

SECTION **PG**

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”

EKS00AR4

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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PG

POWER SUPPLY ROUTING CIRCUIT

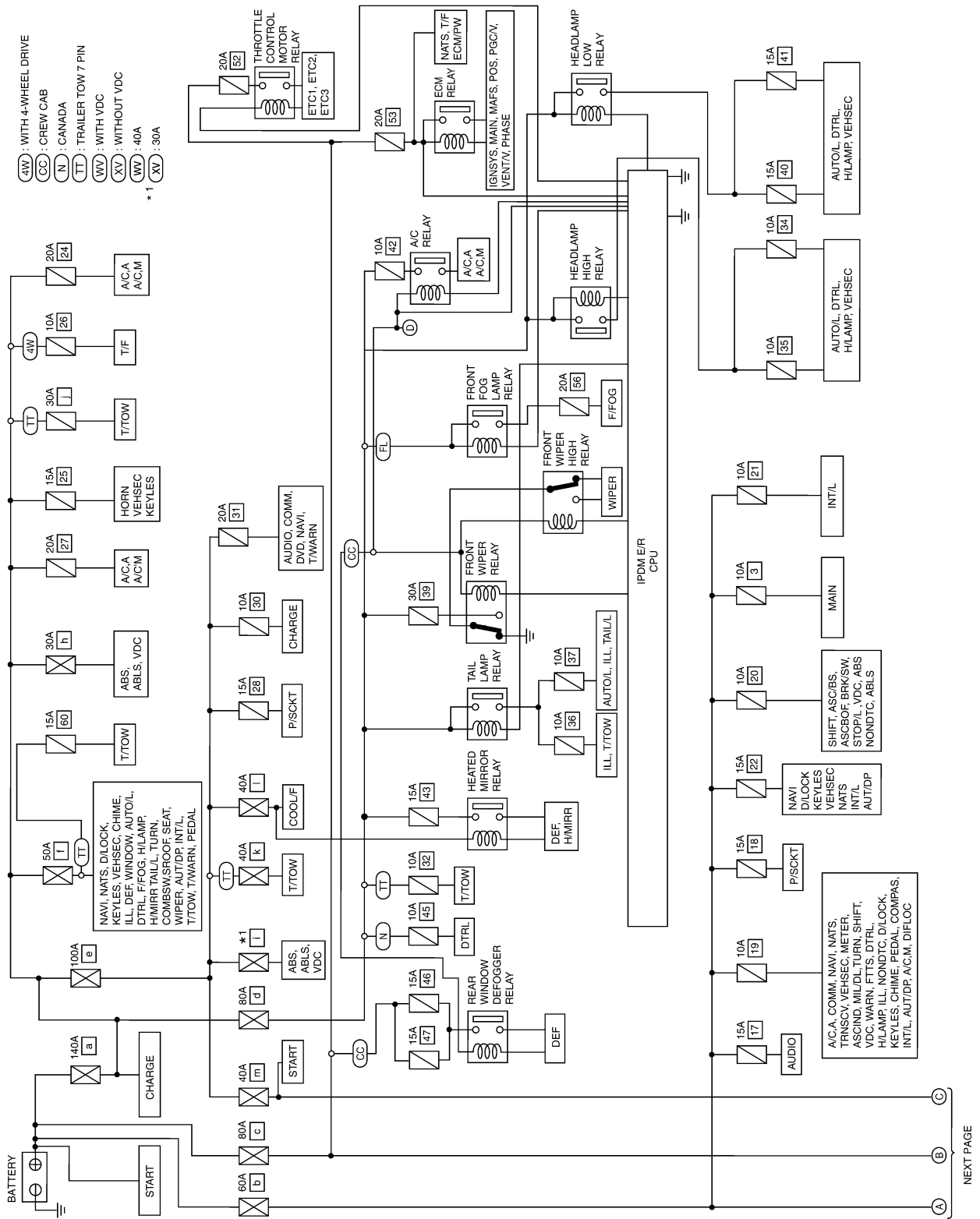
PF:24110

EKS00AR6

POWER SUPPLY ROUTING CIRCUIT

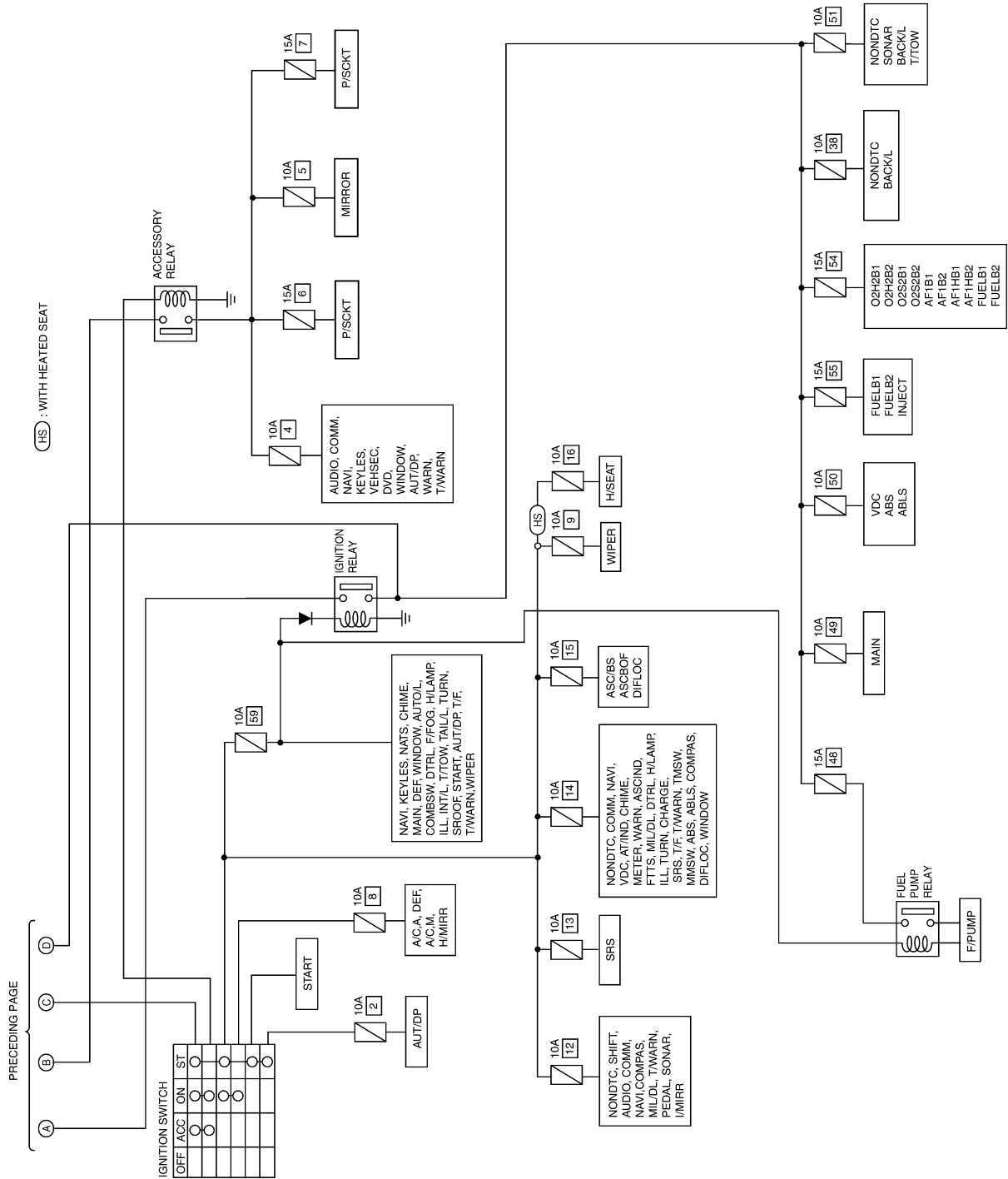
Schematic

For detailed ground distribution, refer to [PG-31, "Ground Distribution"](#).



WKWA3837E

POWER SUPPLY ROUTING CIRCUIT



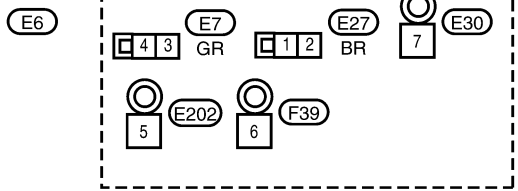
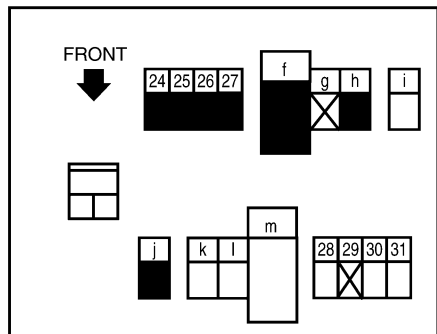
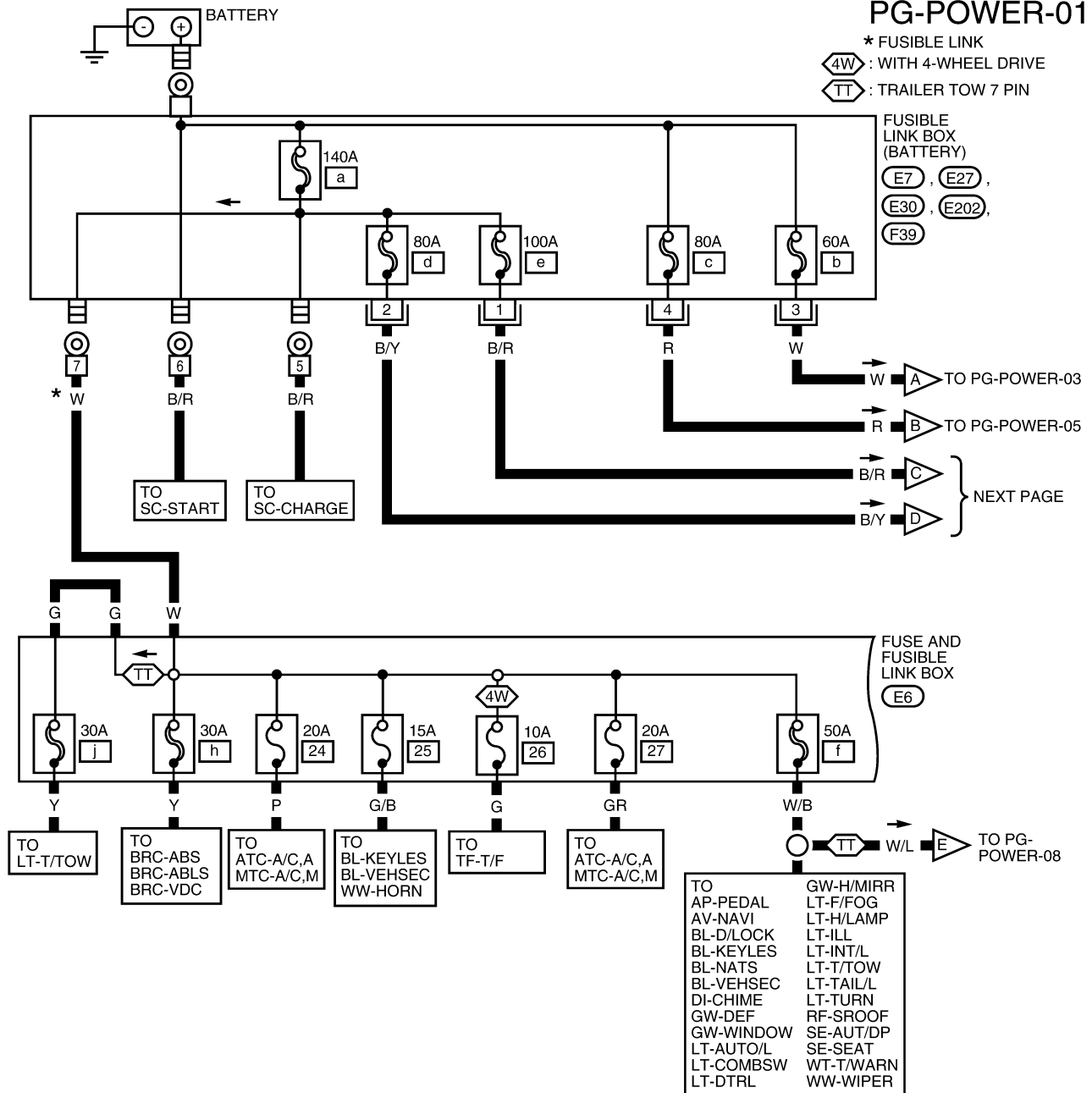
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POWER SUPPLY ROUTING CIRCUIT

EKS00AR7

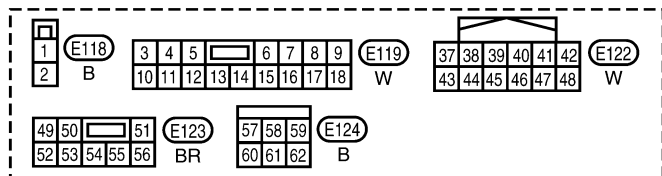
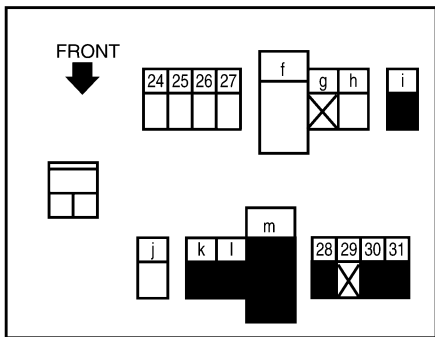
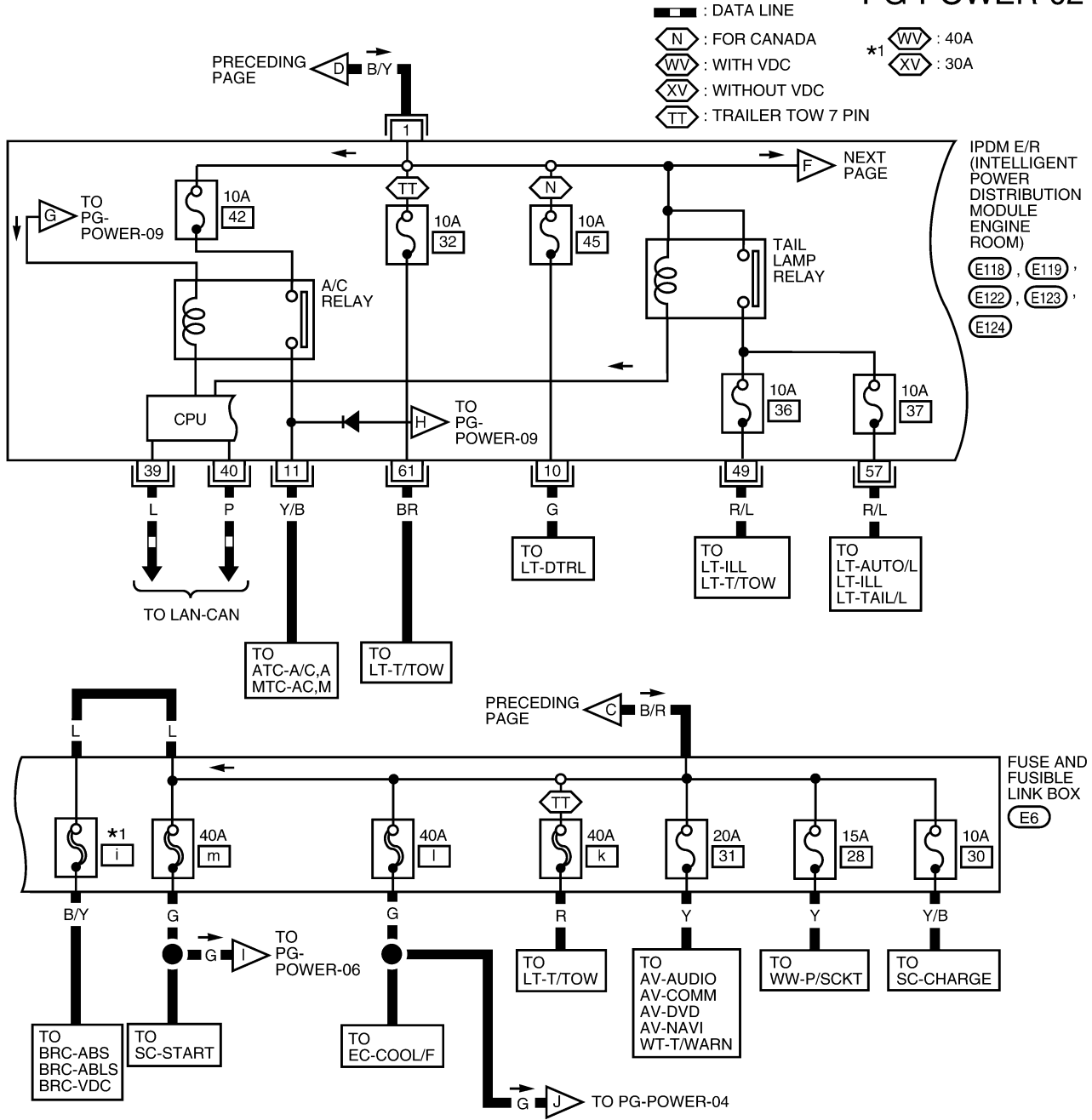
Wiring Diagram — POWER — BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION



WKWA3839E

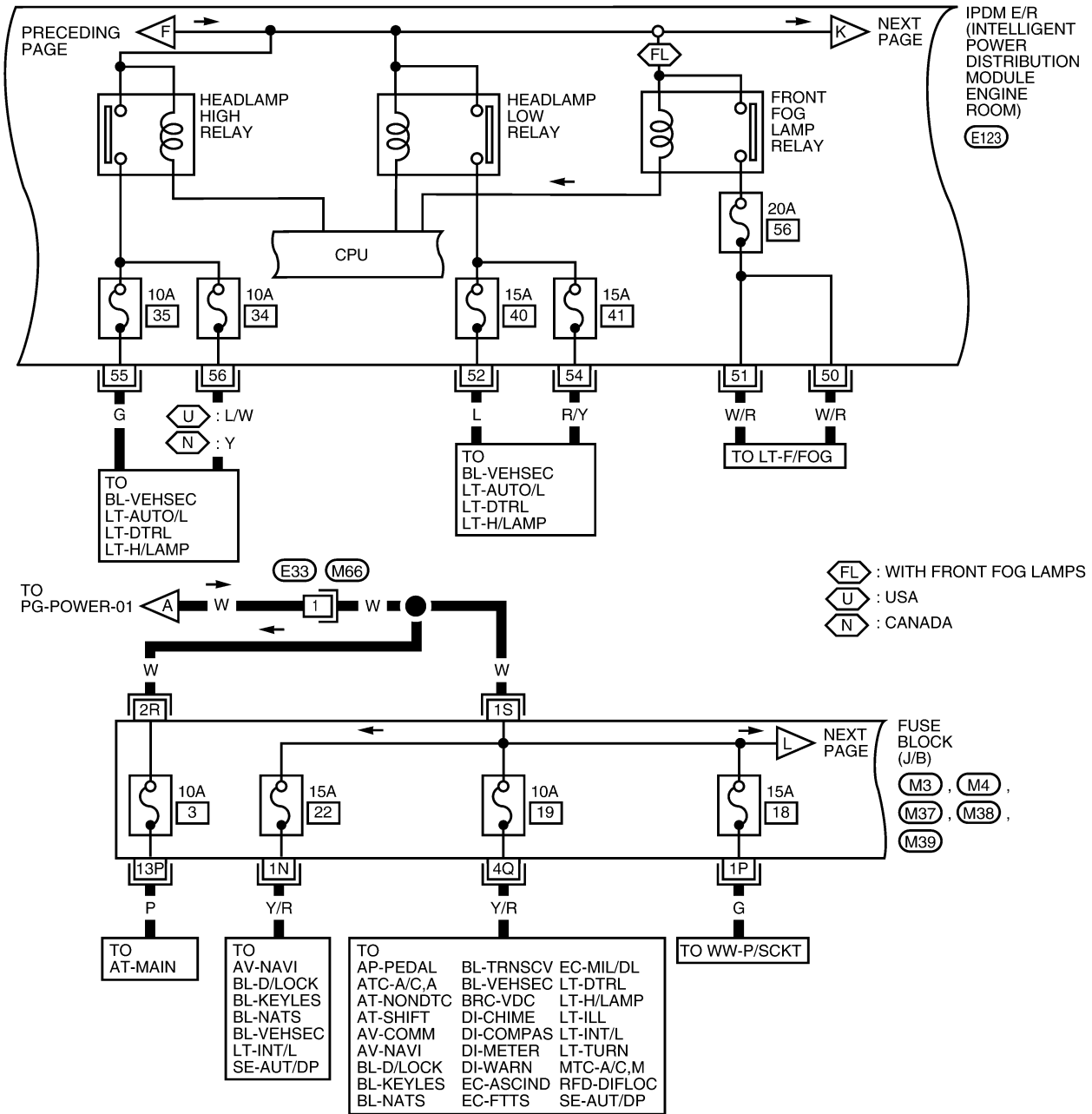
POWER SUPPLY ROUTING CIRCUIT

PG-POWER-02



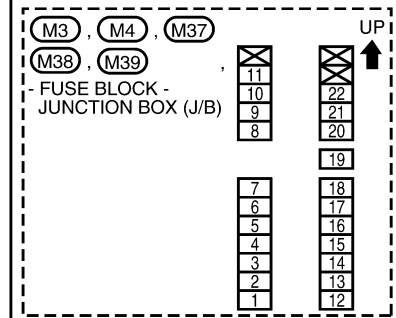
POWER SUPPLY ROUTING CIRCUIT

PG-POWER-03



1 M66 49 50 51 E123
B 52 53 54 55 56 BR

REFER TO THE FOLLOWING.

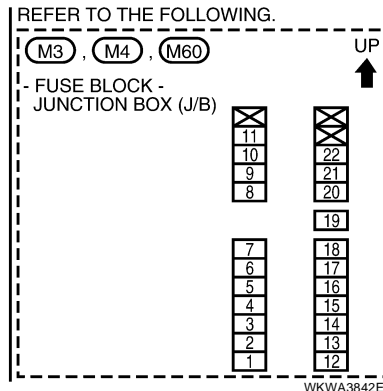
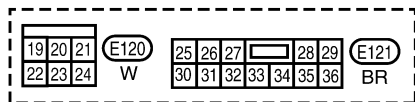
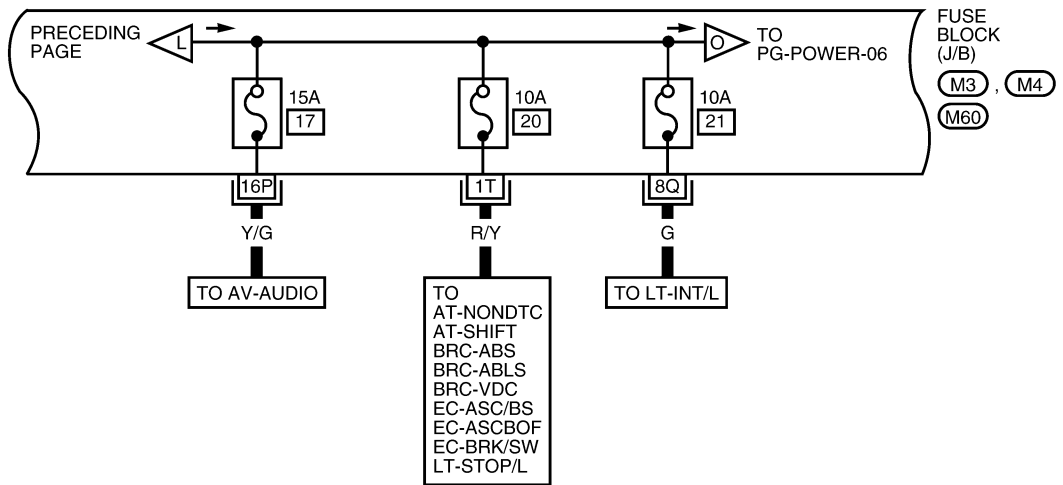
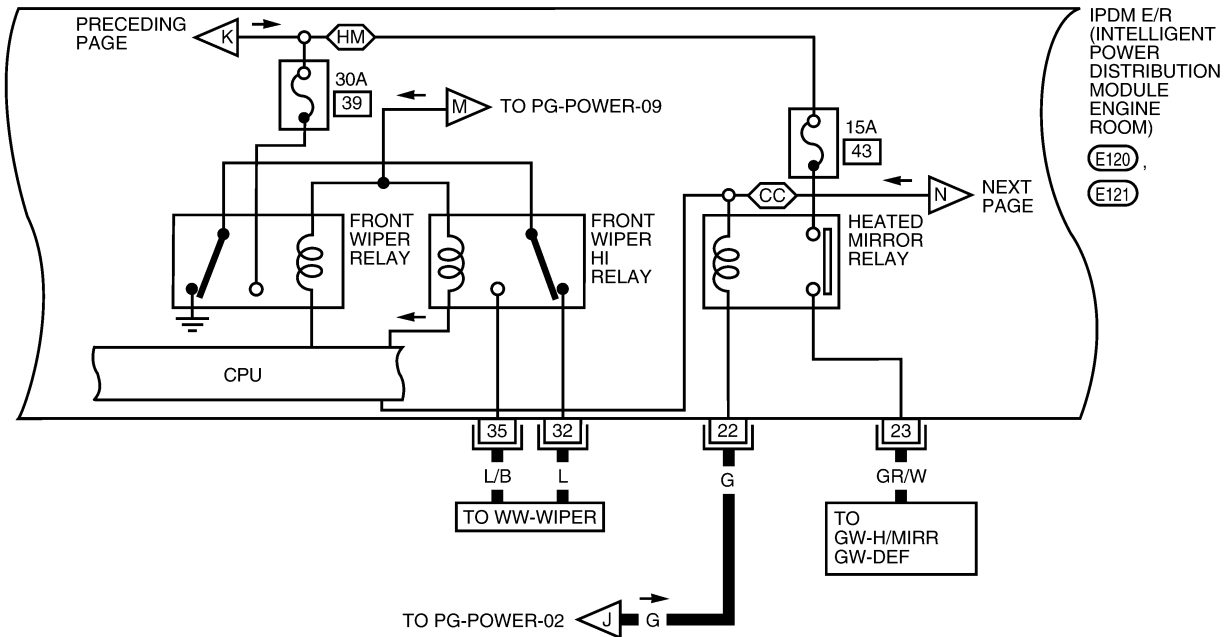


WKWA3841E

POWER SUPPLY ROUTING CIRCUIT

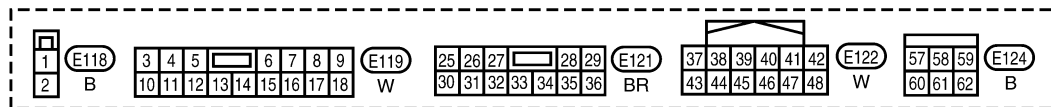
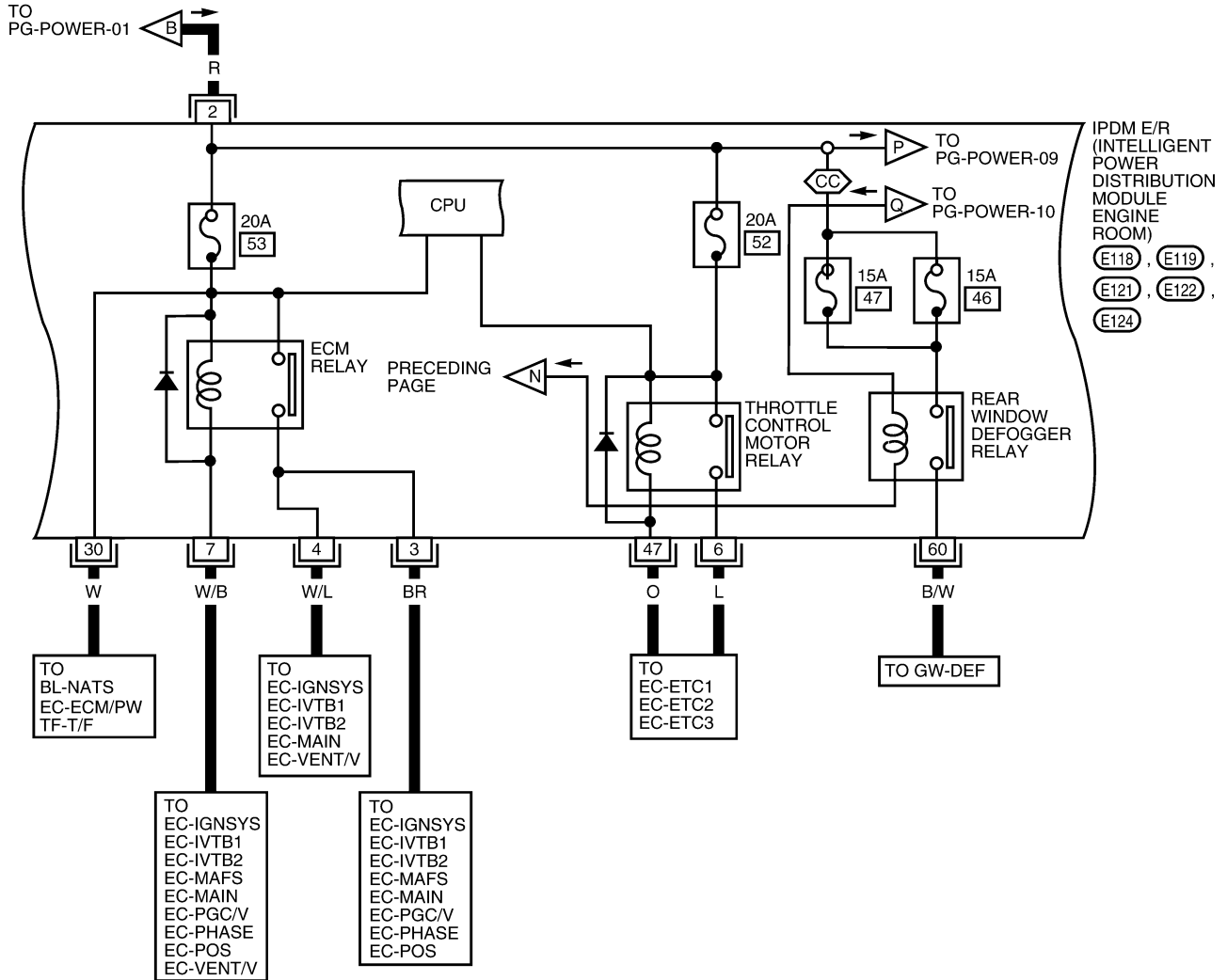
PG-POWER-04

CC : CREW CAB
 HM : WITH HEATED MIRRORS



POWER SUPPLY ROUTING CIRCUIT

PG-POWER-05

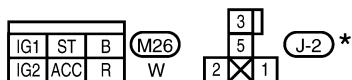
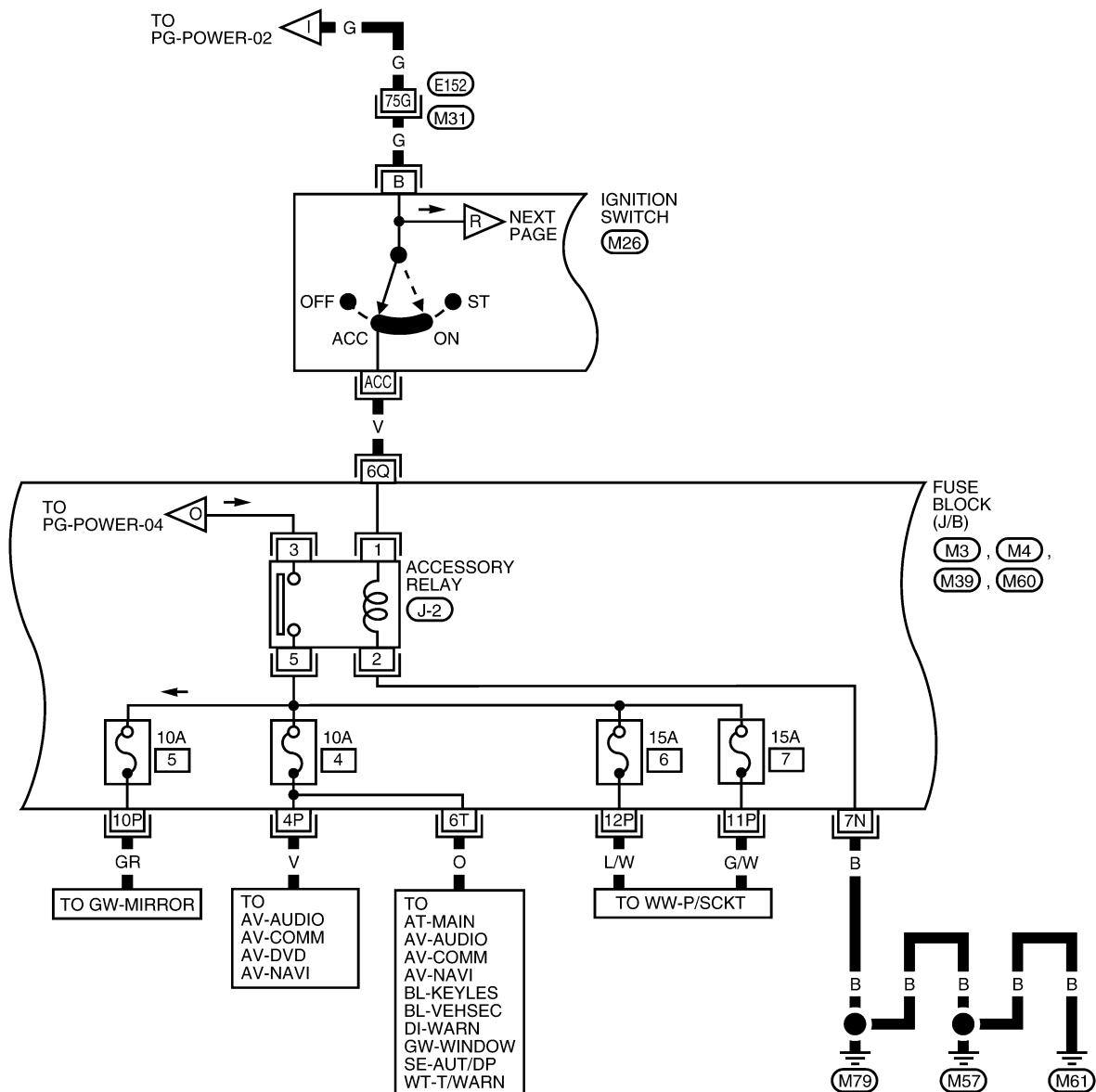


WKWA5482E

POWER SUPPLY ROUTING CIRCUIT

ACCESSORY POWER SUPPLY — IGNITION SW. IN ACC OR ON

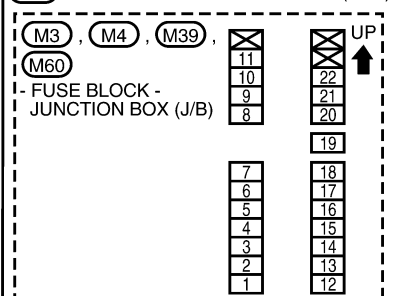
PG-POWER-06



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

REFER TO THE FOLLOWING.

