

SECTION **PG**

POWER SUPPLY, GROUND & CIRCUIT ELEMENTS

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# PRECAUTIONS

< PRECAUTION >

## PRECAUTION

### PRECAUTIONS

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

INFOID:000000006598575

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 3 minutes before performing any service.

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

INFOID:000000006598577

#### **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

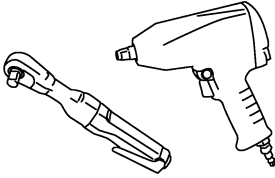
#### Special Service Tool

INFOID:000000006179636

Tool number (Kent-Moore No.) Tool name	Description
<p>— ( — ) Model GR-8 Multitasking Battery Diagnostic Station</p>  <p style="text-align: right;">AWI1A1239ZZ</p>	<p>Tests batteries, starting and charging systems. For operating instructions, refer to diagnostic station instruction manual.</p>

#### Commercial Service Tool

INFOID:000000006179637

Tool name	Description
<p>Power tool</p>  <p style="text-align: right;">PBIC0190E</p>	<p>Loosening bolts and nuts</p>

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# BATTERY

< BASIC INSPECTION >

## BASIC INSPECTION

### BATTERY

#### How to Handle Battery

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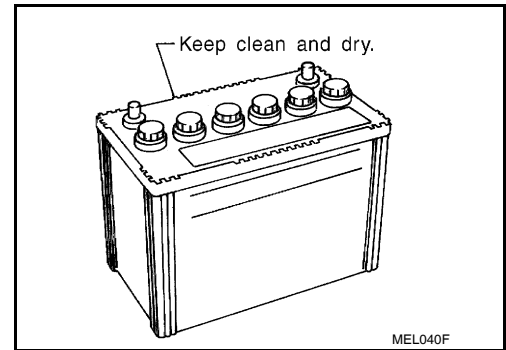
#### CAUTION:

- 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.

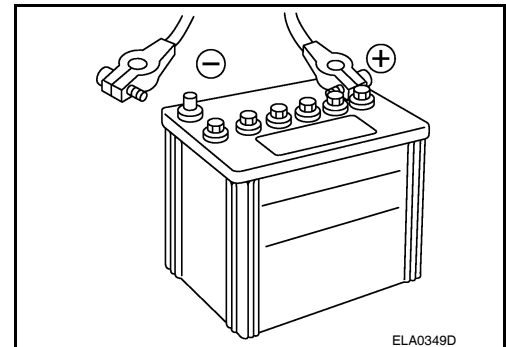
#### METHODS OF PREVENTING OVER-DISCHARGE

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

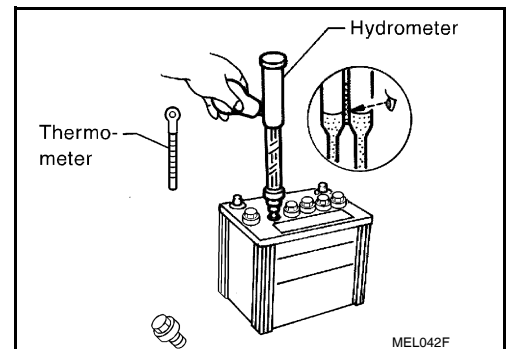
- The battery surface (particularly its top) should always be kept clean and dry.
- The terminal connections should be clean and tight.
- At every routine maintenance, check the electrolyte level. This also applies to batteries designated as "low maintenance" and "maintenance-free".



- 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.)



- 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.



#### CHECKING ELECTROLYTE LEVEL

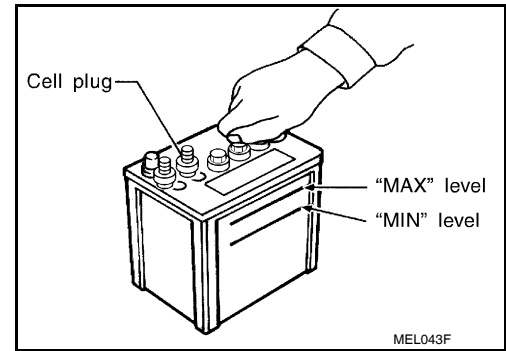
#### WARNING:

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.

# BATTERY

## < BASIC INSPECTION >

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

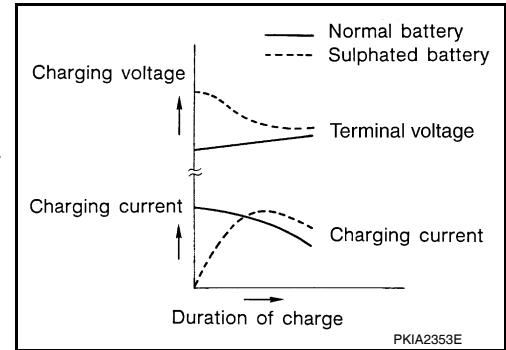


### Sulphation

**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 sulphation on the cell plates.**

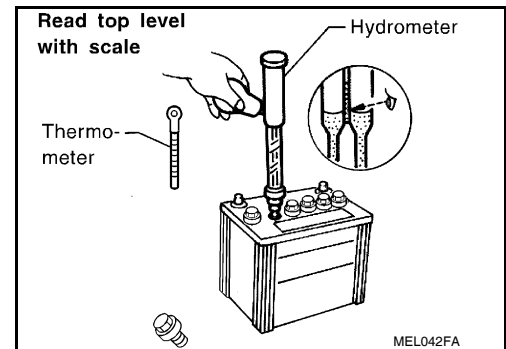
**To determine if a battery has been “sulphated”, note its voltage and current when charging it. As shown in the figure, less current and higher voltage are observed in the initial stage of charging sulphated batteries.**

**A sulphated 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

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
4 (40)	-0.016
-1 (30)	-0.020
-7 (20)	-0.024

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# BATTERY

## < BASIC INSPECTION >

Battery electrolyte temperature [°C (°F)]	Add to specific gravity reading
-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

Amps	Time
50	1 hour
25	2 hours
10	5 hours
5	10 hours

Do not charge at more than 50 ampere rate.

### 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.

## Work Flow

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## TROUBLE DIAGNOSIS WITH MULTITASKING BATTERY DIAGNOSTIC STATION

Refer to diagnostic station instruction manual.

# 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:000000006179640

### Required Procedure After Battery Disconnection

System	Item	Reference
Engine Control System	Idle Air Volume Learning	<a href="#">EC-120</a>
Brake Control System	Steering Angle Sensor Neutral Position	<a href="#">BRC-8</a>
Roof	Sunroof Memory Reset/Initialization	<a href="#">RF-5</a>
Automatic Drive Positioner	Automatic Drive Positioner System Initialization	Refer to Owner's Manual.
Audio, Visual & Navigation System	Audio (Radio Preset)	Refer to Owner's Manual.
	Navigation System	Refer to Owner's Manual.

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# POWER SUPPLY ROUTING CIRCUIT

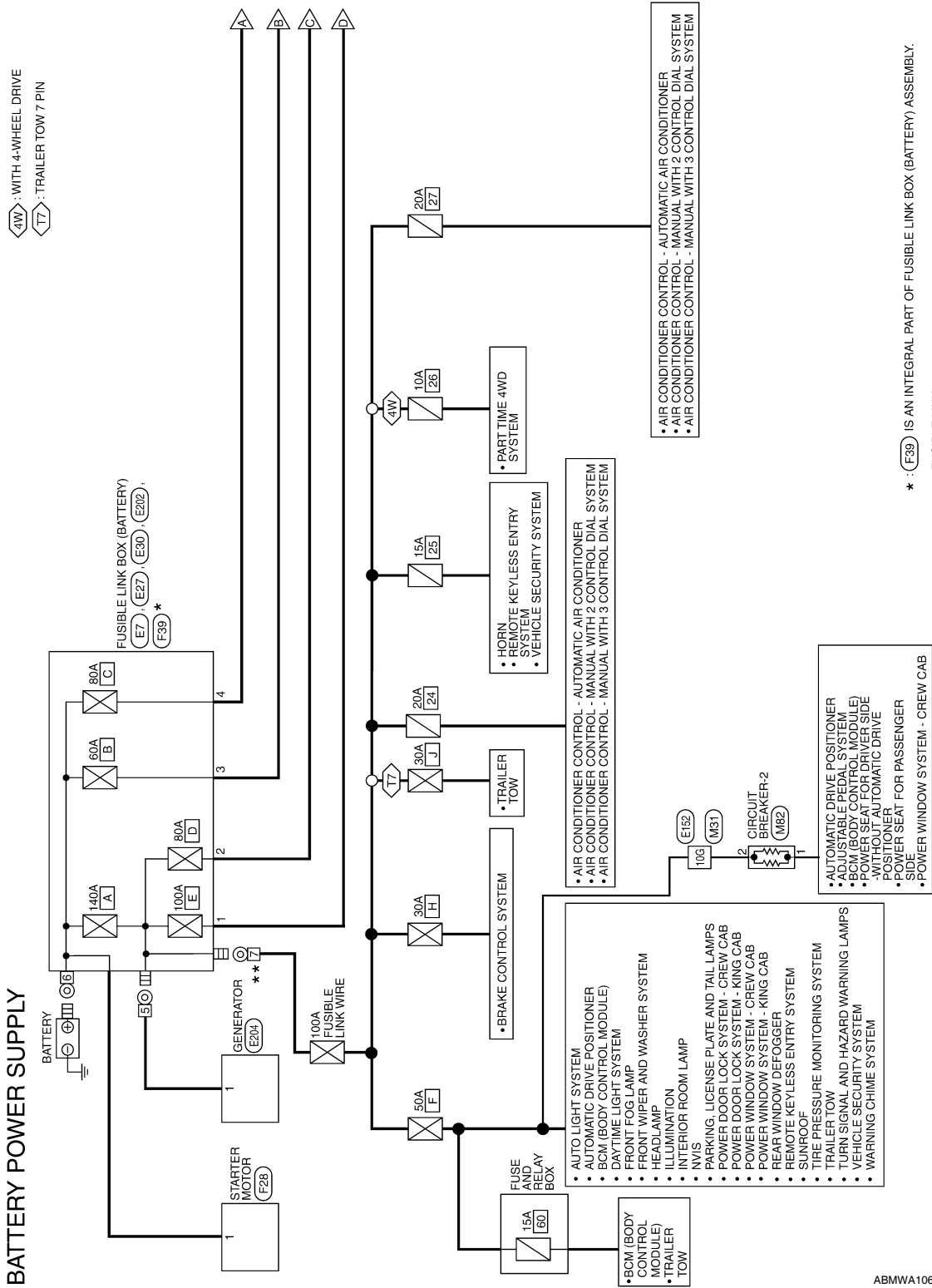
< DTC/CIRCUIT DIAGNOSIS >

## DTC/CIRCUIT DIAGNOSIS

### POWER SUPPLY ROUTING CIRCUIT

Wiring Diagram —Battery Power Supply—

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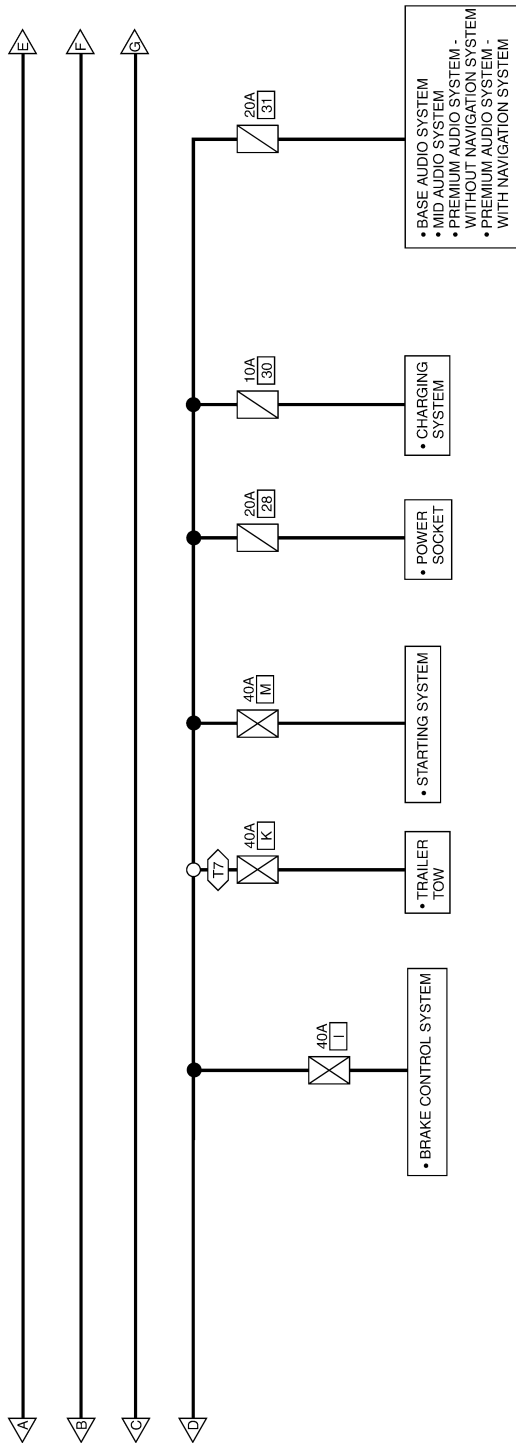
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# POWER SUPPLY ROUTING CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

T7 : TRAILER TOW 7PIN

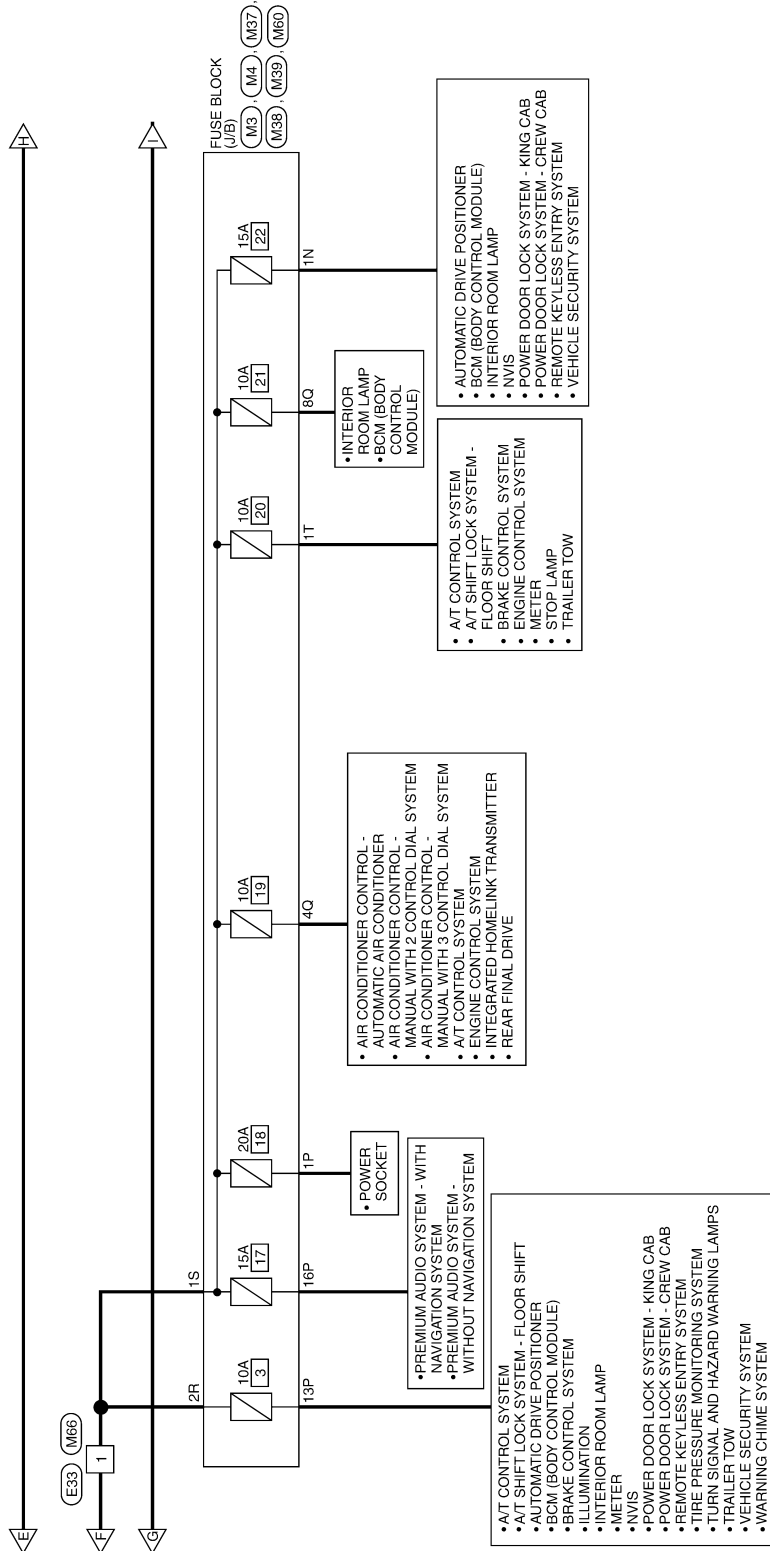


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# POWER SUPPLY ROUTING CIRCUIT

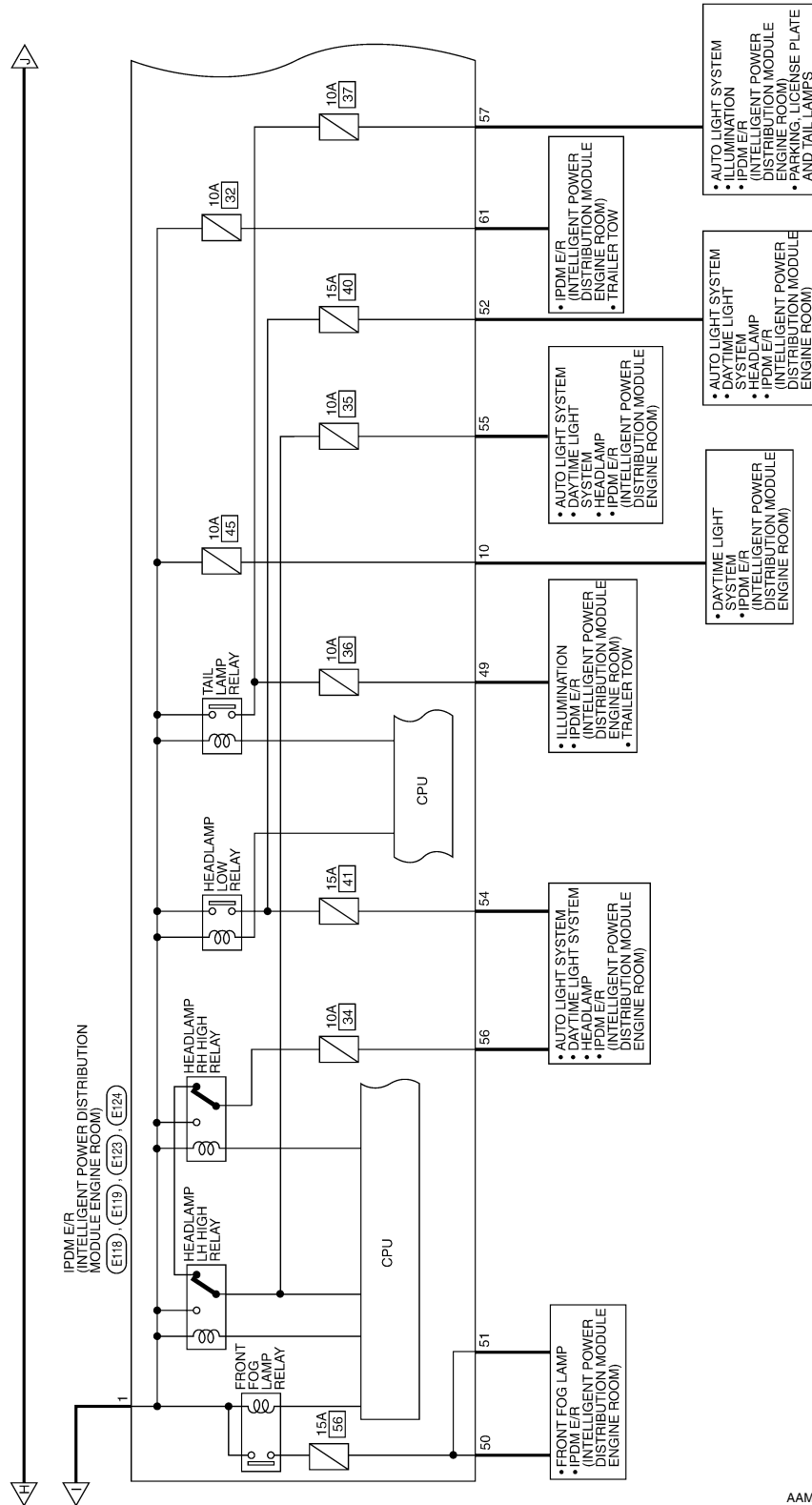
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# POWER SUPPLY ROUTING CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >



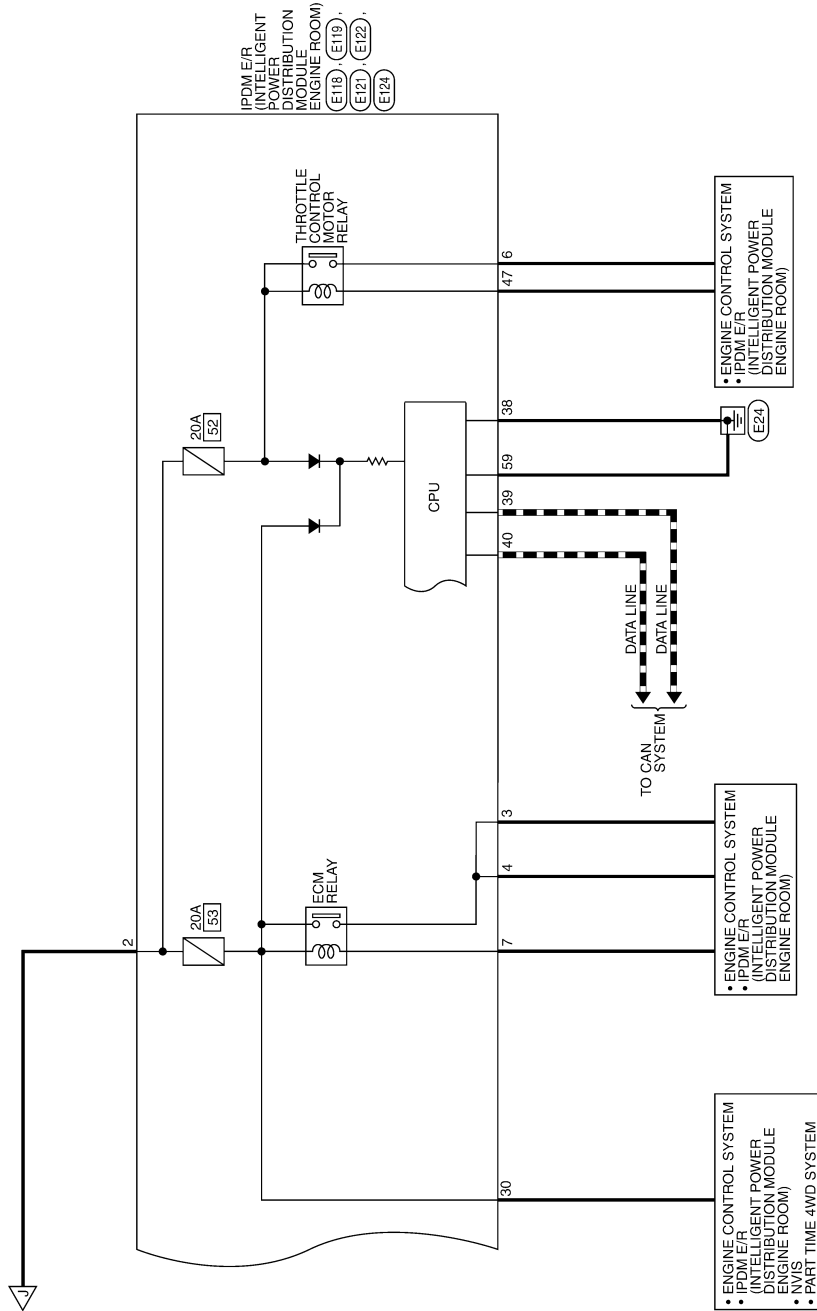
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# POWER SUPPLY ROUTING CIRCUIT

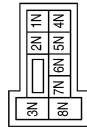
< DTC/CIRCUIT DIAGNOSIS >



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BATTERY POWER SUPPLY CONNECTORS

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



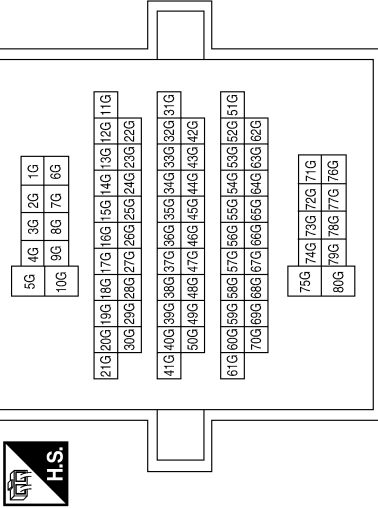
Terminal No.	Color of Wire	Signal Name
1N	Y/R	-

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



Terminal No.	Color of Wire	Signal Name
1P	G	-
13P	P	-
16P	R	-

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



Terminal No.	Color of Wire	Signal Name
10G	W/B	-

Connector No.	M37
Connector Name	FUSE BLOCK (J/B)
Connector Color	BLACK



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

Connector No.	M38
Connector Name	FUSE BLOCK (J/B)
Connector Color	BLACK



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

Connector No.	M39
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
4Q	Y/R	-
8Q	W/L	-

# POWER SUPPLY ROUTING CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Connector No.	M82
Connector Name	CIRCUIT BREAKER-2
Connector Color	WHITE



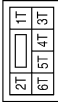
Terminal No.	Color of Wire	Signal Name
1	L/B	-
2	W/B	-

Connector No.	M66
Connector Name	WIRE TO WIRE
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	W	-

Connector No.	M60
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1T	R/Y	-

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



Terminal No.	Color of Wire	Signal Name
7	W	-

Connector No.	E27
Connector Name	FUSIBLE LINK BOX (BATTERY)
Connector Color	BROWN



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

Connector No.	E7
Connector Name	FUSIBLE LINK BOX (BATTERY)
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
3	W	-
4	R	-

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# POWER SUPPLY ROUTING CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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

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



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

Connector No.	E33
Connector Name	WIRE TO WIRE
Connector Color	BLACK



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Terminal No.	Color of Wire	Signal Name
1	W	-

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
47	O	ETC RLY CONT

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

Terminal No.	Color of Wire	Signal Name
30	W	ECM BAT

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# POWER SUPPLY ROUTING CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

Terminal No.	Color of Wire	Signal Name
10G	W/B	—

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

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

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

Terminal No.	Color of Wire	Signal Name
49	R/L	ILLUMINATION
50	W/R	FR FOG LAMP LH
51	W/R	FR FOG LAMP RH
52	L	H/LAMP LO LH
54	R/Y	H/LAMP LO RH
55	G	H/LAMP HI LH
56	L/W	H/LAMP HI RH (WITHOUT DAYTIME LIGHT)
56	Y	H/LAMP HI RH (WITH DAYTIME LIGHT)

