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**POWER SUPPLY, GROUND & CIRCUIT ELEMENTS**

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# PRECAUTIONS

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## PRECAUTION

### PRECAUTIONS

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

INFOID:000000011069838

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 SR 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 SR 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.

#### PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

#### **WARNING:**

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least three minutes before performing any service.

#### Precaution for Power Generation Variable Voltage Control System

INFOID:000000011069839

#### **CAUTION:**

For this model, the battery current sensor that is installed to the negative battery cable measures the charging/discharging current of the battery and performs various engine controls. If an electrical component is connected directly to the negative battery terminal, the current flowing through that component will not be measured by the battery current sensor. This condition may cause a malfunction of the engine control system and battery discharge may occur. Do not connect an electrical component or ground wire directly to the battery terminal.

# PREPARATION

< PREPARATION >

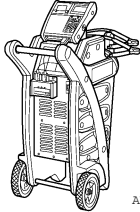
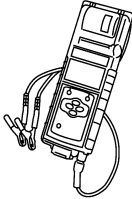
## PREPARATION

### PREPARATION

#### Special Service Tool


INFOID:000000011069840

The actual shape of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
<p>— (—) Model GR8-1200 NI Multitasking battery and electrical diagnostic station</p>  <p style="text-align: right; font-size: small;">AWTIA12392Z</p>	<p>Tests batteries, starting and charging systems and charges batteries. For operating instructions, refer to diagnostic station instruction manual.</p>
<p>— (—) Model EXP-800 NI Battery and electrical diagnostic analyzer</p>  <p style="text-align: right; font-size: small;">JSMIA08062Z</p>	<p>Tests batteries and charging systems. For operating instructions, refer to diagnostic analyzer instruction manual.</p>

#### Commercial Service Tool

INFOID:000000011069841

Tool name	Description
<p>Power tool</p>  <p style="text-align: right; font-size: small;">PIIB1407E</p>	<p>Loosening nuts, screws and bolts</p>

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# ELECTRICAL UNITS LOCATION

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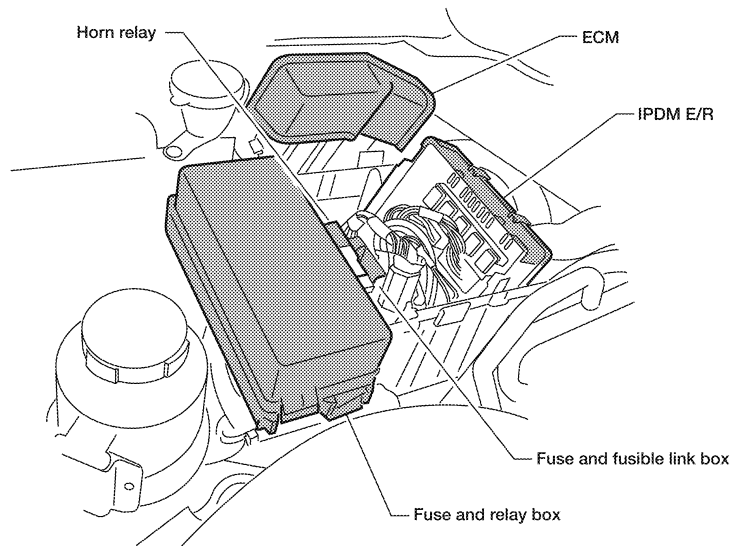
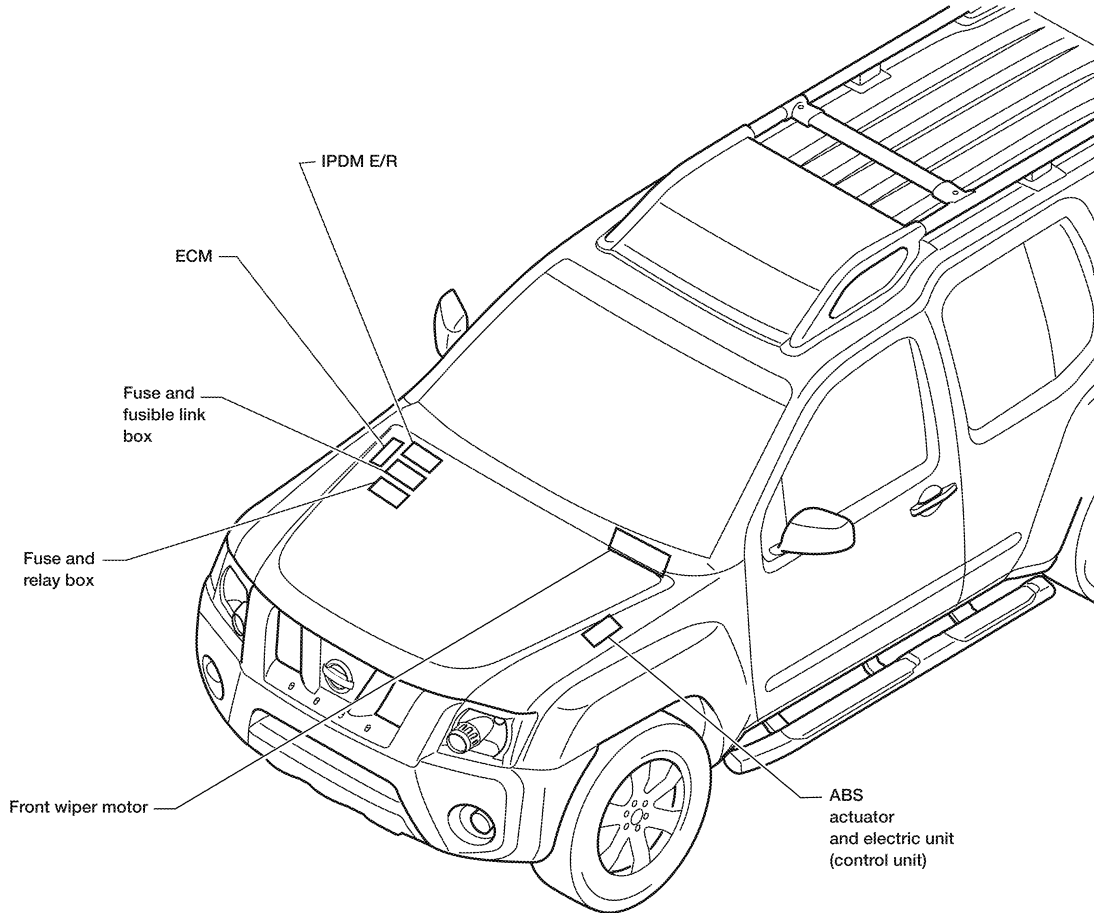
## SYSTEM DESCRIPTION

### ELECTRICAL UNITS LOCATION

Electrical Units Location

INFOID:000000011069853

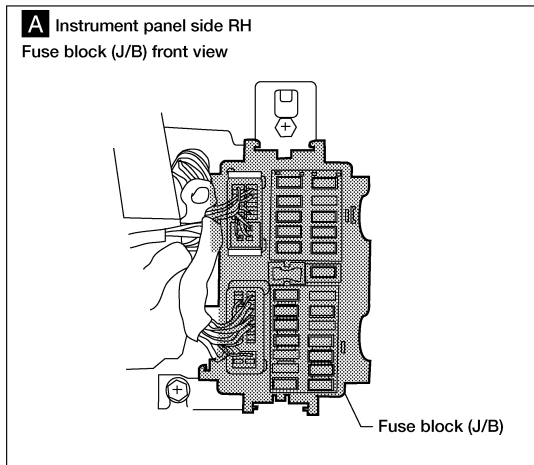
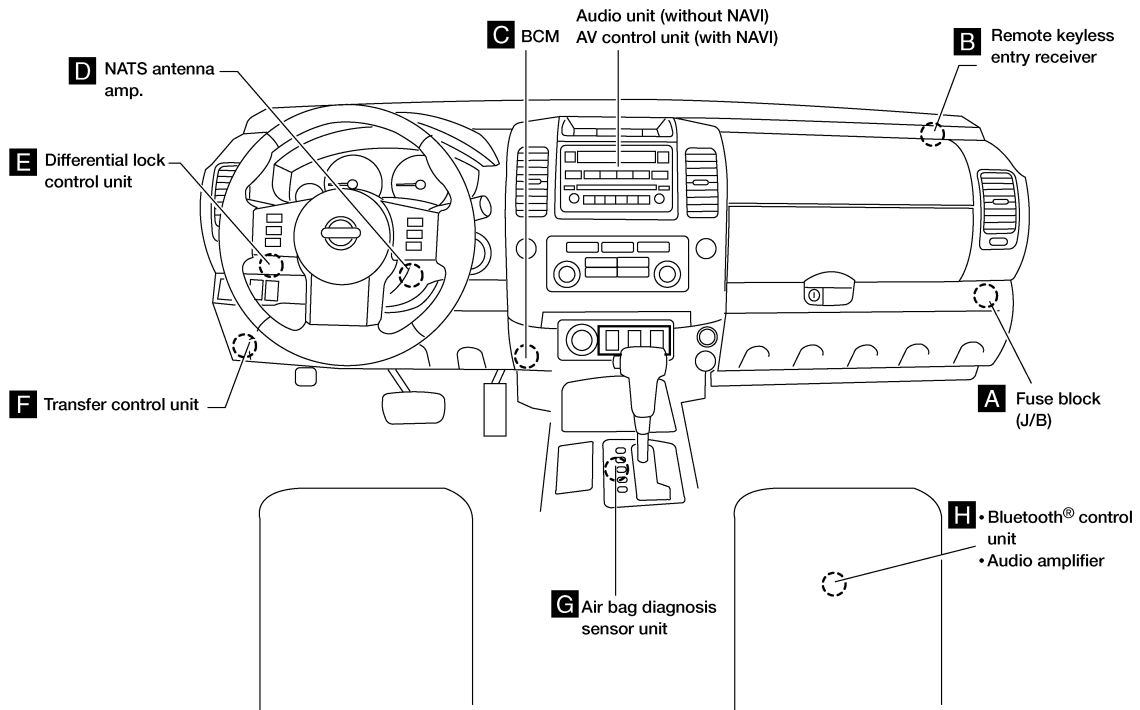
#### ENGINE COMPARTMENT



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# ELECTRICAL UNITS LOCATION

## < SYSTEM DESCRIPTION > PASSENGER COMPARTMENT

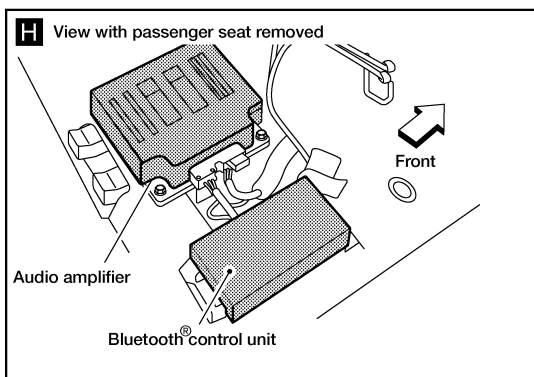
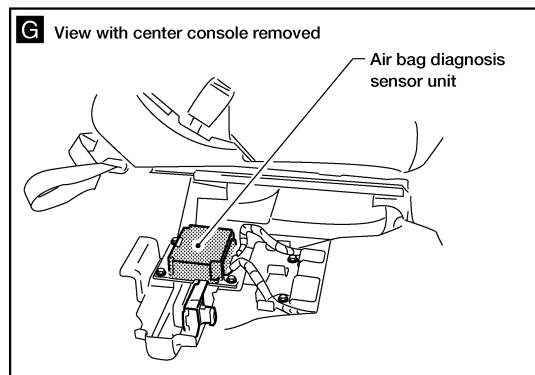
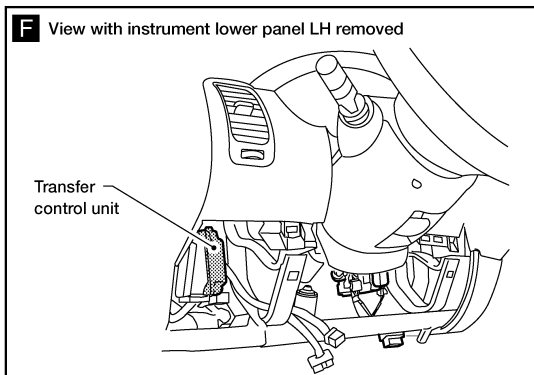
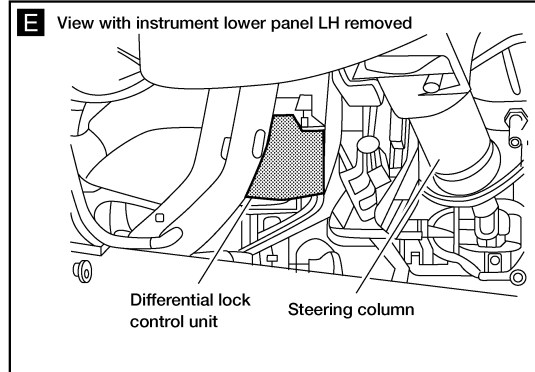
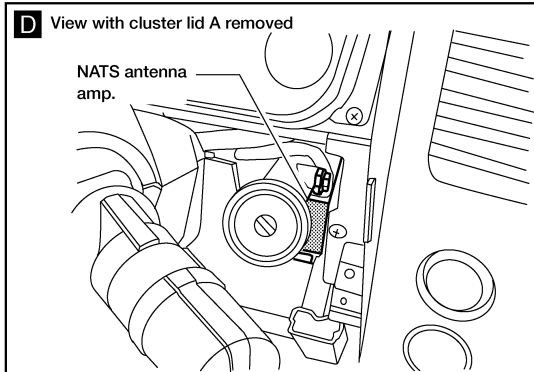
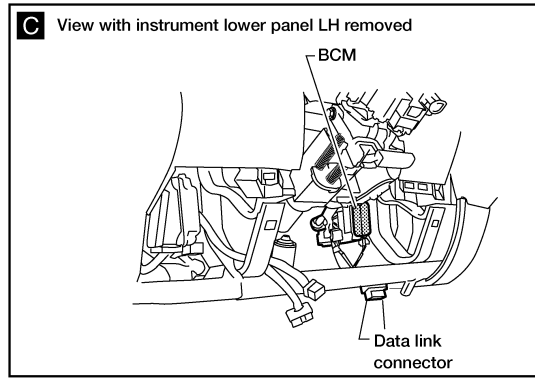
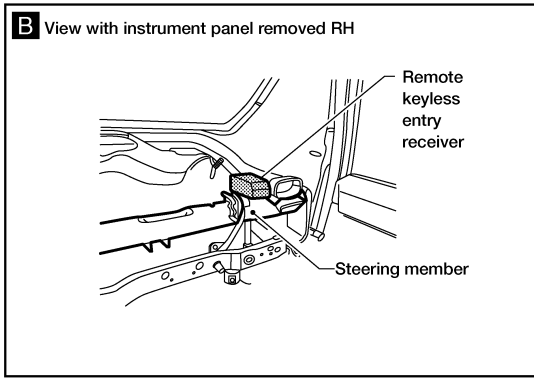


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# ELECTRICAL UNITS LOCATION

< SYSTEM DESCRIPTION >



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# COMPONENT PARTS

< SYSTEM DESCRIPTION >

## COMPONENT PARTS

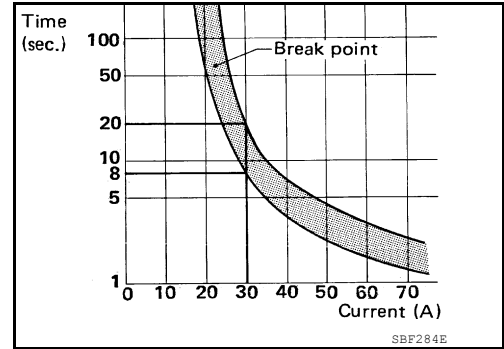
### Circuit Breaker (Built Into BCM)

INFOID:0000000011107787

For example, when current is 30A, the circuit is broken within 8 to 20 seconds.

This circuit breaker is used for the following systems:

- Power windows
- Power moonroof



### Harness Connector

INFOID:0000000011107789

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

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

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

**CAUTION:**

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

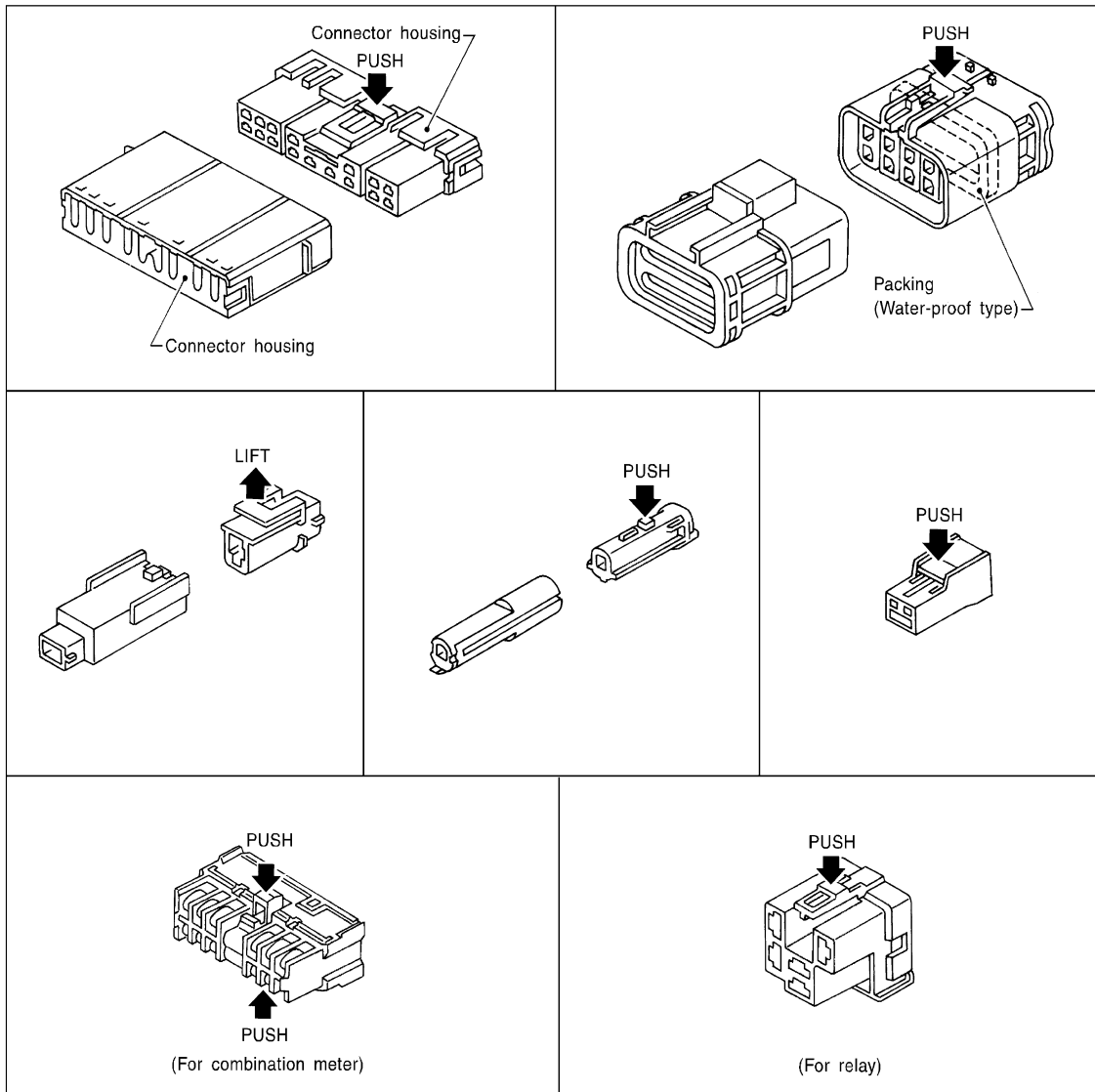
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# COMPONENT PARTS

## < SYSTEM DESCRIPTION >

[Example]



SEL769DA

### HARNESS CONNECTOR (SLIDE-LOCKING TYPE)

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

#### **CAUTION:**

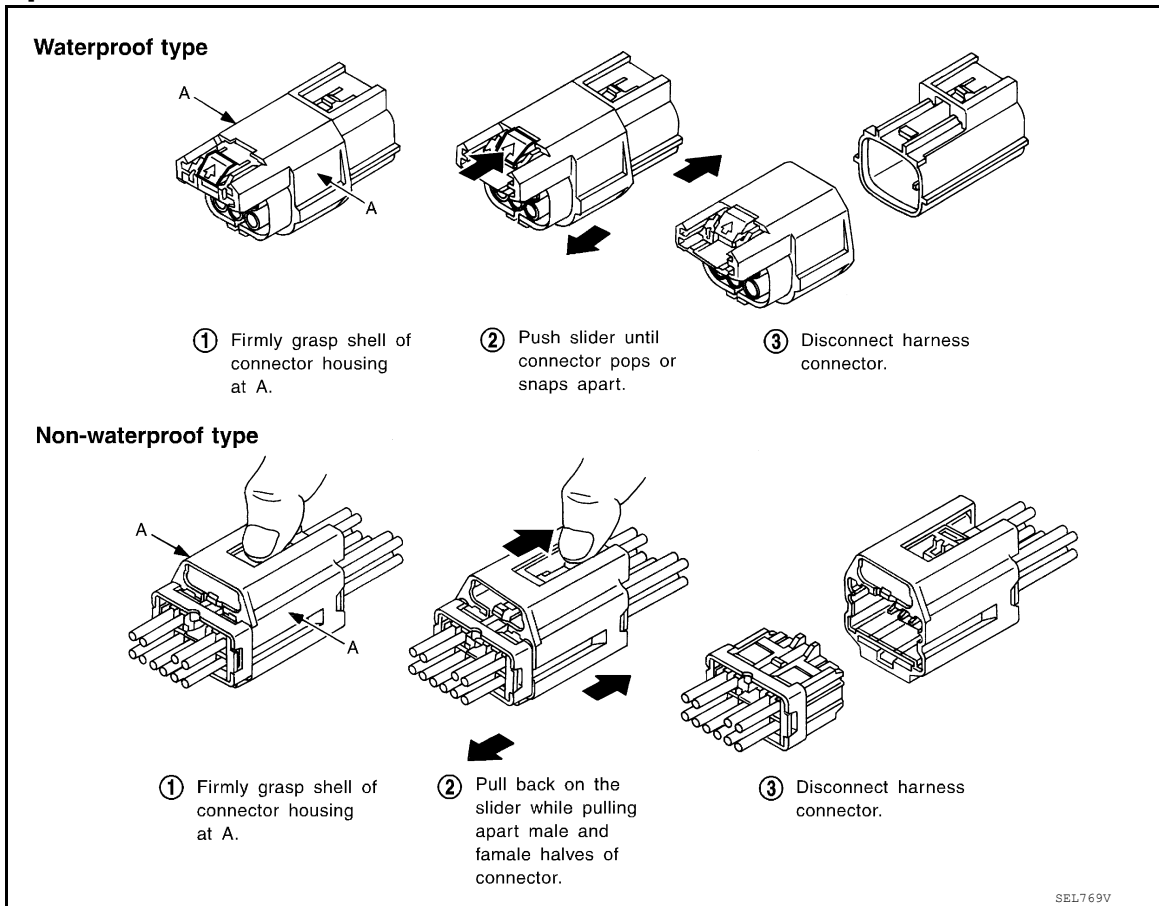
- **Do not pull the harness or wires when disconnecting the connector.**
- **Be careful not to damage the connector support bracket when disconnecting the connector.**



# COMPONENT PARTS

## < SYSTEM DESCRIPTION >

[Example]



### HARNESS CONNECTOR (LEVER LOCKING TYPE)

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

**CAUTION:**

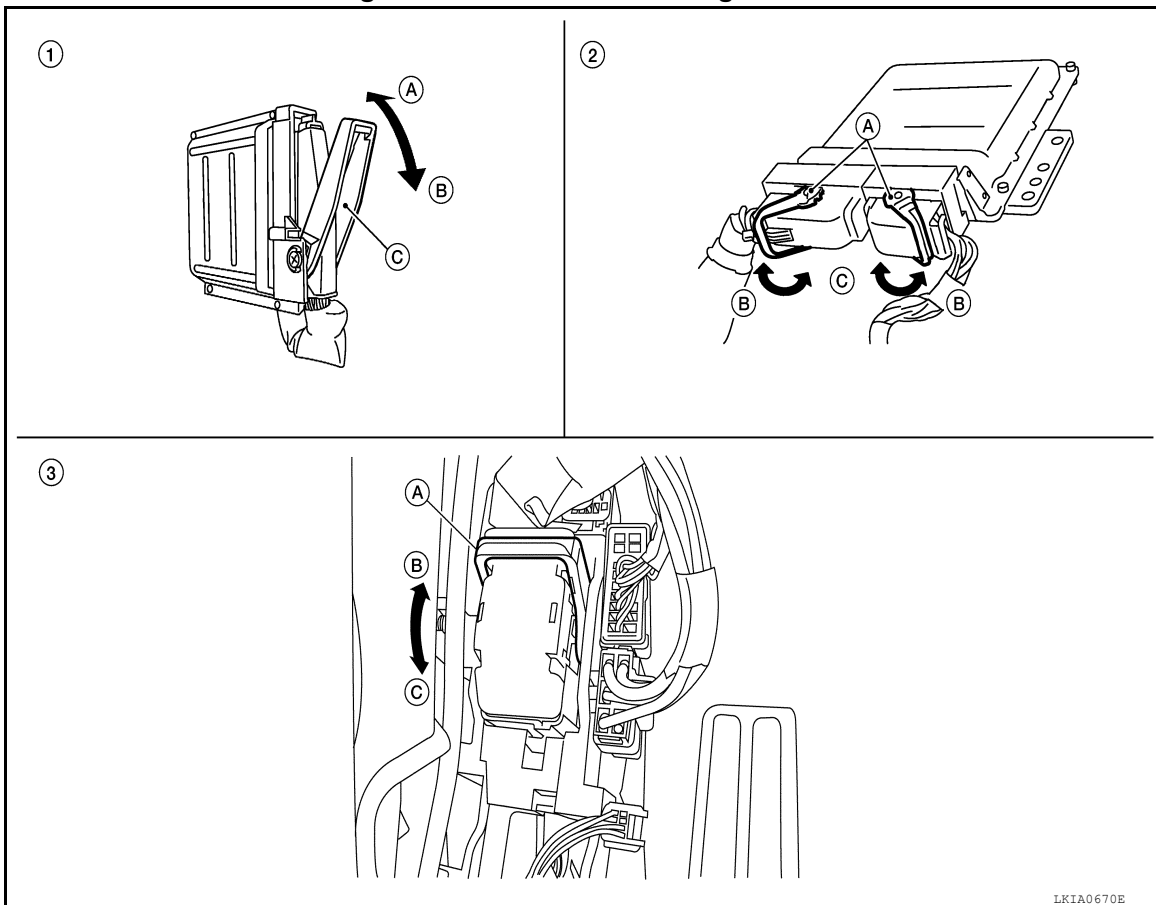
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# COMPONENT PARTS

