# SECTION PG

# POWER SUPPLY, GROUND & CIRCUIT ELEMENTS

## CONTENTS

# PRECAUTION

## PRECAUTIONS

### Precaution for Technicians Using Medical Electric

INFOID:0000000009349251

#### OPERATION PROHIBITION

**WARNING:**

- **Parts with strong magnet is used in this vehicle.**
- **Technicians using a medical electric device such as pacemaker must never perform operation on the vehicle, as magnetic field can affect the device function by approaching to such parts.**

#### NORMAL CHARGE PRECAUTION

**WARNING:**

- **If a technician uses a medical electric device such as an implantable cardiac pacemaker or an implantable cardioverter defibrillator, the possible effects on the devices must be checked with the device manufacturer before starting the charge operation.**
- **As radiated electromagnetic wave generated by PDM (Power Delivery Module) at normal charge operation may affect medical electric devices, a technician using a medical electric device such as implantable cardiac pacemaker or an implantable cardioverter defibrillator must not approach motor room [PDM (Power Delivery Module)] at the hood-opened condition during normal charge operation.**

#### PRECAUTION AT TELEMATICS SYSTEM OPERATION

**WARNING:**

- **If a technician uses implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), avoid the device implanted part from approaching within approximately 220 mm (8.66 in) from interior/exterior antenna.**
- **The electromagnetic wave of TCU might affect the function of the implantable cardiac pacemaker or the implantable cardioverter defibrillator (ICD), when using the service, etc.**
- **If a technician uses other medical electric devices than implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), the electromagnetic wave of TCU might affect the function of the device. The possible effects on the devices must be checked with the device manufacturer before TCU use.**

#### PRECAUTION AT INTELLIGENT KEY SYSTEM OPERATION

**WARNING:**

- **If a technician uses implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), avoid the device implanted part from approaching within approximately 220 mm (8.66 in) from interior/exterior antenna.**
- **The electromagnetic wave of Intelligent Key might affect the function of the implantable cardiac pacemaker or the implantable cardioverter defibrillator (ICD), at door operation, at each request switch operation, or at engine starting.**
- **If a technician uses other medical electric devices than implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), the electromagnetic wave of Intelligent Key might affect the function of the device. The possible effects on the devices must be checked with the device manufacturer before Intelligent Key use.**

### Point to Be Checked Before Starting Maintenance Work

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**The high voltage system may starts automatically. It is required to check that the timer air conditioner and timer charge (during EVSE connection) are not set before starting maintenance work.**
**NOTE:**
If the timer air conditioner or timer charge (during EVSE connection) is set, the high voltage system starts automatically even when the power switch is in OFF state.

### High Voltage Precautions

INFOID:0000000008743980

**WARNING:**

- **Because hybrid vehicles and electric vehicles contain a high voltage battery, there is the risk of electric shock, electric leakage, or similar accidents if the high voltage component and vehicle are han-**

**dled incorrectly. Be sure to follow the correct work procedures when performing inspection and maintenance.**
- **Be sure to remove the service plug in order to disconnect the high voltage circuits before performing inspection or maintenance of high voltage system harnesses and parts.**
- **To prevent the removed service plug from being connected by mistake during the procedure, always carry it in your pocket or put it in the tool box.**
- **Be sure to wear insulating protective equipment before beginning work on the high voltage system.**
- **Clearly identify the persons responsible for high voltage work and ensure that other persons do not touch the vehicle. When not working, cover high voltage parts with an insulating cover sheet or similar item to prevent other persons from contacting them.**

**CAUTION:**

**There is the possibility of a malfunction occurring if the vehicle is changed to READY status while the service plug is removed. Therefore do not change the vehicle to READY status unless instructed to do so in the Service Manual.**

## HIGH VOLTAGE HARNESS AND EQUIPMENT IDENTIFICATION

The colors of the high voltage harnesses and connectors are all orange. Orange "High Voltage" labels are applied to the Li-ion battery and other high voltage devices. Do not carelessly touch these harnesses and parts.

## HANDLING OF HIGH VOLTAGE HARNESS AND TERMINALS

Immediately insulate disconnected high voltage connectors and terminals with insulating tape.

## REGULATIONS ON WORKERS WITH MEDICAL ELECTRONICS

**WARNING:**

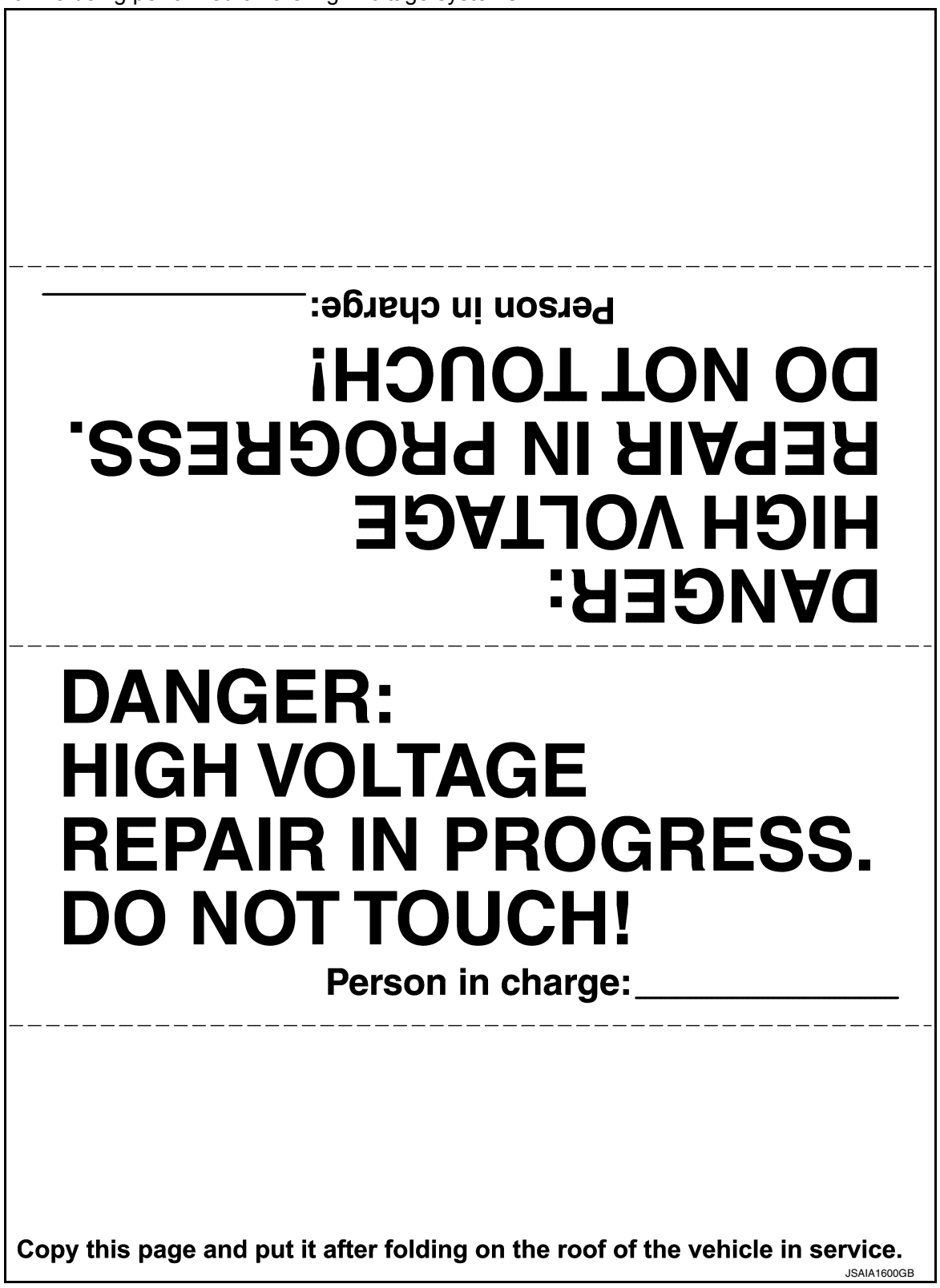
**The vehicle contains parts that contain powerful magnets. If a person who is wearing a heart pacemaker or other medical device is close to these parts, the medical device may be affected by the magnets. Such persons must not perform work on the vehicle.**

## PROHIBITED ITEMS TO CARRY DURING THE WORK

Because this vehicle uses components that contain high voltage and powerful magnetism, due not carry any metal products which may cause short circuits, or any magnetic media (cash cards, prepaid cards, etc.) which may be damaged on your person when working.

## POSTING A SIGN OF “DANGER! HIGH VOLTAGE AREA. KEEP OUT”

To call the attention of other workers, indicate "High voltage work in progress. Do not touch!" on vehicles where work is being performed on the high voltage systems.




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

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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 Removing 12V Battery

*INFOID:0000000008743982*

1. Check that EVSE is not connected.
   **NOTE:**
   If EVSE is connected, the air conditioning system may be automatically activated by the timer A/C function.
2. Turn the power switch OFF → ON → OFF. Get out of the vehicle. Close all doors (including back door).
3. Check that the charge status indicator lamp does not blink and wait for 5 minutes or more.
   **NOTE:**
   If the battery is removed within 5 minutes after the power switch is turned OFF, plural DTCs may be detected.
4. Remove 12V battery within 1 hour after turning the power switch OFF → ON → OFF.
   **NOTE:**
   - The 12V battery automatic charge control may start automatically even when the power switch is in OFF state.
   - Once the power switch is turned ON → OFF, the 12V battery automatic charge control does not start for approximately 1 hour.

   **CAUTION:**

   - **After all doors (including back door) are closed, if a door (including back door) is opened before battery terminals are disconnected, start over from Step 1.**
   - **After turning the power switch OFF, if "Remote A/C" is activated by user operation, stop the air conditioner and start over from Step 1.**

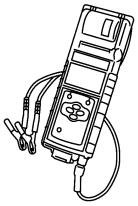
# PREPARATION

## PREPARATION

### Special Service Tools

INFOID:0000000008743983

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

| Tool number<br>(TechMate No.)<br>Tool name | | Description |
|---|---|---|
| —<br>(—) Model GR8-1200 NI<br>Multitasking battery and electrical diagnostic station |  <br>AWIIA1239ZZ | Tests batteries, starting and charging systems and charges batteries.<br>For operating instructions, refer to diagnostic station instruction manual. |
| —<br>(—) Model EXP-800 NI<br>Battery and electrical diagnostic analyzer |  <br>JSMIA0806ZZ | Tests batteries and charging systems.<br>For operating instructions, refer to diagnostic analyzer instruction manual. |

# SYSTEM DESCRIPTION

## COMPONENT PARTS

### Circuit Breaker

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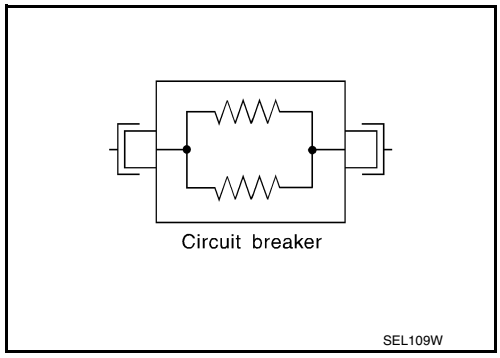
The PTC thermistor generates heat in response to current flow. The temperature (and resistance) of the thermistor element varies with current flow. Excessive current flow will cause the element's temperature to rise. When the temperature reaches a specified level, the electrical resistance will rise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




### 12V Battery

INFOID:0000000008743985

| | | |
|---|---|---|
| Type | | 55B24L(S) |
| 20 hour rate capacity | [V – Ah] | 12 – 45 |
| Cold cranking current (For reference value) | [A] | 433 |

**NOTE:**
VCM charges the 12V battery for 5 minutes when the vehicle power is not turned ON for a set period of time (120 h). Refer to EVC-61, "AUTOMATIC 12V BATTERY CHARGE CONTROL : System Description".

### Harness Connector

INFOID:0000000008743986

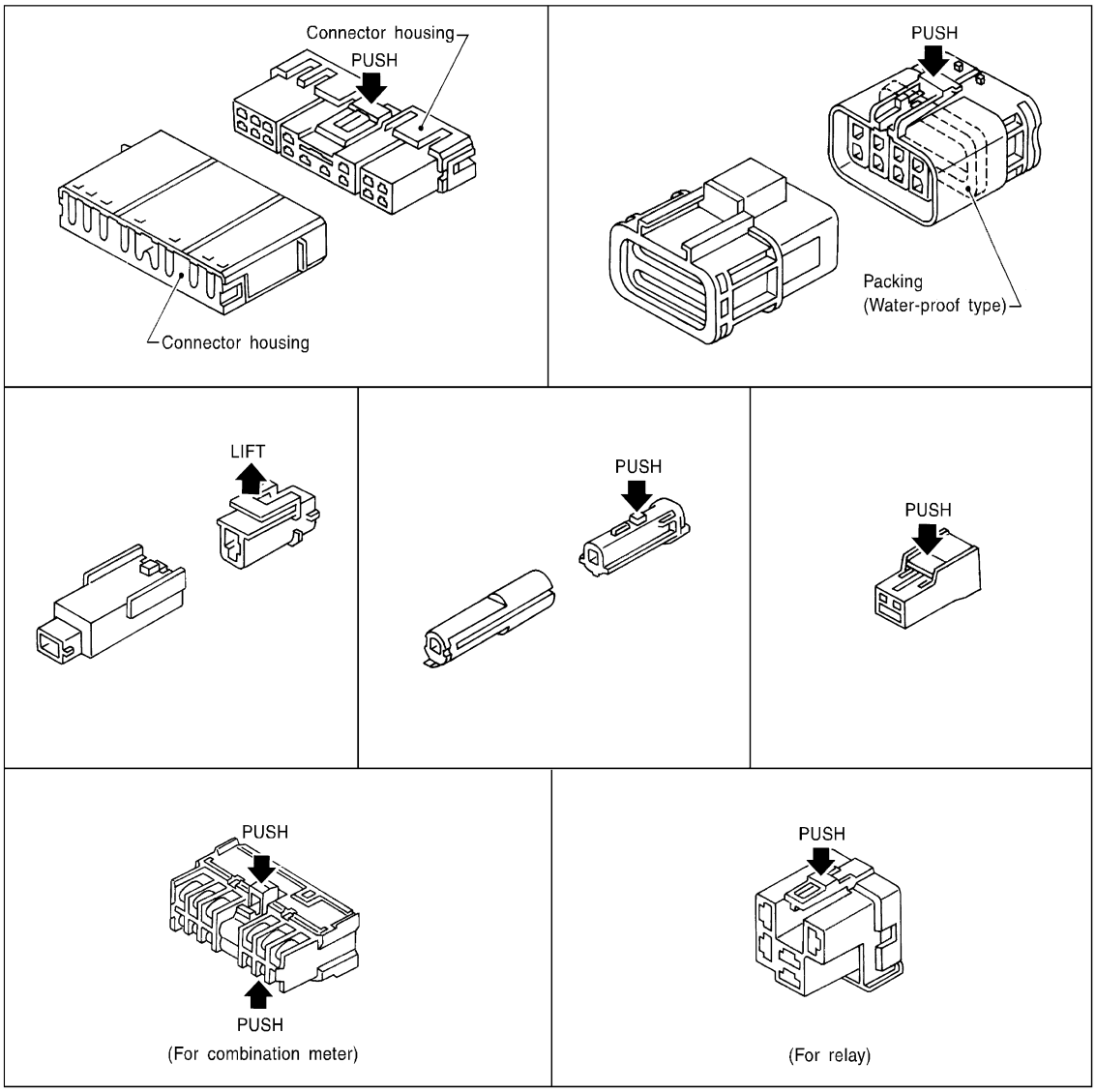
**NOTE:**
The color of the high voltage harnesses and connectors is orange. Do not carelessly touch these harnesses and connector.

#### 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.

**CAUTION:**
**To prevent damage to the parts, never pull the harness or wires when disconnecting the connector.**

[Example]

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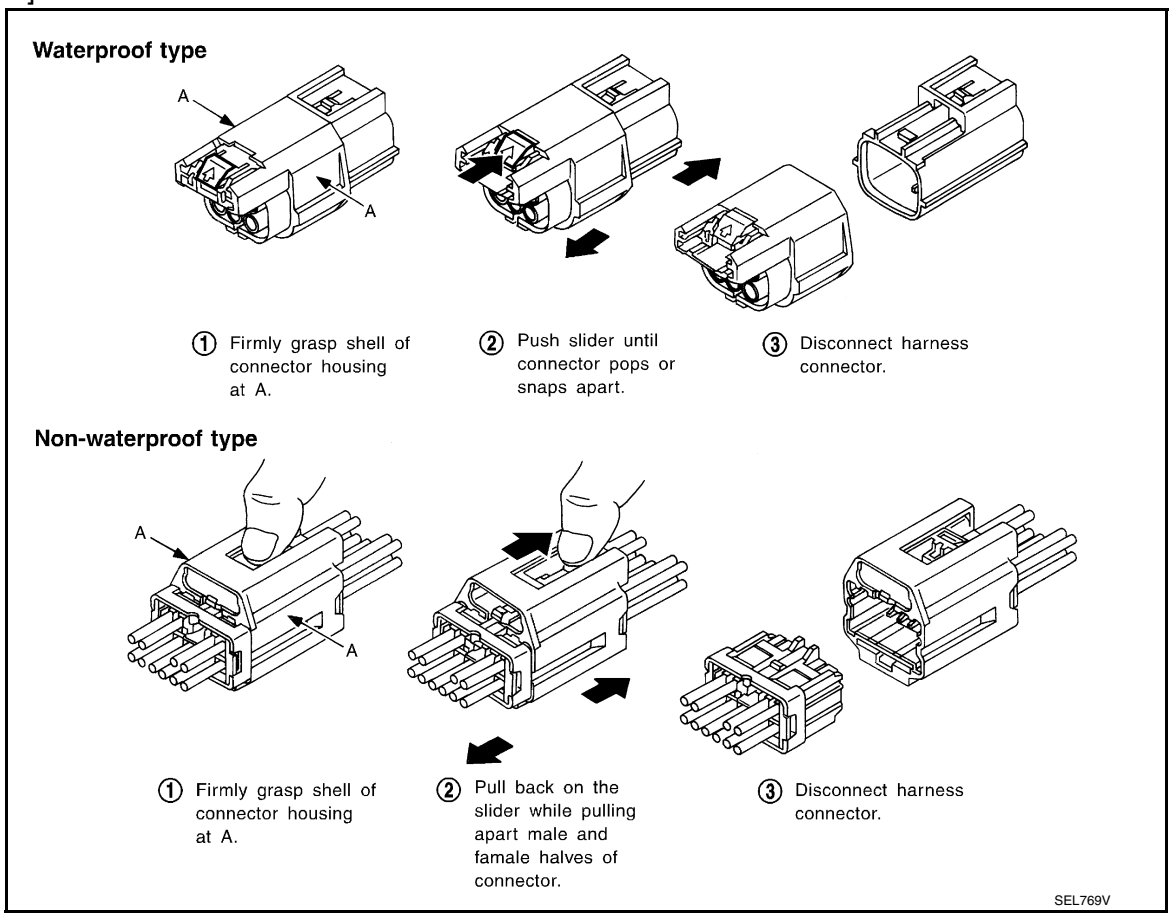
## HARNESS CONNECTOR (SLIDE-LOCKING TYPE)

- 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.
- After connecting the connector, check that the slider is located in the correct position.

**CAUTION:**

- **To prevent damage to the parts, never pull the harness or wires when disconnecting the connector.**
- **To prevent damage to the parts, be careful not to damage the connector support bracket when disconnecting the connector.**

[Example]

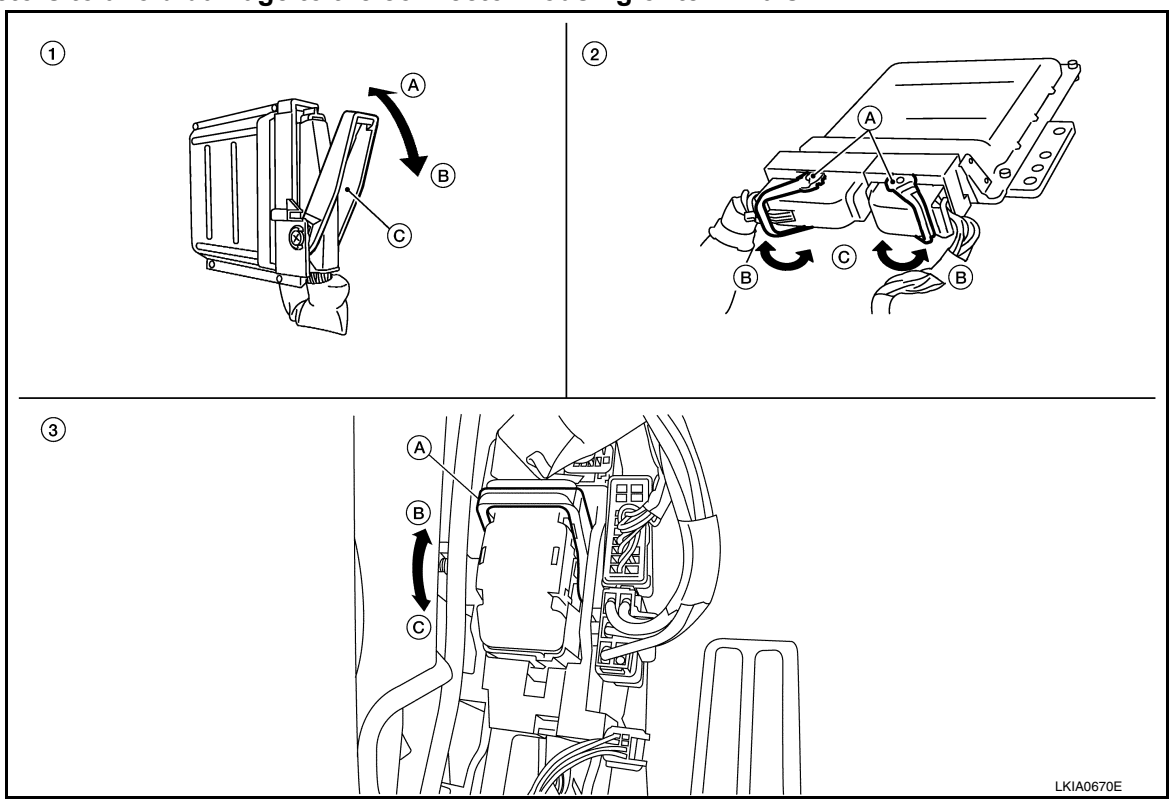



HARNESS CONNECTOR (LEVER LOCKING TYPE)

- 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:**

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



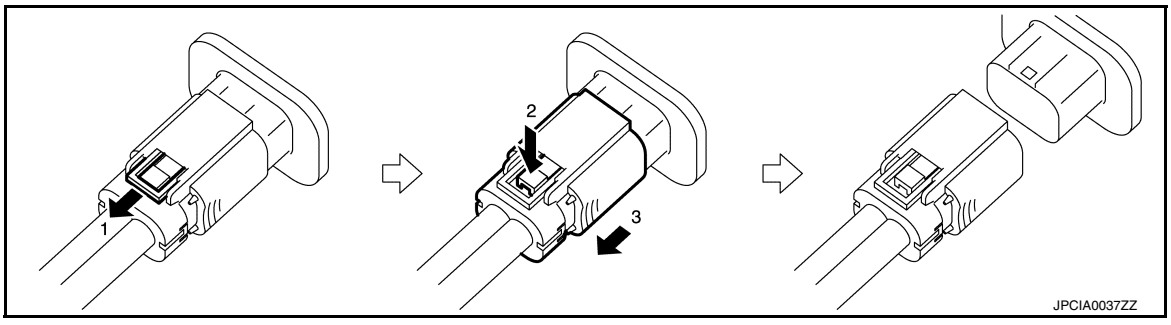

1. Control unit with single lever
   A. Fasten
   B. Loosen
   C. Lever
2. Control unit with dual levers
   A. Levers
   B. Fasten
   C. Loosen
3. SMJ connector
   A. Lever
   B. Fasten
   C. Loosen

## HIGH VOLTAGE HARNESS CONNECTOR (2-STEP TYPE, 3-STEP TYPE)

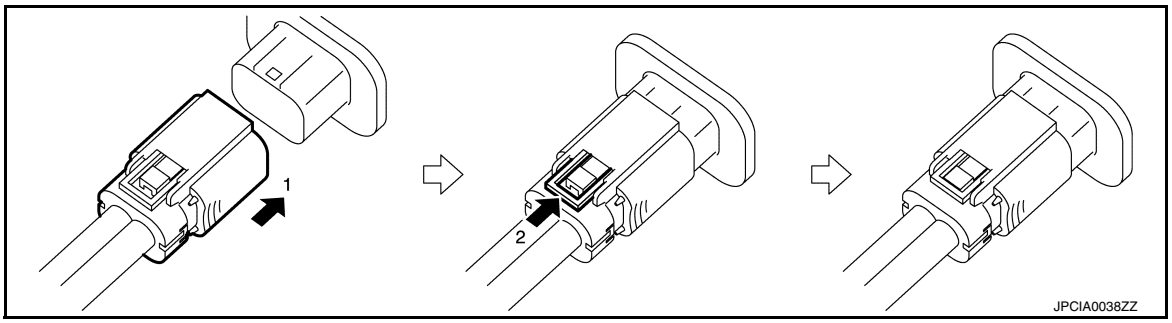
- 2-step type and 3-step type connectors are used for specific high voltage parts.
- For secure connection, check that the slider is pressed all the way when connecting the high voltage connector.

