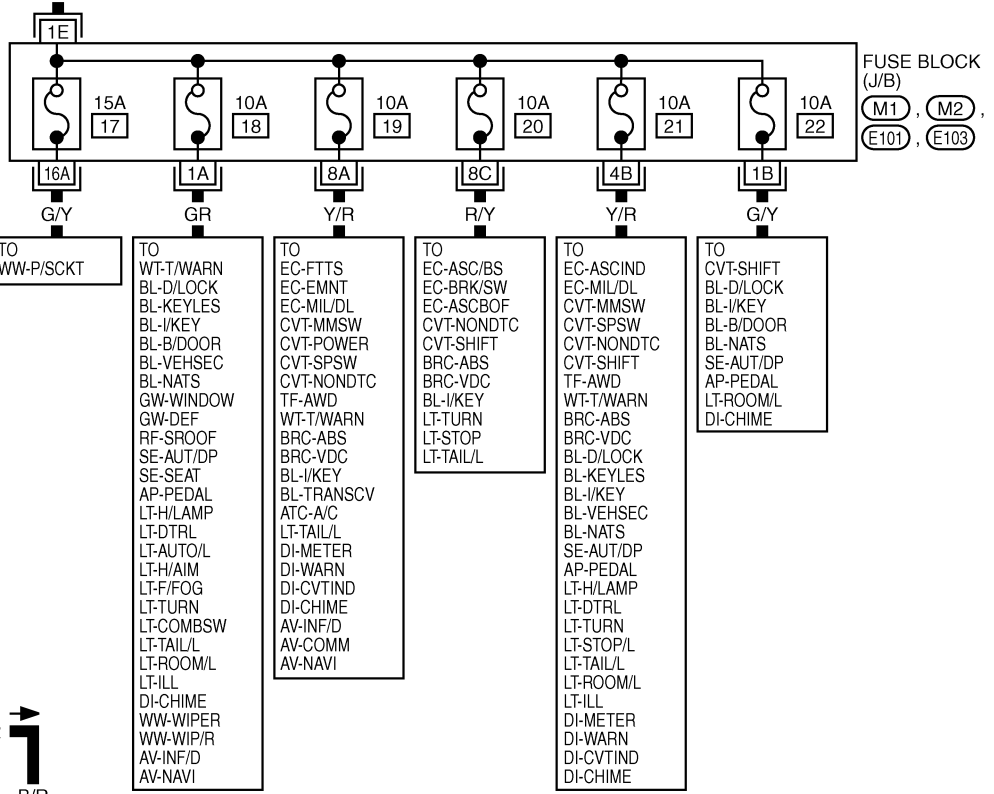


TKWB2681E

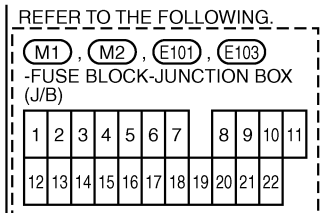
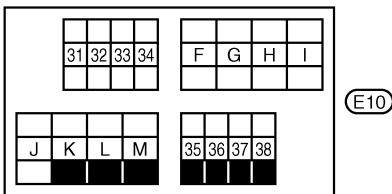
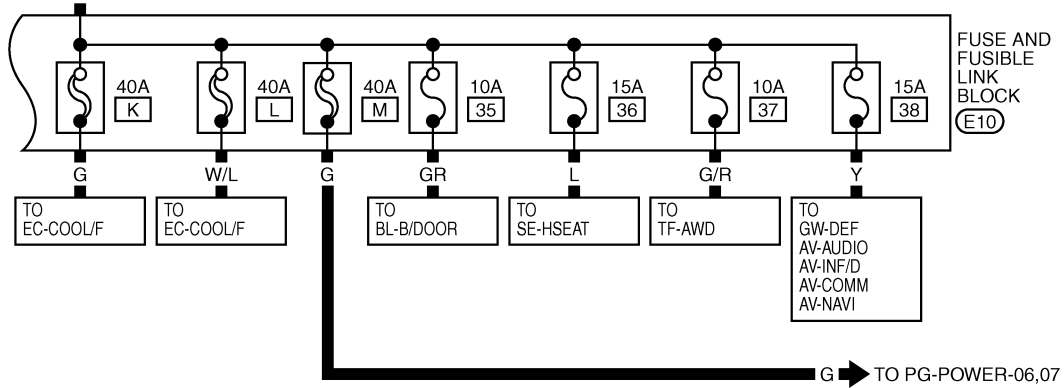
# POWER SUPPLY ROUTING CIRCUIT

PG-POWER-02

PRECEDING PAGE



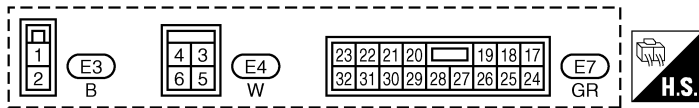
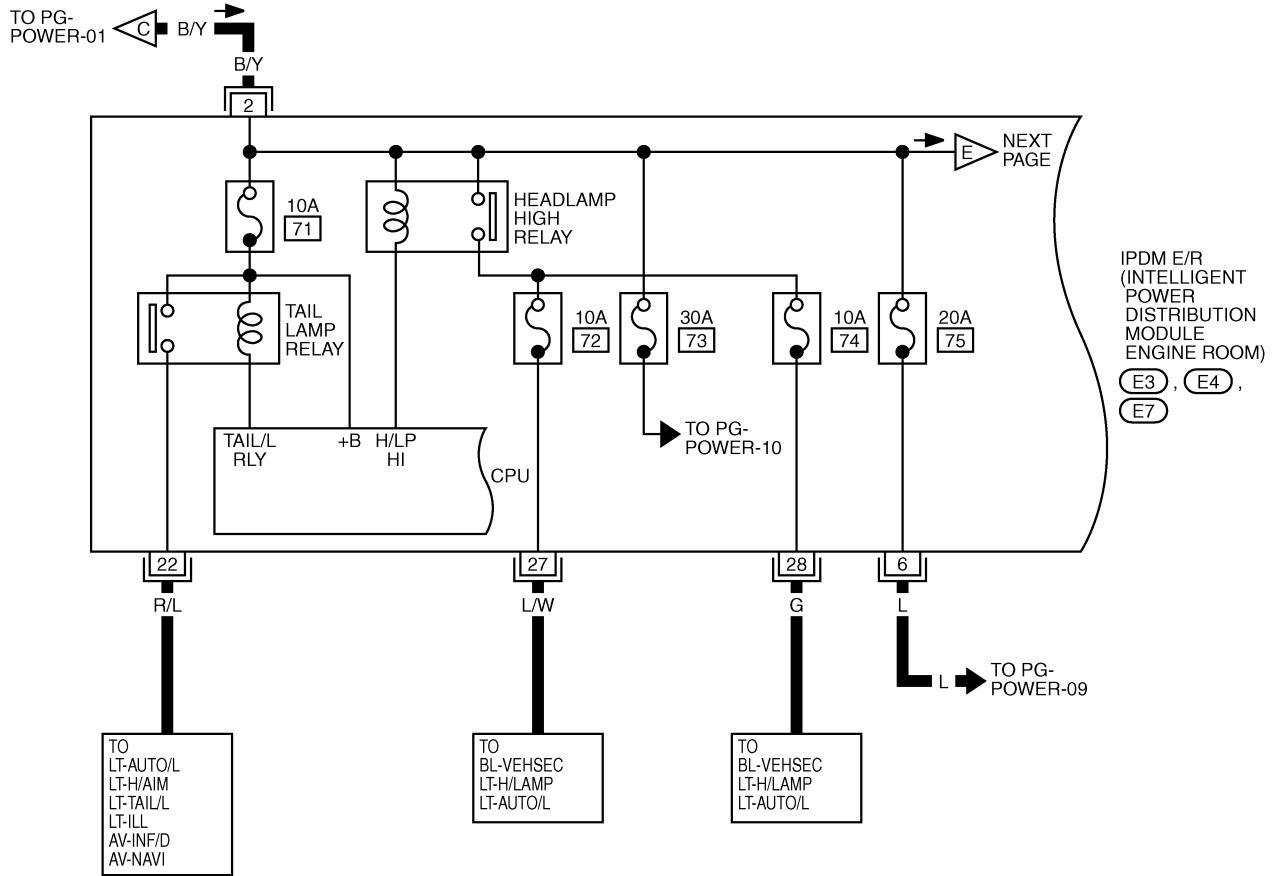
PRECEDING PAGE



TKWB2682E

# POWER SUPPLY ROUTING CIRCUIT

PG-POWER-03

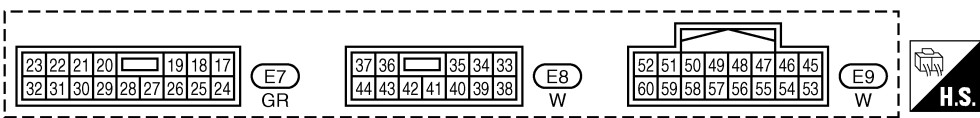
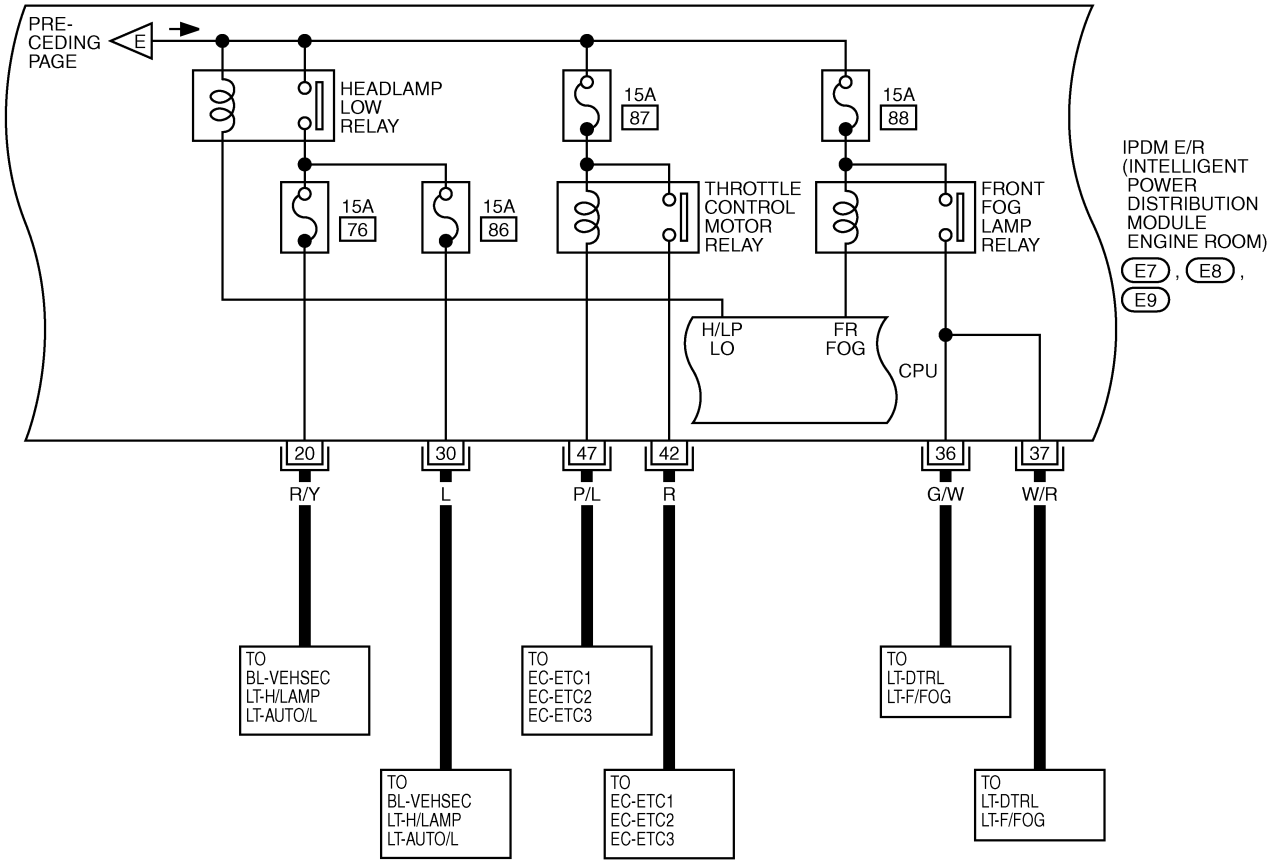


TKWB2683E

# POWER SUPPLY ROUTING CIRCUIT

PG-POWER-04

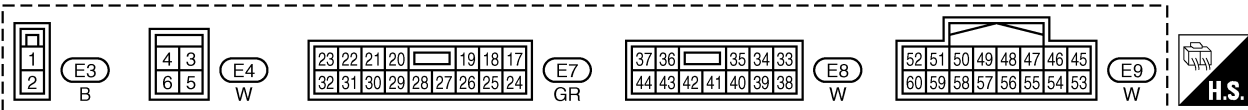
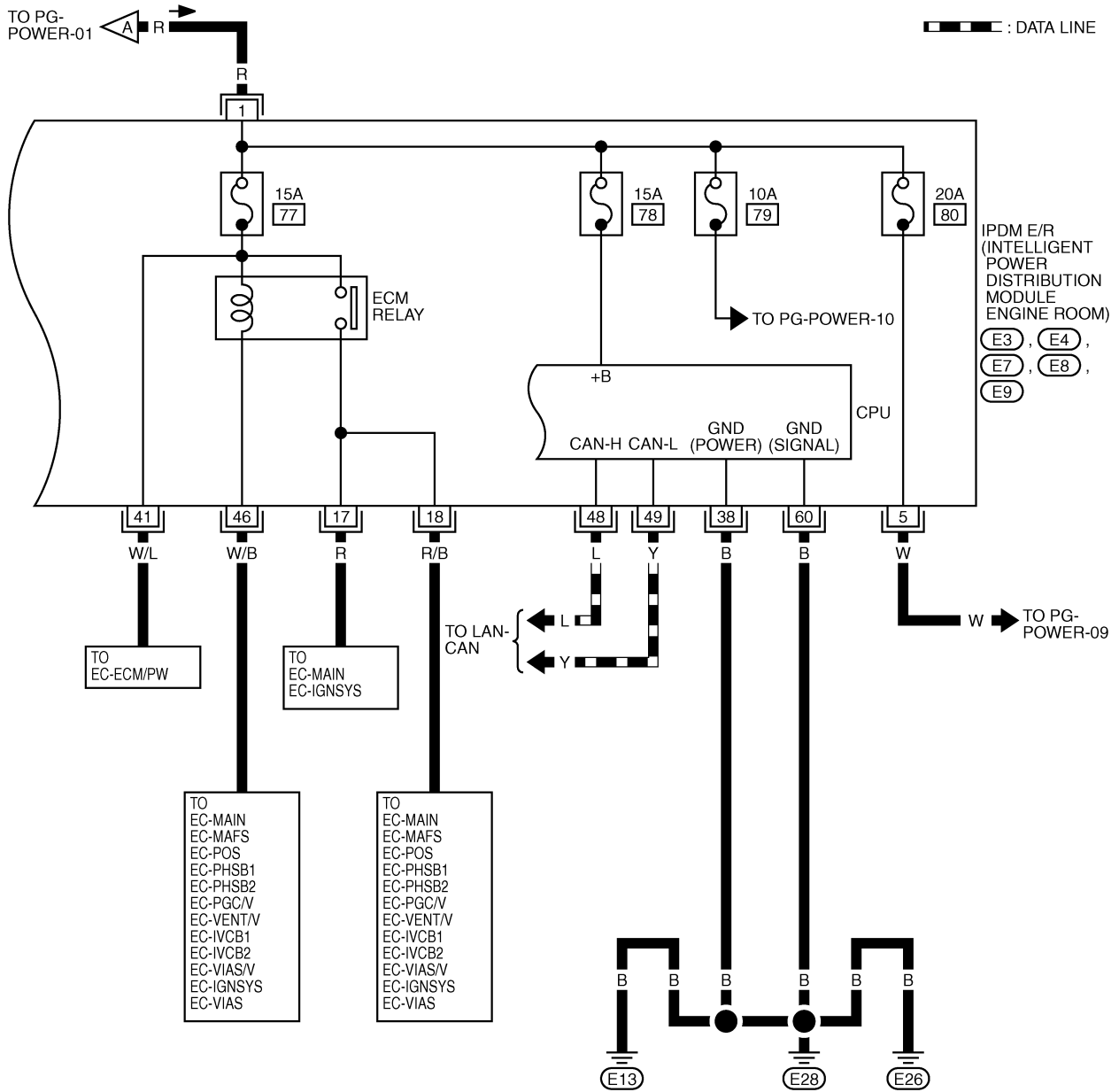
A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
PG  
L  
M



TKWB2684E

# POWER SUPPLY ROUTING CIRCUIT

PG-POWER-05



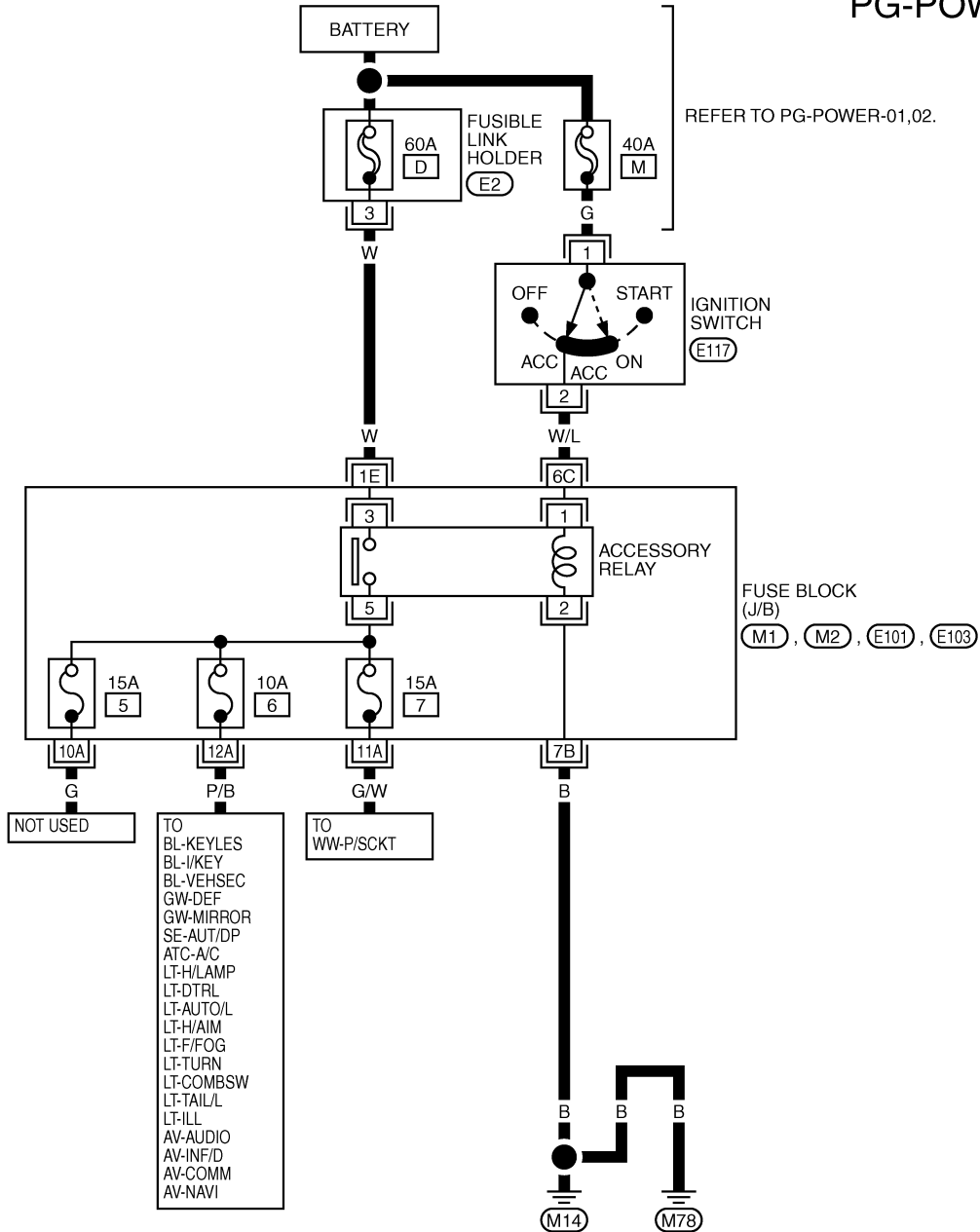
TKWB2685E



# POWER SUPPLY ROUTING CIRCUIT

## ACCESSORY POWER SUPPLY — IGNITION SW. IN “ACC” OR “ON”

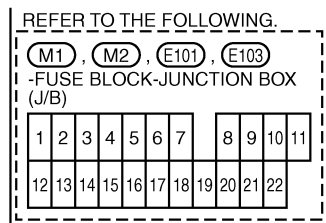
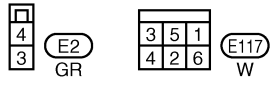
PG-POWER-06



REFER TO PG-POWER-01,02.

FUSE BLOCK (J/B)  
 (M1), (M2), (E101), (E103)

- TO BL-KEYLES
- TO BL-I/KEY
- TO BL-VEHSEC
- TO GW-DEF
- TO GW-MIRROR
- TO SE-AUT/DP
- TO ATC-A/C
- TO LT-H/LAMP
- TO LT-DTRL
- TO LT-AUTO/L
- TO LT-H/AIM
- TO LT-F/FOG
- TO LT-TURN
- TO LT-COMBSW
- TO LT-TAIL/L
- TO LT-ILL
- TO AV-AUDIO
- TO AV-INF/D
- TO AV-COMM
- TO AV-NAVI

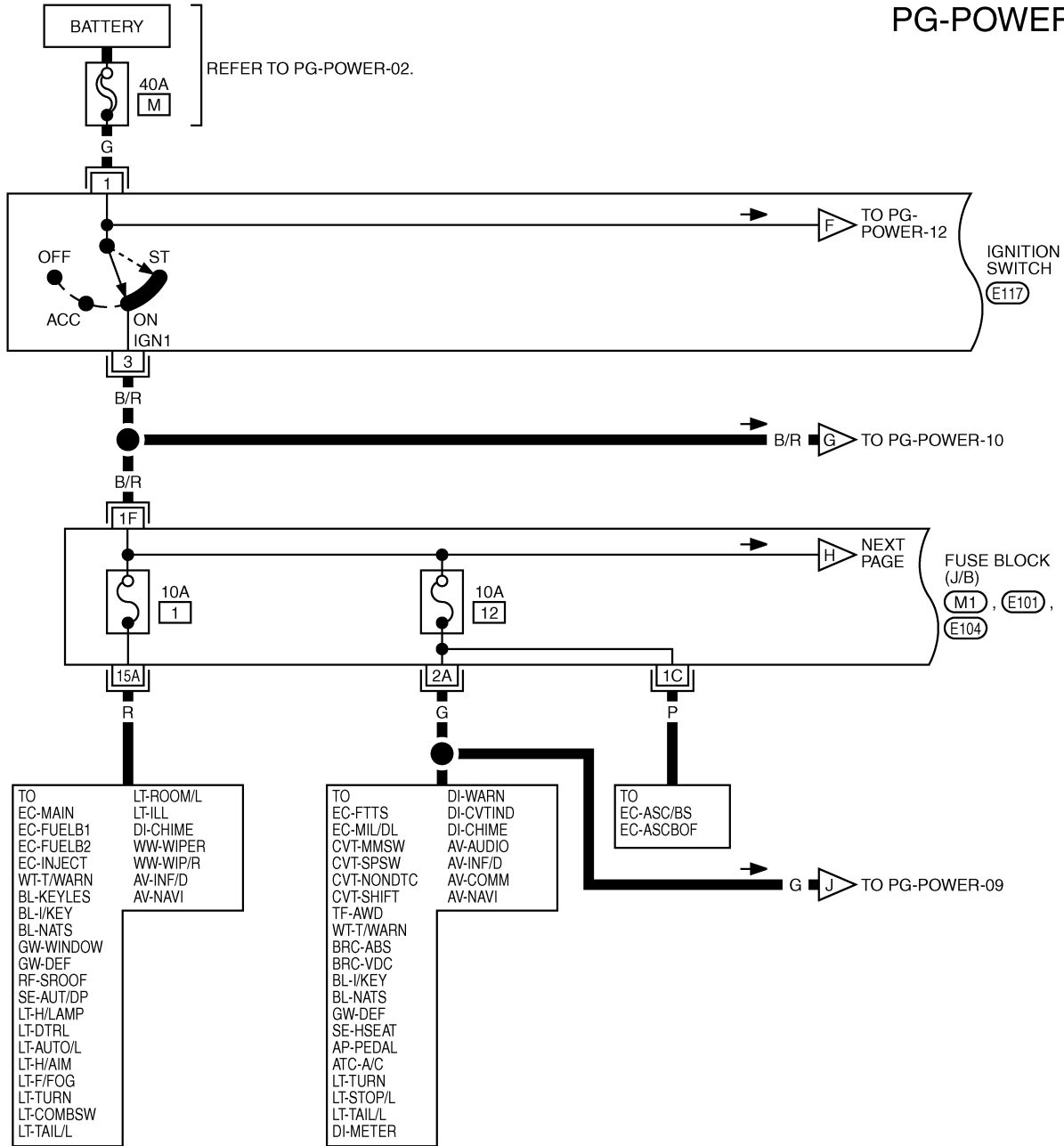


TKWB2686E

# POWER SUPPLY ROUTING CIRCUIT

## IGNITION POWER SUPPLY — IGNITION SW. IN “ON” AND/OR “START”

PG-POWER-07



3	5	1
4	2	6

(E117)  
W

REFER TO THE FOLLOWING.

(M1), (E101), (E104)

- FUSE BLOCK-JUNCTION BOX (J/B)

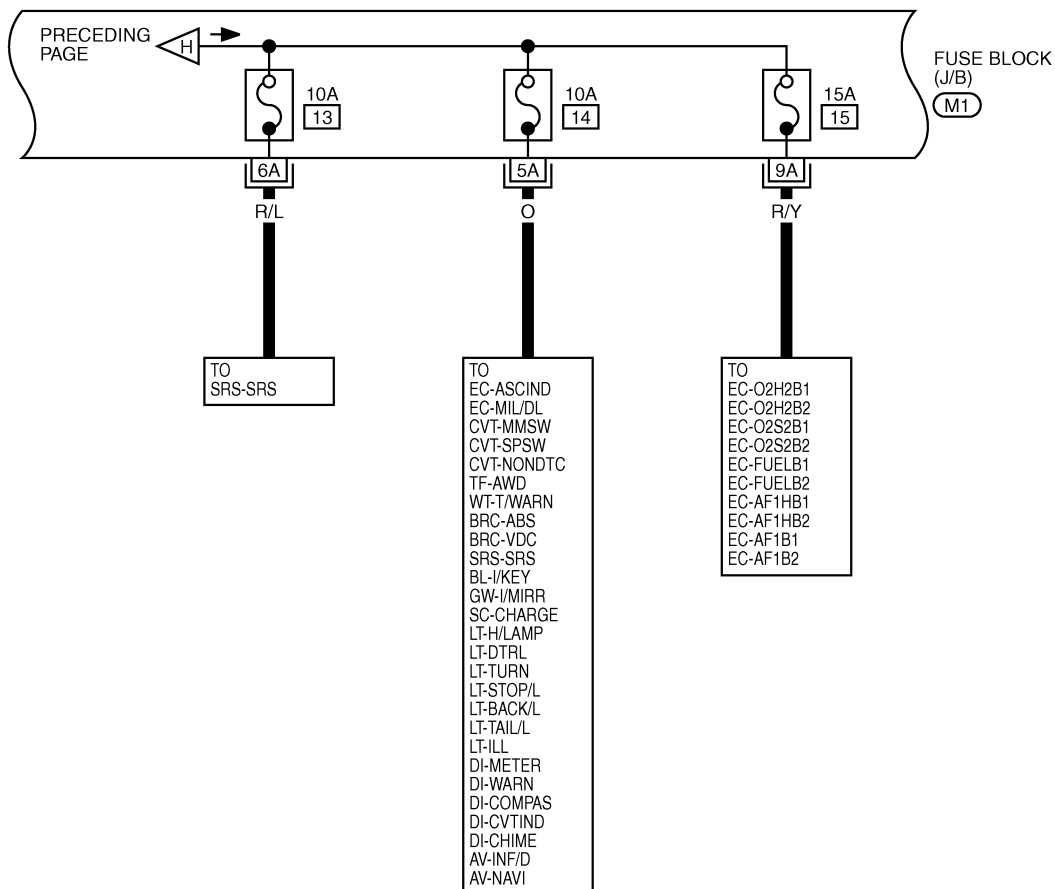
1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	18	19	20	21	22

TKWB2687E

# POWER SUPPLY ROUTING CIRCUIT

PG-POWER-08

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



PG

REFER TO THE FOLLOWING.