(M31) - SUPER MULTIPLE JUNCTION (SMJ)

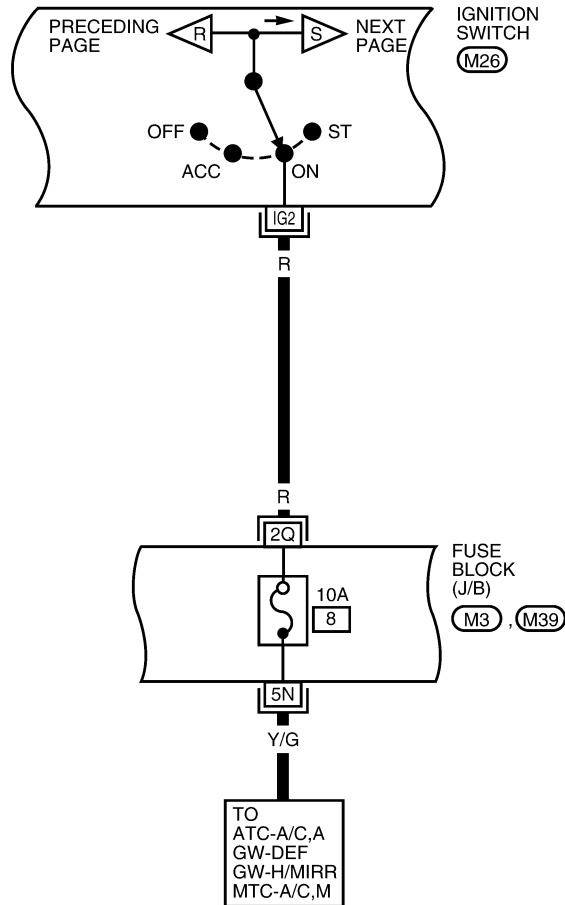


WKWA5472E

POWER SUPPLY ROUTING CIRCUIT

IGNITION POWER SUPPLY — IGNITION SW. IN ON

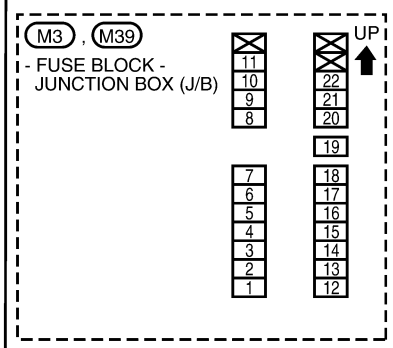
PG-POWER-07



IG1	ST	B	(M26)
IG2	ACC	R	

W

REFER TO THE FOLLOWING.

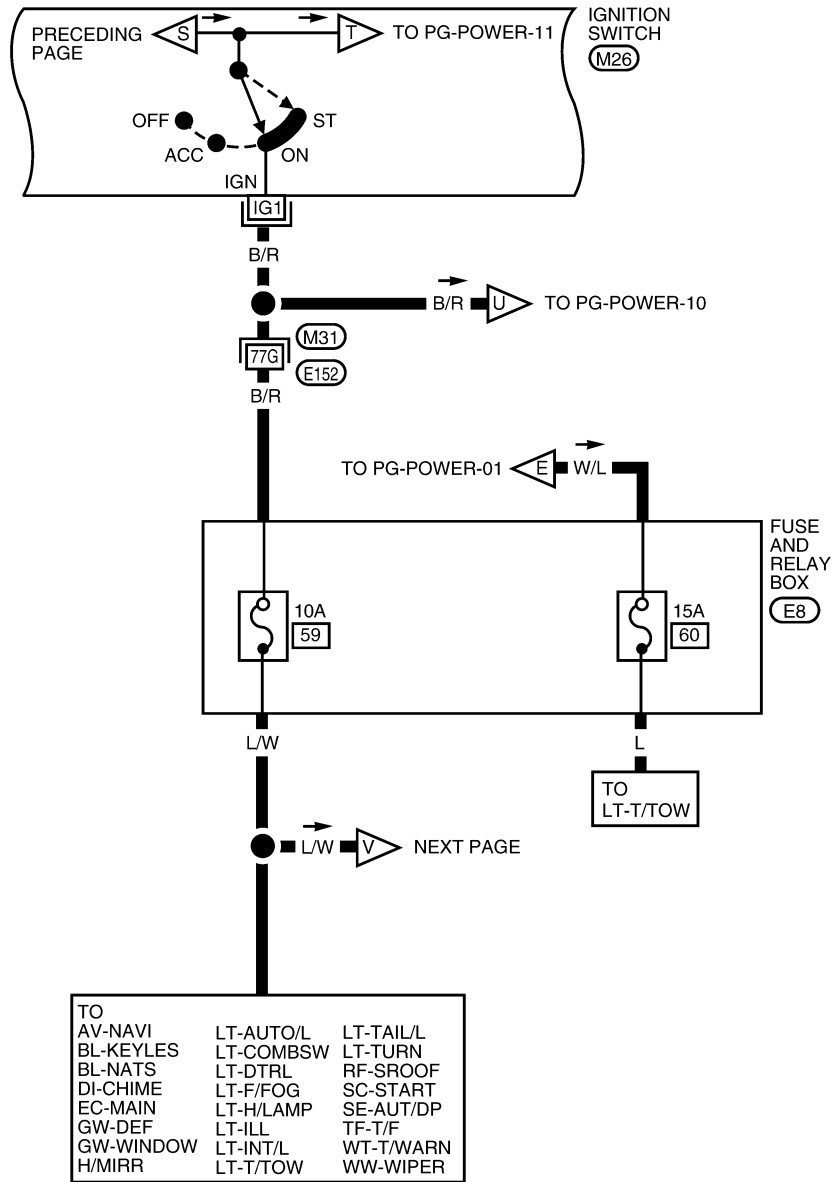


WKWA3845E

POWER SUPPLY ROUTING CIRCUIT

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

PG-POWER-08



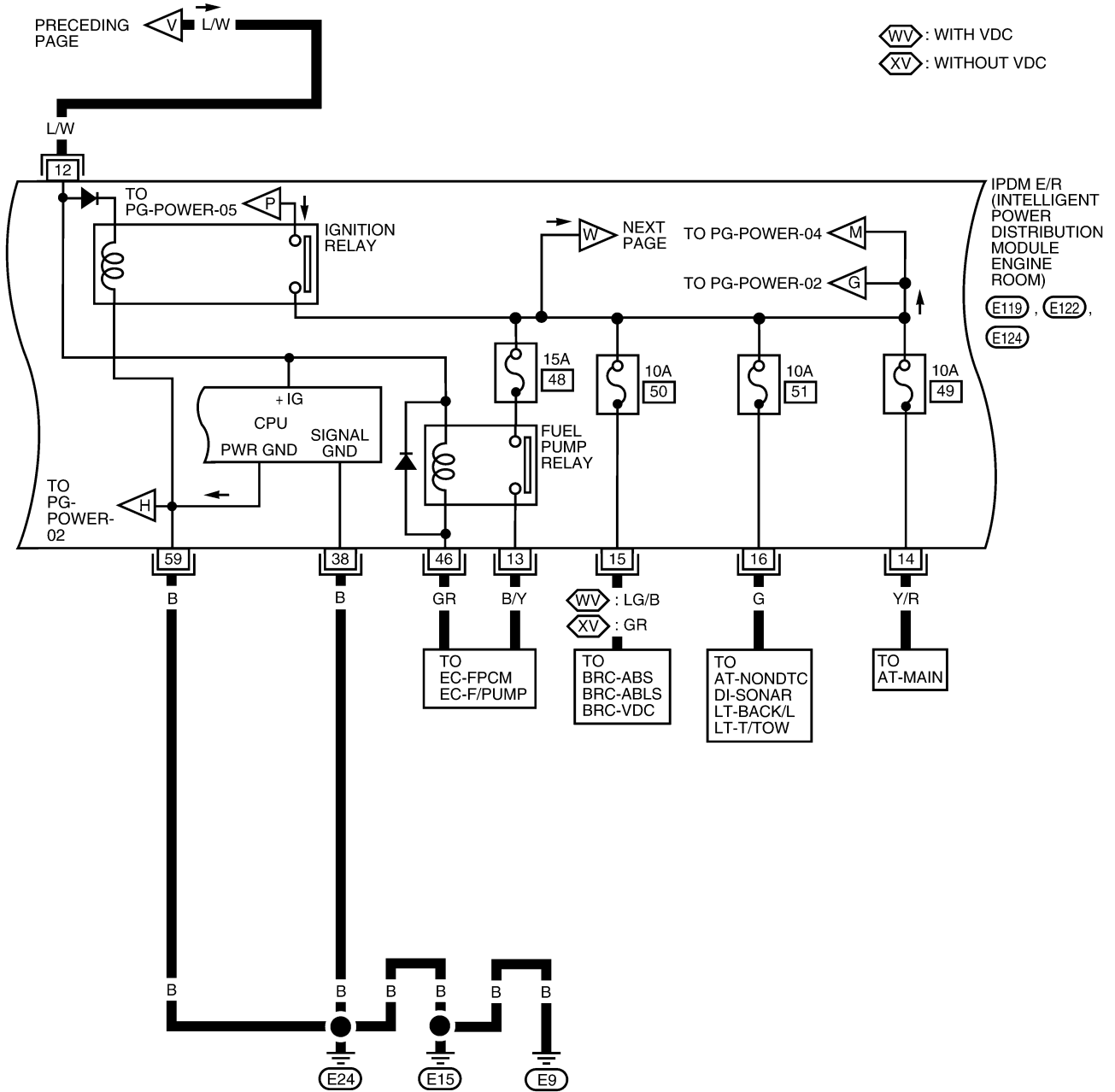
IG1	ST	B	(M26)
IG2	ACC	R	

W

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

POWER SUPPLY ROUTING CIRCUIT

PG-POWER-09

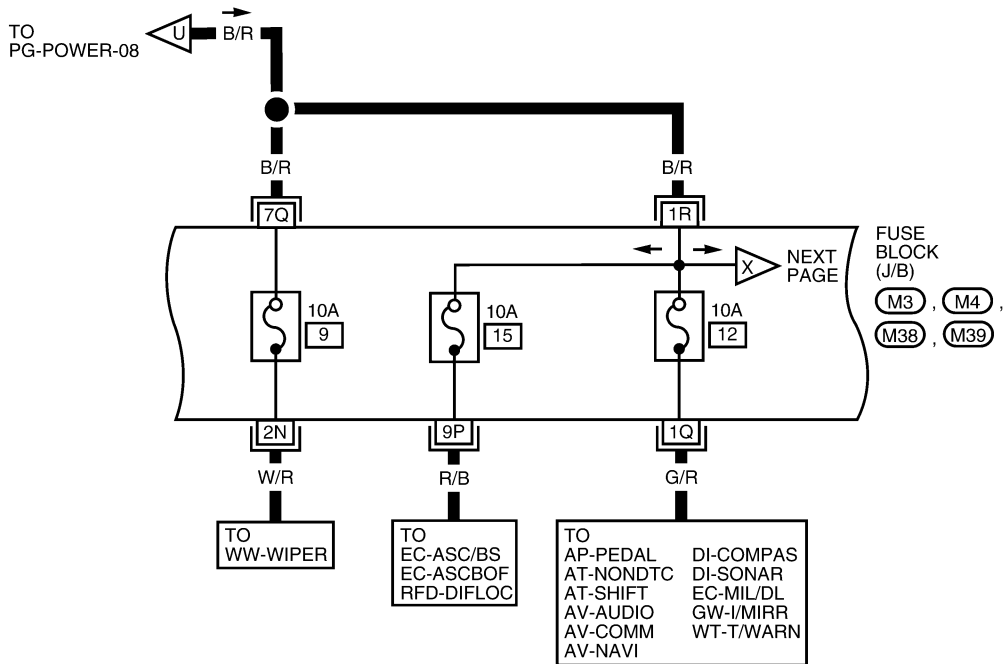
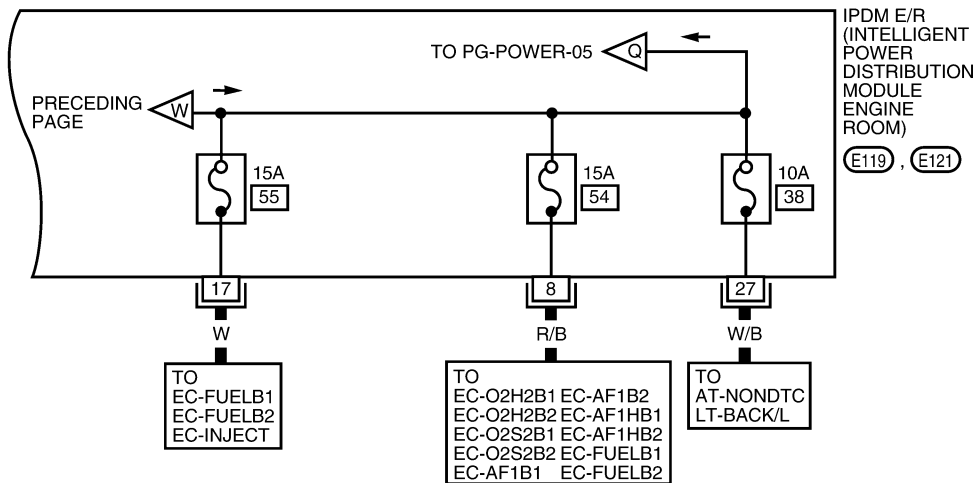


3	4	5	6	7	8	9	E119	37	38	39	40	41	42	E122	57	58	59	E124		
10	11	12	13	14	15	16	17	18	W	43	44	45	46	47	48	W	60	61	62	B

WKWA5483E

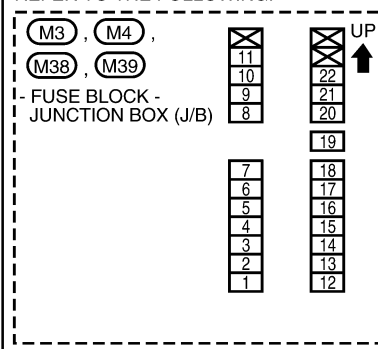
POWER SUPPLY ROUTING CIRCUIT

PG-POWER-10



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.

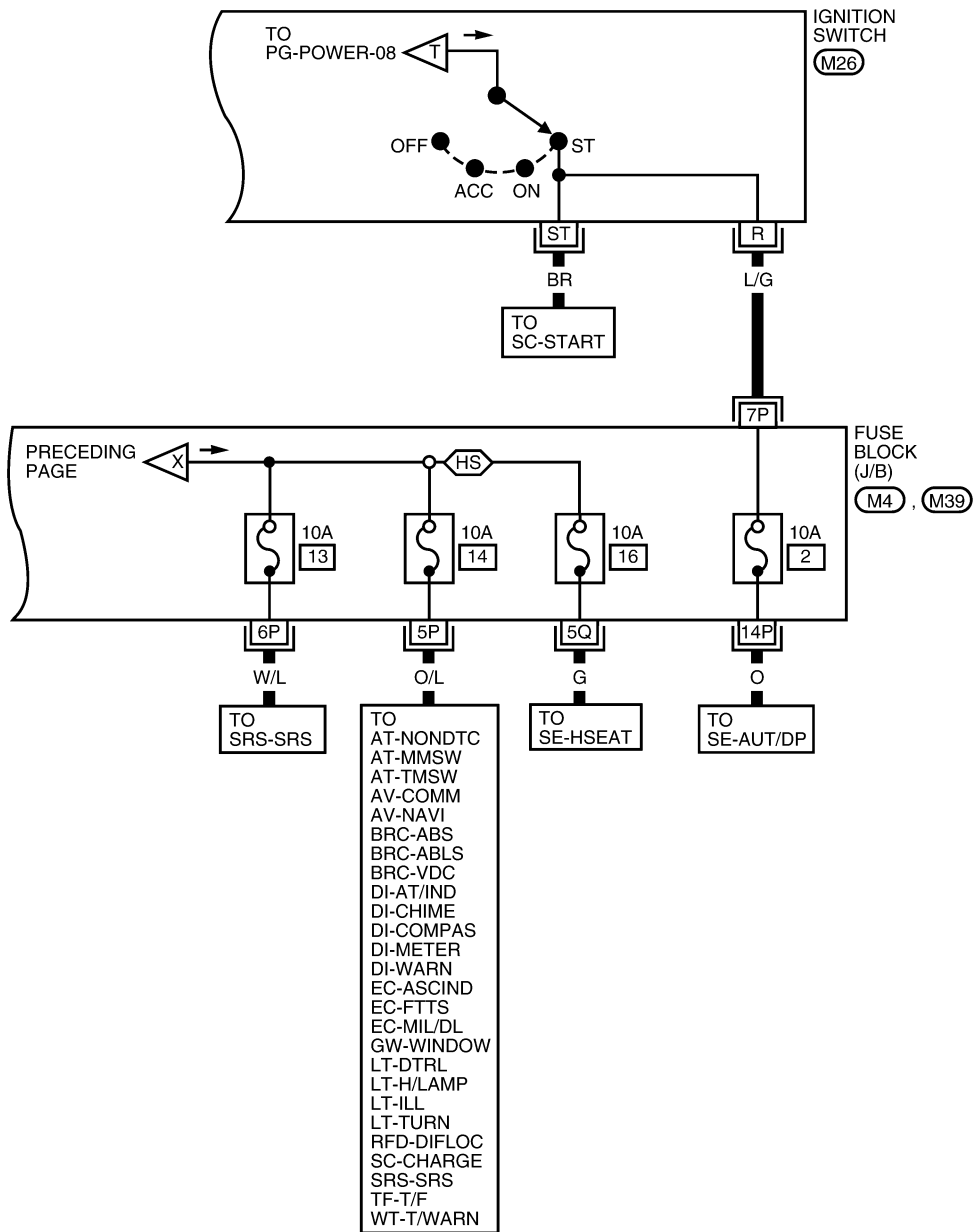


WKWA5473E

POWER SUPPLY ROUTING CIRCUIT

PG-POWER-11

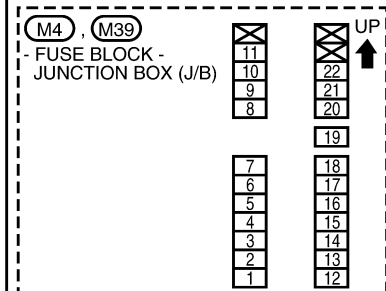
HS: WITH HEATED SEATS



IG1	ST	B	(M26)
IG2	ACC	R	

W

REFER TO THE FOLLOWING.



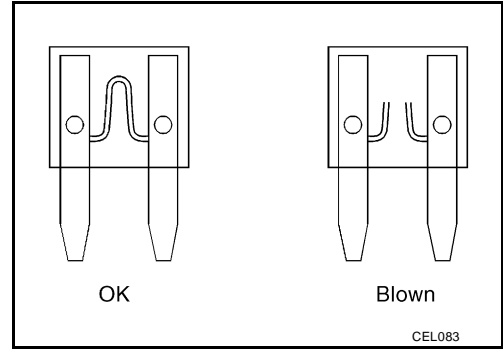
WKWA3849E

POWER SUPPLY ROUTING CIRCUIT

Fuse

EKS00GMD

- 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

EKS00GME

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.

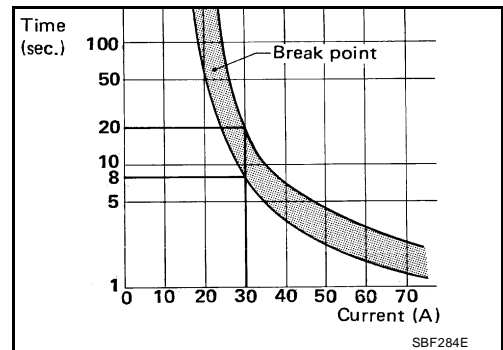
Circuit Breaker (Built Into BCM)

EKS00GMF

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
- Rear window wiper



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

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

PF2:284B7

System Description

EKS00AR8

- 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 (Hi, Lo)
 - Parking lamps
 - Tail and license lamps
 - Front fog lamps
2. Wiper control
Using CAN communication lines, it receives signals from the BCM and controls the front wipers.
3. Heated mirror relay control
Using CAN communication lines, it receives signals from the BCM and controls the heated mirror relay.
4. A/C compressor control
Using CAN communication lines, it receives signals from the ECM and controls the A/C compressor (magnetic clutch).
5. Starter control
Using CAN communication lines, it receives signals from the BCM and controls the starter relay.
6. Cooling fan control
Using CAN communication lines, it receives signals from the ECM and controls the cooling fan relays.
7. 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 and parking lamps	<ul style="list-style-type: none">● With the ignition switch ON, the tail and parking lamps are ON.● With the ignition switch OFF, the tail and parking lamps are 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.
Front wiper	Until the ignition switch is turned off, the front wiper LO and HI remains in the same status it was in just before fail-safe control was initiated.
Rear window defogger	Rear window defogger relay OFF
A/C compressor	A/C compressor OFF
Front fog lamps	Front fog lamp relay OFF

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

IPDM E/R STATUS CONTROL

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

1. CAN communication status
 - CAN communication is normally performed with other control units.
 - Individual unit control by IPDM E/R is normally performed.
 - When sleep request signal is received from BCM, mode is switched to sleep waiting status.
2. Sleep waiting status
 - Process to stop CAN communication is activated.
 - All systems controlled by IPDM E/R are stopped. When 1 second has 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

EKS00AR9

Refer to [LAN-2. "SYSTEM DESCRIPTION"](#) .

Function of Detecting Ignition Relay Malfunction

EKS00ARA

- 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)

EKS00ARB

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 START PROCEDURE

Refer to [LAN-2, "SYSTEM DESCRIPTION"](#).

SELF-DIAGNOSTIC RESULTS

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.

DATA MONITOR

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

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

All Signals, Main Signals, Selection From Menu

Item name	CONSULT-II screen display	Display or unit	Monitor item selection			Description
			ALL SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
Motor fan request	MOTOR FAN REQ	1/2/3/4	X	X	X	Signal status input from ECM
Compressor request	AC COMP REQ	ON/OFF	X	X	X	Signal status input from ECM
Parking, license, 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 request	FR FOG REQ	ON/OFF	X	X	X	Signal status input from BCM
Front wiper request	FR WIP REQ	STOP/1LOW/LOW/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/Block	X	X	X	Control status of IPDM E/R
Starter request	ST RLY REQ	ON/OFF	X		X	Status of input signal ^{NOTE}
Ignition relay status	IGN RLY	ON/OFF	X	X	X	Ignition relay status monitored with IPDM E/R
Rear defogger request (heated mirror)	RR DEF REQ	ON/OFF	X	X	X	Signal status input from BCM
Oil pressure switch	OIL P SW (*1)	OPEN/CLOSE	X		X	Signal status input from IPDM E/R
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 running lamp request	DTRL REQ	ON/OFF	X		X	Signal status input from BCM

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.

CAN DIAG SUPPORT MNTR

Refer to [LAN-2, "SYSTEM DESCRIPTION"](#) .

ACTIVE TEST

Test name	CONSULT-II screen display	Description
Rear defogger output	REAR DEFOGGER	With a certain ON-OFF operation, the heated mirror 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.
Lamp (HI, LO, TAIL, 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.

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

Test name	CONSULT-II screen display	Description
Cornering lamp output	CORNERING LAMP	—
Horn output	HORN	With a certain ON-OFF operation, the horn relay can be operated.

Auto Active Test DESCRIPTION

EKS00ARC

- 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 (crew cab only)
 - Front wipers
 - Tail, parking, and license lamps
 - Front fog lamps
 - Headlamps (Hi, Lo)
 - A/C compressor (magnetic clutch)
 - Cooling fan

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:

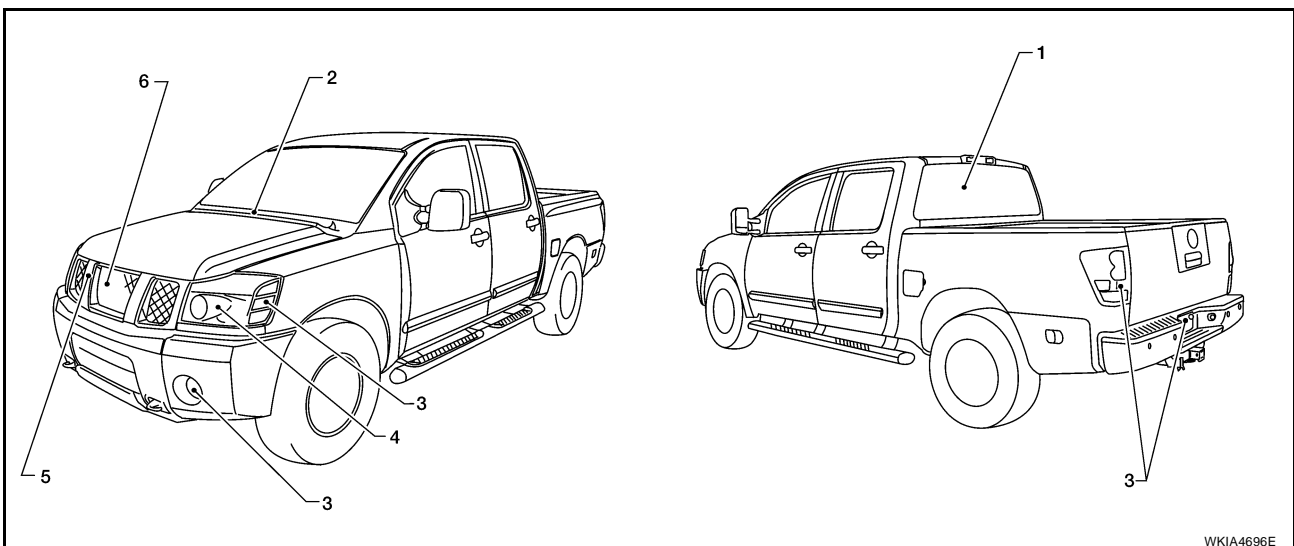
When auto active test mode has to be cancelled halfway, turn ignition switch OFF.

CAUTION:

Be sure to perform [BL-32, "Door Switch Check \(King Cab\)"](#) or [BL-34, "Door Switch Check \(Crew Cab\)"](#) 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 are repeated three times.

