SECTION PG

POWER SUPPLY, GROUND & CIRCUIT ELEMENTS

CONTENTS

PRECAUTIONS

PFP:00011

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

EKS00DNF

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted.
Information necessary to service the system safely is included in the SRS and SB section of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SRS section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

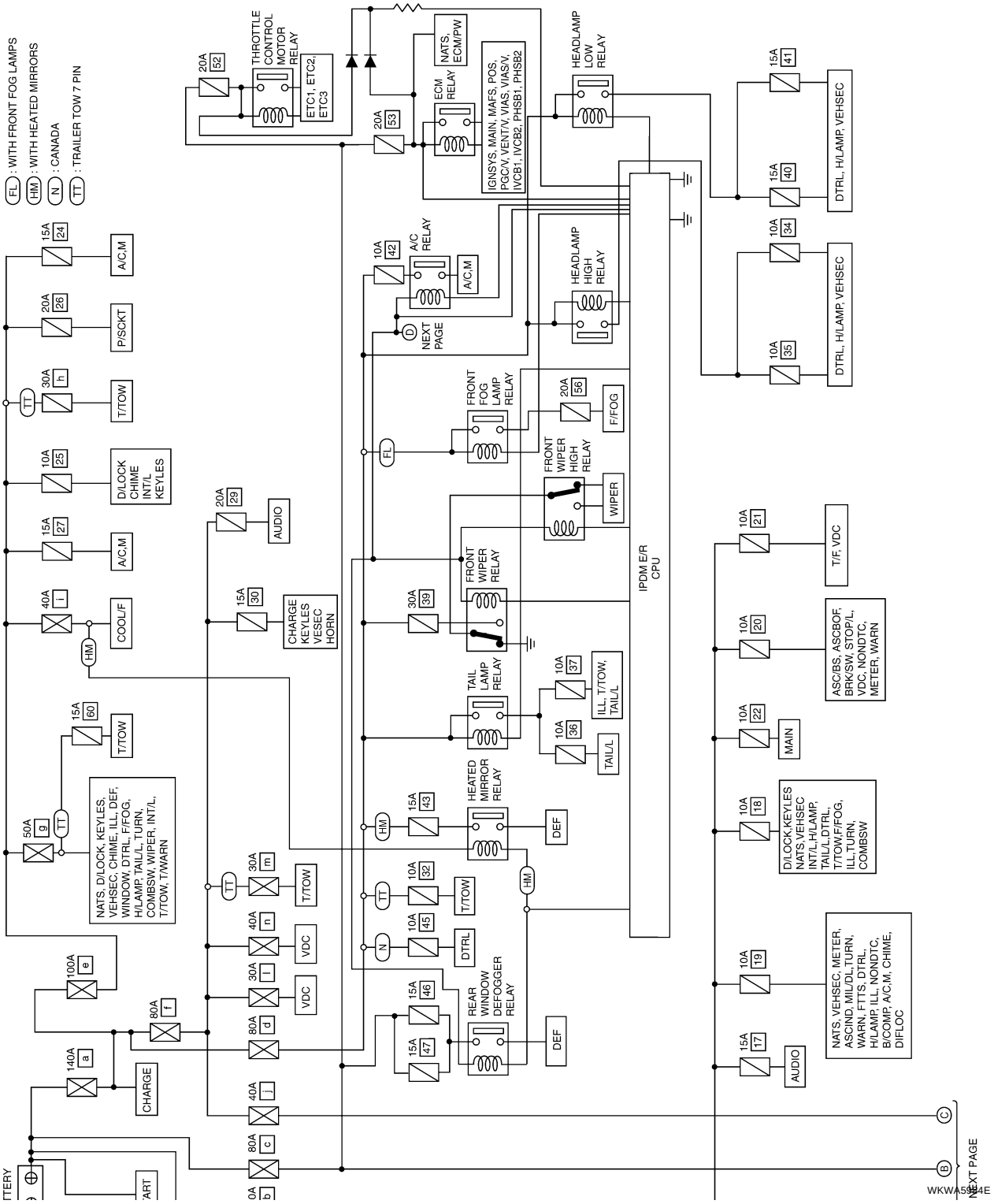
POWER SUPPLY ROUTING CIRCUIT

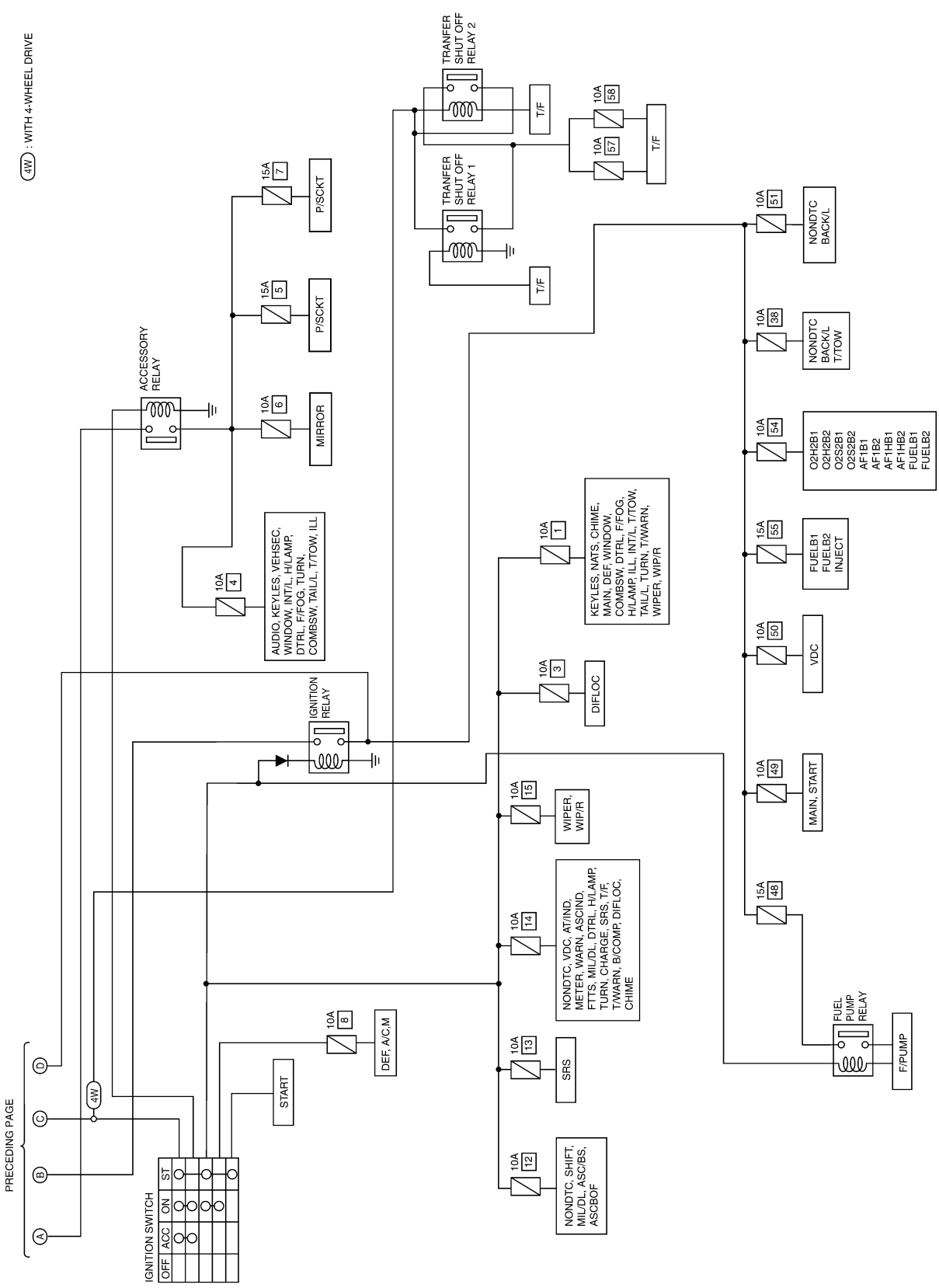
PFP:24110

Schematic

EKS00DNH

For detailed ground distribution, refer to PG-35, "Ground Distribution" .



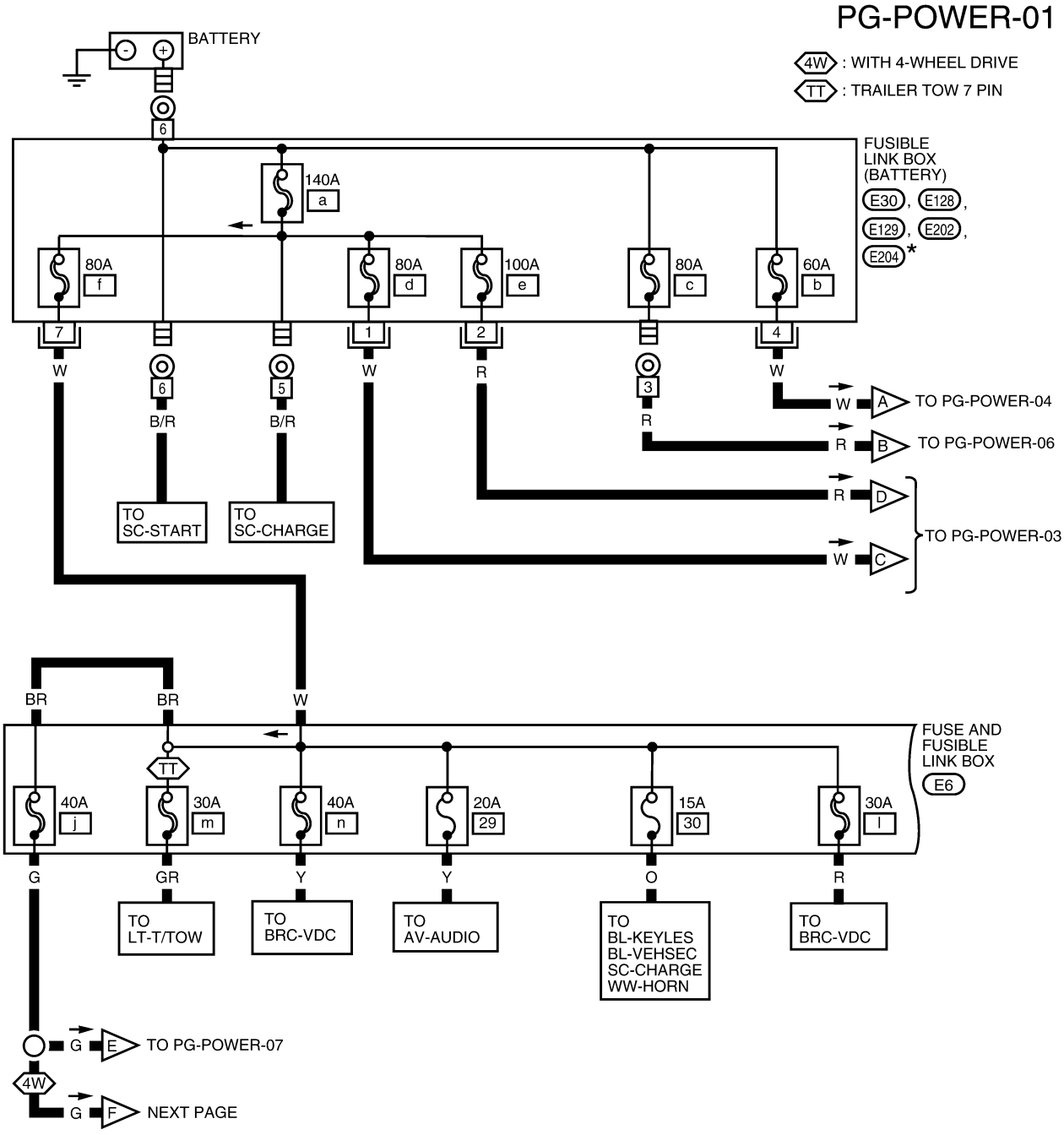

4W : WITH 4-WHEEL DRIVE
TRANFER SHUT OFF RELAY 2
TRANFER SHUT OFF RELAY 1
T/F
10A 58
10A 57
15A 7
P/SCKT
15A 5
P/SCKT
ACCESSORY RELAY
10A 6
MIRROR
10A 4
AUDIO, KEYLES, VEHSEC, WINDOW, INT/L, H/LAMP, DTRL, F/FOG, TURN, COMBSW, TAIL/L, T/TOW, ILL
10A 51
NONDTC BACK/L
10A 38
NONDTC BACK/L T/TOW
10A 54
O2H2B1 O2H2B2 O2S2B1 O2S2B2 AF1B1 AF1B2 AF1HB1 AF1HB2 FUELB1 FUELB2
10A 1
KEYLES, NATS, CHIME, MAIN, DEF, WINDOW, COMBSW, DTRL, F/FOG, H/LAMP, ILL, INT/L, T/TOW, TAIL/L, TURN, T/WARN, WIPER, WIP/R
15A 55
FUELB1 FUELB2 INJECT
10A 3
DIFLOC
IGNITION RELAY
10A 50
VDC
10A 15
WIPER, WIP/R
10A 49
MAIN, START
10A 14
NONDTC, VDC, AT/IND, METER, WARN, ASCIND, FTTS, MIL/DL, DTRL, H/LAMP, TURN, CHARGE, SRS, T/F, T/WARN, B/COMP, DIFLOC, CHIME
15A 48
FUEL PUMP RELAY
F/PUMP
10A 8
DEF, A/C,M
10A 13
SRS
START
10A 12
NONDTC, SHIFT, MIL/DL, ASC/BS, ASCBOF
IGNITION SWITCH
OFF ACC ON ST
PRECEDING PAGE
A B C D
4W

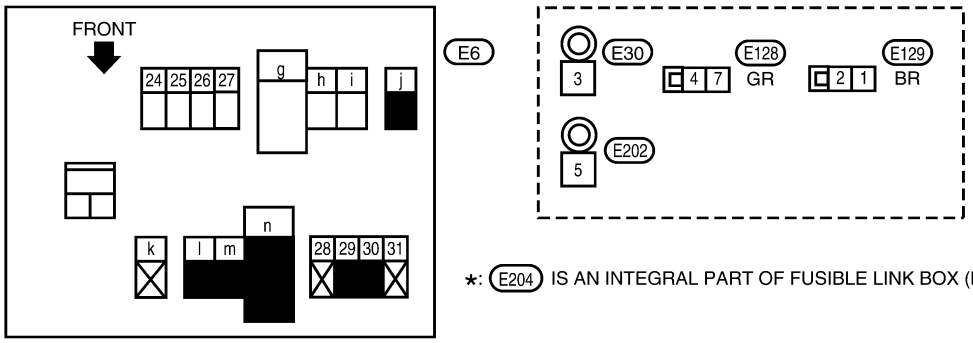
WKWA5985E

Wiring Diagram — POWER —

EKS00DNI

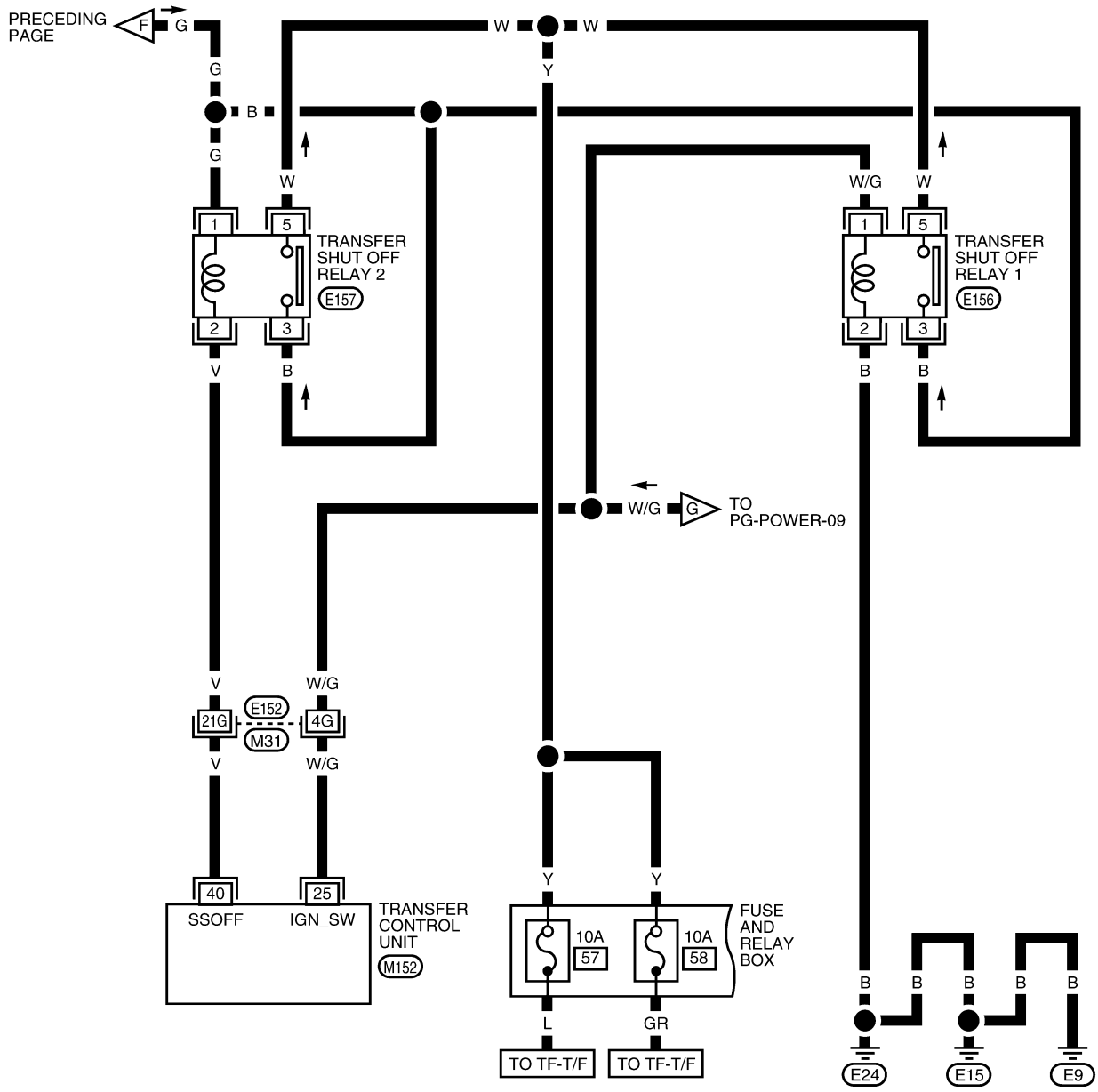
BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION

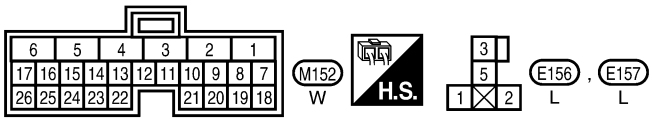




WKWA5986E

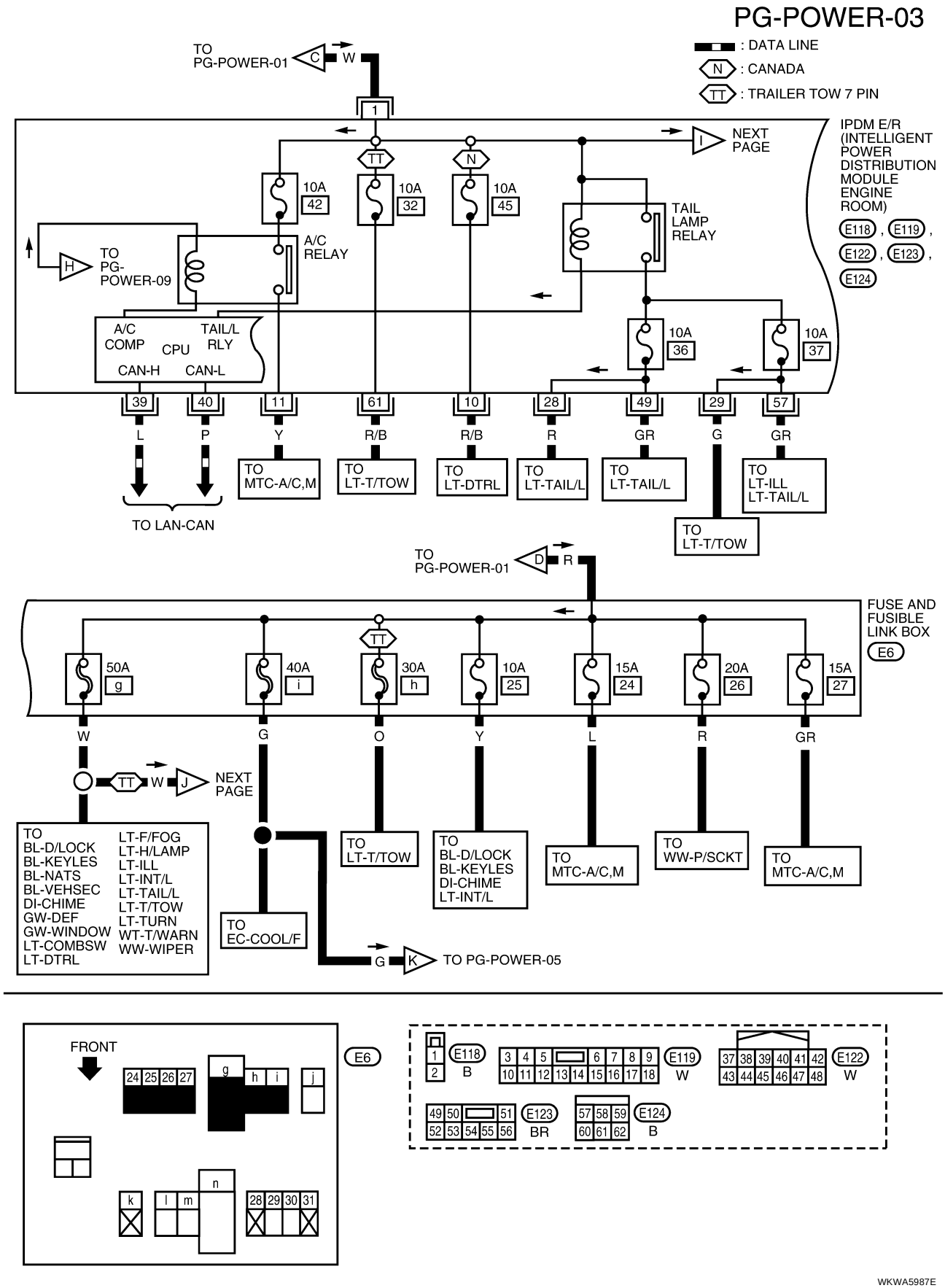
PG-POWER-02





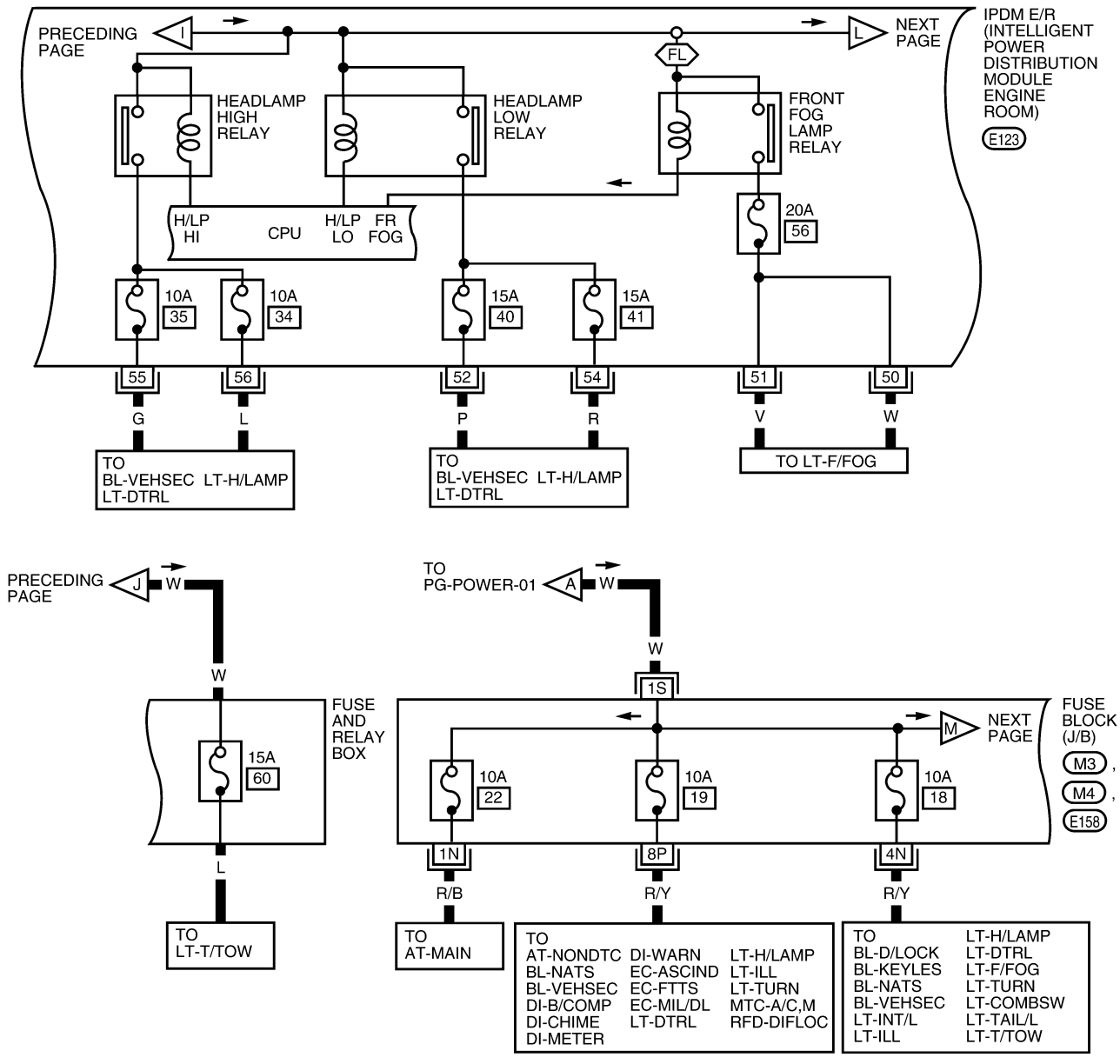
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

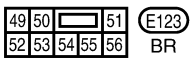
WKWA4478E

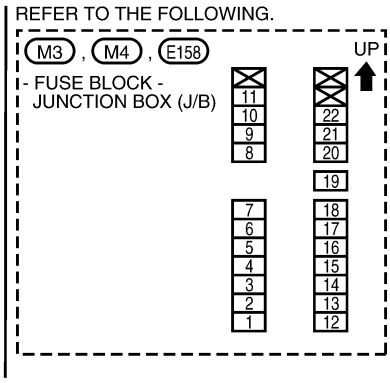

PG-POWER-03
: DATA LINE
N : CANADA
TT : TRAILER TOW 7 PIN
TO PG-POWER-01
C
W
1
NEXT PAGE
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E118, E119, E122, E123, E124
10A 42
10A 32
10A 45
A/C RELAY
TAIL LAMP RELAY
TO PG-POWER-09
A/C COMP
CPU
TAIL/L RLY
CAN-H
CAN-L
10A 36
10A 37
39 40 11 61 10 28 49 29 57
L P Y R/B R/B R GR G GR
TO LAN-CAN
TO MTC-A/C,M
TO LT-T/TOW
TO LT-DTRL
TO LT-TAIL/L
TO LT-TAIL/L
TO LT-ILL LT-TAIL/L
TO LT-T/TOW
TO PG-POWER-01
D
R
FUSE AND FUSIBLE LINK BOX
E6
50A g
40A i
30A h
10A 25
15A 24
20A 26
15A 27
W G O Y L R GR
TT W J NEXT PAGE
TO BL-D/LOCK BL-KEYLES BL-NATS BL-VEHSEC DI-CHIME GW-DEF GW-WINDOW LT-COMBSW LT-DTRL LT-F/FOG LT-H/LAMP LT-ILL LT-INT/L LT-TAIL/L LT-T/TOW LT-TURN WT-T/WARN WW-WIPER
TO EC-COOL/F
TO LT-T/TOW
TO BL-D/LOCK BL-KEYLES DI-CHIME LT-INT/L
TO MTC-A/C,M
TO WW-P/SCKT
TO MTC-A/C,M
G K TO PG-POWER-05
FRONT
E6
24 25 26 27
g h i j
k l m n
28 29 30 31
E118 B
E119 W
E122 W
E123 BR
E124 B
WKWA5987E

