SECTION PG

POWER SUPPLY, GROUND & CIRCUIT ELEMENTS

CONTENTS

PRECAUTION

PRECAUTIONS

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

INFOID:0000000012563562

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

WARNING:

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

Precaution for Power Generation Variable Voltage Control System

INFOID:0000000012563563

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.

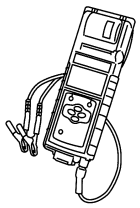
PREPARATION

PREPARATION

Special Service Tool

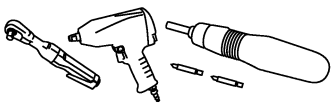
INFOID:0000000012563564

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

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

Commercial Service Tool

INFOID:0000000012563565

Tool name	Description
Power tool  PIIB1407E	Loosening nuts, screws and bolts

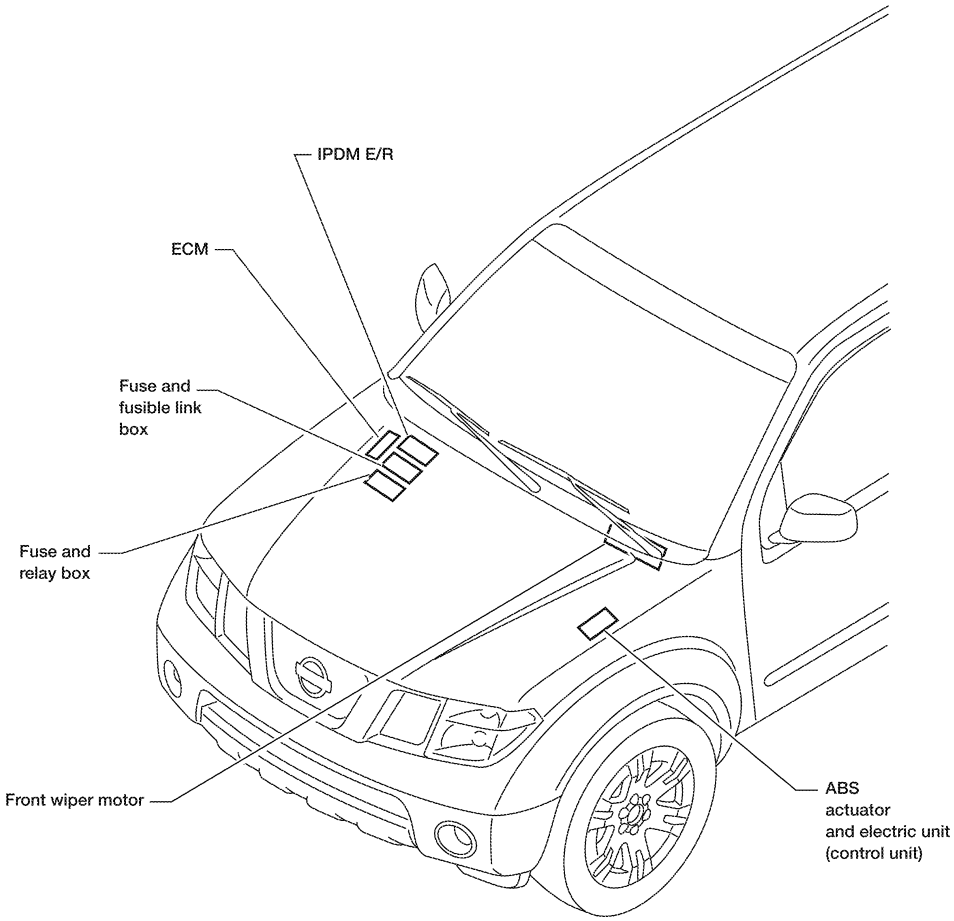
SYSTEM DESCRIPTION

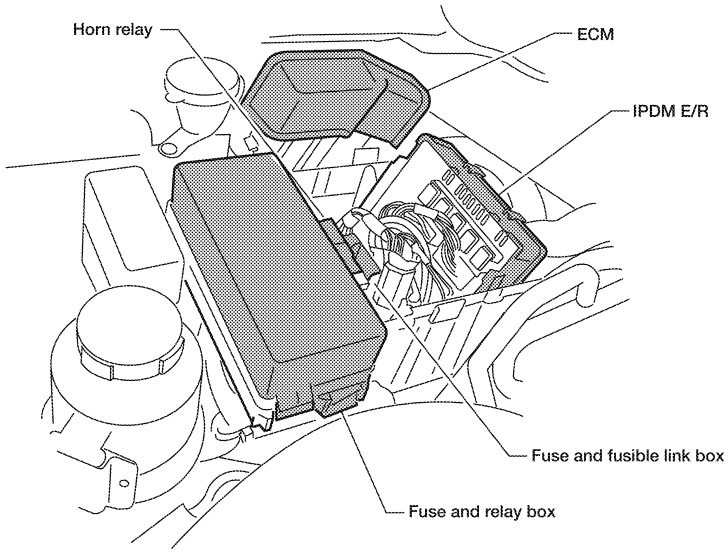
ELECTRICAL UNITS LOCATION

Electrical Units Location

INFOID:0000000012563566

ENGINE COMPARTMENT





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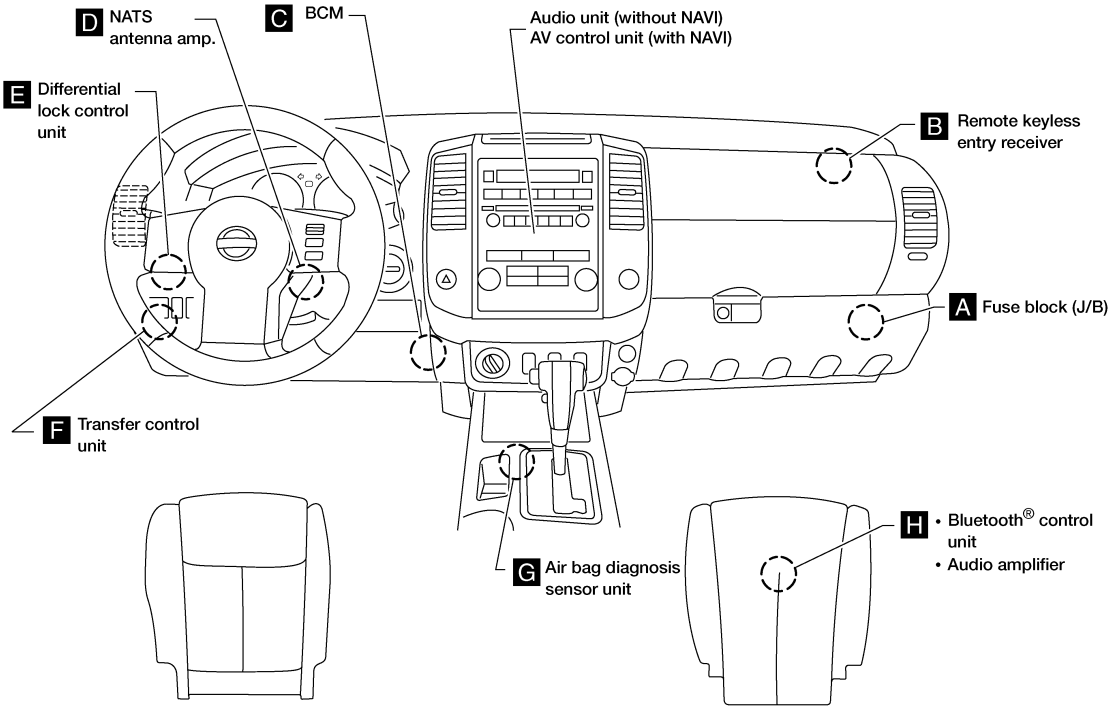
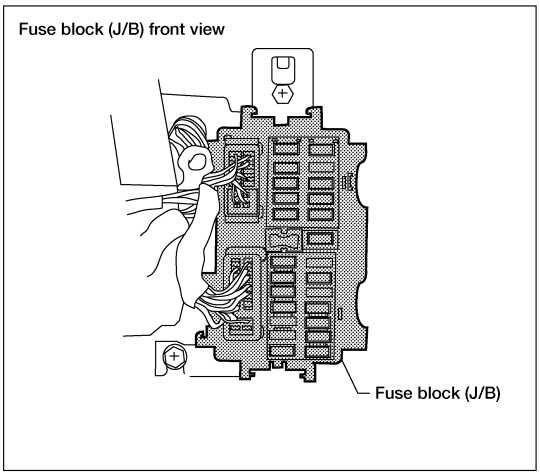


A Instrument panel side RH



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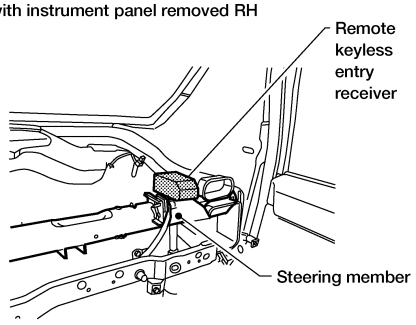
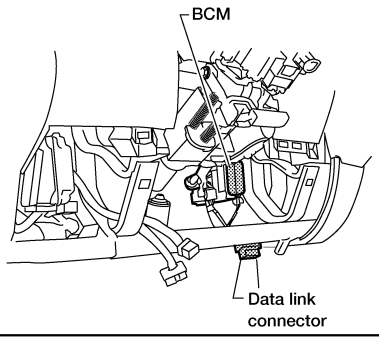
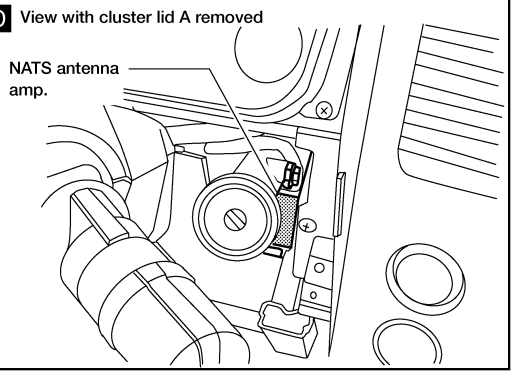
B View with instrument panel removed RH



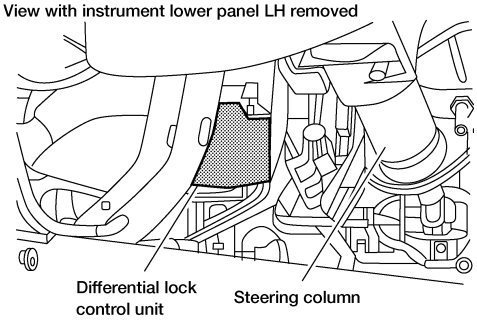
C View with instrument lower panel LH removed



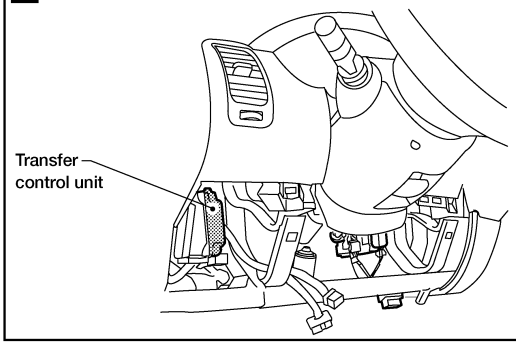
D View with cluster lid A removed



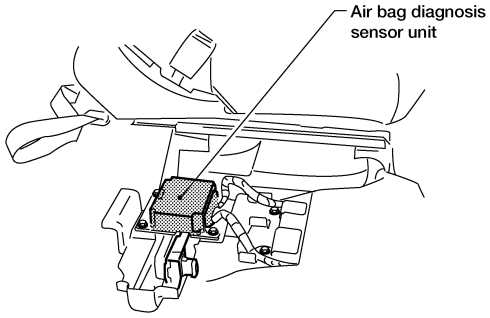
E View with instrument lower panel LH removed



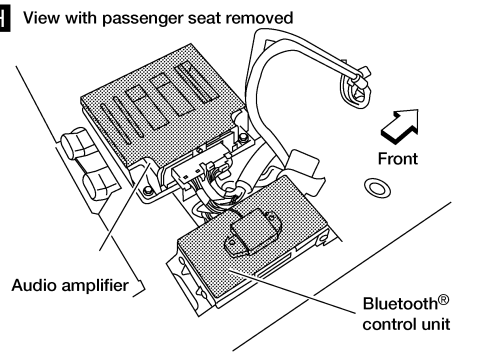
F View with lower instrument cover removed



G View with center console removed



H View with passenger seat removed



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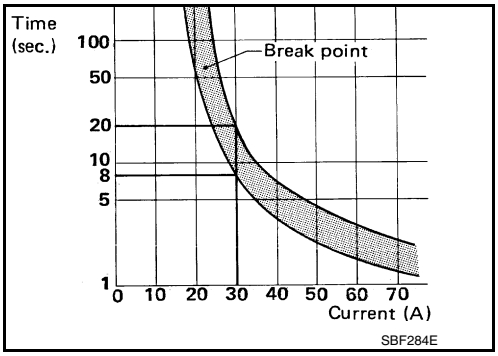
COMPONENT PARTS

Circuit Breaker (Built Into BCM)

INFOID:0000000012563567

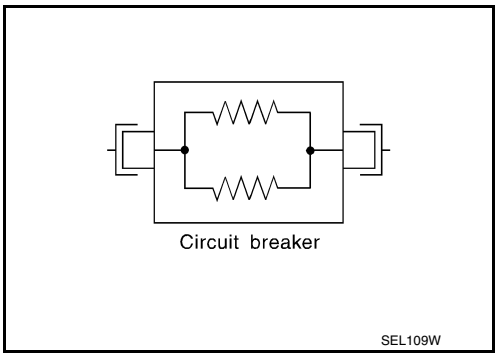
For example, when current is 30A, the circuit is broken within 8 to 20 seconds.
This circuit breaker is used for the following systems:
- Power windows
- Power moonroof



Circuit Breaker (External to BCM)

INFOID:0000000012563568

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.
This circuit breaker is used for the following systems:
- Power seats
- Power moonroof