Connector No.	F28
Connector Name	STARTER MOTOR
Connector Color	—

Terminal No.	Color of Wire	Signal Name
2	B/R	—

Connector No.	E204
Connector Name	GENERATOR
Connector Color	—

Terminal No.	Color of Wire	Signal Name
1	B/R	—

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

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

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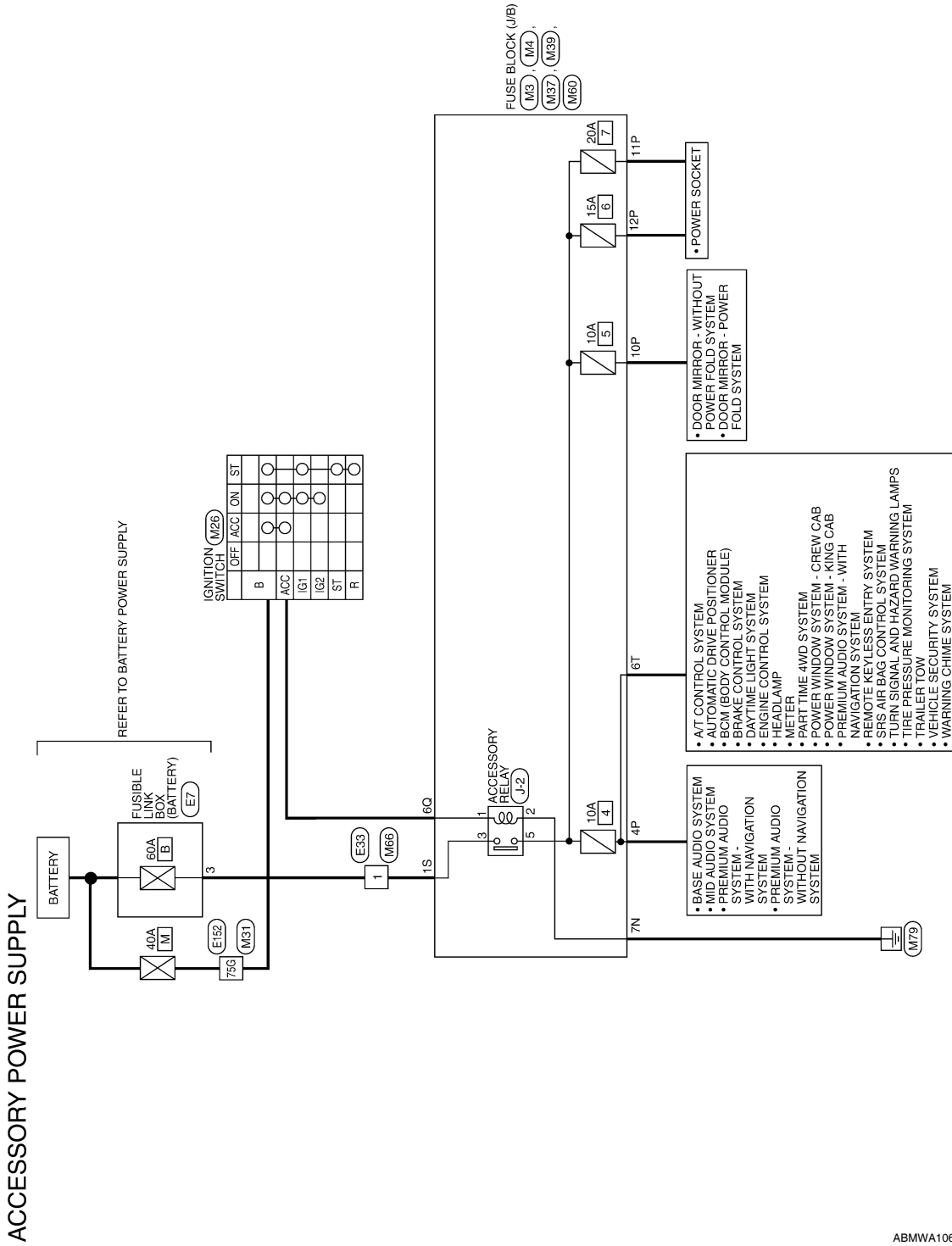


# POWER SUPPLY ROUTING CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## Wiring Diagram —Accessory Power Supply—

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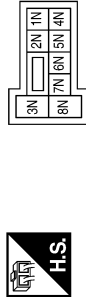
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# POWER SUPPLY ROUTING CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## ACCESSORY 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.	M26
Connector Name	IGNITION SWITCH
Connector Color	WHITE

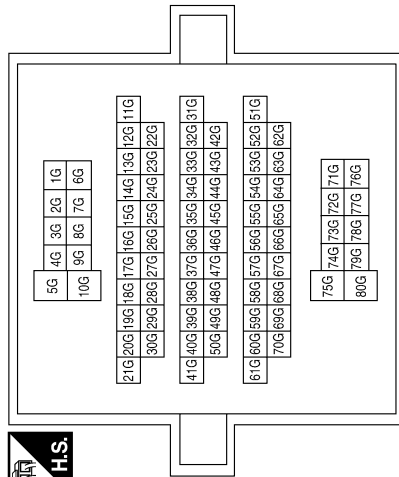


Terminal No.	Color of Wire	Signal Name
7N	B	-

Terminal No.	Color of Wire	Signal Name
4P	V	-
10P	O	- (WITH POWER FOLD SYSTEM)
10P	GR	- (WITHOUT POWER FOLD SYSTEM)
11P	G/W	-
12P	L/W	-

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

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



Terminal No.	Color of Wire	Signal Name
75G	G	-

Connector No.	M37
Connector Name	FUSE BLOCK (J/B)
Connector Color	BLACK



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

# POWER SUPPLY ROUTING CIRCUIT

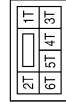
< DTC/CIRCUIT DIAGNOSIS >

Connector No.	M66
Connector Name	WIRE TO WIRE
Connector Color	BLACK



Terminal No.	1	Color of Wire	W	Signal Name	-
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Connector No.	M60
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	6T	Color of Wire	O	Signal Name	-
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Connector No.	M39
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	6Q	Color of Wire	V	Signal Name	-
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Connector No.	E33
Connector Name	WIRE TO WIRE
Connector Color	BLACK



Terminal No.	1	Color of Wire	W	Signal Name	-
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Connector No.	E7
Connector Name	FUSIBLE LINK BOX (BATTERY)
Connector Color	GRAY



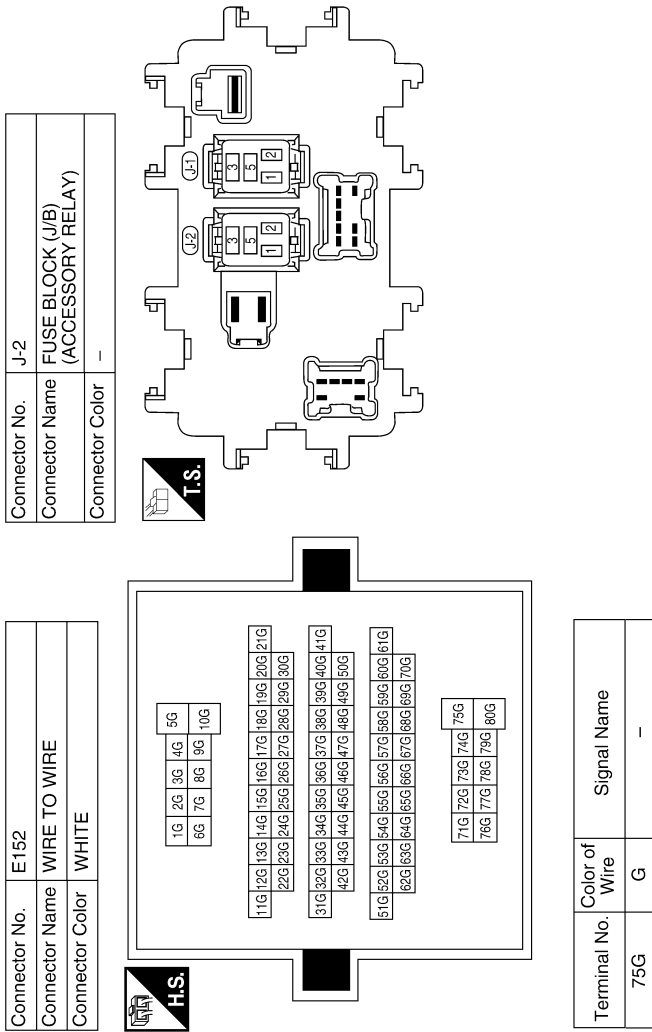
Terminal No.	3	Color of Wire	W	Signal Name	-
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# POWER SUPPLY ROUTING CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

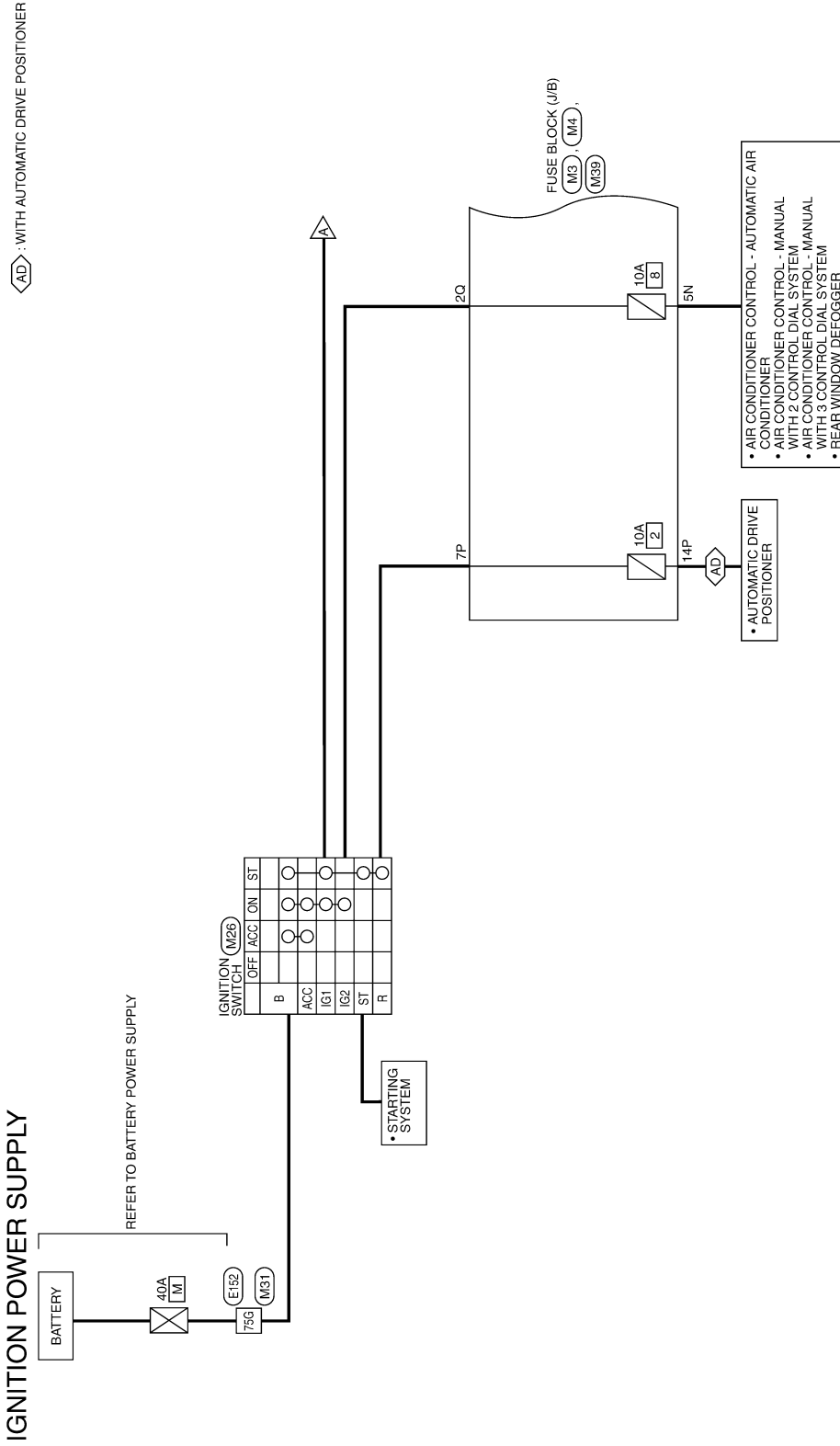


# POWER SUPPLY ROUTING CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## Wiring Diagram — Ignition Power Supply —

INFOID:000000006179643



ABMWA1077GB

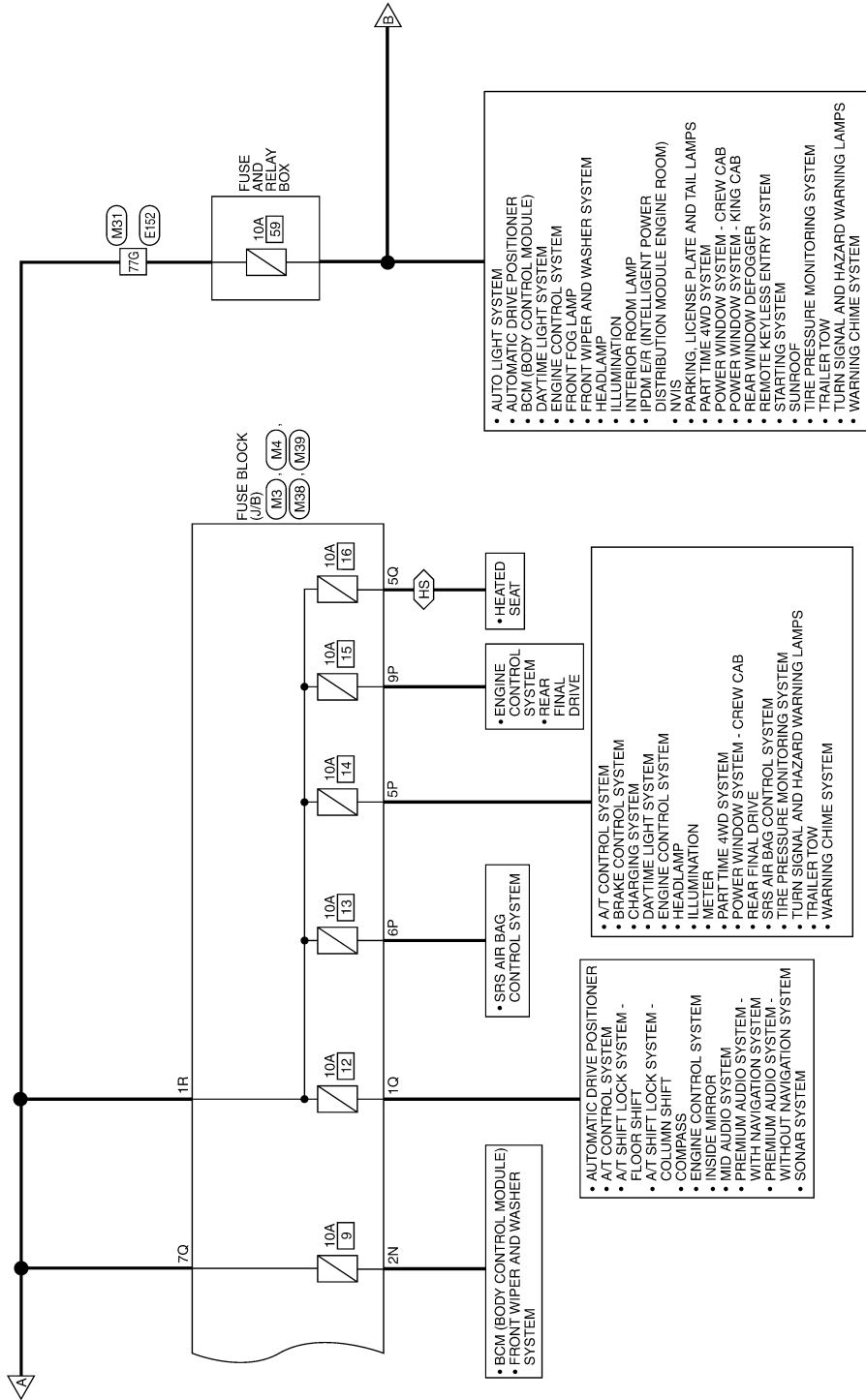
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# POWER SUPPLY ROUTING CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

HS : WITH HEATED SEATS

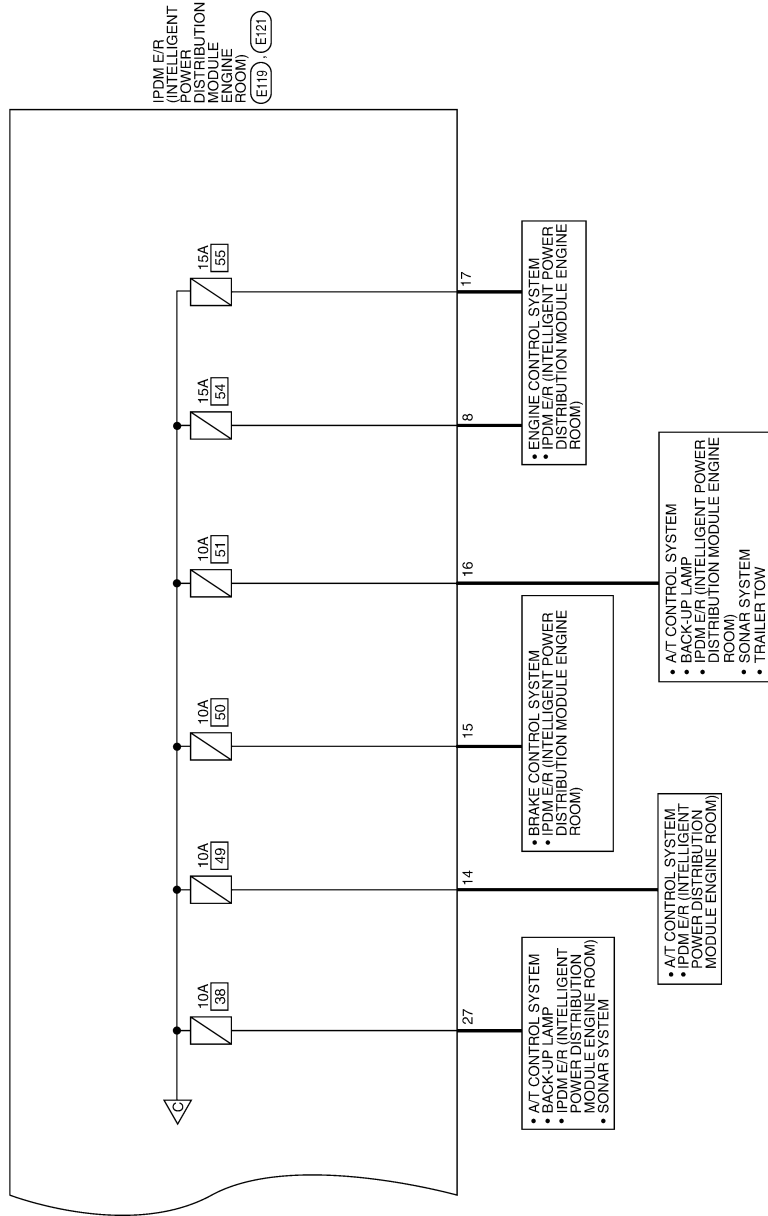


ABMWA1068GB



# POWER SUPPLY ROUTING CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >



ABMWA1069GB

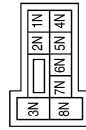


# POWER SUPPLY ROUTING CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## IGNITION POWER SUPPLY CONNECTORS

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



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

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



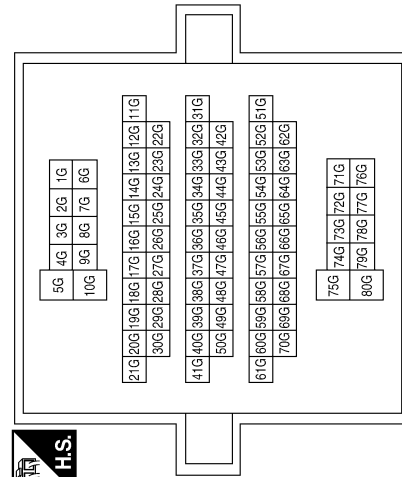
Terminal No.	Color of Wire	Signal Name
5P	O/L	-
6P	W/L	-
7P	LG	-
9P	R/B	-
14P	O	-

Connector No.	M26
Connector Name	IGNITION SWITCH
Connector Color	WHITE



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

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



Terminal No.	Color of Wire	Signal Name
75G	G	-
77G	B/R	-

Connector No.	M38
Connector Name	FUSE BLOCK (J/B)
Connector Color	BLACK



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

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# POWER SUPPLY ROUTING CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Connector No.	E27
Connector Name	FUSIBLE LINK BOX (BATTERY)
Connector Color	BROWN



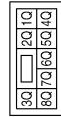
Terminal No.	Color of Wire	Signal Name
2	B/Y	-

Connector No.	E7
Connector Name	FUSIBLE LINK BOX (BATTERY)
Connector Color	GRAY



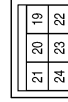
Terminal No.	Color of Wire	Signal Name
4	R	-

Connector No.	M39
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



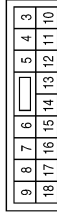
Terminal No.	Color of Wire	Signal Name
1Q	G/R	-
2Q	R	-
5Q	G	-
7Q	B/R	-

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



Terminal No.	Color of Wire	Signal Name
22	G	F/L MOTOR
23	GR/W	HEATED MIRROR

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



Terminal No.	Color of Wire	Signal Name
8	R/B	O2 SENSOR
11	Y/B	A/C COMPRESSOR
12	L/W	IGN SW (IG)
13	B/Y	FUEL PUMP
14	Y/R	AT CU IGN SUPPLY
15	LG/B	ABS IGN SUPPLY
16	G	REVERSE LAMP
17	W	INJECTOR

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	B/Y	F/L USM
2	R	F/L MAIN

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# POWER SUPPLY ROUTING CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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	B/W	RR DEF

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



42	41	40	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
46	GR	FUEL PUMP RLY CONT

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

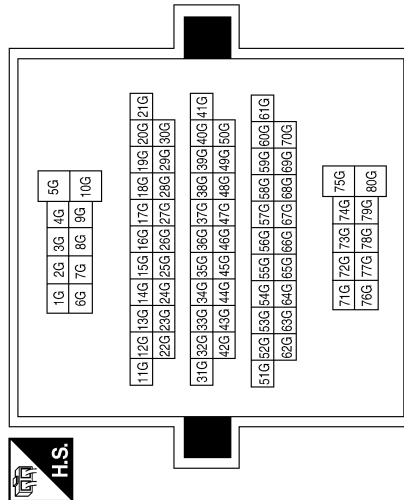


29	28	27	26	25		
36	35	34	33	32	31	30

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

Terminal No.	Color of Wire	Signal Name
75G	G	-
77G	B/R	-

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



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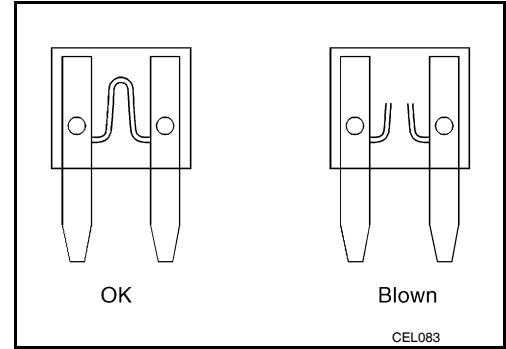
# POWER SUPPLY ROUTING CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## Fuse

INFOID:000000006179644

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



## Fusible Link

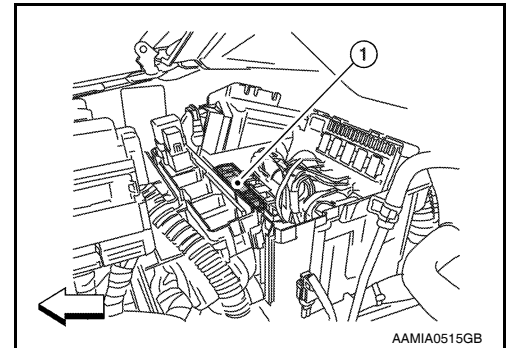
INFOID:000000006179645

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

### CAUTION:

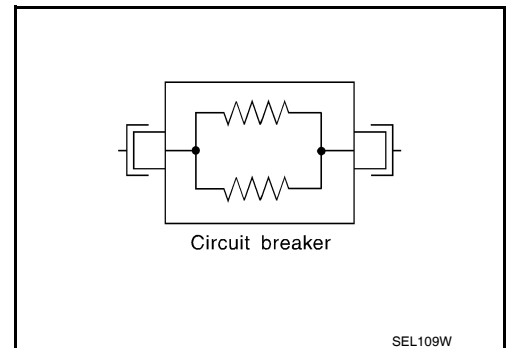
- If fusible link should melt, it is possible that critical circuit (power supply or large current carrying circuit) is shorted. In such a case, carefully check and eliminate cause of malfunction.
- Never wrap outside of fusible link with vinyl tape. Important: Never let fusible link touch any other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



## Circuit Breaker (PTC)

INFOID:000000006179646

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



# GROUND

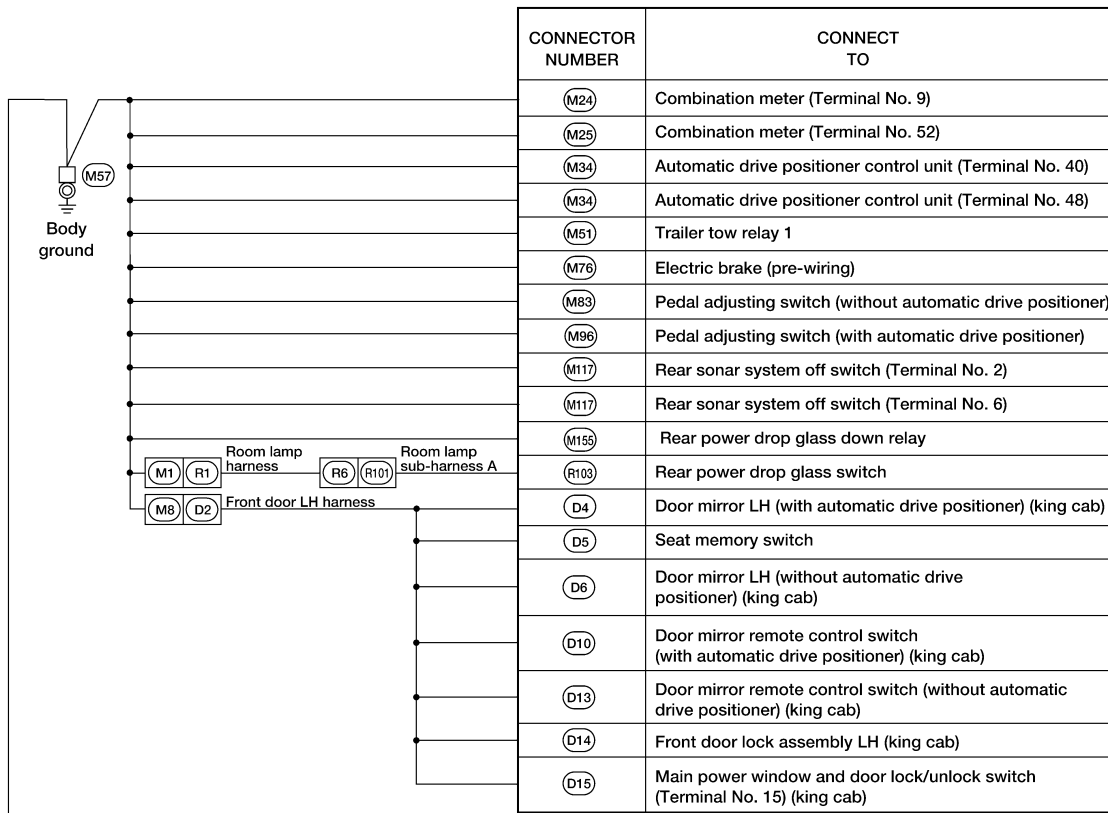
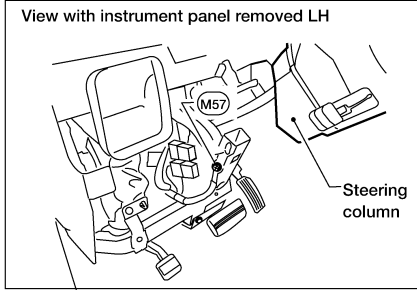
< DTC/CIRCUIT DIAGNOSIS >