## < SYSTEM DESCRIPTION >

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



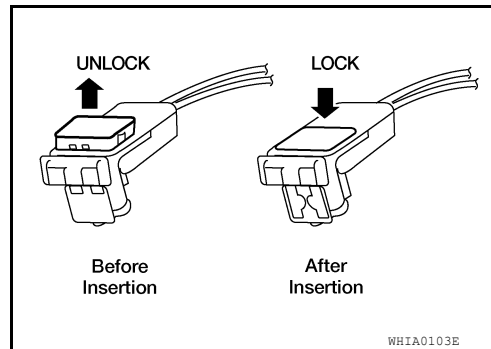
- |                                   |                                 |                  |
|-----------------------------------|---------------------------------|------------------|
| 1. Control unit with single lever | 2. Control unit with dual lever | 3. SMJ connector |
| A. Fasten              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

## HARNESS CONNECTOR (DIRECT-CONNECT SRS COMPONENT TYPE)

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



## Standardized Relay

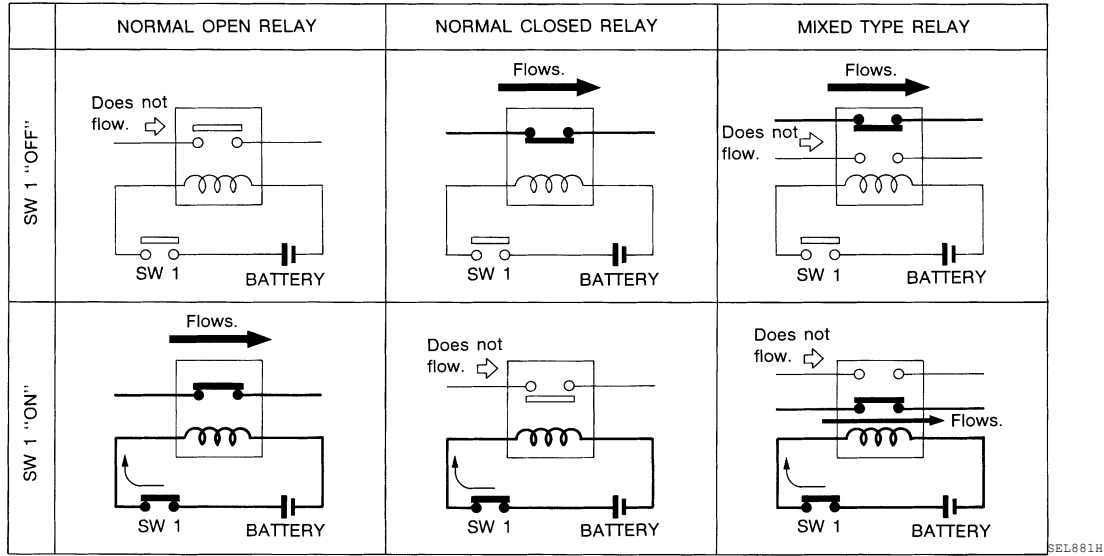
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## NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

# COMPONENT PARTS

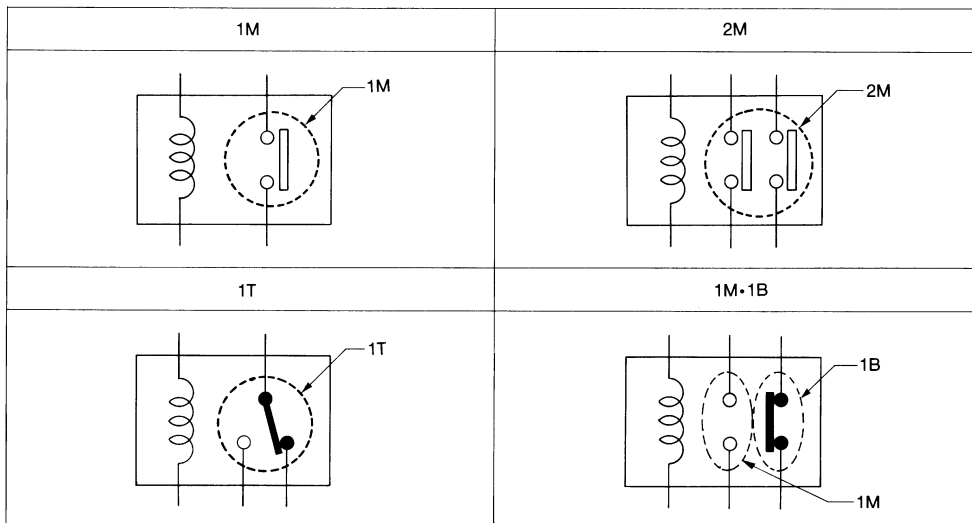
## < SYSTEM DESCRIPTION >

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



## TYPE OF STANDARDIZED RELAYS

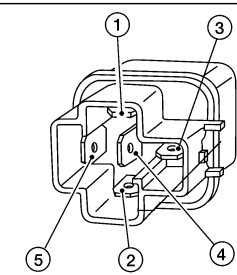
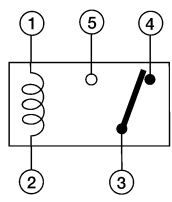
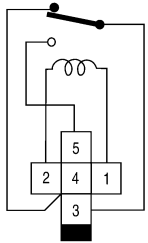
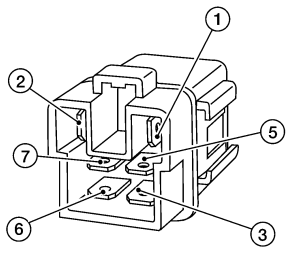
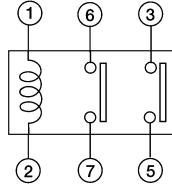
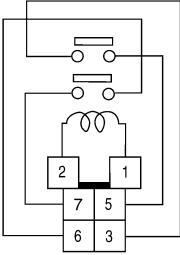
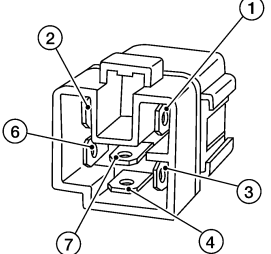
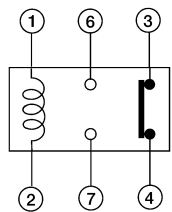
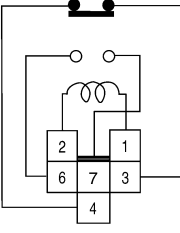
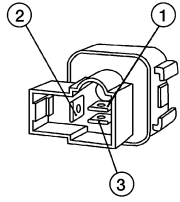
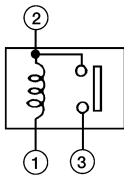
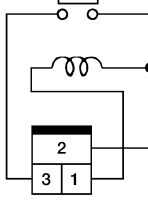
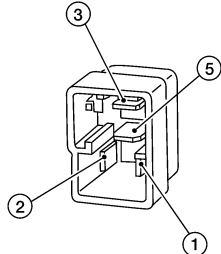
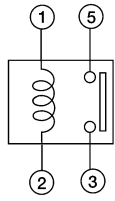
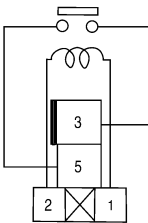
- 1M ..... 1 Make
- 1T ..... 1 Transfer
- 2M ..... 2 Make
- 1M-1B ..... 1 Make 1 Break



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# COMPONENT PARTS

## < SYSTEM DESCRIPTION >

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

# POWER SUPPLY ROUTING CIRCUIT

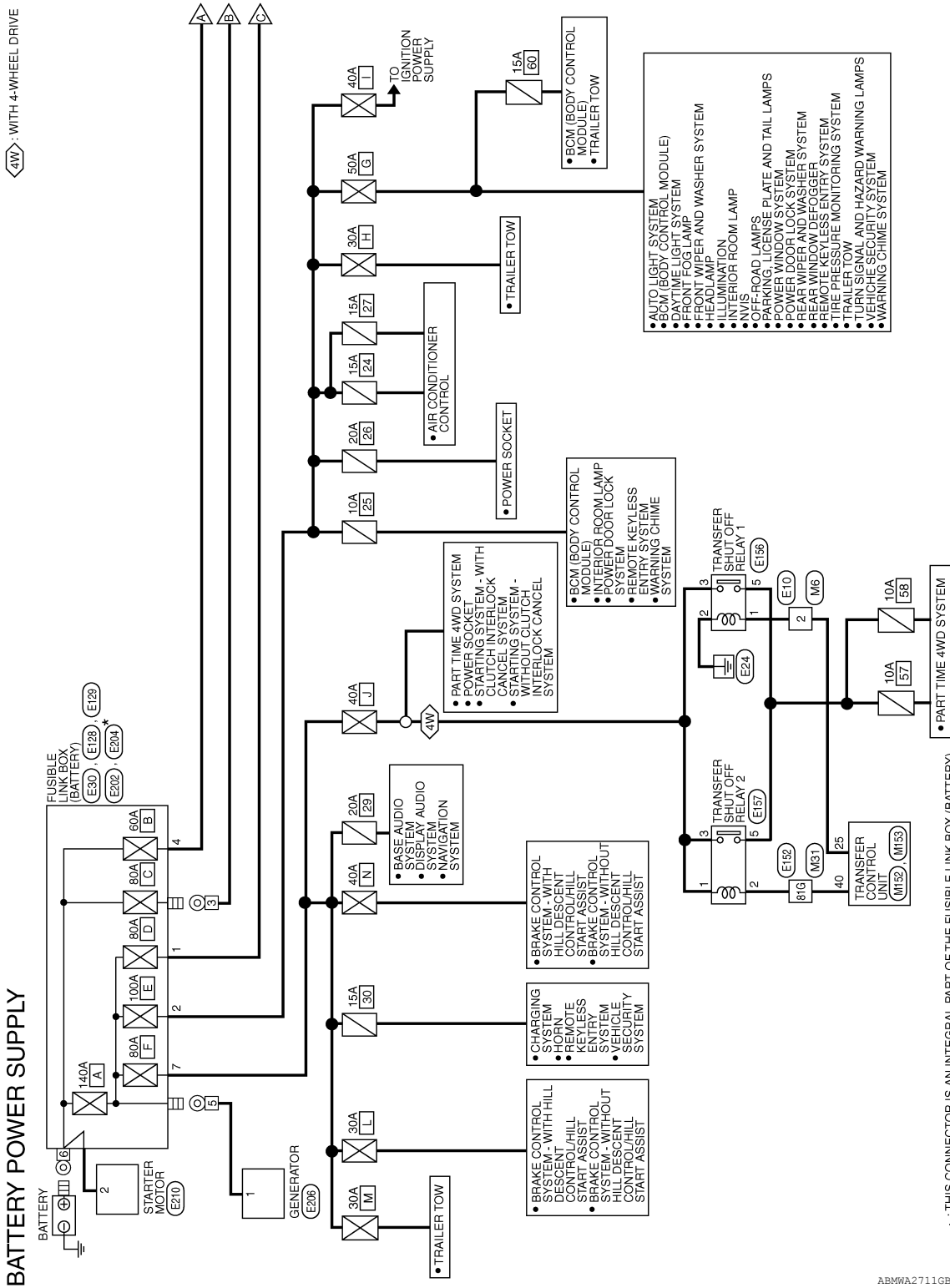
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## WIRING DIAGRAM

### POWER SUPPLY ROUTING CIRCUIT

#### Wiring Diagram—Battery Power Supply

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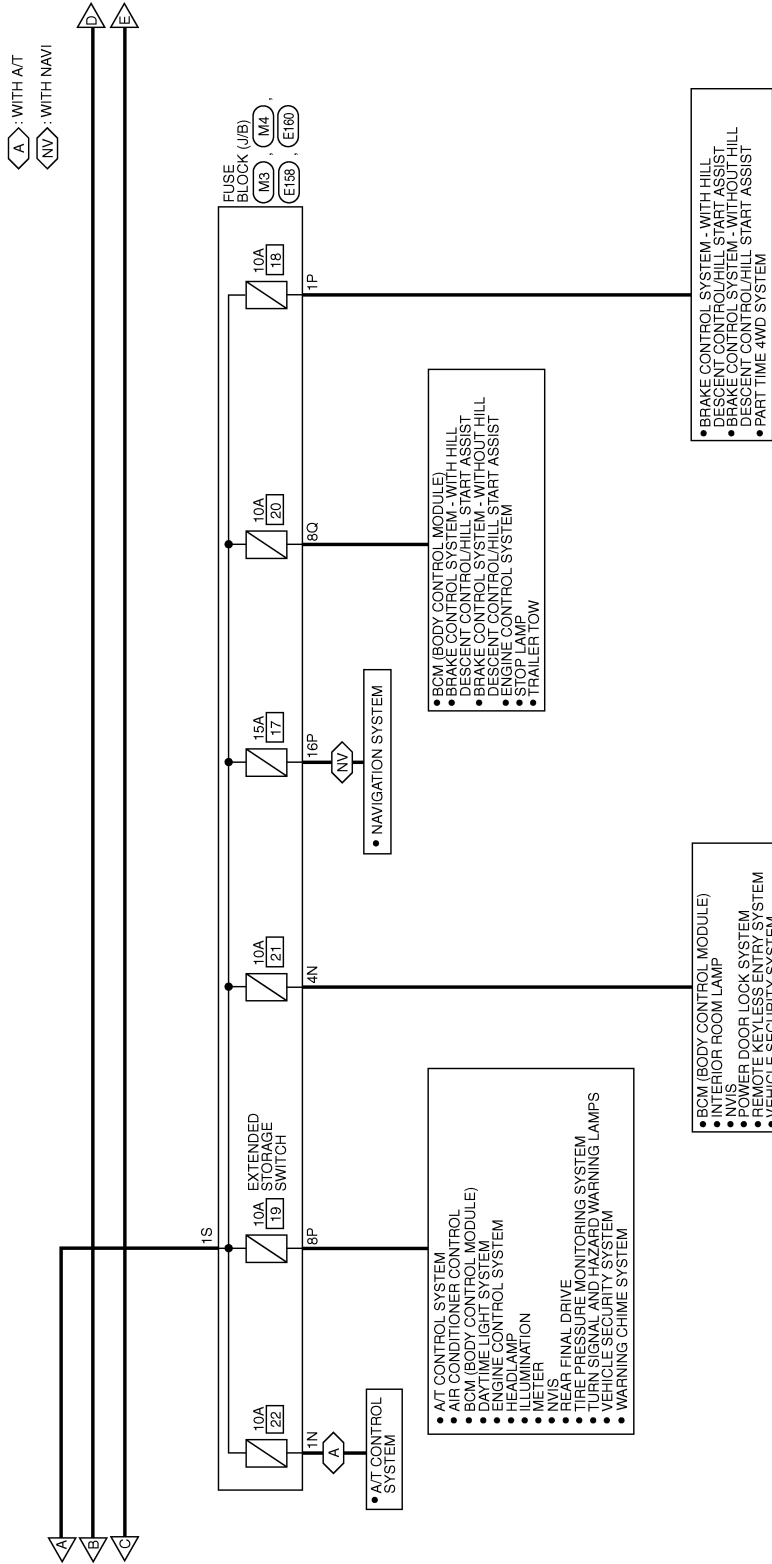


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# POWER SUPPLY ROUTING CIRCUIT

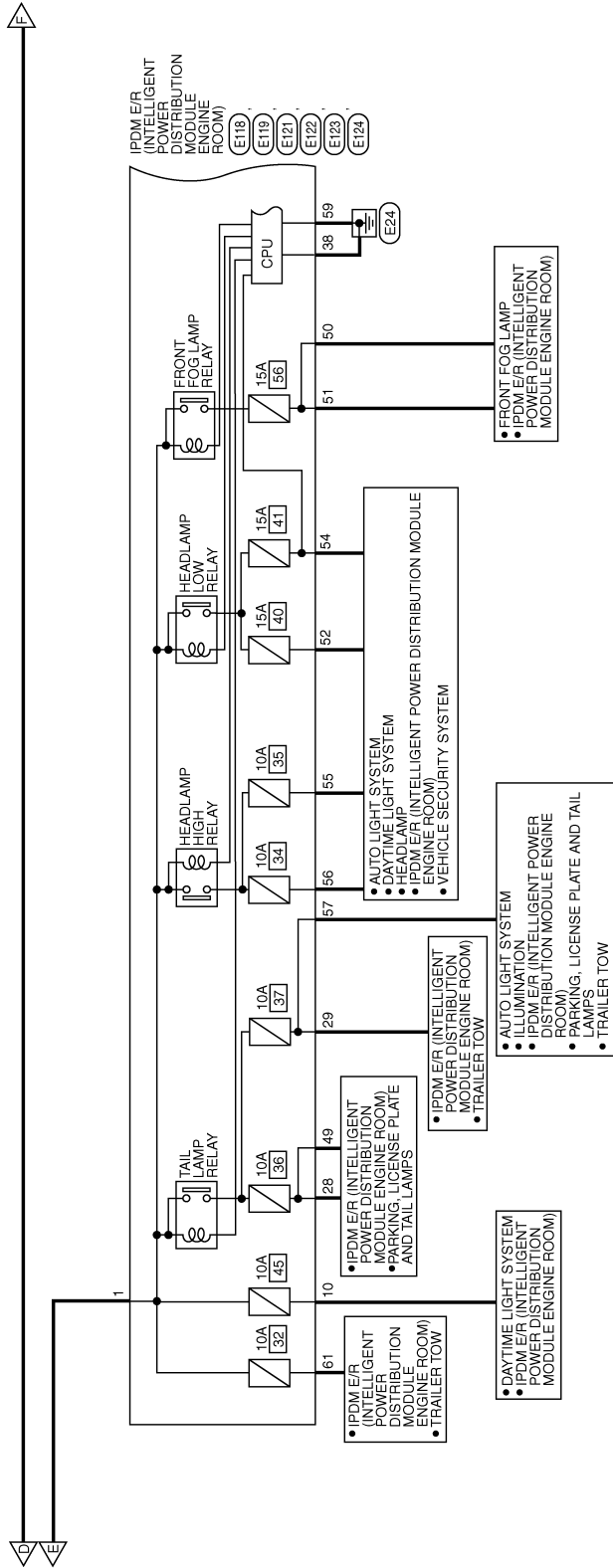
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# POWER SUPPLY ROUTING CIRCUIT

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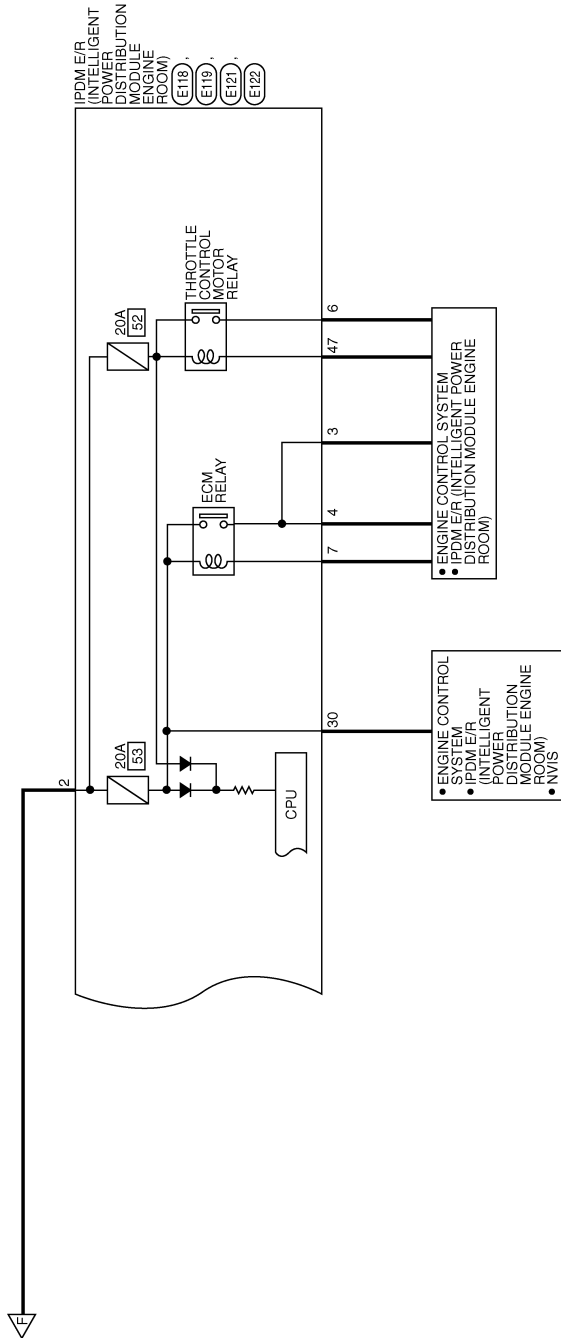


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# POWER SUPPLY ROUTING CIRCUIT

< WIRING DIAGRAM >



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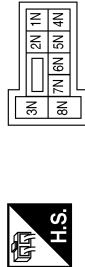


# POWER SUPPLY ROUTING CIRCUIT

< WIRING DIAGRAM >

## BATTERY POWER SUPPLY CONNECTORS

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1N	R/B	-
4N	R/Y	-

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



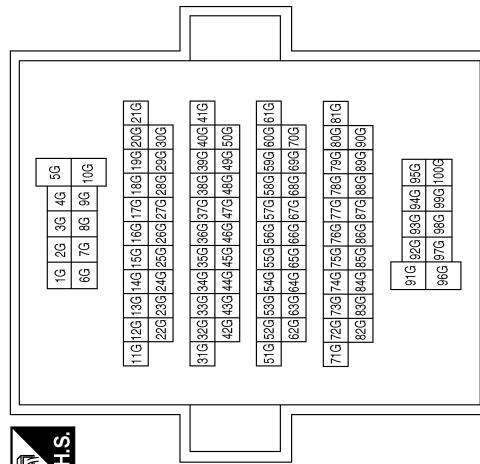
Terminal No.	Color of Wire	Signal Name
1P	R/B	-
8P	R/Y	-
16P	R/B	-

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Color	WHITE



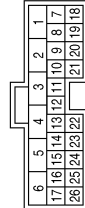
Terminal No.	Color of Wire	Signal Name
2	W/G	-

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE



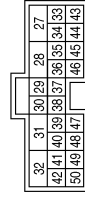
Terminal No.	Color of Wire	Signal Name
81G	V	-

Connector No.	M152
Connector Name	TRANSFER CONTROL UNIT
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
25	W/G	IGN SW

Connector No.	M153
Connector Name	TRANSFER CONTROL UNIT
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
40	V	SSOF

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# POWER SUPPLY ROUTING CIRCUIT

< WIRING DIAGRAM >

Connector No.	E118
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	W	F/L USM
2	R	F/L MAIN

Connector No.	E30
Connector Name	FUSIBLE LINK BOX (BATTERY)
Connector Color	-



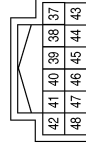
Terminal No.	Color of Wire	Signal Name
3	R	-

Connector No.	E10
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	W/G	-

Connector No.	E122
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
38	B	GND (SIGNAL)
47	BG	ETC RLY CONT

Connector No.	E121
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
28	R	CLEARANCE FRONT LH
29	G	TRAILER RLY CONT
30	R/B	ECM BAT

Connector No.	E119
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
3	G	IGN COIL
4	R	ECM
6	V	ETC
7	BR	ECM RLY CONT
10	R/B	DTRL RLY SUPPLY

ABMIA6417GB

# POWER SUPPLY ROUTING CIRCUIT

< WIRING DIAGRAM >

Connector No.	E124
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BLACK



59	58	57
62	61	60

Terminal No.	Color of Wire	Signal Name
57	GR	TAIL LAMP
59	B	GND (POWER)
61	R/B	TRAIL RLY SUPPLY

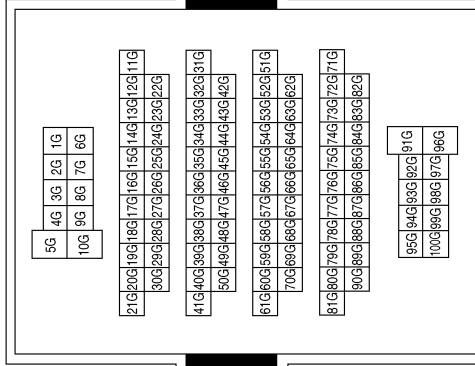
Terminal No.	Color of Wire	Signal Name
49	GR	CLEARANCE FRONT RH
50	W	FR FOG LAMP LH
51	V	FR FOG LAMP RH
52	P	H/LAMP LO LH
54	R	H/LAMP LO RH
55	G	H/LAMP HI LH
56	L	H/LAMP HI RH

Connector No.	E123
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BROWN



51	50	49
56	55	54
53	52	

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
81G	V	-

Connector No.	E129
Connector Name	FUSIBLE LINK BOX (BATTERY)
Connector Color	BLACK



2	1
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Terminal No.	Color of Wire	Signal Name
1	W	-
2	R	-

Connector No.	E128
Connector Name	FUSIBLE LINK BOX (BATTERY)
Connector Color	GRAY



4	7
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Terminal No.	Color of Wire	Signal Name
4	W	-
7	W	-

ABMIA6418GB

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# POWER SUPPLY ROUTING CIRCUIT

< WIRING DIAGRAM >

Connector No.	E158
Connector Name	FUSE BLOCK (J/B)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1S	W	-

Connector No.	E157
Connector Name	TRANSFER SHUT OFF RELAY 2
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
1	G	-
2	V	-
3	B	-
5	W	-

Connector No.	E156
Connector Name	TRANSFER SHUT OFF RELAY 1
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
1	W/G	-
2	B	-
3	B	-
5	W	-

Connector No.	E204
Connector Name	FUSIBLE LINK BOX (BATTERY)
Connector Color	-



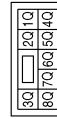
Terminal No.	Color of Wire	Signal Name
6	B/R	-

Connector No.	E202
Connector Name	FUSIBLE LINK BOX (BATTERY)
Connector Color	-



Terminal No.	Color of Wire	Signal Name
5	B/R	-

Connector No.	E160
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
8Q	R/B	-

ABMIA6669GB

# POWER SUPPLY ROUTING CIRCUIT

< WIRING DIAGRAM >

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Connector No.	E210
Connector Name	STARTER MOTOR
Connector Color	-



Terminal No.	2	Color of Wire	B/R	Signal Name	-
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Connector No.	E206
Connector Name	GENERATOR
Connector Color	-