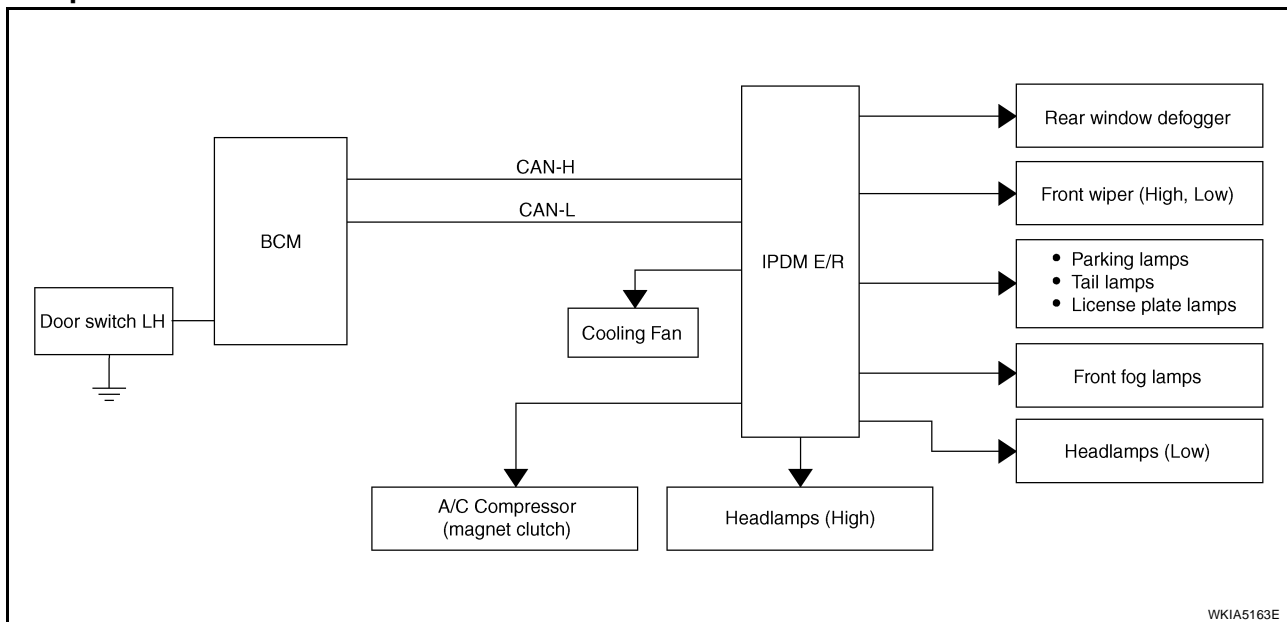


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IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

Item Number	Test Item	Operation Time/Frequency
1	Rear window defogger (Crew Cab only)	10 seconds
2	Front wipers	LOW 5 seconds then HIGH 5 seconds
3	Front fog, tail, license, and parking lamps	10 seconds
4	Headlamps	Low on for 20 seconds. High on-off five times.
5	A/C compressor (magnetic clutch)	ON-OFF 5 times
6	Cooling fan	10 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.	YES	● BCM signal input system
	NO	● Rear window defogger relay ● IPDM E/R malfunction ● Harness or connector malfunction between IPDM E/R and rear window defogger ● Open circuit of rear window defogger
Any of front wipers, tail and parking lamps, front fog lamps, and headlamps (Hi, Lo) do not 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

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

Symptom	Inspection contents	Possible cause	
A/C compressor does not operate.	Perform auto active test. Does magnetic clutch operate?	YES	<ul style="list-style-type: none"> ● BCM signal input circuit ● CAN communication signal between BCM and ECM ● CAN communication signal between ECM and IPDM E/R
		NO	<ul style="list-style-type: none"> ● 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	<ul style="list-style-type: none"> ● ECM signal input circuit ● CAN communication signal between ECM and IPDM E/R
		NO	<ul style="list-style-type: none"> ● Cooling fan motor malfunction ● Harness/connector malfunction between IPDM E/R and cooling fan motor ● IPDM E/R (integrated relay) malfunction

Terminals and Reference Values for IPDM E/R

EKS00ARD

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value (Approx.)
				Ignition switch	Operation or condition	
1	B/Y	Battery power supply	Input	OFF	—	Battery voltage
2	R	Battery power supply	Input	OFF	—	Battery voltage
3	BR	ECM relay	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
4	W/L	ECM relay	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
6	L	Throttle control motor relay	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
7	W/B	ECM relay control	Input	—	Ignition switch ON or START	0V
					Ignition switch OFF or ACC	Battery voltage
8	R/B	Fuse 54	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
10	G	Daytime light relay control	Output	ON	Daytime light system active	0V
					Daytime light system inactive	Battery voltage
11	Y/B	A/C compressor	Output	ON or START	A/C switch ON or defrost A/C switch	Battery voltage
					A/C switch OFF or defrost A/C switch	0V
12	L/W	Ignition switch supplied power	Input	—	OFF or ACC	0V
					ON or START	Battery voltage
13	B/Y	Fuel pump relay	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
14	Y/R	Fuse 49	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
15	LG/B	Fuse 50	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
16	G	Fuse 51	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V

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		
17	W	Fuse 55	Output	—	Ignition switch ON or START	Battery voltage	
					Ignition switch OFF or ACC	0V	
19	W/R	Starter motor	Output	START	—	Battery voltage	
21	BR	Ignition switch supplied power	Input	—	OFF or ACC	0V	
					START	Battery voltage	
22	G	Battery power supply	Output	OFF	—	Battery voltage	
23	GR/W	Door mirror defogger output signal	Output	—	When rear defogger switch is ON	Battery voltage	
					When raker defogger switch is OFF	0V	
24	L/B	Cooling fan relay	Output	—	Conditions correct for cooling fan operation	Battery voltage	
					Conditions not correct for cooling fan operation	0V	
27	W/B	Fuse 38	Output	—	Ignition switch ON or START	Battery voltage	
					Ignition switch OFF or ACC	0V	
30	W	Fuse 53	Output	—	Ignition switch ON or START	Battery voltage	
					Ignition switch OFF or ACC	0V	
32	L	Wiper low speed signal	Output	ON or START	Wiper switch	OFF	Battery voltage
						LO or INT	0V
35	L/B	Wiper high speed signal	Output	ON or START	Wiper switch	OFF, LO, INT	Battery voltage
						HI	0V
38	B	Ground	Input	—	—	0V	
39	L	CAN-L	—	ON	—	—	
40	P	CAN-H	—	ON	—	—	
43	L/Y	Wiper auto stop signal	Input	ON or START	Wiper switch	OFF, LO, INT	Battery voltage
44	BR	Daytime light relay control	Input	ON	Daytime light system active		0V
					Daytime light system inactive		Battery voltage
45	G/W	Horn relay control	Input	ON	When door locks are operated using key fob (OFF → ON)*1		Battery voltage → 0V
46	GR	Fuel pump relay control	Input	—	Ignition switch ON or START		0V
					Ignition switch OFF or ACC		Battery voltage
47	O	Throttle control motor relay control	Input	—	Ignition switch ON or START		0V
					Ignition switch OFF or ACC		Battery voltage
48	B/R	Starter relay (inhibit switch)	Input	ON or START	Selector lever in "P" or "N"		0V
					Selector lever any other position		Battery voltage
49	R/L	Trailer tow relay	Output	ON	Lighting switch must be in the 1st 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	
50	W/R	Front fog lamp (LH)	Output	ON or START	Lighting switch must be in the 2nd position (LOW beam is ON) and the front fog lamp switch	0V
					OFF	Battery voltage
51	W/R	Front fog lamp (RH)	Output	ON or START	Lighting switch must be in the 2nd position (LOW beam is ON) and the front fog lamp switch	0V
					OFF	Battery voltage
52	L	LH low beam head-lamp	Output	—	Lighting switch in 2nd position	Battery voltage
54	R/Y	RH low beam head-lamp	Output	—	Lighting switch in 2nd position	Battery voltage
55	G	LH high beam head-lamp	Output	—	Lighting switch in 2nd position and placed in HIGH or PASS position	Battery voltage
56	L/W*2 Y*3	LH high beam head-lamp	Output	—	Lighting switch in 2nd position and placed in HIGH or PASS position	Battery voltage
57	R/L	Parking, license, and tail lamp	Output	ON	Lighting switch 1st position	0V
					OFF	Battery voltage
59	B	Ground	Input	—	—	0V
60	B/W	Rear window defogger relay	Output	ON or START	Rear defogger switch ON	Battery voltage
					Rear defogger switch OFF	0V
61	BR	Fuse 32	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V

*1: When horn reminder is ON

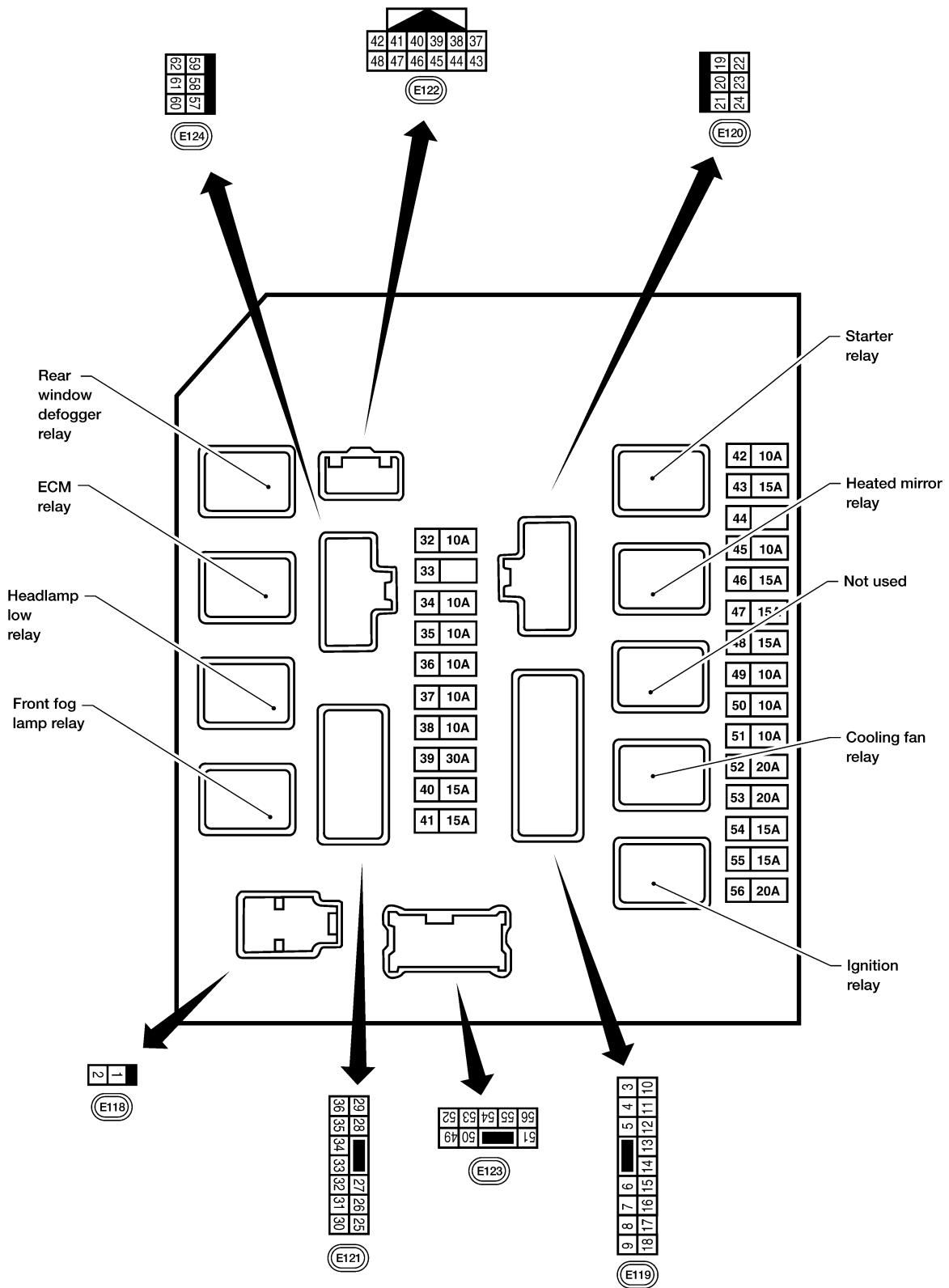
*2: L/W is for U.S.A.

*3: Y is for Canada

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)

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IPDM E/R Power/Ground Circuit Inspection

1. FUSE AND FUSIBLE LINK INSPECTION

Check that the following fusible links or IPDM E/R fuses are not blown.

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

OK or NG

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

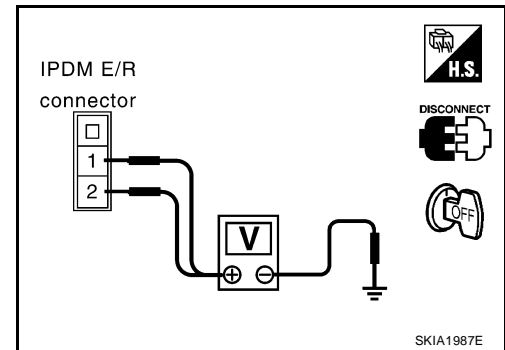
2. POWER CIRCUIT INSPECTION

1. Disconnect IPDM E/R harness connector E118.
2. 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.



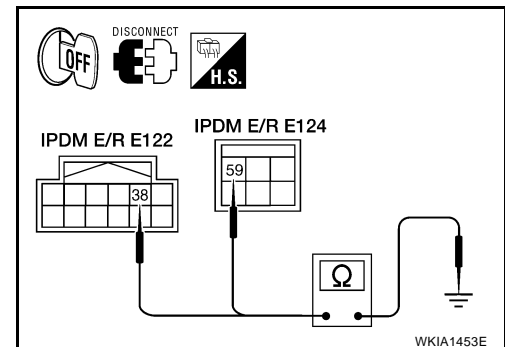
3. GROUND CIRCUIT INSPECTION

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.



Inspection with CONSULT-II (Self-Diagnosis)

EKS00ARG

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) carry out CAN communication.

1. SELF-DIAGNOSIS RESULT CHECK

1. Connect CONSULT-II and select "IPDM E/R" on the Diagnosis System Selection screen.
2. Select "SELF-DIAG RESULTS" on the diagnosis mode selection 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-42, "TROUBLE DIAGNOSIS"](#) .

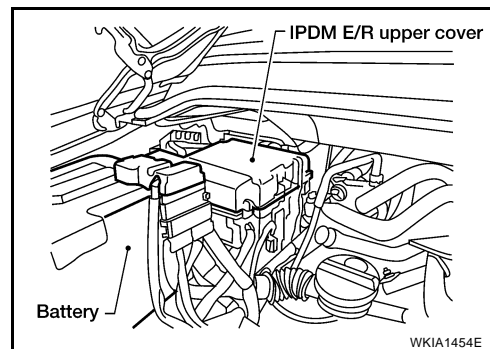
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

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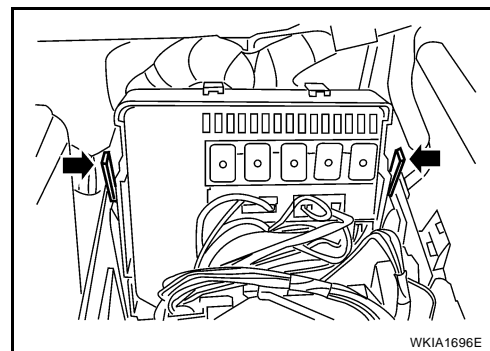
Removal and Installation of IPDM E/R

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.

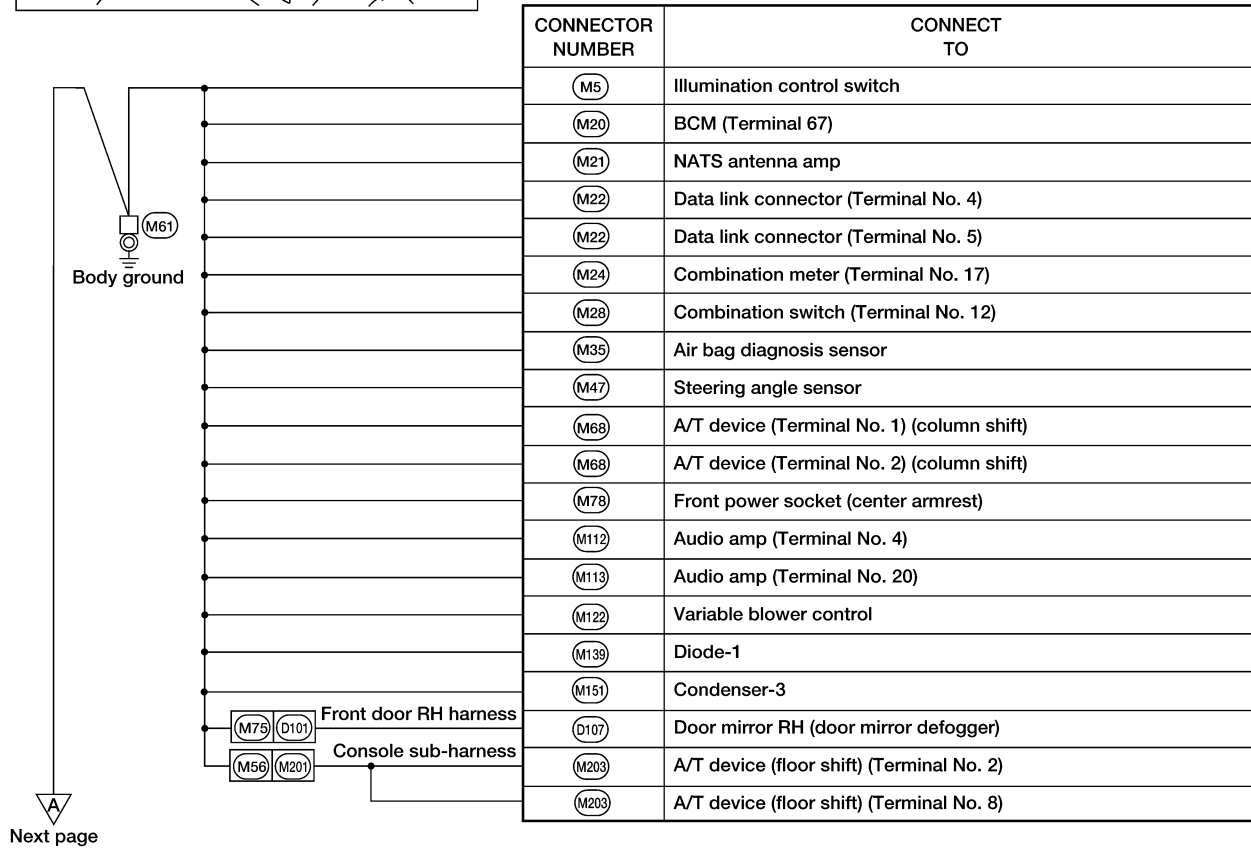
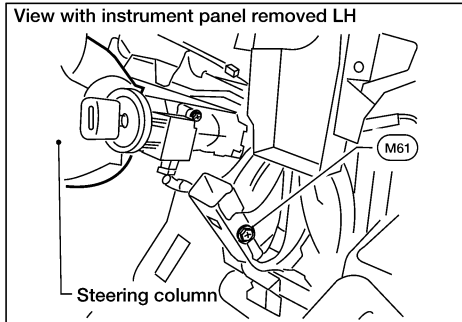
GROUND CIRCUIT

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GROUND CIRCUIT

Ground Distribution MAIN HARNESS

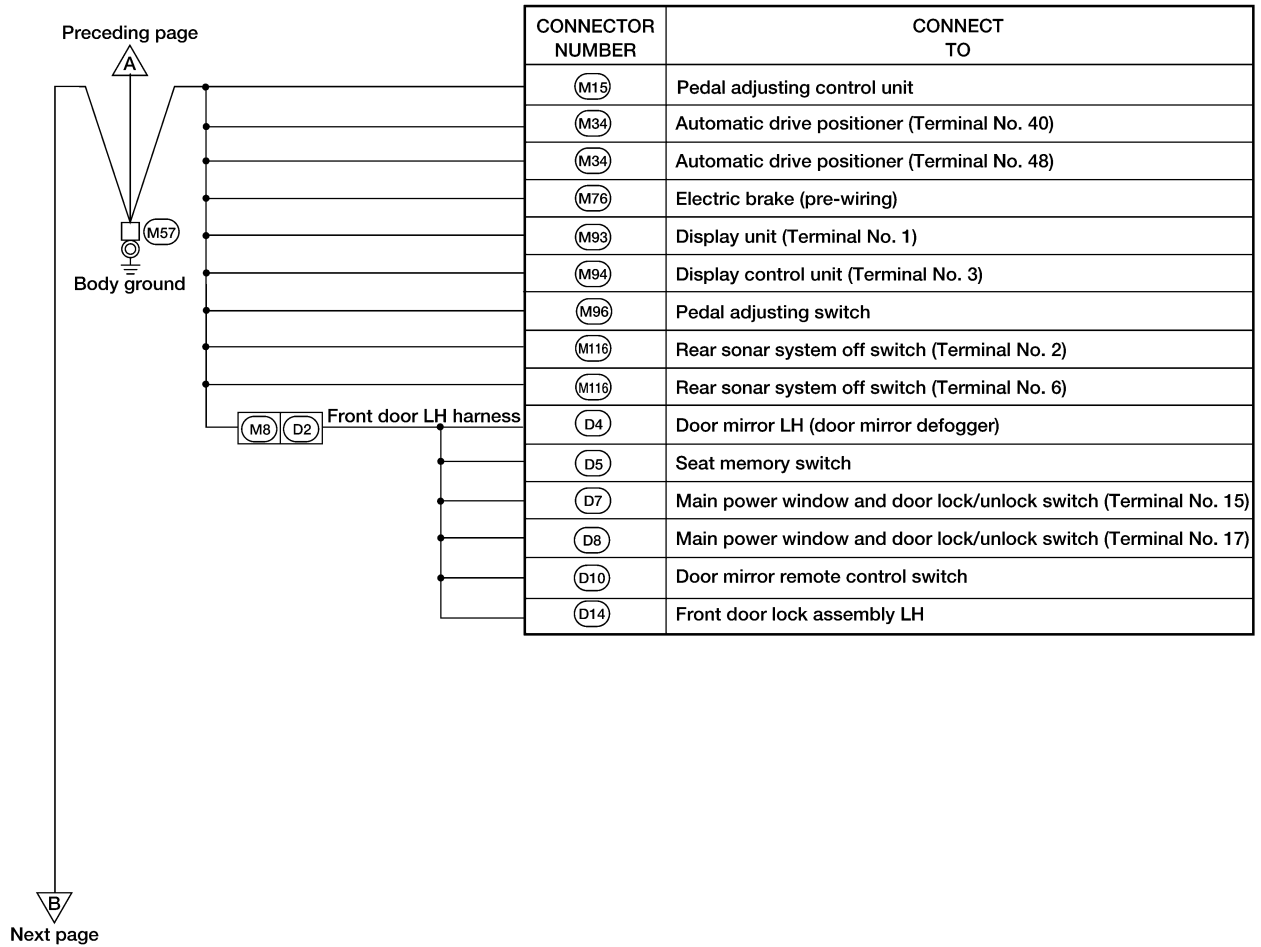
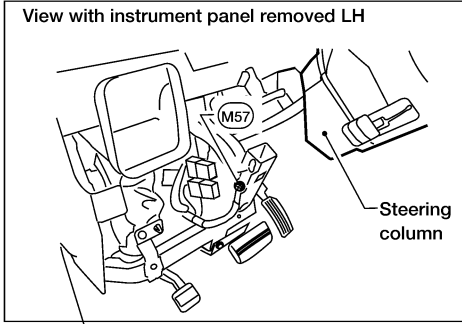


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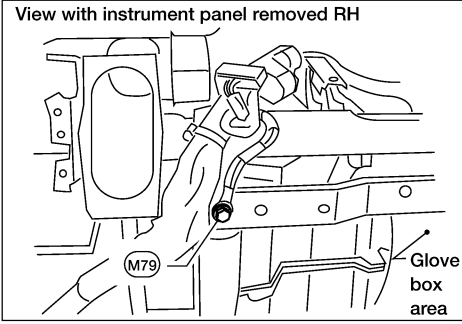
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GROUND CIRCUIT

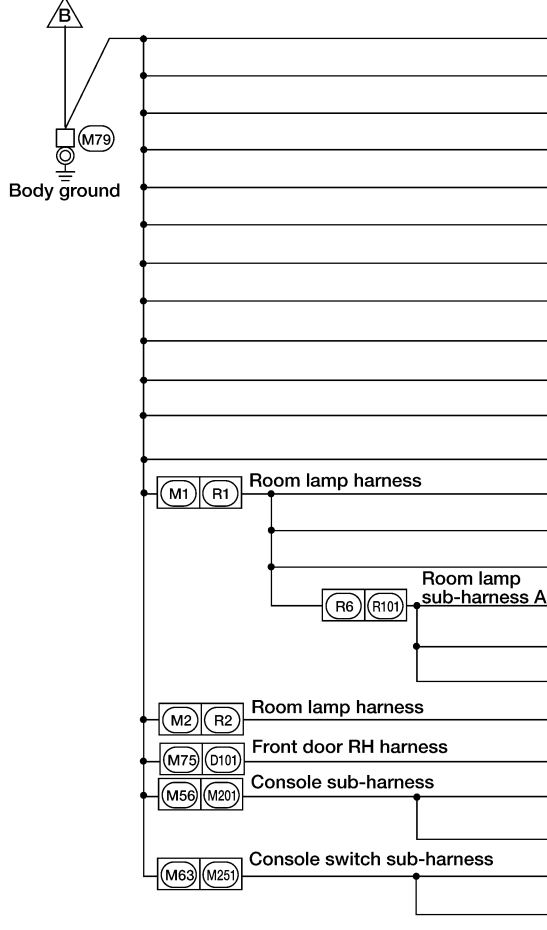


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GROUND CIRCUIT



Preceding page



CONNECTOR NUMBER	CONNECT TO
(M3)	Fuse block J/B (Terminal No. 7N)
(M13)	Front passenger air bag off indicator
(M49)	Front air control (Terminal No. 1)
(M53)	Front power socket LH
(M54)	Front power socket RH (for cigarette lighter)
(M55)	Hazard switch
(M59)	Glove box lamp
(M67)	Tow mode switch (Terminal No. 2)
(M67)	Tow mode switch (Terminal No. 6)
(M81)	Shift lock control unit
(M98)	AV switch
(M148)	VDC OFF switch
(R3)	Vanity lamp LH
(R7)	Auto anti-dazzling inside mirror
(R8)	Vanity lamp RH
(R102)	Front room/map lamp assembly
(R105)	Compass and thermometer
(R106)	HOMELINK universal transceiver
(R4)	Sunroof motor
(D105)	Power window and door lock/unlock switch RH
(M206)	DVD player (Terminal No. 22)
(M207)	Console power socket
(M252)	Front heated seat switch RH
(M255)	Front heated seat switch LH

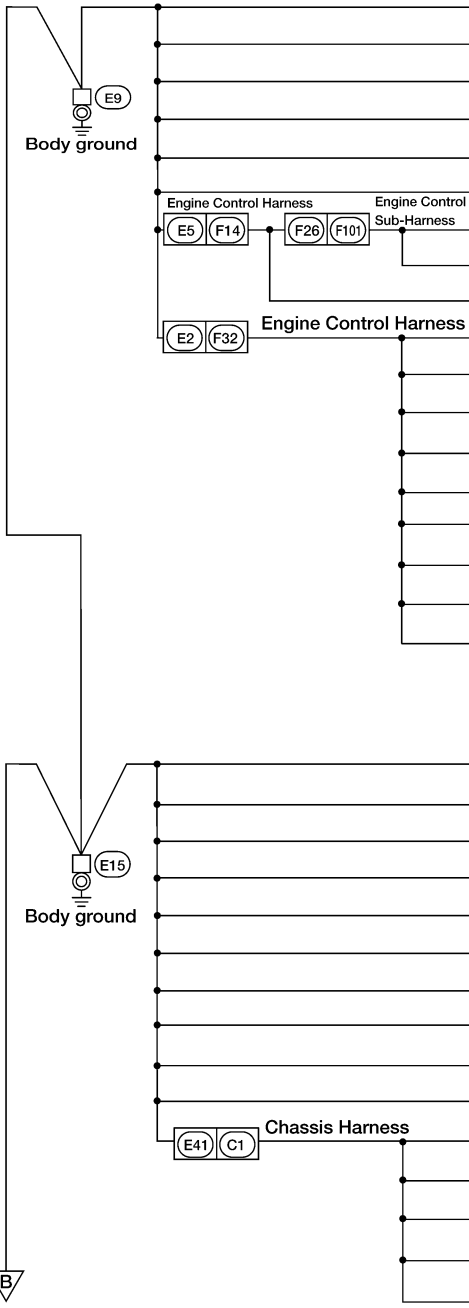
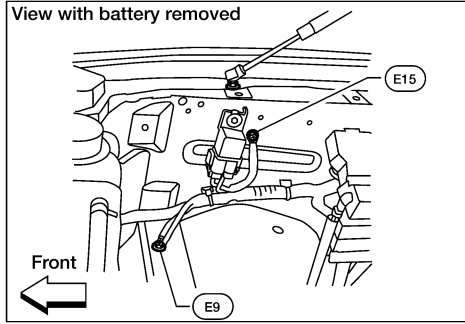
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GROUND CIRCUIT

ENGINE ROOM HARNESS



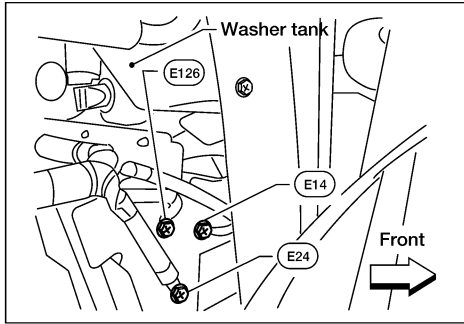
CONNECTOR NUMBER	CONNECT TO
E16	ECM (Terminal No. 115)
E16	ECM (Terminal No. 116)
E142	Transfer control unit (Terminal No. 6)
E142	Transfer control unit (Terminal No. 18)
E156	Trailer turn relay LH
E157	Trailer turn relay RH
F102	Knock sensor (bank 1) shield
F104	Knock sensor (bank 2) shield
F5	Air fuel ratio (A/F) sensor 1 (bank 2)
F9	A/T assembly (TCM) (Terminal No. 10)
F9	A/T assembly (TCM) (Terminal No. 5)
F11	Crankshaft position sensor (POS)
F23	Camshaft position sensor (PHASE)
F50	Electric throttle control actuator (throttle position sensor shield)
F54	ECM (Terminal No. 1)
F62	Intake valve timing control position sensor (bank 1)
F64	Intake valve timing control position sensor (bank 2)
F65	Air fuel ratio (A/F) sensor 1 (bank 1)

CONNECTOR NUMBER	CONNECT TO
E3	Horn
E11	Front combination lamp LH (headlamp) (Terminal No. 3)
E11	Front combination lamp LH (headlamp) (Terminal No. 4)
E17	Fuel pump control module
E21	Brake fluid level switch
E102	Front fog lamp RH
E103	Daytime light relay
E106	Washer fluid level switch
E113	Cooling fan motor
E116	Condenser-2
C5	Fuel level sensor unit and fuel pump (fuel pump)
C12	License plate lamp
C13	Rear combination lamp LH
C14	Rear combination lamp RH
C16	Differential lock position switch

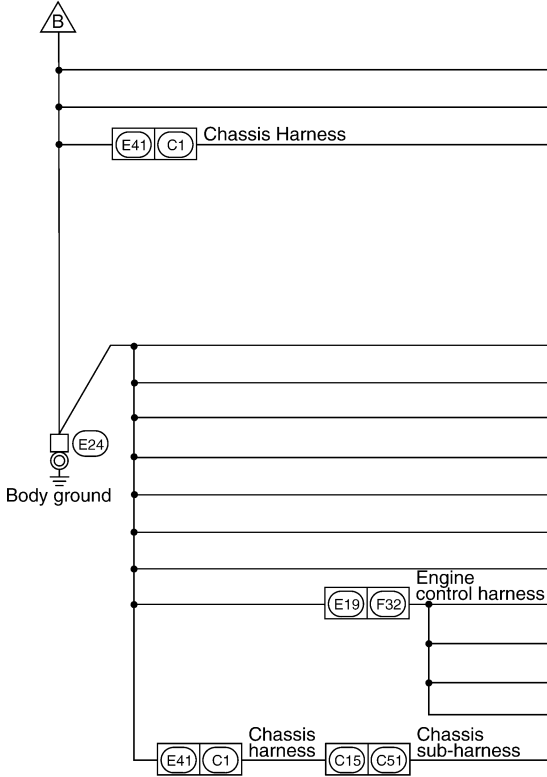
Next page

WKIA5822E

GROUND CIRCUIT



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CONNECTOR NUMBER	CONNECT TO
(E140)	Trailer tow relay 2
(E143)	Transfer control unit (Terminal No. 32)
(C2)	Trailer