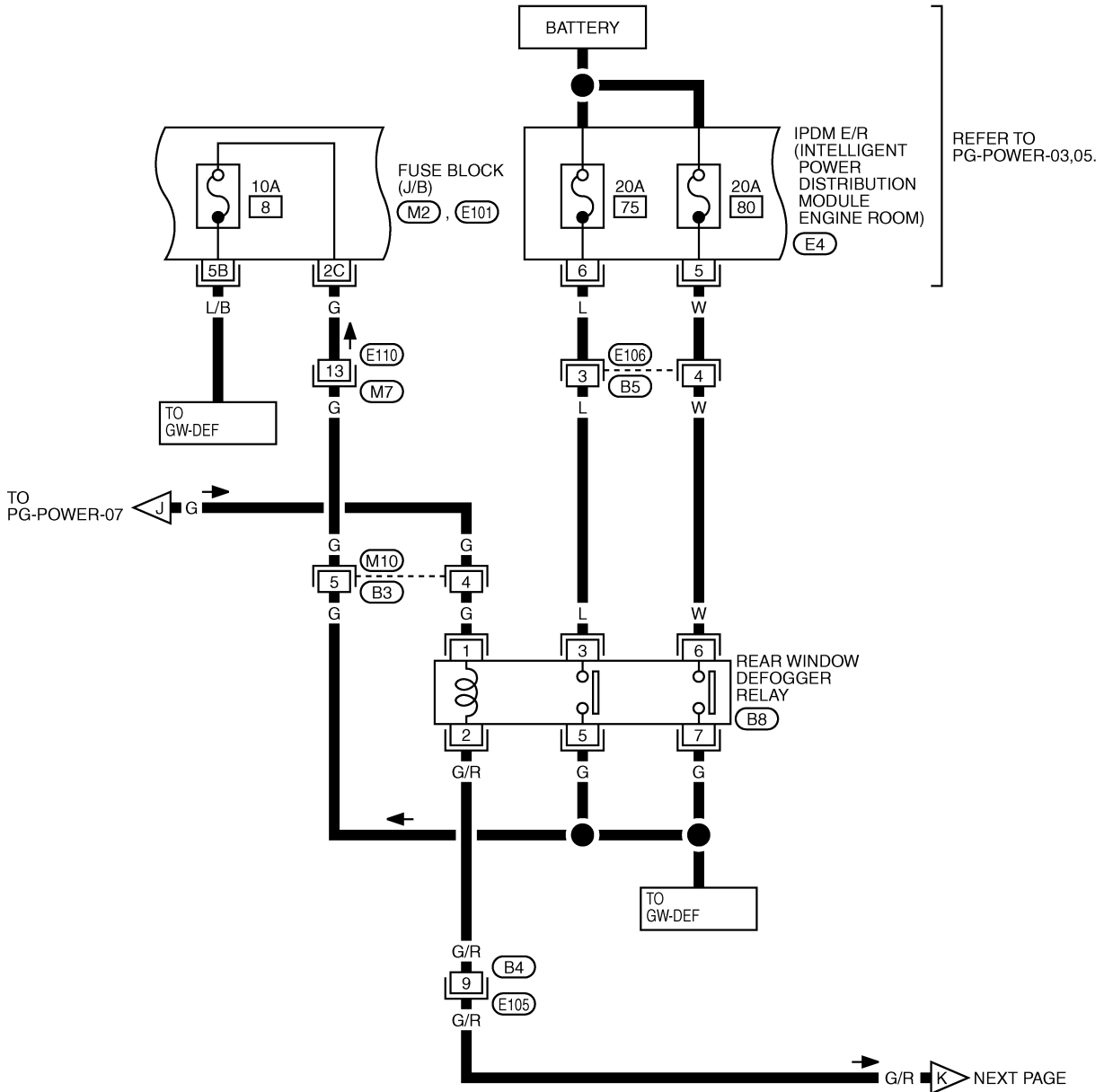
(M1) - FUSE BLOCK-JUNCTION BOX (J/B)

1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	18	19	20	21	22

TKWB2688E

# POWER SUPPLY ROUTING CIRCUIT

PG-POWER-09



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

(M7)  
GR

(M10)  
BR

4	3
6	5

(E4)  
W



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

(E105)  
W

1	2
3	4

(E106)  
W

1	2
5	7
3	6

(B8)  
BR

REFER TO THE FOLLOWING.

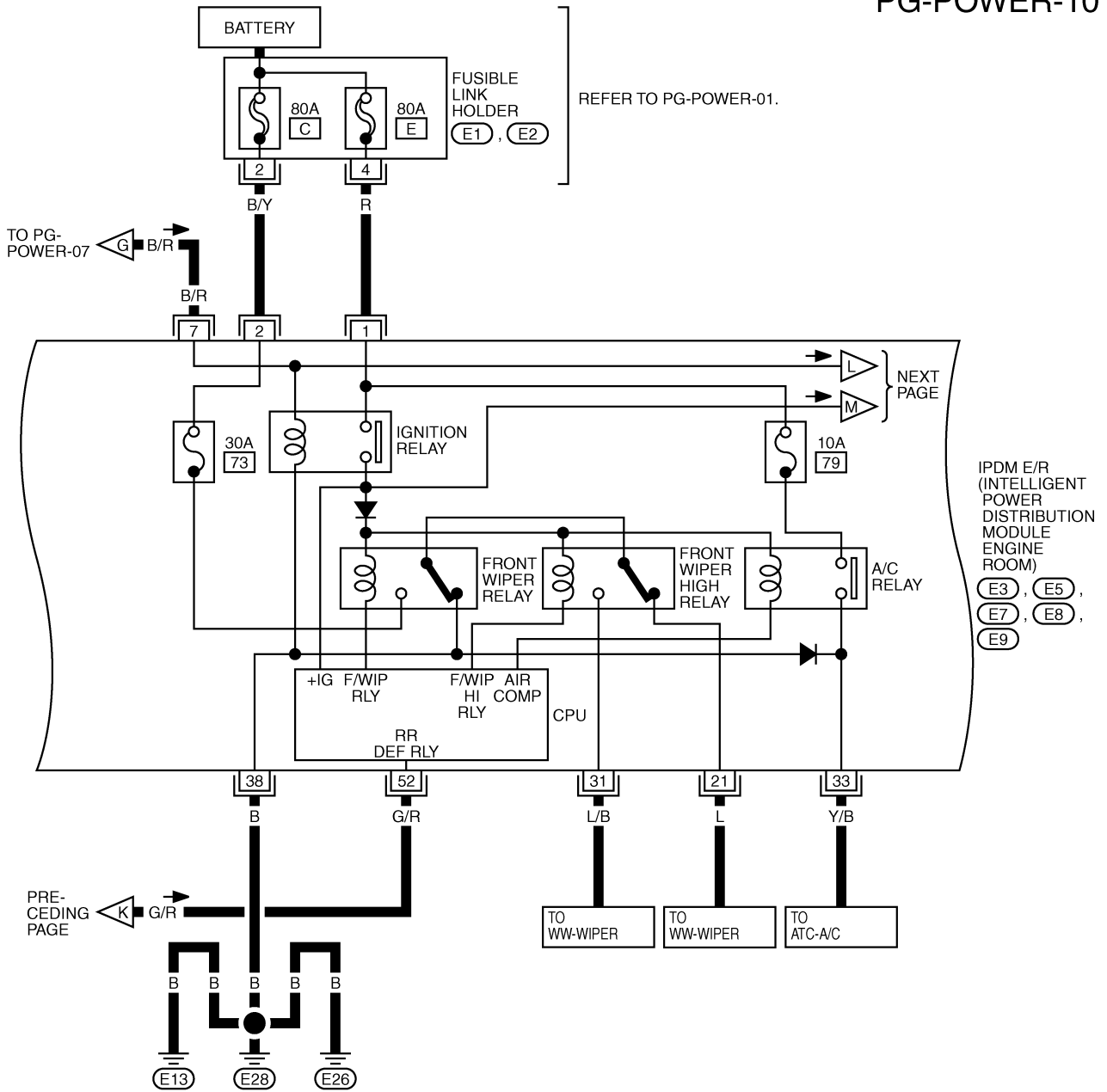
(M2), (E101) - FUSE BLOCK-JUNCTION BOX (J/B)

1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	18	19	20	21	22

TKWB0538E

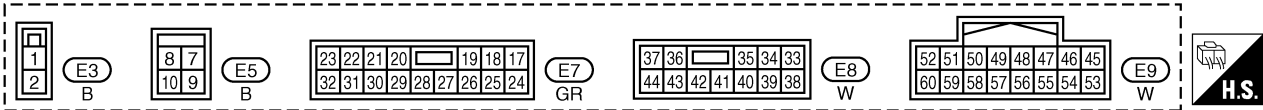
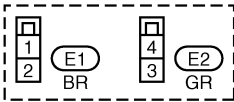
# POWER SUPPLY ROUTING CIRCUIT

PG-POWER-10



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

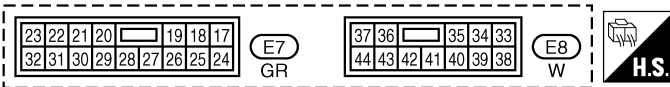
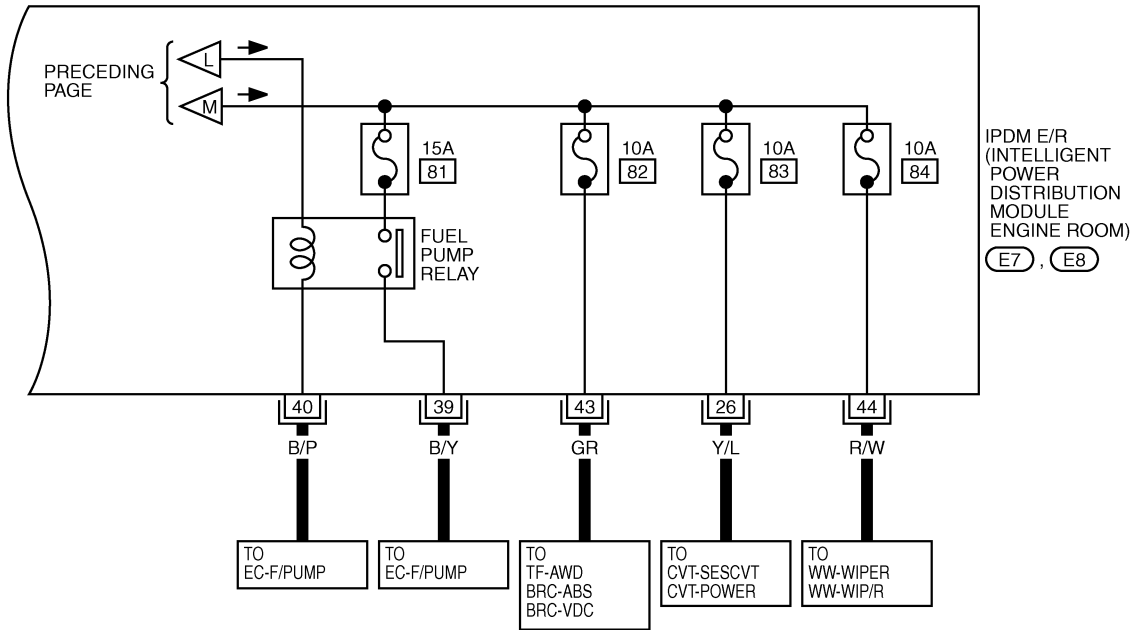
PG



TKWB0539E

# POWER SUPPLY ROUTING CIRCUIT

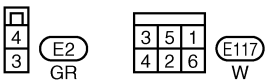
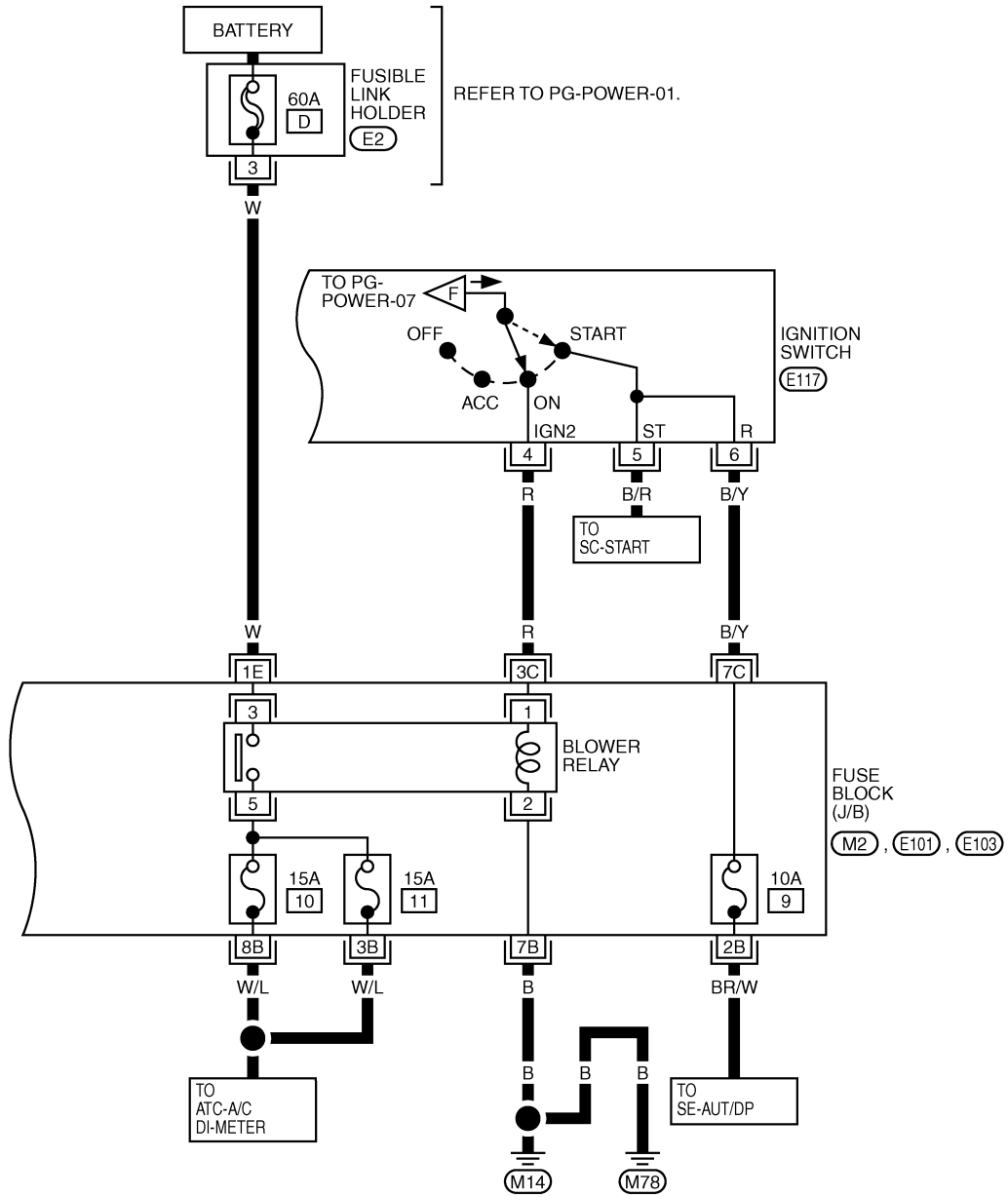
PG-POWER-11



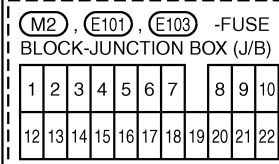
TKWB2689E

# POWER SUPPLY ROUTING CIRCUIT

PG-POWER-12



REFER TO THE FOLLOWING.



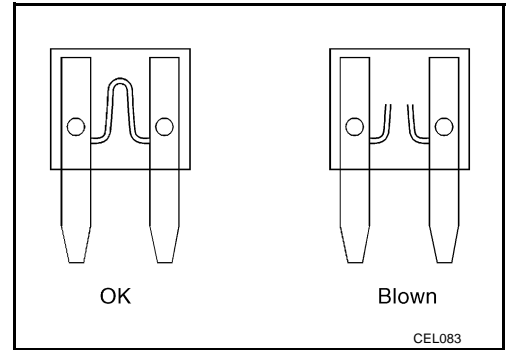
TKWA1753E

# POWER SUPPLY ROUTING CIRCUIT

## Fuse

NKS0025C

- If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.
- Use fuse of specified rating. Never use fuse of more than specified rating.
- Do not partially install fuse; always insert it into fuse holder properly.
- Remove fuse for "ELECTRICAL PARTS (BAT)" if vehicle is not used for a long period of time.



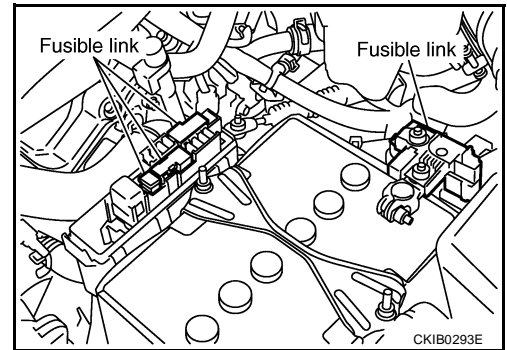
## Fusible Link

NKS0025D

A melted fusible link can be detected either by visual inspection or by feeling with finger tip. If its condition is questionable, use circuit tester or test lamp.

### CAUTION:

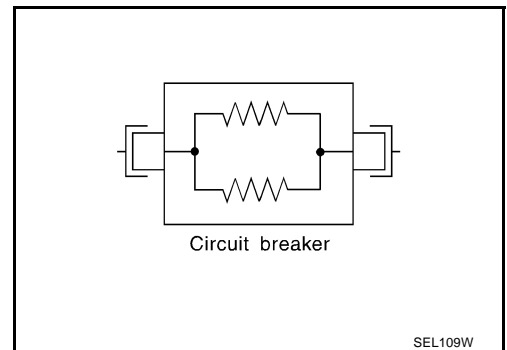
- If fusible link should melt, it is possible that critical circuit (power supply or large current carrying circuit) is shorted. In such a case, carefully check and eliminate cause of malfunction.
- Never wrap outside of fusible link with vinyl tape. Important: Never let fusible link touch any other wiring harness, vinyl or rubber parts.



## Circuit Breaker

NKS0025E

The PTC thermistor generates heat in response to current flow. The temperature (and resistance) of the thermistor element varies with current flow. Excessive current flow will cause the element's temperature to rise. When the temperature reaches a specified level, the electrical resistance will rise sharply to control the circuit current. Reduced current flow will cause the element to cool. Resistance falls accordingly and normal circuit current flow is allowed to resume.





# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

## IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

PFP:284B7

### System Description

NKS0025F

- IPDM E/R (Intelligent Power Distribution Module Engine Room) integrates the relay box and fuse block which were originally placed in engine compartment. It controls integrated relay via IPDM E/R control circuit.
- IPDM E/R-integrated control circuit performs ON-OFF operation of relay, CAN communication control, oil pressure switch signal, and hood switch signal reception, etc.
- It controls operation of each electrical part via ECM, BCM and CAN communication lines.

#### CAUTION:

None of the IPDM E/R-integrated relays can be removed.

### SYSTEMS CONTROLLED BY IPDM E/R

IPDM E/R receives a request signal from each control unit with CAN communication. It controls each system.

Control system	Transmit control unit	Control part
Lamp control	BCM	<ul style="list-style-type: none"> <li>● Head lamps (HI, LO)</li> <li>● Front fog lamps</li> <li>● Parking, license plate, side marker and tail lamps</li> </ul>
Wiper control	BCM	Front wipers
Rear window defogger control	BCM	Rear window defogger
A/C compressor control	ECM	A/C compressor (magnet clutch)
Cooling fan control	ECM	Cooling fan
Horn control	BCM	Horn

### CAN COMMUNICATION LINE CONTROL

With CAN communication, by connecting each control unit using two communication lines (CAN L line, CAN H line), it is possible to transmit maximum amount of information with minimum wiring. Each control unit can transmit and receive data, and reads necessary information only.

#### 1. Fail-safe control

- When CAN communication with other control units is impossible, IPDM E/R performs fail-safe control. After CAN communication recovers normally, it also returns to normal control.
- Operation of control parts by IPDM E/R during fail-safe mode is as follows:

Controlled system	Fail-safe mode
Headlamp	<ul style="list-style-type: none"> <li>● With the ignition switch ON, the headlamp (LO) is ON.</li> <li>● With the ignition switch OFF, the headlamp (LO) is OFF.</li> </ul>
Parking, license plate, side marker and tail lamps	<ul style="list-style-type: none"> <li>● With the ignition switch ON, the parking, license plate, side marker and tail lamps are ON.</li> <li>● With the ignition switch OFF, the parking, license plate, side marker and tail lamps are OFF.</li> </ul>
Cooling fan	<ul style="list-style-type: none"> <li>● With the ignition switch ON, the cooling fan HI operates.</li> <li>● With the ignition switch OFF, the cooling fan stops.</li> </ul>
Front wiper	Until the ignition switch is turned OFF, the front wiper LO and HI remains in the same status it was in just before fail-safe control was initiated.
Rear window defogger	Rear window defogger relay OFF
A/C compressor	A/C compressor OFF
Front fog lamps	Front fog lamp relay OFF

# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

## IPDM E/R STATUS CONTROL

In order to save power, IPDM E/R switches status by itself based on each operating condition.

1. CAN communication status
  - CAN communication is normally performed with other control units.
  - Individual unit control by IPDM E/R is normally performed.
  - When sleep request signal is received from BCM, mode is switched to sleep waiting status.
2. Sleep waiting status
  - Process to stop CAN communication is activated.
  - All systems controlled by IPDM E/R are stopped. When 3 seconds have elapsed after CAN communication with other control units is stopped, mode switches to sleep status.
3. Sleep status
  - IPDM E/R operates in low power mode.
  - CAN communication is stopped.
  - When a change in CAN communication line is detected, mode switches to CAN communication status.
  - When a change hood switch or ignition switch signal is detected, mode switches to CAN communication status.

## CAN Communication System Description

NKS0025G

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. Modern vehicles are equipped with many electronic control units 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

NKS0025H

Refer to [LAN-32, "CAN Communication Unit"](#) .

## Function of Detecting Ignition Relay Malfunction

NKS0025I

- When contact point of integrated ignition relay is stuck and cannot be turned OFF, IPDM E/R turns ON tail and parking lamps for 10 minutes to indicate ignition relay malfunction.
- When a state of ignition relay having built-in does not agree with a state of Ignition switch signal input by a CAN communication from BCM, IPDM E/R lets tail lamp relay operate.

Ignition switch signal	Ignition relay status	Tail lamp relay
ON	ON	—
OFF	OFF	—
ON	OFF	—
OFF	ON	ON (10 minutes)

**NOTE:**

When the ignition switch is turned ON, the tail lamps are OFF.

# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

## CONSULT-II Function (IPDM E/R)

NKS0025J

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

Inspection Item, Diagnosis Mode	Description
SELF-DIAG RESULTS	The IPDM E/R performs diagnosis of the CAN communication and self-diagnosis.
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 INSPECTION PROCEDURE

Refer to [GI-38, "CONSULT-II Start Procedure"](#).

### SELF-DIAG RESULTS

#### Operation Procedure

1. Touch "SELF-DIAG RESULTS" on "SELECT DIAG MODE" screen.
2. Check display content in self-diagnostic results.

#### Display Item List

Display Items	CONSULT-II display code	Malfunction detecting condition	TIME		Possible causes
			CRNT	PAST	
NO DTC IS DETECTED.FURTHER TESTING MAY BE REQUIRED.	-	-	-	-	-
CAN COMM CIRC	U1000	<ul style="list-style-type: none"> <li>● If CAN communication reception/transmission data has a malfunction, or if any of the control units malfunction, data reception/transmission cannot be confirmed.</li> <li>● When the data in CAN communication is not received before the specified time</li> </ul>	×	×	Any of or several items below have errors. <ul style="list-style-type: none"> <li>● TRANSMIT DIAG</li> <li>● ECM</li> <li>● BCM/SEC</li> </ul>

#### NOTE:

The details for display of the period are as follows:

- CRNT: Error currently detected with IPDM E/R.
- PAST: Error detected in the past and memorized with IPDM E/R.

### DATA MONITOR

#### Operation Procedure

1. Touch "DATA MONITOR" on "SELECT MONITOR ITEM" screen.
2. Touch "ALL SIGNALS", "MAIN SIGNALS" or "SELECTION FROM MENU" on the "DATA MONITOR" screen.

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

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

# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

## 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	
Motor fan request	MOTOR FAN REQ	1/2/3/4	×	×	×	Signal status input from ECM
Compressor request	AC COMP REQ	ON/OFF	×	×	×	Signal status input from ECM
Tail & clear request	TAIL&CLR REQ	ON/OFF	×	×	×	Signal status input from BCM
H/L LO request	HL LO REQ	ON/OFF	×	×	×	Signal status input from BCM
H/L HI request	HL HI REQ	ON/OFF	×	×	×	Signal status input from BCM
Front fog request	FR FOG REQ	ON/OFF	×	×	×	Signal status input from BCM
Head lamp washer request	HL WASHER REQ* <sup>1</sup>	ON/OFF	×		×	Signal status input from BCM
Front wiper request	FR WIP REQ	STOP/1LOW/LOW/HI	×	×	×	Signal status input from BCM
Wiper auto stop	WIP AUTO STOP	ACT P/STOP P	×	×	×	Output status of IPDM E/R
Wiper protection	WIP PROT	OFF/BLOCK	×	×	×	Control status of IPDM E/R
Starter request	ST RLY REQ* <sup>2</sup>	ON/OFF	×		×	Status of input signal
Ignition relay status	IGN RLY	ON/OFF	×	×	×	Ignition relay status monitored with IPDM E/R
Rear window defogger request	RR DEF REQ	ON/OFF	×	×	×	Signal status input from BCM
Oil pressure switch	OIL P SW	OPEN/CLOSE	×		×	Signal status input in IPDM E/R
Day time light request	DTRL REQ* <sup>1</sup>	ON/OFF	×		×	Signal status input from BCM
Hood switch	HOOD SW	ON/OFF	×		×	Signal status input in IPDM E/R
Theft warning horn request	THFT HRN REQ	ON/OFF	×		×	Signal status input from BCM
Horn chirp	HORN CHIRP	ON/OFF	×		×	Output 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.
- \*1: This item is displayed, but does not function.
- \*2: The vehicle without the Intelligent Key system displays only ON without change.

# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

## ACTIVE TEST

### Operation Procedure

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

Test item	CONSULT-II screen display	Description
Tail lamp operation	TAIL LAMP	With a certain ON-OFF operation, the tail lamp relay can be operated.
Rear window defogger operation	REAR DEFOGGER	With a certain ON-OFF operation, the rear window defogger relay can be operated.
Front wiper (HI, LO) operation	FRONT WIPER	With a certain operation (OFF, HI ON, LO ON), the front wiper relay (Lo, Hi) can be operated.
Cooling fan operation	MOTOR FAN	With a certain operation (1,2,3,4), the cooling fan can be operated.
Headlamp washer operation	HEAD LAMP WASHER <sup>NOTE</sup>	—
Lamp (HI, LO, FOG) operation	LAMPS	With a certain operation (OFF, HI ON, LO ON, FOG ON), the lamp relay (Lo, Hi, Fog) can be operated.
Horn operation	HORN	Push "ON" button, horn relay operates 20ms.

#### NOTE:

Headlamp washer item is displayed, but cannot be tested.

## Auto Active Test DESCRIPTION

NKS0025K

In auto active test mode, operation inspection can be performed when IPDM E/R sends a drive signal to the following systems:

- Rear window defogger
- Front wipers
- Parking lamps, license plate lamps, tail lamps and side marker lamps
- Front fog lamps
- Headlamps (Hi, Lo)
- A/C compressor (magnetic clutch)
- Cooling fan

## OPERATION PROCEDURE

1. Close hood and front door (passenger side), and then lift wiper arms away from windshield (to prevent glass damage by wiper operation).

#### NOTE:

When auto active test is performed with hood opened, sprinkle water on windshield beforehand.

2. Turn ignition switch OFF.
3. Turn ignition switch ON, and within 20 seconds, open and close 10 times of front door LH. Then turn ignition switch OFF.
4. Turn ignition switch ON within 10 seconds after ignition switch OFF.
5. When auto active test mode is actuated, horn chirps once. Oil pressure warning lamp starts blinking.
6. After a series of operations is repeated three times, auto active test is completed.