## GROUND

### Ground Distribution

INFOID:000000006179647

### MAIN HARNESS



Next page

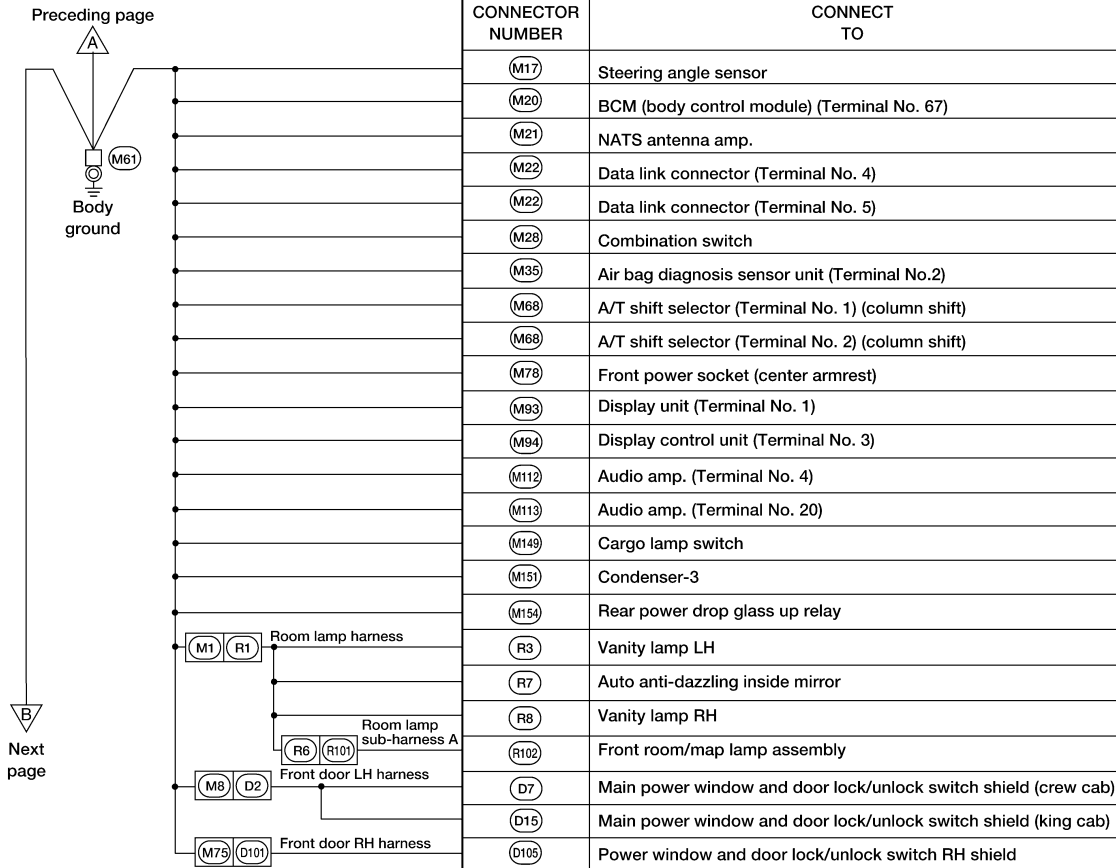
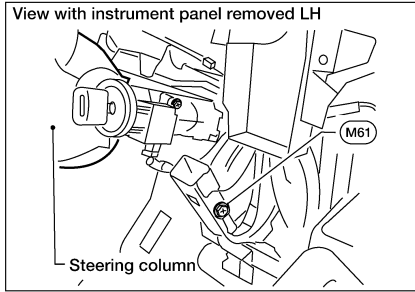
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# GROUND

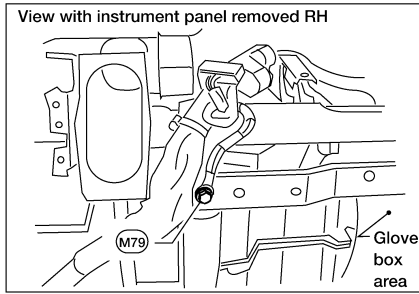
## < DTC/CIRCUIT DIAGNOSIS >



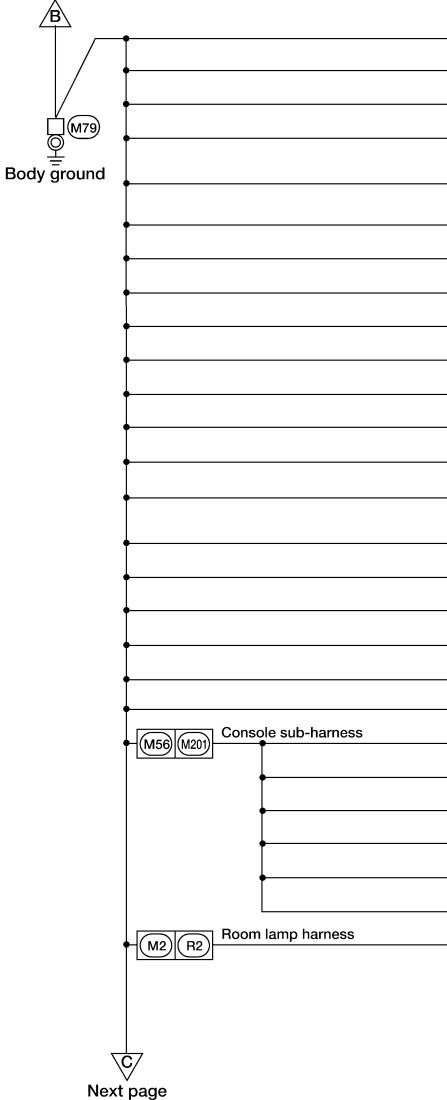
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# GROUND

## < DTC/CIRCUIT DIAGNOSIS >



Preceding page



CONNECTOR NUMBER	CONNECT TO
(M3)	Fuse block (J/B) (Terminal No. 7N)
(M13)	Front passenger air bag off indicator
(M32)	In-vehicle sensor
(M47)	Hazard switch (manual with 2 control dial system or auto A/C)
(M50)	Front air control (Terminal No. 35) (automatic air conditioner)
(M53)	Front power socket LH
(M54)	Front power socket RH
(M55)	Hazard switch (manual with 3 control dial system)
(M67)	Tow mode switch (Terminal No. 2)
(M67)	Tow mode switch (Terminal No. 6)
(M81)	Shift lock control unit (Terminal No. 8)
(M98)	AV switch
(M107)	Front blower relay
(M121)	Variable blower control (3 control dial system without auto A/C)
(M122)	Variable blower control (manual with 2 control dial system or auto A/C)
(M148)	VDC OFF switch
(M159)	Front heated seat switch LH
(M160)	Front heated seat switch RH
(M176)	Front air control (Terminal No. 1) (manual with 3 control dial system)
(M181)	Front air control (Terminal No. 35) (manual with 2 control dial system)
(M203)	A/T shift selector (floor shift) (Terminal No. 2) (king cab)
(M203)	A/T shift selector (floor shift) (Terminal No. 8) (king cab)
(M204)	A/T shift selector (floor shift) (Terminal No. 2) (crew cab)
(M204)	A/T shift selector (floor shift) (Terminal No. 8) (crew cab)
(M206)	DVD player (Terminal No. 22)
(M207)	Console power socket
(R4)	Sunroof motor assembly

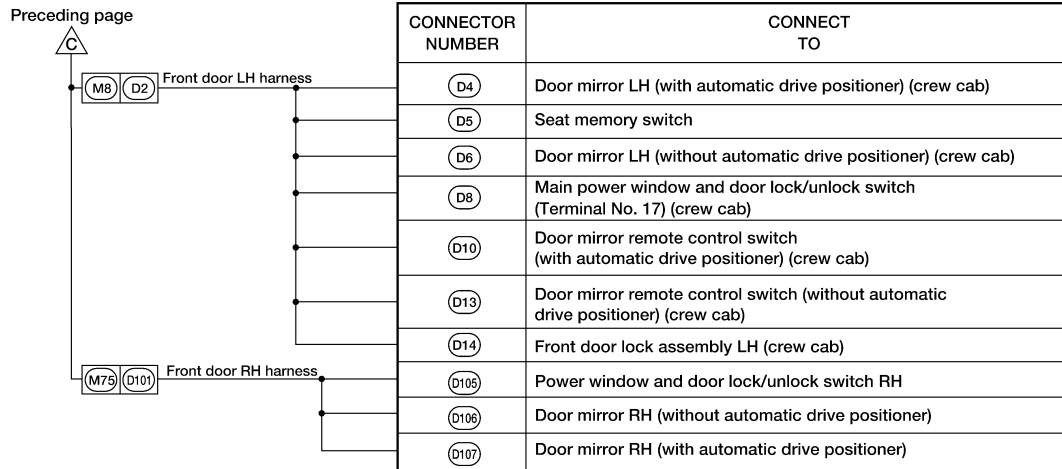
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# GROUND

## < DTC/CIRCUIT DIAGNOSIS >



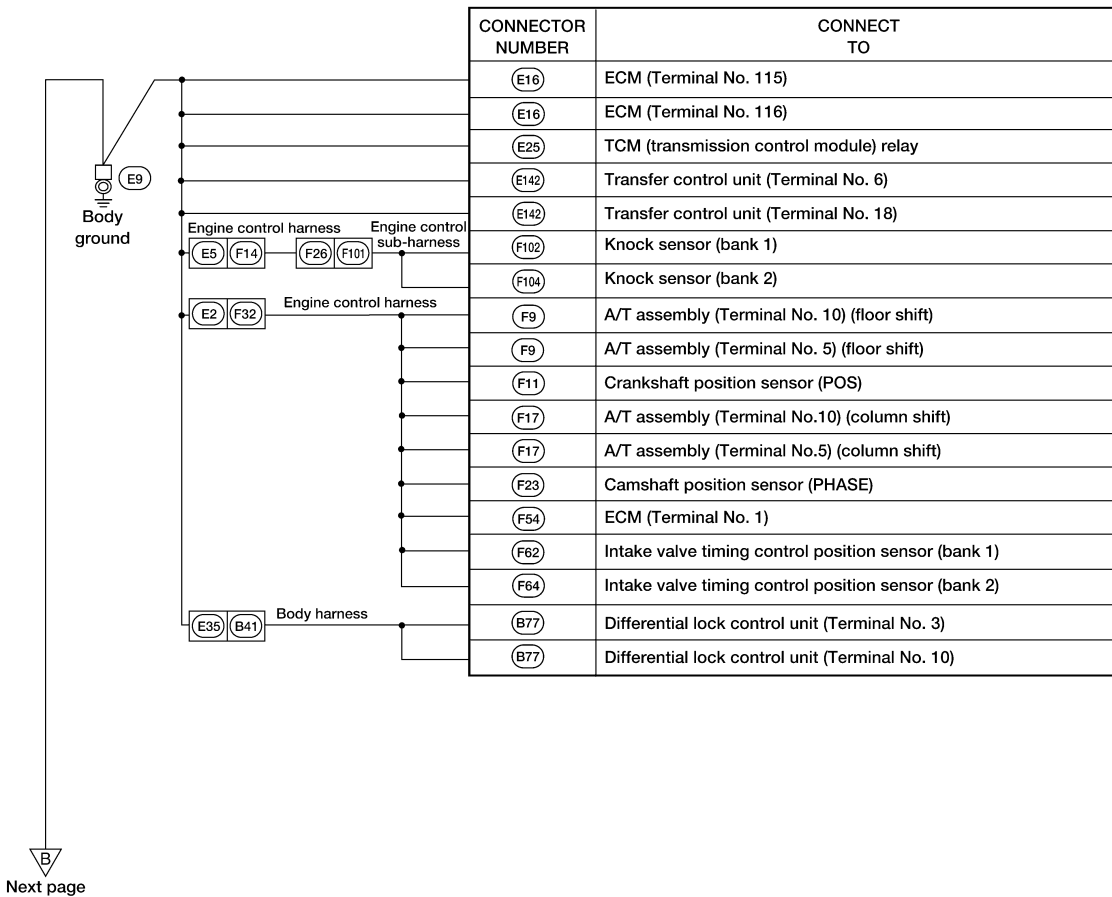
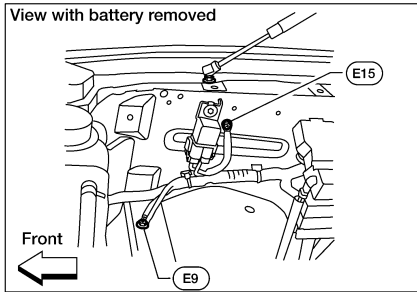
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# GROUND

< DTC/CIRCUIT DIAGNOSIS >

## ENGINE ROOM HARNESS

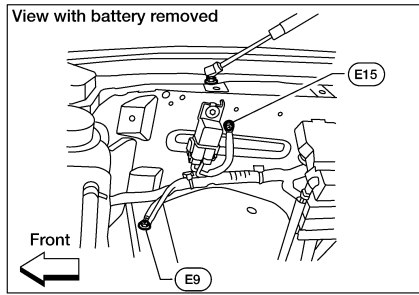


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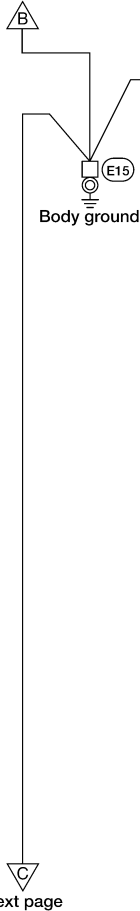
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# GROUND

## < DTC/CIRCUIT DIAGNOSIS >



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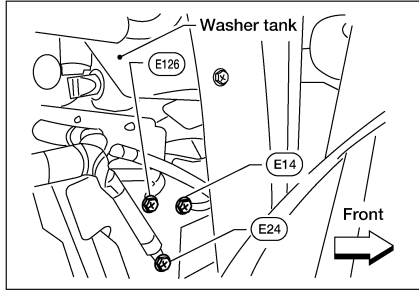
CONNECTOR NUMBER	CONNECT TO
E3	Horn
E6	Front combination lamp LH (Terminal No.4) (with daytime light system)
E8	Dropping resistor (flexible fuel vehicles)
E11	Front combination lamp LH (Terminal No. 3) (without daytime light system)
E11	Front combination lamp LH (Terminal No. 4) (without daytime light system)
E17	Fuel pump control module (FPCM) (flexible fuel vehicles)
E21	Brake fluid level switch
E102	Front fog lamp RH
E103	Daytime light relay
E116	Condenser-2
C5	Fuel level sensor unit and fuel pump (without flexible fuel)
C12	License plate lamps
C13	Rear combination lamp LH (Terminal No. 5)
C13	Rear combination lamp LH (Terminal No. 1)
C14	Rear combination lamp RH (Terminal No. 5)
C14	Rear combination lamp RH (Terminal No. 1)

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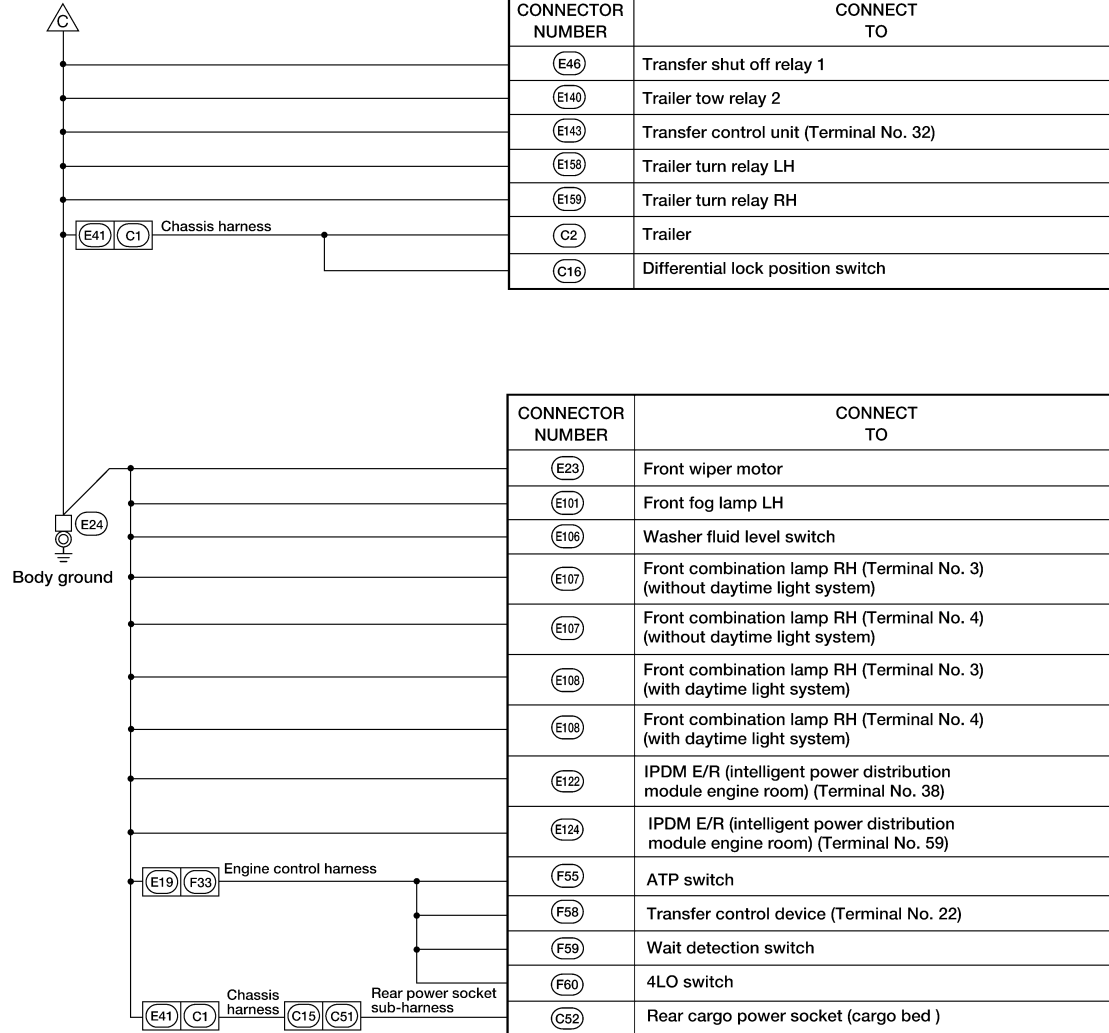
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# GROUND

## < DTC/CIRCUIT DIAGNOSIS >



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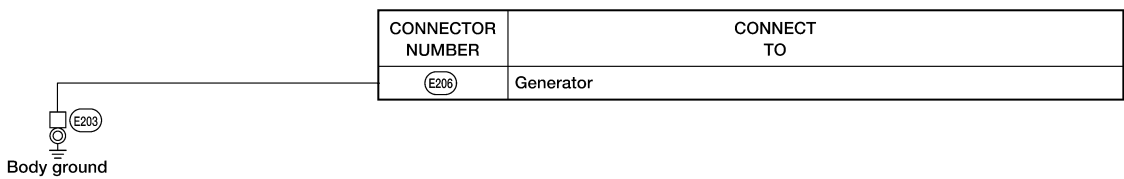
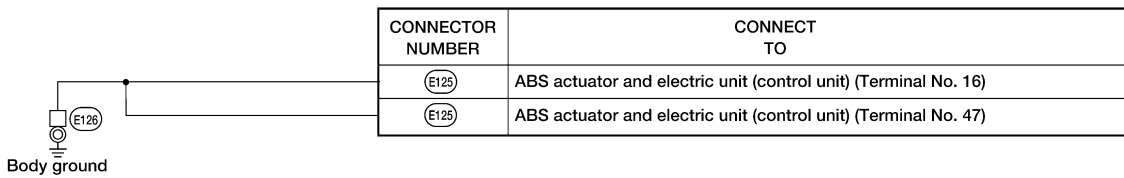
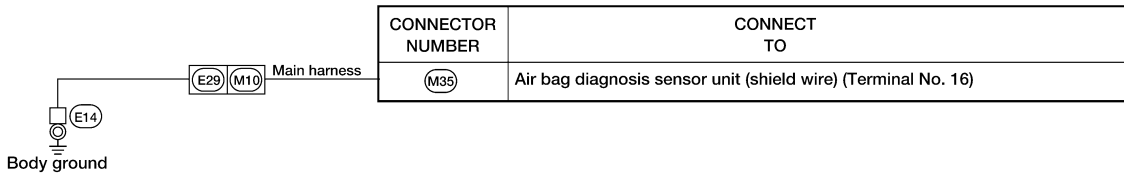
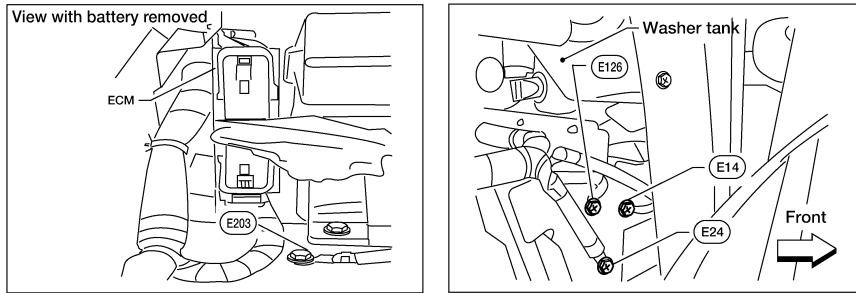
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# GROUND

## < DTC/CIRCUIT DIAGNOSIS >

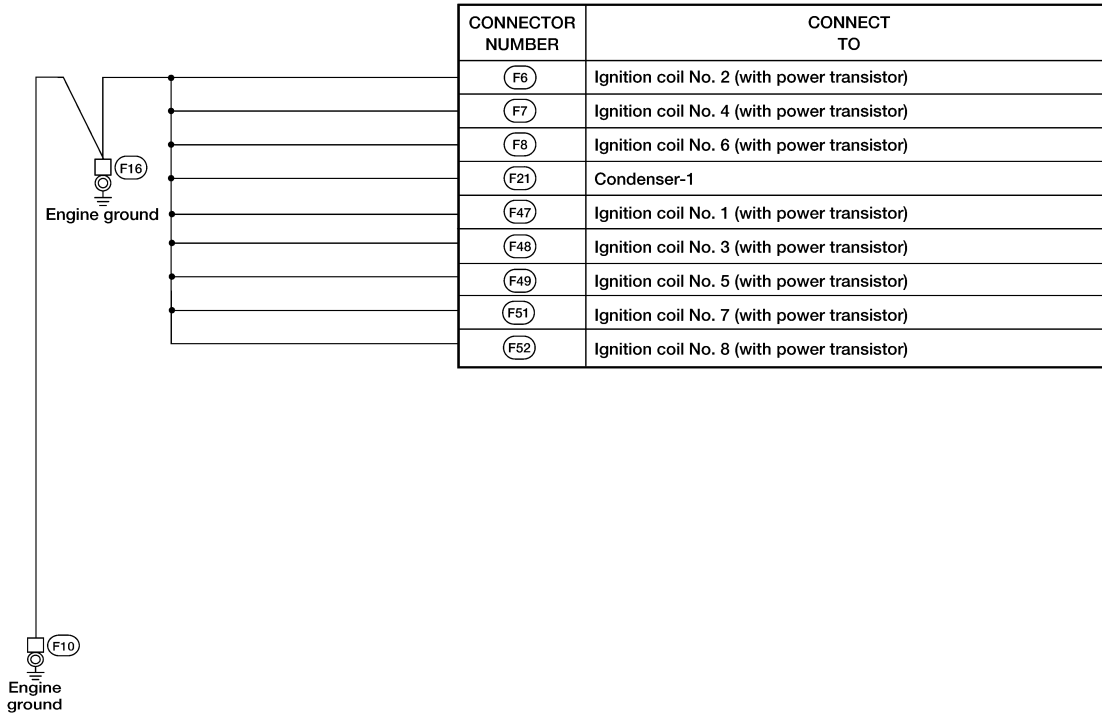
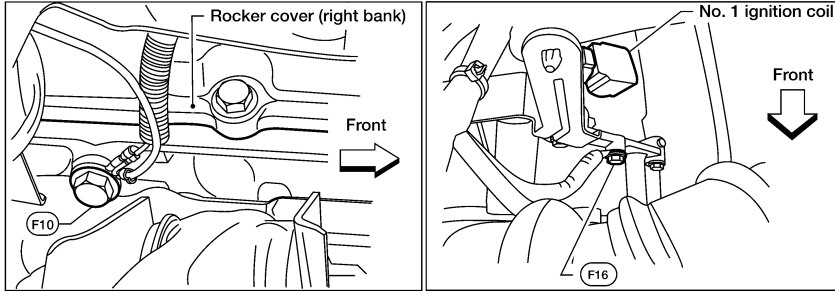