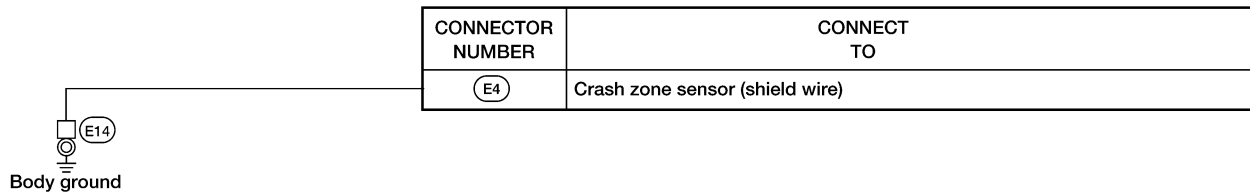
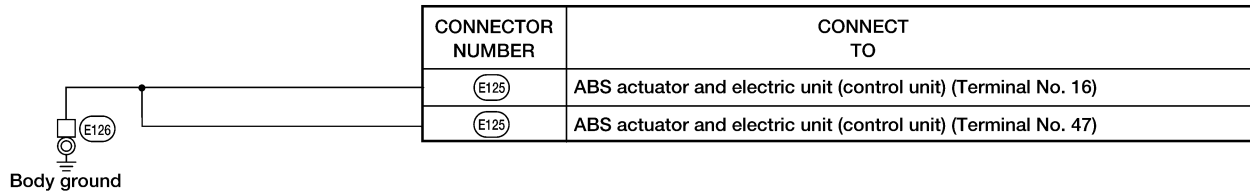
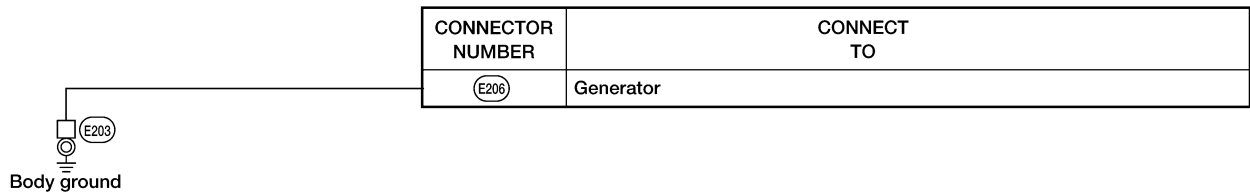
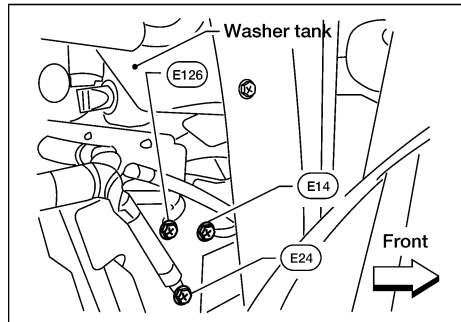
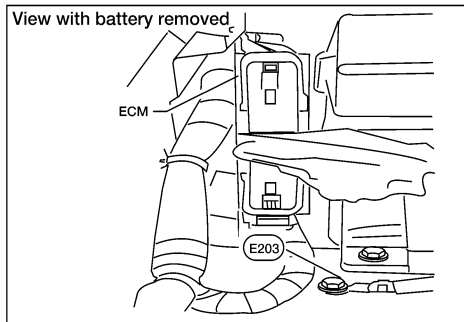
CONNECTOR NUMBER	CONNECT TO
(E23)	Front wiper motor
(E46)	Transfer shut off relay 1
(E101)	Front fog lamp LH
(E107)	Front combination lamp RH (headlamp) (Terminal No. 3)
(E107)	Front combination lamp RH (headlamp) (Terminal No. 4)
(E122)	IPDM E/R
(E124)	IPDM E/R
(F55)	ATP switch
(F58)	Transfer control device (Terminal No. 22)
(F59)	Wait detection switch
(F60)	4LO switch
(C52)	Rear cargo bed power socket

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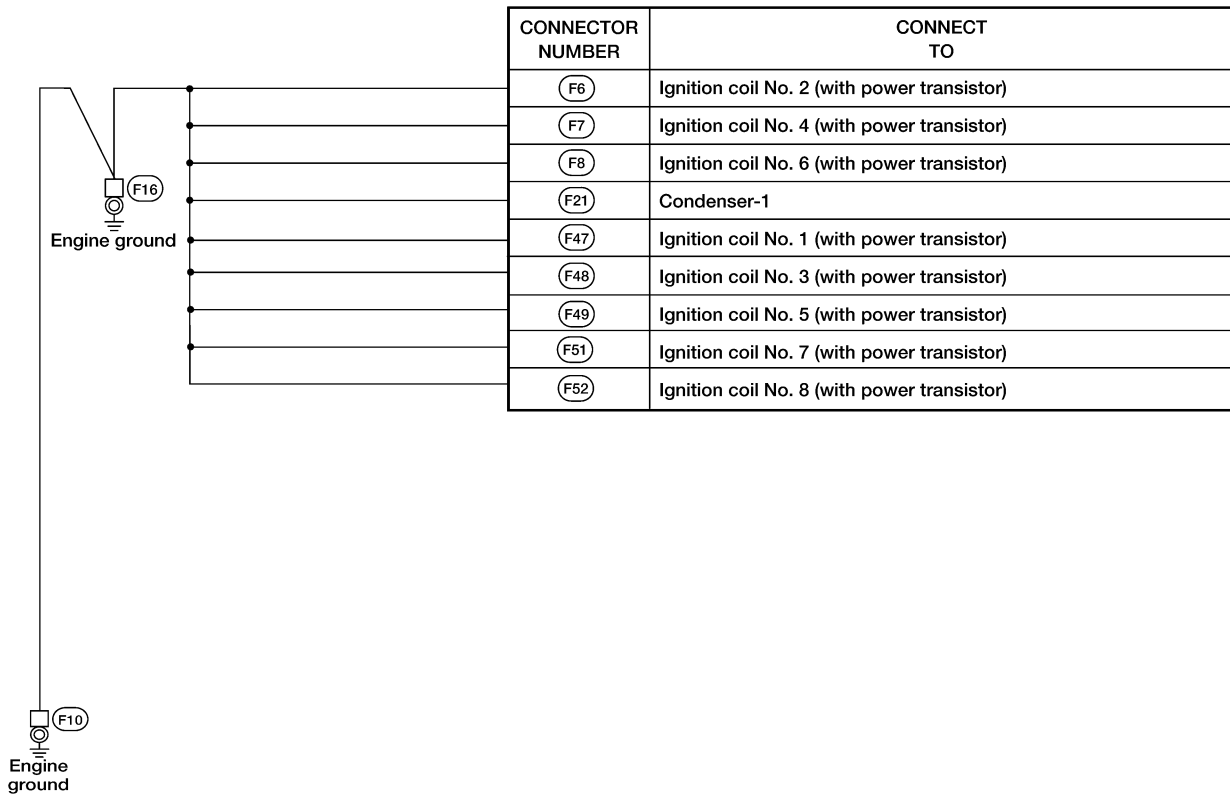
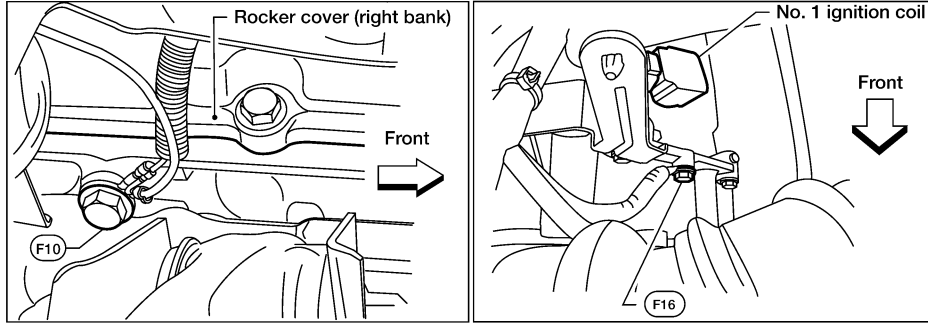
GROUND CIRCUIT



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GROUND CIRCUIT

ENGINE CONTROL HARNESS

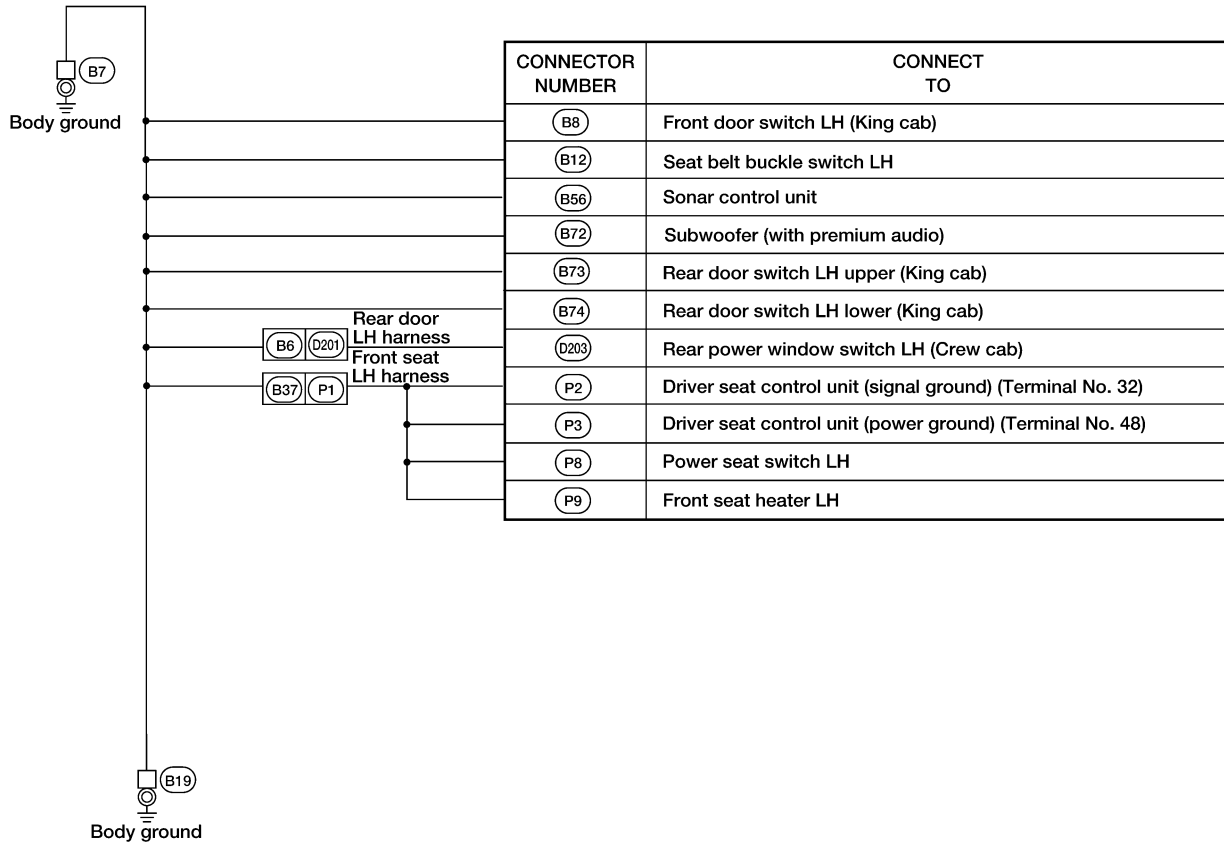
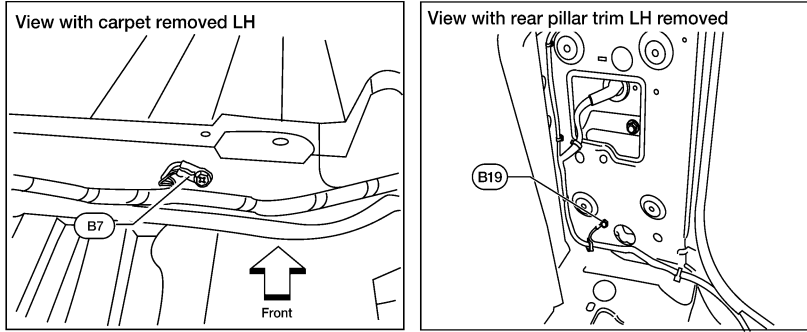


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GROUND CIRCUIT

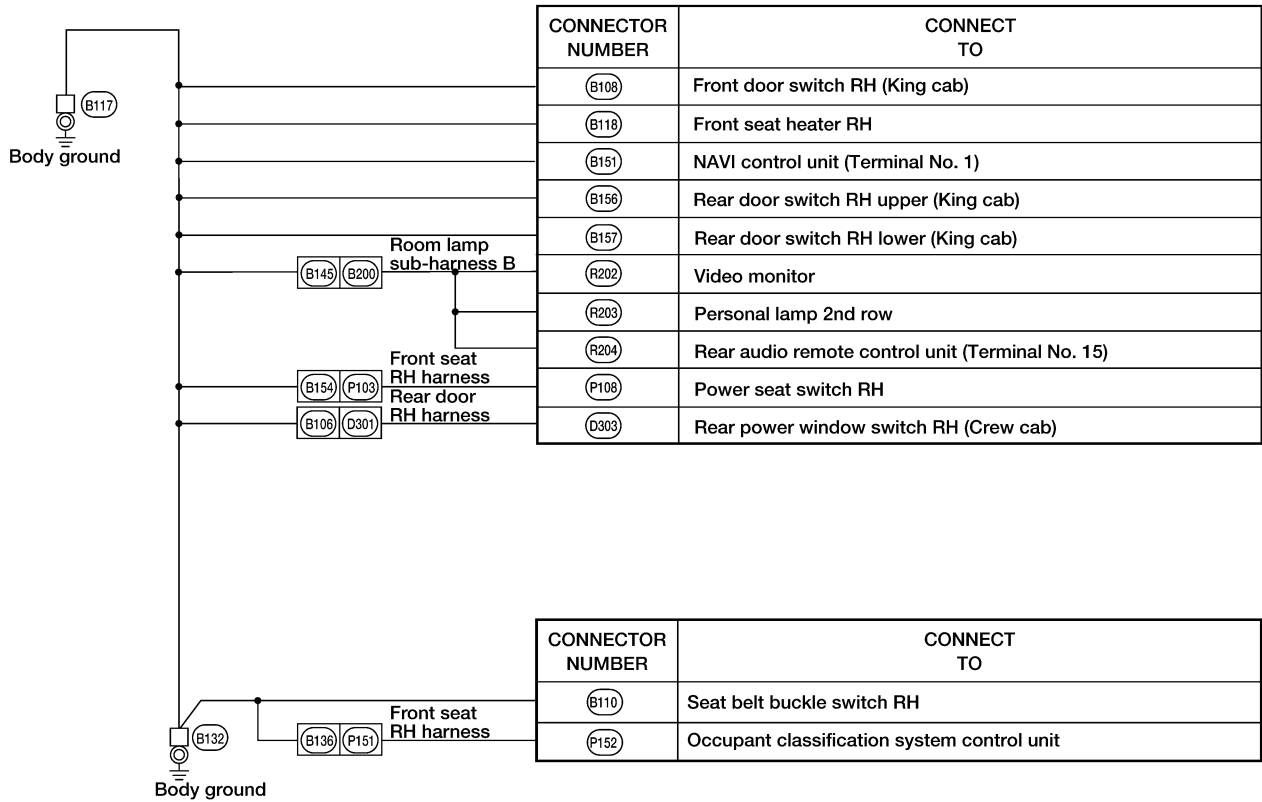
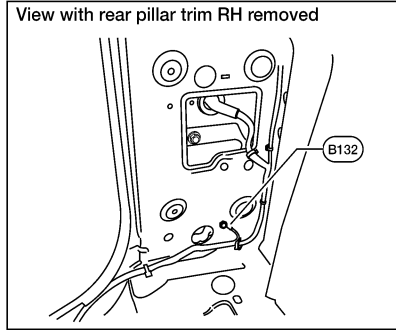
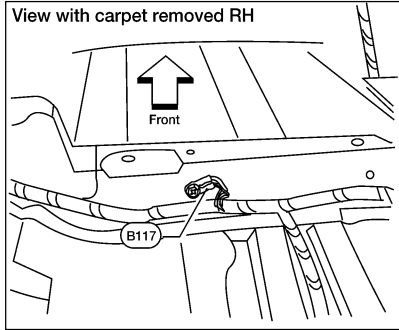
BODY HARNESS



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GROUND CIRCUIT

BODY NO. 2 HARNESS



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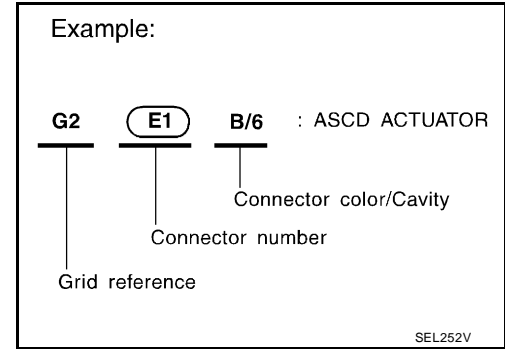
Harness Layout

HOW TO READ HARNESS LAYOUT

EKS00ARJ

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

- Main Harness
- Engine Room Harness LH View (Engine Compartment)
- Engine Room Harness RH View (Engine Compartment)
- Engine Control Harness
- Chassis Harness and Rear Sonar Sensor Sub-harness
- Body Harness (King Cab Models)
- Body Harness (Crew Cab Models)
- Body No. 2 Harness (King Cab Models)
- Body No. 2 Harness (Crew Cab Models)



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.

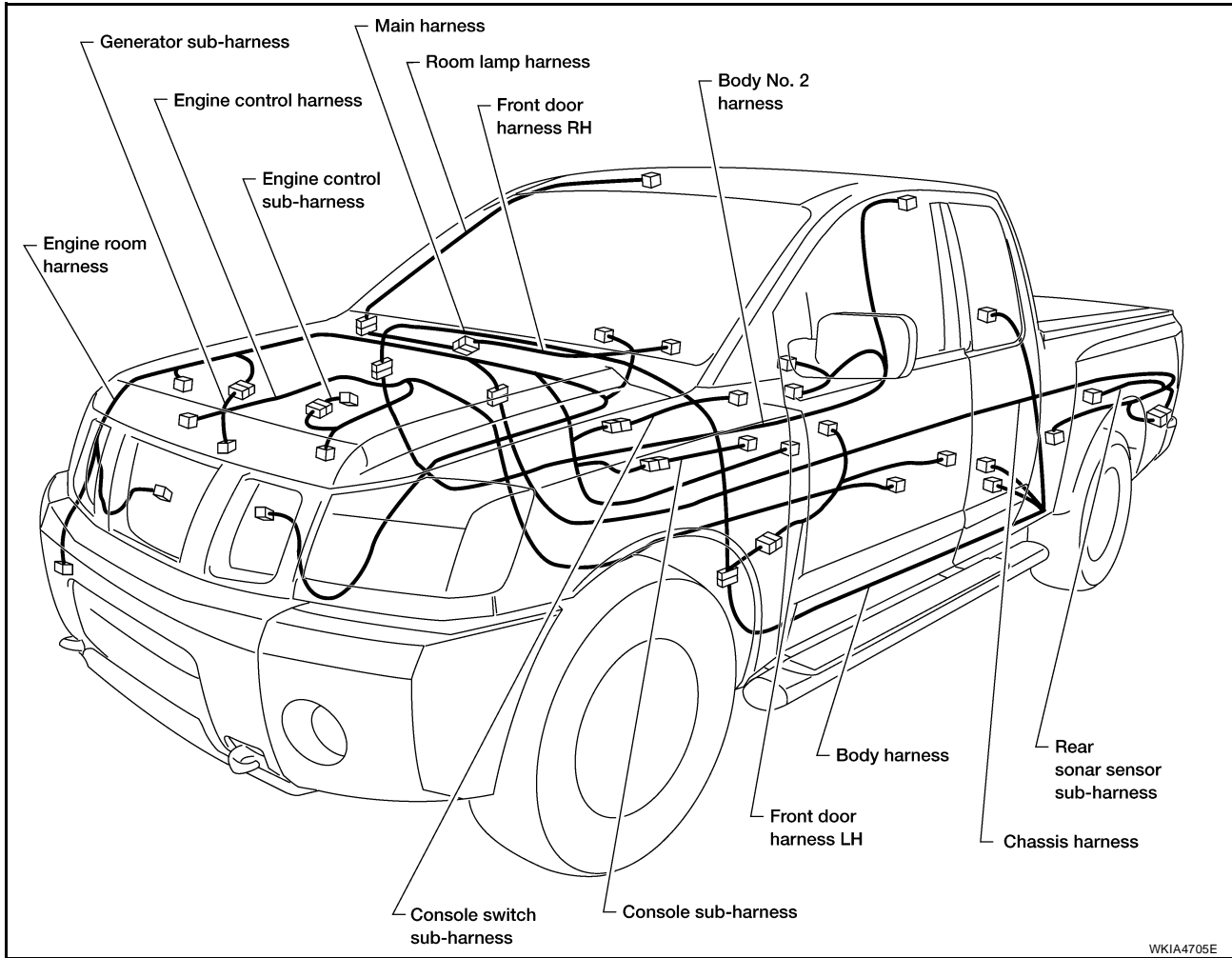
CONNECTOR SYMBOL

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. 	—			

HARNESS

OUTLINE (KING CAB MODELS)



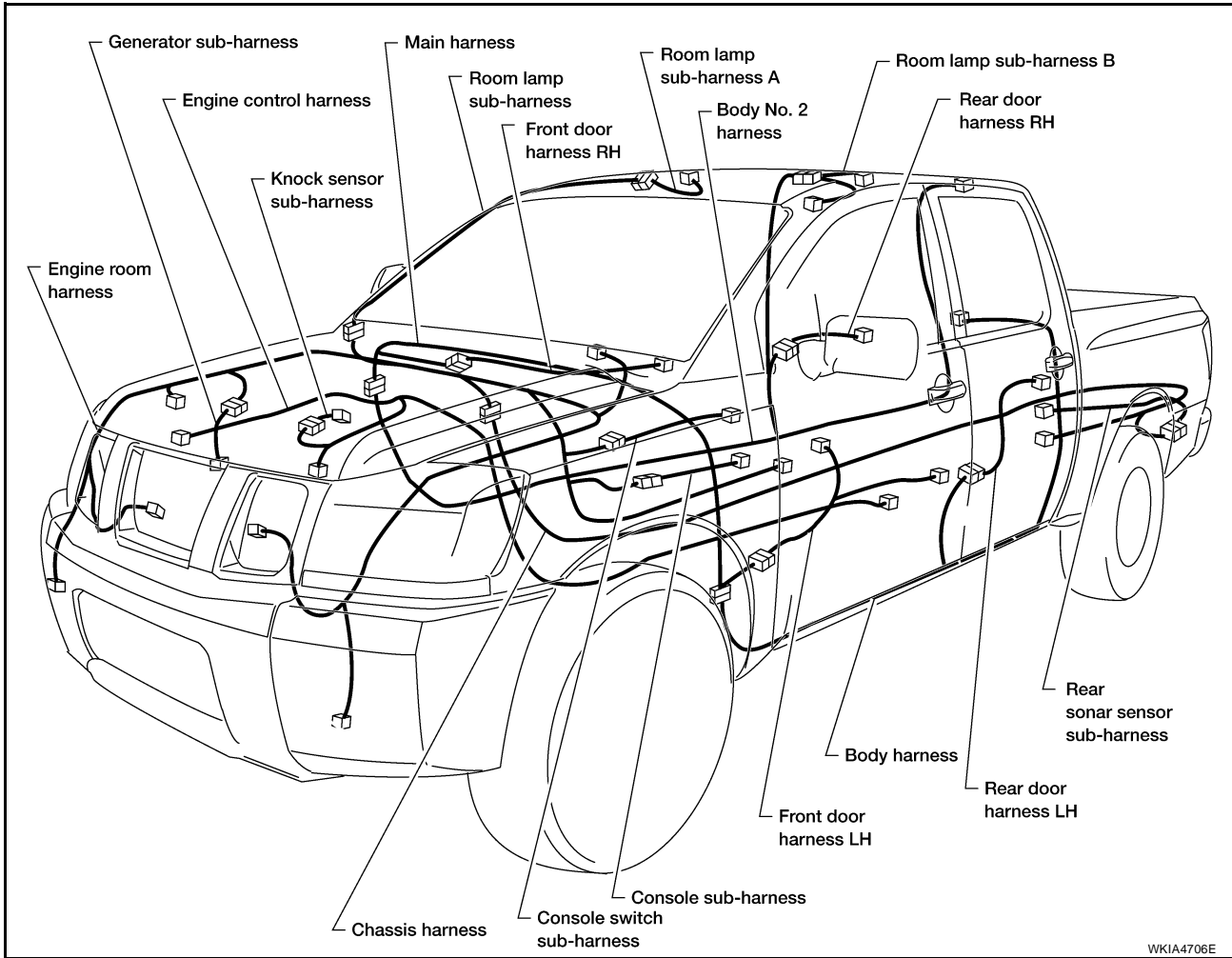
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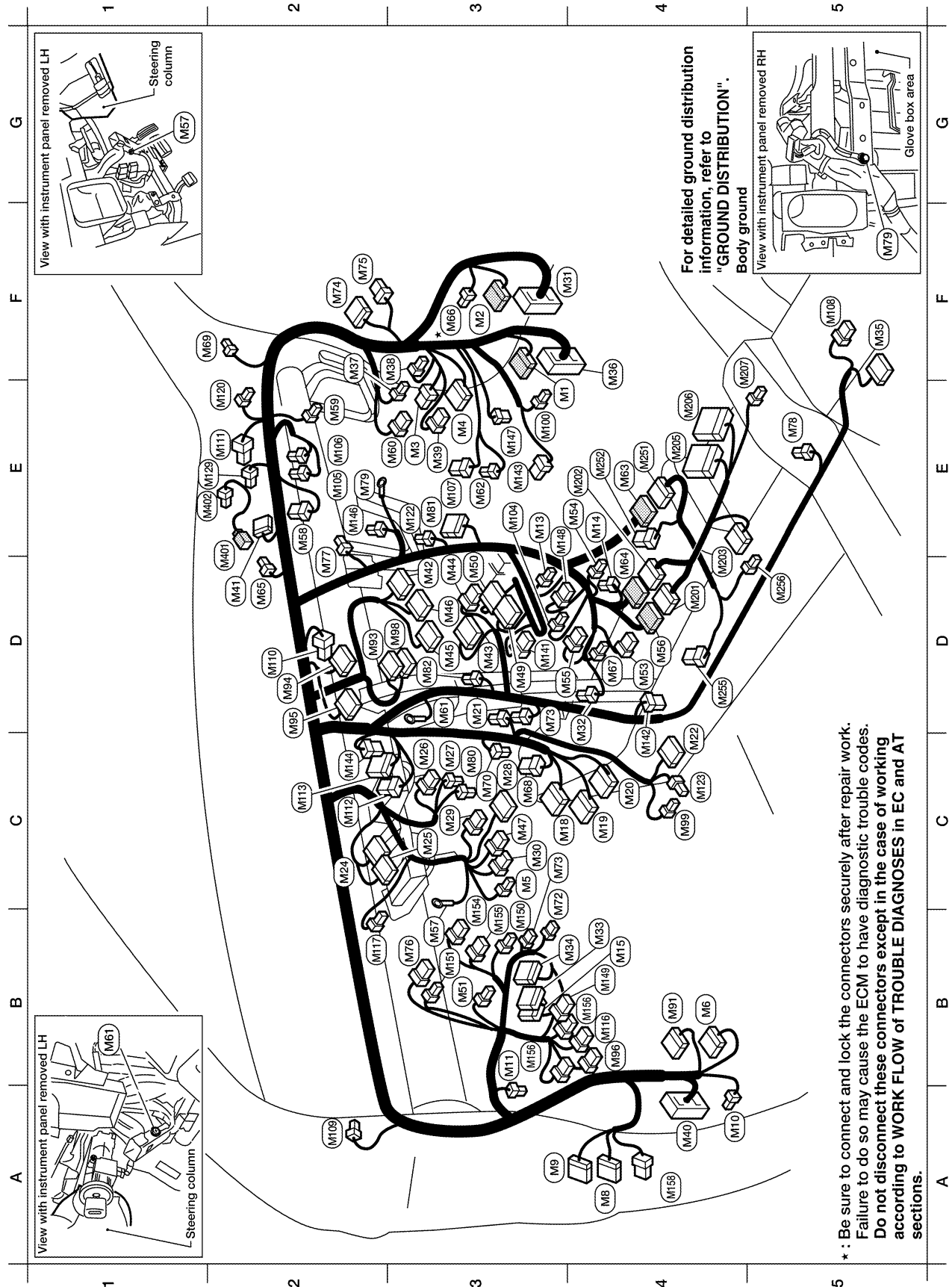
HARNESS

OUTLINE (CREW CAB MODELS)