#### NOTE:

When auto active test mode has to be cancelled halfway, turn ignition switch OFF.

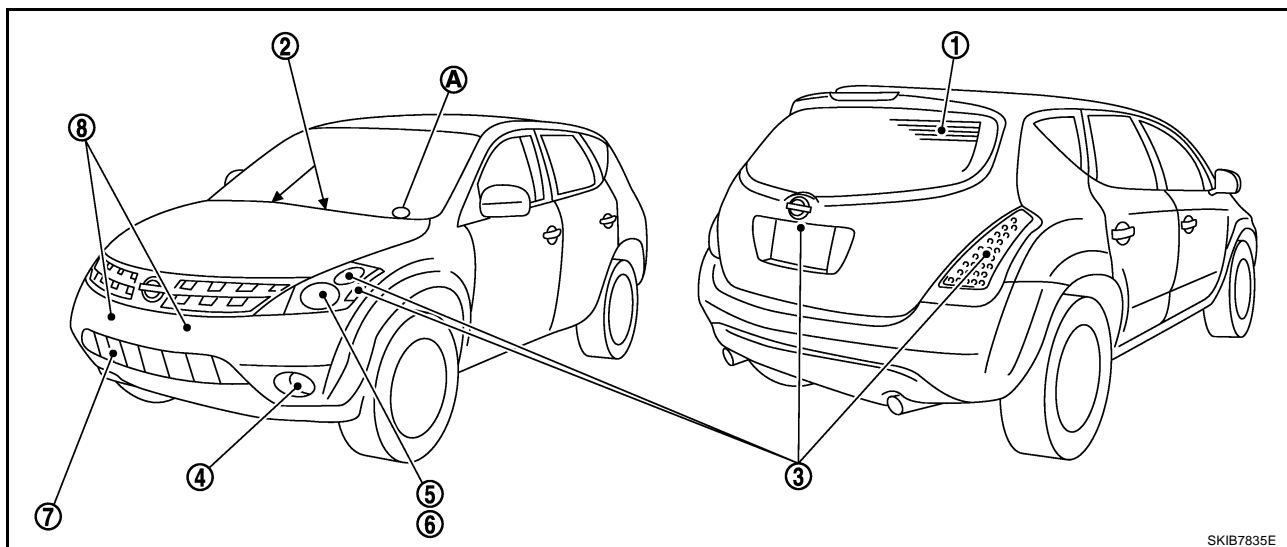
#### CAUTION:

Be sure to inspect **BL-44, "Check Door Switch"** when the auto active test cannot be performed.

# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

## INSPECTION IN AUTO ACTIVE TEST MODE

When auto active test mode is actuated, the following eight steps are repeated three times.



(A): Oil pressure warning lamp is blinking when the auto active test operating.

### Operation steps

	Test item	Operation time/ frequency
1	Rear window defogger	10 seconds
2	Front wiper	LO 5 seconds → HI 5 seconds
3	Parking lamps, license plate lamps, tail lamps and side marker lamps	10 seconds
4	Front fog lamps	10 seconds
5	Headlamp (LO)	10 seconds
6	Headlamp (HI) <sup>NOTE</sup>	ON↔OFF 5 times
7	A/C compressor (magnetic clutch)	ON↔OFF 5 times
8	Cooling fan	LO 5 seconds → HI 5 seconds

#### NOTE:

Turns ON-OFF the solenoid to switch HI/LO. In this case, the bulb does not illuminate.

# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

## Concept of Auto Active Test

- IPDM E/R actuates auto active test mode when it receives door switch signal from BCM via CAN communication line. Therefore, when auto active test mode is activated successfully, CAN communication between IPDM E/R and BCM is normal.
- If any of systems controlled by IPDM E/R cannot be operated, possible cause can be easily diagnosed using auto active test.

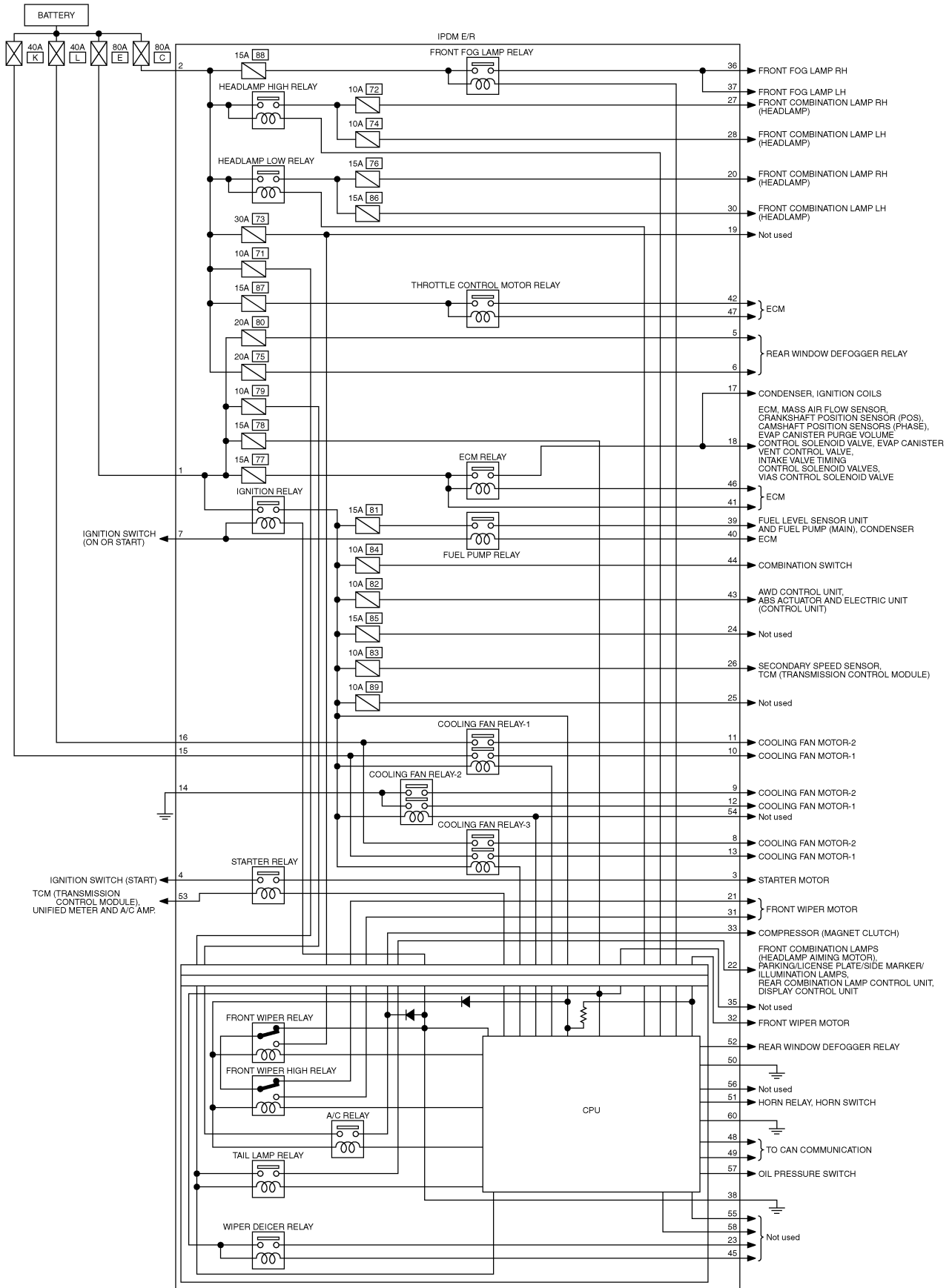
Diagnosis chart in auto active test mode

Symptom	Inspection contents	Possible cause	
Any of front wipers, tail and parking lamps, front fog lamps, and head lamps (Hi, Lo) do not operate.	Perform auto active test. Does system in question operate?	YES	● BCM signal input system malfunction
		NO	<ul style="list-style-type: none"> <li>● Lamp/wiper motor malfunction</li> <li>● Lamp/wiper motor ground circuit malfunction</li> <li>● Harness/connector malfunction between IPDM E/R and system in question</li> <li>● IPDM E/R (integrated relay) malfunction</li> </ul>
Rear window defogger does not operate.	Perform auto active test. Does rear window defogger operate?	YES	● BCM signal input circuit malfunction
		NO	<ul style="list-style-type: none"> <li>● Rear window defogger relay malfunction</li> <li>● Harness/connector malfunction between IPDM E/R and rear window defogger relay</li> <li>● Open circuit of rear window defogger</li> <li>● IPDM E/R malfunction</li> </ul>
A/C compressor does not operate.	Perform auto active test. Does magnetic clutch operate?	YES	<ul style="list-style-type: none"> <li>● BCM signal input circuit malfunction</li> <li>● CAN communication signal between BCM and ECM.</li> <li>● CAN communication signal between ECM and IPDM E/R</li> </ul>
		NO	<ul style="list-style-type: none"> <li>● Magnetic clutch malfunction</li> <li>● Harness/connector malfunction between IPDM E/R and magnetic clutch</li> <li>● IPDM E/R (integrated relay) malfunction</li> </ul>
Cooling fan does not operate.	Perform auto active test. Does cooling fan operate?	YES	<ul style="list-style-type: none"> <li>● ECM signal input circuit</li> <li>● CAN communication signal between ECM and IPDM E/R</li> </ul>
		NO	<ul style="list-style-type: none"> <li>● Cooling fan motor malfunction</li> <li>● Harness/connector malfunction between IPDM E/R and cooling fan motor</li> <li>● IPDM E/R (integrated relay) malfunction</li> </ul>
Oil pressure warning lamp does not operate.	Perform auto active test. Does oil pressure warning lamp blink?	YES	<ul style="list-style-type: none"> <li>● Harness/connector malfunction between IPDM E/R and oil pressure switch</li> <li>● Oil pressure switch malfunction</li> <li>● IPDM E/R malfunction</li> </ul>
		NO	<ul style="list-style-type: none"> <li>● CAN communication signal between BCM and Unified Meter and A/C Amp.</li> <li>● Combination meter</li> </ul>

# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

## Schematic

NKS0025L



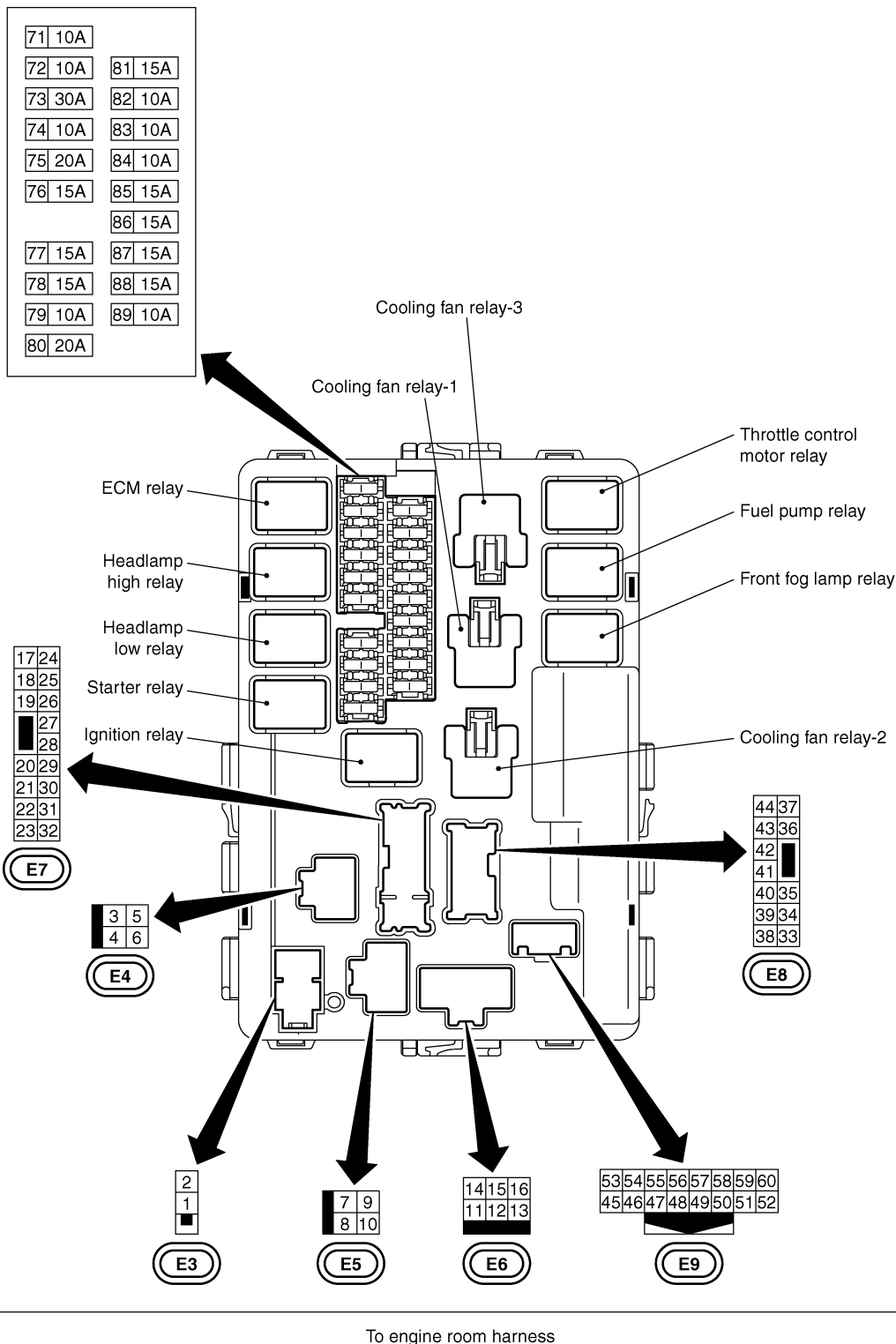
TKWB2690E



## IPDM E/R Terminal Arrangement

NKS0025M

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



To engine room harness

CKIB0042E

# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

## IPDM E/R Power/Ground Circuit Inspection

NKS0025N

### 1. CHECK FUSE AND FUSIBLE LINK

Make sure the following fusible links or IPDM E/R fuses are not blown.

Terminal No.	Power source	Fuse and fusible link No.
1	Battery power	E
2		C
—		71
—		78

OK or NG

- OK >> GO TO 2.  
 NG >> Replace fuse or fusible link.

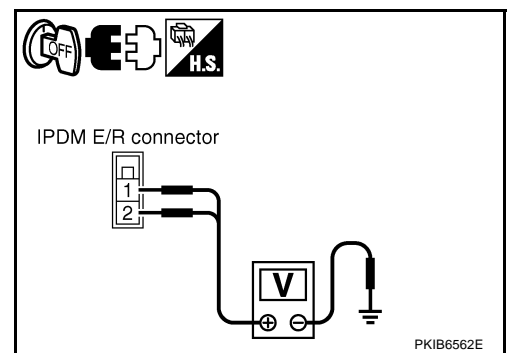
### 2. CHECK POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect IPDM E/R harness connector E3.
- Check voltage between IPDM E/R harness connector E3 terminals 1, 2 and ground.

**1, 2 - Ground : Battery voltage**

OK or NG

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



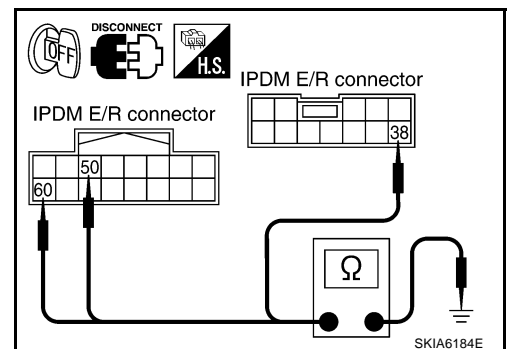
### 3. CHECK GROUND CIRCUIT

- Disconnect IPDM E/R harness connectors E8 and E9.
- Check continuity between IPDM E/R harness connectors E8 terminal 38, E9 terminal 50, 60 and ground.

**38, 50, 60 - Ground : Continuity should exist.**

OK or NG

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



## Inspection with CONSULT-II (Self-Diagnosis)

NKS00250

### 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. CHECK SELF DIAGNOSTIC RESULT

1. Connect CONSULT-II and select "IPDM E/R" on "SELECT SYSTEM" screen.
2. Select "SELF-DIAG RESULTS" on the "SELECT DIAG MODE" screen.
3. Check display content in self diagnostic results.

CONSULT-II display	CONSULT-II display code	TIME		Details of diagnosis result
		CRNT	PAST	
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.	-	-	-	No malfunction
CAN COMM CIRC	U1000	×	×	Any of or several items below have errors. <ul style="list-style-type: none"> <li>● TRANSMIT DIAG</li> <li>● ECM</li> <li>● BCM/SEC</li> </ul>

### NOTE:

The details for display of the period are as follows:

- CRNT: Error currently detected with IPDM E/R.
- PAST: Error detected in the past and memorized with IPDM E/R.

### Contents displayed

NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.>>INSPECTION END

CAN COMM CIRC>>After print-out of the monitor items, refer to [LAN-3, "Precautions When Using CONSULT-II"](#) .

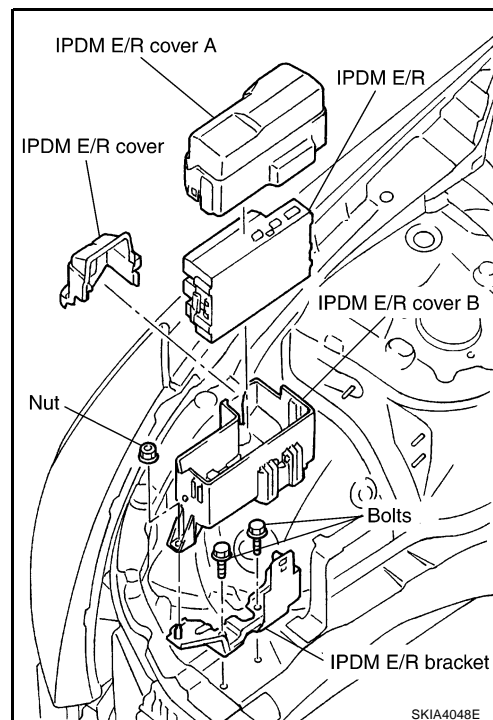
# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

NKS0025P

## Removal and Installation of IPDM E/R

### REMOVAL

1. Remove IPDM E/R cover A and IPDM E/R cover.
2. While spreading pawls on both side of IPDM E/R cover B, remove IPDM E/R from IPDM E/R cover B.
3. Remove harness connector from IPDM E/R.



### INSTALLATION

Installation is the revers order of removal.

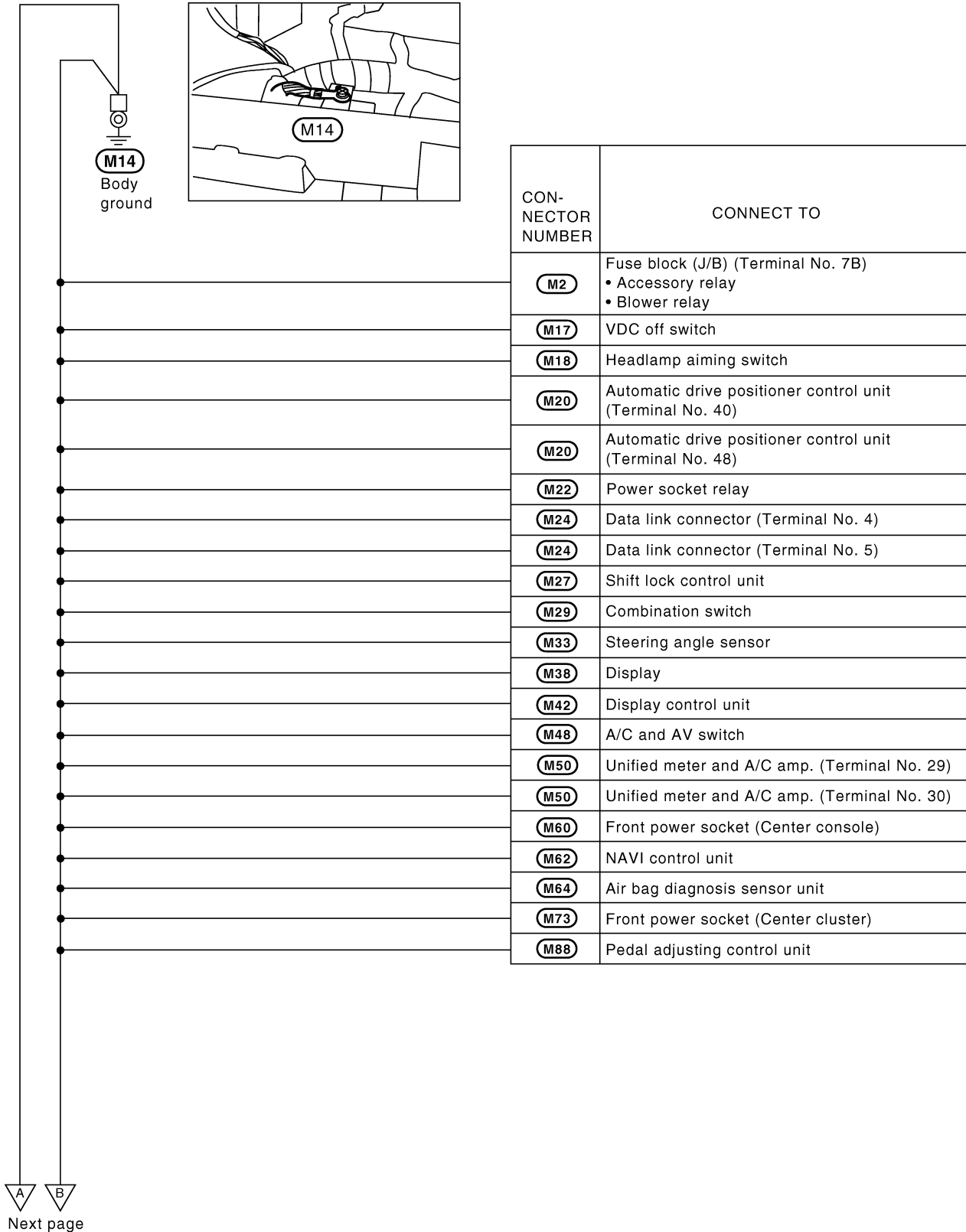
# GROUND

## GROUND

PF0:00011

### Ground Distribution MAIN HARNESS

NKS0025Q

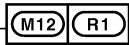


A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M

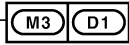
PG

# GROUND

Preceding page



Room lamp harness



Front door harness  
(Driver side)

CON-NECTOR NUMBER	CONNECT TO
R2	Vanity mirror lamp (Driver side)
R3	Map lamp
R4	Auto anti-dazzling inside mirror
R5	Sunroof switch
R6	Sunroof motor assembly
R7	Vanity mirror lamp (Passenger side)
R8	Personal lamp LH
R9	Room lamp
R10	Personal lamp RH
R13	Front passenger air bag off indicator
D2	Door mirror (Driver side) (With door mirror defogger)
D3	Seat memory switch
D7	Power window main switch • CPU • Door lock and unlock switch • Power window lock switch • Illumination
D10	Front door lock assembly (Driver side) • Door unlock sensor (With Intelligent Key) • Door switch • Door key cylinder switch (Without Intelligent Key)
D11	Door key cylinder switch (With Intelligent Key)
D12	Front door request switch (Driver side)



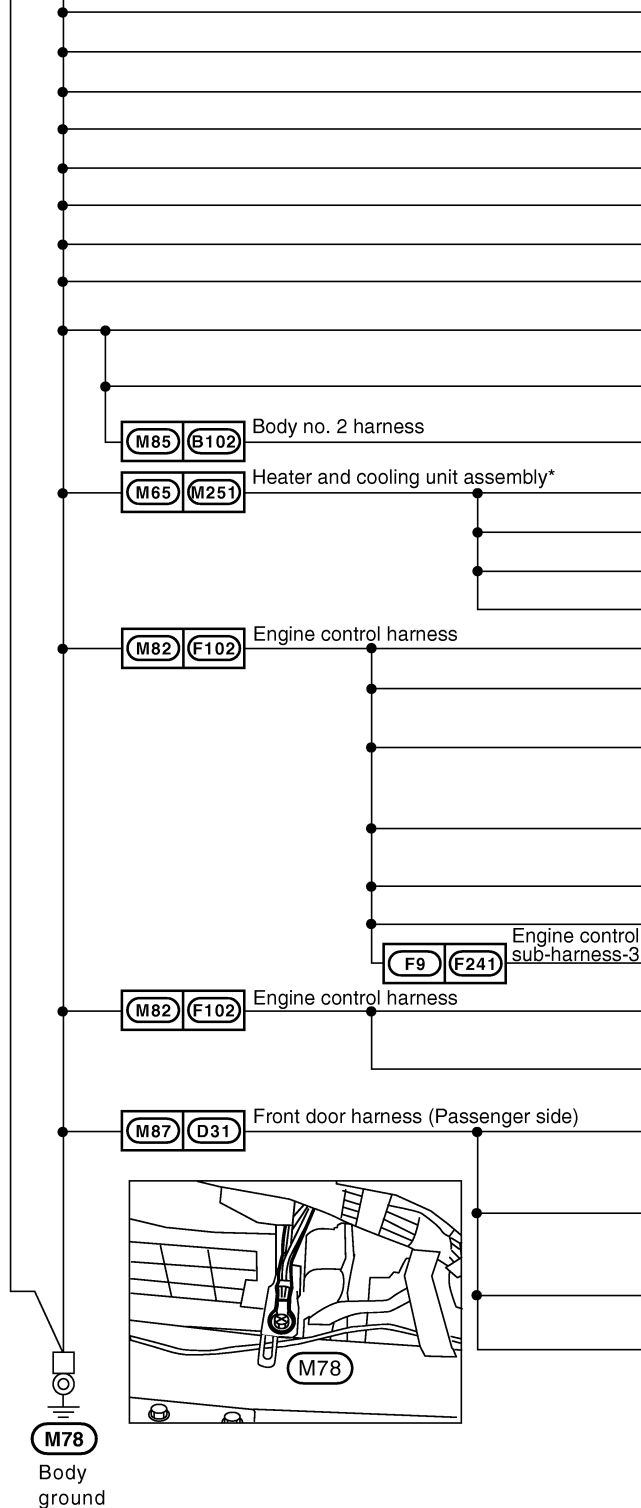
Next page

CON-NECTOR NUMBER	CONNECT TO
M25	Combination meter (Terminal No. 22)
M25	Combination meter (Terminal No. 23)
M25	Combination meter (Terminal No. 24)
M35	BCM (Body control module)
M53	Heated seat switch (Passenger side)
M54	Heated seat switch (Driver side)
M55	AWD lock switch
M56	Door mirror remote control switch (Without memory mirror)
M57	CVT device (Terminal No. 2) (Without manual mode switch)
M57	CVT device (Terminal No. 11) (With manual mode switch)
M58	Coin box illumination
M66	Door mirror remote control switch (With memory mirror)

CKIB0295E

# GROUND

Preceding page



CON-NECTOR NUMBER	CONNECT TO
M75	Glove box lamp
M80	ECM (Terminal No. 115)
M80	ECM (Terminal No. 116)
M91	Condenser
M92	Condenser
M93	Condenser
M96	Option connector for DVD
M99	Intelligent Key unit
M102	Shield wire [Inside key antenna-1 (console)]
M109	Shield wire [Inside key antenna-2 (Dashboard)]
B122	Shield wire [Inside key antenna-3 (Luggage room)]
M252	Mode door motor
M253	Air mix door motor (Driver side)
M254	Air mix door motor (Passenger side)
M255	Intake door motor
F8	Camshaft position sensor (PHASE) (Bank 2)
F20	Crankshaft position sensor (POS)
F33	Shield wire [Electric throttle control actuator (Throttle position sensor)] (For circuit from terminal No. 1)
F33	Shield wire [Electric throttle control actuator (Throttle position sensor)] (For circuit from terminal No. 2,4,5)
F34	Camshaft position sensor (PHASE) (Bank 1)
F101	ECM (Terminal No. 1)
F242	Shield wire (Knock sensor)
F104	TCM (Transmission control module) (Terminal No. 25)
F104	TCM (Transmission control module) (Terminal No. 48)
D32	Door mirror (Passenger side) (With door mirror defogger)
D35	Front power window switch (Passenger side) • CPU • Doorlock and unlock switch • Illumination
D38	Front door lock assembly (Passenger side) • Door switch
D39	Front door request switch (Passenger side)

\*:This sub-harness is not shown in "HARNESS LAYOUT".