PG-POWER-04

FL : WITH FRONT FOG LAMPS



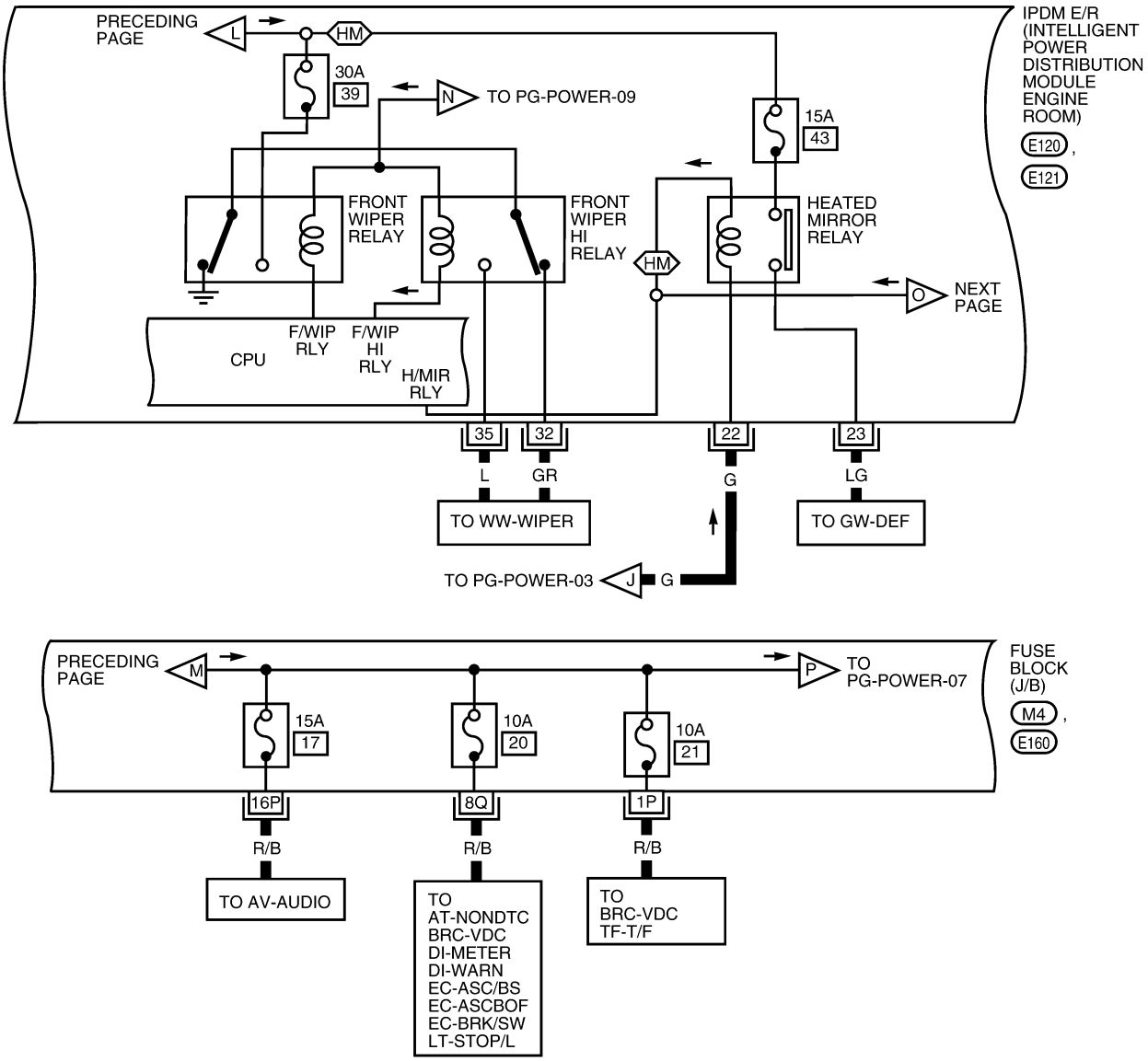


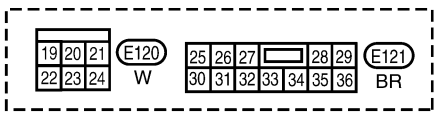


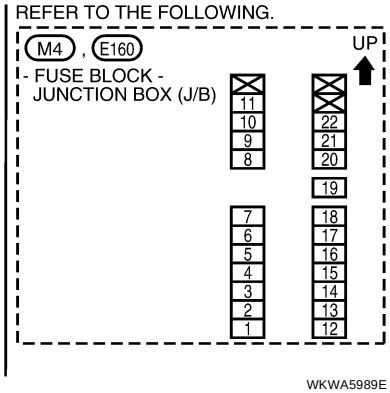
WKWA5988E

PG-POWER-05

HM : WITH HEATED MIRRORS

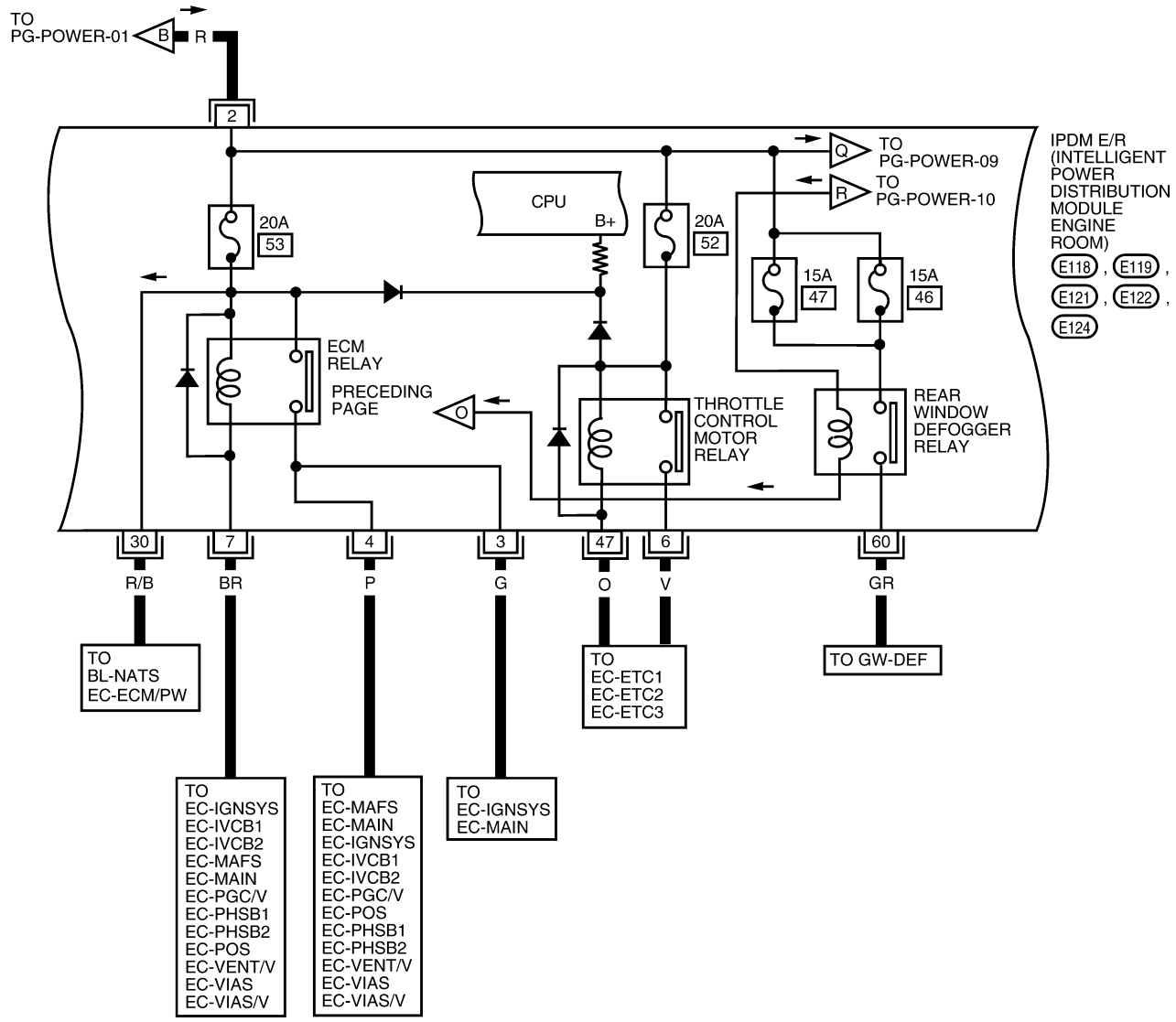


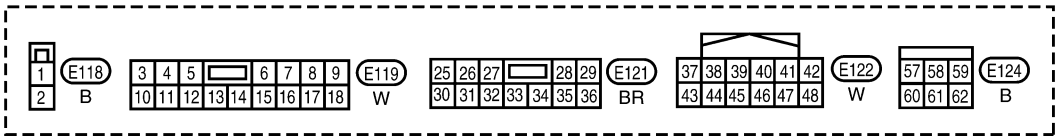




WKWA5989E

PG-POWER-06

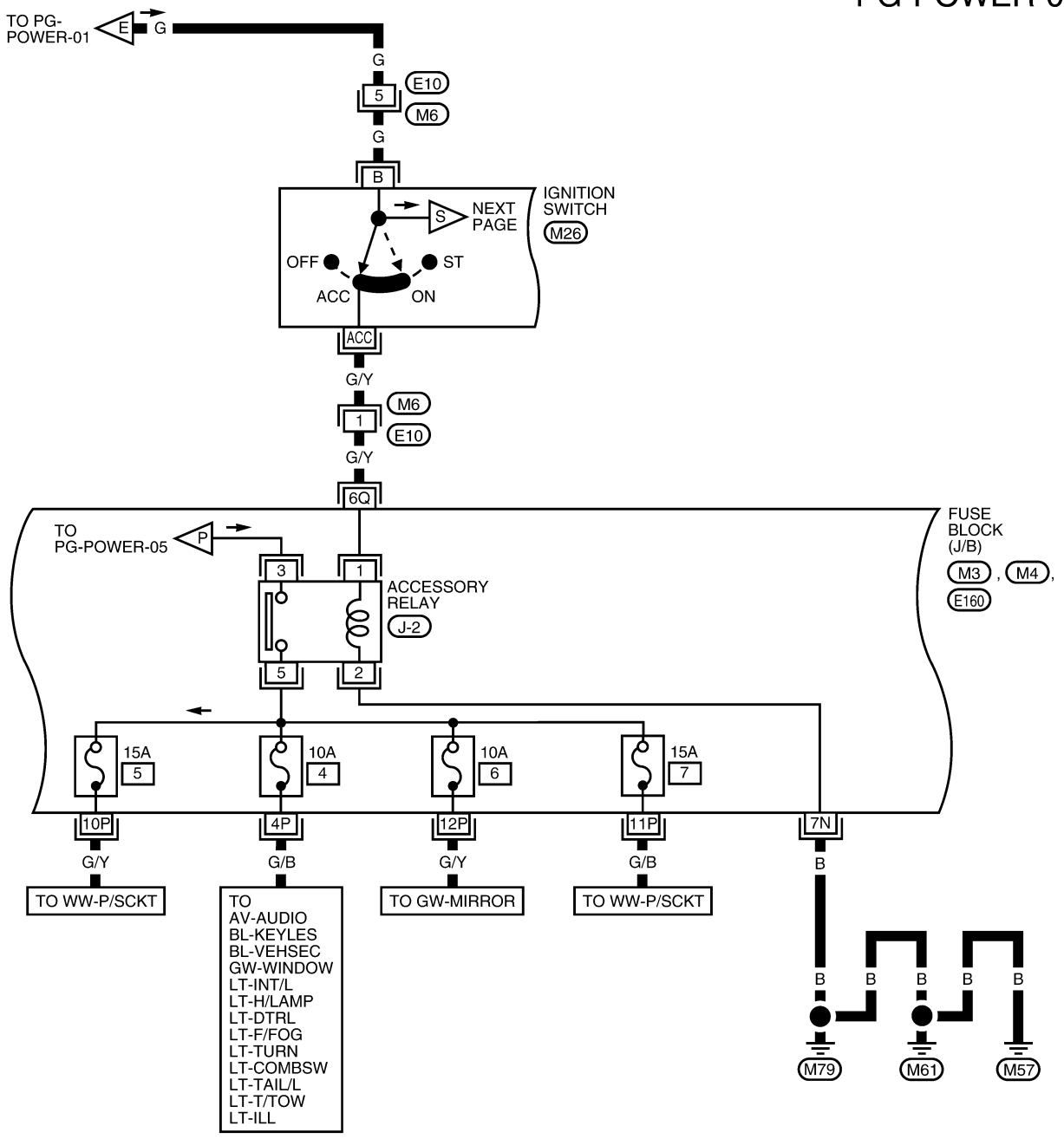


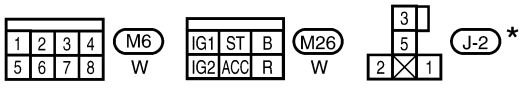


WKWA5990E

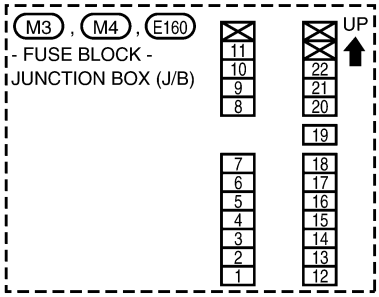
ACCESSORY POWER SUPPLY — IGNITION SW. IN ACC OR ON

PG-POWER-07





REFER TO THE FOLLOWING.

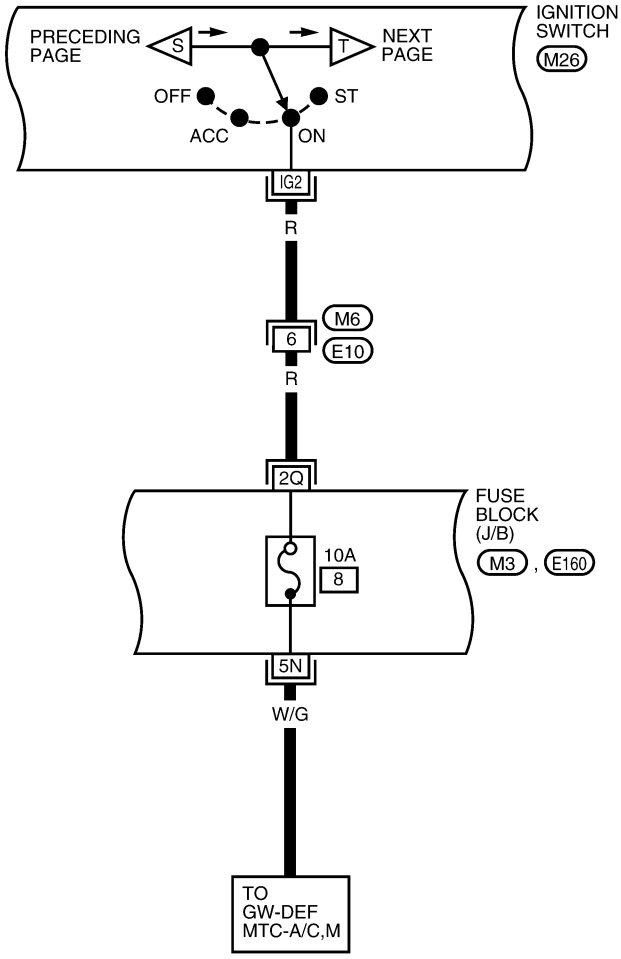


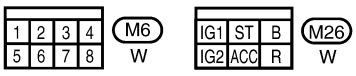
* : THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT”.

WKWA5991E

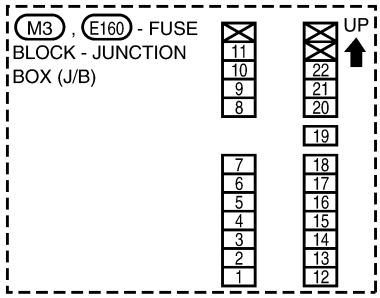
IGNITION POWER SUPPLY — IGNITION SW. IN ON

PG-POWER-08





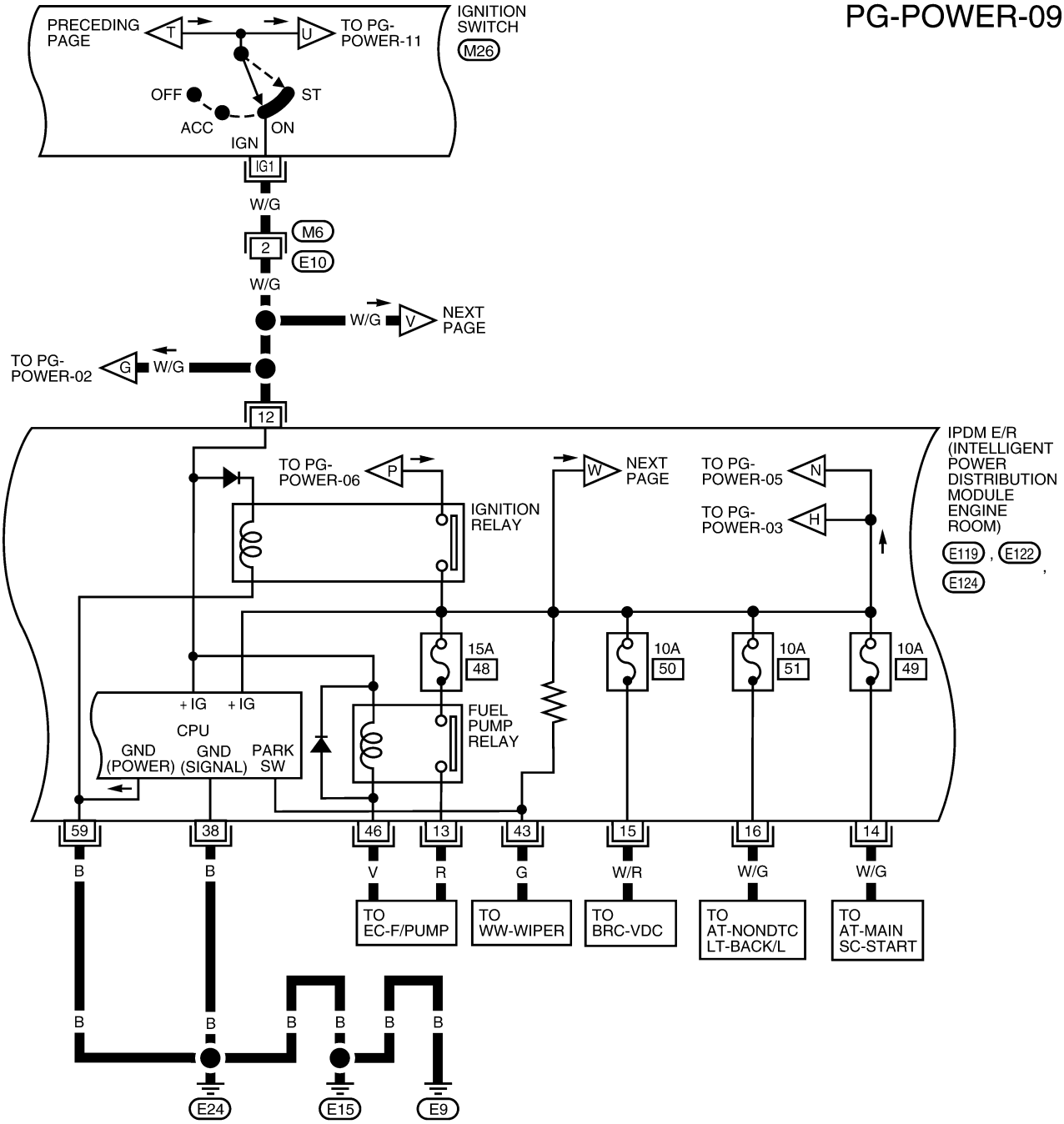
REFER TO THE FOLLOWING.

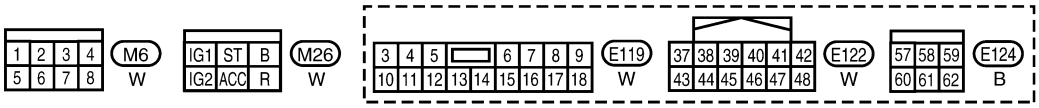


WKWA4483E

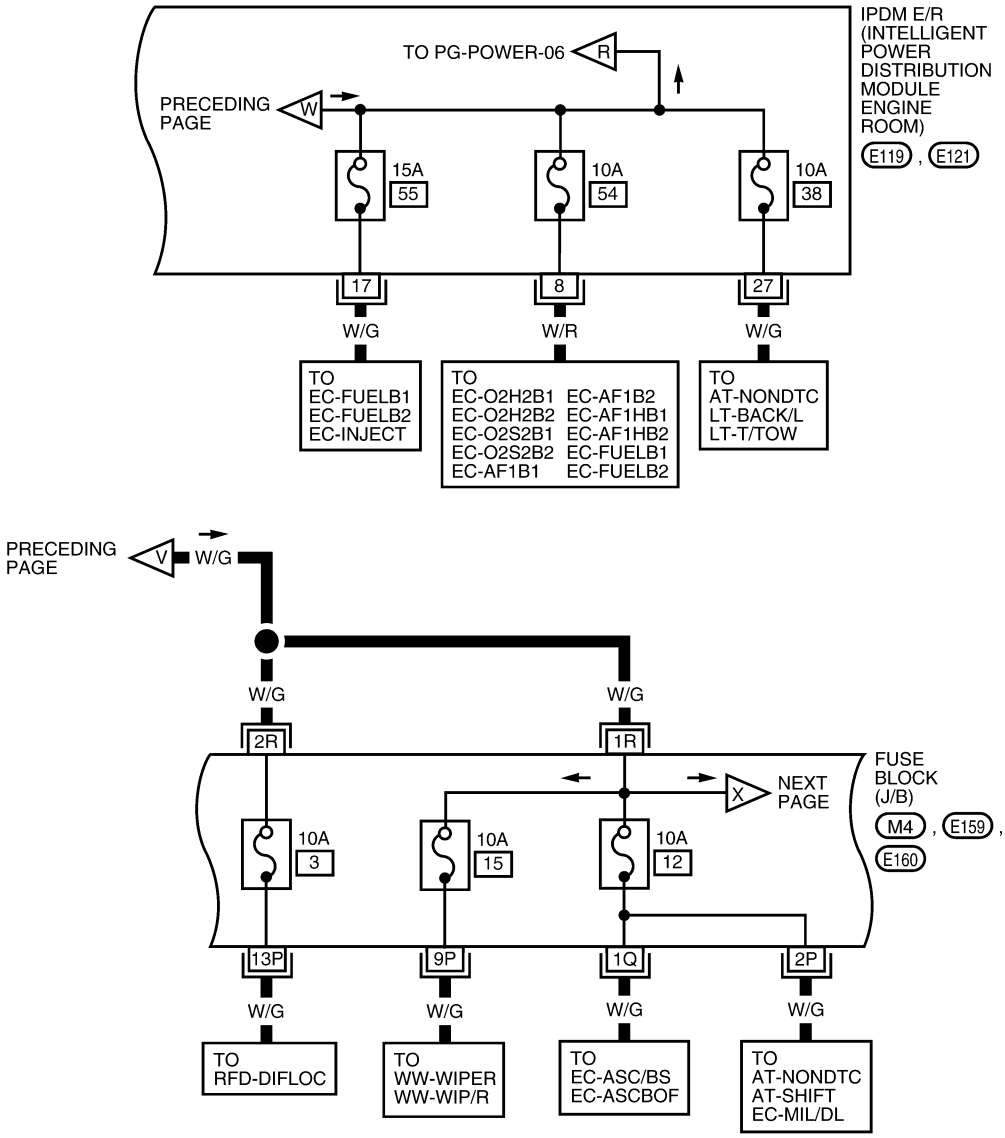
IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START

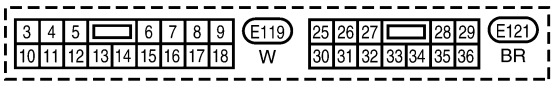
PG-POWER-09

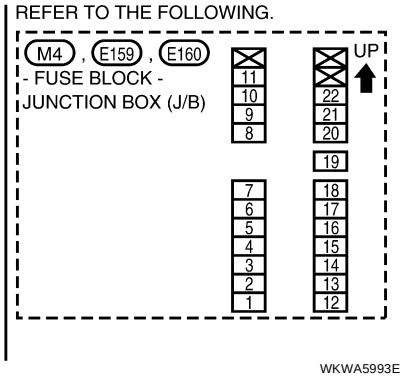




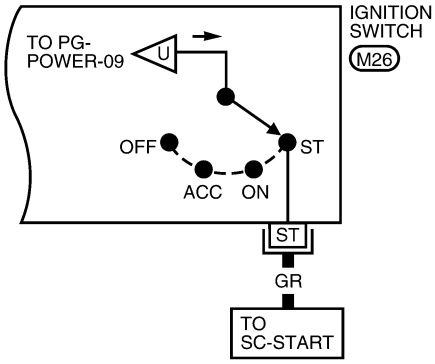
WKWA5992E

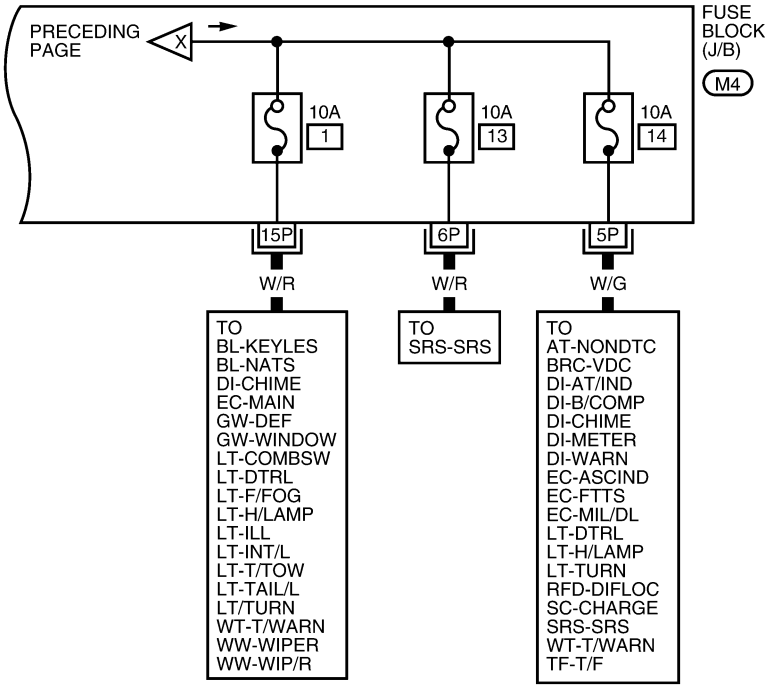

IPDM E/R
(INTELLIGENT
POWER
DISTRIBUTION
MODULE
ENGINE
ROOM)
E119 , E121
TO PG-POWER-06
R
PRECEDING
PAGE
W
15A
55
10A
54
10A
38
17
8
27
W/G
W/R
W/G
TO
EC-FUELB1
EC-FUELB2
EC-INJECT
TO
EC-O2H2B1 EC-AF1B2
EC-O2H2B2 EC-AF1HB1
EC-O2S2B1 EC-AF1HB2
EC-O2S2B2 EC-FUELB1
EC-AF1B1 EC-FUELB2
TO
AT-NONDTC
LT-BACK/L
LT-T/TOW
PRECEDING
PAGE
V
W/G
W/G
W/G
2R
1R
FUSE
BLOCK
(J/B)
M4 , E159 ,
E160
NEXT
PAGE
X
10A
3
10A
15
10A
12
13P
9P
1Q
2P
W/G
W/G
W/G
W/G
TO
RFD-DIFLOC
TO
WW-WIPER
WW-WIP/R
TO
EC-ASC/BS
EC-ASCBOF
TO
AT-NONDTC
AT-SHIFT
EC-MIL/DL

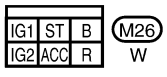

3 4 5 6 7 8 9
10 11 12 13 14 15 16 17 18
E119
W
25 26 27 28 29
30 31 32 33 34 35 36
E121
BR

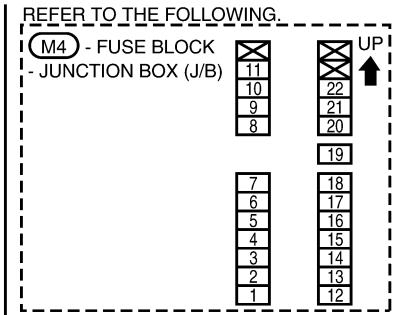

REFER TO THE FOLLOWING.
M4 , E159 , E160
- FUSE BLOCK -
JUNCTION BOX (J/B)
UP
11
10
9
8
7
6
5
4
3
2
1
22
21
20
19
18
17
16
15
14
13
12

WKWA5993E


IGNITION SWITCH
M26
TO PG-POWER-09
U
OFF
ACC
ON
ST
ST
GR
TO SC-START


PRECEDING PAGE
X
FUSE BLOCK (J/B)
M4
10A 1
10A 13
10A 14
15P
6P
5P
W/R
W/R
W/G
TO BL-KEYLES BL-NATS DI-CHIME EC-MAIN GW-DEF GW-WINDOW LT-COMBSW LT-DTRL LT-F/FOG LT-H/LAMP LT-ILL LT-INT/L LT-T/TOW LT-TAIL/L LT/TURN WT-T/WARN WW-WIPER WW-WIP/R
TO SRS-SRS
TO AT-NONDTC BRC-VDC DI-AT/IND DI-B/COMP DI-CHIME DI-METER DI-WARN EC-ASCIND EC-FTTS EC-MIL/DL LT-DTRL LT-H/LAMP LT-TURN RFD-DIFLOC SC-CHARGE SRS-SRS WT-T/WARN TF-T/F


IG1 ST B
IG2 ACC R
M26
W

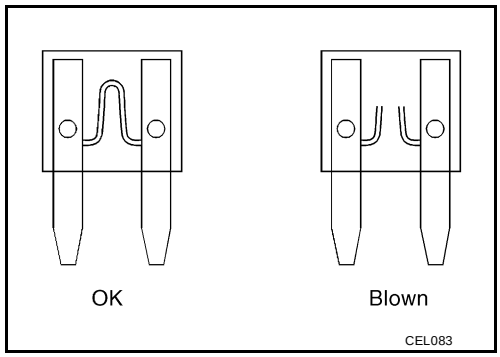

REFER TO THE FOLLOWING.
M4 - FUSE BLOCK - JUNCTION BOX (J/B)
UP
11 10 9 8
22 21 20
19
7 6 5 4 3 2 1
18 17 16 15 14 13 12

WKWA5994E

Fuse

EKS00HOO

- If fuse is blown, be sure to eliminate cause of incident 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

EKS00HOP

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:

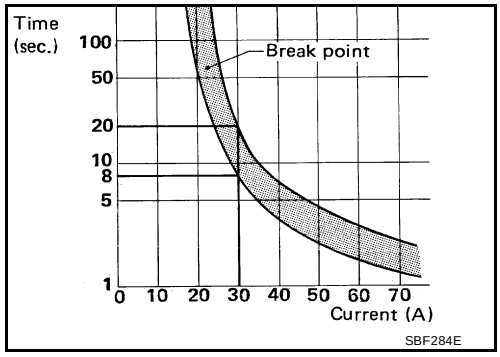
- **If fusible link should melt, it is possible that critical circuit (power supply or large current carrying circuit) is shorted. In such a case, carefully check and eliminate cause of incident.**
- **Never wrap outside of fusible link with vinyl tape.**
- **Never let fusible link touch any other wiring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

Circuit Breaker (Built Into BCM)

EKS00HOQ

For example, when current is 30A, the circuit is broken within 8 to 20 seconds.
A circuit breaker is used for the following systems:

- Power windows



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

PFP:284B7

System Description

EKS00DNJ

- 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 relays via IPDM E/R control circuits.
- IPDM E/R-integrated control circuits perform ON-OFF operation of relays, CAN communication control, etc.
- It controls operation of each electrical component 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

1. Lamp control
   Using CAN communication lines, it receives signals from the BCM and controls the following lamps:
   - Headlamps (High, Low)
   - Daytime light relay control (Canada only)
   - Parking lamps and side marker lamps
   - Tail and license plate lamps
   - Front fog lamps
2. Wiper control
   Using CAN communication lines, it receives signals from the BCM and controls the front wipers.
3. Daytime light relay control
   Using CAN communication lines, it receives signals from the BCM and controls the daytime light relay.
4. Generator control
   Using CAN communication lines, it receives signals from the ECM and controls power generation output.
5. Rear window defogger and heated mirror relay control (Canada only)
   Using CAN communication lines, it receives signals from the BCM and controls the rear window defogger and heated mirror relay (if equipped).
6. A/C compressor control
   Using CAN communication lines, it receives signals from the BCM and controls the A/C compressor (magnetic clutch).
7. Starter control
   Using CAN communication lines, it receives signals from the BCM and controls the starter relay.
8. Cooling fan control
   Using CAN communication lines, it receives signals from the ECM and controls the cooling fan relays.
9. Horn control
   Using CAN communication lines, it receives signals from the BCM and controls the horn relay.

CAN COMMUNICATION LINE CONTROL

With CAN communication, by connecting each control unit using two communication lines (CAN-L, CAN-H) it is possible to transmit a 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 returns to normal operation, 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	● With the ignition switch ON, the headlamp low is ON. ● With the ignition switch OFF, the headlamp low is OFF.
Tail, license plate and parking lamps	● With the ignition switch ON, the tail lamp relay is ON. ● With the ignition switch OFF, the tail lamp relay is OFF.

Controlled system	Fail-safe mode
Cooling fan	● With the ignition switch ON, the cooling fan HI operates. ● With the ignition switch OFF, the cooling fan stops.
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 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 current-consumption mode.
   - CAN communication is stopped.
   - When a change in CAN communication signal is detected, mode switches to CAN communication status.
   - When a change in ignition switch signal is detected, mode switches to CAN communication status.

CAN Communication System Description

EKS00DNK

Refer to LAN-21, "CAN COMMUNICATION" .

Function of Detecting Ignition Relay Malfunction

EKS00DNL

- When the integrated ignition relay is stuck in a "closed contact" position and cannot be turned OFF, IPDM E/R turns ON tail and parking lamps for 10 minutes to indicate IPDM E/R malfunction.
- When the state of the integrated ignition relay does not agree with the state of the ignition switch signal received via CAN communication, the IPDM E/R activates the tail lamp relay.

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.

CONSULT-II Function (IPDM E/R)

EKS00DNM

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

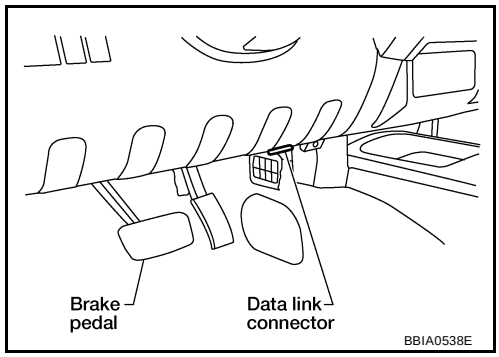
IPDM E/R Diagnostic Mode	Description
SELF-DIAG RESULTS	Displays IPDM E/R self-diagnosis results.
DATA MONITOR	Displays IPDM E/R input/output data in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	Operation of electrical loads can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

CONSULT-II BASIC OPERATION

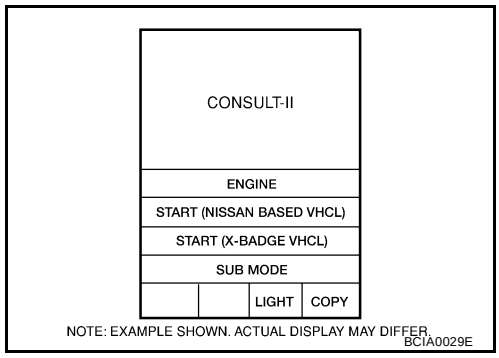
CAUTION:

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

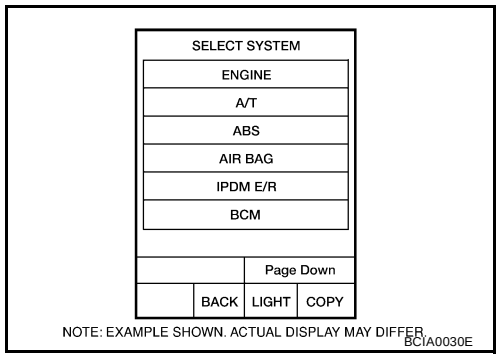
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



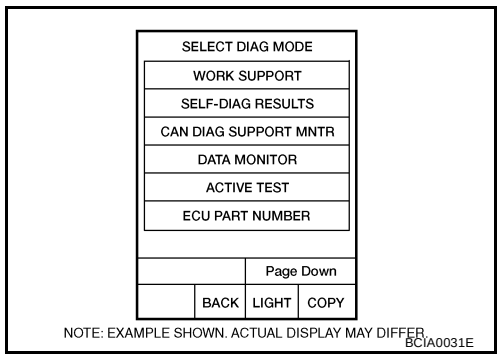
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “IPDM E/R” on “SELECT SYSTEM” screen.
   - If “IPDM E/R” is not displayed, go to GI-41, "CONSULT-II Data Link Connector (DLC) Circuit" .