HARNESS

MAIN HARNESS



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

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HARNESS

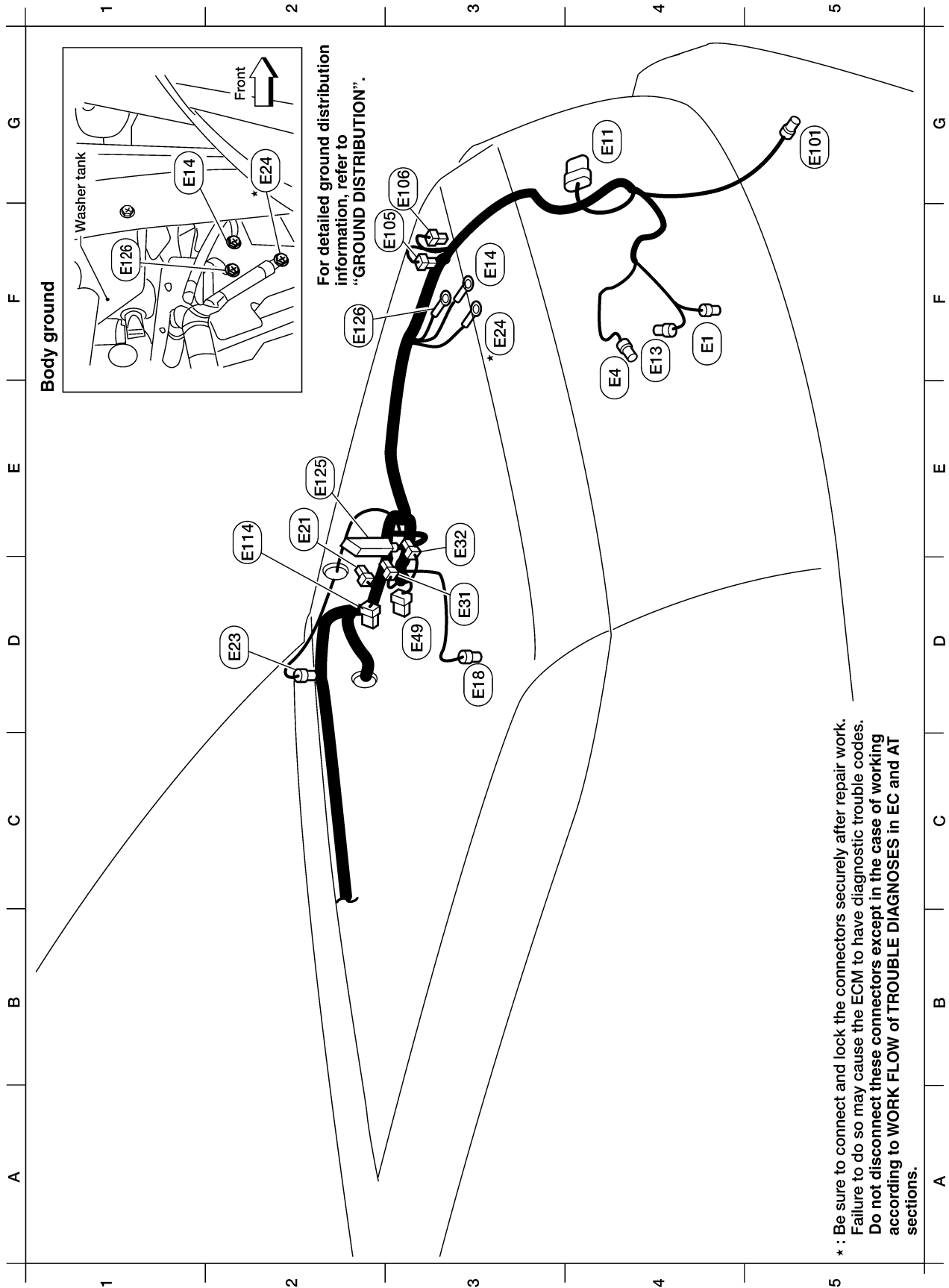
E4	M1	W/16	To	(R4)		
F3	M2	W/12	To	(R2)	(with sunroof)	
E3	M3	W/8	Fuse block (J/B)			
E3	M4	W/16	Fuse block (J/B)			
C3	M5	W/3	Illumination control switch			
B4	M6	W/10	To	(E10)		
A4	M6	W/16	To	(D2)		
A3	M9	BR/24	To	(D1)		
A4	(M10)	Y/4	To	(E9)		
B3	(M11)	B/1	Parking brake switch			
E3	(M13)	W/3	Front passenger air bag off indicator			
E4	(M14)	W/2	Front power socket (center armrest)			
B4	(M15)	W/15	Pedal adjusting control unit			
C3	(M18)	W/40	BCM (body control module)			
C4	(M19)	W/15	BCM (body control module)			
C4	(M20)	B/15	BCM (body control module)			
D3	(M21)	W/4	NATS antenna amplifier			
C4	(M22)	W/16	Data link connector			
D3	(M23)	W/2	Diode 1			
C2	(M24)	W/40	Combination meter			
D3	(M25)	W/12	Combination meter			
C3	(M26)	W/6	Ignition switch			
C3	(M27)	W/4	Key switch/key lock sol (floor shift)			
C3	(M28)	W/16	Combination switch			
C3	(M30)	Y/6	Combination switch (spiral cable)			
C3	(M30)	GR/8	Combination switch (spiral cable)			
F4	(M31)	SMJ	To	(E52)		
D4	(M32)	W/4	In-vehicle sensor (ATC)			
B4	(M33)	W/32	Automatic drive positioner control unit			
B4	(M34)	W/16	Automatic drive positioner control unit			
F5	(M35)	Y/28	Air bag diagnosis sensor unit			
F4	(M36)	SMJ	To	(E109)		
F2	(M37)	B/1	Fuse block (J/B)			
F3	(M38)	B/2	Fuse block (J/B)			
E3	(M39)	W/8	Fuse block (J/B)			
A4	(M40)	SMJ	To	(E69)		
D2	(M41)	W/16	Satellite radio tuner or pre-wiring for satellite radio tuner			
D3	(M42)	W/16	Audio unit			
D3	(M43)	W/10	Audio unit			
D3	(M44)	W/6	Audio unit			
D3	(M45)	W/16	Audio unit			
D3	(M46)	W/20	Audio unit			
C3	(M47)	W/8	Steering angle sensor			
D3	(M49)	B/26	Front air control			
D3	(M50)	W/18	Front air control			
B3	(M51)	L/4	Trailer tow relay 1			
D4	(M53)	B/2	Front power socket LH			
E4	(M54)	B/2	Front power socket RH (for cigarette lighter)			
D4	(M55)	W/8	Hazard switch			
D4	(M56)	W/16	To	(M20)	(floor shift)	
B3	(M57)	-	Body ground			
E2	(M58)	B/6	Intake door motor			
E3	(M59)	BR/2	Glove box lamp			
E3	(M60)	W/6	Fuse block (J/B)			
D3	(M61)	-	Body ground			
E3	(M62)	B/2	Front blower motor			
E4	(M63)	BR/20	To	(M55)		
D4	(M64)	BR/24	To	(M202)		
D2	(M65)	W/4	To	(M40)		
F3*	(M66)	B/1	To	(E33)		
D4	(M67)	GR/8	Tow mode switch			
F2	(M69)	BR/1	To	(M35)	(with Sirius satellite radio tuner)	
F2	(M69)	V/1	To	(M35)	(with XM satellite radio tuner)	
C3	(M68)	W/8	A/T device (column shift)			
C3	(M70)	W/2	Condenser-3			
C4	(M72)	W/6	Differential lock mode switch			
D3	(M73)	BR/6	Back-up lamp relay			
F2	(M74)	BR/20	To	(G10)		
F2	(M75)	W/10	To	(G10)		
B3	(M76)	W/6	Electric brake (pre-wiring)			
E2	(M77)	Y/4	Front pass air bag module (service replacement)			
E5	(M78)	W/2	Armrest power socket (bench seat)			
E2	(M79)	-	Body ground			
C3	(M80)	W/2	Key switch (column shift)			
E3	(M81)	GR/10	Shift lock control unit (floor shift)			
D3	(M82)	W/2	Circuit breaker -2			
B4	(M81)	W/16	To	(E26)		
D2	(M83)	W/24	Display unit (with NAVI)			
D2	(M84)	W/24	Display control unit (with NAVI)			
D2	(M85)	W/32	Display control unit (with NAVI)			
B4	(M86)	BR/6	Pedal adjusting switch			
D3	(M88)	W/24	AV switch			
C4	(M89)	BR/2	Foot lamp LH			
E3	(M100)	BR/2	Foot lamp RH			
E3	(M10)	W/4	Auxiliary in jack (audio)			
E2	(M105)	Y/2	Front passenger air bag module			
E2	(M106)	O/2	Front passenger air bag module			
E3	(M107)	B/5	Front blower motor relay			
F5	(M108)	B/6	Yaw rate/side decel G-sensor (with VDC)			
A2	(M109)	BR/2	Front tweeter LH			
D2	(M110)	BR/2	Center speaker (with premium audio)			
E2	(M111)	BR/2	Front tweeter RH			
C2	(M113)	W/8	Audio amplifier (with premium audio)			
C2	(M114)	L/24	Audio amplifier (with premium audio)			
B4	(M116)	GR/8	Rear sonar system OFF switch			
B2	(M117)	B/2	Sonar buzzer			
E2	(M120)	W/4	Remote keyless entry receiver			
E3	(M122)	W/4	Variable blower control			
E4	(M123)	W/2	Tire pressure warning check connector			
C1	(M129)	BR/1	Satellite radio tuner (with Sirius satellite radio)			
E1	(M129)	V/1	Satellite radio tuner (with XM satellite radio)			
D3	(M141)	W/8	4WD shift switch			
C4	(M142)	B/6	Mode door motor			
E3	(M143)	B6	Air mix door motor (passenger (with ATC))			
C2	(M144)	B/6	Defroster door motor			
E2	(M149)	W/2	Intake sensor			
E3	(M147)	B/6	Air mix door motor (driver (with ATC))			
E3	(M147)	B/6	Air mix door motor (front) (with MTC)			
D3	(M148)	GR/6	VDC OFF switch			
B3	(M149)	W/6	Cargo lamp switch			
B3	(M150)	L/4	Cargo lamp relay			
B3	(M151)	W/2	Condenser-3			
B4	(M154)	L/4	Rear window defogger cut-off relay			
B3	(M155)	B/5	Rear power drop glass up relay			
A4	(M156)	W/6	Rear power drop glass down relay			
A4	(M158)	W/10	To	(C2)		
Console sub-harness						
D4	(M201)	W/16	To	(M35)		
E4	(M202)	BR/24	To	(M84)		
D4	(M203)	W/12	A/T device (floor shift)			
E4	(M205)	GR/16	DVD player			
E4	(M206)	L/16	DVD player			
F5	(M207)	B/2	Console power socket			
Console switch sub-harness						
E4	(M23)	BR/20	To	(M63)		
E4	(M232)	BR/6	Heated seat switch (passenger)			
D4	(M235)	BR/6	Heated seat switch (driver)			
D5	(M25)	B/2	A/T device illumination (floor shift)			
Optical sensor sub-harness						
D2	(M40)	W/4	To	(M85)		
E2	(M42)	B/4	Optical sensor			

* : Refer to Previous Page.

WKIA5824E

HARNESS

ENGINE ROOM HARNESS (LH VIEW) Engine Compartment



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

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HARNESS

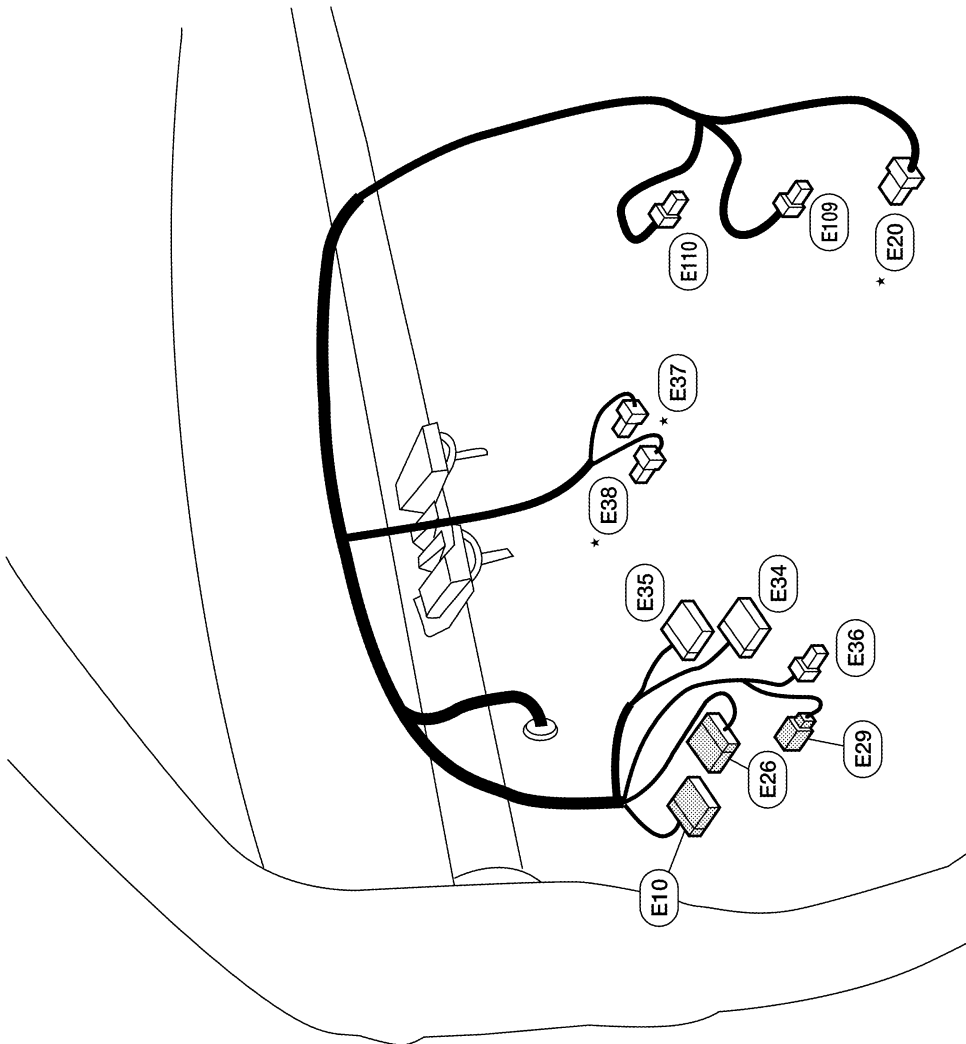
E4	(E1)	GR/2	: Ambient sensor
E4	(E4)	Y/2	: Crash zone sensor
G4	(E11)	B/6	: Front combination lamp LH
F4	(E13)	GR/2	: Ambient sensor 2
F3	(E14)	-	: Body ground
D3	(E18)	GR/2	: Front wheel sensor LH
E2	(E21)	GR/2	: Brake fluid level switch
D2	(E23)	GR/6	: Front wiper motor
F3	(E24)	-	: Body ground
D3	(E31)	B/3	: Front pressure sensor
E3	(E32)	B/3	: Rear pressure sensor
D3	(E49)	B/6	: Active booster
G5	(E101)	B/2	: Front fog lamp LH
F3	(E105)	GR/2	: Washer motor
G3	(E106)	BR/2	: Washer fluid level switch
E2	(E114)	B/6	: Delta stroke sensor
E2	(E125)	B/47	: ABS actuator and electric unit (control unit)
F2	(E126)	-	: Body ground

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

HARNESS

Passenger Compartment

- (E10) W/10 : To (M6)
- * (E20) B/8 : Accelerator pedal position (APP) sensor
- (E26) W/16 : To (M91)
- (E29) Y/4 : To (M10)
- (E34) W/24 : To (E40)
- (E35) W/12 : To (B41)
- (E36) W/2 : To (E42)
- * (E37) BR/2 : ASCD brake switch
- * (E38) W/4 : Stop lamp switch (column shift)
- * (E38) B/2 : Stop lamp switch (floor shift)
- (E109) GR/2 : Pedal adjusting motor
- (E110) W/3 : Pedal adjusting motor



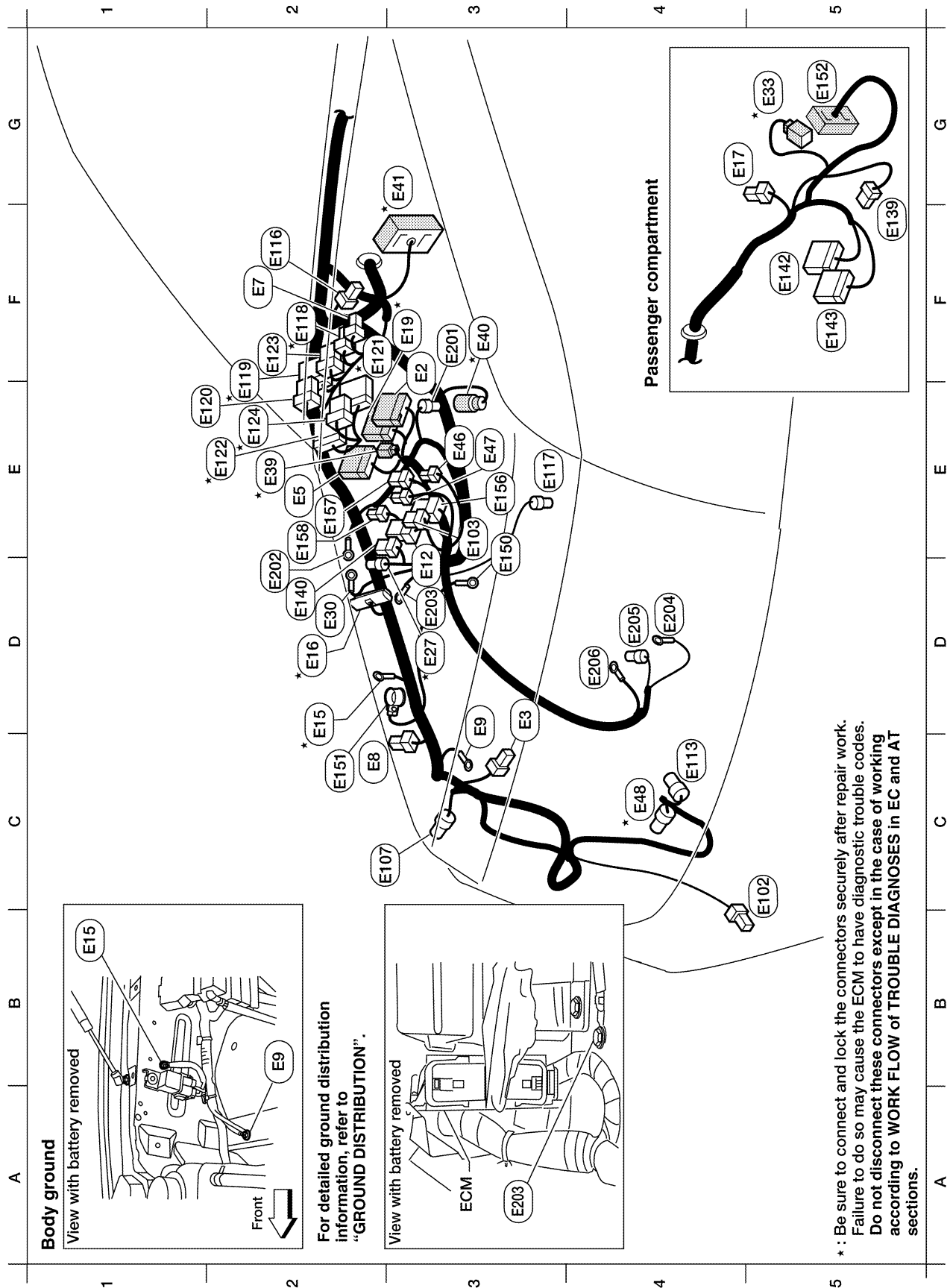
* : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.
 Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

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HARNESS

ENGINE ROOM HARNESS (RH VIEW)

Engine Compartment



Refer to [PG-45, "ENGINE ROOM HARNESS \(LH VIEW\)"](#) for continuation of engine room harness.

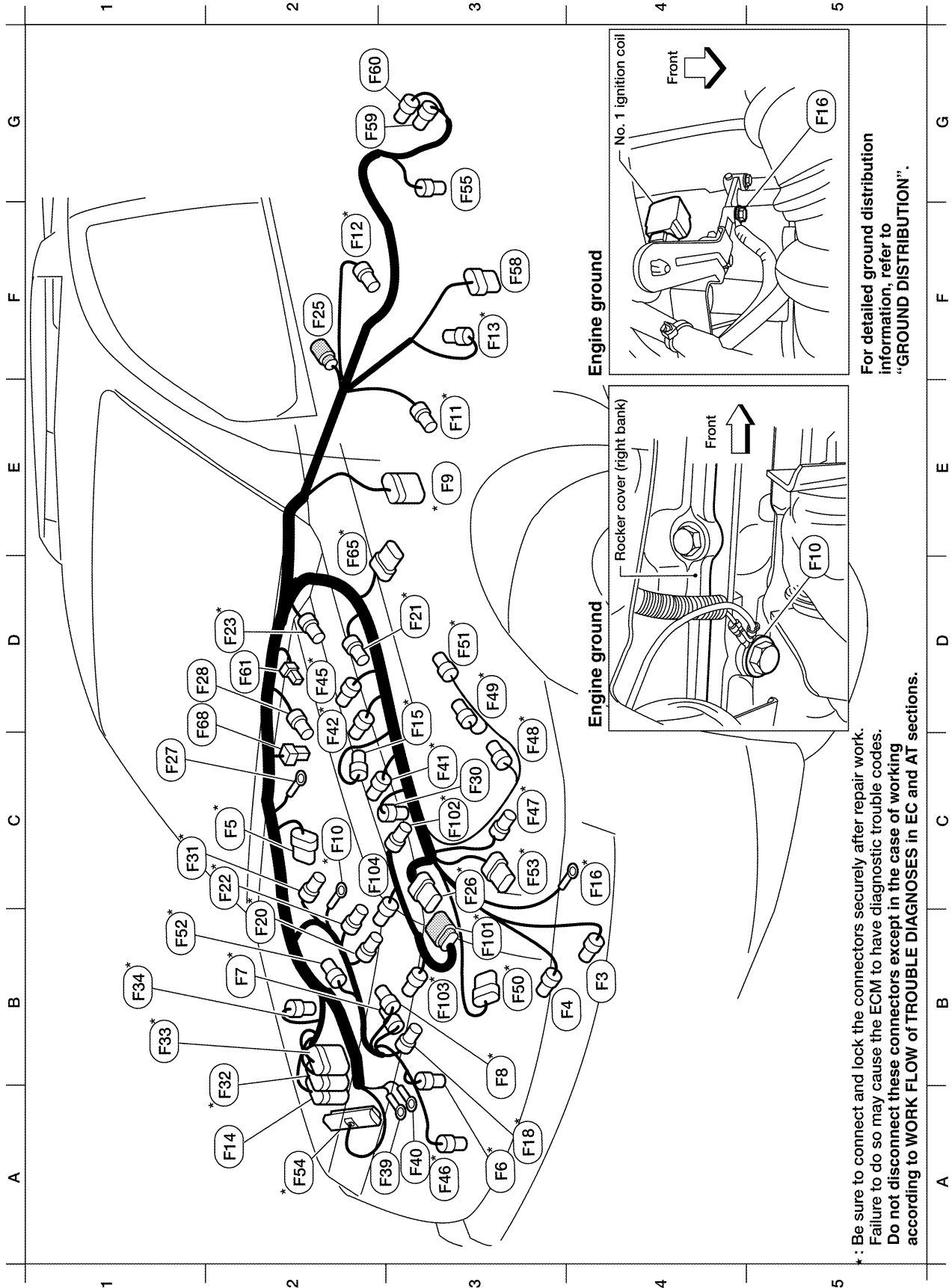
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F3	E2	W/16	: To	F32
D3	E3	B/2	: Horn	
E2 *	E5	W/24	: To	F14
C2	E7	GR/2	: Fuse and fusible link box	
C2	E8	GR/2	: Dropping resistor	
C3 *	E9	-	: Body ground	
D3	E12	B/5	: Stop lamp relay	
C2	E15	-	: Body ground	
D2	E16	B/32	: ECM	
G4	E17	W/4	: Fuel pump control module	
F3	E19	W/16	: To	F33
D3	E27	BR/2	: Fusible link box (battery)	
D2	E30	-	: Fusible link box (battery)	
G5 *	E33	B/1	: To	M66
E2 *	E39	W/2	: To	F34
F3 *	E40	GR/3	: To	E201
G3	E41	SMJ	: To	C1 (located RH rear of engine compartment)
E3	E46	L/4	: Transfer SHUT OFF relay 1	
E3	E47	L/4	: Transfer SHUT OFF relay 2	
C4 *	E48	B/3	: Refrigerant pressure sensor	
C5	E102	B/2	: Front fog lamp RH	
E3	E103	B/5	: Daytime light relay	
C2	E107	B/6	: Front combination lamp RH	
C4	E113	GR/2	: Cooling fan motor	
F2 *	E119	W/2	: Condenser-2	
E3 *	E117	GR/2	: Front wheel sensor RH	
F2	E118	B/2	: IPDM E/R (intelligent power distribution module engine room)	
E2 *	E119	W/16	: IPDM E/R (intelligent power distribution module engine room)	
E2 *	E120	W/6	: IPDM E/R (intelligent power distribution module engine room)	
F3	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)	
F2	E123	BR/8	: IPDM E/R (intelligent power distribution module engine room)	
E2 *	E124	B/6	: IPDM E/R (intelligent power distribution module engine room)	
F5	E139	W/8	: To	E107
D2	E140	BR/6	: Trailer tow relay 2	
F5	E142	W/26	: Transfer control unit	
F5	E143	W/24	: Transfer control unit	
E3	E150	-	: Engine ground	
C2	E151	-	: Negative battery cable	
G5	E152	SMJ	: To	M31
E3	E156	B/5	: Transfer shift high relay	
E2	E157	B/5	: Transfer shift low relay	
E2	E158	L/4	: Trailer turn relay LH	
D2	E159	L/4	: Trailer turn relay RH	
Generator sub-harness				
F3	E201	GR/3	: To	E40
D2	E202	B/1	: Fusible link box (battery)	
D3	E203	-	: Body ground	
D4	E204	-	: Generator	
D4	E205	B/3	: Generator	
D4	E206	-	: Generator	

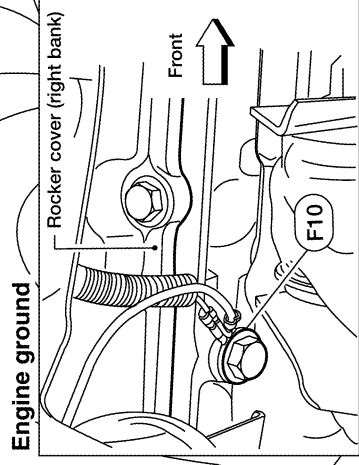
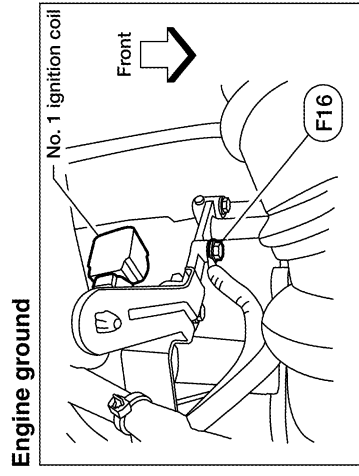
* : Be sure to connect and lock the connectors securely after repair work.
 Failure to do so may cause the ECM to have diagnostic trouble codes.
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

HARNESS

ENGINE CONTROL HARNESS



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



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

WKIA4715E

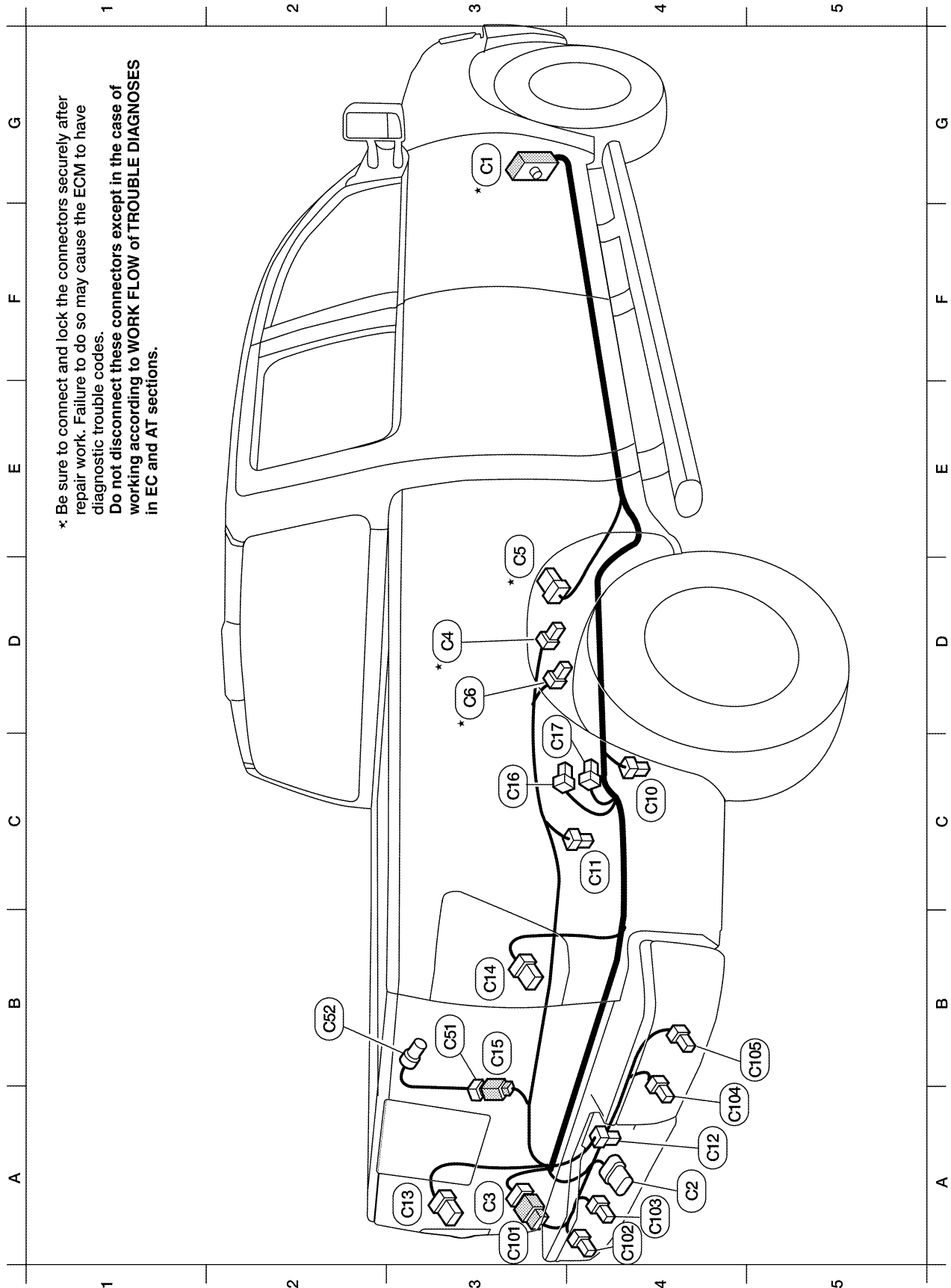
B4	(F3)	B/1	: A/C Compressor	C3	*	(F47)	GR/3	: Ignition coil No. 1 (with power transistor)	
B4	(F4)	GR/1	: Oil pressure switch	C3	*	(F48)	GR/3	: Ignition coil No. 3 (with power transistor)	
C2	(F5)	B/6	: Air fuel ratio (A/F) sensor 1 (bank 2)	D3	*	(F49)	GR/3	: Ignition coil No. 5 (with power transistor)	
A3	*	(F6)	GR/3	: Ignition coil No. 2 (with power transistor)	B3	*	(F50)	B/6	: Electric throttle control actuator
B2	*	(F7)	GR/3	: Ignition coil No. 4 (with power transistor)	D3	*	(F51)	GR/3	: Ignition coil No. 7 (with power transistor)
B3	*	(F8)	GR/3	: Ignition coil No. 6 (with power transistor)	B1	*	(F52)	GR/3	: Ignition coil No. 8 (with power transistor)
E3	*	(F9)	G/10	: A/T assembly	C3	*	(F53)	B/6	: Mass air flow sensor
C2	*	(F10)	-	: Engine ground	A2	*	(F54)	B/81	: ECM
E3	*	(F11)	B/3	: Crankshaft position sensor (POS)	G3	*	(F55)	B/2	: ATP switch (4WD only)
F2	*	(F12)	G/4	: Heated oxygen sensor 2 (bank 2)	F3	(F58)	B/8	: Transfer control device (4WD only)	
F3	*	(F13)	G/4	: Heated oxygen sensor 2 (bank 1)	G2	(F59)	GR/2	: Wait detection switch (4WD only)	
A2	(F14)	W/24	: To (E5)	G2	(F60)	GR/2	: 4LO switch (4WD only)		
C3	*	(F15)	L/2	: EVAP canister purge volume control solenoid valve	D2	(F61)	W/2	: Condenser-2	
C4	*	(F16)	-	: Engine ground	D2	*	(F65)	B/6	: Air fuel ratio (A/F) sensor 1 (bank 1)
A3	*	(F18)	GR/2	: Fuel injector No. 2	D1	*	(F68)	B/2	: Water valve
B2	*	(F20)	GR/2	: Fuel injector No. 4	Engine control sub-harness				
D3	*	(F21)	GR/2	: Condenser-1	B3	*	(F101)	B/6	: To (F26)
C2	*	(F22)	GR/2	: Fuel injector No. 6	C3	*	(F102)	B/2	: Knock sensor (bank 1)
D2	*	(F23)	B/3	: Camshaft position sensor (PHASE)	B3	*	(F103)	GR/2	: Engine coolant temperature sensor
F2	(F25)	W/2	: Diode No. 2	C2	*	(F104)	B/2	: Knock sensor (bank 2)	
C3	*	(F26)	B/6	: To (F101)					
C1	(F27)	B/1	: Starter motor						
D2	(F28)	GR/1	: Starter motor						
C3	*	(F30)	GR/2	: Fuel injector No. 1					
C1	*	(F31)	GR/2	: Fuel injector No. 8					
A2	*	(F32)	W/16	: To (E2)					
B1	*	(F33)	W/16	: To (E19)					
B1	*	(F34)	W/2	: To (E39)					
A3	(F39)	-	: Fusible link box (battery)						
A3	(F40)	-	: Fusible link box (battery)						
C3	*	(F41)	GR/2	: Fuel injector No. 3					
C2	*	(F42)	GR/2	: Fuel injector No. 5					
D2	*	(F45)	GR/2	: Fuel injector No. 7					
A3	*	(F46)	B/3	: Power steering pressure sensor					

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

WKIA5826E

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WKIA3703E

- G3 * C1 SMJ : To E41 (located RH rear of engine compartment)
- A4 C2 B/7 : Trailer
- A3 C3 GR/6 : To C101
- D3 * C4 GR/3 : EVAP control system pressure sensor
- E3 * C5 GR/5 : Fuel level sensor unit and fuel pump
- D3 * C6 B/2 : EVAP canister vent control valve
- C4 C10 GR/2 : Rear wheel sensor RH
- C4 C11 BR/2 : Rear wheel sensor LH
- A4 C12 W/2 : License plate lamps
- A3 C13 GR/8 : Rear combination lamp LH
- B3 C14 GR/8 : Rear combination lamp RH
- B3 C15 W/2 : To C51
- C3 C16 GR/2 : Differential lock position switch
- C3 C17 B/2 : Differential lock solenoid
- Rear power socket sub-harness
- B3 C51 W/2 : To C15
- B2 C52 BR/2 : Rear cargo bed power socket
- Rear sonar sensor sub-harness
- A3 C101 GR/6 : To C3
- A4 C102 B/3 : Rear sonar sensor LH outer
- A4 C103 B/3 : Rear sonar sensor LH inner
- A4 C104 B/3 : Rear sonar sensor RH inner
- B5 C105 B/3 : Rear sonar sensor RH outer

