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SECTION

POWER SUPPLY, GROUND & CIRCUIT ELEMENTS

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PRECAUTIONS

PRECAUTIONS

PFP:00011

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

EKS00G8A

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.

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POWER SUPPLY ROUTING CIRCUIT

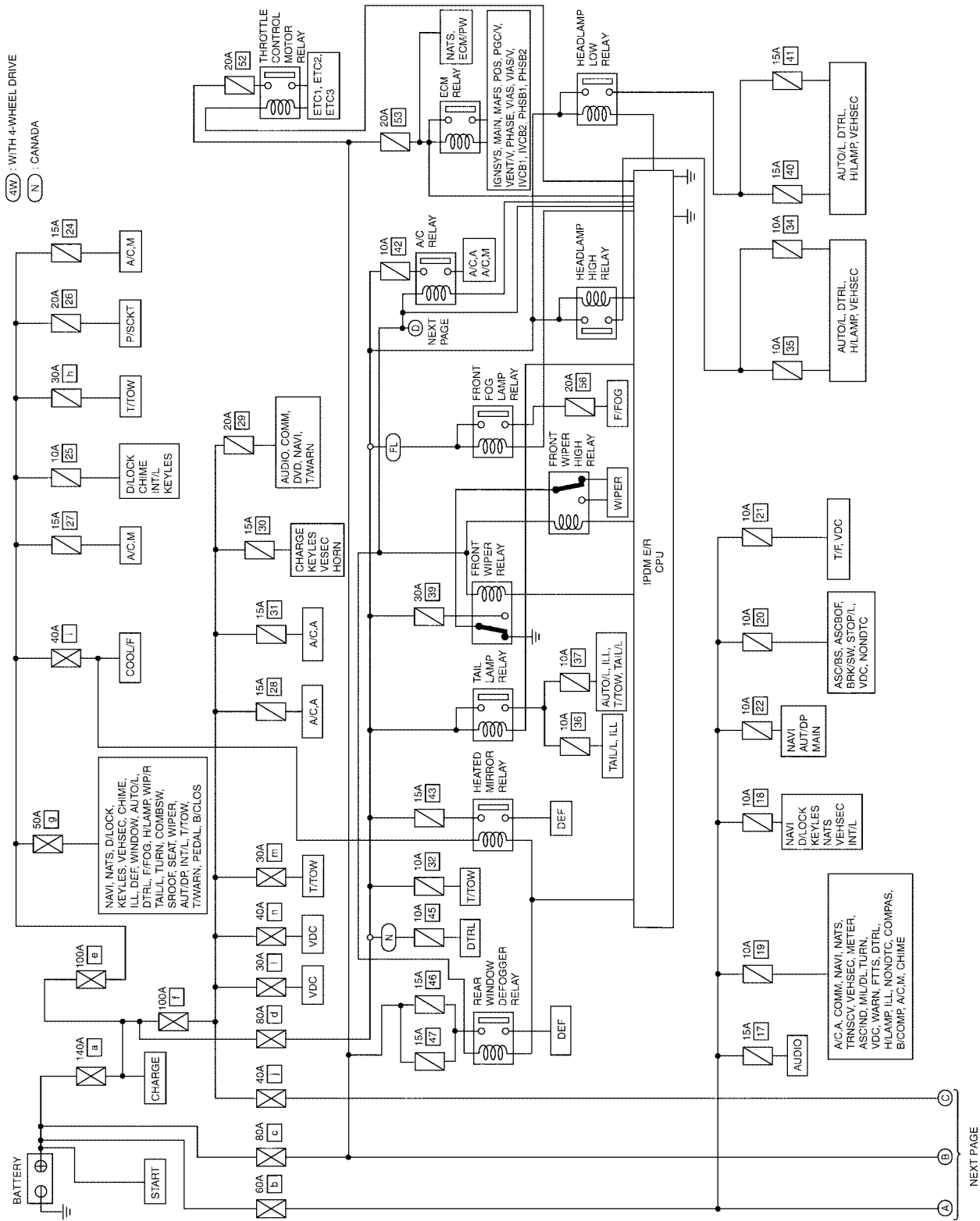
PF:24110

EKS00G8C

POWER SUPPLY ROUTING CIRCUIT

Schematic

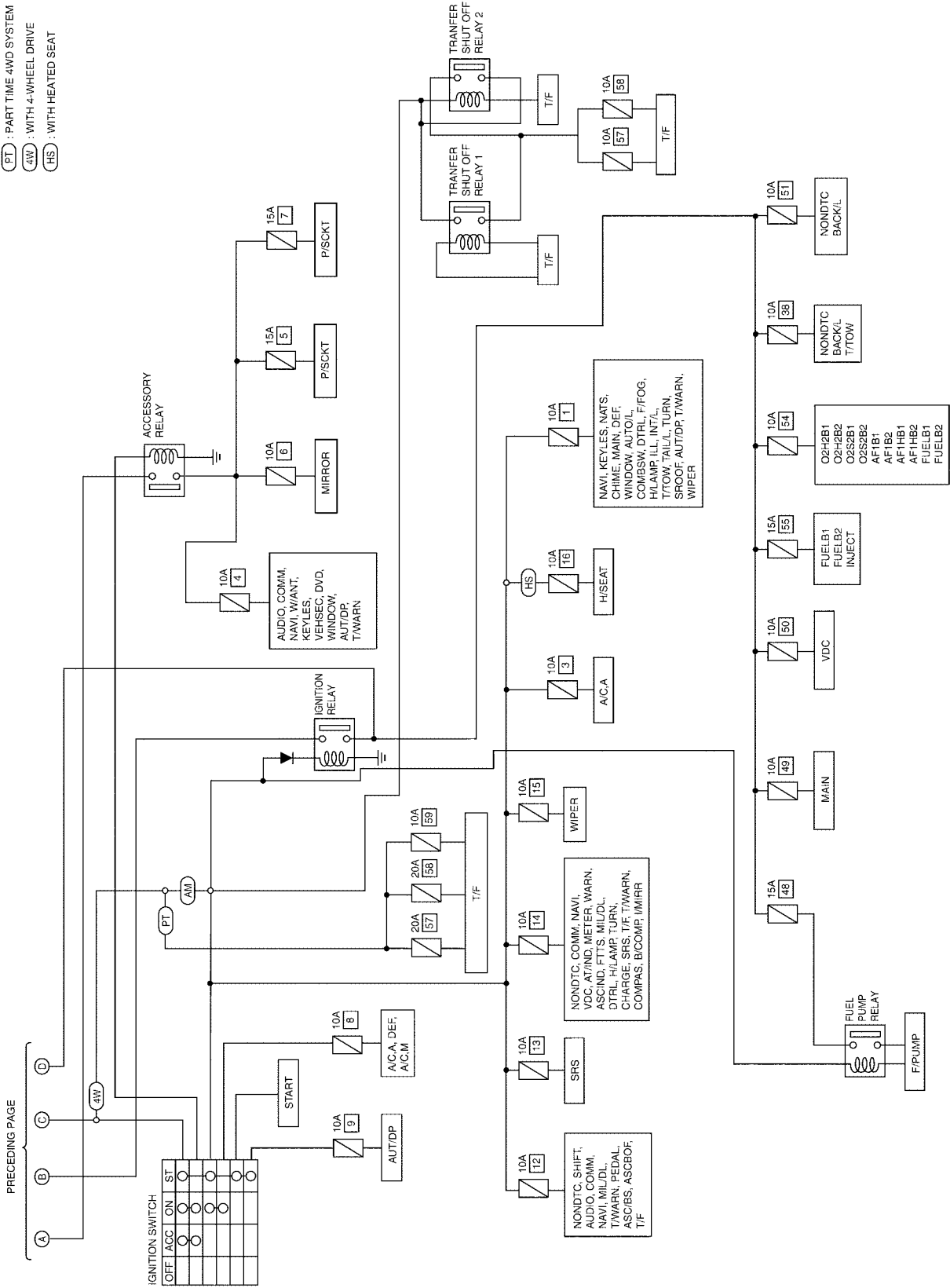
For detailed ground distribution, refer to [PG-33, "Ground Distribution"](#).



WKWA4401E

POWER SUPPLY ROUTING CIRCUIT

- AM : ALL-MODE 4WD SYSTEM
- PT : PART TIME 4WD SYSTEM
- 4W : WITH 4-WHEEL DRIVE
- HS : WITH HEATED SEAT



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WKWA4402E

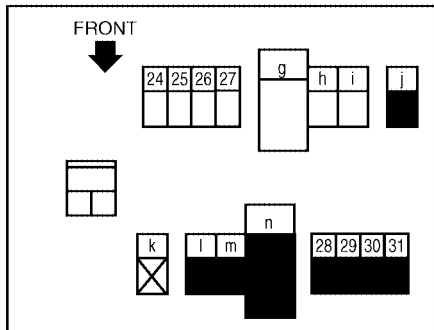
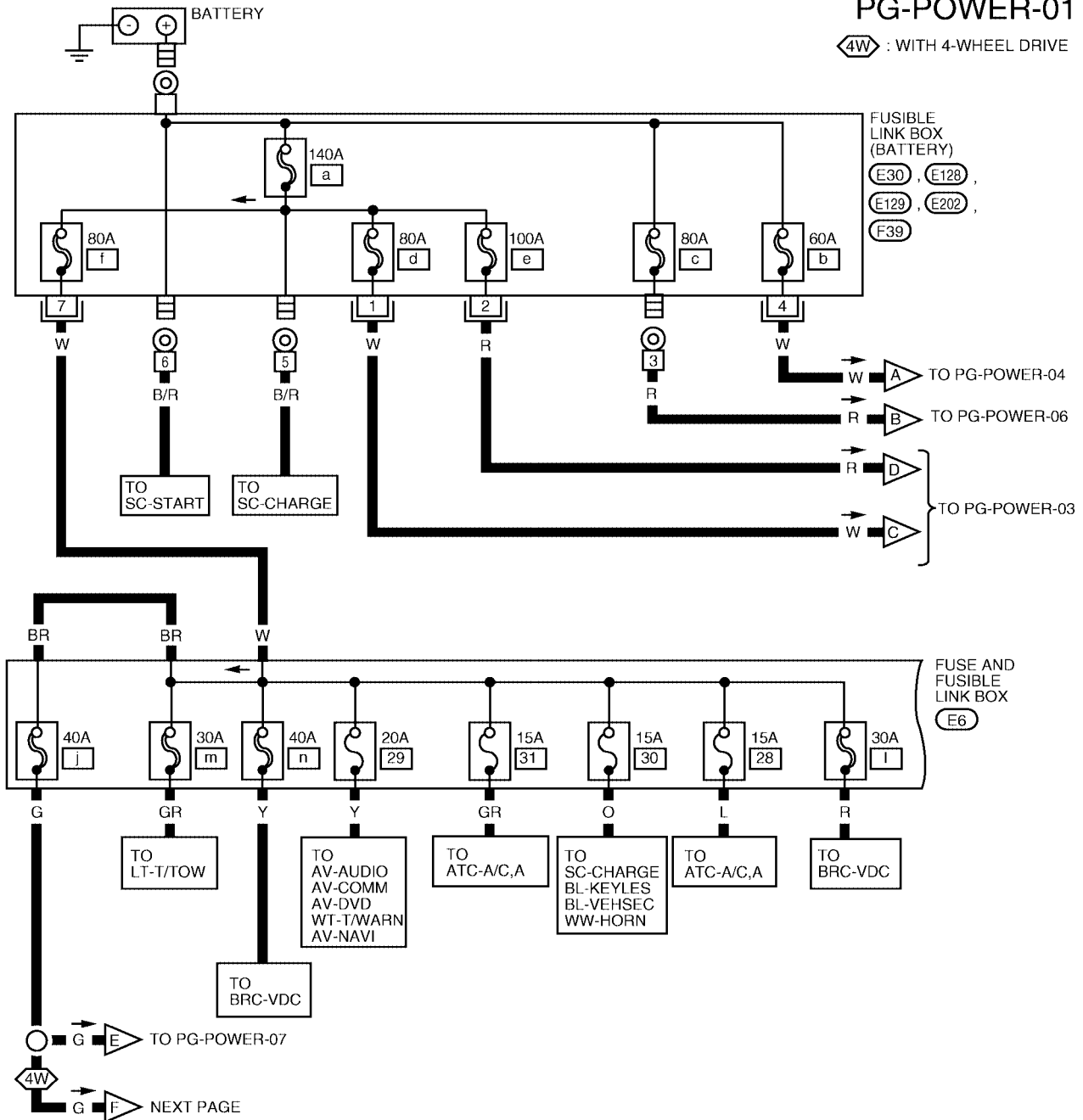
POWER SUPPLY ROUTING CIRCUIT

EKS00G8D

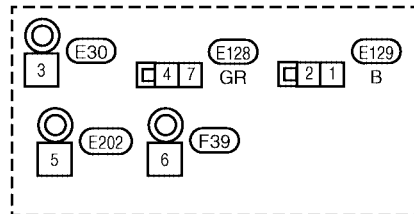
Wiring Diagram — POWER — BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION

PG-POWER-01

4W : WITH 4-WHEEL DRIVE



E6



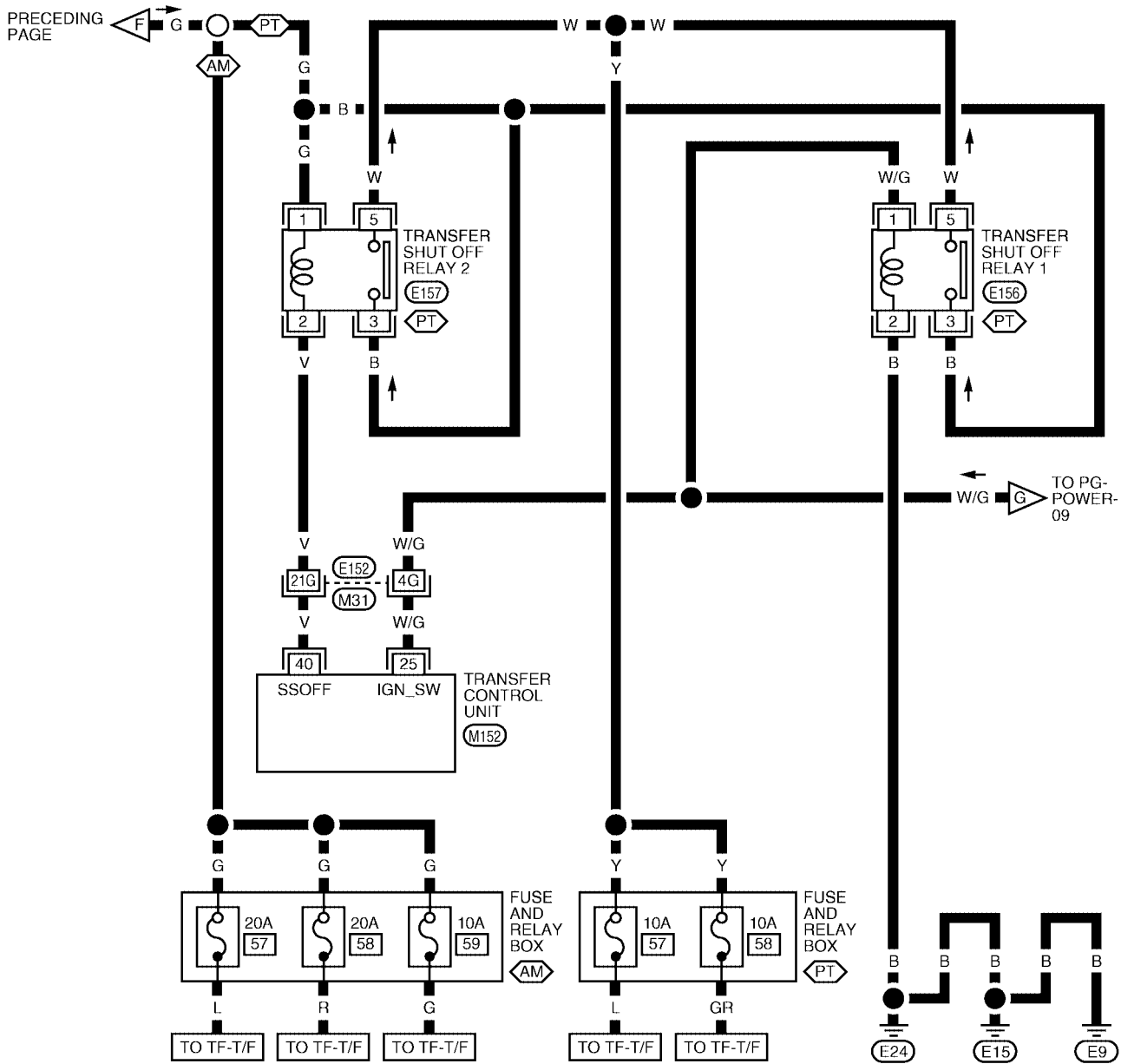
WKWA4403E

POWER SUPPLY ROUTING CIRCUIT

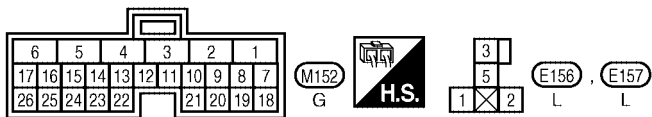
PG-POWER-02

AM : ALL-MODE 4WD SYSTEM

PT : PART TIME 4WD SYSTEM



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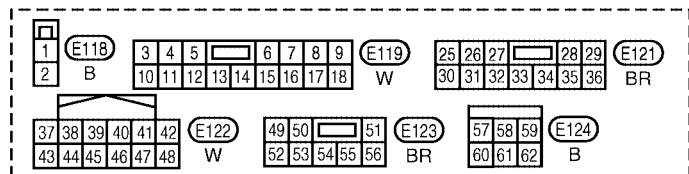
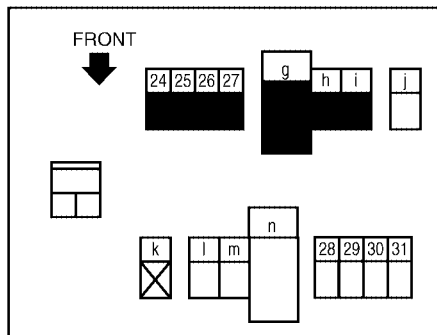
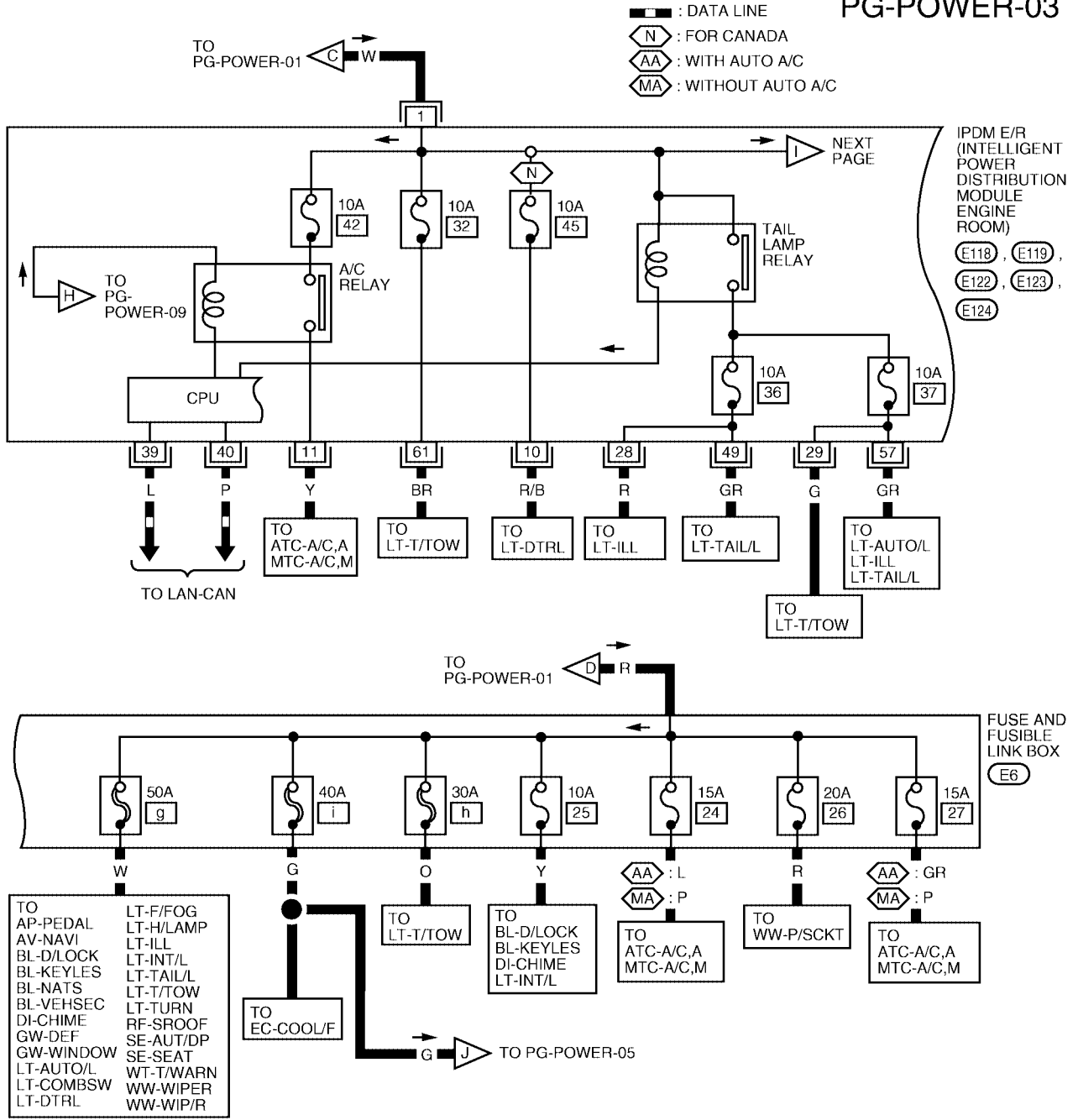


REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

WKWA4404E

POWER SUPPLY ROUTING CIRCUIT

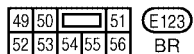
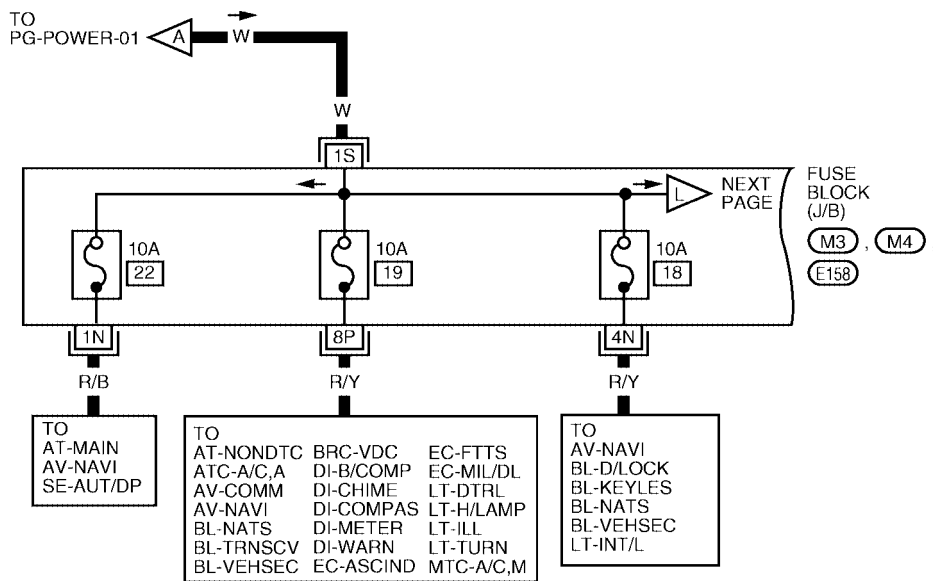
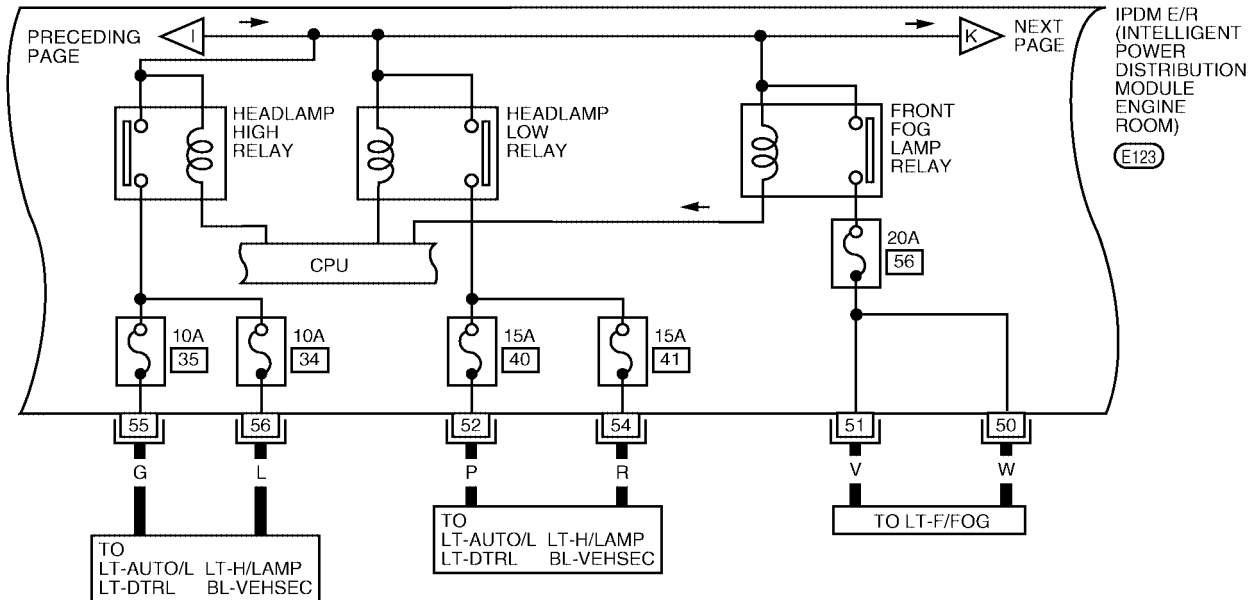
PG-POWER-03



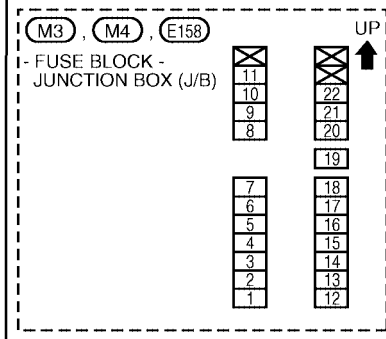
WKWA4405E

POWER SUPPLY ROUTING CIRCUIT

PG-POWER-04



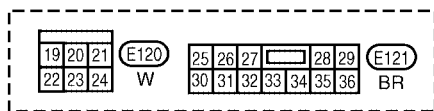
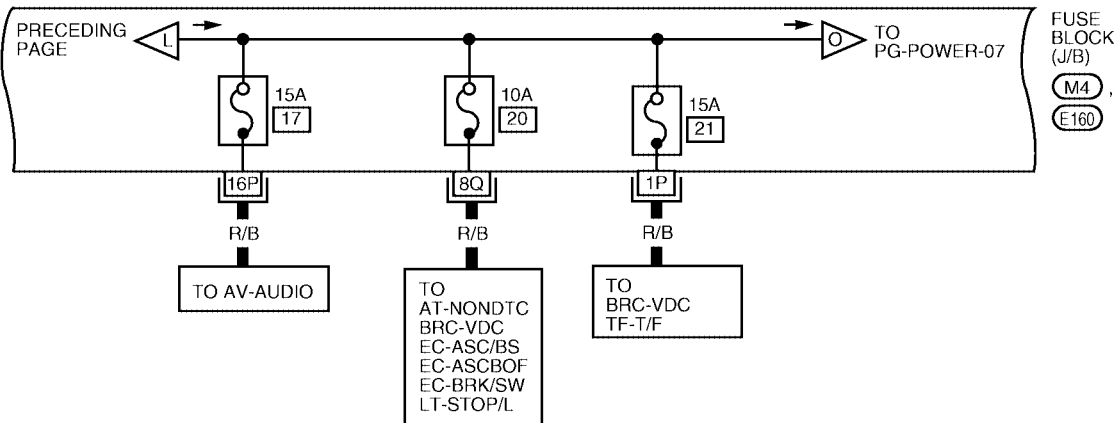
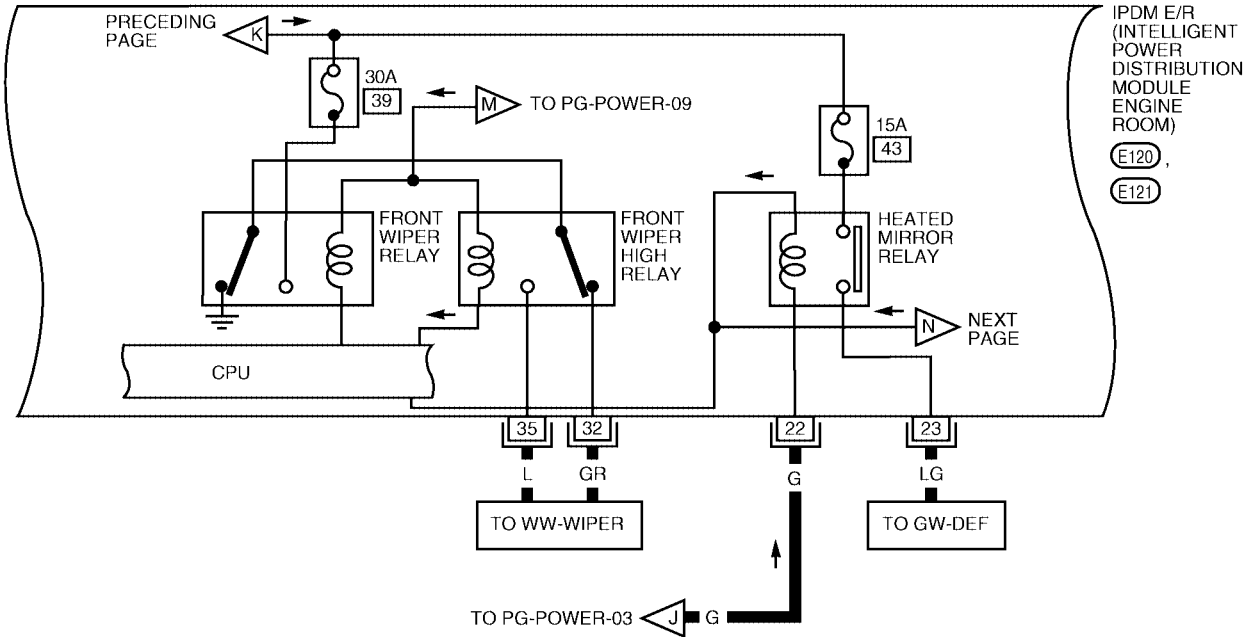
REFER TO THE FOLLOWING.



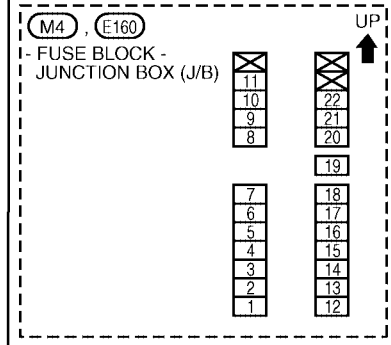
WKWA4406E

POWER SUPPLY ROUTING CIRCUIT

PG-POWER-05



REFER TO THE FOLLOWING.