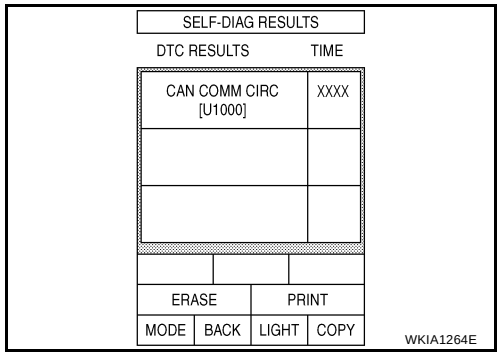
4. Select the desired part to be diagnosed on the "SELECT DIAG MODE" screen.



SELF-DIAGNOSTIC RESULTS

Operation Procedure

1. Touch “SELF-DIAG RESULTS” on “SELECT DIAG MODE” screen.
2. Self-diagnosis results are displayed.



Display Item List

Display items	CONSULT-II display code	Malfunction detection	TIME		Possible causes
			CRNT	PAST	
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.	—	—	—	—	—
CAN COMM CIRC	U1000	● If CAN communication reception/transmission data has a malfunction, or if any of the control units fail, data reception/transmission cannot be confirmed. ● When the data in CAN communication is not received before the specified time.	X	X	Any of items listed below have errors: ● TRANSMIT DIAG ● ECM ● BCM/SEC

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 placed in IPDM E/R memory.

DATA MONITOR

Operation Procedure

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

ALL SIGNALS	All signals will be monitored.
MAIN SIGNALS	Monitors the predetermined item(s).
SELECTION FROM MENU	Selects and monitors individual signal(s).

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

All Signals, Main Signals, Selection From Menu

Item name	CONSULT-II screen display	Display or unit	Monitor item selection			Description
			ALL SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
Motor fan request	MOTOR FAN REQ	1/2/3/4	X	X	X	Signal status input from ECM
Compressor request	AC COMP REQ	ON/OFF	X	X	X	Signal status input from BCM
Parking, license plate, and tail lamp request	TAIL & CLR REQ	ON/OFF	X	X	X	Signal status input from BCM
Headlamp low beam request	HL LO REQ	ON/OFF	X	X	X	Signal status input from BCM
Headlamp high beam request	HL HI REQ	ON/OFF	X	X	X	Signal status input from BCM
Front fog lamps request	FR FOG REQ	ON/OFF	X	X	X	Signal status input from BCM
Front wiper request	FR WIP REQ	STOP/1LO/LO/HI	X	X	X	Signal status input from BCM
Wiper auto stop	WIP AUTO STOP	ACT P/STOP P	X	X	X	Output status of IPDM E/R
Wiper protection	WIP PROT	OFF/LS/HS/ BLOCK	X	X	X	Control status of IPDM E/R
Starter request	ST RLY REQ	ON/OFF	X		X	Signal status of input from BCM
Ignition relay status	IGN RLY	ON/OFF	X	X	X	Ignition relay status monitored with IPDM E/R
Rear defogger request	RR DEF REQ	ON/OFF	X	X	X	Signal status input from BCM
Hood switch	HOOD SW (*1)	OFF	X			Signal status input from IPDM E/R
Theft warning horn request	THFT HRN REQ	ON/OFF	X		X	Signal status input from BCM
Horn chirp	HORN CHIRP	ON/OFF	X		X	Output status of IPDM E/R
Daytime lights request	DTRL REQ	ON/OFF	X		X	Signal status input from BCM

Item name	CONSULT-II screen display	Display or unit	Monitor item selection			Description
			ALL SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
Oil pressure switch	OIL P SW (*1)	OPEN/CLOSE	X		X	—
Headlamp washer request	HL WASHER REQ (*1)	ON/OFF	X		X	—

NOTE:

- Perform monitoring of IPDM E/R data with the ignition switch ON. When the ignition switch is in ACC position, display may not be correct.
- (*1) This item is displayed, but does not function.

ACTIVE TEST

Operation Procedure

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

Test name	CONSULT-II screen display	Description
Rear defogger output	REAR DEFOGGER	With a certain ON-OFF operation, the rear defogger relay can be operated.
Front wiper (HI, LO) output	FRONT WIPER	With a certain operation (OFF, HI ON, LO ON), the front wiper relay (Lo, Hi) can be operated.
Cooling fan output	MOTOR FAN	With a certain operation (1, 2, 3, 4), the cooling fan can be operated.
Headlamp relay (HI, LO) output	EXTERNAL LAMPS	With a certain operation (OFF, HI ON, LO ON, TAIL ON, FOG ON), the lamp relay (Low, High, Tail, Fog) can be operated.
Front fog lamp relay (FOG) output		With a certain operation (OFF, HI ON, LO ON, TAIL ON, FOG ON), the lamp relay (Low, High, Tail, Fog) can be operated.
Tail lamp relay output		With a certain operation (OFF, HI ON, LO ON, TAIL ON, FOG ON), the lamp relay (Low, High, Tail, Fog) can be operated.
Horn output	HORN	With a certain ON-OFF operation, the horn relay can be operated.

Auto Active Test

EKS00DNN

DESCRIPTION

- 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
  - Side marker lamps
  - Tail, license plate and parking lamps
  - Headlamps (High, Low)
  - A/C compressor (magnetic clutch)
  - Cooling fan
  - Fog lamps

OPERATION PROCEDURE

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

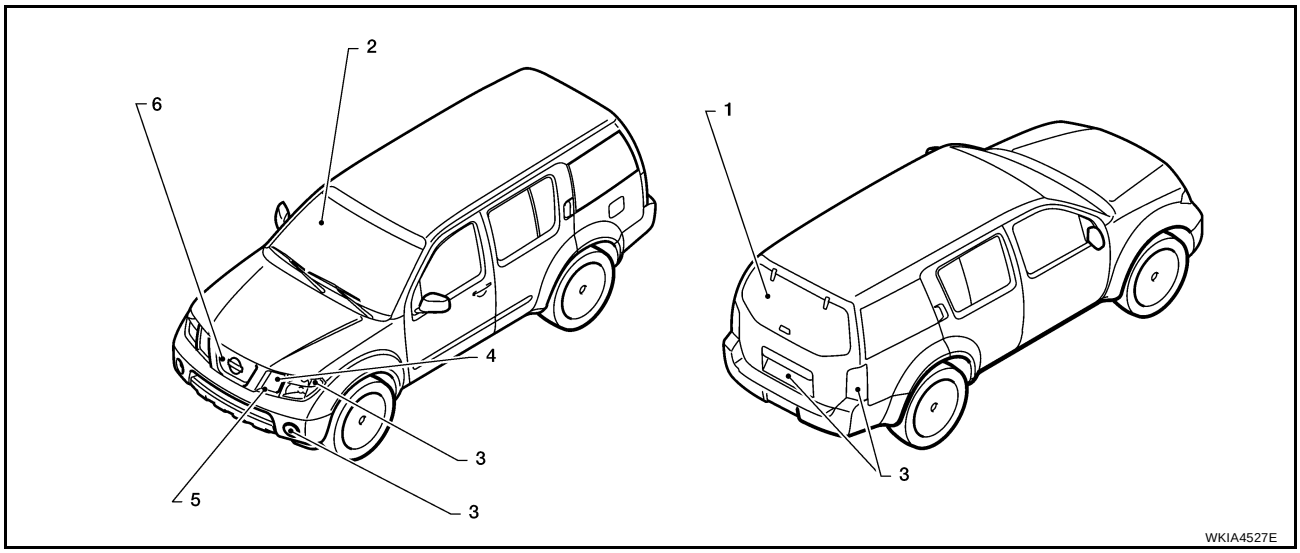
   NOTE:
   When auto active test is performed with hood opened, sprinkle water on windshield beforehand.
2. Turn ignition switch OFF.
3. Turn ignition switch ON and, within 20 seconds, press front door switch LH 10 times. Then turn ignition switch OFF.
4. Turn ignition switch ON within 10 seconds after ignition switch OFF.
5. When auto active test mode is actuated, horn chirps once.
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 perform BL-29, "Door Switch Check" when the auto active test cannot be performed.

INSPECTION IN AUTO ACTIVE TEST MODE

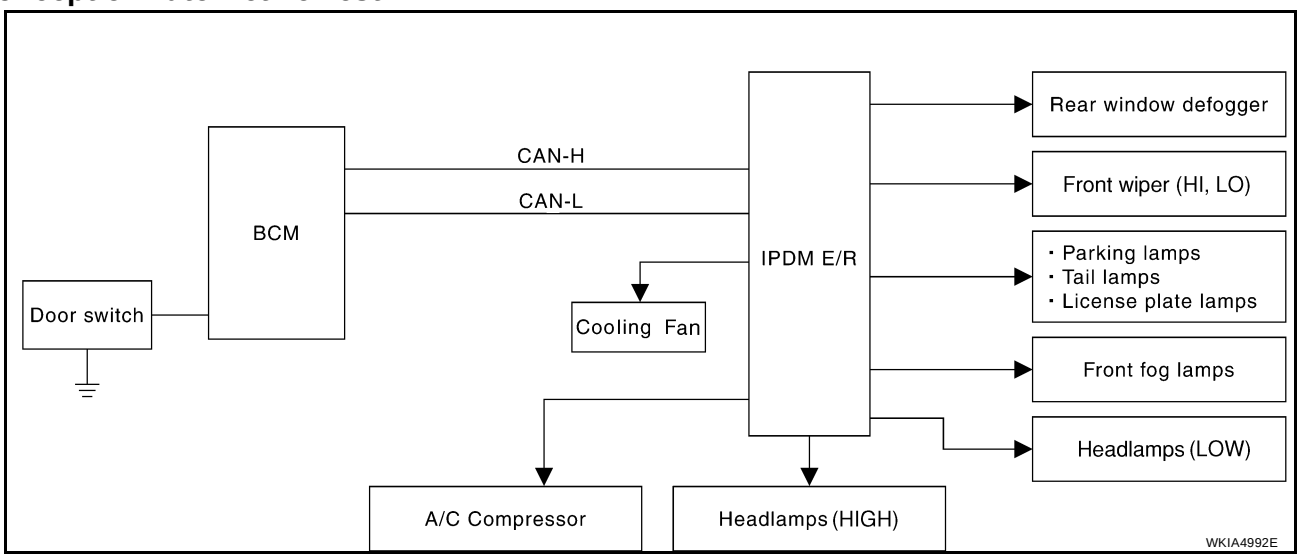
When auto active test mode is actuated, the following six steps activate in order. These six steps cycle three times before the auto active test automatically terminates.



Item Number	Test Item	Operation Time/Frequency
1	Rear window defogger	10 seconds
2	Front wipers	LOW 5 seconds then HIGH 5 seconds
3	License plate, tail, parking and fog lamps	10 seconds

Item Number	Test Item	Operation Time/Frequency
4	Headlamps	LOW 10 seconds then HIGH ON-OFF 5 times
5	A/C compressor (magnetic clutch)	ON-OFF 5 times
6	Cooling fan	LOW 5 seconds then HIGH 5 seconds

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 the systems controlled by IPDM E/R cannot be operated, possible cause can be easily diagnosed using auto active test.

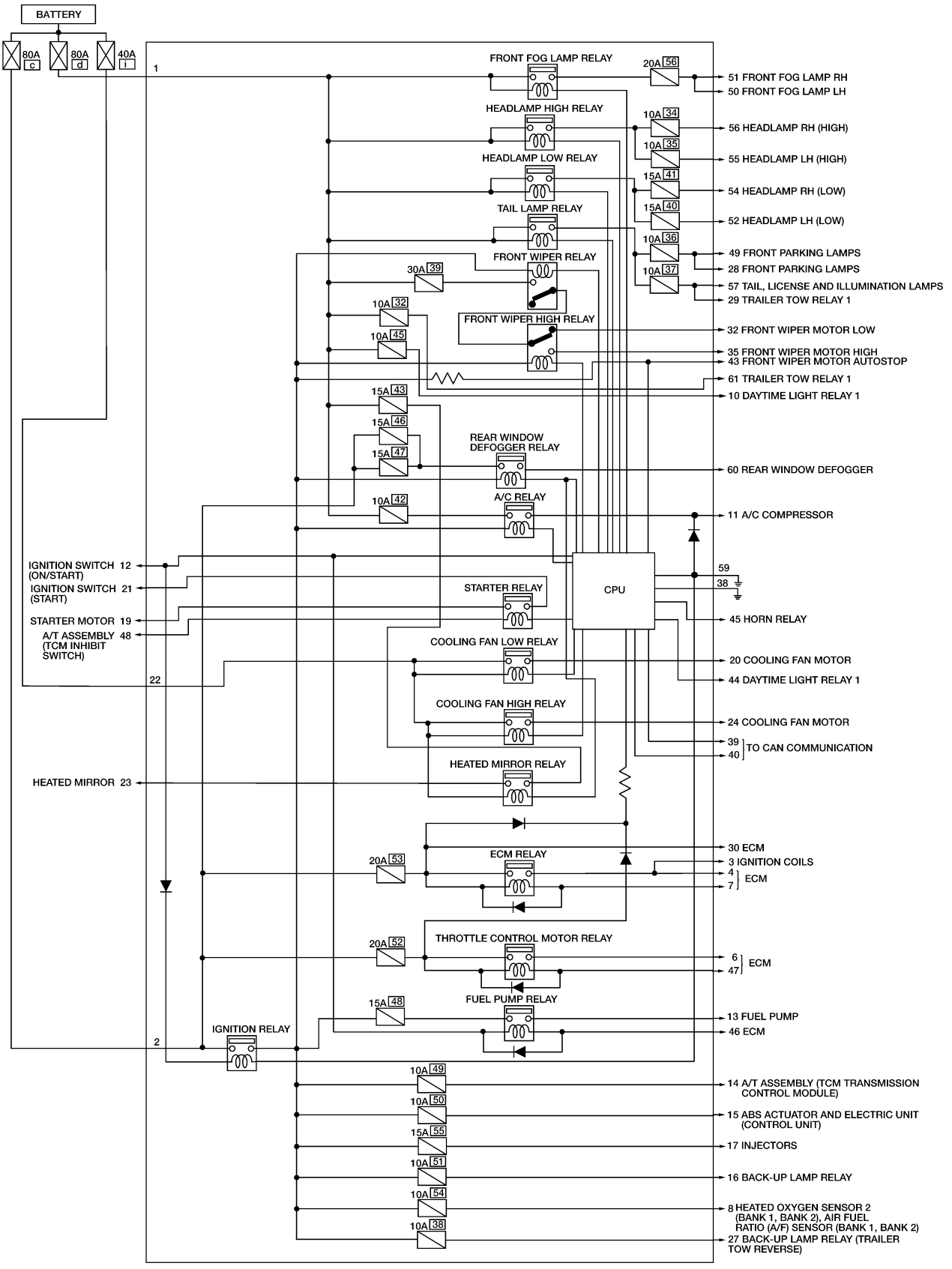
Diagnosis chart in auto active test mode

Symptom	Inspection contents		Possible cause
Rear window defogger does not operate.	Perform auto active test. Does rear window defogger operate?	YES	● BCM signal input circuit
		NO	● Rear window defogger relay ● Open circuit of rear window defogger ● IPDM E/R malfunction ● Harness or connector malfunction between IPDM E/R and rear window defogger
Any of front wipers, tail and parking lamps, front fog lamps, and headlamps (Hi, Lo) do not operate.	Perform auto active test. Does system in question operate?	YES	● BCM signal input system
		NO	● Lamp/wiper motor malfunction ● Lamp/wiper motor ground circuit malfunction ● Harness/connector malfunction between IPDM E/R and system in question ● IPDM E/R (integrated relay) malfunction
A/C compressor does not operate.	Perform auto active test. Does magnetic clutch operate?	YES	● BCM signal input circuit ● CAN communication signal between BCM and ECM ● CAN communication signal between ECM and IPDM E/R
		NO	● Magnetic clutch malfunction ● Harness/connector malfunction between IPDM E/R and magnetic clutch ● IPDM E/R (integrated relay) malfunction

Symptom	Inspection contents		Possible cause
Cooling fan does not operate.	Perform auto active test. Does cooling fan operate?	YES	● ECM signal input circuit ● CAN communication signal between ECM and IPDM E/R
		NO	● Cooling fan motor malfunction ● Harness/connector malfunction between IPDM E/R and cooling fan motor ● IPDM E/R (integrated relay) malfunction

Schematic

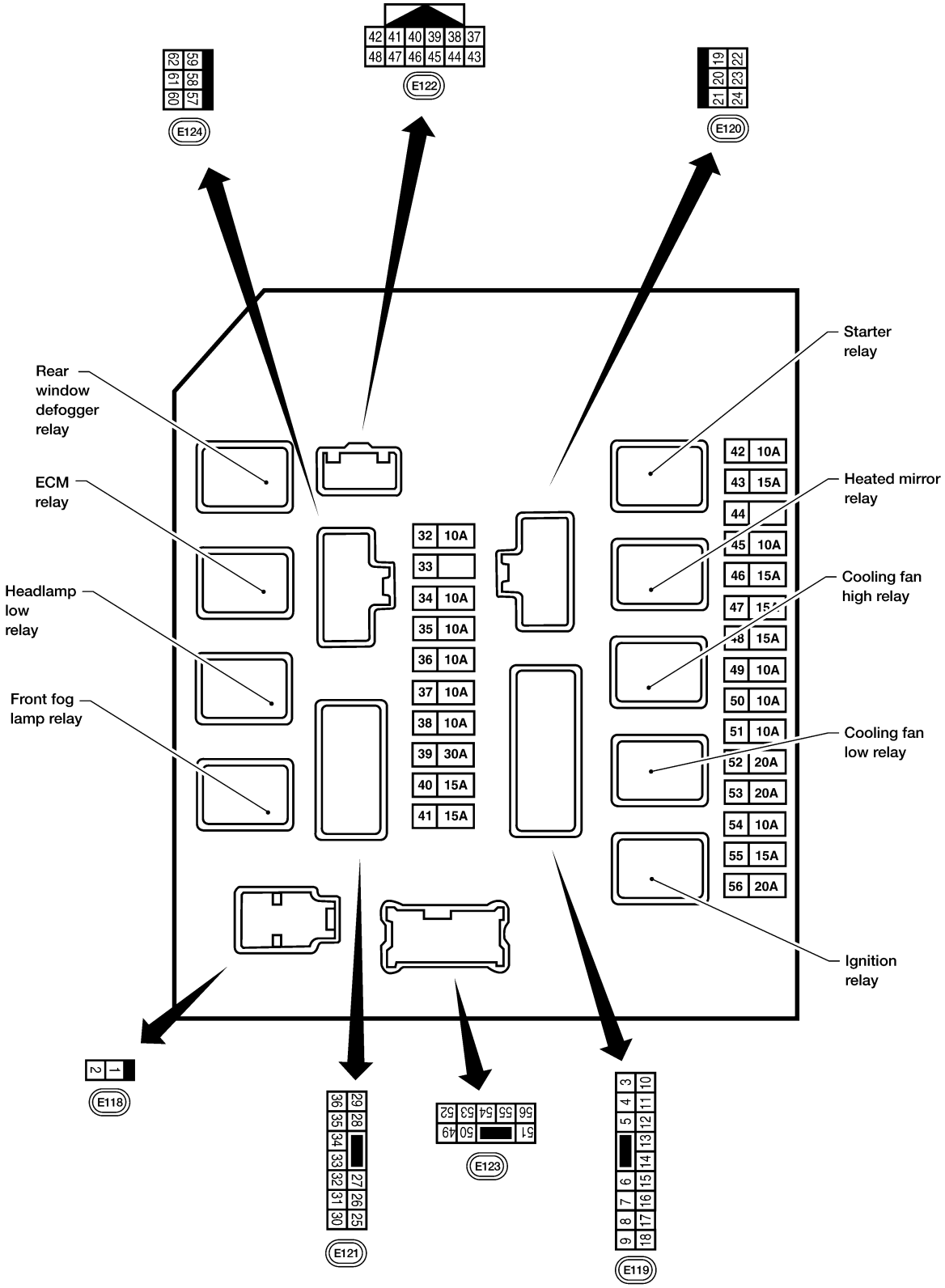
EKS00DNO



WKWA5995E

IPDM E/R Terminal Arrangement

EKS00DNP



WKIA1695E

Terminals and Reference Values for IPDM E/R

EKS00HMC

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value (Approx.)
				Ignition switch	Operation or condition	
1	W	Battery power supply	Input	OFF	—	Battery voltage
2	R	Battery power supply	Input	OFF	—	Battery voltage
3	G	Ignition coil	Output	ON or START	—	Battery voltage
4	P	ECM relay	Output	ON or START	—	Battery voltage
6	V	Throttle control relay	Output	ON or START	—	Battery voltage
7	BR	ECM relay control	Input	—	Ignition switch ON or START	0V
					Ignition switch OFF or ACC	Battery voltage
8	W/R	O2 and A/F sensor ignition supply	Output	ON or START	—	Battery voltage
10	R/B	Battery power supply (daytime light relay)	Output	OFF	—	Battery voltage
11	Y	A/C compressor	Output	ON	A/C switch or auto A/C request ON	Battery voltage
12	W/G	Ignition switch	Input	—	OFF or ACC	0V
					ON or START	Battery voltage
13	R	Fuel pump relay	Output	ON or START	OFF or ACC	0V
					ON or START	Battery voltage
14	W/G	AT ignition supply	Output	ON or START	—	Battery voltage
15	W/R	ABS ignition supply	Output	ON or START	—	Battery voltage
16	W/G	Reverse lamp	Output	ON or START	—	Battery voltage
17	W/G	Injector	Output	ON or START	—	Battery voltage
19	W	Starter motor	Output	START	—	Battery voltage
20	BR	Cooling fan motor (low)	Output	ON or START	—	Battery voltage
21	GR	Ignition switch	Input	—	OFF or ACC or ON	0V
					START	Battery voltage
22	G	Battery power supply (cooling fan relays)	Input	OFF	—	Battery voltage
23	LG	Heated mirror relay	Output	ON or START	Rear window defogger switch is ON	Battery voltage
					Rear window defogger switch is OFF	0V
24	P	Cooling fan motor (high)	Output	ON or START	—	Battery voltage
27	W/G	Trailer tow relay	Output	ON or START	—	Battery voltage
28	R	LH front parking and front side marker lamp	Output	OFF	Lighting switch 1ST position: OFF	0V
					Lighting switch 1ST position: ON	Battery voltage

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition			Reference value (Approx.)
				Ignition switch	Operation or condition		
29	G	Trailer tow relay	Output	OFF	Lighting switch 1ST position	OFF	0V
						ON	Battery voltage
30	R/B	Battery power supply (ECM)	Input	OFF	—		Battery voltage
32	GR	Low speed signal	Output	ON	Wiper switch	OFF	0V
						LO	Battery voltage
35	L	High speed signal	Output	ON	Wiper switch	OFF	0V
						HI	Battery voltage
37	Y	Generator	Output	ON			—
38	B	Ground	Input	—	—		0V
39	L	CAN-H	—	ON	—		—
40	P	CAN-L	—	ON	—		—
43	G	Wiper auto stop signal	Input	ON	Wipers in non-park position		Battery voltage
					Wipers in park position		0V
44	R	Daytime light relay 1 signal	Output	ON	Park brake switch position	OFF	0V
						ON	Battery voltage
45	LG	Horn relay	Input	When doors are operated using keyfob		OFF	Battery voltage
						ON	0V
46	V	Fuel pump relay control	Input	—	Ignition switch ON or START		0V
					Ignition switch OFF or ACC		Battery voltage
47	O	Throttle control relay control	Input	—	Ignition switch ON or START		0V
					Ignition switch OFF or ACC		Battery voltage
48	R	Starter relay (inhibit switch)	Input	ON or START	Selector lever in "P" or "N"		Battery voltage
					Selector lever any other position		0V
49	GR	RH front parking and front side marker lamp	Output	—	Lighting switch 1ST position	OFF	
						ON	Battery voltage
50	W	Front fog lamp (LH)	Output	ON	Lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) and the front fog lamp switch must be ON	OFF	0V
						ON	Battery voltage

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition			Reference value (Approx.)
				Ignition switch	Operation or condition		
51	V	Front fog lamp (RH)	Output	ON	Lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) and the front fog lamp switch must be ON	OFF	0V
						ON	Battery voltage
52	P	Headlamp low (LH)	Output	OFF	Lighting switch 2ND position	OFF	0V
						ON	Battery voltage
54	R	Headlamp low (RH)	Output	OFF	Lighting switch 2ND position	OFF	0V
						ON	Battery voltage
55	G	Headlamp high (LH)	Output	OFF	Lighting switch HIGH or PASS position	OFF	0V
						ON	Battery voltage
56	L	Headlamp high (RH)	Output	OFF	Lighting switch HIGH or PASS position	OFF	0V
						ON	Battery voltage
57	GR	Rear parking, license, and tail lamp	Input	ON	Lighting switch 1ST position	OFF	0V
						ON	Battery voltage
59	B	Ground	—	—	—		0V
60	GR	Rear window defogger relay output signal	Output	ON	When rear window defogger switch is ON		Battery voltage
					When rear window defogger switch is OFF		0V
61	R/B	Battery power supply (trailer tow relay)	Output	OFF	—		Battery voltage

IPDM E/R Power/Ground Circuit Inspection

EKS00DNQ

1. FUSE AND FUSIBLE LINK INSPECTION

Check that the following fusible links are not blown.

Terminal No.	Signal name	Fusible link No.
1, 2	Battery power	a, c, d

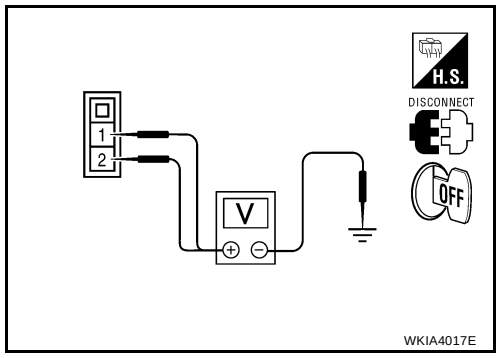
OK or NG

OK >> GO TO 2.
NG >> Replace fusible link.

2. POWER CIRCUIT INSPECTION

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R harness connector E118.
3. Check voltage between IPDM E/R harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(-)	
IPDM E/R connector	Terminal		
E118	1, 2	Ground	Battery voltage



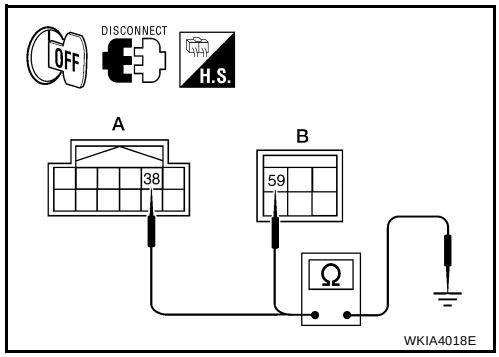
OK or NG

OK >> GO TO 3.
NG >> Repair or replace IPDM E/R power circuit harness.

3. GROUND CIRCUIT INSPECTION

1. Disconnect IPDM E/R harness connectors E122 and E124.
2. Check continuity between IPDM E/R harness connectors and ground.

A		B		Continuity
Connector	Terminal	Connector	Terminal	
IPDM E/R: E122	38	IPDM E/R: E124	59	Yes



OK or NG

OK >> Inspection End.
NG >> Repair or replace IPDM E/R ground circuit harness.

Inspection with CONSULT-II (Self-Diagnosis)

EKS00DNR

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

1. SELF-DIAGNOSIS RESULT CHECK

1. Connect CONSULT-II and select "IPDM E/R" on the "SELECT SYSTEM" screen.
2. Select "SELF-DIAG RESULTS" on the "SELECT DIAG MODE" screen.
3. Check display content in self-diagnosis 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	X	X	Any of items listed below have errors: ● TRANSMIT DIAG ● ECM ● BCM/SEC

NOTE:
The Details for Display for the Period are as follows:

- CRNT: Error currently detected by IPDM E/R.
- PAST: Error detected in the past and stored in IPDM E/R memory.

Contents displayed

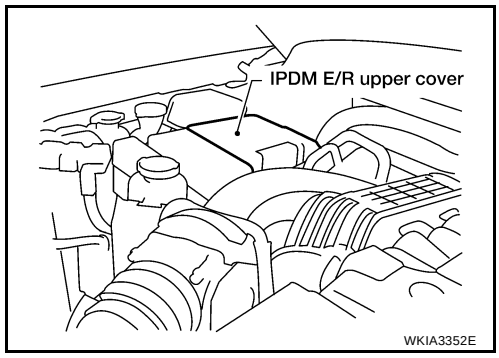
NO DTC DETECTED. FURTHER TESTING MAY BE REQUIRED.>>INSPECTION END.
CAN COMM CIRC>>Print out the self-diagnosis result and refer to LAN-21, "CAN COMMUNICATION" .

Removal and Installation of IPDM E/R

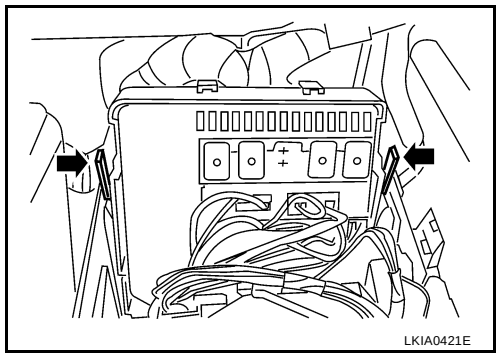
EKS00DNS

REMOVAL

1. Disconnect negative battery cable.
2. Remove IPDM E/R upper cover.



3. Release 2 clips and pull IPDM E/R up from case.
4. Disconnect IPDM E/R connectors and remove the IPDM E/R.



INSTALLATION

Installation is in the reverse order of removal.