2-Step Type

DISCONNECT

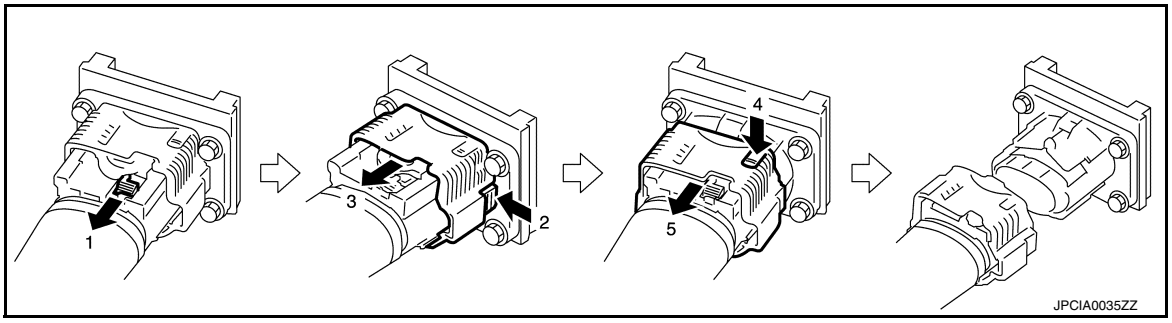


CONNECT

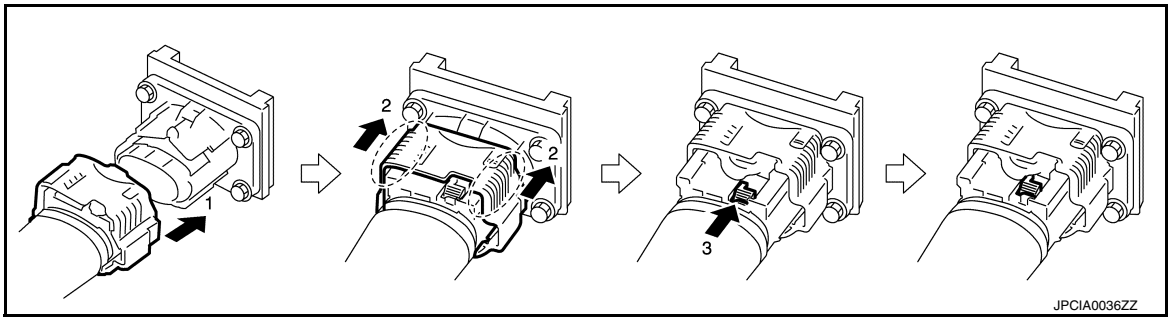



3-Step Type

DISCONNECT




CONNECT




## Standardized Relay

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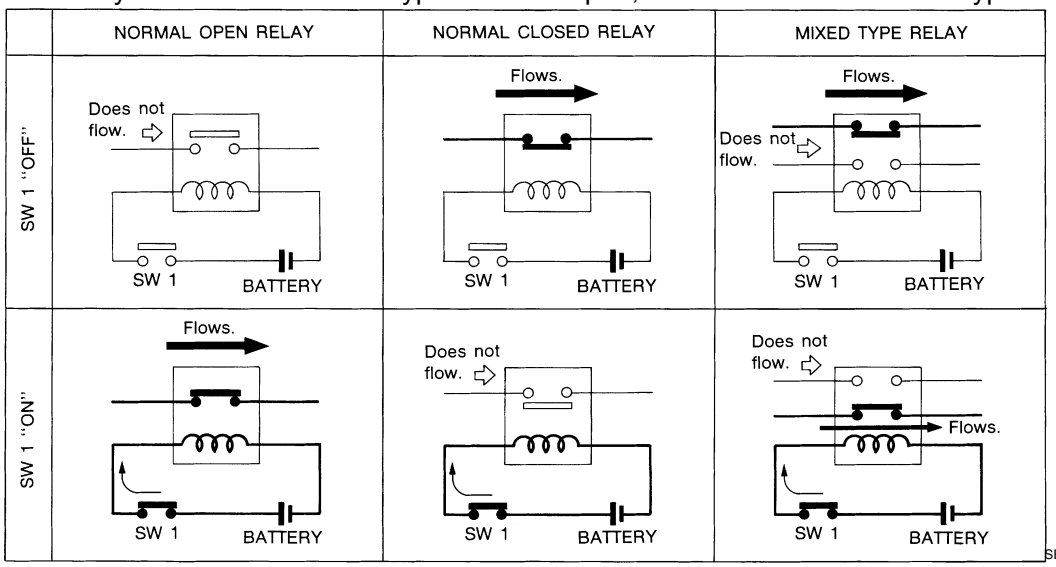
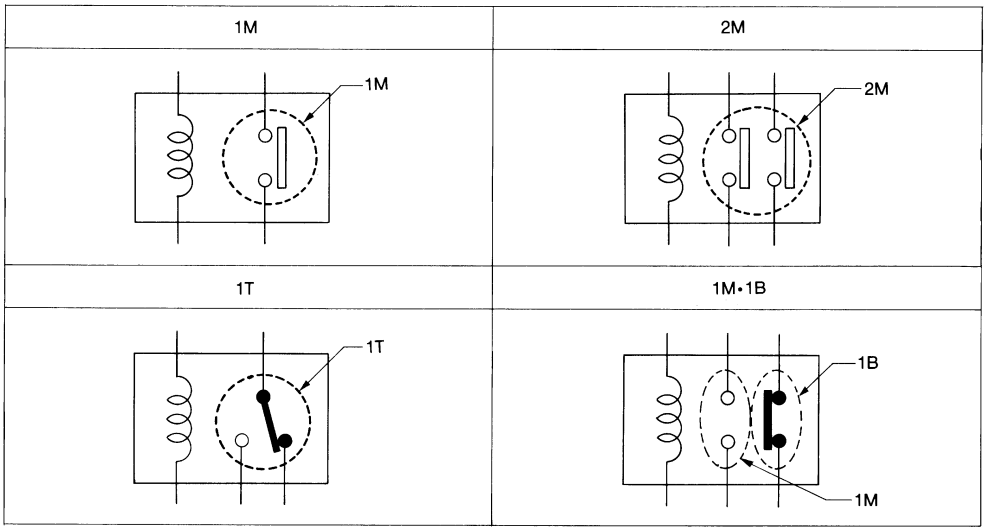
### NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

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



## TYPE OF STANDARDIZED RELAYS

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

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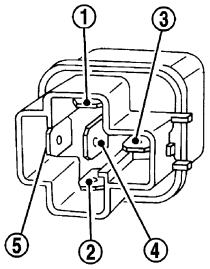
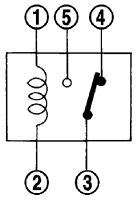
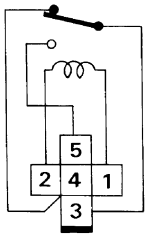
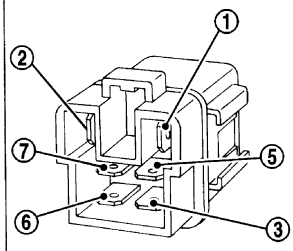
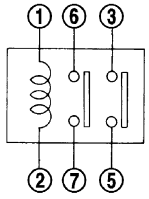
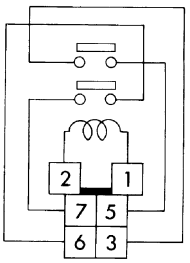
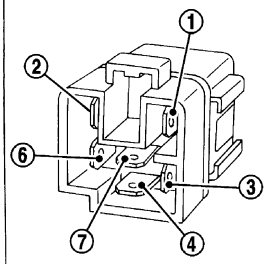
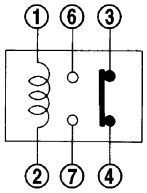
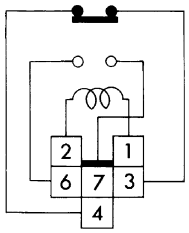
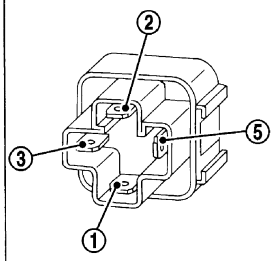
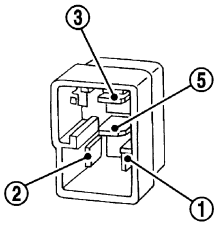
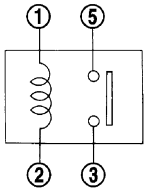
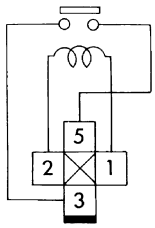
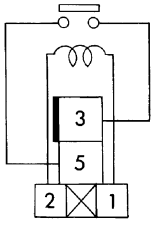
| Type | Outer view | Circuit | Connector symbol and connection | Case color |
|---|---|---|---|---|
| 1T |  |  |  | BLACK |
| 2M |  |  |  | BROWN |
| 1M•1B |  |  |  | GRAY |
| 1M |  <br>  |  |  <br>  | BLUE |

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

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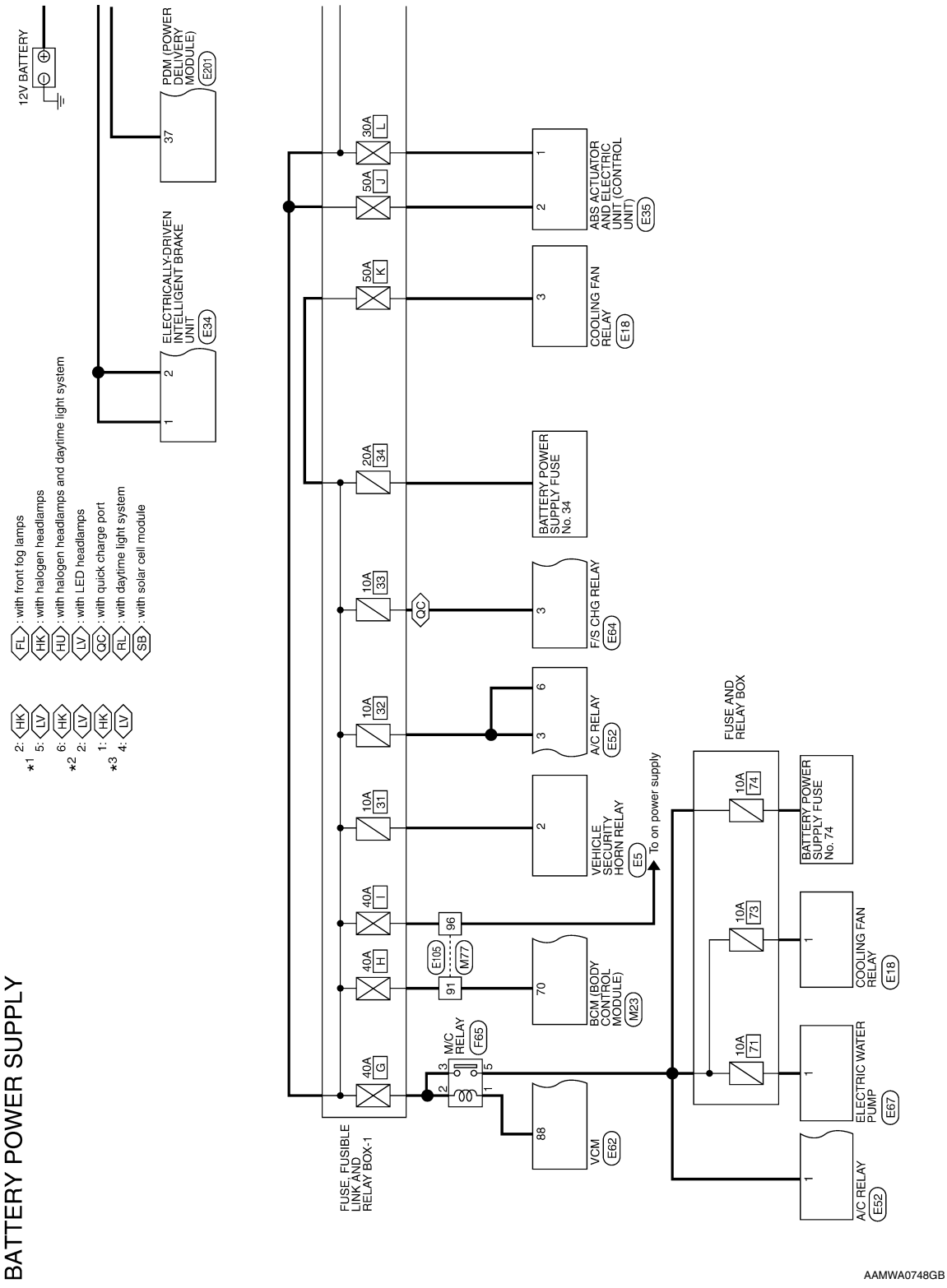
# WIRING DIAGRAM

## POWER SUPPLY ROUTING CIRCUIT

### Wiring Diagram - BATTERY POWER SUPPLY -

INFOID:0000000008743988

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

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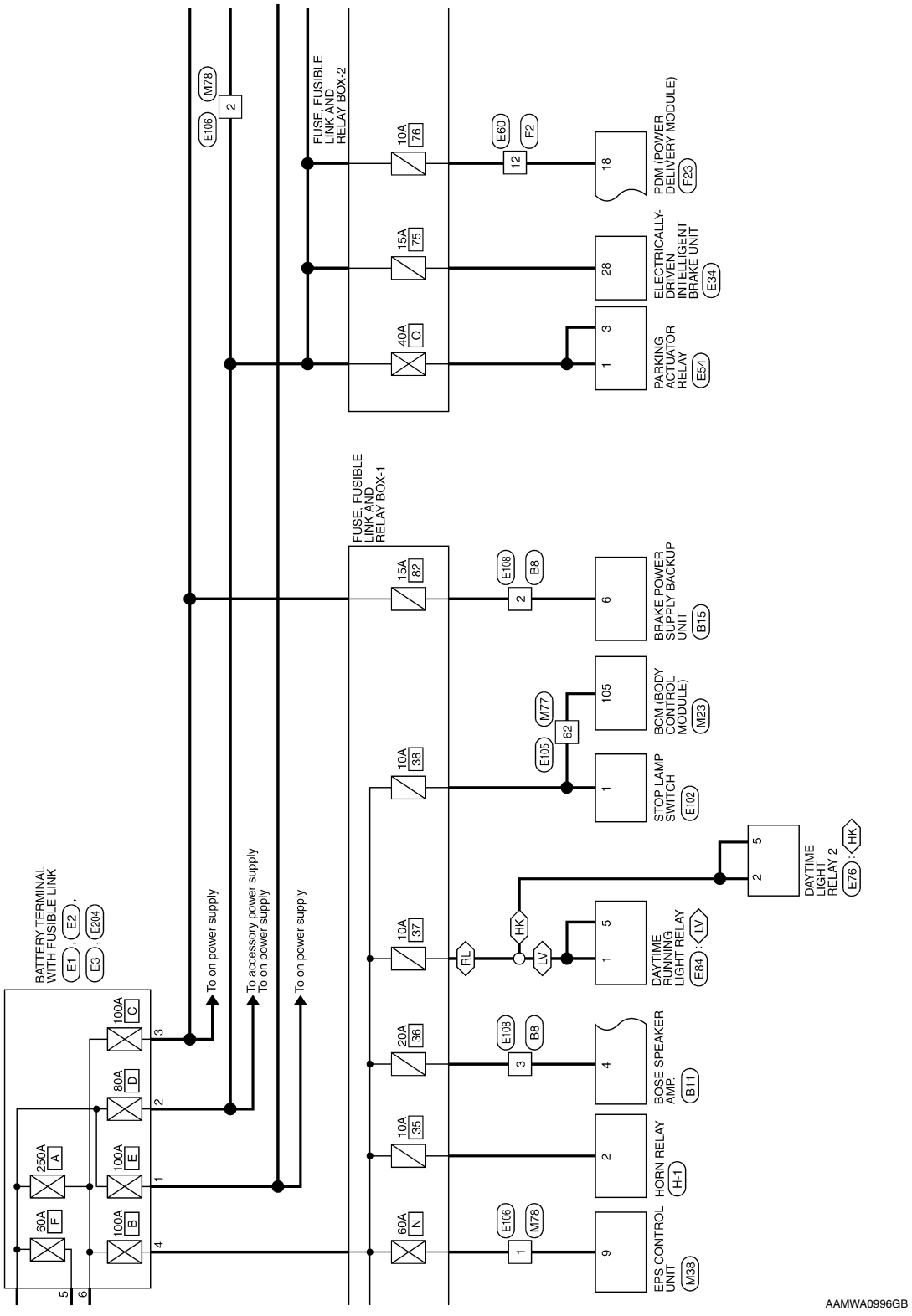
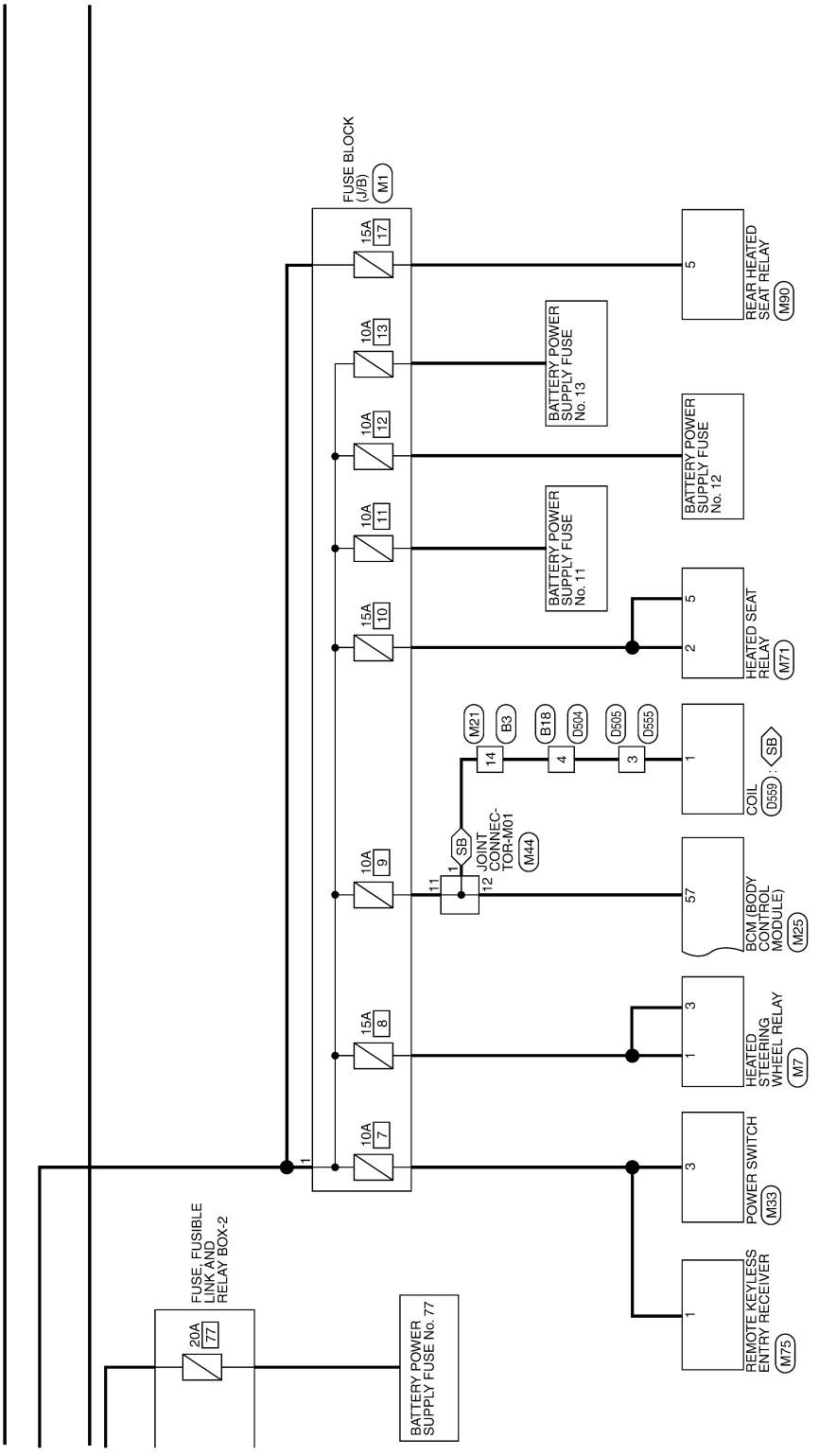