Terminal No.	1	Color of Wire	B/R	Signal Name	-
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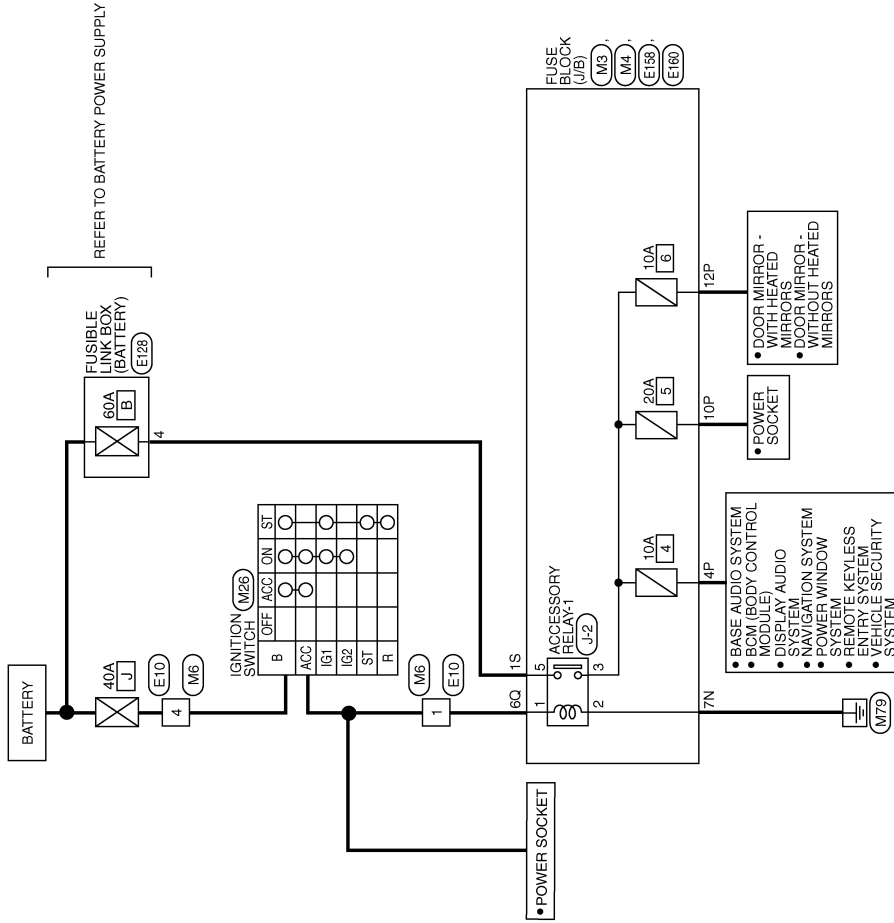
# POWER SUPPLY ROUTING CIRCUIT

< WIRING DIAGRAM >

## Wiring Diagram—Accessory Power Supply

INFOID:000000011069846

### ACCESSORY POWER SUPPLY



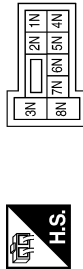
ABMWA2372GB

# POWER SUPPLY ROUTING CIRCUIT

< WIRING DIAGRAM >

## ACCESSORY POWER SUPPLY CONNECTORS

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	7N	Color of Wire	B	Signal Name	-
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Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	4P	Color of Wire	G/B	Signal Name	-
10P	G/Y	-	-		
12P	G/Y	-	-		

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	1	Color of Wire	G/Y	Signal Name	-
4	G	-	-		

Connector No.	M26
Connector Name	IGNITION SWITCH
Connector Color	WHITE



Terminal No.	B	Color of Wire	G	Signal Name	-
ACC	G/Y	-	-		

Connector No.	E10
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	1	Color of Wire	G/Y	Signal Name	-
4	G	-	-		

Connector No.	E128
Connector Name	FUSIBLE LINK BOX (BATTERY)
Connector Color	GRAY



Terminal No.	4	Color of Wire	W	Signal Name	-
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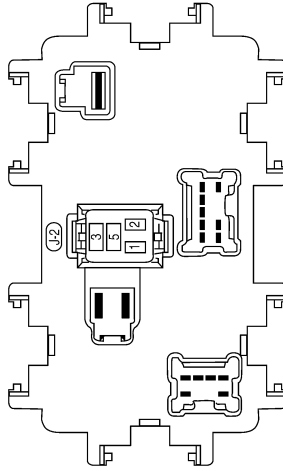
ABMIA0432GB

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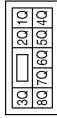
# POWER SUPPLY ROUTING CIRCUIT

< WIRING DIAGRAM >

Connector No.	J-2
Connector Name	FUSE BLOCK (J/B) (ACCESSORY RELAY-1)
Connector Color	-



Connector No.	E160
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	6Q	Color of Wire	G/Y	Signal Name	-
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Connector No.	E158
Connector Name	FUSE BLOCK (J/B)
Connector Color	BLACK



Terminal No.	1S	Color of Wire	W	Signal Name	-
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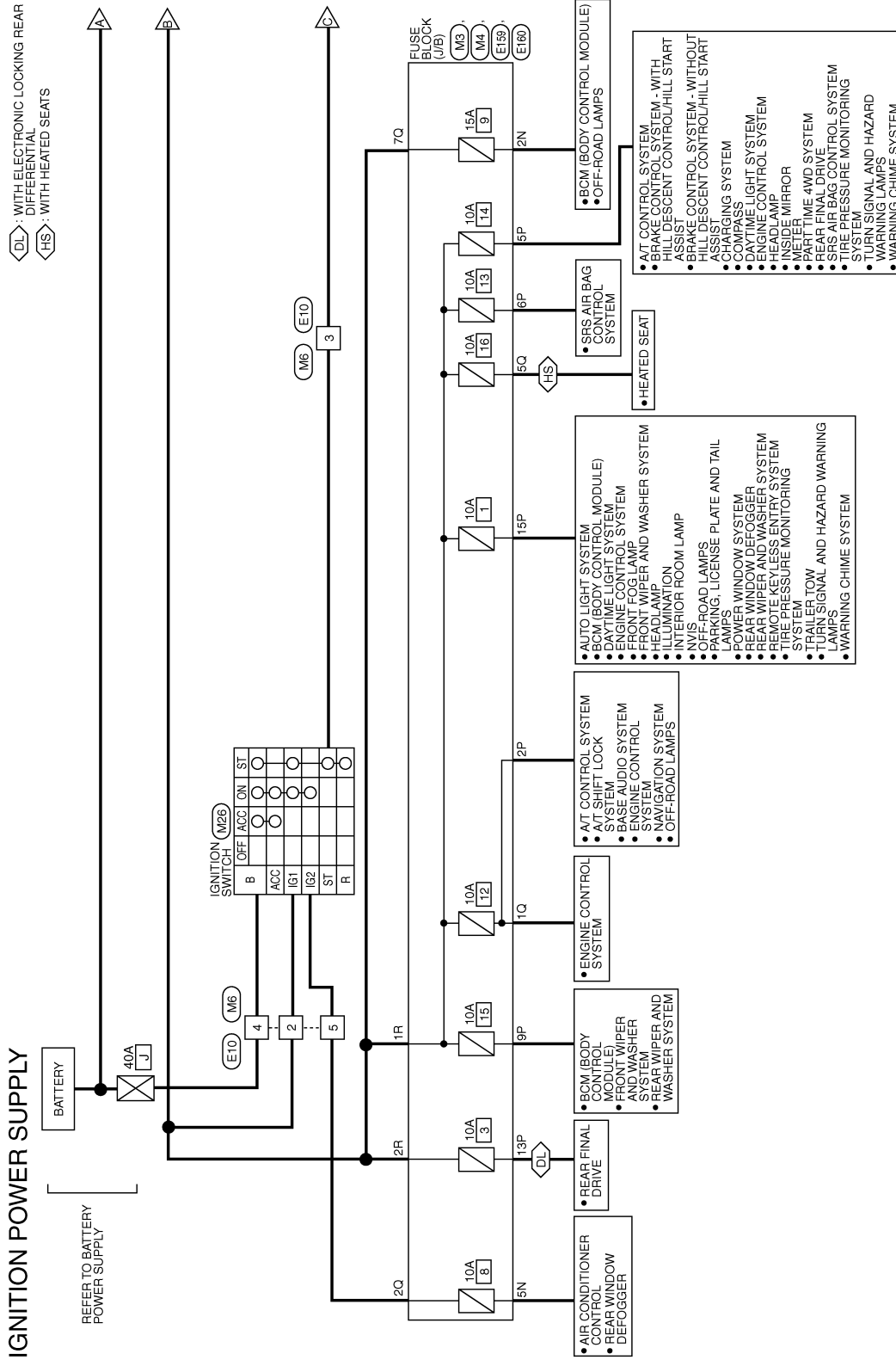


# POWER SUPPLY ROUTING CIRCUIT

< WIRING DIAGRAM >

## Wiring Diagram—Ignition Power Supply

INFOID:000000011069847

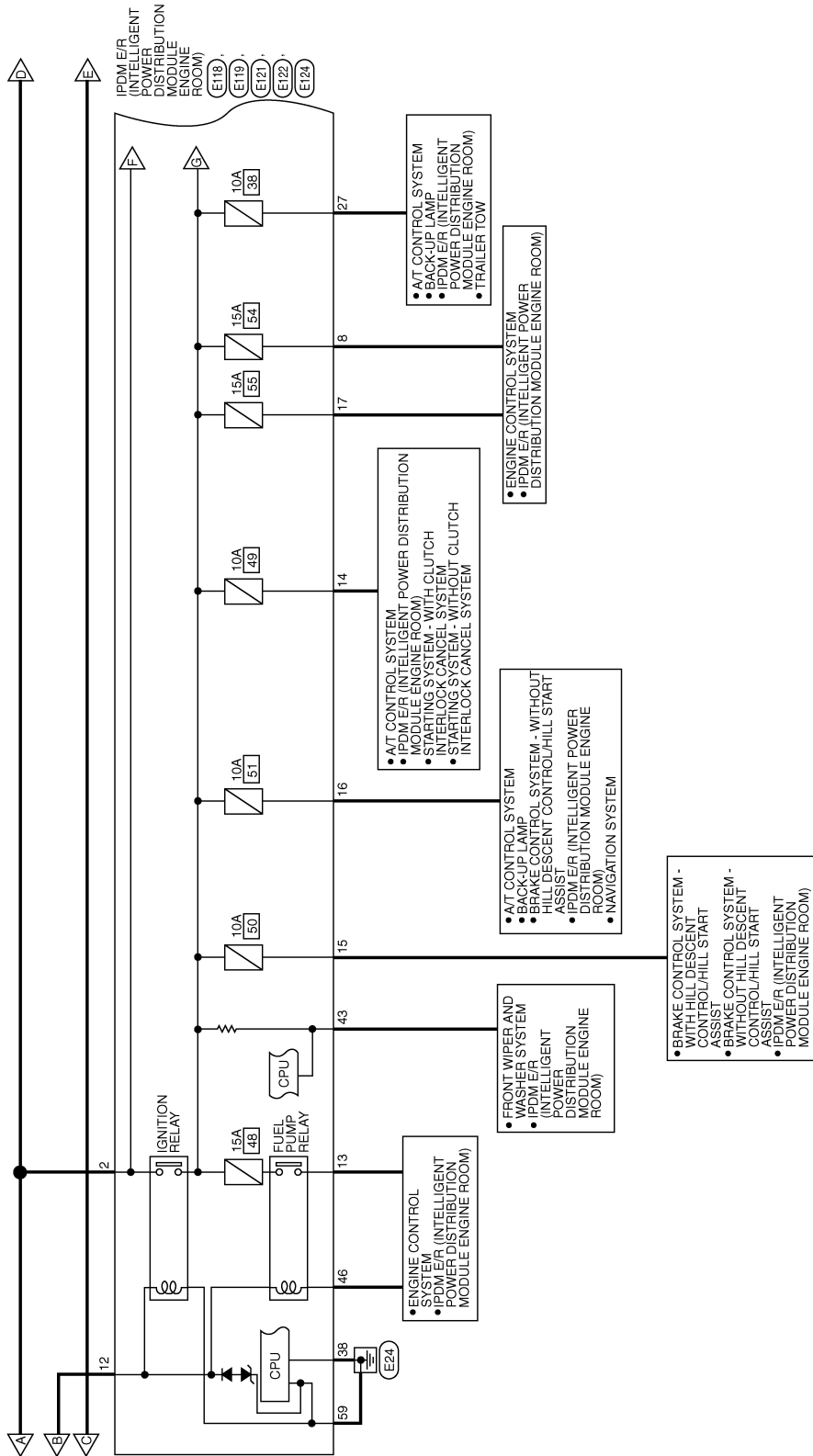


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# POWER SUPPLY ROUTING CIRCUIT

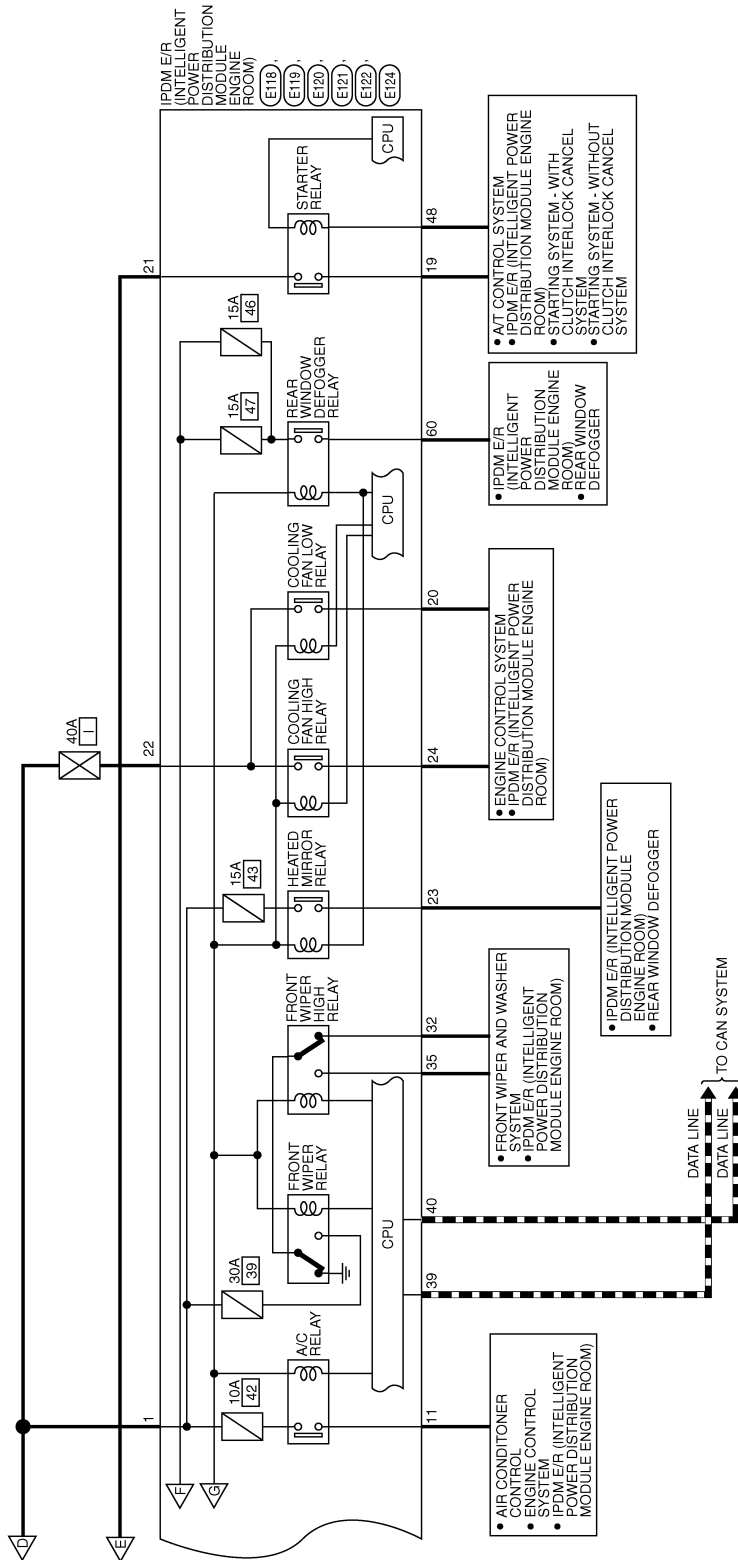
< WIRING DIAGRAM >



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# POWER SUPPLY ROUTING CIRCUIT

< WIRING DIAGRAM >



ABMWA2871GB

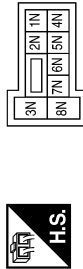
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# POWER SUPPLY ROUTING CIRCUIT

< WIRING DIAGRAM >

## IGNITION POWER SUPPLY CONNECTORS

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
2N	W/R	-
5N	W/G	-

Terminal No.	Color of Wire	Signal Name
2P	W/G	-
5P	W/G	-
6P	W/R	-
9P	W/G	-
13P	W/G	-
15P	W/R	-

Terminal No.	Color of Wire	Signal Name
2	W/G	-
3	GR	-
4	G	-
5	R	-

Connector No.	M26
Connector Name	IGNITION SWITCH
Connector Color	WHITE



Connector No.	E10
Connector Name	WIRE TO WIRE
Connector Color	WHITE

Connector No.	E118
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
B	G	-
ST	GR	-
IG1	W/G	-
IG2	R	-

Terminal No.	Color of Wire	Signal Name
2	W/G	-
3	GR	-
4	G	-
5	R	-

Terminal No.	Color of Wire	Signal Name
1	W	F/L MAIN
2	R	F/L USM

# POWER SUPPLY ROUTING CIRCUIT

< WIRING DIAGRAM >

Connector No.	E120
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE

21	20	19
24	23	22



Terminal No.	Color of Wire	Signal Name
19	W	STARTER MTR
20	BR	MOTOR FAN 1
21	GR	IGN SW (ST)
22	G	F/L MOTOR FAN
23	LG	HEATED MIRROR
24	P	MOTOR FAN 2

Terminal No.	Color of Wire	Signal Name
15	W/R	ABS IGN SUPPLY
16	W/G	REVERSE LAMP
17	W/G	INJECTOR

Connector No.	E119
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE

9	8	7	6	5	4	3
18	17	16	15	14	13	12
11	10	9	8	7	6	5



Terminal No.	Color of Wire	Signal Name
8	W/R	O2 SENSOR
11	Y	A/C COMPRESSOR
12	W/G	IGN SW (IG)
13	R	FUEL PUMP
14	W/G	A/T ECU IGN SUPPLY

Connector No.	E124
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BLACK

59	58	57
62	61	60



Terminal No.	Color of Wire	Signal Name
59	B	GND (POWER)
60	GR	RR DEF

Connector No.	E122
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE

42	41	40	39	38	37
48	47	46	45	44	43



Terminal No.	Color of Wire	Signal Name
38	B	GND (SIGNAL)
39	L	CAN-H
40	P	CAN-L
43	G	AUTO STOP SW
46	V	FUEL PUMP RLY CONT
48	R	RANGE SW

Connector No.	E121
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BROWN

29	28	27	26	25
36	35	34	33	32
31	30	29	28	27



Terminal No.	Color of Wire	Signal Name
27	W/G	TTOW REV LAMP
32	GR	FR WIPER LO
35	L	FR WIPER HI

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A B C D E F G H I J K L PG N O P

# POWER SUPPLY ROUTING CIRCUIT

< WIRING DIAGRAM >

Connector No.	E160
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1Q	W/G	-
2Q	R	-
5Q	W/R	-
7Q	W/G	-

Connector No.	E159
Connector Name	FUSE BLOCK (J/B)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1R	W/G	-
2R	W/G	-

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# GROUND CIRCUIT

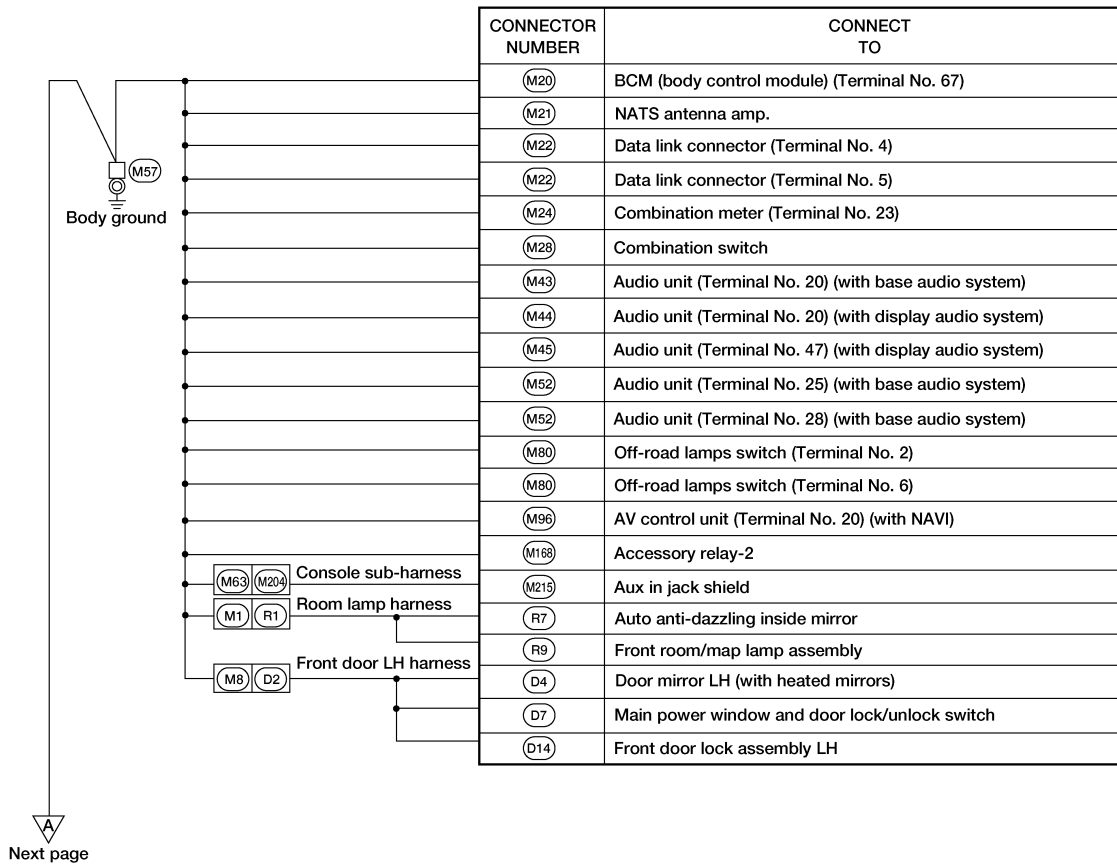
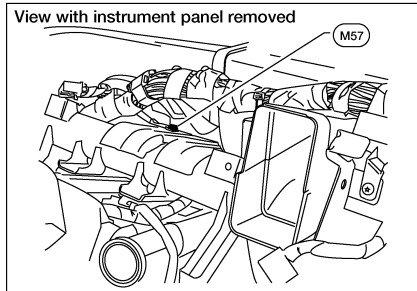
< WIRING DIAGRAM >

## GROUND CIRCUIT

### Ground Distribution

INFOID:000000011069851

### Main Harness



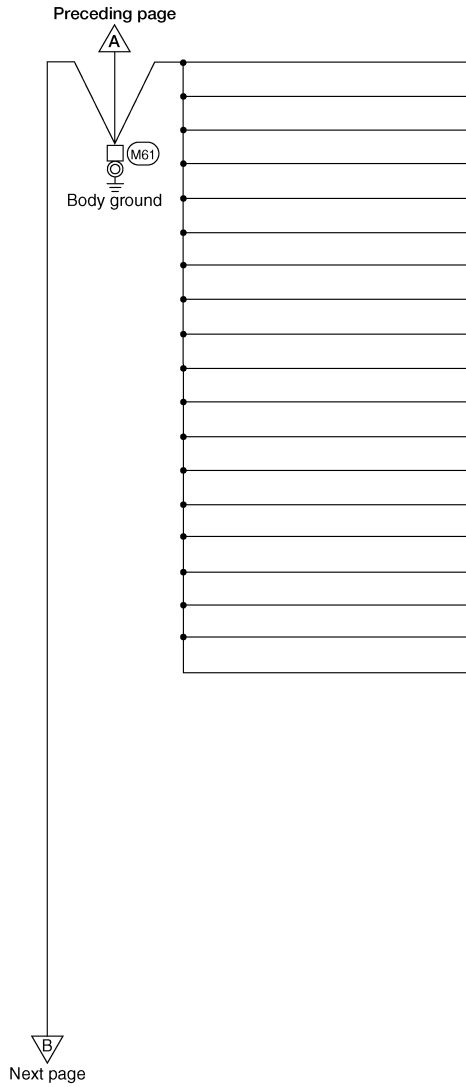
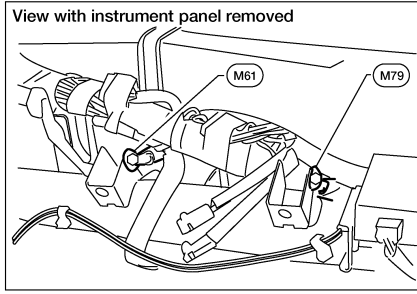
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# GROUND CIRCUIT

< WIRING DIAGRAM >



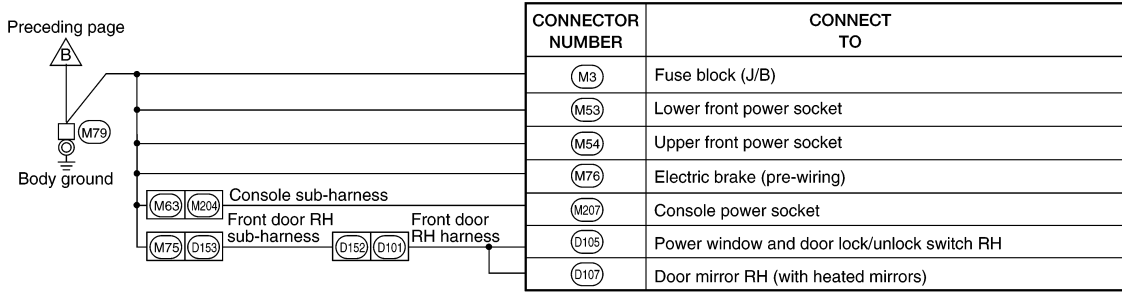
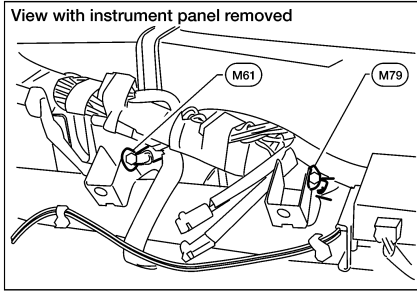
CONNECTOR NUMBER	CONNECT TO
(M2)	Front air control (Terminal No. 35)
(M13)	Front passenger air bag OFF indicator
(M24)	Combination meter (Terminal No. 13)
(M35)	Air bag diagnosis sensor unit (Terminal No. 2)
(M47)	Steering angle sensor
(M55)	Hazard switch
(M121)	Variable blower control
(M152)	Transfer control unit (Terminal No. 6)
(M152)	Transfer control unit (Terminal No. 18)
(M153)	Transfer control unit (Terminal No. 32)
(M154)	VDC OFF switch
(M155)	Hill descent control switch
(M156)	A/T shift selector (Terminal No. 2)
(M156)	A/T shift selector (Terminal No. 8)
(M156)	A/T shift selector (Terminal No. 10)
(M159)	Door mirror remote control switch
(M160)	Front heated seat switch RH
(M161)	Front heated seat switch LH
(M163)	Clutch interlock cancel switch