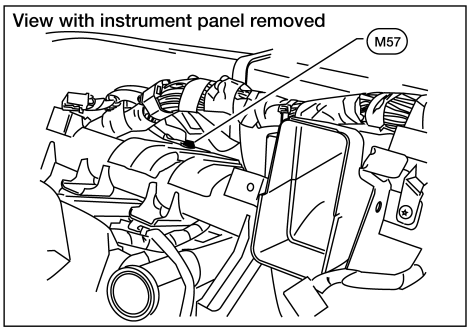
GROUND CIRCUIT

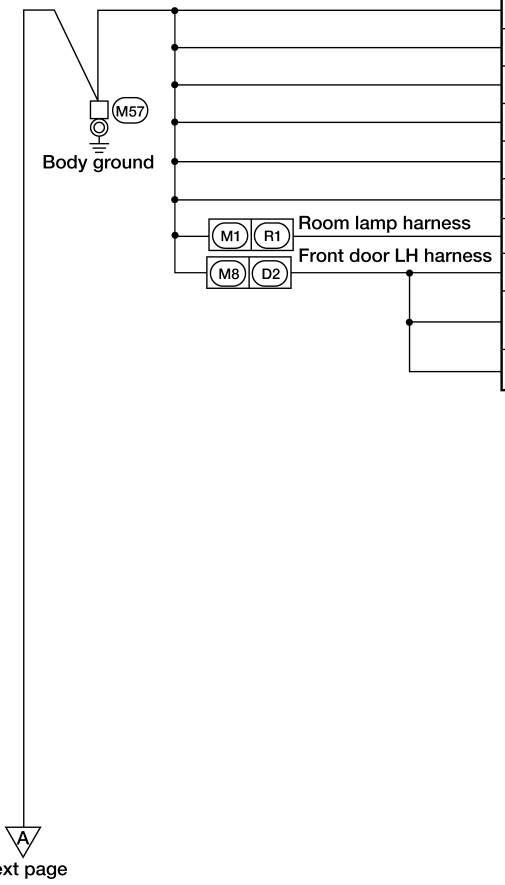
PFP:24080

Ground Distribution

EKS00DNT

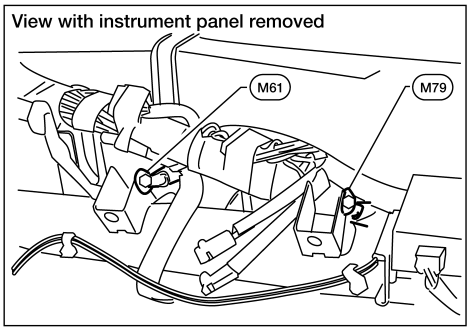
MAIN HARNESS

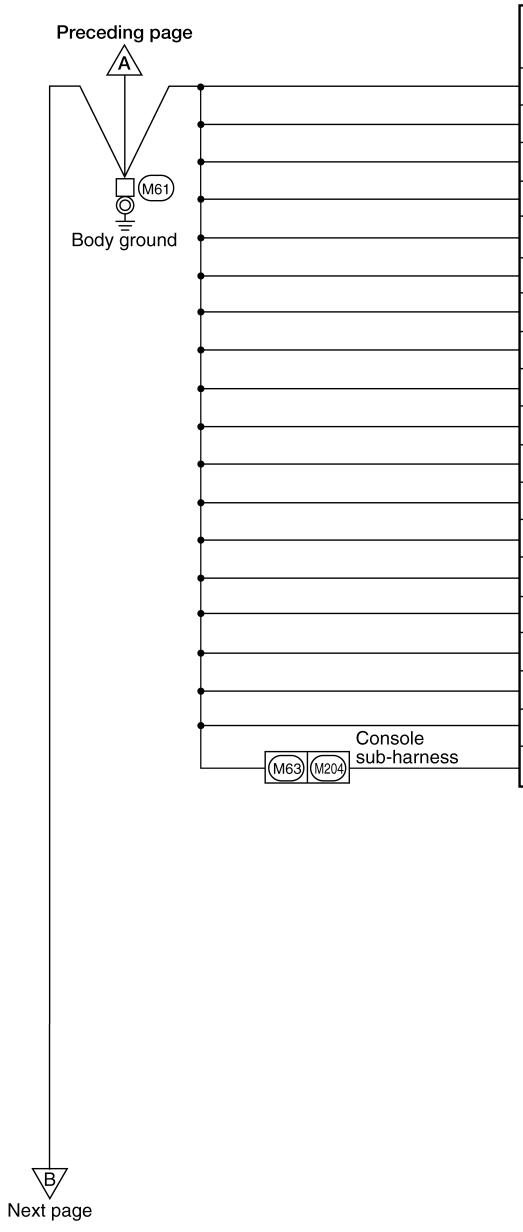




CONNECTOR NUMBER	CONNECT TO
M20	BCM (Terminal No. 67)
M22	Data link connector (Terminal No. 4)
M22	Data link connector (Terminal No. 5)
M24	Combination meter (Terminal No. 23)
M28	Combination switch
M164	Clutch interlock cancel relay 1
R9	Front room/map lamp assembly
D4	Door mirror LH
D7	Main power window and door lock/unlock switch (Terminal No. 14)
D14	Front door lock assembly LH

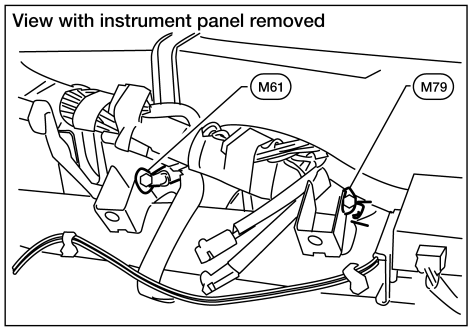
WKIA5032E

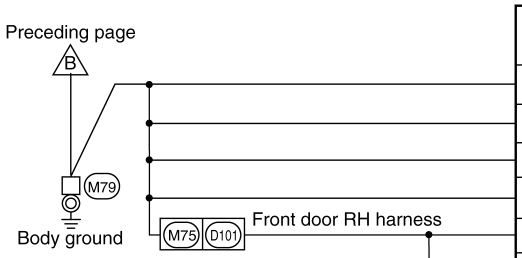




CONNECTOR NUMBER	CONNECT TO
M13	Front passenger air bag off indicator
M21	NATS antenna amp.
M24	Combination meter (Terminal No. 13)
M35	Air bag diagnosis sensor
M47	Steering angle sensor
M49	Front air control
M51	Front blower switch
M55	Hazard switch
M152	Transfer control unit (Terminal No. 6)
M152	Transfer control unit (Terminal No. 18)
M153	Transfer control unit (Terminal No. 32)
M154	VDC off switch
M155	HDC switch
M156	A/T device (Terminal No. 2)
M156	A/T device (Terminal No. 8)
M156	A/T device (Terminal No. 10)
M159	Door mirror remote control switch
M163	Clutch interlock cancel switch
M207	Console power socket

WKIA5080E

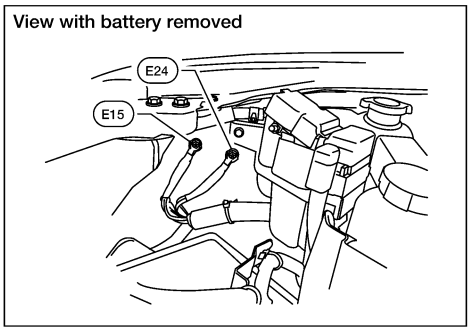


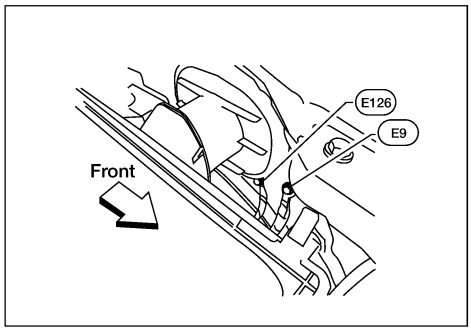


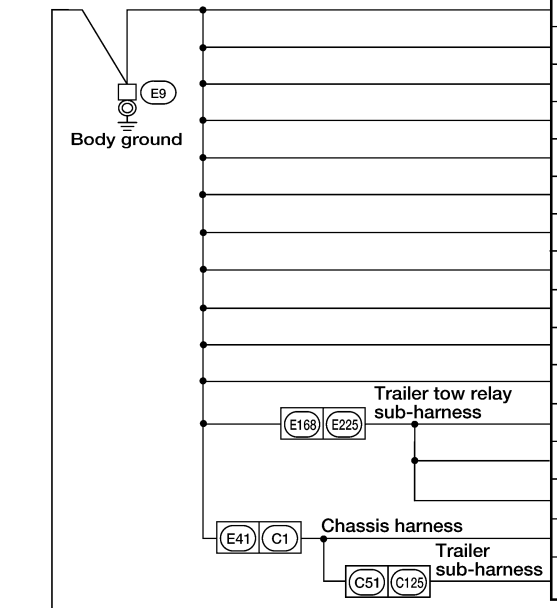
CONNECTOR NUMBER	CONNECT TO
M3	Fuse block (J/B)
M53	Lower front power socket
M54	Upper front power socket
M76	Electric brake (pre-wiring)
D105	Power window and door lock/unlock switch RH
D107	Door mirror RH

WKIA5081E

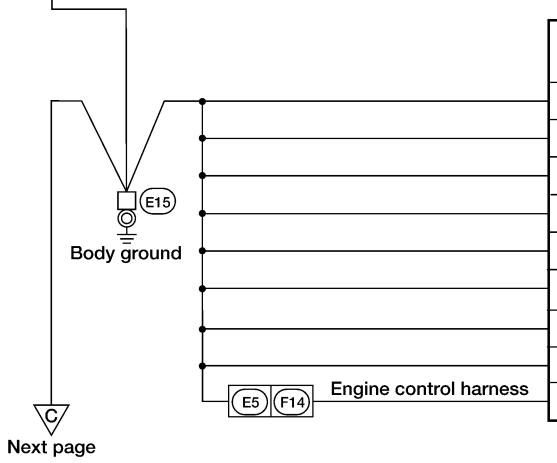
ENGINE ROOM HARNESS







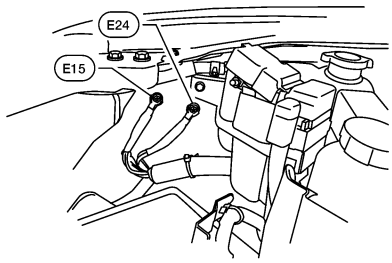
CONNECTOR NUMBER	CONNECT TO
E3	Horn (with dual note horn)
E17	Front combination lamp LH (side marker)
E21	Brake fluid level switch
E23	Front wiper motor
E102	Front fog lamp RH
E103	Daytime light relay 2
E104	Daytime light relay 1
E106	Washer fluid level switch
E107	Front combination lamp RH (headlamp)
E111	Front combination lamp RH (parking/turn signal)
E162	Horn (with single note horn)
E226	Back-up lamp relay (with M/T)
E227	Trailer tow relay 1
E228	Trailer tow relay 2
C5	Fuel level sensor unit and fuel pump
C126	Trailer (7-pin)

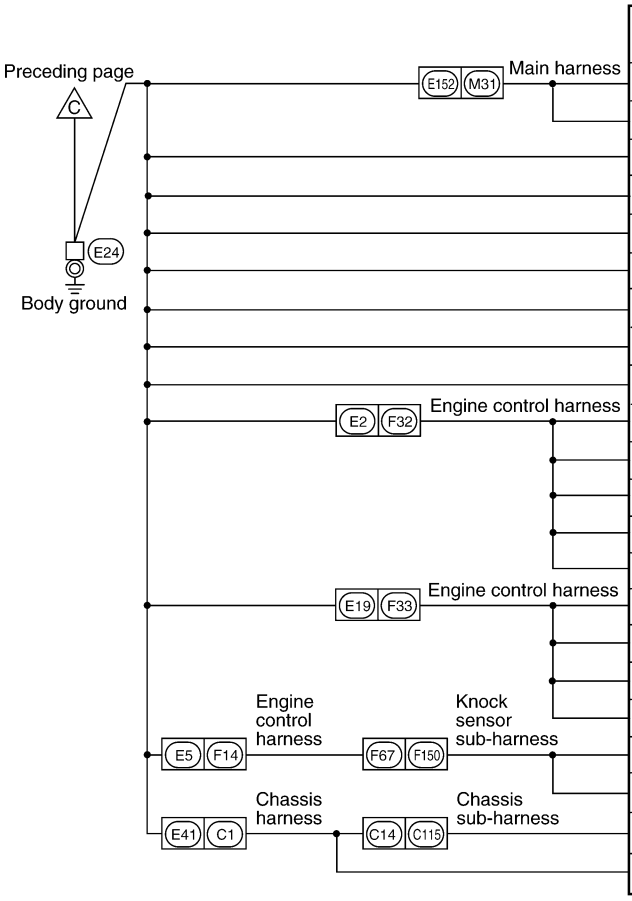


CONNECTOR NUMBER	CONNECT TO
E11	Front combination lamp LH (headlamp)
E27	Front combination lamp LH (parking/turn signal)
E101	Front fog lamp LH
E108	Front combination lamp RH (side marker)
E113	Cooling fan motor (Terminal No. 3)
E113	Cooling fan motor (Terminal No. 4)
E169	Trailer turn relay LH
E170	Trailer turn relay RH
F66	Park/neutral position switch (with M/T)

WKIA6062E

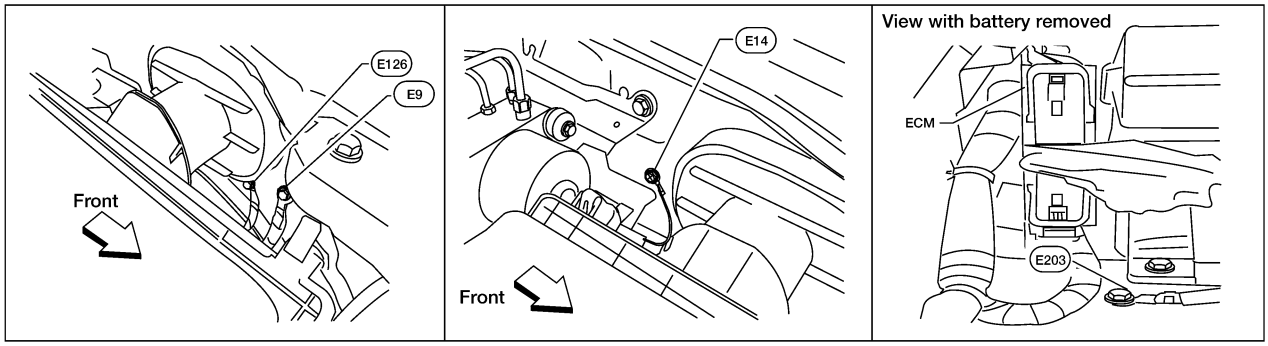
View with battery removed





CONNECTOR NUMBER	CONNECT TO
M70	Differential lock control unit (Terminal No. 3)
M70	Differential lock control unit (Terminal No. 10)
E16	ECM (Terminal No. 115)
E16	ECM (Terminal No. 116)
E54	Front blower motor relay
E122	IPDM E/R (Terminal No. 38)
E124	IPDM E/R (Terminal No. 59)
E156	Transfer shut off relay 1
E166	Clutch interlock cancel relay 2
F11	Crankshaft position sensor
F23	Camshaft position sensor (PHASE) (bank 2)
F50	Electric throttle control actuator (shield wire)
F54	ECM (Terminal No. 1)
F70	Camshaft position sensor (PHASE) (bank 1)
F55	ATP switch
F58	Transfer control device
F59	Wait detection switch
F60	4LO switch
F151	Knock sensor (bank 1) (shield wire)
F152	Knock sensor (bank 2) (shield wire)
C116	Differential lock position switch
C12	License plate lamp

WKIA6063E



CONNECTOR NUMBER	CONNECT TO
E4	Crash zone sensor (shield wire)

E14
Body ground

CONNECTOR NUMBER	CONNECT TO
E125	ABS actuator and electric unit (control unit) (Terminal No. 16)
E125	ABS actuator and electric unit (control unit) (Terminal No. 47)

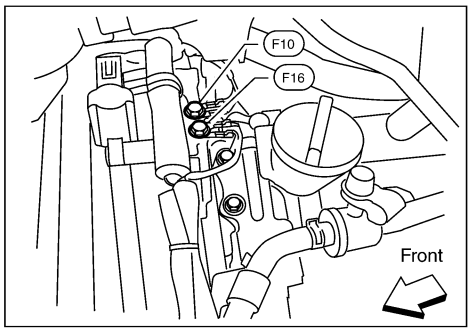
E126
Body ground

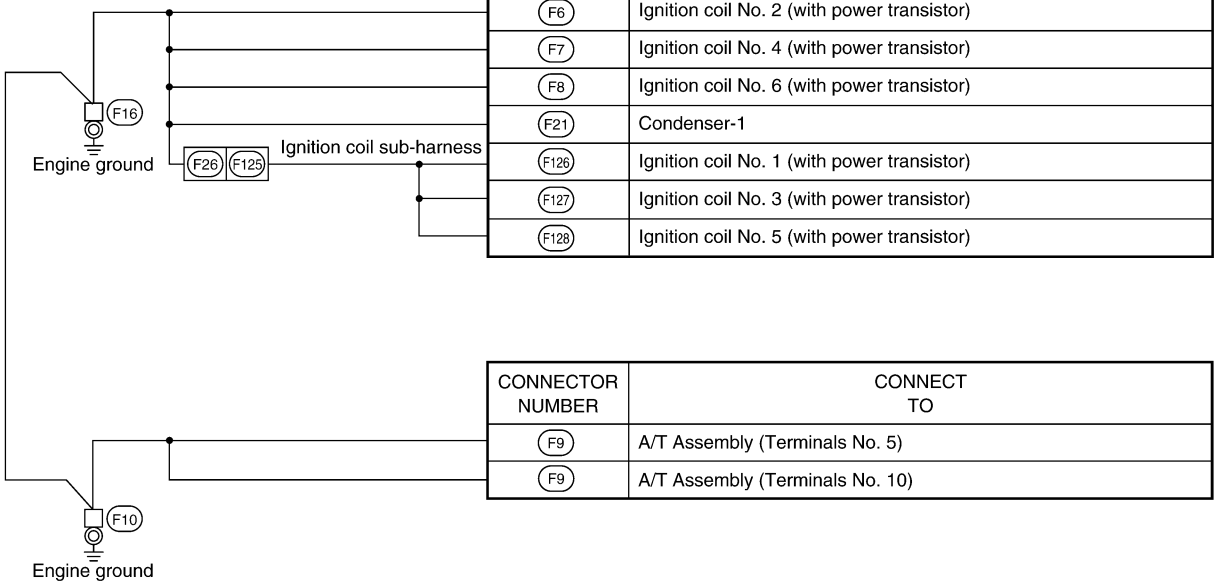
CONNECTOR NUMBER	CONNECT TO
E209	Generator

E203
Body ground

WKIA6064E

ENGINE CONTROL HARNESS



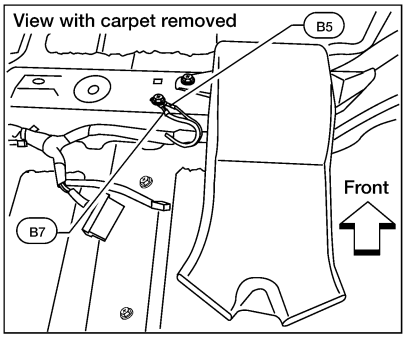


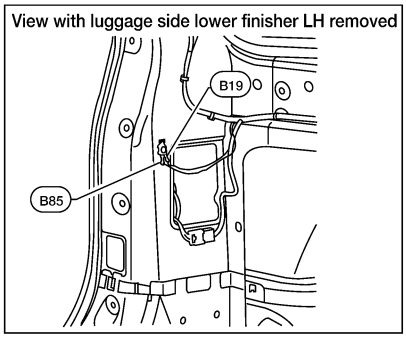
CONNECTOR NUMBER	CONNECT TO
F6	Ignition coil No. 2 (with power transistor)
F7	Ignition coil No. 4 (with power transistor)
F8	Ignition coil No. 6 (with power transistor)
F21	Condenser-1
F126	Ignition coil No. 1 (with power transistor)
F127	Ignition coil No. 3 (with power transistor)
F128	Ignition coil No. 5 (with power transistor)

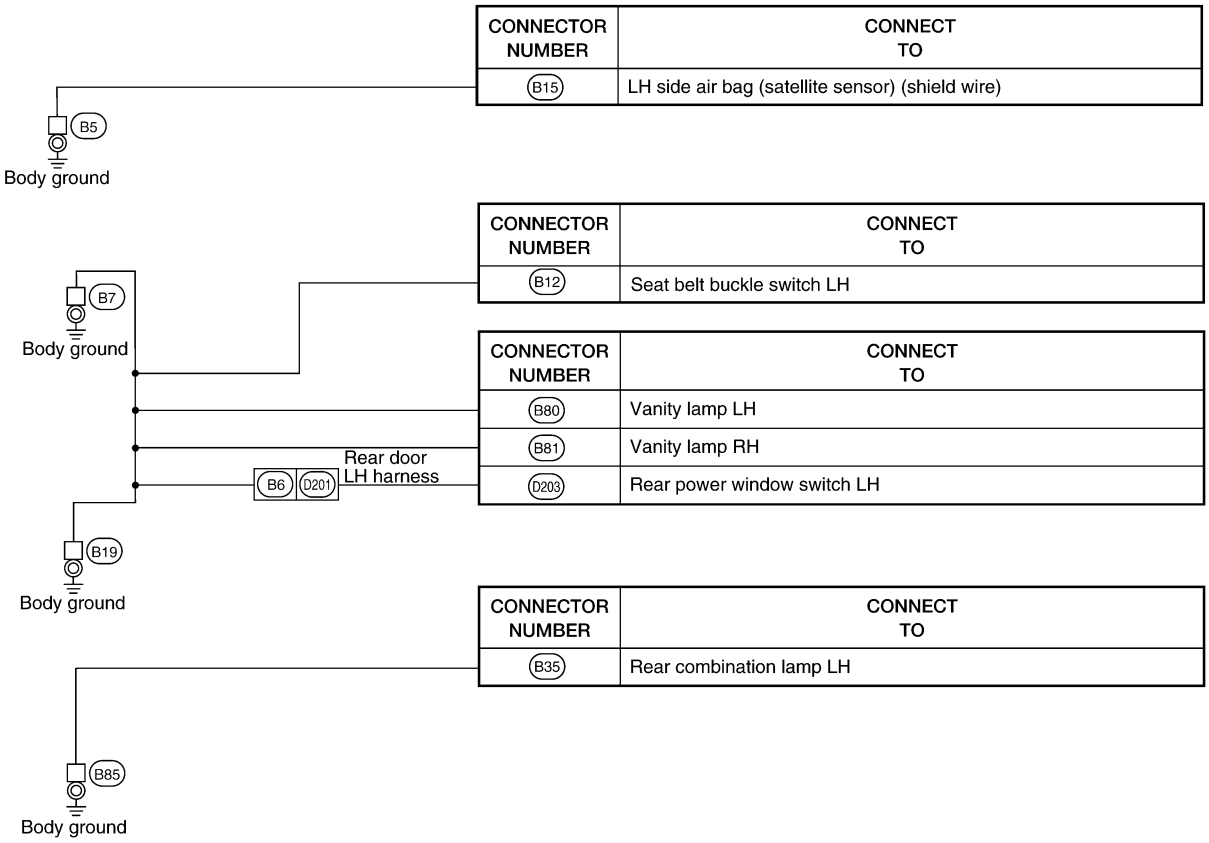
CONNECTOR NUMBER	CONNECT TO
F9	A/T Assembly (Terminals No. 5)
F9	A/T Assembly (Terminals No. 10)

WKIA5171E

BODY HARNESS







CONNECTOR NUMBER	CONNECT TO
B15	LH side air bag (satellite sensor) (shield wire)

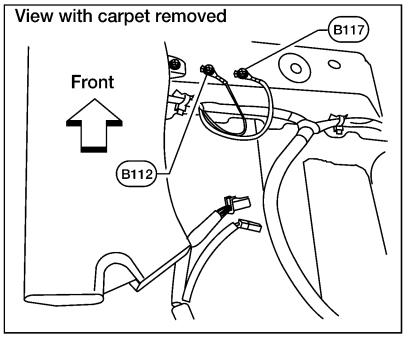
CONNECTOR NUMBER	CONNECT TO
B12	Seat belt buckle switch LH

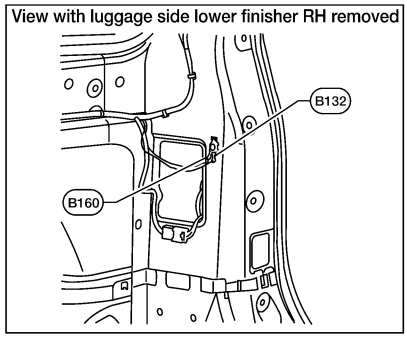
CONNECTOR NUMBER	CONNECT TO
B80	Vanity lamp LH
B81	Vanity lamp RH
D203	Rear power window switch LH

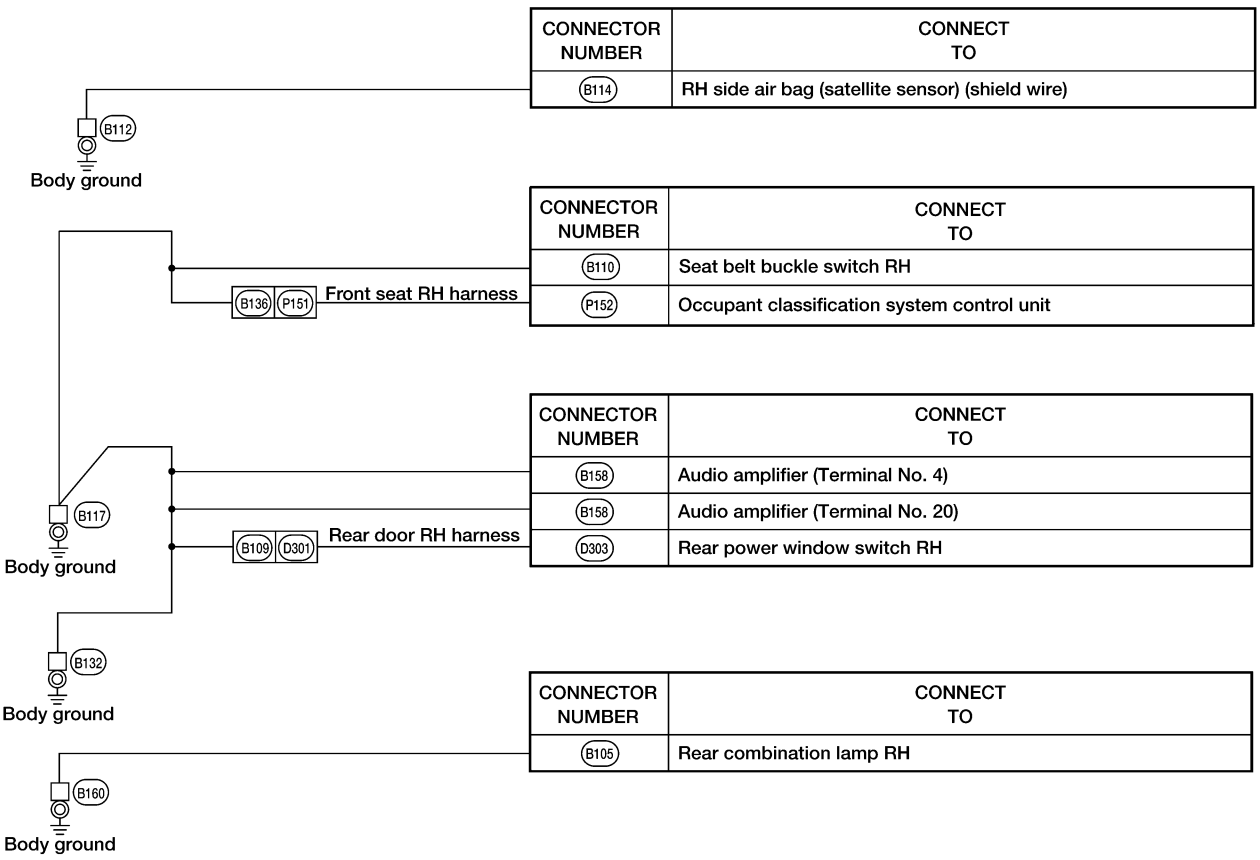
CONNECTOR NUMBER	CONNECT TO
B35	Rear combination lamp LH

WKIA6065E

BODY NO. 2 HARNESS







CONNECTOR NUMBER	CONNECT TO
B114	RH side air bag (satellite sensor) (shield wire)

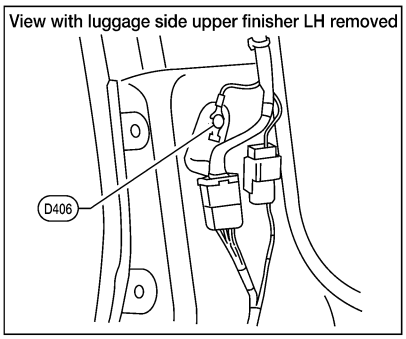
CONNECTOR NUMBER	CONNECT TO
B110	Seat belt buckle switch RH
P152	Occupant classification system control unit

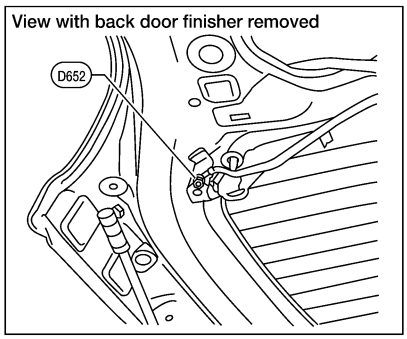
CONNECTOR NUMBER	CONNECT TO
B158	Audio amplifier (Terminal No. 4)
B158	Audio amplifier (Terminal No. 20)
D303	Rear power window switch RH

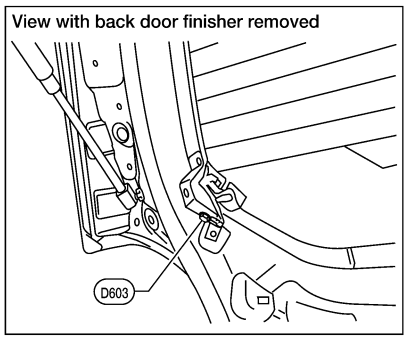
CONNECTOR NUMBER	CONNECT TO
B105	Rear combination lamp RH

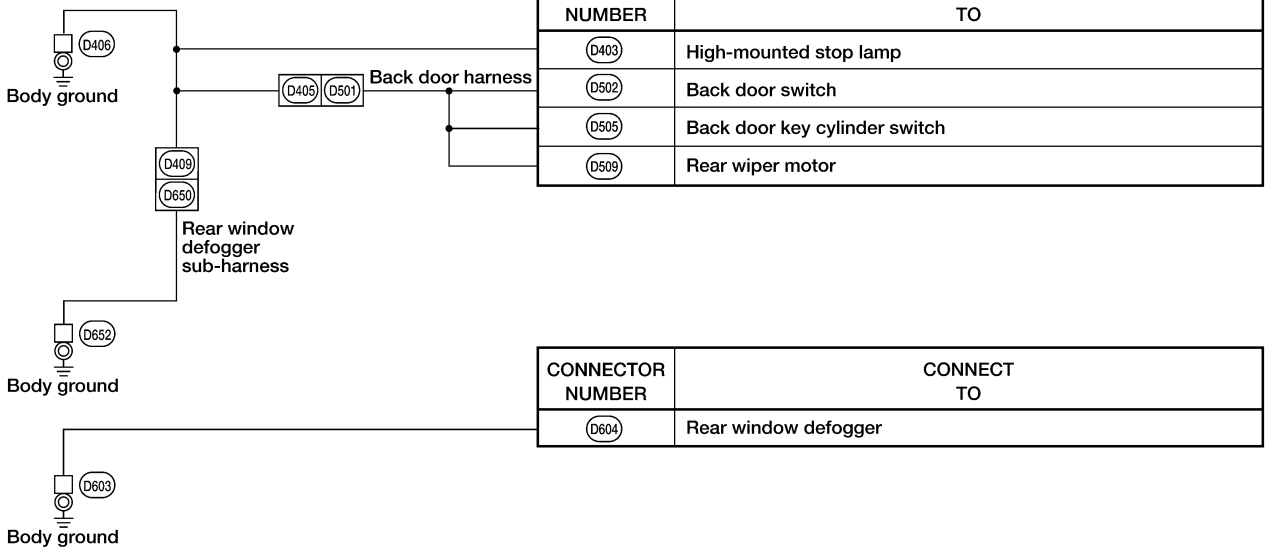
WKIA6066E

BACK DOOR NO. 2 AND BACK DOOR HARNESS









CONNECTOR NUMBER	CONNECT TO
D403	High-mounted stop lamp
D502	Back door switch
D505	Back door key cylinder switch
D509	Rear wiper motor

CONNECTOR NUMBER	CONNECT TO
D604	Rear window defogger

WKIA3971E

HARNESS

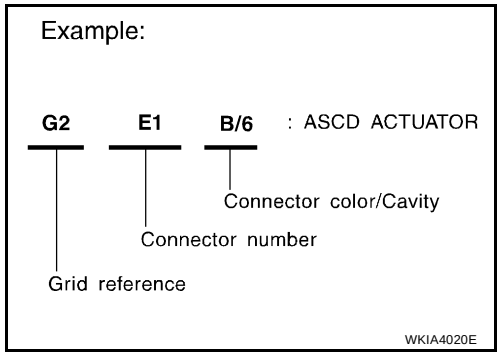
PFP:24010

Harness Layout

EKS00DNU

HOW TO READ HARNESS LAYOUT

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



- Main Harness and Console Sub-harness
- Engine Room Harness RH View (Engine Compartment), Generator Sub-harness, and Trailer Tow Relay Sub-harness
- Engine Room Harness (Passenger Compartment)
- Engine Room Harness LH View (Engine Compartment)
- Engine Control Harness, Injector Sub-harness, Ignition Coil Sub-harness and Knock Sensor Sub-harness
- Chassis Harness, Differential Sub-harness and Trailer Sub-harness
- Body Harness
- Body No. 2 Harness
- Room Lamp Harness
- Back Door Harness, Back Door No. 2 Harness, Rear Window Sub-Harness, Rear Window Defogger Sub-Harness
- Front Door LH Harness
- Front Door RH Harness
- Rear Door LH Harness
- Rear Door RH Harness

To use the grid reference

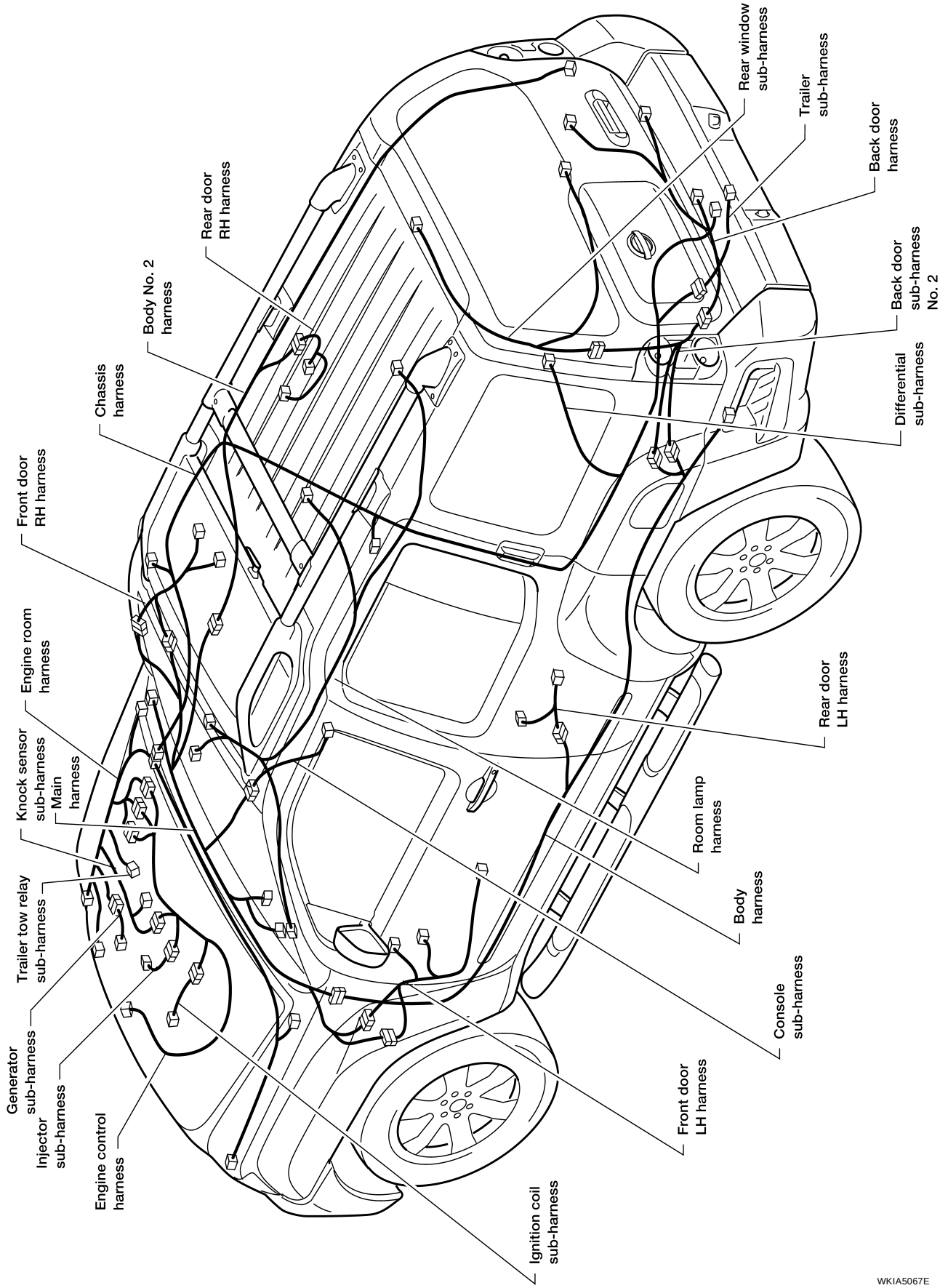
1. Find the desired connector number on the connector list.
2. Find the grid reference.
3. On the drawing, find the crossing of the grid reference letter column and number row.
4. Find the connector number in the crossing zone.
5. Follow the line (if used) to the connector.