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# GROUND

< DTC/CIRCUIT DIAGNOSIS >

## ENGINE CONTROL HARNESS



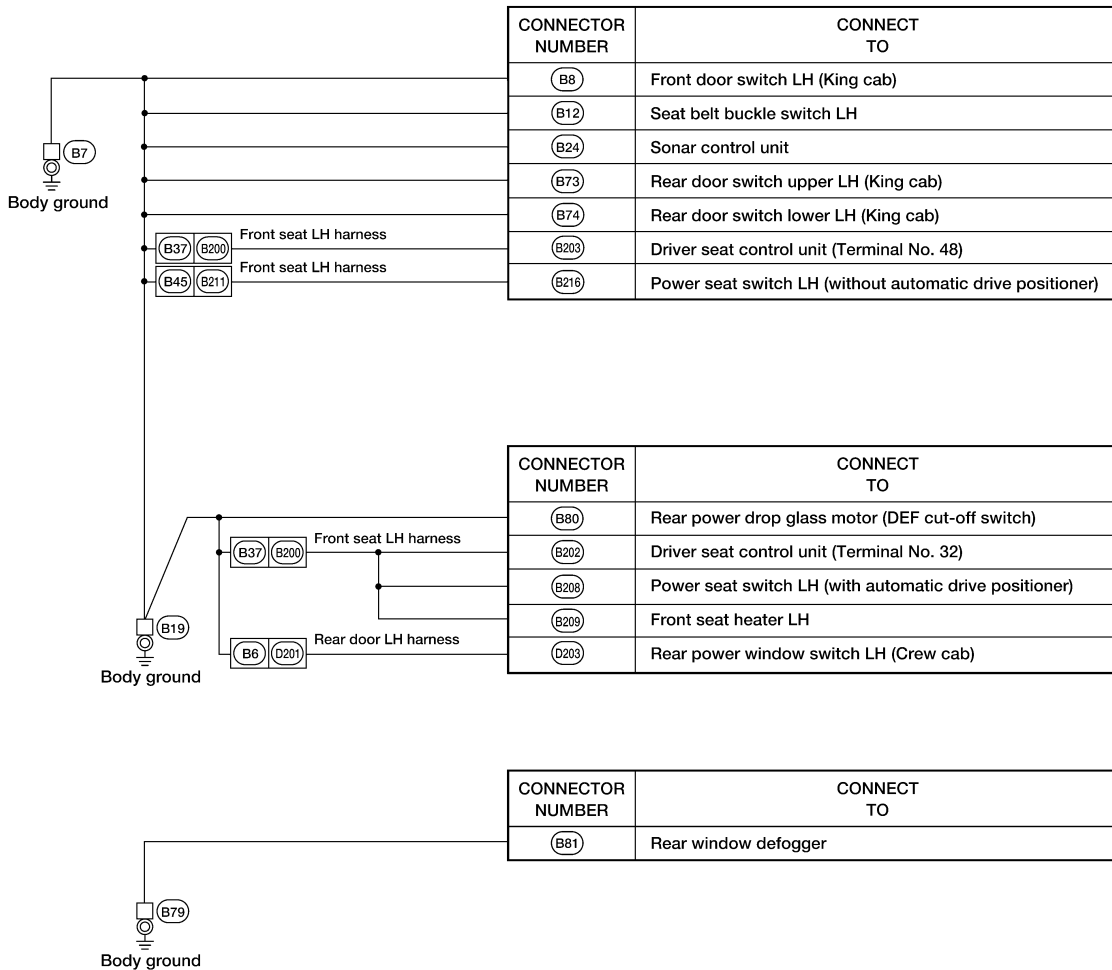
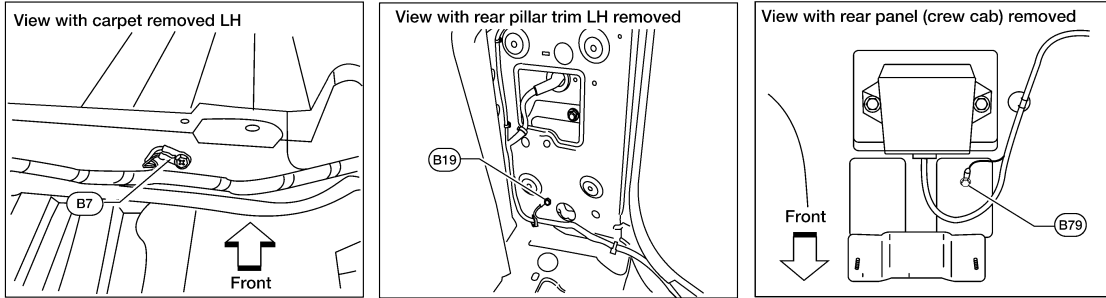
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# GROUND

< DTC/CIRCUIT DIAGNOSIS >

## BODY HARNESS

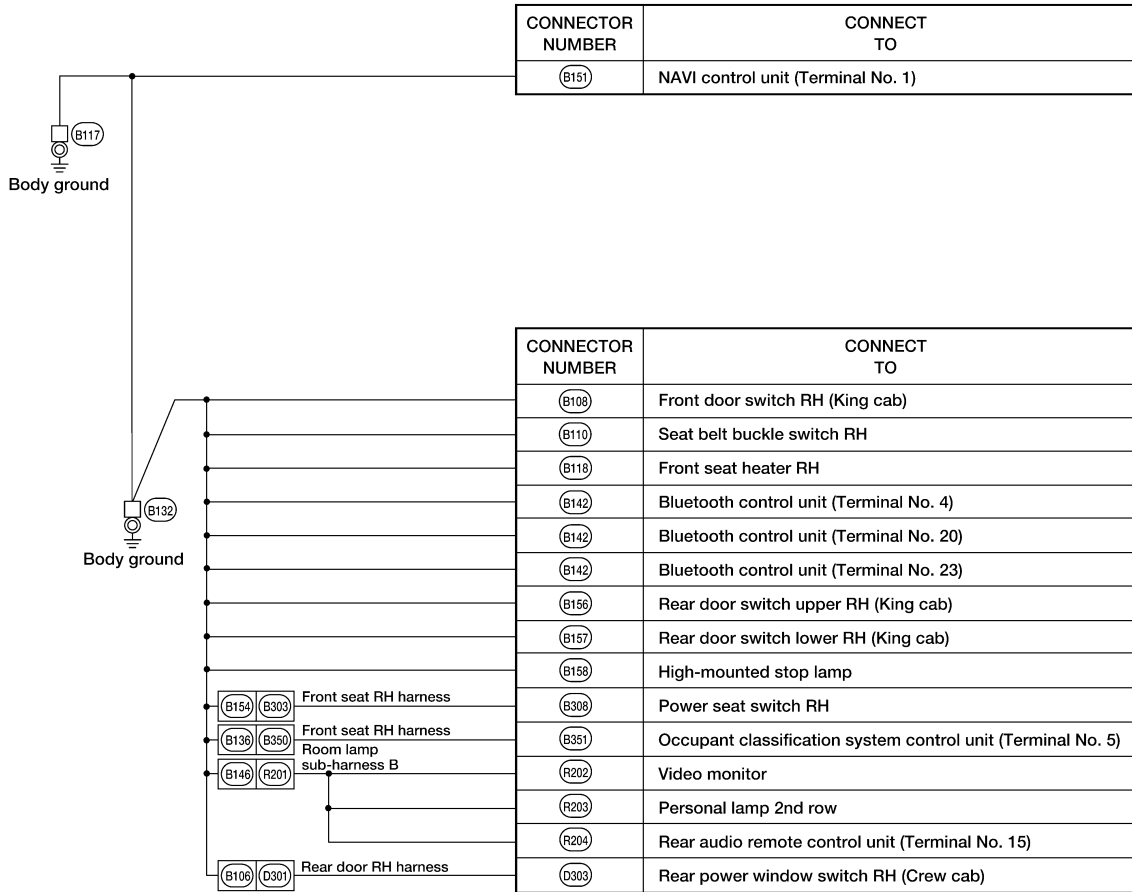
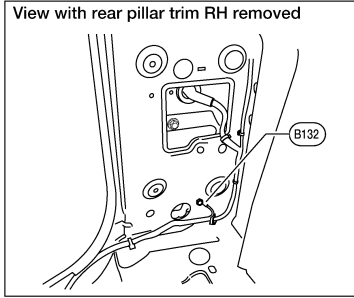
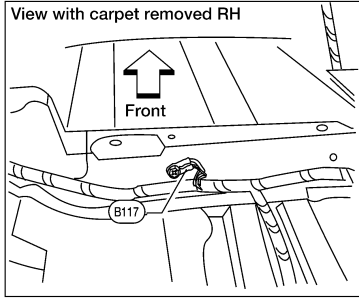


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# GROUND

< DTC/CIRCUIT DIAGNOSIS >

## BODY NO. 2 HARNESS



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# HARNESS

< DTC/CIRCUIT DIAGNOSIS >

## HARNESS

### Harness Layout

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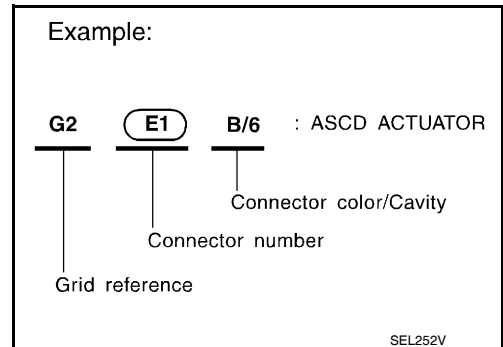
#### HOW TO READ HARNESS LAYOUT

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

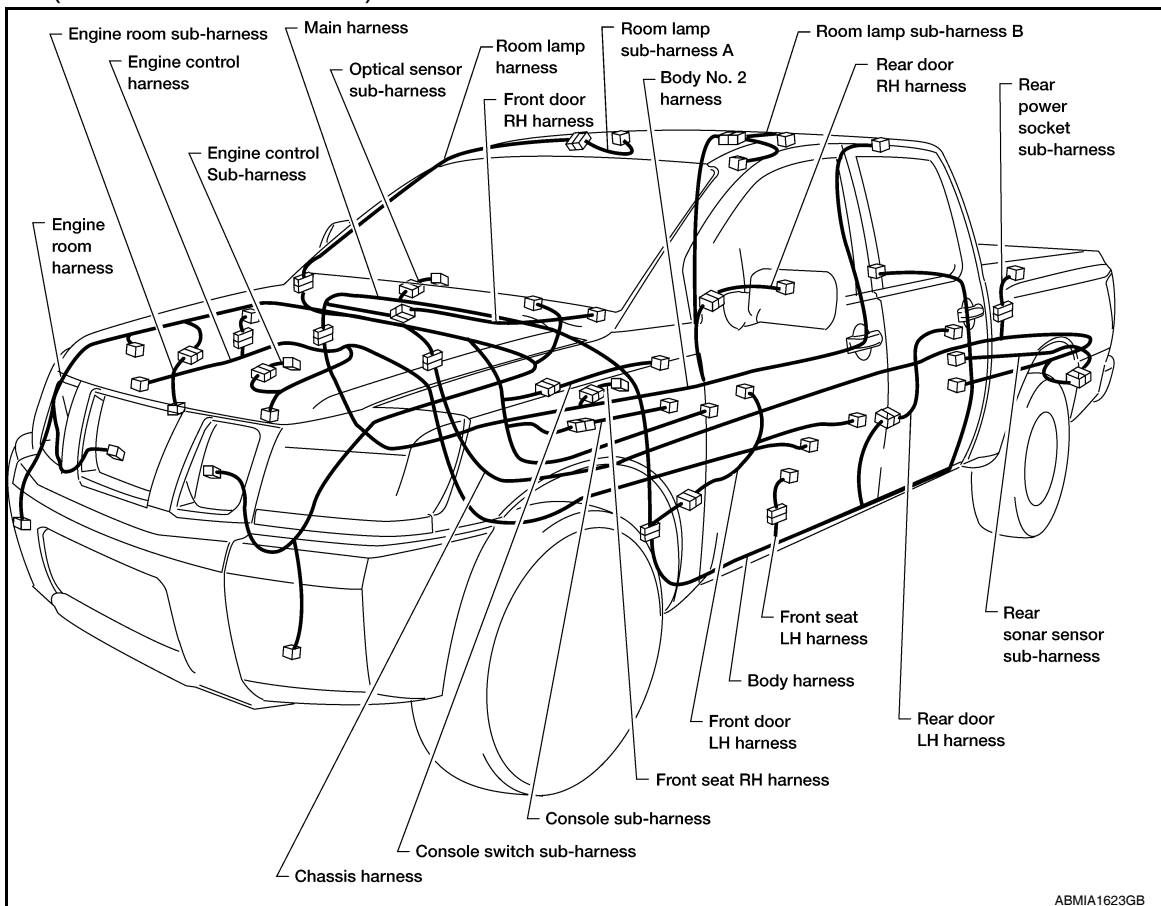
- Main Harness, Console Sub-harness, Console Switch Sub-harness and Optical Sensor Sub-harness
- Engine Room Harness and Engine Room Sub-harness
- Engine Room Harness (Passenger Compartment)
- Engine Control Harness and Knock Sensor Sub-harness
- Chassis Harness, Rear Sonar Sensor Sub-harness and Rear Power Socket Sub-harness
- Body Harness (King Cab Models) and Front Seat LH Harness
- Body Harness (Crew Cab Models) and Front Seat LH Harness
- Body No. 2 Harness (King Cab Models) and Front Seat RH Harness
- Body No. 2 Harness (Crew Cab Models) and Front Seat RH Harness
- Room Lamp Harness, Room Lamp Sub-harness A and Room Lamp Sub-harness B

#### 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.



#### OUTLINE (CREW CAB MODELS)

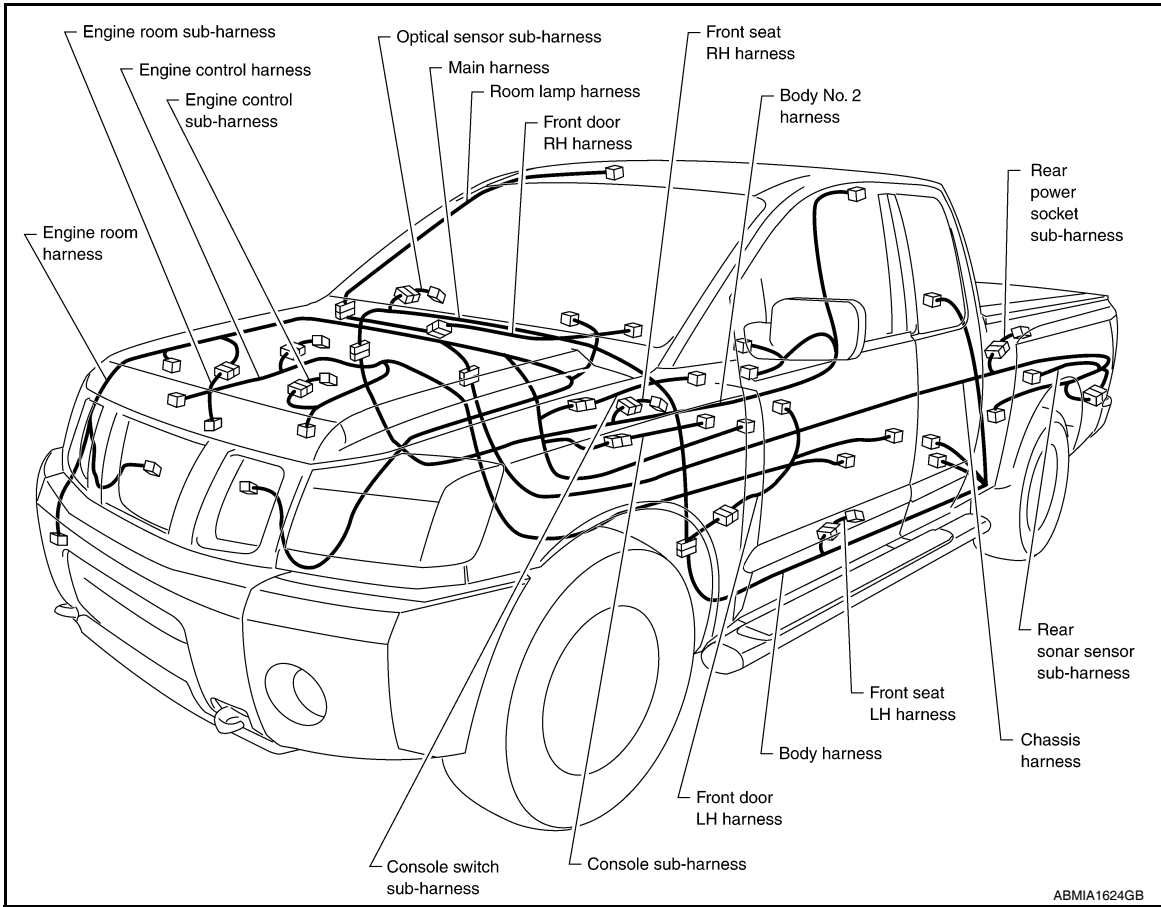




# HARNESS

< DTC/CIRCUIT DIAGNOSIS >

OUTLINE (KING CAB MODELS)



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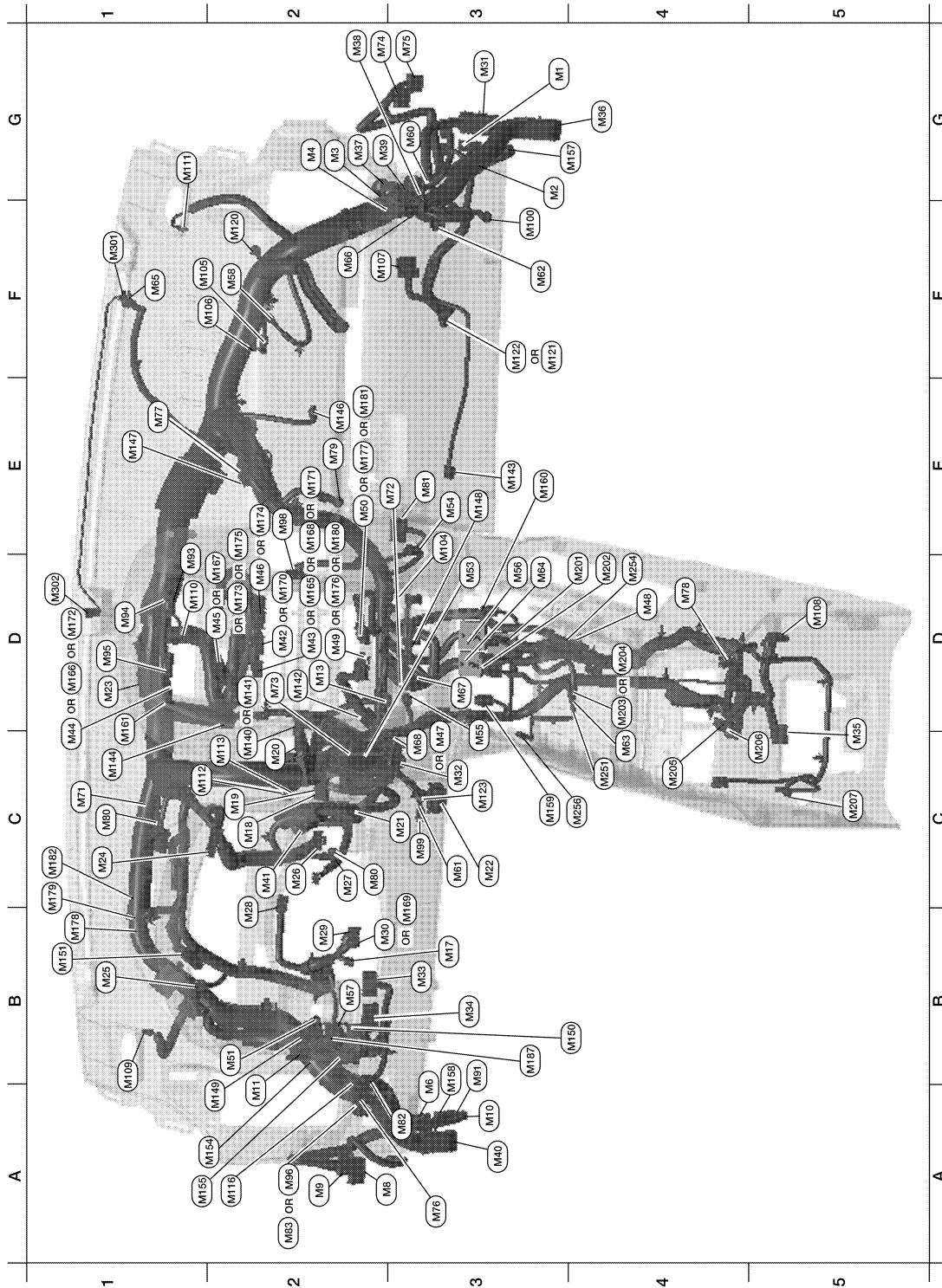
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# HARNESS

< DTC/CIRCUIT DIAGNOSIS >

## MAIN HARNESS



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G3	M1	W/16	: To R1	D1	M95	W/32	: Display control unit
G3	M2	W/12	: To R2	A2	M96	BR/6	: Pedal adjusting switch (with automatic drive positioner)
G2	M3	W/8	: Fuse block (J/B)	D2	M98	W/24	: AV switch
G2	M4	W/16	: Fuse block (J/B)	C3	M99	BR/2	: Foot lamp LH

# HARNESS

## < DTC/CIRCUIT DIAGNOSIS >

A3	M6	W/10	: To E10	F3	M100	BR/2	: Foot lamp RH	A
A3	M8	W/16	: To D2	E3	M104	W/4	: Aux jack	B
A2	M9	BR/24	: To D1	F1	M105	Y/2	: Front passenger air bag module	C
A3	M10	Y/4	: To E29	F1	M106	O/2	: Front passenger air bag module	D
A2	M11	B/1	: Parking brake switch	F3	M107	B/5	: Front blower relay	E
D2	M13	BR/3	: Front passenger air bag OFF indicator	D5	M108	B/4	: Yaw rate/ side/ decel G sensor	F
B3	M17	W/8	: Steering angle sensor	B1	M109	BR/2	: Front tweeter LH	G
C2	M18	W/40	: BCM (body control module)	D1	M110	BR/2	: Center speaker	H
C2	M19	W/15	: BCM (body control module)	G1	M111	BR/2	: Front tweeter RH	I
C2	M20	B/15	: BCM (body control module)	C1	M112	W/8	: Audio amp.	J
C3	M21	W/4	: NATS antenna amp.	C2	M113	W/24	: Audio amp.	K
C3	M22	W/16	: Data link connector	A2	M116	B/2	: Rear sonar buzzer	L
D1	M23	W/2	: Diode-1	B1	M117	GR/8	: Sonar system OFF switch	PG
C1	M24	W/40	: Combination meter	F2	M120	W/4	: Remote keyless entry receiver	N
B1	M25	W/12	: Combination meter	F3	M121	W/4	: Variable blower control (3 control dial system or auto A/C)	O
C2	M26	W/6	: Ignition switch	F3	M122	W/4	: Variable blower control (2 control dial without A/C)	P
C2	M27	W/4	: Key switch and key lock solenoid	C3	M123	W/2	: Tire pressure warning check connector	
B2	M28	W/16	: Combination switch	C2	M140	GR/8	: 4WD shift switch (2 control dial system or auto A/C)	
B2	M29	Y/6	: Combination switch	C2	M141	W/8	: 4WD shift switch (3 control dial system without auto A/C)	
B3	M30	GR/8	: Combination switch (with Bluetooth)	D2	M142	B/6	: Mode door motor	
G3	M31	SMJ	: To E152	E3	M143	B/6	: Air mix door motor (passenger)	
C3	M32	W/4	: In-vehicle sensor	C1	M144	B/6	: Defroster door motor	
B3	M33	W/32	: Automatic drive positioner control unit	E2	M146	GR/2	: Intake sensor	
B3	M34	W/16	: Automatic drive positioner control unit	E1	M147	B/6	: Air mix door motor (driver)	
C5	M35	Y/28	: Air bag diagnosis sensor unit	E3	M148	GR/6	: VDC OFF switch	
G4	M36	SMJ	: To B149	A1	M149	W/6	: Cargo lamp switch	
G2	M37	B/1	: Fuse block (J/B)	B3	M150	L/4	: Cargo lamp relay	
G2	M38	B/2	: Fuse block (J/B)	B1	M151	W/2	: Condenser-3	
G2	M39	W/8	: Fuse block (J/B)	A1	M154	B/5	: Rear power drop glass up relay	
A3	M40	SMJ	: To B69	A1	M155	B/5	: Rear power drop glass down relay	
C2	M41	W/16	: Satellite radio tuner or pre-wiring for satellite radio tuner	G3	M157	W/20	: To B161	
D2	M42	W/12	: Audio unit (with premium audio system with NAVI)	B3	M158	W/10	: To D3	
D2	M43	W/10	: Audio unit (with premium audio system with NAVI)	C3	M159	W/6	: Front heated seat switch LH	
D1	M44	W/6	: Audio unit (with premium audio system with NAVI)	E3	M160	BR/6	: Front heated seat switch RH	
D1	M45	W/16	: Audio unit (with premium audio system-with NAVI)	C1	M161	W/2	: Diode-3	
D2	M46	W/20	: Audio unit (with premium audio system with NAVI)	D2	M165	W/10	: Audio unit (with mid audio system)	
D3	M47	W/4	: Hazard switch (2 control dial system or auto A/C)	D1	M166	W/6	: Audio unit (with mid audio system)	

# HARNESS

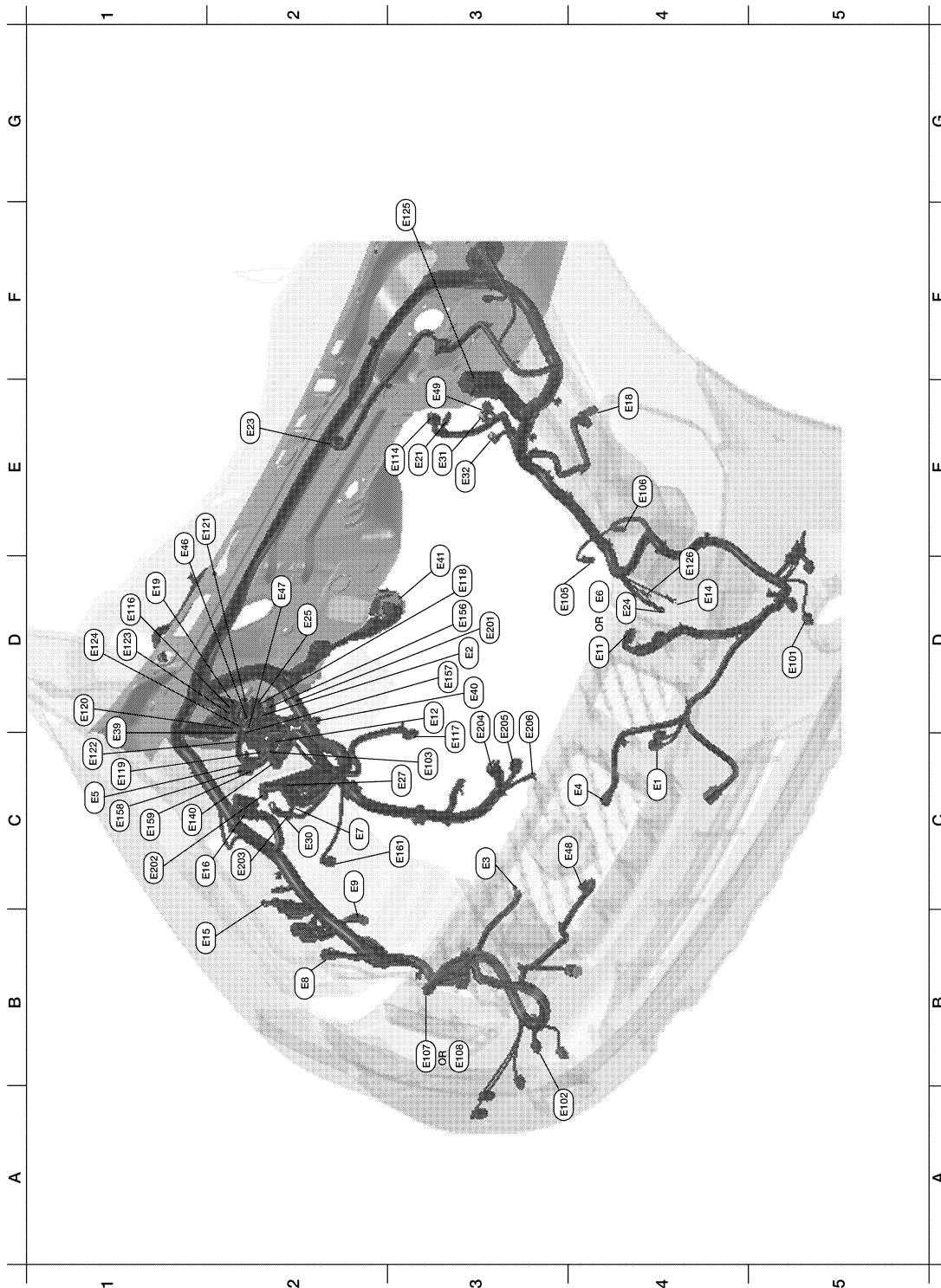
## < DTC/CIRCUIT DIAGNOSIS >

D4	M48	BR/2	: To M254	D2	M167	W/16	: Audio unit (with mid audio system)
D2	M49	B/26	: Front air control (with automatic temperature control)	D2	M168	W/20	: Audio unit (with base audio system)
D2	M50	L/18	: Front air control (with auto A/C)	B3	M169	GR/8	: Combination switch (without Bluetooth)
B2	M51	L/4	: Trailer tow relay 1	D2	M170	W/12	: Audio unit (with premium audio system without NAVI)
D3	M53	B/3	: Front power socket LH	E2	M171	W/10	: Audio unit (with premium audio system without NAVI)
E3	M54	B/3	: Front power socket RH	D1	M172	W/6	: Audio unit (with premium audio system without NAVI)
C3	M55	W/8	: Hazard switch (3 control dial system without auto A/C)	D2	M173	W/16	: Audio unit (with premium audio system without NAVI) (crew cab)
D3	M56	W/16	: To M201	E2	M174	W/20	: Audio unit (with premium audio system without NAVI)
B2	M57	—	: Body ground	E2	M175	W/16	: Audio unit (with premium audio system without NAVI) (king cab)
F2	M58	B/6	: Intake door motor	D2	M176	B/26	: Front air control (manual 3 control dial system)
G3	M60	W/6	: Fuse block (J/B)	D2	M177	L/18	: Front air control (manual 3 control dial system)
C3	M61	—	: Body ground	B1	M178	L/20	: Joint connector-M10
F3	M62	B/2	: Front blower motor	B1	M179	L/20	: Joint connector-M11
C4	M63	BR/20	: To M251	E2	M180	B/26	: Front air control (manual 2 control dial system)
D3	M64	BR/24	: To M202	E2	M181	L/18	: Front air control (manual 2 control dial system)
F1	M65	W/4	: To M301	B1	M182	W/20	: Joint connector-M07
F2	M66	B/1	: To E33	B3	M187	L/4	: Rear window defogger cut-off relay
C3	M67	GR/8	: Tow mode switch	Console sub-harness			
C3	M68	W/8	: A/T shift selector (column shift)	D4	M201	W/16	: To M56
C1	M71	B/2	: Resistor	D4	M202	BR/24	: To M64
E2	M72	W/6	: Differential lock mode switch	D4	M203	W/12	: A/T shift selector (floor shift) (king cab)
D2	M73	BR/6	: Back-up lamp relay	D4	M204	W/12	: A/T shift selector (floor shift) (crew cab)
G2	M74	BR/20	: To D102	G4	M205	GR/16	: DVD player
G3	M75	W/10	: To D101	C5	M206	L/16	: DVD player
A3	M76	W/6	: Electric brake (pre-wiring)	C5	M207	B/3	: Console power socket
E1	M77	Y/4	: Front passenger air bag module (service replacement)	Console switch sub-harness			
D4	M78	W/2	: Front power socket (center armrest)	C4	M251	BR/20	: To M63
E2	M79	—	: Body ground	D4	M254	BR/2	: To M48
C2	M80	W/2	: Key switch	C4	M256	B/2	: A/T shift selector (floor shift)
E3	M81	GR/10	: Shift lock control unit	Optical sensor sub-harness			
A3	M82	W/2	: Circuit breaker-2	F1	M301	W/4	: To M65
A2	M83	BR/6	: Pedal adjusting switch (without automatic drive positioner)	D1	M302	W/4	: Optical sensor
B3	M91	W/16	: To E26				
D1	M93	W/24	: Display unit				