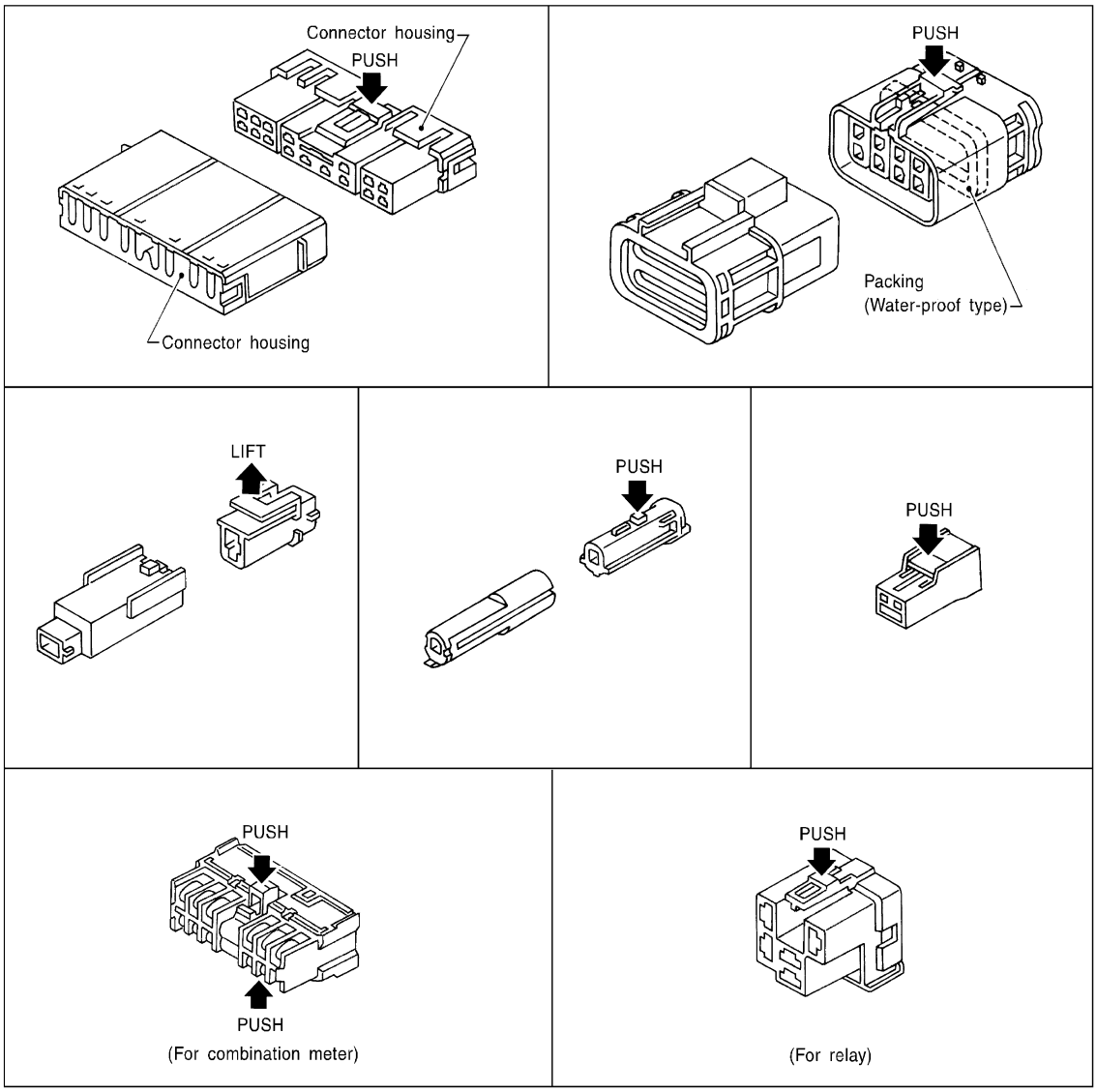
Harness Connector

INFOID:0000000012563569

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

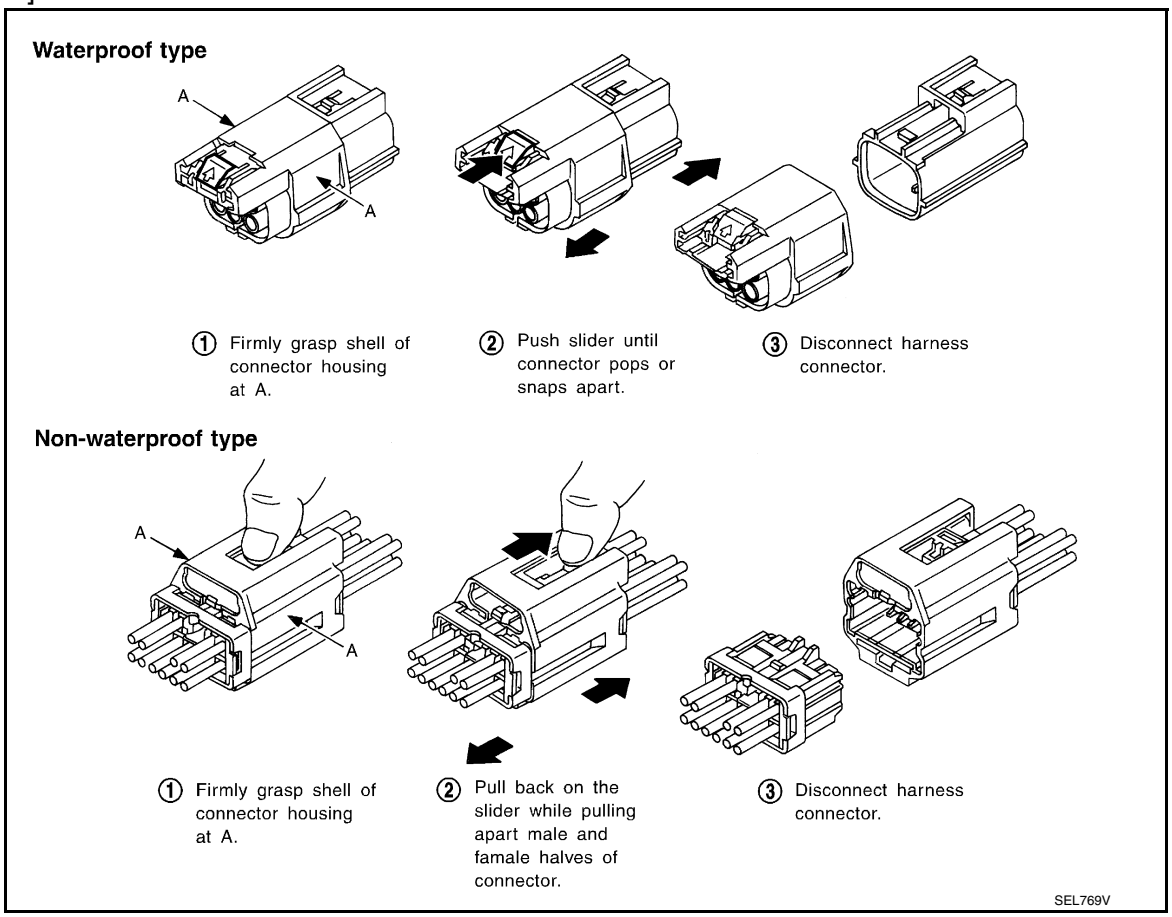
HARNESS CONNECTOR (SLIDE-LOCKING TYPE)

- 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.
- 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]

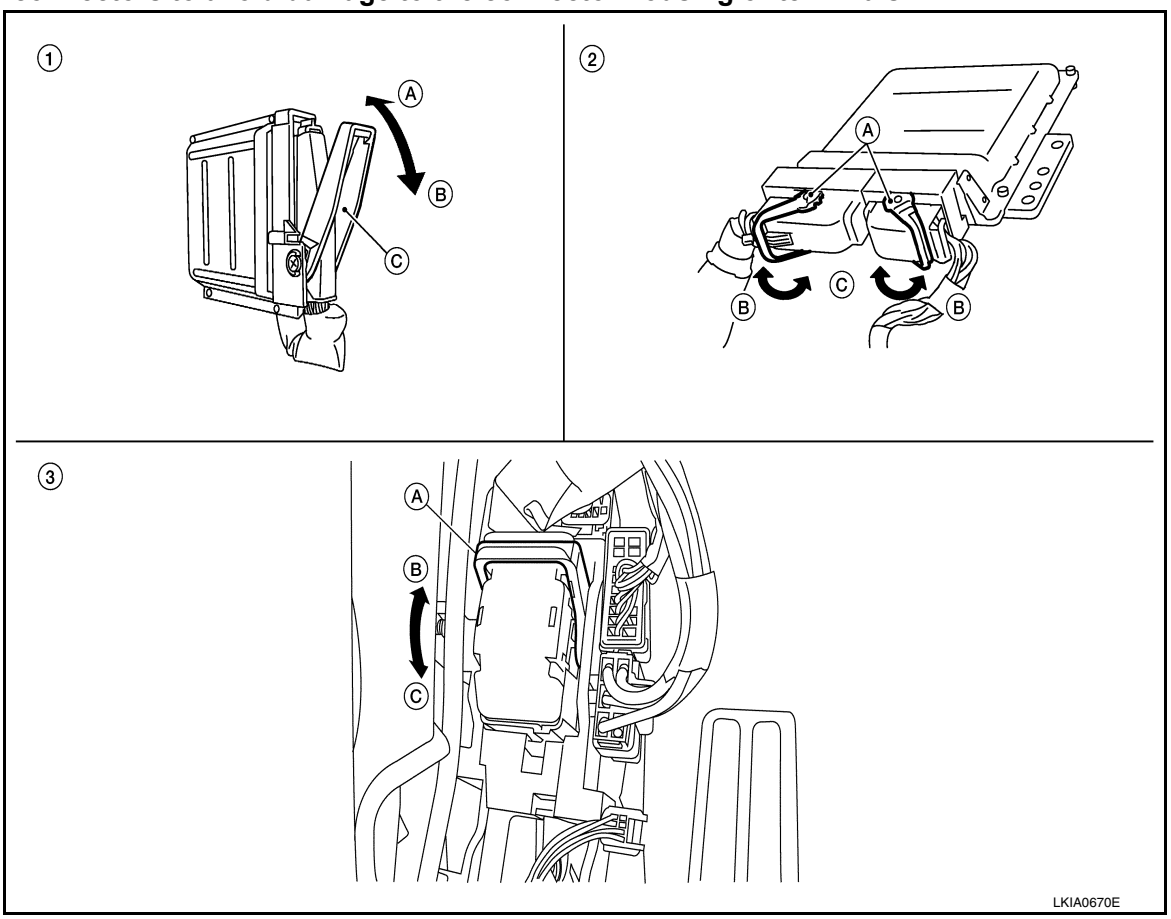


HARNESS CONNECTOR (LEVER LOCKING TYPE)

- 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:

- **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.**



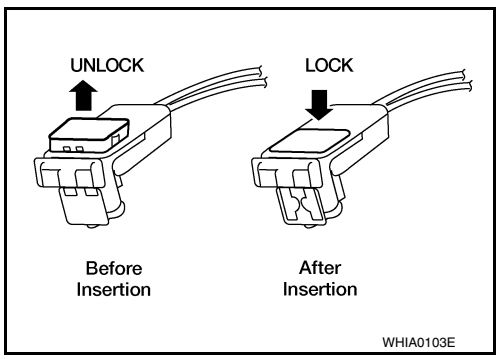
1. Control unit with single lever
   A. Fasten
   B. Loosen
   C. Lever
2. Control unit with dual lever
   A. Levers
   B. Fasten
   C. Loosen
3. SMJ connector
   A. Lever
   B. Fasten
   C. Loosen

HARNESS CONNECTOR (DIRECT-CONNECT SRS COMPONENT TYPE)

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

CAUTION:

- **Do not pull the harness or wires when removing connectors from SRS components.**

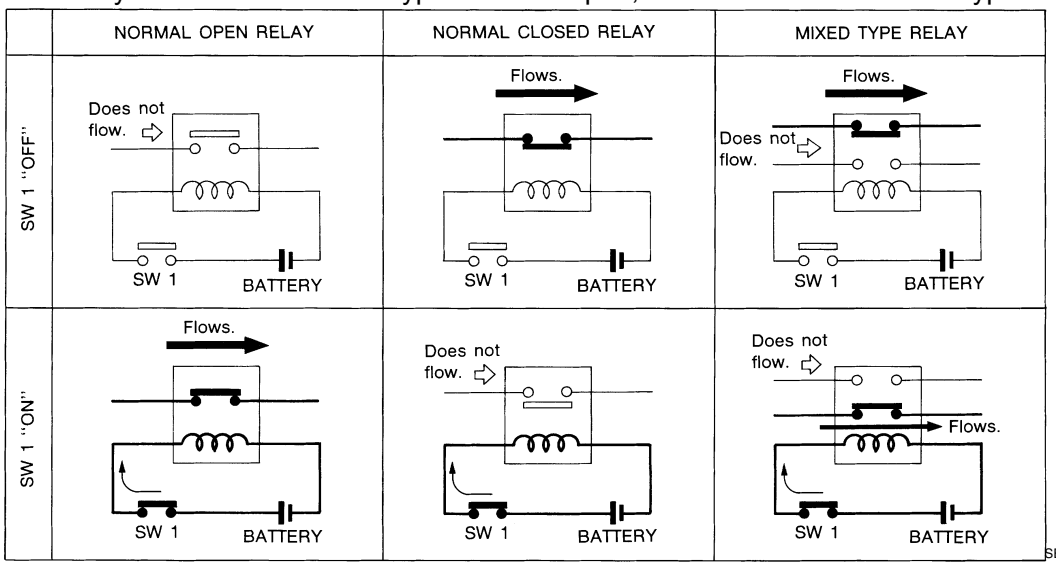


Standardized Relay

INFOID:0000000012563570

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

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



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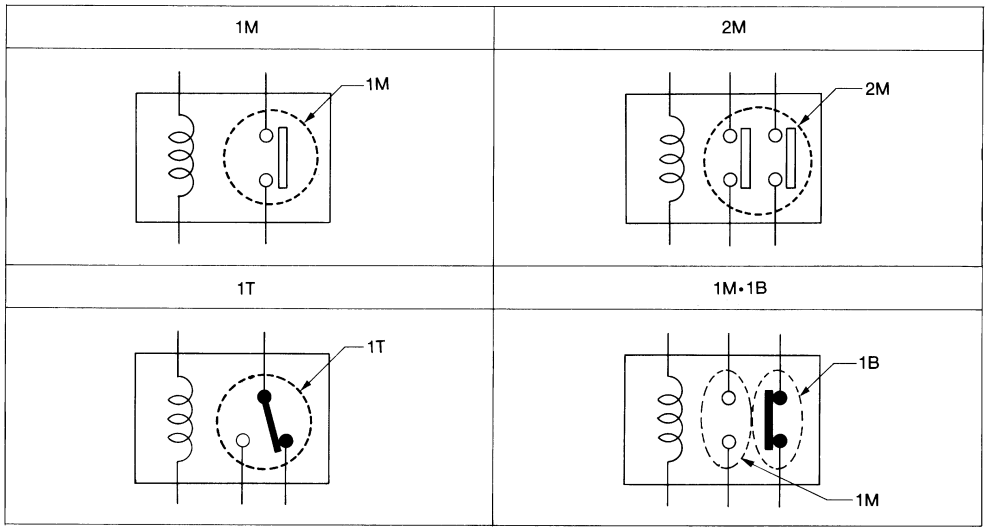
TYPE OF STANDARDIZED RELAYS

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



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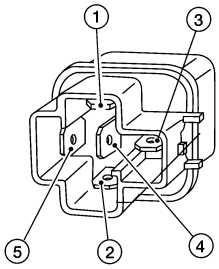
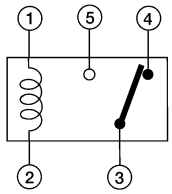
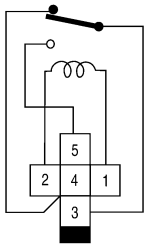
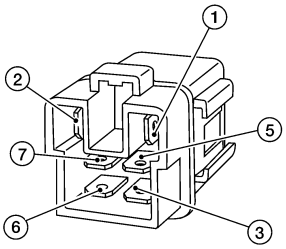
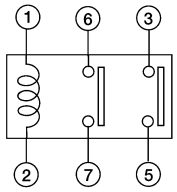
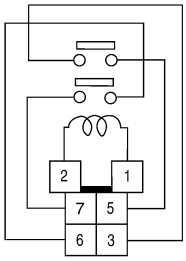
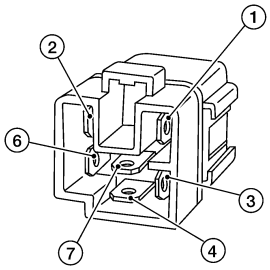
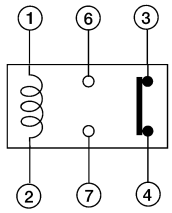
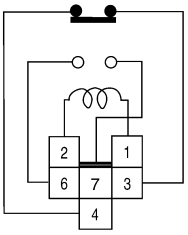
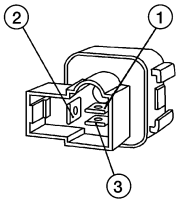
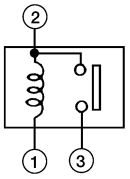
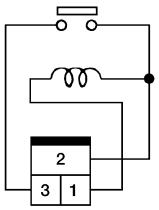
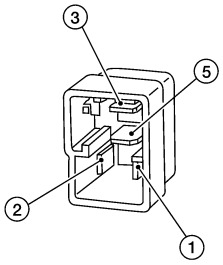
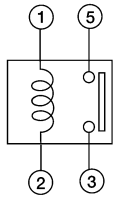
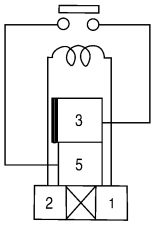
Type	Outer view	Circuit	Connector Symbol and connection	Case color
1T				BLACK
2M				BROWN
1M ·1B				GRAY
1M				BLACK
				BLUE