BATTERY TERMINAL WITH FUSIBLE LINK
E1 , E2 , E3 , E204
250A A
60A F
100A B
100A E
80A D
100A C
60A N
10A 35
20A 36
10A 37
10A 38
15A 82
10A 76
15A 75
40A O
FUSE, FUSIBLE LINK AND RELAY BOX-1
FUSE, FUSIBLE LINK AND RELAY BOX-2
To on power supply
To accessory power supply
To on power supply
To on power supply
E106 M78
EPS CONTROL UNIT M38
HORN RELAY H-1
BOSE SPEAKER AMP. B11
DAYTIME RUNNING LIGHT RELAY E84 : LV
DAYTIME LIGHT RELAY 2 E76 : HK
STOP LAMP SWITCH E102
BCM (BODY CONTROL MODULE) M23
BRAKE POWER SUPPLY BACKUP UNIT B15
PARKING ACTUATOR RELAY E54
ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT E34
PDM (POWER DELIVERY MODULE) F23
E108 B8
E105 M77
E60 F2
RL
HK
LV
AAMWA0996GB

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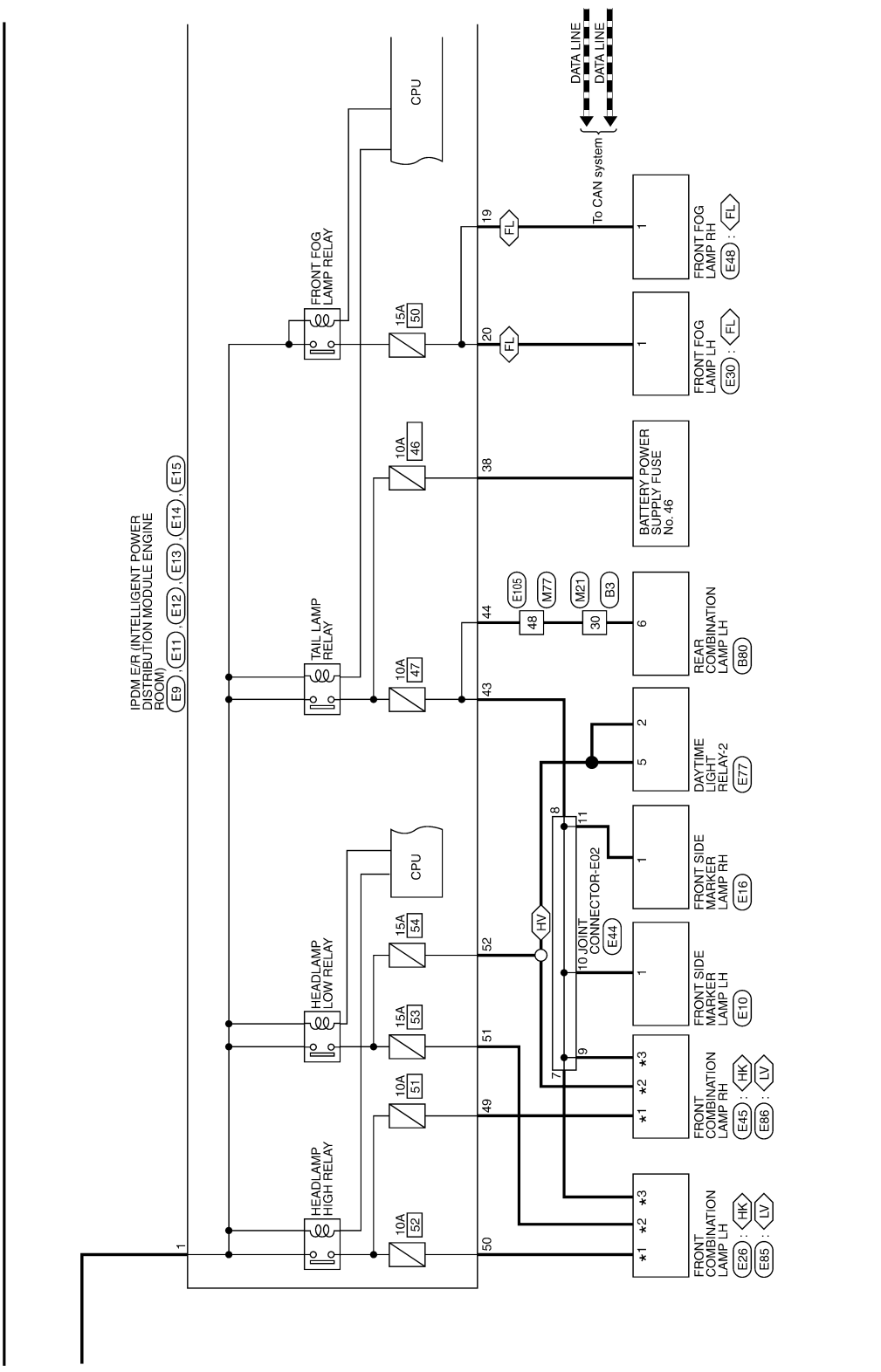


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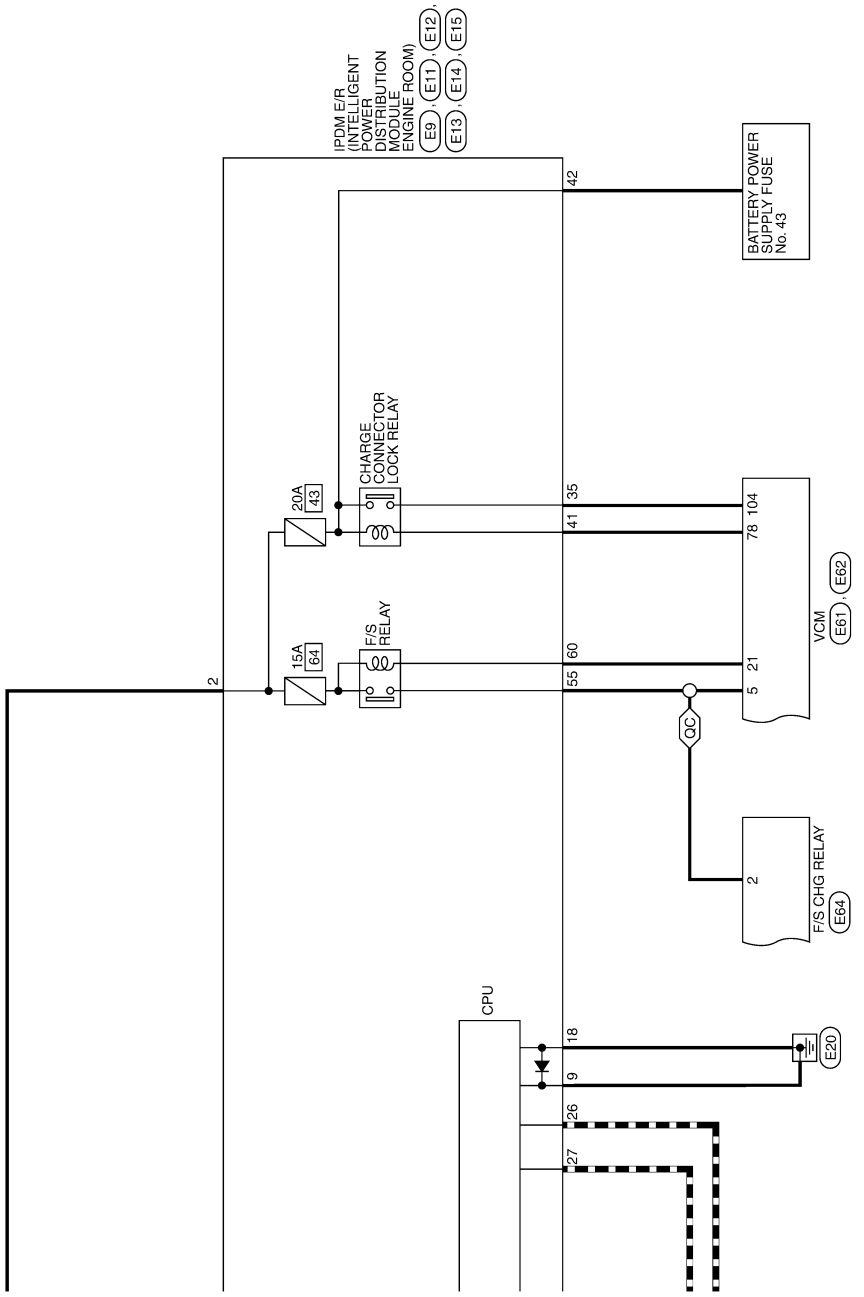


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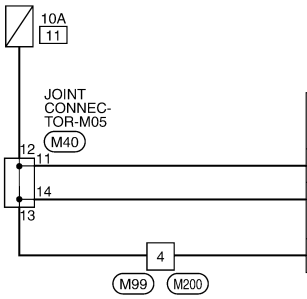
## Wiring Diagram - BATTERY POWER SUPPLY FUSE No.11 -

INFOID:0000000008743989

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

BATTERY POWER SUPPLY FUSE No. 11




| Connector no. | Terminal no. | Connect to |
|---|---|---|
| M34 | 1 | COMBINATION METER |
| M47 | 13 | APPROACHING VEHICLE SOUND FOR PEDESTRIANS (VSP) CONTROL UNIT |
| M201 | 4 | CHARGING STATUS INDICATOR |

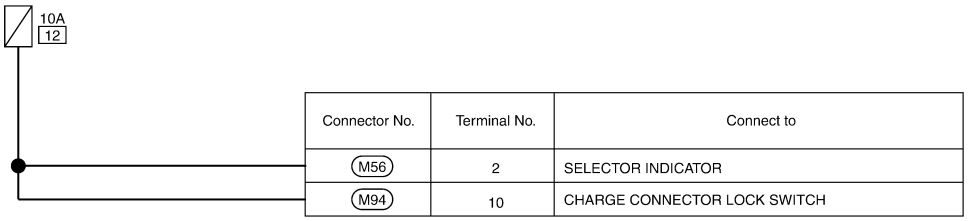
AAMIA1539GB

## Wiring Diagram - BATTERY POWER SUPPLY FUSE No.12 -

INFOID:0000000008743990

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

BATTERY POWER SUPPLY FUSE No. 12




| Connector No. | Terminal No. | Connect to |
|---|---|---|
| M56 | 2 | SELECTOR INDICATOR |
| M94 | 10 | CHARGE CONNECTOR LOCK SWITCH |

AAMIA1540GB

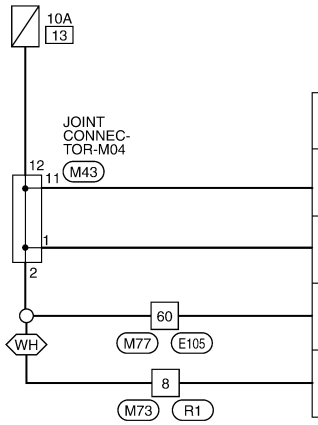
## Wiring Diagram - BATTERY POWER SUPPLY FUSE No.13 -

INFOID:0000000008743991

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

BATTERY POWER SUPPLY FUSE No. 13

WH : With homelink universal transmitter




| Connector No. | Terminal No. | Connect to |
|---|---|---|
| M4 | 16 | DATA LINK CONNECTOR |
| M55 | 31 | A/C AUTO AMP. |
| E28 | 1 | INTELLIGENT KEY WARNING BUZZER |
| R7 | 10 | AUTO ANTI-DAZZLING INSIDE MIRROR |

AAMIA1541GB

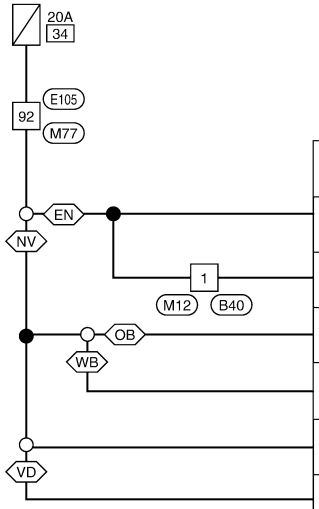
# Wiring Diagram - BATTERY POWER SUPPLY FUSE No.34 -

INFOID:0000000009347911

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

BATTERY POWER SUPPLY FUSE No. 34

EN : Without NAVI
NV : With NAVI
OB : Without BOSE audio system
VD : With around view monitor
WB : With BOSE audio system




| Connector No. | Terminal No. | Connect to |
|---|---|---|
| M83 | 19 | AUDIO UNIT |
| B9 | 1 | BLUETOOTH® CONTROL UNIT |
| M95 | 19 | AV CONTROL UNIT |
| M100 | 19 | AV CONTROL UNIT |
| M67 | 1 | TCU |
| M32 | 2 | AROUND VIEW MONITOR CONTROL UNIT |

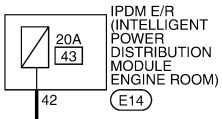
AAMIA1542GB

## Wiring Diagram - BATTERY POWER SUPPLY FUSE No.43 -

INFOID:0000000008743992

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

BATTERY POWER SUPPLY FUSE No.43




| Connector No. | Terminal No. | Connect to |
|---|---|---|
| E24 | 1 | CHARGING PORT LID ILLUMINATION |
| E61 | 11 | VCM |
| E88 | 5 | CHARGE PORT LID OPENER ACTUATOR RELAY |

AAMIA1543GB

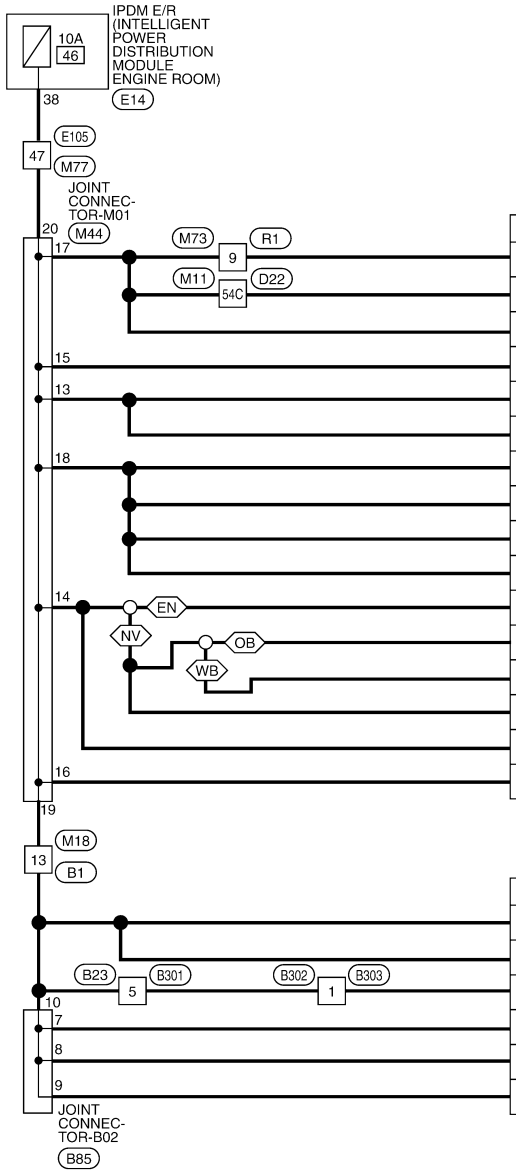
# Wiring Diagram - BATTERY POWER SUPPLY FUSE No.46 -

INFOID:0000000009347912

For connector terminal arrangements, harness layouts, and alphabets in a ⟨⟩ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

BATTERY POWER SUPPLY FUSE No.46

⟨EN⟩ : without NAVI
⟨NV⟩ : with NAVI
⟨OB⟩ : without BOSE audio system
⟨WB⟩ : with BOSE audio system




| Connector No. | Terminal No. | Connect to |
|---|---|---|
| R4 | 1 | MAP LAMP |
| D5 | 9 | DOOR MIRROR REMOTE CONTROL SWITCH |
| M26 | 3 | METER CONTROL SWITCH |
| M65 | 1 | IMMEDIATE CHARGING SWITCH |
| M45 | 3 | HAZARD SWITCH |
| M56 | 5 | SELECTOR INDICATOR |
| M6 | 3 | HEATED STEERING WHEEL SWITCH |
| M28 | 1 | VDC OFF SWITCH |
| M93 | 1 | CHARGE PORT LID OPENER SWITCH |
| M94 | 2 | CHARGE CONNECTOR LOCK SWITCH |
| M83 | 9 | AUDIO UNIT |
| M95 | 9 | AV CONTROL UNIT |
| M100 | 9 | AV CONTROL UNIT |
| M51 | 8 | MULTI FUNCTION SWITCH |
| M55 | 19 | A/C AUTO AMP. |
| M108 | 23 | COMBINATION SWITCH (SPIRAL CABLE) |

| Connector No. | Terminal No. | Connect to |
|---|---|---|
| B25 | 5 | FRONT HEATED SEAT SWITCH LH |
| B33 | 5 | FRONT HEATED SEAT SWITCH RH |
| B306 | 5 | REAR HEATED SEAT SWITCH |
| B58 | 1 | LICENSE PLATE LAMP RH |
| B57 | 1 | LICENSE PLATE LAMP LH |
| B59 | 6 | REAR COMBINATION LAMP RH |

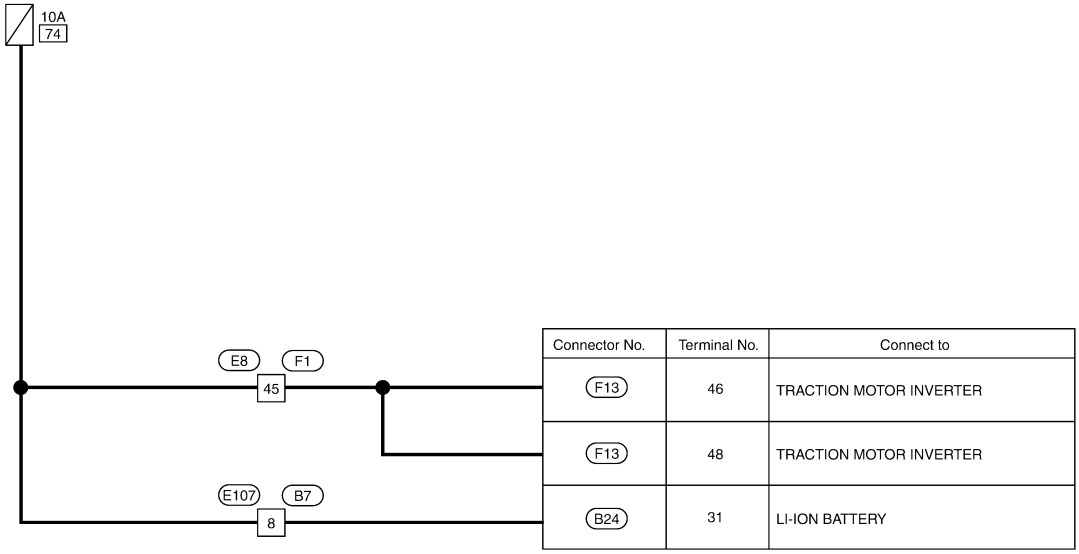
AAMIA2054GB

## Wiring Diagram - BATTERY POWER SUPPLY FUSE No.74 -

INFOID:0000000008743995

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

BATTERY POWER SUPPLY FUSE No.74




| Connector No. | Terminal No. | Connect to |
|---|---|---|
| F13 | 46 | TRACTION MOTOR INVERTER |
| F13 | 48 | TRACTION MOTOR INVERTER |
| B24 | 31 | LI-ION BATTERY |

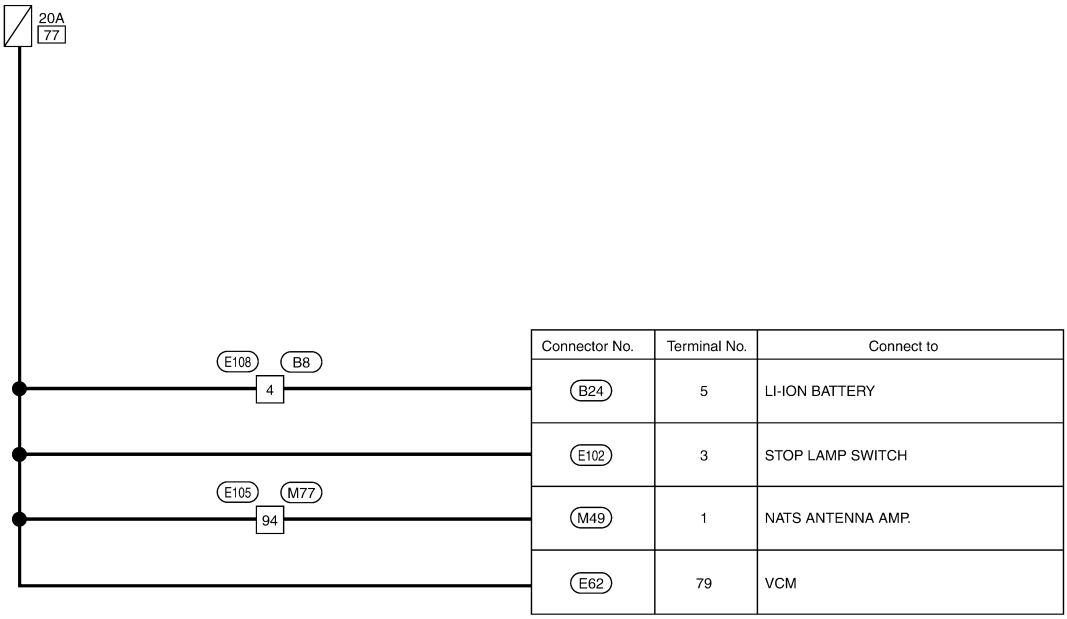
AAMIA1545GB

## Wiring Diagram - BATTERY POWER SUPPLY FUSE No.77 -

INFOID:0000000009347913

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

BATTERY POWER SUPPLY FUSE No.77




| Connector No. | Terminal No. | Connect to |
|---|---|---|
| B24 | 5 | LI-ION BATTERY |
| E102 | 3 | STOP LAMP SWITCH |
| M49 | 1 | NATS ANTENNA AMP. |
| E62 | 79 | VCM |