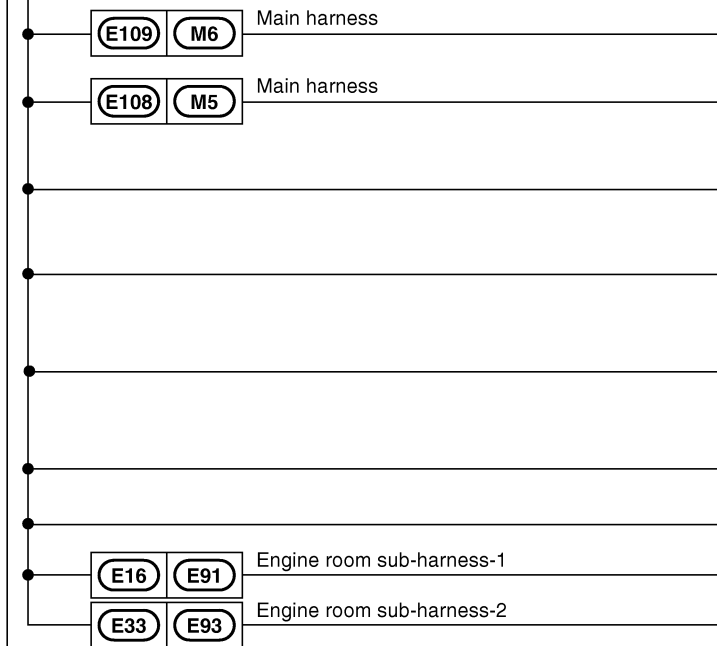
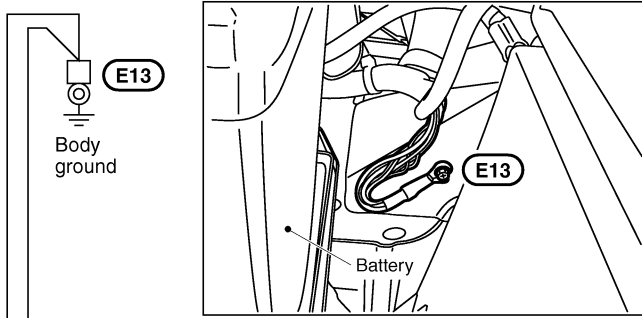
A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
L  
M

PG

CKIB0296E

# GROUND

## ENGINE ROOM HARNESS



CON-NECTOR NUMBER	CONNECT TO
<b>M25</b>	Combination meter (Terminal No. 12)
<b>M70</b>	Blower motor
<b>E6</b>	IPDM E/R (Intelligent power distribution module engine room) (Terminal No. 14) Cooling fan relay-2
<b>E17</b>	Front combination lamp LH (Terminal No. 5) • Headlamp
<b>E17</b>	Front combination lamp LH (Terminal No. 8) • Turn signal • Headlamp aiming motor • Parking • Side marker
<b>E21</b>	Brake fluid level switch
<b>E22</b>	Front wiper motor
<b>E92</b>	Front fog lamp LH
<b>E94</b>	Front fog lamp RH

CON-NECTOR NUMBER	CONNECT TO
<b>E8</b>	IPDM E/R (Intelligent power distribution module engine room) (Terminal No. 38) • CPU • Ignition relay • Front wiper relay
<b>E9</b>	IPDM E/R (Intelligent power distribution module engine room) (Terminal No. 50) • CPU
<b>E9</b>	IPDM E/R (Intelligent power distribution module engine room) (Terminal No. 60) • CPU
<b>E30</b>	Front combination lamp RH (Terminal No. 5) • Headlamp
<b>E30</b>	Front combination lamp RH (Terminal No. 8) • Turn signal • Headlamp aiming motor • Parking • Side marker

Next page

CKIB0297E



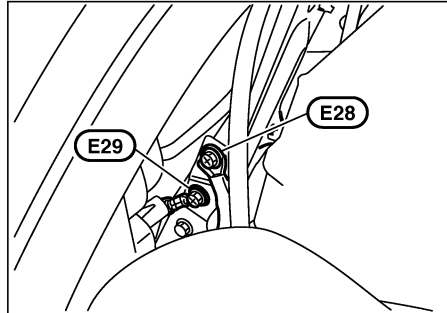
# GROUND

Preceding page

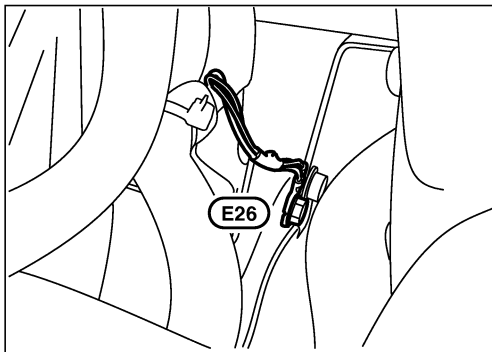
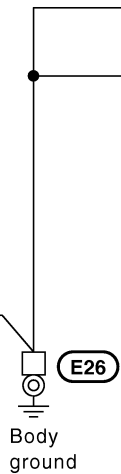
A B



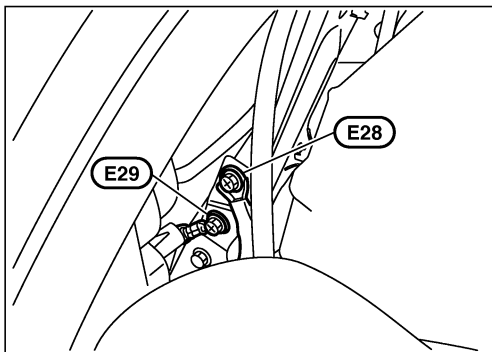
CONNECTOR NUMBER	CONNECT TO
<b>E32</b>	Washer level sensor
<b>E38</b>	Cooling fan motor-1
<b>E39</b>	Cooling fan motor-2
<b>E111</b>	AWD control unit (Terminal No. 10)
<b>E111</b>	AWD control unit (Terminal No. 11)



CONNECTOR NUMBER	CONNECT TO
<b>E24</b>	ABS actuator and electric unit (Control unit) (Terminal No. 16)
<b>E24</b>	ABS actuator and electric unit (Control unit) (Terminal No. 47)



CONNECTOR NUMBER	CONNECT TO
<b>E35</b>	Alternator (E)

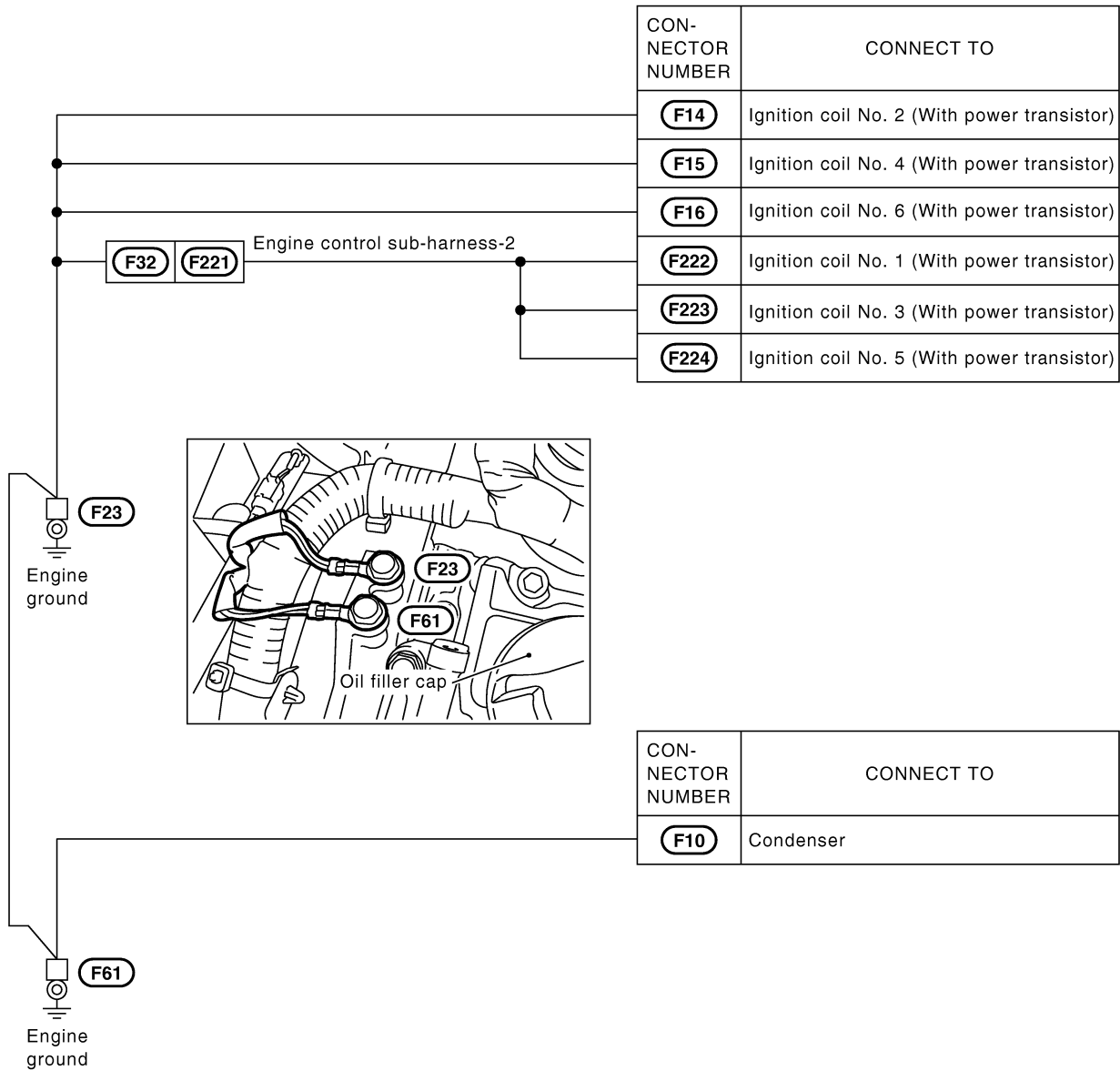


A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
PG  
L  
M

CKIB0309E

# GROUND

## ENGINE CONTROL HARNESS

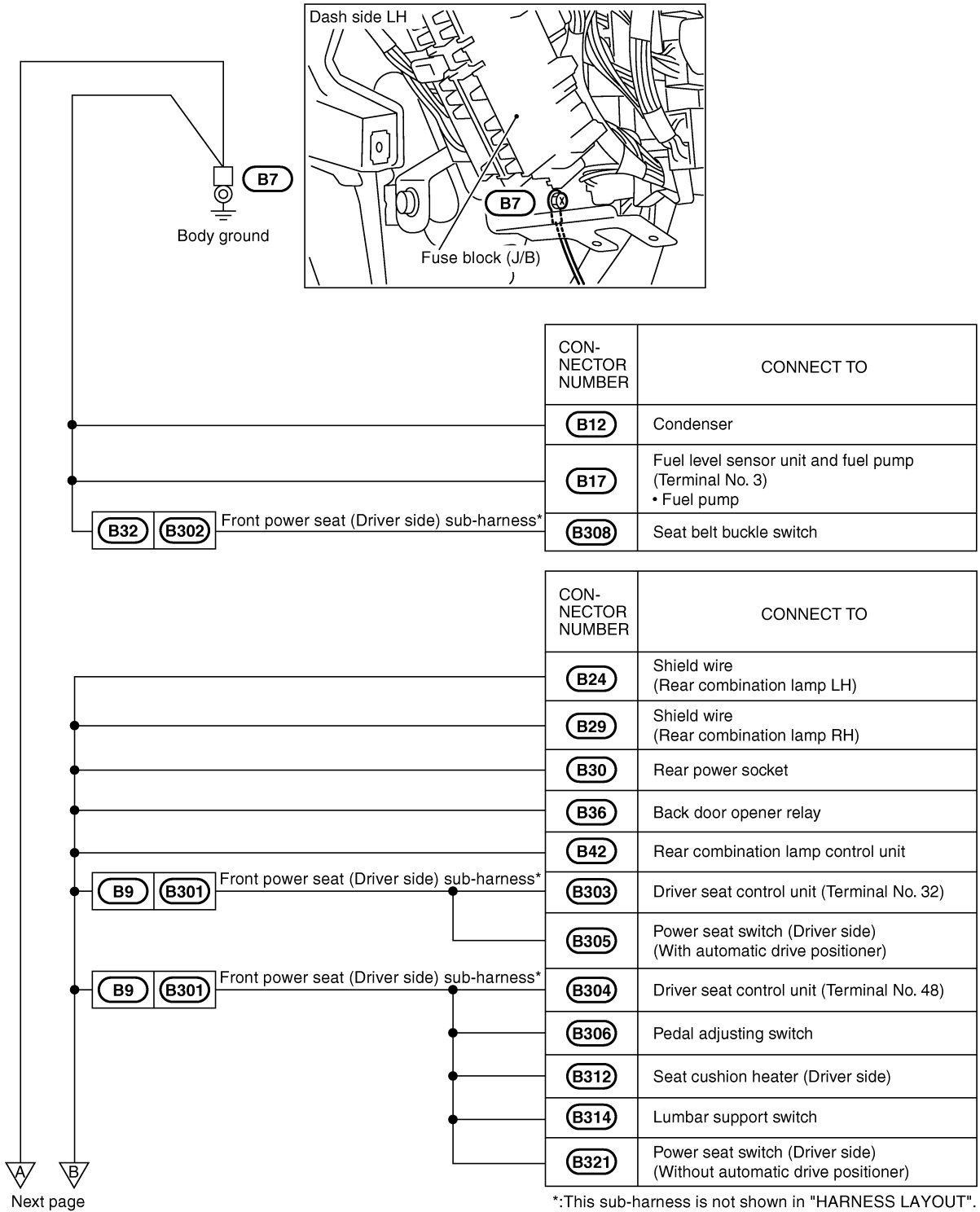


CKIB0298E

# GROUND

## BODY HARNESS

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

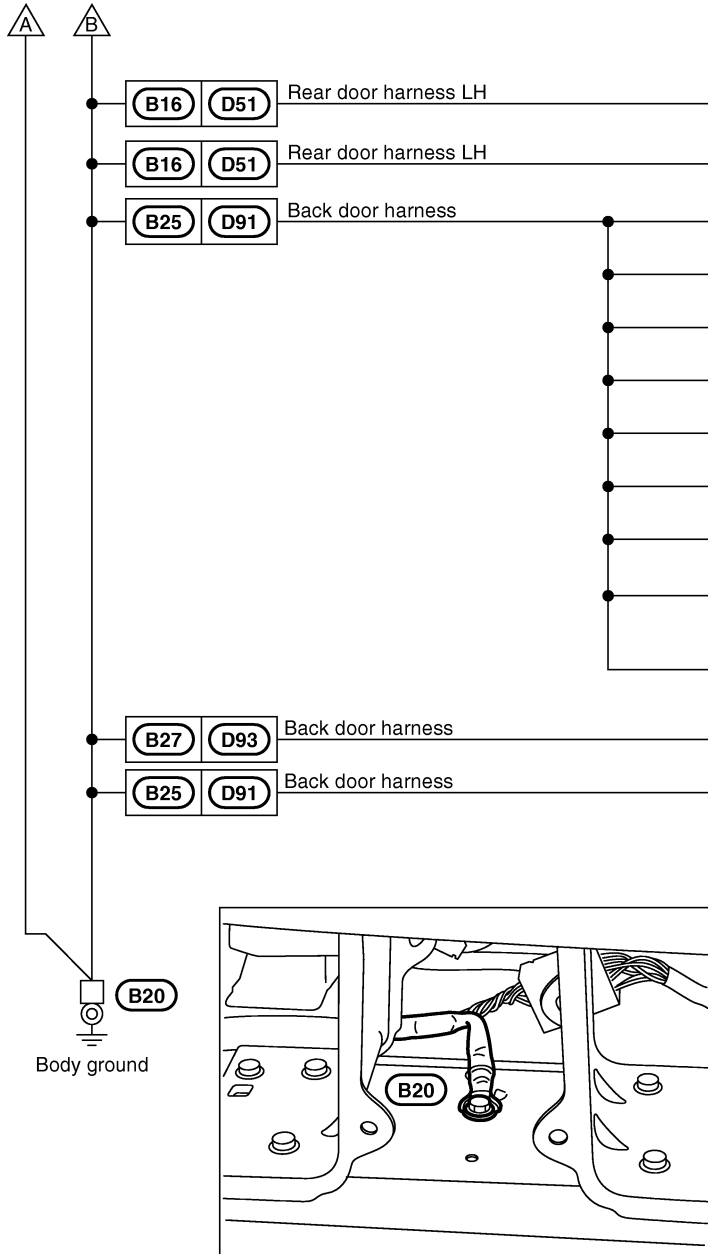


Next page

CKIB0300E

# GROUND

Preceding page

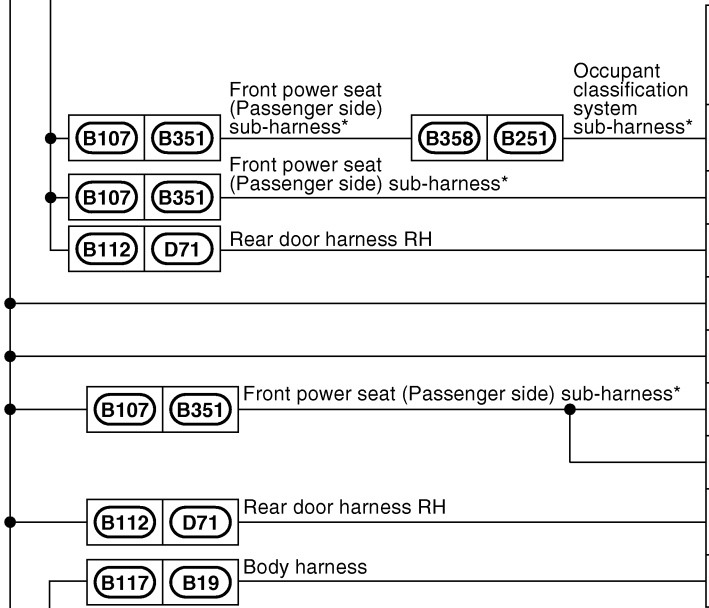
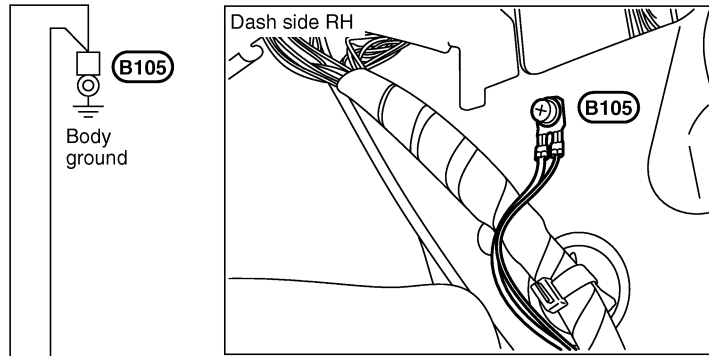


CON-NECTOR NUMBER	CONNECT TO
D55	Rear power window switch LH
D56	Rear door lock assembly LH • Door switch
D96	High-mounted stop lamp
D99	Back-up lamp LH
D102	License plate lamp LH
D103	Rear wiper motor
D104	License plate lamp RH
D105	Back-up lamp RH
D108	Back door request switch
D110	Back door opener switch
D111	Back door lock assembly • Door switch • Back door opener actuator
D107	Rear window defogger (-)
D109	Rear view camera

CKIB0301E

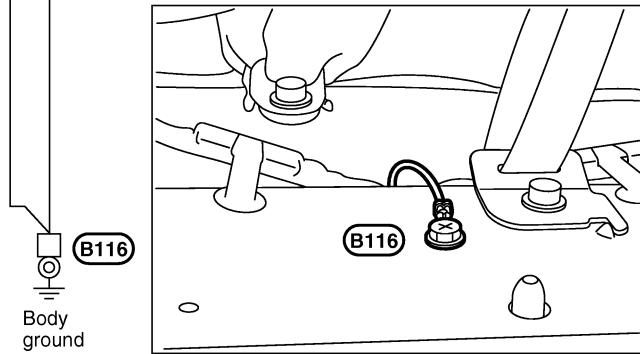
# GROUND

## BODY NO. 2 HARNESS



CON-NECTOR NUMBER	CONNECT TO
B252	Occupant classification system control unit
B355	Seat belt buckle switch
D75	Rear power window switch RH
B106	Heated seat relay
B114	BOSE speaker amp.
B354	Power seat switch (Passenger side)
B356	Seat cushion heater (Passenger side)
D76	Rear door lock assembly RH • Door switch
B37	Rear view camera control unit

\*:This sub-harness is not shown in "HARNES LAYOUT".



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

## HARNESS

PFP:00011

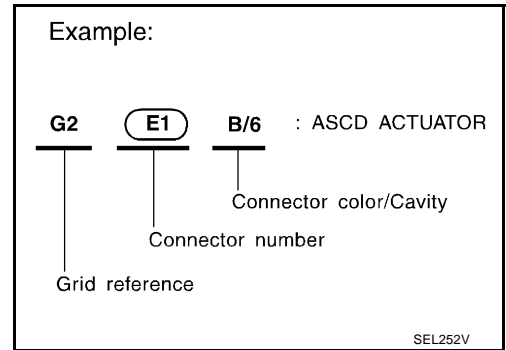
### Harness Layout

NKS0025R

#### HOW TO READ HARNESS LAYOUT

The following Harness Layouts use a map style grid to help locate connectors on the figures:

- Main Harness
- Engine Room Harness (Engine Compartment)
- Engine Control Harness
- Body Harness
















#### To Use the Grid Reference

1. Find the desired connector number on the connector list.
2. Find the grid reference.
3. On the figure, find the crossing of the grid reference letter column and number row.
4. Find the connector number in the crossing zone.
5. Follow the line (if used) to the connector.

#### CONNECTOR SYMBOL

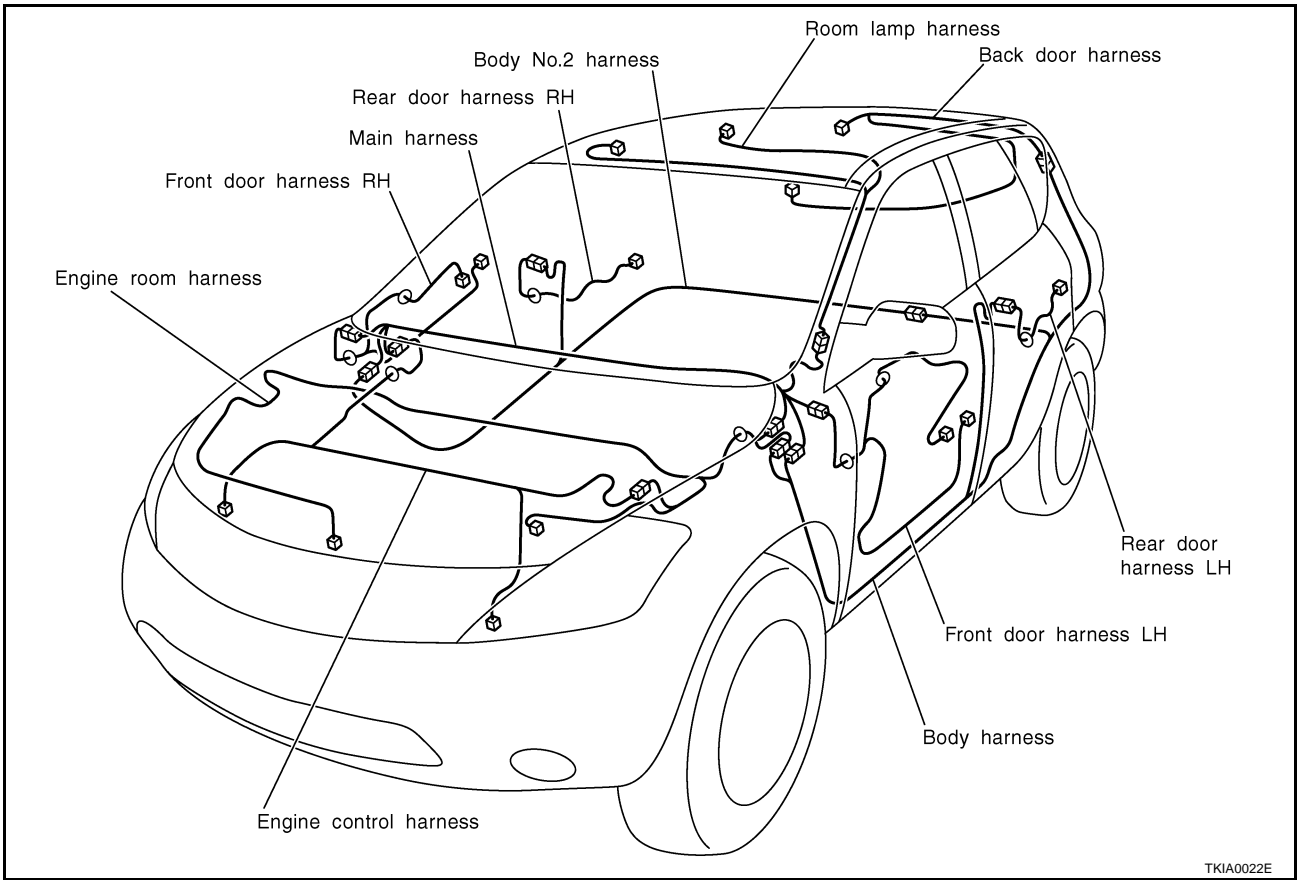
Main symbols of connector (in Harness Layout) are indicated in the below.

Connector type	Water proof type		Standard type	
	Male	Female	Male	Female
• Cavity: Less than 4 • Relay connector				
• Cavity: From 5 to 8				
• Cavity: More than 9				
• Ground terminal etc.	—			

CKIT0108E

# HARNESSES

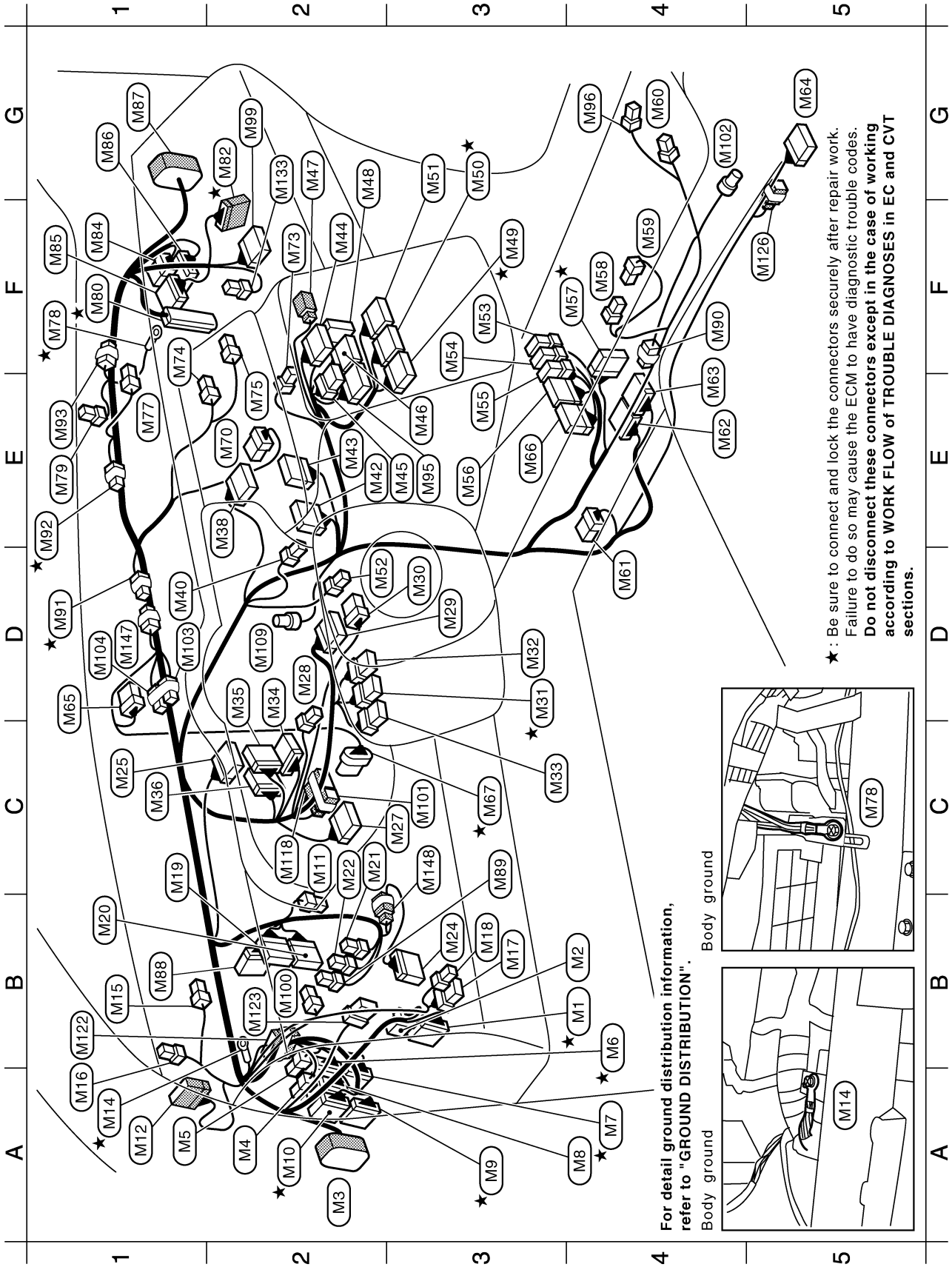
## OUTLINE



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

# HARNESS

## MAIN HARNESS



For detail ground distribution information, refer to "GROUND DISTRIBUTION".