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# GROUND CIRCUIT

< WIRING DIAGRAM >



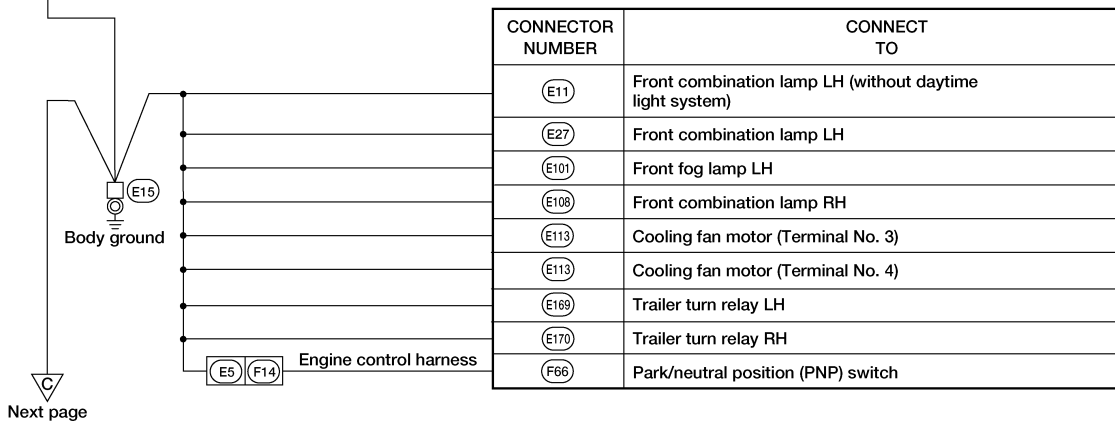
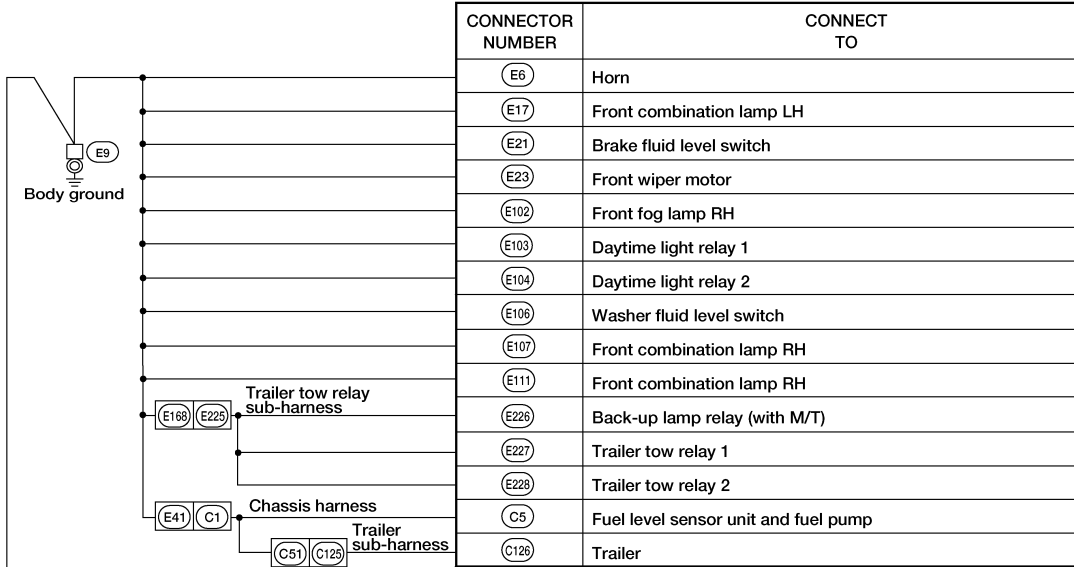
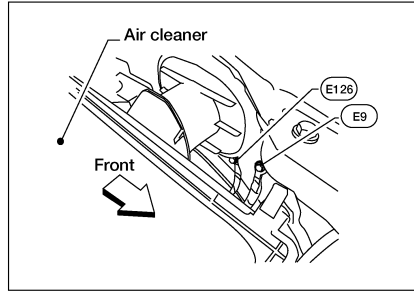
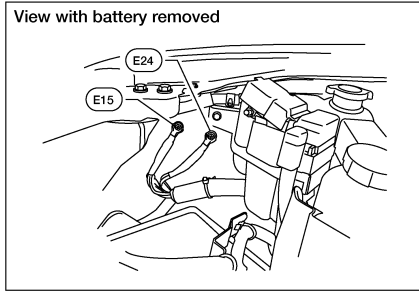
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# GROUND CIRCUIT

< WIRING DIAGRAM >

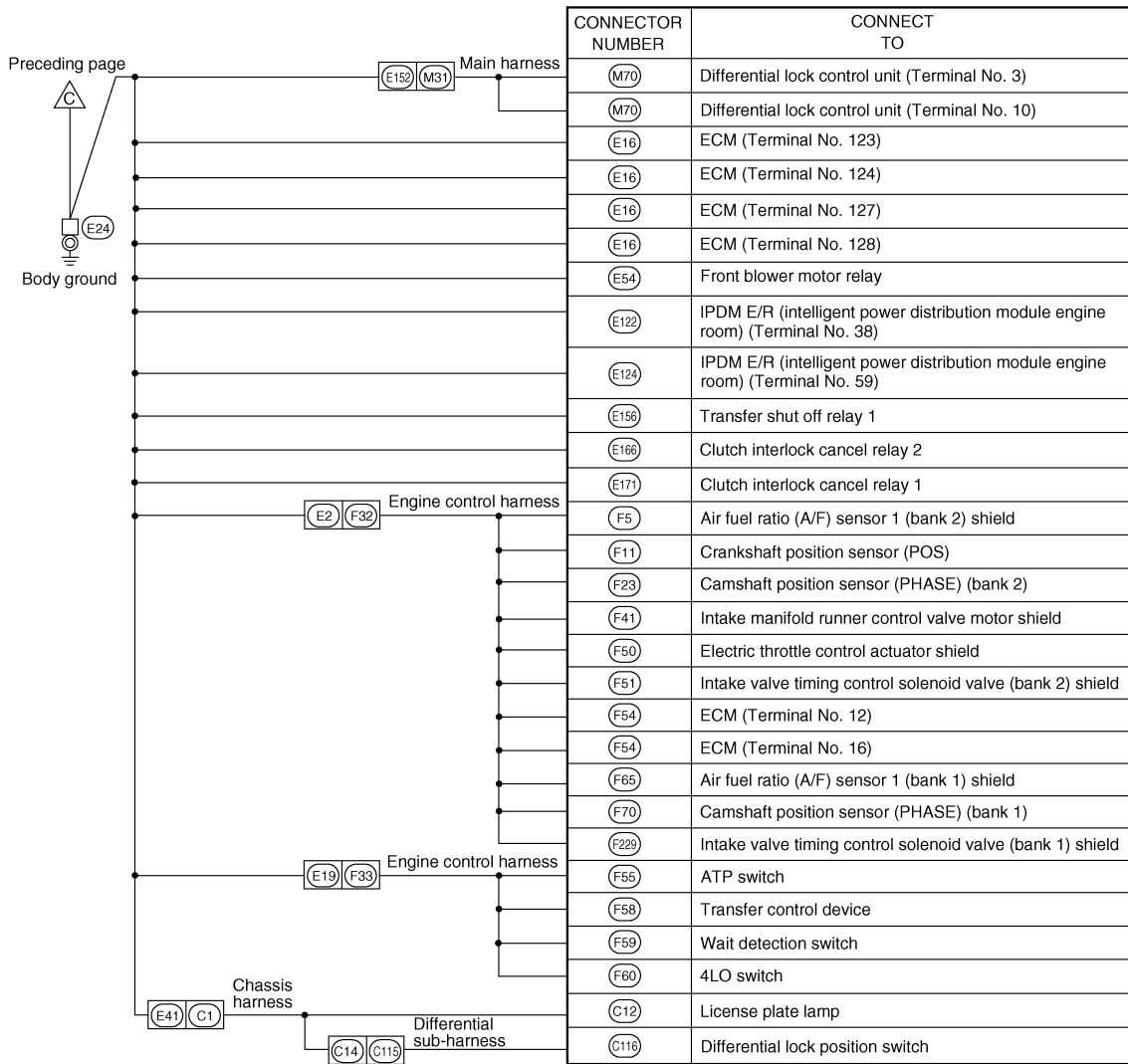
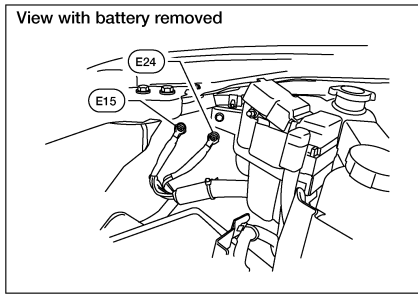
## Engine Room Harness



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# GROUND CIRCUIT

< WIRING DIAGRAM >



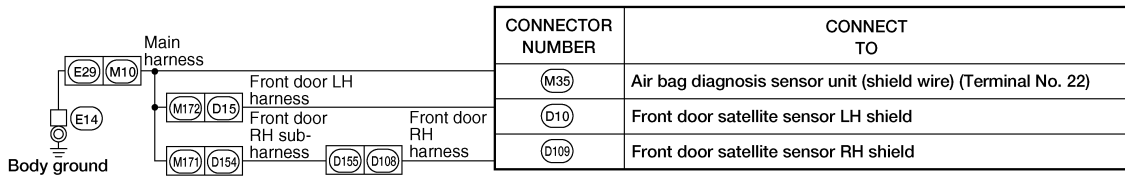
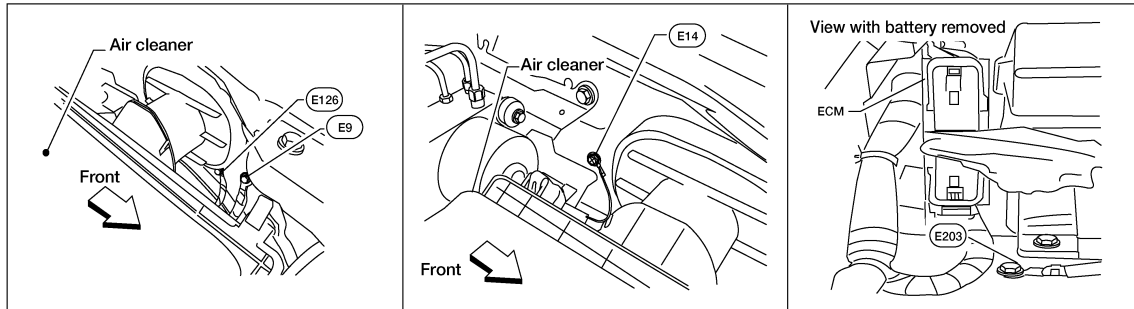
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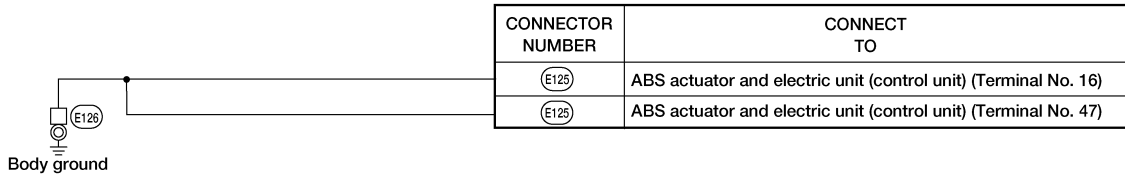
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# GROUND CIRCUIT

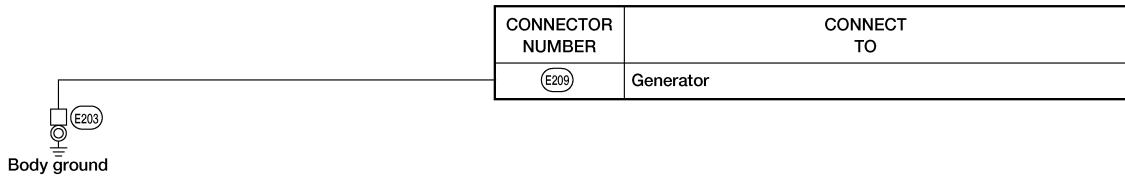
< WIRING DIAGRAM >



CONNECTOR NUMBER	CONNECT TO
M35	Air bag diagnosis sensor unit (shield wire) (Terminal No. 22)
D10	Front door satellite sensor LH shield
D109	Front door satellite sensor RH shield



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



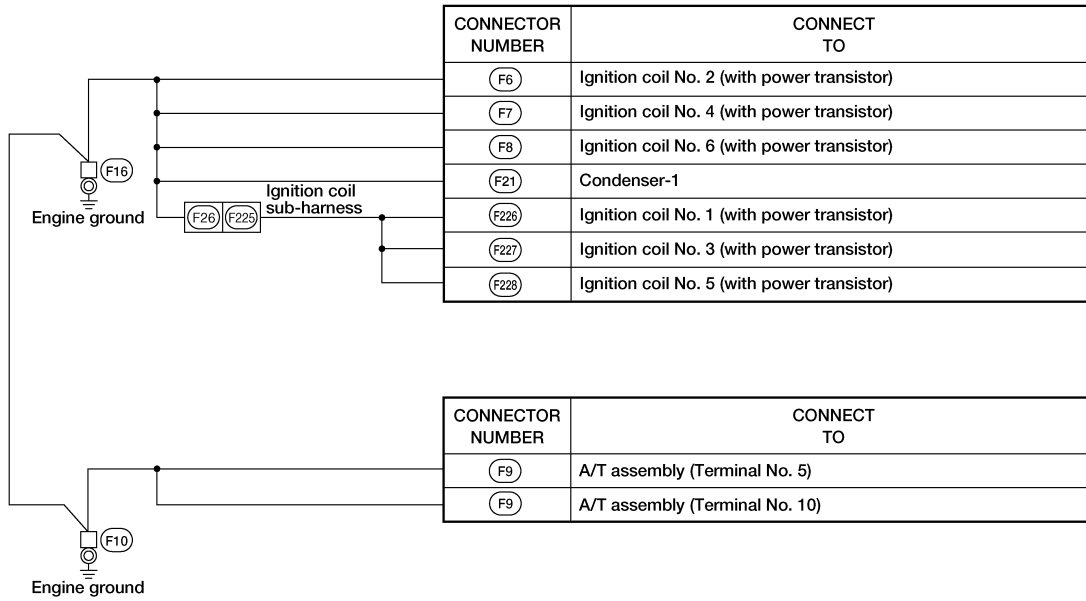
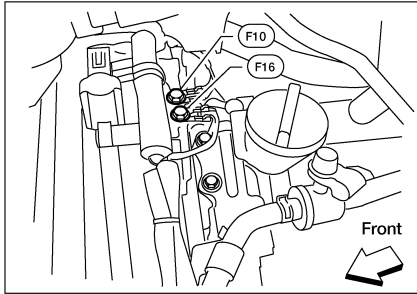
CONNECTOR NUMBER	CONNECT TO
E209	Generator

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# GROUND CIRCUIT

< WIRING DIAGRAM >

## Engine Control Harness



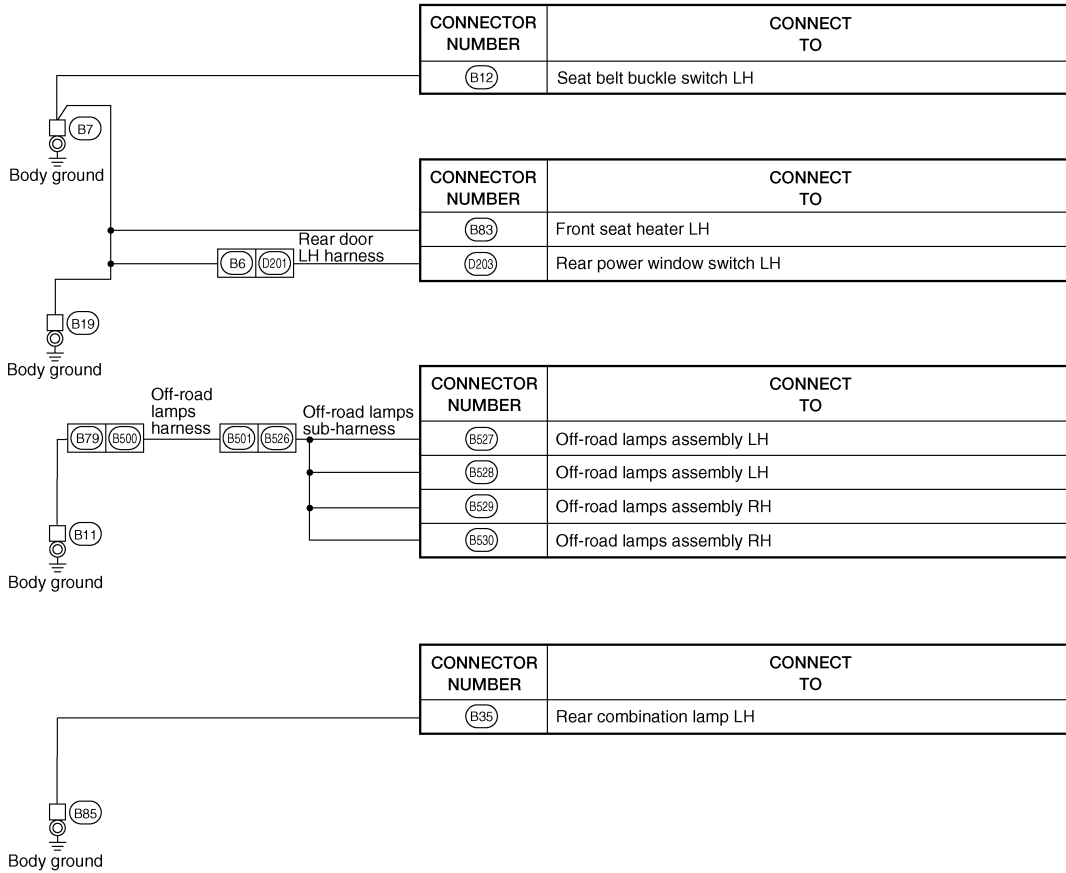
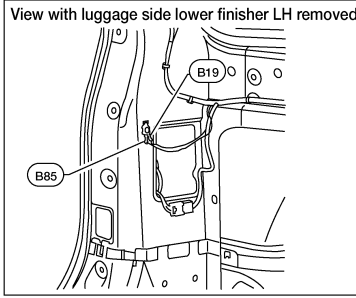
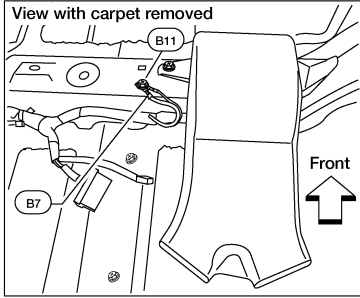
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# GROUND CIRCUIT

< WIRING DIAGRAM >

## Body Harness

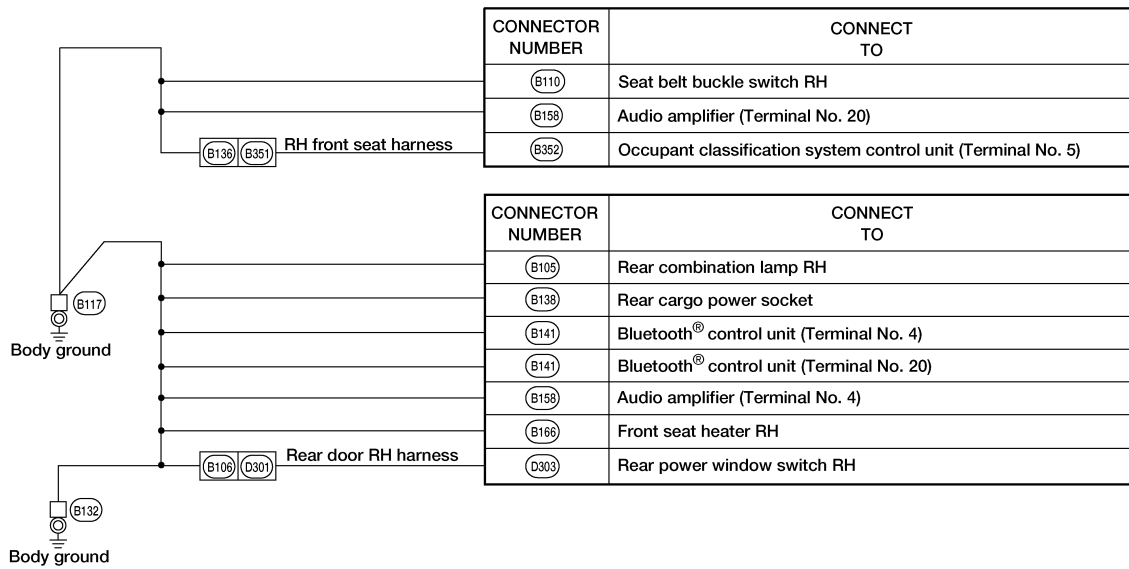
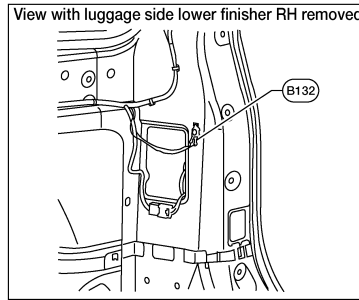
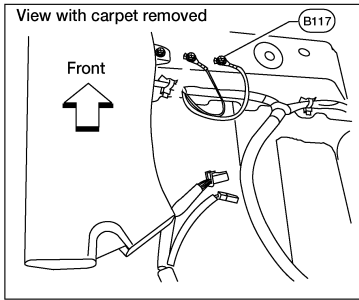


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# GROUND CIRCUIT

< WIRING DIAGRAM >

Body No. 2 Harness



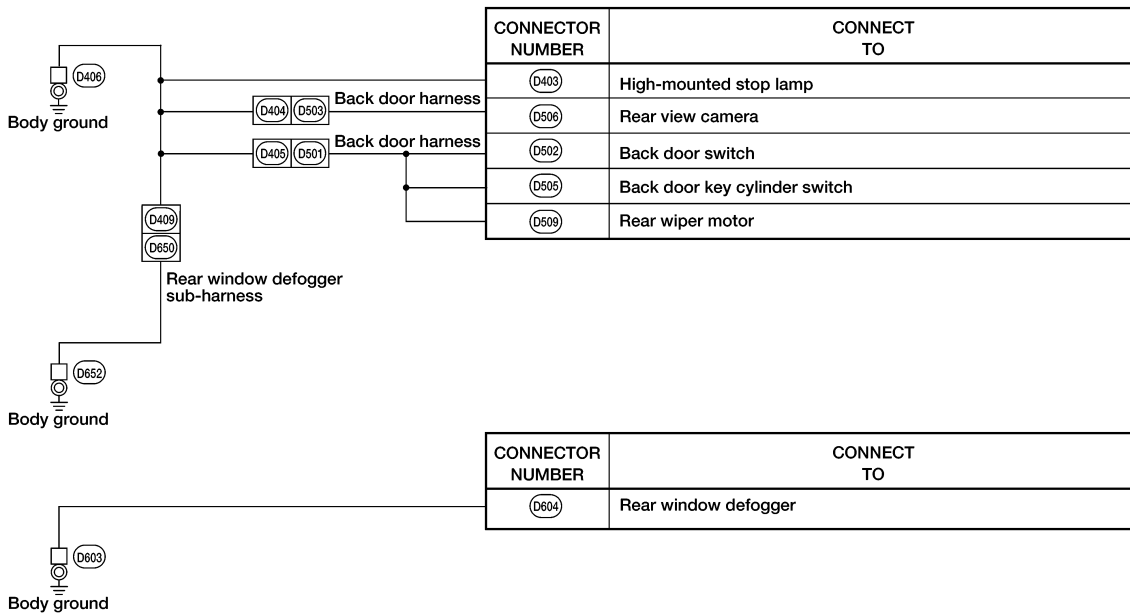
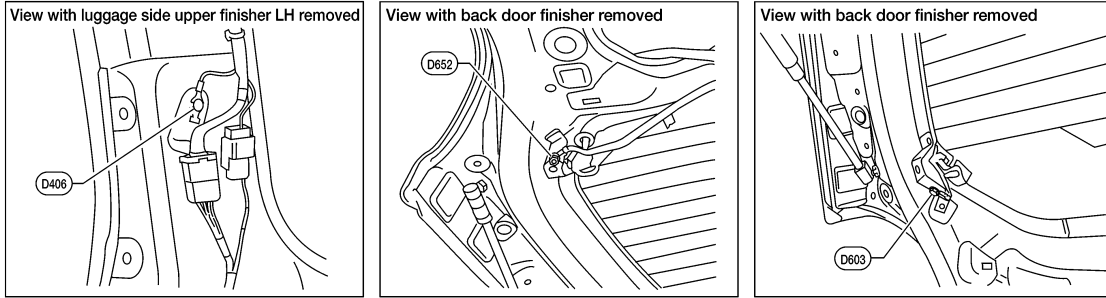
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# GROUND CIRCUIT