# HARNESS

< DTC/CIRCUIT DIAGNOSIS >

## ENGINE ROOM HARNESS



ABMIA2527GB

C4	E1	GR/2	: Ambient sensor	A3	E102	B/2	: Front fog lamp RH
D3	E2	W/16	: To F32	C3	E103	B/5	: Daytime light relay
C3	E3	B/2	: Horn	D4	E105	BR/2	: Front washer motor
C4	E4	Y/2	: Crash zone sensor	E4	E106	BR/2	: Washer fluid level switch
C1	E5	W/24	: To F14	B3	E107	B/6	: Front combination lamp RH (without daytime light system)

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# HARNESS

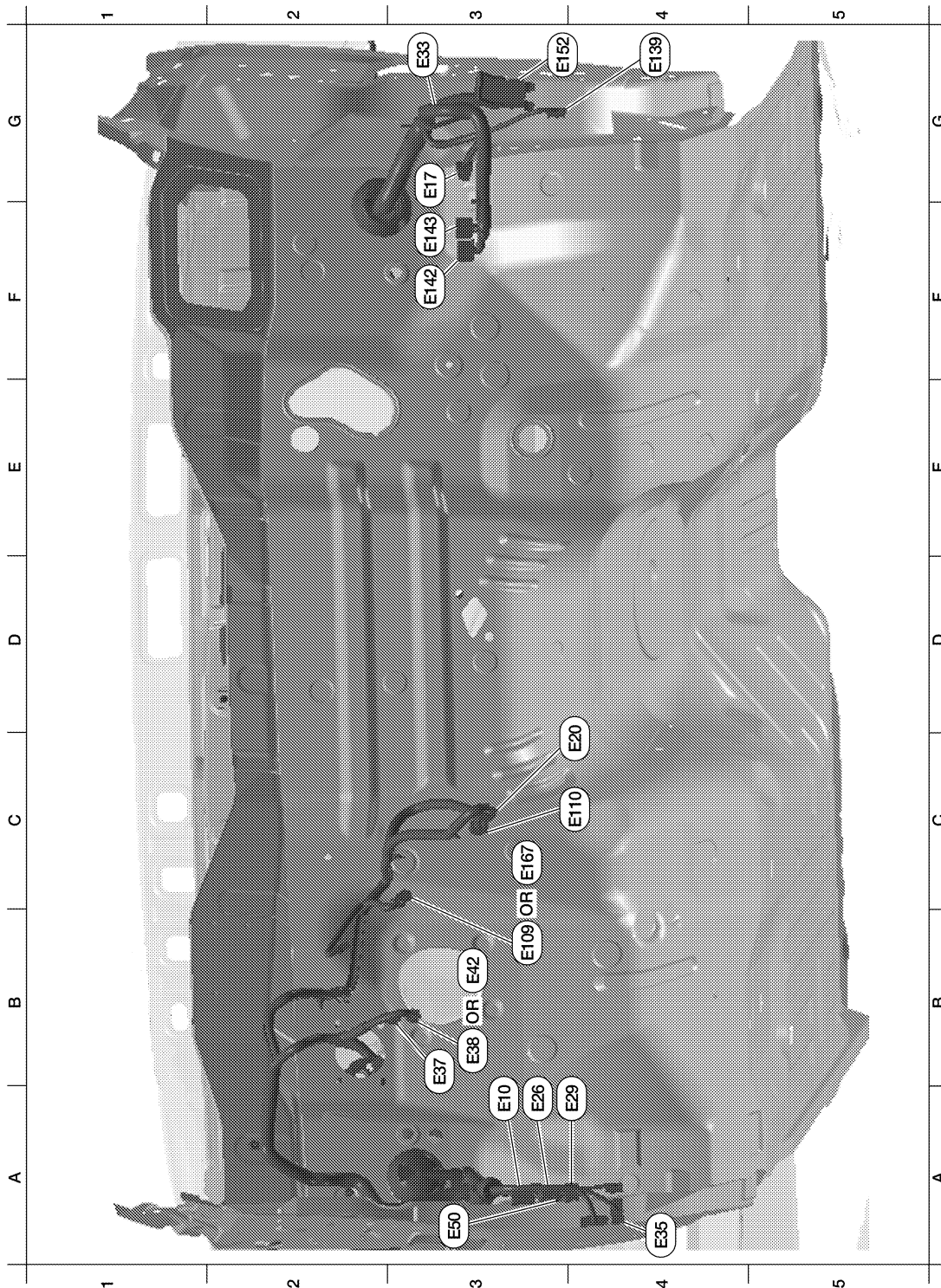
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D4	E6	B/6	: Front combination lamp LH (with daytime light system)	B3	E108	B/6	: Front combination lamp RH (with daytime light system)
C2	E7	GR/2	: Fusible link box (battery)	E3	E114	B/6	: Delta stroke sensor
B2	E8	GR/2	: Dropping resistor	D1	E116	W/2	: Condenser-2
C2	E9	—	: Body ground	D3	E117	GR/2	: Front wheel sensor RH
D4	E11	B/6	: Front combination lamp LH (without daytime light system)	D3	E118	B/2	: IPDM E/R (intelligent power distribution module engine room)
D3	E12	B/5	: Stop lamp relay	C1	E119	W/16	: IPDM E/R (intelligent power distribution module engine room)
D4	E14	—	: Body ground	D1	E120	W/6	: IPDM E/R (intelligent power distribution module engine room)
B1	E15	—	: Body ground	E1	E121	BR/12	: IPDM E/R (intelligent power distribution module engine room)
C1	E16	B/40	: ECM	C1	E122	W/12	: IPDM E/R (intelligent power distribution module engine room)
E4	E18	GR/2	: Front wheel sensor LH	D1	E123	BR/8	: IPDM E/R (intelligent power distribution module engine room)
D1	E19	W/16	: To F33	D1	E124	B/6	: IPDM E/R (intelligent power distribution module engine room)
E3	E21	GR/2	: Brake fluid level switch	F3	E125	B/47	: ABS actuator and electric unit (control unit)
E2	E23	GR/6	: Front wiper motor	D4	E126	—	: Body ground
D4	E24	—	: Body ground	C1	E140	BR/6	: Trailer tow relay-2
D2	E25	L/4	: TCM (transmission control module) relay	D3	E156	B/5	: Transfer shift high relay
C3	E27	BR/2	: Fusible link box (battery)	D3	E157	B/5	: Transfer shift low relay
C2	E30	/1	: Fusible link box (battery)	C1	E158	L/4	: Trailer turn relay LH
E3	E31	GR/3	: Front pressure sensor	C1	E159	L/4	: Trailer turn relay RH
E3	E32	GR/3	: Rear pressure sensor	C3	E161	B/3	: Battery current sensor
D1	E39	W/2	: To F34	Engine room sub-harness			
D3	E40	B/3	: To E201	D3	E201	B/3	: To E40
D3	E41	SMJ	: To C1	C1	E202	/1	: Fusible link box (battery)
E1	E46	L/4	: Transfer SHUT OFF relay 1	C2	E203	—	: Body ground
D2	E47	L/4	: Transfer SHUT OFF relay 2	D3	E204	/1	: Generator
C4	E48	B/3	: Refrigerant pressure sensor	D3	E205	B/3	: Generator
E3	E49	B/6	: Active booster	D3	E206	/1	: Generator
D5	E101	B/2	: Front fog lamp LH				

# HARNESS

< DTC/CIRCUIT DIAGNOSIS >

## ENGINE ROOM HARNESS (PASSENGER COMPARTMENT)



ABMIA1627GB

A3	E10	W/10	: To M6	B3	E42	B/2	: Stop lamp switch (floor shift)
G3	E17	W/4	: Fuel pump control module (FPCM)	A3	E50	BR/2	: To B75
C4	E20	B/8	: Accelerator pedal position (APP) sensor	B3	E109	GR/2	: Pedal adjusting motor assembly
A3	E26	W/16	: To M91	C4	E110	GR/3	: Pedal adjusting motor assembly
A3	E29	Y/4	: To M10	G4	E139	W/8	: To B107

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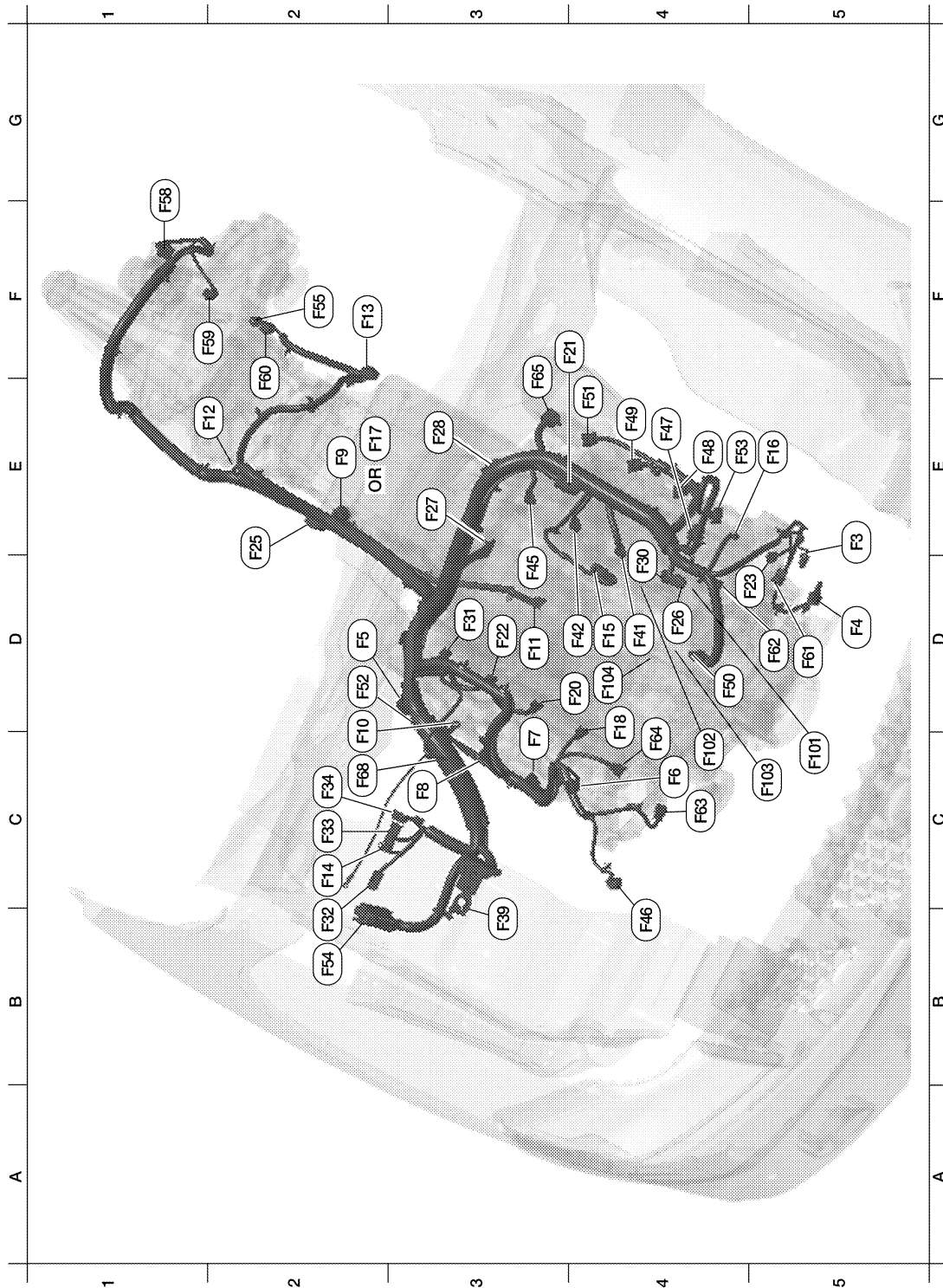
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# HARNESS

## < DTC/CIRCUIT DIAGNOSIS >

G3	E33	B/1	: To M66	F3	E142	W/26	: Transfer control unit
A4	E35	W/12	: To B41	F3	E143	W/24	: Transfer control unit
B3	E37	BR/2	: ASCD brake switch	G3	E152	SMJ	: To M31
B3	E38	W/4	: Stop lamp switch (column shift)	C3	E167	GR/2	: Pedal adjusting motor

## ENGINE CONTROL HARNESS



ABMIA0120GB



# HARNESS

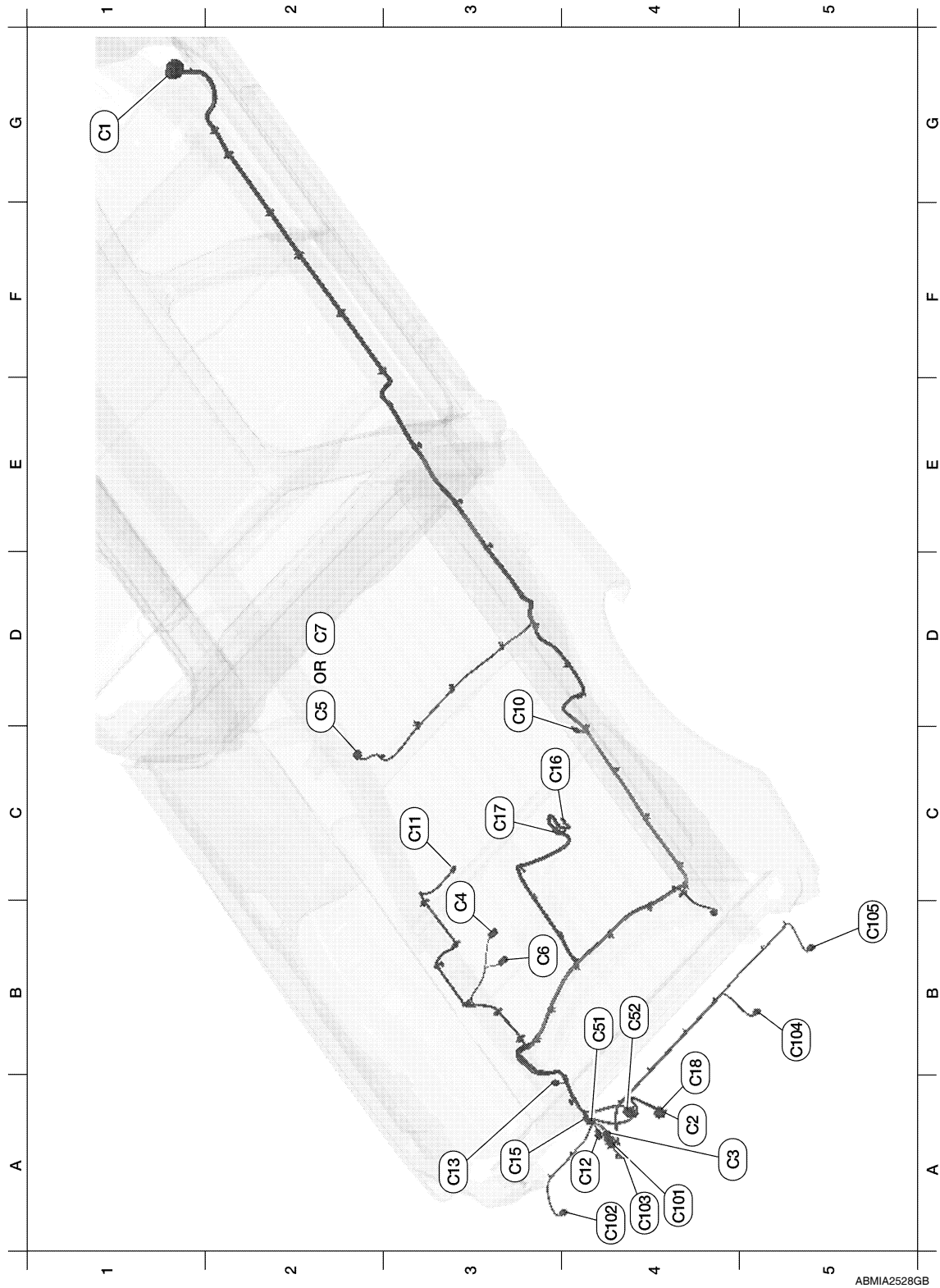
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E5	F3	B/1	: A/C Compressor	B3	F39	—	: Fusible link (battery)	A	
D5	F4	GR/1	: Oil pressure switch	D4	F41	GR/2	: Fuel injector No. 3		
D2	F5	GR/4	: Air fuel ratio (A/F) sensor 1 (bank 2)	D4	F42	GR/2	: Fuel injector No. 5	B	
C4	F6	GR/3	: Ignition coil No. 2 (with power transistor)	D3	F45	GR/2	: Fuel injector No. 7		
C3	F7	GR/3	: Ignition coil No. 4 (with power transistor)	B4	F46	B/3	: Power steering pressure sensor	C	
C3	F8	GR/3	: Ignition coil No. 6 (with power transistor)	E4	F47	GR/3	: Ignition coil No. 1 (with power transistor)		
E2	F9	G/10	: A/T assembly (floor shift)	E4	F48	GR/3	: Ignition coil No. 3 (with power transistor)	D	
C2	F10	—	: Engine ground	E4	F49	GR/3	: Ignition coil No. 5 (with power transistor)		
D3	F11	B/3	: Crankshaft position sensor (POS)	D4	F50	B/6	: Electric throttle control actuator	E	
E1	F12	G/4	: Heated oxygen sensor 2 (bank 2)	E4	F51	GR/3	: Ignition coil No. 7 (with power transistor)		
F2	F13	G/4	: Heated oxygen sensor 2 (bank 1)	D2	F52	GR/3	: Ignition coil No. 8 (with power transistor)	F	
C2	F14	W/24	: To E5	E5	F53	B/6	: Mass air flow sensor	G	
D4	F15	GR/2	: EVAP canister purge volume control solenoid valve	B2	F54	B/81	: ECM		
E5	F16	—	: Engine ground	F2	F55	B/2	: ATP switch	H	
E2	F17	G/10	: A/T assembly (column shift)	F1	F58	B/8	: Transfer control device		
C4	F18	GR/2	: Fuel injector No. 2	F2	F59	GR/2	: Wait detection switch	I	
D4	F20	GR/2	: Fuel injector No. 4	F2	F60	GR/2	: 4LO switch	J	
F4	F21	GR/2	: Condenser-1	D5	F61	G/2	: Intake valve timing control solenoid valve (bank 1)		
D3	F22	GR/2	: Fuel injector No. 6	D4	F62	B/3	: Intake valve timing control position sensor (bank 1)	K	
D4	F23	B/3	: Camshaft position sensor (PHASE)	C4	F63	G/2	: Intake valve timing control solenoid valve (bank 2)		
D2	F25	W/2	: Diode-2	C4	F64	B/3	: Intake valve timing control position sensor (bank 2)	L	
D4	F26	B/6	: To F101	F3	F65	GR/4	: Air fuel ratio (A/F) sensor 1 (bank 1)		
E3	F27	—	: Starter motor	C2	F68	GR/2	: Water valve		
E3	F28	GR/1	: Starter motor	Engine control sub-harness					
D4	F30	GR/2	: Fuel injector No. 1	C5	F101	B/6	: To F26		
D3	F31	GR/2	: Fuel injector No. 8	C4	F102	B/2	: Knock sensor (bank 1)		
B2	F32	W/16	: To E2	C5	F103	GR/2	: Engine coolant temperature sensor		
C2	F33	W/16	: To E19	D4	F104	B/2	: Knock sensor (bank 2)	PG	
C2	F34	W/2	: To E39						

# HARNESS

< DTC/CIRCUIT DIAGNOSIS >

## CHASIS HARNESS



ABMIA2528GB

G1	C1	SMJ	: To E41	C3	C16	GR/2	: Differential lock position switch
A4	C2	B/7	: Trailer	C3	C17	B/2	: Differential lock solenoid
A4	C3	GR/6	: To C101	A4	C18	B/7	: Trailer receptacle
C3	C4	GR/3	: Evap control system pressure sensor	Rear power socket sub-harness			
D2	C5	GR/5	: Fuel level sensor unit and fuel pump (without flexible fuel)	B4	C51	W/2	: To C15



# HARNESSES

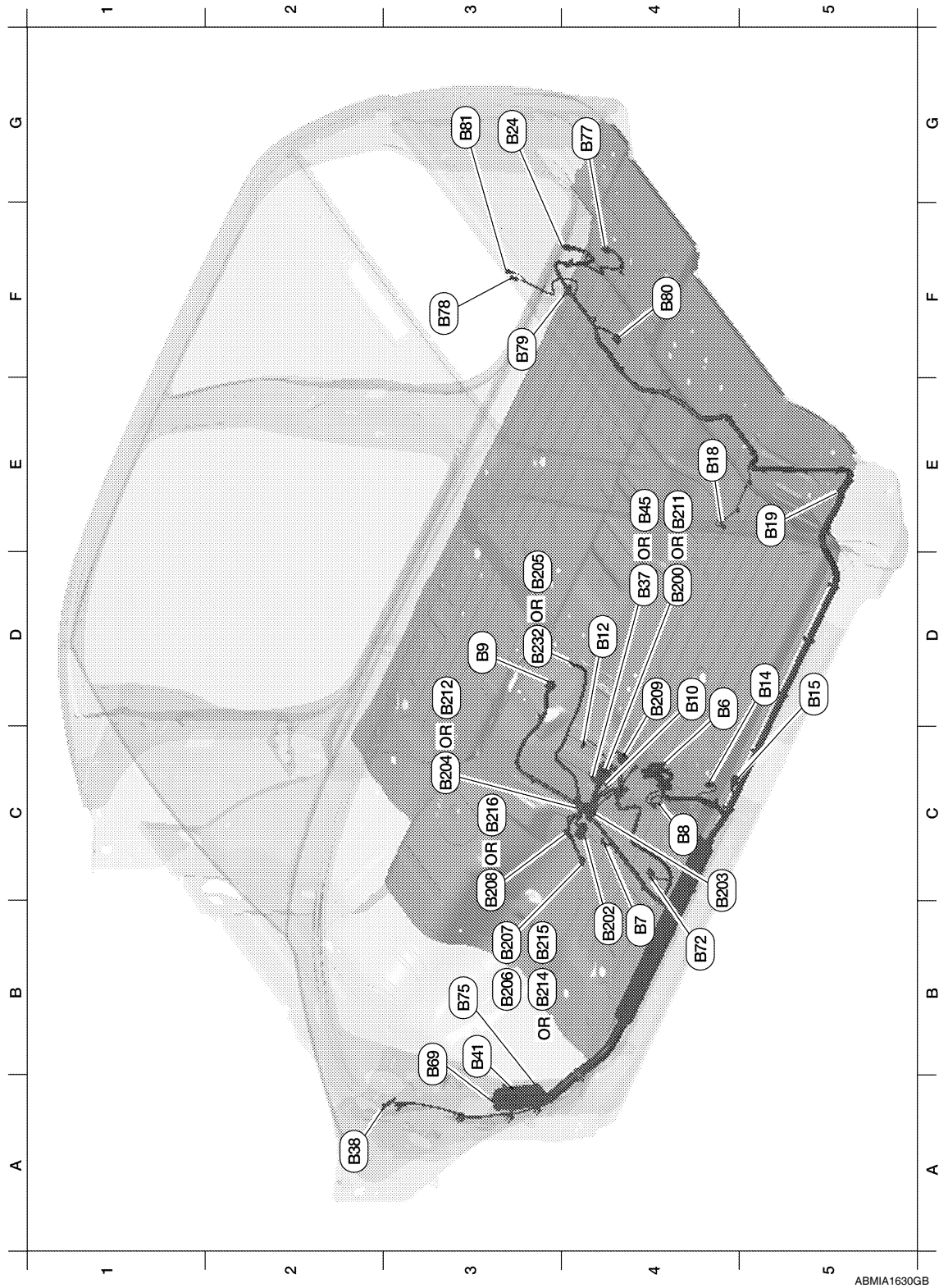
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D5	B7	—	: Body ground	F3	B77	B/26	: Differential lock control unit
F4	B8	W/3	: Front door switch LH	Front seat LH harness			
D4	B9	Y/12	: Air bag diagnosis sensor unit	E5	B200	W/16	: To B37 (with automatic drive positioner)
E5	B10	Y/2	: Front LH side air bag module	D5	B202	W/32	: Driver seat control unit
E4	B12	W/4	: Seat belt buckle switch LH	D4	B203	W/16	: Driver seat control unit
E5	B14	Y/2	: Front LH seat belt pre-tensioner	D3	B204	GR/5	: Sliding motor LH (with automatic drive positioner)
E4	B15	Y/2	: LH side air bag (satellite) sensor	E3	B205	W/4	: Reclining motor LH (with automatic drive positioner)
F4	B19	—	: Body ground	D4	B206	W/5	: Lifting motor (front) (with automatic drive positioner)
F3	B24	W/16	: Sonar control unit	D3	B207	GR/5	: Lifting motor (rear) (with automatic drive positioner)
E4	B37	W/16	: To B200 (with automatic drive positioner)	D4	B208	W/10	: Power seat switch LH (with automatic drive positioner)
C4	B38	Y/2	: LH side curtain air bag module	E4	B209	W/3	: Front seat heater LH
D5	B41	W/12	: To E35	F5	B211	W/2	: To B45
E4	B45	W/2	: To B211	E3	B212	B/2	: Sliding motor LH (without automatic drive positioner)
B3	B69	SMJ	: To M40	D4	B214	GR/2	: Lifting motor (front) (without automatic drive positioner)
D5	B72	W/4	: Subwoofer	E3	B215	GR/2	: Lifting motor (rear) (without automatic drive positioner)
F4	B73	B/2	: Rear door switch upper LH	D4	B216	W/10	: Power seat switch LH (without automatic drive positioner)
E4	B74	B/2	: Rear door switch lower LH	E3	B232	W/2	: Reclining motor LH (without automatic drive positioner)
C5	B75	BR/2	: To E50	F5	B211	W/2	: To B45
F3	B76	W/2	: Rear door speaker LH				