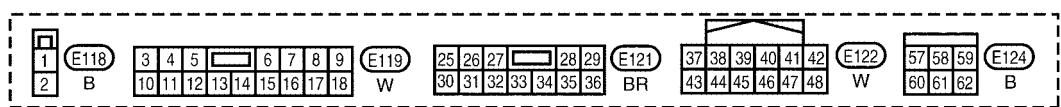
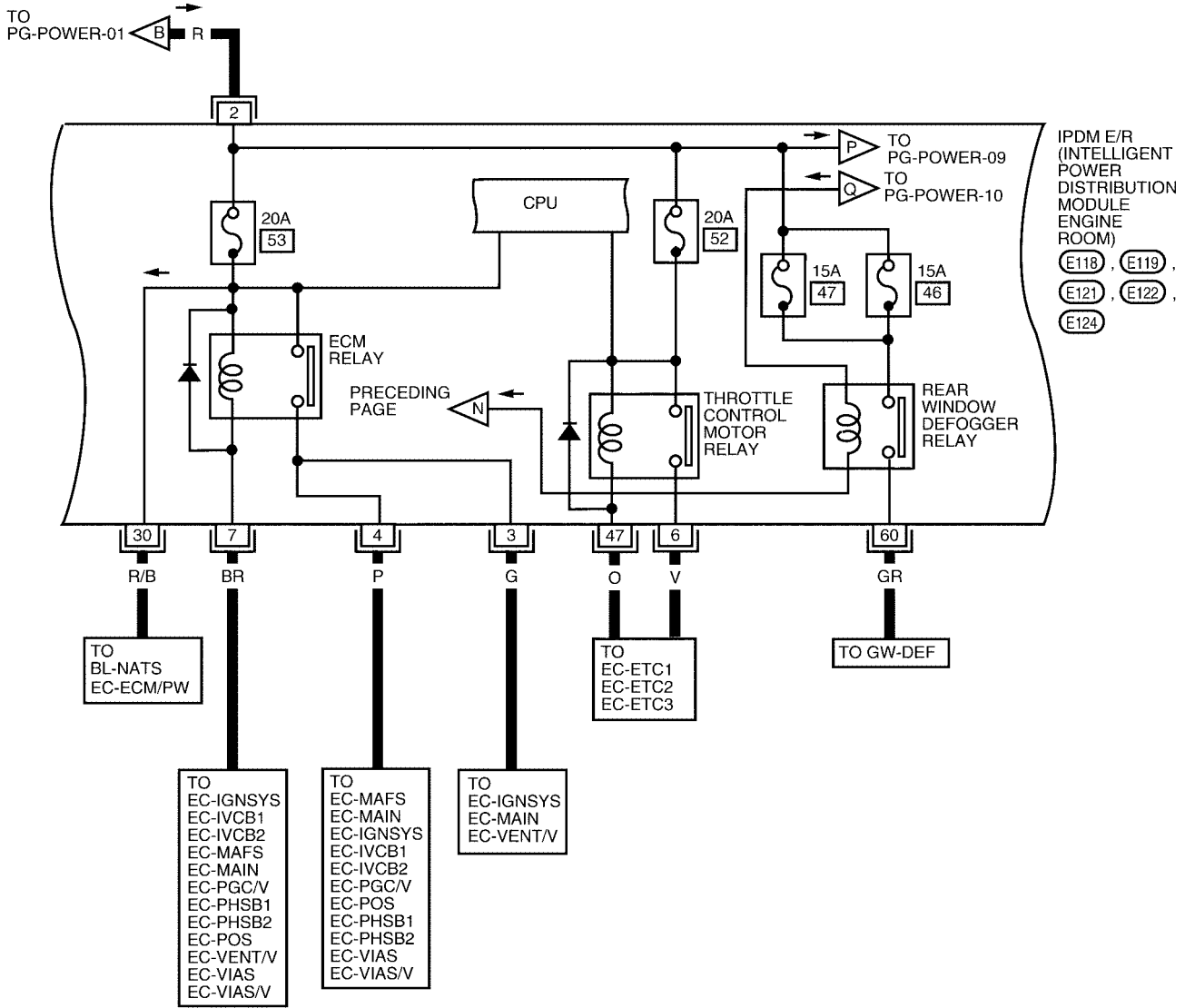


WKWA4407E

POWER SUPPLY ROUTING CIRCUIT

PG-POWER-06

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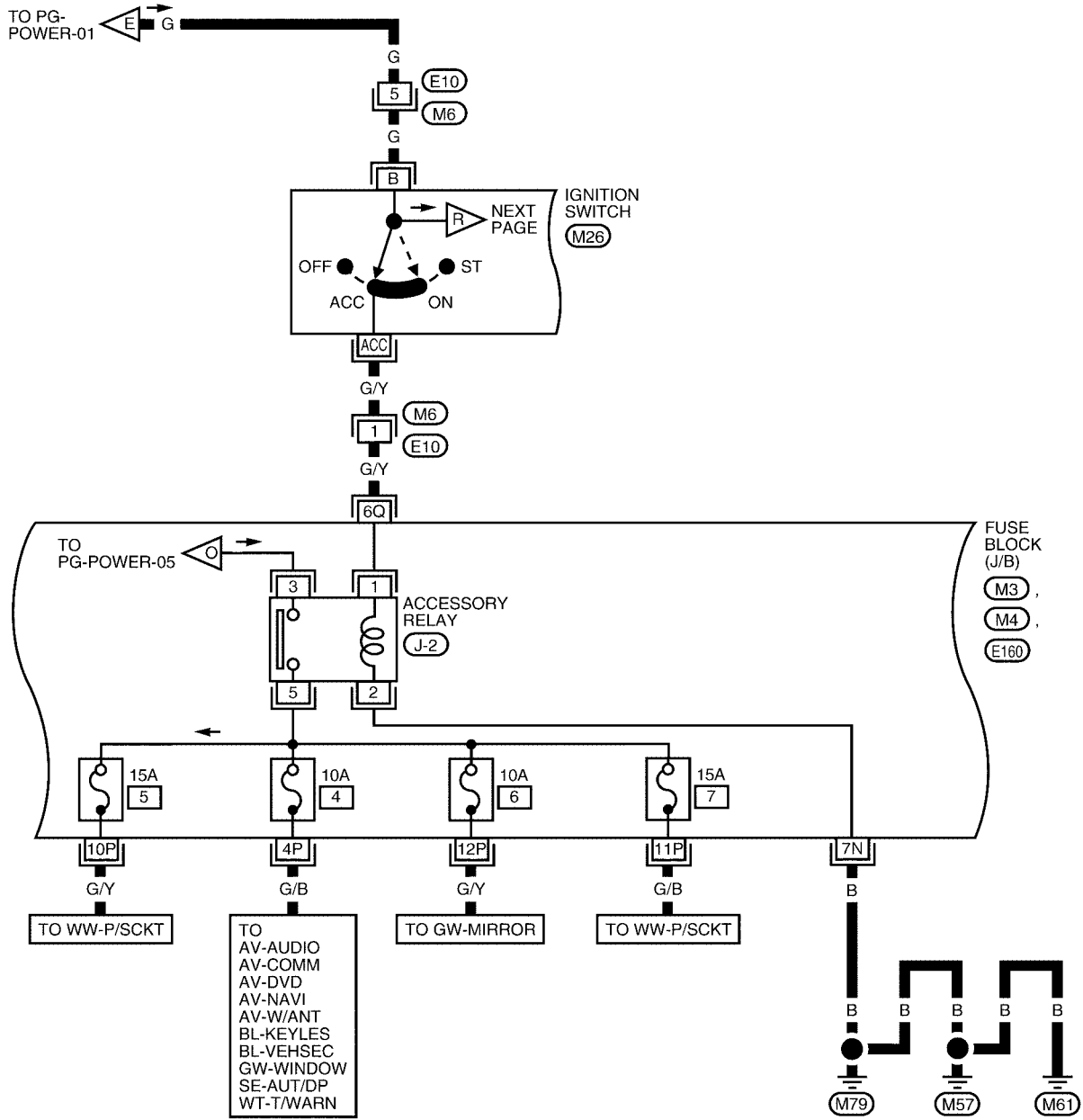


WKWA4408E

POWER SUPPLY ROUTING CIRCUIT

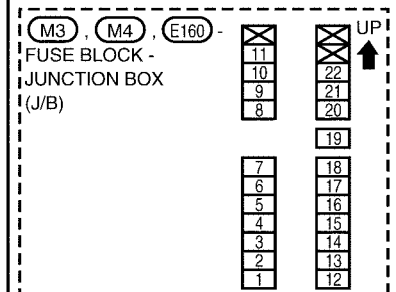
ACCESSORY POWER SUPPLY — IGNITION SW. IN ACC OR ON

PG-POWER-07



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

REFER TO THE FOLLOWING.

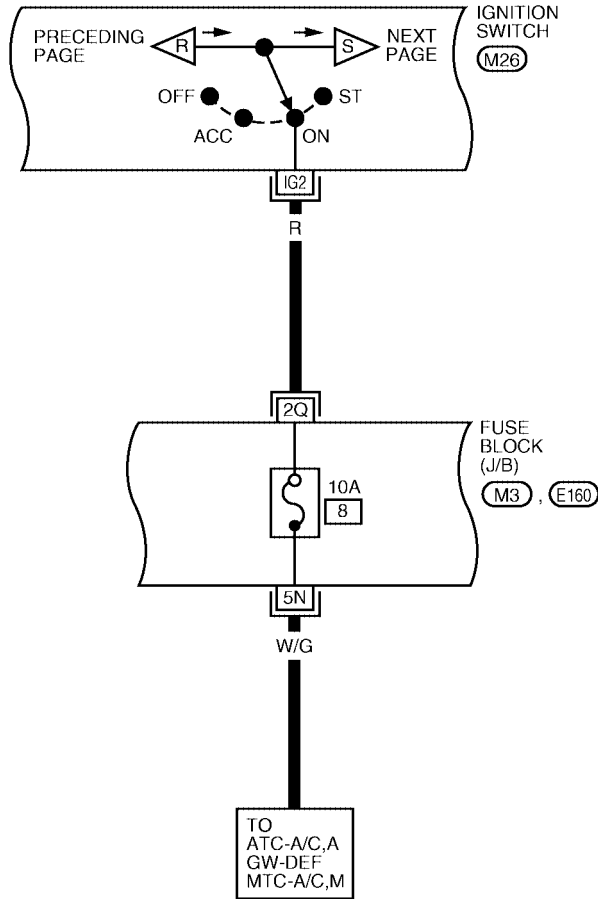


WKWA4409E

POWER SUPPLY ROUTING CIRCUIT

IGNITION POWER SUPPLY — IGNITION SW. IN ON

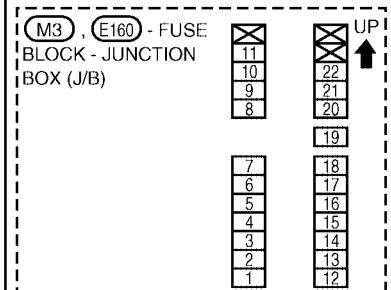
PG-POWER-08



IG1	ST	B	M26
IG2	ACC	R	

W

REFER TO THE FOLLOWING.

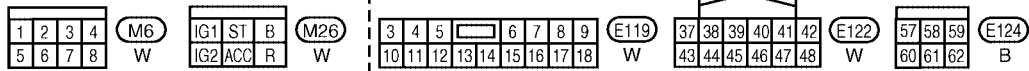
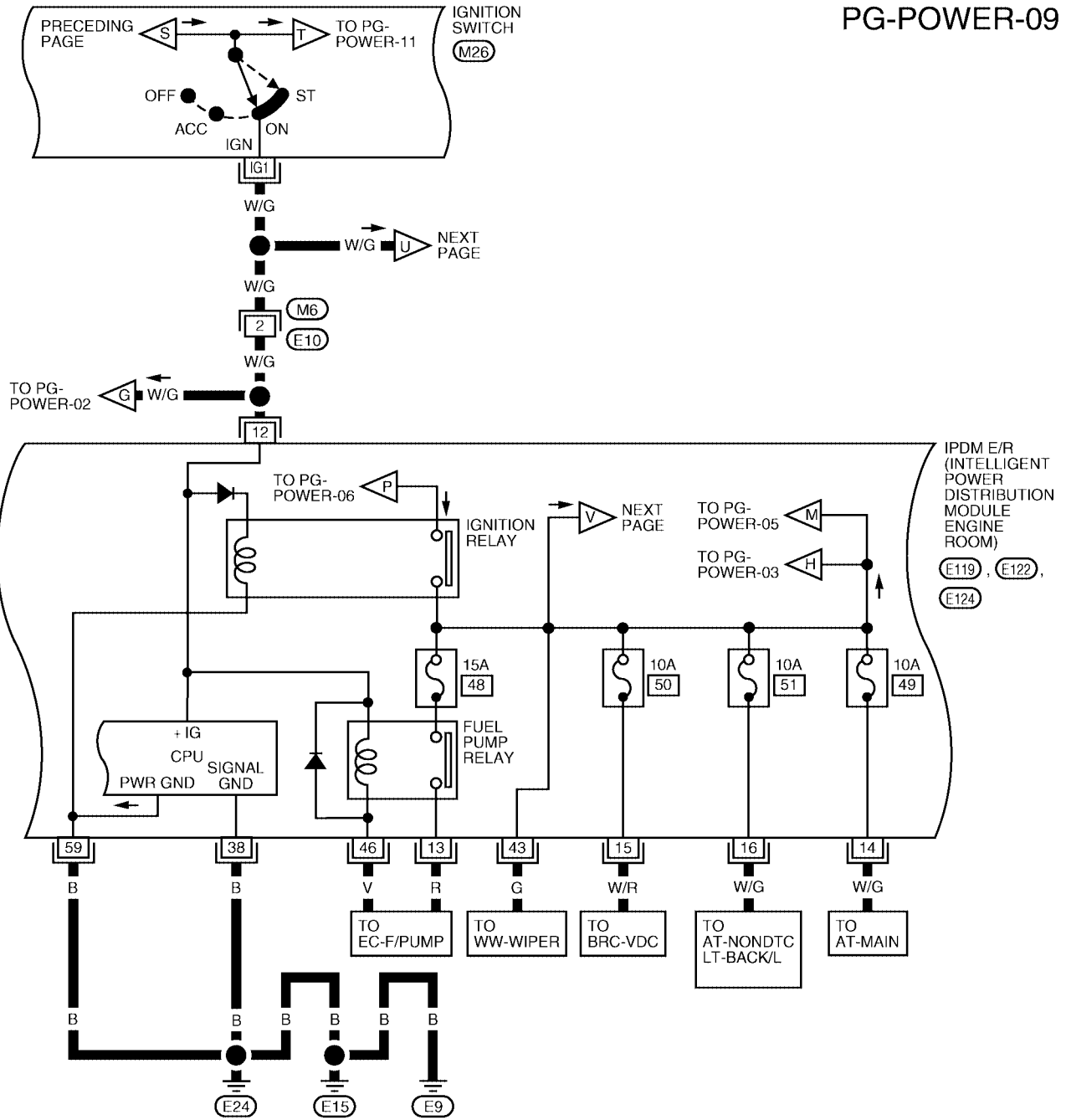


WKWA4410E

POWER SUPPLY ROUTING CIRCUIT

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

PG-POWER-09

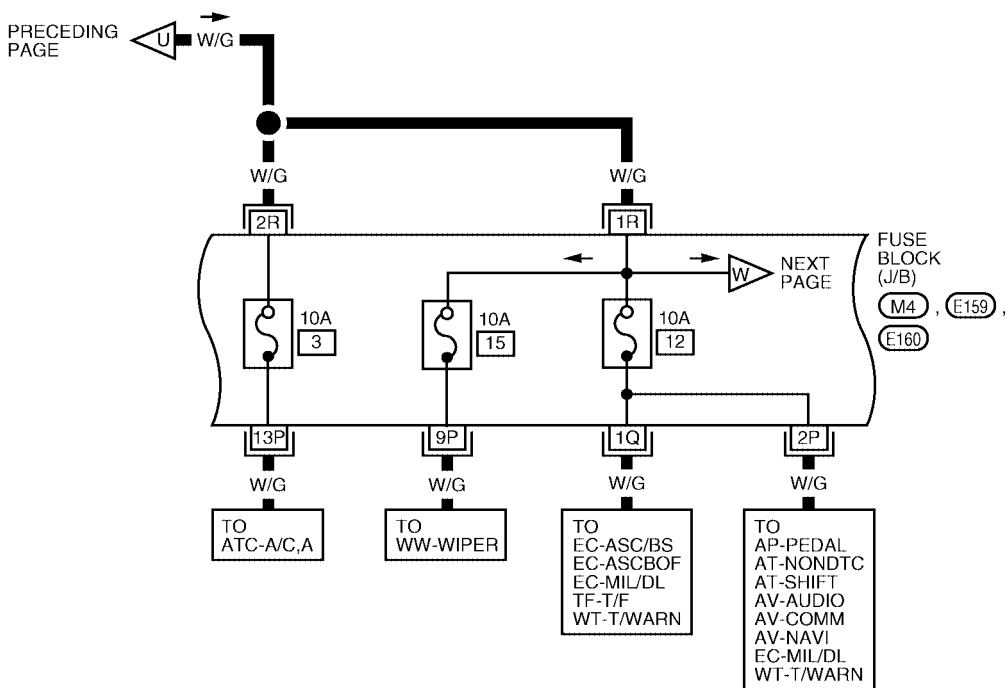
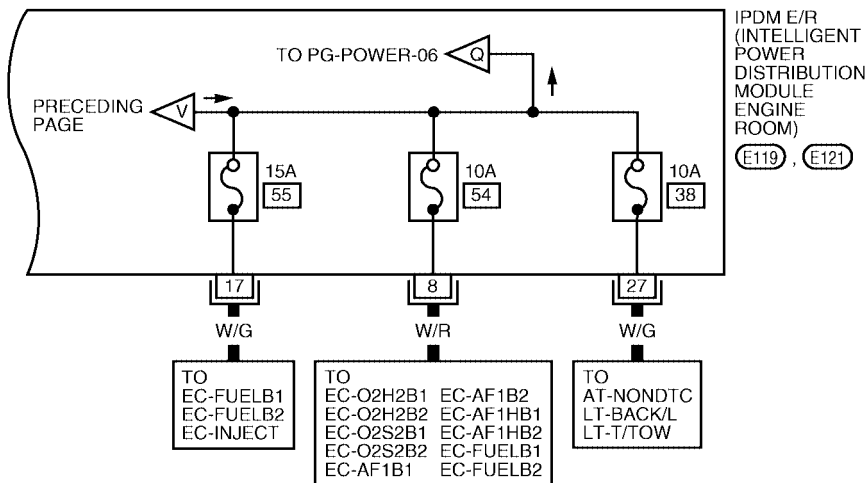


WKWA4411E

POWER SUPPLY ROUTING CIRCUIT

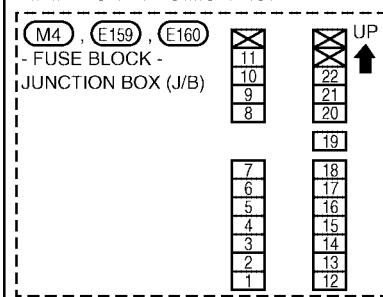
PG-POWER-10

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

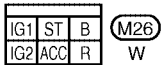
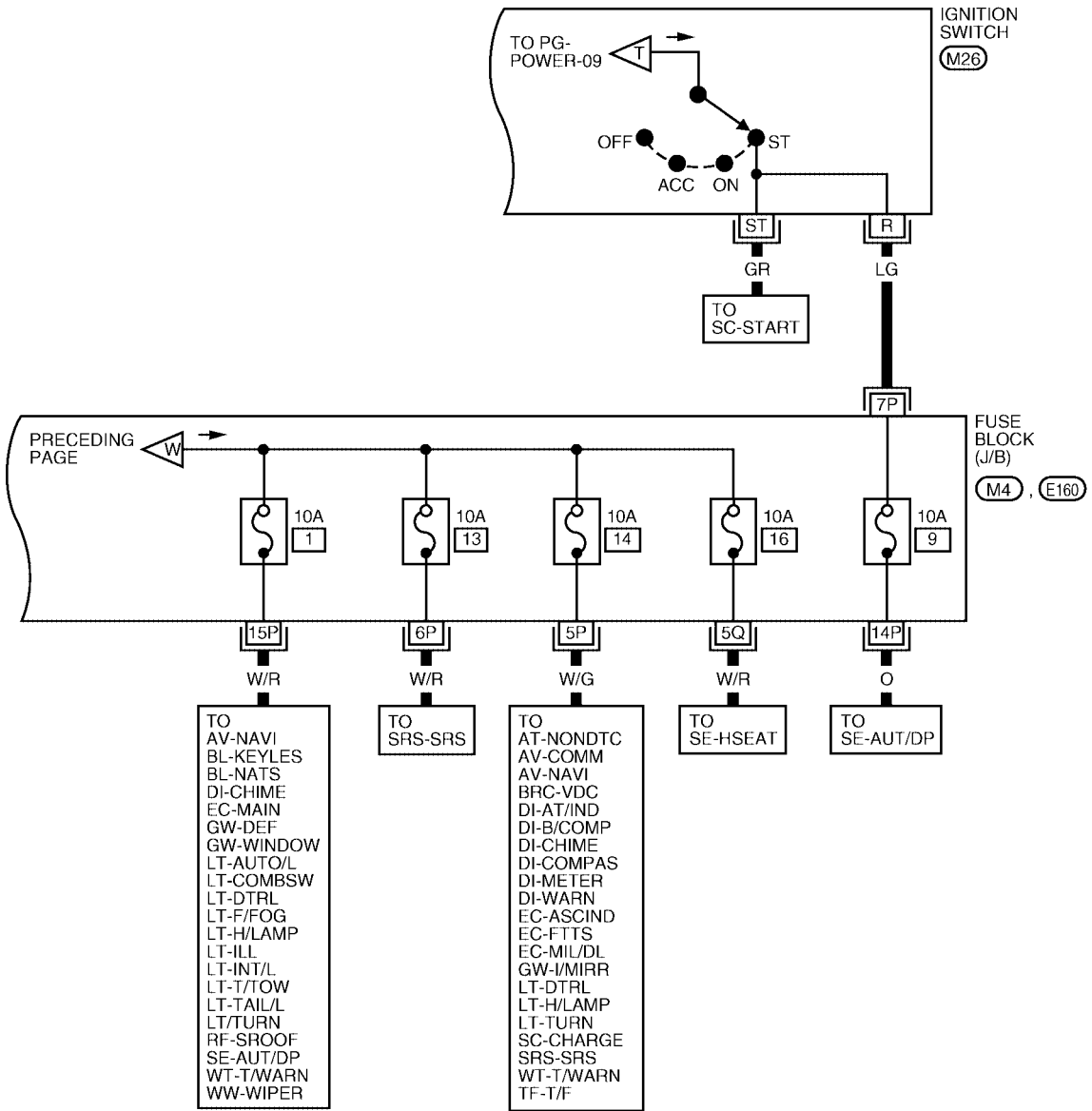
REFER TO THE FOLLOWING.



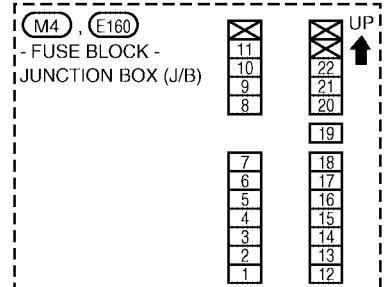
WKWA4412E

POWER SUPPLY ROUTING CIRCUIT

PG-POWER-11



REFER TO THE FOLLOWING.



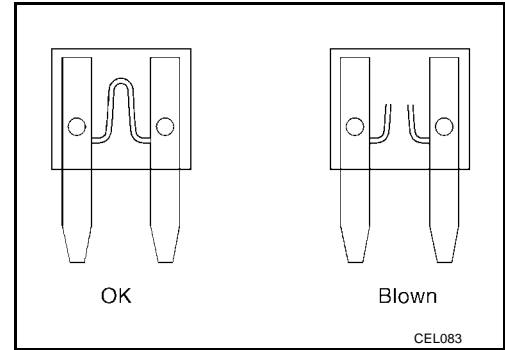
WKWA4413E

POWER SUPPLY ROUTING CIRCUIT

Fuse

EKS00HM0

- 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

EKS00HM1

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.

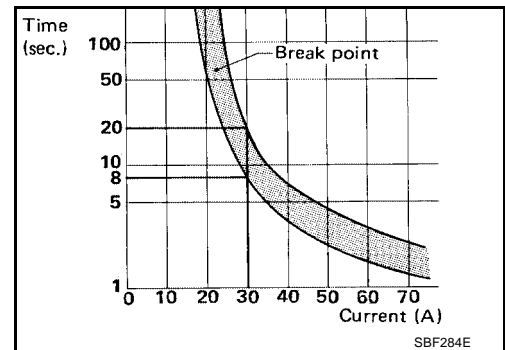
Circuit Breaker (Built Into BCM)

EKS00HM2

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
- Power door locks
- Remote keyless entry system
- Power sunroof



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

PF0:284B7

System Description

EKS00G8E

- 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)
 - Parking 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 relay control
Using CAN communication lines, it receives signals from the BCM and controls the rear window defogger relay.
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-line, CAN H-line), 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	<ul style="list-style-type: none"> ● 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	<ul style="list-style-type: none"> ● With the ignition switch ON, the tail lamp relay is ON. ● With the ignition switch OFF, the tail lamp relay is OFF.
Cooling fan	<ul style="list-style-type: none"> ● With the ignition switch ON, the cooling fan HI operates. ● With the ignition switch OFF, the cooling fan stops.

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

Controlled system	Fail-safe mode
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

EKS00G8F

Refer to [LAN-25, "CAN COMMUNICATION"](#).

Function of Detecting Ignition Relay Malfunction

EKS00G8G

- 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.

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

CONSULT-II Function (IPDM E/R)

EKS00GBH

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

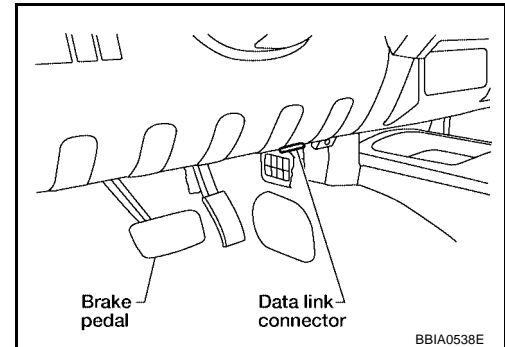
IPDM E/R diagnostic Mode	Description
SELF-DIAG RESULTS	Displays IPDM E/R self-diagnosis results.
DATA MONITOR	Displays IPDM E/R input/output data in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	Operation of electrical loads can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

CONSULT-II BASIC OPERATION

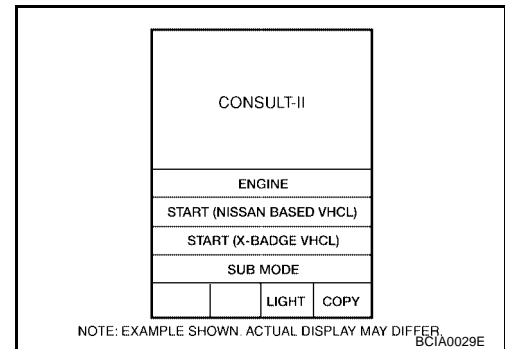
CAUTION:

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.

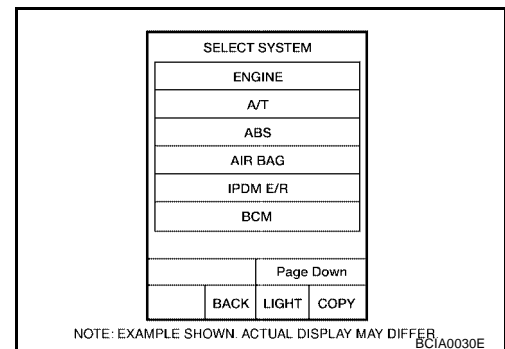
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



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

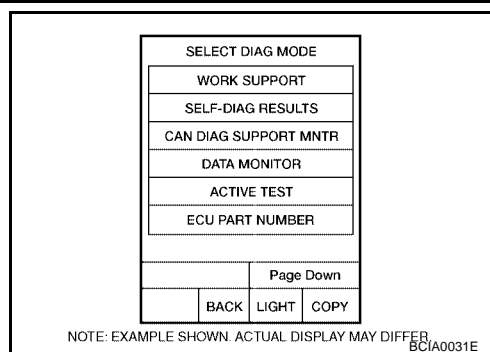


3. Touch "IPDM E/R" on "SELECT SYSTEM" screen.
 - If "IPDM E/R" is not displayed, go to [GI-40, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



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

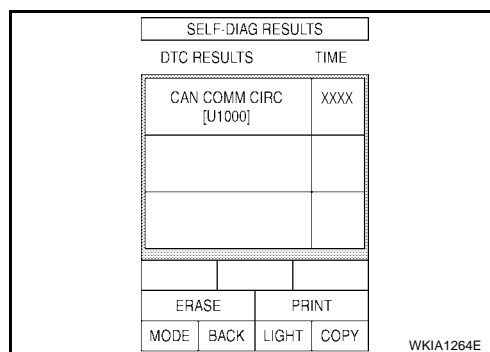
- Select the desired part to be diagnosed on the “SELECT DIAG MODE” screen.



SELF-DIAGNOSTIC RESULTS

Operation Procedure

- Touch “SELF-DIAG RESULTS” on “SELECT DIAG MODE” screen.
- 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	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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.

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

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 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

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

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 (HIGH, LOW) 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	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.
Tail lamp relay 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.
Horn output	HORN	With a certain ON-OFF operation, the horn relay can be operated.

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

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Auto Active Test 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
 - Tail, license plate, front fog, and parking lamps
 - Headlamps (High, Low)
 - A/C compressor (magnetic clutch)

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:

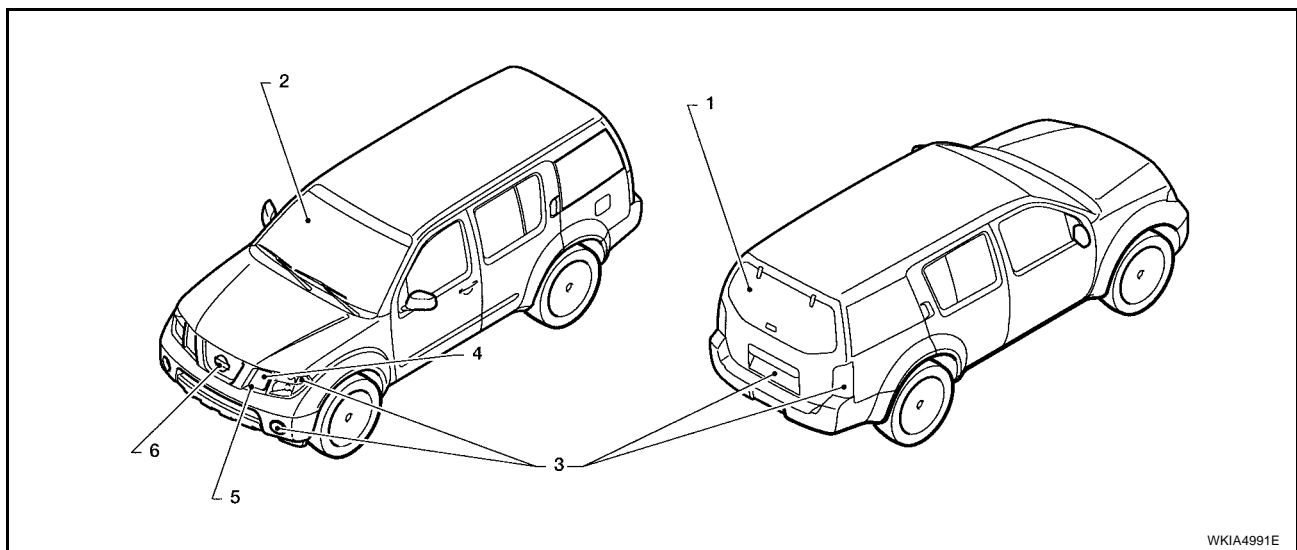
When auto active test mode has to be cancelled halfway, turn ignition switch OFF.

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 five steps are repeated three times.