< WIRING DIAGRAM >

## Back Door No. 2 and Back Door Harness



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# HARNESS

< WIRING DIAGRAM >

## HARNESS

### Harness Layout

INFOID:000000011069852

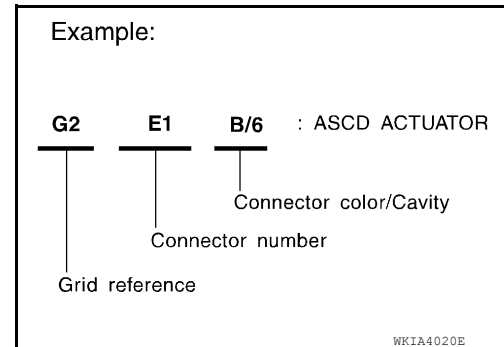
#### HOW TO READ HARNESS LAYOUT

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

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

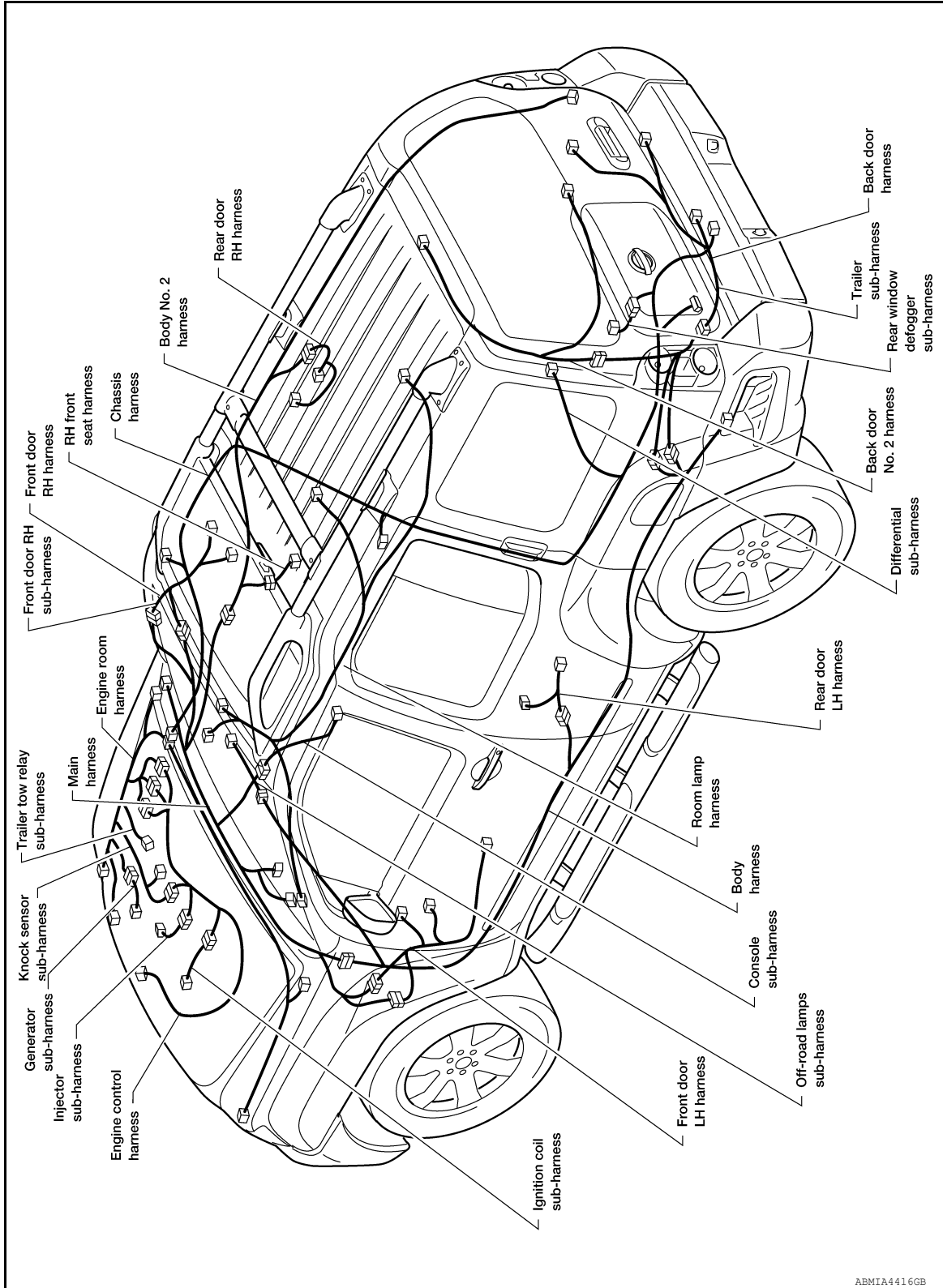


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# HARNESS

< WIRING DIAGRAM >

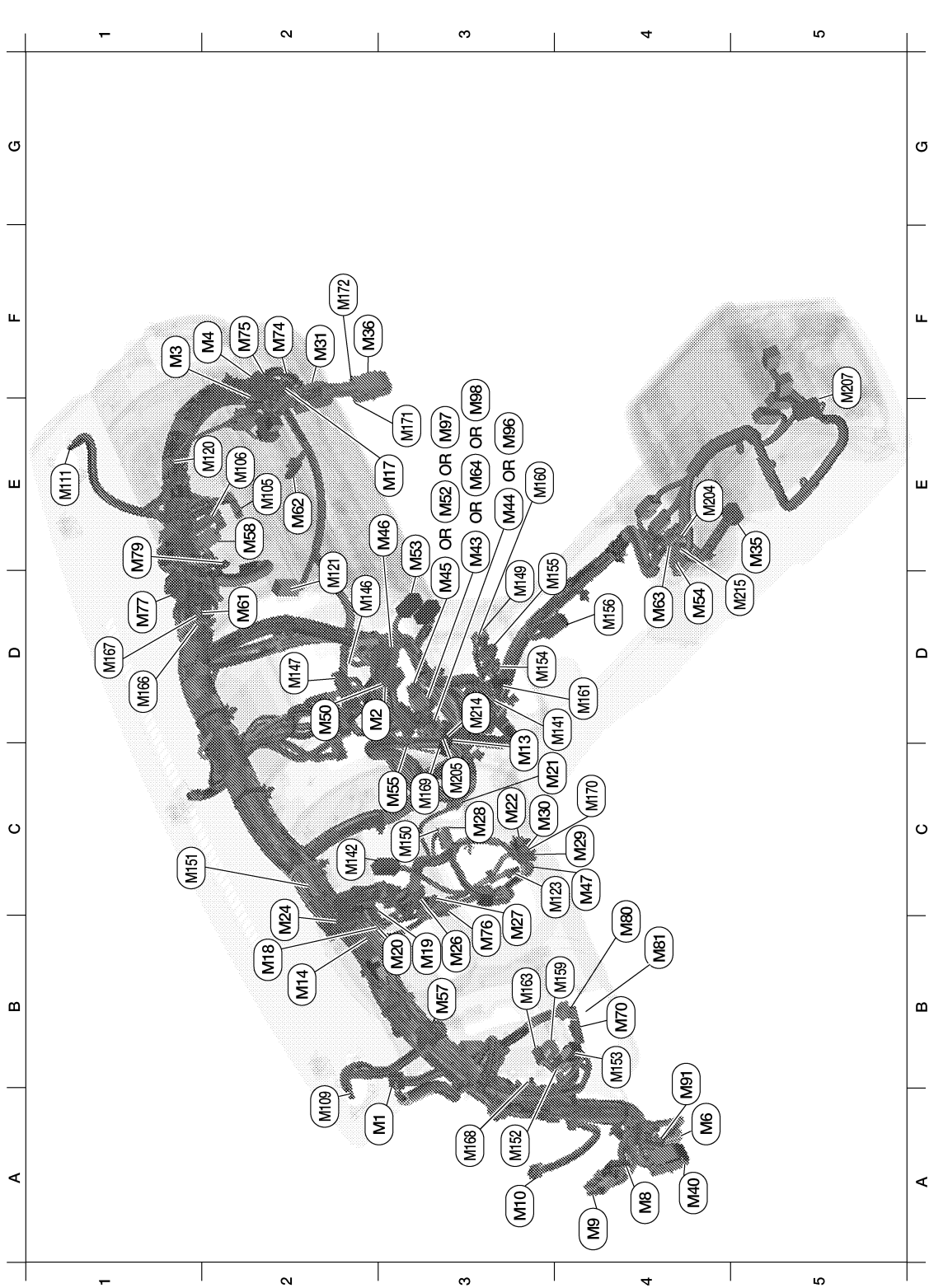
## OUTLINE



# HARNESS

< WIRING DIAGRAM >

## MAIN HARNESS



ABMIA6392GB

A3	M1	W/24	: To R1	B3	M76	W/6	: Electric brake (pre-wiring)
D3	M2	W/18	: Front air control	D1	M77	Y/4	: Front passenger air bag module (service replacement)
F1	M3	W/8	: Fuse block (J/B)	E1	M79	—	: Body ground
F2	M4	W/16	: Fuse block (J/B)	B4	M80	GR/8	: Off-road lamps switch

# HARNESS

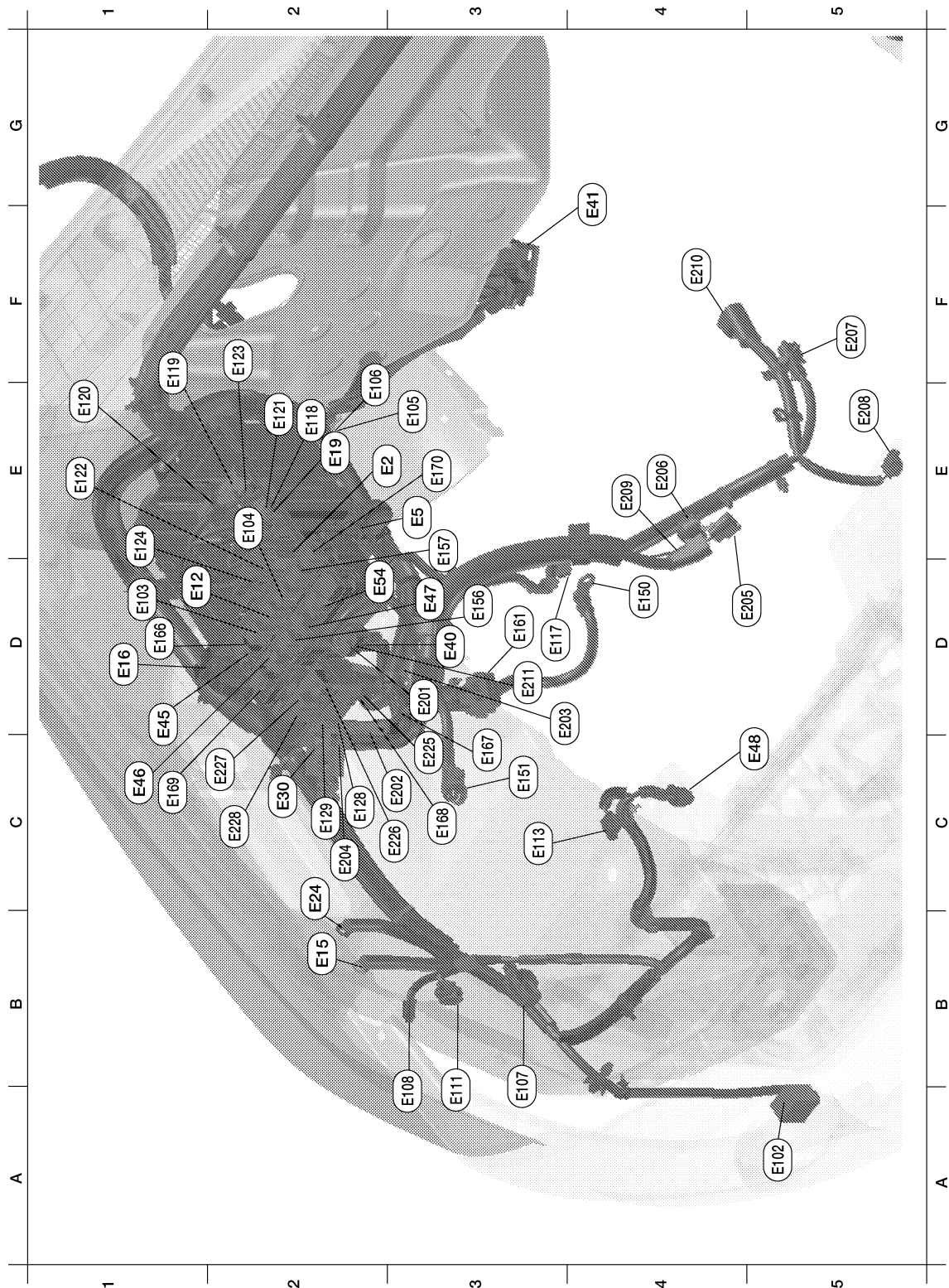
## < WIRING DIAGRAM >

A4	M6	W/6	: To E10	B4	M81	L/4	: Off-road lamps relay
A4	M8	BR/12	: To D2	B4	M91	W/16	: To E26
A4	M9	W/12	: To D1	E3	M96	W/20	: AV control unit (with NAVI)
A3	M10	Y/4	: To E29	E3	M97	W/24	: AV control unit (with NAVI)
C3	M13	BR/3	: Front passenger air bag OFF indicator	F3	M98	B/6	: AV control unit (with NAVI)
B2	M14	B/4	: Optical sensor	E2	M105	Y/2	: Front passenger air bag module
E3	M17	W/16	: To B163	E2	M106	O/2	: Front passenger air bag module
B2	M18	W/40	: BCM (body control module)	A2	M109	BR/2	: Front tweeter LH
B3	M19	W/15	: BCM (body control module)	E1	M111	BR/2	: Front tweeter RH
B3	M20	B/15	: BCM (body control module)	E2	M120	W/4	: Remote keyless entry receiver
C4	M21	W/4	: NATS antenna amp.	E2	M121	W/4	: Variable blower control
C3	M22	W/16	: Data link connector	C4	M123	W/2	: Tire pressure warning check connector
B2	M24	W/40	: Combination meter	D4	M141	GR/8	: 4WD shift switch
B3	M26	W/6	: Ignition switch	C2	M142	B/6	: Mode door motor
B3	M27	W/2	: Key switch	D3	M146	GR/2	: Intake sensor
C3	M28	W/16	: Combination switch	D2	M147	B/6	: Air mix door motor
C4	M29	Y/6	: Combination switch (spiral cable)	D3	M149	W/6	: Differential lock mode switch
C4	M30	GR/8	: Combination switch (spiral cable)	C3	M150	W/2	: Ignition keyhole illumination
F2	M31	SMJ	: To E152	C2	M151	G/20	: Joint connector-M03
E5	M35	Y/28	: Air bag diagnosis sensor unit	A3	M152	W/26	: Transfer control unit
F3	M36	SMJ	: To B149	B4	M153	W/24	: Transfer control unit
A4	M40	SMJ	: To B69	D4	M154	GR/6	: VDC OFF switch
E3	M43	W/20	: Audio unit (with base audio system)	D4	M155	W/8	: Hill descent control switch
E2	M44	W/20	: Audio unit (with display audio system)	D4	M156	W/10	: A/T shift selector
D3	M45	W/32	: Audio unit (with display audio system)	B4	M159	W/16	: Door mirror remote control switch
E3	M46	W/8	: Audio unit (with display audio system)	E3	M160	BR/6	: Front heated seat switch RH
C4	M47	W/8	: Steering angle sensor	D4	M161	W/6	: Front heated seat switch LH
D2	M50	B/26	: Front air control	B3	M163	W/8	: Clutch interlock cancel switch
E3	M52	W/16	: Audio unit (with base audio system)	D1	M166	L/20	: Joint connector-M01
E3	M53	B/3	: Lower front power socket	D1	M167	L/20	: Joint connector-M02
D4	M54	GR/3	: Upper front power socket	A3	M168	L/4	: Accessory relay-2
C3	M55	W/4	: Hazard switch	C3	M169	B/6	: To M205
B3	M57	—	: Body ground	C4	M170	B/2	: Resistor
E2	M58	B/6	: Intake door motor	E3	M171	Y/4	: To D154
D2	M61	—	: Body ground	F2	M172	Y/4	: To D15
E2	M62	B/2	: Front blower motor	Console sub-harness			
D4	M63	W/6	: To M204	E4	M204	W/6	: To M63
F3	M64	B/6	: Audio unit (with display audio system)	C3	M205	B/6	: To M169
B4	M70	W/26	: Differential lock control unit	F5	M207	B/3	: Console power socket
F2	M74	W/12	: To D151	C3	M214	B/6	: USB interface
F2	M75	W/10	: To D153	D5	M215	W/4	: Aux in jack

# HARNESS

< WIRING DIAGRAM >

## ENGINE ROOM HARNESS (RH VIEW)



ABMIA00322Z

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

E3	E2	W/16	: To F32	E1	E124	B/6	: IPDM E/R (intelligent power distribution module engine room)
E3	E5	W/24	: To F14	C2	E128	GR/2	: Fusible link box (battery)
D1	E12	L/4	: Stop lamp relay	C2	E129	B/2	: Fusible link box (battery)

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# HARNES

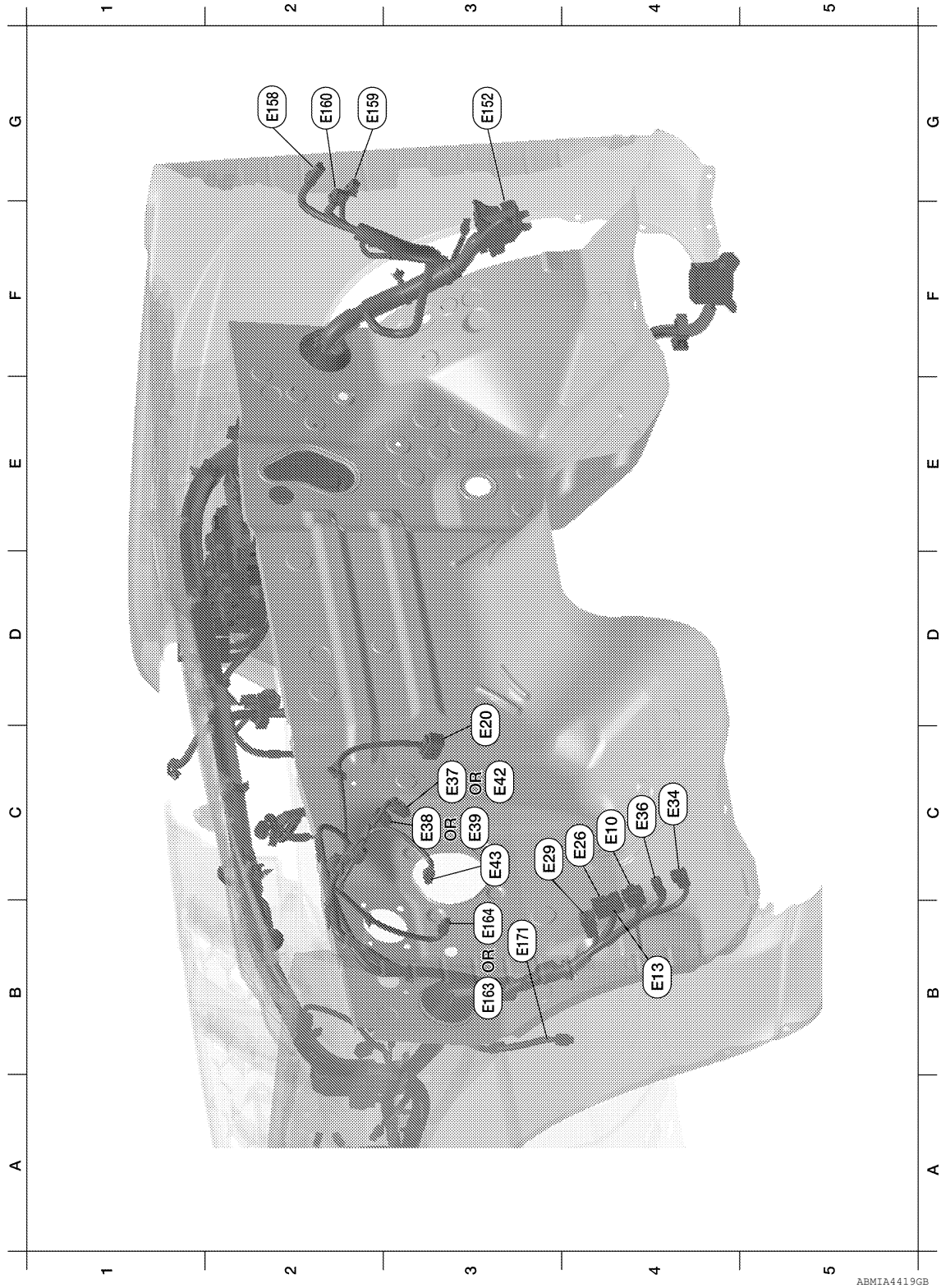
## < WIRING DIAGRAM >

B2	E15	—	: Body ground	D4	E150	—	: Battery ground
D1	E16	GR/32	: ECM	C3	E151	—	: Negative battery cable
E2	E19	W/16	: To F33	D3	E156	L/4	: Transfer shut off relay 1
C2	E24	—	: Body ground	D3	E157	L/4	: Transfer shut off relay 2
C2	E30	—	: Fusible link box (battery)	D3	E161	B/3	: Battery current sensor
D3	E40	GR/9	: To E201	D1	E166	BR/6	: Clutch interlock cancel relay 2
G4	E41	SMJ	: To C1	C3	E167	B/2	: Diode-3
D1	E45	BR/6	: Back-up lamp relay (with A/T)	C3	E168	W/12	: To E225
C1	E46	B/5	: Transfer shift high relay	C1	E169	L/4	: Trailer turn relay LH
D3	E47	B/5	: Transfer shift low relay	E3	E170	L/4	: Trailer turn relay RH
C5	E48	B/3	: Refrigerant pressure sensor	Generator sub-harness			
D2	E54	BR/6	: Front blower motor relay	D3	E201	GR/9	: To E40
A5	E102	B/2	: Front fog lamp RH	C3	E202	—	: Fusible link box (battery)
D1	E103	B/5	: Daytime light relay 1	C3	E203	—	: Body ground
E2	E104	L/4	: Daytime light relay 2	C2	E204	—	: Fusible link box (battery)
E3	E105	B/2	: Front and rear washer motor	D5	E205	B/3	: Generator
F2	E106	BR/2	: Washer fluid level switch	E4	E206	—	: Generator
A3	E107	B/3	: Front combination lamp RH	F5	E207	GR/1	: Starter motor
A3	E108	GR/2	: Front combination lamp RH	E5	E208	GR/1	: Oil pressure switch
A3	E111	GR/3	: Front combination lamp RH	E4	E209	—	: Generator
C3	E113	GR/4	: Cooling fan motor	F4	E210	—	: Starter motor
D3	E117	GR/2	: Front wheel sensor RH	D3	E211	GR/2	: Engine oil temperature sensor
E2	E118	B/2	: IPDM E/R (intelligent power distribution module engine room)	Trailer tow relay sub-harness			
F1	E119	W/16	: IPDM E/R (intelligent power distribution module engine room)	C3	E225	W/12	: To E168
E1	E120	W/6	: IPDM E/R (intelligent power distribution module engine room)	C3	E226	L/4	: Back-up lamp relay (with M/T)
E2	E121	BR/12	: IPDM E/R (intelligent power distribution module engine room)	C2	E227	L/4	: Trailer tow relay 1
E1	E122	W/12	: IPDM E/R (intelligent power distribution module engine room)	C2	E228	BR/6	: Trailer tow relay 2
F2	E123	BR/8	: IPDM E/R (intelligent power distribution module engine room)				

# HARNESS

< WIRING DIAGRAM >

## ENGINE ROOM HARNESS (PASSENGER COMPARTMENT)



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C4	E10	W/6	: To M6	C3	E42	BR/2	: Brake pedal position switch (with A/T)
B4	E13	B/2	: Ambient sensor 2	C3	E43	L/2	: Clutch pedal position switch
D3	E20	B/6	: Accelerator pedal position (APP) sensor	G3	E152	SMJ	: To M31
C4	E26	W/16	: To M91	G2	E158	B/1	: Fuse block (J/B)

# HARNESS

## < WIRING DIAGRAM >

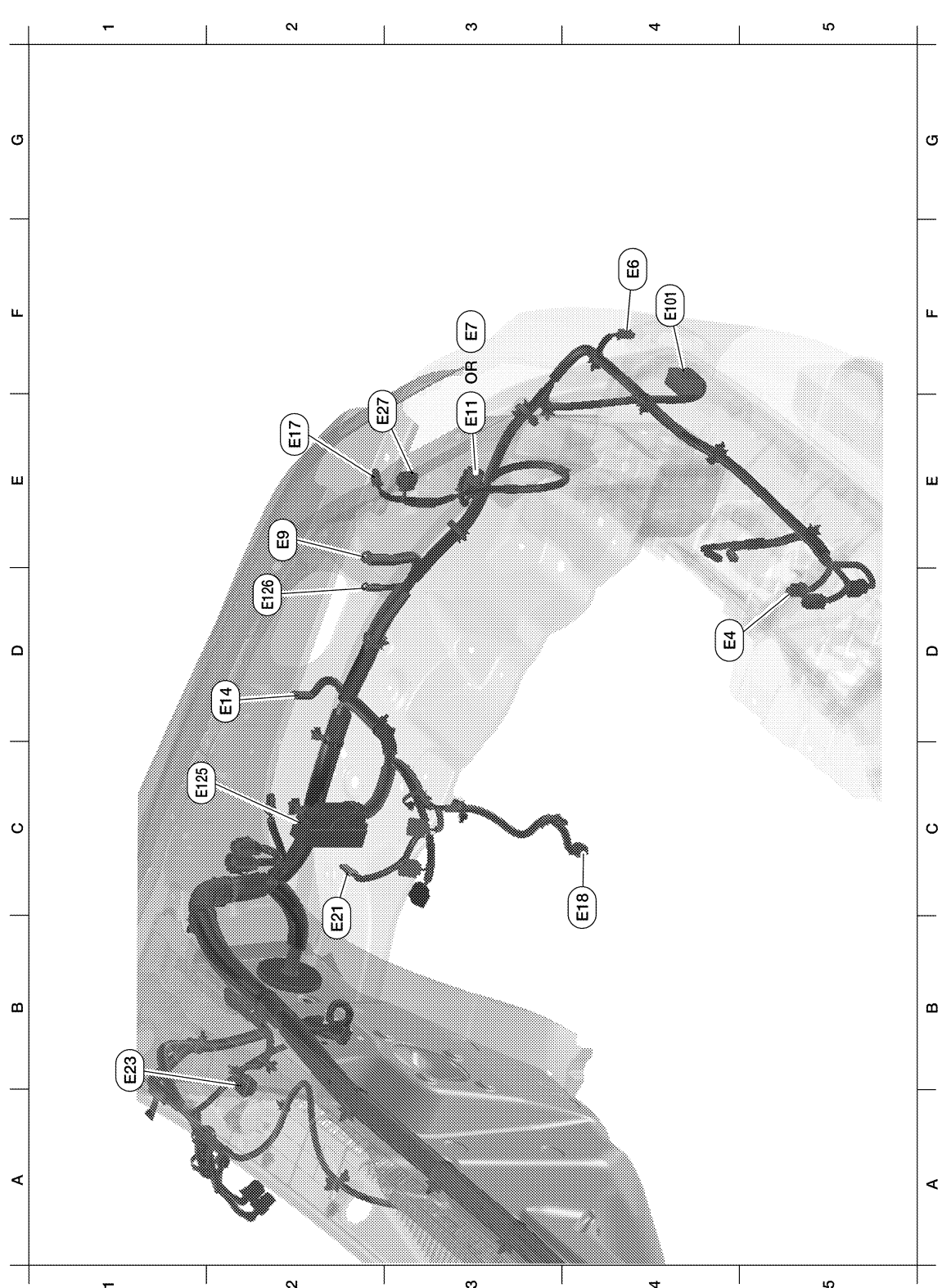
C3	E29	Y/4	: To M10	G2	E159	B/2	: Fuse block (J/B)
C4	E34	W/8	: To B40	G2	E160	W/8	: Fuse block (J/B)
C4	E36	W/2	: To B42	B3	E163	L/2	: Clutch interlock switch (with clutch interlock cancel system)
C3	E37	BR/2	: Brake pedal position switch (with M/T)	B3	E164	L/2	: Clutch interlock switch (without clutch interlock cancel system)
C3	E38	B/2	: Stop lamp switch (with M/T)	B3	E171	B/5	: Clutch interlock cancel relay 1
C3	E39	W/4	: Stop lamp switch (with A/T)				