CONNECTOR SYMBOL

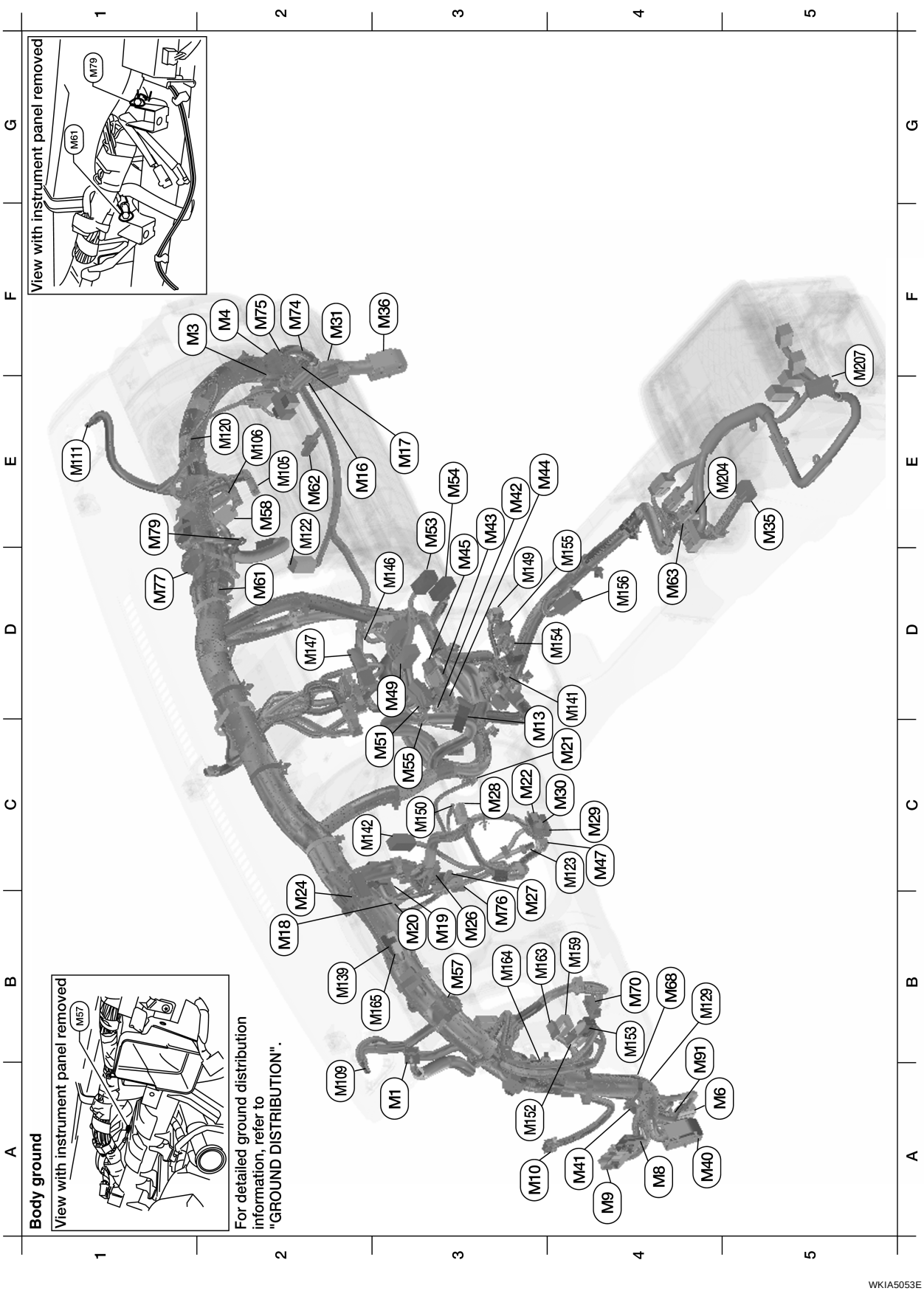
Main symbols of connector (in Harness Layout) are indicated below.

Connector type	Water proof type		Standard type	
	Male	Female	Male	Female
● Cavity: 4 or less				
● Cavity: From 5 to 8				
● Cavity: 9 or more				
● Ground terminal etc.	—			

OUTLINE


Rear window sub-harness
Trailer sub-harness
Back door harness
Rear door RH harness
Body No. 2 harness
Back door sub-harness No. 2
Chassis harness
Differential sub-harness
Front door RH harness
Engine room harness
Rear door LH harness
Knock sensor sub-harness
Main harness
Room lamp harness
Trailer tow relay sub-harness
Body harness
Console sub-harness
Generator sub-harness
Injector sub-harness
Front door LH harness
Engine control harness
Ignition coil sub-harness
WKIA5067E

MAIN HARNESS

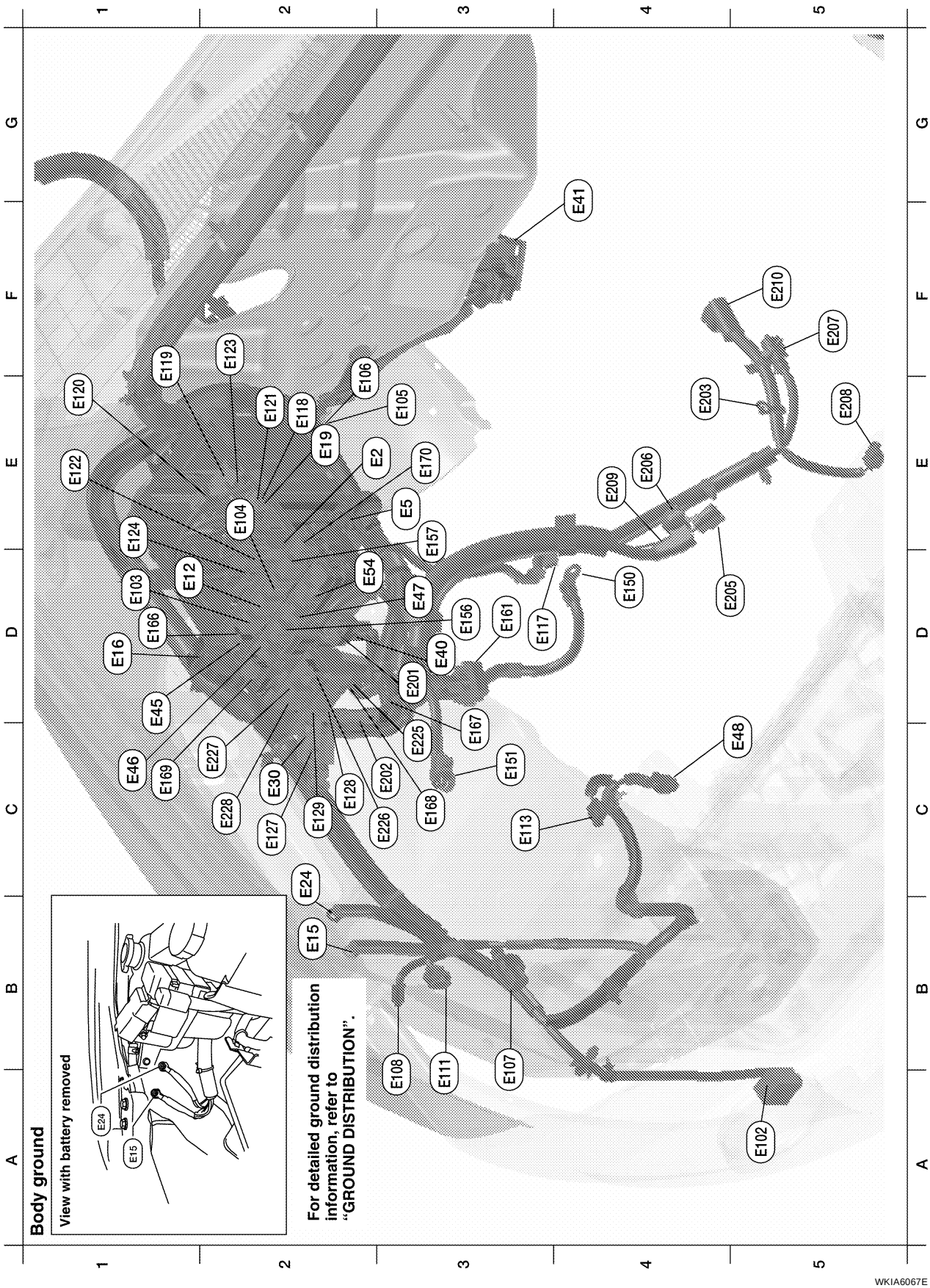


WKIA5053E

A3	M1	W/12	: To R1	E2	M62	B/2	: Front blower motor
F1	M3	W/8	: Fuse block (J/B)	D4	M63	W/6	: To M204
F2	M4	W/16	: Fuse block (J/B)	B4	M68	V/1	: To M250 (with XM satellite radio tuner)
A4	M6	W/8	: To E10	B4	M68	BR/1	: To M250 (with Sirius satellite radio tuner)
A4	M8	W/16	: To D2	B4	M70	W/26	: Differential lock control unit
A4	M9	W/24	: To D1	F2	M74	W/16	: To D102
A4	M10	Y/4	: To E29	F2	M75	W/12	: To D101
C3	M13	W/3	: Front passenger air bag OFF indicator	B3	M76	W/6	: Electric brake (pre-wiring)
E2	M16	W/12	: To B162	D1	M77	Y/4	: Front passenger air bag module (service replacement)
E3	M17	W/16	: To B163	E1	M79	—	: Body ground
B2	M18	W/40	: BCM (body control module)	A4	M91	W/16	: To E26
B3	M19	W/15	: BCM (body control module)	E2	M105	Y/2	: Front passenger air bag module
B3	M20	B/15	: BCM (body control module)	E2	M106	O/2	: Front passenger air bag module
C4	M21	W/4	: NATS antenna amp.	A2	M109	BR/2	: Front tweeter LH
C3	M22	W/16	: Data link connector	E1	M111	BR/2	: Front tweeter RH
B2	M24	W/40	: Combination meter	E2	M120	W/4	: Remote keyless entry receiver
B3	M26	W/6	: Ignition switch	E2	M122	B/4	: Front blower motor resistor
C3	M27	W/2	: Key switch	C4	M123	W/2	: Tire pressure warning check connector
C3	M28	W/16	: Combination switch	B4	M129	V/1	: Satellite radio tuner (with XM satellite radio tuner)
C4	M29	Y/6	: Combination switch (spiral cable)	B4	M129	BR/1	: Satellite radio tuner (with Sirius satellite radio tuner)
C4	M30	GR/8	: Combination switch (spiral cable)	B2	M139	B/2	: Diode-1
F2	M31	SMJ	: To E152	D4	M141	GR/8	: 4WD shift switch
E5	M35	Y/28	: Air bag diagnosis sensor unit	C3	M142	B/6	: Mode door motor
F3	M36	SMJ	: To B149	D3	M146	B/2	: Intake sensor
A4	M40	SMJ	: To B69	D2	M147	B/6	: Air mix door motor (front)
A3	M41	W/16	: Satellite radio tuner	D3	M149	W/6	: Differential lock control unit
A3	M41	W/16	: Pre-wiring for satellite radio tuner	C3	M150	BR/2	: Ignition keyhole illumination
E3	M42	W/12	: Audio unit	A3	M152	W/26	: Transfer case control unit
E3	M43	W/10	: Audio unit	B4	M153	W/24	: Transfer case control unit
E3	M44	W/6	: Audio unit	D4	M154	GR/6	: VDC off switch
D3	M45	W/16	: Audio unit	D4	M155	W/8	: HDC switch
C4	M47	W/8	: Steering angle sensor	D4	M156	W/10	: A/T device
D3	M49	B/26	: Front air control	B4	M159	W/16	: Door mirror remote control switch
C3	M51	W/8	: Front blower switch	B3	M163	W/8	: Clutch interlock cancel switch
E3	M53	B/2	: Lower front power socket	B3	M164	B/5	: Clutch interlock cancel relay 1
E3	M54	GR/2	: Upper front power socket	B3	M165	B/2	: Diode-7
C3	M55	W/4	: Hazard switch	Console sub-harness			
B3	M57	–	: Body ground	E4	M204	W/6	: To M63
E2	M58	B/6	: Intake door motor	F5	M207	B/2	: Console power socket
D2	M61	—	: Body ground				

ENGINE ROOM HARNESS (RH VIEW)

Engine Compartment

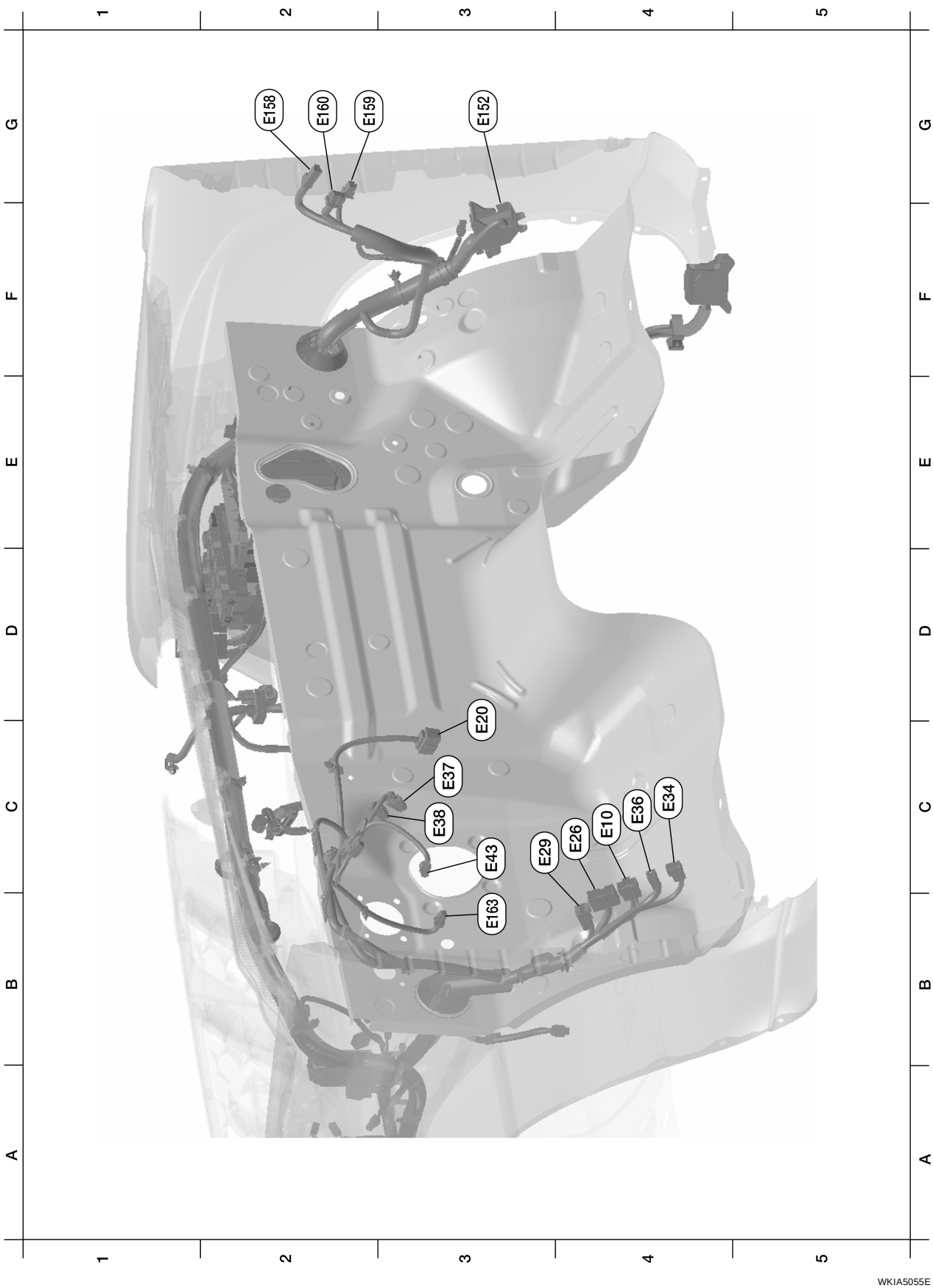


WKIA6067E

Refer to PG-53, "ENGINE ROOM HARNESS (LH VIEW)" for continuation of engine room harness.

E3	E2	W/16	: To F32	E1	E124	B/6	: IPDM E/R (intelligent power distribution module engine room)
E3	E5	W/24	: To F14	C2	E127	—	: Fusible link box (battery)
D1	E12	L/5	: Stop lamp relay	C2	E128	GR/2	: Fusible link box (battery)
B2	E15	—	: Body ground	C2	E129	BR/2	: Fusible link box (battery)
D1	E16	B/40	: ECM	D4	E150	—	: Battery ground
E2	E19	W/16	: To F33	C3	E151	—	: Negative battery cable
C2	E24	—	: Body ground	D3	E156	L/4	: Transfer shut off relay 1
C2	E30	—	: Fusible link box (battery)	D3	E157	L/4	: Transfer shut off relay 2
D3	E40	GR/9	: To E201	D3	E161	B/3	: Battery current sensor
G4	E41	SMJ	: To C1	D1	E166	BR/6	: Clutch interlock cancel relay 2 (with M/T)
C1	E45	BR/6	: Back-up lamp relay (with A/T)	C3	E167	B/2	: Diode-3
C1	E46	B/5	: Transfer shift high relay	C3	E168	W/2	: To E225
D3	E47	B/5	: Transfer shift low relay	C1	E169	L/4	: Trailer turn relay LH
C5	E48	B/3	: Refrigerant pressure sensor	E3	E170	L/4	: Trailer turn relay RH
D3	E54	BR/6	: Front blower motor relay	Generator sub-harness			
A5	E102	B/2	: Front fog lamp RH	D3	E201	GR/9	: To E40
D1	E103	B/5	: Daytime light relay 1	C3	E202	B/1	: To fuse and fusible link box
E2	E104	L/4	: Daytime light relay 2	E4	E203	—	: Body ground
F3	E105	B/2	: Front and rear washer motor	D5	E205	B/3	: Generator
F2	E106	BR/2	: Washer fluid level switch	E4	E206	—	: Generator
A3	E107	B/3	: Front combination lamp RH (head lamp)	F5	E207	GR/1	: Starter motor
A3	E108	GR/2	: Front combination lamp RH (side marker)	E5	E208	B/3	: Oil pressure sensor
A3	E111	GR/3	: Front combination lamp RH (parking /turn signal lamp)	E4	E209	—	: Generator
C3	E113	GR/4	: Cooling fan motor	E4	E210	—	: Starter motor (battery supply)
D3	E117	GR/2	: Front wheel sensor RH	Trailer tow relay sub-harness			
E2	E118	B/2	: IPDM E/R (intelligent power distribution module engine room)	C3	E225	W/12	: To E168
F1	E119	W/18	: IPDM E/R (intelligent power distribution module engine room)	C3	E226	L/4	: Back-up lamp relay (with M/T)
E1	E120	W/6	: IPDM E/R (intelligent power distribution module engine room)	C2	E227	L/4	: Trailer tow relay 1
E2	E121	BR/12	: IPDM E/R (intelligent power distribution module engine room	C2	E228	BR/6	: Trailer tow relay 2
E1	E122	W/12	: IPDM E/R (intelligent power distribution module engine room)				
F2	E123	BR/8	: IPDM E/R (intelligent power distribution module engine room)				

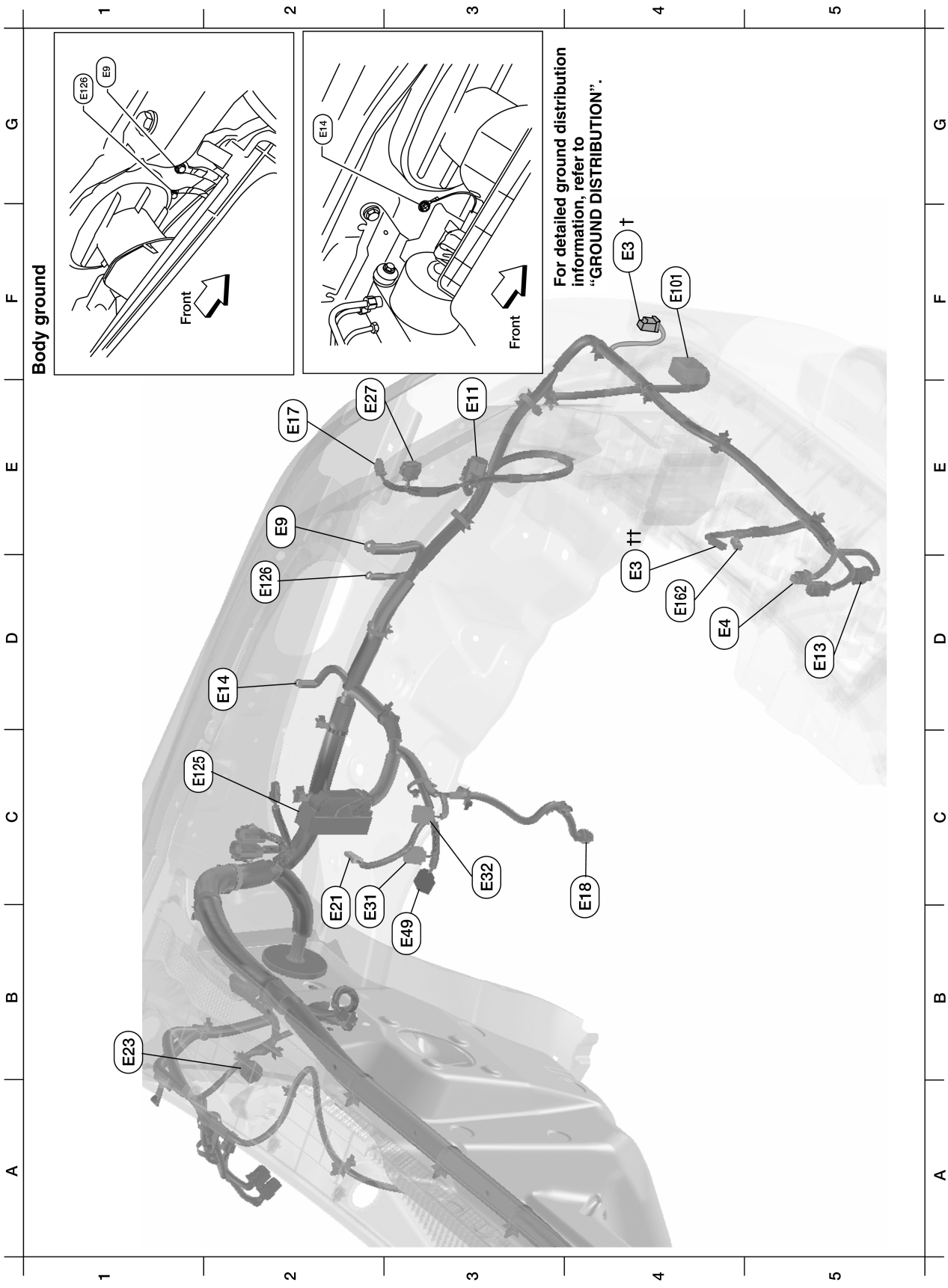
Passenger Compartment



C4	E10	W/8	: To M6	C3	E38	W/4	: Stop lamp switch (with A/T)
D3	E20	B/6	: Accelerator pedal position (APP) sensor	C3	E43	L/2	: ASCD clutch switch
C4	E26	W/16	: To M91	G3	E152	SMJ	: To M31
C3	E29	Y/4	: To M10	G2	E158	B/1	: Fuse block (J/B)
C4	E34	W/8	: To B40	G2	E159	B/2	: Fuse block (J/B)
C4	E36	W/2	: To B42	G2	E160	W/8	: Fuse block (J/B)
C3	E37	BR/2	: ASCD brake switch	B3	E163	L/2	: Clutch interlock switch

ENGINE ROOM HARNESS (LH VIEW)

Engine Compartment

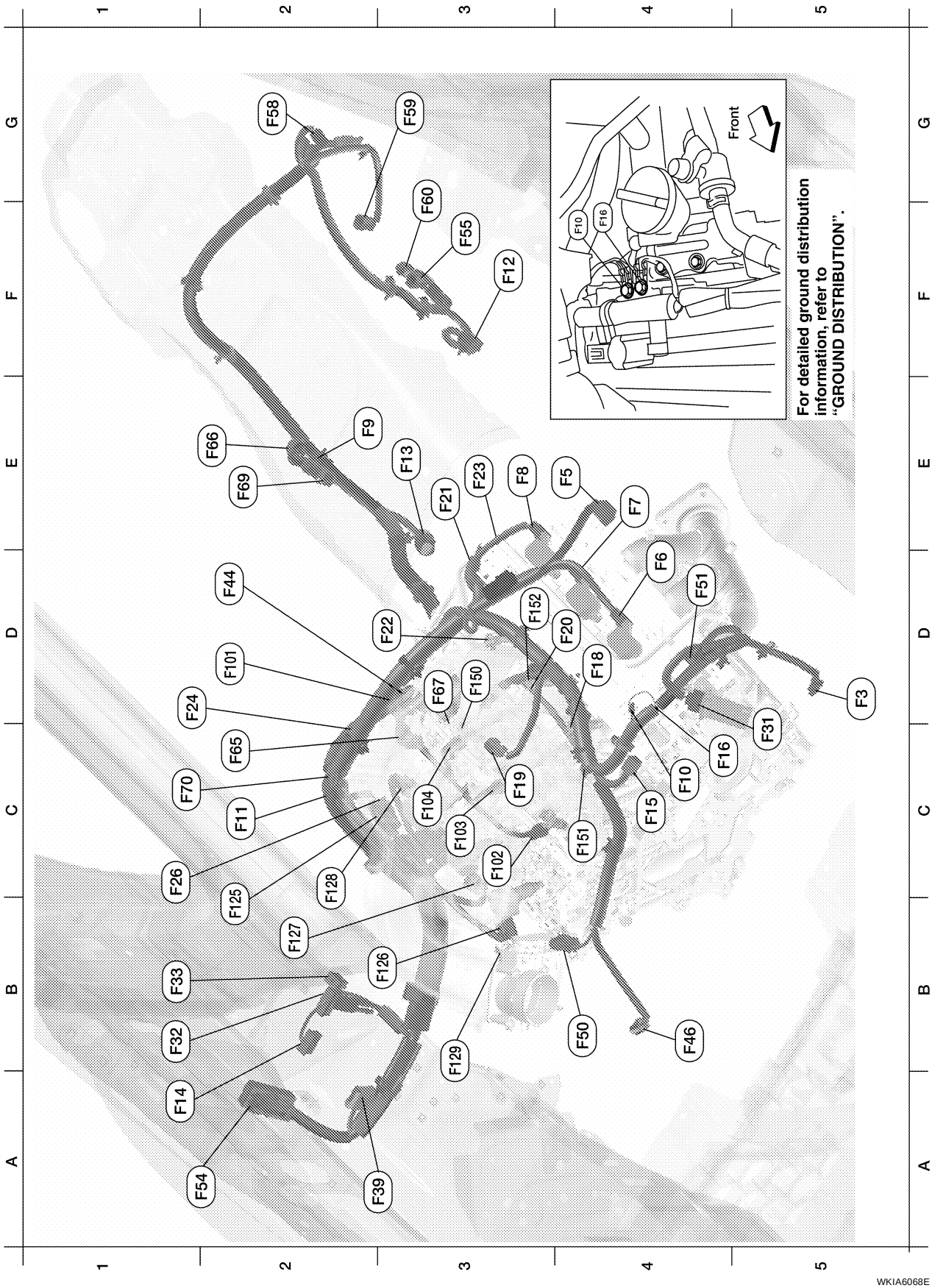


WKIA5082E

Refer to PG-49, "ENGINE ROOM HARNESS (RH VIEW)" for continuation of engine room harness.