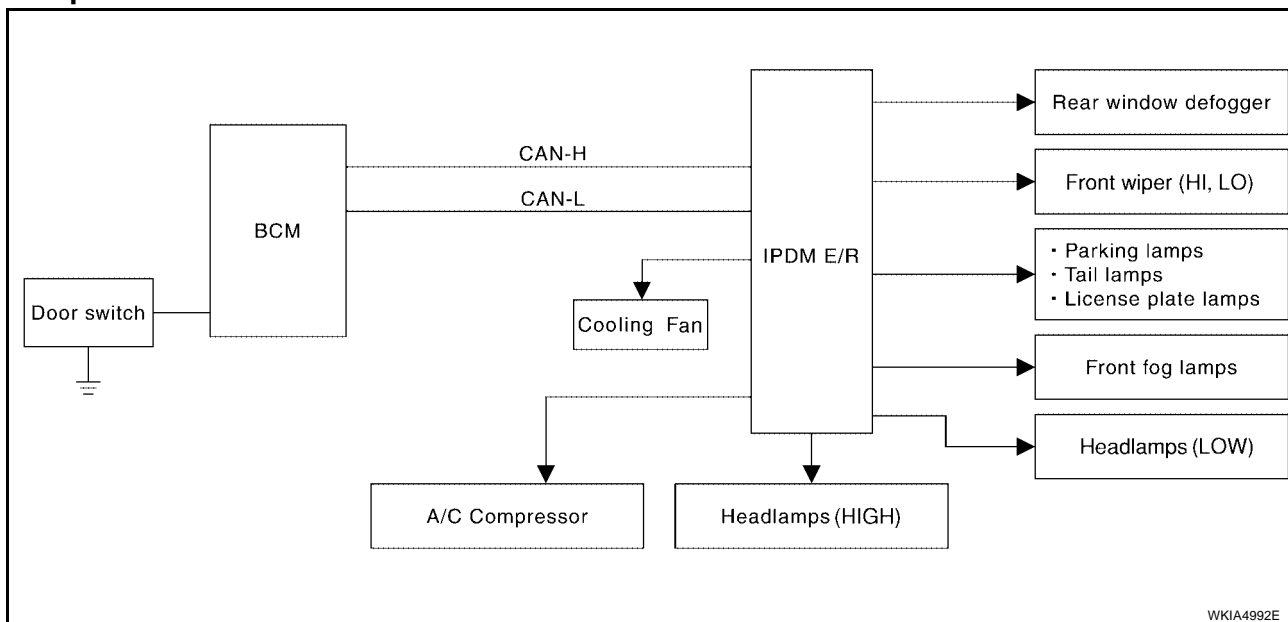


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Item Number	Test Item	Operation Time/Frequency
1	Rear window defogger	10 seconds
2	Front wipers	LOW 5 seconds then HIGH 5 seconds
3	Tail, license plate, front fog and parking lamps	10 seconds
4	Headlamps	Low ON for 10 seconds. then High ON-OFF five times.
5	A/C compressor (magnetic clutch)	ON-OFF 5 times
6	Cooling fan	LOW 5 seconds, then HIGH 5 seconds

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

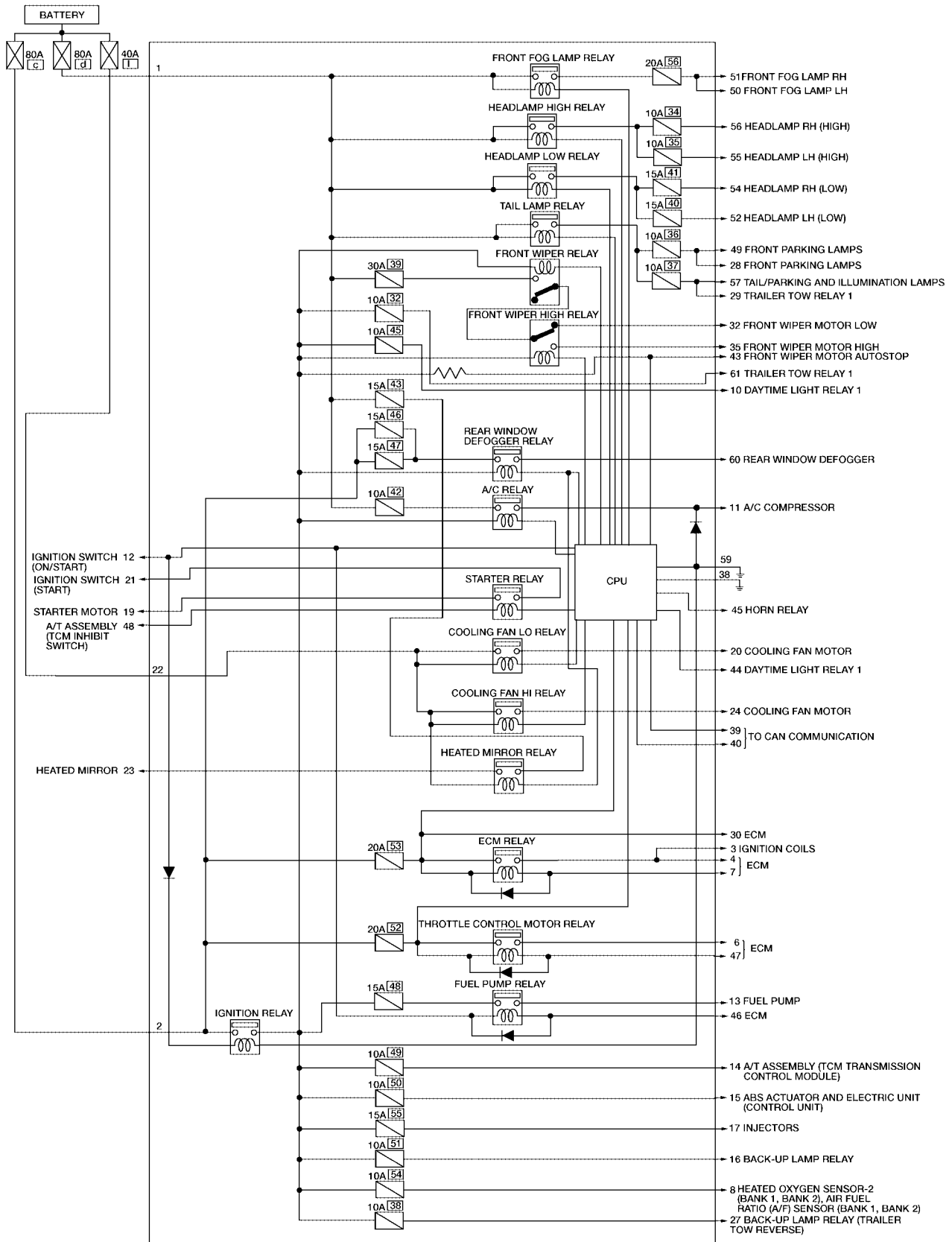
Diagnosis chart in auto active test mode

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 (High, Low) 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
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

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

Schematic

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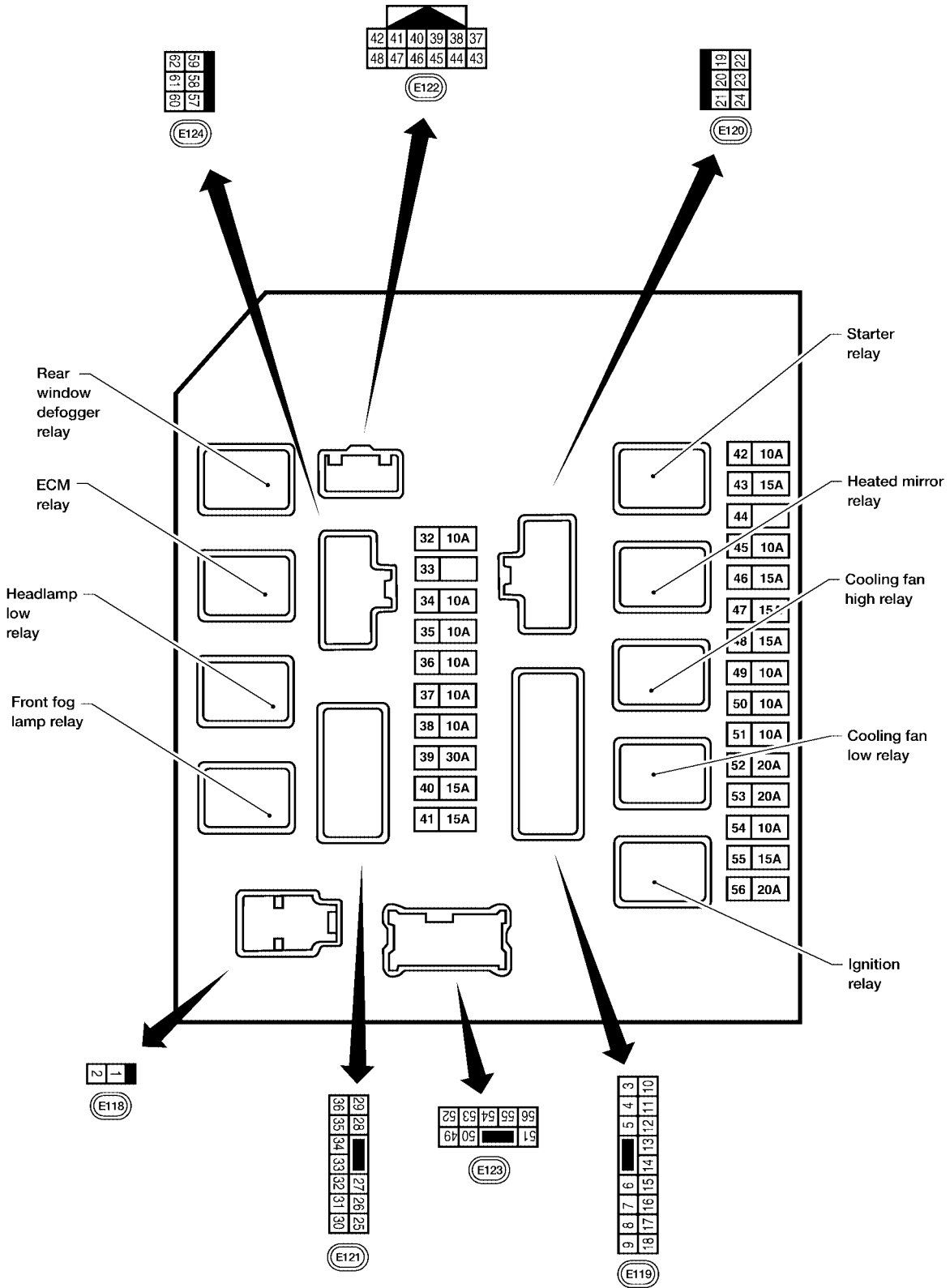


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IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

IPDM E/R Terminal Arrangement

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

Terminals and Reference Values for IPDM E/R

EKS00HLS

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	ON or START	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	
14	W/G	A/T 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	0	
24	P	Cooling fan motor (high)	Output	ON or START	—	Battery voltage	
27	WG	Trailer tow relay	Output	ON or START	—	Battery voltage	
28	R	LH front parking and front side marker lamp	Output	ON	Lighting switch 1ST position	OFF	0V
					ON	Battery voltage	
29	G	Trailer tow relay	Output	ON	Lighting switch 1ST position	OFF	0V
					ON	Battery voltage	

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

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value (Approx.)	
				Ignition switch	Operation or condition		
30	V	Battery power supply (ECM)	Input	OFF	—	Battery voltage	
32	GR	Low speed signal	Output	ON	Wiper switch	OFF	0
						LO	Battery voltage
35	L	High speed signal	Output	ON	Wiper switch	OFF	0
						HI	Battery voltage
37	Y	Generator	Output	ON		—	
38	B	Ground	Input	—	—	0	
39	L	CAN-H	—	ON	—	—	
40	P	CAN-L	—	ON	—	—	
43	G	Wiper auto stop signal	Input	ON	Wiper operating		Battery voltage
					Wiper stopped		0
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 locks are operated using keyfob (OFF → ON)		Battery voltage → 0	
46	V	Fuel pump relay control	Input	ON or START	Ignition switch ON or START		0V
					Ignition switch OFF or ACC		Battery voltage
47	O	Throttle control relay control	Input	ON or START	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	ON	Lighting switch 1ST position	OFF	Battery voltage
						ON	
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
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	ON	Lighting switch 2ND position	OFF	0V
						ON	Battery voltage

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

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value (Approx.)	
				Ignition switch	Operation or condition		
54	R	Headlamp low (RH)	Output	ON	Lighting switch 2ND position	OFF	0V
						ON	Battery voltage
55	G	Headlamp high (LH)	Output	ON	Lighting switch HIGH or PASS position	OFF	0V
						ON	Battery voltage
56	L	Headlamp high (RH)	Output	ON	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	—	—	—	0	
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		0
61	R/B	Battery power supply (trailer tow relay)	Output	OFF	—	Battery voltage	

IPDM E/R Power/Ground Circuit Inspection

EKS00G8L

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.

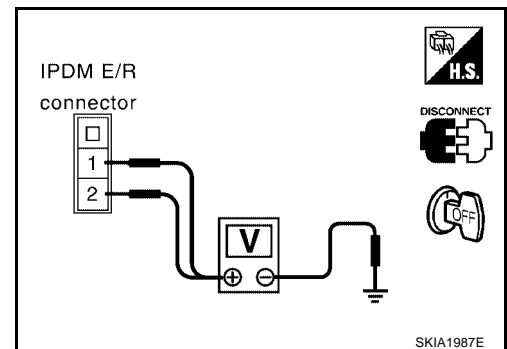
2. POWER CIRCUIT INSPECTION

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

Battery voltage should exist.

OK or NG

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



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

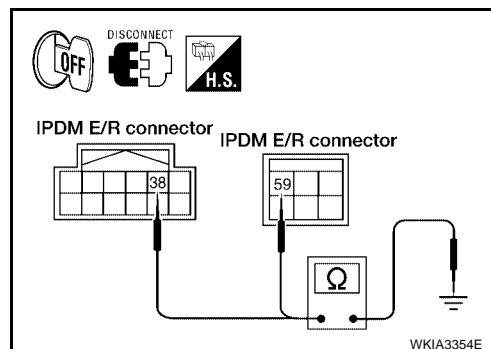
3. GROUND CIRCUIT INSPECTION

1. Disconnect IPDM E/R harness connectors E122 and E124.
2. Check continuity between IPDM E/R harness connector E122 terminal 38, and E124 terminal 59 and ground.

Continuity should exist.

OK or NG

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



EKS00GBM

Inspection with CONSULT-II (Self-Diagnosis)

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".
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: <ul style="list-style-type: none"> ● 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-25. "CAN COMMUNICATION"](#).

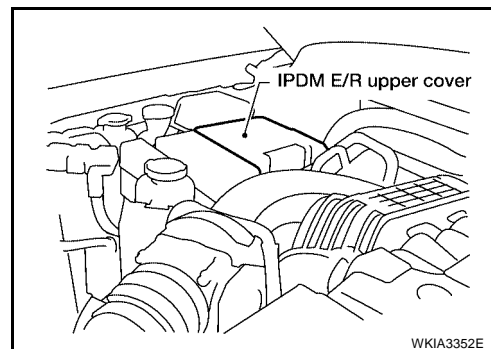
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

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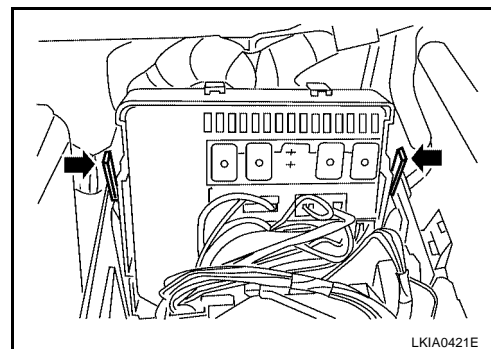
Removal and Installation of IPDM E/R

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

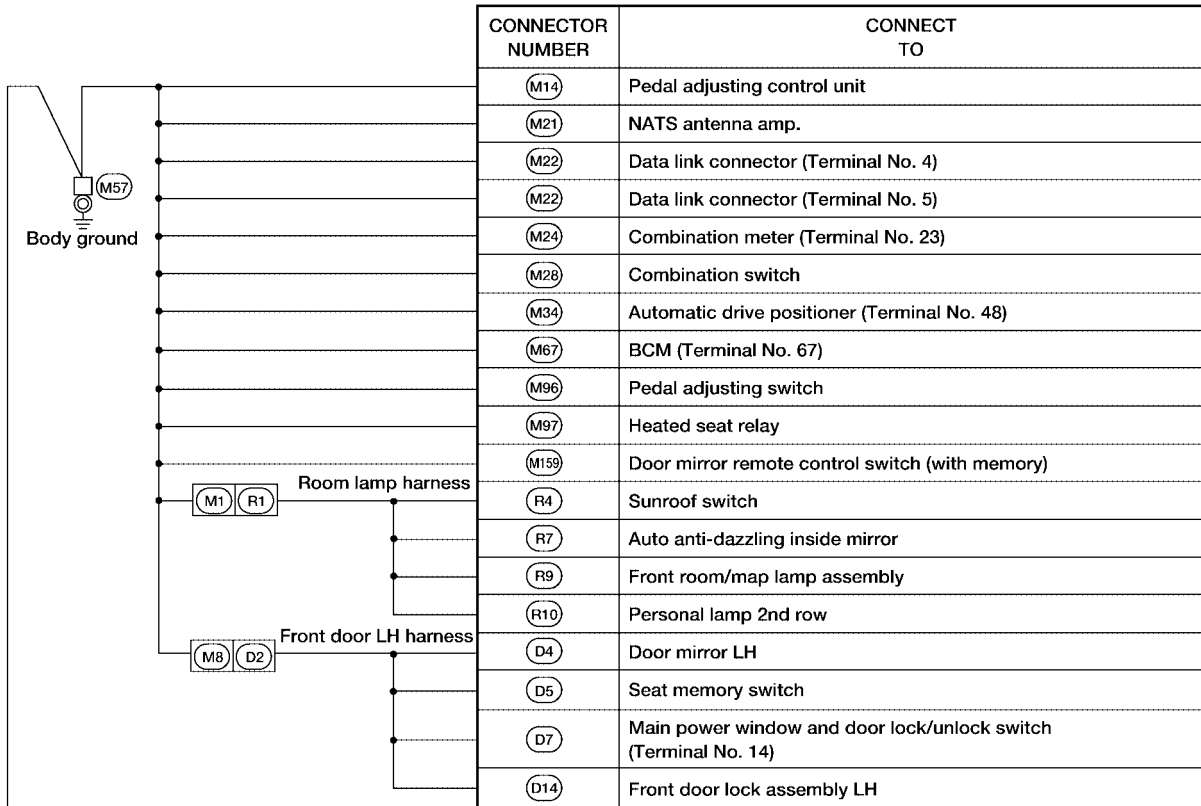
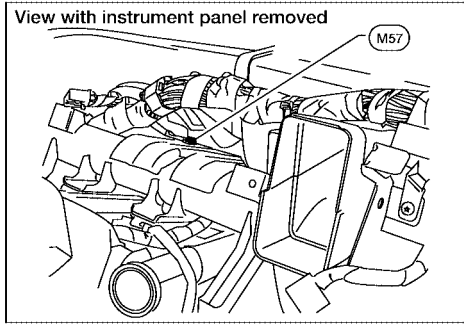
Installation is in the reverse order of removal.

GROUND CIRCUIT

PFP:24080

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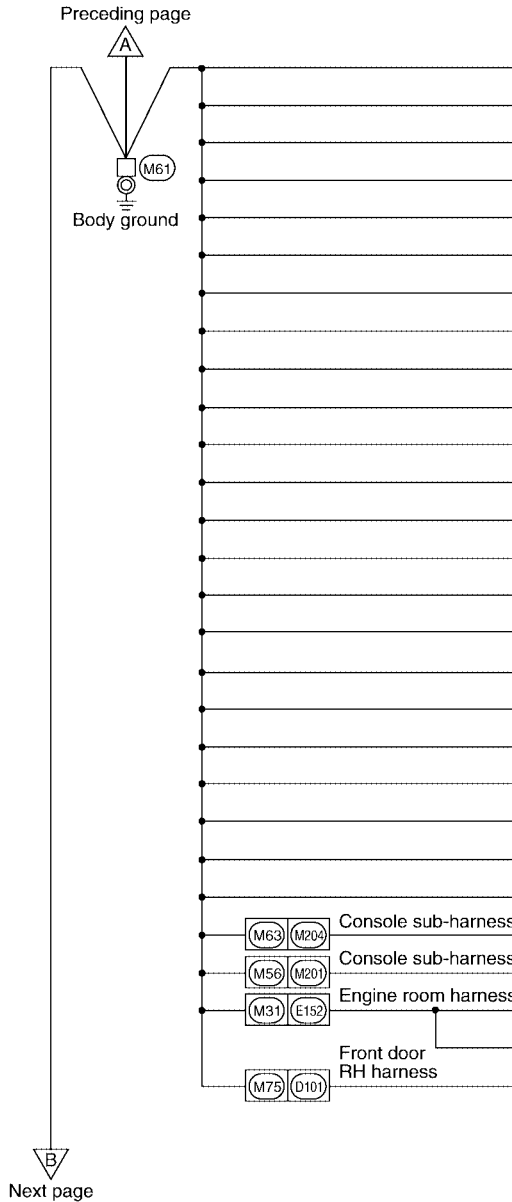
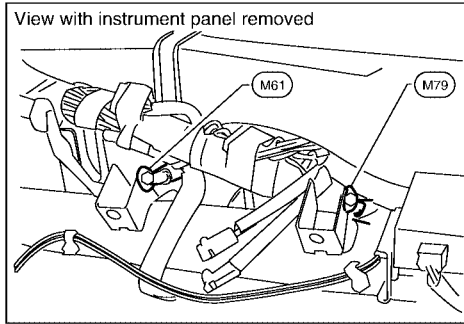
GROUND CIRCUIT Ground Distribution MAIN HARNESS



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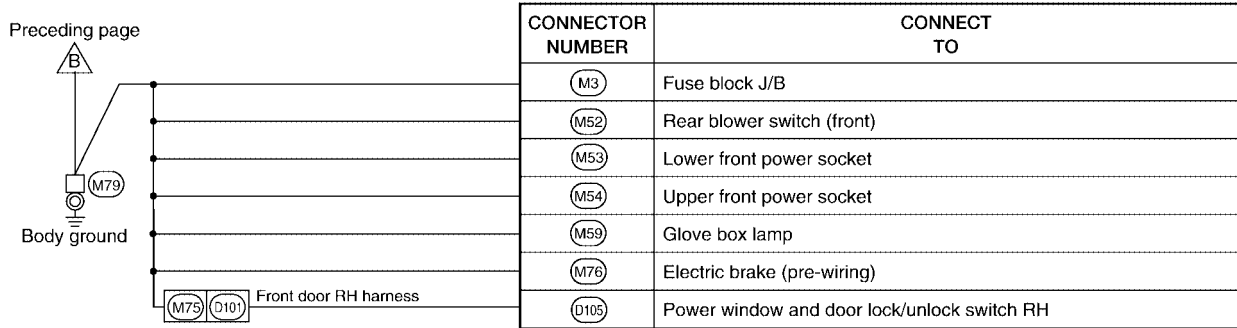
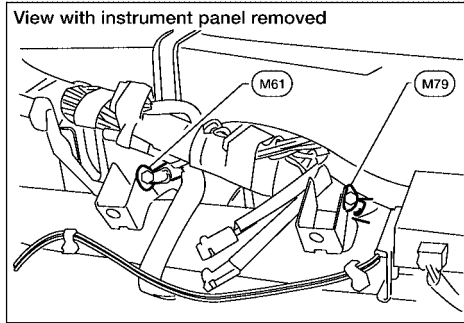
GROUND CIRCUIT



CONNECTOR NUMBER	CONNECT TO
(M13)	Front passenger air bag off indicator
(M24)	Combination meter (Terminal No. 13)
(M34)	Automatic drive positioner control unit (Terminal No. 40)
(M35)	Air bag diagnosis sensor
(M47)	Steering angle sensor
(M49)	Front air control
(M51)	Front blower switch
(M55)	Hazard switch
(M93)	Display unit (Terminal No. 1)
(M94)	Display control unit (Terminal No. 3)
(M122)	Variable blower control
(M139)	Diode-1
(M152)	Transfer control unit (Terminal No. 3) (all-mode 4WD)
(M152)	Transfer control unit (Terminal No. 6) (all-mode 4WD)
(M152)	Transfer control unit (Terminal No. 6) (part time 4WD)
(M152)	Transfer control unit (Terminal No. 18) (part time 4WD)
(M153)	Transfer control unit (Terminal No. 45) (all-mode 4WD)
(M153)	Transfer control unit (Terminal No. 32) (part time 4WD)
(M154)	VDC off switch
(M155)	HDC switch
(M156)	A/T device (Terminal No. 2)
(M159)	Door mirror remote control switch (without memory)
(M161)	Front heated seat switch LH
(M207)	Console power socket
(M209)	Rear air control
(E46)	Transfer shift high relay (Terminal No. 1)
(E47)	Transfer shift low relay (Terminal No. 1)
(D107)	Door mirror RH

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GROUND CIRCUIT



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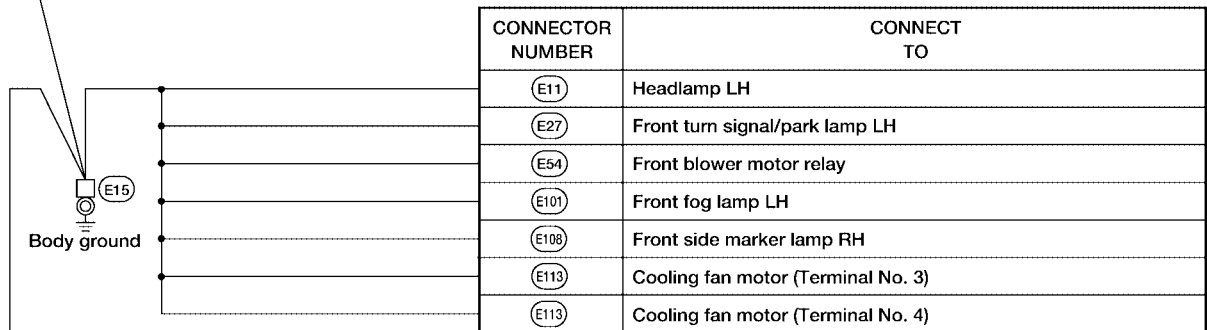
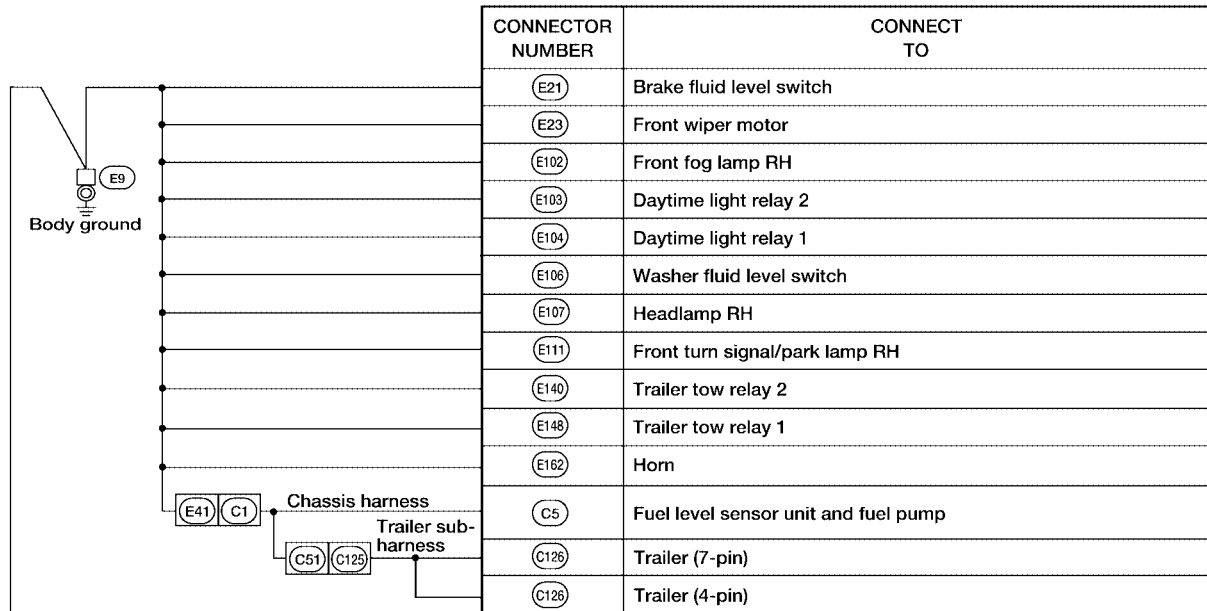
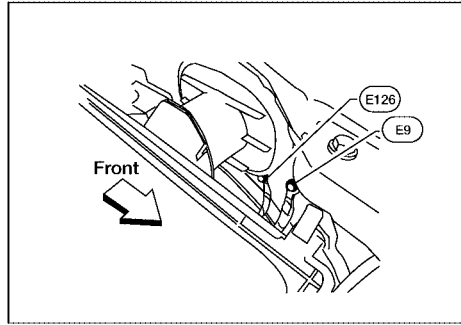
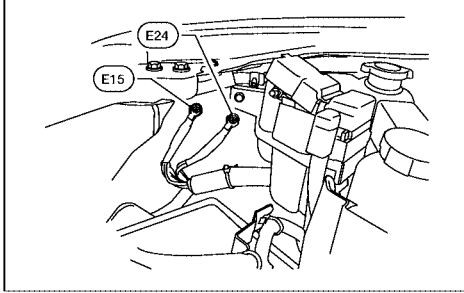
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GROUND CIRCUIT