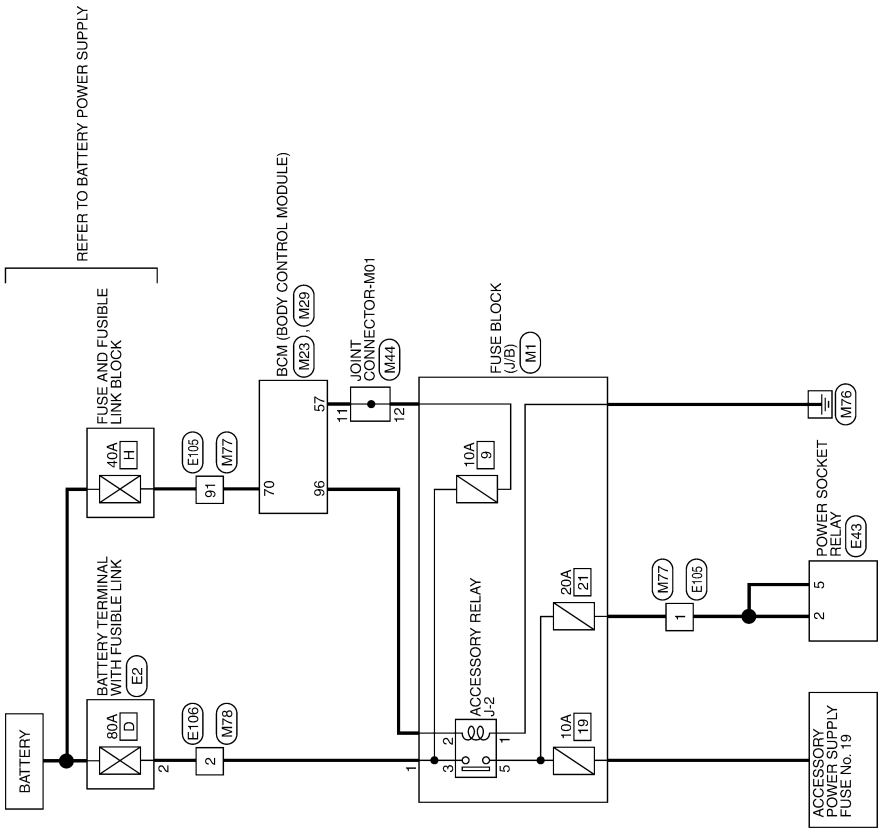
AAMIA1546GB

## Wiring Diagram - ACCESSORY POWER SUPPLY -

INFOID:0000000008743996

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

ACCESSORY POWER SUPPLY




AAMWA0753GB

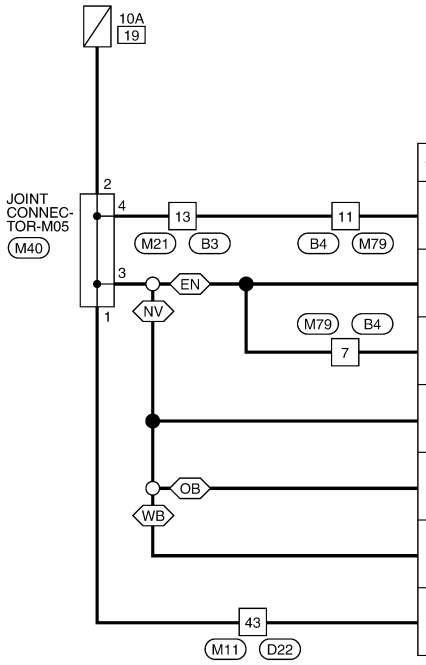
# Wiring Diagram - ACCESSORY POWER SUPPLY FUSE No.19 -

INFOID:0000000008743997

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

ACCESSORY POWER SUPPLY FUSE No. 19

EN : without NAVI
NV : with NAVI
OB : without BOSE audio system
WB : with BOSE audio system



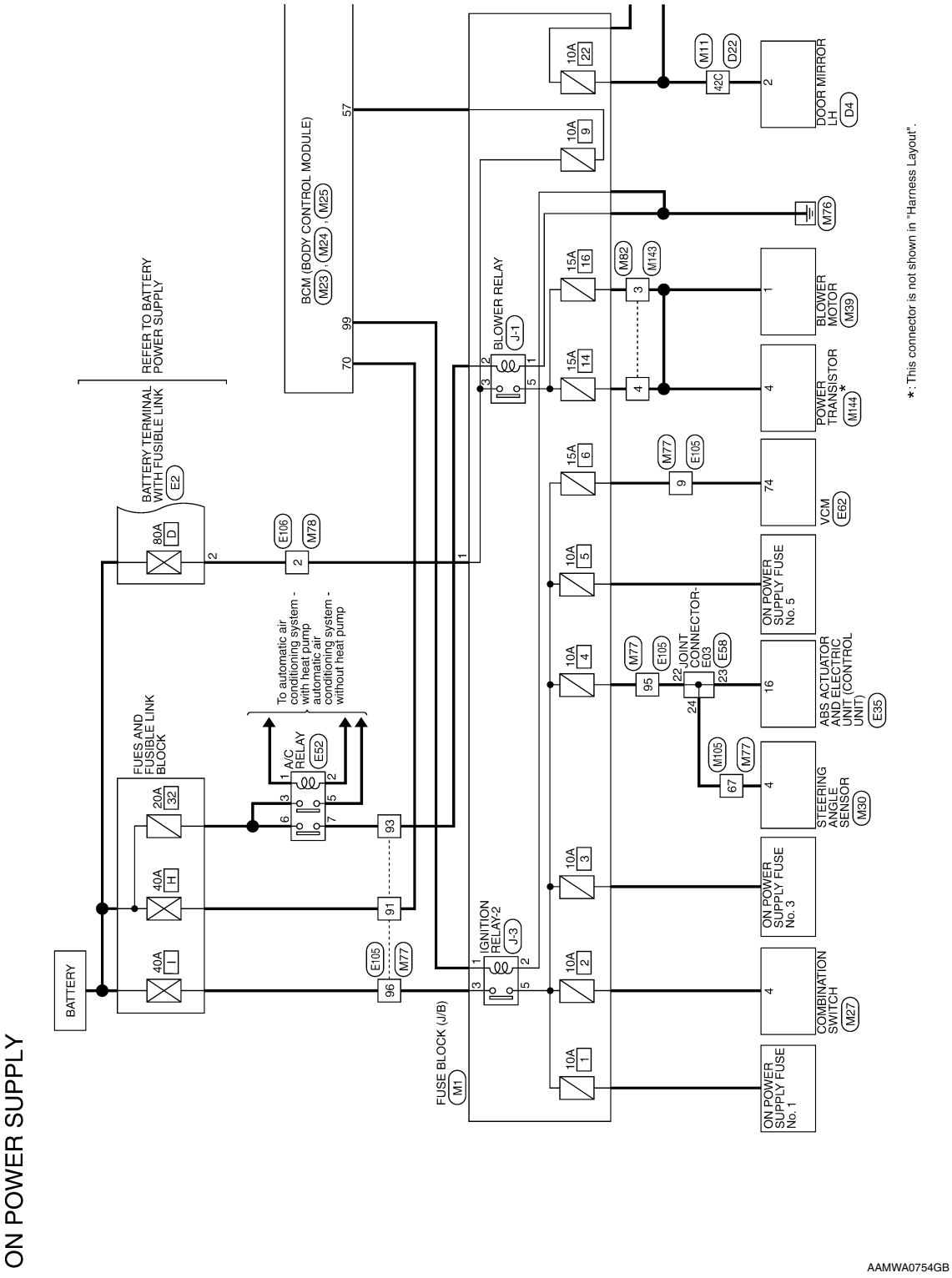

| Connector No. | Terminal No. | Connect to |
|---|---|---|
| M67 | 3 | TCU |
| M83 | 7 | AUDIO UNIT |
| B9 | 2 | BLUETOOTH® CONTROL UNIT |
| M51 | 4 | MULTI FUNCTION SWITCH |
| M95 | 7 | AV CONTROL UNIT |
| M100 | 7 | AV CONTROL UNIT |
| D23 | 7 | DOOR MIRROR REMOTE CONTROL SWITCH |

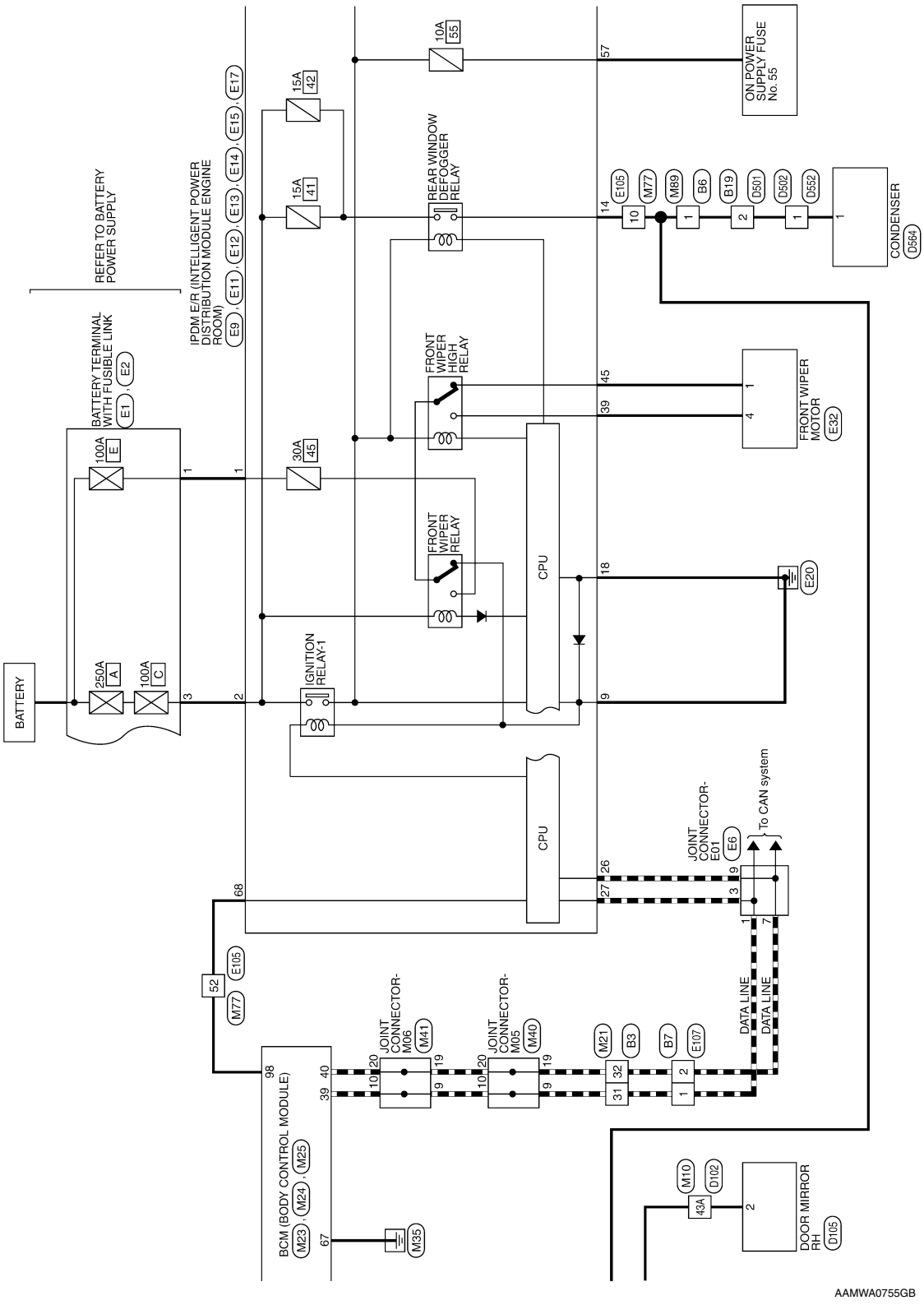
AAMIA2055GB

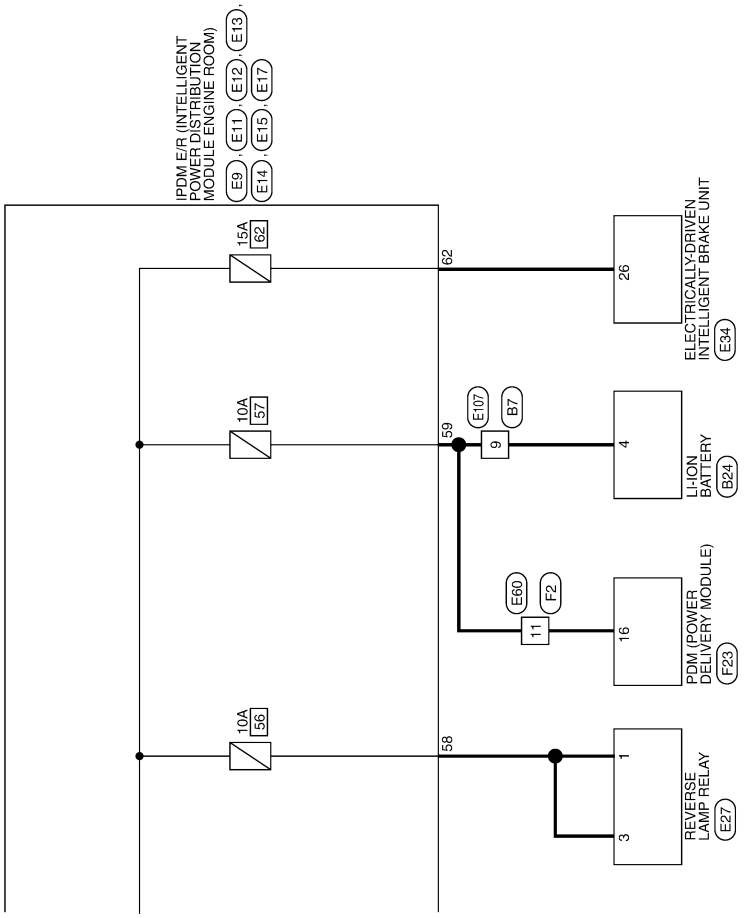
## Wiring Diagram - ON POWER SUPPLY -

INFOID:0000000008743998

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".




REFER TO BATTERY POWER SUPPLY
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E9, E11, E12, E13, E14, E15, E17
BATTERY TERMINAL WITH FUSIBLE LINK
E1, E2
BATTERY
100A E
250A A
100A C
30A 45
15A 41
15A 42
10A 55
IGNITION RELAY-1
FRONT WIPER RELAY
FRONT WIPER HIGH RELAY
REAR WINDOW DEFOGGER RELAY
CPU
CPU
ON POWER SUPPLY FUSE No. 55
CONDENSER D564
FRONT WIPER MOTOR E32
E20
JOINT CONNECTOR-E01 E6
To CAN system
DATA LINE
DATA LINE
JOINT CONNECTOR-M06 M41
JOINT CONNECTOR-M05 M40
M21
B3
B7
E107
BCM (BODY CONTROL MODULE) M23, M24, M25
M35
M10
D102
43A
DOOR MIRROR RH D105
AAMWA0755GB



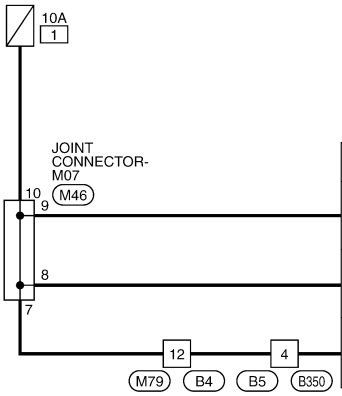

AAMWA0756GB

## Wiring Diagram - ON POWER SUPPLY FUSE No.1 -

INFOID:0000000008743999

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

ON POWER SUPPLY FUSE No. 1




| Connector No. | Terminal No. | Connect to |
|---|---|---|
| M61 | 1 | AIR BAG DIAGNOSIS SENSOR UNIT |
| M63 | 3 | FRONT PASSENGER AIR BAG OFF INDICATOR |
| B351 | 9 | OCCUPANT CLASSIFICATION SYSTEM CONTROL UNIT |

AAMIA1548GB

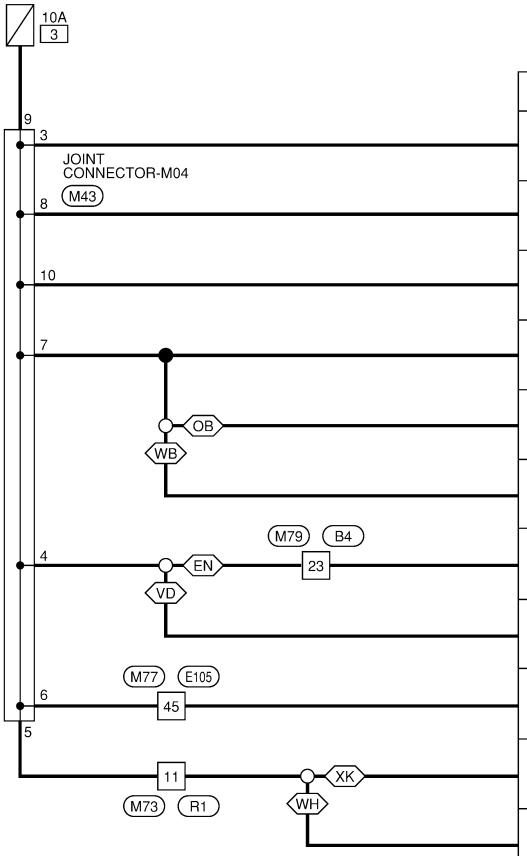
## Wiring Diagram - ON POWER SUPPLY FUSE No.3 -

INFOID:0000000008744000

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

ON POWER SUPPLY FUSE No. 3

EN : without NAVI
OB : without BOSE audio system
VD : with around view monitor
WB : with BOSE audio system
WH : With homelink universal transmitter
XK : Without homelink universal transmitter




| Connector No. | Terminal No. | Connect to |
|---|---|---|
| M67 | 4 | TCU |
| M4 | 8 | DATA LINK CONNECTOR |
| M37 | 4 | EPS CONTROL UNIT |
| M55 | 32 | A/C AUTO AMP. |
| M96 | 26 | AV CONTROL UNIT |
| M103 | 26 | AV CONTROL UNIT |
| B9 | 3 | BLUETOOTH® CONTROL UNIT |
| M32 | 4 | AROUND VIEW MONITOR CONTROL UNIT |
| E112 | 1 | BRAKE PEDAL POSITION SWITCH |
| R6 | 1 | AUTO ANTI-DAZZLING INSIDE MIRROR |
| R7 | 6 | AUTO ANTI-DAZZLING INSIDE MIRROR |

AAMIA1549GB

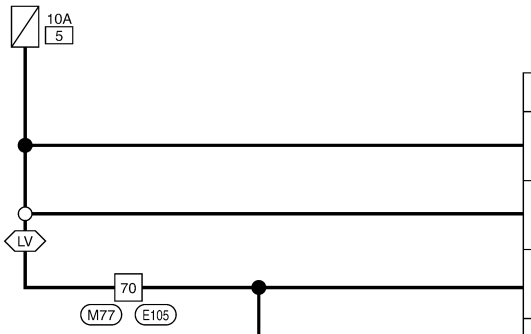
## Wiring Diagram - ON POWER SUPPLY FUSE No.5 -

INFOID:0000000008744001

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

ON POWER SUPPLY FUSE No. 5

⬡ LV : with LED headlamps




| Connector No. | Terminal No. | Connect to |
|---|---|---|
| M34 | 3 | COMBINATION METER |
| M47 | 11 | APPROACHING VEHICLE SOUND FOR PEDESTRIANS (VSP) CONTROL UNIT |
| E85 | 3 | FRONT COMBINATION LAMP LH |
| E86 | 3 | FRONT COMBINATION LAMP RH |

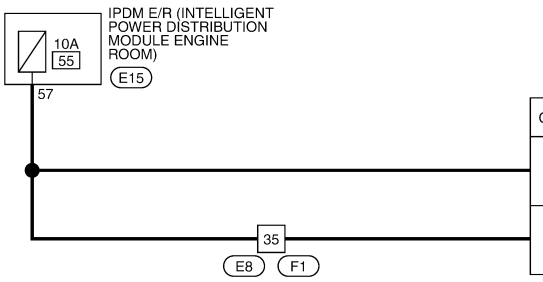
AAMIA1550GB

## Wiring Diagram - ON POWER SUPPLY FUSE No.55 -

INFOID:0000000008744002

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

ON POWER SUPPLY FUSE No. 55



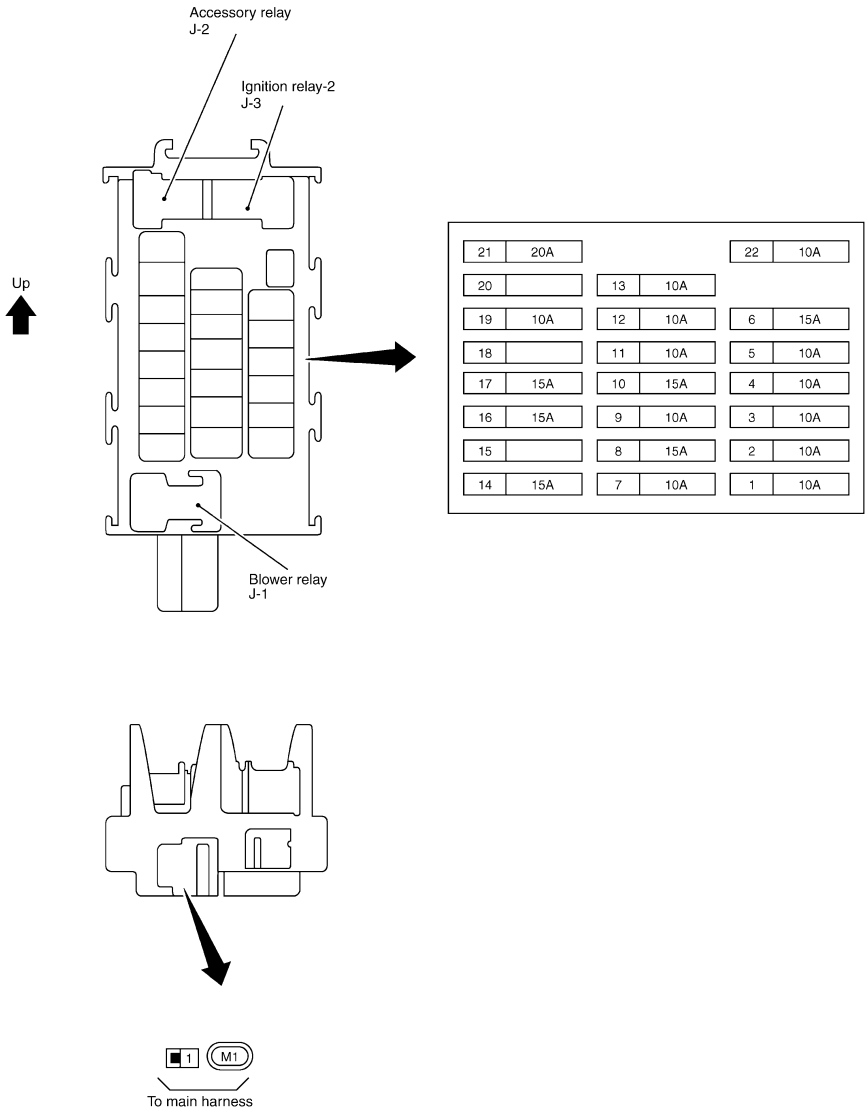

| Connector No. | Terminal No. | Connect to |
|---|---|---|
| E61 | 51 | VCM |
| F13 | 42 | TRACTION MOTOR INVERTER |