★: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes. Do not disconnect these connectors except in the case of working according to **WORK FLOW of TROUBLE DIAGNOSES** in EC and CVT sections.

TKIB0607E

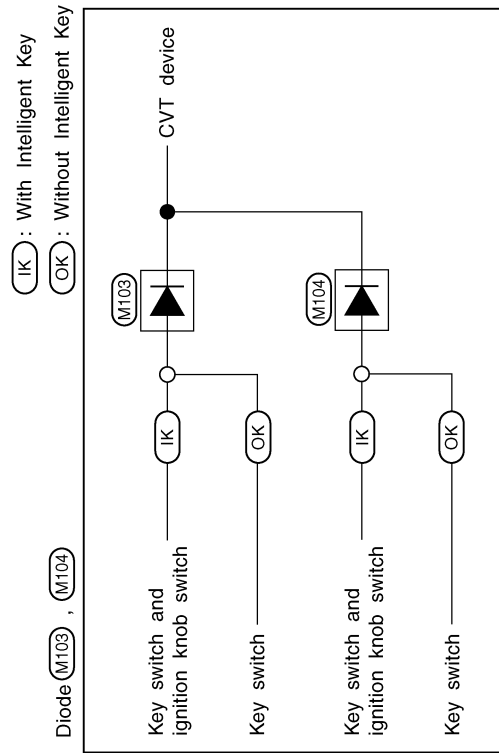


# HARNESSES

B4	★	M1	W/16	: Fuse block (J/B)	E2	M42	W/24	: Display control unit	E2	M70	W/6	: Blower motor
B4		M2	W/8	: Fuse block (J/B)	E2	M43	W/32	: Display control unit	F2	M73	B/2	: Front power socket (Center cluster)
A2		M3	SMJ	: To D1	F2	M44	W/10	: Audio unit	F1	M74	Y/4	: Front passenger air bag module
A2		M4	Y/4	: To E107	E3	M45	W/6	: Audio unit	E2	M75	W/2	: Glove box lamp
A1	★	M5	W/4	: To E108	E3	M46	W/16	: Audio unit	E1	M77	BR/2	: Tweeter RH
B4	★	M6	W/32	: To E109	G2	M47	BR/2	: To rod antenna	F1	M78	—	: Body ground
A4	★	M7	GR/16	: To B1	G3	M48	W/16	: A/C and AV switch	E1	M79	B/2	: Sunload sensor
A4	★	M8	BR/12	: To B1	F3	M49	GR/20	: Unified meter and A/C amp.	F1	M80	SMJ	: ECM
A3	★	M9	W/24	: To B2	G3	M50	GR/16	: Unified meter and A/C amp.	G2	M82	W/18	: To F102
A2	★	M10	BR/16	: To B3	D2	M51	W/24	: Unified meter and A/C amp.	F1	M84	W/6	: To B101
C2		M11	W/2	: Tire pressure warning check connector	F3	M52	W/2	: In-vehicle sensor	F1	M85	W/18	: To B102
A1		M12	W/10	: To R1	F3	M53	BR/6	: Heated seat switch (Passenger side)	G1	M86	W/16	: To B103
A1	★	M14	—	: Body ground	F3	M54	W/6	: Heated seat switch (Driver side)	G1	M87	SMJ	: To D31
B1		M15	BR/2	: Tweeter LH	E3	M55	W/6	: AWD lock switch	B1	M88	W/16	: Pedal adjusting control unit
A1		M16	W/3	: Optical sensor	E3	M56	W/16	: Door mirror remote control switch (Without memory mirror)	C3	M89	W/2	: Circuit breaker
B3		M17	GR/6	: VDC off switch	F4	M57	W/16	: CVT device	F4	M90	B/2	: Not used
B3		M18	W/4	: Headlamp aiming switch	F4	M58	W/2	: Coin box illumination	D1	M91	GR/2	: Condenser
C1		M19	W/32	: Automatic drive positioner control unit	F4	M59	BR/2	: CVT illumination	E1	M92	GR/2	: Condenser
B1		M20	W/16	: Automatic drive positioner control unit	G4	M60	B/2	: Front power socket (Center console)	E1	M93	W/2	: Condenser
C2		M21	L/4	: Back-up lamp relay	D4	M61	B/6	: Yaw rate / side / decel G sensor	E3	M95	W/12	: Audio unit
C2		M22	L/4	: Power socket relay	E4	M62	W/40	: NAVI control unit	G4	M96	W/3	: Option connector for DVD
B3		M24	W/16	: Data link connector	E4	M63	W/32	: NAVI control unit	G2	M99	W/40	: Intelligent Key unit
C1		M25	W/24	: Combination meter	E4	M64	Y/28	: Air bag diagnosis sensor unit	B2	M100	W/3	: Intelligent Key warning buzzer (Inside)
C3		M27	GR/10	: Shift lock control unit	G5	M65	W/6	: Heater & cooling unit assembly				
D2		M28	W/4	: Key switch (Without Intelligent Key)	D1	M65	W/6	: Heater & cooling unit assembly				
D3		M29	W/16	: Combination switch	E3	M66	BR/16	: Door mirror remote control switch (With memory mirror)				
D3		M30	W/8	: NATS antenna amp.	C3	M67	B/8	: Accelerator pedal position sensor				
D3	★	M31	GR/8	: Combination switch (Spiral cable)								
D3		M32	Y/6	: Combination switch (Spiral cable)								
C3		M33	W/8	: Steering angle sensor								
D2		M34	W/40	: BCM (Body control module)								
D2		M35	B/15	: BCM (Body control module)								
C1		M36	W/15	: BCM (Body control module)								
E2		M38	W/24	: Display								
D1		M40	W/2	: Ignition keyhole illumination								

★ : Be sure to connect and lock the connectors securely after repair work.  
 Failure to do so may cause the ECM to have diagnostic trouble codes.  
**Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and CVT sections.**

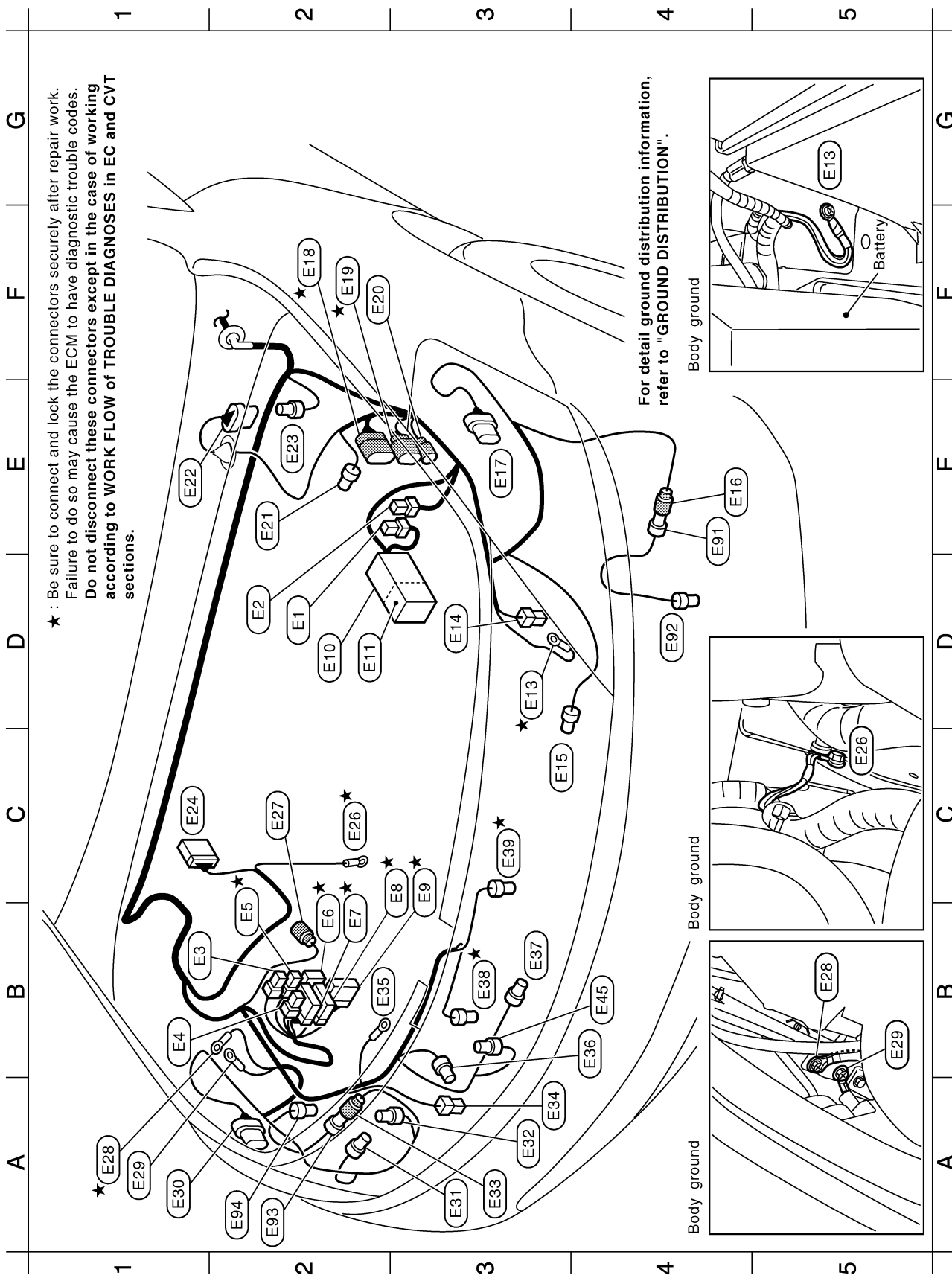
- C3 (M101) : Steering lock unit
- G4 (M102) GR/2 : Inside key antenna-1 (Center console)
- D1 (M103) : Diode
- D1 (M104) : Diode
- D2 (M109) GR/2 : Inside key antenna-2 (Dashboard)
- C2 (M118) GR/6 : Key switch and ignition knob switch  
(With Intelligent Key)
- B1 (M122) W/16 : To (B35)
- B2 (M123) B/5 : Passenger side select unlock relay
- F5 (M126) W/4 : To (B39)
- G2 (M133) W/4 : Remote keyless entry receiver
- D1 (M147) GR/2 : Resistor
- C3 (M148) W/4 : Option connector



# HARNESS

## ENGINE ROOM HARNESS

### Engine Compartment



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

PG

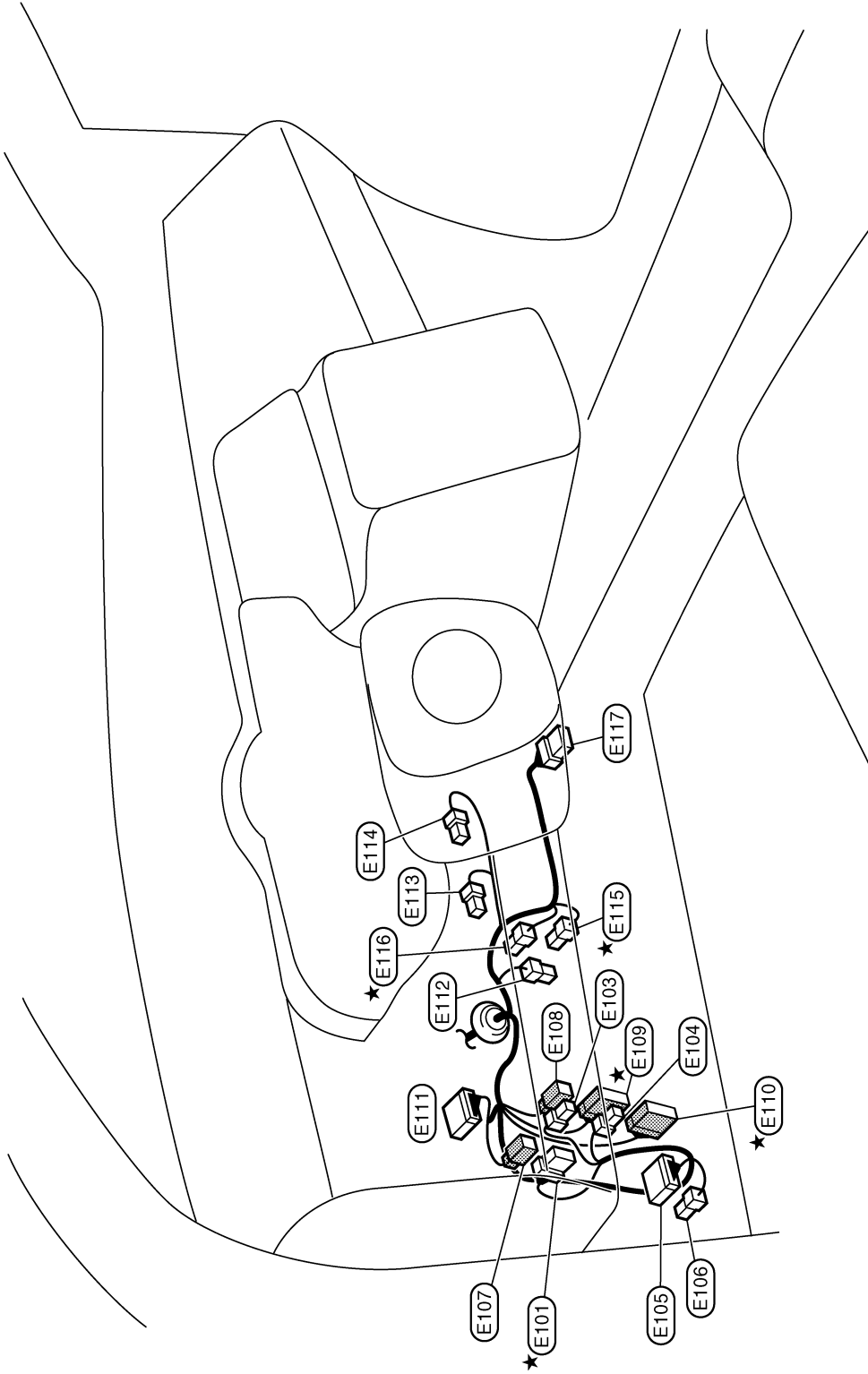
TKIB0610E



# HARNESS

## Passenger Compartment

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

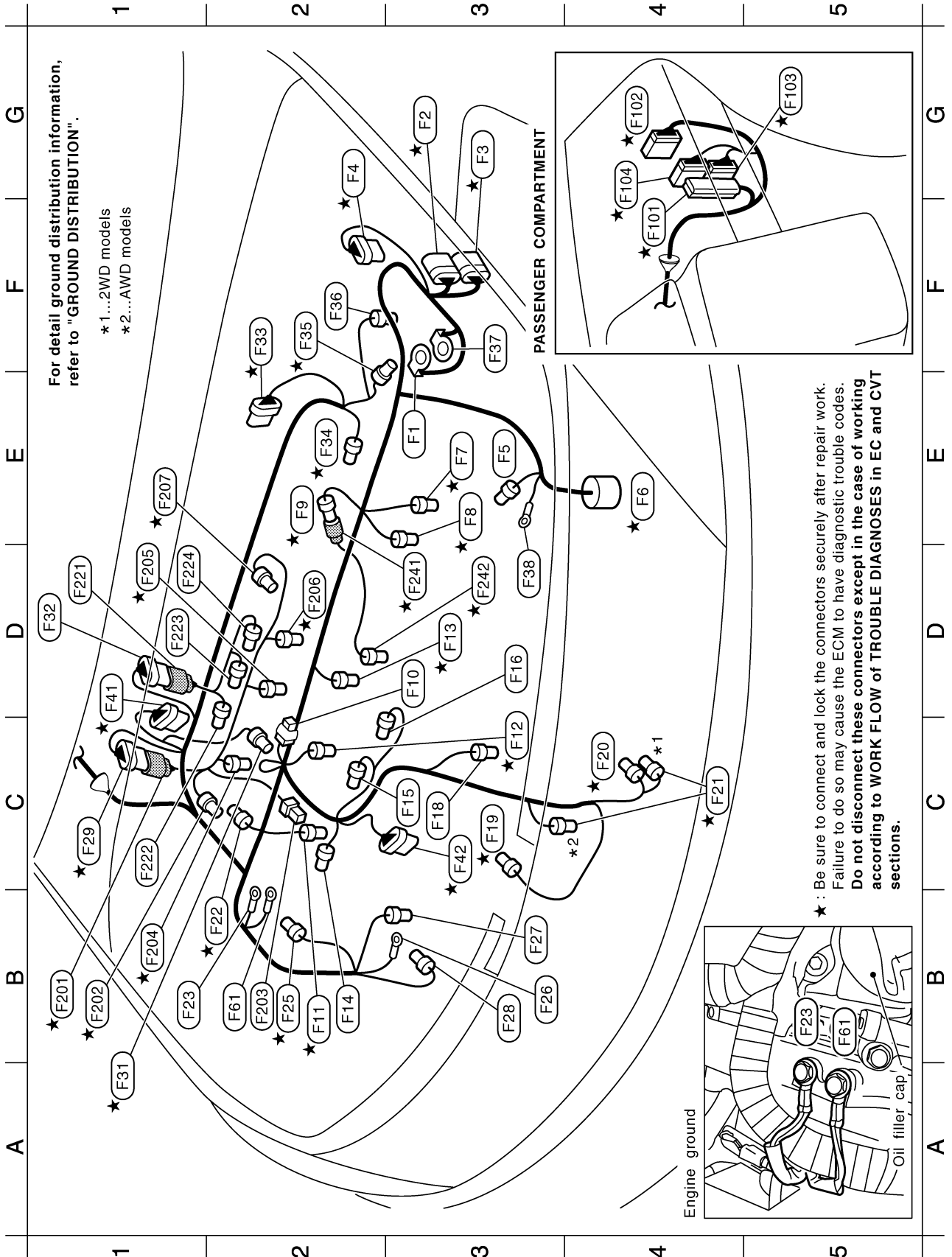


- ★ (E101) : Fuse block (J/B)
- (E103) : Fuse block (J/B)
- (E104) : Fuse block (J/B)
- (E105) : To (B4)
- (E106) : To (B5)
- (E107) : To (M4)
- (E108) : To (M5)
- ★ (E109) : To (M6)
- ★ (E110) : To (M7)
- (E111) : W/16 : AWD control unit
- (E112) : W/1 : Parking brake switch
- (E113) : GR/2 : Pedal adjusting motor
- (E114) : W/3 : Pedal adjusting motor
- ★ (E115) : BR/2 : ASCD brake switch
- ★ (E116) : W/4 : Stop lamp switch
- (E117) : W/6 : Ignition switch

★ : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes. **Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and CVT sections.**

# HARNESS

## ENGINE CONTROL HARNESS



TKIB0613E

## Engine control harness

E3	(F1)	—	: Fusible link holder
G3	(F2)	GR/9	: To (E18)
G3	(F3)	B/8	: To (E19)
G2	(F4)	B/6	: Mass air flow sensor
E3	(F5)	GR/1	: Starter motor
E4	(F6)	-/22	: CVT unit
E3	(F7)	GR/2	: Engine coolant temperature sensor
E3	(F8)	B/3	: Camshaft position sensor (PHASE) (Bank 2)
E2	(F9)	GR/2	: To (F241)
D3	(F10)	GR/2	: Condenser
B2	(F11)	GR/2	: Fuel injector No.2
C3	(F12)	GR/2	: Fuel injector No.4
D3	(F13)	GR/2	: Fuel injector No.6
B2	(F14)	GR/3	: Ignition coil No.2 (With power transistor)
C3	(F15)	GR/3	: Ignition coil No.4 (With power transistor)
D3	(F16)	GR/3	: Ignition coil No.6 (With power transistor)
C3	(F18)	BR/3	: Front electronic controlled engine mount
C3	(F19)	G/4	: Heated oxygen sensor 2 (Bank 1)
C4	(F20)	B/3	: Crankshaft position sensor (POS)
C4	(F21)	G/4	: Heated oxygen sensor 2 (Bank 2)
B2	(F22)	B/2	: VIAS control solenoid valve
B1	(F23)	—	: Engine ground
B2	(F25)	LGR/2	: Intake valve timing control solenoid valve (Bank 2)
B3	(F26)	—	: Alternator (B)
B3	(F27)	GR/4	: Alternator (S, L)
B3	(F28)	B/1	: Compressor
C1	(F29)	GR/8	: To (F201)
A1	(F31)	B/3	: Power steering pressure sensor
D1	(F32)	DGR/6	: To (F221)
F2	(F33)	DGR/6	: Electric throttle control actuator
E2	(F34)	G/3	: Camshaft position sensor (PHASE) (Bank 1)
F2	(F35)	B/3	: Secondary speed sensor
F2	(F36)	BR/3	: Rear electronic controlled engine mount (AWD models)
F3	(F37)	—	: Fusible link holder
D3	(F38)	—	: Starter motor
D1	(F41)	-/6	: Air fuel ratio (AVF) sensor 1 (Bank 1)
C3	(F42)	-/6	: Air fuel ratio (AVF) sensor 1 (Bank 2)

B2	(F61)	—	: Engine ground
F4	(F101)	SMJ	: ECM
G4	(F102)	W/18	: To (M82)
G5	(F103)	W/24	: TCM (Transmission control module)
G4	(F104)	GR/24	: TCM (Transmission control module)

<b>Engine control sub-harness-1</b>			
B1	(F201)	G/8	: To (F29)
B1	(F202)	G/2	: Intake valve timing control solenoid valve (Bank 1)
B2	(F203)	B/1	: Oil pressure switch
B1	(F204)	GR/2	: Fuel injector No.1
D1	(F205)	GR/2	: Fuel injector No.3
D2	(F206)	GR/2	: Fuel injector No.5
E1	(F207)	L/2	: EVAP canister purge volume control solenoid valve

## Engine control sub-harness-2

D1	(F221)	G/6	: To (F32)
C1	(F222)	GR/3	: Ignition coil No.1 (With power transistor)
D1	(F223)	GR/3	: Ignition coil No.3 (With power transistor)
D1	(F224)	GR/3	: Ignition coil No.5 (With power transistor)

## Engine control sub-harness-3

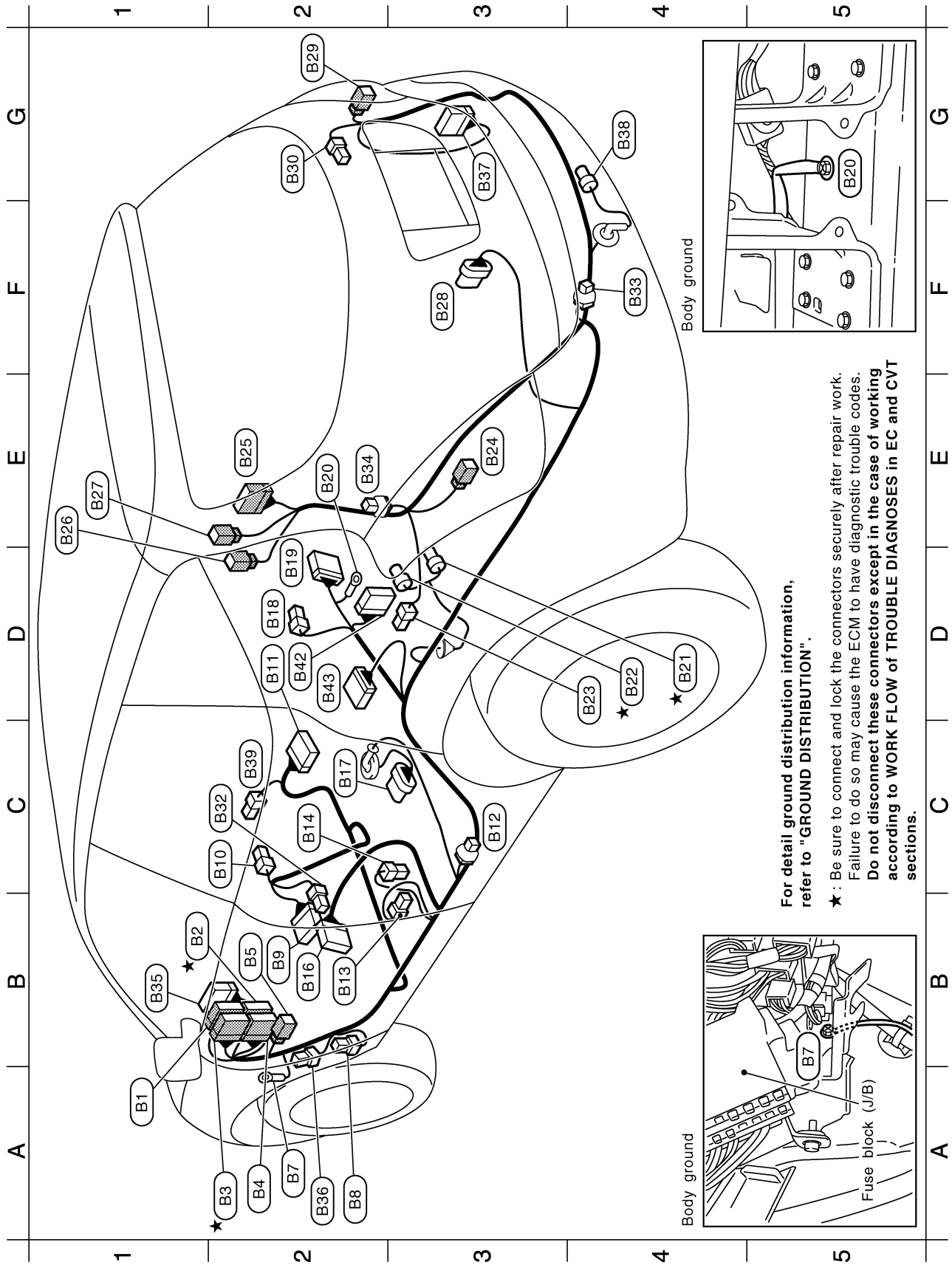
D3	(F241)	GR/2	: To (F9)
D3	(F242)	L/2	: Knock sensor

★ : Be sure to connect and lock the connectors securely after repair work.  
 Failure to do so may cause the ECM to have diagnostic trouble codes.  
**Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and CVT sections.**

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

# HARNESS

## BODY HARNESS



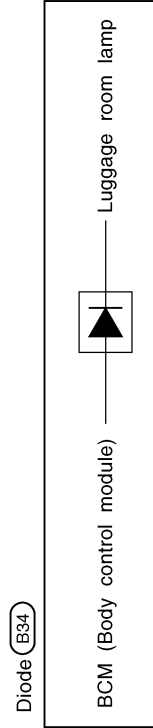
TKIB0615E



A1	(B1)	BR/12	: To (M8)
B1	(B2)	W/24	: To (M9)
A2	(B3)	BR/16	: To (M10)
A2	(B4)	W/12	: To (E105)
B2	(B5)	W/4	: To (E106)
A2	(B7)	—	: Body ground
A2	(B8)	BR/6	: Rear window defogger relay
B2	(B9)	W/16	: Front power seat (Driver side)
C2	(B10)	Y/2	: Front LH side air bag module
D2	(B11)	Y/12	: Air bag diagnosis sensor unit
C3	(B12)	W/2	: Condenser
B2	(B13)	Y/2	: LH side air bag (Satellite) sensor
C2	(B14)	Y/2	: Front LH seat belt pre-tensioner
B2	(B16)	W/18	: To (D51)
C2	(B17)	GR/5	: Fuel level sensor unit and fuel pump
D2	(B18)	Y/2	: To (B118)
D2	(B19)	W/16	: To (B117)
E2	(B20)	—	: Body ground
D4	(B21)	B/2	: EVAP canister vent control valve
D4	(B22)	GR/3	: EVAP control system pressure sensor
D4	(B23)	W/4	: Fuel lid lock actuator
E3	(B24)	W/4	: Rear combination lamp LH