ENGINE ROOM HARNESS

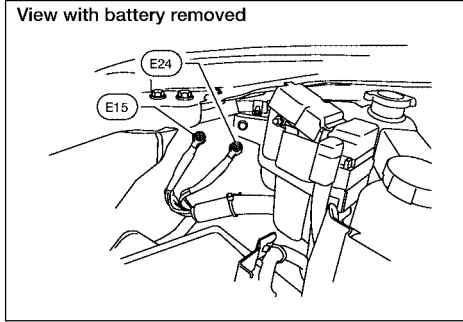
View with battery removed



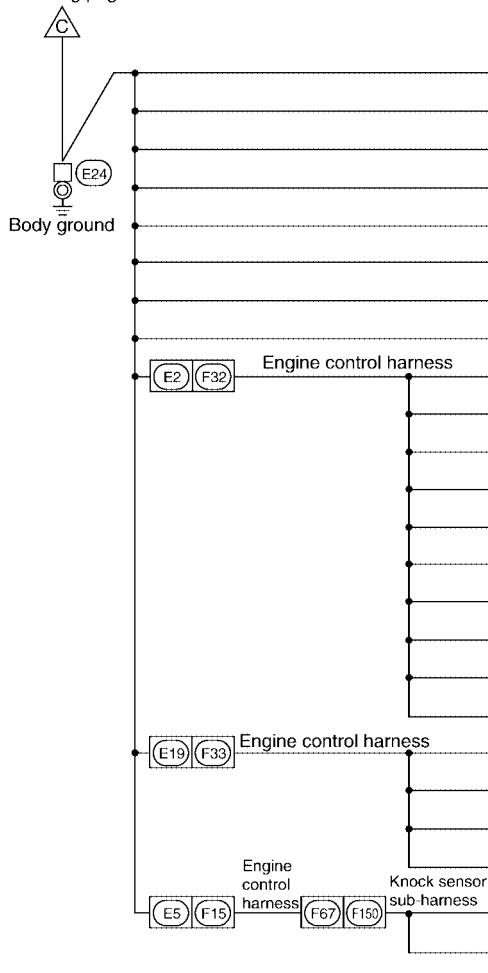
Next page

WKIA4172E

GROUND CIRCUIT



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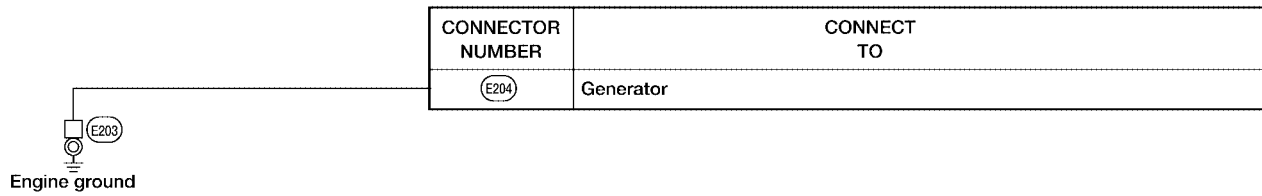
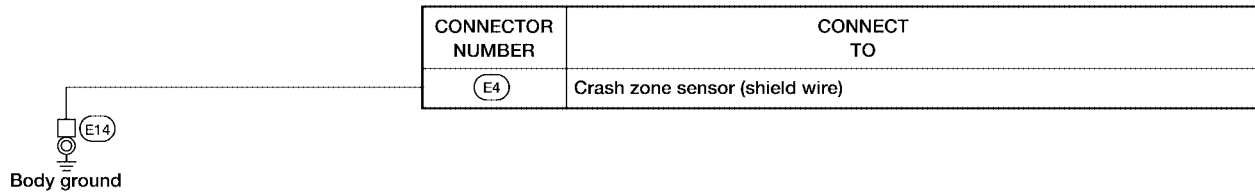
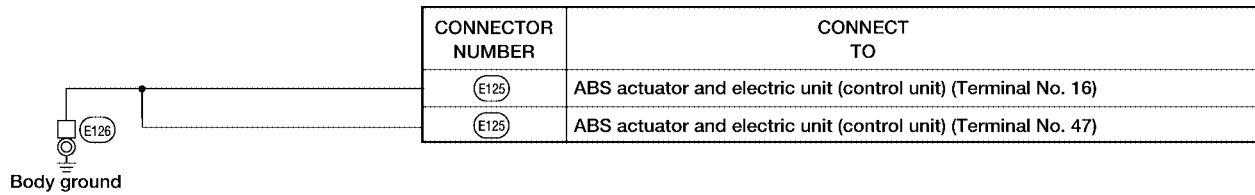
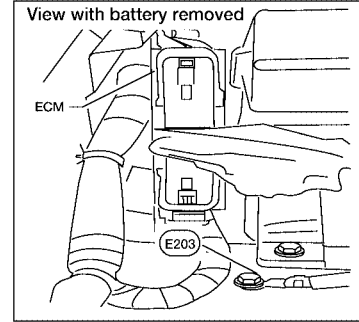
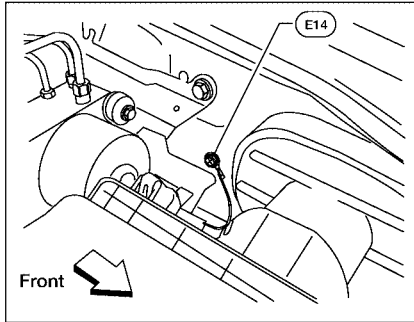
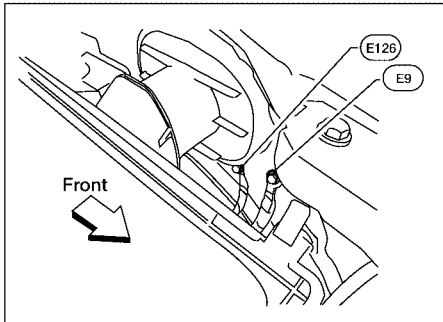
CONNECTOR NUMBER	CONNECT TO
E16	ECM (Terminal No. 115)
E16	ECM (Terminal No. 116)
E46	Transfer shift high relay (Terminal No. 4)
E47	Transfer shift low relay (Terminal No. 4)
E56	Transfer terminal cord assembly (all-mode 4WD) (Terminal No. 19)
E122	IPDM E/R (Terminal No. 38)
E124	IPDM E/R (Terminal No. 59)
E156	Transfer shut off relay 1
E2	F11 Crankshaft position sensor
F32	F23 Camshaft position sensor (PHASE) (bank 2)
	F50 Electric throttle control actuator (shield wire)
	F54 ECM (Terminal No. 1)
	F55 ATP switch (all-mode 4WD)
	F57 Transfer motor
	F58 Transfer control device (all-mode 4WD)
	F59 Wait detection switch (all-mode 4WD)
	F60 Neutral 4LO switch (all-mode 4WD)
	F66 Camshaft position sensor (PHASE) (bank 1)
E19	F55 ATP switch (part time 4WD)
F33	F58 Transfer control device (part time 4WD)
	F59 Wait detection switch (part time 4WD)
	F60 4LO switch (part time 4WD)
E5	F151 Knock sensor (bank 1) shield
F15	F152 Knock sensor (bank 2) shield
F67	
F150	

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WKIA4995E

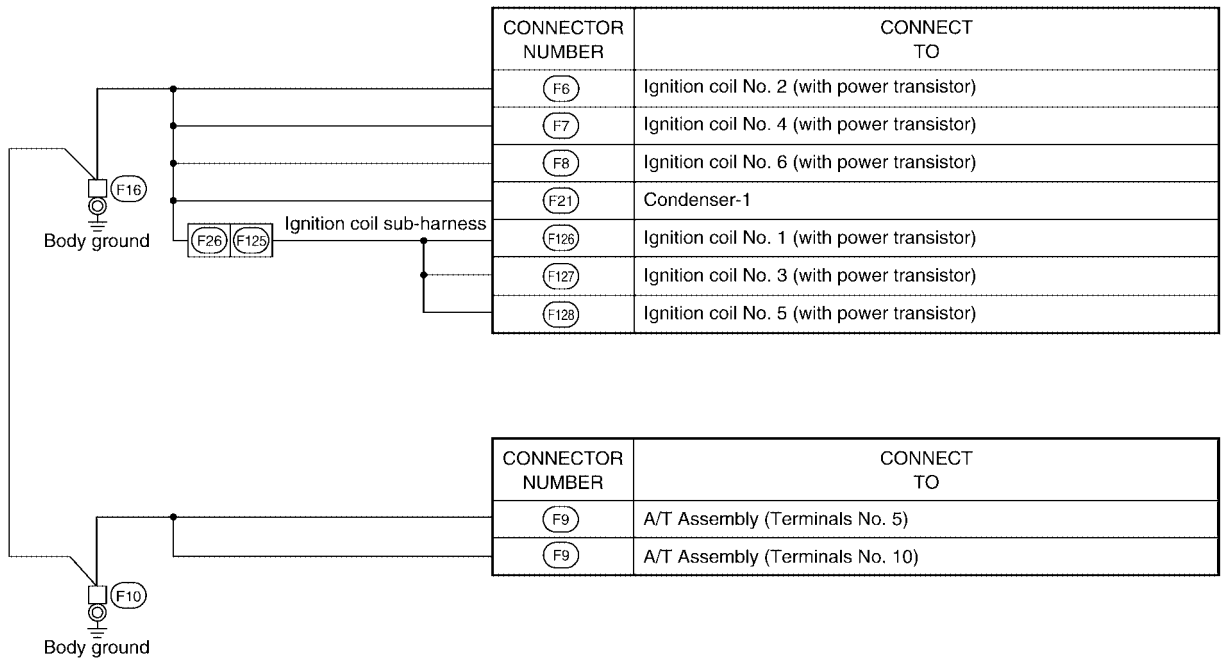
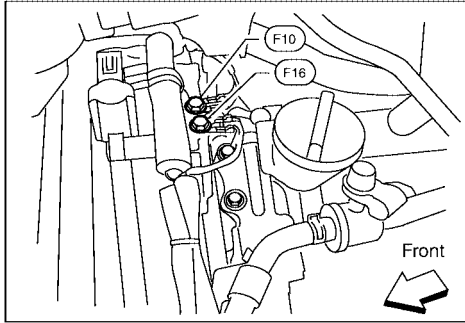
GROUND CIRCUIT



WKIA4996E

GROUND CIRCUIT

ENGINE CONTROL HARNESS

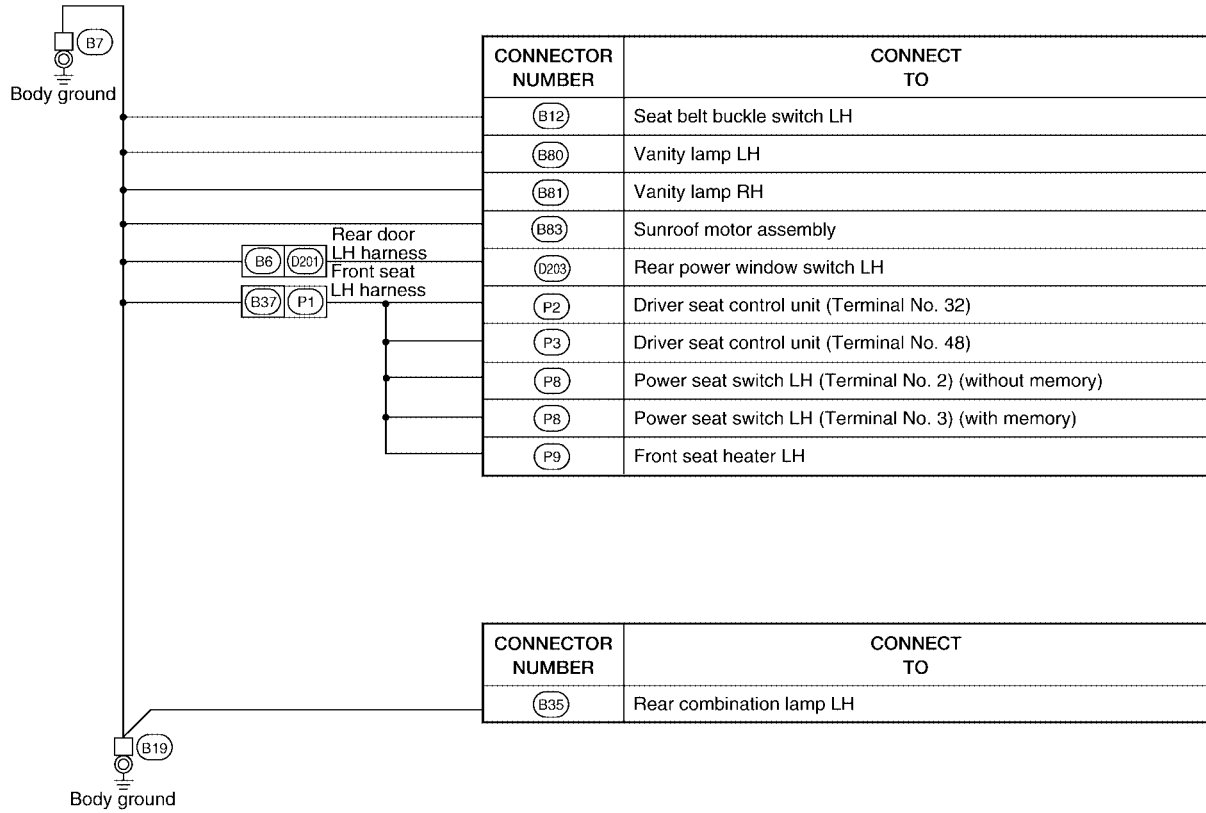
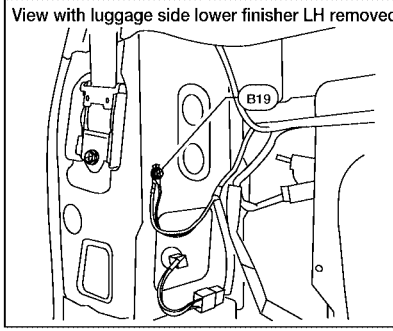
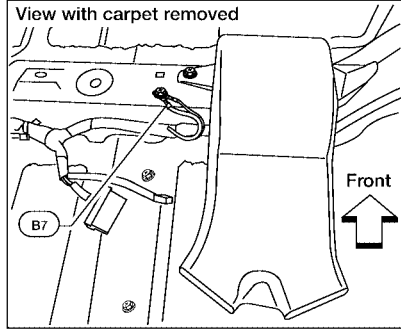


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GROUND CIRCUIT

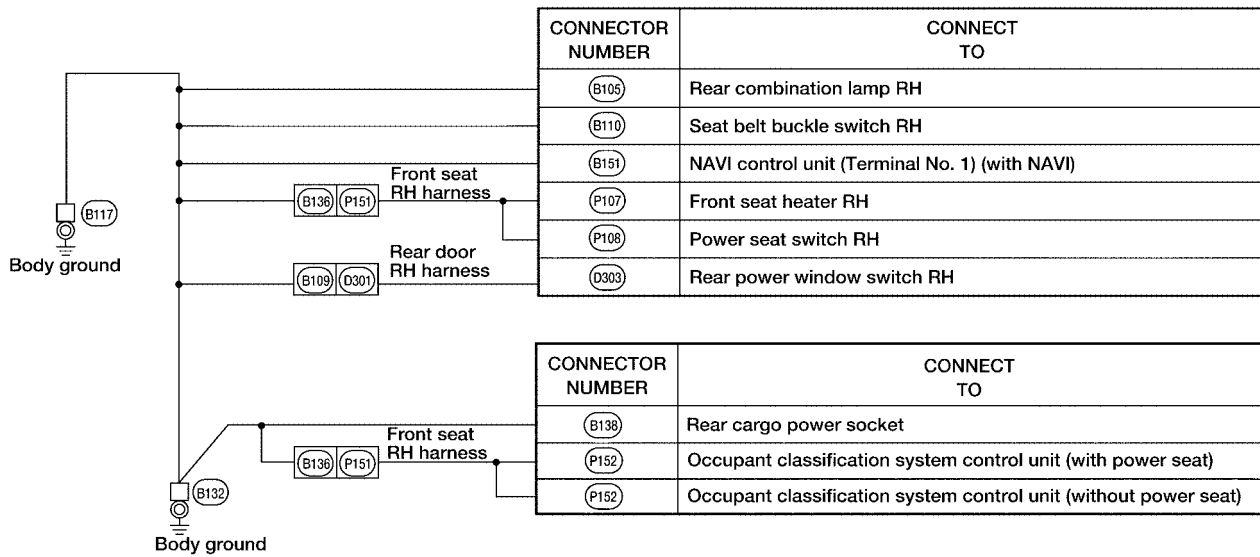
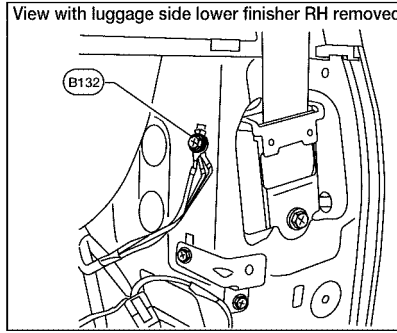
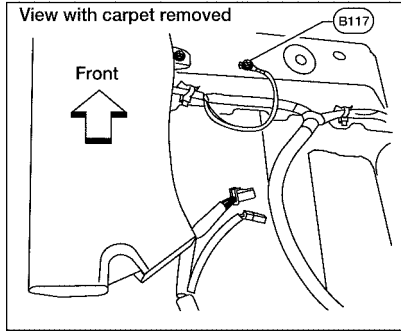
BODY HARNESS



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GROUND CIRCUIT

BODY NO. 2 HARNESS

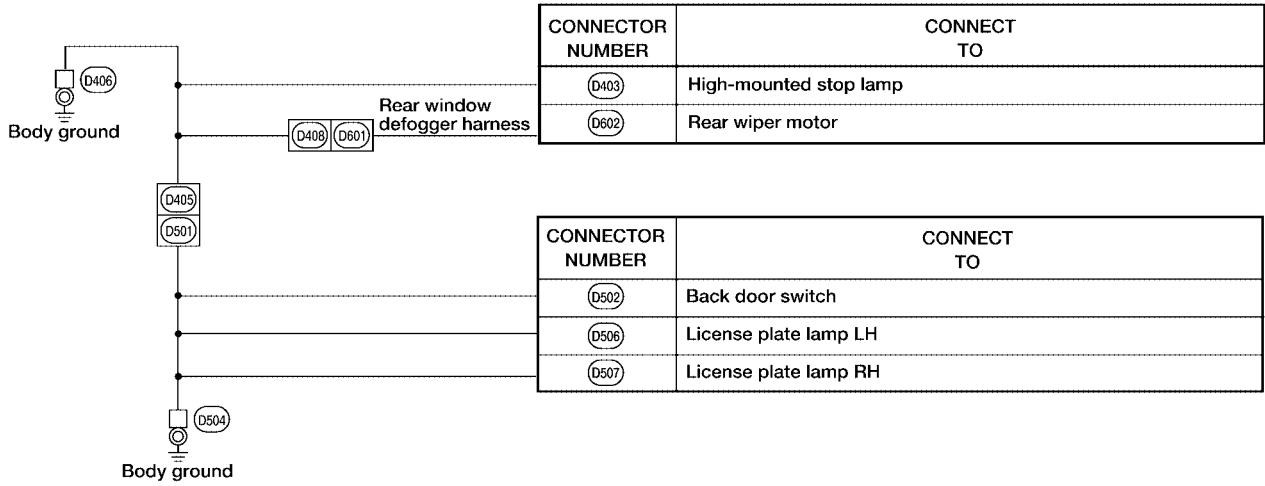
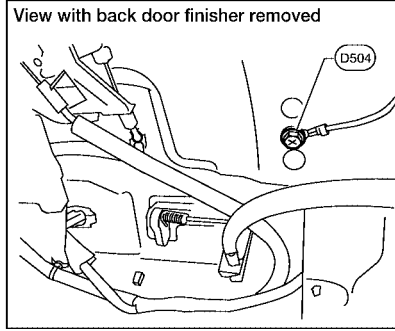
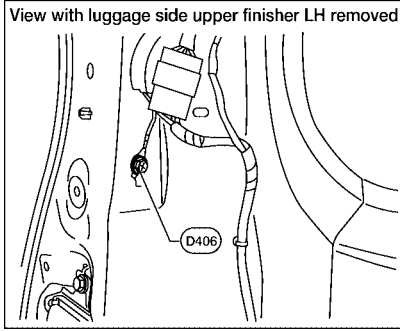


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GROUND CIRCUIT

BACK DOOR NO. 2 AND BACK DOOR HARNESS



WKIA3575E

HARNESS

PFP:24010

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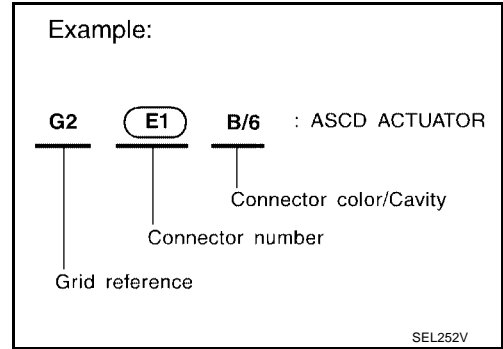
HARNESS

Harness Layout

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) and Generator 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 and Trailer Sub-harness
- Body Harness
- Body No. 2 Harness and Rear Blower Motor Sub-harness
- Room Lamp Harness
- Back Door Harness, Back Door No. 2 Harness, Rear Window Sub-harness, and Rear Window Defogger Sub-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.

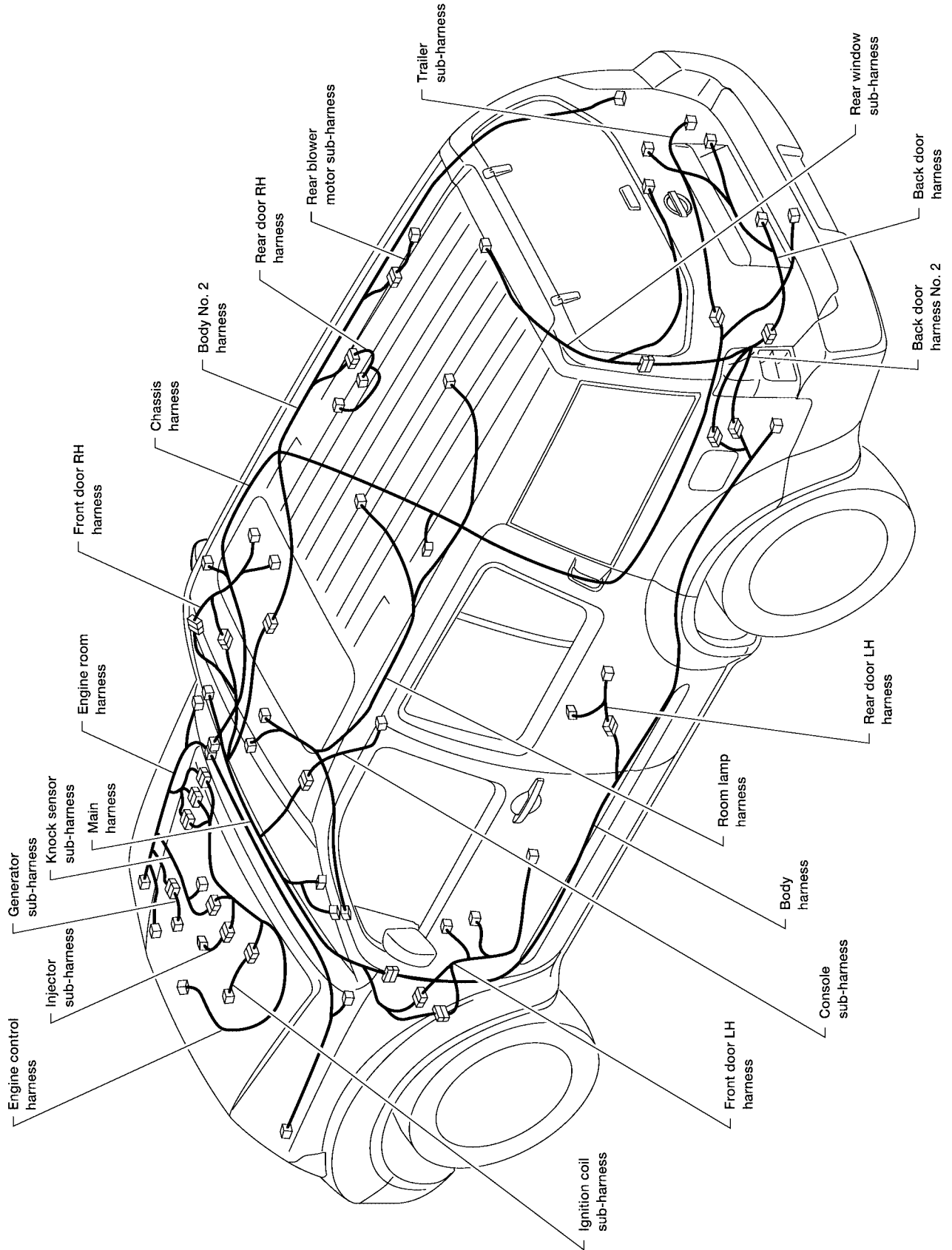
CONNECTOR SYMBOL

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

Connector type	Water proof type		Standard type	
	Male	Female	Male	Female
<ul style="list-style-type: none"> ● Cavity: 4 or Less ● Relay connector 				
<ul style="list-style-type: none"> ● Cavity: From 5 to 8 				
<ul style="list-style-type: none"> ● Cavity: 9 or More 				
<ul style="list-style-type: none"> ● Ground terminal etc. 	—			

HARNESSES

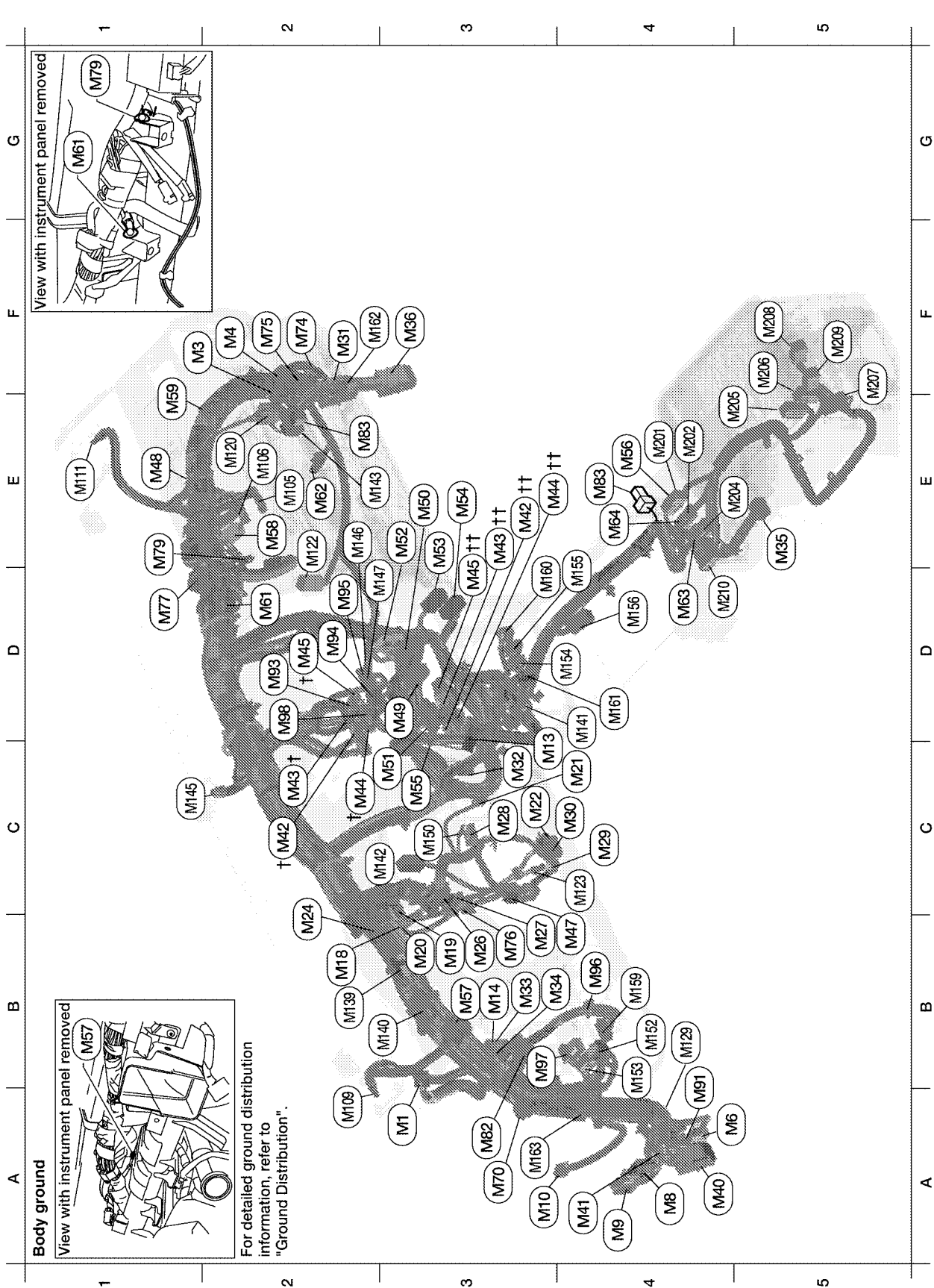
OUTLINE



WKIA4999E

HARNESS

MAIN HARNESS



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WKIA5000E

HARNESSES

A3	M1	W/12	: To R1	C2	M51	W/8	: Front blower switch
F2	M3	W/8	: Fuse block (J/B)	E3	M52	W/8	: Rear blower switch (front)
F2	M4	W/16	: Fuse block (J/B)	E3	M53	B/2	: Power socket
A5	M6	W/8	: To E10	E3	M54	GR/2	: Power socket
A4	M8	W/16	: To D2	C3	M55	W/4	: Hazard switch
A4	M9	W/24	: To D1	E4	M56	W/16	: To M201
A3	M10	Y/4	: To E29	B3	M57	—	: Body ground
C3	M13	W/3	: Front passenger air bag OFF indicator	E2	M58	B/6	: Intake door motor
B3	M14	W/16	: Pedal adjusting control unit	E2	M59	BR/2	: Glove box lamp
B2	M18	W/40	: BCM (body control module)	D2	M61	—	: Body ground
B3	M19	W/15	: BCM (body control module)	E3	M62	B/2	: Front blower motor
B3	M20	B/15	: BCM (body control module)	D4	M63	W/6	: To M204
C4	M21	W/4	: NATS antenna amp.	D4	M64	W/6	: To M202
C3	M22	W/16	: Data link connector	A3	M70	BR/1	: To M350 (with Sirius satellite tuner)
B2	M24	W/40	: Combination meter	A3	M70	V/1	: To M350 (with XM satellite tuner)
B3	M26	W/6	: Ignition switch	F2	M74	W/16	: To D102
B3	M27	W/2	: Key switch	F2	M75	W/12	: To D101
C3	M28	W/16	: Combination switch	B3	M76	W/6	: Electric brake (pre-wiring)
C4	M29	Y/6	: Combination switch (spiral cable)	D2	M77	Y/4	: Front passenger air bag module (service replacement)
C4	M30	GR/8	: Combination switch (spiral cable)	E1	M79	—	: Body ground
F2	M31	SMJ	: To E152	A3	M82	W/2	: Circuit breaker-2
C3	M32	W/4	: In-vehicle sensor	E4	M83	W/4	: To B142
B3	M33	W/32	: Automatic drive positioner control unit	B4	M91	W/16	: To E26
B4	M34	W/16	: Automatic drive positioner control unit	D2	M93	W/24	: Display unit
E5	M35	Y/28	: Air bag diagnosis sensor unit	D2	M94	W/24	: Display control unit (with NAVI)
F3	M36	SMJ	: To B149	D2	M95	W/32	: Display control unit (with NAVI)
A4	M40	SMJ	: To B69	B4	M96	BR/6	: Pedal adjusting switch
A4	M41	W/12	: Pre-wiring for satellite radio tuner	B4	M97	BR/5	: Heated seat relay
A4	M41	W/12	: Satellite radio tuner	D2	M98	W/16	: AV switch
C2	M42	W/12†	: Audio unit (without NAVI)	E2	M105	Y/2	: Front passenger air bag module
E3	M42	W/ 12††	: Audio unit (with NAVI)	E2	M106	O/2	: Front passenger air bag module
C2	M43	W/10†	: Audio unit (without NAVI)	B2	M109	BR/2	: Front tweeter LH
E3	M43	W/ 10††	: Audio unit (with NAVI)	E1	M111	BR/2	: Front tweeter RH
C2	M44	W/6†	: Audio unit (without NAVI)	E2	M120	W/4	: Remote keyless entry receiver
E3	M44	W/6††	: Audio unit (with NAVI)	E2	M122	W/4	: Variable blower control (with ATC)
D2	M45	W/16†	: Audio unit (without NAVI)	E2	M122	B/4	: Front blower motor resistor (with MTC)
D3	M45	W/ 16††	: Audio unit (with NAVI)	C4	M123	W/2	: Tire pressure warning check connector
B4	M47	W/8	: Steering angle sensor	B4	M129	BR/1	: Satellite radio tuner (with Sirius satellite tuner)
E1	M48	BR/2	: To M501	B4	M129	V/1	: Satellite radio tuner (with XM satellite tuner)
D3	M49	B/26	: Front air control	B3	M139	B/2	: Diode-1
E3	M50	W/18	: Front air control	B3	M140	B/2	: Diode-2