# HARNESS

< DTC/CIRCUIT DIAGNOSIS >

## BODY HARNESS (CREW CAB MODELS)



ABMIA1630GB

D4	B6	W/18	: To D201	F3	B79	—	: Body ground
B4	B7	—	: Body ground	F4	B80	GR/4	: Rear power drop glass motor
C4	B8	W/3	: Front door switch LH	G3	B81	B/1	: Rear window defogger
D3	B9	Y/12	: Air bag diagnosis sensor unit	Front seat LH harness			
D4	B10	Y/2	: Front LH side air bag module	D4	B200	W/16	: To B37

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## HARNESSES

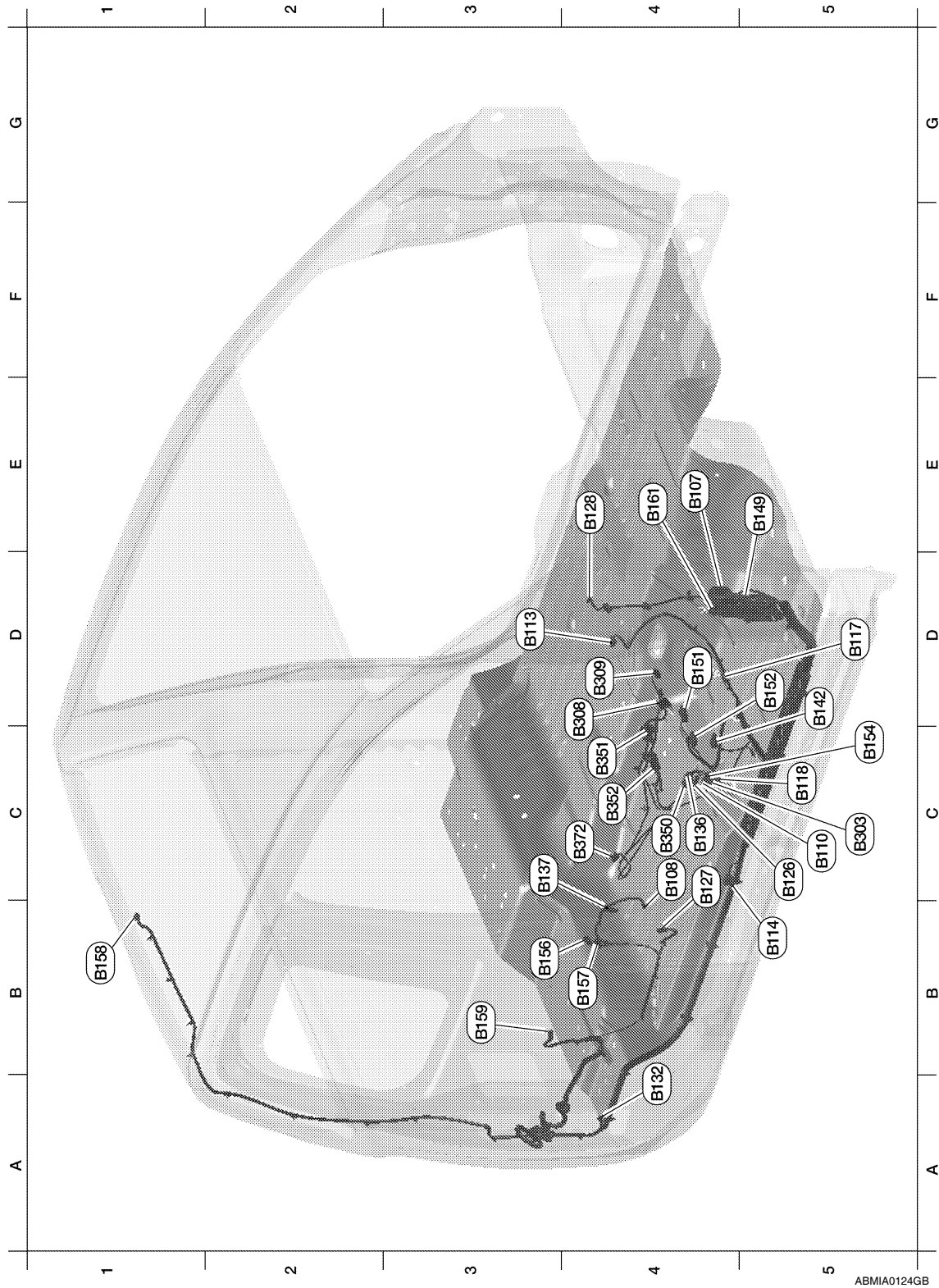
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D4	B12	W/4	: Seat belt buckle switch LH	B4	B202	W/32	: Driver seat control unit
D5	B14	Y/2	: Front LH seat belt pre-tensioner	C4	B203	W/16	: Driver seat control unit
D5	B15	Y/2	: LH side air bag (satellite) sensor	C3	B204	GR/5	: Sliding motor LH (with automatic drive positioner)
E4	B18	W/3	: Rear door switch LH	D3	B205	W/4	: Reclining motor LH (with automatic drive positioner)
E5	B19	—	: Body ground	B3	B206	W/5	: Lifting motor (front) (with automatic drive positioner)
G3	B24	W/16	: Sonar control unit	B3	B207	GR/5	: Lifting motor (rear) (with automatic drive positioner)
D4	B37	W/16	: To B200	C3	B208	W/10	: Power seat switch LH (with automatic drive positioner)
A2	B38	Y/2	: LH side curtain air bag module	D4	B209	W/3	: Front seat heater LH
B3	B41	W/12	: To E35	E4	B211	W/2	: To B45
E4	B45	W/2	: To B211	D3	B212	B/2	: Sliding motor LH (without automatic drive positioner)
B3	B69	SMJ	: To M40	B3	B214	GR/2	: Lifting motor (front) (without automatic drive positioner)
B4	B72	W/4	: Subwoofer	B3	B215	GR/2	: Lifting motor (rear) (without automatic drive positioner)
B3	B75	BR/2	: To E50	C3	B216	W/10	: Power seat switch LH (without automatic drive positioner)
G4	B77	B/26	: Differential lock control unit	D3	B232	W/2	: Reclining motor LH (without automatic drive positioner)
F3	B78	B/1	: Rear window defogger				

# HARNESS

< DTC/CIRCUIT DIAGNOSIS >

BODY NO. 2 HARNESS (KING CAB MODELS)



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E4	B107	W/8	: To E139	D5	B152	W/32	: NAVI control unit
C4	B108	W/3	: Front door switch RH	C5	B154	W/2	: To B303
C5	B110	W/4	: Seat belt buckle switch RH	B3	B156	B/2	: Rear door switch upper RH
D3	B113	Y/12	: Air bag diagnosis sensor unit	B4	B157	B/2	: Rear door switch lower RH
B5	B114	Y/2	: RH side air bag (satellite) sensor	B1	B158	W/3	: High-mounted stop lamp

# HARNESSES

## < DTC/CIRCUIT DIAGNOSIS >

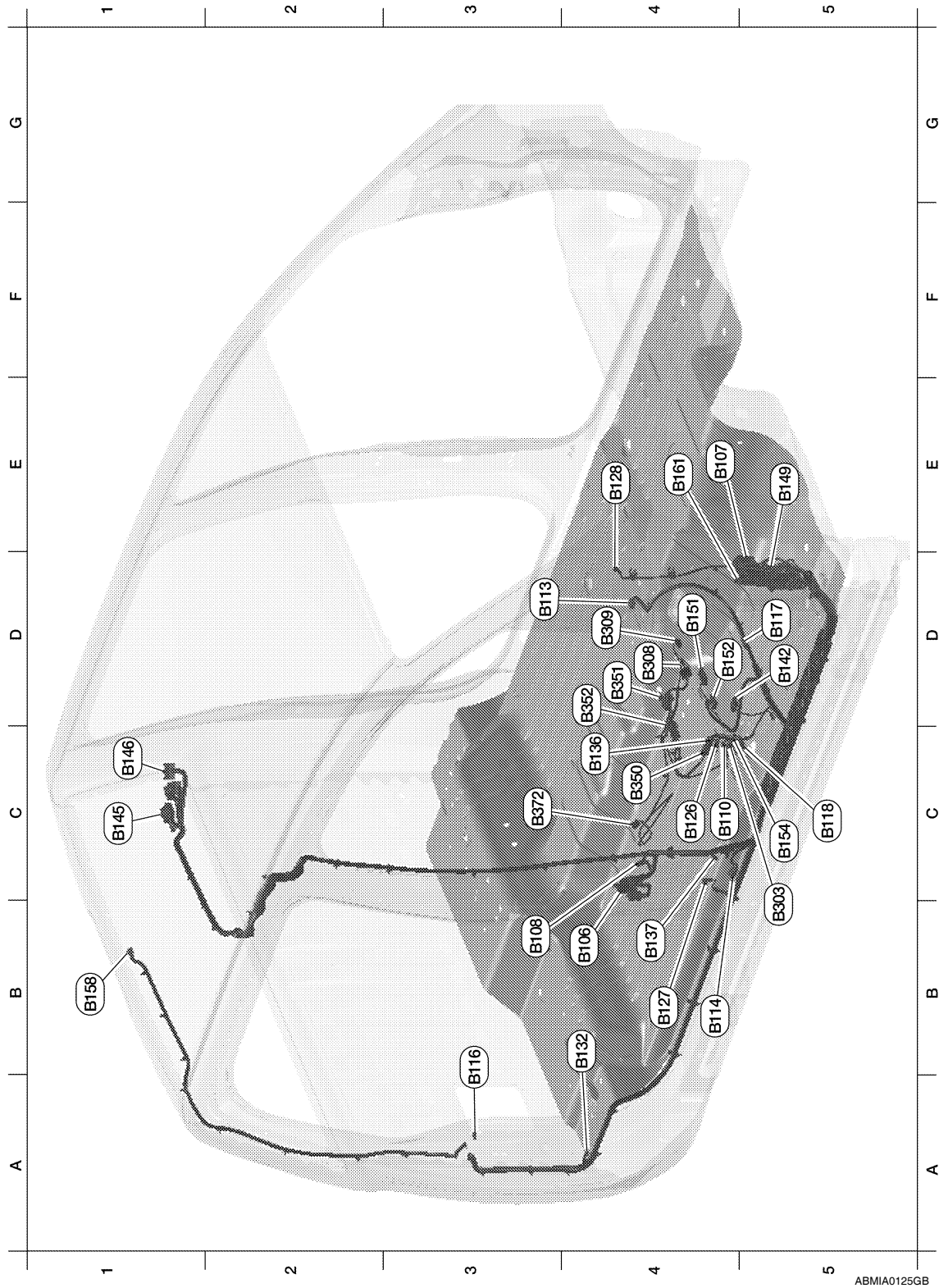
D5	B117	—	: Body ground	B3	B159	W/2	: Rear door speaker RH
C5	B118	W/3	: Front seat heater RH	E4	B161	W/20	: To M157
C5	B126	Y/2	: Front RH side air bag module	Front seat RH harness			
C4	B127	Y/2	: Front RH seat belt pre-tensioner	C5	B303	W/2	: To B154
E4	B128	Y/2	: RH side curtain air bag module	D4	B308	W/6	: Power seat switch RH
B4	B132	—	: Body ground	D4	B309	GR/2	: Sliding motor RH
C4	B136	W/8	: To B350	C4	B350	Y/8	: To B136
C3	B137	W/3	: Belt tension sensor	C4	B351	B/18	: Occupant classification control unit
D5	B142	W/32	: Bluetooth control unit	C4	B352	B/3	: Occupant classification system sensor
E5	B149	SMJ	: To M36	C2	B372	W/2	: Reclining motor RH
D4	B151	W/40	: NAVI control unit				



# HARNESS

< DTC/CIRCUIT DIAGNOSIS >

BODY NO. 2 HARNESS (CREW CAB MODELS)



ABMIA0125GB

B4	B106	W/18	: To D301	C1	B145	W/16	: To R200
E4	B107	W/8	: To E139	C1	B146	BR/24	: To R201
B3	B108	W/3	: Front door switch RH	E5	B149	SMJ	: To M36
C4	B110	W/3	: Seat belt buckle switch RH	D4	B151	W/40	: NAVI control unit
D3	B113	Y/12	: Air bag diagnosis sensor unit	D4	B152	W/32	: NAVI control unit

# HARNESSES

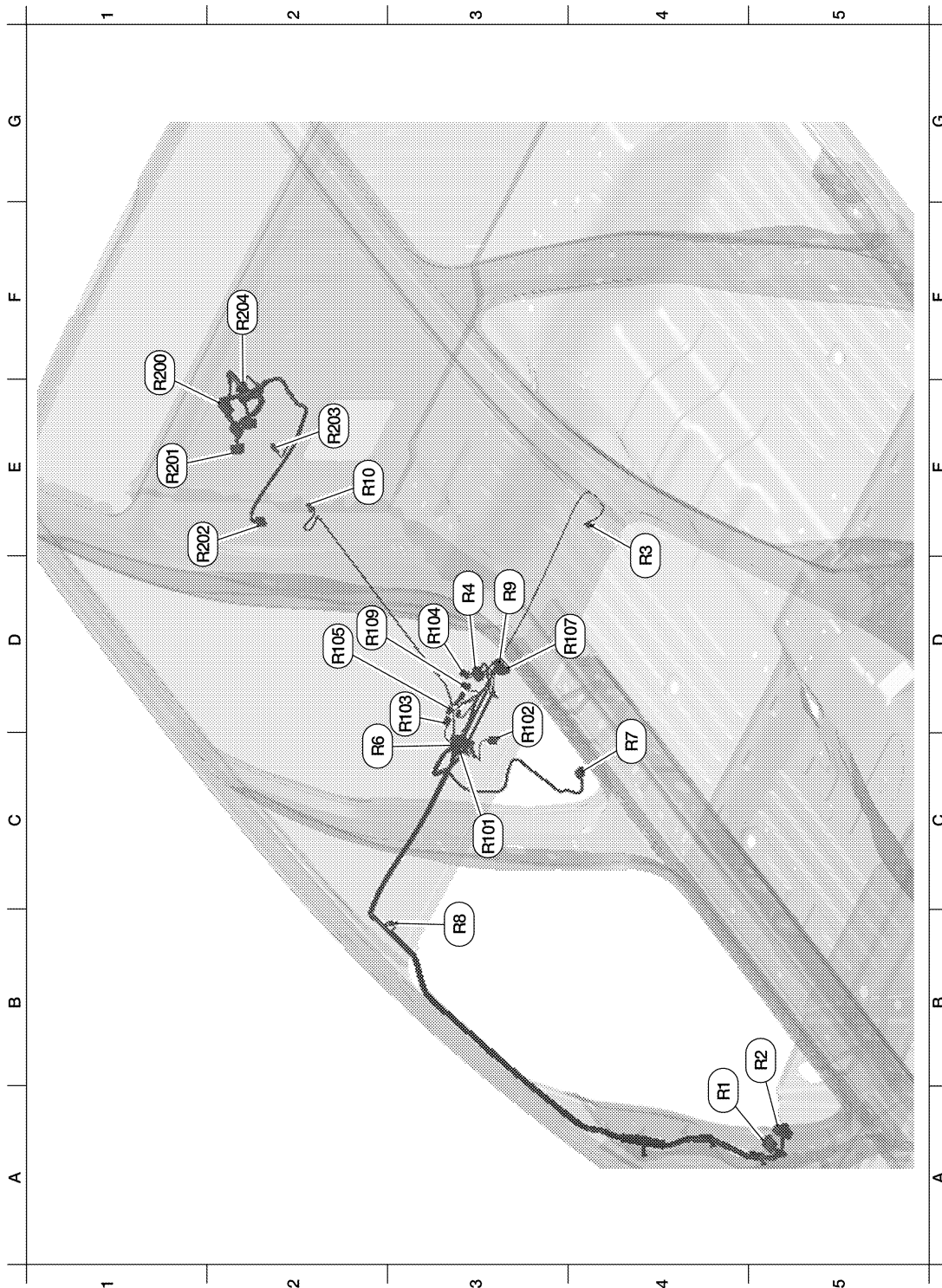
## < DTC/CIRCUIT DIAGNOSIS >

B4	B114	Y/2	: RH side air bag (satellite) sensor	C5	B154	W/2	: To B303
B3	B116	W/3	: Rear door switch RH	B1	B158	W/3	: High-mounted stop lamp
D5	B117	—	: Body ground	E4	B161	W/20	: To M157
C5	B118	W/3	: Front seat heater RH	Front seat RH harness			
C4	B126	Y/2	: Front RH side air bag module	B5	B303	W/2	: To B154
B4	B127	Y/2	: Front RH seat belt pre-tensioner	D4	B308	W/6	: Power seat switch RH
E4	B128	Y/2	: RH side curtain air bag module	D4	B309	GR/2	: Sliding motor RH
B4	B132	—	: Body ground	C4	B350	Y/8	: To B136
C4	B136	W/8	: To B350	D4	B351	B/18	: Occupant classification control unit
B4	B137	W/3	: Belt tension sensor	D4	B352	B/3	: Occupant classification system sensor
D5	B142	W/32	: Bluetooth control unit	C3	B372	W/2	: Reclining motor RH

# HARNESS

< DTC/CIRCUIT DIAGNOSIS >

## ROOM LAMP HARNESS



ABMIA0126GB

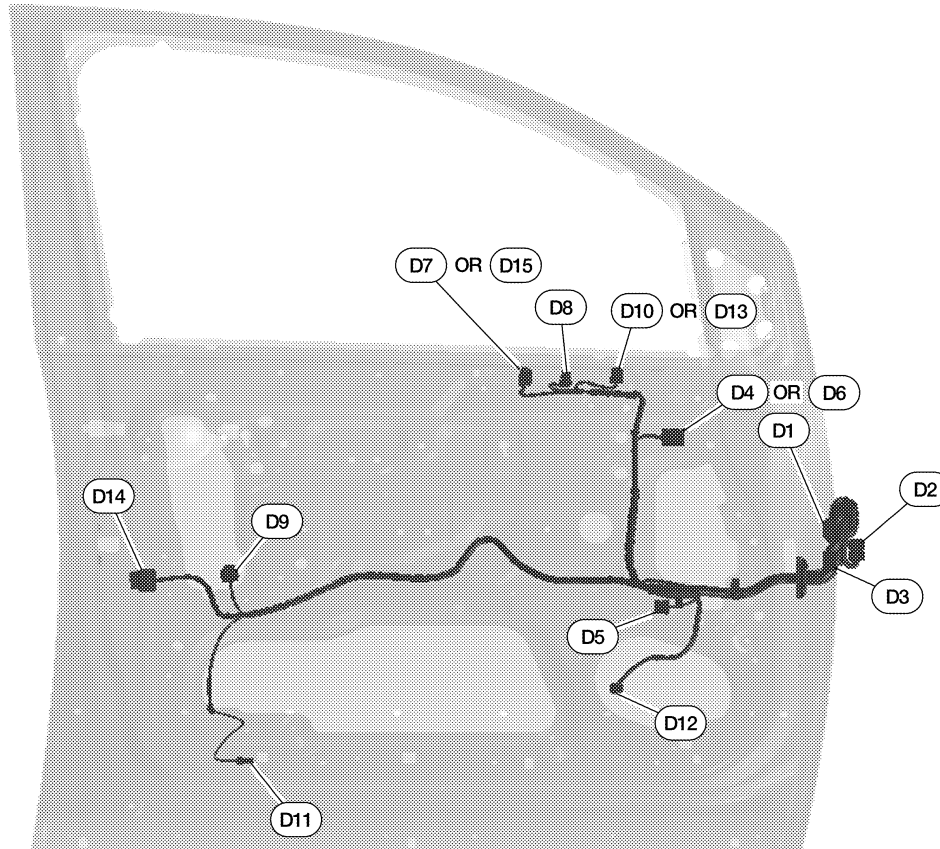
A4	R1	W/16	: To M1	D3	R103	W/6	: Rear power drop glass switch
B5	R2	W/12	: To M2	D3	R104	GR/6	: Sunroof switch
E4	R3	W/2	: Vanity lamp LH	D2	R105	W/4	: Bluetooth ON indicator
D3	R4	W/10	: Sunroof motor assembly	D3	R107	W/8	: To R9
C2	R6	W/16	: To R101	D2	R109	W/4	: Microphone

# HARNESS

## < DTC/CIRCUIT DIAGNOSIS >

C4	R7	GR/10	: Auto anti-dazzling inside mirror	Room lamp sub-harness B		
B3	R8	W/2	: Vanity lamp RH	F1	R200	W/16 : To B145
D3	R9	W/8	: To R107	E1	R201	BR/24 : To B146
E2	R10	W/2	: Room lamp	E1	R202	W/12 : Video monitor
Room lamp sub-harness A				E2	R203	W/3 : Personal lamp 2ND row
C3	R101	W/16	: To R6	F2	R204	W/16 : Rear audio remote control unit
D3	R102	GR/8	: Front room/map lamp assembly			

## FRONT DOOR LH HARNESS

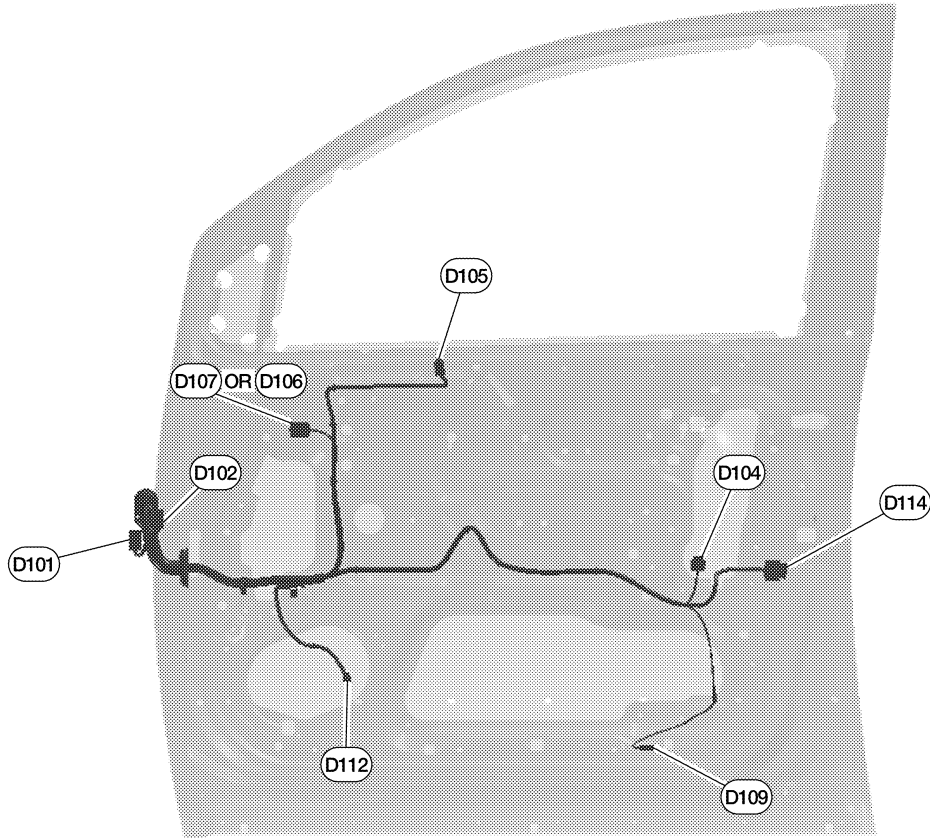


ABMIA0127GB

D1	BR/24	: To M9	D9	GR/6	: Front power window motor LH
D2	W/16	: To M8	D10	BR/16	: Door mirror remote control switch (with automatic drive positioner)
D3	W/10	: To M158	D11	W/2	: Front step lamp LH
D4	W/16	: Door mirror LH (with automatic drive positioner)	D12	W/2	: Front door speaker LH
D5	W/8	: Seat memory switch	D13	W/16	: Door mirror remote control switch (without automatic drive positioner)
D6	W/6	: Door mirror LH (without automatic drive positioner)	D14	B/6	: Front door lock assembly LH
D7	W/16	: Main power window and door lock/unlock switch (crew cab)	D15	W/16	: Main power window and door lock/unlock switch (king cab)
D8	W/3	: Main power window and door lock/unlock switch (crew cab)			

# HARNESS

## < DTC/CIRCUIT DIAGNOSIS > FRONT DOOR RH HARNESS



ABMIA0128GB

D101	W/10	: To M75	D107	W/16	: Door mirror RH (with automatic drive positioner)
D102	BR/20	: To M74	D109	W/2	: Front step lamp RH
D104	GR/6	: Front power window motor RH	D112	W/2	: Front door speaker RH
D105	W/16	: Power window and door lock/unlock switch RH	D114	B/6	: Front door lock actuator RH
D106	W/6	: Door mirror RH (without automatic drive positioner)			