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

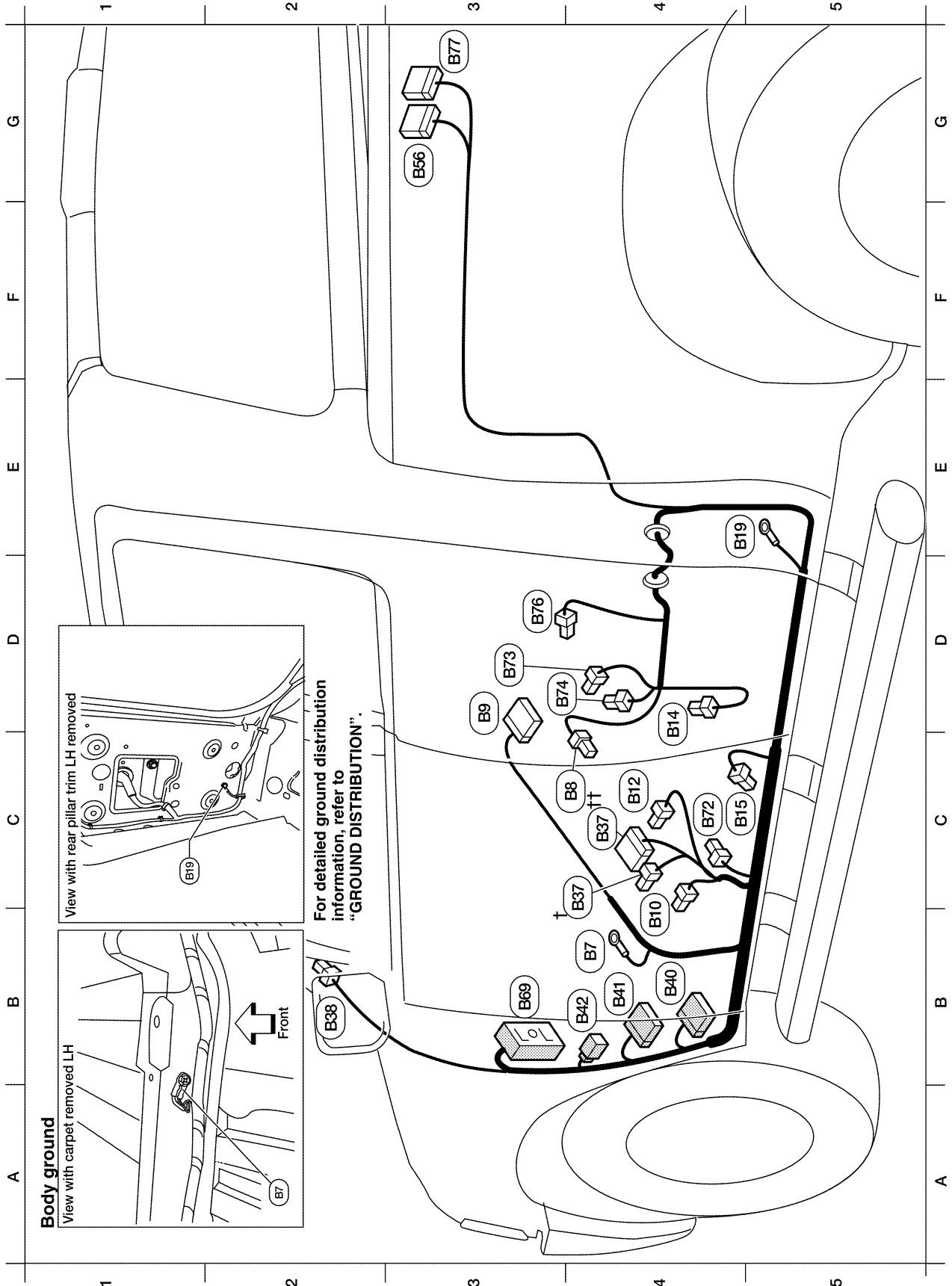
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BODY HARNESS (KING CAB MODELS)



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B4	(B7)	-	: Body ground
C4	(B8)	W/3	: Front door switch LH
D3	(B9)	Y/12	: Air bag diagnosis sensor unit
B4	(B10)	Y/2	: Front LH side air bag module
C4	(B12)	W/3	: Seat belt buckle switch LH
D4	(B14)	Y/2	: Front LH seat belt pre-tensioner
C4	(B15)	Y/2	: LH side air bag (satellite) sensor
E5	(B19)	-	: Body ground
C4	† (B37)	W/2	: To (P1) (without automatic drive positioner)
C4	†† (B37)	W/16	: To (P1) (with automatic drive positioner)
B2	(B38)	Y/2	: LH side curtain air bag module
B4	(B40)	W/24	: To (E34)
B4	(B41)	W/12	: To (E35)
B4	(B42)	W/2	: To (E36)
G3	(B56)	W/16	: Sonar control unit
B3	(B69)	SMJ	: To (M40)
C4	(B72)	W/4	: Subwoofer (with premium audio system)
D3	(B73)	B/2	: Rear door switch upper LH
D3	(B74)	B/2	: Rear door switch lower LH
D3	(B76)	W/2	: Rear door speaker LH
G3	(B77)	B/26	: Differential lock control unit

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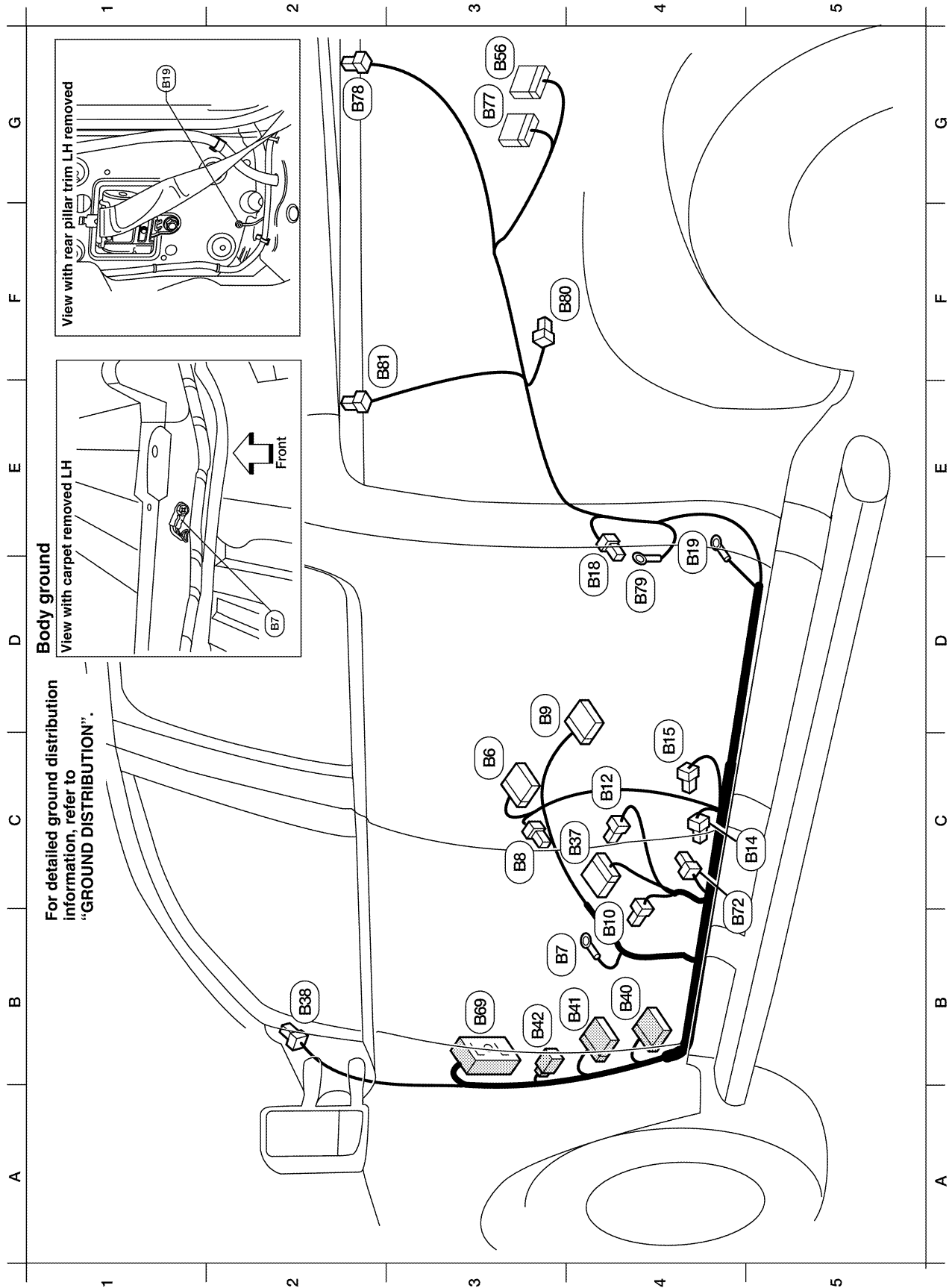
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BODY HARNESS (CREW CAB MODELS)



WKIA4721E

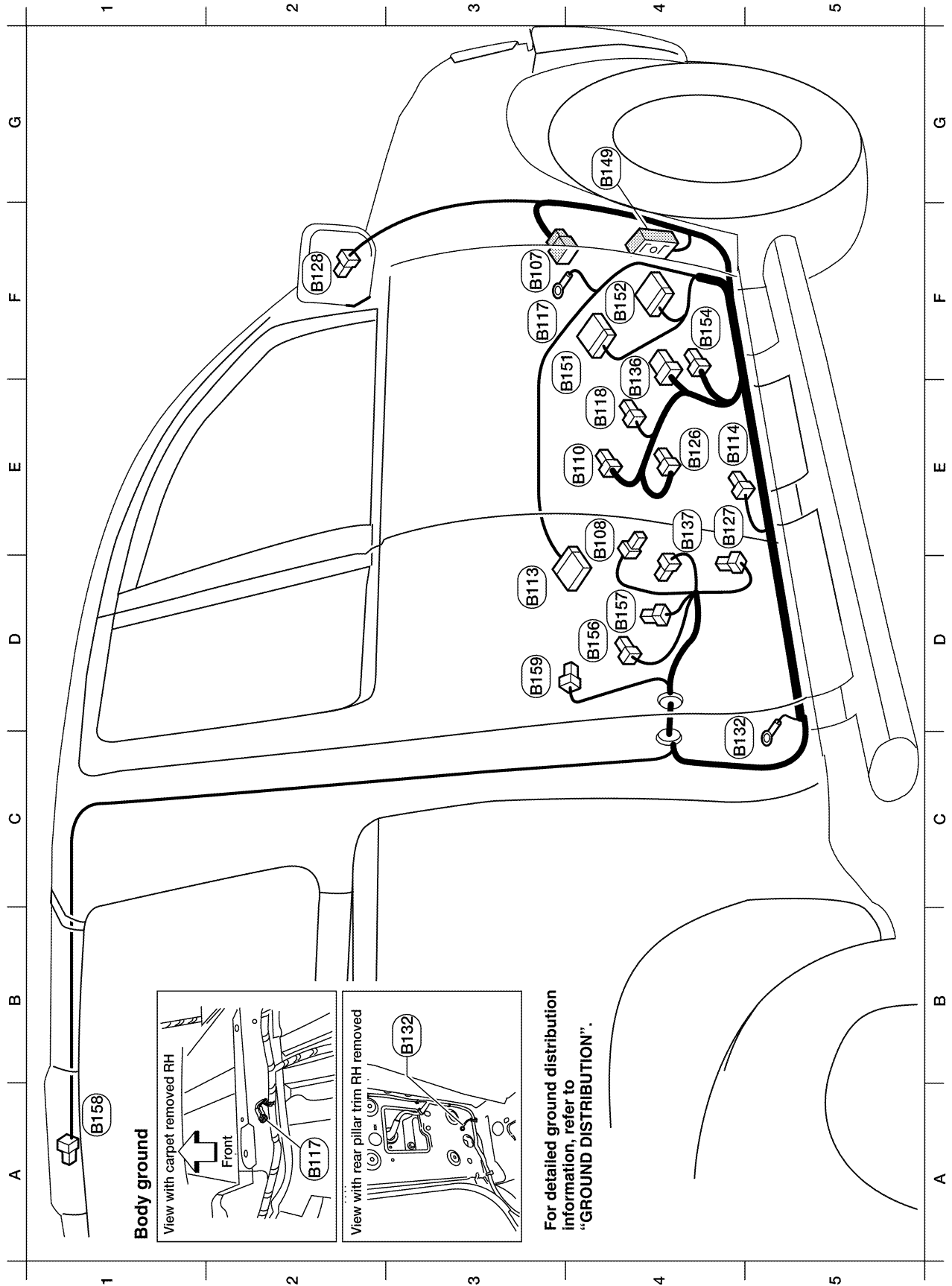
HARNESSES

C3	(B6)	W/18	: To	(D201)	
B3	(B7)	-	: Body ground		
C3	(B8)	W/3	: Front door switch LH		
C3	(B9)	Y/12	: Air bag diagnosis sensor unit		
B4	(B10)	Y/2	: Front LH side air bag module		
C4	(B12)	W/3	: Seat belt buckle switch LH		
C5	(B14)	Y/2	: Front LH seat belt pre-tensioner		
C4	(B15)	Y/2	: LH side air bag (satellite) sensor		
D4	(B18)	W/3	: Rear door switch LH		
E4	(B19)	-	: Body ground		
C4	(B37)	W/16	: To	(P1)	
B2	(B38)	Y/2	: LH side curtain air bag module		
B4	(B40)	W/24	: To	(E34)	
B4	(B41)	W/12	: To	(E35)	
B3	(B42)	W/2	: To	(E36)	
G3	(B56)	W/16	: Sonar control unit		
B3	(B69)	SMJ	: To	(M40)	
B4	(B72)	W/4	: Subwoofer (with premium audio system)		
G3	(B77)	B/26	: Differential lock control unit		
G2	(B78)	B/1	: Rear window defogger		
D4	(B79)	-	: Body ground		
F4	(B80)	GR/4	: Rear power drop glass motor		
F2	(B81)	B/1	: Rear window defogger		

WK1A4722E

HARNESS

BODY NO. 2 HARNESS (KING CAB MODELS)



WKIA4723E

HARNESS

F3	(B107)	W/8	: To (E138)
E4	(B108)	W/3	: Front door switch RH
E4	(B110)	W/3	: Seat belt buckle switch RH
D3	(B113)	Y/12	: Air bag diagnosis sensor unit
E4	(B114)	Y/2	: RH side air bag (satellite) sensor
F3	(B117)	-	: Body ground
E4	(B119)	W/3	: Front seat heater RH
E4	(B126)	Y/2	: Front RH side air bag module
E4	(B127)	Y/2	: Front RH seat belt pre-tensioner
F2	(B128)	Y/2	: RH side curtain air bag module
C4	(B132)	-	: Body ground
E4	(B136)	W/8	: To (F151)
E4	(B137)	W/3	: Belt tension sensor
G4	(B149)	SMJ	: To (M36)
F4	(B151)	W/40	: NAVI control unit (with NAVI)
F4	(B152)	W/32	: NAVI control unit (with NAVI)
F4	(B154)	W/2	: To (F109)
D4	(B156)	B/2	: Rear door switch upper RH
D4	(B157)	B/2	: Rear door switch lower RH
A1	(B158)	W/3	: High mounted stop lamp
D3	(B159)	W/2	: Rear door speaker RH

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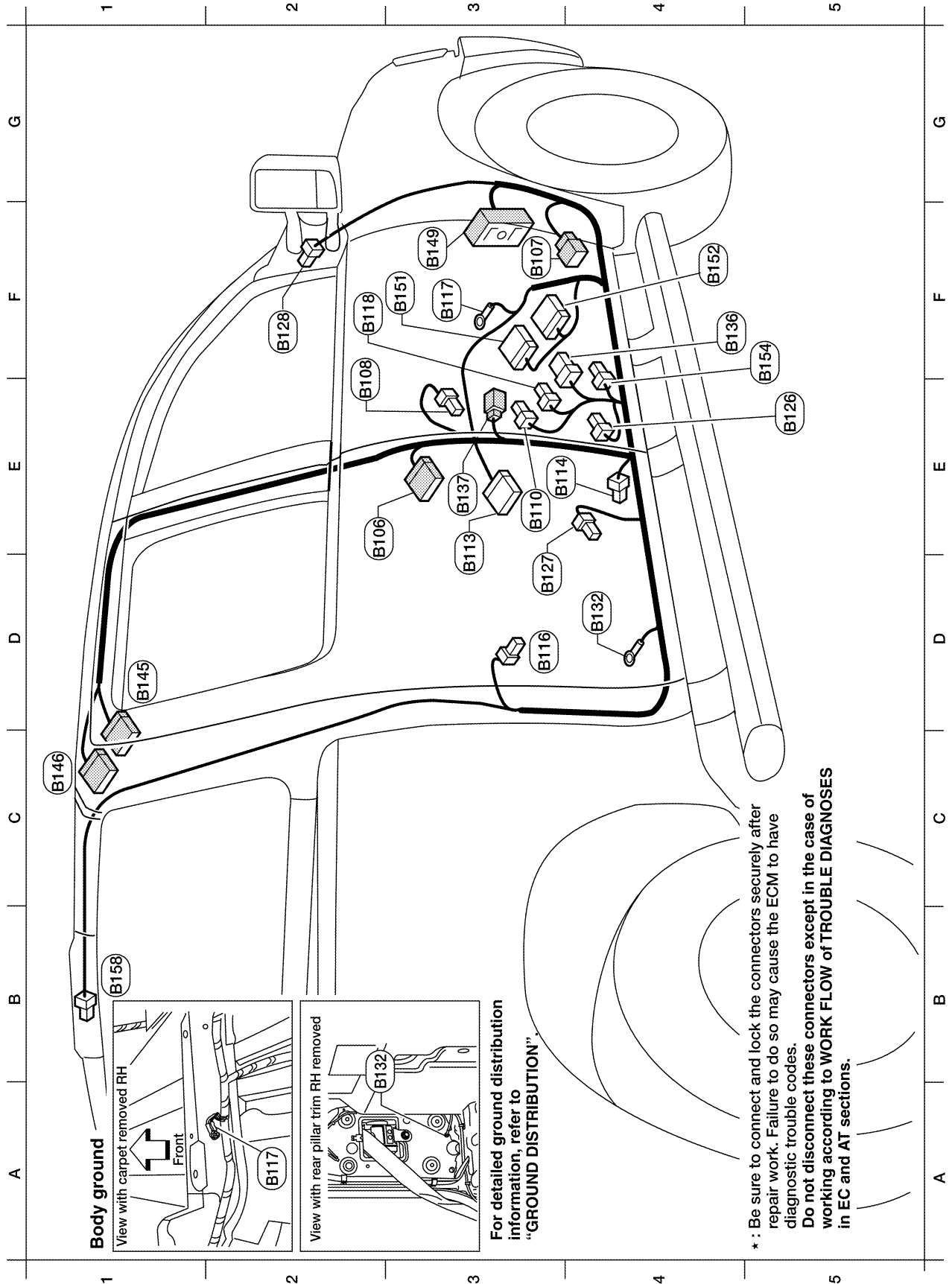
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HARNESS

BODY NO. 2 HARNESS (CREW CAB MODELS)



WKIA4725E

HARNESS

E2 (B106) W/18 : To (D301)
 F3 (B107) W/8 : To (E139)
 F2 (B108) W/3 : Front door switch RH
 E3 (B110) W/3 : Seat belt buckle switch RH
 E3 (B113) Y/12 : Air bag diagnosis sensor unit
 E4 (B114) Y/2 : RH side air bag (satellite) sensor
 D3 (B116) W/3 : Rear door switch RH
 F3 (B117) - : Body ground
 F2 (B118) W/3 : Front seat heater RH
 E5 (B126) Y/2 : Front RH side air bag module
 D4 (B127) Y/2 : Front RH seat belt pre-tensioner
 F2 (B128) Y/2 : RH side curtain air bag module
 D4 (B132) - : Body ground
 F4 (B136) W/8 : To (P151)
 E3 (B137) W/3 : Belt tension sensor
 D1 (B145) W/16 : To (R200)
 C1 (B146) BR/24 : To (E201)
 F3 (B149) SMJ : To (M336)
 F3 (B151) W/40 : NAVI control unit (with NAVI)
 F4 (B152) W/32 : NAVI control unit (with NAVI)
 F5 (B154) W/2 : To (P103)
 B1 (B158) W/3 : High mounted stop lamp

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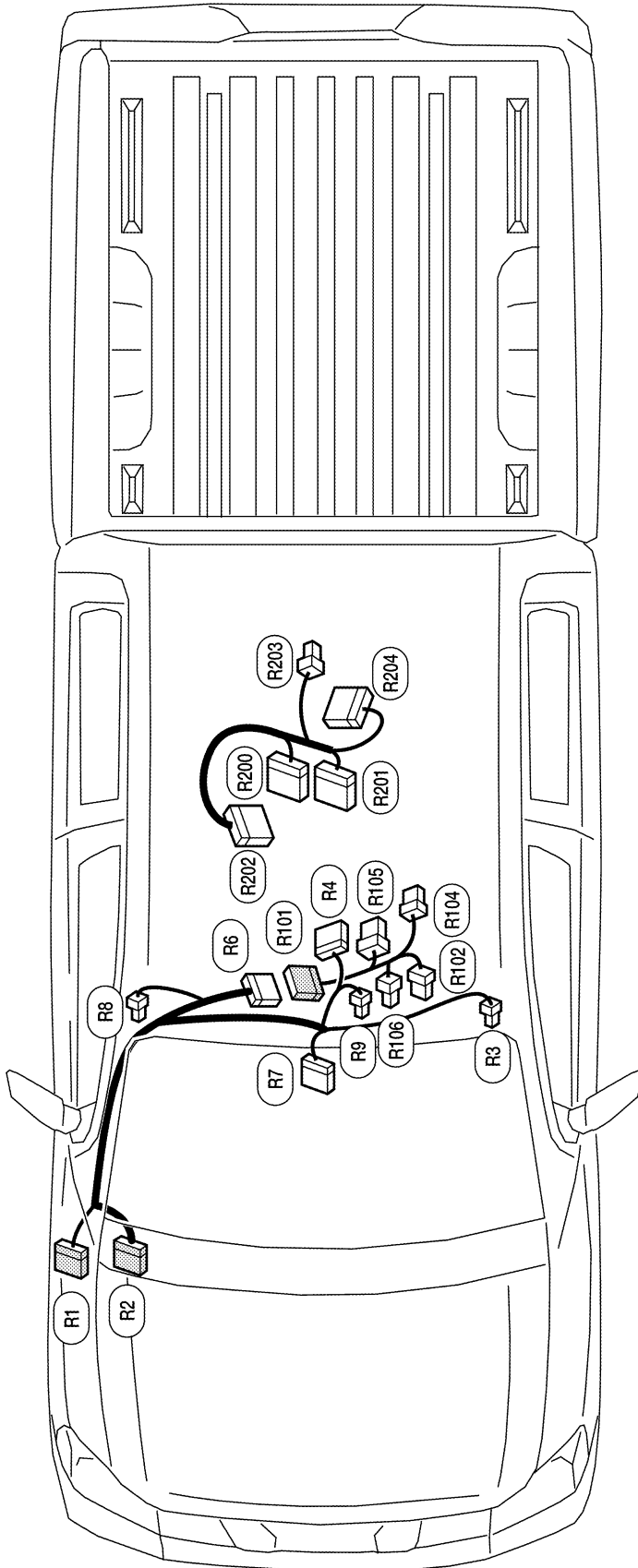
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HARNESS

ROOM LAMP HARNESS



- (R1) W/16 : To (M1)
- (R2) W/12 : To (M2)
- (R3) W/2 : Vanity lamp LH
- (R4) W/10 : Sunroof motor assembly
- (R6) W/24 : To (R10)
- (R7) B/7 : Auto anti-dazzling inside mirror
- (R8) W/2 : Vanity lamp RH
- (R9) W/2 : Room lamp

Room lamp sub-harness A

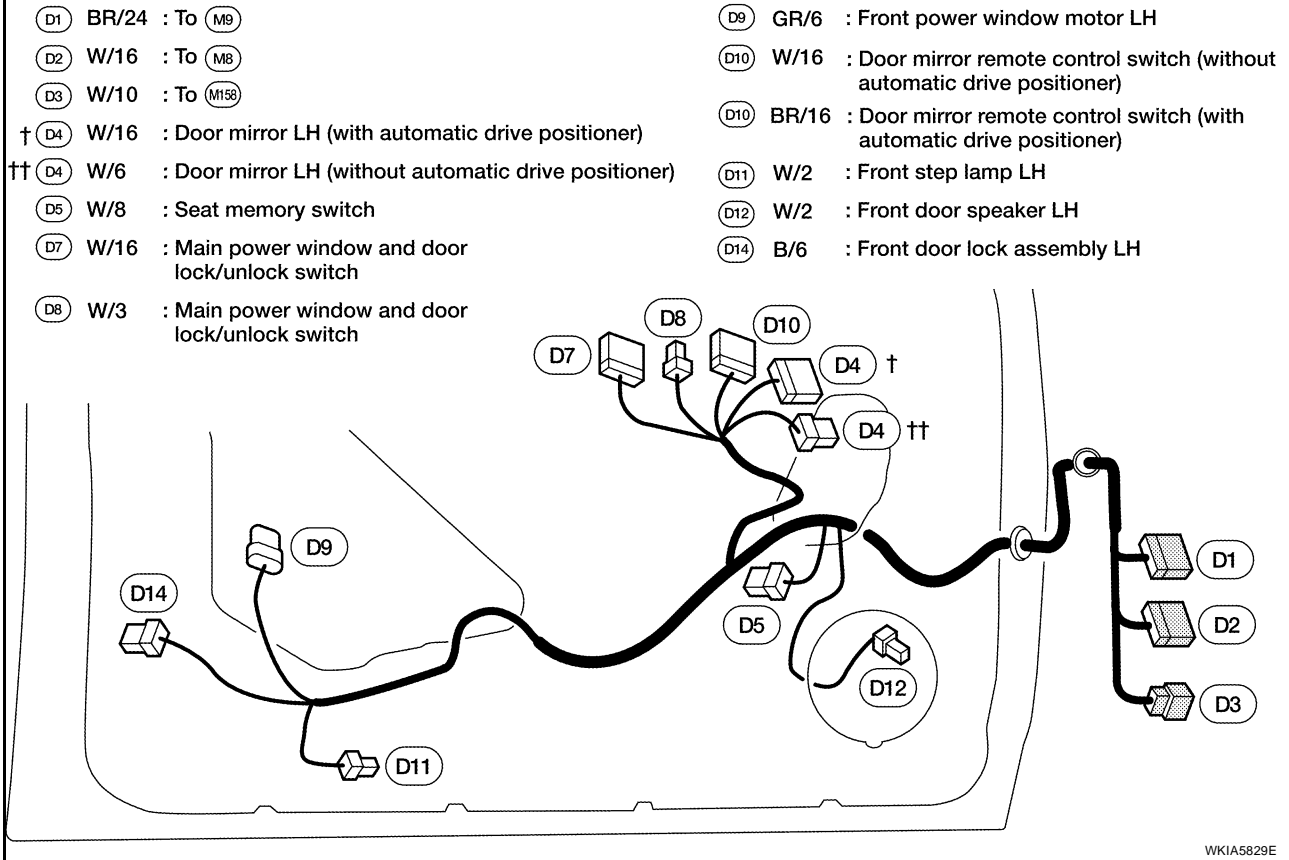
- (R10) W/24 : To (R6)
- (R102) GR/8 : Front room/map lamp assembly
- (R104) GR/6 : Sunroof switch
- (R105) W/8 : Compass and thermometer
- (R106) W/2 : HOMELINK universal transceiver

Room lamp sub-harness B (Crew Cab)

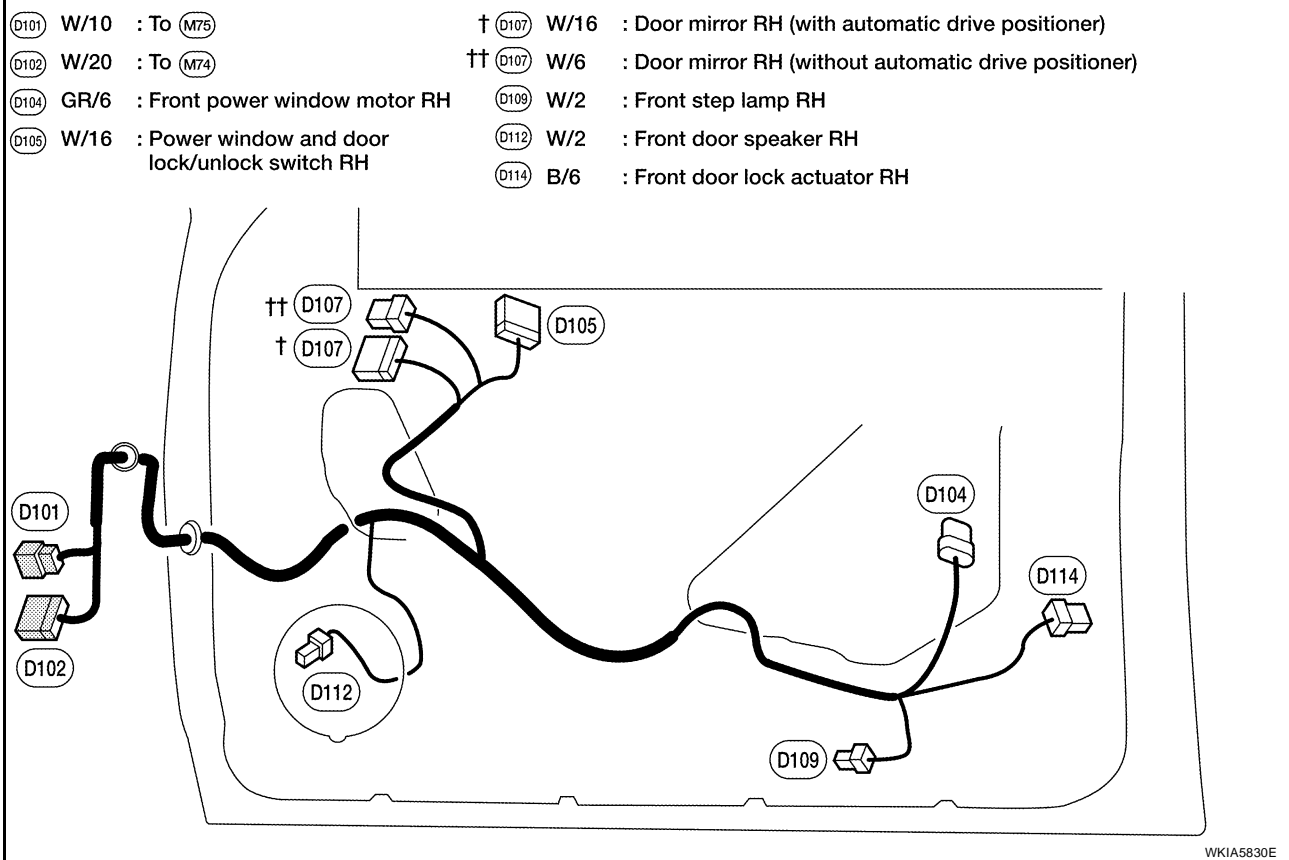
- (R200) W/16 : To (B145)
- (R201) BR/24 : To (B146)
- (R202) W/12 : Video monitor
- (R203) W/3 : Personal lamp 2nd row
- (R204) W/16 : Rear audio remote control unit