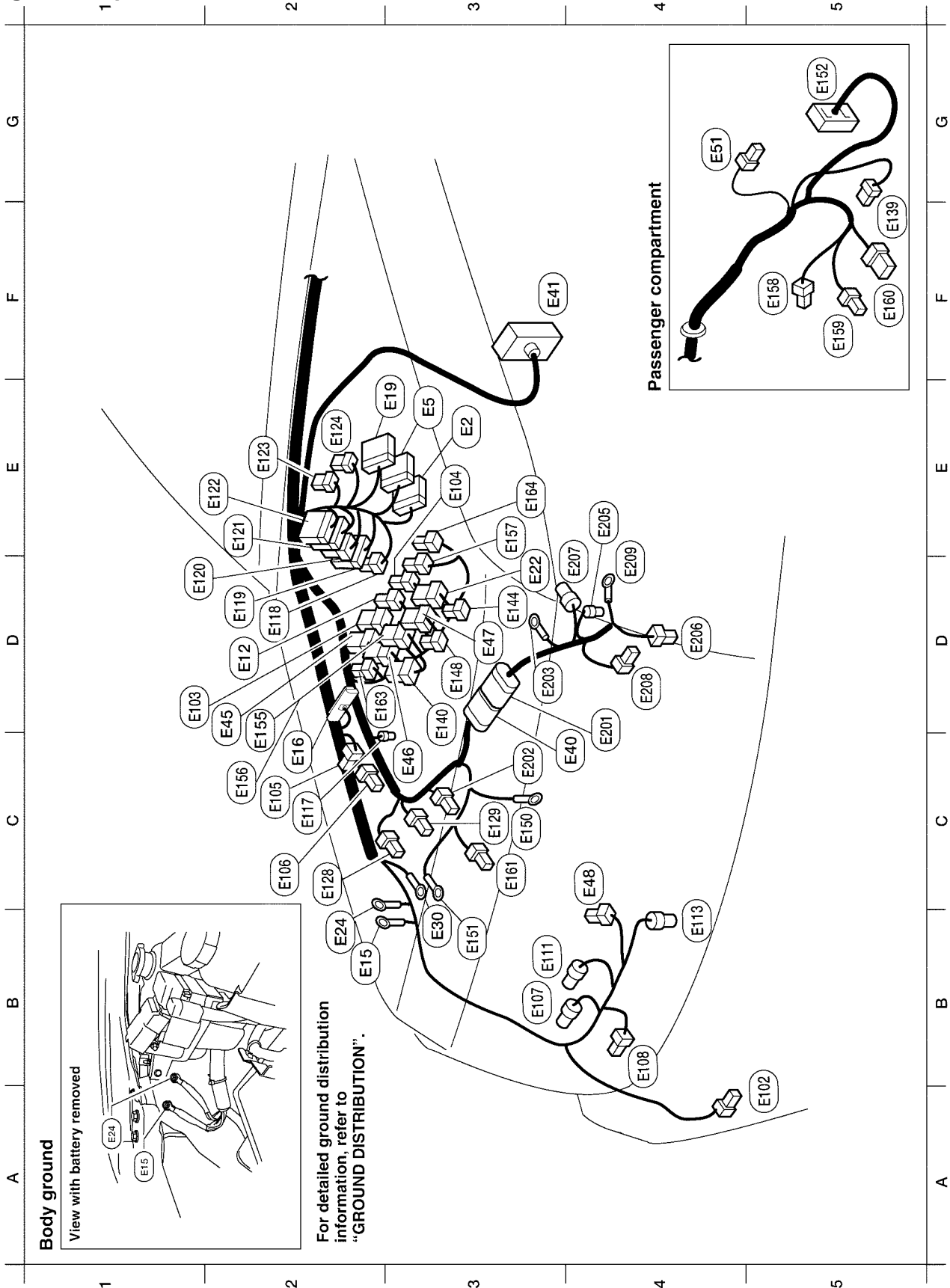
HARNESSES

D4	M141	GR/8	: 4WD shift switch					A
C3	M142	B/6	: Mode door motor					
E3	M143	B/6	: Air mix door motor (passenger)					
C1	M145	B/4	: Optical sensor					B
E2	M146	W/2	: Intake sensor					
D2	M147	B/6	: Air mix door motor (driver) (with ATC)					
D2	M147	B/6	: Air mix door motor (front) (with MTC)					C
C3	M150	BR/2	: Ignition keyhole illumination					
B4	M152	W/26	: Transfer case control unit (part time 4WD)					D
B4	M153	W/24	: Transfer case control unit (part time 4WD)					E
D4	M153	G/24	: Transfer case control unit (all-mode 4WD)					
B4	M153	W/24	: Transfer case control unit (part time 4WD)					F
D4	M153	G/24	: Transfer case control unit (all-mode 4WD)					G
D4	M154	GR/6	: VDC off switch					
E4	M155	W/8	: HDC switch					
D4	M156	W/10	: A/T device					H
B2	M157	W/2	: Diode-5					
B4	M159	W/16	: Door mirror remote control switch					
D4	M160	BR/6	: Front heated seat switch RH					I
D4	M161	BR/6	: Front heated seat switch LH					
F2	M162	W/2	: To B131					J
A3	M163	BR/6	: Rear blower motor relay					
Console sub-harness								
E4	M201	W/16	: To M56					PG
E4	M202	W/6	: To M64					
D4	M204	W/6	: To M63					
E5	M205	GR/16	: DVD player					L
E5	M206	L/16	: DVD player					
F5	M207	B/2	: Console power socket					M
F5	M208	GR/5	: Rear air control					

HARNESS

ENGINE ROOM HARNESS (RH VIEW)

Engine Compartment



WKIA5001E

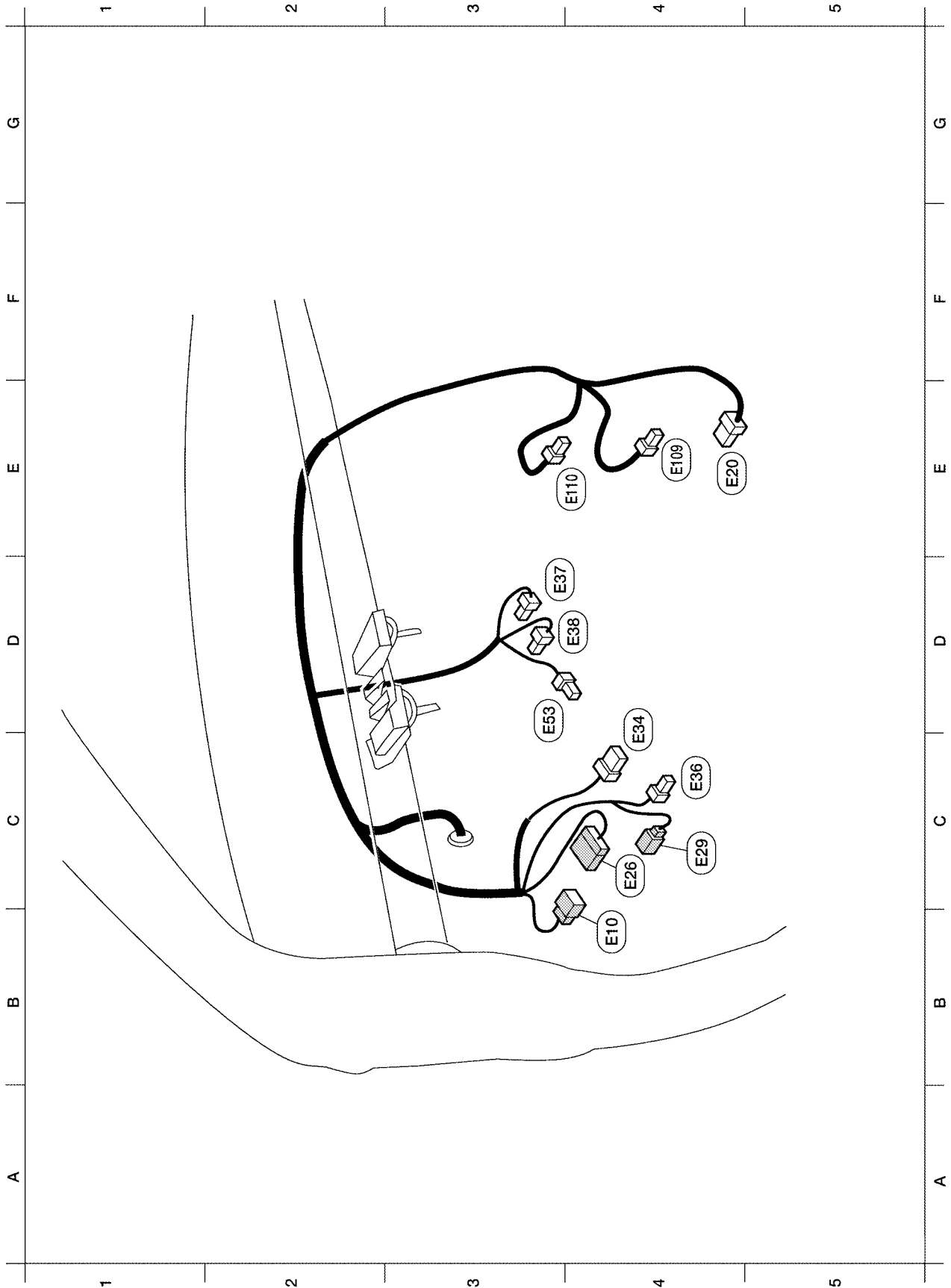
Refer to [PG-52, "ENGINE ROOM HARNESS \(LH VIEW\)"](#) for continuation of engine room harness.

HARNESS

E3	E2	W/16	: To F32	E2	E123	BR/8	: IPDM E/R (intelligent power distribution module engine room)	A	
E3	E5	W/24	: To F14	E2	E124	B/6	: IPDM E/R (intelligent power distribution module engine room)	B	
D2	E12	L/5	: Stop lamp relay	C2	E128	GR/2	: Fusible link box (battery)	C	
B2	E15	—	: Body ground	C3	E129	BR/2	: Fusible link box (battery)	D	
C2	E16	B/40	: ECM	F5	E139	W/8	: To B107	E	
E3	E19	W/16	: To F33	D3	E140	BR/6	: Trailer tow relay 2	F	
D3	E22	BR/6	: Front blower motor relay	D3	E144	L/4	: Heater pump relay	G	
B2	E24	—	: Body ground	D3	E148	L/4	: Trailer tow relay 1	H	
D2	E25	BR/6	: Rear blower motor relay	C3	E150	—	: Battery ground	I	
B3	E30	—	: Fusible link box (battery)	B3	E151	—	: Negative battery cable	J	
D3	E40	GR/9	: To E201	G5	E152	SMJ	: To M31	PG	
F4	E41	SMJ	: To C1 (located RH rear of engine compartment)	C2	E155	L/4	: Transfer shut off relay (all-mode 4WD)	L	
D3	E42	—	: Relay box	C2	E156	L/4	: Transfer shut off relay 1 (part time 4WD)	M	
D2	E45	BR/6	: Back-up lamp relay	E3	E157	L/4	: Transfer shut off relay 2 (part time 4WD)		
D3	E46	B/5	: Transfer shift high relay	F5	E158	B/1	: Fuse block (J/B)		
D3	E47	B/5	: Transfer shift low relay	F5	E159	B/2	: Fuse block (J/B)		
C4	E48	B/3	: Refrigerant pressure sensor	F5	E160	W/8	: Fuse block (J/B)		
G4	E51	W/2	: To B104	C3	E161	B/3	: Battery current sensor		
A5	E102	B/2	: Front fog lamp RH	E3	E164	L/4	: Trailer turn relay LH		
D2	E103	B/5	: Daytime light relay 1	D2	E163	L/4	: Trailer turn relay RH		
E3	E104	L/4	: Daytime light relay 2	Generator sub-harness					
C2	E105	B/2	: Front and rear washer motor	D3	E201	GR/9	: To E40		
C2	E106	BR/2	: Washer fluid level switch	C3	E202	B/1	: Fusible link box (battery)		
B3	E107	B/3	: Front headlamp RH	E4	E203	—	: Body ground		
B4	E108	GR/2	: Front side marker lamp RH	E4	E205	GR/3	: Generator		
B3	E111	GR/3	: Front turn signal/park lamp RH	D4	E206	—	: Generator		
B4	E113	GR/4	: Cooling fan motor	D4	E207	GR/1	: Starter motor		
C2	E117	GR/2	: Front wheel sensor RH	D5	E208	B/3	: Oil pressure sensor		
D2	E118	B/2	: IPDM E/R (intelligent power distribution module engine room)	D3	E209	—	: Generator		
D2	E119	W/18	: IPDM E/R (intelligent power distribution module engine room)						
D1	E120	W/6	: IPDM E/R (intelligent power distribution module engine room)						
E2	E121	BR/12	: IPDM E/R (intelligent power distribution module engine room)						
E2	E122	W/12	: IPDM E/R (intelligent power distribution module engine room)						

HARNESS

Passenger Compartment



WKIA5004E

HARNESS

B4	E10	W/6	: To M6					A
E4	E20	B/6	: Accelerator pedal position (APP) sensor					
C4	E26	W/16	: To M91					B
C4	E29	Y/4	: To M10					
C4	E34	W/8	: To B40					
C4	E36	W/2	: To B42					C
D4	E37	BR/2	: ASCD brake switch					
D4	E38	W/4	: Stop lamp switch					D
C3	E53	B/1	: Park brake switch					
E4	E109	GR/2	: Pedal adjusting motor					
E3	E110	W/4	: Pedal adjusting motor					E

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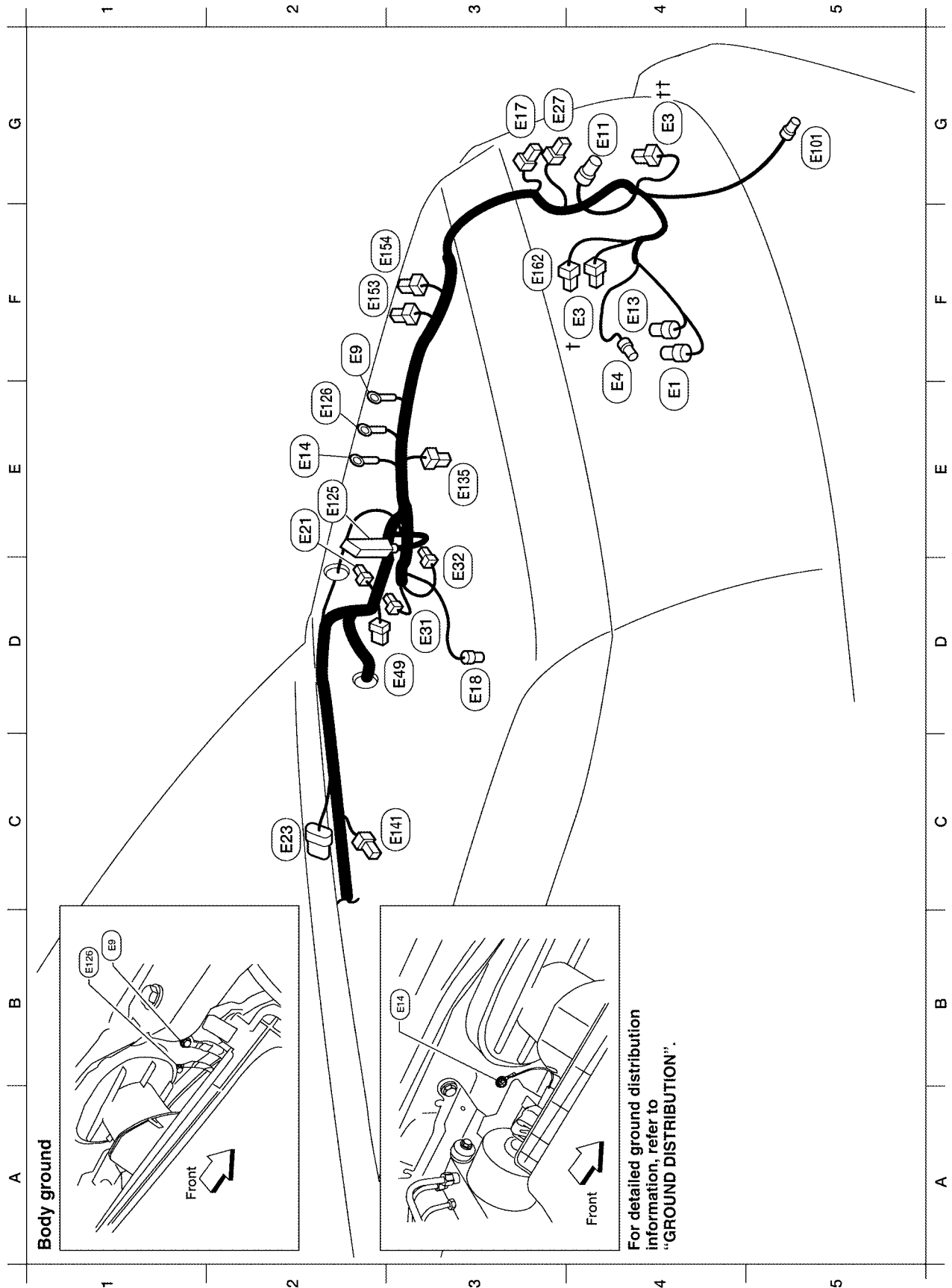
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HARNESS

ENGINE ROOM HARNESS (LH VIEW)

Engine Compartment



Refer to [PG-48, "ENGINE ROOM HARNESS \(RH VIEW\)"](#) for continuation of engine room harness.

WKIA5005E

HARNESS

E4	E1	B/2	: Ambient sensor 1					A
F4	E3†	B/1	: Horn (without dual note horn)					
F4	E3††	B/2	: Horn (with dual note horn)					
E4	E4	Y/2	: Crash zone sensor					B
F2	E9	—	: Body ground					
G4	E11	B/3	: Front headlamp LH					C
F4	E13	GR/2	: Ambient sensor 2					
E2	E14	—	: Body ground					
G3	E17	GR/2	: Front side marker lamp LH					D
D3	E18	GR/2	: Front wheel sensor LH					
E2	E21	GR/2	: Brake fluid level switch					
C2	E23	GR/5	: Front wiper motor					E
G3	E27	GR/3	: Front turn signal/park lamp LH					
D3	E31	B/3	: Front pressure sensor					F
D3	E32	B/3	: Rear pressure sensor					
D3	E49	B/6	: Active booster					
G5	E101	B/2	: Front fog lamp LH					G
E2	E125	B/47	: ABS actuator and electric unit (control unit)					H
E2	E126	—	: Body ground					
E3	E135	GR/2	: Transfer dropping resistor					
C3	E141	BR/2	: Heater pump					I
F2	E153	W/2	: Transfer motor relay (all-mode 4WD)					
F2	E154	W/2	: Transfer motor relay (all-mode 4WD)					
F3	E162	B/1	: Horn					J

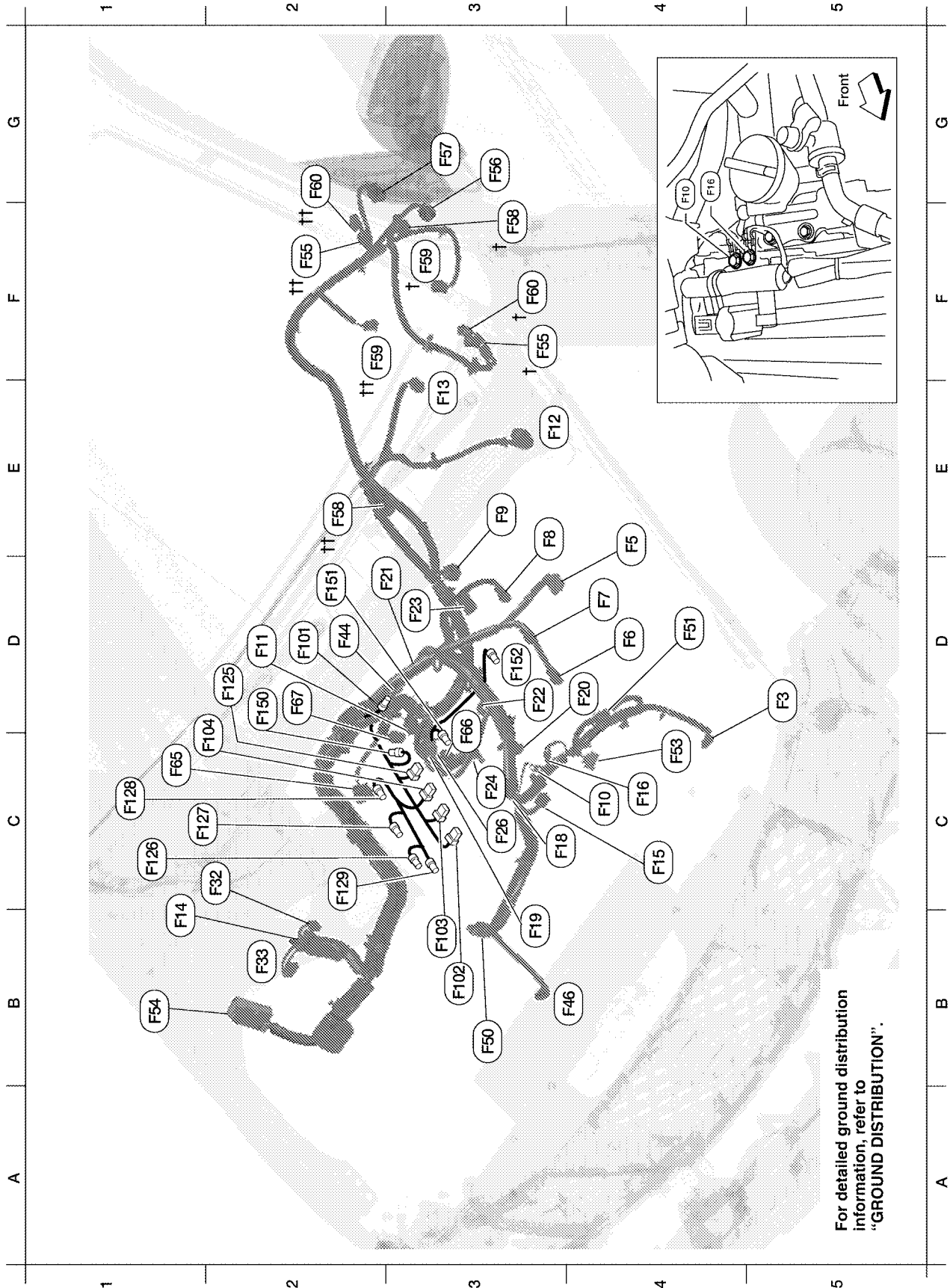
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HARNESS

ENGINE CONTROL HARNESS



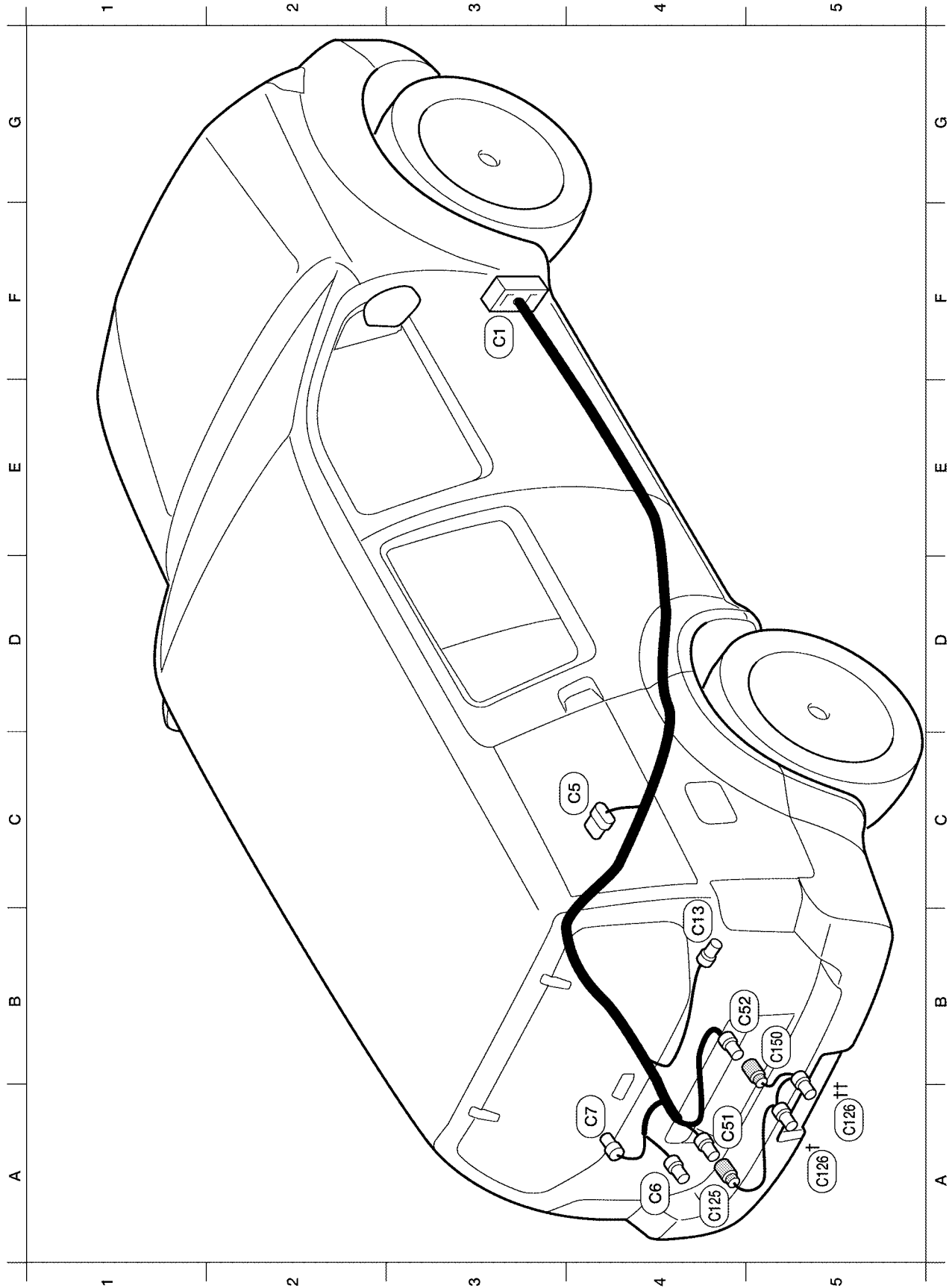
WKIA5006E

HARNESS

D5	F3	B/1	: A/C Compressor	E2	F58††	GR/6	: Transfer control device (all-mode 4WD)	A	
E4	F5	B/6	: Air fuel ratio (A/F) sensor 1 (bank 2)	F3	F59†	GR/2	: Wait detection switch (part time 4WD)	B	
D4	F6	GR/3	: Ignition coil No. 2 (with power transistor)	F2	F59††	B/2	: Wait detection switch (all mode 4WD)	C	
D4	F7	GR/3	: Ignition coil No. 4 (with power transistor)	G2	F60†	GR/2	: 4LO switch (part time 4WD)	D	
E3	F8	GR/3	: Ignition coil No. 6 (with power transistor)	C1	F60††	GR/2	: 4LO switch (all-mode 4WD)	E	
E3	F9	G/10	: A/T assembly		F65	B/6	: Air fuel ratio (A/F) sensor 1 (bank 1)	F	
C4	F10	—	: Engine ground	D3	F66	GR/3	: Camshaft position sensor (PHASE) (bank 1)	G	
D2	F11	B/3	: Crankshaft position sensor (POS)	D2	F67	L/4	: To F150	H	
E3	F12	G/4	: Heated oxygen sensor 2 (bank 2)	Injector sub-harness					I
E3	F13	L/4	: Heated oxygen sensor 2 (bank 1)	D2	F101	GR/4	: To F44	J	
B1	F14	W/24	: To E5	B3	F102	GR/2	: Fuel injector No. 1		
C4	F15	L/2	: EVAP canister purge volume control solenoid valve	B3	F103	GR/2	: Fuel injector No. 3		
C4	F16	—	: Engine ground	C1	F104	GR/2	: Fuel injector No. 5		
C3	F18	GR/2	: Fuel injector No. 2	Ignition coil sub-harness					
B3	F19	B/2	: VIAS control solenoid valve	D2	F125	G/8	: To F26		
D4	F20	GR/2	: Fuel injector No. 4	C1	F126	GR/3	: Ignition coil No. 1 (with power transistor)		
D2	F21	GR/2	: Condenser-1	C1	F127	GR/3	: Ignition coil No. 3 (with power transistor)		
D3	F22	GR/2	: Fuel injector No. 6	C1	F128	GR/3	: Ignition coil No. 5 (with power transistor)		
D3	F23	B/3	: Camshaft position sensor (PHASE) (bank 1)	C2	F129	G/2	: Intake valve timing control solenoid valve (bank 1)		
C3	F24	GR/2	: Engine coolant temperature sensor	Knock sensor sub-harness					
C3	F26	G/8	: To F125	D2	F150	L/4	: To F67		
C3	F27	B/1	: Starter motor	D2	F151	B/2	: Knock sensor (bank 1)		
C2	F32	W/16	: To E2	D3	F152	B/2	: Knock sensor (bank 2)		
B2	F33	W/16	: To E19						
B4	F39	—	: Fusible link box (battery)						
D2	F44	GR/4	: To F101						
B4	F46	B/3	: Power steering pressure sensor						
B3	F50	B/6	: Electric throttle control actuator						
D4	F51	G/2	: Intake valve timing control solenoid valve (bank 2)						
C4	F53	B/6	: Mass air flow sensor						
B1	F54	B/81	: ECM						
F3	F55†	B/2	: ATP switch (all-mode 4WD)						
F2	F55††	B/2	: ATP switch (part time 4WD)						
G3	F56	B/8	: Terminal cord assembly (all-mode 4WD)						
G3	F57	B/2	: Transfer motor (all-mode 4WD)						
F3	F58†	B/8	: Transfer control device (part time 4WD)						

HARNESS

CHASSIS HARNESS



WKIA5007E

HARNESS

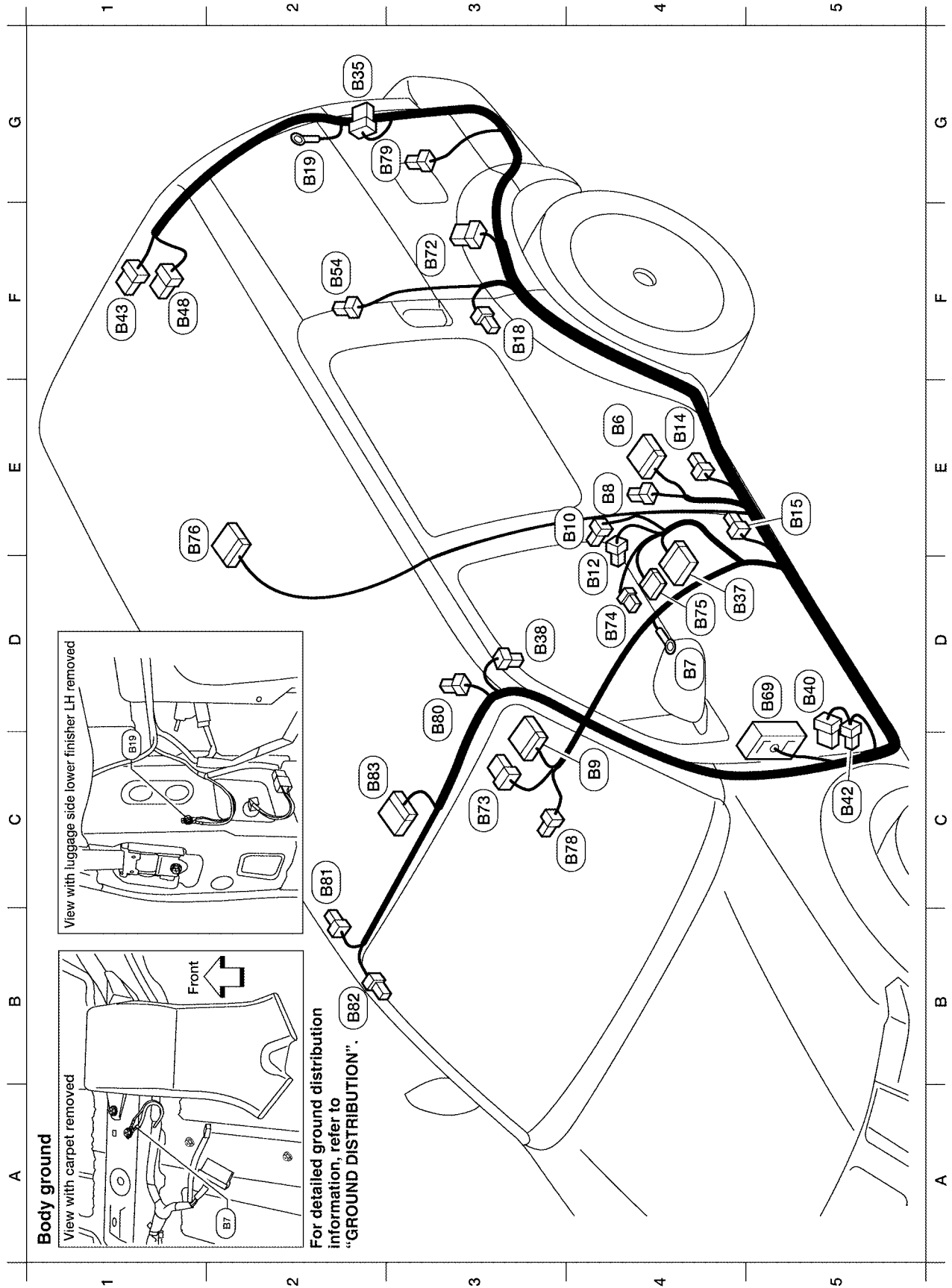
F3	C1	SMJ	: To E41						A
C4	C5	GR/5	: Fuel level sensor unit and fuel pump						B
A4	C6	B/2	: EVAP canister vent control valve						C
A4	C7	GR/3	: EVAP control system pressure sensor						D
B4	C13	GR/4	: Rear wheel sensor assembly						E
A4	C51	GR/6	: To C125						F
B4	C52	B/2	: To C150						G
Trailer sub-harness									H
A4	C125	GR/6	: To C51						I
A5	C126†	B/7	: Trailer (7-pin)						J
A5	C126††	B/4	: Trailer (4-pin)						K
B5	C150	B/2	: To C52						L