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

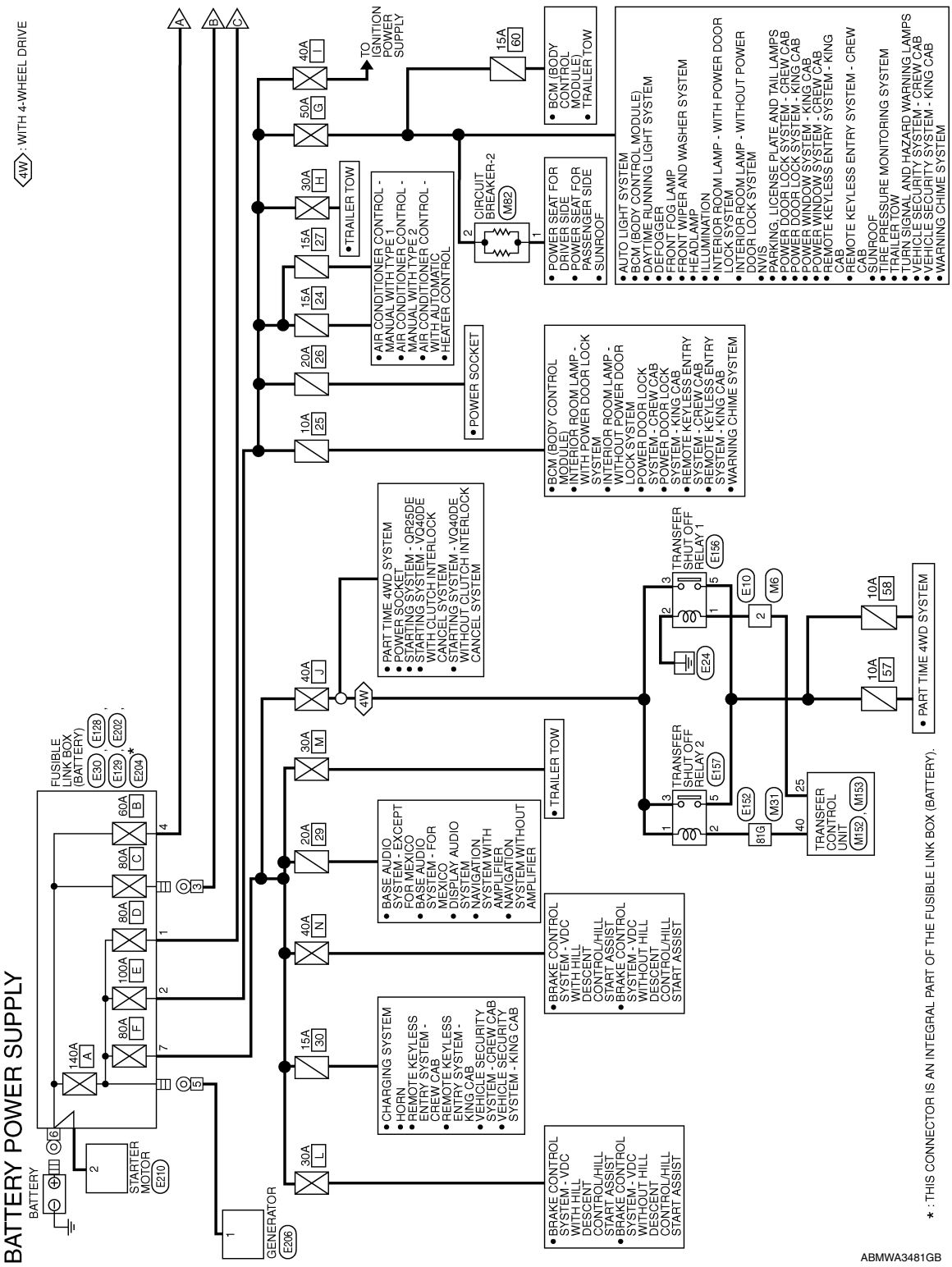
WKIA0253E

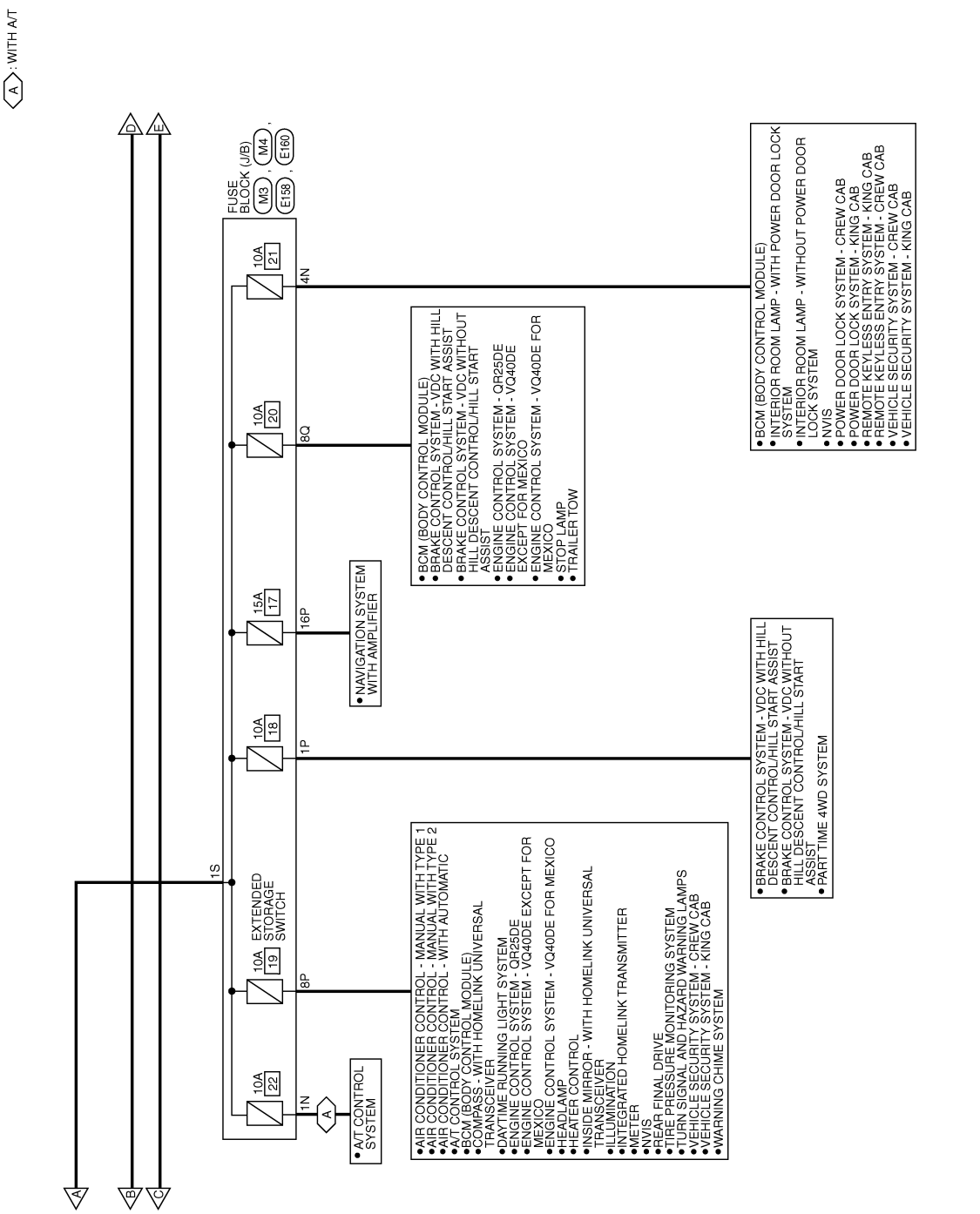
WIRING DIAGRAM

POWER SUPPLY ROUTING CIRCUIT

Wiring Diagram—Battery Power Supply

INFOID:0000000012563571





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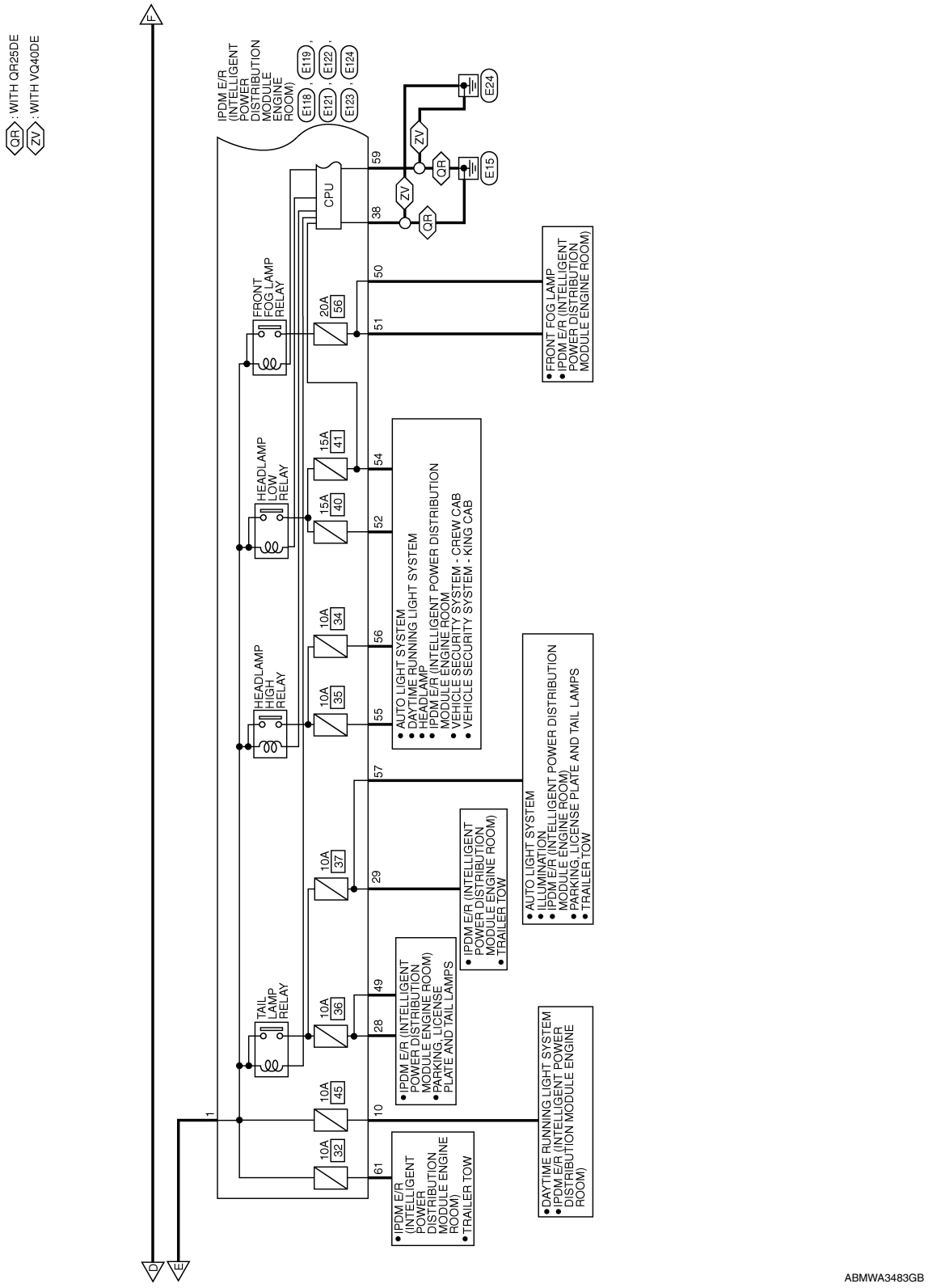
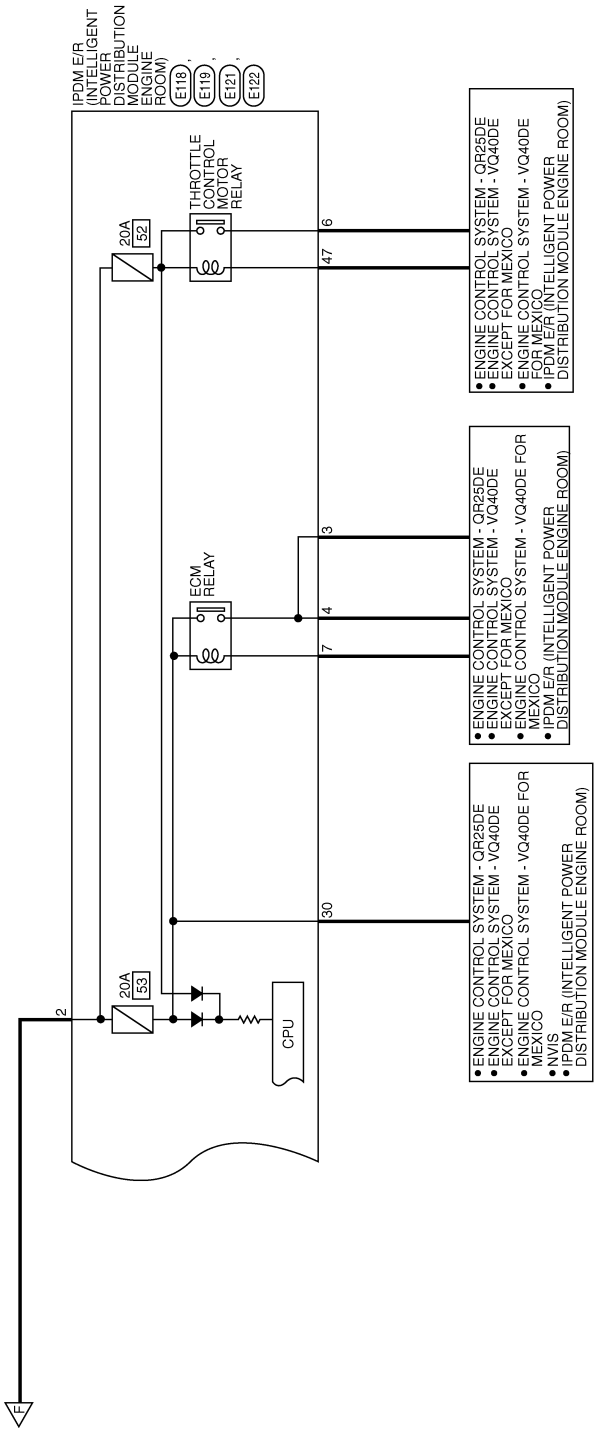


ABMWA3483GB



ABMWA2866GB

BATTERY POWER SUPPLY CONNECTORS

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

H.S.

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

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

H.S.

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

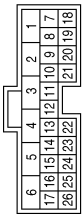
Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

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

H.S.



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

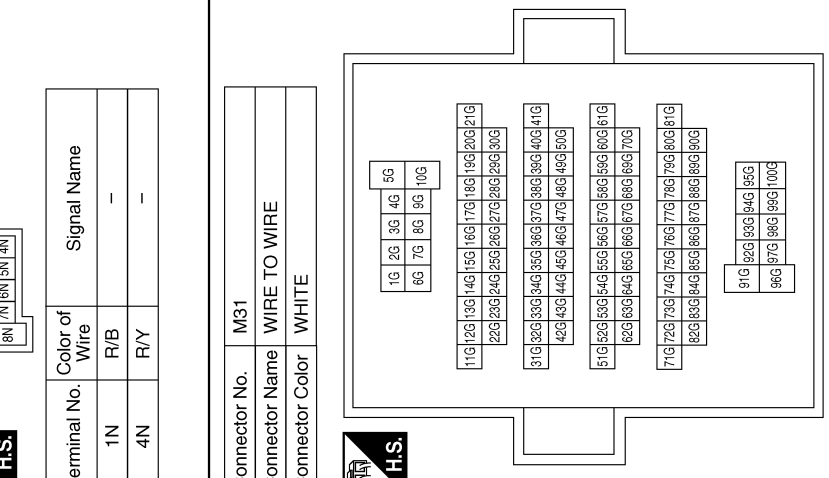
Connector No.	M82
Connector Name	CIRCUIT BREAKER-2
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	G	–
2	P	–

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

H.S.



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

ABMIA5558GB

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

H.S.

32	31	30	29	28	27
42	41	40	39	38	37	36	35	34	33
50	49	48	47	46	45	44	43

Terminal No.	Color of Wire	Signal Name
40	V	SSOF

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

H.S.

1	2	3
4	5	6

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

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

H.S.

3

Terminal No.	Color of Wire	Signal Name
3	R	–

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

H.S.

1
2

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

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

H.S.

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

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

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

H.S.

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

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

ABMIA6664GB

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

H.S.

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

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

H.S.

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

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

H.S.

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

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

H.S.

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

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

H.S.

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

ABMIA6665GB

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

H.S.

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

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

H.S.

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

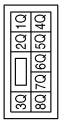
Connector No.	E202
Connector Name	FUSIBLE LINK BOX (BATTERY)
Connector Color	–

H.S.

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

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

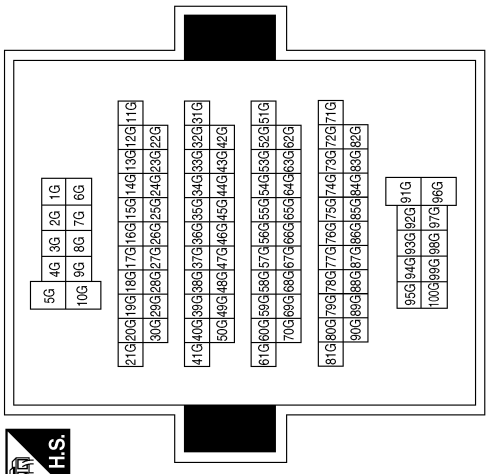
H.S.



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

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

H.S.



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

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

H.S.

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

ABMIA5560GB

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

H.S.

6

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

Connector No.	E206
Connector Name	GENERATOR
Connector Color	–

H.S.

1

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

Connector No.	E210
Connector Name	STARTER MOTOR
Connector Color	–

H.S.

2

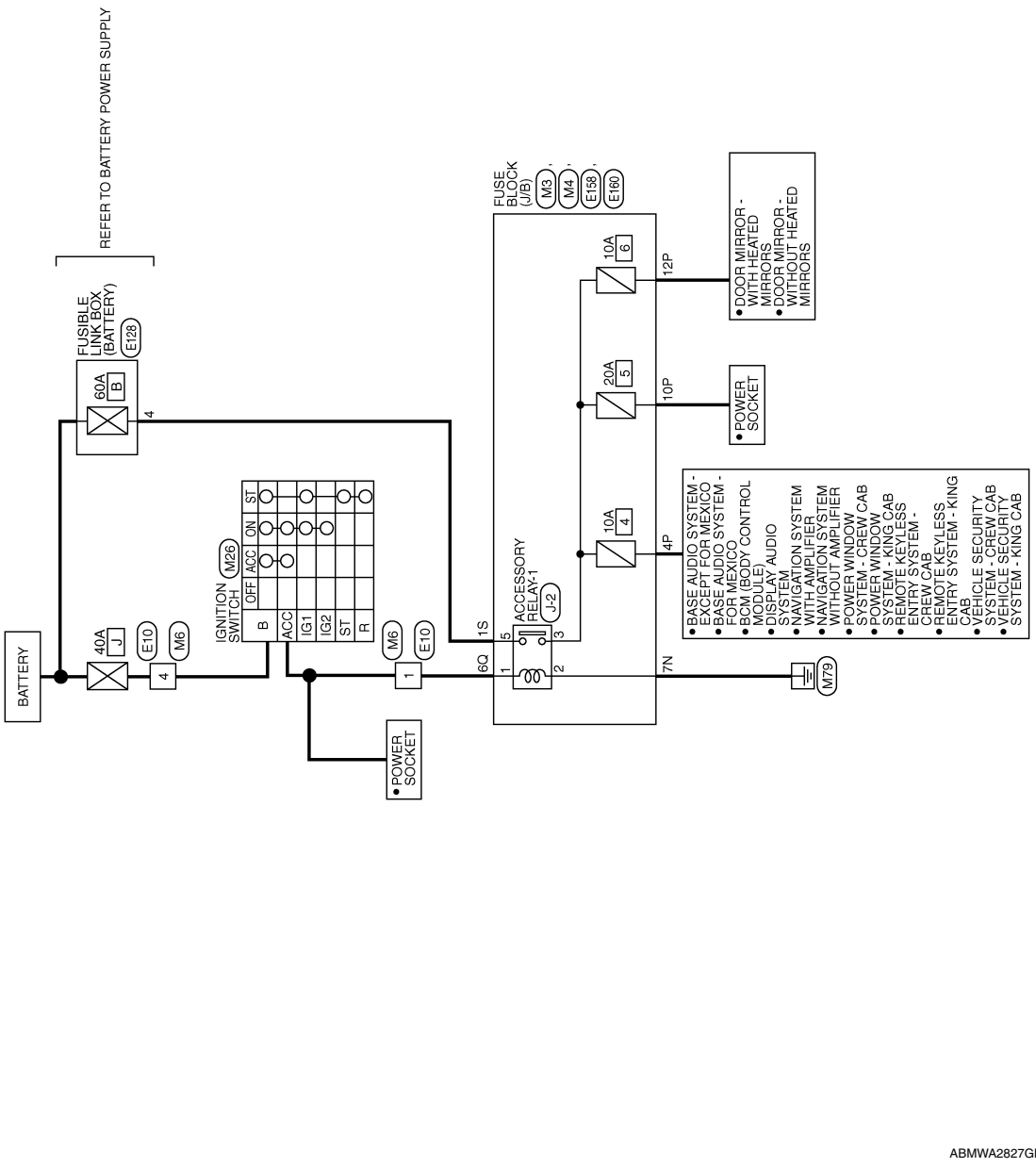
Terminal No.	Color of Wire	Signal Name
2	B/R	–

ABMIA4370GB

Wiring Diagram—Accessory Power Supply

INFOID:0000000012563572

ACCESSORY POWER SUPPLY



ABMWA2827GB

ACCESSORY POWER SUPPLY CONNECTORS

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

H.S.

3N		2N	1N
7N	6N	5N	4N
8N			

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

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

H.S.

7P	6P	5P	4P		3P	2P	1P
16P	15P	14P	13P	12P	11P	9P	8P

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

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

H.S.

3	2	1
6	5	4

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

Connector No.	M26
Connector Name	IGNITION SWITCH
Connector Color	WHITE

H.S.

B	ST	IG1
R	ACC	IG2

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

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

H.S.

1	2	3
4	5	6

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

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

H.S.

4
7

Terminal No.	Color of Wire	Signal Name
4	W	–

ABMIA0380GB

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

H.S.