# HARNESS

< WIRING DIAGRAM >

## ENGINE ROOM HARNESS (LH VIEW)



ABMIA1509GB

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

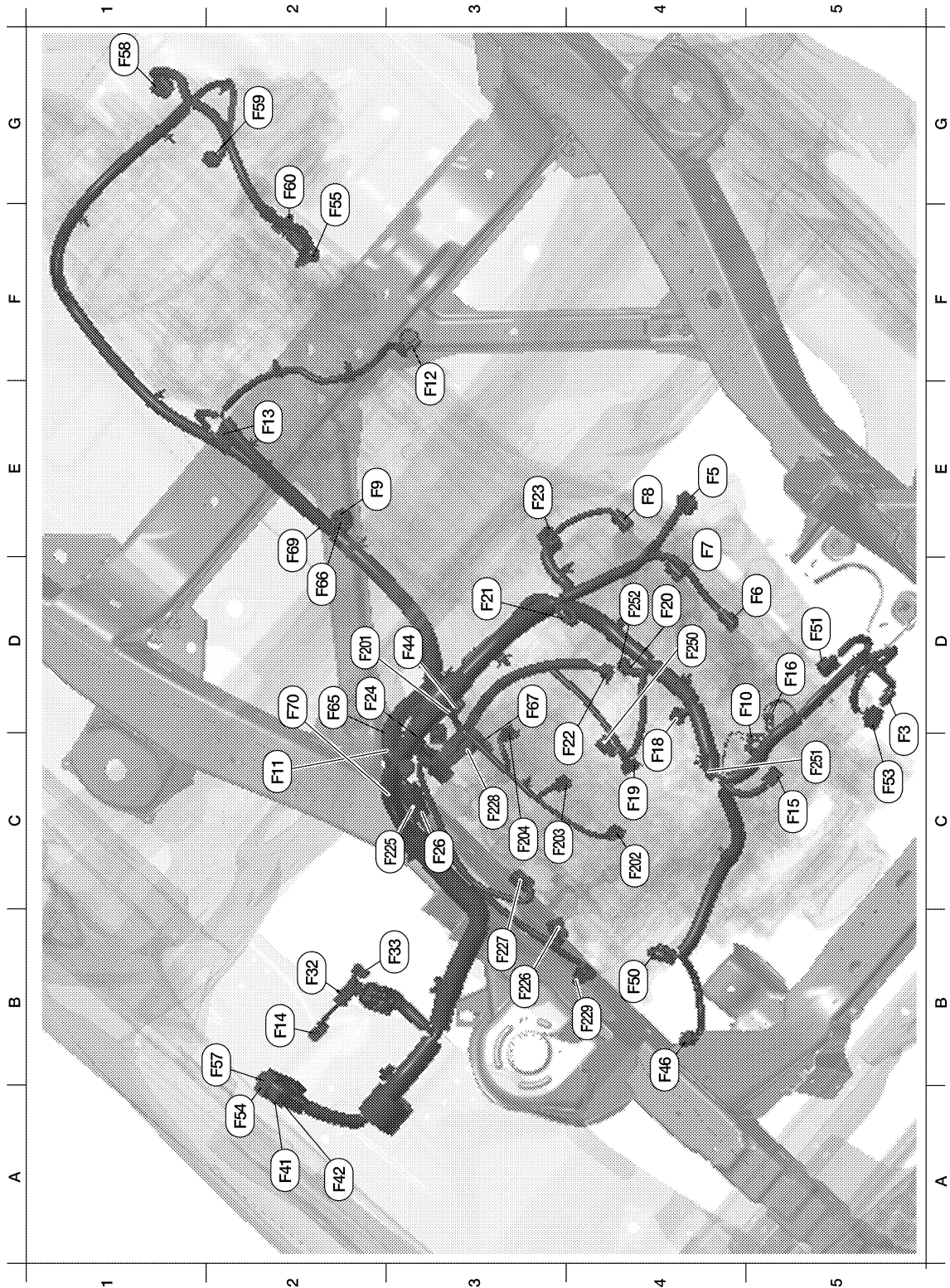
D4	E4	Y/2	: Crash zone sensor	C4	E18	GR/2	: Front wheel sensor LH
F4	E6	B/2	: Horn	B2	E21	GR/2	: Brake fluid level switch
F3	E7	B/3	: Front combination lamp LH (with daytime light system)	B1	E23	GR/5	: Front wiper motor

# HARNESS

## < WIRING DIAGRAM >

E2	E9	—	: Body ground	E2	E27	GR/3	: Front combination lamp LH
E3	E11	B/3	: Front combination lamp LH (without daytime light system)	F4	E101	B/2	: Front fog lamp LH
D2	E14	—	: Body ground	C1	E125	B/47	: ABS actuator and electric unit (control unit)
E2	E17	GR/2	: Front combination lamp LH	D2	E126	—	: Body ground

## ENGINE CONTROL HARNESS



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# HARNESS

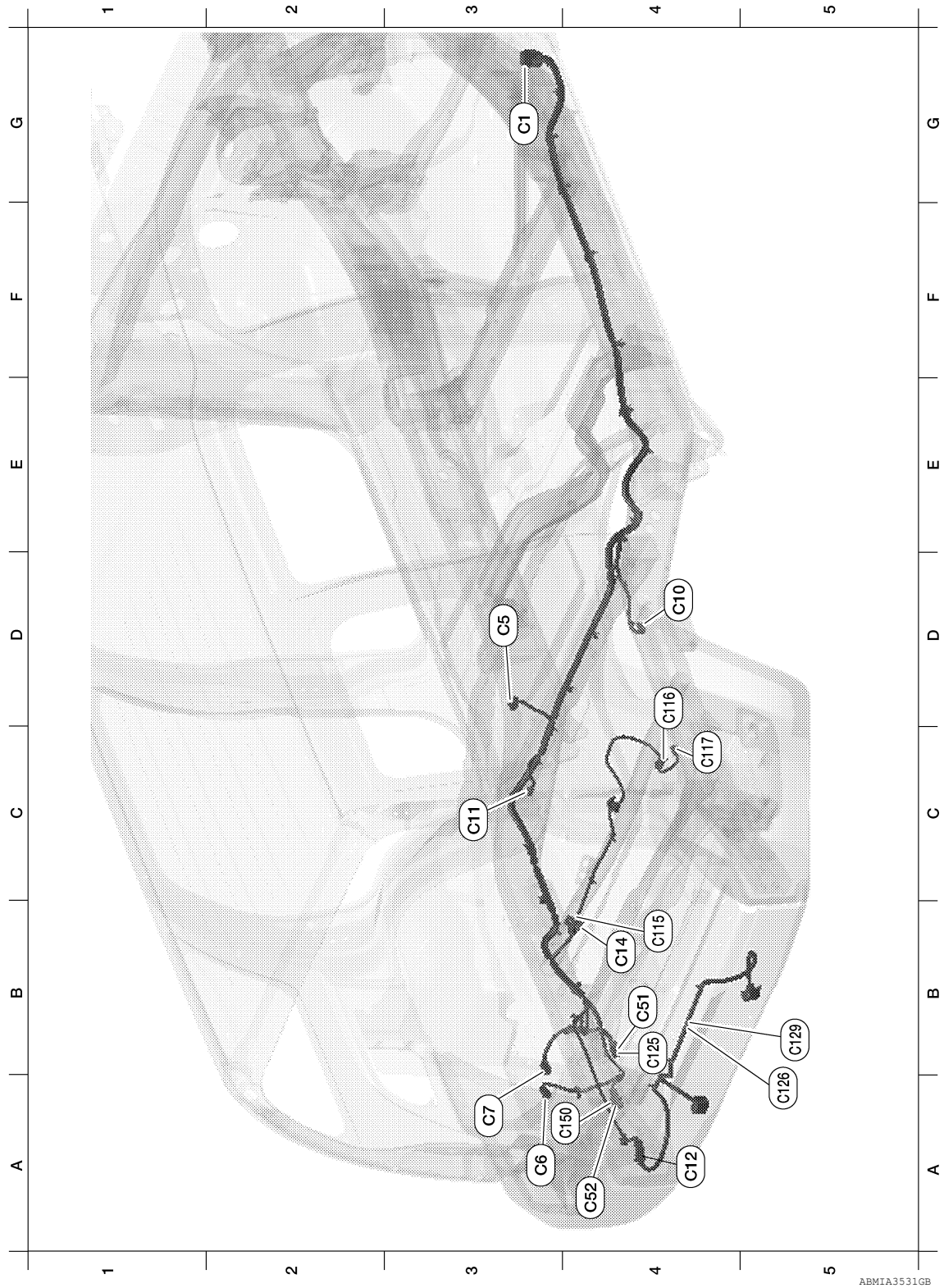
## < WIRING DIAGRAM >

C5	F3	B/1	: A/C compressor	D5	F51	GR/2	: Intake valve timing control solenoid valve (bank 2)	A
E4	F5	GR/4	: Air fuel ratio (A/F) sensor 1 (bank 2)	C5	F53	B/6	: Mass air flow sensor	
D5	F6	GR/3	: Ignition coil No. 2 (with power transistor)	A2	F54	B/48	: ECM	B
E4	F7	GR/3	: Ignition coil No. 4 (with power transistor)	F2	F55	B/2	: ATP switch	
E4	F8	GR/3	: Ignition coil No. 6 (with power transistor)	B2	F57	BR/48	: ECM	C
E2	F9	G/10	: A/T assembly	G1	F58	B/8	: Transfer control device	
D5	F10	—	: Engine ground	G2	F59	GR/2	: Wait detection switch	
C2	F11	B/3	: Crankshaft position sensor (POS)	G2	F60	GR/2	: 4LO switch	D
F3	F12	B/4	: Heated oxygen sensor 2 (bank 2)	D2	F65	GR/4	: Air fuel ratio (A/F) sensor 1 (bank 1)	
E2	F13	B/4	: Heated oxygen sensor 2 (bank 1)	D2	F66	B/2	: Park/neutral position (PNP) switch	E
B2	F14	W/24	: To E5	D3	F67	L/4	: To F250	
C5	F15	GR/2	: EVAP canister purge volume control solenoid valve	E2	F69	W/2	: Back-up lamp switch	F
D5	F16	—	: Engine ground	D2	F70	G/3	: Camshaft position sensor (PHASE) (bank 1)	G
C4	F18	GR/2	: Fuel injector No. 2	Injector sub-harness				
C4	F19	B/2	: VIAS control solenoid valve	D2	F201	G/4	: To F44	H
D4	F20	GR/2	: Fuel injector No. 4	C4	F202	GR/2	: Fuel injector No. 1	
D3	F21	W/2	: Condenser-1	C3	F203	GR/2	: Fuel injector No. 3	I
D4	F22	GR/2	: Fuel injector No. 6	C3	F204	GR/2	: Fuel injector No. 5	J
E3	F23	B/3	: Camshaft position sensor (PHASE) (bank 2)	Ignition coil sub-harness				
D2	F24	GR/2	: Engine coolant temperature sensor	C3	F225	G/8	: To F26	K
C3	F26	G/8	: To F225	B3	F226	GR/3	: Ignition coil No.1 (with power transistor)	L
B2	F32	W/16	: To E2	B3	F227	GR/3	: Ignition coil No.3 (with power transistor)	
B3	F33	W/16	: To E19	C3	F228	GR/3	: Ignition coil No.5 (with power transistor)	
A2	F41	B/2	: Intake manifold runner control valve motor	B4	F229	GR/2	: Intake valve timing control solenoid valve (bank 1)	
A2	F42	B/3	: Intake manifold runner control valve position sensor	Knock sensor sub-harness				
D3	F44	G/4	: To F201	D4	F250	L/4	: To F67	
B4	F46	B/3	: Power steering pressure sensor	C5	F251	GR/2	: Knock sensor (bank 1)	PG
B4	F50	W/6	: Electric throttle control actuator	D4	F252	GR/2	: Knock sensor (bank 2)	

# HARNESS

< WIRING DIAGRAM >

## CHASSIS HARNESS



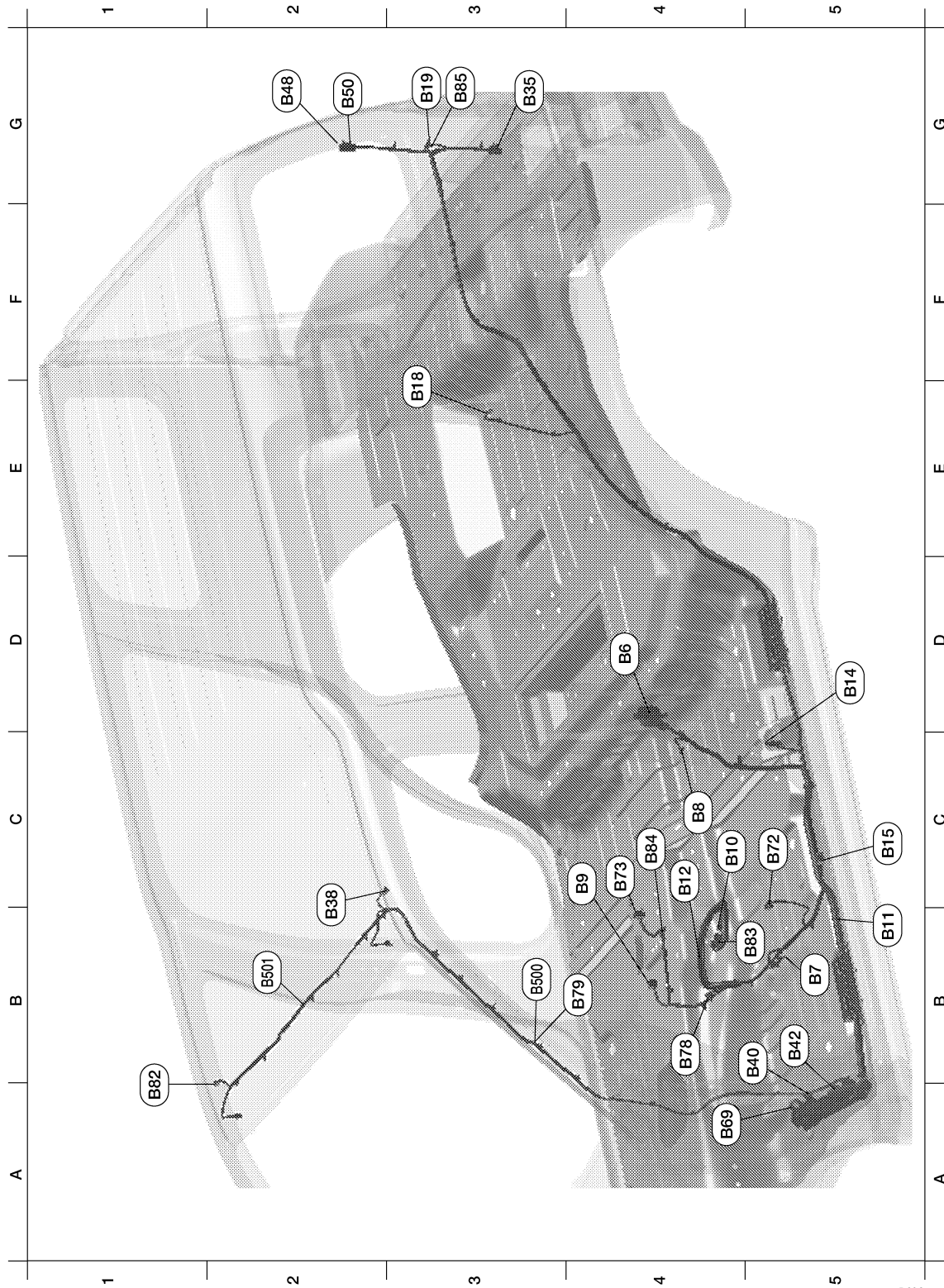
G3	C1	SMJ	: To E41	Differential sub-harness		
D3	C5	GR/5	: Fuel level sensor unit and fuel pump	B4	C115	GR/4 : To C14
A3	C6	B/2	: EVAP canister vent control valve	C4	C116	GR/2 : Differential lock position switch
A3	C7	GR/3	: EVAP control system pressure sensor	C4	C117	B/2 : Differential lock solenoid
D4	C10	GR/2	: Rear wheel sensor RH	Trailer sub-harness		

# HARNESS

## < WIRING DIAGRAM >

C3	C11	BR/2	: Rear wheel sensor LH	B4	C125	GR/6	: To C51
A4	C12	W/2	: License plate lamp	A5	C126	B/7	: Trailer
B4	C14	GR/4	: To C115	B5	C129	B/7	: Trailer receptacle
B4	C51	GR/6	: To C125	A4	C150	B/2	: To C52
A4	C52	B/2	: To C150				

## BODY HARNESS



ABMIA56032Z

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# HARNESSES

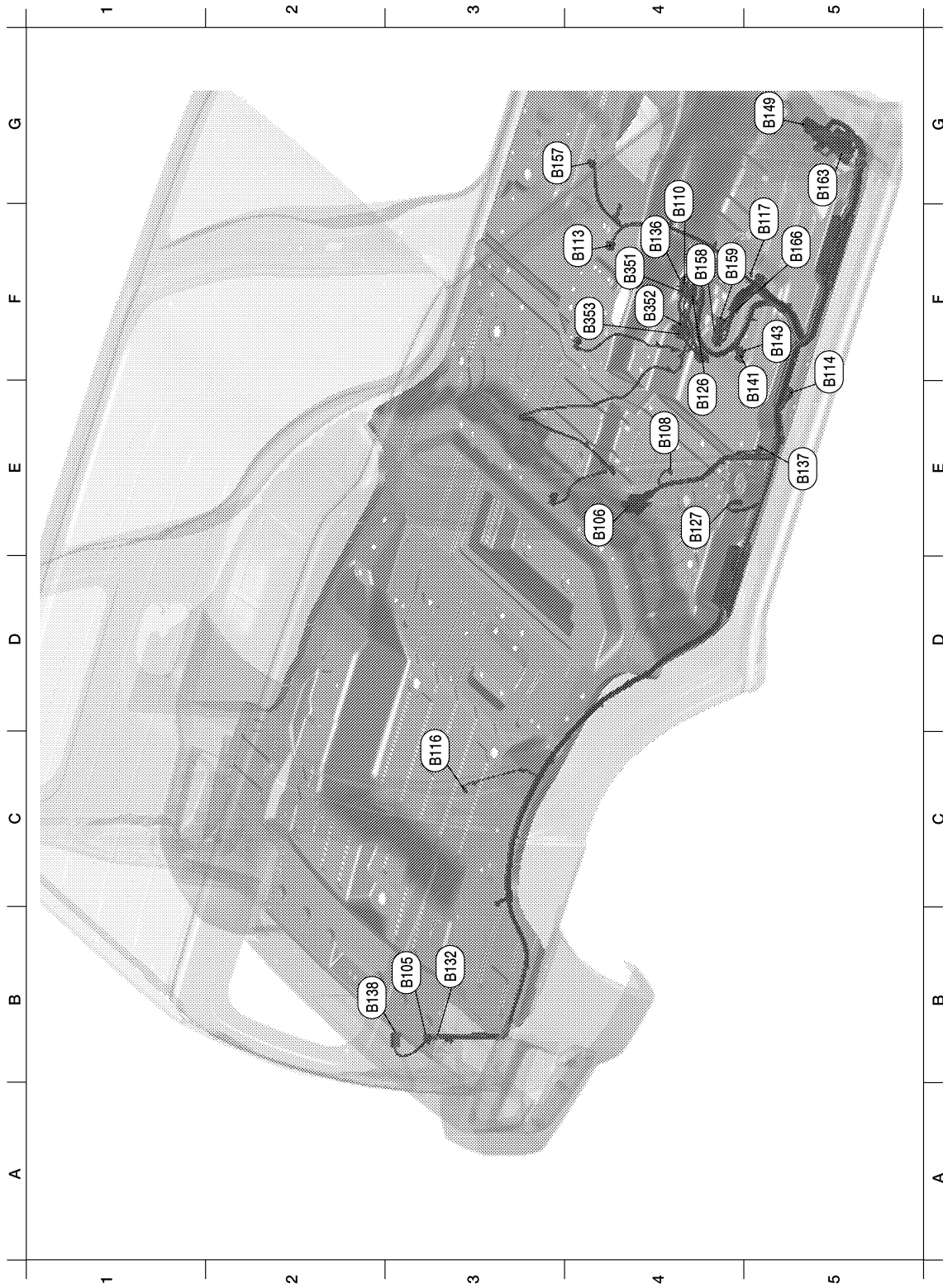
## < WIRING DIAGRAM >

D4	B6	W/12	: To D201	G2	B48	W/16	: To D402
B5	B7	—	: Body ground	G2	B50	W/2	: To D410
C4	B8	W/3	: Front door switch LH	A4	B69	SMJ	: To M40
C4	B9	Y/22	: Air bag diagnosis sensor unit	C5	B72	W/4	: Subwoofer
C4	B10	Y/2	: Front LH side air bag module	C4	B73	B/4	: Yaw rate/side/decel G sensor
B5	B11	—	: Body ground	B4	B78	Y/2	: To B157
C4	B12	W/4	: Seat belt buckle switch LH	B4	B79	W/6	: To B500
D5	B14	Y/2	: Front LH seat belt pre-tensioner	A1	B82	Y/2	: RH side curtain air bag module
C5	B15	Y/2	: LH side air bag (satellite) sensor	B5	B83	W/3	: Front seat heater LH
E3	B18	W/3	: Rear door switch LH	C4	B84	B/1	: Parking brake switch
G3	B19	—	: Body ground	G3	B85	—	: Body ground
G3	B35	W/6	: Rear combination lamp LH	Off-road lamps sub-harness			
C2	B38	Y/2	: LH side curtain air bag module	B3	B500	W/6	: To B79
B5	B40	W/8	: To E34	B2	B501	GR/6	: To B526
B5	B42	W/2	: To E36				

# HARNESS

< WIRING DIAGRAM >

BODY NO. 2 HARNESS



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B3	B105	W/6	: Rear combination lamp RH	B2	B138	B/3	: Rear cargo power socket
E4	B106	W/12	: To D301	E5	B141	W/32	: Bluetooth® control unit
E4	B108	W/3	: Front door switch RH	F5	B143	W/8	: Bluetooth® control unit
F4	B110	W/4	: Seat belt buckle switch RH	G5	B149	SMJ	: To M36
F4	B113	Y/22	: Air bag diagnosis sensor unit	G4	B157	Y/2	: To B78

# HARNESS

## < WIRING DIAGRAM >

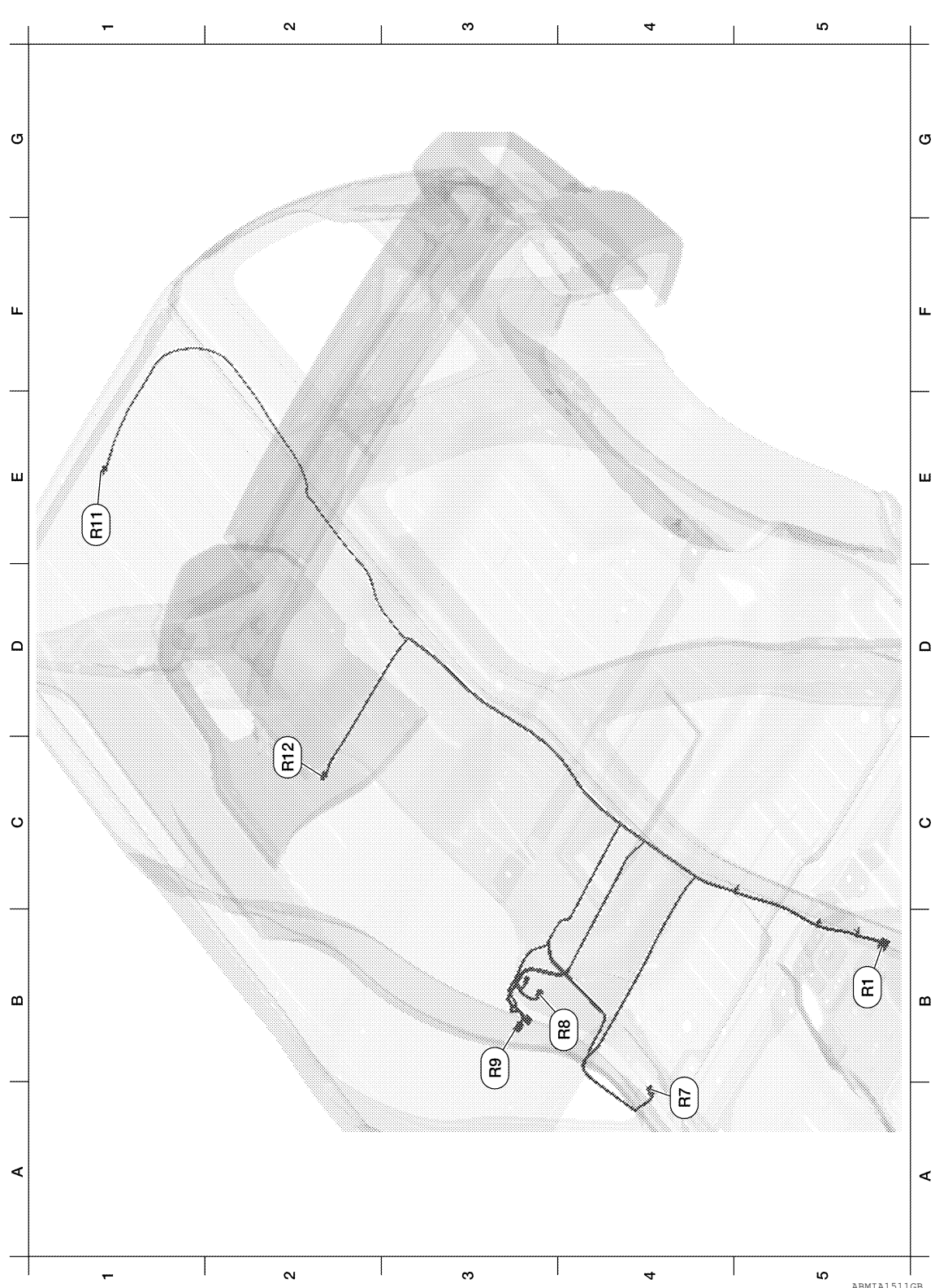
E5	B114	Y/2	: RH side air bag (satellite) sensor	F4	B158	W/8	: Audio amplifier
C3	B116	W/3	: Rear door switch RH	F4	B159	W/24	: Audio amplifier
F5	B117	—	: Body ground	G5	B163	W/16	: To M17
E4	B126	Y/2	: Front RH side air bag module	F5	B166	W/3	: Front seat heater RH
E4	B127	Y/2	: Front RH seat belt pre-tensioner	RH front seat harness			
B3	B132	—	: Body ground	F4	B351	W/8	: To B136
F4	B136	W/8	: To B351	F4	B352	B/18	: Occupant classification system control unit
E5	B137	W/3	: Belt tension sensor	F4	B353	B/3	: Occupant classification system sensor



# HARNESS

< WIRING DIAGRAM >

## ROOM LAMP HARNESS



ABMIA1511GB

B5	R1	W/24	: To M1	B3	R9	W/3	: Front room/map lamp assembly
A4	R7	W/7	: Auto anti-dazzling inside mirror	E1	R11	W/2	: Cargo lamp
B4	R8	W/4	: Microphone	C2	R12	W/2	: Room lamp 2nd row

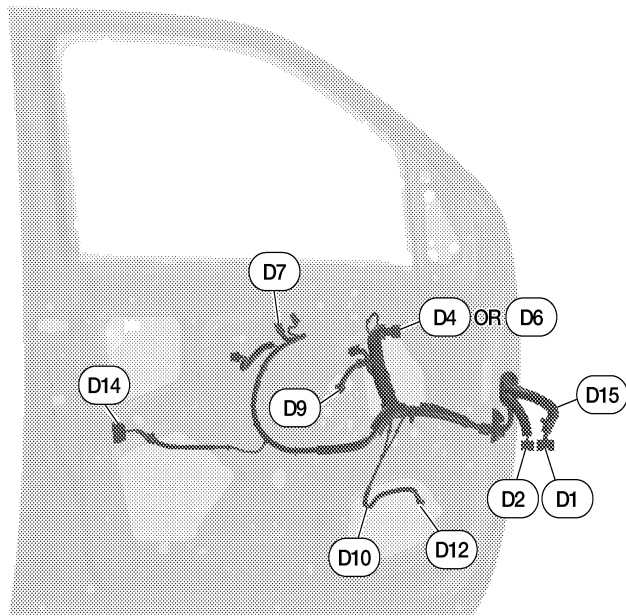
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# HARNESS