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HARNESS

BODY HARNESS



WKIA5008E

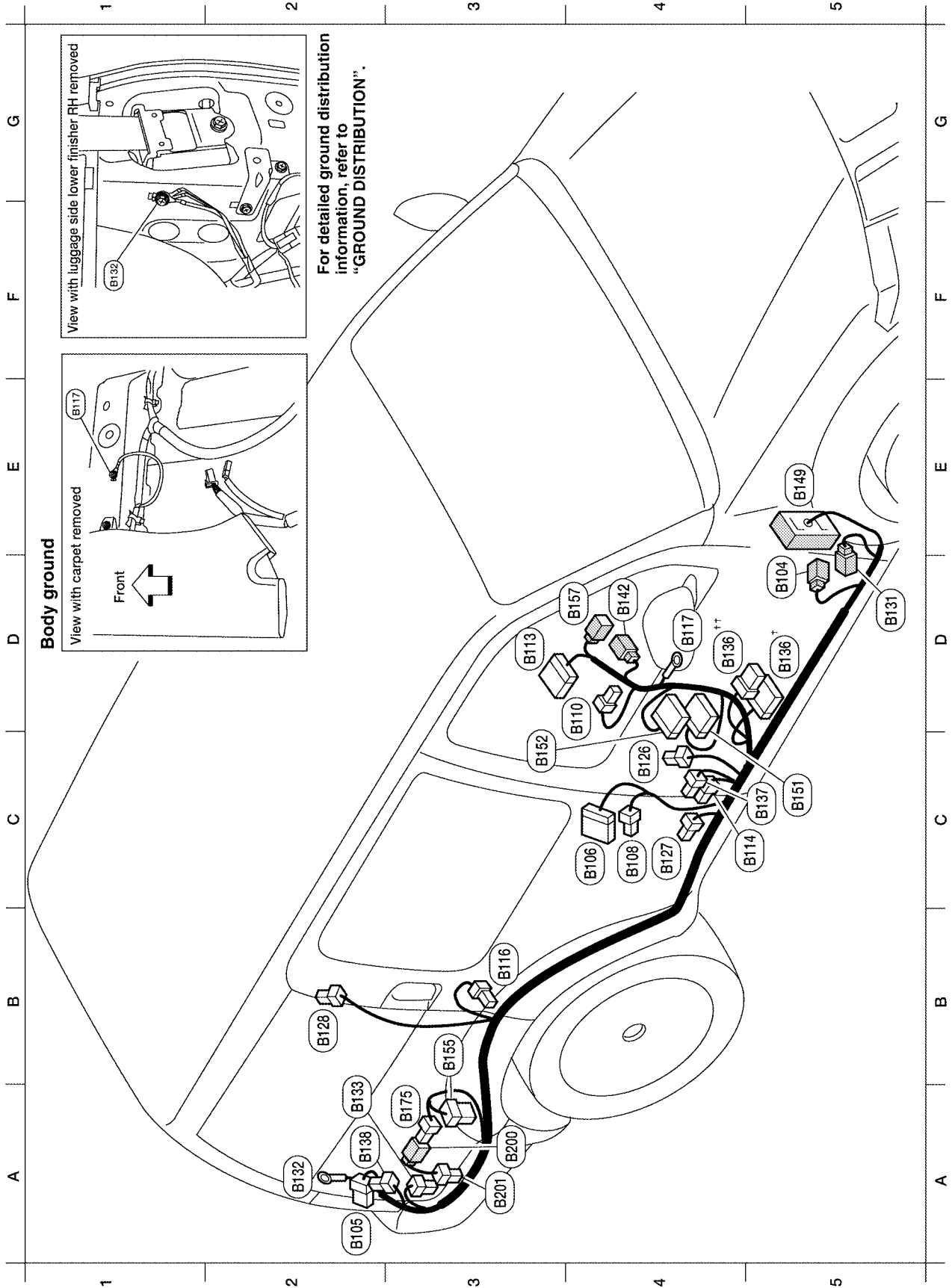
HARNESSES

E4	B6	W/12	: To D201							A
D4	B7	—	: Body ground							
E4	B8	W/3	: Front door switch LH							
C4	B9	Y/12	: Air bag diagnosis sensor unit							B
E4	B10	Y/2	: Front LH side air bag module							
D4	B12	W/3	: Seat belt buckle switch LH							C
E4	B14	Y/2	: Front LH seat belt pre-tensioner							
E5	B15	Y/2	: LH side air bag (satellite) sensor							
F3	B18	W/3	: Rear door switch LH							D
G2	B19	—	: Body ground							
G2	B35	W/6	: Rear combination lamp LH							
D5	B37	W/16	: To P1							E
D3	B38	Y/2	: LH side front curtain air bag module							
D5	B40	W/8	: To E34							F
C5	B42	W/2	: To E36							
F1	B43	W/8	: To D401							
F1	B48	W/6	: To D402							G
F2	B54	Y/2	: LH side rear curtain air bag module							
D5	B69	SMJ	: To M40							H
F3	B72	W/8	: Subwoofer (with BOSE audio system)							
C3	B73	B/6	: Yaw rate/side/decel G sensor							
D4	B74	GR/8	: BOSE speaker amp.							I
D4	B75	B/24	: BOSE speaker amp.							
E1	B76	W/16	: Video monitor							J
C4	B78	Y/2	: To B157							
G3	B79	W/4	: Fuel lid lock actuator							
D3	B80	W/2	: Vanity lamp LH							PG
C2	B81	W/2	: Vanity lamp RH							
B2	B82	Y/2	: RH side front curtain air bag module							
C3	B83	B/10	: Sunroof motor assembly							L

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HARNESS

BODY NO. 2 HARNESS



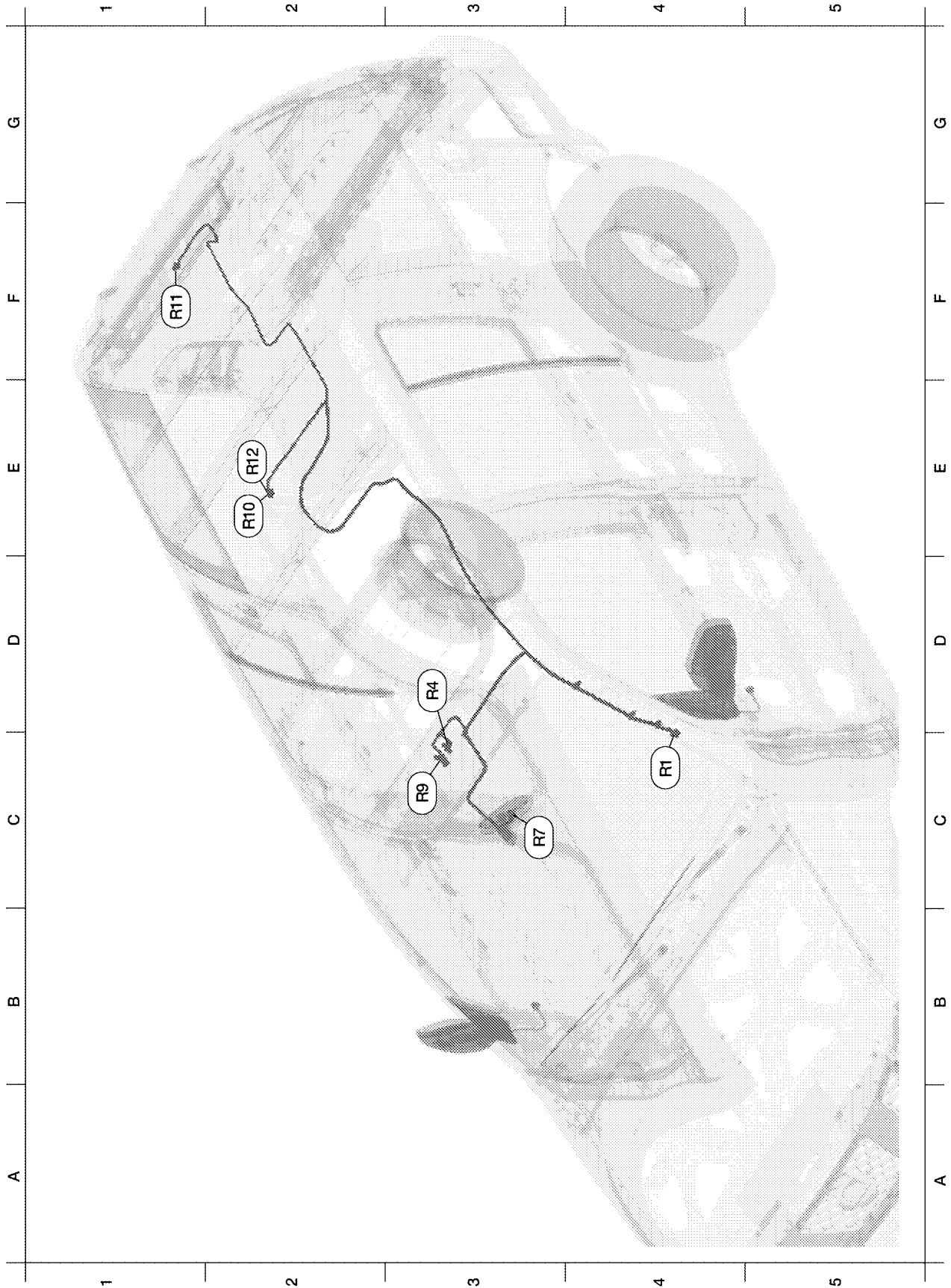
WKIA5009E

HARNESSES

D5	B104	W/2	: To E51					A
A2	B105	W/6	: Rear combination lamp RH					
C4	B106	W/12	: To D301					B
C4	B108	W/3	: Front door switch RH					
D4	B110	W/3	: Seat belt buckle switch RH					C
D3	B113	Y/12	: Air bag diagnosis sensor unit					
C5	B114	Y/2	: RH side air bag (satellite) sensor					D
B3	B116	W/3	: Rear door switch RH					
D4	B117	—	: Body ground					E
C4	B126	Y/2	: Front RH side air bag module					
C4	B127	Y/2	: Front RH seat belt pre-tensioner					F
B2	B128	Y/2	: RH side rear curtain air bag module					
D5	B131	W/2	: To M162					G
A2	B132	—	: Body ground					
A2	B133	W/4	: Rear blower motor resistor					H
D5	†B136	W/16	: To P151 (with power seat)					
D4	††B136	W/8	: To P151 (without power seat)					I
C5	B137	B/3	: Belt tension sensor					J
A2	B138	B/2	: Rear cargo power socket					
D4	B142	W/4	: To M83					PG
E5	B149	SMJ	: To M36					
C5	B151	W/40	: NAVI control unit (with NAVI)					L
C3	B152	W/32	: NAVI control unit (with NAVI)					
B3	B155	B/6	: Air mix door motor (rear)					M
D4	B157	Y/2	: To B78					
A3	B175	W/2	: To B200					
Rear blower motor sub-harness								
A3	B200	W/2	: To B175					
A3	B201	B/2	: Rear blower motor					

HARNESS

ROOM LAMP HARNESS



LKIA0623E

HARNESSES

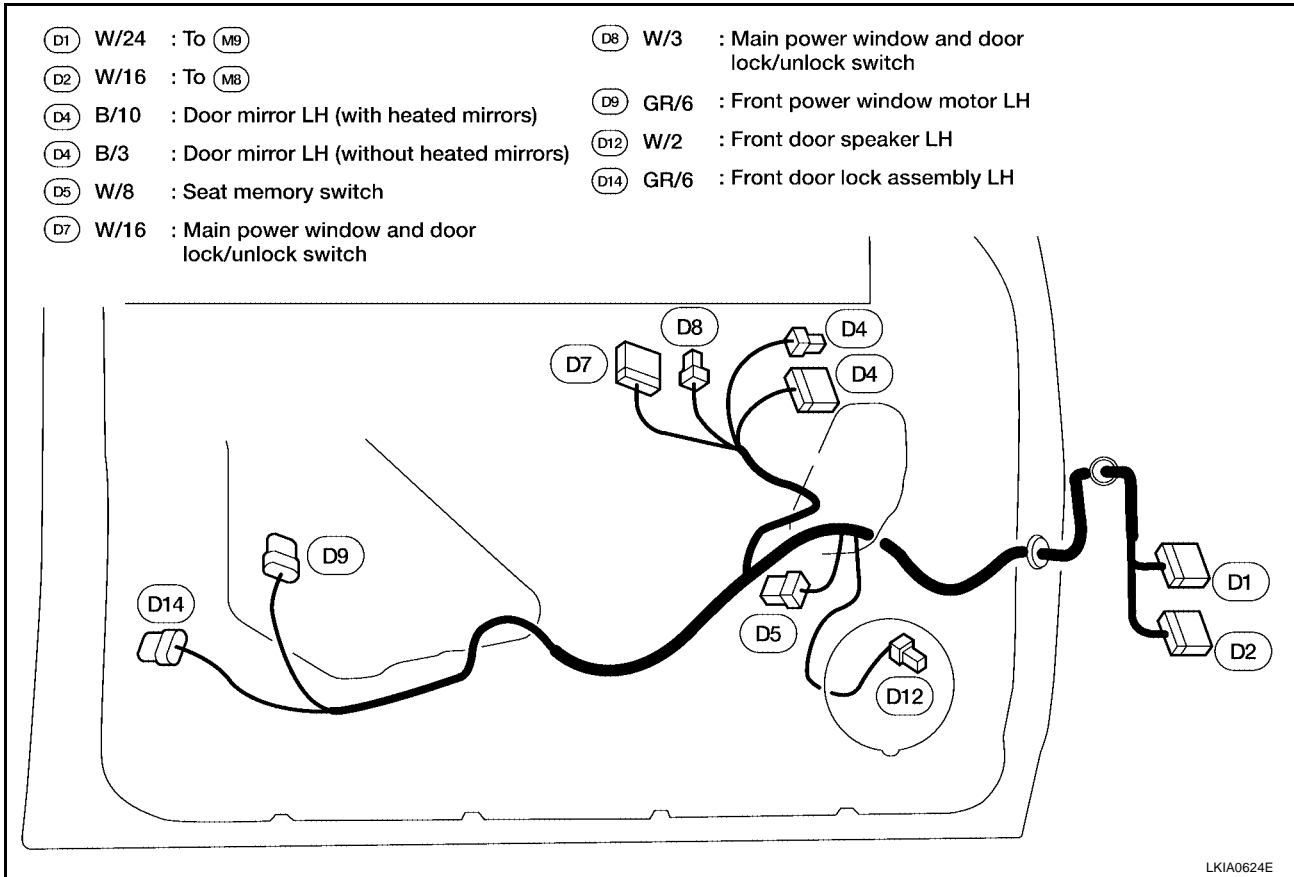
C4	R1	W/12	: To M1					A
D3	R4	W/3	: Sunroof switch					B
C3	R7	W/7	: Auto anti-dazzling inside mirror (without HOMELINK® universal transceiver)					C
C3	R7	B/10	: Auto day/night inside mirror (with HOMELINK® universal transceiver)					D
C3	R9	W/3	: Front room/map lamp assembly					E
E2	R10	W/3	: Personal lamp 2nd row					F
F1	R11	W/2	: Cargo lamp					G
E2	R12	W/3	: Room lamp 2nd row					H

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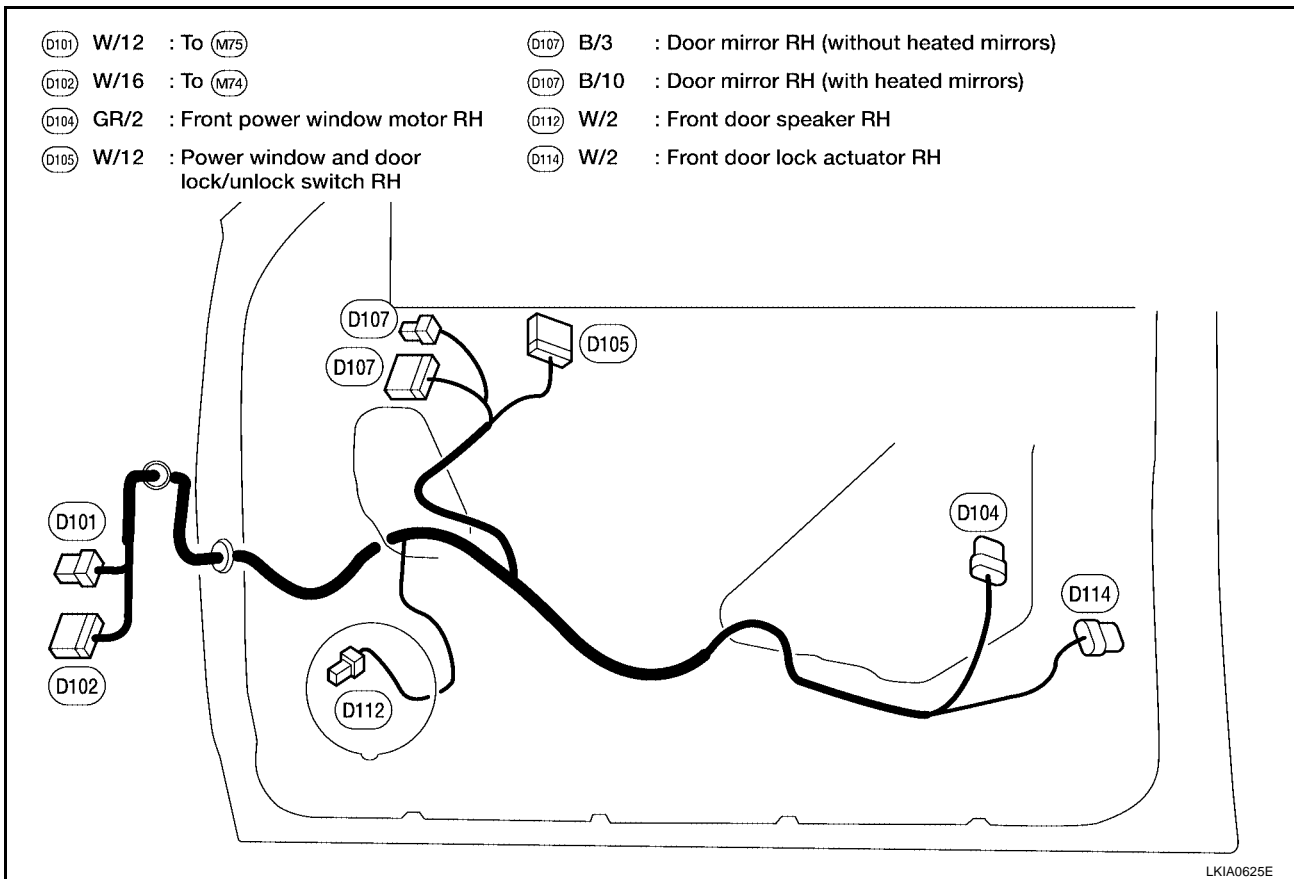
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HARNESS

FRONT DOOR LH HARNESS

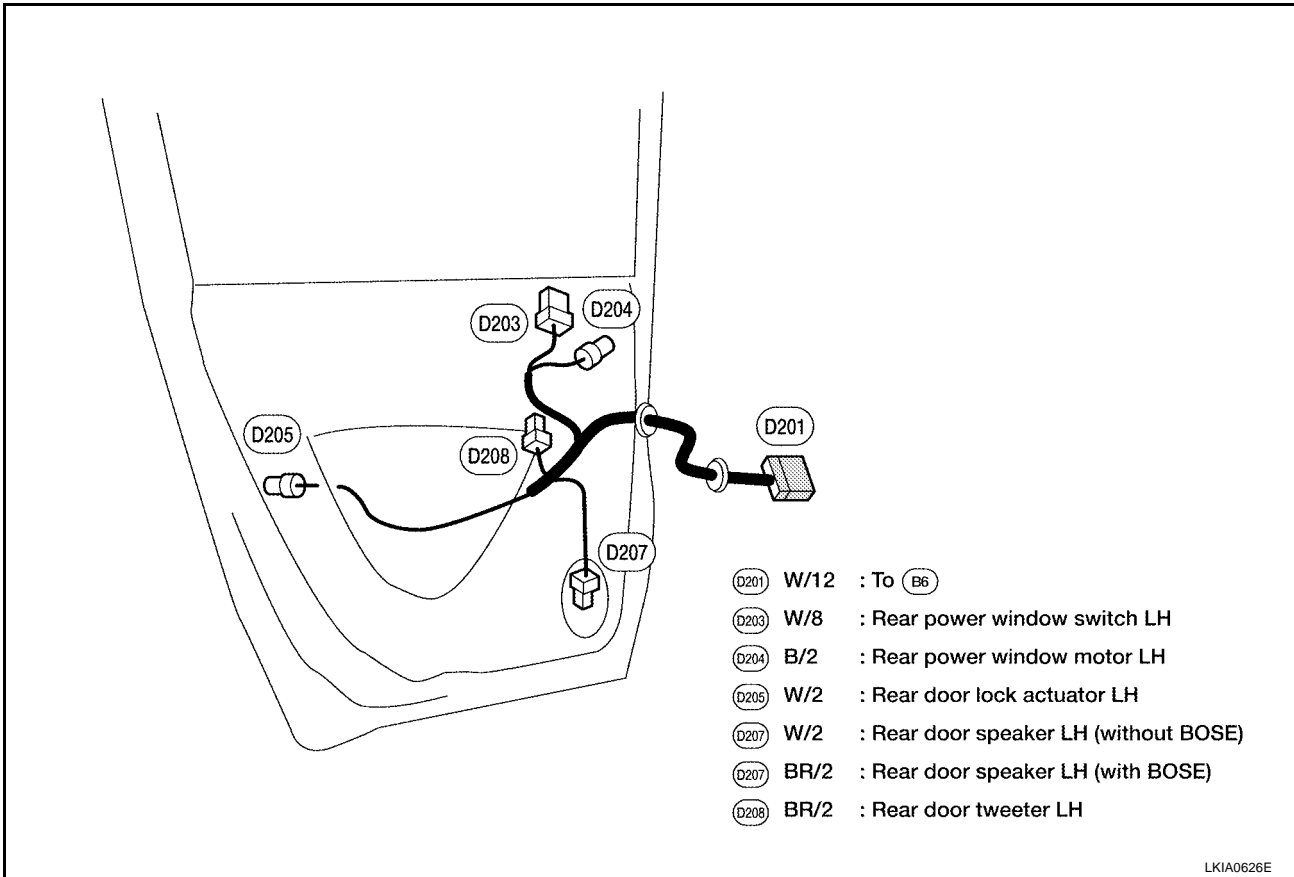


FRONT DOOR RH HARNESS

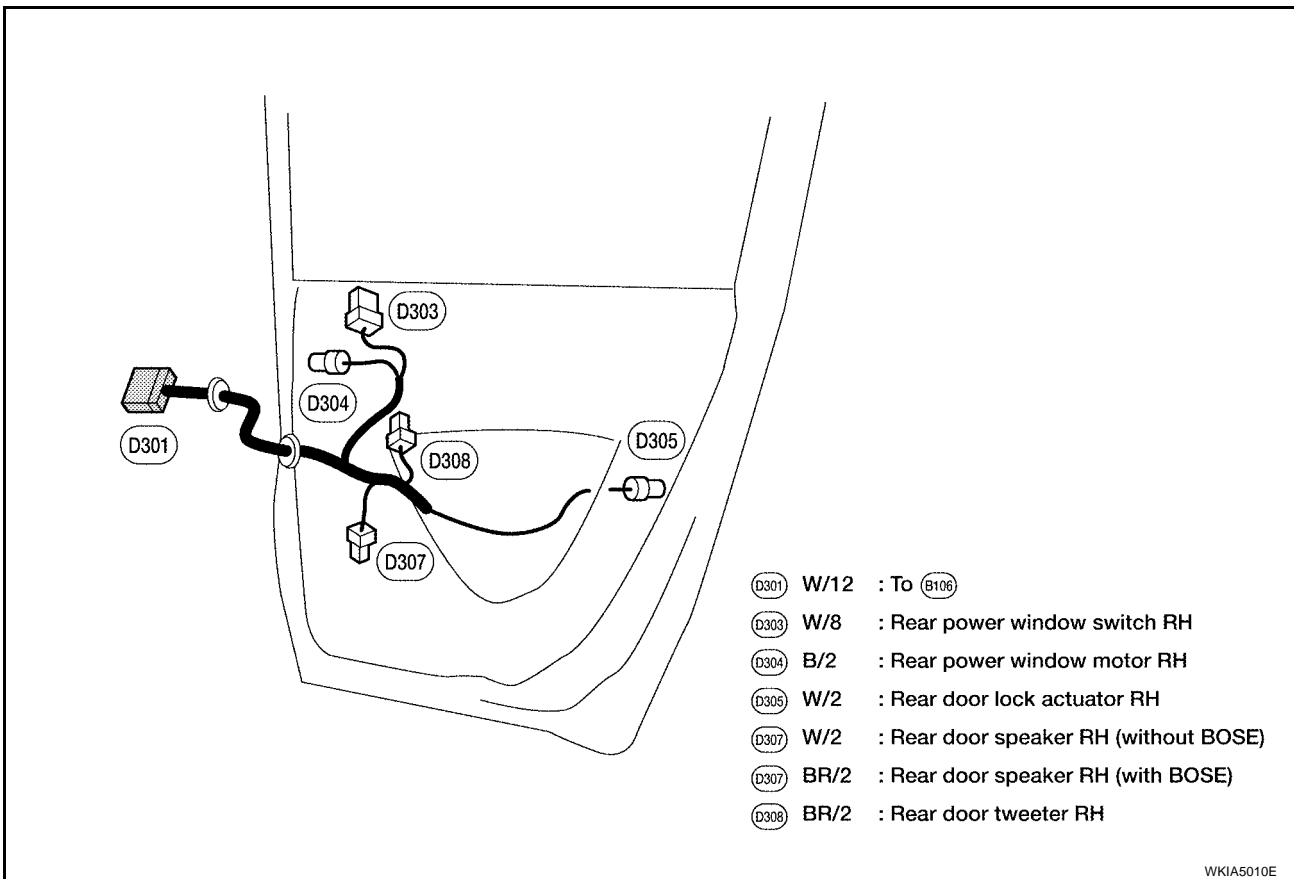


HARNESS

REAR DOOR LH HARNESS



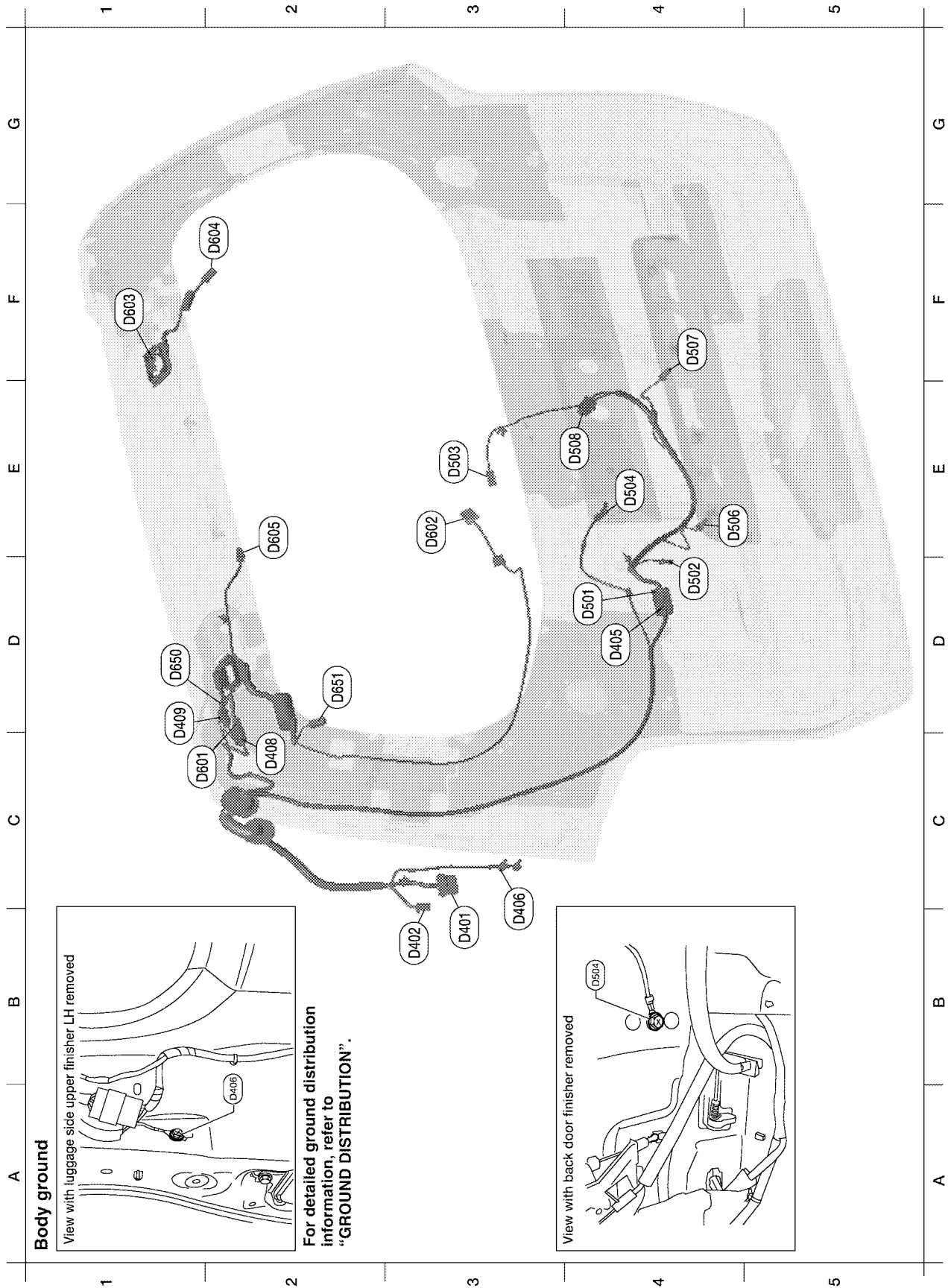
REAR DOOR RH HARNESS



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HARNESS

BACK DOOR HARNESS



LKIA0628E

HARNESS

Back door No. 2 harness								A
B3	D401	W/8	: To B43					A
B3	D402	W/6	: To B48					B
D4	D405	W/8	: To D501					B
B3	D406	—	: Body ground					C
C2	D408	W/4	: To D601					C
D1	D409	W/1	: To D650					C
Back door harness								D
D4	D501	W/8	: To D405					D
D4	D502	W/3	: Back door switch					E
E3	D503	B/1	: Glass hatch ajar switch					E
E4	D504	—	: Body ground					F
E4	D506	W/2	: License plate lamp LH					F
F4	D507	W/2	: License plate lamp RH					F
E4	D508	W/4	: Back door lock actuator					G
Rear window sub-harness								G
C1	D601	W/4	: To D405					H
E3	D602	W/4	: Rear wiper motor					H
F1	D603	—	: Body ground (defogger)					I
F2	D604	B/1	: Rear window defogger					I
E2	D605	W/2	: High mounted stop lamp					J
Rear window defogger sub-harness								J
D1	D650	W/1	: To D409					J
D2	D651	B/1	: Rear window defogger					J