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

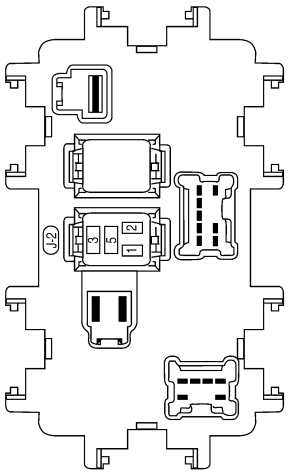
Connector No.	E160
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
6Q	G/Y	–

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

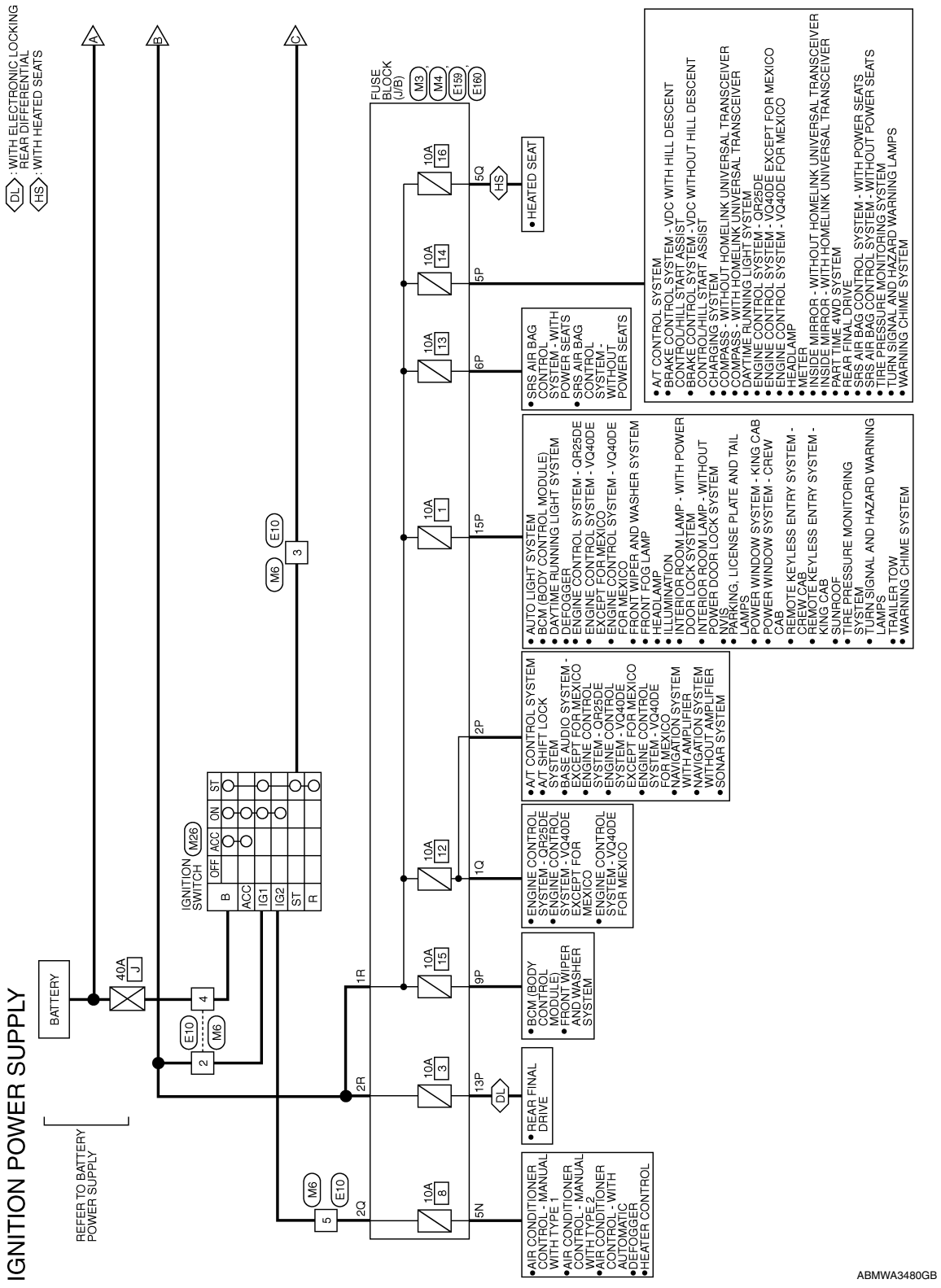
T.S.

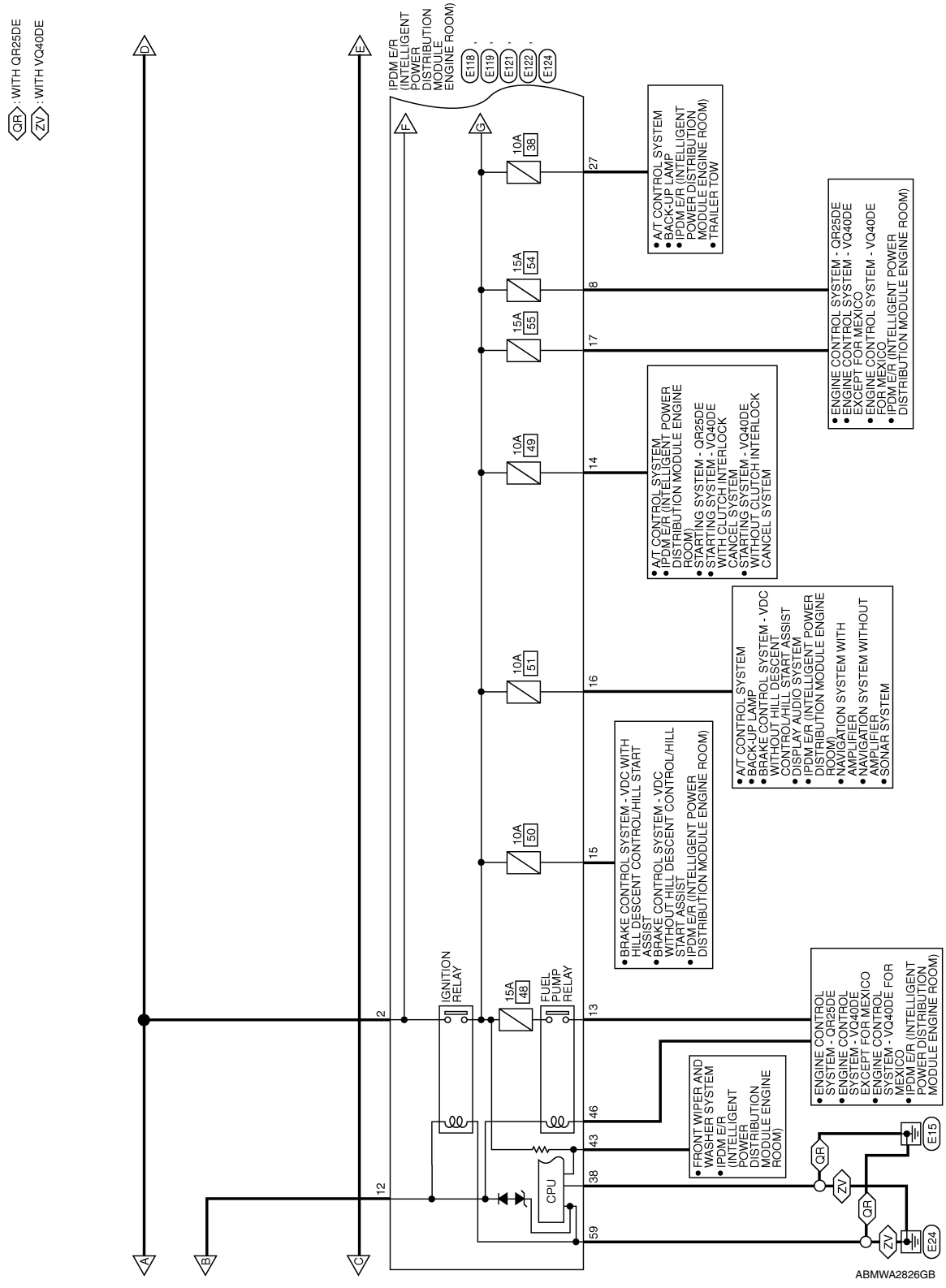


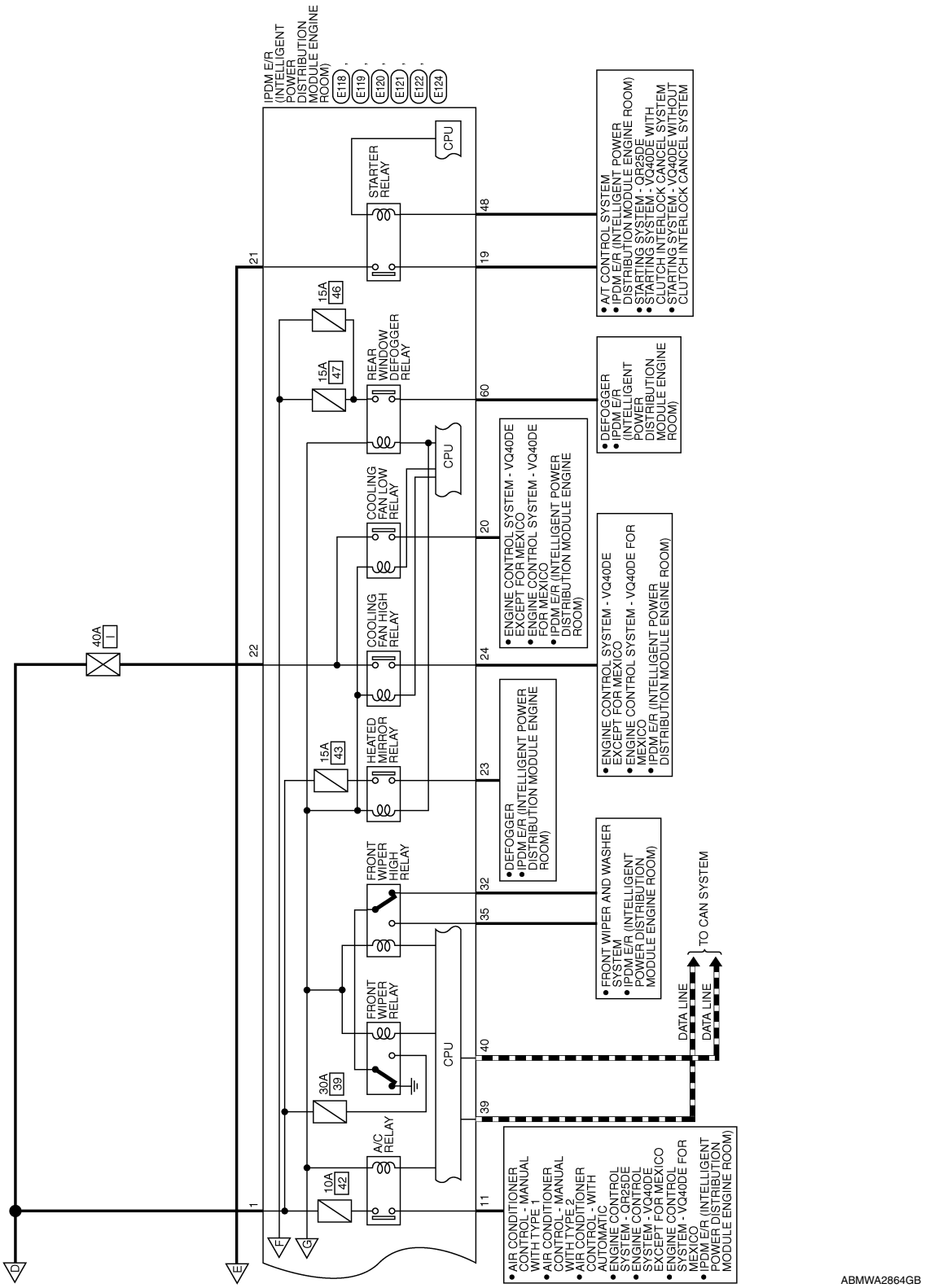
ABMIA4371GB

Wiring Diagram—Ignition Power Supply

INFOID:0000000012563573




QR : WITH QR25DE
ZV : WITH VQ40DE
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E118, E119, E121, E122, E124
10A 38
15A 54
15A 55
10A 49
10A 51
10A 50
15A 48
IGNITION RELAY
FUEL PUMP RELAY
CPU
27
8
17
14
16
15
2
13
46
43
38
12
59
• A/T CONTROL SYSTEM
• BACK-UP LAMP
• IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
• TRAILER TOW
• ENGINE CONTROL SYSTEM - QR25DE
• ENGINE CONTROL SYSTEM - VQ40DE EXCEPT FOR MEXICO
• ENGINE CONTROL SYSTEM - VQ40DE FOR MEXICO
• IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
• A/T CONTROL SYSTEM
• IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
• STARTING SYSTEM - QR25DE
• STARTING SYSTEM - VQ40DE WITH CLUTCH INTERLOCK
• STARTING SYSTEM - VQ40DE WITHOUT CLUTCH INTERLOCK
• CANCEL SYSTEM
• A/T CONTROL SYSTEM
• BACK-UP LAMP
• BRAKE CONTROL SYSTEM - VDC WITHOUT HILL DESCENT CONTROL/HILL START ASSIST
• DISPLAY AUDIO SYSTEM
• IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
• NAVIGATION SYSTEM WITH AMPLIFIER
• NAVIGATION SYSTEM WITHOUT AMPLIFIER
• SONAR SYSTEM
• BRAKE CONTROL SYSTEM - VDC WITH HILL DESCENT CONTROL/HILL START ASSIST
• BRAKE CONTROL SYSTEM - VDC WITHOUT HILL DESCENT CONTROL/HILL START ASSIST
• IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
• ENGINE CONTROL SYSTEM - QR25DE
• ENGINE CONTROL SYSTEM - VQ40DE EXCEPT FOR MEXICO
• ENGINE CONTROL SYSTEM - VQ40DE FOR MEXICO
• IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
• FRONT WIPER AND WASHER SYSTEM
• IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E15
E24
ABMWA2826GB


IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E118
E119
E120
E121
E122
E124
CPU
STARTER RELAY
REAR WINDOW DEFOGGER RELAY
COOLING FAN LOW RELAY
COOLING FAN HIGH RELAY
HEATED MIRROR RELAY
FRONT WIPER HIGH RELAY
FRONT WIPER RELAY
A/C RELAY
40A 1
15A 46
15A 47
15A 43
30A 39
10A 42
21
22
1
48
19
60
20
24
23
32
35
40
39
11
D
E
F
G
• A/T CONTROL SYSTEM
• IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
• STARTING SYSTEM - QR25DE WITH CLUTCH INTERLOCK CANCEL SYSTEM
• STARTING SYSTEM - VQ40DE WITHOUT CLUTCH INTERLOCK CANCEL SYSTEM
• DEFOGGER
• IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
• ENGINE CONTROL SYSTEM - VQ40DE EXCEPT FOR MEXICO
• ENGINE CONTROL SYSTEM - VQ40DE FOR MEXICO
• IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
• ENGINE CONTROL SYSTEM - VQ40DE EXCEPT FOR MEXICO
• ENGINE CONTROL SYSTEM - VQ40DE FOR MEXICO
• IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
• DEFOGGER
• IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
• FRONT WIPER AND WASHER SYSTEM
• IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
DATA LINE
DATA LINE
TO CAN SYSTEM
• AIR CONDITIONER CONTROL - MANUAL WITH TYPE 1
• AIR CONDITIONER CONTROL - MANUAL WITH TYPE 2
• AIR CONDITIONER CONTROL - WITH AUTOMATIC
• ENGINE CONTROL SYSTEM - QR25DE
• ENGINE CONTROL SYSTEM - VQ40DE EXCEPT FOR MEXICO
• ENGINE CONTROL SYSTEM - VQ40DE FOR MEXICO
• IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
ABMWA2864GB

IGNITION POWER SUPPLY CONNECTORS

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

H.S.

3N		2N	1N
8N	7N	6N	5N	4N

Terminal No.	Color of Wire	Signal Name
5N	W/G	–

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

H.S.

7P	6P	5P	4P		3P	2P	1P
16P	15P	14P	13P	12P	11P	10P	9P	8P

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

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

H.S.

3	2	1
6	5	4

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

Connector No.	M26
Connector Name	IGNITION SWITCH
Connector Color	WHITE

H.S.

B	ST	IG1
R	ACC	IG2

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

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

H.S.

1	2	3
4	5	6

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

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

H.S.

1
2

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

ABMIA4424GB

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

H.S.

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

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

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

H.S.

21	20	19
24	23	22

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

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

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

H.S.

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

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

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

H.S.

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

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

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

H.S.

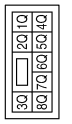
59	58	57
62	61	60

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

ABMIA6666GB

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

H.S.



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

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

H.S.