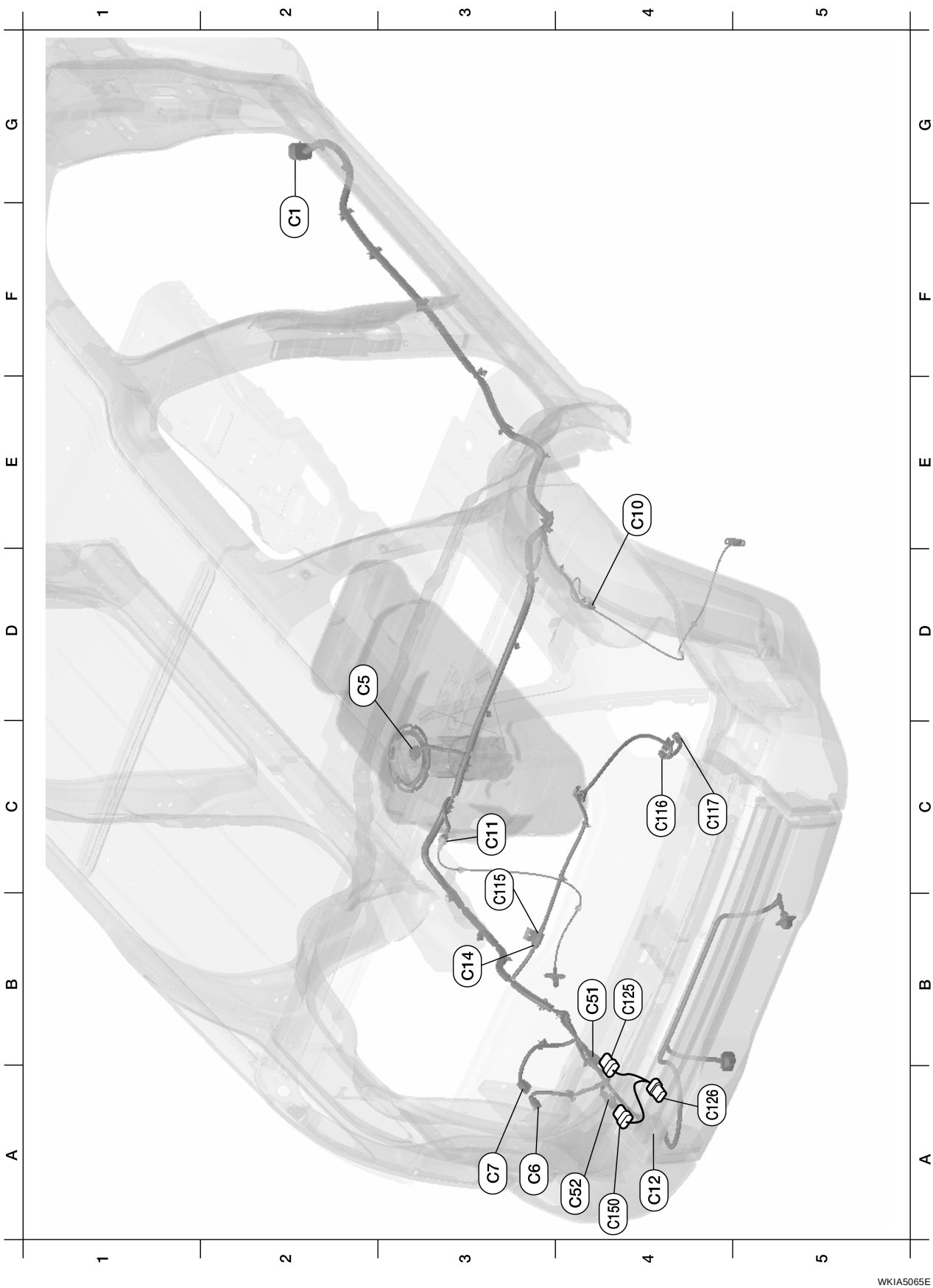
F4	E3†	B/2	: Horn (with dual note horn)	B1	E23	GR/5	: Front wiper motor
D4	E3††	B/1	: Horn	E2	E27	GR/3	: Front combination lamp LH (parking/turn signal)
D4	E4	Y/2	: Crash zone sensor	B2	E31	B/3	: Front pressure sensor
E2	E9	—	: Body ground	C3	E32	B/3	: Rear pressure sensor
E3	E11	B/3	: Front combination lamp LH (head lamp)	B3	E49	B/6	: Active booster
D5	E13	GR/2	: Ambient sensor 2	F4	E101	B/2	: Front fog lamp LH
D2	E14	—	: Body ground	C2	E125	B/47	: ABS actuator and electric unit (control unit)
E2	E17	GR/2	: Front combination lamp LH (side marker)	D2	E126	—	: Body ground
C4	E18	GR/2	: Front wheel sensor LH	D4	E162	B/1	: Horn (with single note horn)
C2	E21	GR/2	: Brake fluid level switch				

ENGINE CONTROL HARNESS



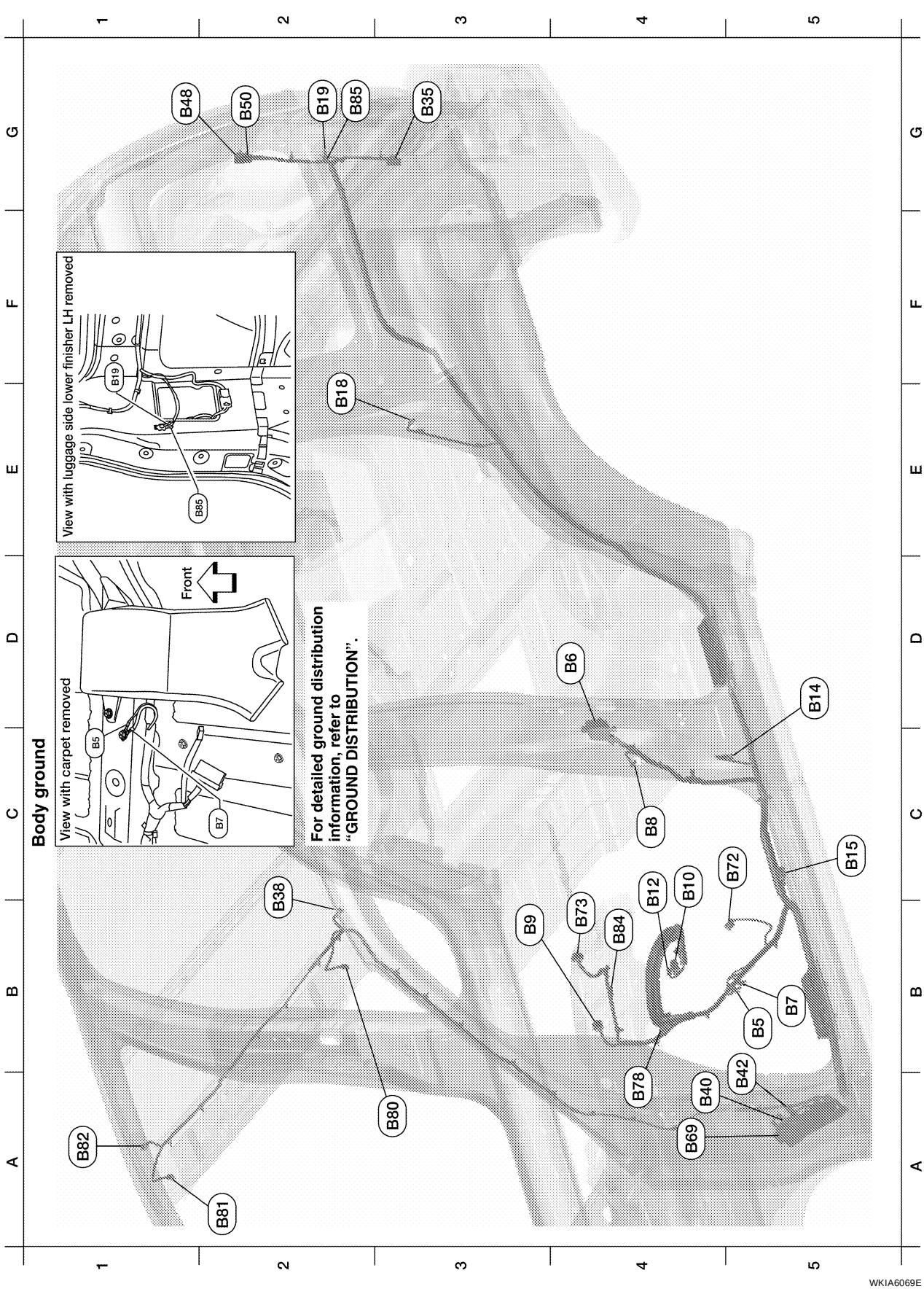
D5	F3	B/1	: A/C Compressor	A1	F54	B/81	: ECM
E4	F5	B/6	: Air fuel ratio (A/F) sensor 1 (bank 2)	F3	F55	B/2	: ATP switch
E4	F6	GR/3	: Ignition coil No. 2 (with power tran sistor)	G2	F58	B/8	: Transfer control device (actuator motor)
E4	F7	GR/3	: Ignition coil No. 4 (with power tran sistor)	G3	F59	B/2	: Wait detection switch
E3	F8	GR/3	: Ignition coil No. 6 (with power tran sistor)	G3	F60	GR/2	: 4LO switch
E3	F9	G/10	: A/T assembly	C2	F65	B/6	: Air fuel ratio (A/F) sensor 1 (bank 1)
C4	F10	—	: Engine ground	E1	F66	B/2	: Park/neutral position switch (with M/T)
C2	F11	B/3	: Crankshaft position sensor (POS)	D3	F67	L/4	: To F150
F3	F12	G/4	: Heated oxygen sensor 2 (bank 2)	E2	F69	W/2	: Back up lamp switch
E3	F13	L/4	: Heated oxygen sensor 2 (bank 1)	C1	F70	G/3	: Camshaft position sensor (PHASE) (bank 1)
A1	F14	W/24	: To E5	Injector sub-harness			
C4	F15	L/2	: EVAP canister purge volume control solenoid valve	D2	F101	GR/4	: To F44
C4	F16	—	: Engine ground	C3	F102	GR/2	: Fuel injector No. 1
D3	F18	GR/2	: Fuel injector No. 2	C3	F103	GR/2	: Fuel injector No. 3
C3	F19	B/2	: VIAS control solenoid valve	C3	F104	GR/2	: Fuel injector No. 5
D4	F20	GR/2	: Fuel injector No. 4	Ignition coil sub-harness			
E3	F21	GR/2	: Condenser-1	C2	F125	G/8	: To F26
D3	F22	GR/2	: Fuel injector No. 6	B3	F126	GR/3	: Ignition coil No. 1 (with power transistor)
E3	F23	B/3	: Camshaft position sensor (PHASE) (bank 2)	B2	F127	GR/3	: Ignition coil No. 3 (with power transistor)
D2	F24	GR/2	: Engine coolant temperature sensor	C2	F128	GR/3	: Ignition coil No. 5 (with power transistor)
C1	F26	G/8	: To F125	B3	F129	G/2	: Intake valve timing control solenoid valve (bank 1)
C5	F31	B/6	: Mass air flow sensor	Knock sensor sub-harness			
B1	F32	W/16	: To E2	D3	F150	L/4	: To F67
B1	F33	W/16	: To E19	C4	F151	B/2	: Knock sensor (bank 1)
D2	F44	GR/4	: To F101	D3	F152	B/2	: Knock sensor (bank 2)
B4	F46	B/3	: Power steering pressure sensor				
B4	F50	B/6	: Electric throttle control actuator				
D4	F51	G/2	: Intake valve timing control solenoid valve (bank 2)				

CHASSIS HARNESS



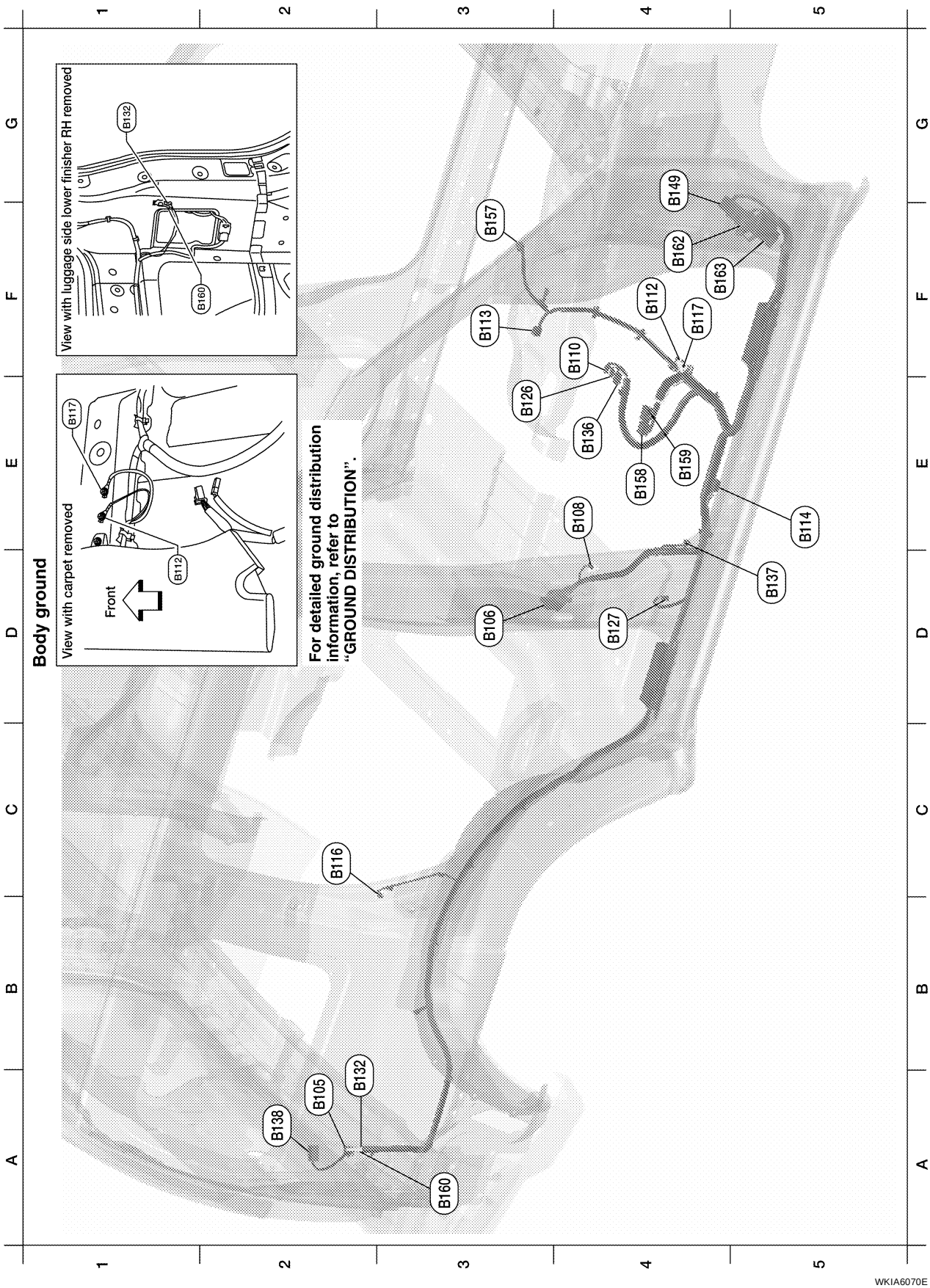
F2	C1	SMJ	: To E41	Differential Sub-harness			
D2	C5	GR/5	: Fuel level sensor unit and fuel pump	C3	C115	GR/4	: To C14
A3	C6	B/2	: EVAP canister vent control valve	C4	C116	GR/2	: Differential lock position switch
A3	C7	GR/3	: EVAP control system pressure sensor	C4	C117	B/2	: Differential lock solenoid
E4	C10	G/2	: Rear wheel sensor RH	Trailer Sub-harness			
C3	C11	G/2	: Rear wheel sensor LH	B4	C125	GR/6	:To C51
A4	C12	W/2	: License plate lamp	A4	C126	B/7	: Trailer
B3	C14	GR/4	: To C115	A4	C150	B/2	: To C52
B4	C51	GR/6	: To C125				
A4	C52	B/2	: To C150				

BODY HARNESS



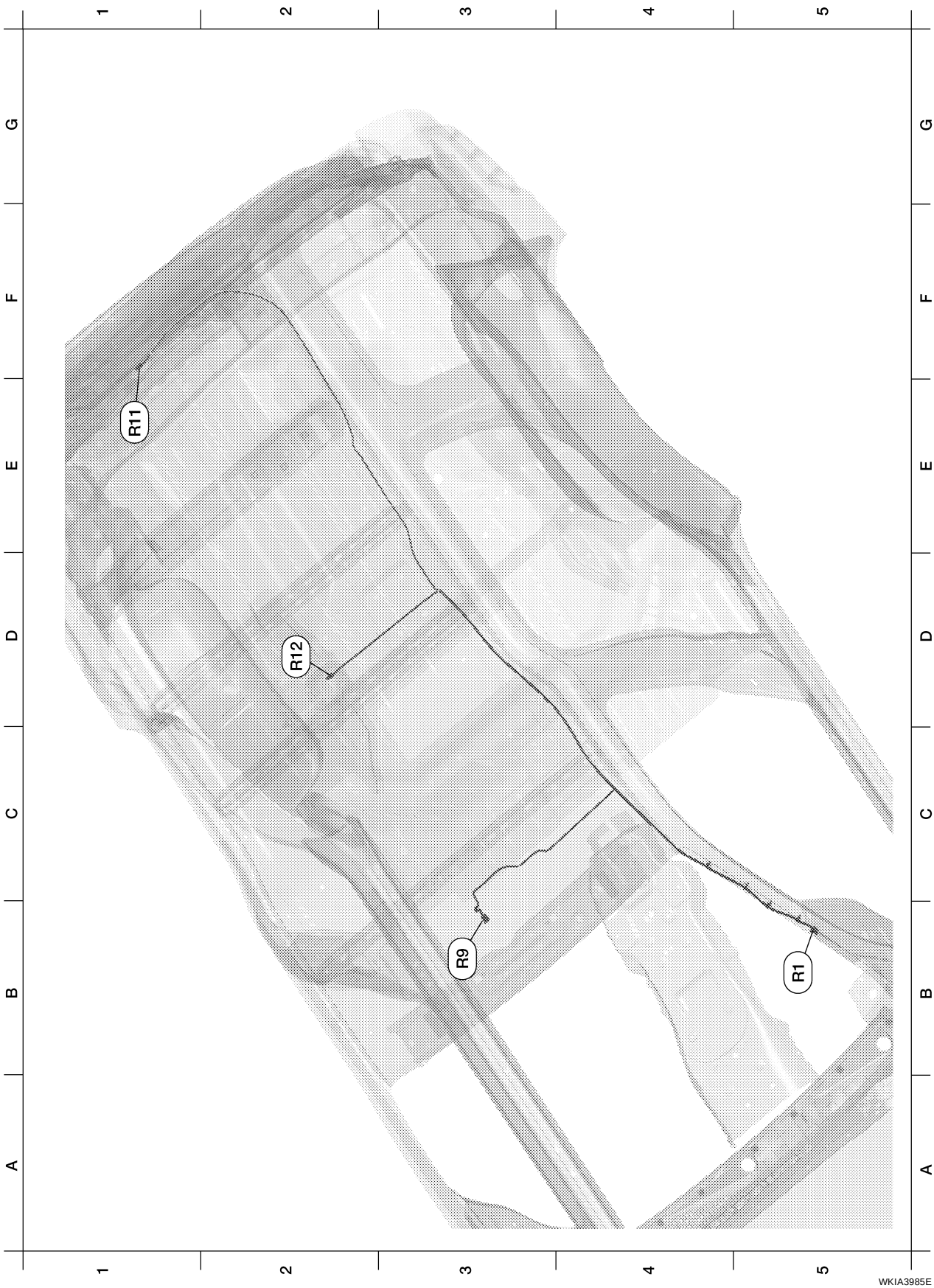
B5	B5	—	: LH side air bag (satellite sensor) (shield wire)	A4	B40	W/8	: To E34
D4	B6	—	: To D201	B5	B42	W/2	: To E36
B5	B7	—	: Body ground	G1	B48	W/6	: To D402
C4	B8	W/3	: Front door switch LH	G2	B50	W/2	:To D410
B3	B9	Y/12	: Air bag diagnosis sensor unit	A4	B69	SMJ	: To M40
C4	B10	Y/2	: Front LH side air bag module	C5	B72	W/8	: Subwoofer (with audio amplifier)
C4	B12	W/3	: Seat belt buckle switch LH	B4	B73	B/6	: Yaw rate/side/decel G sensor
D5	B14	Y/2	: Front LH seat belt pre-tensioner	A4	B78	Y/2	: To B157
C5	B15	Y/2	: LH side air bag (satellite sensor)	A3	B80	W/2	: Vanity lamp LH
E2	B18	W/3	: Rear door switch LH	A2	B81	W/2	: Vanity lamp RH
G2	B19	—	: Body ground	A1	B82	Y/2	: RH side front curtain air bag module
G3	B35	W/6	: Rear combination lamp LH	B4	B84	B/1	: Parking brake switch
B2	B38	Y/2	: LH side front curtain air bag module	G2	B85	B/1	: Body ground

BODY NO. 2 HARNESS



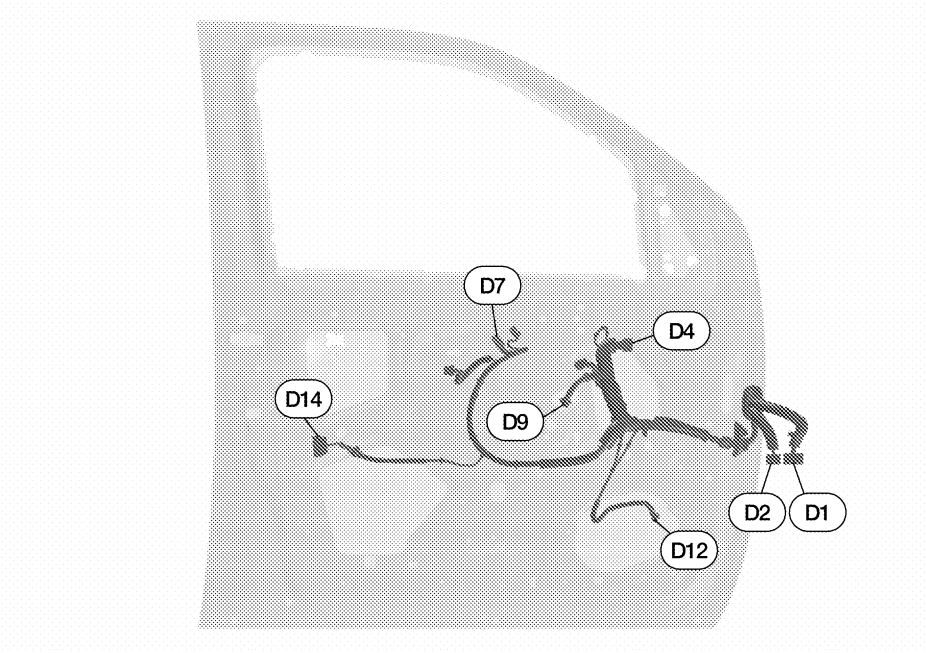
A2	B105	W/6	: Rear combination lamp RH	A2	B132	—	: Body ground
D3	B106	W/12	: To D301	E4	††B136	W/16	: To P151
E4	B108	W/3	: Front door switch RH	D5	B137	W/3	: Belt tension sensor
F4	B110	W/3	: Seat belt buckle switch RH	A2	B138	B/2	: Rear cargo power socket
F4	B112	—	: RH side air bag (satellite sensor) (shield wire)	G4	B149	SMJ	: To M36
F3	B113	Y/12	: Air bag diagnosis sensor unit	F3	B157	Y/2	: To B78
E5	B114	Y/2	: RH side air bag (satellite sensor)	E4	B158	W/8	: Audio amplifier
C2	B116	W/3	: Rear door switch RH	E4	B159	W/24	: Audio amplifier
F4	B117	—	: Body ground	A3	B160	—	: Body ground
E3	B126	Y/2	: Front RH side air bag module	F4	B162	W/12	: To M16
D4	B127	Y/2	: Front RH seat belt pre-tensioner	F4	B163	W/16	: To M17

ROOM LAMP HARNESS



B5	R1	W/12	: To M1	E1	R11	W/2	: Cargo lamp
B3	R9	W/3	: Front room/map lamp assembly	D2	R12	W/2	: Room lamp 2nd row

FRONT DOOR LH HARNESS



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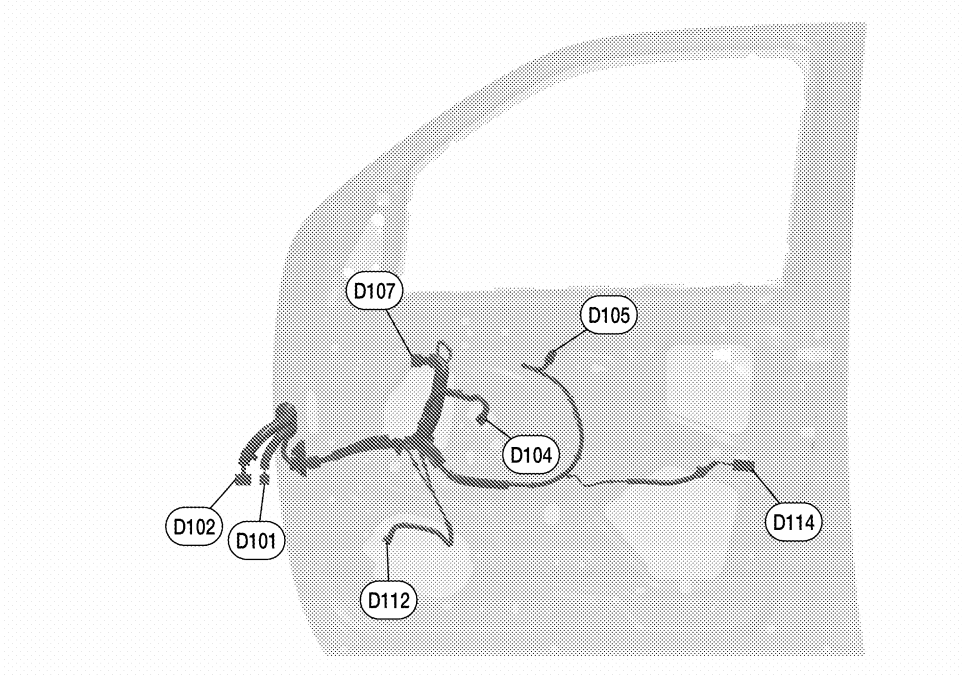
D1	W/24	: To M9	D7	W/16	: Main power window and door lock/unlock switch
D2	W/16	: To M8	D9	GR/2	: Front power window motor LH
D4	B/10	: Door mirror LH (with heated mirror)	D12	W/2	: Front door speaker LH
D4	B/3	: Door mirror LH (without heated mirror)	D14	GR/6	: Front door lock assembly LH

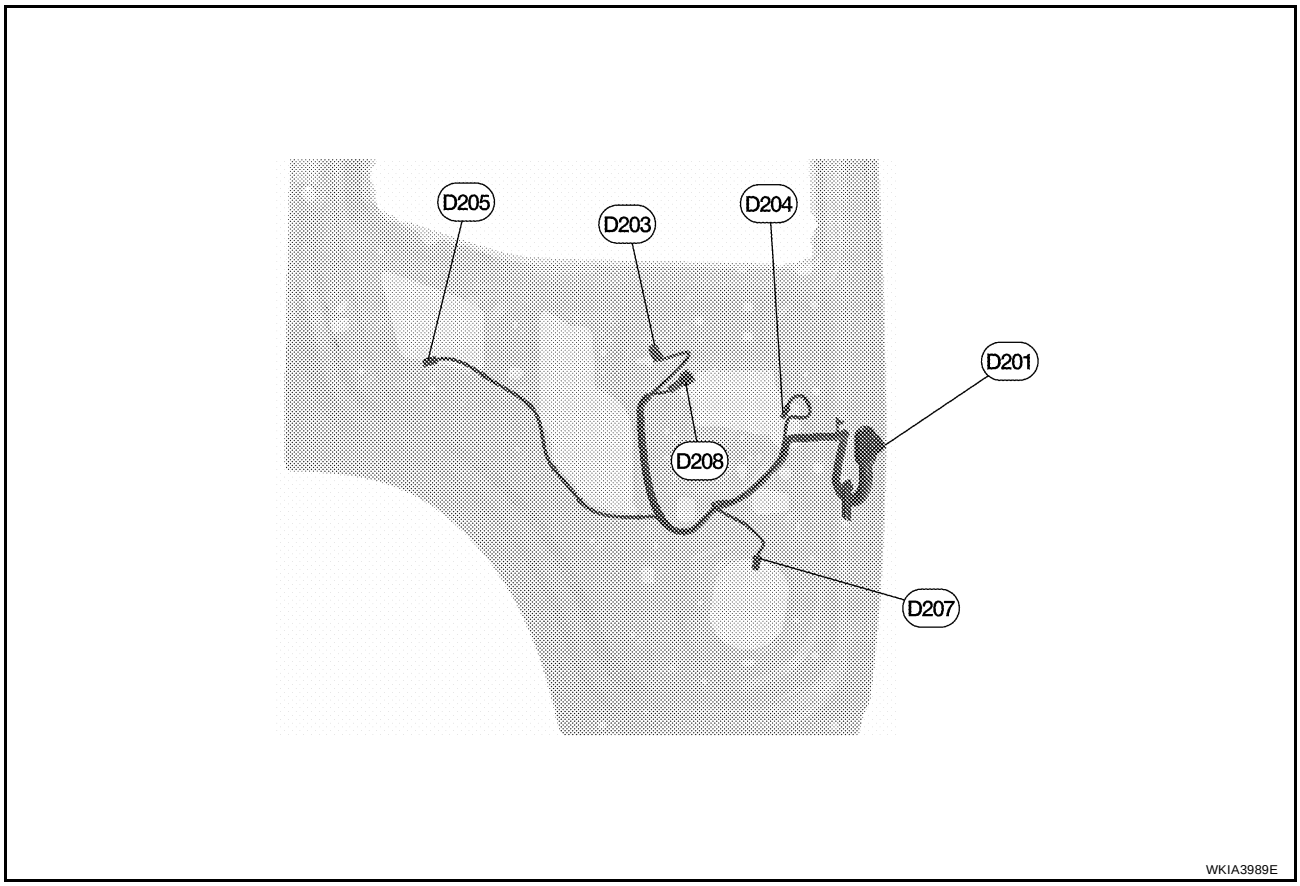
FRONT DOOR RH HARNESS



WKIA3987E

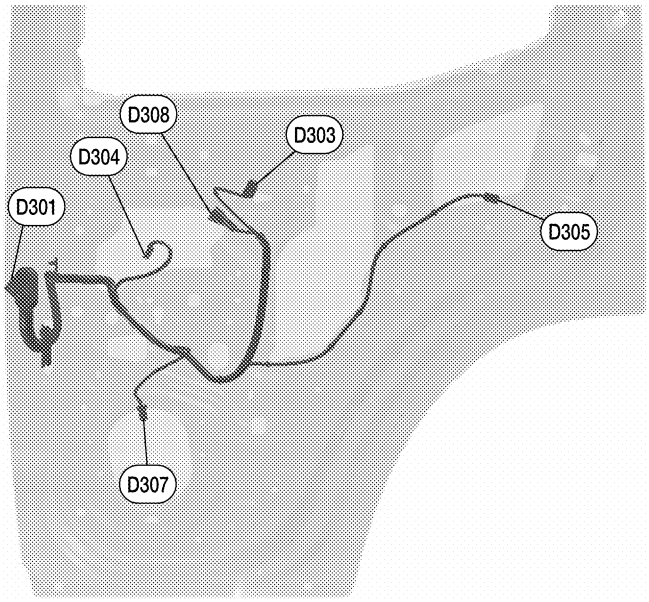
D101	W/12	: To M75	D107	B/3	: Door mirror RH (without heated mirror)
D102	W/16	: To M74	D107	B/10	: Door mirror RH (with heated mirror)
D104	GR/2	: Front power window motor RH	D112	W/2	: Front door speaker RH
D105	W/12	: Power window and door lock/unlock switch RH	D114	W/2	: Front door lock actuator RH

REAR DOOR LH HARNESS



D201	W/12	: To B6	D205	W/2	: Rear door lock actuator LH
D203	W/8	: Rear power window switch LH	D207	W/2	: Rear door speaker LH
D204	B/2	: Rear power window motor LH	D208	BR/2	: Rear door tweeter LH