E2	(B25)	W/18	: To (D91)
E1	(B26)	Y/4	: To (D92)
E1	(B27)	W/2	: To (D93)
F3	(B28)	GR/6	: Woofer
G2	(B29)	W/4	: Rear combination lamp RH
G2	(B30)	B/2	: Rear power socket
C2	(B32)	W/2	: Front power seat (Driver side)
F4	(B33)	W/1	: Option connector for trailer
E2	(B34)	W/2	: Diode
B1	(B35)	W/16	: To (M122)
A2	(B36)	L/4	: Back door opener relay
G3	(B37)	W/16	: Rear view camera control unit
G4	(B38)	GR/2	: Outside key antenna (Rear bumper)
C2	(B39)	W/4	: To (M126)
D2	(B42)	W/16	: Rear combination lamp control unit
D2	(B43)	W/16	: Satellite radio tuner

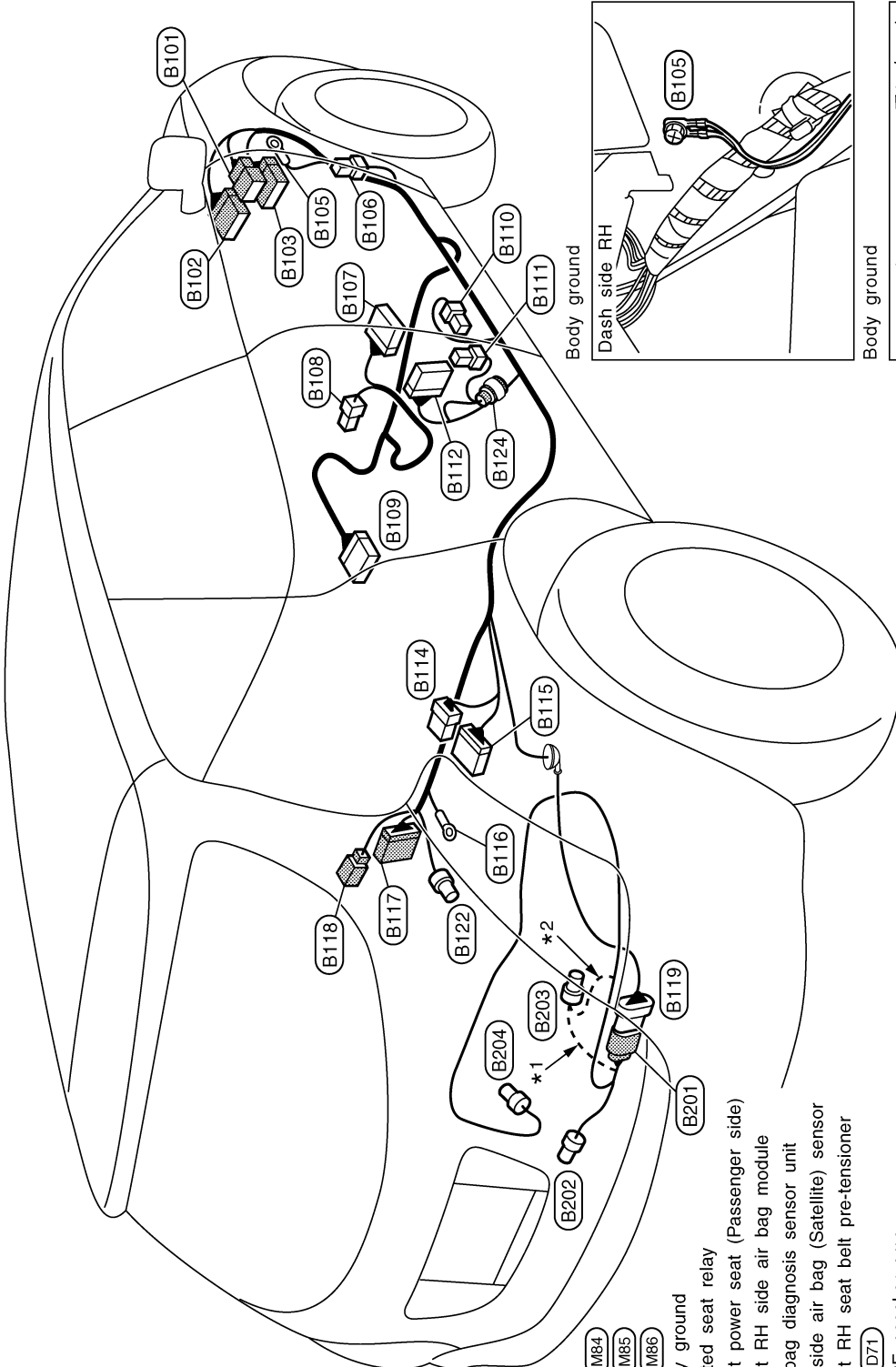
★ : Be sure to connect and lock the connectors securely after repair work.  
 Failure to do so may cause the ECM to have diagnostic trouble codes.  
**Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and CVT sections.**



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

# HARNESS

## BODY NO. 2 HARNESS

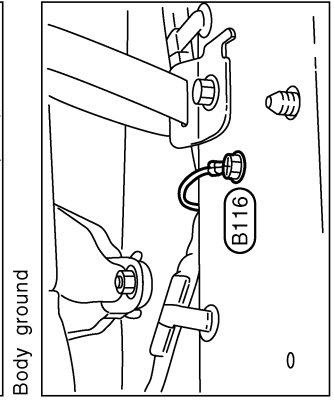
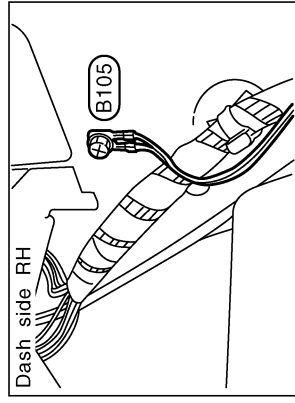


\*1...2WD models  
\*2...4WD models

- B101 W/6 : To (M84)
- B102 W/18 : To (M85)
- B103 W/16 : To (M86)
- B105 - : Body ground
- B106 L/4 : Heated seat relay
- B107 W/12 : Front power seat (Passenger side)
- B108 Y/2 : Front RH side air bag module
- B109 Y/12 : Air bag diagnosis sensor unit
- B110 Y/2 : RH side air bag (Satellite) sensor
- B111 Y/2 : Front RH seat belt pre-tensioner
- B112 W/18 : To (D71)
- B114 GR/8 : BOSE speaker amp.
- B115 B/24 : BOSE speaker amp.
- B116 - : Body ground
- B117 W/16 : To (B19)
- B118 Y/2 : To (E18)
- B119 B/6 : To (B201)
- B122 GR/2 : Inside key antenna-3 (Luggage room)
- B124 BR/3 : Belt tension sensor

### Body No.2 sub-harness

- (E201) B/6 : To (B119)
- (B202) L/2 : Rear wheel sensor LH
- (B203) GR/2 : Rear wheel sensor RH
- (B204) GR/2 : AWD solenoid



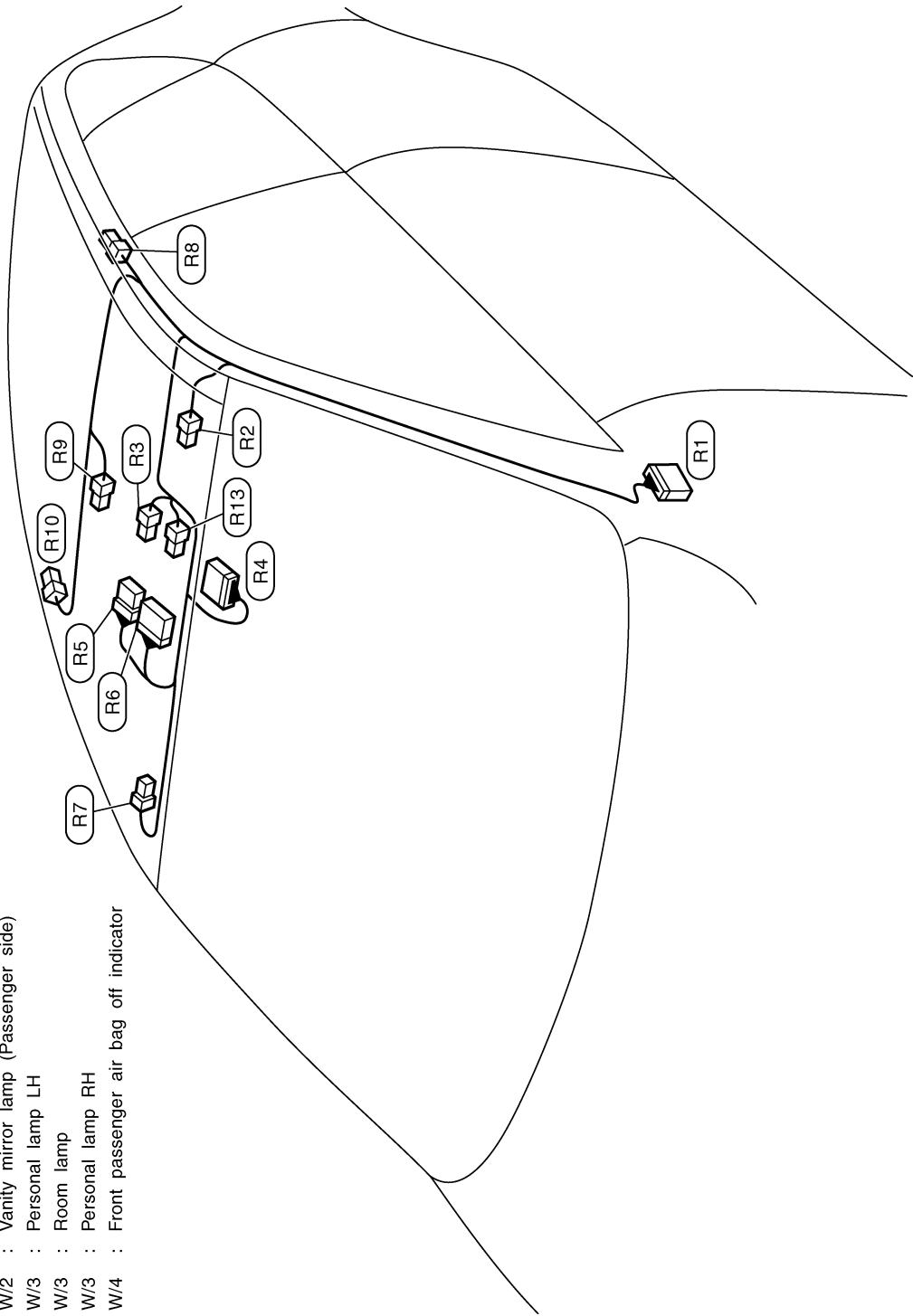
For detail ground distribution information, refer to "GROUND DISTRIBUTION".

# HARNESS

## ROOM LAMP HARNESS

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

- (R1) : To (M12)
- W/10 : Vanity mirror lamp (Driver side)
- W/2 : Map lamp
- B/10 : Auto anti-dazzling inside mirror
- GR/6 : Sunroof switch
- W/10 : Sunroof motor assembly
- W/2 : Vanity mirror lamp (Passenger side)
- W/3 : Personal lamp LH
- W/3 : Room lamp
- W/3 : Personal lamp RH
- W/4 : Front passenger air bag off indicator



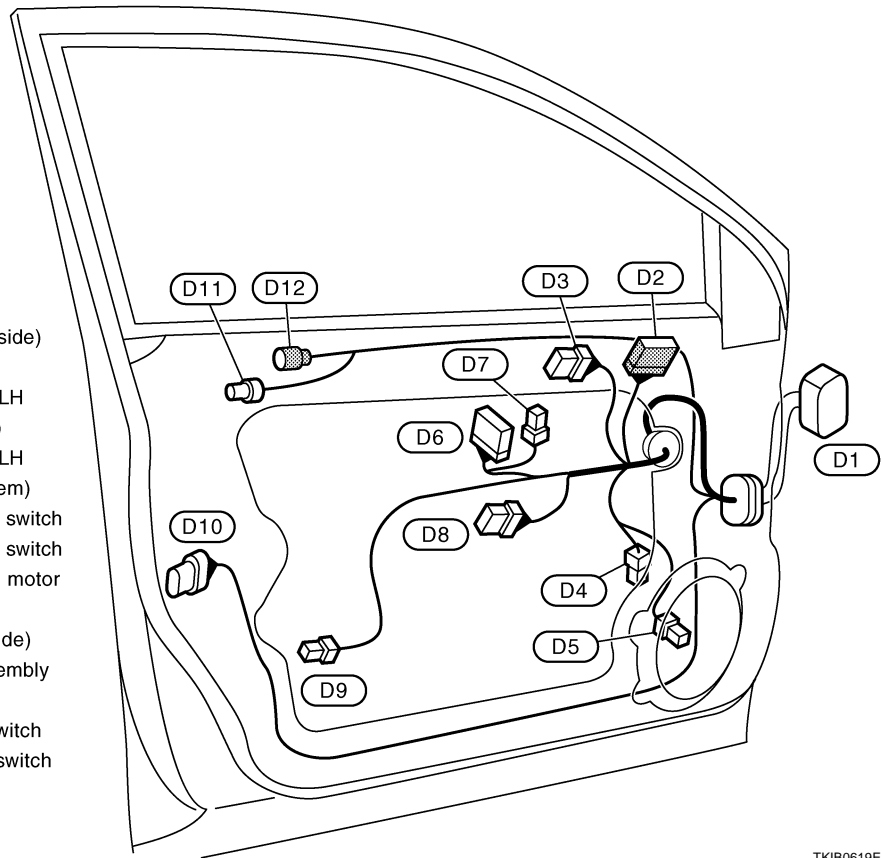
TKIB0618E

# HARNESS

## FRONT DOOR HARNESS

### LH Side

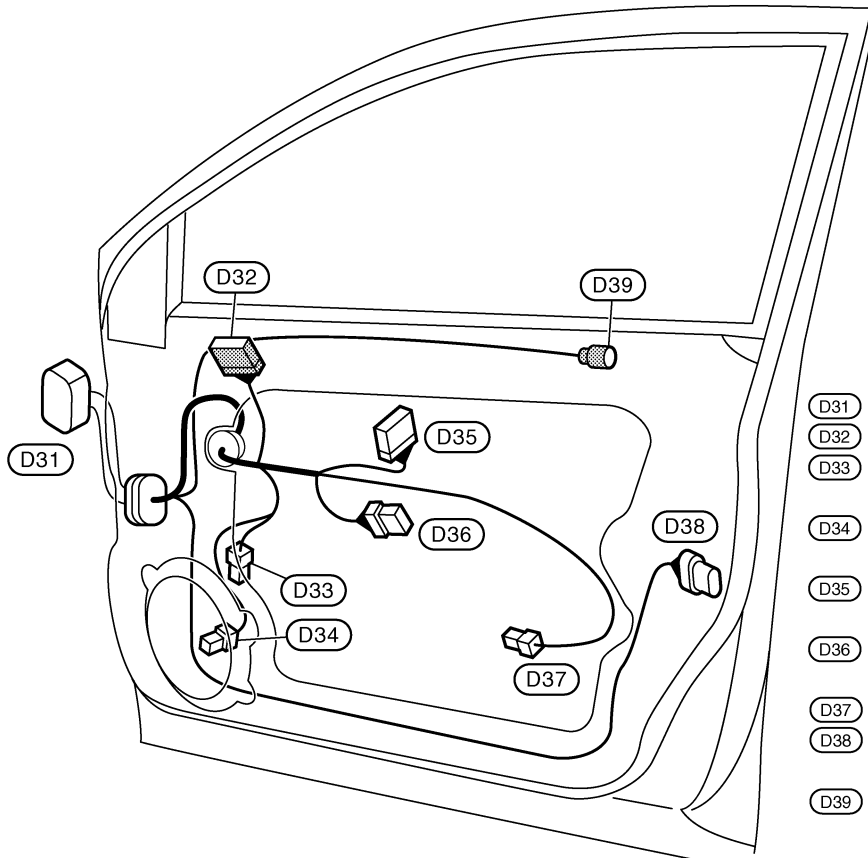
- (D1) SMJ : To (M3)
- (D2) W/12 : Door mirror (Driver side)
- (D3) W/8 : Seat memory switch
- (D4) BR/2 : Front door speaker LH  
(With BOSE system)
- (D5) W/2 : Front door speaker LH  
(Without BOSE system)
- (D6) W/16 : Power window main switch
- (D7) W/3 : Power window main switch
- (D8) W/6 : Front power window motor  
(Driver side)
- (D9) W/2 : Step lamp (Driver side)
- (D10) B/6 : Front door lock assembly  
(Driver side)
- (D11) BR/3 : Door key cylinder switch
- (D12) GR/2 : Front door request switch  
(Driver side)



TKIB0619E

### RH Side

- (D31) SMJ : To (M87)
- (D32) W/12 : Door mirror (Passenger side)
- (D33) BR/2 : Front door speaker RH  
(With BOSE system)
- (D34) W/2 : Front door speaker RH  
(Without BOSE system)
- (D35) W/16 : Front power window switch  
(Passenger side)
- (D36) W/6 : Front power window motor  
(Passenger side)
- (D37) W/2 : Step lamp (Passenger side)
- (D38) B/6 : Front door lock assembly  
(Passenger side)
- (D39) GR/2 : Front door request switch  
(Passenger side)



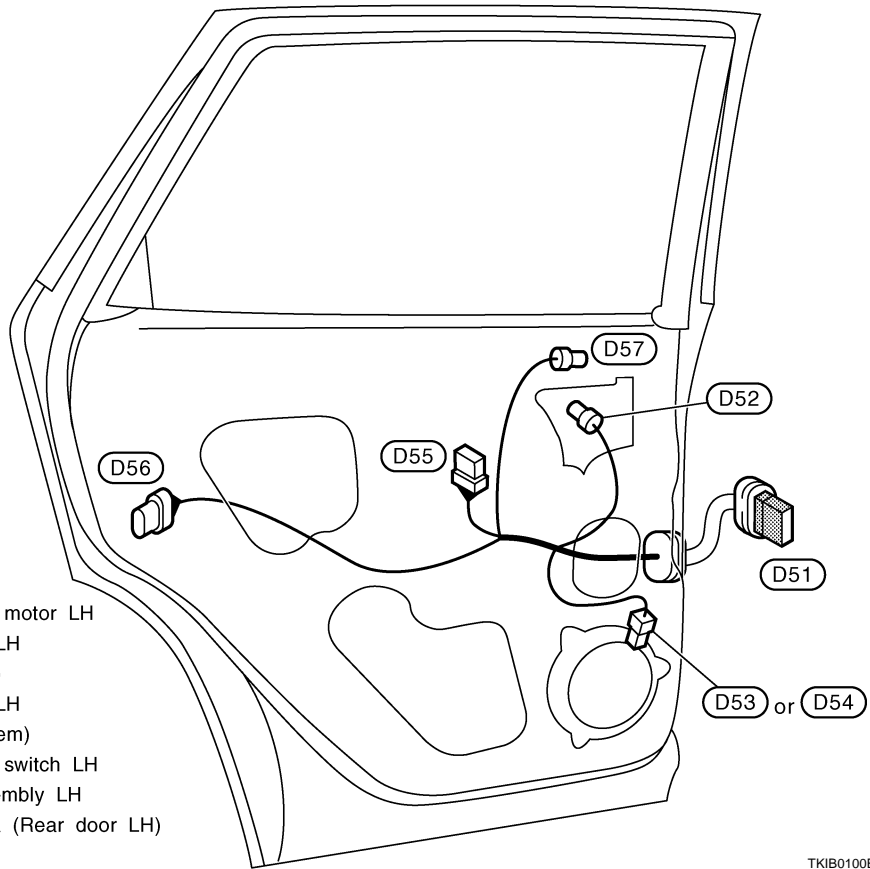
TKIB0620E

# HARNESS

## REAR DOOR HARNESS

### LH Side

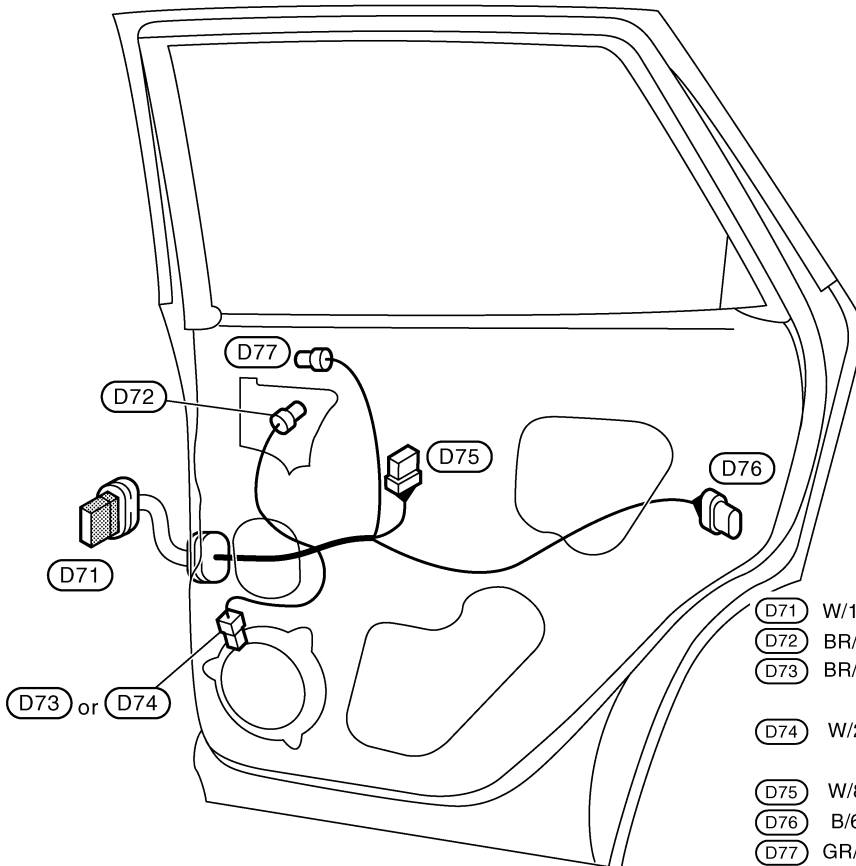
- (D51) W/18 : To (B16)
- (D52) BR/2 : Rear power window motor LH
- (D53) BR/2 : Rear door speaker LH  
(With BOSE system)
- (D54) W/2 : Rear door speaker LH  
(Without BOSE system)
- (D55) W/8 : Rear power window switch LH
- (D56) B/6 : Rear door lock assembly LH
- (D57) GR/2 : Outside key antenna (Rear door LH)



TKIB0100E

### RH Side

- (D71) W/18 : To (B112)
- (D72) BR/2 : Rear power window motor RH
- (D73) BR/2 : Rear door speaker RH  
(With BOSE system)
- (D74) W/2 : Rear door speaker RH  
(Without BOSE system)
- (D75) W/8 : Rear power window switch RH
- (D76) B/6 : Rear door lock assembly RH
- (D77) GR/2 : Outside key antenna (Rear door RH)

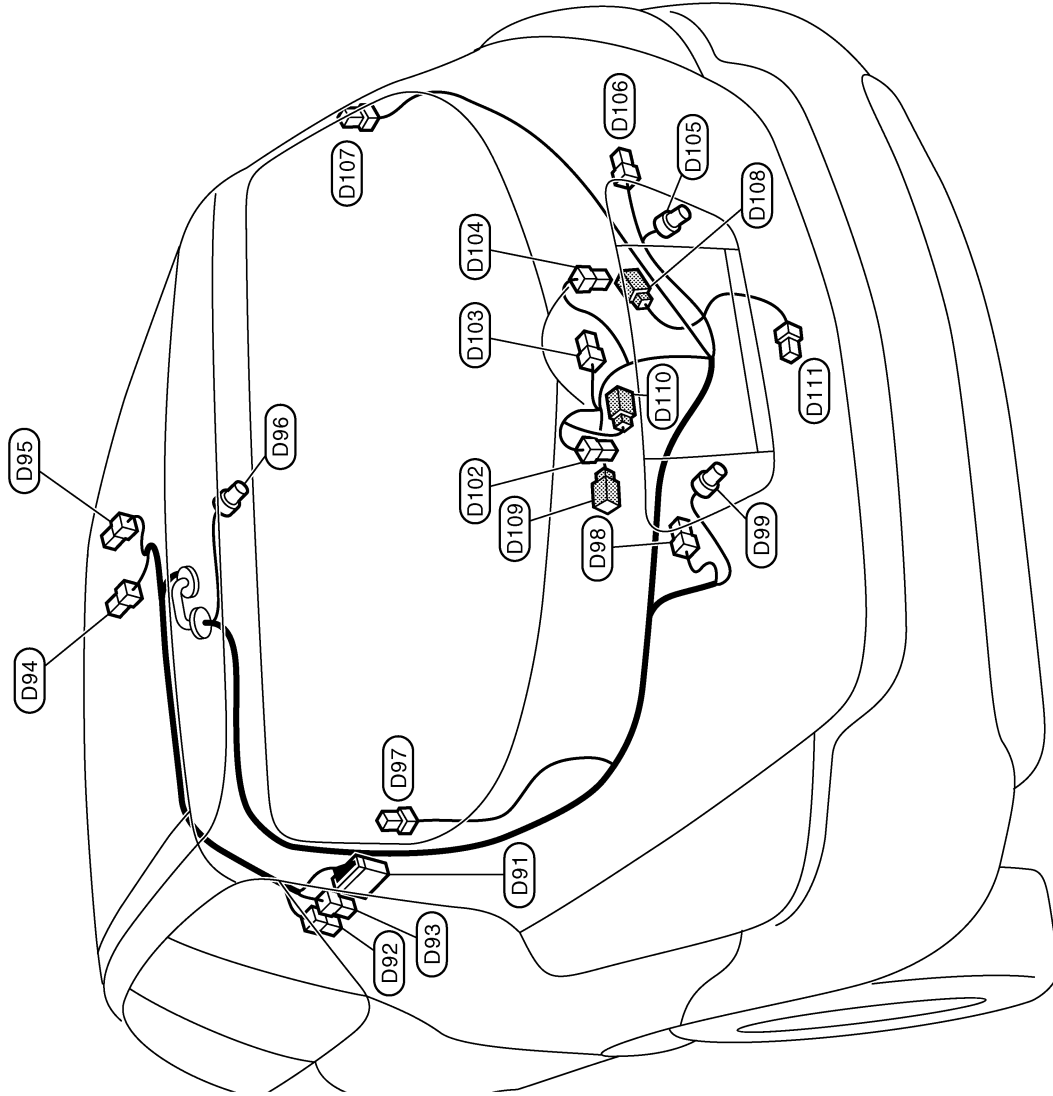


TKIB0101E

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

# HARNESS

## BACK DOOR HARNESS



D91	W/18	:	To	(B25)
D92	Y/4	:	To	(B26)
D93	W/2	:	To	(B27)
D94	O/2	:	LH side curtain air bag module	
D95	Y/2	:	RH side curtain air bag module	
D96	W/2	:	High-mounted stop lamp	
D97	B/1	:	Rear window defogger (+)	
D98	W/4	:	Luggage room lamp LH	
D99	W/2	:	Back-up lamp LH	
D102	BR/2	:	License plate lamp LH	
D103	W/4	:	Rear wiper motor	
D104	BR/2	:	License plate lamp RH	
D105	W/2	:	Back-up lamp RH	
D106	W/4	:	Luggage room lamp RH	
D107	B/1	:	Rear window defogger (-)	
D108	BR/2	:	Back door request switch	
D109	W/4	:	Rear view camera	
D110	BR/2	:	Back door opener switch	
D111	W/4	:	Back door lock assembly	

TKIB0621E

# HARNESS

## Wiring Diagram Codes (Cell Codes)

NKS0025S

Use the chart below to find out what each wiring diagram code stands for. Refer to the wiring diagram code in the alphabetical index to find the location (page number) of each wiring diagram.