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

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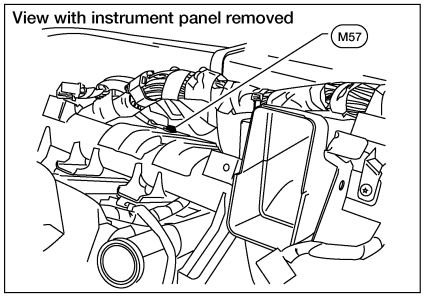
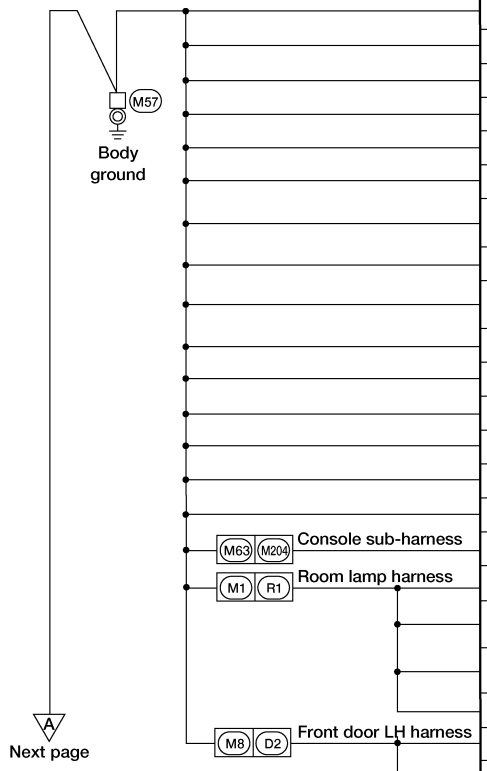
GROUND

Ground Distribution

INFOID:0000000012563574

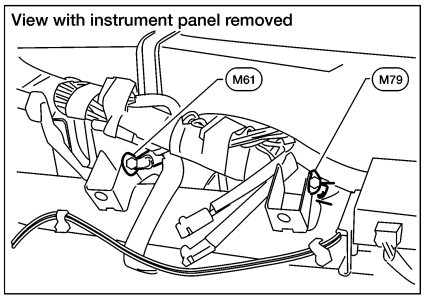
MAIN HARNESS

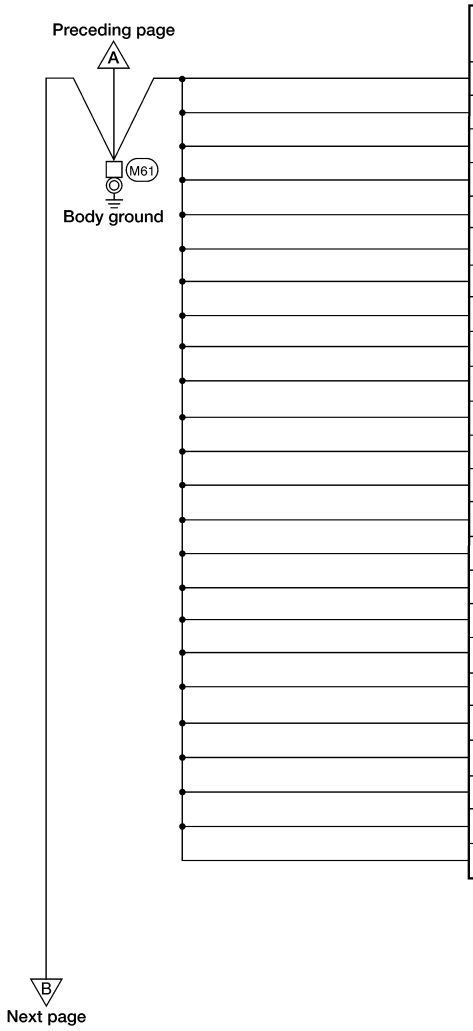




CONNECTOR NUMBER	CONNECT TO
M20	BCM (body control module) (Terminal No. 67)
M21	NATS antenna amp. (Terminal No. 3)
M22	Data link connector (Terminal No. 4)
M22	Data link connector (Terminal No. 5)
M24	Combination meter (Terminal No. 23)
M28	Combination switch
M43	Audio unit (Terminal No. 20) (with base audio system - except for Mexico)
M44	Audio unit (Terminal No. 20) (with display audio system)
M60	Audio unit (Terminal No. 26) (with base audio system - except for Mexico)
M93	Sonar control unit (Terminal No. 6)
M94	Sonar system OFF switch (Terminal No. 2)
M94	Sonar system OFF switch (Terminal No. 6)
M96	AV control unit (Terminal No. 20) (with NAVI with amplifier)
M107	AV control unit (Terminal No. 20) (with NAVI without amplifier)
M168	Accessory relay-2
M215	Aux in jack shield
R4	Sunroof switch
R6	Auto anti-dazzling inside mirror (without homelink universal transceiver)
R7	Auto anti-dazzling inside mirror (with homelink universal transceiver)
R9	Front room/map lamp assembly
D4	Door mirror LH (with heated mirror)
D7	Main power window and door lock/unlock switch
D14	Front door lock assembly LH

ABMIA6563GB





CONNECTOR NUMBER	CONNECT TO
M13	Front passenger air bag OFF indicator
M24	Combination meter (Terminal No. 13)
M34	In-vehicle sensor
M35	Air bag diagnosis sensor unit (Terminal No. 2)
M47	Steering angle sensor
M49	Front air control (Terminal No. 20) (manual with type 2)
M51	Front blower switch
M55	Hazard switch
M56	Front air control (Terminal No. 35) (with auto A/C)
M59	Front air control (Terminal No. 35) (manual with type 1)
M71	Cargo lamp switch
M121	Variable blower control (front)
M152	Transfer control unit (Terminal No. 6)
M152	Transfer control unit (Terminal No. 18)
M153	Transfer control unit (Terminal No. 32)
M154	VDC OFF switch
M155	Hill descent control switch
M156	A/T shift selector (Terminal No. 2)
M156	A/T shift selector (Terminal No. 8)
M156	A/T shift selector (Terminal No. 10)
M159	Door mirror remote control switch
M160	Front heated seat switch RH
M161	Front heated seat switch LH
M163	Clutch interlock cancel switch

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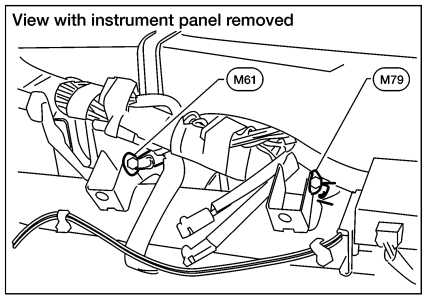
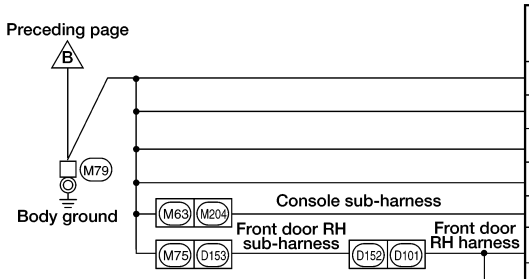
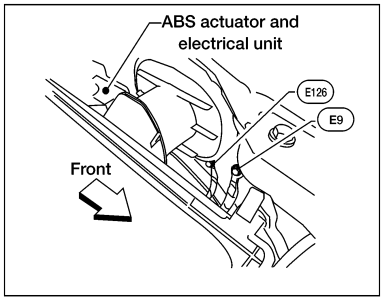
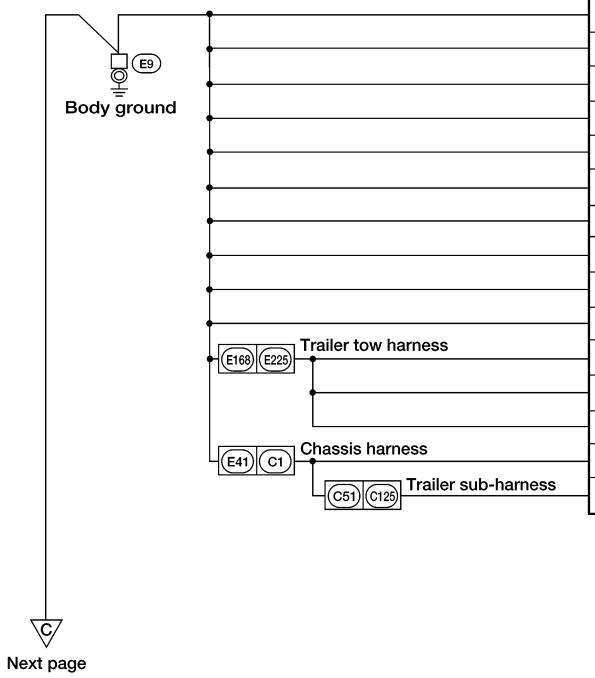




CONNECTOR NUMBER	CONNECT TO
M3	Fuse block (J/B)
M53	Lower front power socket
M54	Upper front power socket
M76	Electric brake (pre-wiring)
M207	Console power socket
D105	Power window and door lock/unlock switch RH
D107	Door mirror RH (with heated mirror)

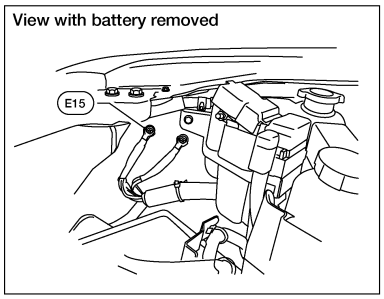
ABMIA4384GB



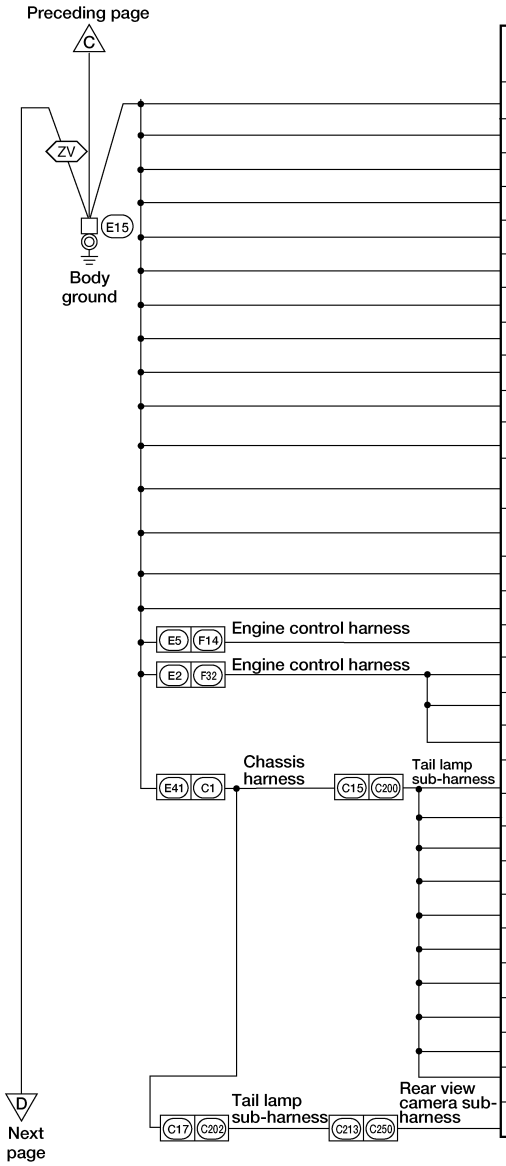


CONNECTOR NUMBER	CONNECT TO
E6	Horn
E17	Front combination lamp LH
E21	Brake fluid level switch
E23	Front wiper motor
E102	Front fog lamp RH
E103	Daytime light relay 1
E104	Daytime light relay 2
E106	Washer fluid level switch
E107	Front combination lamp RH
E111	Front combination lamp RH
E226	Back-up lamp relay (with M/T)
E227	Trailer tow relay 1
E228	Trailer tow relay 2
C5	Fuel level sensor unit and fuel pump
C126	Trailer

AAMIA2131GB



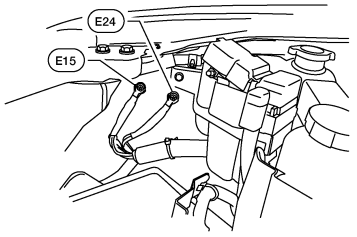
ZV : WITH VQ40DE



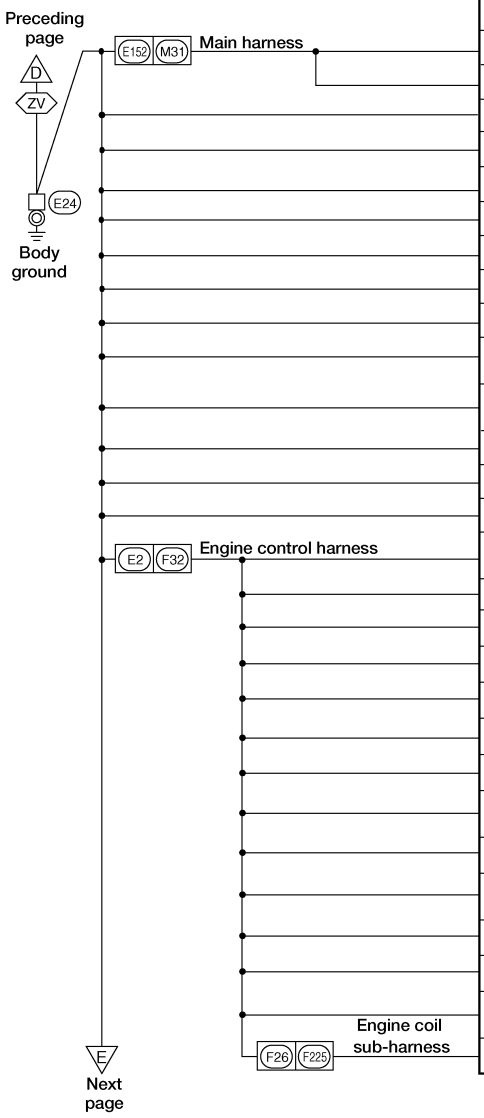
CONNECTOR NUMBER	CONNECT TO
E11	Front combination lamp LH (without daytime light system)
E16	ECM (Terminal No. 107) (with QR25DE)
E16	ECM (Terminal No. 108) (with QR25DE)
E16	ECM (Terminal No. 111) (with QR25DE)
E16	ECM (Terminal No. 112) (with QR25DE)
E27	Front combination lamp LH
E54	Front blower motor relay (manual with type 1 or heater control)
E101	Front fog lamp LH
E108	Front combination lamp RH
E113	Cooling fan motor (Terminal No. 3) (with VQ40DE)
E113	Cooling fan motor (Terminal No. 4) (with VQ40DE)
E122	IPDM E/R (intelligent power distribution module engine room) (Terminal No. 38) (with QR25DE)
E124	IPDM E/R (intelligent power distribution module engine room) (Terminal No. 59) (with QR25DE)
E164	Trailer turn relay LH
E165	Trailer turn relay RH
F66	Park/neutral position (PNP) switch
F50	Electric throttle control actuator shield (with QR25DE)
F52	ECM (Terminal No. 12) (with QR25DE)
F52	ECM (Terminal No. 16) (with QR25DE)
C201	Rear combination lamp LH
C202	Rear combination lamp RH
C203	License plate lamp LH
C204	License plate lamp RH
C205	Rear combination lamp LH (Terminal No. 7) (with A/T)
C206	Rear combination lamp RH (Terminal No. 7) (with A/T)
C207	Rear combination lamp LH
C208	Rear combination lamp RH
C209	Rear combination lamp RH (Terminal No. 7) (with M/T)
C210	Rear combination lamp LH (Terminal No. 7) (with M/T)
C251	Rear view camera

ABMIA6564GB

View with battery removed



ZV : WITH VQ40DE



CONNECTOR NUMBER	CONNECT TO
M70	Differential lock control unit (Terminal No. 3)
M70	Differential lock control unit (Terminal No. 10)
E8	ECM (Terminal No. 115) (with VQ40DE for Mexico)
E8	ECM (Terminal No. 116) (with VQ40DE for Mexico)
E54	Front blower motor relay (with auto A/C or manual with type 2)
E55	ECM (Terminal No. 123) (with VQ40DE except for Mexico)
E55	ECM (Terminal No. 124) (with VQ40DE except for Mexico)
E55	ECM (Terminal No. 127) (with VQ40DE except for Mexico)
E55	ECM (Terminal No. 128) (with VQ40DE except for Mexico)
E122	IPDM E/R (intelligent power distribution module engine room) (Terminal No. 38) (with VQ40DE)
E124	IPDM E/R (intelligent power distribution module engine room) (Terminal No. 59) (with VQ40DE)
E156	Transfer shut OFF relay 1
E166	Clutch interlock cancel relay 2
E171	Clutch interlock cancel relay 1
F2	Air fuel ratio (A/F) sensor 1 (bank 2) shield (with VQ40DE except for Mexico)
F11	Crankshaft position sensor (POS) (with VQ40DE)
F25	Camshaft position sensor (PHASE) (bank 2) (with VQ40DE)
F41	Intake manifold runner control valve motor shield
F50	Electric throttle control actuator shield (with VQ40DE)
F51	Intake valve timing control solenoid valve (bank 2) shield
F54	ECM (Terminal No. 1) (with VQ40DE for Mexico)
F68	Air fuel ratio (A/F) sensor 1 (bank 1) shield (with VQ40DE for Mexico)
F70	Camshaft position sensor (PHASE) (bank 1) (with VQ40DE)
F71	Air fuel ratio (A/F) sensor 1 (bank 1) shield (with VQ40DE except for Mexico)
F73	ECM (Terminal No. 12) (with VQ40DE except for Mexico)
F73	ECM (Terminal No. 16) (with VQ40DE except for Mexico)
F76	Air fuel ratio (A/F) sensor 1 (bank 2) shield (with VQ40DE for Mexico)
F229	Intake valve timing control solenoid valve (bank 1) shield

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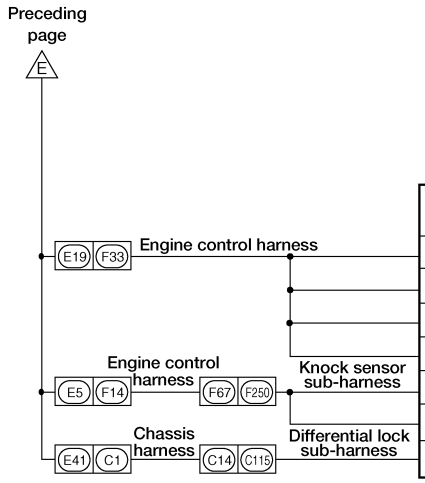

CONNECTOR NUMBER	CONNECT TO
F55	ATP switch
F58	Transfer control device
F59	Wait detection switch
F60	4LO switch
F251	Knock sensor (bank 1) (shield wire) (with VQ40DE for Mexico)
F252	Knock sensor (bank 2) (shield wire) (with VQ40DE for Mexico)
C116	Differential lock position switch

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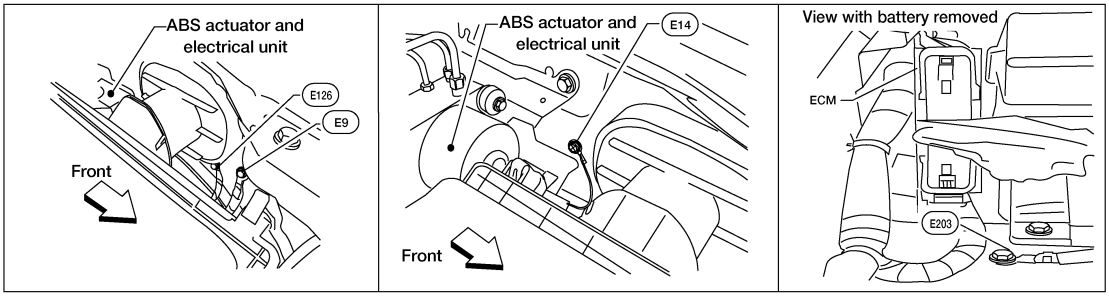
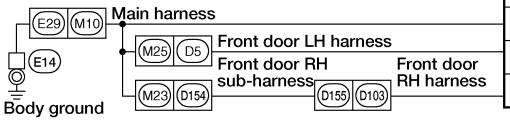
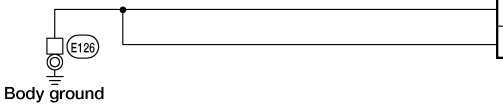




CONNECTOR NUMBER	CONNECT TO
M35	Air bag diagnosis sensor unit (shield wire) (Terminal No. 22)
D10	Front door satellite sensor LH shield
D109	Front door satellite sensor RH shield



CONNECTOR NUMBER	CONNECT TO
E127	ABS actuator and electric unit (control unit) (Terminal No. 16)
E127	ABS actuator and electric unit (control unit) (Terminal No. 47)