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## FRONT DOOR LH HARNESS



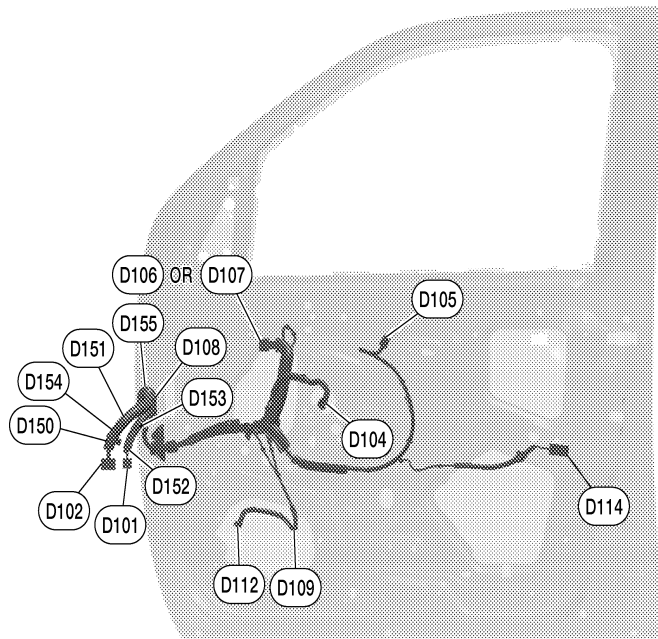
ABMIA6393GB

D1	W/12	: To M9	D9	BR/2	: Front power window motor LH
D2	BR/12	: To M8	D10	Y/2	: Front door satellite sensor LH
D4	B/10	: Door mirror LH (with heated mirrors)	D12	W/2	: Front door speaker LH
D6	B/3	: Door mirror LH (without heated mirrors)	D14	GR/6	: Front door lock assembly LH
D7	W/16	: Main power window and door lock/unlock switch	D15	Y/4	: To M172

# HARNESS

< WIRING DIAGRAM >

## FRONT DOOR RH HARNESS



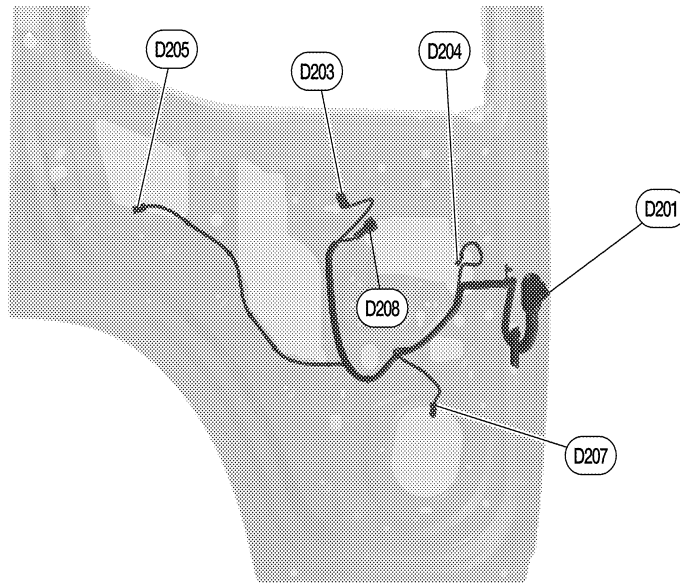
ABMIA6394GB

D101	W/10	: To D152	D114	W/2	: Front door lock actuator RH
D102	W/12	: To D150	Front door RH sub-harness		
D104	BR/2	: Front power window motor RH	D150	W/12	: To D102
D105	W/12	: Power window and door lock/unlock switch RH	D151	W/12	: To M74
D106	B/3	: Door mirror RH (without heated mirrors)	D152	W/10	: To D101
D107	B/10	: Door mirror RH (with heated mirrors)	D153	W/10	: To M75
D108	Y/4	: To D155	D154	Y/4	: To M171
D109	Y/2	: Front door satellite sensor RH	D155	Y/4	: To D108
D112	W/2	: Front door speaker RH			

# HARNES

< WIRING DIAGRAM >

## REAR DOOR LH HARNES



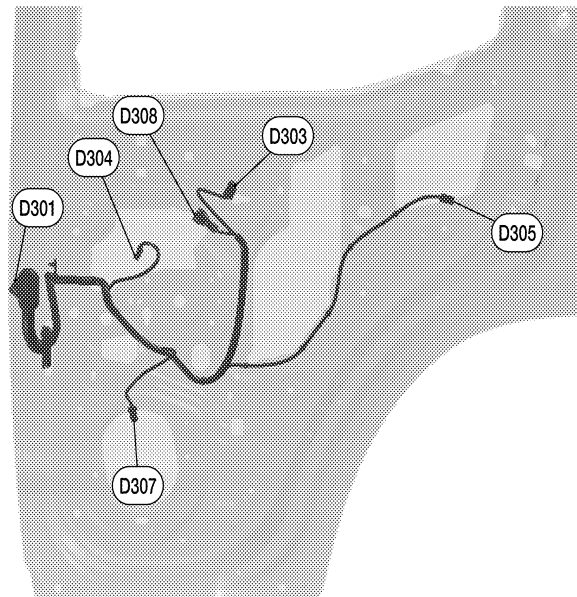
ABMIA2612GB

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

# HARNESS

< WIRING DIAGRAM >

## REAR DOOR RH HARNESS



ABMIA2613GB

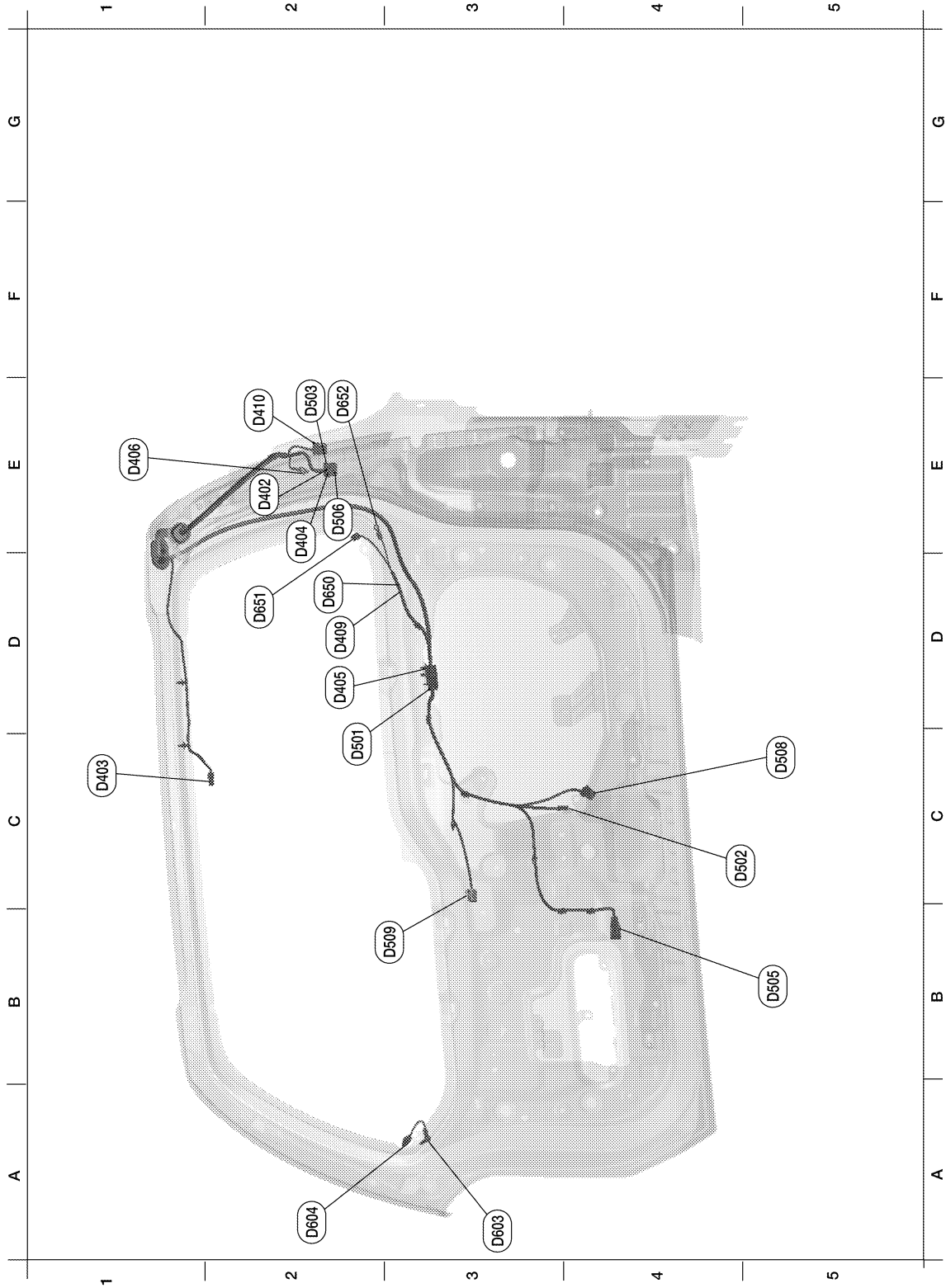
D301	W/12	: To B106	D305	W/2	: Rear door lock actuator RH
D303	W/8	: Rear power window switch RH	D307	W/2	: Rear door speaker RH
D304	B/2	: Rear power window motor RH	D308	BR/2	: Rear tweeter RH

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# HARNES

< WIRING DIAGRAM >

## BACK DOOR HARNES



ABMIA4423ZZ

Back door No. 2 harness				F2	D503	W/8	: To D404
E2	D402	W/16	: To B48	B5	D505	BR/3	: Back door key cylinder switch
C1	D403	W/2	: High-mounted stop lamp	E2	D506	W/4	: Rear view camera
E2	D404	W/8	: To D503	C5	D508	W/4	: Back door lock actuator
D2	D405	W/8	: To D501	B3	D509	W/4	: Rear wiper motor

# HARNESS

## < WIRING DIAGRAM >

E1	D406	—	: Body ground	Rear window defogger sub-harness			
D2	D409	W/2	: To D650	A3	D603	—	: Body ground
E2	D410	W/2	: To B50	A2	D604	B/1	: Rear window defogger
Back door harness				D2	D650	W/2	: To D409
C2	D501	W/8	: To D405	D2	D651	B/1	: Rear window defogger
C5	D502	W/3	: Back door switch	E2	D652	—	: Body ground

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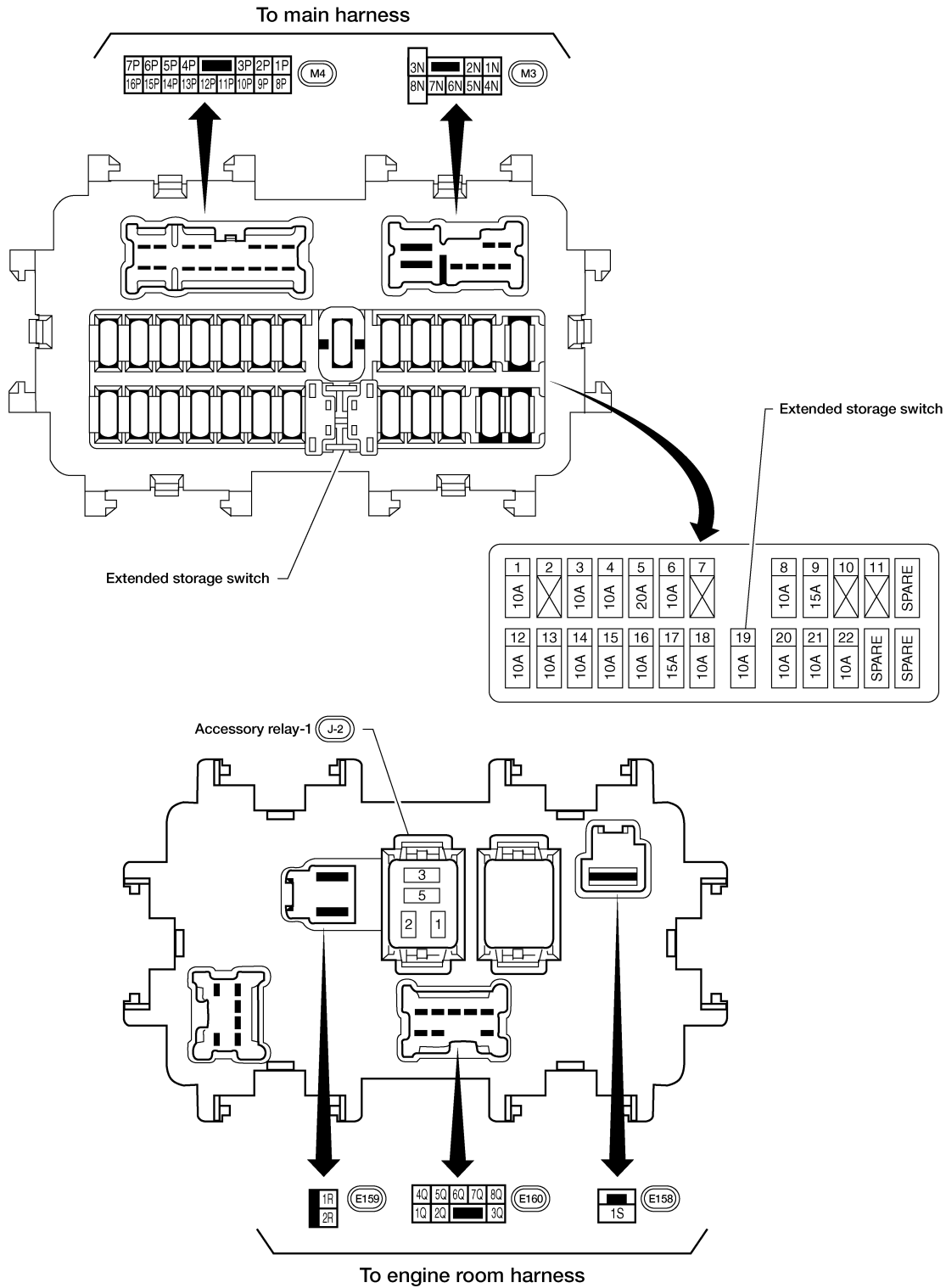
# FUSE BLOCK-JUNCTION BOX (J/B)

< WIRING DIAGRAM >

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

### Terminal Arrangement

INFOID:000000011069856



ABMIA6390GB



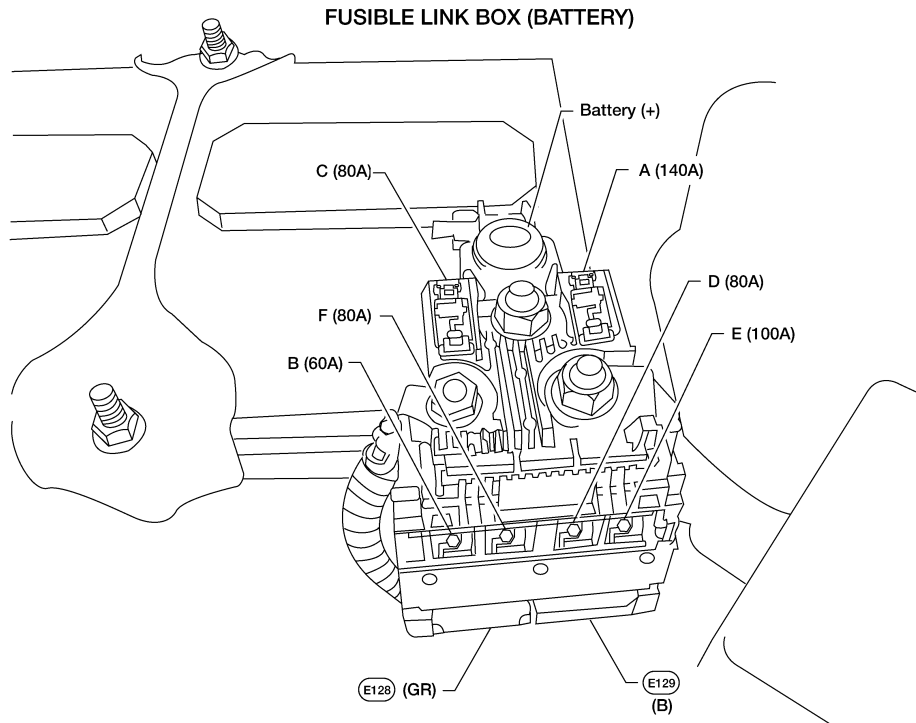
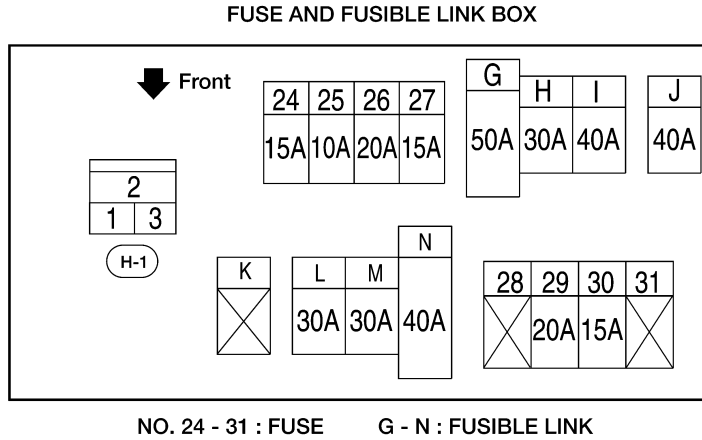
# FUSE AND FUSIBLE LINK BOX

< WIRING DIAGRAM >

## FUSE AND FUSIBLE LINK BOX

### Terminal Arrangement

INFOID:000000011069857



ABMIA1517GB

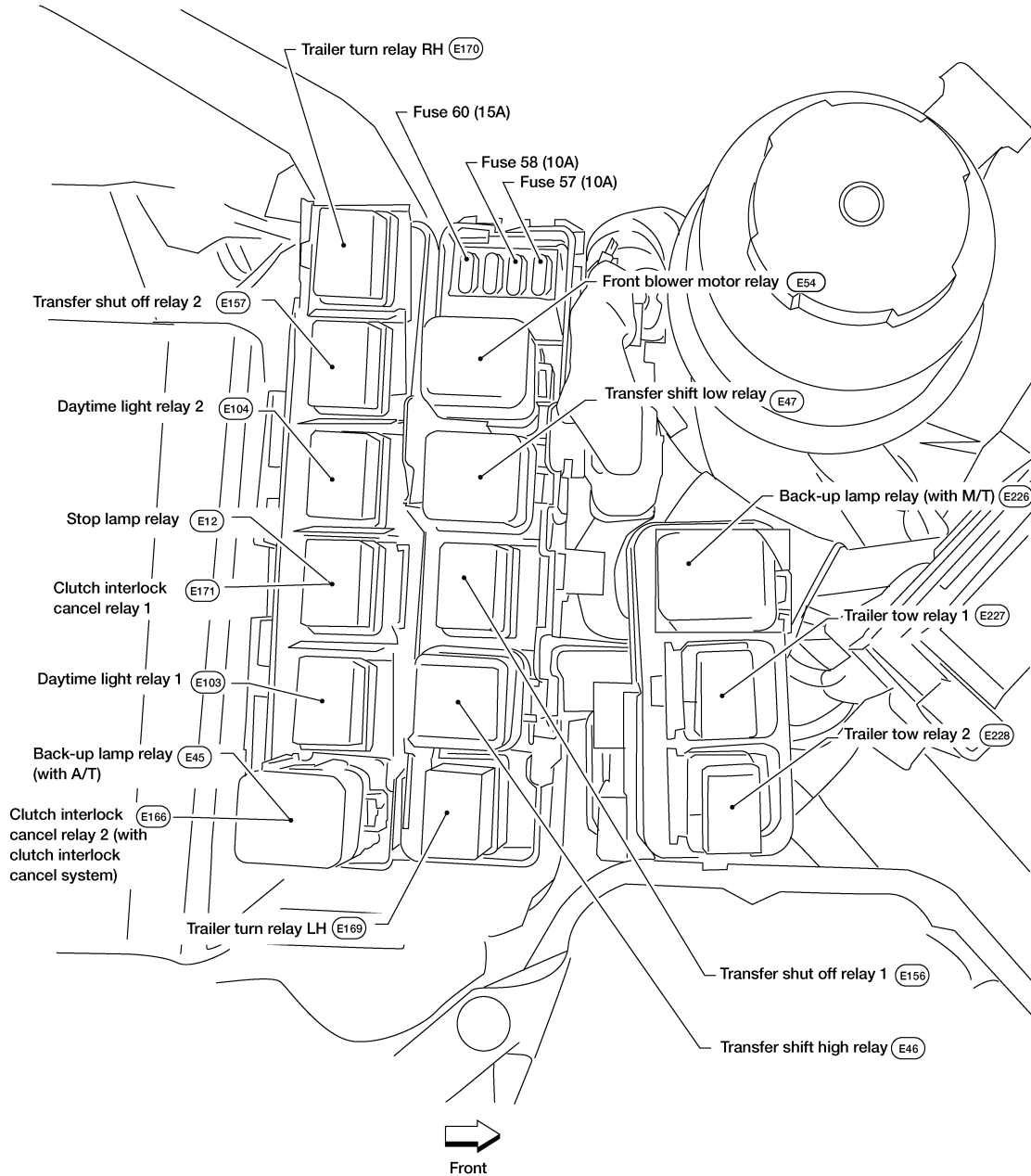
# FUSE AND RELAY BOX

< WIRING DIAGRAM >

## FUSE AND RELAY BOX

### Terminal Arrangement

INFOID:000000011069858



ABMIA6431GB

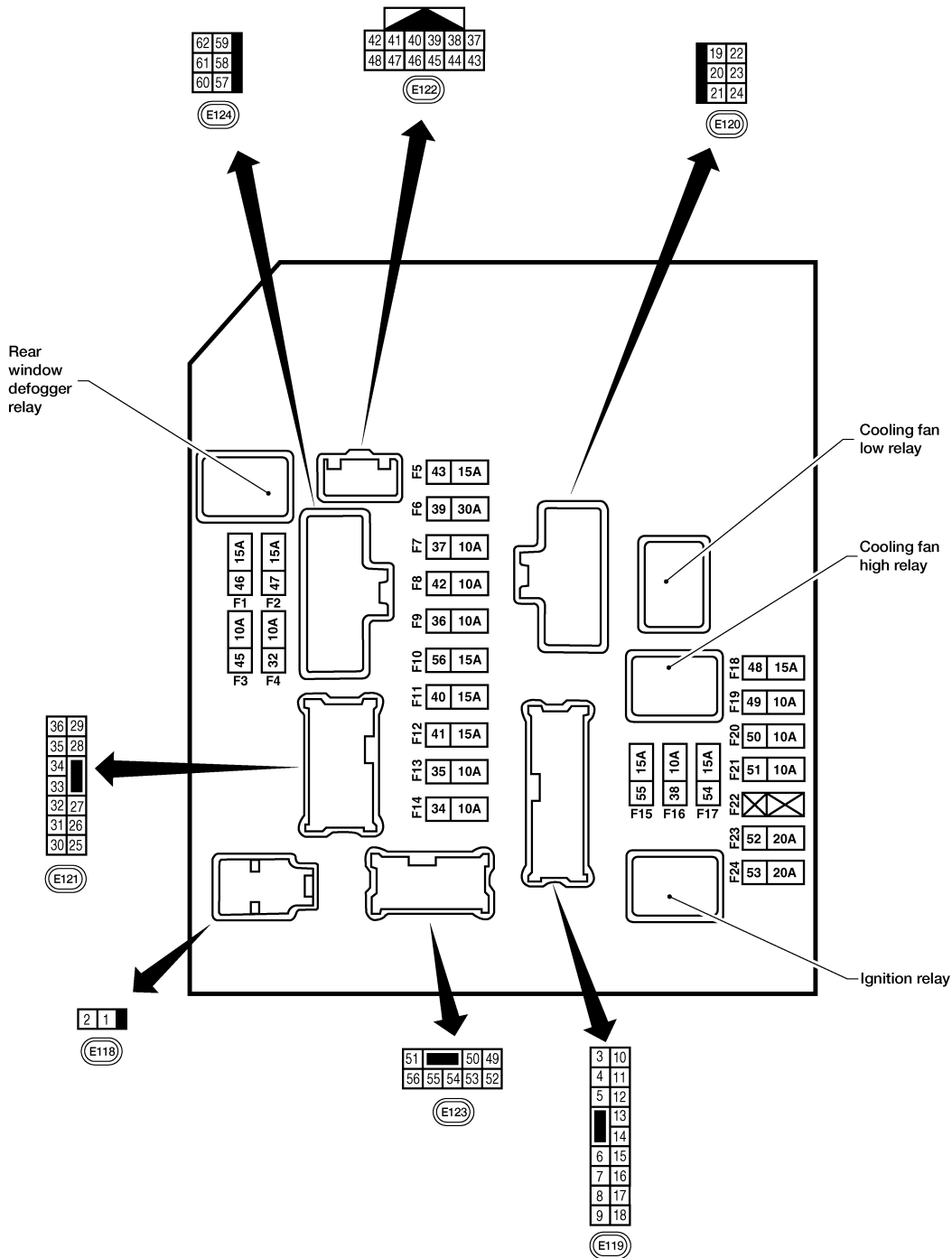
# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

< WIRING DIAGRAM >

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

### IPDM E/R Terminal Arrangement

INFOID:000000011069859



**NOTE:**

Numbers preceded by an "F" represent the fuse numbers imprinted on the IPDM E/R. The other numbers represent the fuse numbers as they appear in the wiring diagrams.

ABMIA6432GB

# BATTERY

< BASIC INSPECTION >

## BASIC INSPECTION

### BATTERY

#### How to Handle Battery

INFOID:000000011069842

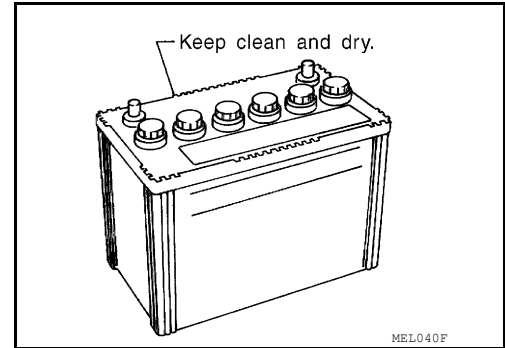
#### CAUTION:

- If it becomes necessary to start the engine with a booster battery and jumper cables, use a 12-volt booster battery.
- After connecting battery cables, ensure that they are tightly clamped to battery terminals for good contact.
- Never add distilled water through the hole used to check specific gravity.

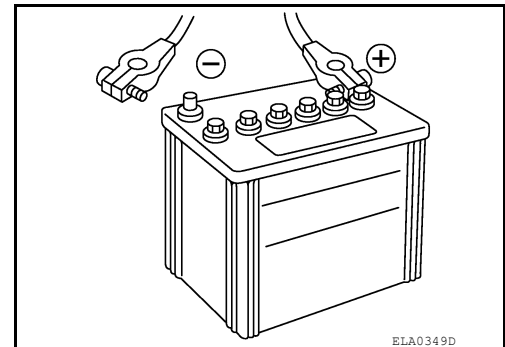
#### METHODS OF PREVENTING OVER-DISCHARGE

The following precautions must be taken to prevent over-discharging a battery.