Code	Section	Wiring Diagram Name
A/C	ATC	Air Conditioner
ABS	BRC	Anti-Lock Brake System
AF1B1	EC	Air Fuel Ratio Sensor 1 Bank 1
AF1B2	EC	Air Fuel Ratio Sensor 1 Bank 2
AF1HB1	EC	Air Fuel Ratio Sensor 1 Heater Bank 1
AF1HB2	EC	Air Fuel Ratio Sensor 1 Heater Bank 2
APPS1	EC	Accelerator Pedal Position Sensor
APPS2	EC	Accelerator Pedal Position Sensor
APPS3	EC	Accelerator Pedal Position Sensor
ASC/BS	EC	Automatic Speed Control Device (ASCD) Brake Switch
ASC/SW	EC	Automatic Speed Control Device (ASCD) Steering Switch
ASCBOF	EC	Automatic Speed Control Device (ASCD) Brake Switch
ASCIND	EC	Automatic Speed Control Device (ASCD) Indicator
AUDIO	AV	Audio
AUT/DP	SE	Automatic Drive Positioner
AUTO/L	LT	Automatic Light System
AWD	TF	AWD System
B/DOOR	BL	Back Door Opener
BACK/L	LT	Back-Up Lamp
BRK/SW	EC	Brake Switch
CAN	CVT	CAN Communication Line
CAN	EC	CAN Communication Line
CAN	LAN	CAN System
CHARGE	SC	Charging System
CHIME	DI	Warning Chime
COMBSW	LT	Combination Switch
COMM	AV	Audio Visual Communication Line
COMPAS	DI	Compass
COOL/F	EC	Cooling Fan Control
CVTIND	DI	CVT Indicator Lamp
D/LOCK	BL	Power Door Lock
DEF	GW	Rear Window Defogger
DTRL	LT	Headlamp – With Daytime Light System
ECM/PW	EC	ECM Power Supply for Back-Up
ECTS	EC	Engine Coolant Temperature Sensor
EMNT	EC	Engine Mount
ETC1	EC	Electric Throttle Control Function
ETC2	EC	Electric Throttle Control Motor Relay
ETC3	EC	Electric Throttle Control Motor
F/FOG	LT	Front Fog Lamp
F/PUMP	EC	Fuel Pump

# HARNESS

Code	Section	Wiring Diagram Name
FTS	CVT	CVT Fluid Temperature Sensor Circuit
FTTS	EC	Fuel Tank Temperature Sensor
FUELB1	EC	Fuel Injection System Function (Bank 1)
FUELB2	EC	Fuel Injection System Function (Bank 2)
H/AIM	LT	Headlamp Aiming Control System
H/LAMP	LT	Headlamp
HORN	WW	Horn
HSEAT	SE	Heated Seat
I/KEY	BL	Intelligent Key System
I/MIRR	GW	Inside Mirror (Auto Anti-Dazzling Mirror)
IATS	EC	Intake Air Temperature Sensor
IGNSYS	EC	Ignition System
ILL	LT	Illumination
INF/D	AV	Vehicle Information and Integrated Switch System
INJECT	EC	Injector
IVCB1	EC	Intake Valve Timing Control Solenoid Valve Bank 1
IVCB2	EC	Intake Valve Timing Control Solenoid Valve Bank 2
KEYLES	BL	Remote Keyless Entry System
KS	EC	Knock Sensor
L/USSV	CVT	Lock-Up Select Solenoid Valve
LPSV	CVT	Line Pressure Solenoid Valve
MAFS	EC	Mass Air Flow Sensor
MAIN	EC	Main Power Supply and Ground Circuit
METER	DI	Speedometer, Tachometer, Temp. and Fuel Gauges
MIL/DL	EC	MIL & Data Link Connector
MIRROR	GW	Power Door Mirror
MMSW	CVT	Manual Mode Switch
NATS	BL	Nissan Anti-Theft System
NAVI	AV	Navigation System
NONDTC	CVT	Non-Detective Items
O2H2B1	EC	Heated Oxygen Sensor 2 Heater Bank 1
O2H2B2	EC	Heated Oxygen Sensor 2 Heater Bank 2
O2S2B1	EC	Heated Oxygen Sensor 2 Bank 1
O2S2B2	EC	Heated Oxygen Sensor 2 Bank 2
P/SCKT	WW	Power Socket
PEDAL	AP	Adjustable Pedal System
PGC/V	EC	EVAP Canister Purge Volume Control Solenoid Valve
PHSB1	EC	Camshaft Position Sensor (PHASE) (Bank1)
PHSB2	EC	Camshaft Position Sensor (PHASE) (Bank2)
PNP/SW	CVT	Park/Neutral Position Switch
PNP/SW	EC	Park/Neutral Position Switch
POS	EC	Crankshaft Position Sensor (CKPS) (POS)
POWER	CVT	Transmission Control Module (Power Supply)
POWER	PG	Power Supply Routing Circuit



# HARNESS

Code	Section	Wiring Diagram Name	
PRE/SE	EC	EVAP Control System Pressure Sensor	A
PRIPS	CVT	Primary Pressure Sensor	
PRSCVT	CVT	Primary Speed Sensor CVT (Revolution Sensor)	B
PS/SEN	EC	Power Steering Pressure Sensor	
ROOM/L	LT	Interior Room Lamp	
RP/SEN	EC	Refrigerant Pressure Sensor	C
SEAT	SE	Power Seat	
SECPS	CVT	Secondary Pressure Sensor	D
SECPSV	CVT	Secondary Pressure Solenoid Valve	
SEN/PW	EC	Sensor Power Supply	
SESCVT	CVT	Secondary Speed Sensor CVT (Revolution Sensor)	E
SHIFT	CVT	CVT Shift Lock System	
SPSW	CVT	Second Position Switch	
SROOF	RF	Sunroof	F
SRS	SRS	Supplemental Restraint System	
START	SC	Starting System	G
STM	CVT	Step Motor	
STOP/L	LT	Stop Lamp	H
STSIG	CVT	Start Signal Circuit	
T/WARN	WT	Low Tire Pressure Warning System	
TAIL/L	LT	Parking, License and Tail Lamps	I
TCV	CVT	Torque Converter Clutch Solenoid Valve	
TPS1	EC	Throttle Position Sensor (Sensor 1)	
TPS2	EC	Throttle Position Sensor (Sensor 2)	J
TPS3	EC	Throttle Position Sensor	
TRNSCV	BL	Homelink Universal Transceiver	PG
TURN	LT	Turn Signal and Hazard Warning Lamp	
VDC	BRC	Vehicle Dynamics Control System	
VEHSEC	BL	Vehicle Security System	L
VENT/V	EC	EVAP Canister Vent Control Valve	
VIAS	EC	Variable Induction Air Control System	M
VIAS/V	EC	VIAS Control Solenoid Valve	
WARN	DI	Warning Lamps	
WINDOW	GW	Power Window	
WIP/R	WW	Rear Wiper and Washer	
WIPER	WW	Front Wiper and Washer	

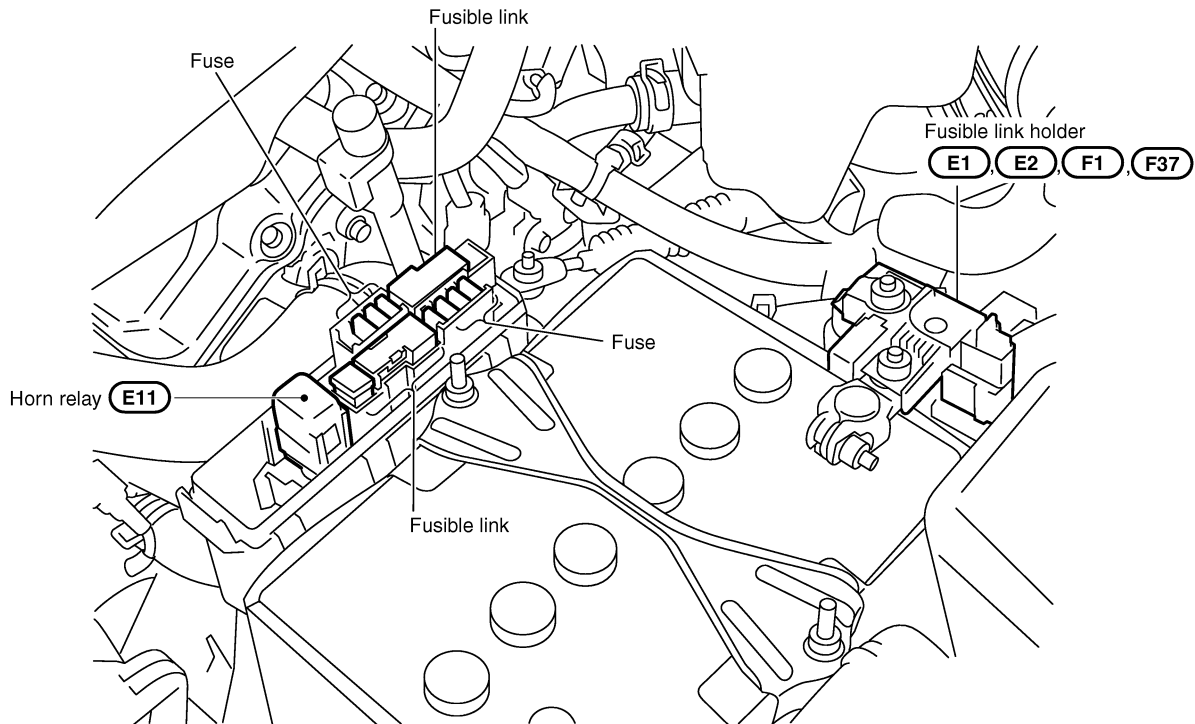
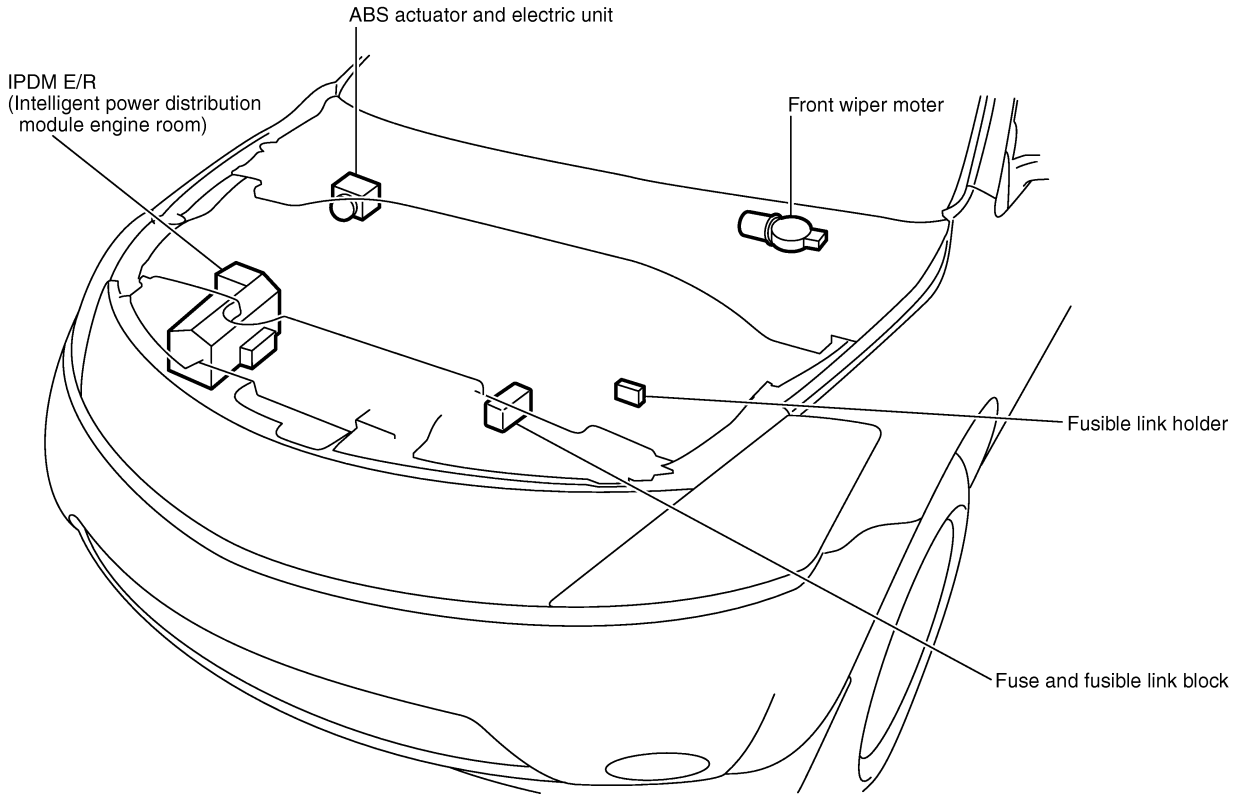
# ELECTRICAL UNITS LOCATION

PFP:25230

NKS0025T

## ELECTRICAL UNITS LOCATION

### Electrical Units Location ENGINE COMPARTMENT

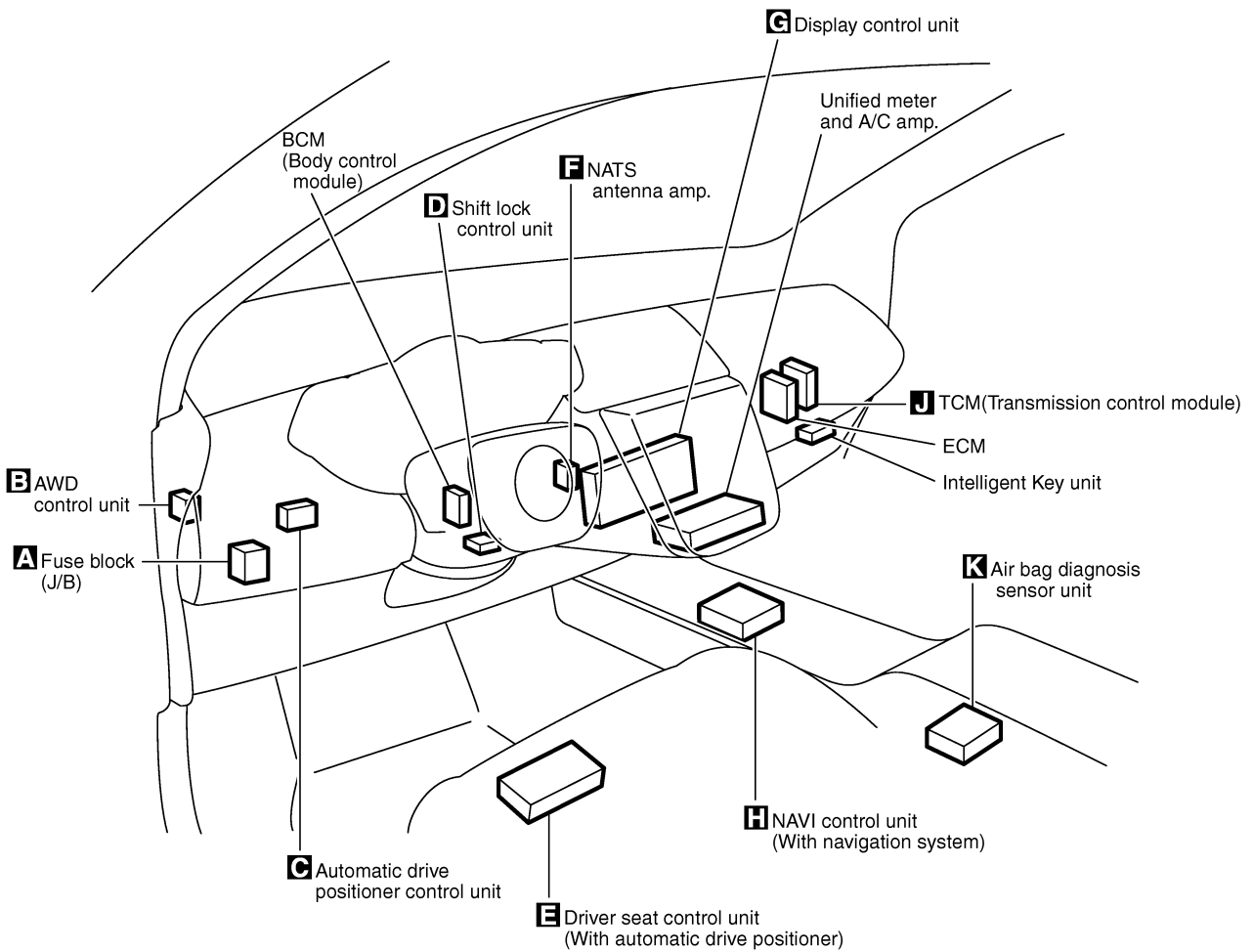


CKIB0303E

# ELECTRICAL UNITS LOCATION

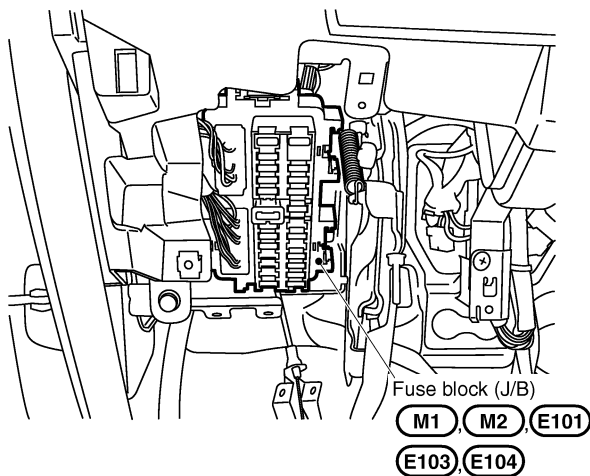
## PASSENGER COMPARTMENT

A  
B  
C  
D  
E  
F  
G  
H  
I  
J

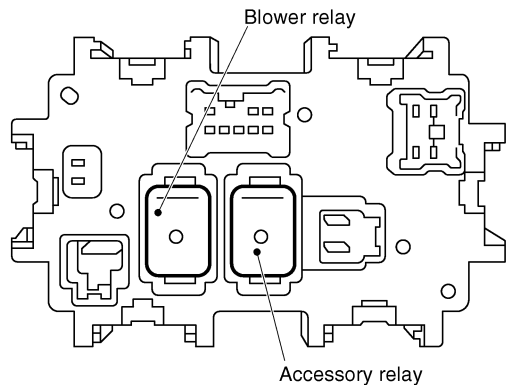


PG

**A** Driver side view with lower instrument panel removed



Fuse block (J/B) rear view

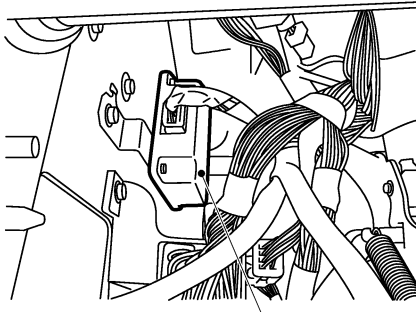


L  
M

CKIB0304E

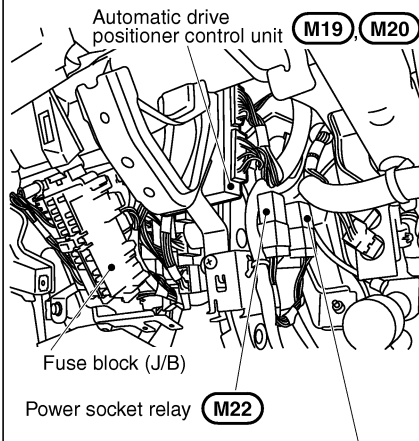
# ELECTRICAL UNITS LOCATION

**B** Dash side LH



AWD control unit **(E111)**

**C** Driver side view with lower instrument panel removed



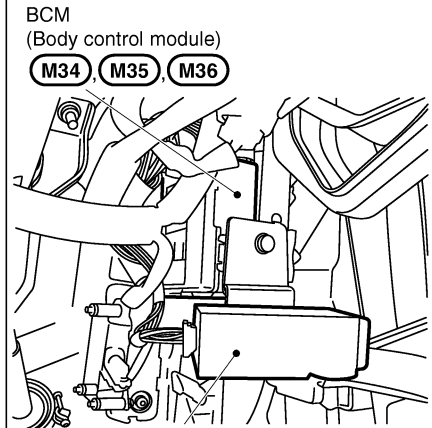
Automatic drive positioner control unit **(M19)** **(M20)**

Fuse block (J/B)

Power socket relay **(M22)**

Circuit breaker **(M89)**

**D** Driver side view with lower instrument panel removed

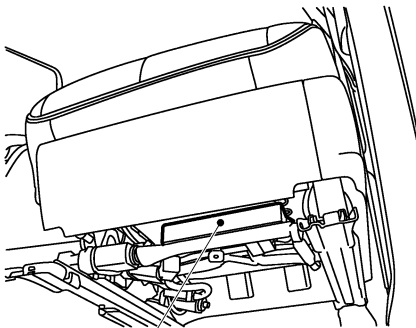


BCM  
(Body control module)

**(M34)** **(M35)** **(M36)**

Shift lock control unit **(M27)**

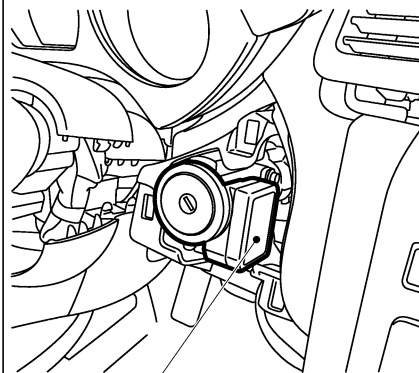
**E** Under driver seat



Driver seat control unit  
(With automatic drive positioner)

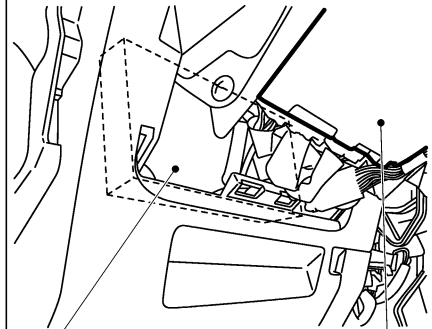
**(B303)** **(B304)**

**F** Driver side view with cluster lid A removed



NATS antenna amp. **(M30)**

**G** View with instrument panel center removed

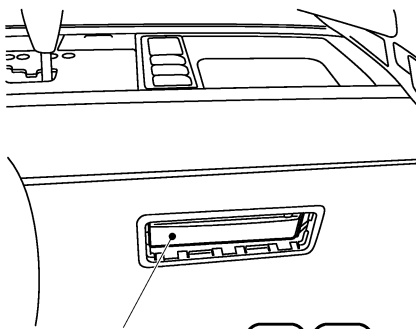


Display control unit **(M42)** **(M43)**

Unified meter and A/C amp.

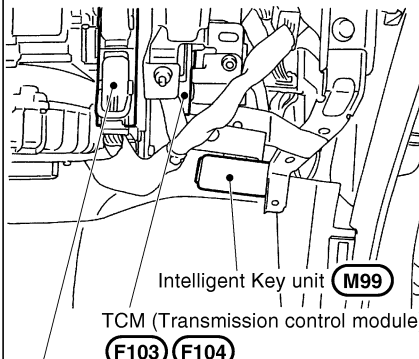
**(M49)** **(M50)** **(M51)**

**H**



NAVI control unit **(M62)** **(M63)**

**J** Behind lower instrument panel on passenger side



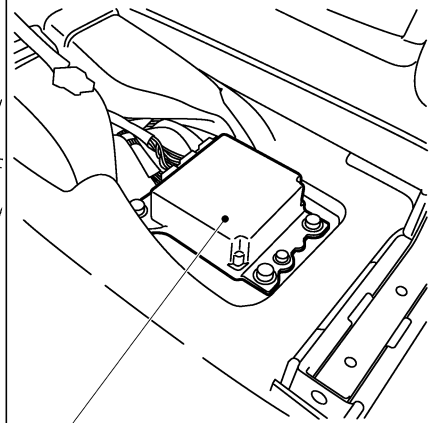
Intelligent Key unit **(M99)**

TCM (Transmission control module)

**(F103)** **(F104)**

ECM **(M80)** **(F101)**

**K** View with floor console box removed

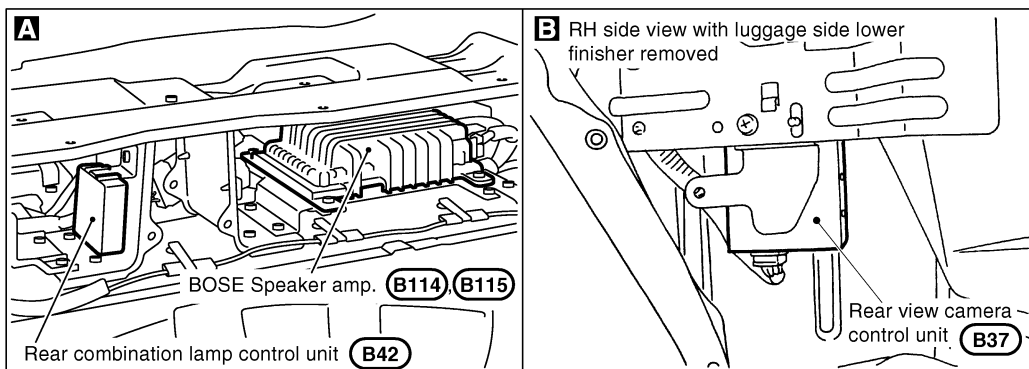
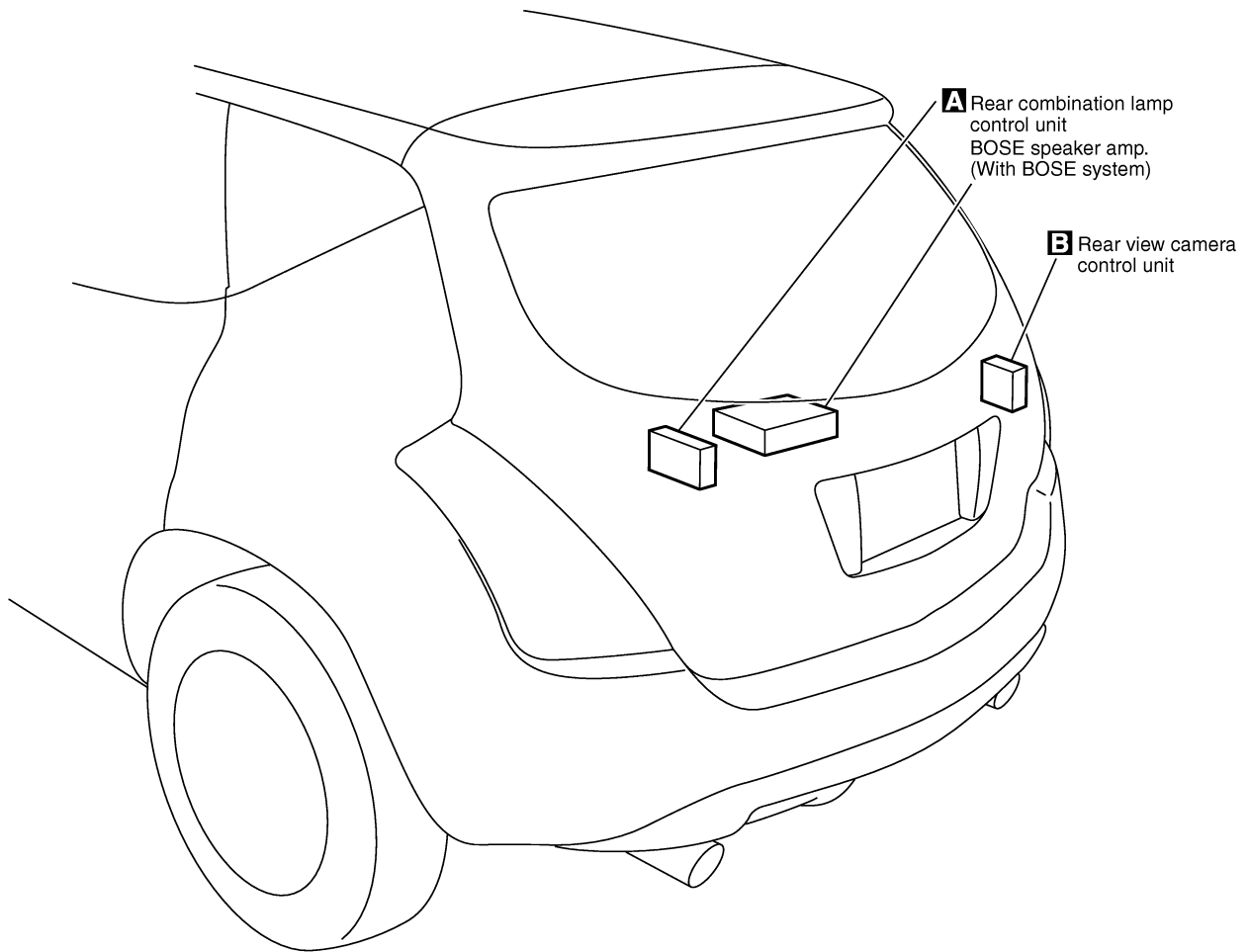


Air bag diagnosis sensor unit **(M64)**

CKIB0305E

# ELECTRICAL UNITS LOCATION

## LUGGAGE COMPARTMENT



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

CKIB0306E

# HARNESS CONNECTOR

PFP:00011

NKS0025U

## HARNESS CONNECTOR

### Description

#### HARNESS CONNECTOR (TAB-LOCKING TYPE)

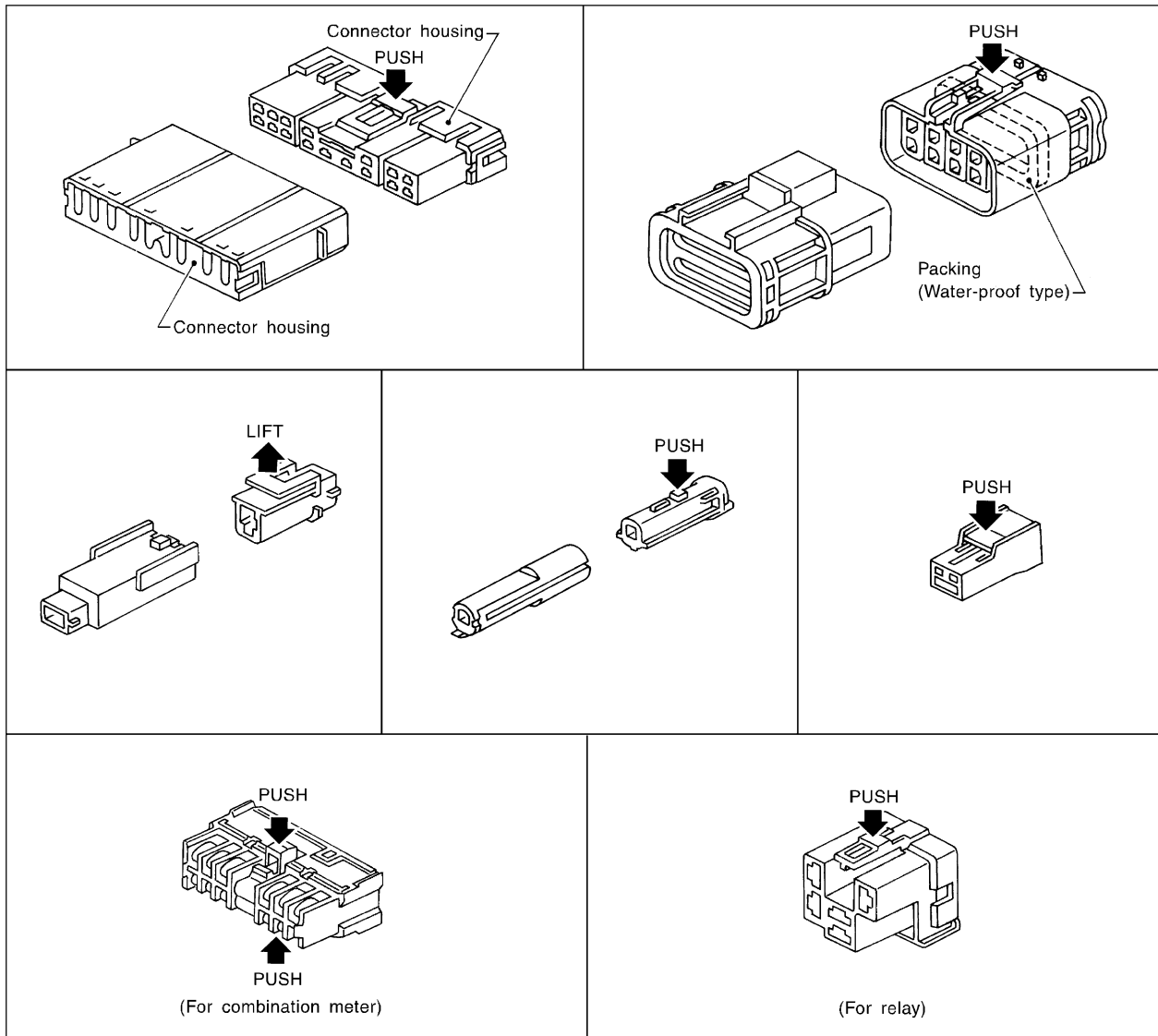
- The tab-locking type connectors help prevent accidental looseness or disconnection.
- The tab-locking type connectors are disconnected by pushing or lifting the locking tab(s). Refer to the figure below.