HARNESS

FRONT DOOR HARNESS LH



FRONT DOOR HARNESS RH



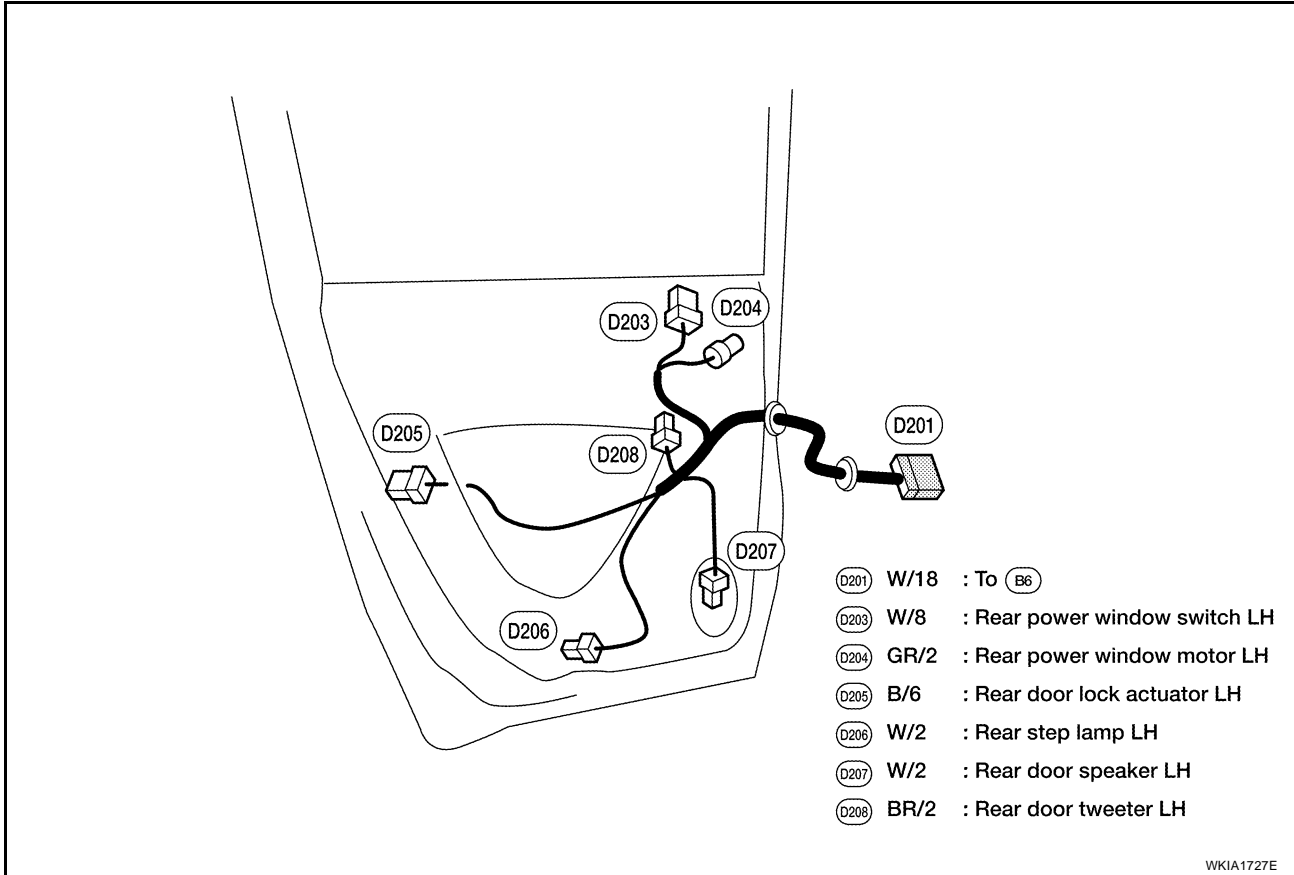
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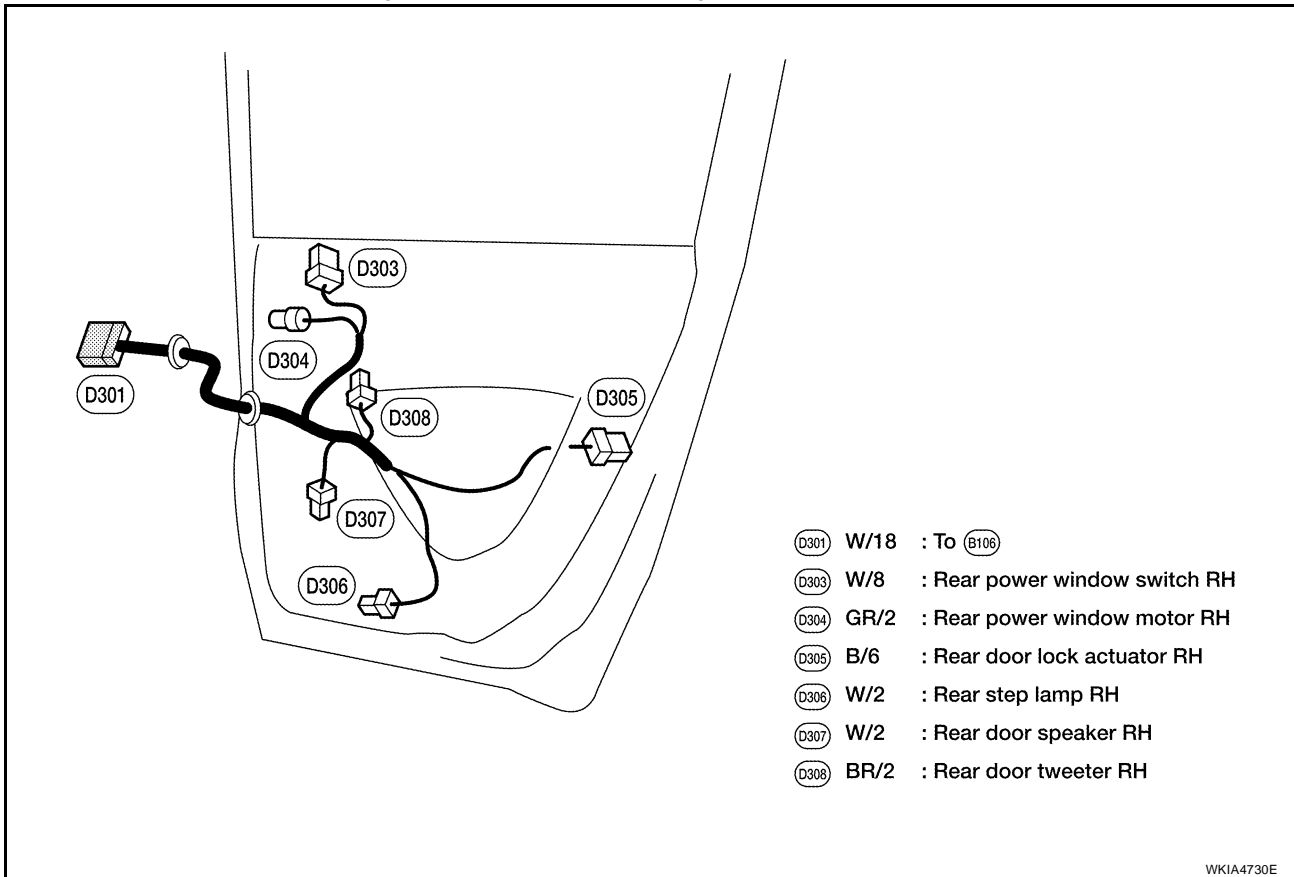
HARNESS

REAR DOOR HARNESS LH (CREW CAB MODELS)



WKIA1727E

REAR DOOR HARNESS RH (CREW CAB MODELS)



WKIA4730E

HARNESS

Wiring Diagram Codes (Cell Codes)

EKS00ARK

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 (Bank 1)
AF1HB2	EC	Air Fuel Ratio (A/F) Sensor 1 (Bank 2)
APPS1	EC	Accelerator Pedal Position Sensor
APPS2	EC	Accelerator Pedal Position Sensor
APPS3	EC	Accelerator Pedal Position Sensor
ABLS	BRC	Anti-Lock Brake System Limited Slip
ABS	BRC	Anti-Lock Brake System
ASC/BS	EC	ASCD Brake Switch
ASC/SW	EC	ASCD Steering Switch
ASCBOF	EC	ASCD Brake Switch
ASCIND	EC	ASCD Indicator
A/T	AT	A/T Assembly
AT/IND	DI	A/T Indicator Lamp
AUDIO	AV	Audio
AUT/DP	SE	Automatic Drive Positioner
AUTO/L	LT	Auto Light Control
BACK/L	LT	Back-up Lamp
BRK/SW	EC	Brake Switch
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 and Thermometer
D/LOCK	BL	Power Door Lock
DIFLOC	RFD	Electronic Locking Differential
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
FTTS	EC	Fuel Tank Temperature Sensor
FUELB1	EC	Fuel Injection System Bank 1
FUELB2	EC	Fuel Injection System Bank 2
H/LAMP	LT	Headlamp
H/MIRR	GW	Heated Mirror

HARNESSES

HORN	WW	Horn
HSEAT	SE	Heated Seat
I/MIRR	GW	Inside Mirror (Auto Anti-Dazzling Mirror)
IATS	EC	Intake Air Temperature Sensor
IGNSYS	EC	Ignition System
ILL	LT	Illumination
INJECT	EC	Injectors
INT/L	LT	Room/Map, Vanity, Cargo, Personal, Foot, Step, and Puddle Lamps
KEYLES	BL	Remote Keyless Entry System
KS	EC	Knock Sensor
MAFS	EC	Mass Air Flow Sensor
MAIN	EC	Main Power Supply and Ground Circuit
METER	DI	Speedometer, Tachometer, Temp. and Fuel Gauges
MIL/DL	EC	Malfunction Indicator Lamp
MIRROR	GW	Door Mirror
MMSW	AT	Manual Mode Switch
NATS	BL	Nissan Anti-Theft System
NAVI	AV	Navigation 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
PEDAL	AP	Adjustable Pedal System
PGC/V	EC	EVAP Canister Purge Volume Control Solenoid Valve
PHASE	EC	Camshaft Position Sensor (PHASE) (Bank 1)
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
SEAT	SE	Power Seat
SEN/PW	EC	Sensor Power Supply
SHIFT	AT	A/T Shift Lock System
SONAR	DI	Rear Sonar System
SROOF	RF	Sunroof
SRS	SRS	Supplemental Restraint System
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
TMSW	AT	Tow Mode Switch
TPS1	EC	Throttle Position Sensor
TPS2	EC	Throttle Position Sensor
TPS3	EC	Throttle Position Sensor
TRNSCV	BL	HOMELINK® Universal Transceiver
TURN	LT	Turn Signal and Hazard Warning Lamps
VDC	BRC	Vehicle Dynamic Control System

HARNESSES

VEHSEC	BL	Vehicle security (theft warning) system
VENT/V	EC	EVAP Canister Vent Control Valve
WARN	DI	Warning Lamps
WINDOW	GW	Power Window
WIPER	WW	Front Wiper and Washer

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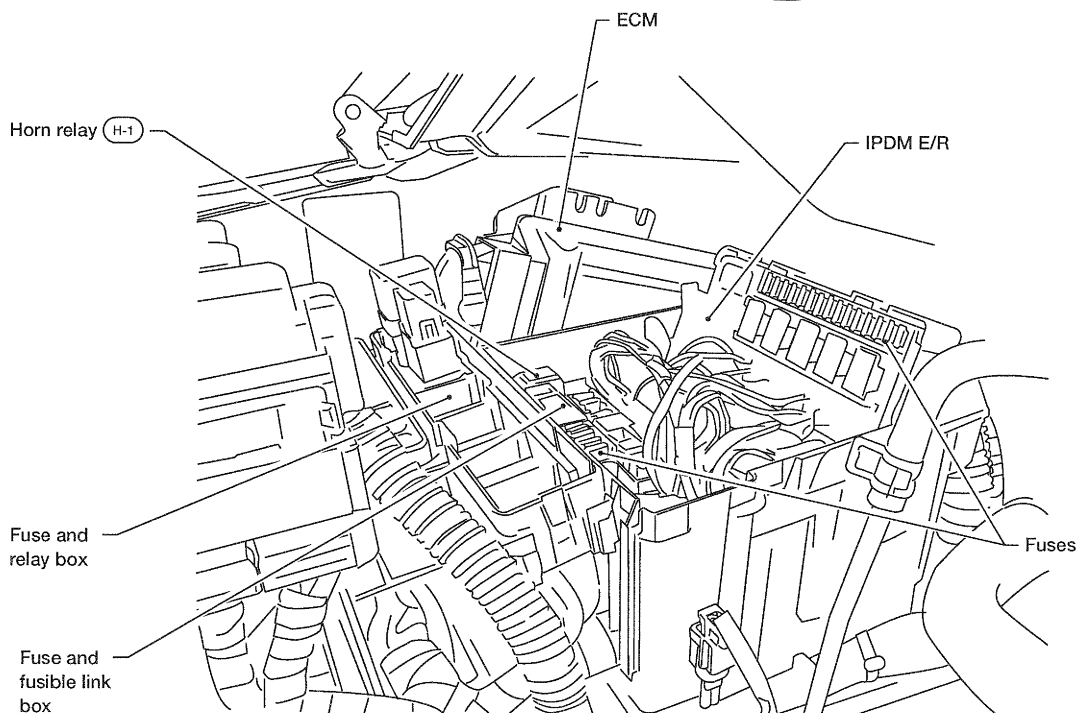
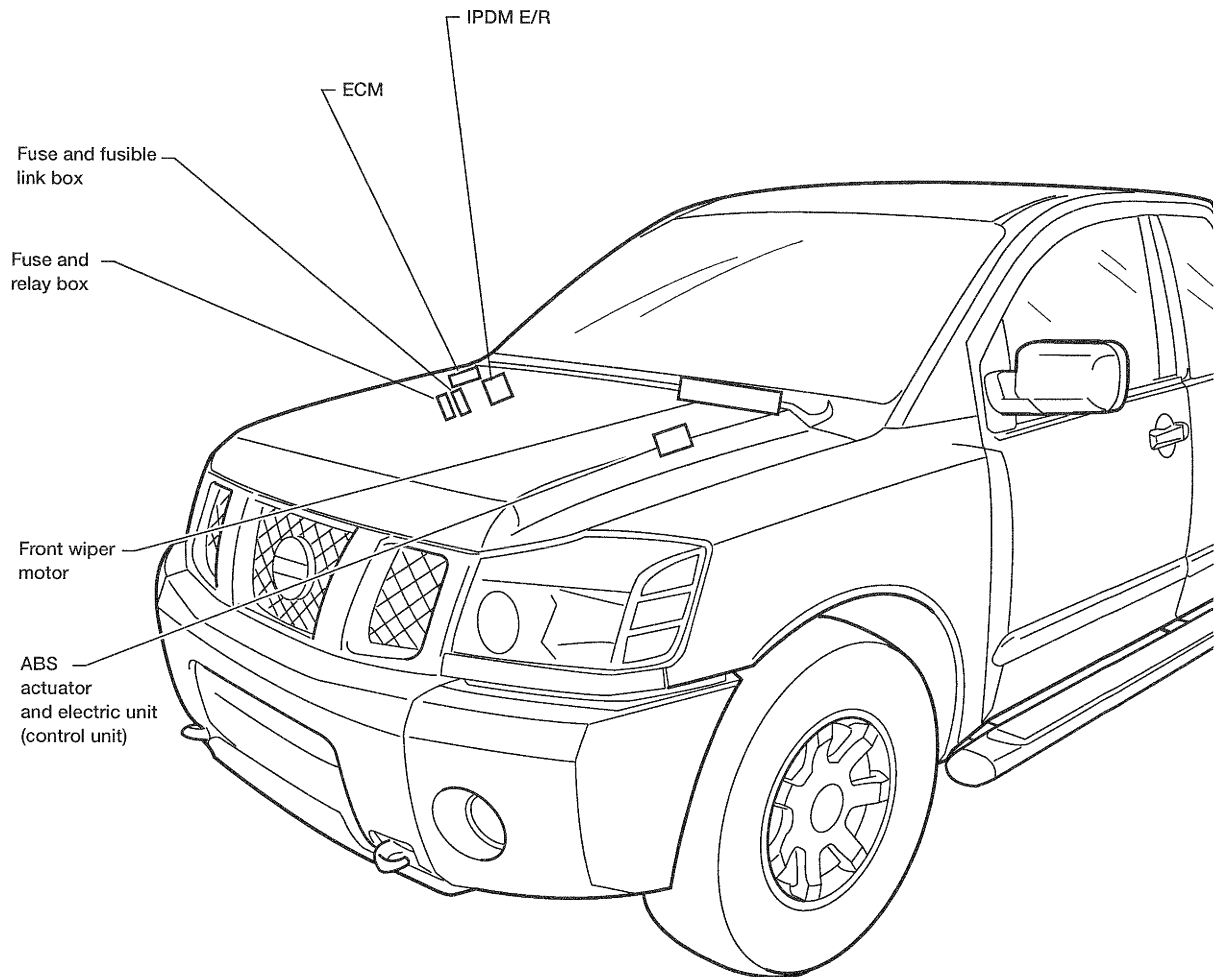
ELECTRICAL UNITS LOCATION

PF2:25230

EKS00ARL

ELECTRICAL UNITS LOCATION

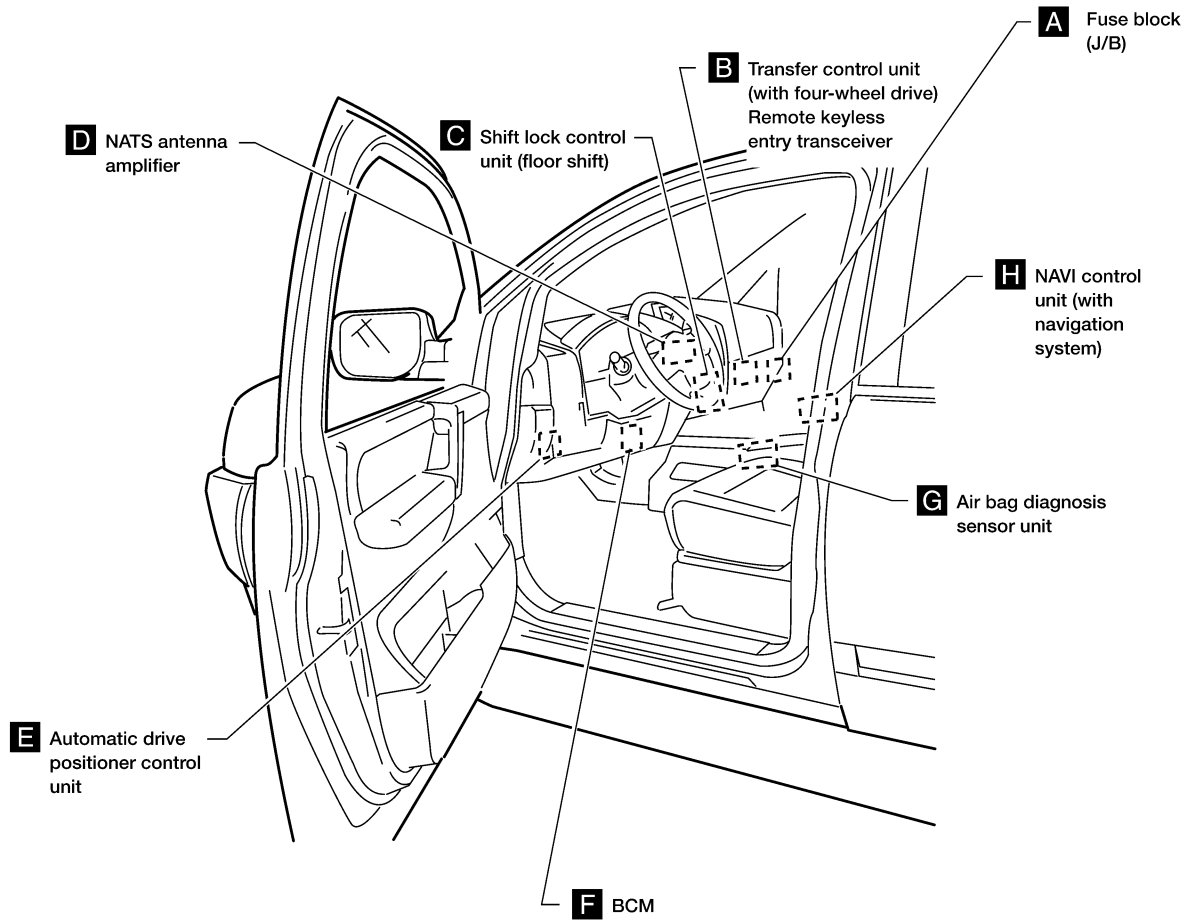
Electrical Units Location ENGINE COMPARTMENT



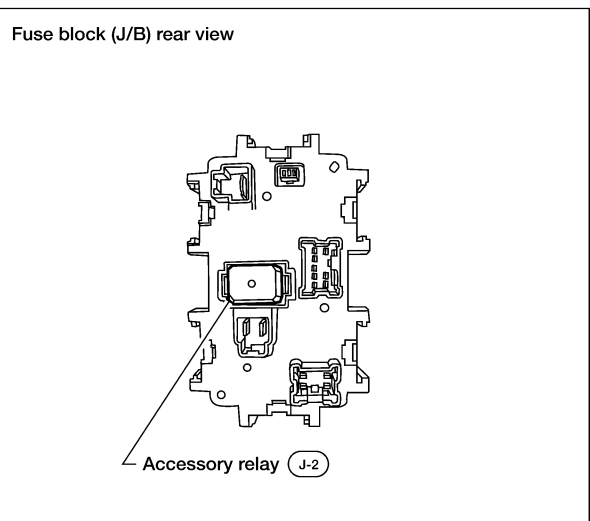
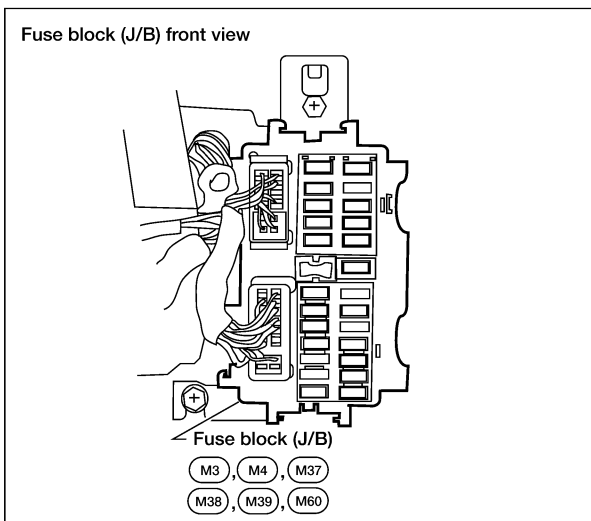
WKIA1703E

ELECTRICAL UNITS LOCATION

PASSENGER COMPARTMENT



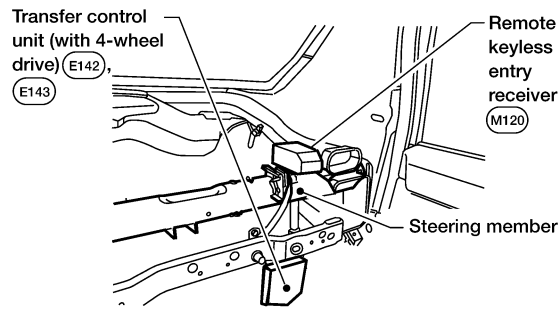
A Instrument panel side RH



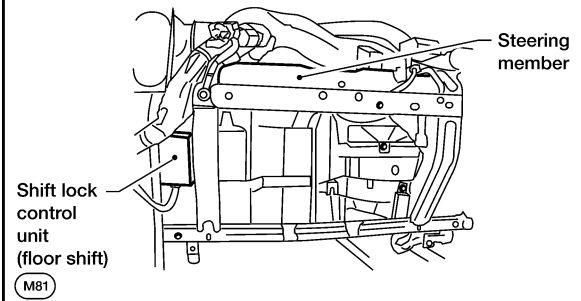
WKIA4731E

ELECTRICAL UNITS LOCATION

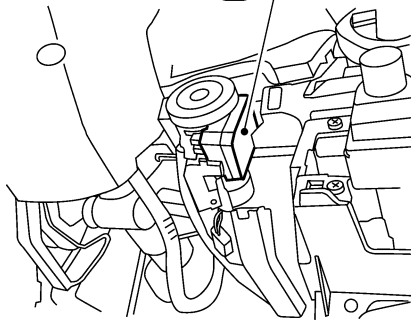
B View with instrument panel removed RH



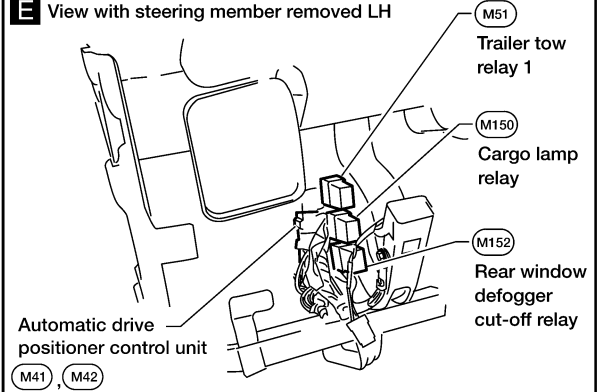
C View with instrument panel removed RH



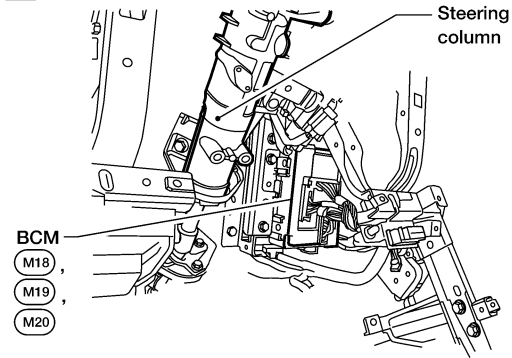
D View with lower driver instrument panel removed
NATS antenna amplifier (M21)



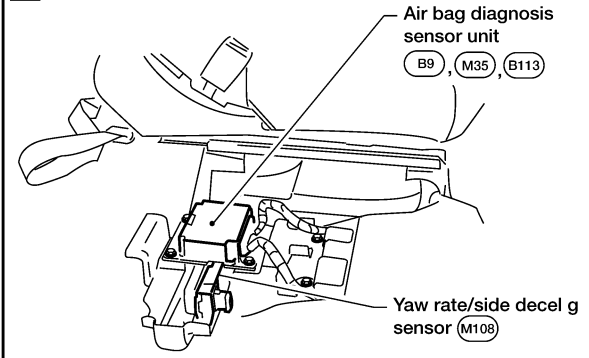
E View with steering member removed LH



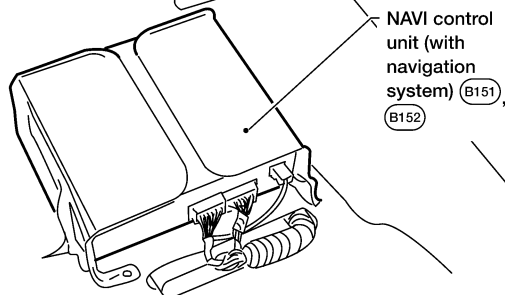
F View with instrument panel removed



G View with center console removed



H View with passenger seat removed



WKIA4732E

HARNESS CONNECTOR

HARNESS CONNECTOR

PFP:B4341

Description

HARNESS CONNECTOR (TAB-LOCKING TYPE)

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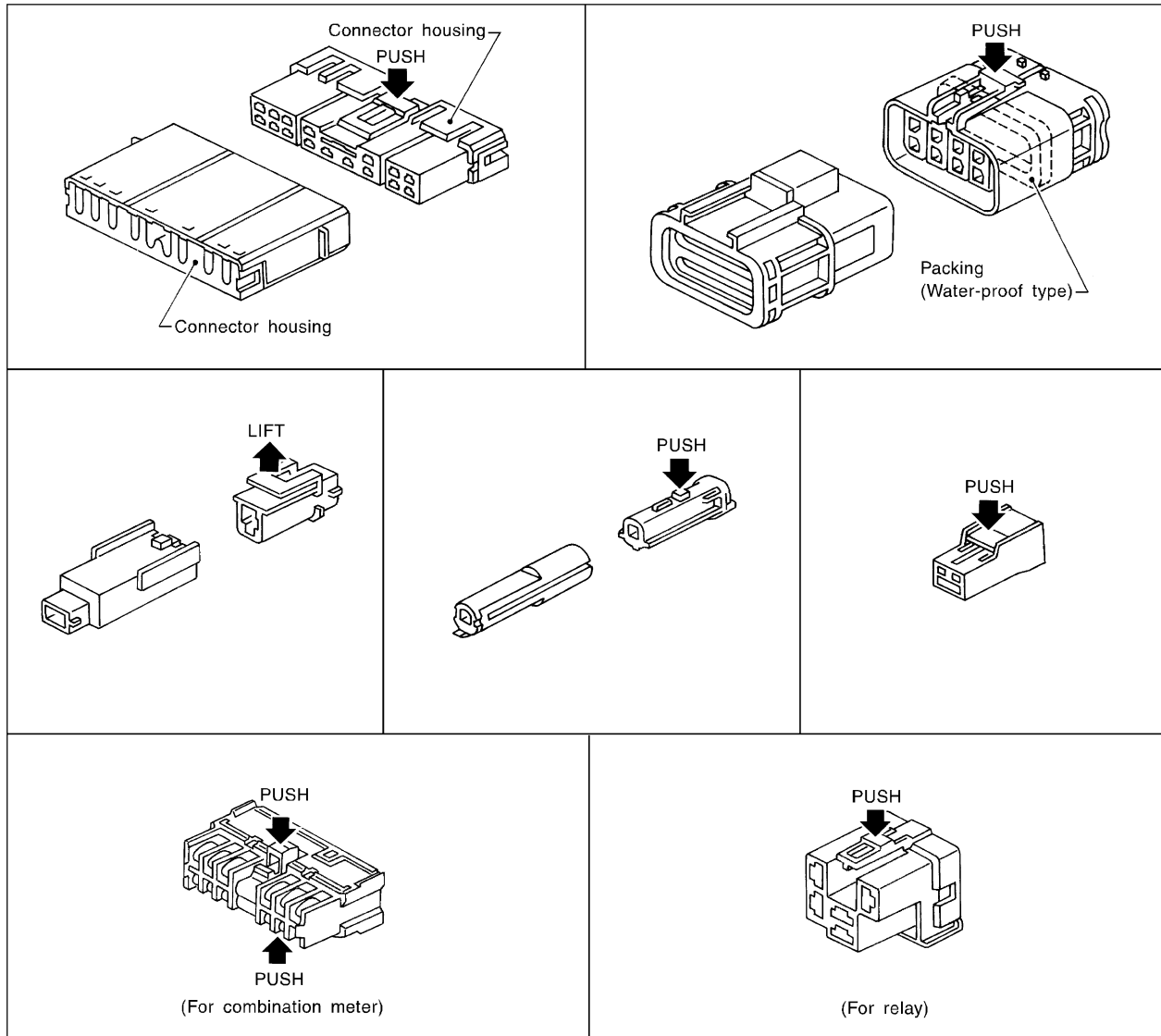
- The tab-locking type connectors help prevent accidental looseness or disconnection.
- The tab-locking type connectors are disconnected by pushing or lifting the locking tab(s). Refer to the illustration below.