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HARNESSES

EKS00680

Wiring Diagram Codes (Cell Codes)

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,A	ATC	Auto Air Conditioner
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
AUT/DP	SE	Automatic Drive Positioner
AUTO/L	LT	Auto Light Control
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
COMM	AV	Audio Visual Communication System
COMPAS	DI	Compass
CUR/SE	EC	Battery Current Sensor
D/LOCK	BL	Power Door Lock
DEF	GW	Rear Window Defogger
DTRL	LT	Headlamp - With Daytime Light System
DVD	AV	DVD Entertainment 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

HARNESSES

HSEAT	SE	Heated Seat	
I/MIRR	GW	Inside Mirror (Auto Anti-Dazzling Mirror)	A
IATS	EC	Intake Air Temperature Sensor	
IGNSYS	EC	Ignition System	
ILL	LT	Illumination	B
INJECT	EC	Injectors	
INT/L	LT	Room/Map, Vanity, Cargo, and Personal Lamps	
IVCB1	EC	Intake Valve Timing Control Solenoid Valve Bank 1	C
IVCB2	EC	Intake Valve Timing Control Solenoid Valve Bank 2	
KEYLES	BL	Remote Keyless Entry System	
KS	EC	Knock Sensor	D
MAFS	EC	Mass Air Flow Sensor	
MAIN	AT	Main Power Supply and Ground Circuit	E
MAIN	EC	Main Power Supply and Ground Circuit	
METER	DI	Speedometer, Tachometer, Temp. and Fuel Gauges	
MIL/DL	EC	Malfunction Indicator Lamp	F
MIRROR	GW	Door Mirror	
NATS	BL	Nissan Anti-Theft System	
NAVI	AV	Navigation System	G
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	H
O2S2B1	EC	Heated Oxygen Sensor 2 Bank 1	
O2S2B2	EC	Heated Oxygen Sensor 2 Bank 2	
P/SCKT	WW	Power Socket	I
PEDAL	AP	Adjustable Pedal System	
PGC/V	EC	EVAP Canister Purge Volume Control Solenoid Valve	
PHSB1	EC	Camshaft Position Sensor (PHASE) (Bank 1)	J
PHSB2	EC	Camshaft Position Sensor (PHASE) (Bank 1)	
PNP/SW	AT	Park/Neutral Position Switch	
PNP/SW	EC	Park/Neutral Position Switch	PG
POS	EC	Crankshaft Position Sensor (POS)	
POWER	PG	Power Supply Routing	
PRE/SE	EC	EVAP Control System Pressure Sensor	L
PS/SEN	EC	Power Steering Pressure Sensor	
RP/SEN	EC	Refrigerant Pressure Sensor	
SEAT	SE	Power Seat	M
SEN/PW	EC	Sensor Power Supply	
SHIFT	AT	A/T Shift Lock System	
SROOF	RF	Sunroof	
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	
TRNSCV	BL	HOMELINK® Universal Transceiver	

HARNESSES

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)
W/ANT	AV	Audio Antenna
WARN	DI	Warning Lamps
WINDOW	GW	Power Window
WIP/R	WW	Rear Wiper and Washer
WIPER	WW	Front Wiper and Washer

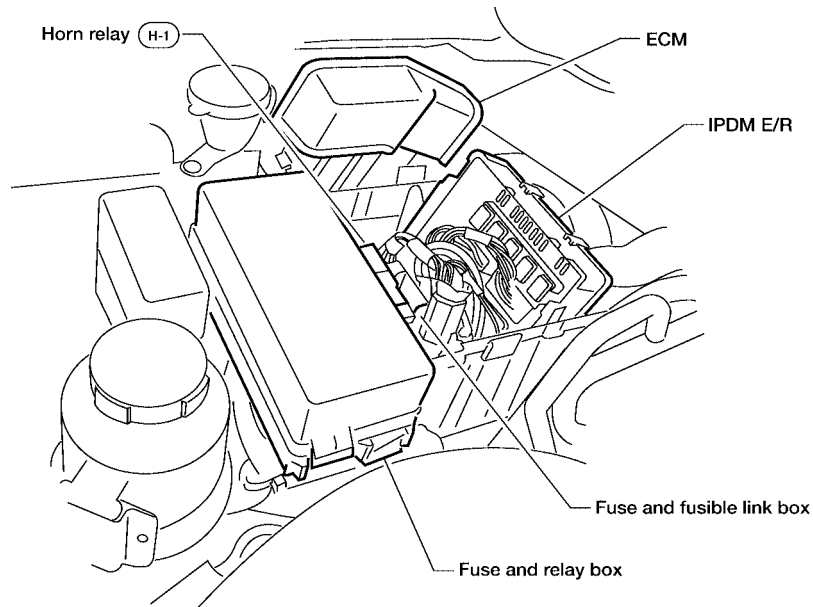
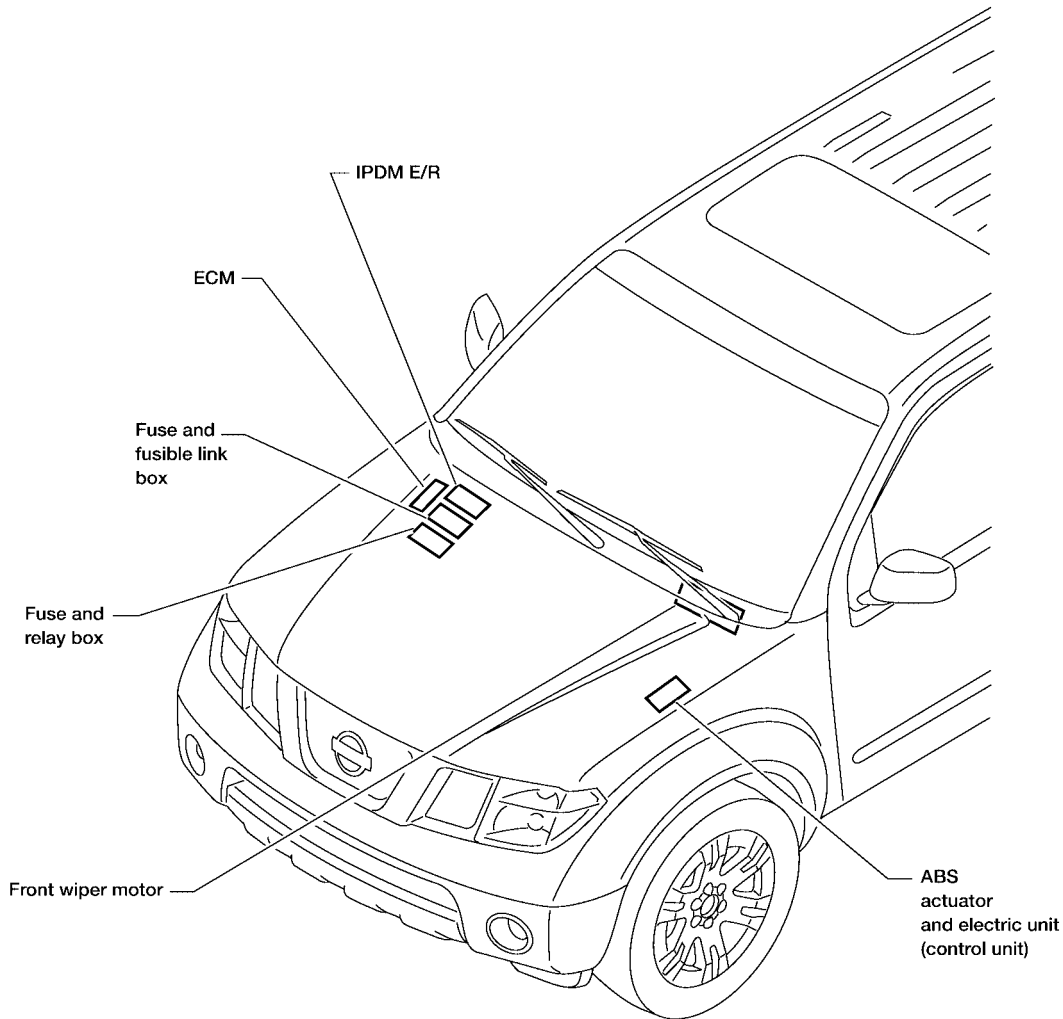
ELECTRICAL UNITS LOCATION

ELECTRICAL UNITS LOCATION

Electrical Units Location ENGINE COMPARTMENT

PF2:25230

EKS00G6R

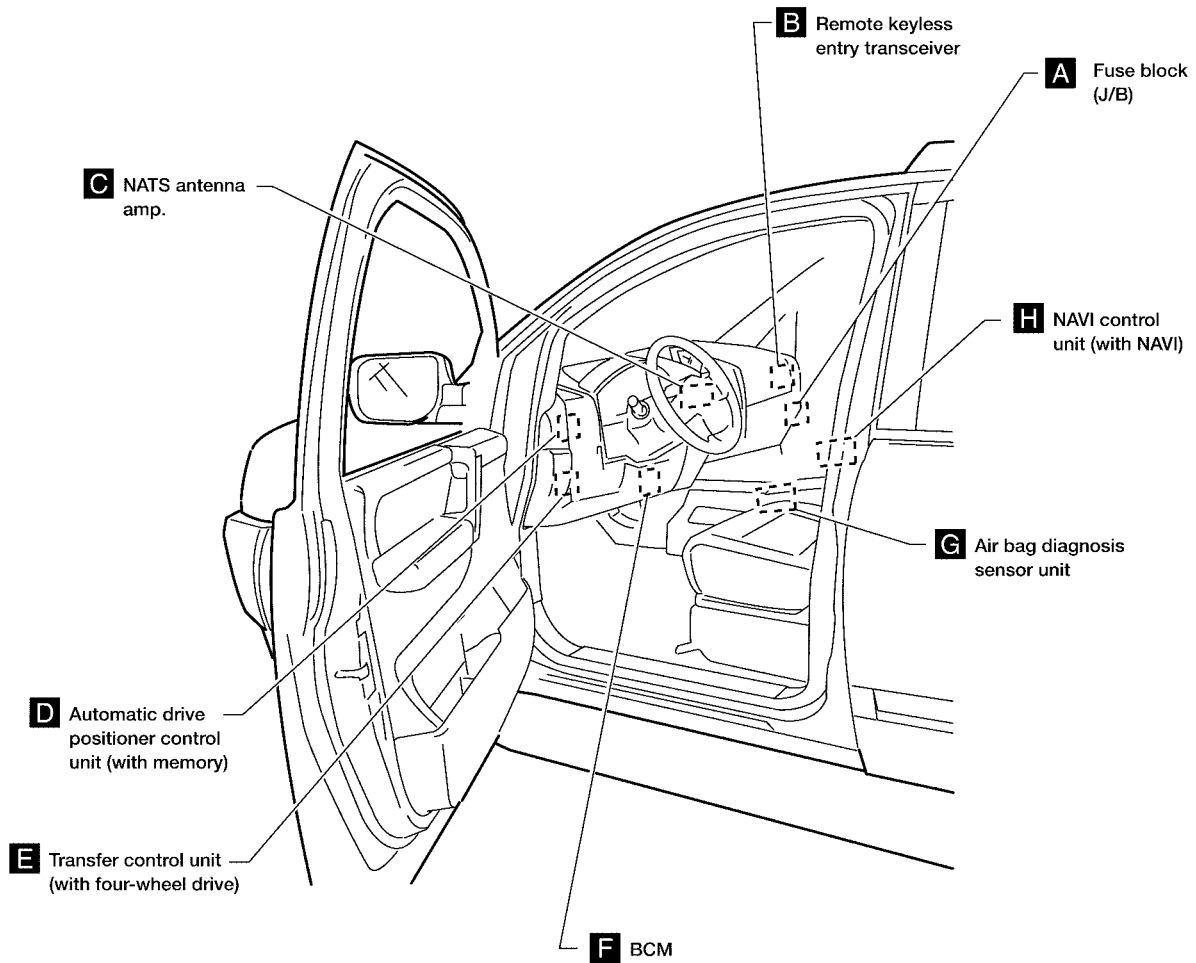


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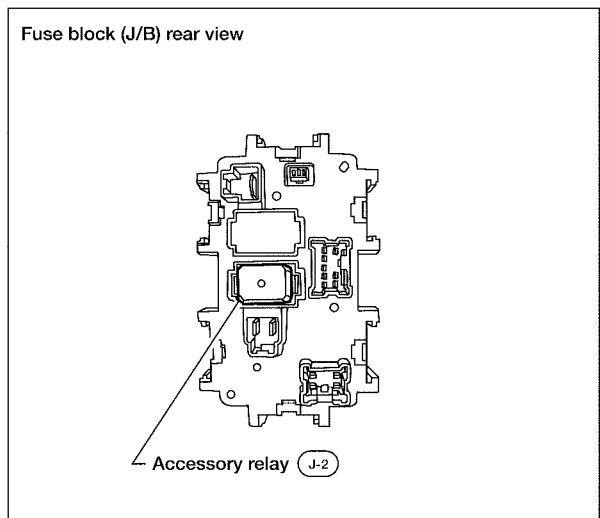
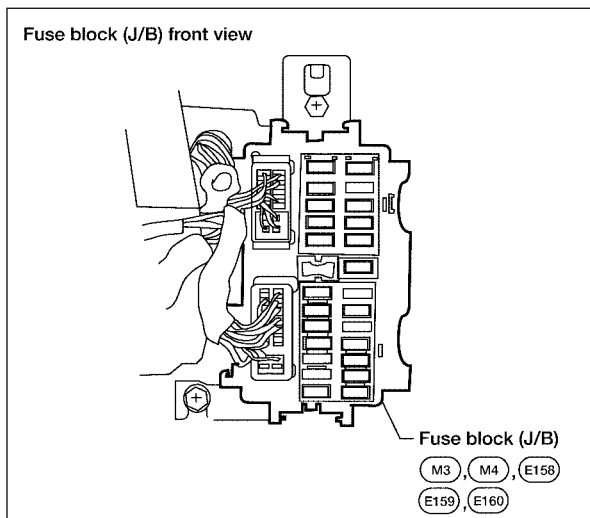
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ELECTRICAL UNITS LOCATION

PASSENGER COMPARTMENT

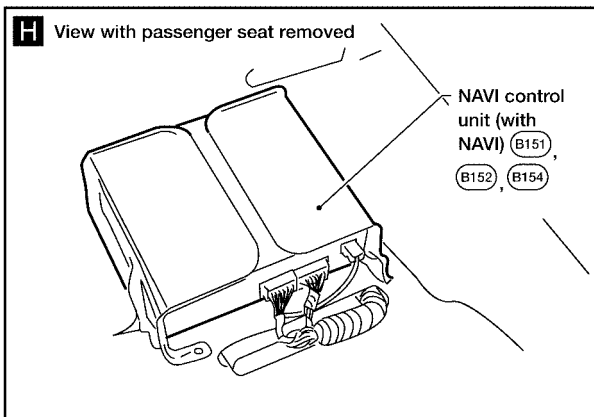
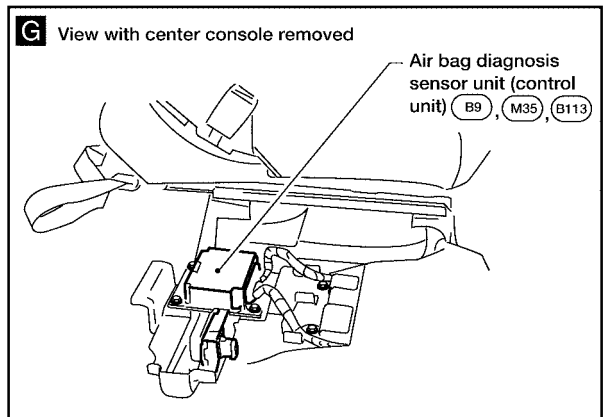
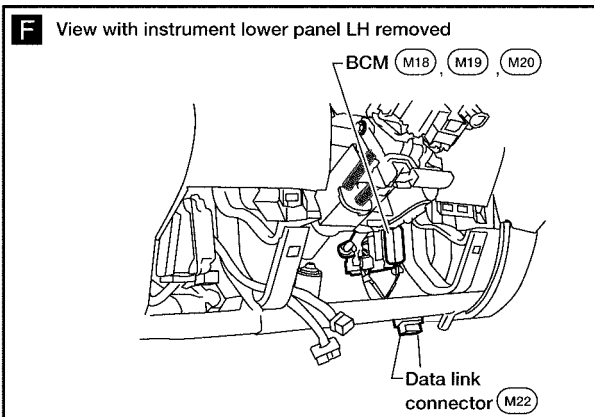
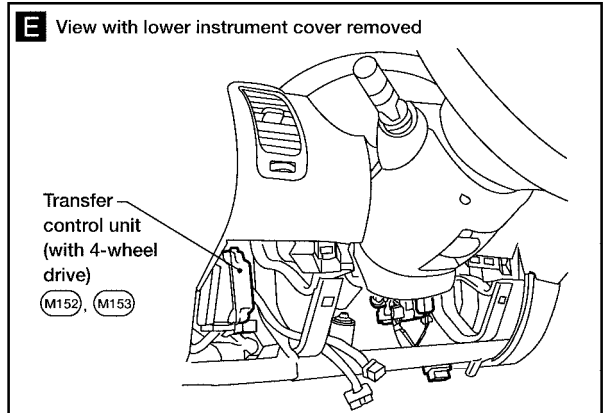
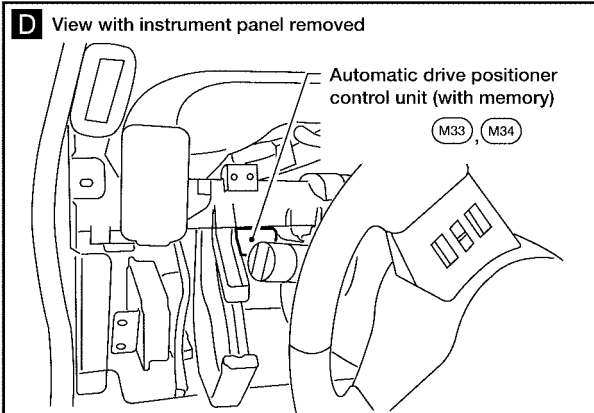
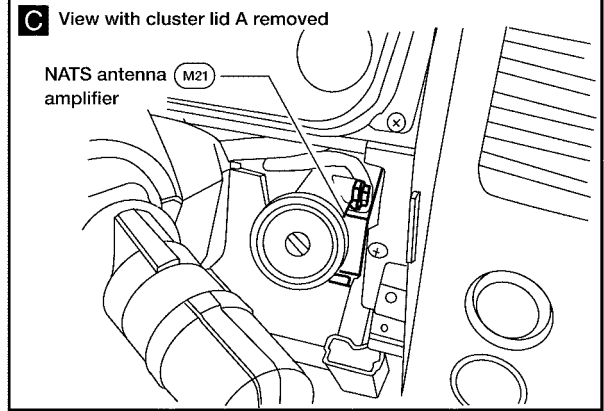
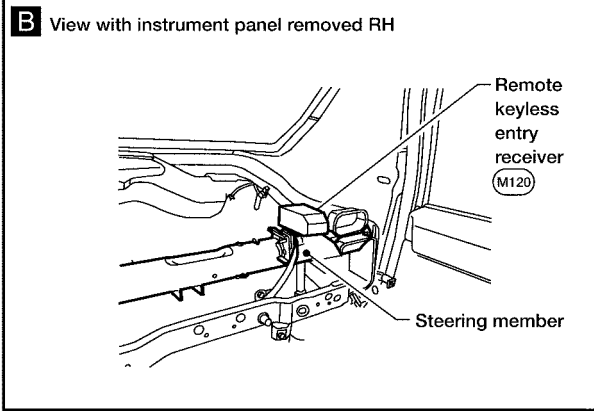


A Instrument panel side RH



WKIA5024E

ELECTRICAL UNITS LOCATION



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WKIA5025E

HARNESS CONNECTOR

PFP:B4341

HARNESS CONNECTOR

Description

HARNESS CONNECTOR (TAB-LOCKING TYPE)

EKS00G8V

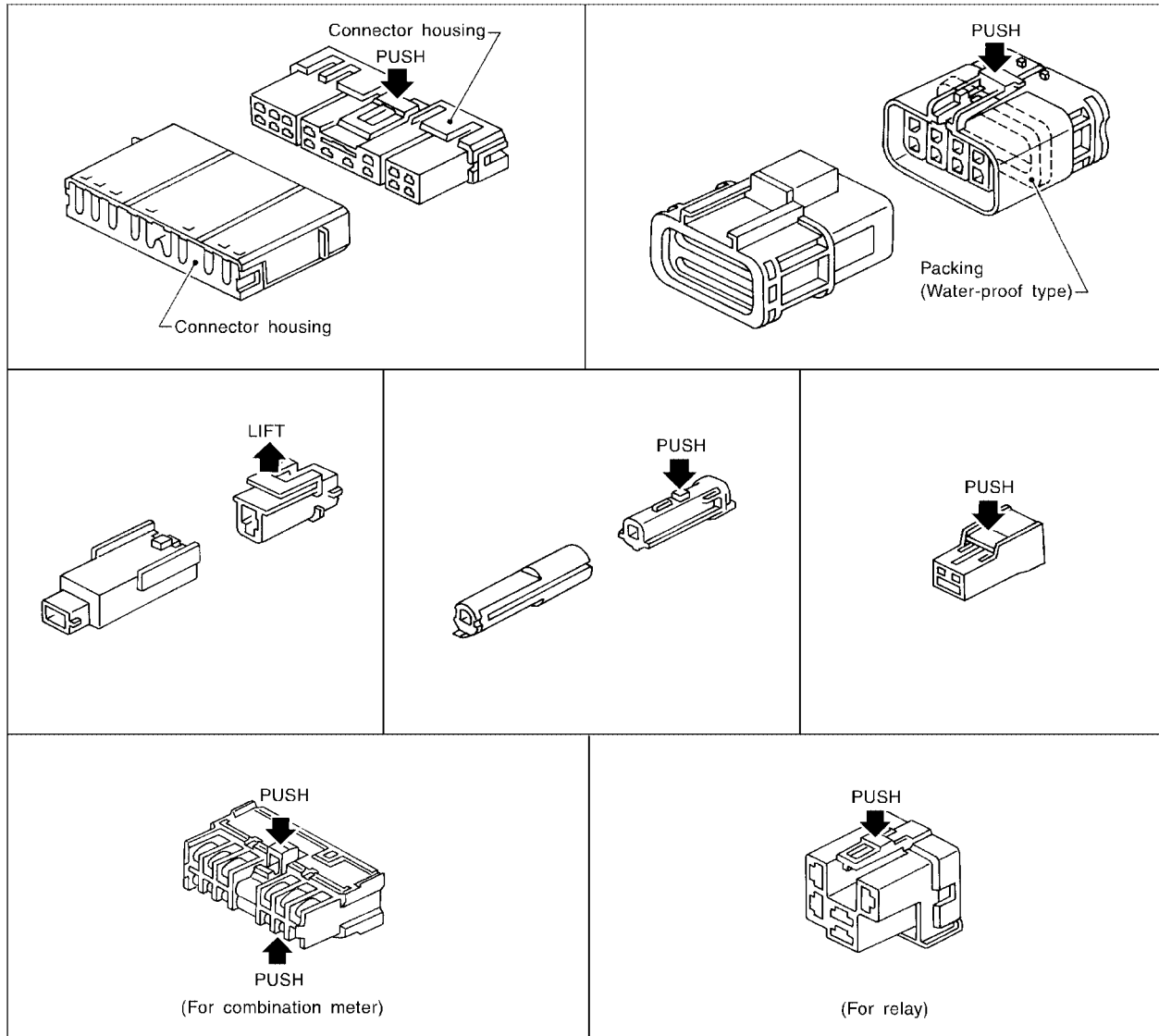
- The tab-locking type connectors help prevent accidental looseness or disconnection.
- The tab-locking type connectors are disconnected by pushing or lifting the locking tab(s). Refer to the illustration below.

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

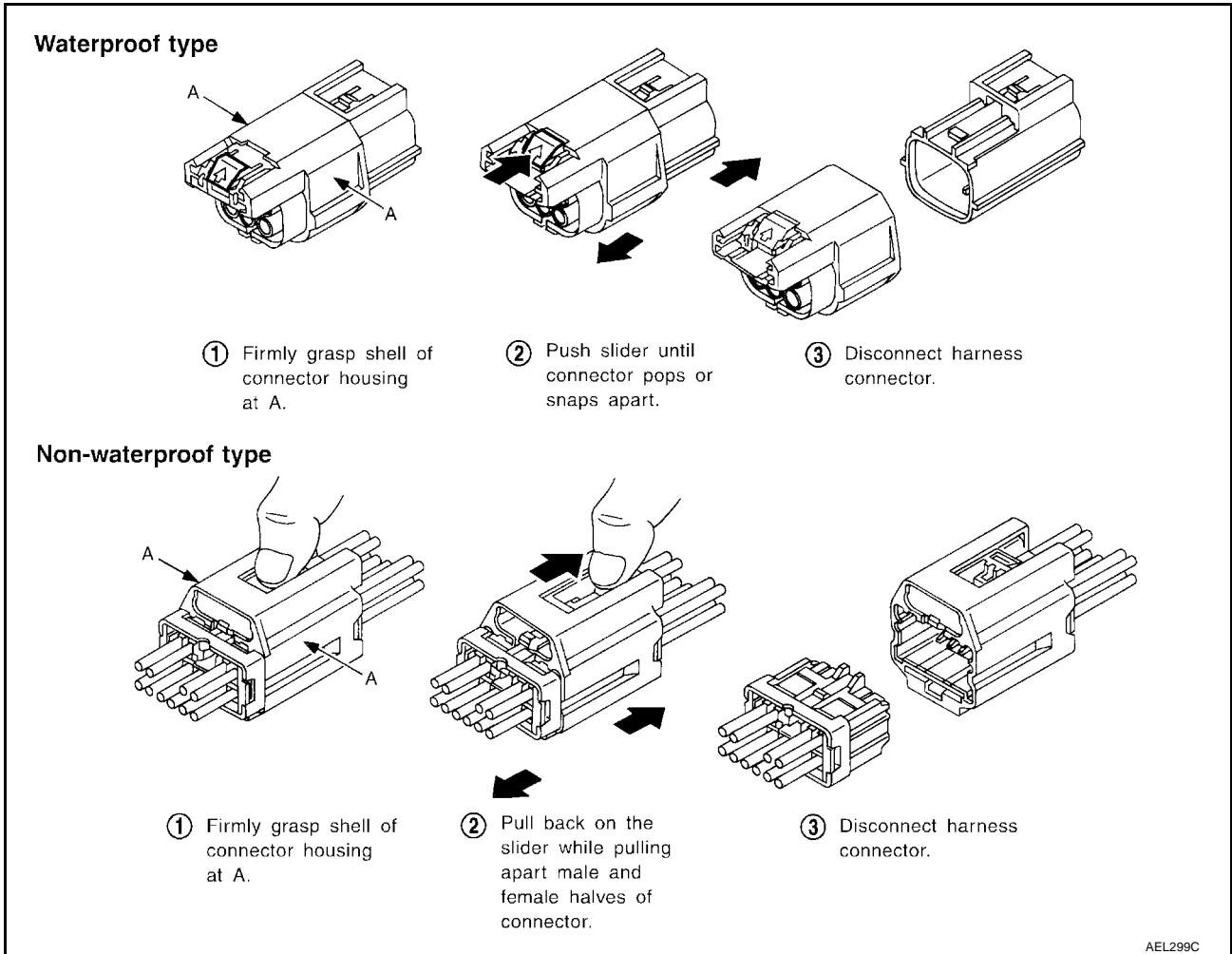
HARNESS CONNECTOR (SLIDE-LOCKING TYPE)

- 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]



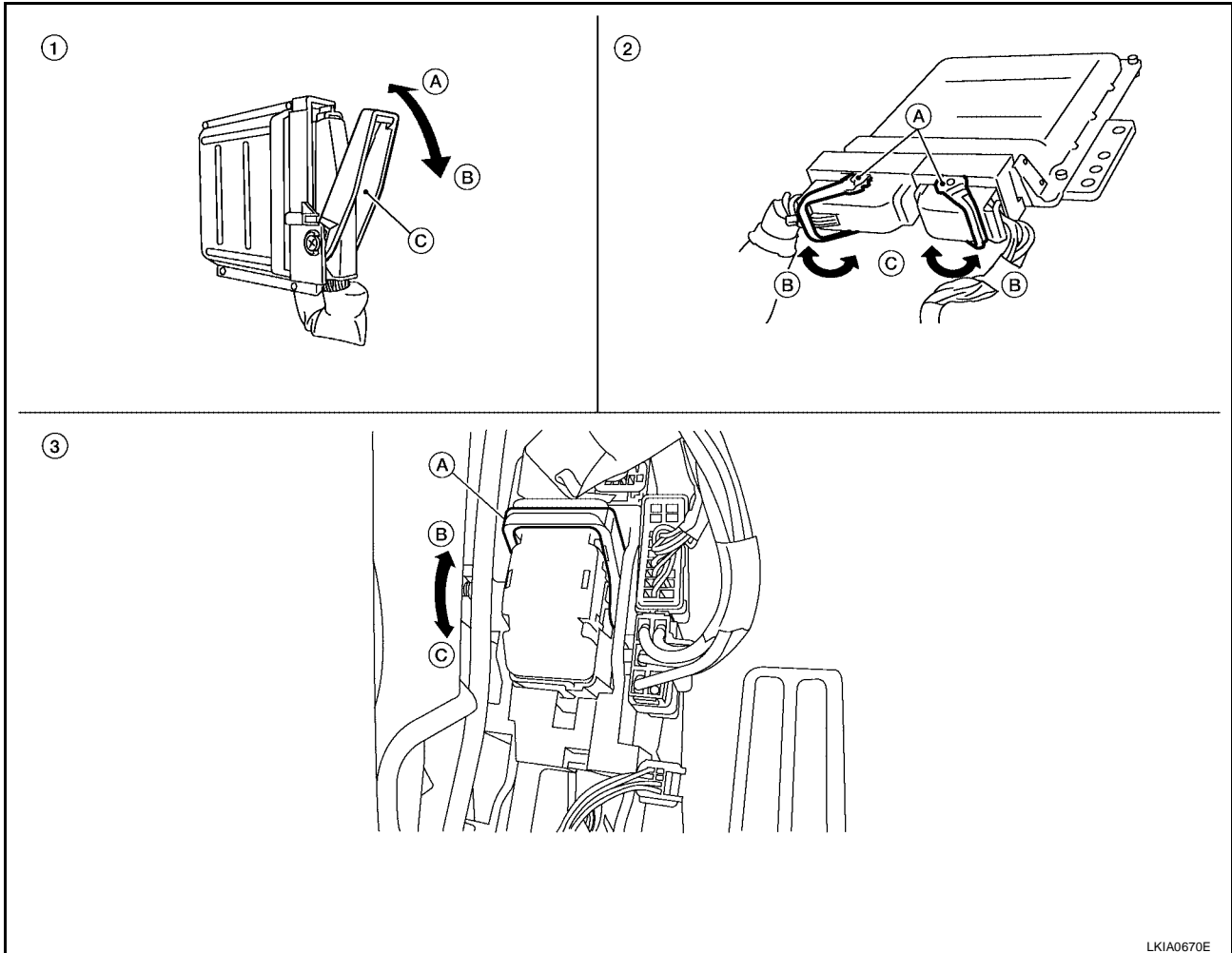
HARNES CONNECTOR

HARNES 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.