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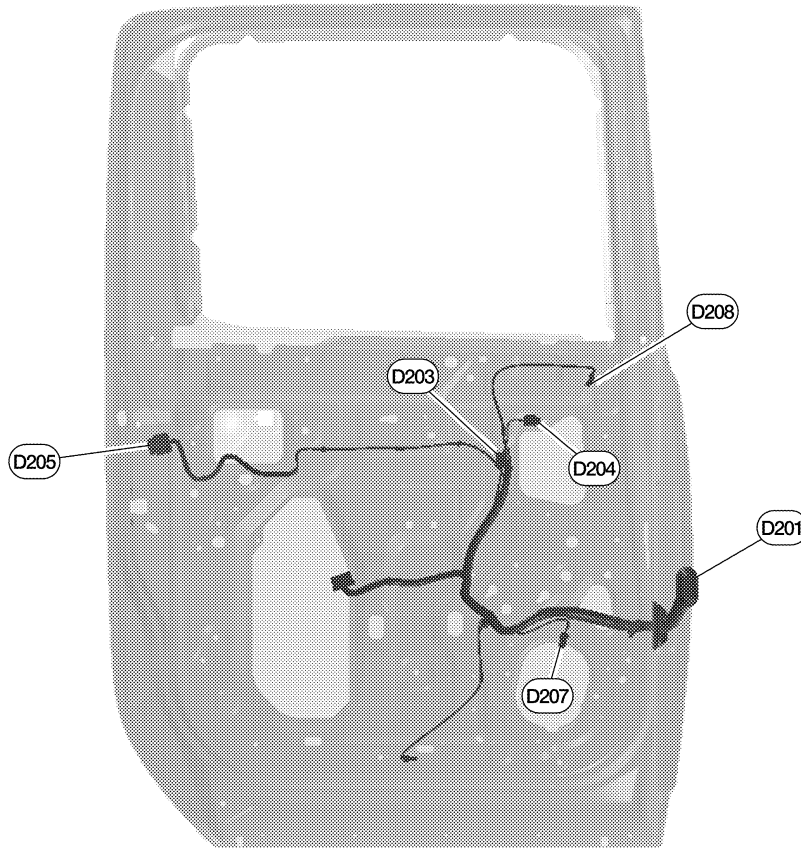
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# HARNESS

< DTC/CIRCUIT DIAGNOSIS >

## REAR DOOR LH HARNESS (CREW CAB MODELS)



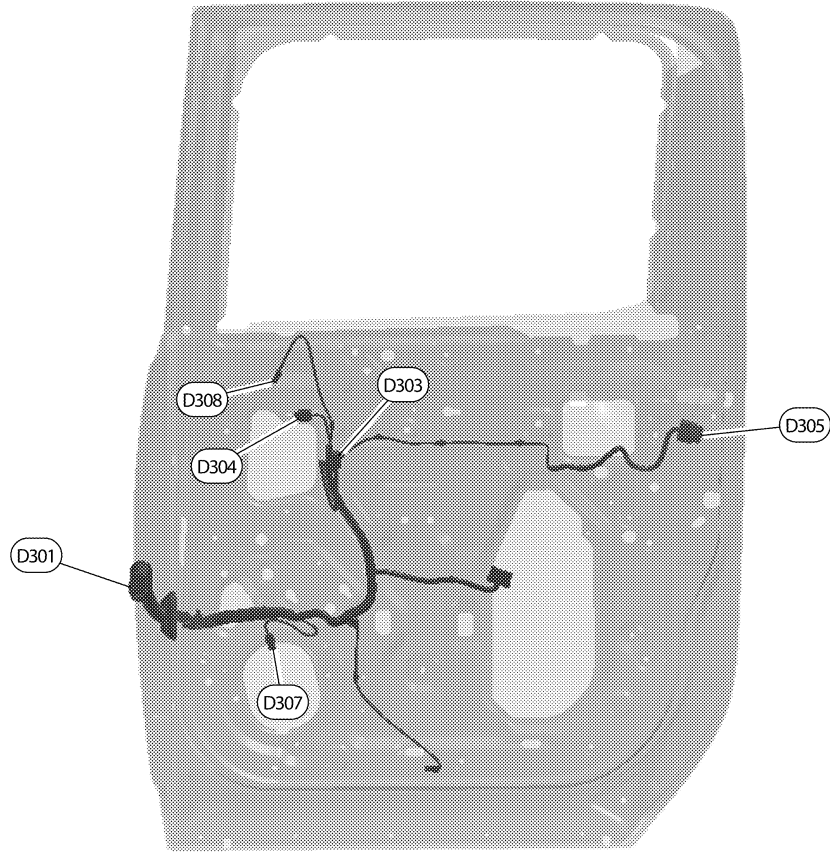
ABMIA0129GB

D201	W/18	: To B6	D205	B/6	: Rear door lock actuator LH
D203	W/8	: Rear power window switch LH	D207	W/2	: Rear door speaker LH
D204	GR/2	: Rear power window motor LH	D208	BR/2	: Rear door tweeter LH

# HARNESS

< DTC/CIRCUIT DIAGNOSIS >

## REAR DOOR RH HARNESS (CREW CAB MODELS)



ABMIA0130GB

D301	W/18	: To B106	D305	B/6	: Rear door lock actuator RH
D303	W/8	: Rear power window switch RH	D307	W/2	: Rear door speaker RH
D304	GR/2	: Rear power window motor RH	D308	BR/2	: Rear door tweeter RH

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# ELECTRICAL UNITS LOCATION

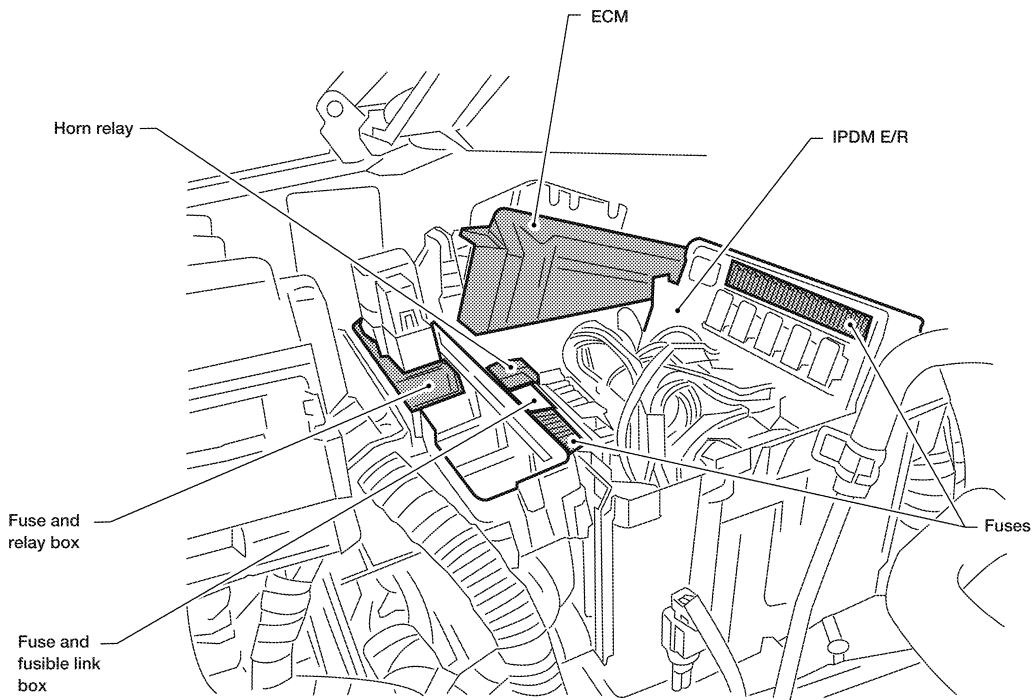
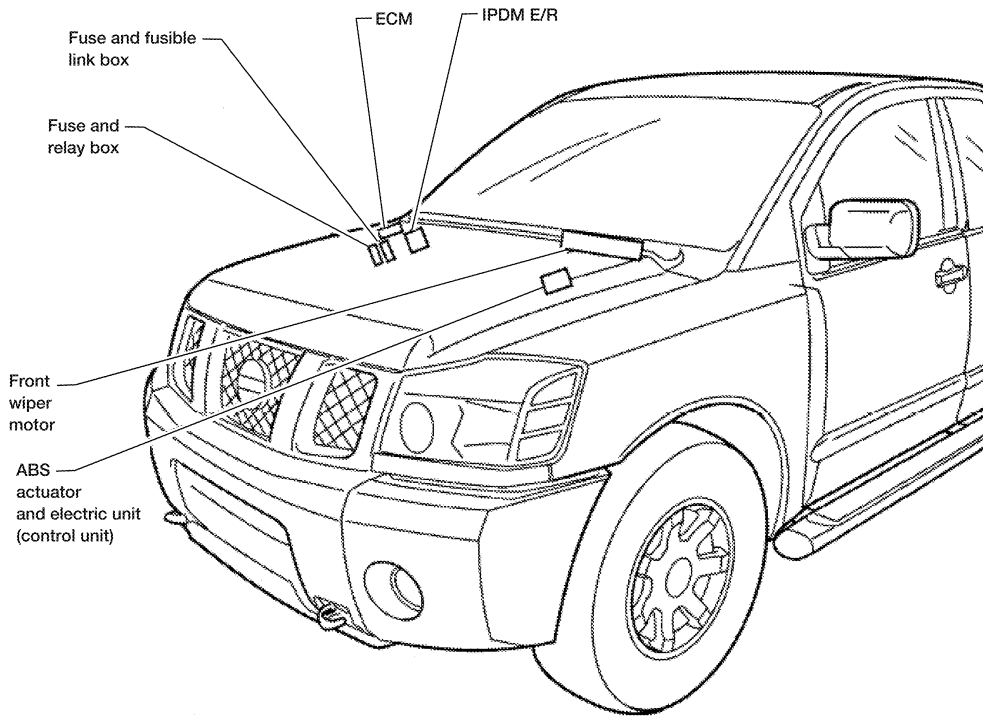
< DTC/CIRCUIT DIAGNOSIS >

## ELECTRICAL UNITS LOCATION

### Electrical Units Location

INFOID:000000006179649

#### ENGINE COMPARTMENT

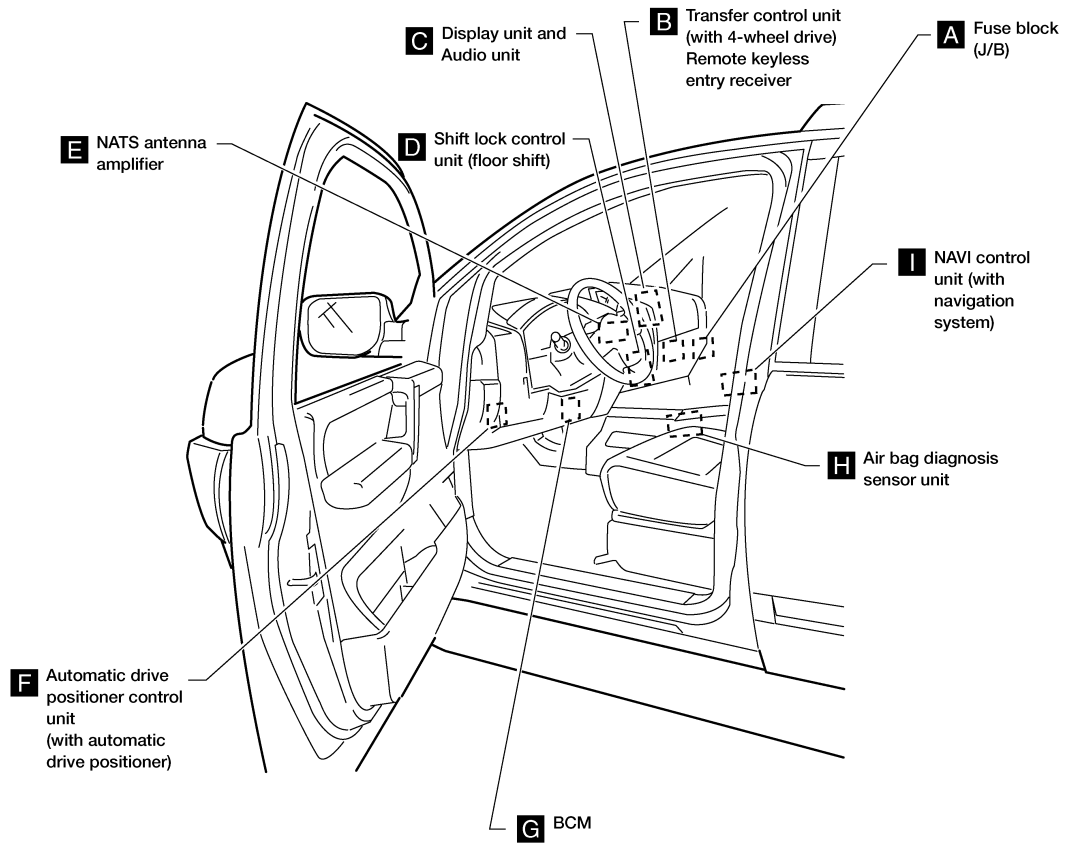


ALMIA0303GB

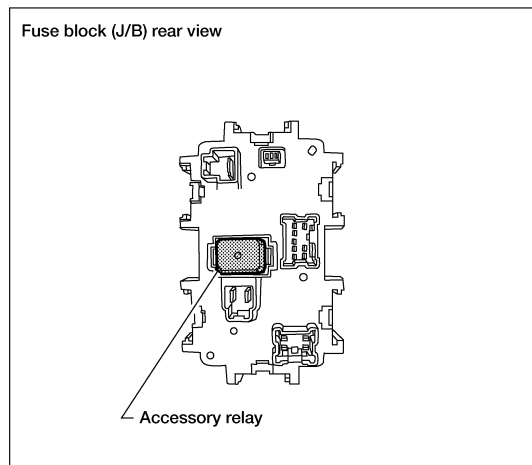
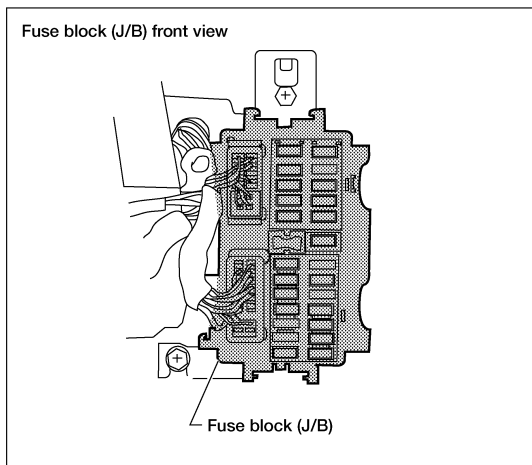


# ELECTRICAL UNITS LOCATION

## < DTC/CIRCUIT DIAGNOSIS > PASSENGER COMPARTMENT



**A** Instrument panel side RH

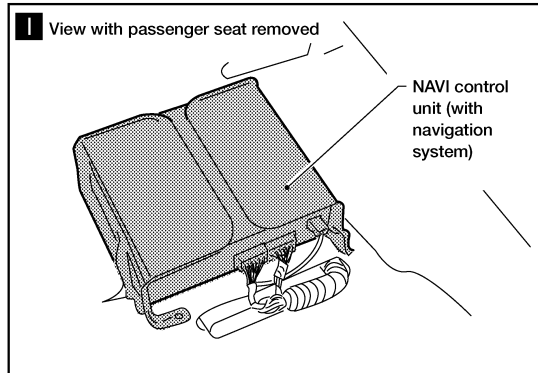
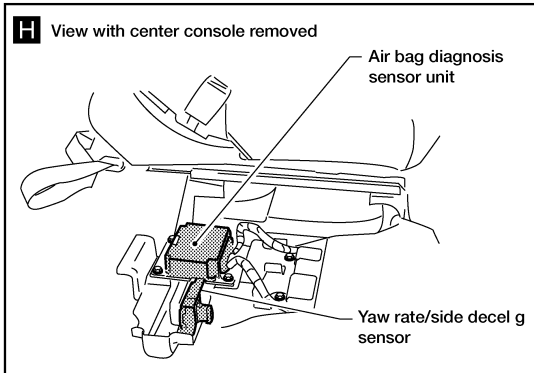
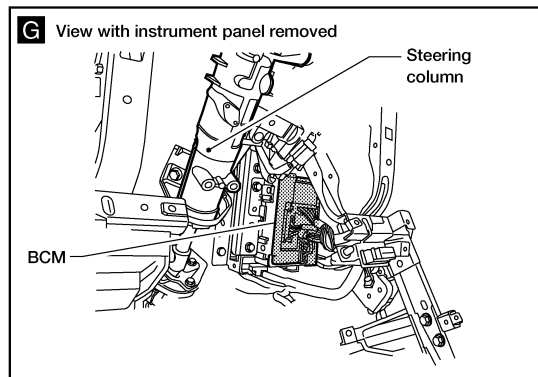
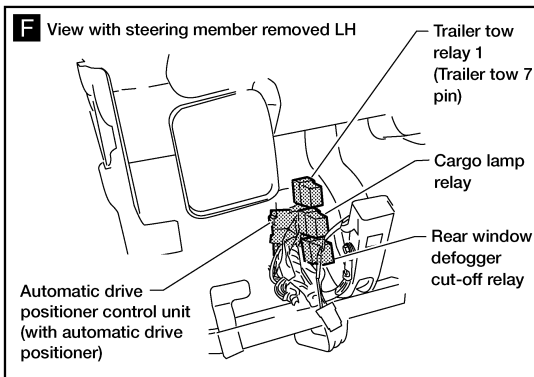
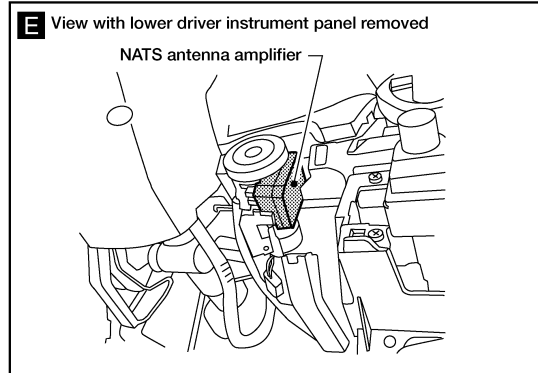
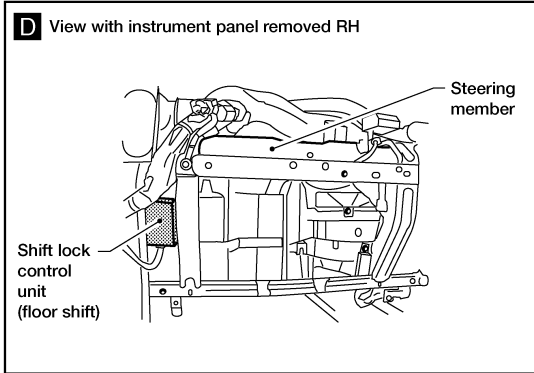
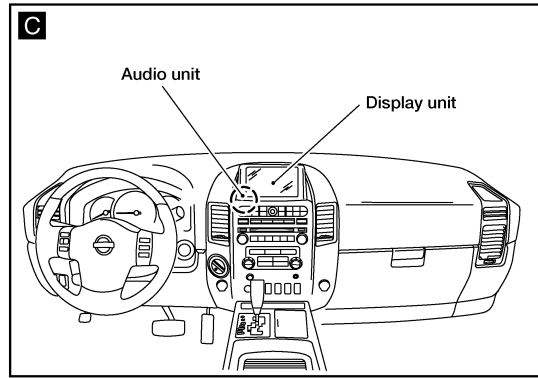
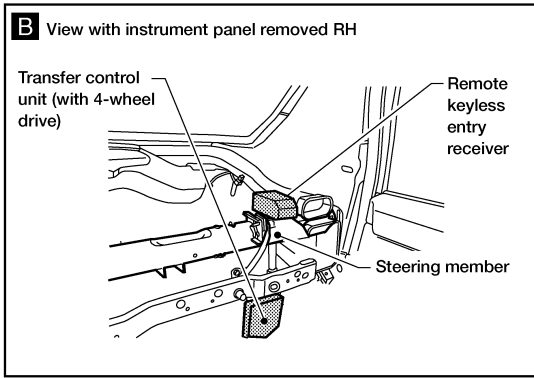


ABMIA1631GB

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# ELECTRICAL UNITS LOCATION

< DTC/CIRCUIT DIAGNOSIS >



ABMIA1632GB

# HARNESS CONNECTOR

< DTC/CIRCUIT DIAGNOSIS >

## HARNESS CONNECTOR

### Description

INFOID:000000006179650

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

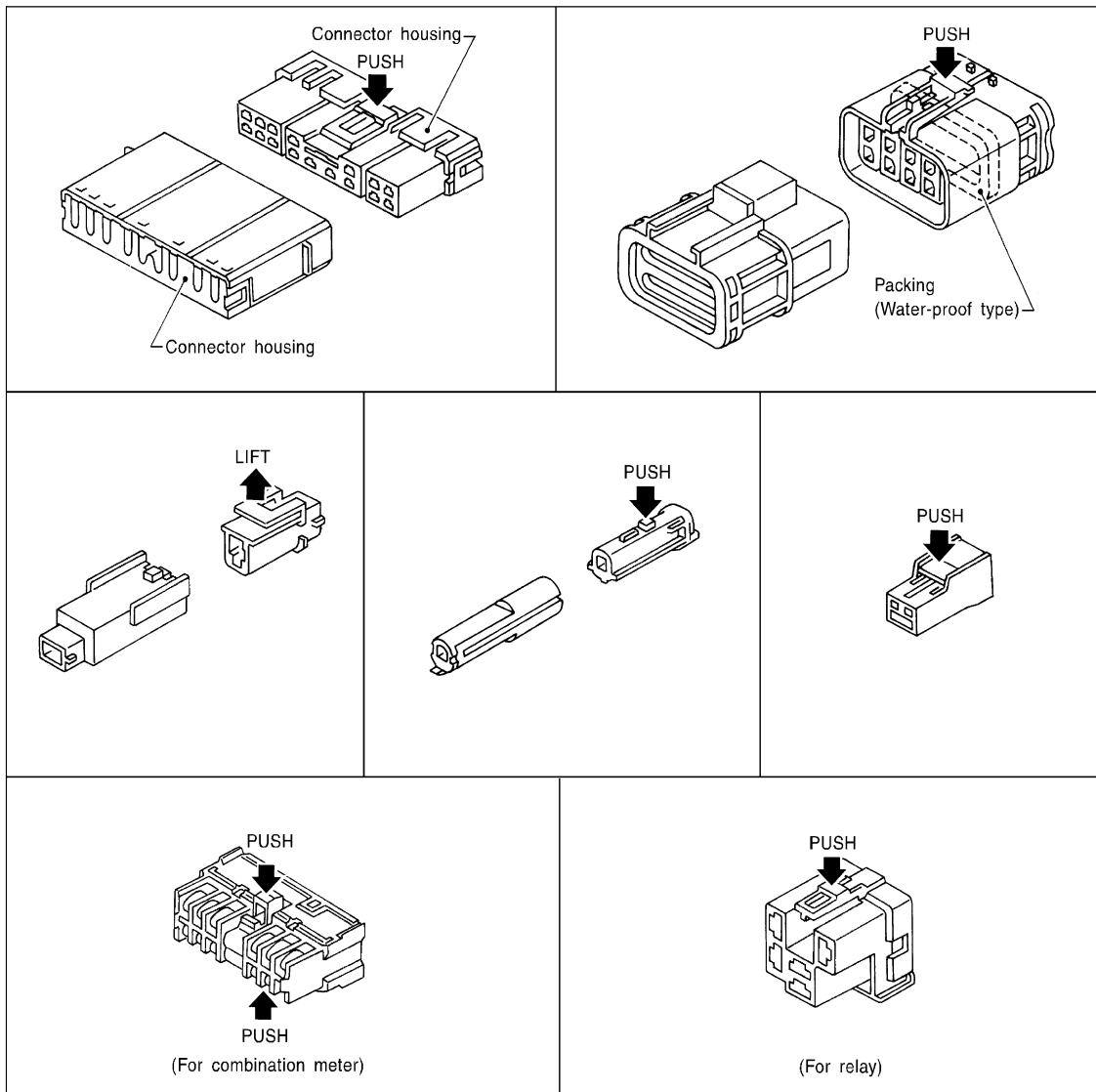
- The tab-locking type connectors help prevent accidental looseness or disconnection.
- The tab-locking type connectors are disconnected by pushing or lifting the locking tab(s). Refer to the figure below.

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.**

[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.

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# HARNESS CONNECTOR

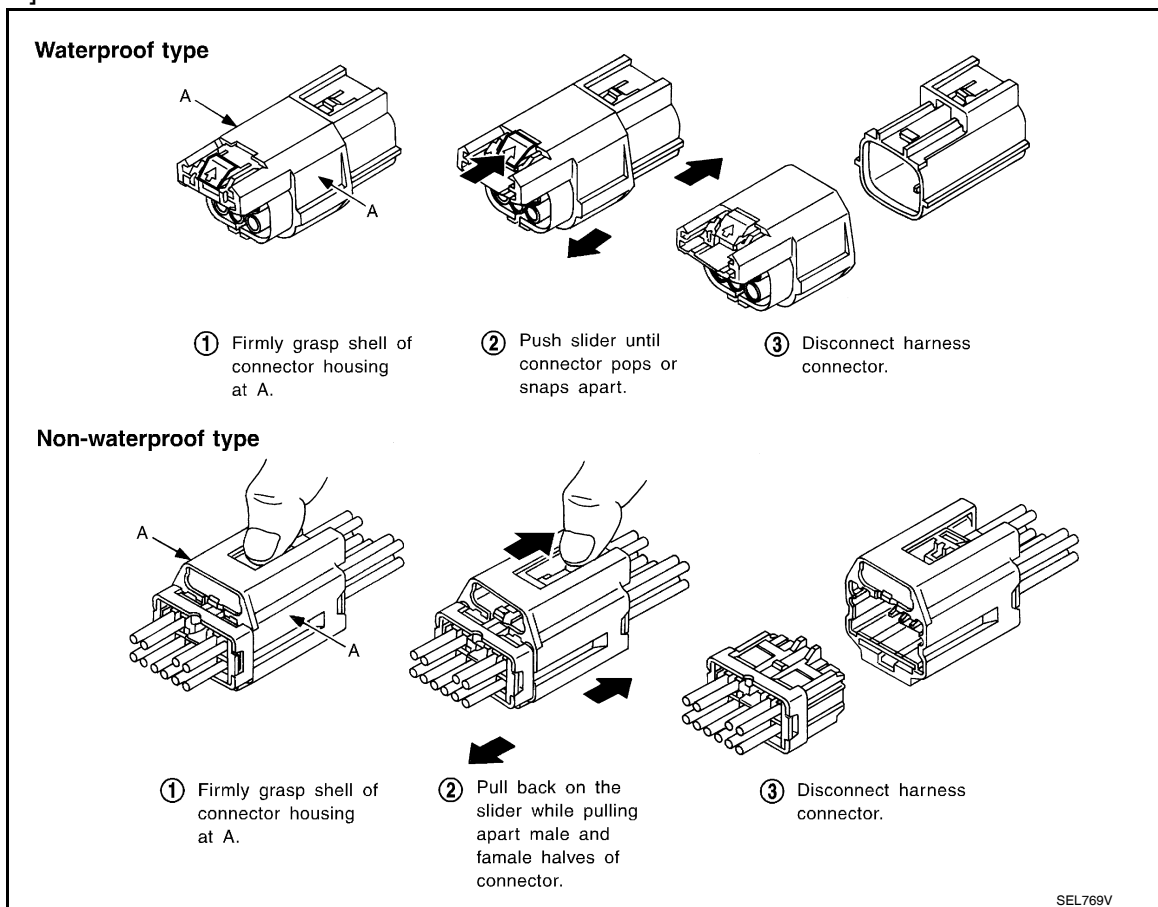
## < DTC/CIRCUIT DIAGNOSIS >

- 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.