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]



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SEL769DA

HARNESS CONNECTOR

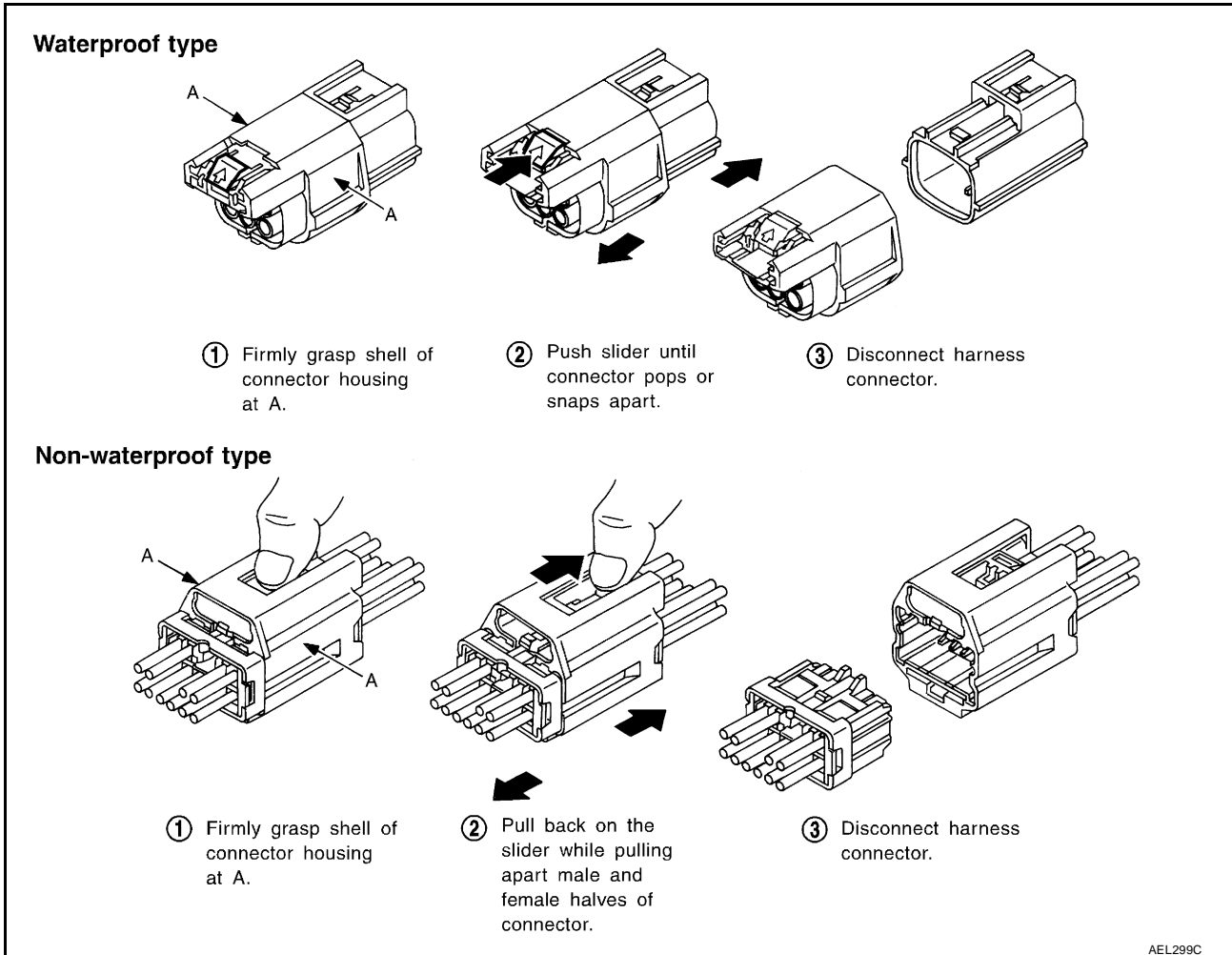
HARNESS CONNECTOR (SLIDE-LOCKING TYPE)

- 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]



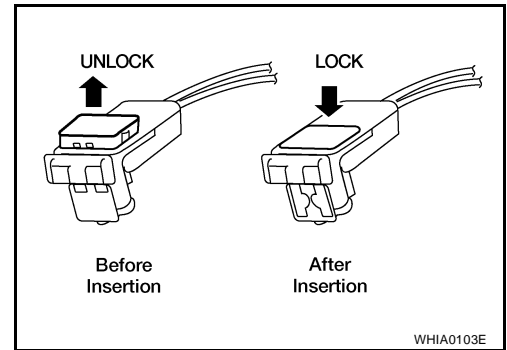
HARNESS CONNECTOR

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.**



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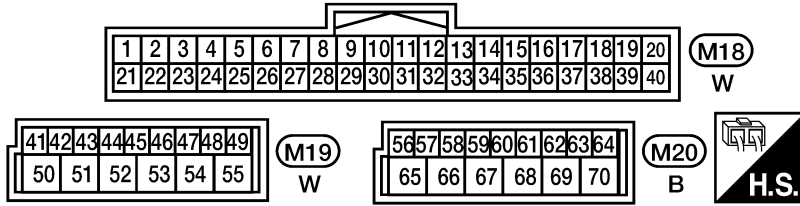
ELECTRICAL UNITS

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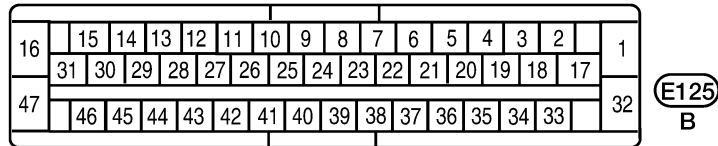
ELECTRICAL UNITS Terminal Arrangement

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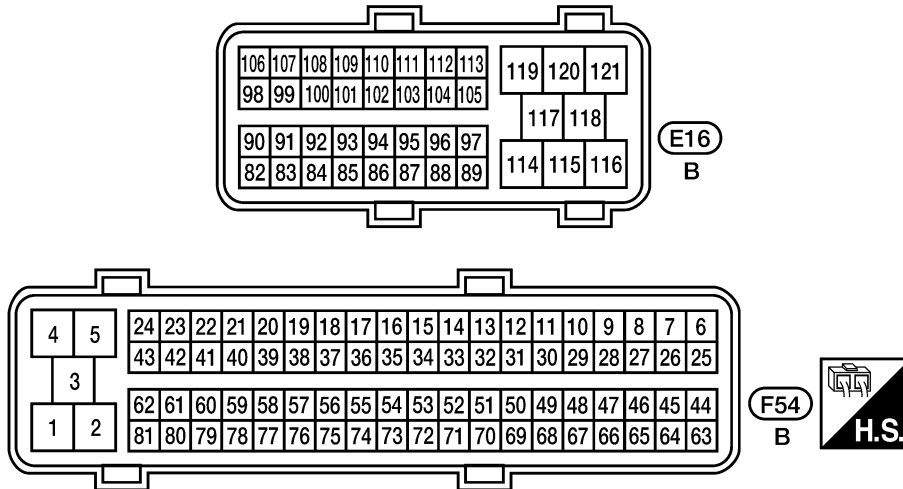
BCM (BODY CONTROL MODULE)



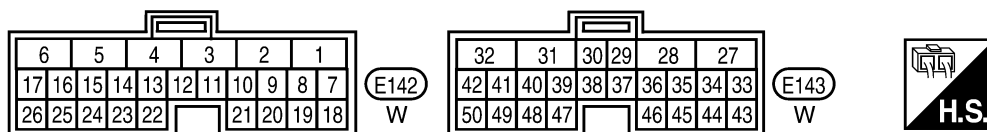
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)



ECM



TRANSFER CONTROL UNIT



WKIA4733E

STANDARDIZED RELAY

PFP:25230

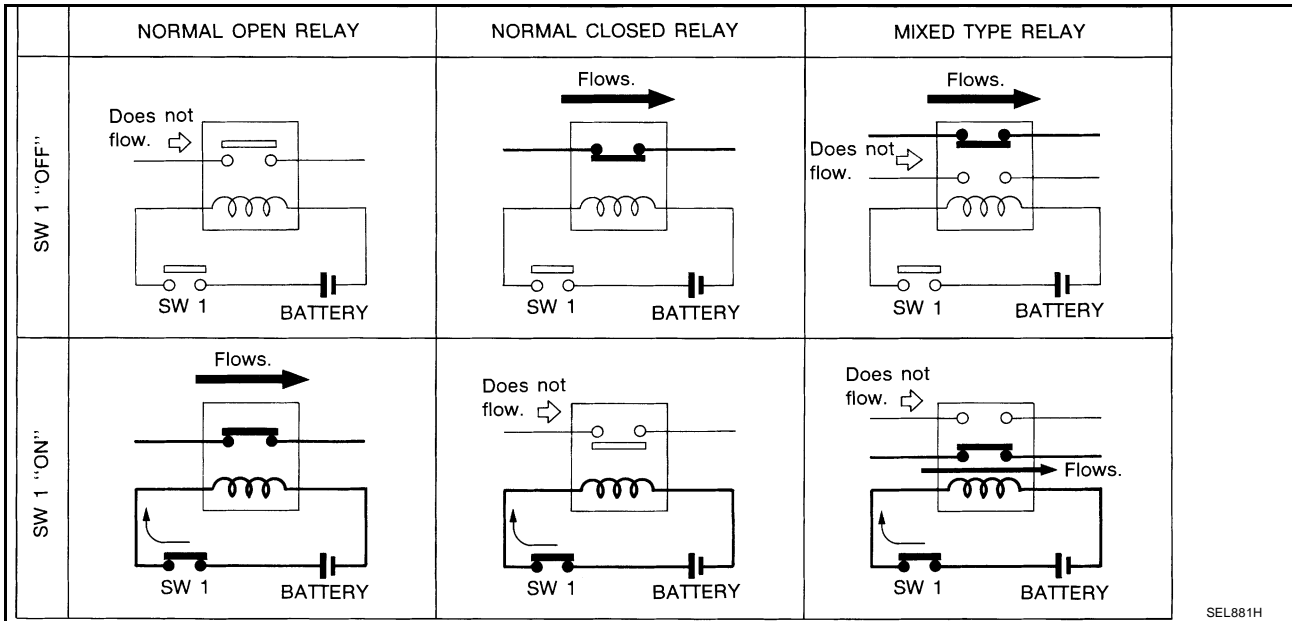
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STANDARDIZED RELAY

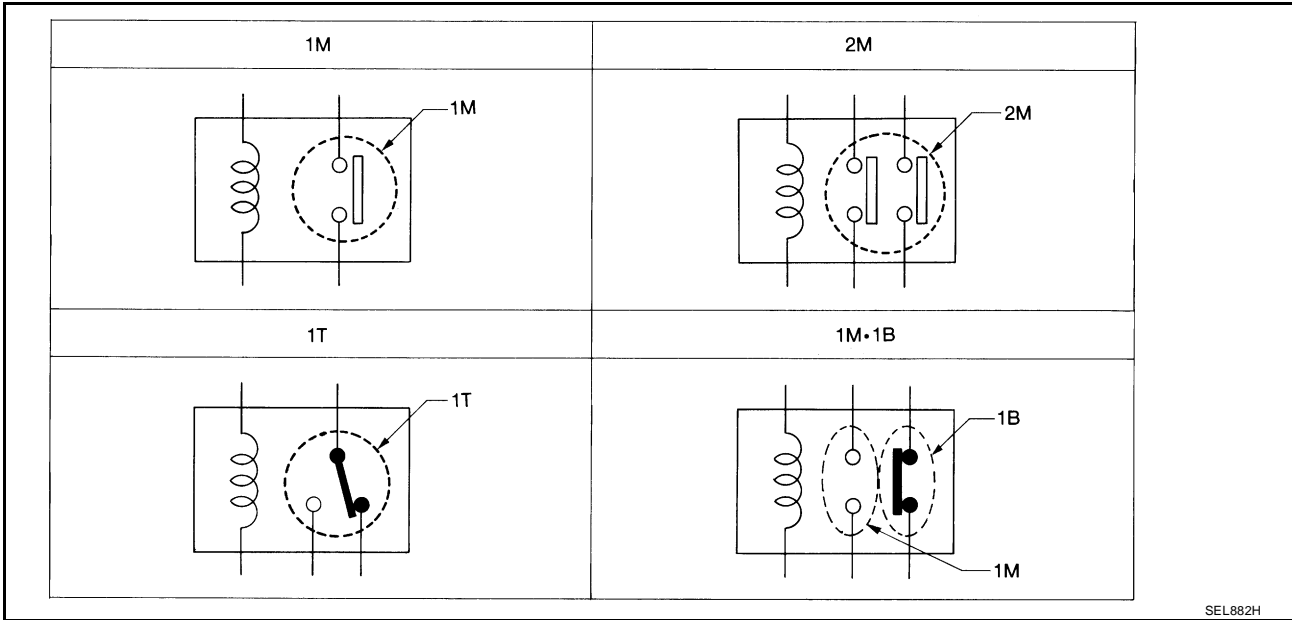
Description

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

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

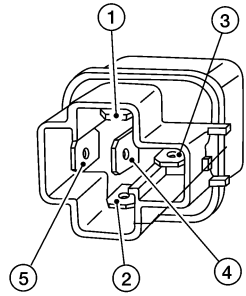
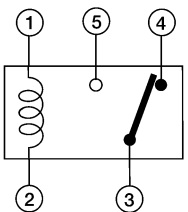
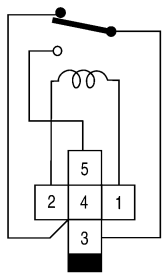
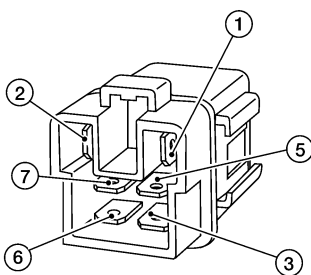
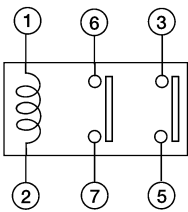
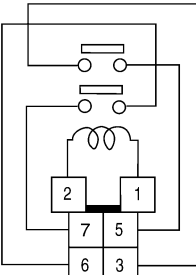
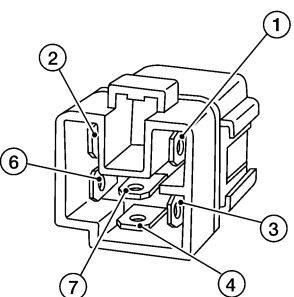
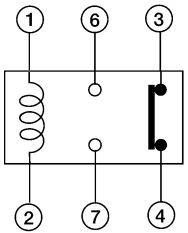
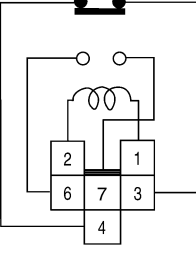
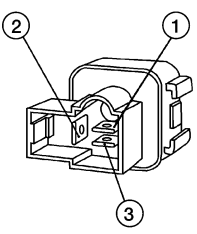
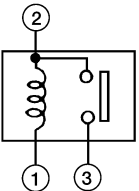
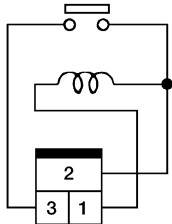
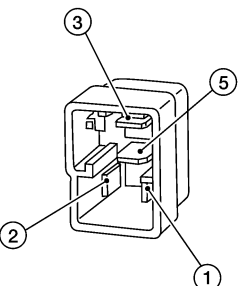
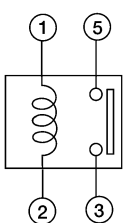
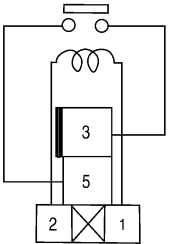


TYPE OF STANDARDIZED RELAYS



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)

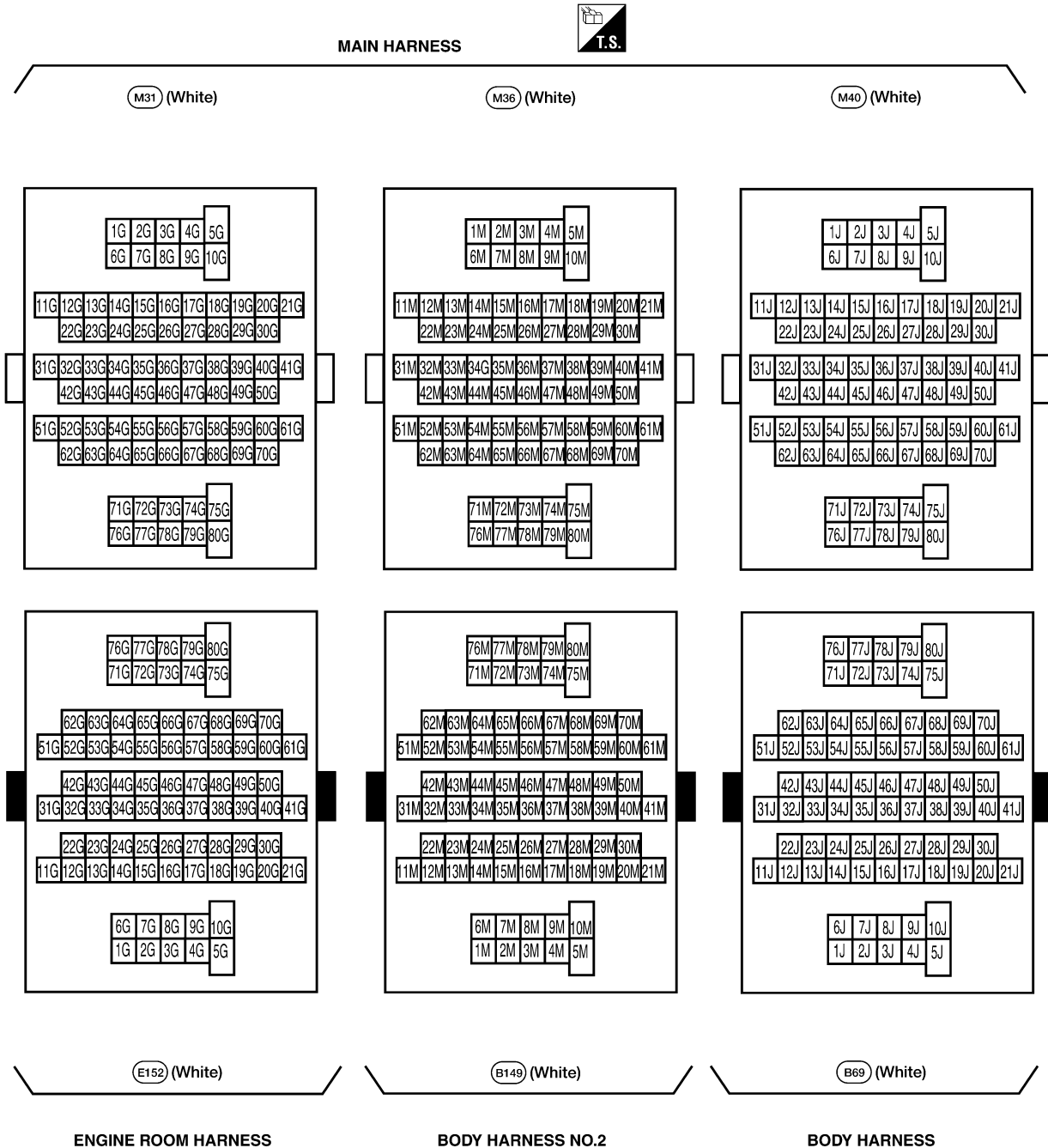
SUPER MULTIPLE JUNCTION (SMJ)

Terminal Arrangement

PF:84341

EKS00ARS

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

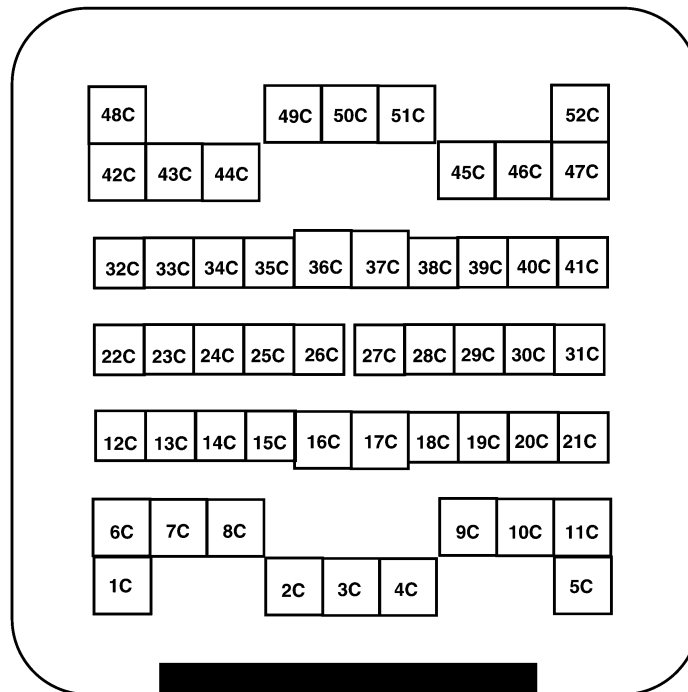
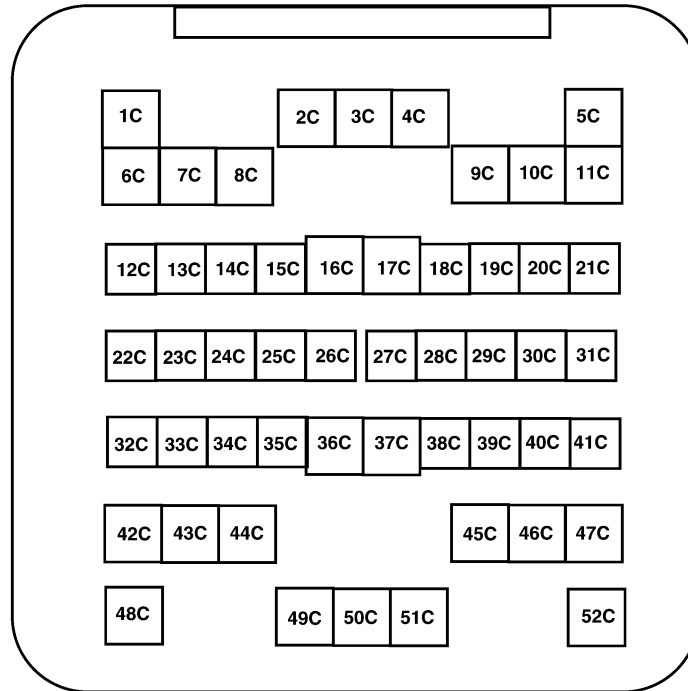


SUPER MULTIPLE JUNCTION (SMJ)

CHASSIS HARNESS



(C1) (Gray)



(E41) (Gray)

ENGINE ROOM HARNESS

WKIA1845E

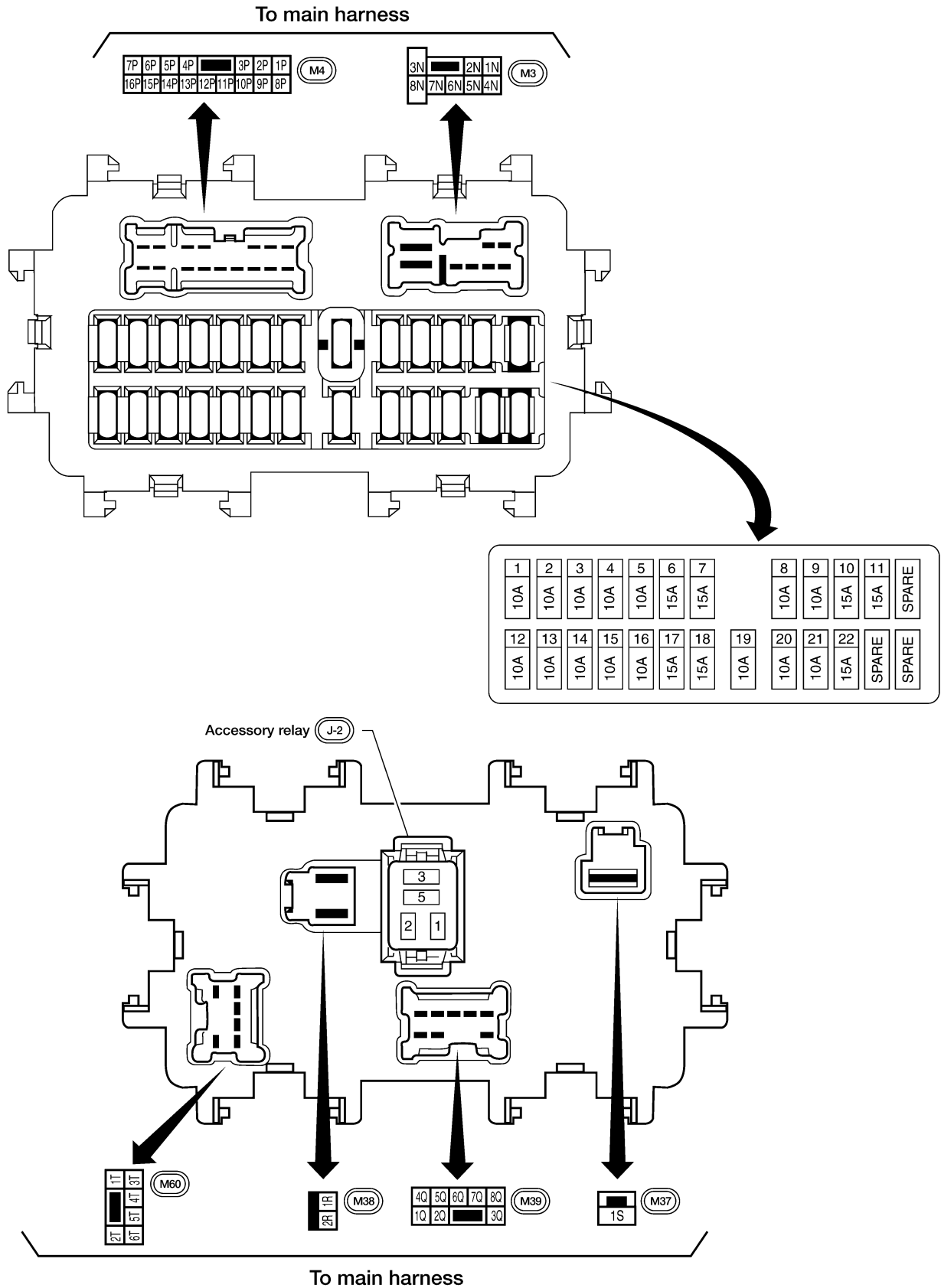
FUSE BLOCK-JUNCTION BOX (J/B)

FUSE BLOCK-JUNCTION BOX (J/B)

Terminal Arrangement

PF24350

EKS00ART



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

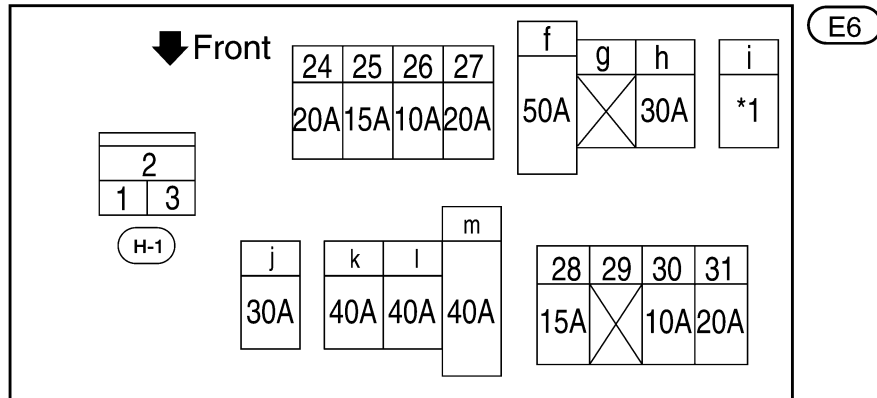
FUSE AND FUSIBLE LINK BOX

FUSE AND FUSIBLE LINK BOX

PF24381

Terminal Arrangement

EKS00ARU



24 - 31: FUSE f - m: FUSIBLE LINK

*1 40A with VDC
30A without VDC

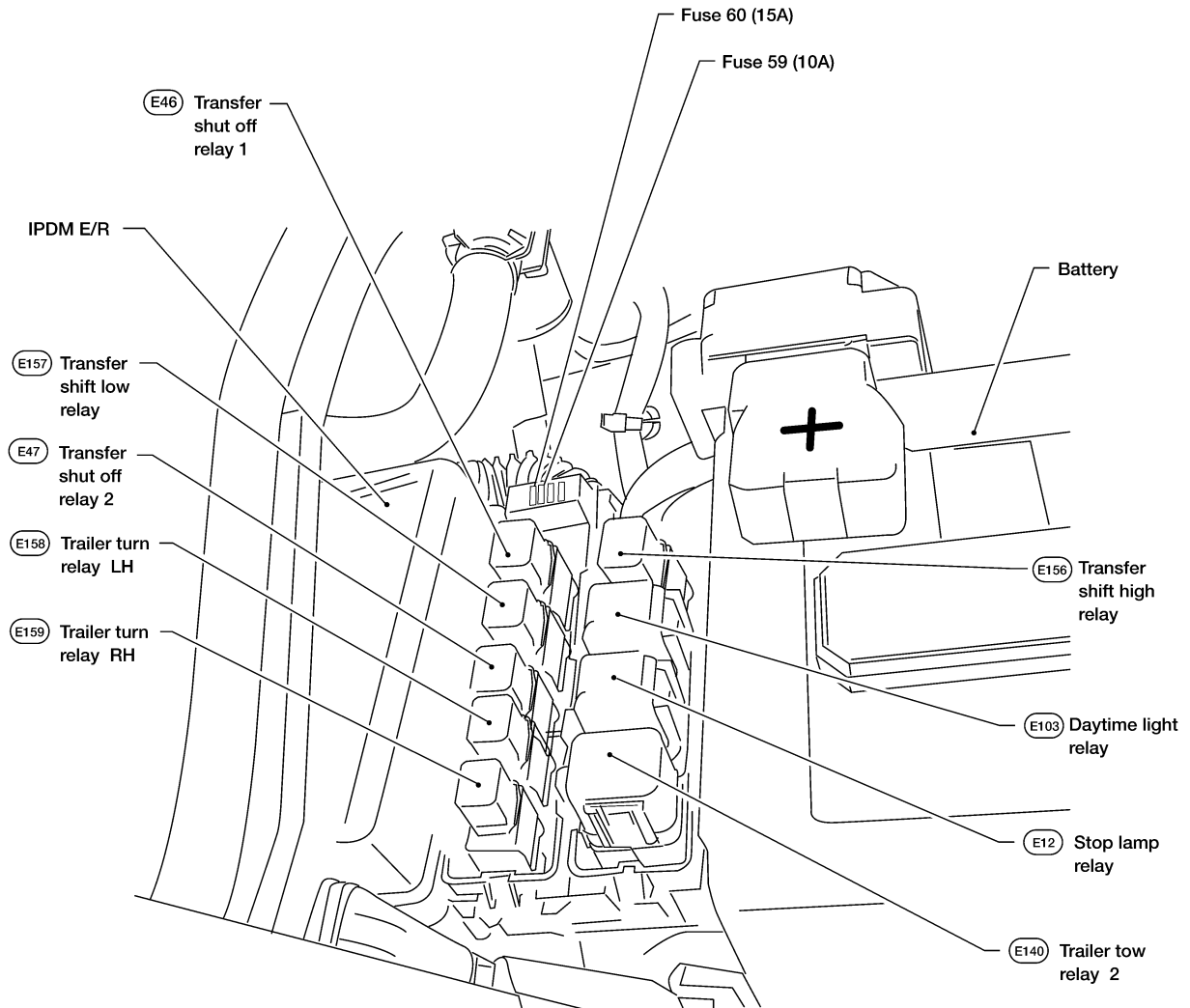
FUSE AND RELAY BOX

PF24012

EKS00ARV

FUSE AND RELAY BOX

Terminal Arrangement



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

PG

WKIA4736E

FUSE AND RELAY BOX