LKIA0670E

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

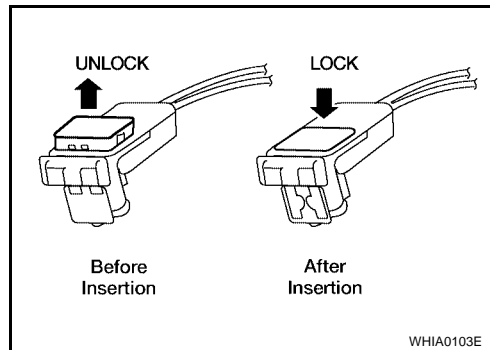
HARNES CONNECTOR

HARNES 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.**



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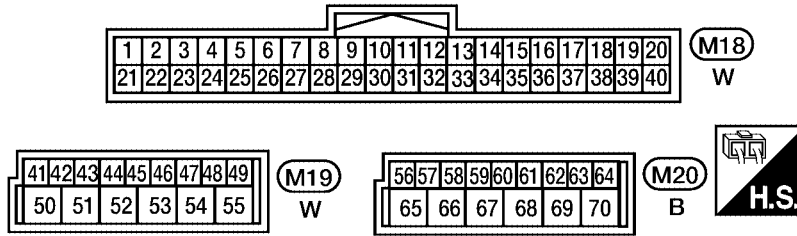
ELECTRICAL UNITS

PF2:23710

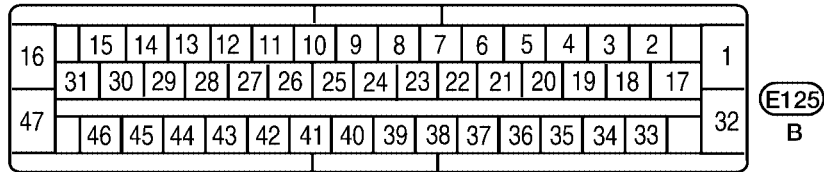
EKS00GBW

ELECTRICAL UNITS Terminal Arrangement

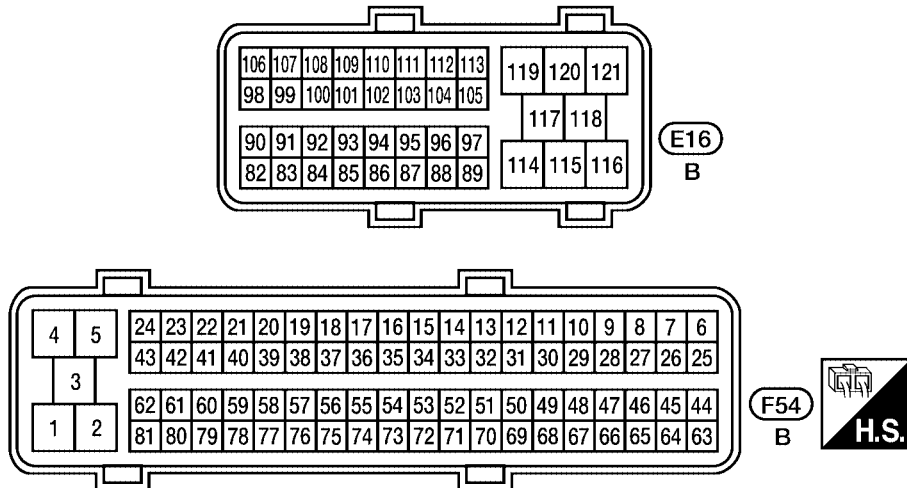
BCM (BODY CONTROL MODULE)



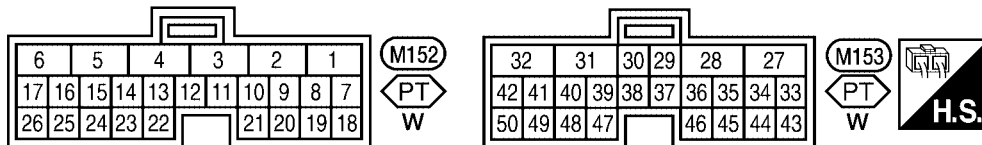
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)



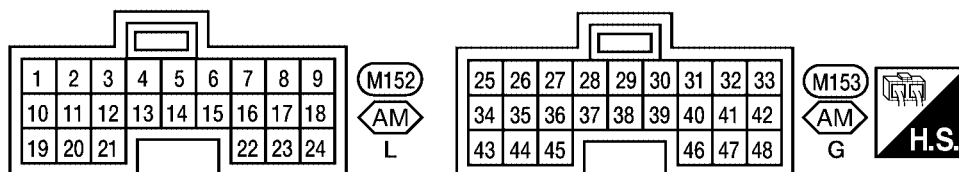
ECM



TRANSFER CONTROL UNIT



TRANSFER CONTROL UNIT



: ALL-MODE 4WD SYSTEM : PART TIME 4WD SYSTEM

WKIA5011E

STANDARDIZED RELAY

PFP:25230

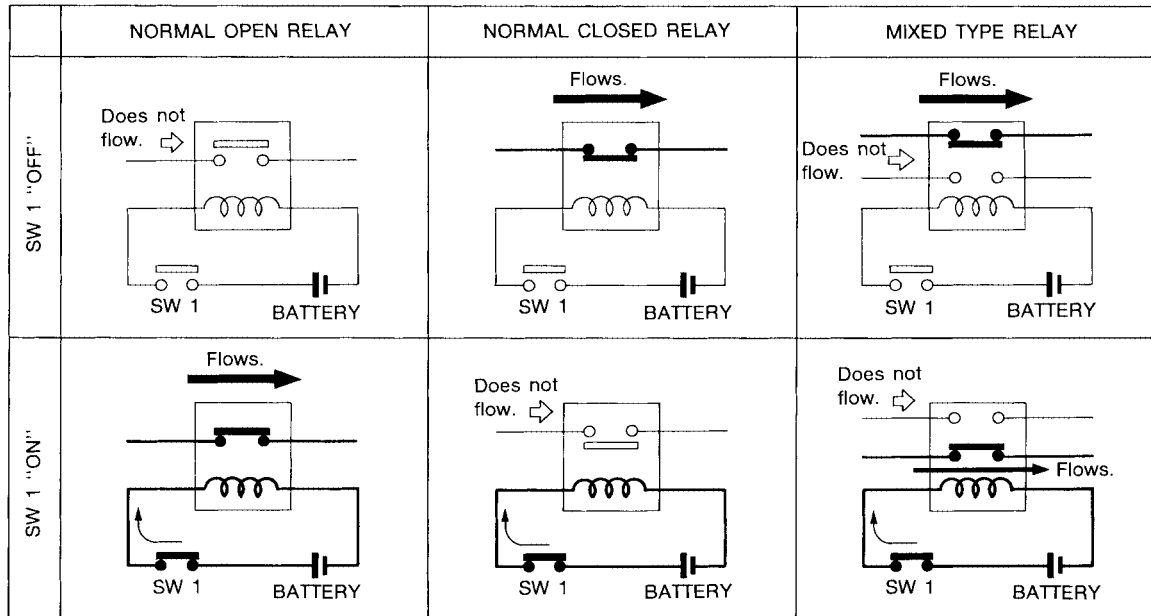
EKS00G8X

STANDARDIZED RELAY

Description

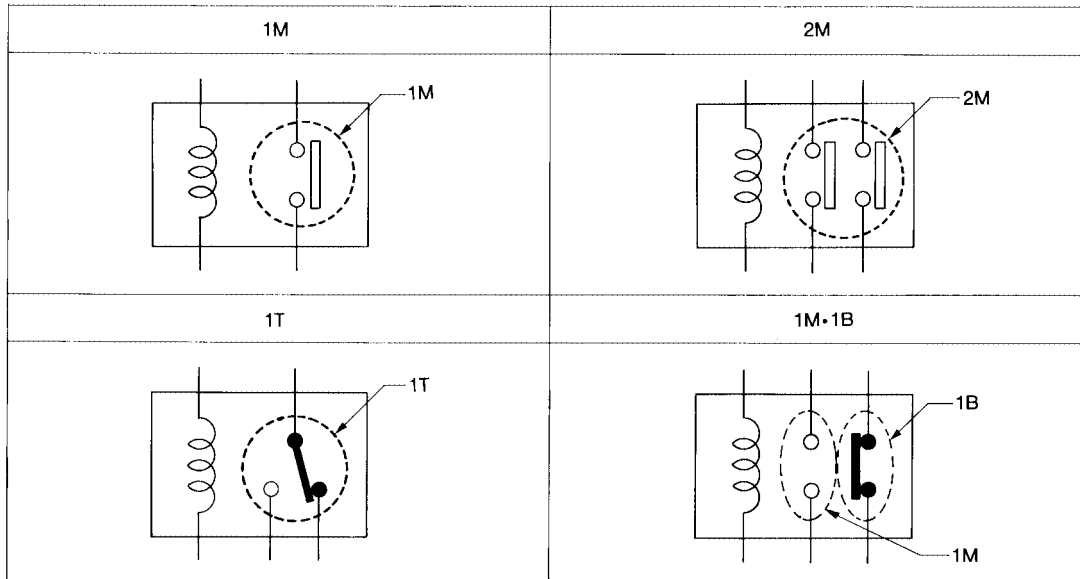
NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

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



SEL881H

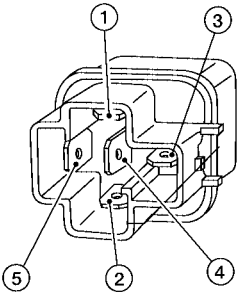
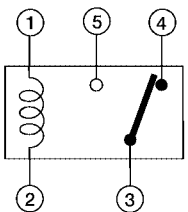
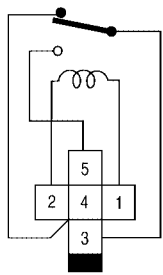
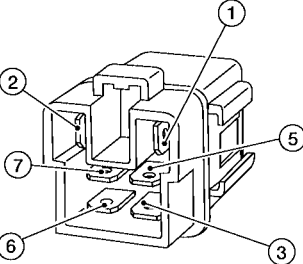
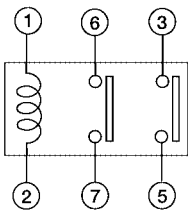
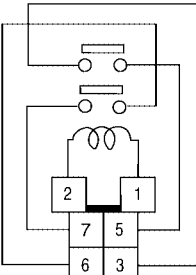
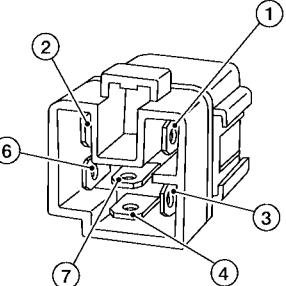
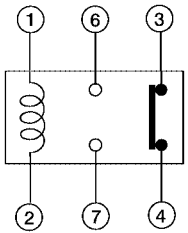
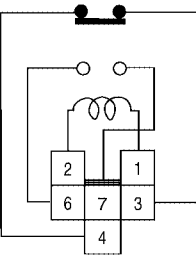
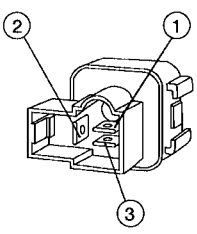
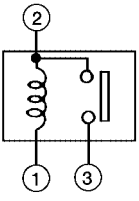
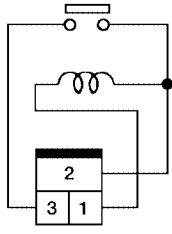
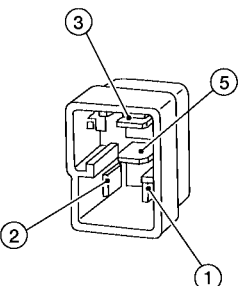
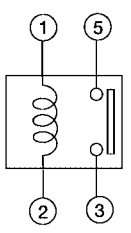
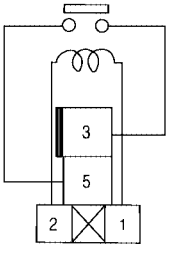
TYPE OF STANDARDIZED RELAYS



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)

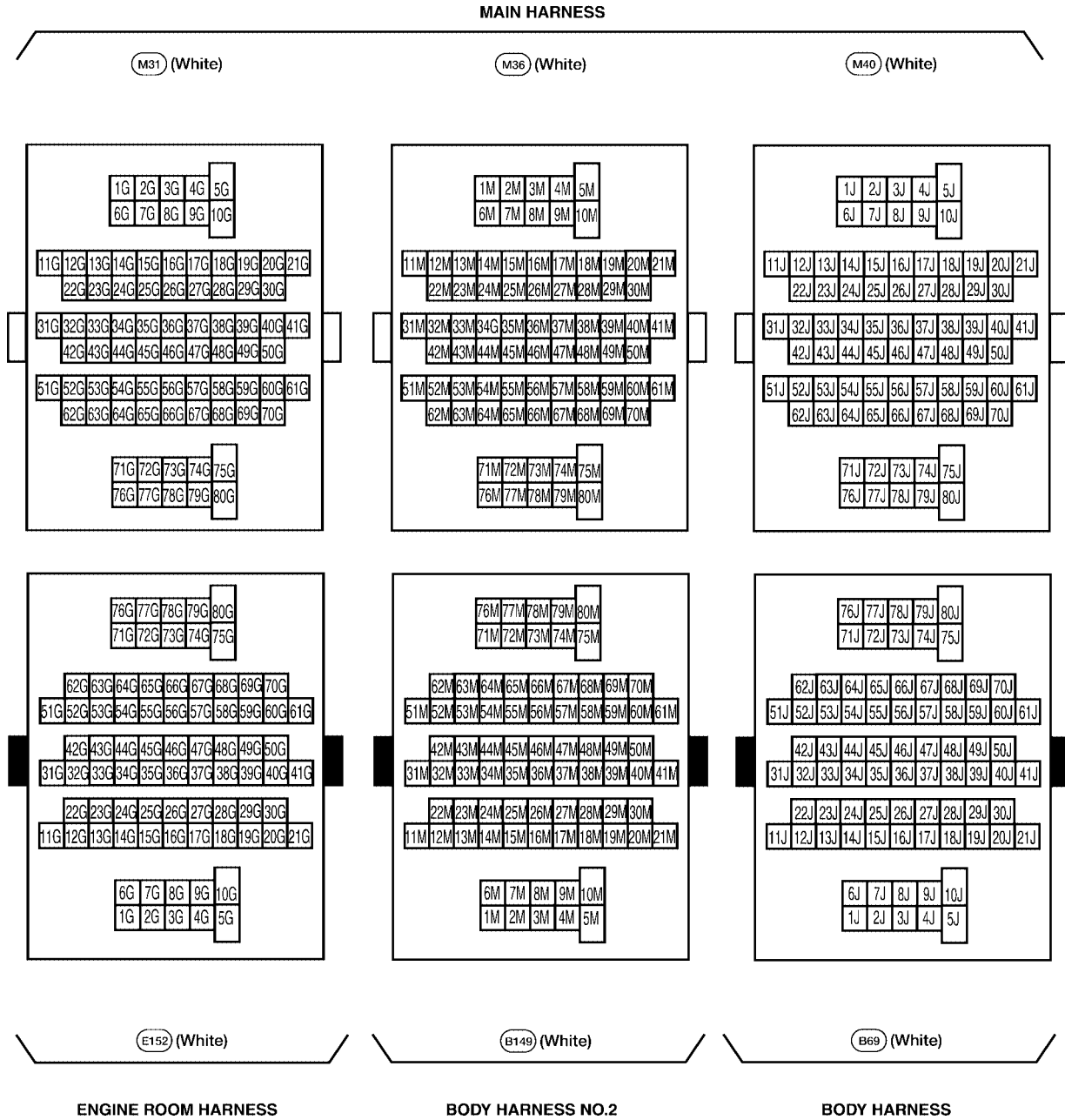
SUPER MULTIPLE JUNCTION (SMJ)

Terminal Arrangement

PF:84341

EKS00G8Y

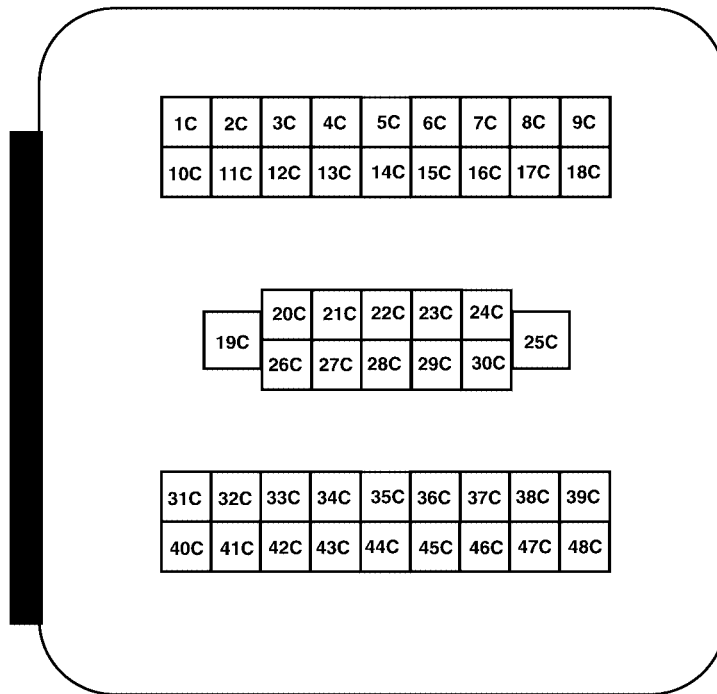
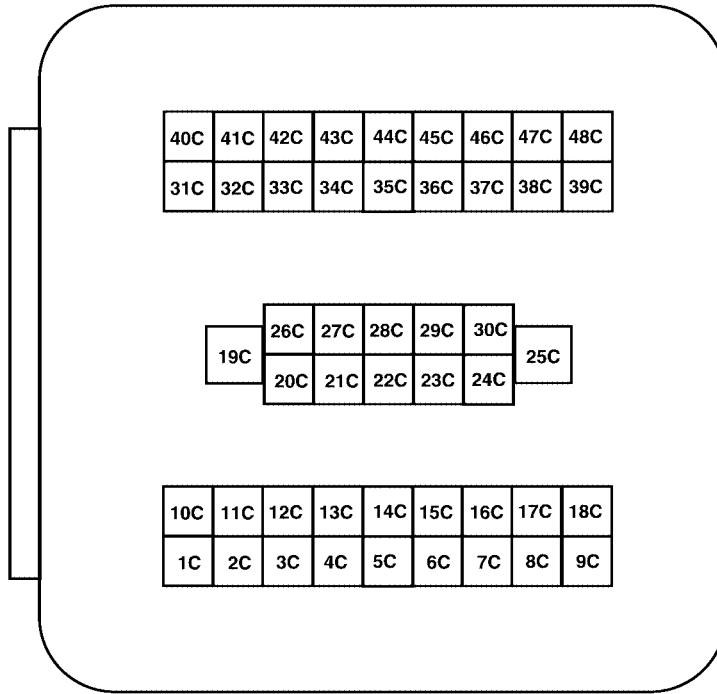
A
B
C
D
E
F
G
H
I
J
PG
L
M



SUPER MULTIPLE JUNCTION (SMJ)

CHASSIS HARNESS

C1 (Black)



E41 (Black)

ENGINE ROOM HARNESS

WKIA4179E

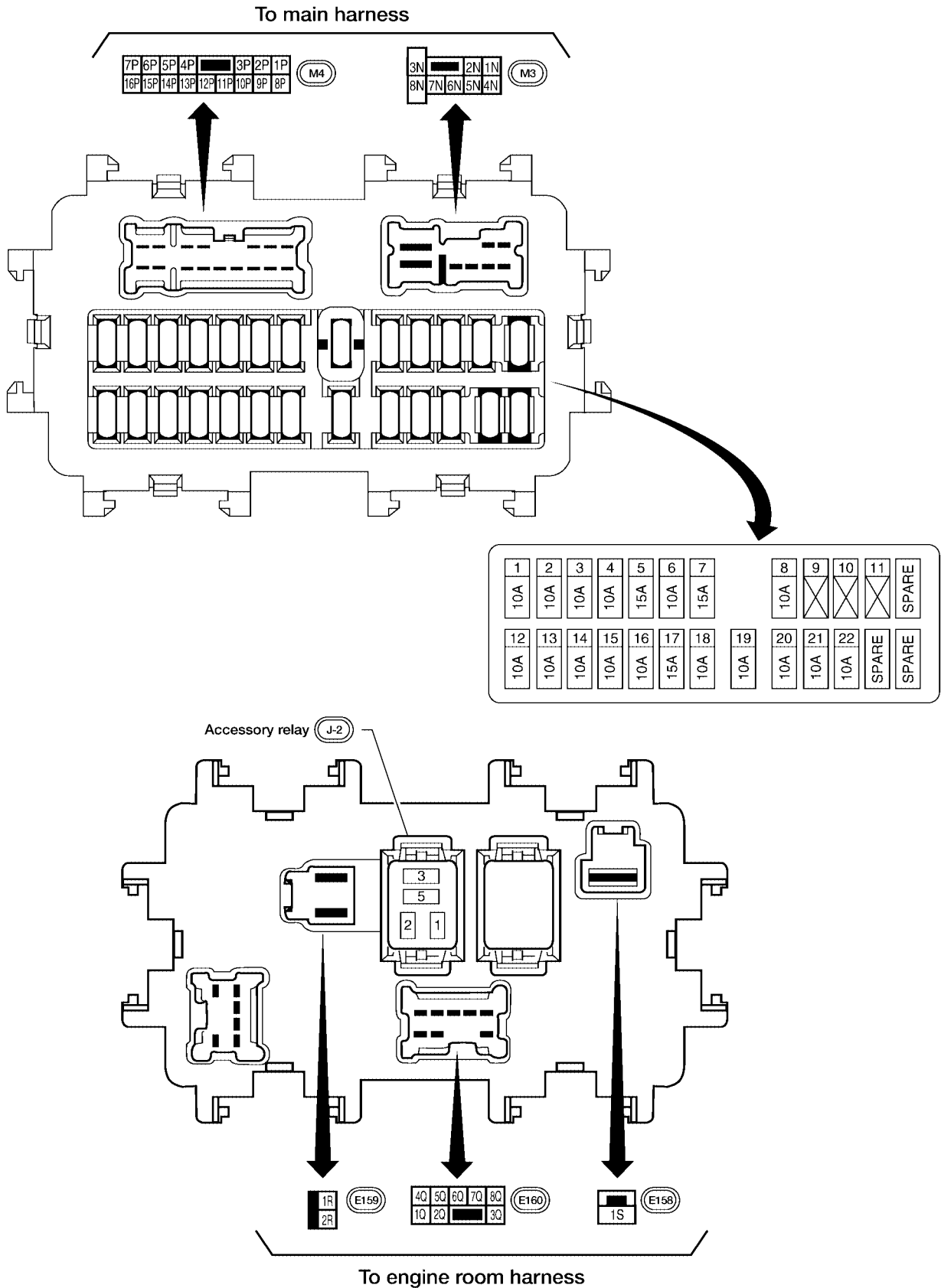
FUSE BLOCK-JUNCTION BOX (J/B)

FUSE BLOCK-JUNCTION BOX (J/B)

Terminal Arrangement

PF24350

EKS00G&Z



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

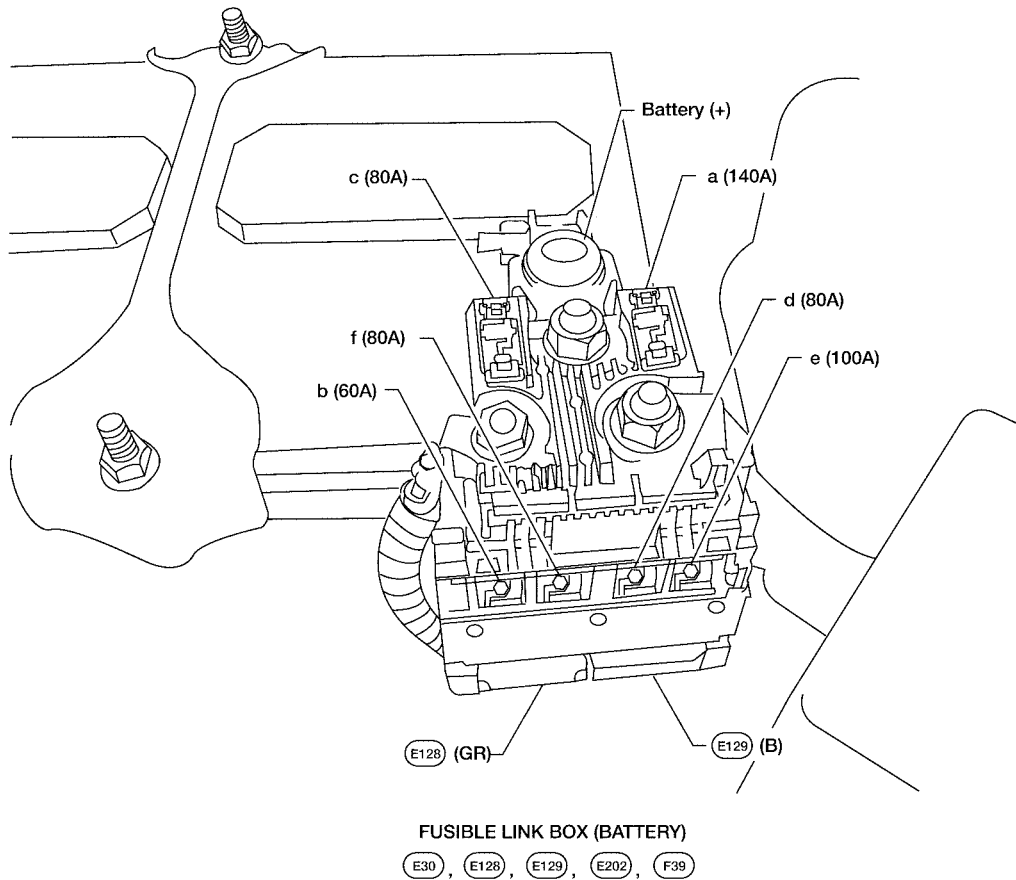
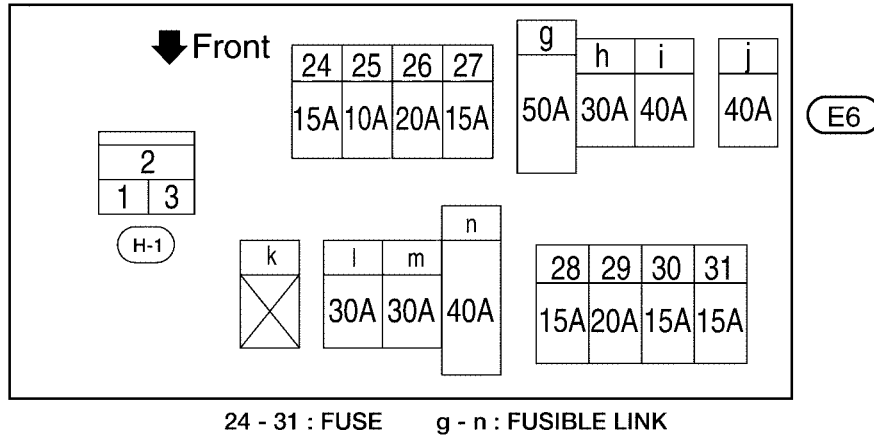
FUSE AND FUSIBLE LINK BOX

FUSE AND FUSIBLE LINK BOX

PF24381

Terminal Arrangement

EKS00G90



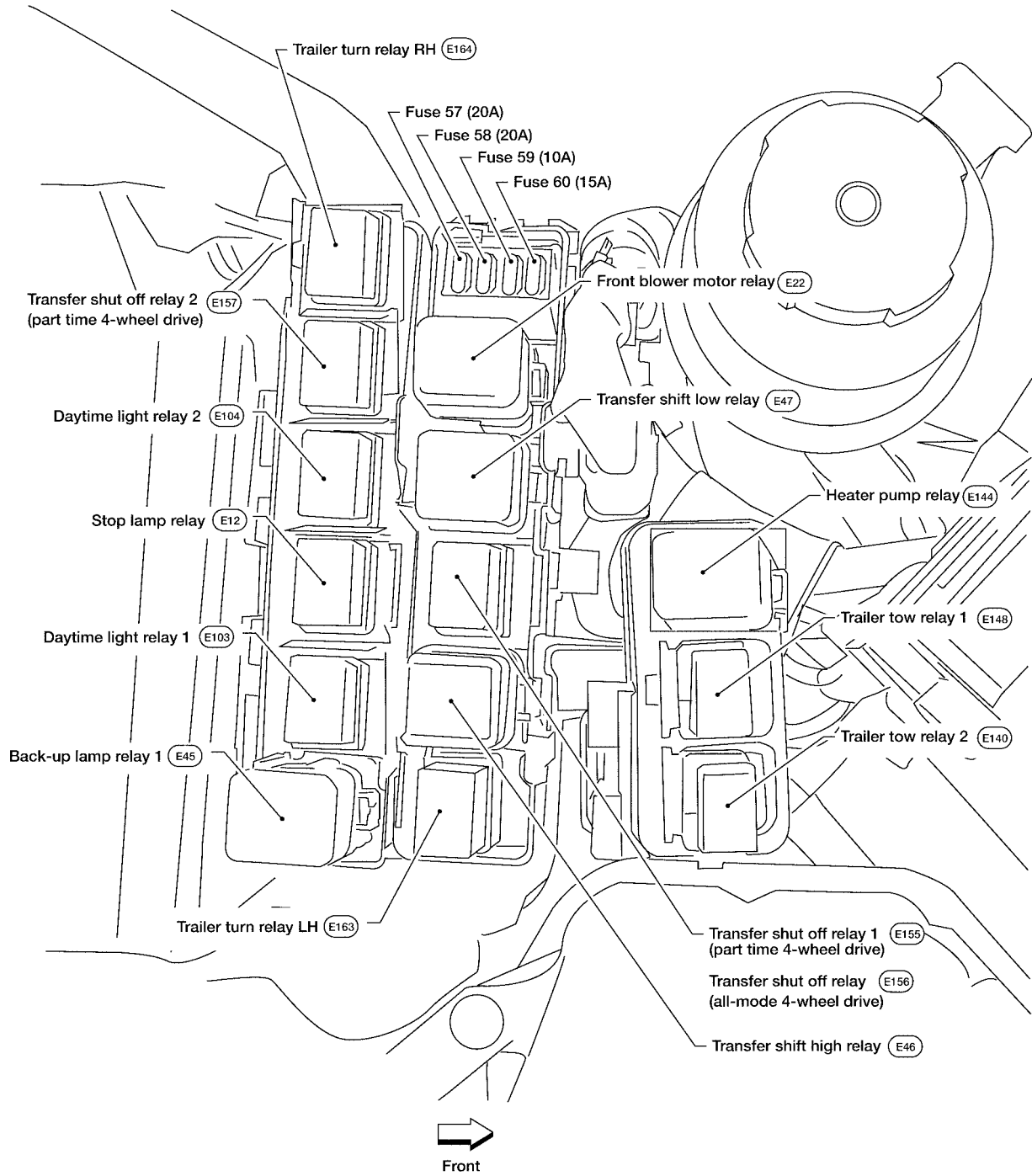
WKIA5013E

FUSE AND RELAY BOX

PFP:24012

EKS00G91

FUSE AND RELAY BOX Terminal Arrangement



A
B
C
D
E
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I
J
PG
L
M

FUSE AND RELAY BOX