[Example]



## HARNESS CONNECTOR (LEVER LOCKING TYPE)

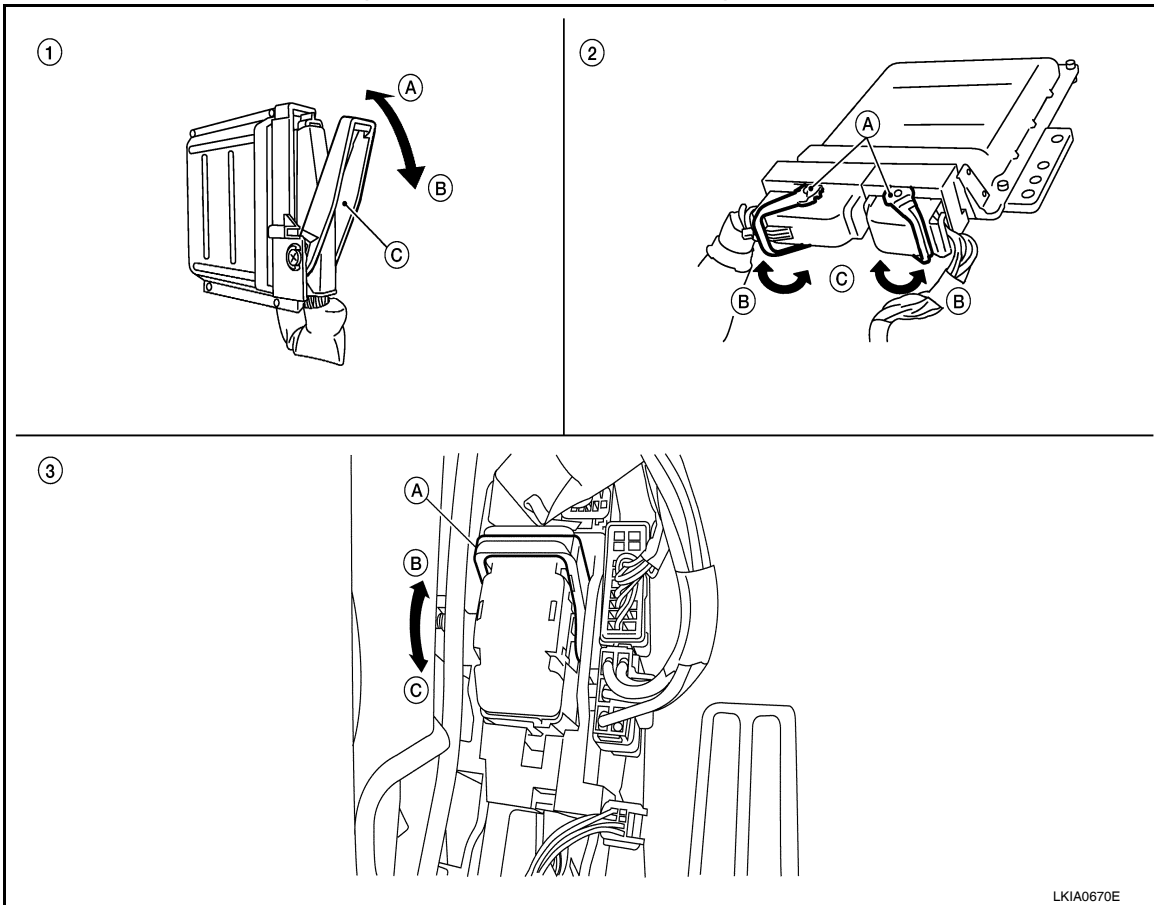
- Lever locking type harness connectors are used on certain control units and control modules such as ECM, ABS actuator and electric unit (control unit), etc.
- Lever locking type harness connectors are also used on super multiple junction (SMJ) connectors.
- Always confirm the lever is fully locked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

### CAUTION:

# HARNES CONNECTOR

## < DTC/CIRCUIT DIAGNOSIS >

- 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.



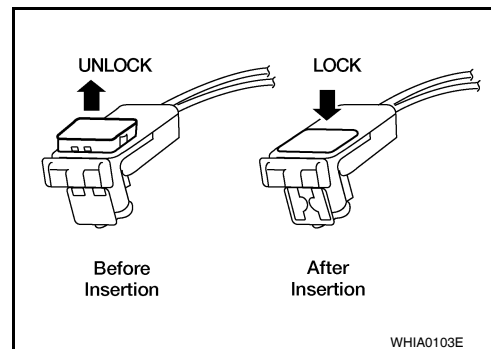
- |  |  |   |
|--|--|---|
| <p>1. Control unit with single lever</p> <p>A. Fasten</p> <p>B. Loosen</p> <p>C. Lever</p> | <p>2. Control unit with dual lever</p> <p>A. Fasten</p> <p>B. Loosen</p> <p>C. Lever</p> | <p>3. SMJ connector</p> <p>A. Fasten</p> <p>B. Loosen</p> <p>C. Lever</p> |
|--|--|---|

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

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

< DTC/CIRCUIT DIAGNOSIS >

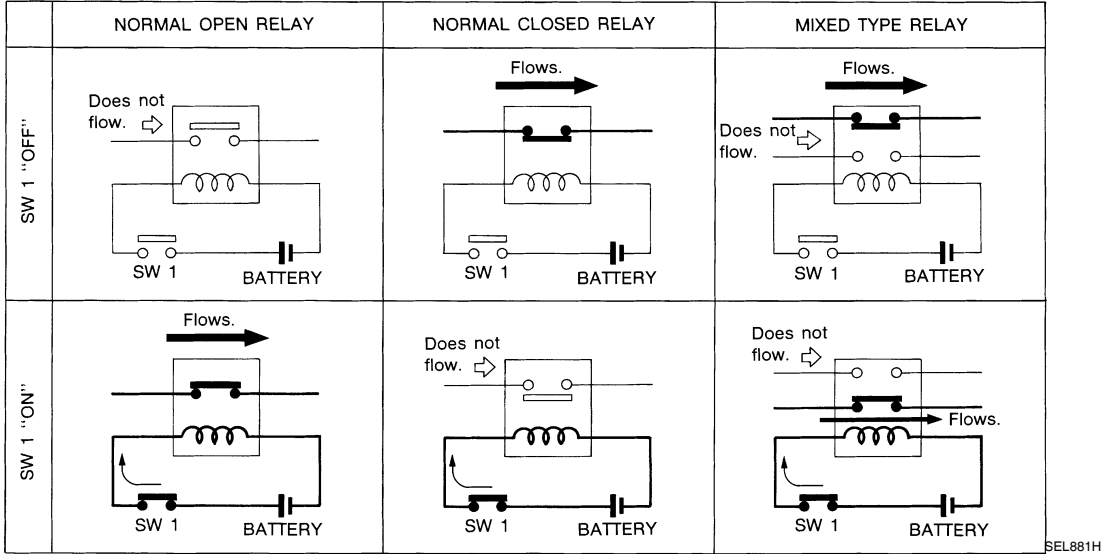
## STANDARDIZED RELAY

### Description

INFOID:000000006179651

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

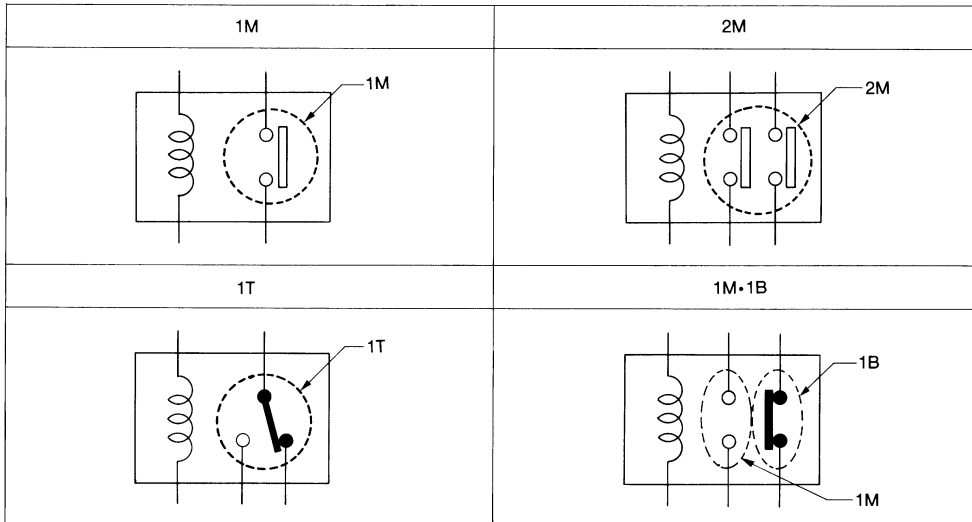
Relays can mainly be divided into three types: normal open, normal closed and mixed type relays.



SEL881H

### TYPE OF STANDARDIZED RELAYS

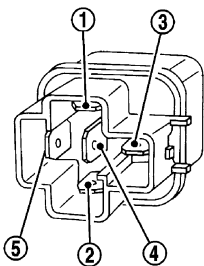
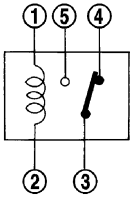
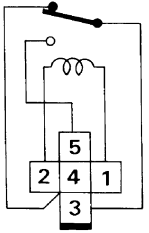
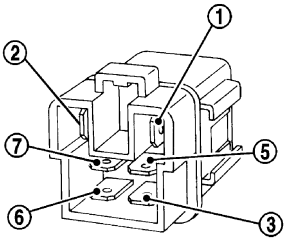
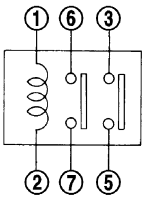
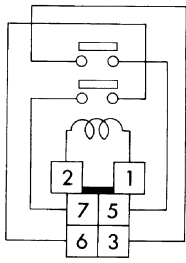
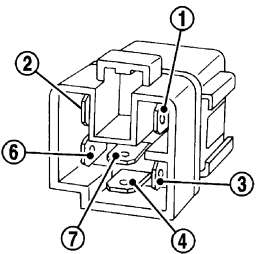
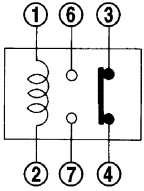
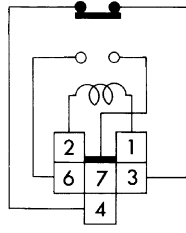
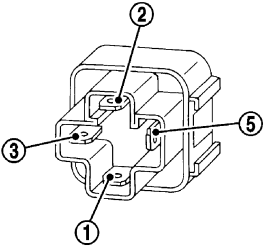
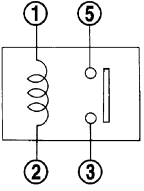
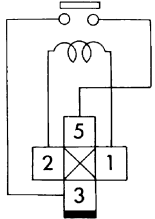
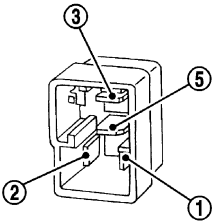
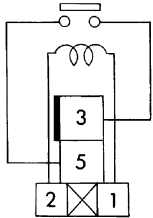
- 1M ..... 1 Make
- 2M ..... 2 Make
- 1T ..... 1 Transfer
- 1M·1B ..... 1 Make 1 Break



SEL882H

# STANDARDIZED RELAY

## < DTC/CIRCUIT DIAGNOSIS >

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

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

SEL188W

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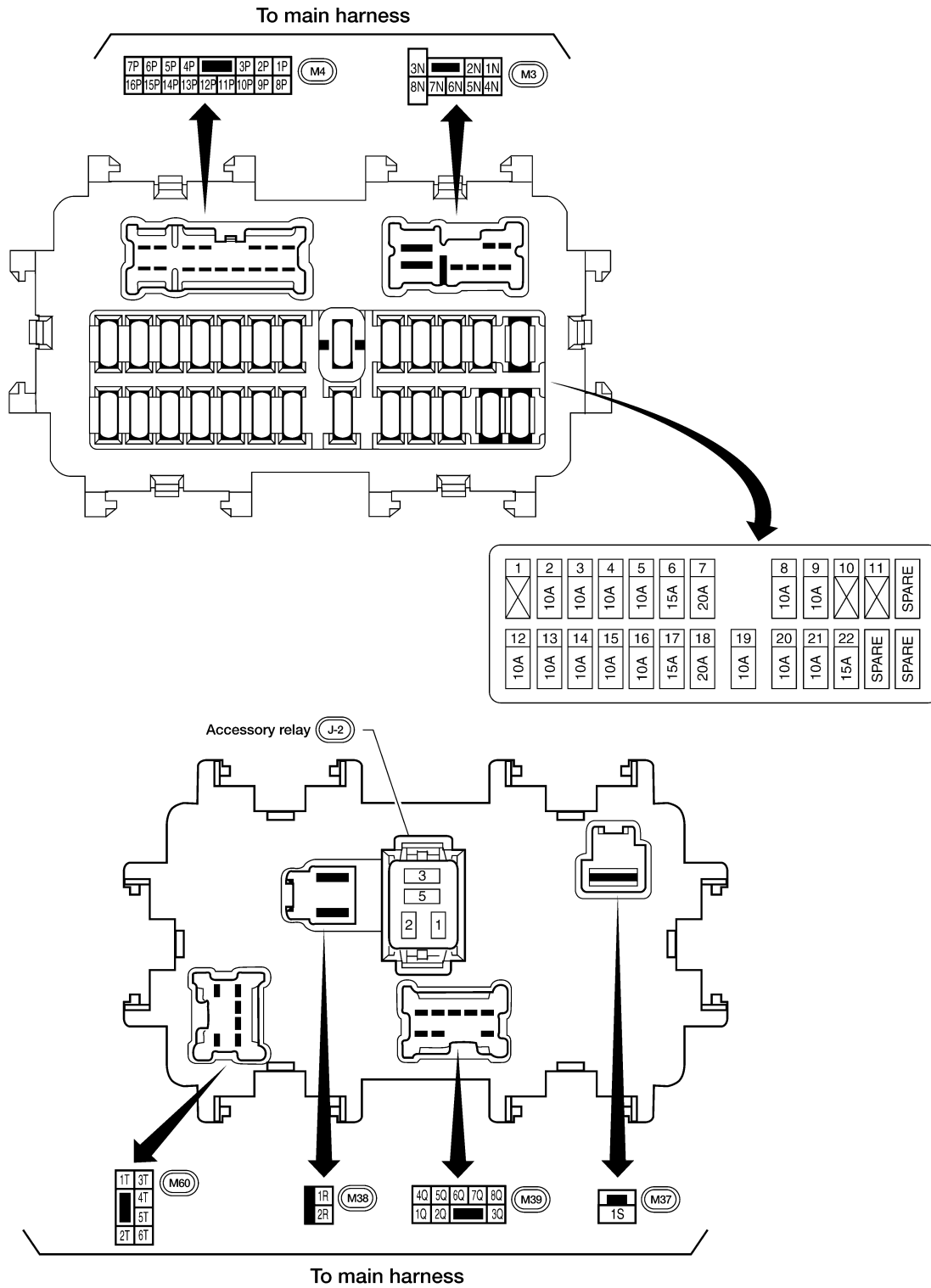
# FUSE BLOCK - JUNCTION BOX (J/B)

< DTC/CIRCUIT DIAGNOSIS >

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

### Terminal Arrangement

INFOID:000000006179652



ABMIA2529GB



# FUSE, FUSIBLE LINK AND RELAY BOX

< DTC/CIRCUIT DIAGNOSIS >

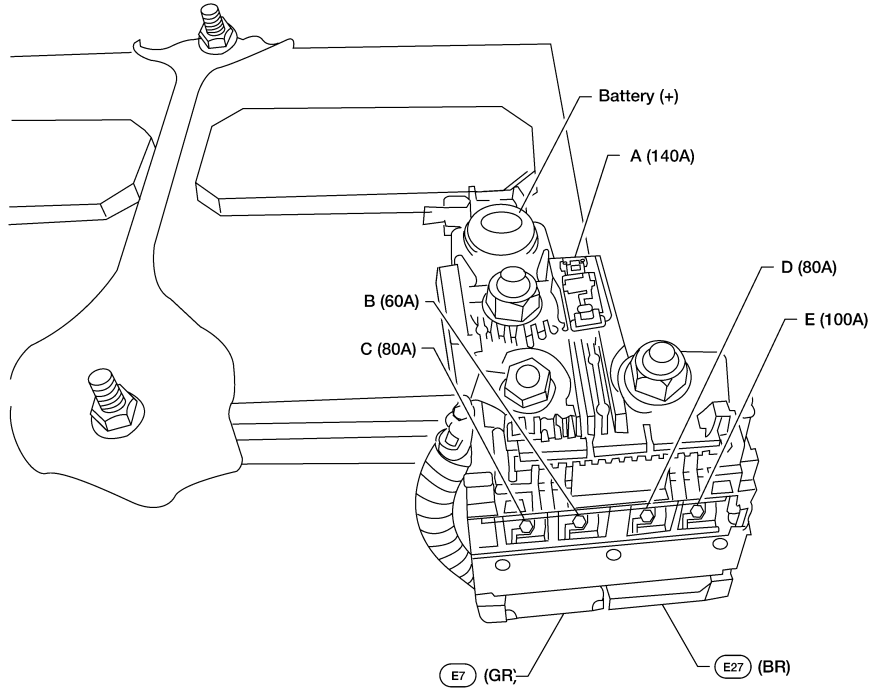
## FUSE, FUSIBLE LINK AND RELAY BOX

### Terminal Arrangement

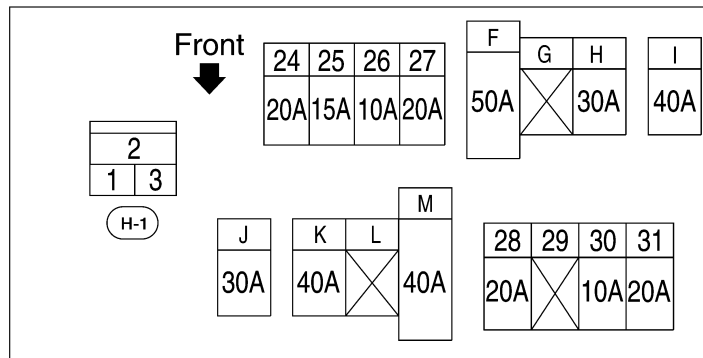
INFOID:000000006179653

### FUSE AND FUSIBLE LINK BOX

FUSIBLE LINK BOX (BATTERY)



FUSE AND FUSIBLE LINK BOX



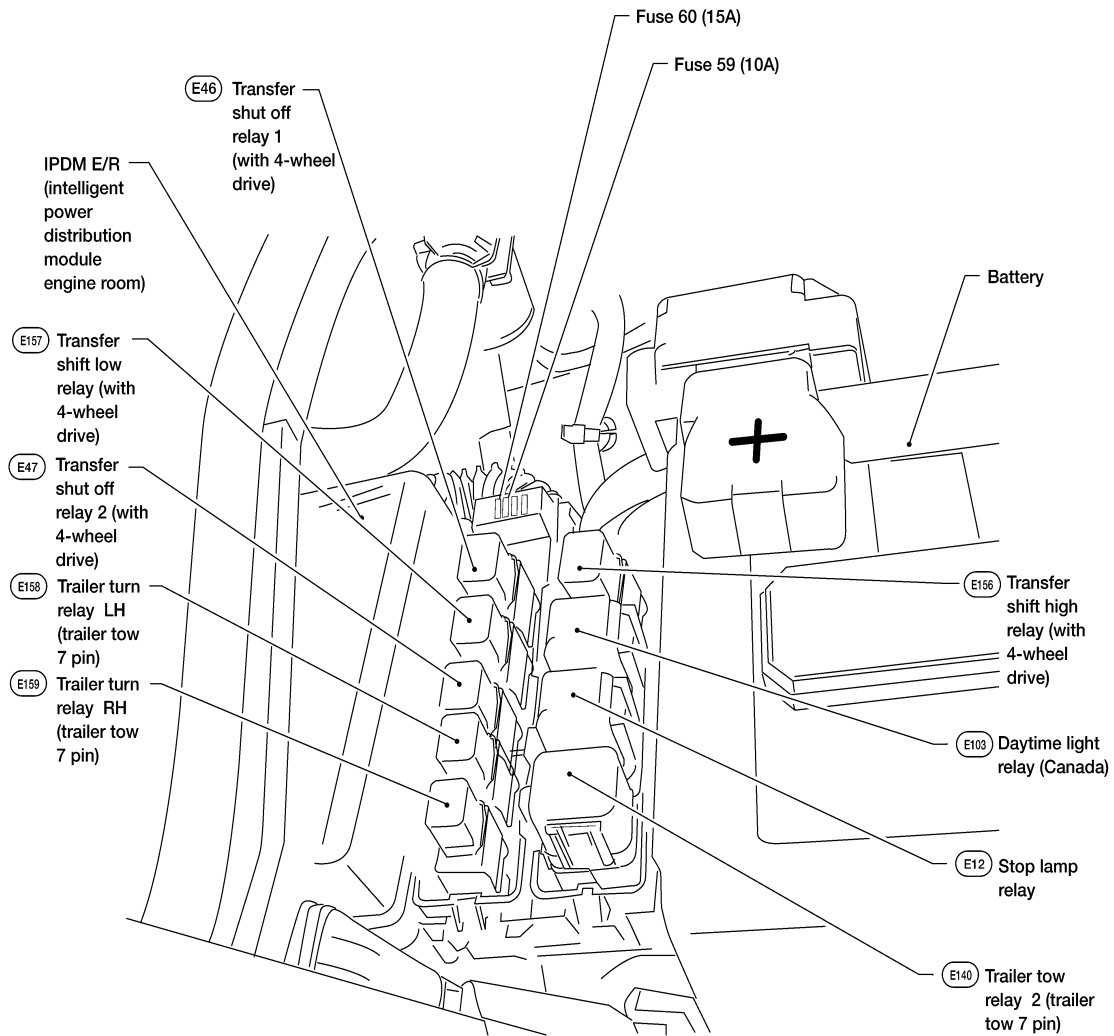
24 - 31 : FUSE    F - M : FUSIBLE LINK

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# FUSE, FUSIBLE LINK AND RELAY BOX

< DTC/CIRCUIT DIAGNOSIS >

## FUSE AND RELAY BOX



ABMIA1635GB

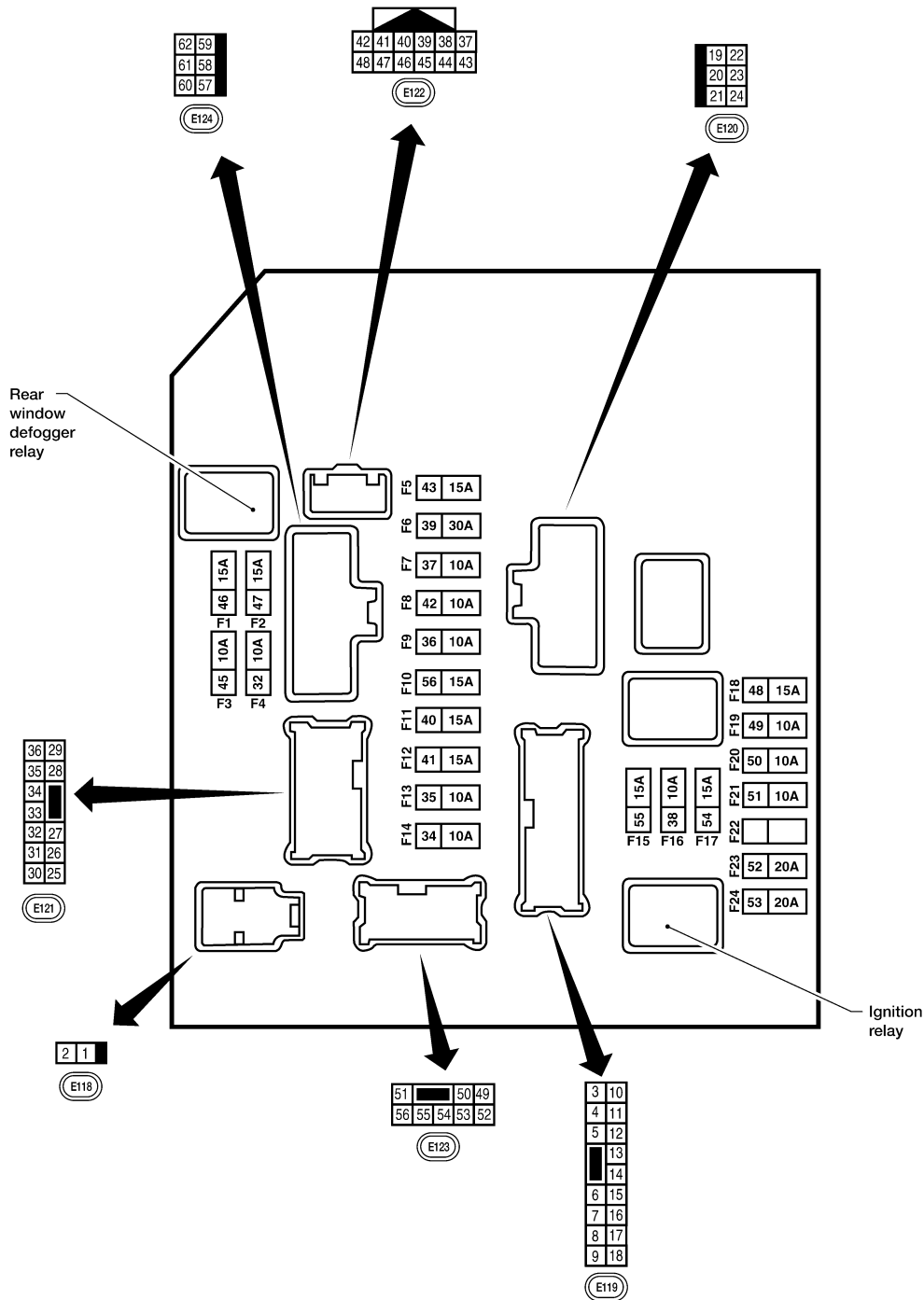
# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

< DTC/CIRCUIT DIAGNOSIS >

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

### IPDM E/R Terminal Arrangement

INFOID:000000006179655



**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.

ABMIA2539GB

# BATTERY

< REMOVAL AND INSTALLATION >

## REMOVAL AND INSTALLATION

### BATTERY

#### Removal and Installation

INFOID:000000006179656

#### REMOVAL

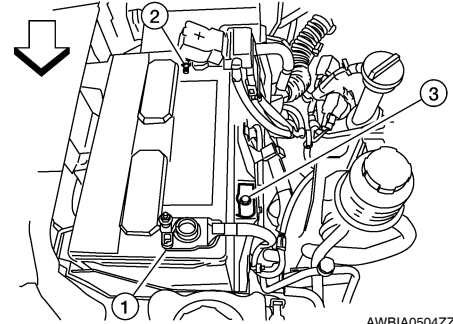
1. Disconnect the negative battery terminal (1) and positive battery terminal (2).

**CAUTION:**

**Remove negative battery terminal first.**

↔ : **Front**

2. Remove the battery cover.
3. Remove the battery clamp bolt (3) and battery clamp.
4. Remove the battery.



#### INSTALLATION

Installation is in the reverse order of removal.

**CAUTION:**

**When installing, install the positive battery terminal first.**

**Battery clamp bolt : 14.7 N·m (1.5 kg-m, 11 ft-lb)**

**Battery terminal nut : 3.5 N·m (0.36 kg-m, 31 in-lb)**

Reset electronic systems as necessary. Refer to [PG-7. "ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Special Repair Requirement"](#).

# SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

## SERVICE DATA AND SPECIFICATIONS (SDS)

### SERVICE DATA AND SPECIFICATIONS (SDS)

#### Battery

INFOID:000000006179657

	Standard battery	Heavy duty battery (with towing package and FFV equipped vehicles)
Type*	Gr. 24F	Gr. 27F
Capacity (20 HR) minimum V-AH	12 - 70	12 - 80
Cold cranking current A (For reference value)	650	710

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

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