AAMIA1551GB

# FUSE BLOCK - JUNCTION BOX (J/B)

## Fuse, Connector and Terminal Arrangement

INFOID:0000000008744003

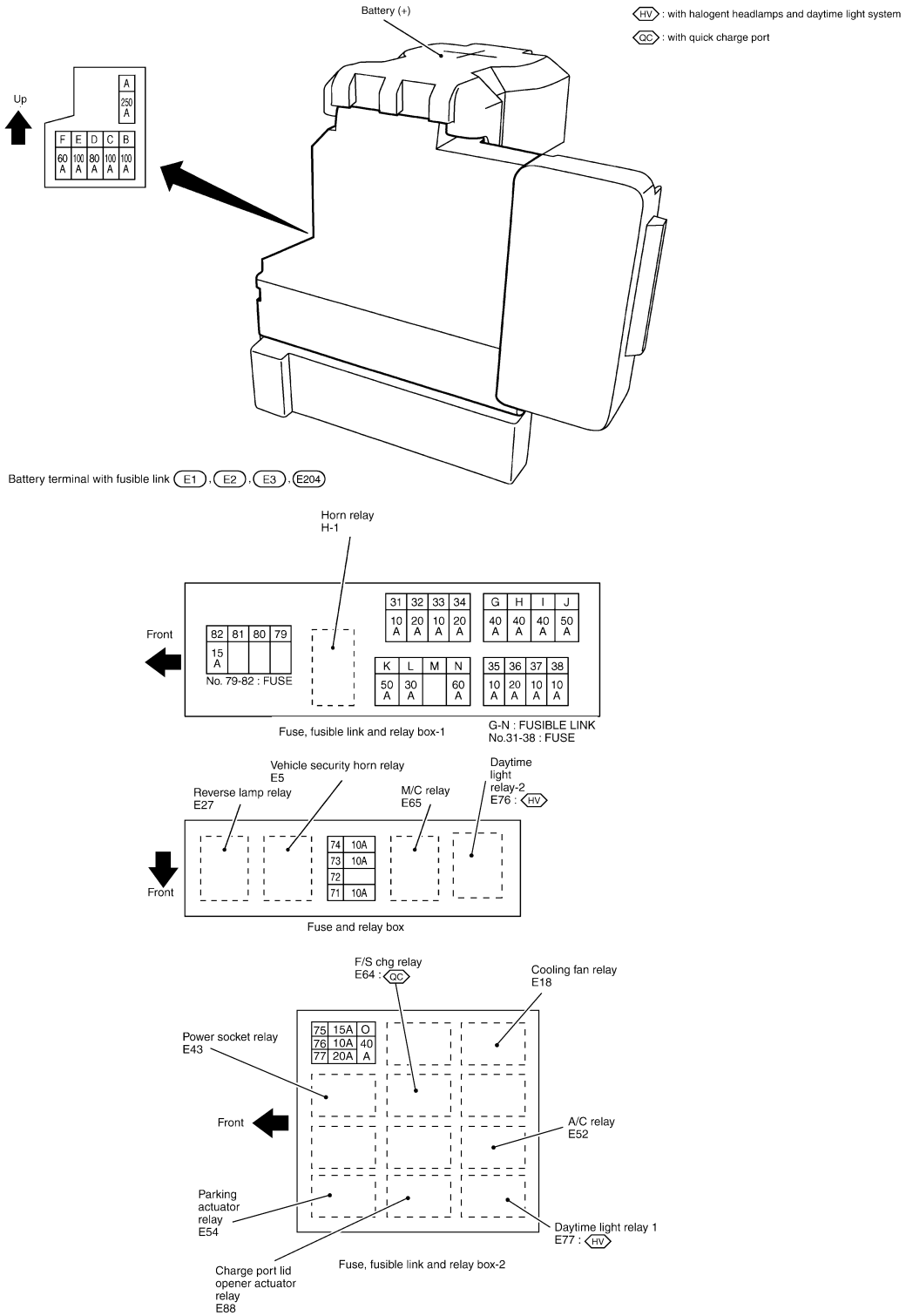



AAMIA1552GB

# FUSE, FUSIBLE LINK AND RELAY BOX

## Fuse and Fusible Link Arrangement

INFOID:0000000008744004

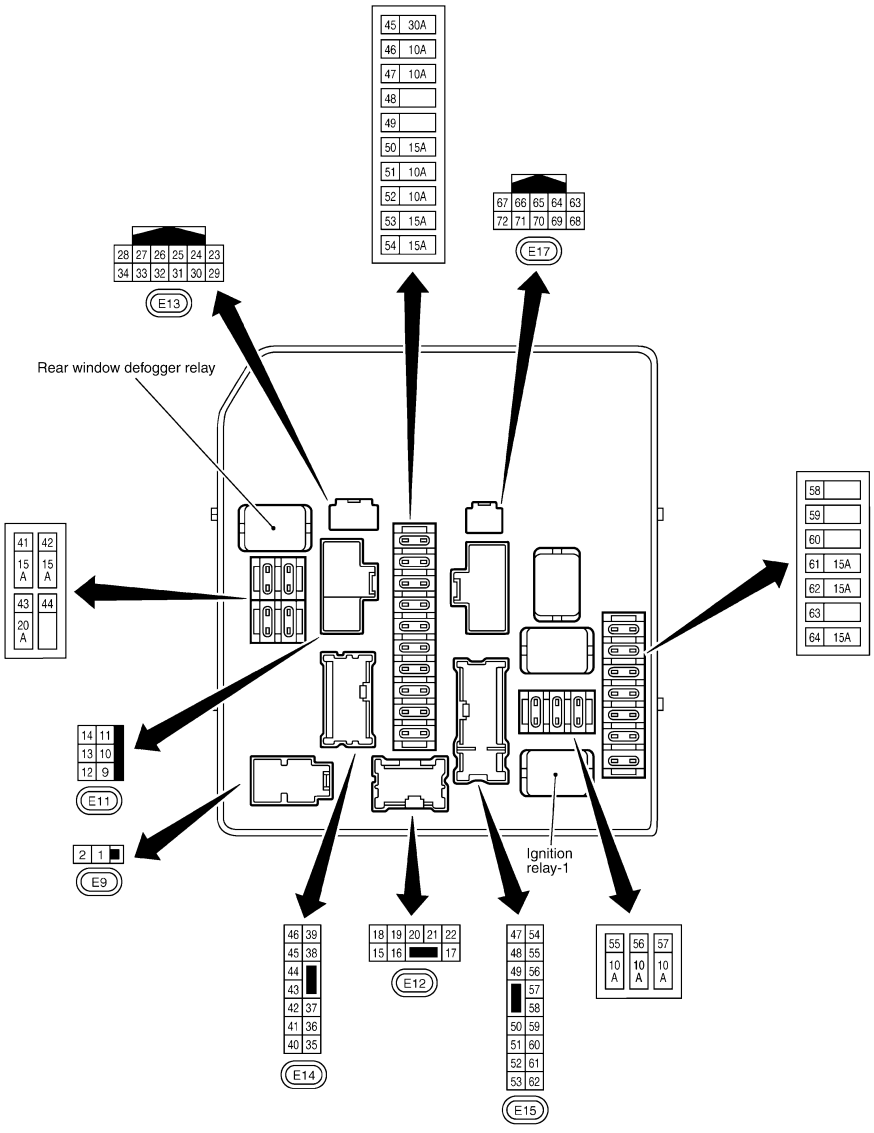



AAMIA2056GB

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

## Fuse, Connector and Terminal Arrangement

INFOID:0000000008744005




AAMIA1554GB

# HARNESS

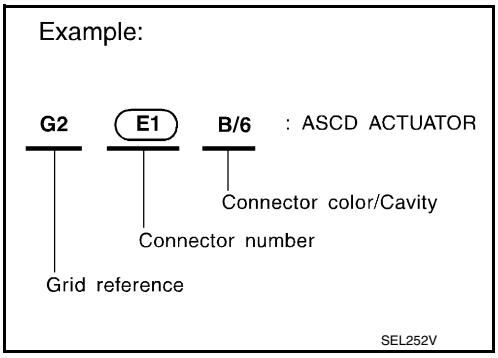
## Harness Layout

INFOID:0000000010336172

### HOW TO READ HARNESS LAYOUT

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

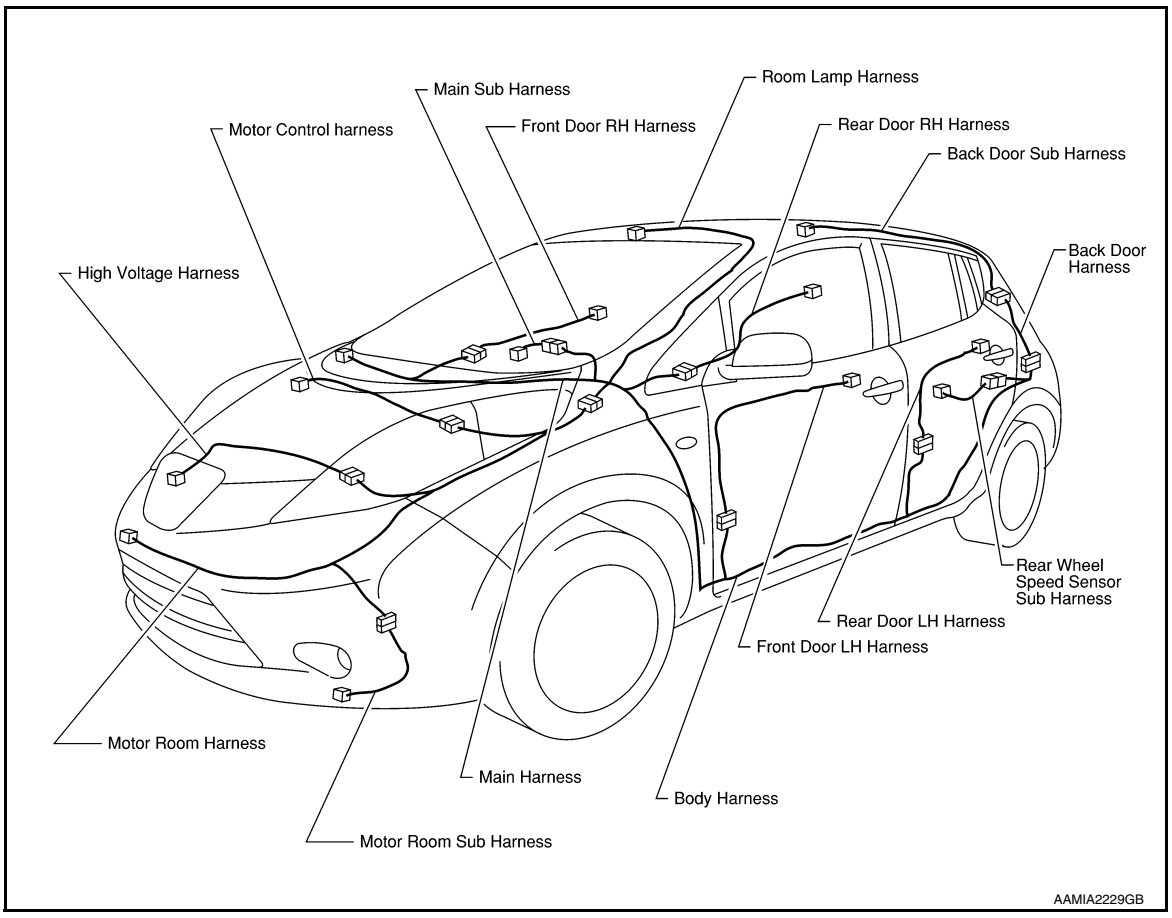
- Main Harness and Main Sub Harness
- Motor Room Harness and Motor Room Sub Harness
- Motor Room Harness (Passenger Compartment)
- Motor Control Harness
- Body Harness and Rear Wheel Speed Sensor Sub Harness
- Room Lamp Harness
- High Voltage Harness

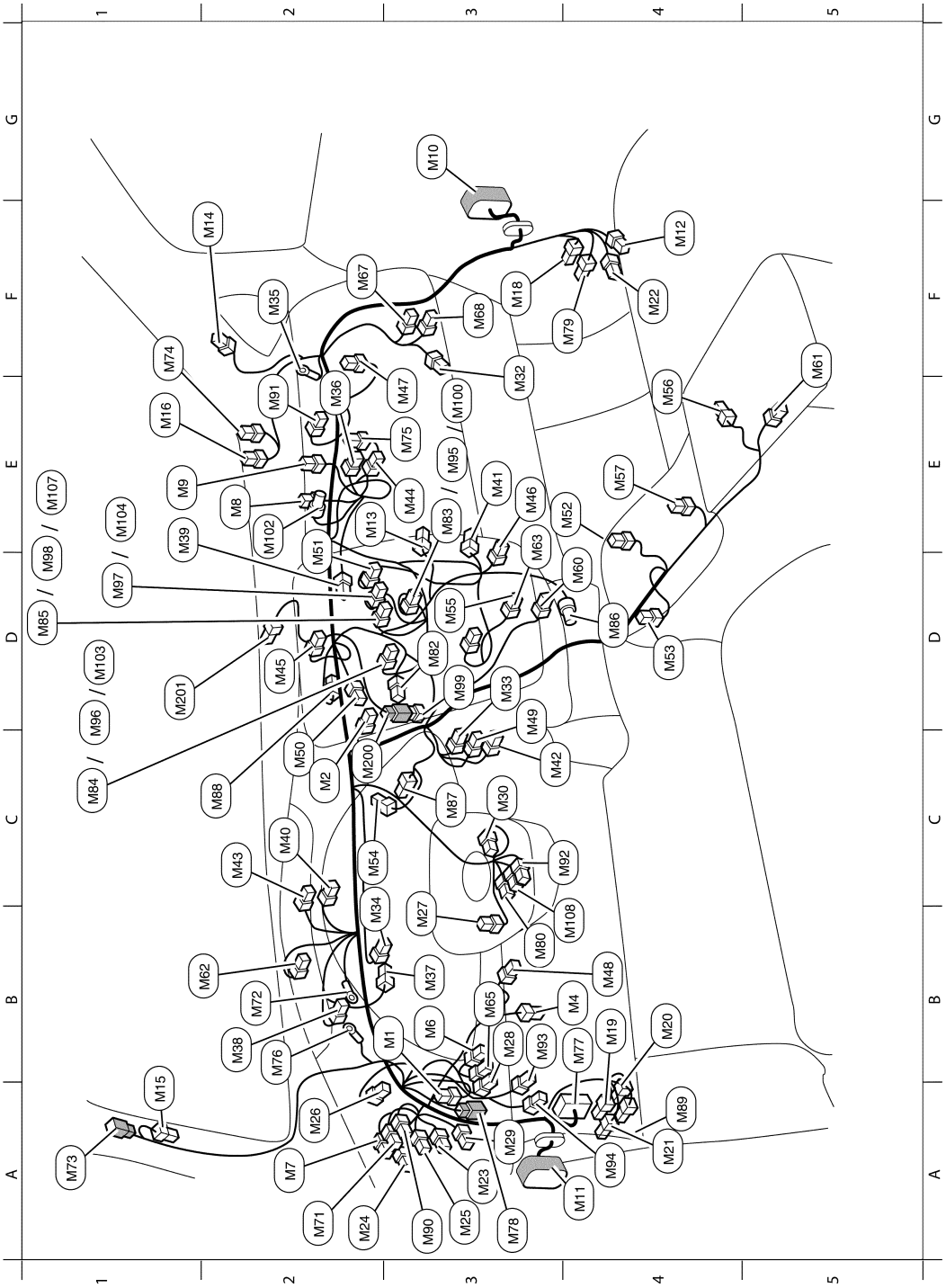



**To use the grid reference**

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.