CONNECTOR NUMBER	CONNECT TO
E209	Generator

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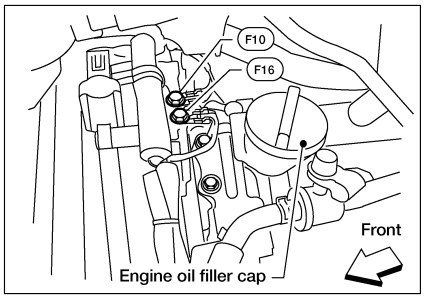
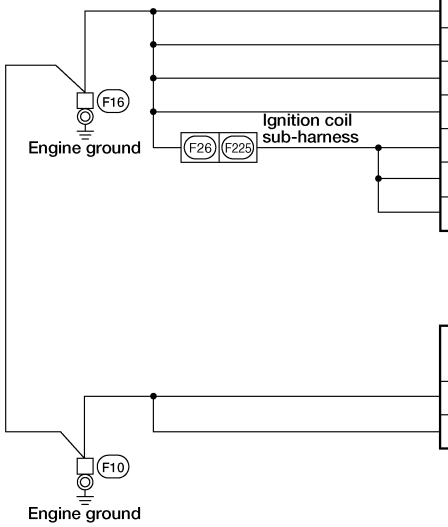
ENGINE CONTROL HARNESS (VQ40DE MODELS)





CONNECTOR NUMBER	CONNECT TO
F21	Condenser-1
F29	Ignition coil No. 2 (with power transistor) (with VQ40DE)
F30	Ignition coil No. 4 (with power transistor) (with VQ40DE)
F31	Ignition coil No. 6 (with power transistor) (with VQ40DE)
F226	Ignition coil No. 1 (with power transistor) (with VQ40DE)
F227	Ignition coil No. 3 (with power transistor) (with VQ40DE)
F228	Ignition coil No. 5 (with power transistor) (with VQ40DE)

CONNECTOR NUMBER	CONNECT TO
F9	A/T Assembly (Terminal No. 5)
F9	A/T Assembly (Terminal No. 10)

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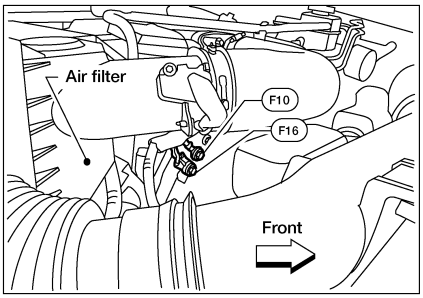

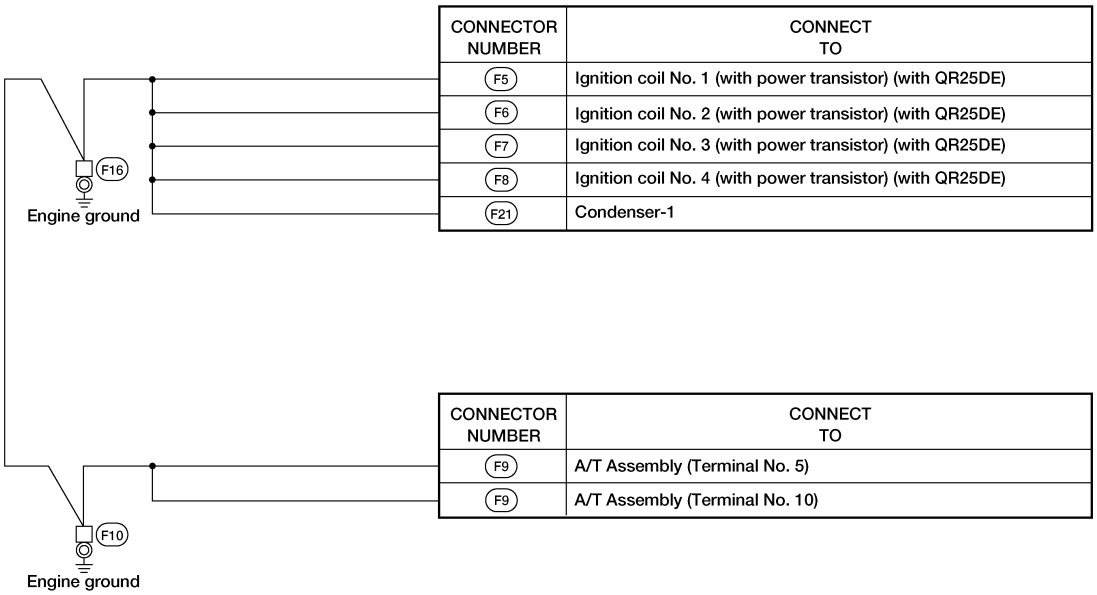

CONNECTOR NUMBER	CONNECT TO
F5	Ignition coil No. 1 (with power transistor) (with QR25DE)
F6	Ignition coil No. 2 (with power transistor) (with QR25DE)
F7	Ignition coil No. 3 (with power transistor) (with QR25DE)
F8	Ignition coil No. 4 (with power transistor) (with QR25DE)
F21	Condenser-1

CONNECTOR NUMBER	CONNECT TO
F9	A/T Assembly (Terminal No. 5)
F9	A/T Assembly (Terminal No. 10)

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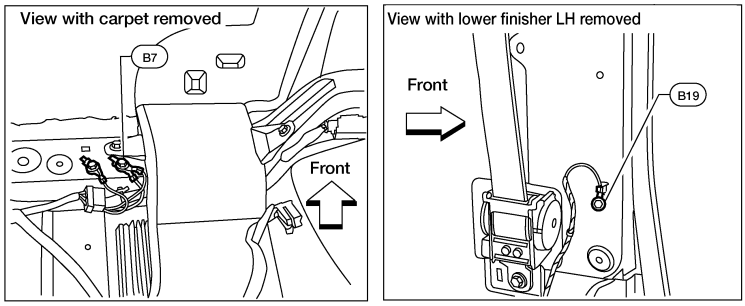

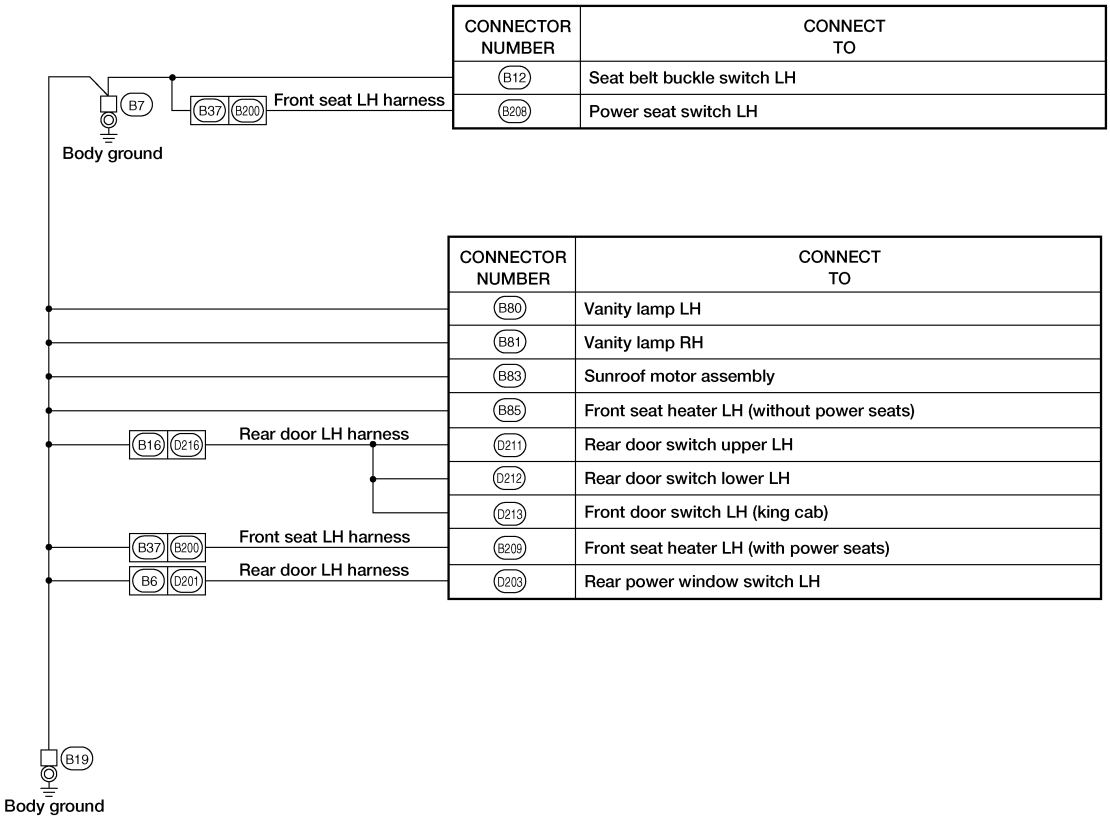

CONNECTOR NUMBER	CONNECT TO
B12	Seat belt buckle switch LH
B208	Power seat switch LH

CONNECTOR NUMBER	CONNECT TO
B80	Vanity lamp LH
B81	Vanity lamp RH
B83	Sunroof motor assembly
B85	Front seat heater LH (without power seats)
D211	Rear door switch upper LH
D212	Rear door switch lower LH
D213	Front door switch LH (king cab)
B209	Front seat heater LH (with power seats)
D203	Rear power window switch LH

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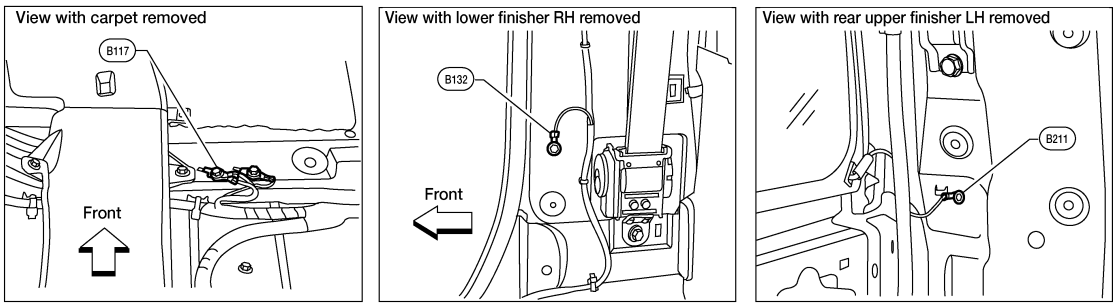

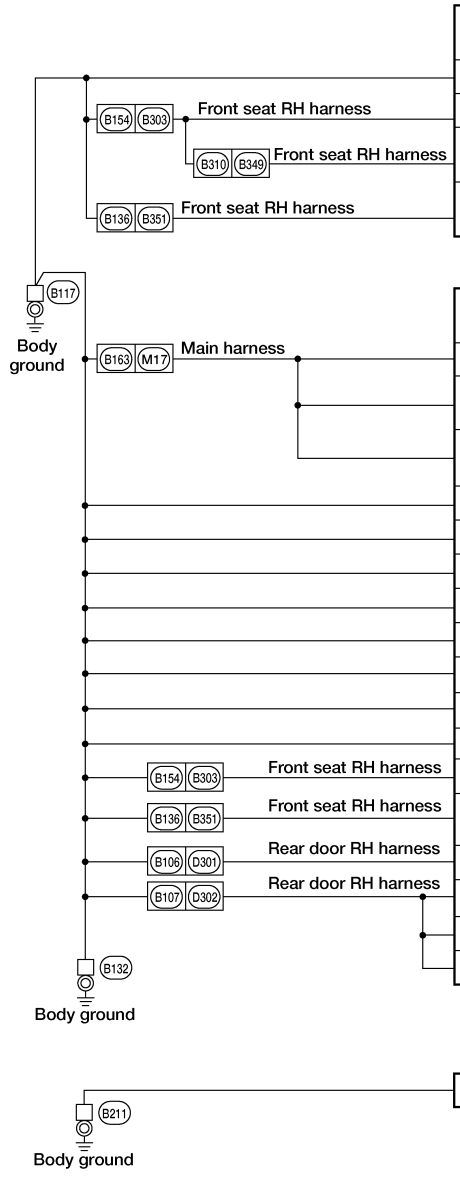

CONNECTOR NUMBER	CONNECT TO
B110	Seat belt buckle switch RH (Terminal No. 2) (crew cab)
B308	Power seat switch RH
B352	Occupant classification system control unit (Terminal No. 5) (crew cab with power seats)
B352	Occupant classification system control unit (Terminal No. 5) (crew cab without power seats)

CONNECTOR NUMBER	CONNECT TO
M45	Audio unit (Terminal No. 48) (with display audio system)
M60	Audio unit (Terminal No. 25) (with base audio system - except for Mexico) (king cab)
M60	Audio unit (Terminal No. 27) (with base audio system - except for Mexico) (crew cab)
B110	Seat belt buckle switch RH (Terminal No. 2) (king cab)
B141	Bluetooth® control unit (Terminal No. 4)
B141	Bluetooth® control unit (Terminal No. 22)
B141	Bluetooth® control unit (Terminal No. 23)
B158	Audio amplifier (Terminal No. 4)
B158	Audio amplifier (Terminal No. 20)
B161	High-mounted stop lamp assembly
B166	Front seat heater RH (without power seats)
B307	Front seat heater RH (with power seats)
B352	Occupant classification system control unit (Terminal No. 5) (king cab without power seats)
D303	Rear power window switch RH
D312	Rear door switch upper RH
D313	Rear door switch lower RH
D314	Front door switch RH (king cab)

B210	Rear window defogger

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HARNESS

Harness Layout

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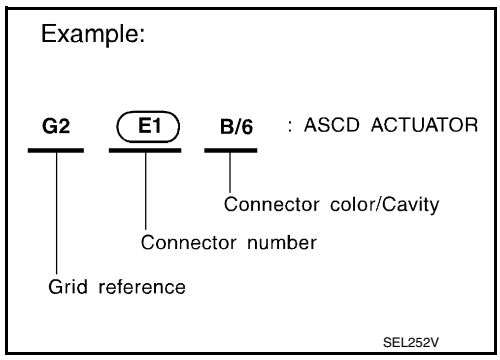
HOW TO READ HARNESS LAYOUT

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

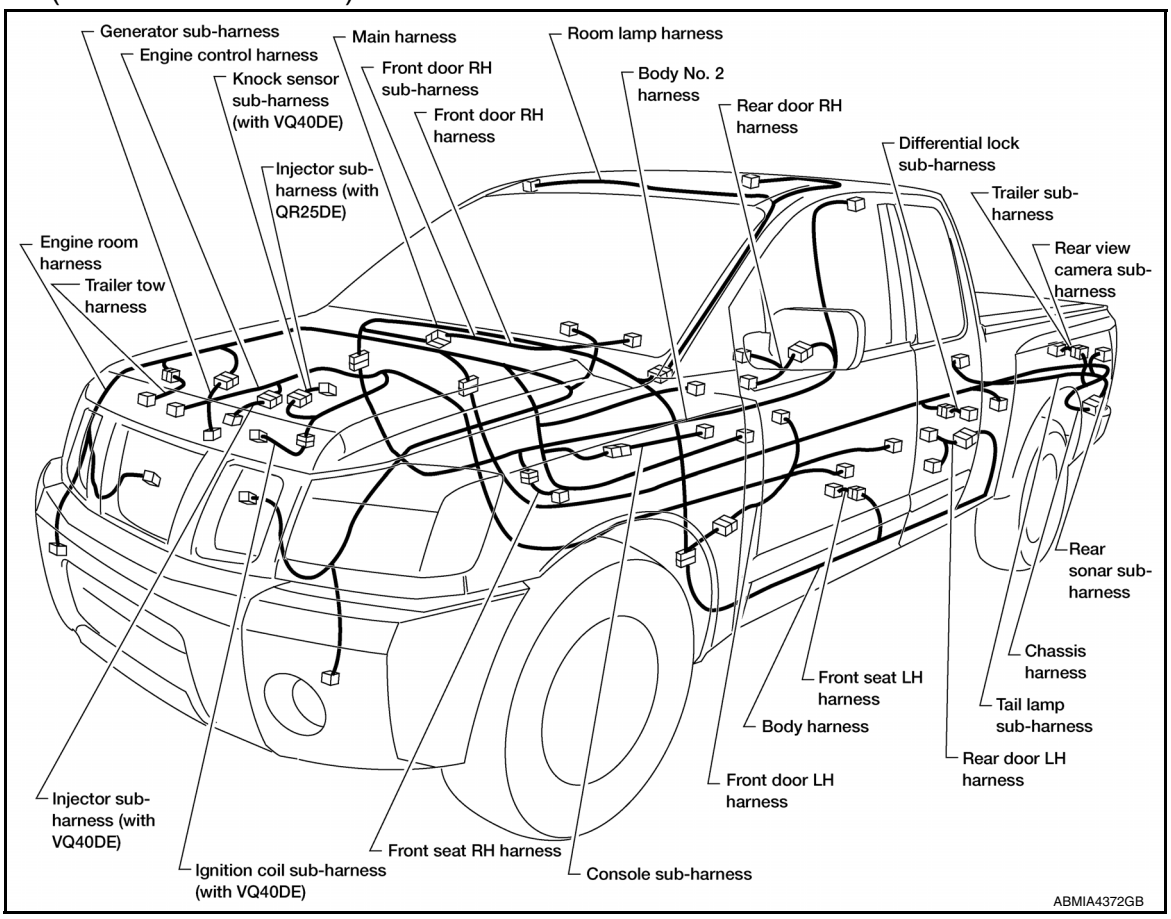


- Main Harness and Console Sub-harness
- Engine Room Harness (RH View), Generator Sub-harness and Trailer Tow Harness
- Engine Room Harness (Passenger Compartment)
- Engine Room Harness (LH View)
- Engine Control Harness (QR25DE Models) and Injector Sub-harness
- Engine Control Harness (VQ40DE Models), Injector Sub-harness, Ignition Coil Sub-harness and Knock Sensor Sub-harness
- Chassis Harness, Differential Lock Sub-harness, Trailer Sub-harness and Tail Lamp Sub-harness, Rear sonar sub-harness, Rear view camera 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