- The battery surface (particularly its top) should always be kept clean and dry.
- The terminal connections should be clean and tight.
- At every routine maintenance, check the electrolyte level.  
This also applies to batteries designated as "low maintenance" and "maintenance-free".



- When the vehicle is not going to be used over a long period of time, disconnect the battery cable from the negative terminal. (If the vehicle has an extended storage switch, turn it off.)



#### Work Flow

INFOID:000000011069843

#### BATTERY DIAGNOSIS WITH EXP-800 NI OR GR8-1200 NI

To diagnose and confirm the condition of the battery, use the following special service tools:

- EXP-800 NI Battery and electrical diagnostic analyzer
- GR8-1200 NI Multitasking battery and electrical diagnostic station

#### NOTE:

Refer to the applicable Instruction Manual for proper battery diagnosis procedures.

#### BATTERY DIAGNOSIS WITHOUT EXP-800 NI OR GR8-1200 NI

##### Checking Electrolyte Level

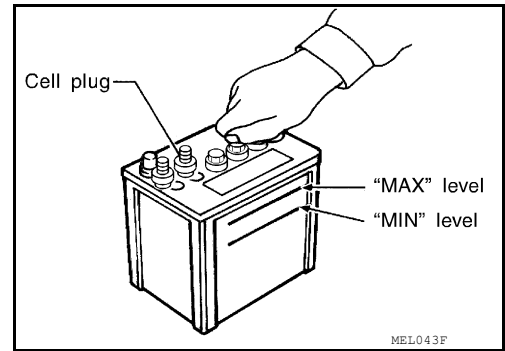
#### WARNING:

Never allow battery fluid to come in contact with skin, eyes, fabrics, or painted surfaces. After touching a battery, never touch or rub your eyes until you have thoroughly washed your hands. If acid contacts eyes, skin or clothing, immediately flush with water for 15 minutes and seek medical attention. Failure to do this may cause personal injury or damage to clothing or the painted surfaces.

# BATTERY

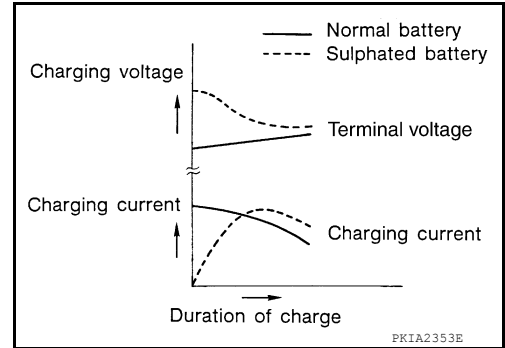
## < BASIC INSPECTION >

- Remove the cell plug using a suitable tool.
- Add distilled water up to the MAX level.



## SULFATION

- **A battery will be completely discharged if it is left unattended for a long time and the specific gravity will become less than 1.100. This may result in sulfation on the cell plates.**
- **To determine if a battery has been "sulfated", note its voltage and current when charging it. As shown in the figure, less current and higher voltage are observed in the initial stage of charging sulfated batteries.**
- **A sulfated battery may sometimes be brought back into service by means of a long, slow charge, 12 hours or more, followed by a battery capacity test.**



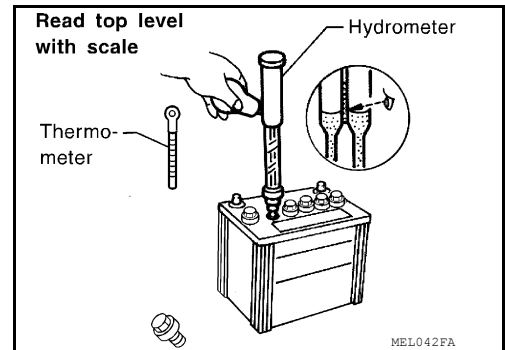
## Specific Gravity Check

### NOTE:

Check the charge condition of the battery.

Periodically check the specific gravity of the electrolyte. Keep a close check on charge condition to prevent over-discharge.

1. Read hydrometer and thermometer indications at eye level.
2. Use the chart below to correct your hydrometer reading according to electrolyte temperature.



## Hydrometer Temperature Correction

Battery electrolyte temperature [°C (°F)]	Add to specific gravity reading
71 (160)	0.032
66 (150)	0.028
60 (140)	0.024
54 (130)	0.020
49 (120)	0.016
43 (110)	0.012
38 (100)	0.008
32 (90)	0.004
27 (80)	0
21 (70)	-0.004
16 (60)	-0.008
10 (50)	-0.012

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# BATTERY

## < BASIC INSPECTION >

Battery electrolyte temperature [°C (°F)]	Add to specific gravity reading
4 (40)	-0.016
-1 (30)	-0.020
-7 (20)	-0.024
-12 (10)	-0.028
-18 (0)	-0.032

Corrected specific gravity	Approximate charge condition
1.260 - 1.280	Fully charged
1.230 - 1.250	3/4 charged
1.200 - 1.220	1/2 charged
1.170 - 1.190	1/4 charged
1.140 - 1.160	Almost discharged
1.110 - 1.130	Completely discharged

### Charging The Battery

#### **CAUTION:**

- **Never “quick charge” a fully discharged battery.**
- **Keep the battery away from open flame while it is being charged.**
- **When connecting the charger, connect the leads first, then turn on the charger. Never turn on the charger first, as this may cause a spark.**
- **If battery electrolyte temperature rises above 55 °C (131 °F), stop charging. Always charge battery at a temperature below 55 °C (131 °F).**

#### Charging Rates (Standard Charge)

Approximate charge condition	Charge current (A)	Charge time (h)
Fully charged	7	2
3/4 charged		2.5
1/2 charged		5
1/4 charged		7.5
Almost discharged		9
Completely discharged		10

#### Charging Rates (Quick Charge)

Approximate charge condition	Charge current (A)	Charge time (h)
Fully charged	—	—
3/4 charged	16	0.5
1/2 charged	33	
1/4 charged		
Almost discharged	—	—
Completely discharged		

#### **NOTE:**

The ammeter reading on your battery charger will automatically decrease as the battery charges. This indicates that the voltage of the battery is increasing normally as the state of charge improves. The charging amps indicated above refer to initial charge rate.

- If, after charging, the specific gravity of any two cells varies more than 0.050, the battery should be replaced.

# INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

## INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL

ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Special Repair Requirement

INFOID:000000011069844

Required Procedure After Battery Disconnection

System	Item	Reference
Engine Control System	Idle Air Volume Learning	<a href="#">EC-127</a>
Brake Control System	Steering Angle Sensor Neutral Position	<a href="#">BRC-12</a> (Type 1) <a href="#">BRC-123</a> (Type 2)
Audio, Visual & Navigation System	Audio (Radio Preset)	Refer to Owner's Manual.
	Navigation System	Refer to Owner's Manual.

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# FUSE INSPECTION

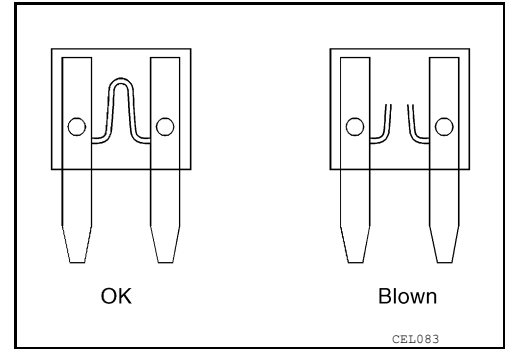
< BASIC INSPECTION >

## FUSE INSPECTION

### How To Check

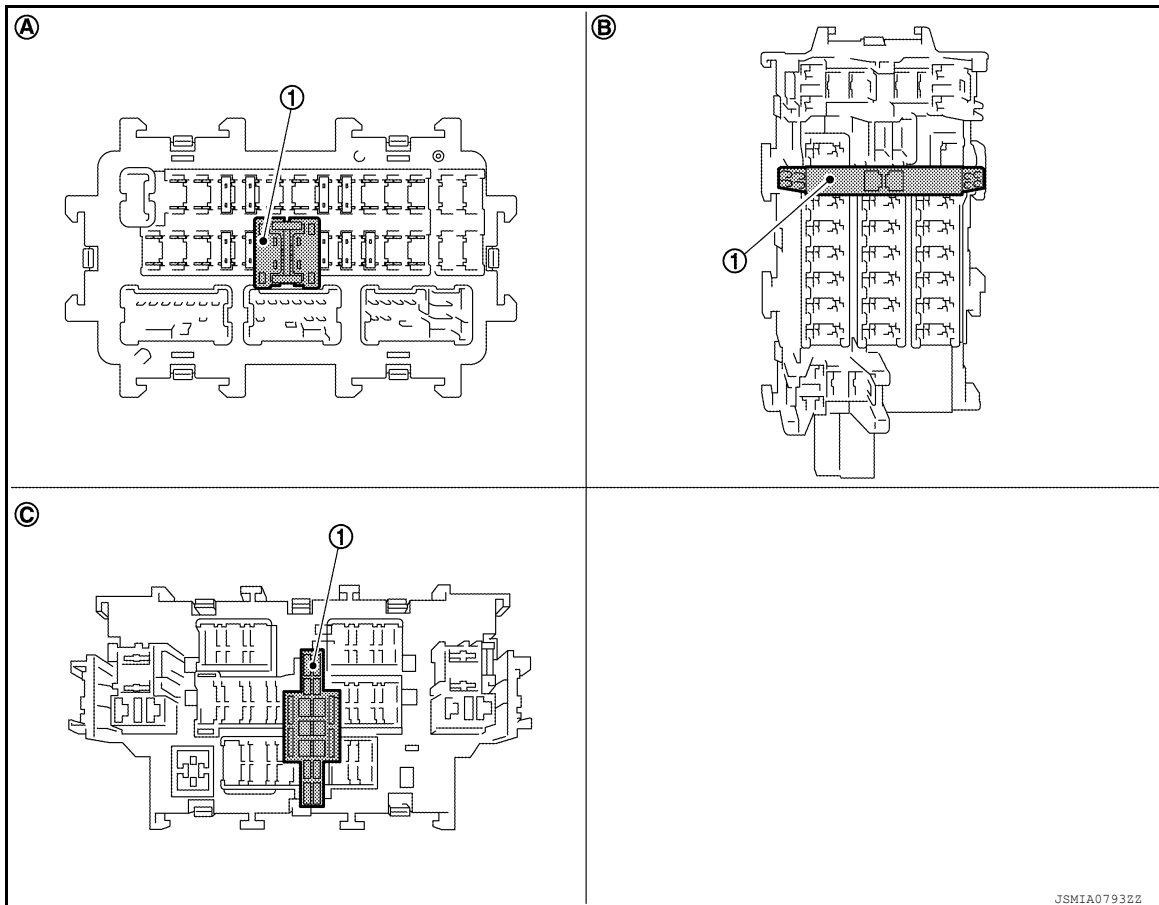
INFOID:000000011229876

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



### EXTENDED STORAGE FUSE SWITCH (IF EQUIPPED)

The following switch may be mounted on the fuse block (Junction Box) for transportation and storage.



① Extended storage fuse switch

Ⓐ Type A

Ⓑ Type B

Ⓒ Type C

Remove the extended storage fuse switch if it causes the interference when checking fuses.

How To Extended Storage Fuse Switch ON/OFF

#### CAUTION:

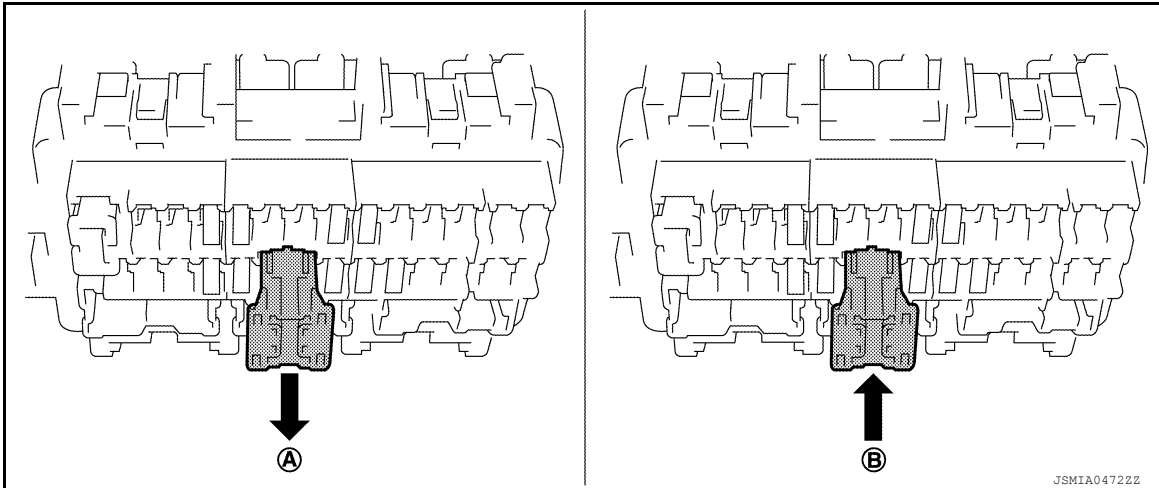
- Turn the ignition switch OFF when operating the extended storage fuse switch.
- Under normal conditions, keep the extended storage fuse switch in ON state. Never operate the extended storage fuse switch except when necessary.



# FUSE INSPECTION

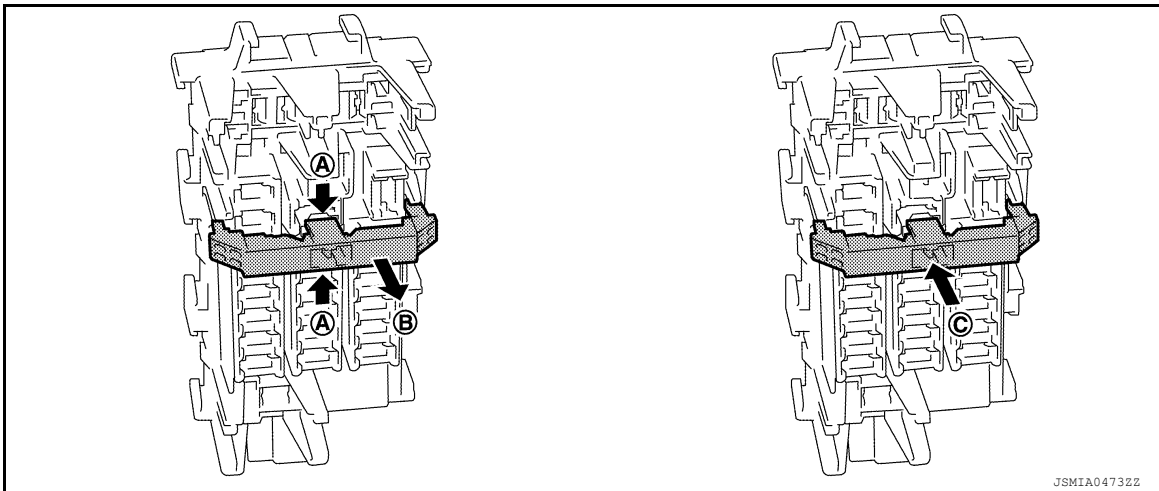
## < BASIC INSPECTION >

### • Type A



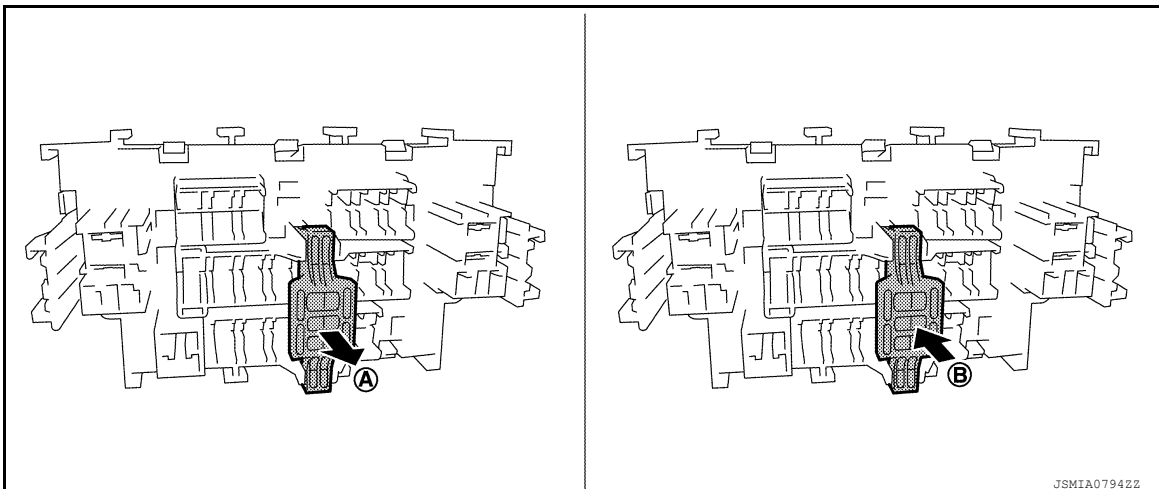
- To turn the extended storage fuse switch OFF, pull it up in (A) direction as shown in the figure.
- To turn the extended storage fuse switch ON, press it in (B) direction as shown in the figure.

### • Type B



- To turn the extended storage fuse switch OFF, hold (A) of the switch and pull up in (B) direction as shown in the figure.
- To turn the extended storage fuse switch ON, press it in (C) direction as shown in the figure.

### • Type C



- To turn the extended storage fuse switch OFF, pull it up in (A) direction as shown in the figure.
- To turn the extended storage fuse switch ON, press it in (B) direction as shown in the figure.

## How To Remove Extended Storage Fuse Switch

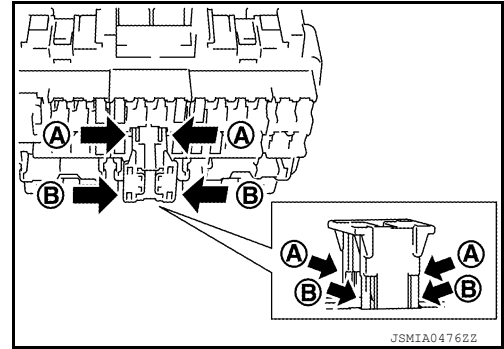
### Type A

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# FUSE INSPECTION

## < BASIC INSPECTION >

1. Turn the ignition switch OFF.
2. Turn the extended storage fuse switch OFF.
3. Press pawl (A) and tilt to disengage the extended storage fuse switch. Press pawl (B) and tilt to remove the extended storage fuse switch.



### CAUTION:

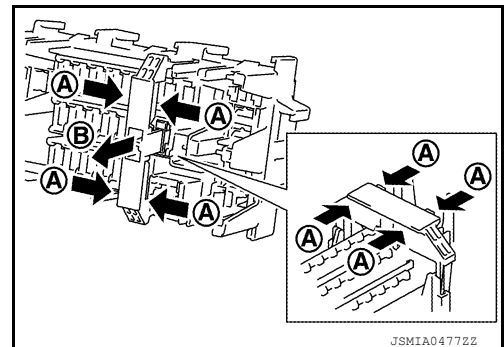
Never use fuse for bus bar.

### NOTE:

- Extended storage fuse switch and bus bar are removed together. Remove bus bar from extended storage fuse switch, if necessary.
- Install removed bus bar to fuse block.
- Extended storage fuse switch is for transportation and storage. Reinstallation is not required after the removal.

### Type B

1. Turn the ignition switch OFF.
2. Turn the extended storage fuse switch OFF.
3. Hold (A) and pull up the extended storage fuse switch hard in (B) direction.



### CAUTION:

Never use fuse for bus bar.

### NOTE:

- Extended storage fuse switch and bus bar may be removed together. Remove bus bar from extended storage fuse switch, if necessary.
- Install removed bus bar to fuse block.
- Extended storage fuse switch is for transportation and storage. Reinstallation is not required after the removal.

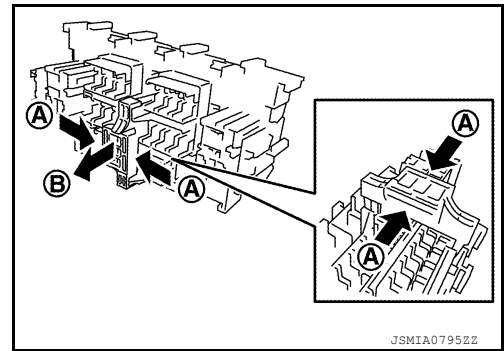
### Type C

1. Turn the ignition switch OFF.
2. Turn the extended storage fuse switch OFF.

# FUSE INSPECTION

## < BASIC INSPECTION >

3. Hold (A) and pull up the extended storage fuse switch hard in (B) direction.



**CAUTION:**

**Never use fuse for bus bar.**

**NOTE:**

- Extended storage fuse switch and bus bar are removed together. Remove bus bar from extended storage fuse switch, if necessary.
- Install removed bus bar to fuse block.
- Extended storage fuse switch is for transportation and storage. Reinstallation is not required after the removal.

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# FUSIBLE LINK INSPECTION

< BASIC INSPECTION >

## FUSIBLE LINK INSPECTION

### Fusible Link

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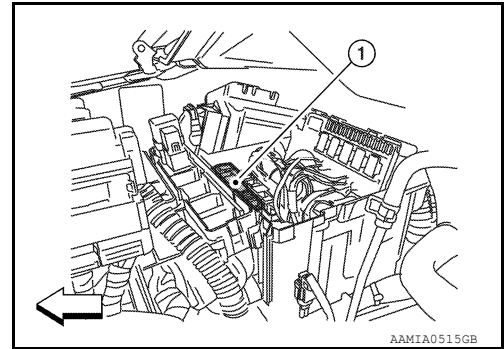
A melted fusible link can be detected either by visual inspection or by feeling with finger tip. If its condition is questionable, use circuit tester or test lamp.

1 : Fusible link

←: Vehicle front

#### CAUTION:

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



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# BATTERY

< REMOVAL AND INSTALLATION >

## REMOVAL AND INSTALLATION

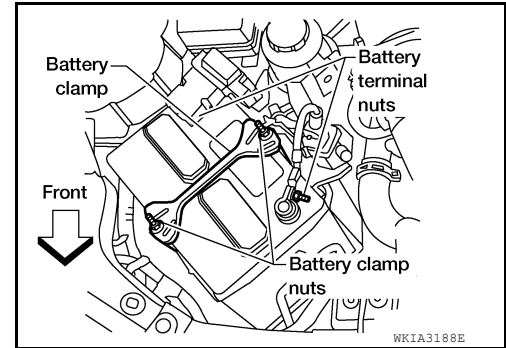
### BATTERY

#### Removal and Installation

INFOID:000000011069860

#### REMOVAL

1. Disconnect both negative and positive battery terminals.  
**CAUTION:**
  - **Disconnect negative battery terminal first.**
  - **Before servicing, turn the ignition switch off and wait at least three minutes.**
2. Remove battery clamp nuts and battery clamp.
3. Remove battery cover.
4. Remove battery.



#### INSTALLATION

Installation is in the reverse order of removal.

#### **CAUTION:**

**When connecting battery terminals, connect the positive battery terminal first.**

**Battery clamp nuts : 3.92 N·m (0.40 kg-m, 35 in-lb)**

**Battery terminal nut : 3.4 N·m (0.35 kg-m, 30 in-lb)**

Reset electronic systems as necessary. Refer to [PG-71, "ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Special Repair Requirement"](#).

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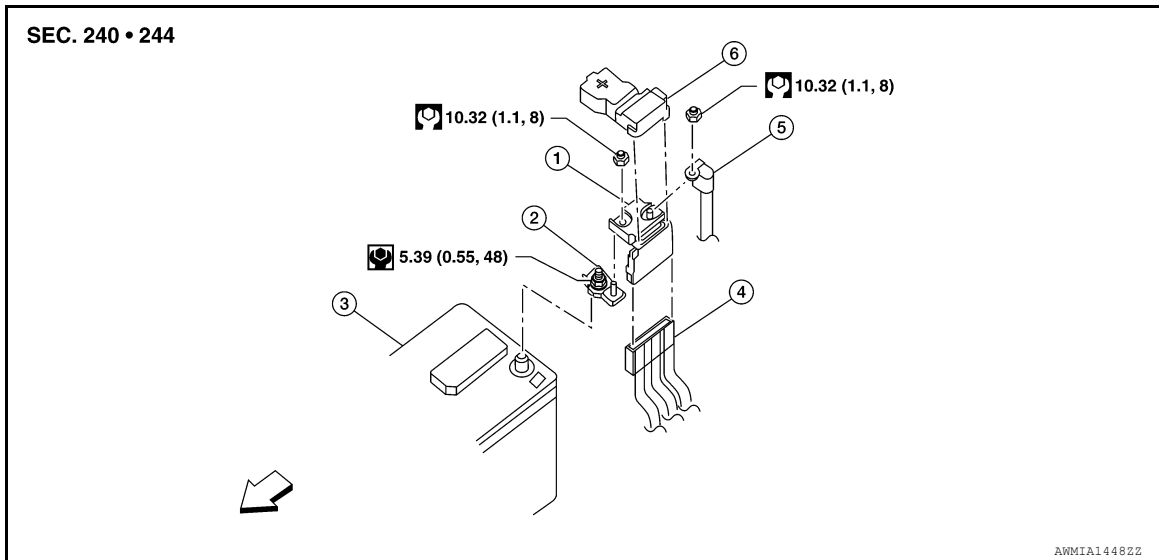
# BATTERY TERMINAL WITH FUSIBLE LINK

< REMOVAL AND INSTALLATION >

## BATTERY TERMINAL WITH FUSIBLE LINK

Exploded View

INFOID:000000011508790



- |                               |                      |            |
|-------------------------------|----------------------|------------|
| 1. Fusible link box (battery) | 2. Positive Terminal | 3. Battery |
| 4. Harness connectors         | 5. Positive cable    | 6. Cover   |
- ⇐ Front

## Removal and Installation

INFOID:000000011508791

### REMOVAL

1. Disconnect negative terminal from the battery and reposition.  
**CAUTION:**  
To prevent damage to the parts, disconnect the negative terminal from the battery negative post first.
2. Disconnect positive terminal from the battery.
3. Disconnect positive cable from fusible link box (battery).
4. Disconnect harness connectors and separate positive terminal from fusible link box (battery).

### INSTALLATION

Installation is in the reverse order of removal.

#### **CAUTION:**

Replace the fusible link box (battery) if it has been dropped or sustained and impact.

To install the fusible link box (battery), carefully read the following instructions:

- To prevent damage to the parts, connect the positive terminal to the battery positive post first.
- After connecting the positive terminal, to securely supply battery voltage, ensure that the positive and negative terminals are tightly clamped to battery posts for good contact.
- To securely supply battery voltage, check the positive and negative terminals for poor connection caused by corrosion.

Reset electronic systems as necessary. Refer to [PG-71. "ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Special Repair Requirement"](#).

# BATTERY

< SERVICE DATA AND SPECIFICATIONS (SDS)

## SERVICE DATA AND SPECIFICATIONS (SDS)

### BATTERY

#### Battery

INFOID:0000000011069861

Type*	GR35
Capacity (20 HR) minimum V-AH	12-60
Cold cranking current A [For reference value @ -18°C (0°F)]	550

\*: Always check with the Parts Department for the latest parts information.

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