### OUTLINE





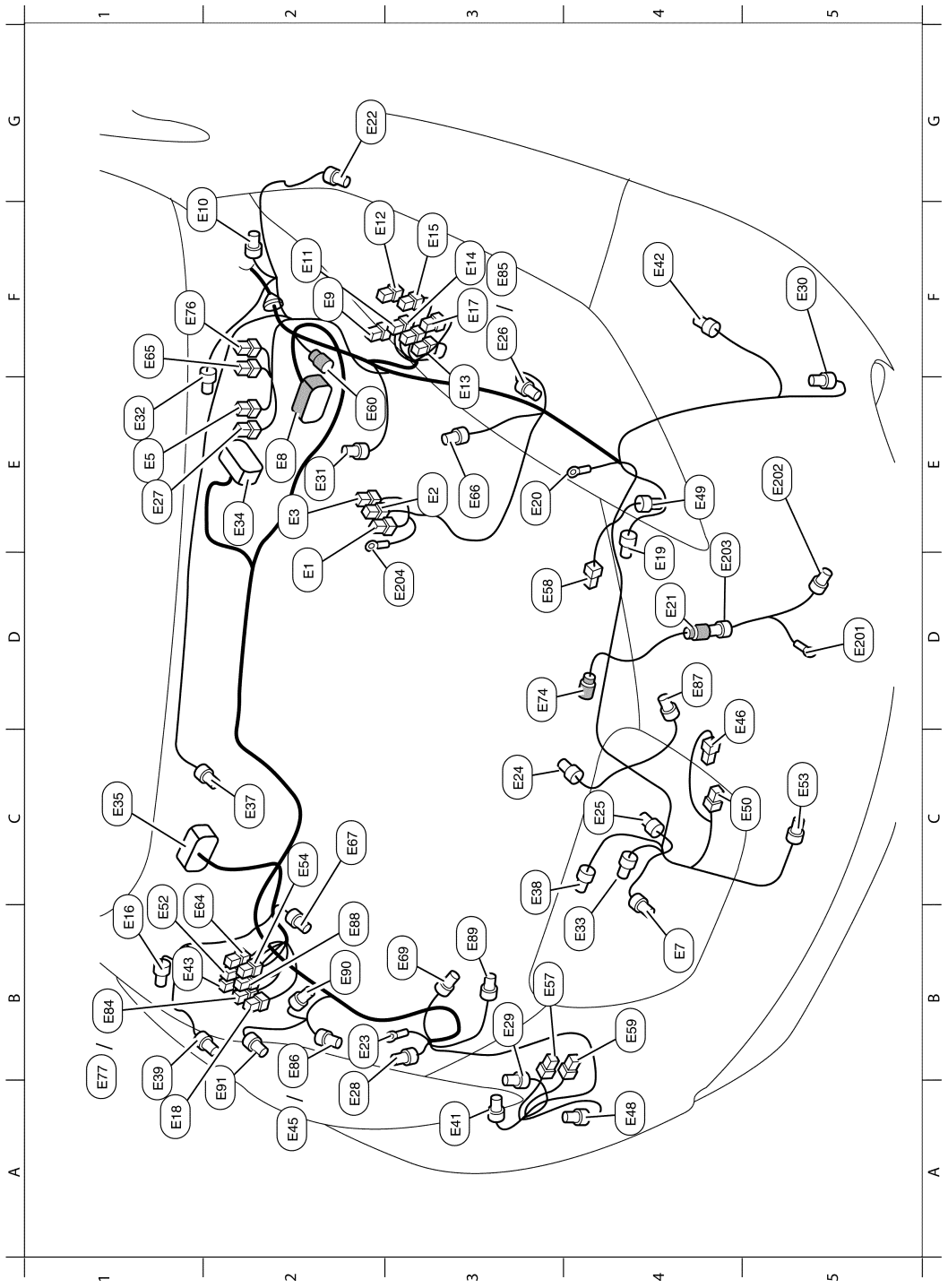

AAMIA0236ZZ

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| B3 | M1 | W/1 | : Fuse block (J/B) | C2 | M54 | — | : Intake door motor |
| C2 | M2 | W/2 | : Room lamp diode | D3 | M55 | W/40 | : A/C auto amp. |
| B4 | M4 | W/16 | : Data link connector | E4 | M56 | W/8 | : Selector indicator |
| B3 | M6 | B/8 | : Heated steering wheel switch | E4 | M57 | W/12 | : Electric shift sensor |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| A2 | M7 | B/4 | : Heated steering relay | D4 | M60 | B/3 | : Power socket |
| E2 | M8 | B/2 | : Front passenger air bag module | F5 | M61 | Y/21 | : Air bag diagnosis sensor unit |
| E1 | M9 | O/2 | : Front passenger air bag module | B2 | M62 | W/8 | : Upper meter |
| G3 | M10 | W/55 | : To D102 | E3 | M63 | B/4 | : Front passenger air bag off indicator |
| A4 | M11 | W/55 | : To D22 | B3 | M65 | GR/8 | : Immediate charging switch |
| F4 | M12 | W/8 | : To B40 | F2 | M67 | W/40 | : TCU |
| E2 | M13 | BR/2 | : Warning buzzer | F3 | M68 | GR/17 | : TCU |
| F2 | M14 | BR/2 | : Tweeter RH | A2 | M71 | B/5 | : Heated seat relay |
| A1 | M15 | BR/2 | : Tweeter LH | B2 | M72 | — | : Body ground |
| E1 | M16 | W/3 | : Optical sensor | A1 | M73 | W/16 | : To R1 |
| F3 | M18 | W/16 | : To B1 | F1 | M74 | W/2 | : Sunload sensor |
| B4 | M19 | W/16 | : To B2 | E3 | M75 | W/4 | : Remote keyless entry receiver |
| B4 | M20 | W/16 | : To B26 | B2 | M76 | — | : Body ground |
| A4 | M21 | W/32 | : To B3 | B4 | M77 | SMJ | : To E105 |
| F4 | M22 | W/24 | : To B7 | A3 | M78 | B/2 | : To E106 |
| A3 | M23 | W/40 | : BCM (Body control module) | F4 | M79 | W/32 | : To B4 |
| A2 | M24 | B/40 | : BCM (Body control module) | B3 | M80 | W/2 | : Combination switch |
| A3 | M25 | W/15 | : BCM (Body control module) | D3 | M82 | W/4 | : To M143 |
| A2 | M26 | W/12 | : Meter control switch | E3 | M83 | W/20 | : Audio unit |
| B3 | M27 | W/16 | : Combination switch | C1 | M84 | W/32 | : Audio unit |
| B3 | M28 | B/8 | : VDC off switch | D1 | M85 | B/5 | : Audio unit |
| A3 | M29 | B/15 | : BCM (Body control module) | D4 | M86 | B/2 | : Inside key antenna (Instrument center) |
| C3 | M30 | W/8 | : Steering angle sensor | C3 | M87 | W/24 | : To M140 |
| E3 | M32 | W/40 | : Around view monitor control unit | C2 | M88 | W/2 | : Diode-3 |
| D3 | M33 | W/8 | : Push-button ignition switch | A4 | M89 | W/2 | : To B6 |
| B2 | M34 | W/40 | : Combination meter | A3 | M90 | B/5 | : Rear heated seat relay |
| F2 | M35 | — | : Body ground | E2 | M91 | W/4 | : Dongle unit |
| E2 | M36 | GR/20 | : Joint connector-M02 | C4 | M92 | GR/8 | : Combination switch |
| B3 | M37 | W/8 | : EPS control unit | B3 | M93 | G/8 | : Charging port opener switch |
| B2 | M38 | B/2 | : EPS control unit | A4 | M94 | GR/10 | : Charge connector lock switch |
| E1 | M39 | GR/2 | : Blower motor | E3 | M95 | W/20 | : AV control unit (With navigation system without BOSE) |
| C2 | M40 | B/20 | : Joint connector-M05 | D1 | M96 | W/40 | : AV control unit (With navigation system without BOSE) |
| E3 | M41 | B/20 | : Joint connector-M06 | D1 | M97 | GR/17 | : AV control unit (With navigation system without BOSE) |
| C3 | M42 | W/2 | : In-vehicle sensor | D1 | M98 | B/5 | : AV control unit (With navigation system without BOSE) |
| C2 | M43 | GR/20 | : Joint connector-M04 | D3 | M99 | W/4 | : To M200 |
| E3 | M44 | GR/20 | : Joint connector-M01 | E3 | M100 | W/20 | : AV control unit (With navigation system with BOSE) |
| D2 | M45 | W/4 | : Hazard switch | E2 | M102 | W/16 | : Heater pump control unit |
| E3 | M46 | O/20 | : Joint connector-M07 | D1 | M103 | W/40 | : AV control unit (With navigation system with BOSE) |
| E3 | M47 | W/16 | : Approaching vehicle sound for pedestrians (VSP) control unit | E1 | M104 | GR/17 | : AV control unit (With navigation system with BOSE) |
| B4 | M48 | W/2 | : Start up sound speaker | E1 | M107 | B/5 | : AV control unit (With navigation system with BOSE) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| D3 | M49 | W/4 | : NATS antenna amp. | B4 | M108 | Y/6 | : Combination switch (Spiral cable) |
| C2 | M50 | P/20 | : Joint connector-M03 | Main sub harness | | | |
| E2 | M51 | W/8 | : Multifunction switch | C2 | M200 | W/4 | : To M99 |
| E4 | M52 | W/4 | : Auxiliary input jack | D1 | M201 | W/4 | : Charging status indicator |
| D4 | M53 | G/5 | : USB connector | | | | |

MOTOR ROOM HARNESS

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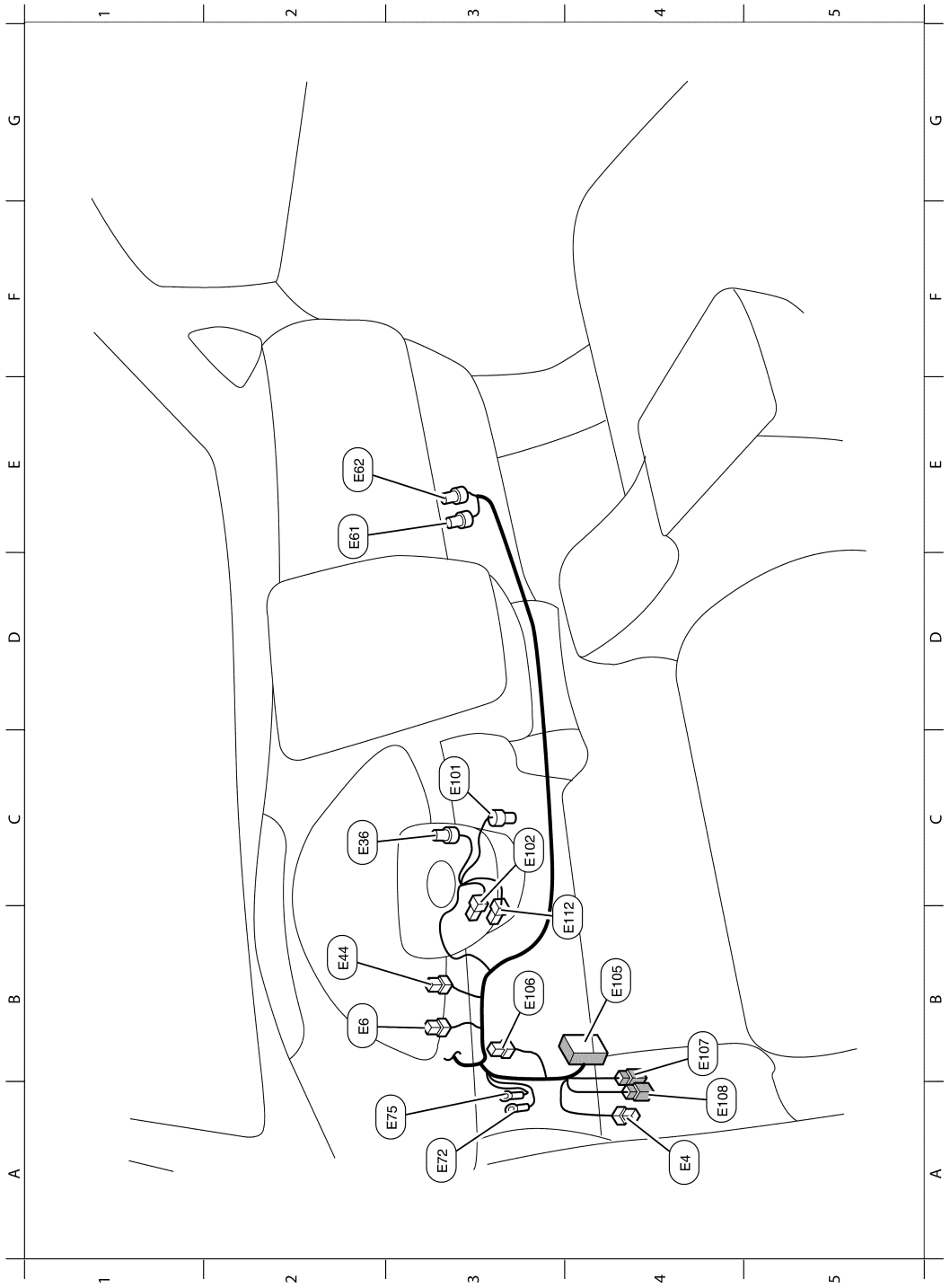
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| D2 | E1 | GR/2 | : Fusible link box (Battery) | A3 | E41 | GR/2 | : Washer pump |
| E3 | E2 | BR/2 | : Fusible link box (Battery) | F4 | E42 | B/2 | : Approaching vehicle sound for pedestrians (VSP) speaker |
| E2 | E3 | B/1 | : Fusible link box (Battery) | B1 | E43 | B/4 | : Power socket relay |
| E1 | E5 | W/3 | : Anti theft horn relay | A2 | E45 | GR/6 | : Front combination lamp RH (With halogen headlamps) |
| B4 | E7 | B/10 | : Quick charge port | D4 | E46 | B/1 | : Horn (Low) |
| E2 | E8 | B/52 | : To F1 | A4 | E48 | B/2 | : Front fog lamp RH |
| F2 | E9 | B/2 | : IPDM E/R (Intelligent power distribution module engine room) | E4 | E49 | B/3 | : Refrigerant pressure sensor |
| F1 | E10 | GR/2 | : Front side marker lamp LH | C5 | E50 | B/1 | : Horn (Low) |
| F2 | E11 | B/6 | : IPDM E/R (Intelligent power distribution module engine room) | C1 | E52 | BR/6 | : A/C relay |
| F2 | E12 | BR/8 | : IPDM E/R (Intelligent power distribution module engine room) | C5 | E53 | B/2 | : Ambient sensor |
| E3 | E13 | BR/12 | : IPDM E/R (Intelligent power distribution module engine room) | C2 | E54 | — | : Parking actuator relay |
| F3 | E14 | BR/12 | : IPDM E/R (Intelligent power distribution module engine room) | B3 | E57 | B/1 | : Vehicle security horn |
| F3 | E15 | W/16 | : IPDM E/R (Intelligent power distribution module engine room) | D3 | E58 | B/24 | : Joint connector-E03 |
| B1 | E16 | GR/2 | : Front side marker lamp RH | B4 | E59 | B/1 | : Vehicle security horn |
| F3 | E17 | W/10 | : IPDM E/R (Intelligent power distribution module engine room) | E2 | E60 | B/12 | : To F2 |
| A1 | E18 | — | : Cooling fan relay | C1 | E64 | B/4 | : F/S chg relay |
| D4 | E19 | GR/3 | : Cooling fan control module | F1 | E65 | B/4 | : M/C relay |
| E3 | E20 | — | : Body ground | E3 | E66 | B/4 | : Battery current sensor |
| D4 | E21 | B/4 | : To E203 | C2 | E67 | G/4 | : Electric water pump |
| G2 | E22 | B/2 | : Front wheel sensor LH | B3 | E69 | GR/2 | : Coolant temperature sensor |
| B2 | E23 | — | : Body ground | D3 | E74 | GR/2 | : Hood switch |
| C3 | E24 | GR/2 | : Charging port lid illumination | F1 | E76 | B/5 | : Daytime light relay 2 |
| C4 | E25 | B/2 | : Normal charge port | B1 | E77 | B/4 | : Daytime light relay 1 |
| F3 | E26 | GR/6 | : Front combination lamp LH (With halogen headlamps) | B1 | E84 | B/5 | : Daytime running light relay |
| E1 | E27 | B/4 | : Reverse lamp relay | F3 | E85 | B/10 | : Front combination lamp LH (With LED headlamps) |
| A2 | E28 | BR/3 | : Intelligent Key warning buzzer | B2 | E86 | B/10 | : Front combination lamp RH (With LED headlamps) |
| B3 | E29 | BR/2 | : Washer level switch | D4 | E87 | GR/4 | : Charging connector lock actuator |
| F5 | E30 | B/2 | : Front fog lamp LH | B2 | E88 | B/4 | : Charging port opener actuator relay |
| E2 | E31 | B/3 | : Master cylinder pressure sensor | B3 | E89 | BR/2 | : Compressor suction refrigerant temperature sensor |
| E1 | E32 | GR/5 | : Front wiper motor | B2 | E90 | GR/2 | : Refrigerant channel switching 2 way type valve |
| B4 | E33 | Y/2 | : Crash zone sensor | A2 | E91 | B/2 | : Refrigerant channel switching 3 way type valve |
| E2 | E34 | B/46 | : Electrically-driven intelligent brake unit | Motor room sub harness | | | |
| C1 | E35 | B/32 | : ABS actuator and electric unit (Control unit) | D5 | E201 | — | : PDM (Power delivery module) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| C2 | E37 | GR/2 | : Brake fluid level switch | E5 | E202 | B/4 | : Front camera |
| C3 | E38 | B/4 | : Charge port lid opener actuator | D4 | E203 | B/4 | : To E21 |
| B1 | E39 | B/2 | : Front wheel sensor RH | D3 | E204 | — | : Fusible link box (Battery) |

MOTOR ROOM HARNESS (PASSENGER COMPARTMENT)

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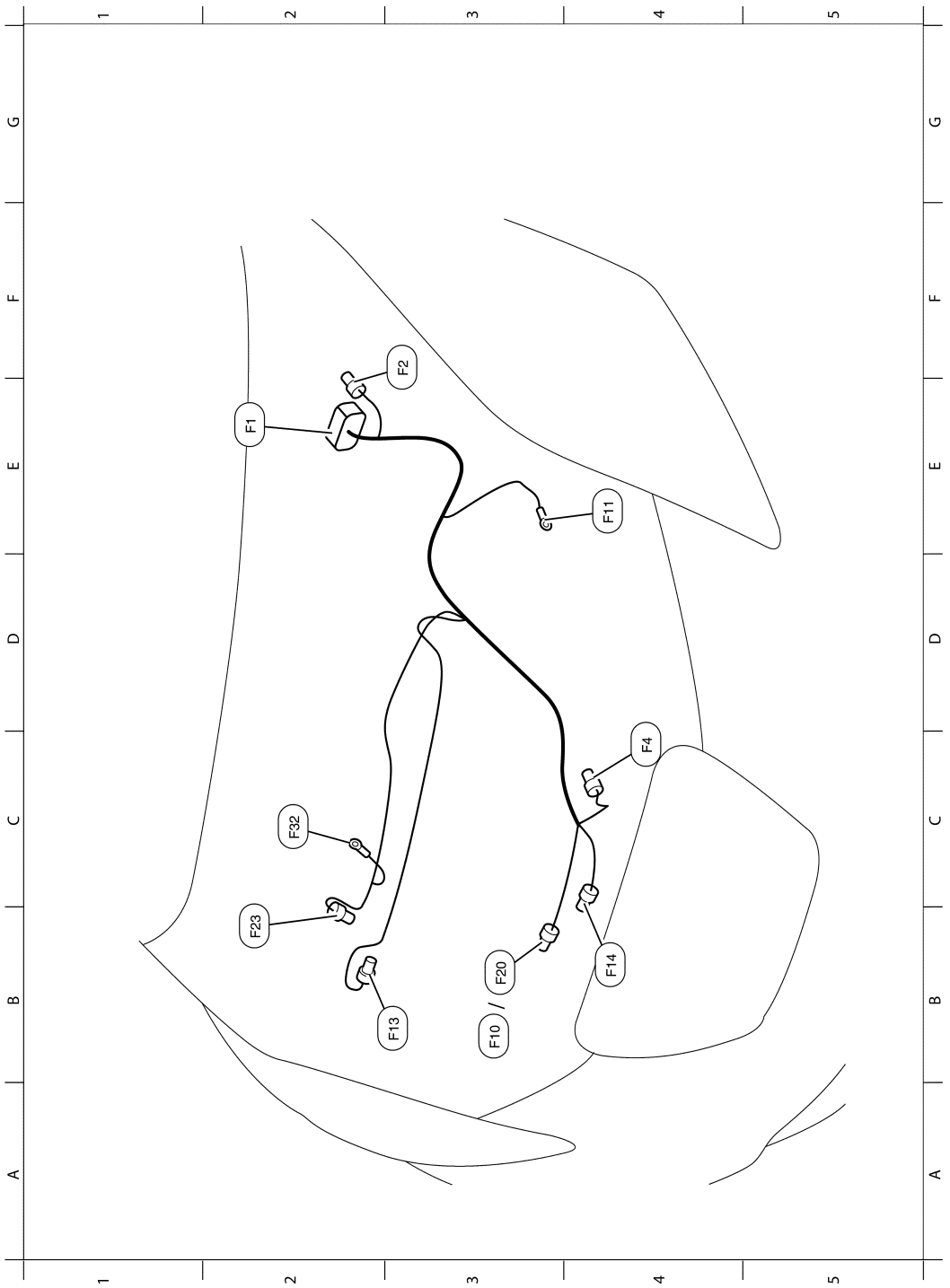
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| A4 | E4 | B/1 | : Parking brake switch | C3 | E101 | B/6 | : Accelerator pedal position sensor |
| B2 | E6 | B/12 | : Joint connector-E01 | C3 | E102 | W/4 | : Stop lamp switch |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| C2 | E36 | B/4 | : Stroke sensor | B4 | E105 | SMJ | : To M77 |
| B2 | E44 | B/12 | : Joint connector-E02 | B3 | E106 | B/2 | : To M78 |
| E2 | E61 | B/65 | : VCM | B4 | E107 | W/24 | : To B7 |
| E2 | E62 | BR/65 | : VCM | A4 | E108 | W/4 | : To B8 |
| A3 | E72 | — | : Body ground | B4 | E112 | BR/2 | : Brake pedal position switch |
| A3 | E75 | — | : Body ground | | | | |

MOTOR CONTROL HARNESS

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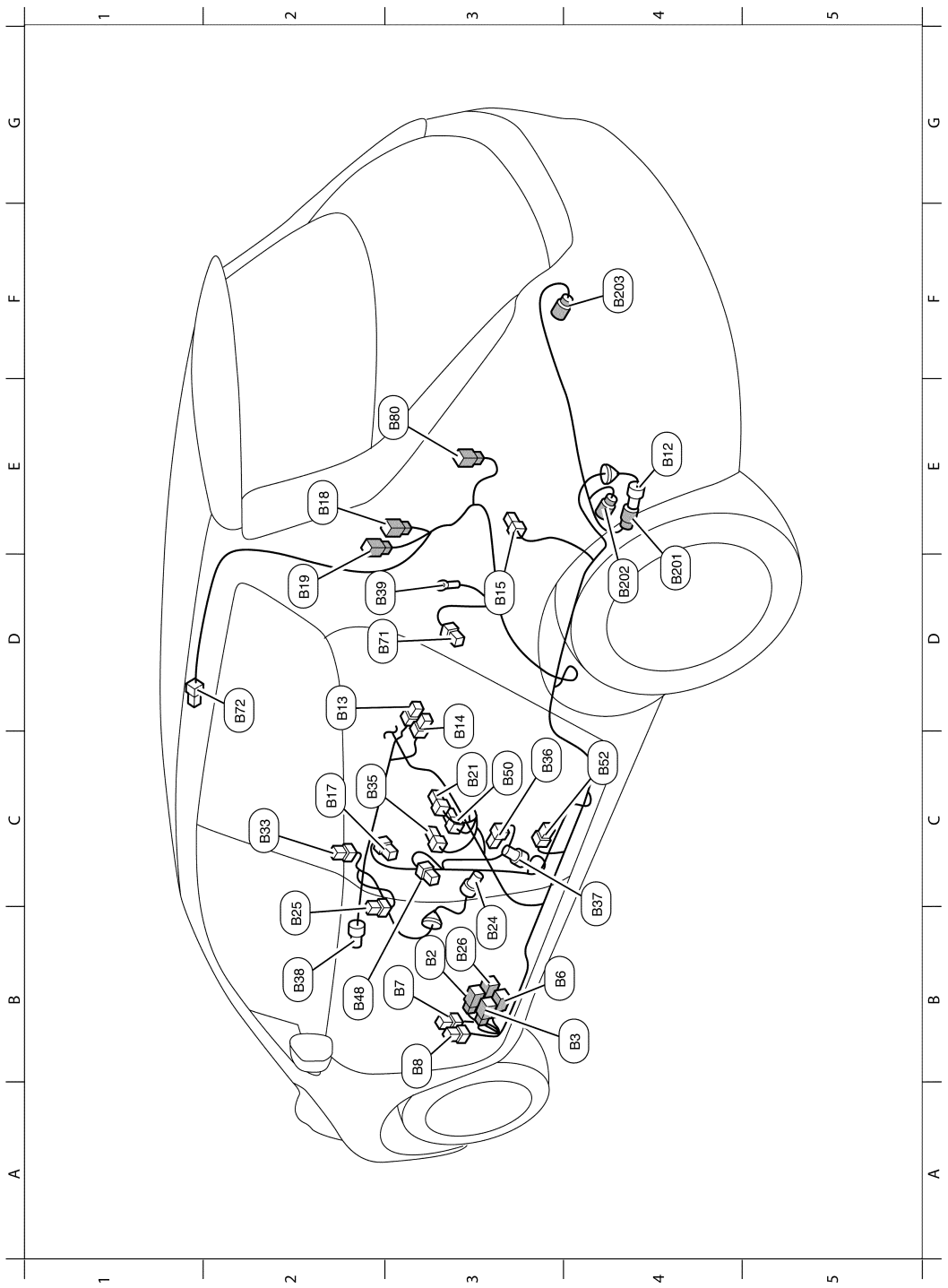
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| E2 | F1 | B/52 | : To E8 | B3 | F13 | B/49 | : Traction motor inverter |
| F3 | F2 | B/12 | : To E60 | B4 | F14 | B/8 | : Traction motor |
| C4 | F4 | B/10 | : Parking actuator | B3 | F20 | B/6 | : Electric compressor (With heat pump) |
| B3 | F10 | W/6 | : Electric compressor (Without heat pump) | B2 | F23 | G/36 | : PDM (Power delivery module) |
| E4 | F11 | — | : Body ground | C2 | F32 | — | : PDM (Power delivery module) |

BODY HARNESS (LH SIDE)