Refer to the next page for description of the slide-locking type connector.

#### CAUTION:

Never pull the harness or wires when disconnecting the connector.

[Example]



SEL769DA

# HARNESS CONNECTOR

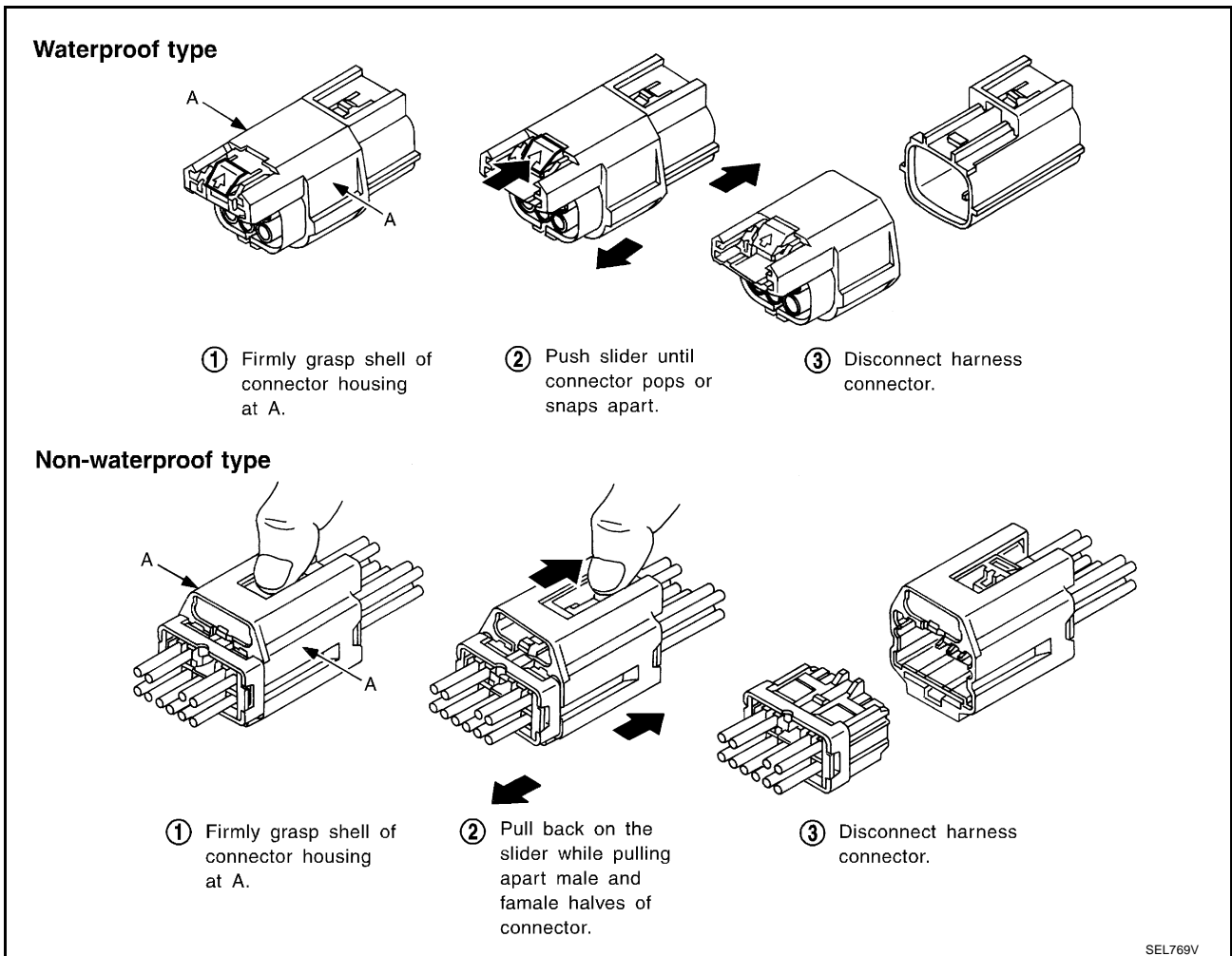
## HARNESS CONNECTOR (SLIDE-LOCKING TYPE)

- A new style slide-locking type connector is used on certain systems and components, especially those related to OBD.
- The slide-locking type connectors help prevent incomplete locking and accidental looseness or disconnection.
- The slide-locking type connectors are disconnected by pushing or pulling the slider. Refer to the figure below.

### CAUTION:

- **Never pull the harness or wires when disconnecting the connector.**
- **Be careful not to damage the connector support bracket when disconnecting the connector.**

[Example]



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

# ELECTRICAL UNITS

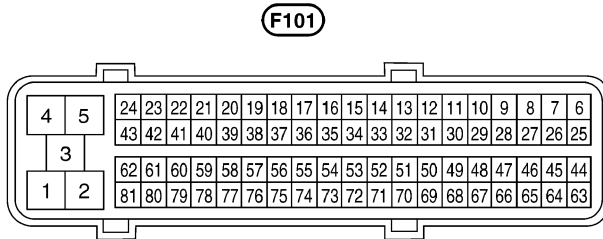
## ELECTRICAL UNITS

PFP:00011

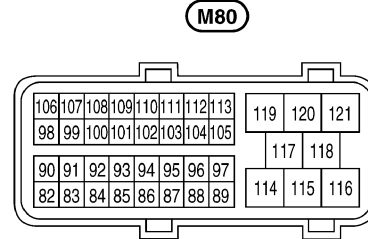
### Terminal Arrangement

NKS0025V

#### ECM



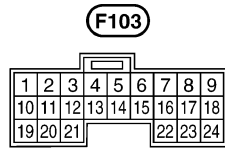
(Black)



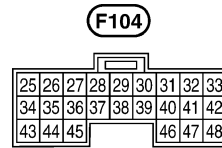
(Black)



#### TCM (TRANSMISSION CONTROL MODULE)



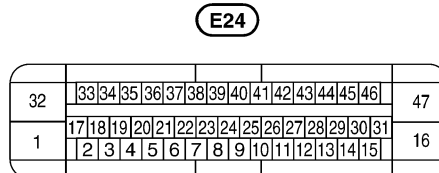
(White)



(Gray)



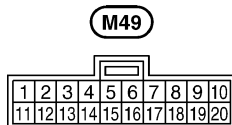
#### ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)



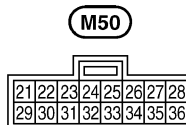
(Black)



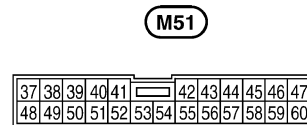
#### UNIFIED METER AND A/C AMP.



(Gray)



(Gray)



(White)

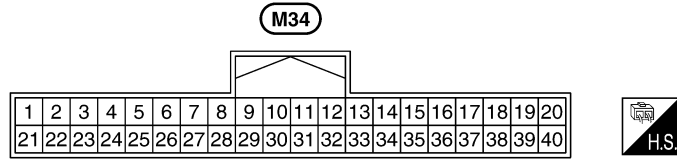


CKIA0322E

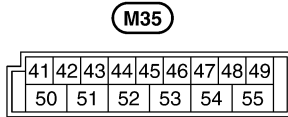


# ELECTRICAL UNITS

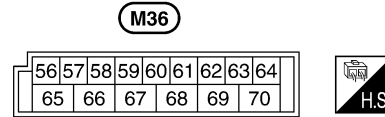
## BCM (BODY CONTROL MODULE)



(White)

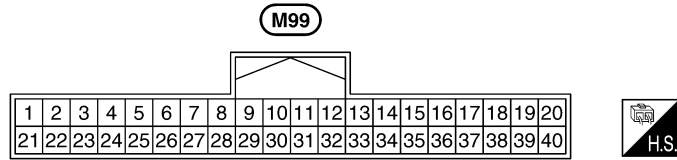


(Black)



(White)

## INTELLIGENT KEY UNIT



(White)

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

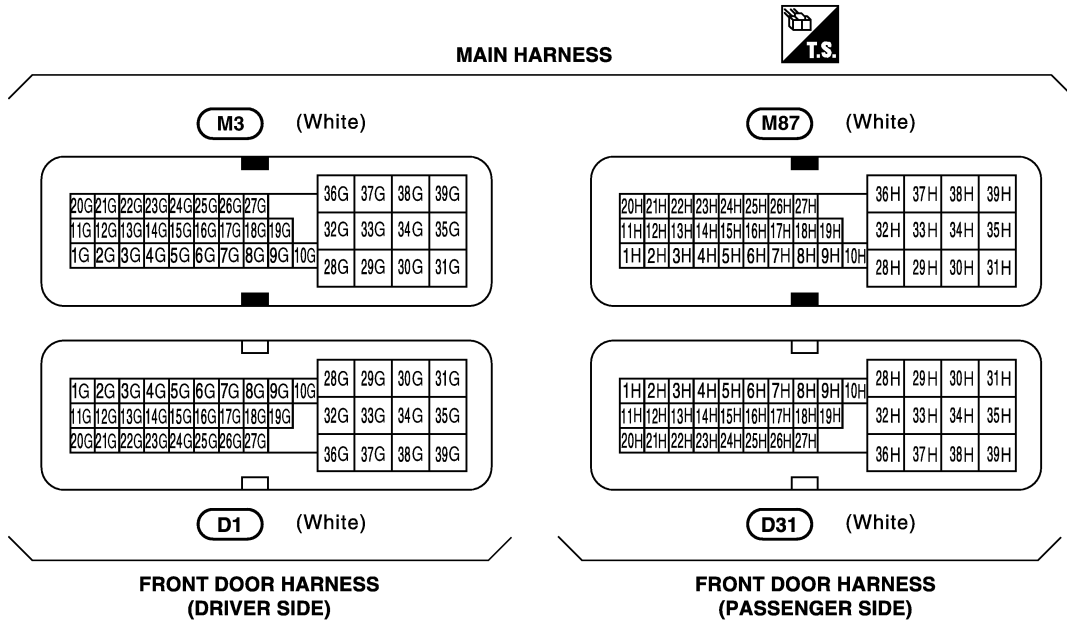
# SMJ (SUPER MULTIPLE JUNCTION)

## SMJ (SUPER MULTIPLE JUNCTION)

PFP:B4341

### Terminal Arrangement

NKS0025W



# STANDARDIZED RELAY

PFP:00011

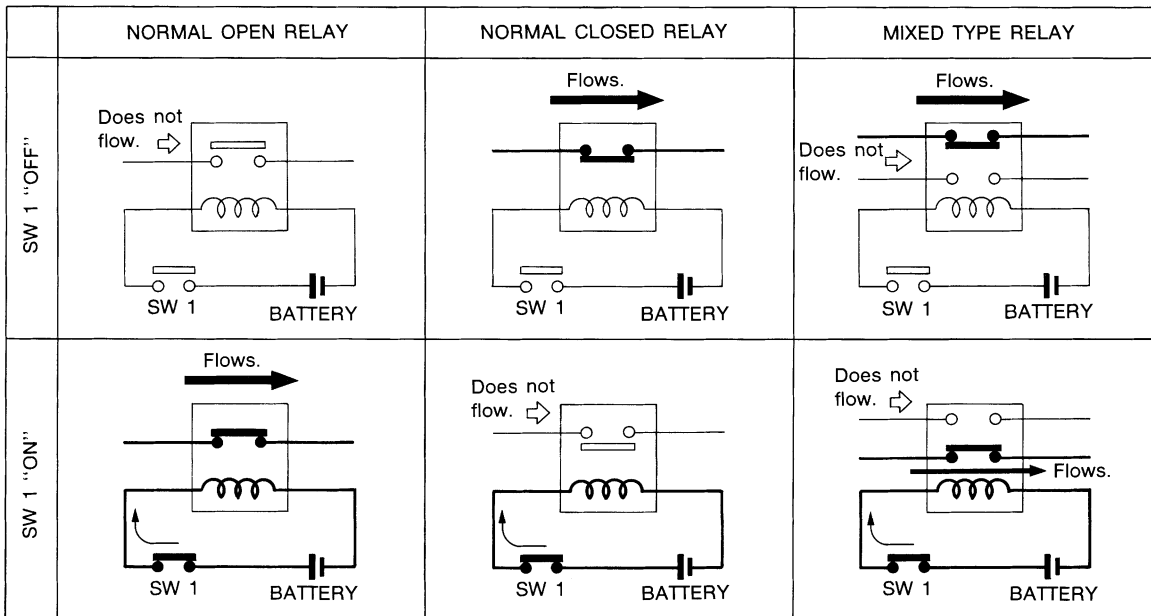
NKS0025X

## STANDARDIZED RELAY

### Description

### NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

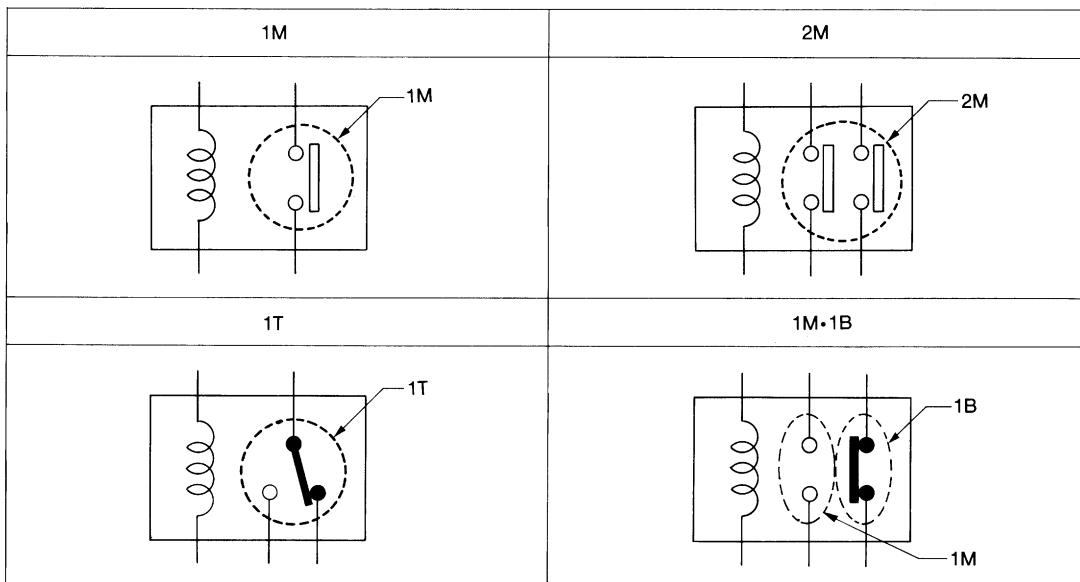
Relays can mainly be divided into three types: normal open, normal closed and mixed type relays.



SEL881H

### TYPE OF STANDARDIZED RELAYS

- 1M ..... 1 Make
- 2M ..... 2 Make
- 1T ..... 1 Transfer
- 1M-1B ..... 1 Make 1 Break



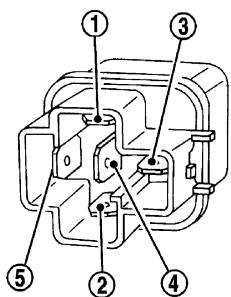
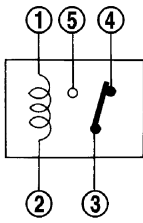
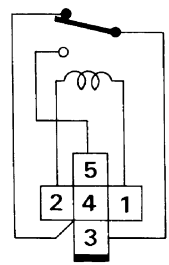
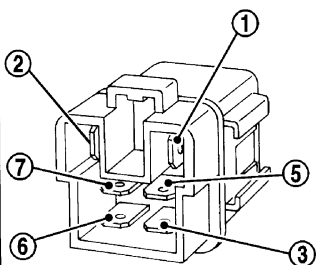
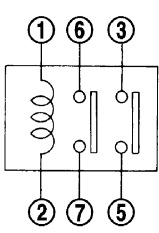
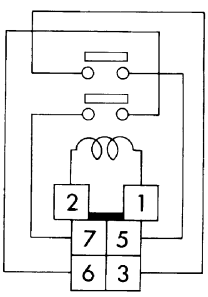
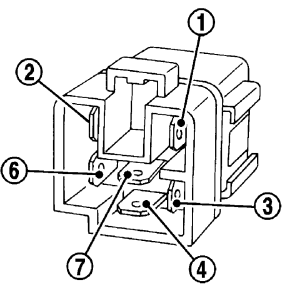
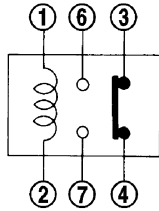
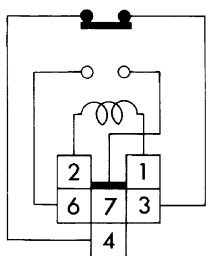
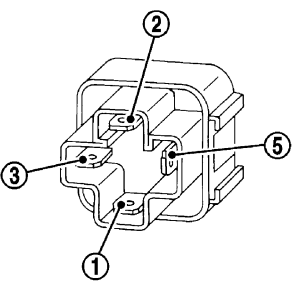
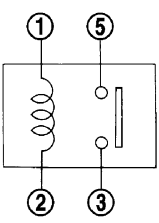
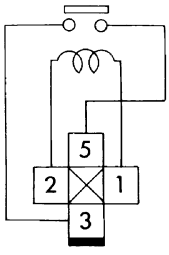
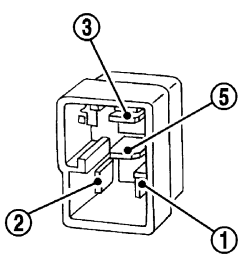
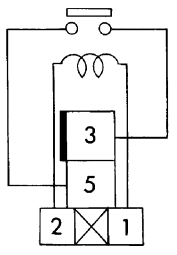
SEL882H

A  
B  
C  
D  
E  
F  
G  
H  
I  
J

PG

L  
M

# STANDARDIZED RELAY

Type	Outer view	Circuit	Connector symbol and connection	Case color
1T				BLACK
2M				BROWN
1M•1B				GRAY
1M				BLUE
				

The arrangement of terminal numbers on the actual relays may differ from those shown above.

SEL188W

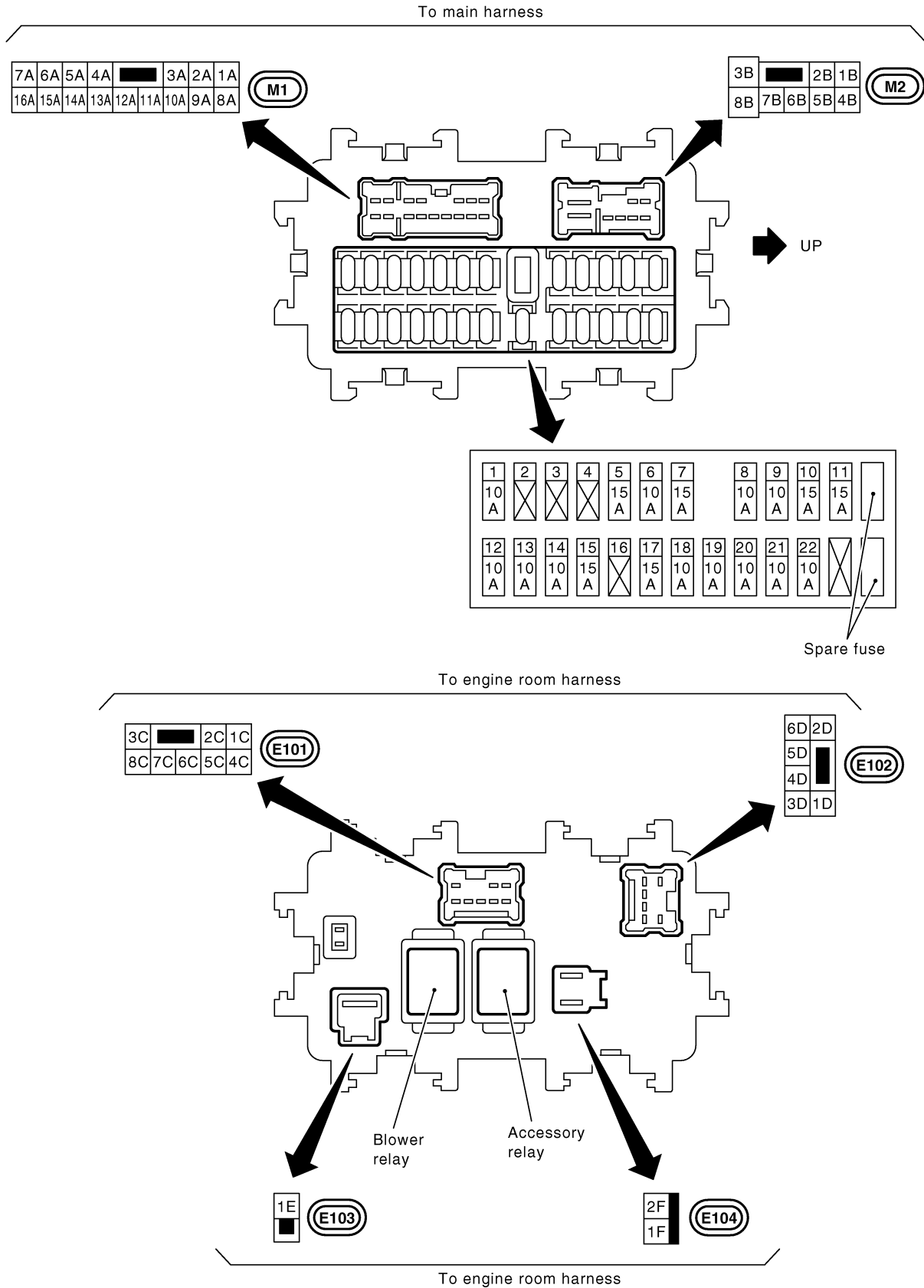
# FUSE BLOCK - JUNCTION BOX (J/B)

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

PPF:24350

### Terminal Arrangement

NKS0025Y



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

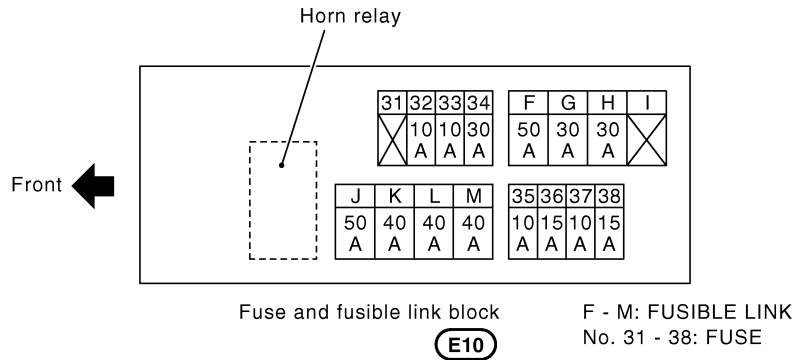
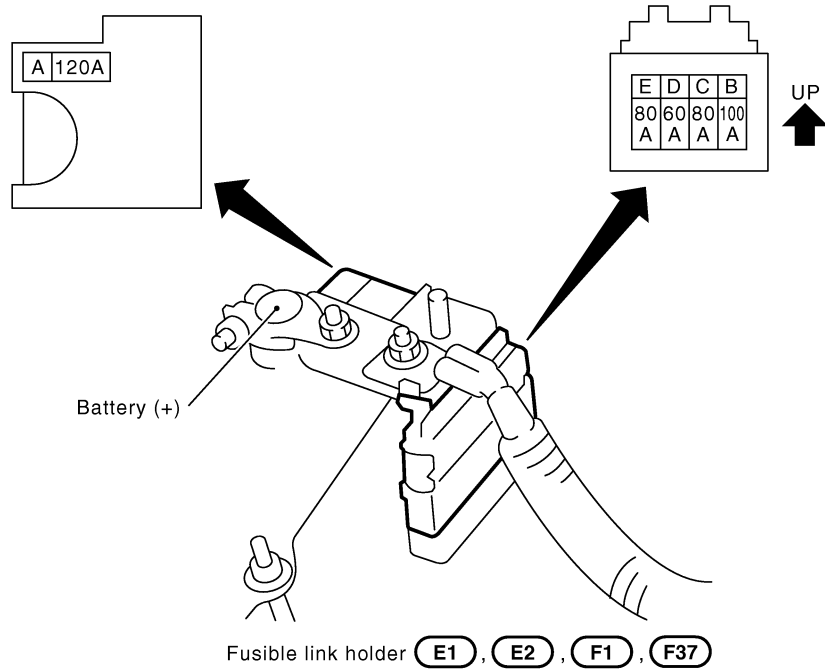
# FUSE, FUSIBLE LINK AND RELAY BOX

## FUSE, FUSIBLE LINK AND RELAY BOX

PFPP:24382

### Terminal Arrangement

NKS0025Z



CKIB0308E