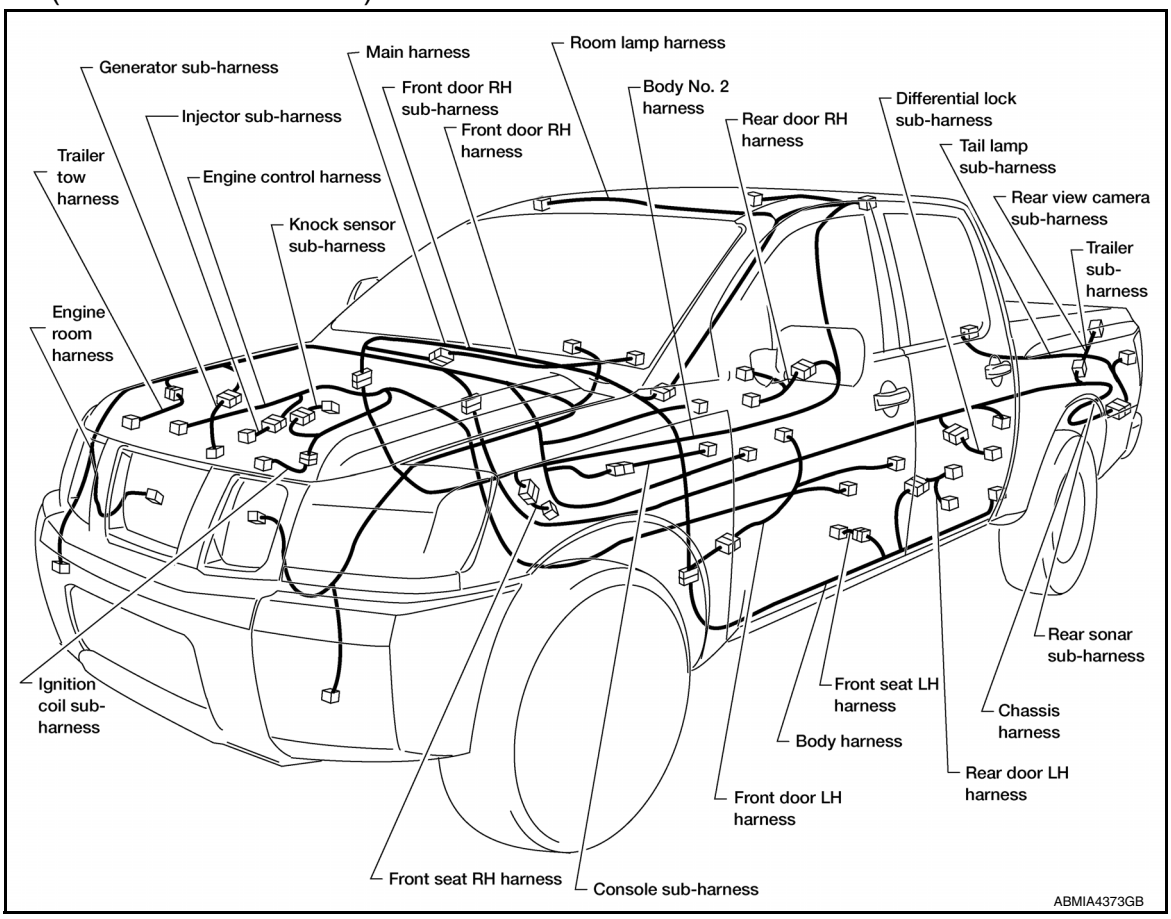
To use the grid reference

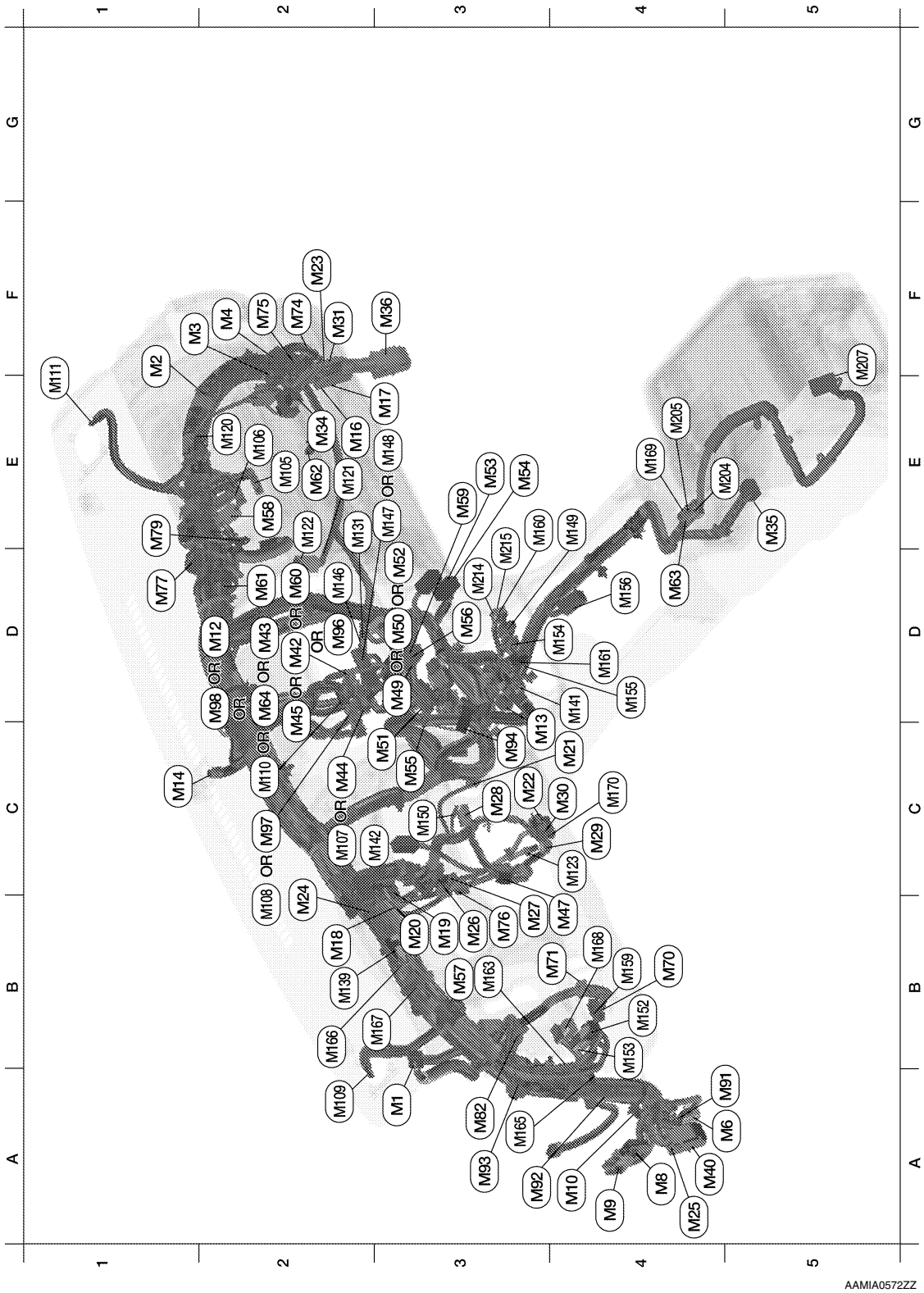
1. Find the desired connector number on the connector list.
2. Find the grid reference.
3. On the drawing, find the crossing of the grid reference letter column and number row.
4. Find the connector number in the crossing zone.
5. Follow the line to the connector.

OUTLINE (KING CAB MODELS)



OUTLINE (CREW CAB MODELS)



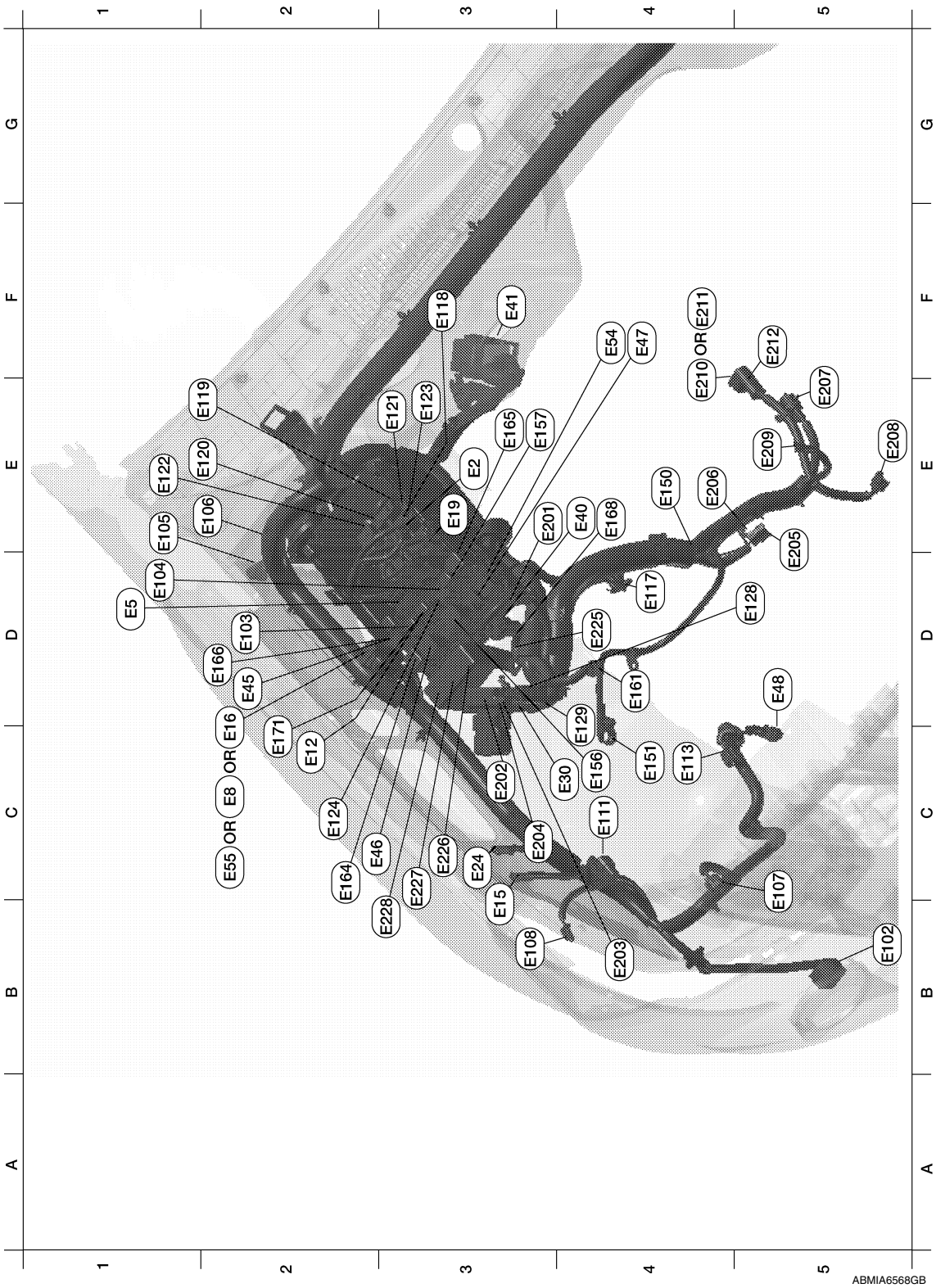


A3	M1	W/24	: To R1	F2	M75	W/10	: To D153
F1	M2	G/20	: Joint connector-M03	B3	M76	W/6	: Electric brake (pre-wiring)
F1	M3	W/8	: Fuse block (J/B)	D1	M77	Y/4	: Front passenger air bag module (service replacement)
F2	M4	W/16	: Fuse block (J/B)	E1	M79	—	: Body ground
A5	M6	W/6	: To E10	A3	M82	W/2	: Circuit breaker-2

A4	M8	BR/12	: To D2	A4	M91	W/16	: To E26
A4	M9	W/12	: To D1	A3	M92	W/4	: Sonar buzzer
A4	M10	Y/4	: To E29	A3	M93	W/16	: Sonar control unit
D2	M12	W/20	: Audio unit (base audio system - for Mexico)	C3	M94	GR/8	: Sonar system off switch
C3	M13	BR/3	: Front passenger air bag OFF indicator	D2	M96	W/20	: AV control unit (with NAVI with amplifier)
C1	M14	B/4	: Optical sensor and sunload sensor	C2	M97	W/24	: AV control unit (with NAVI with amplifier)
E3	M17	W/16	: To B163	D2	M98	B/6	: AV control unit (with NAVI with amplifier)
B2	M18	W/40	: BCM (body control module)	E2	M105	Y/2	: Front passenger air bag module
B3	M19	W/15	: BCM (body control module)	E2	M106	O/2	: Front passenger air bag module
B3	M20	B/15	: BCM (body control module)	C2	M107	W/20	: AV control unit (with NAVI without amplifier)
C4	M21	W/4	: NATS antenna amp.	C2	M108	W/24	: AV control unit (with NAVI without amplifier)
C3	M22	W/16	: Data link connector	A2	M109	BR/2	: Front tweeter LH
F2	M23	Y/4	: To D154	C2	M110	B/6	: AV control unit (with NAVI without amplifier)
B2	M24	W/40	: Combination meter	E1	M111	BR/2	: Front tweeter RH
A4	M25	Y/4	: To D5	E2	M120	W/4	: Remote keyless entry receiver
B3	M26	W/6	: Ignition switch	E2	M121	W/4	: Variable blower control (front)
B3	M27	W/2	: Key switch	E2	M122	W/4	: Front blower motor resistor
C3	M28	W/16	: Combination switch	C4	M123	W/2	: Tire pressure warning check connector
C4	M29	Y/6	: Combination switch (spiral cable)	E2	M131	B/6	: Air mix door motor (passenger)
C4	M30	GR/8	: Combination switch (spiral cable)	B2	M139	B/2	: Diode-6
F2	M31	SMJ	: To E152	D4	M141	GR/8	: 4WD shift switch
E2	M34	W/4	: In-vehicle sensor	C3	M142	B/6	: Mode door motor
E5	M35	Y/28	: Air bag diagnosis sensor unit	E2	M146	GR/2	: Intake sensor
F3	M36	SMJ	: To B149	D2	M147	B/6	: Air mix door motor
A4	M40	SMJ	: To B69	E2	M148	B/6	: Air mix door motor (driver)
D2	M42	W/8	: Audio unit (with display audio system)	E4	M149	W/6	: Differential lock mode switch
D2	M43	W/20	: Audio unit (base audio system - except for Mexico)	C3	M150	W/2	: Ignition keyhole illumination
C2	M44	W/20	: Audio unit (with display audio system)	B4	M152	W/26	: Transfer control unit
D2	M45	W/32	: Audio unit (with display audio system)	B4	M153	W/24	: Transfer control unit
B4	M47	W/8	: Steering angle sensor	D4	M154	GR/6	: VDC off switch
D3	M49	B/26	: Front air control (manual with type 2)	D4	M155	W/8	: Hill descent control switch
D3	M50	B/26	: Front air control (manual with type 1)	D4	M156	W/10	: A/T shift selector
C3	M51	W/8	: Front blower switch	B4	M159	W/16	: Door mirror remote control switch
D2	M52	B/26	: Front air control (with auto A/C)	E3	M160	BR/6	: Front heated seat switch RH
D3	M53	B/3	: Lower front power socket	D4	M161	W/6	: Front heated seat switch LH
E3	M54	GR/3	: Upper front power socket	B3	M163	W/8	: Clutch interlock cancel switch
C3	M55	W/4	: Hazard switch	A3	M165	L/4	: Cargo lamp relay
B3	M56	W/18	: Front air control (with auto A/C)	B3	M166	L/20	: Joint connector-M01
B3	M57	—	: Body ground	B3	M167	L/20	: Joint connector-M02
E2	M58	B/6	: Intake door motor	B4	M168	L/4	: Accessory relay-2
E3	M59	B/18	: Front air control (manual with type 1)	E4	M169	B/6	: To M205

D2	M60	W/16	: Audio unit (base audio system - except for Mexico)	C4	M170	B/2	: Resistor
D2	M61	—	: Body ground	Console sub-harness			
E2	M62	B/2	: Front blower motor	E5	M204	W/6	: To M63
D4	M63	W/6	: To M204	E4	M205	B/6	: To M169
D2	M64	B/6	: Audio unit (with display audio system)	F5	M207	B/3	: Console power socket
B4	M70	W/26	: Differential lock control unit	D3	M214	B/6	: USB interface
B4	M71	W/6	: Cargo lamp switch	D3	M215	W/4	: Aux in jack
F2	M74	W/12	: To D151				

ENGINE ROOM HARNESS (RH VIEW)

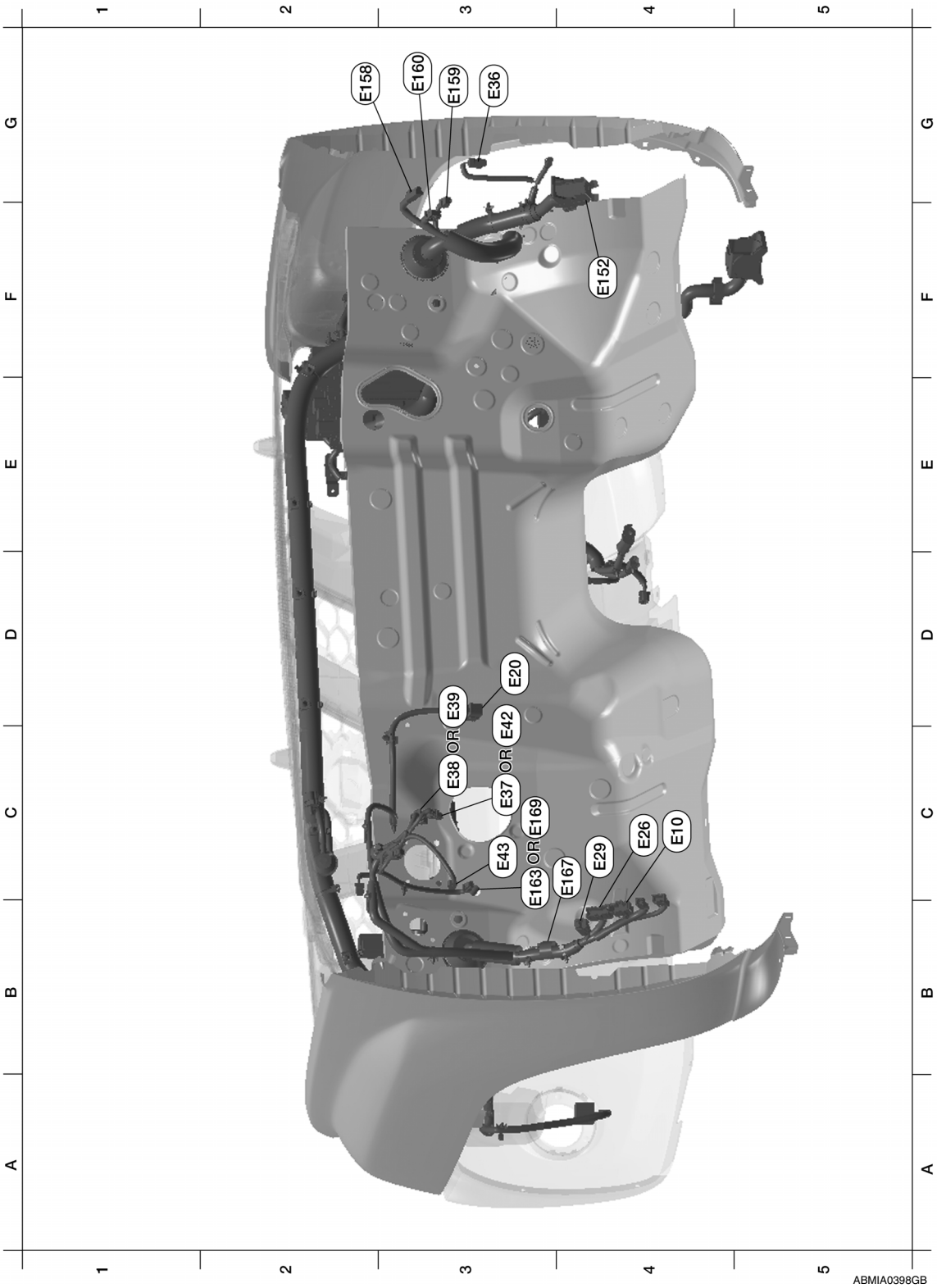


Refer to "ENGINE ROOM HARNESS (LH VIEW)" for continuation of engine room harness.