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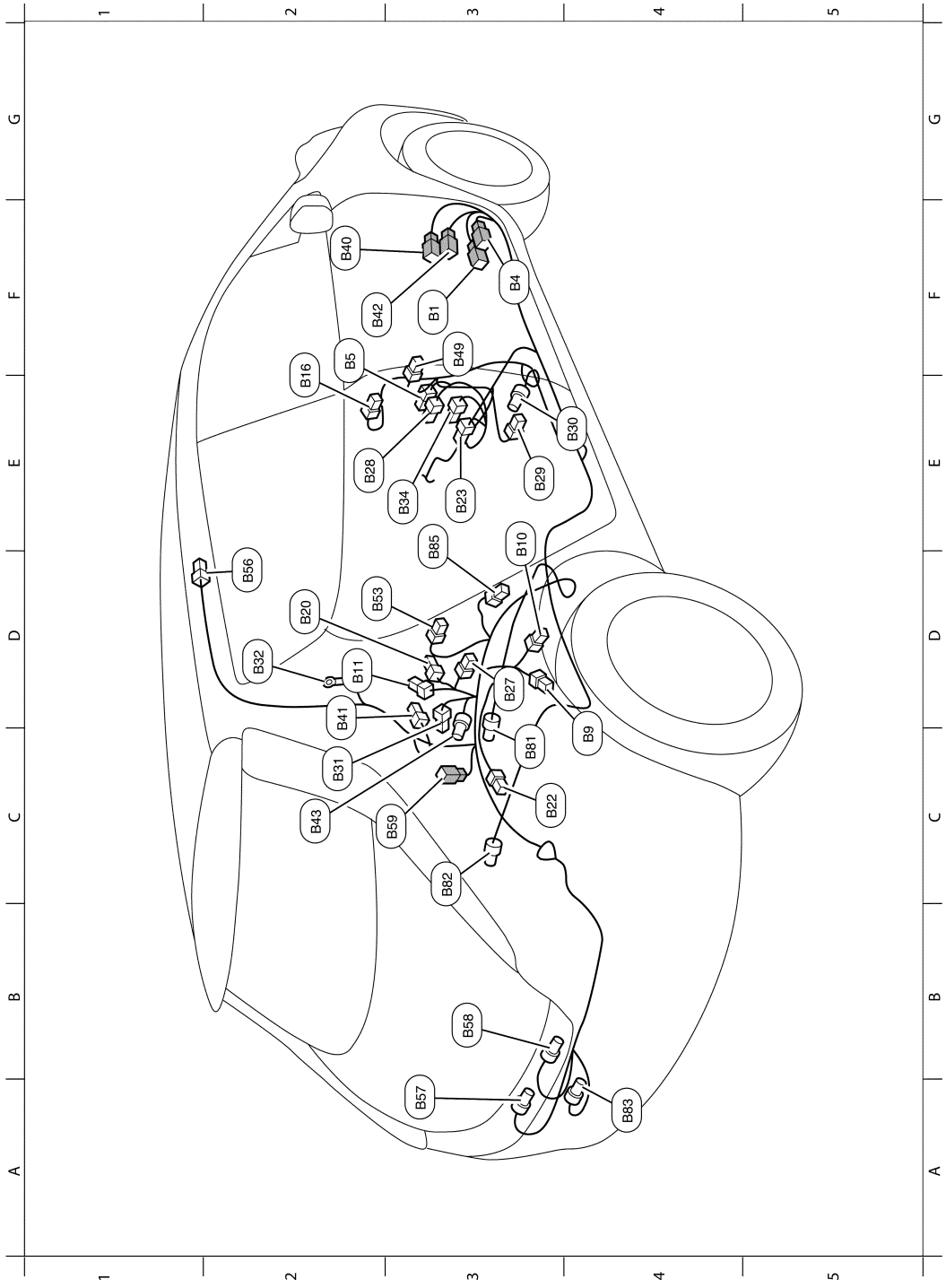
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| B3 | B2 | W/16 | : To M19 | C2 | B33 | BR/6 | : Front heated seat switch RH |
| B4 | B3 | W/32 | : To M21 | C2 | B35 | Y/2 | : Front LH side air bag module |
| B3 | B6 | W/2 | : To M89 | C3 | B36 | Y/2 | : Front LH seat belt pre-tensioner |
| B3 | B7 | W/24 | : To E107 | C4 | B37 | Y/2 | : LH side air bag (Satellite) sensor |
| B3 | B8 | W/4 | : To E108 | B2 | B38 | B/6 | : Yaw rate/side/decel G sensor |
| E4 | B12 | B/10 | : To B201 | D2 | B39 | — | : Body ground |
| D2 | B13 | Y/10 | : Air bag diagnosis sensor unit | B2 | B48 | W/4 | : Front door switch (Driver side) |
| D3 | B14 | Y/11 | : Air bag diagnosis sensor unit | C3 | B50 | W/2 | : Seat belt buckle switch (Driver side) |
| D3 | B15 | W/6 | : Brake power supply backup unit | C4 | B52 | O/2 | : Lap seat belt pre-tensioner (Driver side) |
| C2 | B17 | W/12 | : To D201 | D2 | B71 | W/4 | : Rear door switch LH |
| E2 | B18 | W/20 | : To D504 | D2 | B72 | Y/2 | : LH side front curtain air bag module |
| D2 | B19 | W/4 | : To D501 | E3 | B80 | W/6 | : Rear combination lamp LH |
| C3 | B21 | W/4 | : To B251 | Rear wheel sensor sub harness | | | |
| B3 | B24 | G/36 | : Li-ion battery | D4 | B201 | B/10 | : Wire to wire |
| B2 | B25 | W/6 | : Front heated seat switch LH | D4 | B202 | GR/2 | : Rear wheel sensor LH |
| B3 | B26 | W/16 | : To M20 | F4 | B203 | GR/2 | : Rear wheel sensor RH |

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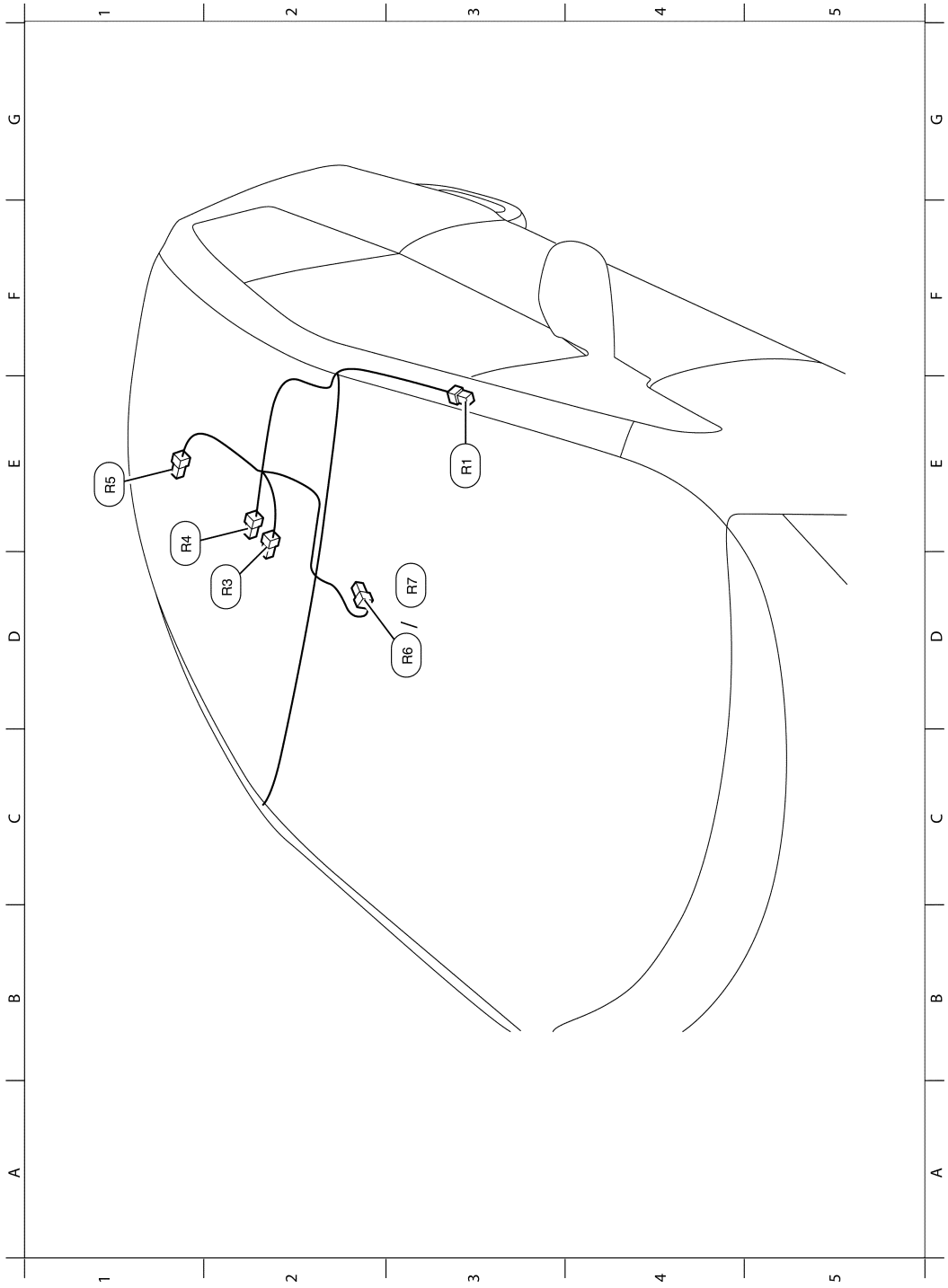
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| F3 | B1 | W/16 | : To M18 | E3 | B34 | W/2 | : Seat belt buckle switch (Passenger side) |
| F3 | B4 | W/32 | : To M79 | F2 | B40 | W/8 | : To M12 |
| F2 | B5 | W/4 | : To B350 | D2 | B41 | W/2 | : Trunk room lamp |
| C4 | B9 | W/32 | : Bluetooth® control unit | F2 | B42 | W/24 | : To M22 |
| E3 | B10 | W/8 | : Bluetooth® control unit | C2 | B43 | GR/2 | : BOSE subwoofer |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| D2 | B11 | B/8 | : BOSE speaker amp. | F3 | B49 | W/4 | : Front door switch RH |
| F2 | B16 | W/12 | : To D301 | D2 | B53 | W/4 | : Rear door switch RH |
| D2 | B20 | B/16 | : BOSE speaker amp. | D2 | B56 | Y/2 | : RH side front curtain air bag module |
| C3 | B22 | W/3 | : To B401 | A3 | B57 | BR/2 | : License plate lamp LH |
| E3 | B23 | W/8 | : To B301 | B3 | B58 | BR/2 | : License plate lamp RH |
| D3 | B27 | B/16 | : BOSE speaker amp. | C3 | B59 | W/6 | : Rear combination lamp RH |
| E2 | B28 | Y/2 | : Front RH side air bag module | C3 | B81 | B/2 | : Inside key antenna (Rear seat) |
| E3 | B29 | Y/2 | : Front RH seat belt pre-tensioner | C3 | B82 | B/2 | : Inside key antenna (Luggage room) |
| E4 | B30 | Y/2 | : RH side air bag (Satellite) sensor | A4 | B83 | B/2 | : Outside key antenna (Rear bumper) |
| C2 | B31 | B/20 | : Joint connector-B03 | E3 | B85 | B/20 | : Joint connector-B02 |
| D2 | B32 | — | : Body ground | | | | |

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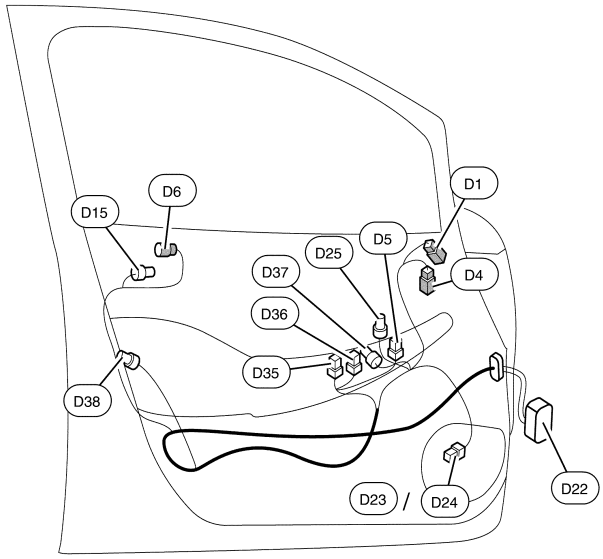
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| E3 | R1 | W/16 | : To M73 | E1 | R5 | W/3 | : Room lamp |
| D2 | R3 | W/6 | : Microphone | D3 | R6 | B/7 | : Auto anti-dazzling inside mirror (Without universal homelink transceiver) |
| E1 | R4 | W/8 | : Map lamp | D3 | R7 | B/10 | : Auto anit-dazzling inside mirror (With homelink universal transceiver) |

## FRONT DOOR LH HARNESS

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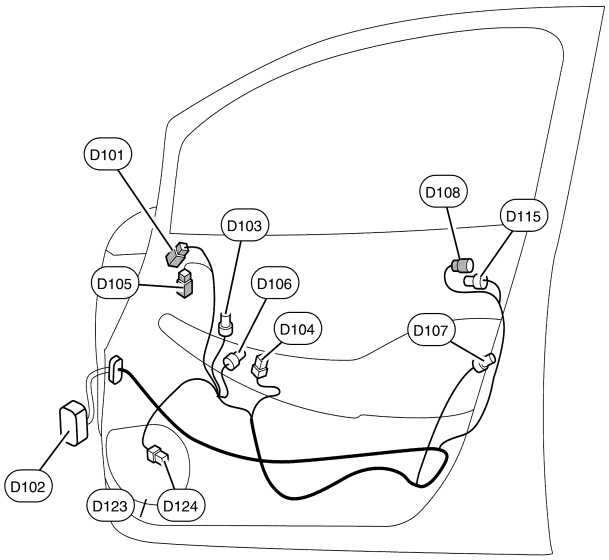
| | | | | | |
|---|---|---|---|---|---|
| D1 | W/4 | : Side camera LH | D24 | BR/2 | : Front door speaker LH (With BOSE audio system) |
| D4 | W/8 | : Door mirror LH | D25 | Y/2 | : Front door satellite sensor LH |
| D5 | W/16 | : Door mirror remote control switch | D35 | W/16 | : Power window main switch |
| D6 | GR/2 | : Outside key antenna (Driver side) | D36 | W/3 | : Power window main switch |
| D15 | B/2 | : Front door request switch (Driver side) | D37 | G/6 | : Front power window motor LH |
| D22 | W/55 | : To M11 | D38 | GR/6 | : Front door lock assembly (Driver side) |
| D23 | W/2 | : Front door speaker LH (Without BOSE audio system) | | | |

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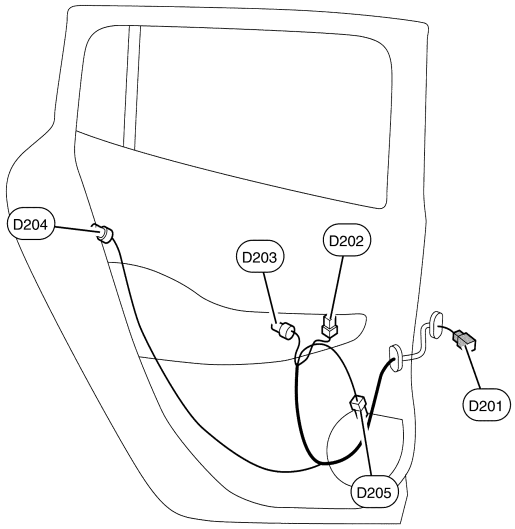
| | | | | | |
|---|---|---|---|---|---|
| D101 | W/4 | : Side camera RH | D107 | GR/5 | : Front door lock assembly (Passenger side) |
| D102 | W/55 | : To M10 | D108 | GR/2 | : Outside key antenna (Passenger side) |
| D103 | Y/2 | : Front door satellite sensor RH | D115 | B/2 | : Front outside handle RH (Request switch) |
| D104 | W/12 | : Front power window switch (Passenger side) | D123 | W/2 | : Front door speaker RH (Without BOSE audio system) |
| D105 | W/8 | : Door mirror RH | D124 | BR/2 | : Front door speaker RH (With BOSE audio system) |
| D106 | G/6 | : Front power window motor (Passenger side) | | | |

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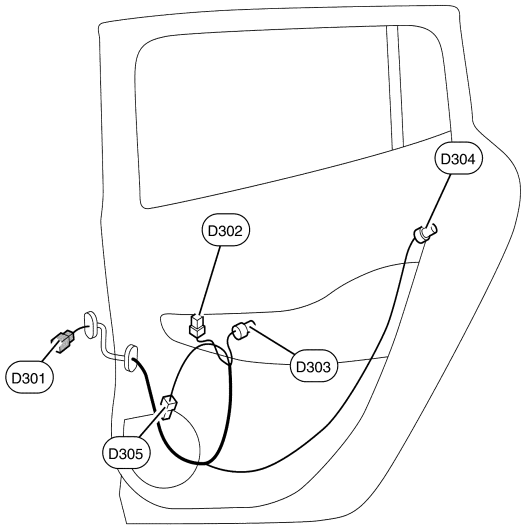
| | | | | | |
|---|---|---|---|---|---|
| D201 | W/12 | : To B17 | D204 | GR/6 | : Rear door lock assembly LH |
| D202 | W/8 | : Rear power window switch LH | D205 | W/2 | : Rear door speaker LH |
| D203 | G/6 | : Rear power window motor LH | | | |

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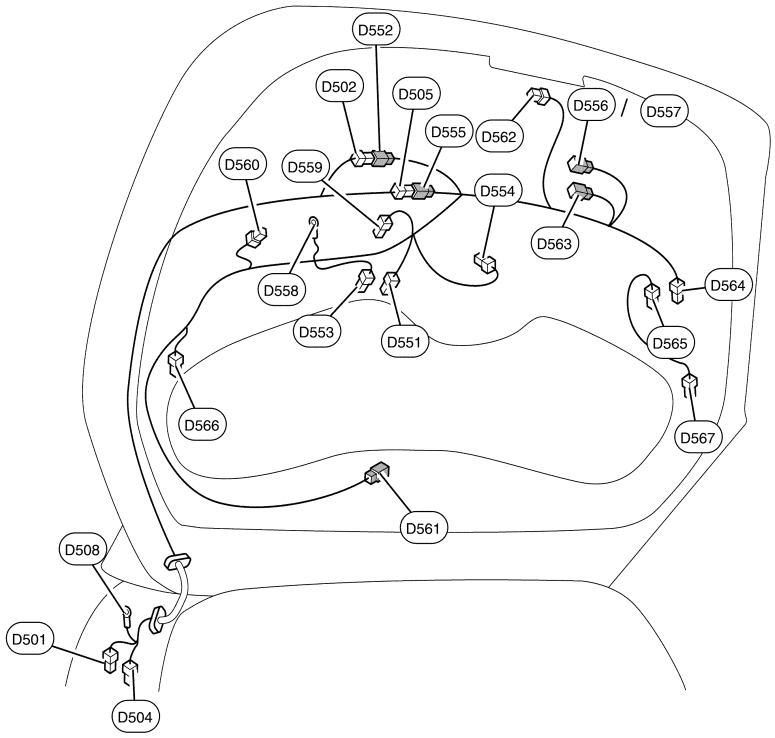
| | | | | | |
|---|---|---|---|---|---|
| D301 | W/12 | : To B16 | D304 | GR/6 | : Rear door lock assembly RH |
| D302 | W/8 | : Rear power window switch RH | D305 | W/2 | : Rear door speaker RH |
| D303 | G/6 | : Rear power window motor RH | | | |

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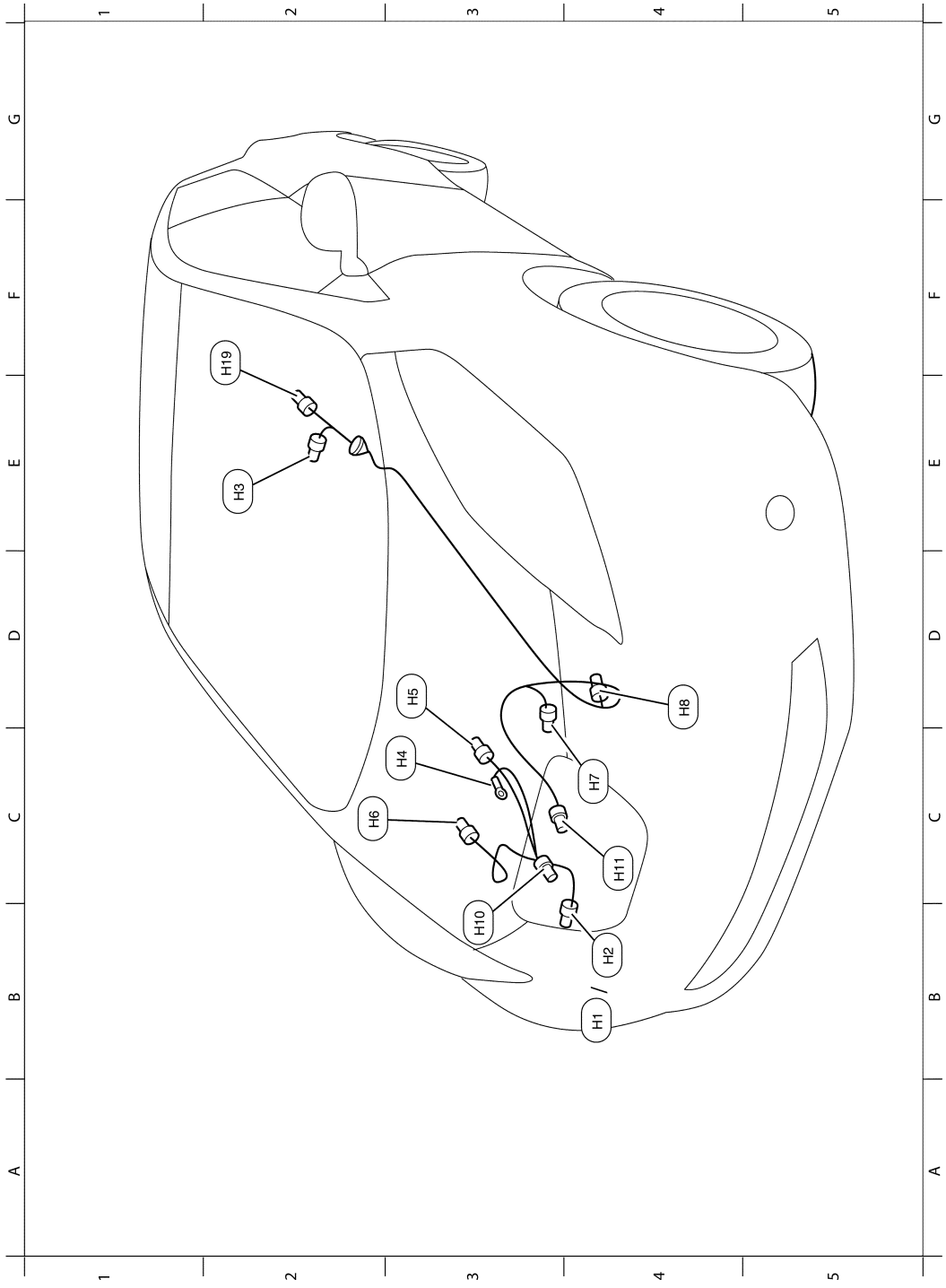
| | | | | | |
|---|---|---|---|---|---|
| D501 | W/4 | : To B19 | D557 | W/8 | : Rear view camera (With around view monitor) |
| D502 | W/2 | : To D552 | D558 | — | : Body ground |
| D504 | W/20 | : To B18 | D559 | W/1 | : Coil |
| D505 | W/12 | : To D555 | D560 | W/4 | : Coil |
| D508 | — | : Body ground | D561 | W/4 | : To D602 |
| Back door sub harness | | | D562 | W/4 | : Back door lock assembly |
| D551 | B/1 | : Condenser | D563 | GR/4 | : Back door opener switch assembly |
| D552 | W/2 | : To D502 | D564 | B/1 | : Condenser-1 |
| D553 | B/1 | : Condenser | D565 | B/1 | : Rear window defogger |
| D554 | W/4 | : Rear wiper motor | D566 | B/1 | : Condenser-1 |
| D555 | W/12 | : To D505 | D567 | B/1 | : Rear window defogger |
| D556 | W/4 | : Rear view camera (Without around view monitor) | | | |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| B4 | H1 | O/4 | : Electric compressor (Without heat pump) | C4 | H7 | O/4 | : PDM (Power delivery module) |
| B4 | H2 | O/3 | : Electric compressor (With heat pump) | D4 | H8 | O/2 | : PDM (Power delivery module) |
| E2 | H3 | O/3 | : Li-ion battery | B3 | H10 | O/2 | : Quick charge port |
| C3 | H4 | — | : Body ground | C4 | H11 | O/3 | : Normal charge port |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| D3 | H5 | B/3 | : PDM (Power delivery module) | F2 | H19 | O/6 | : Li-ion battery |
| C2 | H6 | O/3 | : PDM (Power delivery module) | | | | |