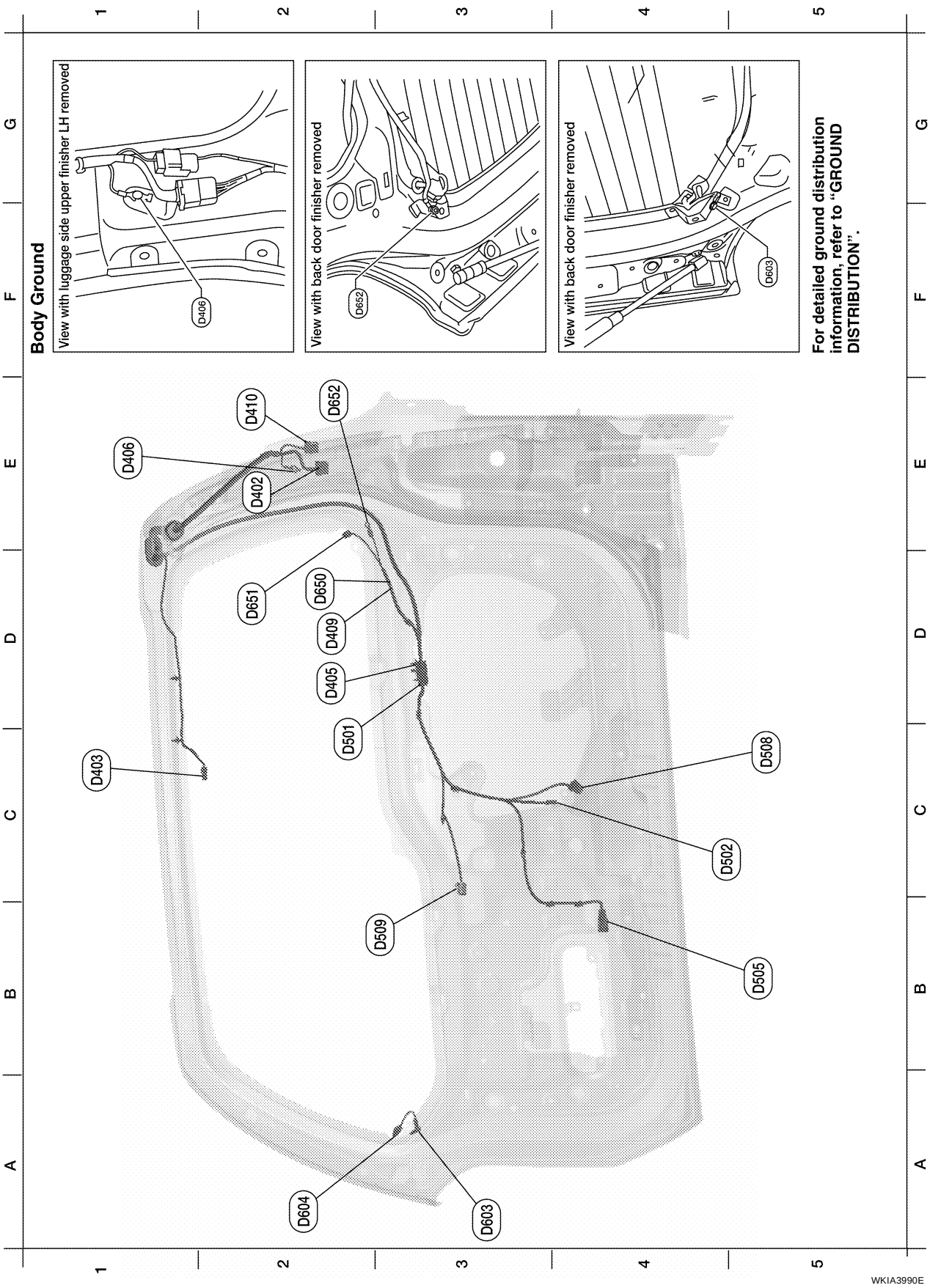
REAR DOOR RH HARNESS



WKIA3988E

D301	W/12	: To B106	D305	W/2	: Rear door lock actuator RH
D303	W/8	: Rear power window switch RH	D307	W/2	: Rear door speaker RH
D304	B/2	: Rear power window motor RH	D308	BR/2	: Rear door tweeter RH

BACK DOOR HARNESS



Back door No. 2 harness				Rear window sub-harness			
E2	D402	W/6	: To B48	B5	D505	BR/3	: Back door key cylinder switch
C1	D403	W/2	: High mounted stop lamp	C5	D508	W/4	: Back door lock actuator
D2	D405	W/8	: To D501	B3	D509	W/4	: Rear wiper motor
E1	D406	—	: Body ground	A3	D603	—	: Body ground (defogger)
D2	D409	W/2	: To D650	A2	D604	B/1	: Rear window defogger
E2	D410	W/2	: To B50	Rear window defogger sub-harness			
Back door harness				D2	D650	W/2	: To D409
C2	D501	W/8	: To D405	D2	D651	B/1	: Rear window defogger
C5	D502	W/3	: Back door switch	E2	D652	—	: Body ground

Wiring Diagram Codes (Cell Codes)

EKS00DNV

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,M	MTC	Manual Air Conditioner
AF1B1	EC	Air Fuel Ratio (A/F) Sensor 1 Bank 1
AF1B2	EC	Air Fuel Ratio (A/F) Sensor 1 Bank 2
AF1HB1	EC	Air Fuel Ratio (A/F) Sensor 1 Heater Bank 1
AF1HB2	EC	Air Fuel Ratio (A/F) 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	ASCD Brake Switch
ASC/SW	EC	ASCD Steering Switch
ASCBOF	EC	ASCD Brake Switch
ASCIND	EC	ASCD Indicator
AT/IND	DI	A/T Indicator Lamp
AUDIO	AV	Audio
B/COMP	DI	Combination Meter Board Computer
BACK/L	LT	Back-up Lamp
BRK/SW	EC	Brake Switch
CAN	AT	CAN Communication Line
CAN	EC	CAN Communication Line
CAN	LAN	CAN System
CHARGE	SC	Charging System
CHIME	DI	Warning Chime
COOL/F	EC	Cooling Fan Control
COMBSW	LT	Combination Switch
CUR/SE	EC	Battery Current Sensor
D/LOCK	BL	Power Door Lock
DEF	GW	Rear Window Defogger
DIFLOC	RFD	Electronic Locking Differential
DTRL	LT	Headlamp - With Daytime Light System
ECM/PW	EC	ECM Power Supply for Back-Up
ECTS	EC	Engine Coolant Temperature Sensor
ETC1	EC	Electric Throttle Control Function
ETC2	EC	Throttle Control Motor Relay
ETC3	EC	Throttle Control Motor
F/FOG	LT	Front Fog Lamp
F/PUMP	EC	Fuel Pump
FTS	AT	A/T Fluid Temperature Sensor
FTTS	EC	Fuel Tank Temperature Sensor
FUELB1	EC	Fuel Injection System Bank 1
FUELB2	EC	Fuel Injection System Bank 2
H/LAMP	LT	Headlamp
HORN	WW	Horn
IATS	EC	Intake Air Temperature Sensor
IGNSYS	EC	Ignition System
ILL	LT	Illumination
INJECT	EC	Injectors
INT/L	LT	Room/Map, Vanity, Cargo, and Personal Lamps

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
MAFS	EC	Mass Air Flow Sensor
MAIN	AT	Main Power Supply and Ground Circuit
MAIN	EC	Main Power Supply and Ground Circuit
METER	DI	Speedometer, Tachometer, Temp. and Fuel Gauges
MIL/DL	EC	Malfunction Indicator Lamp
MIRROR	GW	Door Mirror
NATS	BL	Nissan Anti-Theft System
NONDTC	AT	Non-Detective Items
O2H2B1	EC	Rear Heated Oxygen Sensor 2 Heater Bank 1
O2H2B2	EC	Rear 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
PGC/V	EC	EVAP Canister Purge Volume Control Solenoid Valve
PHSB1	EC	Camshaft Position Sensor (PHASE) (Bank 1)
PHSB2	EC	Camshaft Position Sensor (PHASE) (Bank 1)
PNP/SW	AT	Park/Neutral Position Switch
PNP/SW	EC	Park/Neutral Position Switch
POS	EC	Crankshaft Position Sensor (POS)
POWER	PG	Power Supply Routing
PRE/SE	EC	EVAP Control System Pressure Sensor
PS/SEN	EC	Power Steering Pressure Sensor
RP/SEN	EC	Refrigerant Pressure Sensor
SEN/PW	EC	Sensor Power Supply
SHIFT	AT	A/T Shift Lock System
SRS	SRS	Supplemental Restraint System
STSIG	AT	Start Signal Circuit
START	SC	Starting System
STOP/L	LT	Stop Lamp
T/TOW	LT	Trailer Tow
T/WARN	WT	Low Tire Pressure Warning System
TAIL/L	LT	Parking, License and Tail Lamps
T/F	TF	Transfer Case
TPS1	EC	Throttle Position Sensor
TPS2	EC	Throttle Position Sensor
TPS3	EC	Throttle Position Sensor
TURN	LT	Turn Signal and Hazard Warning Lamps
VDC	BRC	Vehicle Dynamic Control System
VEHSEC	BL	Vehicle security (theft warning) system
VENT/V	EC	EVAP Canister Vent Control Valve
VIAS	EC	Variable Air Induction Control System
VIAS/V	EC	Variable Air Induction Control System Valve
VSSA/T	AT	Vehicle Speed Sensor A/T (Revolution Sensor)
WARN	DI	Warning Lamps
WINDOW	GW	Power Window
WIP/R	WW	Rear Wiper and Washer
WIPER	WW	Front Wiper and Washer

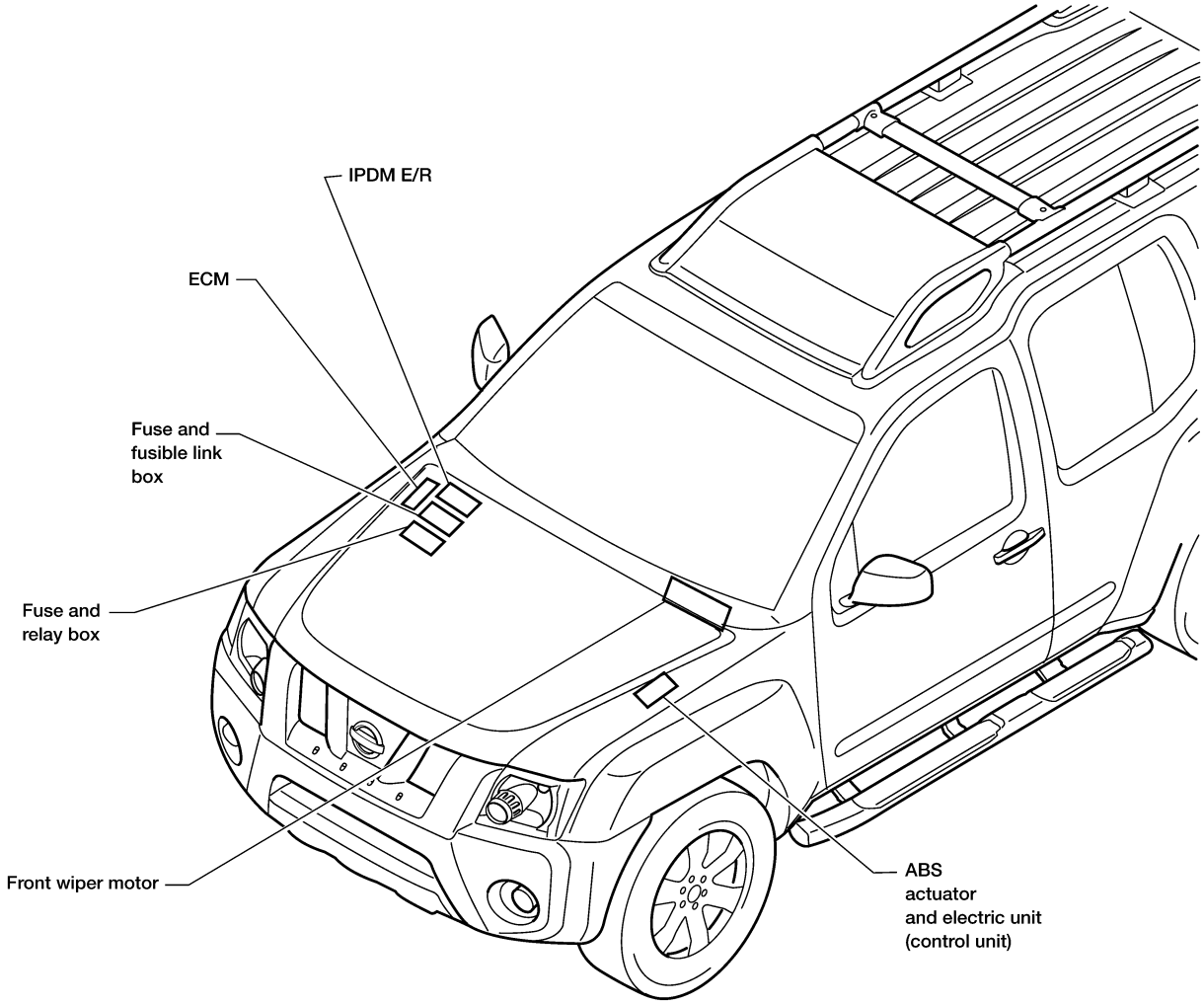
ELECTRICAL UNITS LOCATION

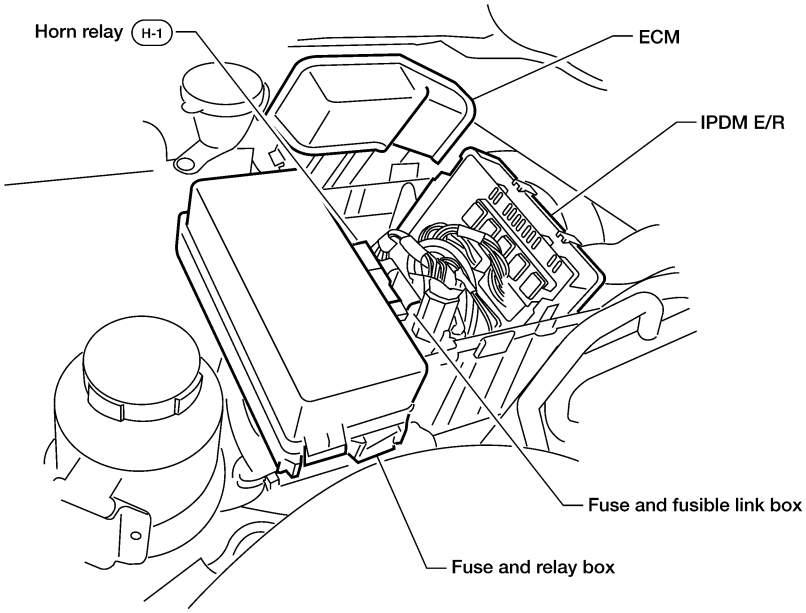
PFP:25230

Electrical Units Location

EKS00DNW

ENGINE COMPARTMENT





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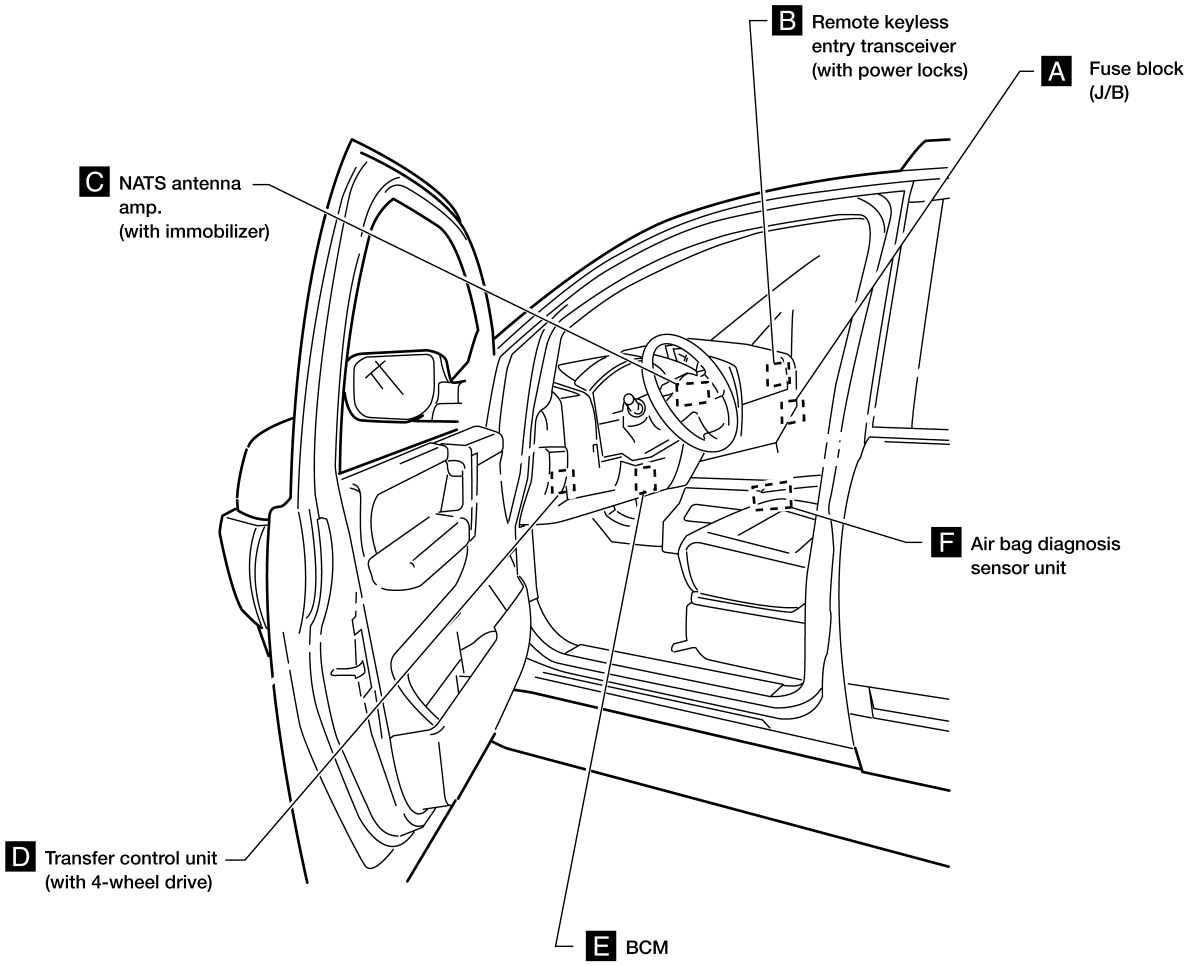
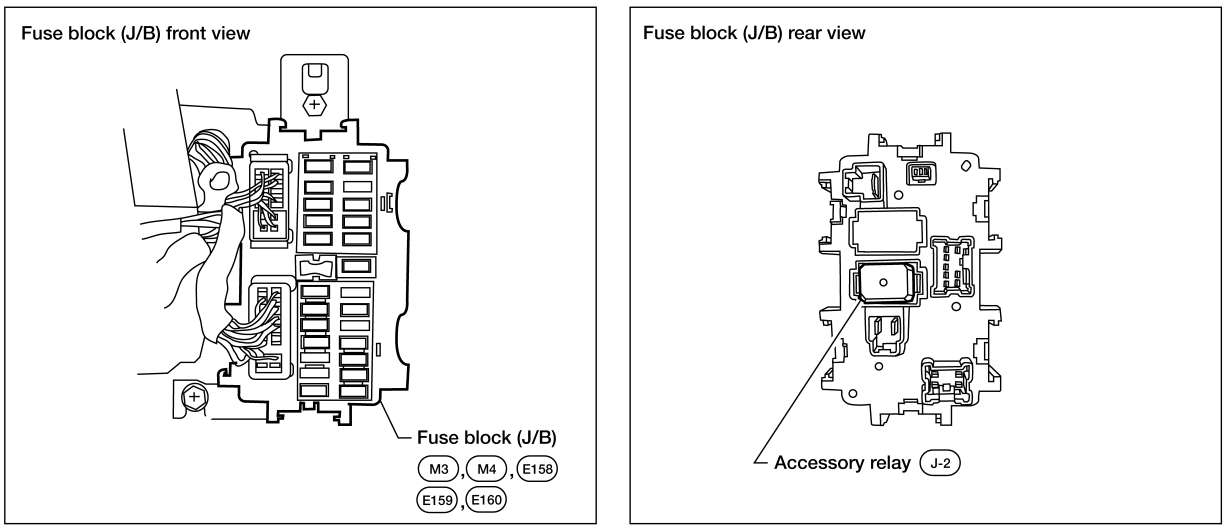
PASSENGER COMPARTMENT

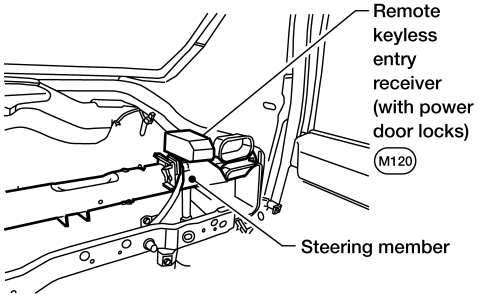


A Instrument panel side RH

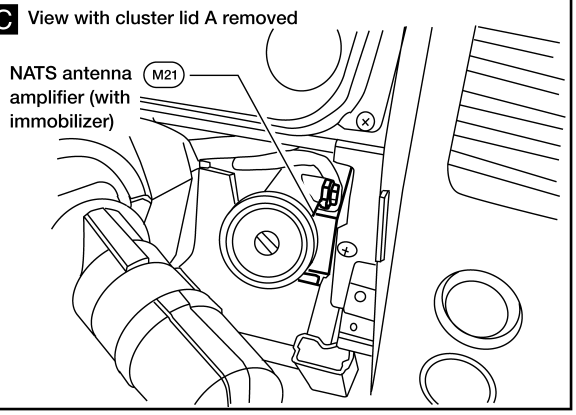


WKIA5071E

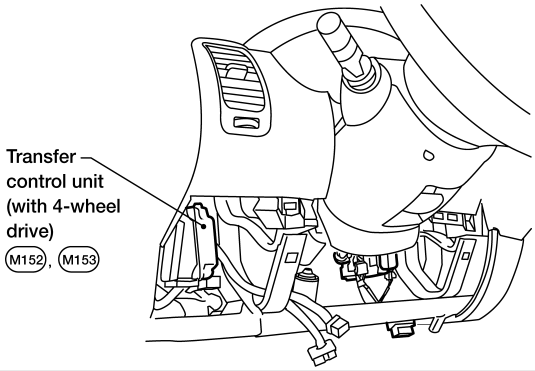
B View with instrument panel removed RH



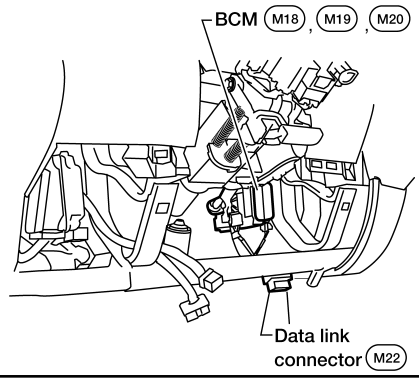
C View with cluster lid A removed



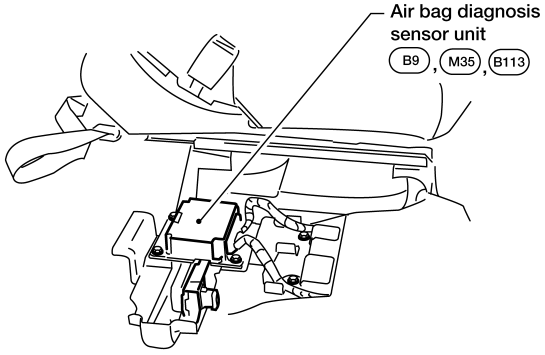
D View with lower instrument cover removed



E View with instrument lower panel LH removed



F View with center console removed



WKIA5072E

HARNESS CONNECTOR

PFP:B4341

Description

EKS00DO0

HARNESS CONNECTOR (TAB-LOCKING TYPE)

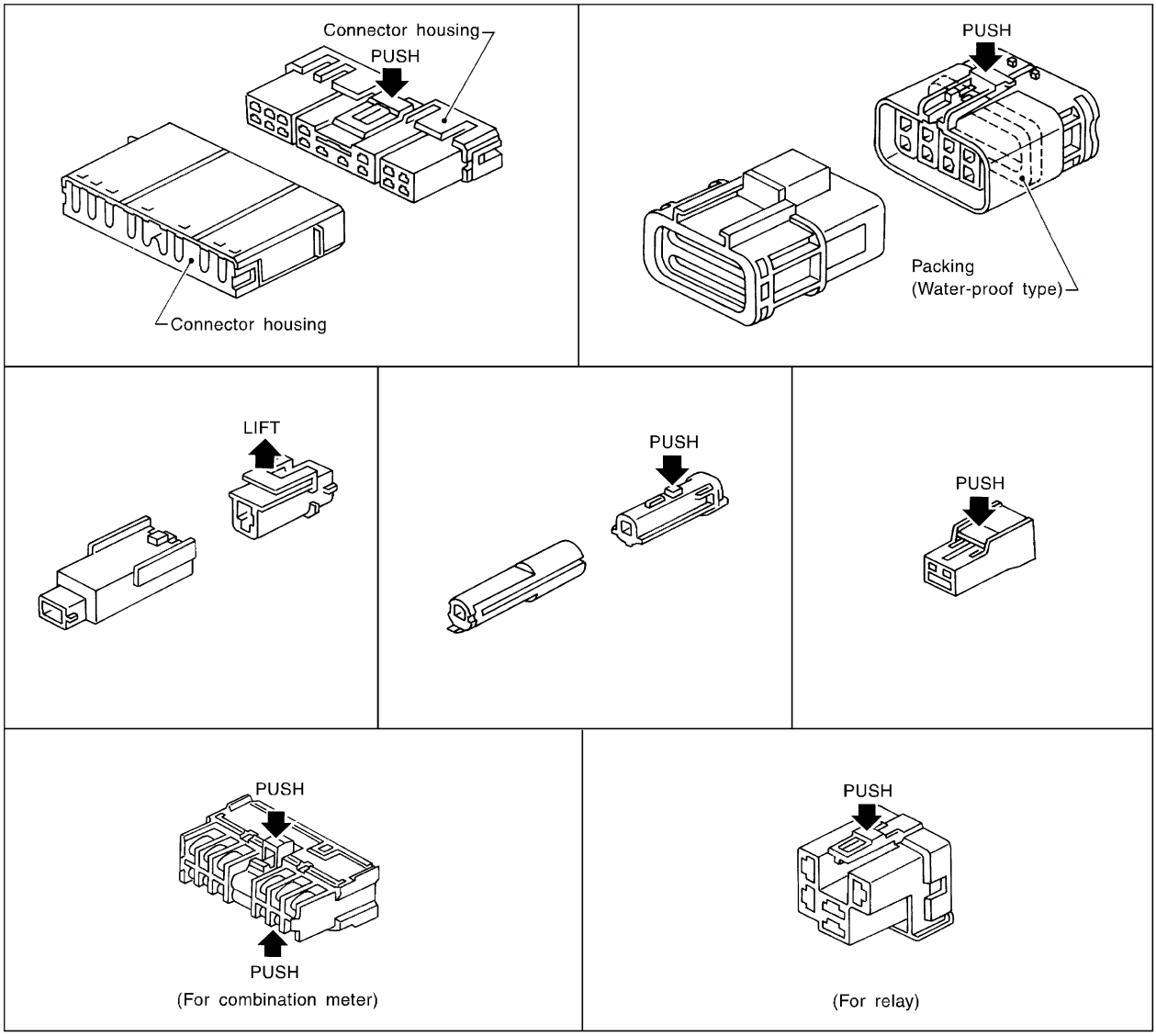
- The tab-locking type connectors help prevent accidental looseness or disconnection.
- The tab-locking type connectors are disconnected by pushing or lifting the locking tab(s). Refer to the illustration below.

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

CAUTION:

Do not pull the harness or wires when disconnecting the connector.

[Example]



SEL769DA

HARNESS CONNECTOR (SLIDE-LOCKING TYPE)

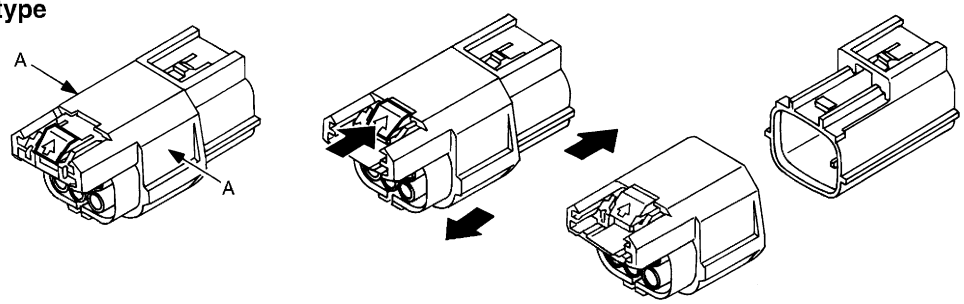
- A new style slide-locking type connector is used on certain systems and components, especially those related to OBD.
- The slide-locking type connectors help prevent incomplete locking and accidental looseness or disconnection.
- The slide-locking type connectors are disconnected by pushing or pulling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

CAUTION:

- **Do not pull the harness or wires when disconnecting the connector.**
- **Be careful not to damage the connector support bracket when disconnecting the connector.**

[Example]

Waterproof type

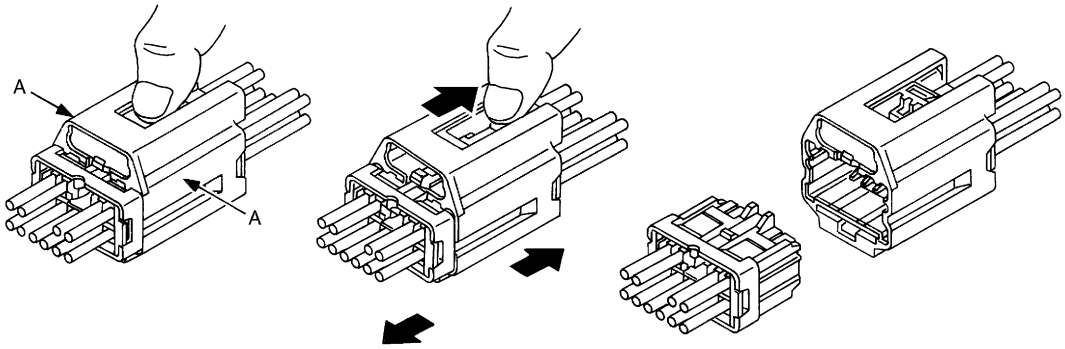


① Firmly grasp shell of connector housing at A.

② Push slider until connector pops or snaps apart.

③ Disconnect harness connector.

Non-waterproof type



① Firmly grasp shell of connector housing at A.

② Pull back on the slider while pulling apart male and female halves of connector.

③ Disconnect harness connector.

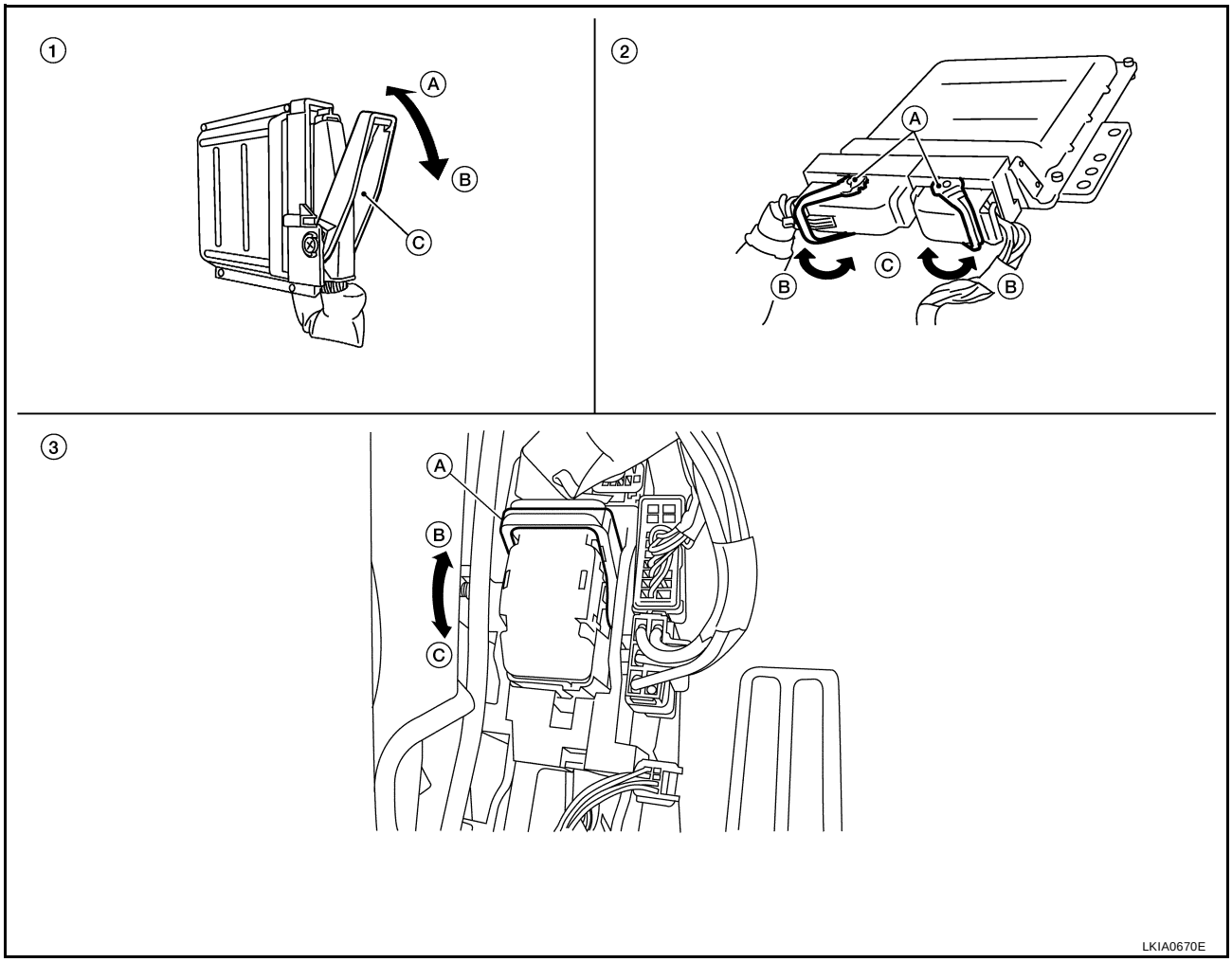
AEL299C

HARNESS CONNECTOR (LEVER LOCKING TYPE)

- Lever locking type harness connectors are used on certain control units and control modules such as ECM, ABS actuator and electric unit (control unit), etc.
- Lever locking type harness connectors are also used on super multiple junction (SMJ) connectors.
- Always confirm the lever is fully locked in place by moving the lever as far as it will go to ensure full connection.