# BASIC INSPECTION

## 12V BATTERY INSPECTION

### How to Handle 12V Battery

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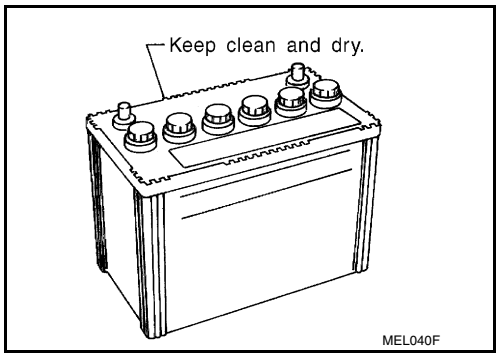
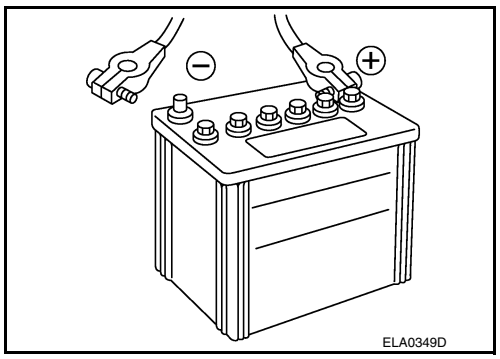
**CAUTION:**
- **If it becomes necessary to start the EV system with a booster battery and jumper cables, use a 12-volt booster battery.**
- **After connecting 12V battery cables, ensure that they are tightly clamped to 12V battery terminals for good contact.**
- **Never add distilled water through the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

#### METHODS OF PREVENTING OVER-DISCHARGE

The following precautions must be taken to prevent over-discharging a battery.
- The 12V 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 12V battery cable from the negative terminal. (If the vehicle has an extended storage switch, turn it off.) Refer to PG-6, "Precaution for Removing 12V Battery".




### Work Flow

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#### 12V BATTERY DIAGNOSIS WITH EXP-800 NI OR GR8-1200 NI

To diagnose and confirm the condition of the 12V battery, use the following special service tools:
- EXP-800 NI Battery and electrical diagnostic analyzer
- GR8-1200 NI Multitasking battery and electrical diagnostic station

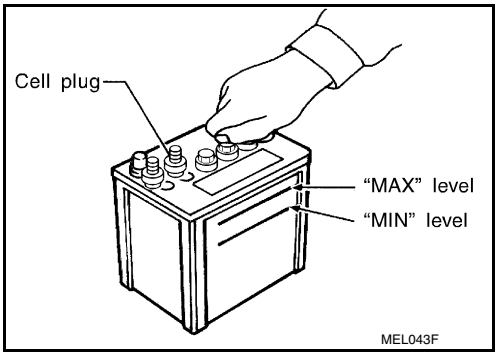
**NOTE:**
Refer to the applicable instruction manual for proper battery diagnosis procedures.

#### 12V BATTERY DIAGNOSIS WITHOUT EXP-800 NI OR GR8-1200 NI

Check Electrolyte Level

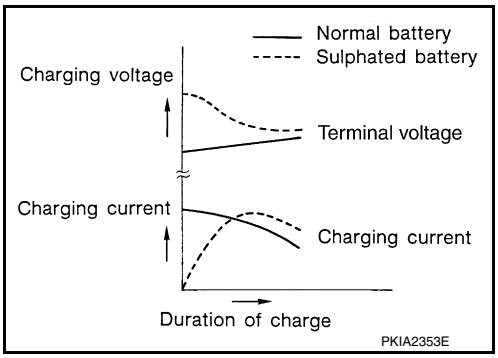
**WARNING:**
**Never allow battery fluid to come in contact with skin, eyes, fabrics, or painted surfaces. After touching a 12V battery, never touch or rub your eyes until you have thoroughly washed your hands. If acid contacts eyes, skin or clothing, immediately flush with water for 15 minutes and seek medical attention.**
**Failure to do this may cause personal injury or damage to clothing or the painted surfaces.**

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




SULFATION

- **A 12V 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 12V 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 12V 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.**



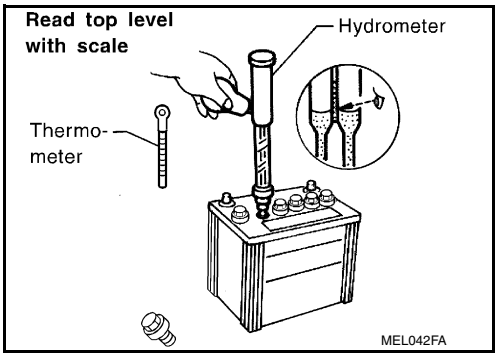

Specific Gravity Check

**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

| 12V 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 |

| 12V 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 12V Battery

**CAUTION:**

- **Never "quick charge" a fully discharged 12V battery.**
- **Keep the 12V 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 12V 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 12V battery charger will automatically decrease as the 12V battery charges. This indicates that the voltage of the 12V 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 12V battery should be replaced.

# ADDITIONAL SERVICE WHEN REMOVING 12V BATTERY NEGATIVE TERMINAL

## Special Repair Requirement

INFOID:0000000009346800

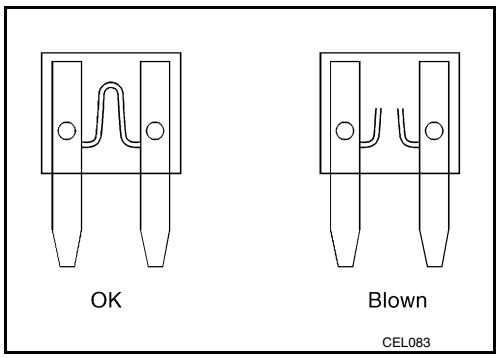
| System | Item | Reference |
|---|---|---|
| EV Control System | VCM Timer Adjustment | EVC-143, "Description" |
| Power Window Control System | Power Window System Initialization | PWC-36, "Description" |
| Heater & Air Conditioning Control System | Temperature Setting Trimmer | HAC-94, "Temperature Setting Trimmer" (with heat pump) |
| | Inlet Port Memory Function (REC) | HAC-94, "Inlet Port Memory Function (REC)" (with heat pump) |
| | Inlet Port Memory Function (FRE) | HAC-95, "Inlet Port Memory Function (FRE)" (with heat pump) |
| | Foot Position Setting Trimmer | HAC-95, "Foot Position Setting Trimmer" (with heat pump) |
| | Compressor Operation Setting at Defroster Mode (Timer/Remote Climate Control) | HAC-95, "Compressor Operation Setting at Defroster Mode (Timer/Remote Climate Control)" (with heat pump) |
| | Setting of Compressor Maximum Rotation Speed During Pre Air Conditioning | HAC-96, "Setting of Compressor Maximum Rotation Speed During Pre Air Conditioning" (with heat pump) |
| | Setting of Compressor Maximum Rotation Speed During Idling | HAC-96, "Setting of Compressor Maximum Rotation Speed During Idling" (with heat pump) |
| | Temperature Setting Trimmer | HAC-291, "Temperature Setting Trimmer" (without heat pump) |
| | Inlet Port Memory Function (REC) | HAC-291, "Inlet Port Memory Function (REC)" (without heat pump) |
| | Inlet Port Memory Function (FRE) | HAC-292, "Inlet Port Memory Function (FRE)" (without heat pump) |
| | Foot Position Setting Trimmer | HAC-292, "Foot Position Setting Trimmer" (without heat pump) |
| | Compressor Operation Setting at Defroster Mode (Timer/Remote Climate Control) | HAC-292, "Compressor Operation Setting at Defroster Mode (Timer/Remote Climate Control)" (without heat pump) |
| | Setting of Compressor Maximum Rotation Speed During Pre Air Conditioning | HAC-293, "Setting of Compressor Maximum Rotation Speed During Pre Air Conditioning" (without heat pump) |
| | Setting of Compressor Maximum Rotation Speed During Idling | HAC-293, "Setting of Compressor Maximum Rotation Speed During Idling" (without heat pump) |
| Audio, Visual & Navigation System | Audio (Radio Preset) | Refer to Owner's Manual |
| | Navigation System | Refer to Owner's Manual |

# FUSE INSPECTION

## How To Check

INFOID:0000000008744024

- 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.

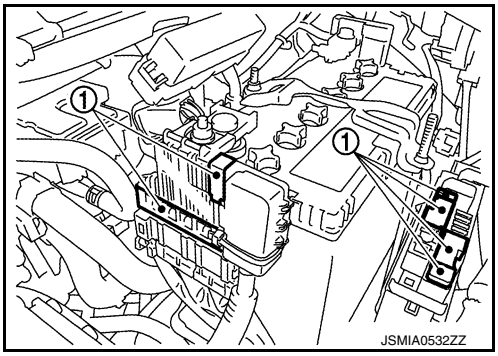


# FUSIBLE LINK INSPECTION

## How To Check

INFOID:0000000008744025

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:**

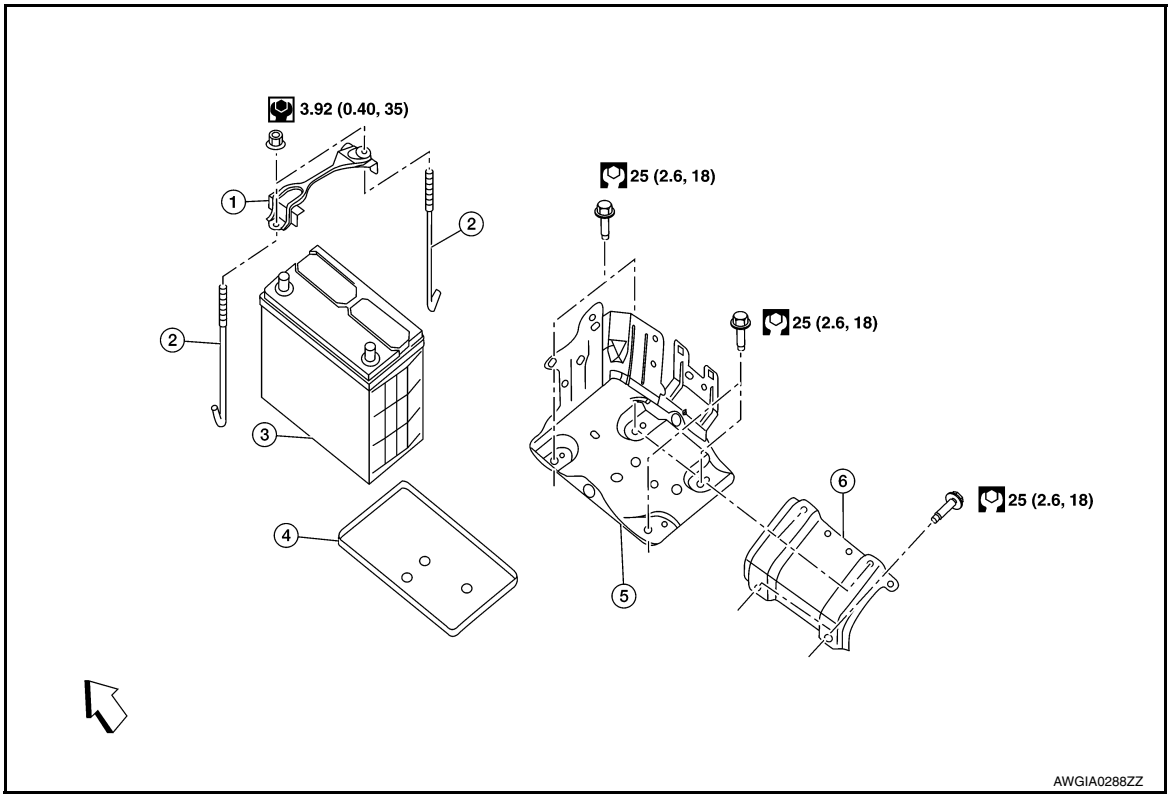
- **If fusible link should melt, it is possible that critical circuit (power supply or large current carrying circuit) is shorted. In such a case, carefully check and eliminate cause of malfunction.**
- **Never wrap outside of fusible link with vinyl tape. Important: Never let fusible link touch any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

# REMOVAL AND INSTALLATION

## 12V BATTERY

### Exploded View

INFOID:0000000008744026




1. Battery frame
2. Battery rods
3. Battery
4. Battery tray liner
5. Battery tray
6. Battery tray bracket

⇦ Front

### Removal and Installation

INFOID:0000000008744027

REMOVAL

1. Disconnect the 12V battery cable from the negative terminal. Refer to PG-6, "Precaution for Removing 12V Battery".
   **CAUTION:**
   **To prevent damage to the parts, disconnect the 12V battery cable from the negative terminal first.**
2. Remove cover of 12V battery positive terminal.
3. Disconnect the 12V battery cable from the positive terminal.
4. Remove battery frame nuts and battery frame.
5. Remove 12V battery.

INSTALLATION

Install in the reverse order of removal.

**CAUTION:**

**To install the 12V battery, carefully read the following instructions.**

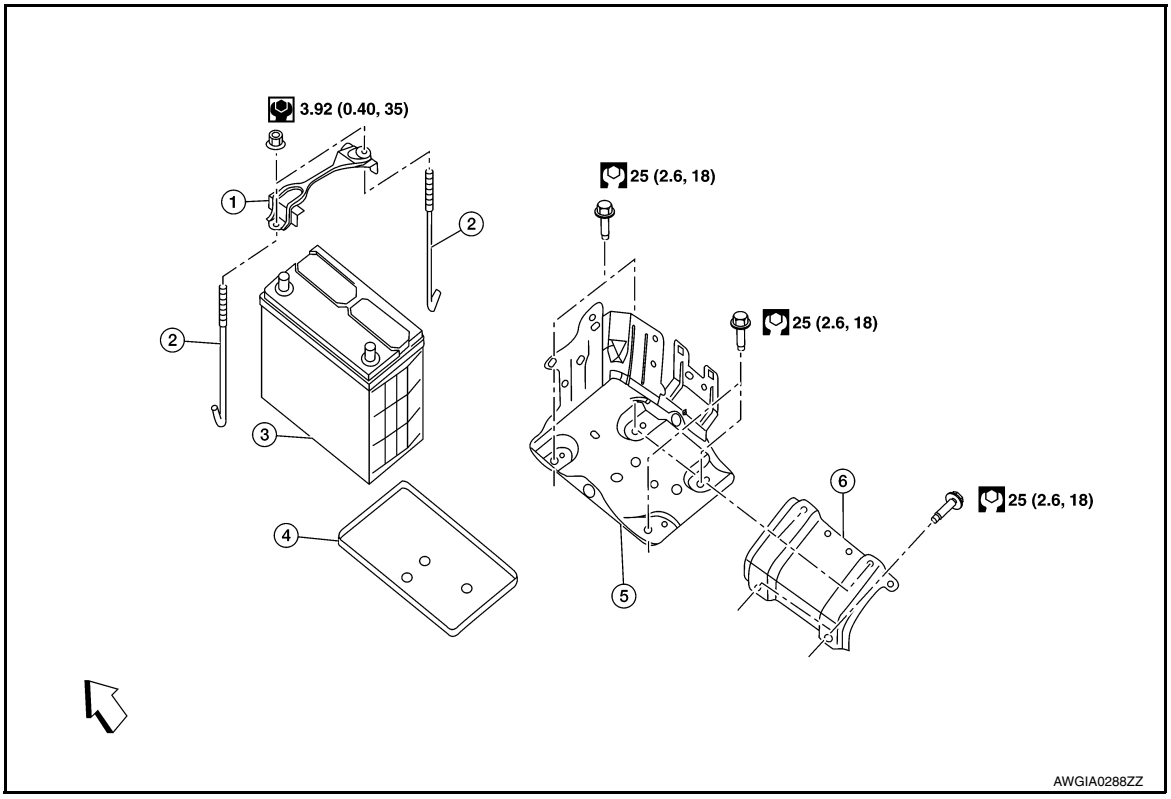
- **To prevent damage to the parts, connect the 12V battery cable to the positive terminal first.**
- **After connecting 12V battery cables, to securely supply 12V battery voltage, ensure that they are tightly clamped to 12V battery terminals for good contact.**
- **To securely supply 12V battery voltage, check 12V battery terminal for poor connection caused by corrosion.**

Reset electronic systems as necessary. Refer to PG-62, "Special Repair Requirement".

# BATTERY TRAY

## Exploded View

INFOID:0000000009328391




1. Battery frame
2. Battery rods
3. Battery
4. Battery tray liner
5. Battery tray
6. Battery tray bracket

⇦ Front

## Removal and Installation

INFOID:0000000009328393

### REMOVAL

1. Remove the 12 volt battery. Refer to PG-65, "Removal and Installation".
2. Remove the battery tray liner.
3. Remove the ground strap retainers from the battery tray and set the ground strap aside.
4. Remove the fuse, fusible link and relay box-1 from the battery tray and set the fuse, fusible link and relay box-1 aside.
5. Remove battery tray bolts and battery tray.

### INSTALLATION

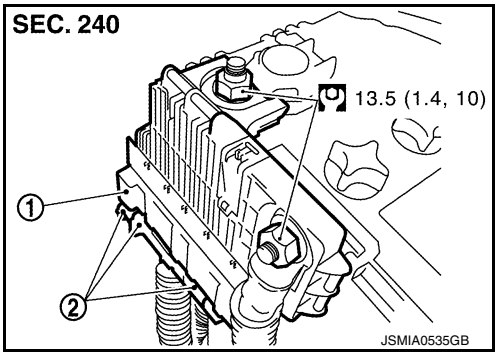
Installation is in the reverse order of removal.

# BATTERY TERMINAL WITH FUSIBLE LINK

## Exploded View

INFOID:0000000008744028

1 : Battery terminal with fusible link
2 : Harness connector
: N·m (kg-m, ft-lb)




## Removal and Installation

INFOID:0000000008744029

### REMOVAL

1. Disconnect the 12V battery cable from the negative terminal. Refer to PG-6, "Precaution for Removing 12V Battery".
   **CAUTION:**
   **To prevent damage to the parts, disconnect the 12V battery cable from the negative terminal first.**
2. Remove cover of 12V battery positive terminal.
3. Disconnect the 12V battery cable from the positive terminal.
4. Open cover of harness mounting nut.
5. Remove harness mounting nut and battery terminal with fusible link mounting nut.
6. Disconnect harness connector and remove battery terminal with fusible link.

### INSTALLATION

Install in the reverse order of removal.

**CAUTION:**

**To install the 12V battery, carefully read the following instructions.**

- **To prevent damage to the parts, connect the 12V battery cable to the positive terminal first.**
- **After connecting 12V battery cables, to securely supply 12V battery voltage, ensure that they are tightly clamped to 12V battery terminals for good contact.**
- **To securely supply 12V battery voltage, check 12V battery terminal for poor connection caused by corrosion.**

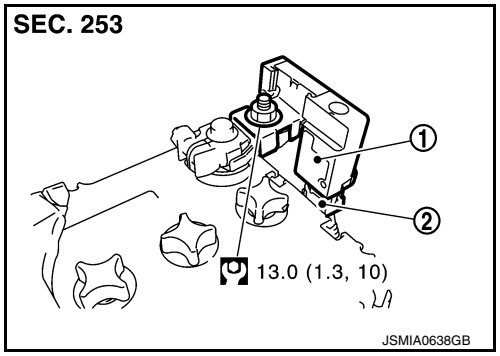
Reset electronic systems as necessary. Refer to PG-62, "Special Repair Requirement"

# BATTERY CURRENT SENSOR

## Exploded View

INFOID:0000000008744030

1 : Battery current sensor (With battery temperature sensor)
2 : Harness connector
: N·m (kg-m, ft-lb)




## Removal and Installation

INFOID:0000000008744031

### REMOVAL

1. Disconnect the 12V battery cable from the negative terminal. Refer to PG-6, "Precaution for Removing 12V Battery".
2. Disconnect the battery current sensor connector.
3. Remove the battery current sensor mounting nut.
4. Remove the battery current sensor from 12V battery cable.

### INSTALLATION

Install in the reverse order of removal.

**CAUTION:**

**To install the 12V battery, carefully read the following instructions.**

- **To prevent damage to the parts, connect the 12V battery cable to the positive terminal first.**
- **After connecting 12V battery cables, to securely supply 12V battery voltage, ensure that they are tightly clamped to 12V battery terminals for good contact.**
- **To securely supply 12V battery voltage, check 12V battery terminal for poor connection caused by corrosion.**

Reset electronic systems as necessary. Refer to PG-62, "Special Repair Requirement".

# SERVICE DATA AND SPECIFICATIONS (SDS)

## SERVICE DATA AND SPECIFICATIONS (SDS)

### 12V Battery

INFOID:0000000008744032

| | | |
|---|---|---|
| Type | | 51R |
| 20 hour rate capacity | [V – Ah] | 12 – 43 |
| Cold cranking current (For reference value) | [A] | 410 |