CAUTION:

Always confirm the lever is fully released (loosened) before attempting to disconnect or connect these connectors to avoid damage to the connector housing or terminals.



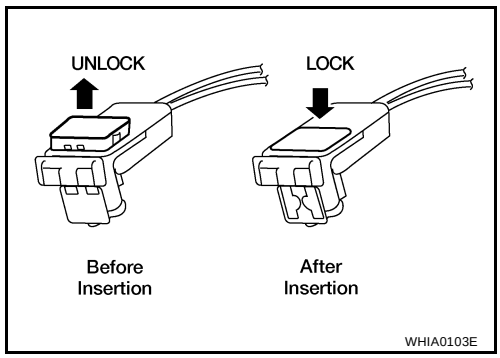
1. Control unit with single lever
   A. Fasten
   B. Loosen
   C. Lever
2. Control unit with dual levers
   A. Levers
   B. Fasten
   C. Loosen
3. SMJ connector
   A. Lever
   B. Fasten
   C. Loosen

HARNESS CONNECTOR (DIRECT-CONNECT SRS COMPONENT TYPE)

- SRS direct-connect type harness connectors are used on certain SRS components such as air bag modules and seat belt pre-tensioners.
- Always pull up to release black locking tab prior to removing connector from SRS component.
- Always push down to lock black locking tab after installing connector to SRS component. When locked, the black locking tab is level with the connector housing.

CAUTION:

- **Do not pull the harness or wires when removing connectors from SRS components.**



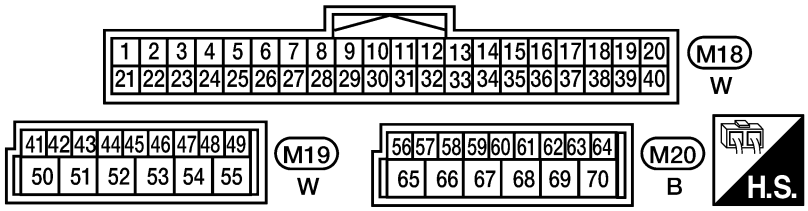
ELECTRICAL UNITS

PFP:23710

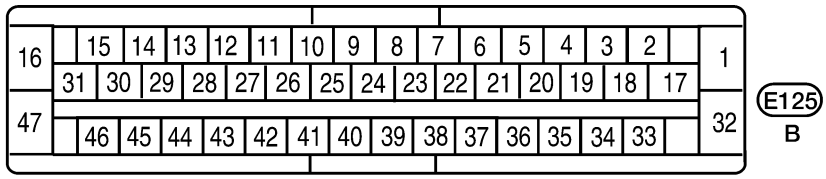
Terminal Arrangement

EKS00DO1

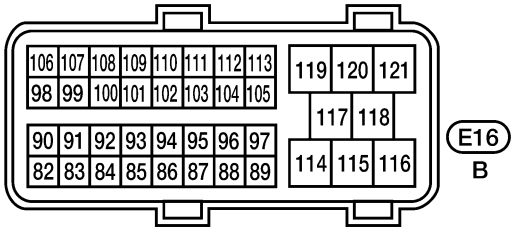
BCM (BODY CONTROL MODULE)

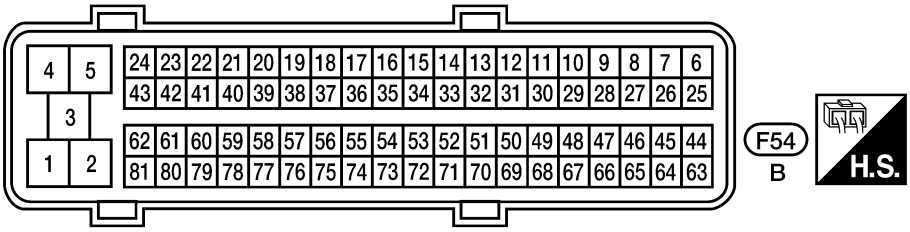


ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

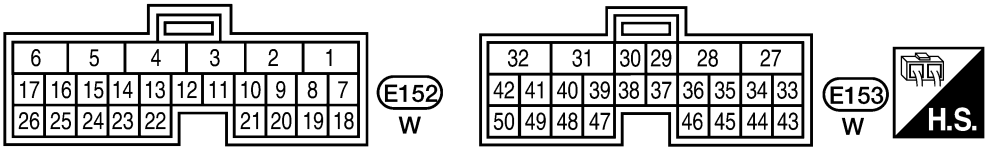


ECM





TRANSFER CONTROL UNIT



WKIA4003E

STANDARDIZED RELAY

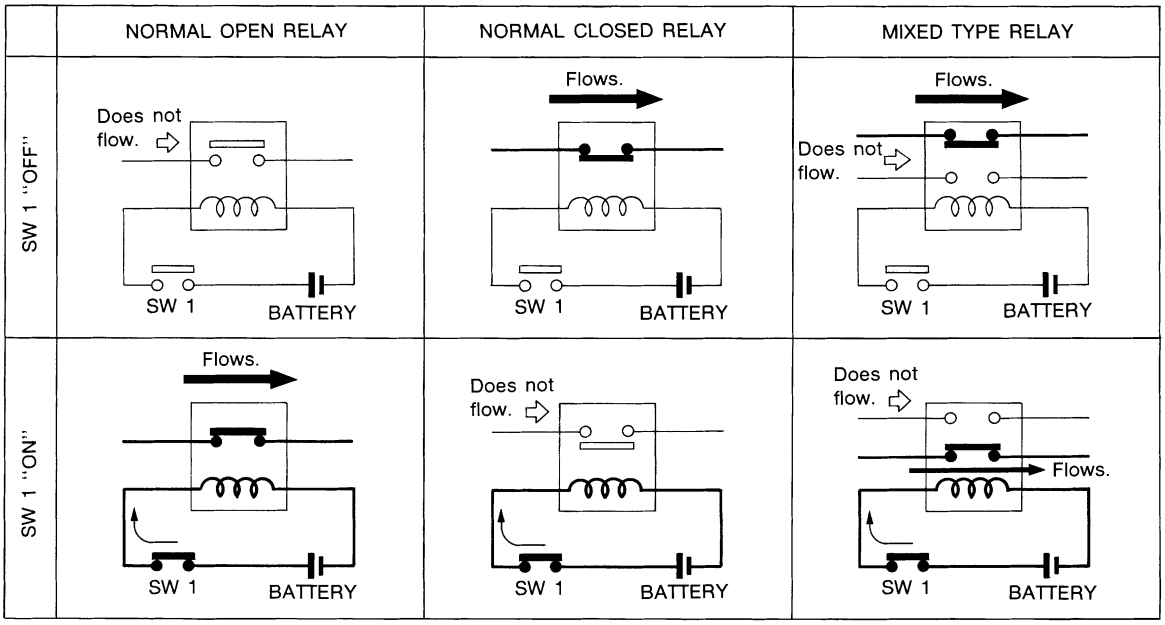
PFP:25230

Description

EKS00DO2

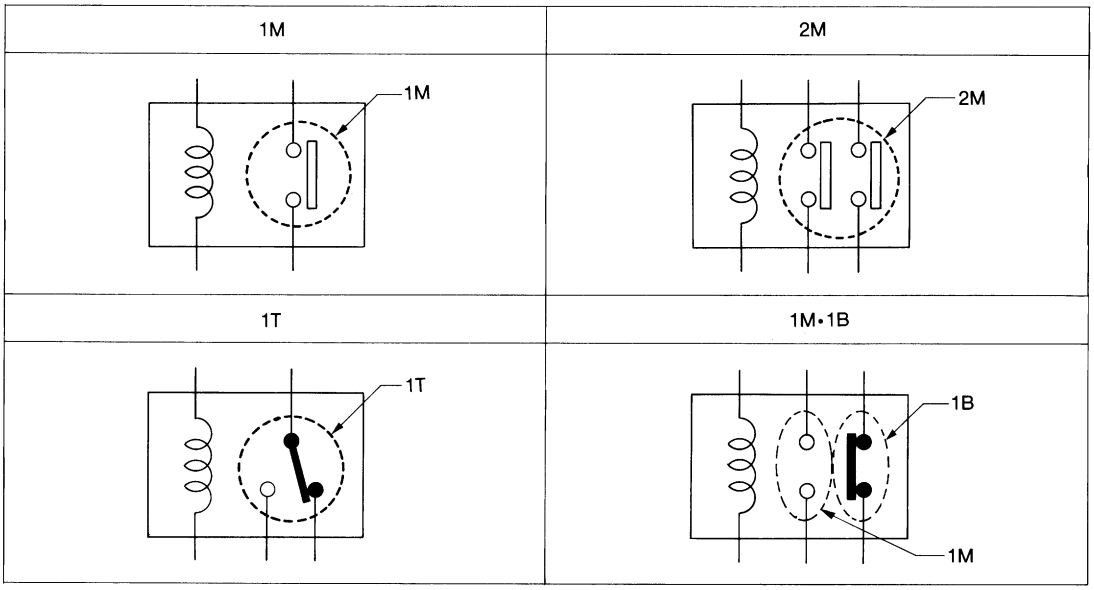
NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

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



SEL881H

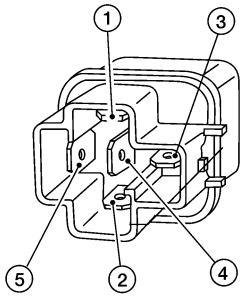
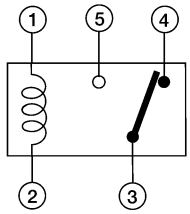
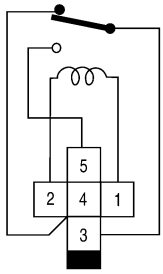
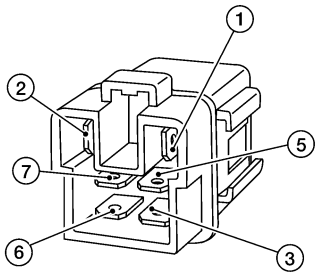
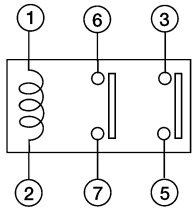
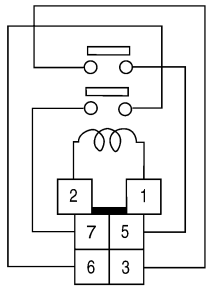
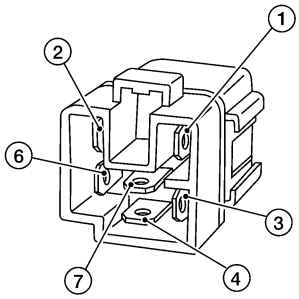
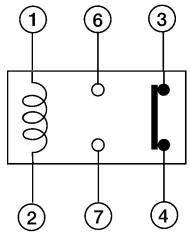
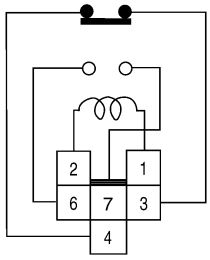
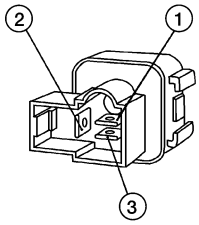
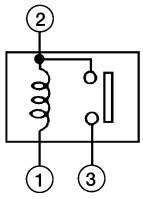
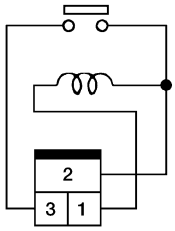
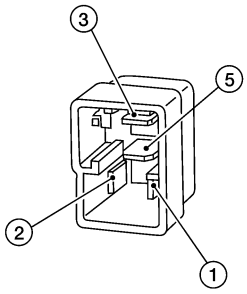
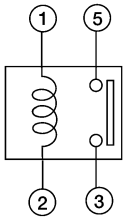
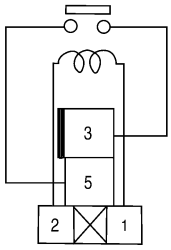
TYPE OF STANDARDIZED RELAYS



SEL882H

1M	1 Make		2M	2 Make
1T	1 Transfer		1M·1B	1 Make 1 Break

STANDARDIZED RELAY

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

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

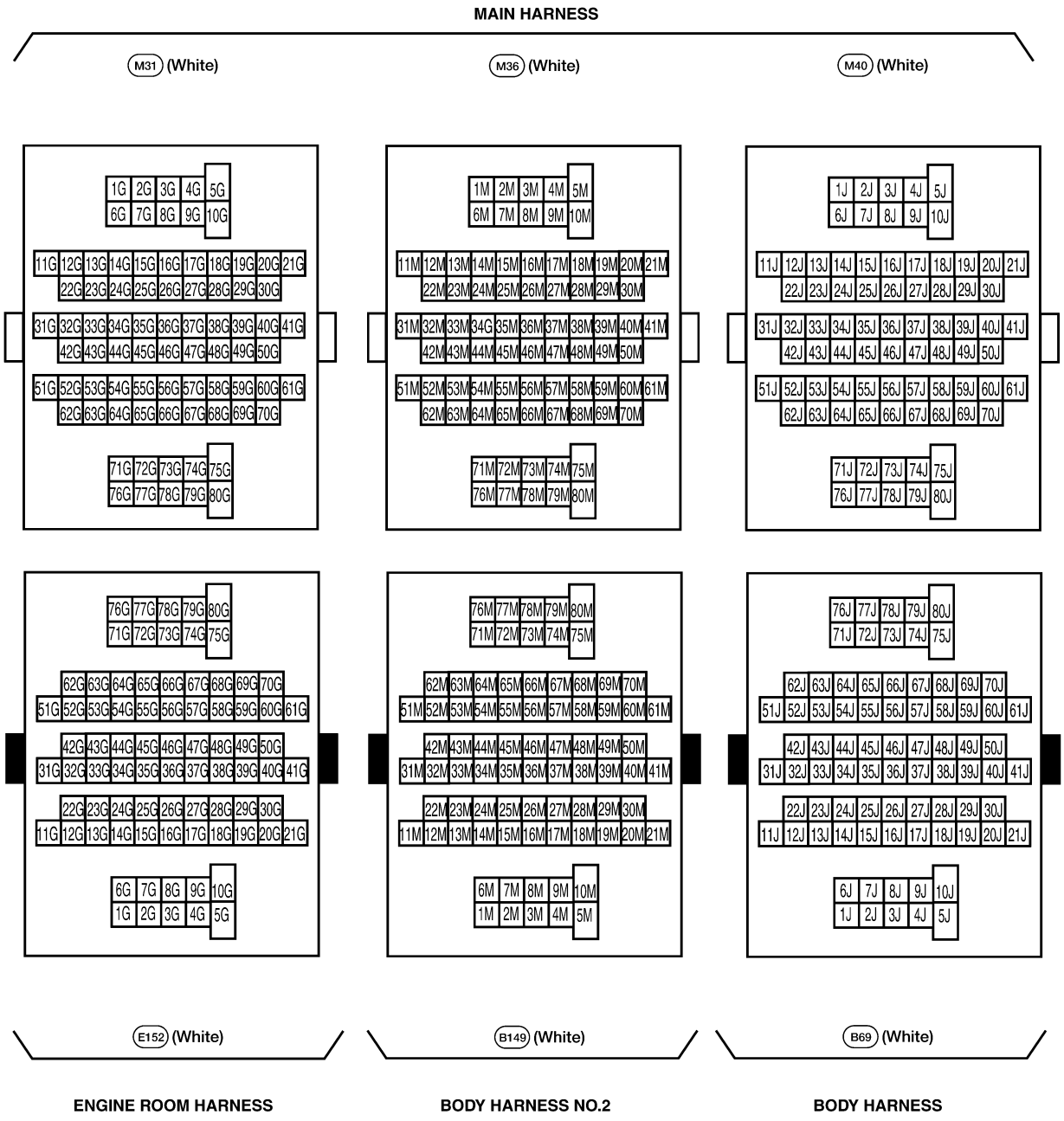
WKIA0253E

SUPER MULTIPLE JUNCTION (SMJ)

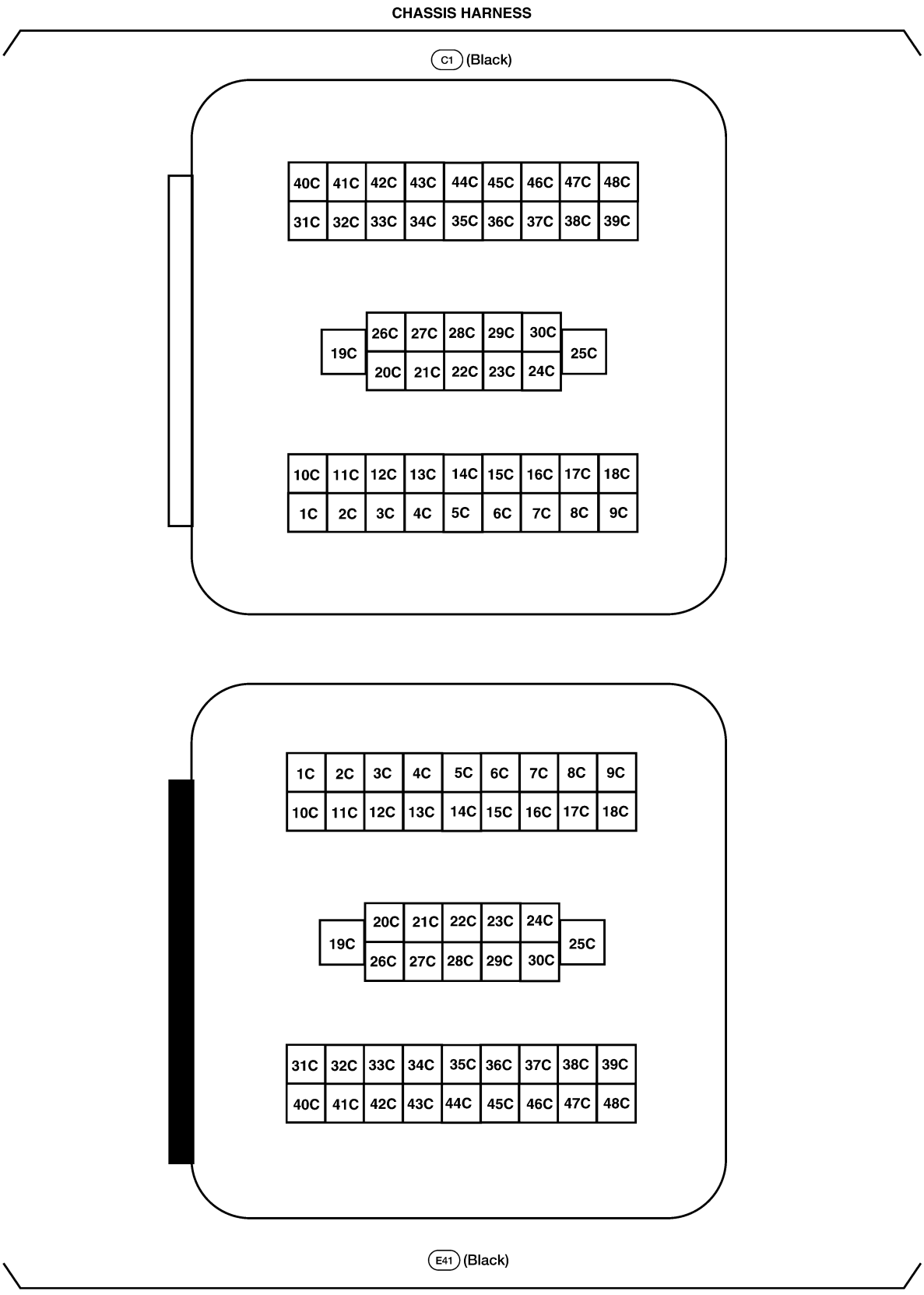
PFP:84341

Terminal Arrangement

EKS00DO3



WKIA3590E


CHASSIS HARNESS
C1 (Black)
40C 41C 42C 43C 44C 45C 46C 47C 48C
31C 32C 33C 34C 35C 36C 37C 38C 39C
19C
26C 27C 28C 29C 30C
20C 21C 22C 23C 24C
25C
10C 11C 12C 13C 14C 15C 16C 17C 18C
1C 2C 3C 4C 5C 6C 7C 8C 9C
1C 2C 3C 4C 5C 6C 7C 8C 9C
10C 11C 12C 13C 14C 15C 16C 17C 18C
19C
20C 21C 22C 23C 24C
26C 27C 28C 29C 30C
25C
31C 32C 33C 34C 35C 36C 37C 38C 39C
40C 41C 42C 43C 44C 45C 46C 47C 48C
E41 (Black)
ENGINE ROOM HARNESS

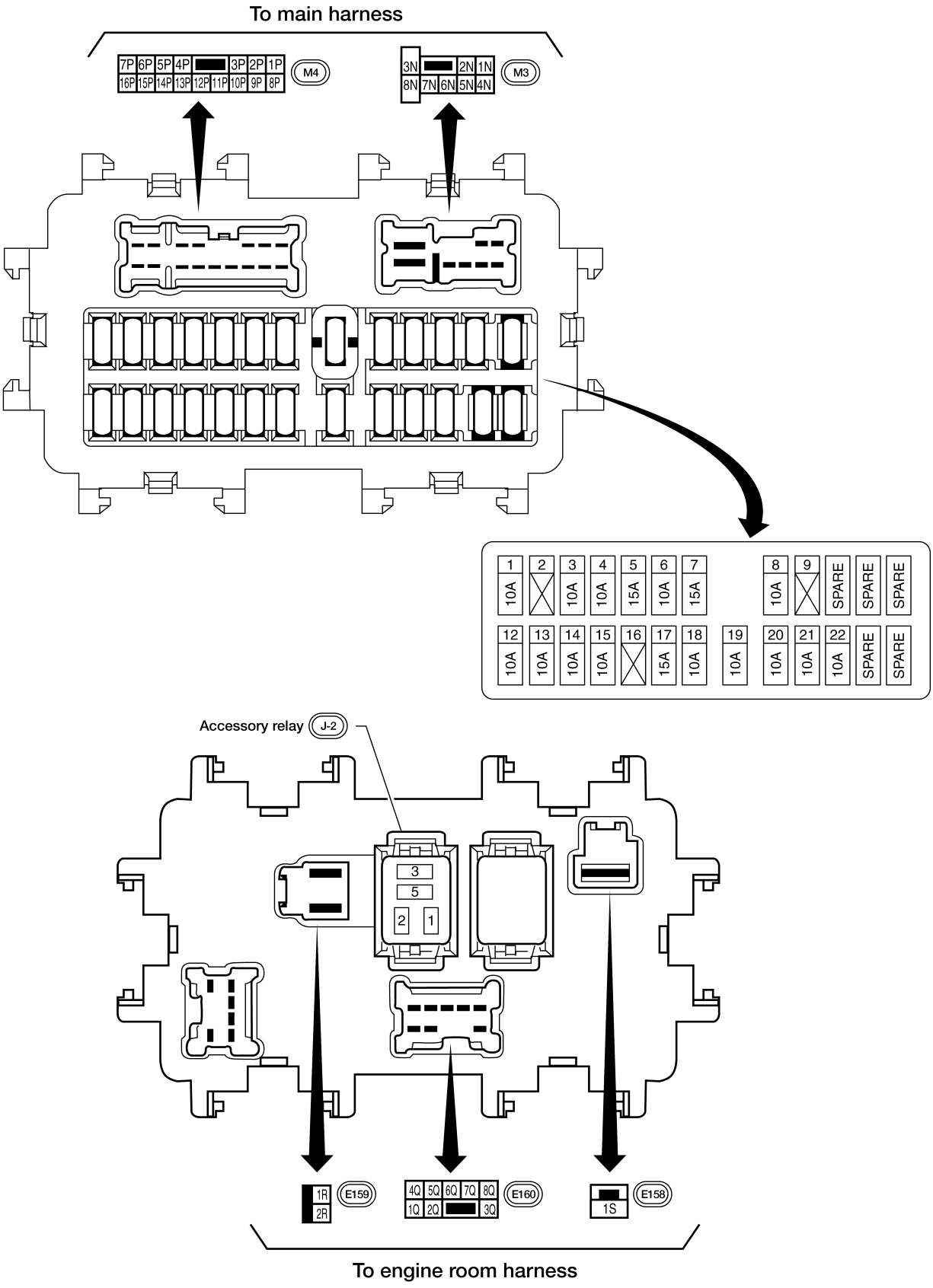
WKIA3972E

FUSE BLOCK-JUNCTION BOX (J/B)

PFP:24350

Terminal Arrangement

EKS00DO4



WKIA5073E

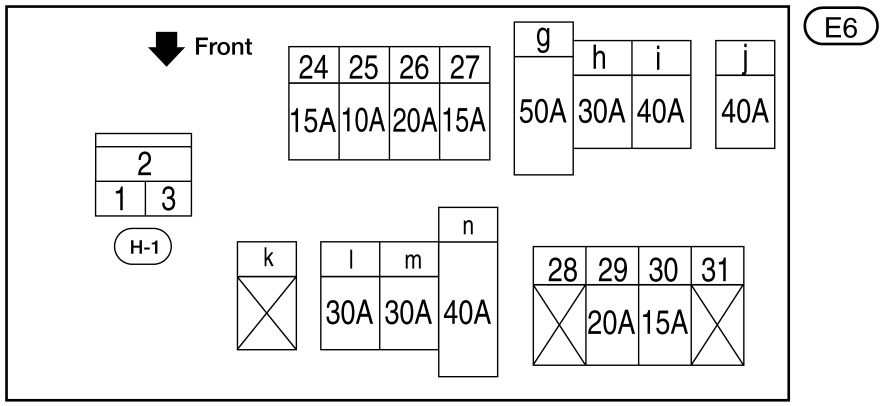
FUSE AND FUSIBLE LINK BOX

PFP:24381

Terminal Arrangement

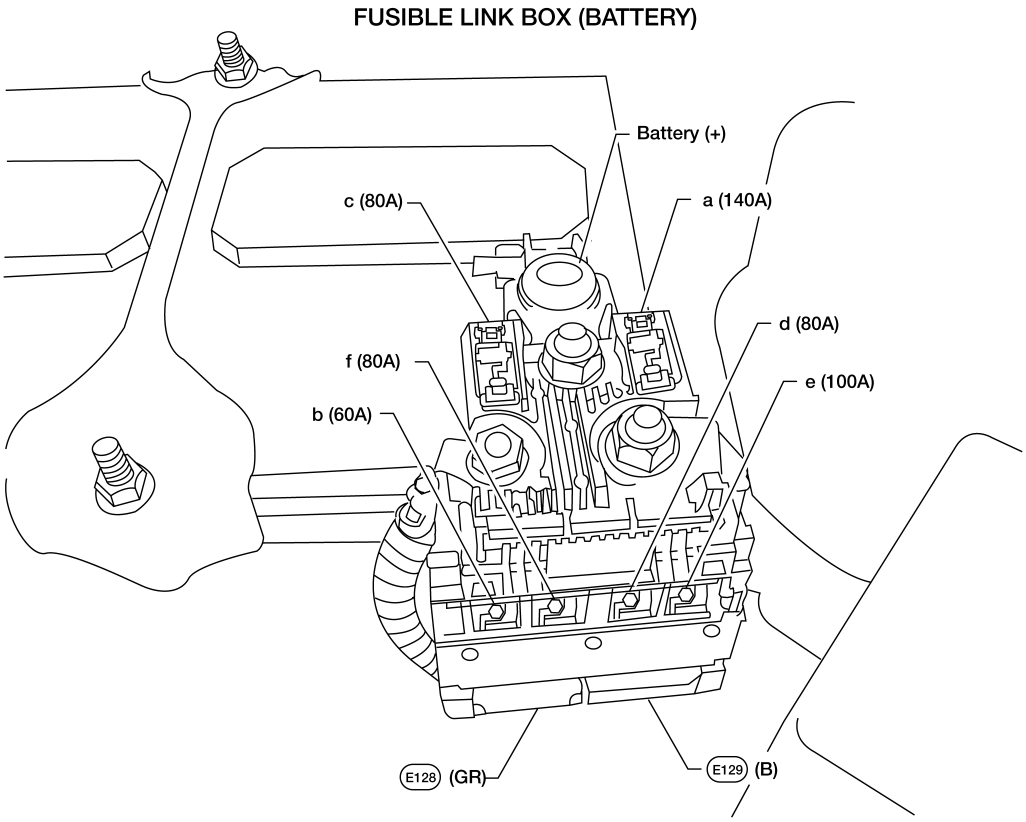
EKS00DO5

FUSE AND FUSIBLE LINK BOX



24 - 31 : FUSE g - n : FUSIBLE LINK

FUSIBLE LINK BOX (BATTERY)



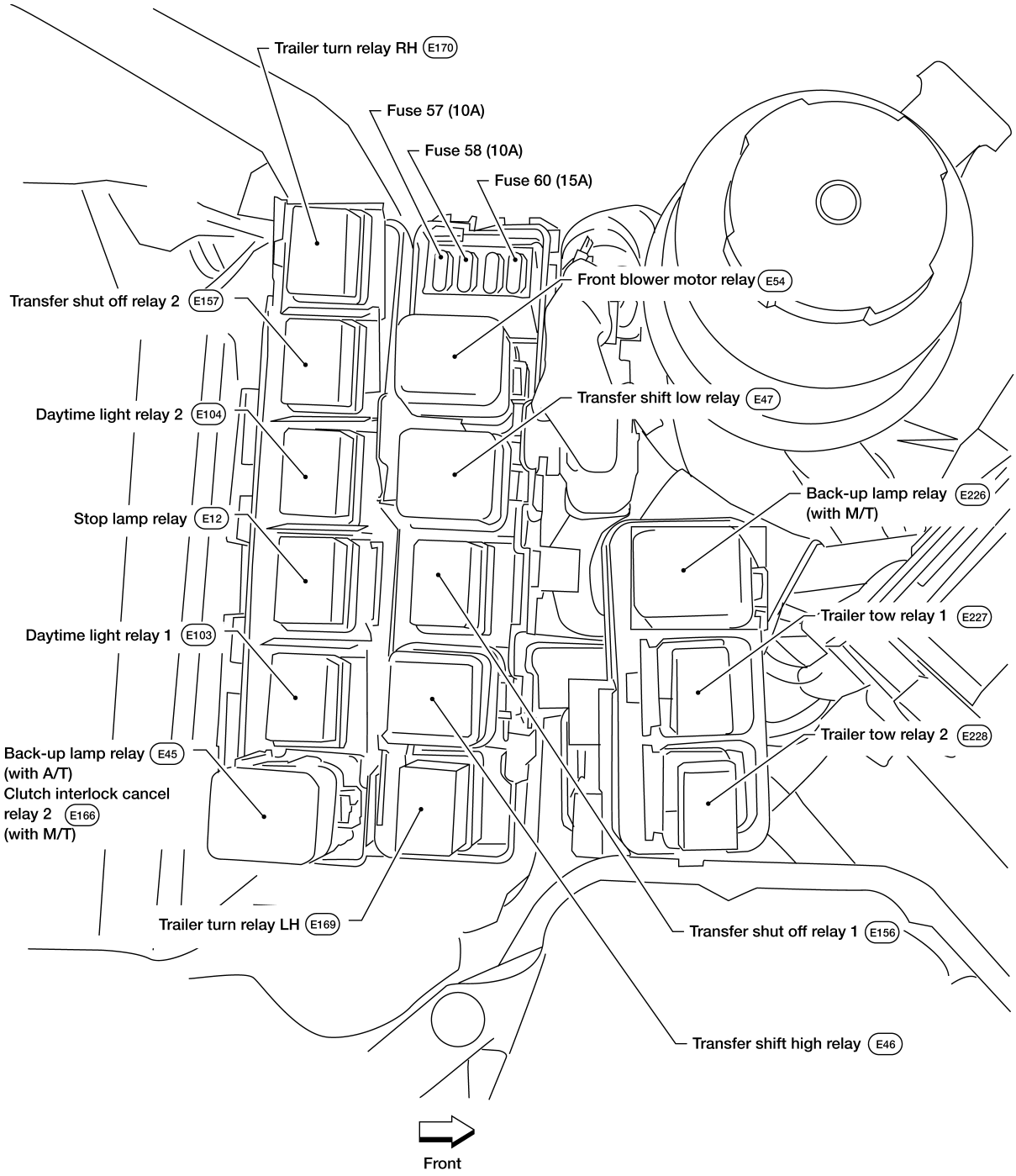
WKIA5074E

FUSE AND RELAY BOX

PFP:24012

Terminal Arrangement

EKS00DO6



WKIA5075E