E3	E2	W/16	: To F32	E3	E123	BR/8	: IPDM E/R (intelligent power distribution module engine room)
D1	E5	W/24	: To F14	C2	E124	B/6	: IPDM E/R (intelligent power distribution module engine room)
C2	E8	B/40	: ECM (with VQ40DE for Mexico)	D5	E128	GR/2	: Fusible link box (battery)

C2	E12	L/4	: Stop lamp relay	D4	E129	B/2	: Fusible link box (battery)
B3	E15	—	: Body ground	E4	E150	—	: Battery ground
D2	E16	B/32	: ECM (with QR25DE)	C4	E151	—	: Negative battery cable
E3	E19	W/16	: To F33	C4	E156	L/4	: Transfer shut off relay 1
C3	E24	—	: Body ground	E3	E157	L/4	: Transfer shut off relay 2
C3	E30	—	: Fusible link box (battery)	D4	E161	B/3	: Battery current sensor
E4	E40	GR/9	: To E201	C2	E164	L/4	: Trailer turn relay LH
F3	E41	SMJ	: To C1	E3	E165	L/4	: Trailer turn relay RH
D2	E45	BR/6	: Back-up lamp relay (with A/T)	D2	E166	BR/6	: Clutch interlock cancel relay 2
C3	E46	B/5	: Transfer shift high relay	E4	E168	W/12	: To E225
F4	E47	B/5	: Transfer shift low relay	C2	E171	B/5	: Clutch interlock cancel relay 1
D5	E48	B/3	: Refrigerant pressure sensor	Generator sub-harness			
F4	E54	BR/6	: Front blower motor relay	E3	E201	GR/9	: To E40
C2	E55	GR/32	: ECM (with VQ40DE except for Mexico)	C3	E202	—	: Fusible link box (battery)
B5	E102	B/2	: Front fog lamp RH	B4	E203	—	: Body ground
D2	E103	B/5	: Daytime light relay 1	C3	E204	—	: Fusible link box (battery)
D1	E104	L/4	: Daytime light relay 2	E5	E205	B/3	: Generator
E1	E105	B/2	: Front washer motor	E4	E206	—	: Generator
E2	E106	BR/2	: Washer fluid level switch	F5	E207	GR/1	: Starter motor (with VQ40DE)
C5	E107	B/3	: Front combination lamp RH	E5	E208	GR/1	: Oil pressure switch (with VQ40DE)
B3	E108	GR/2	: Front combination lamp RH	E5	E209	—	: Generator
C4	E111	GR/3	: Front combination lamp RH	E4	E210	—	: Starter motor
C4	E113	GR/4	: Cooling fan motor (with VQ40DE)	F4	E211	GR/1	: Starter motor (with QR25DE)
D4	E117	GR/2	: Front wheel sensor RH	F5	E212	GR/2	: Engine oil temperature sensor
F3	E118	B/2	: IPDM E/R (intelligent power distribution module engine room)	Trailer tow harness			
E1	E119	W/16	: IPDM E/R (intelligent power distribution module engine room)	D4	E225	W/12	: To E168
E1	E120	W/6	: IPDM E/R (intelligent power distribution module engine room)	C3	E226	L/4	: Back-up lamp relay (with M/T)
E3	E121	BR/12	: IPDM E/R (intelligent power distribution module engine room)	C3	E227	L/4	: Trailer tow relay 1
E1	E122	W/12	: IPDM E/R (intelligent power distribution module engine room)	B3	E228	BR/6	: Trailer tow relay 2

ENGINE ROOM HARNESS (PASSENGER COMPARTMENT)

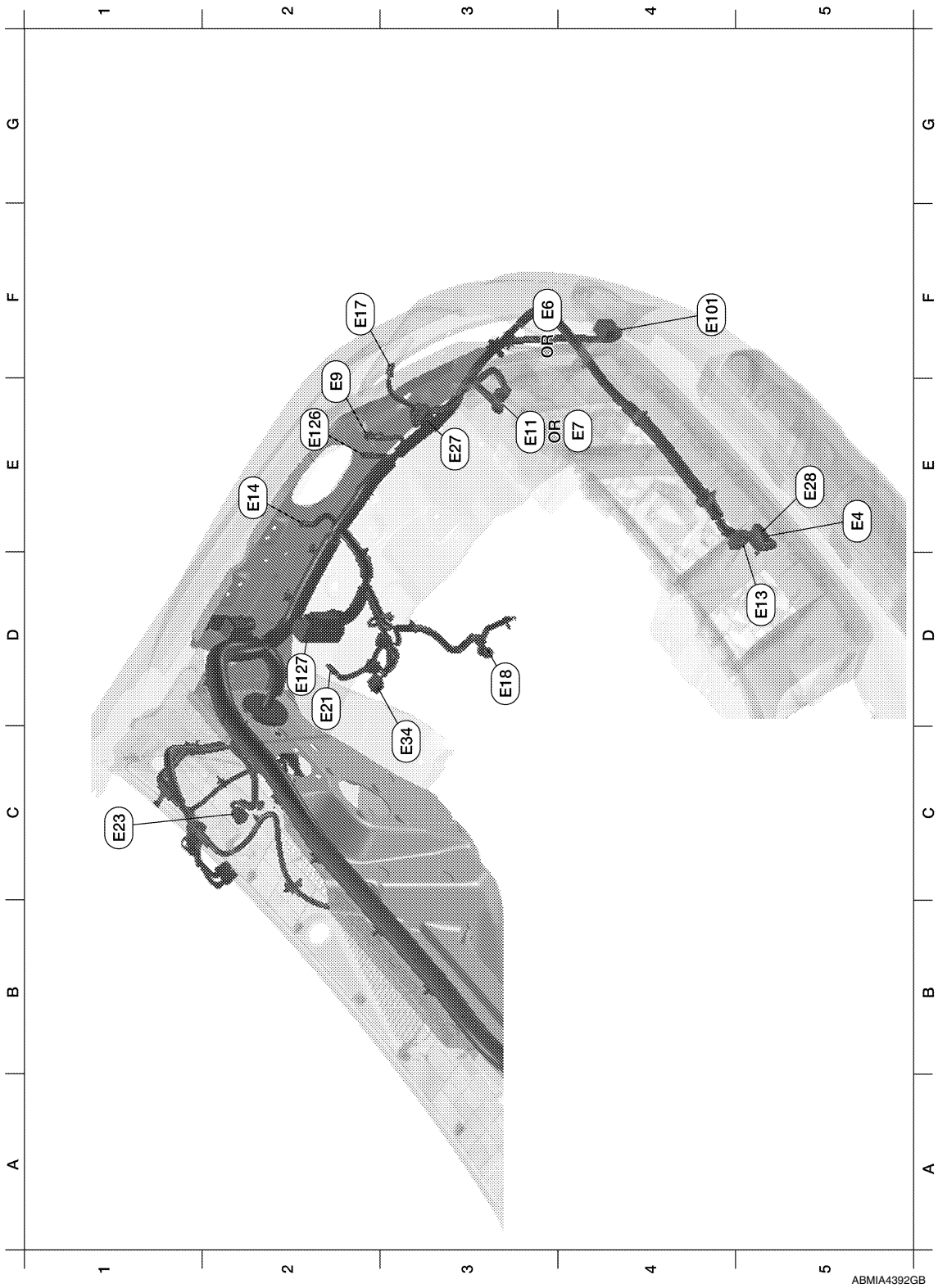


Refer to "ENGINE ROOM HARNESS (LH VIEW)" for continuation of engine room harness.

C4	E10	W/6	: To M6	C3	E43	L/2	: Clutch pedal position switch
D3	E20	B/6	: Accelerator pedal position (APP) sensor	F4	E152	SMJ	: To M31
C4	E26	W/16	: To M91	G2	E158	B/1	: Fuse block (J/B)
C4	E29	Y/4	: To M10	G3	E159	B/2	: Fuse block (J/B)

G3	E36	W/2	: To B102	G3	E160	W/8	: Fuse block (J/B)
C3	E37	BR/2	: Brake pedal position switch (with M/T)	C3	E163	L/2	: Clutch interlock switch (with clutch interlock cancel system)
C3	E38	B/2	: Stop lamp switch (with M/T)	C4	E167	B/2	: Diode-3
D3	E39	W/4	: Stop lamp switch (with A/T)	C3	E169	L/2	: Clutch interlock switch (without clutch interlock cancel system)
C3	E42	BR/2	: Brake pedal position switch (with A/T)				

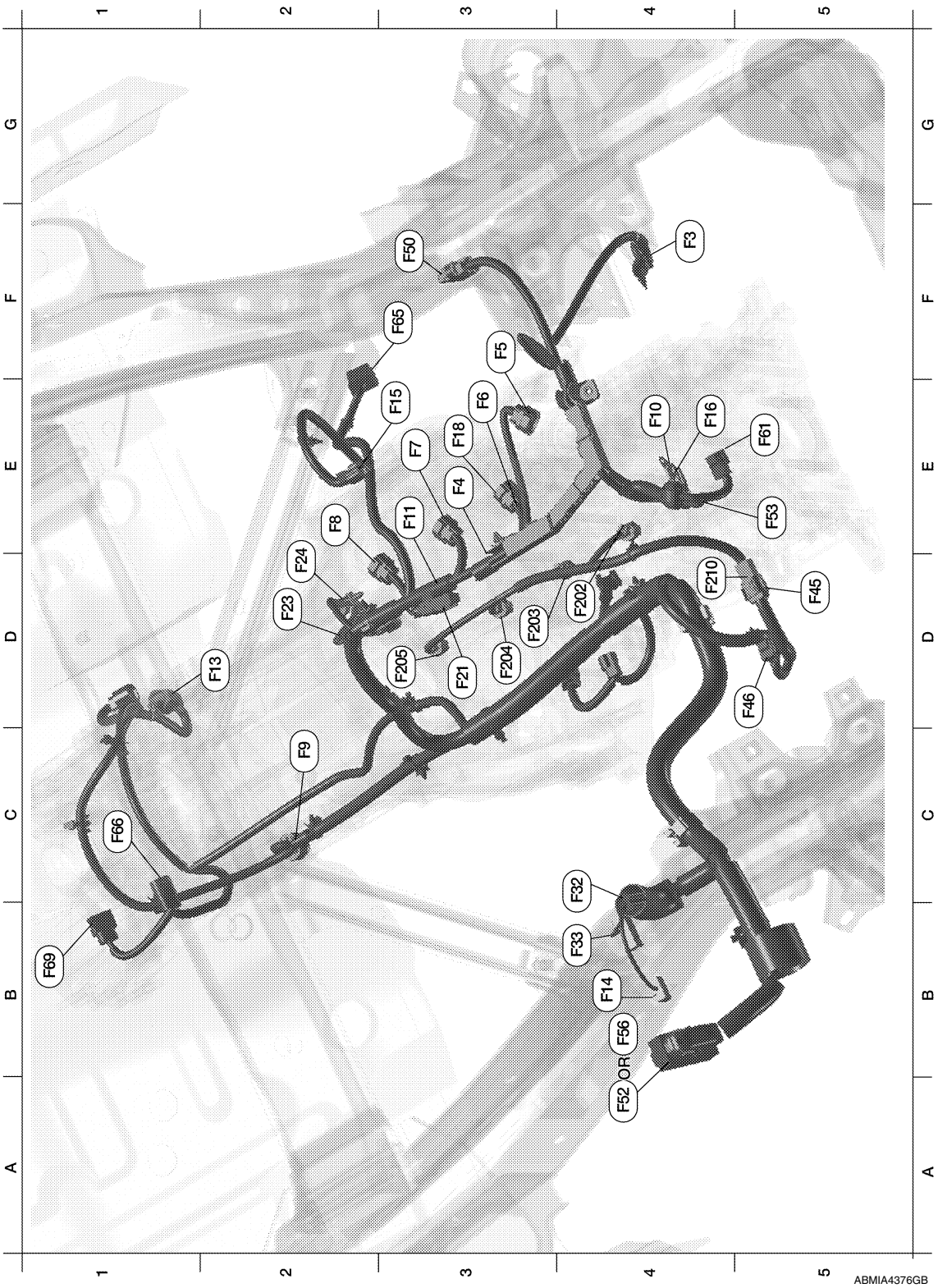
ENGINE ROOM HARNESS (LH VIEW)



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

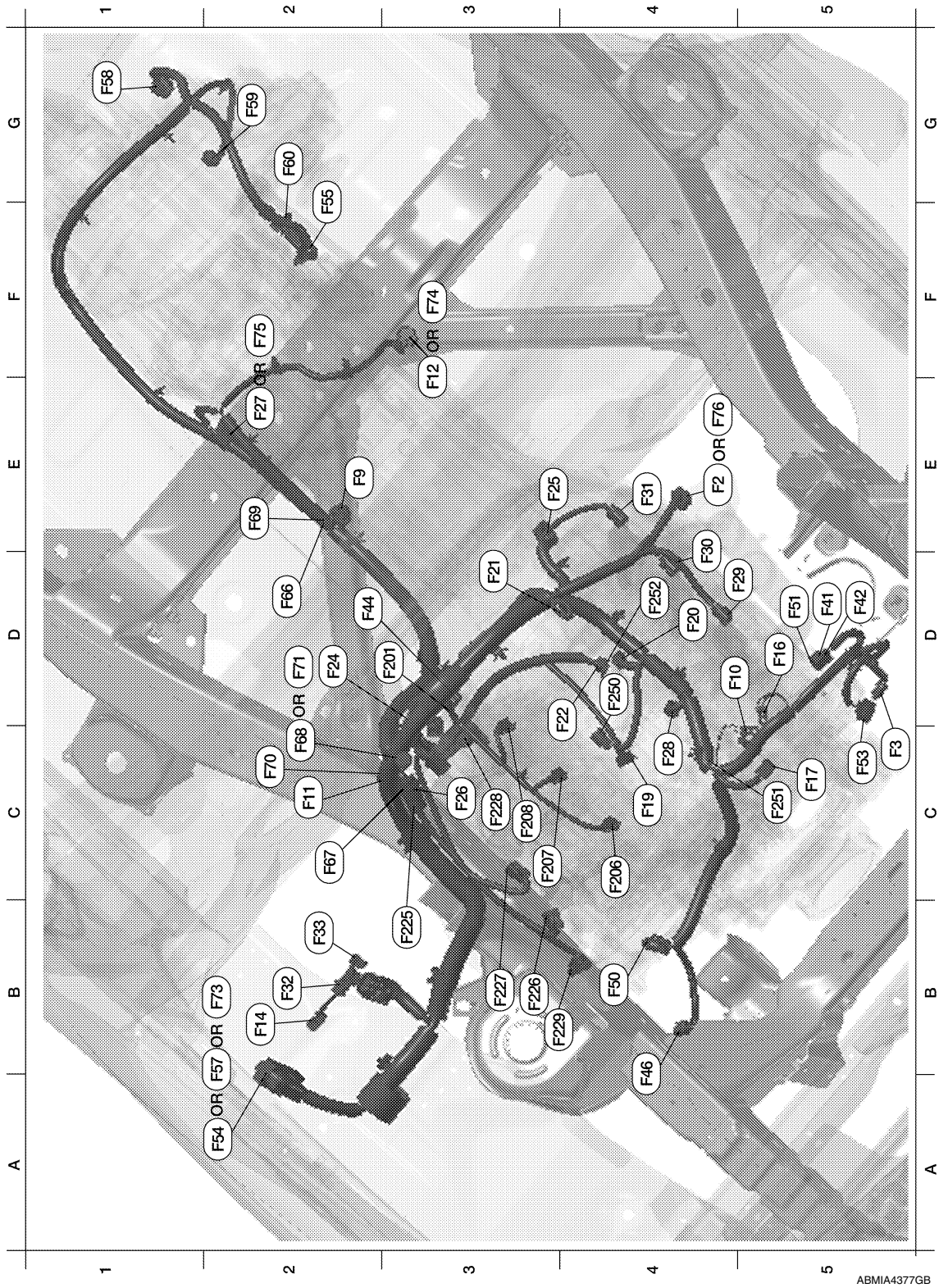
E5	E4	Y/2	: Crash zone sensor	D2	E21	GR/2	: Brake fluid level switch
F3	E6	B/2	: Horn	C1	E23	GR/5	: Front wiper motor
E4	E7	B/3	: Front combination lamp LH (with daytime light system)	E3	E27	GR/3	: Front combination lamp LH
F2	E9	—	: Body ground	E5	E28	B/2	: Ambient sensor

E3	E11	B/3	: Front combination lamp LH (without daytime light system)	C3	E34	W/8	: To B40
D5	E13	B/2	: Ambient sensor 2	F4	E101	B/2	: Front fog lamp LH
E2	E14	—	: Body ground	E2	E126	—	: Body ground
F2	E17	GR/2	: Front combination lamp LH	D2	E127	B/47	: ABS actuator and electric unit (control unit)
D3	E18	GR/2	: Front wheel sensor LH				



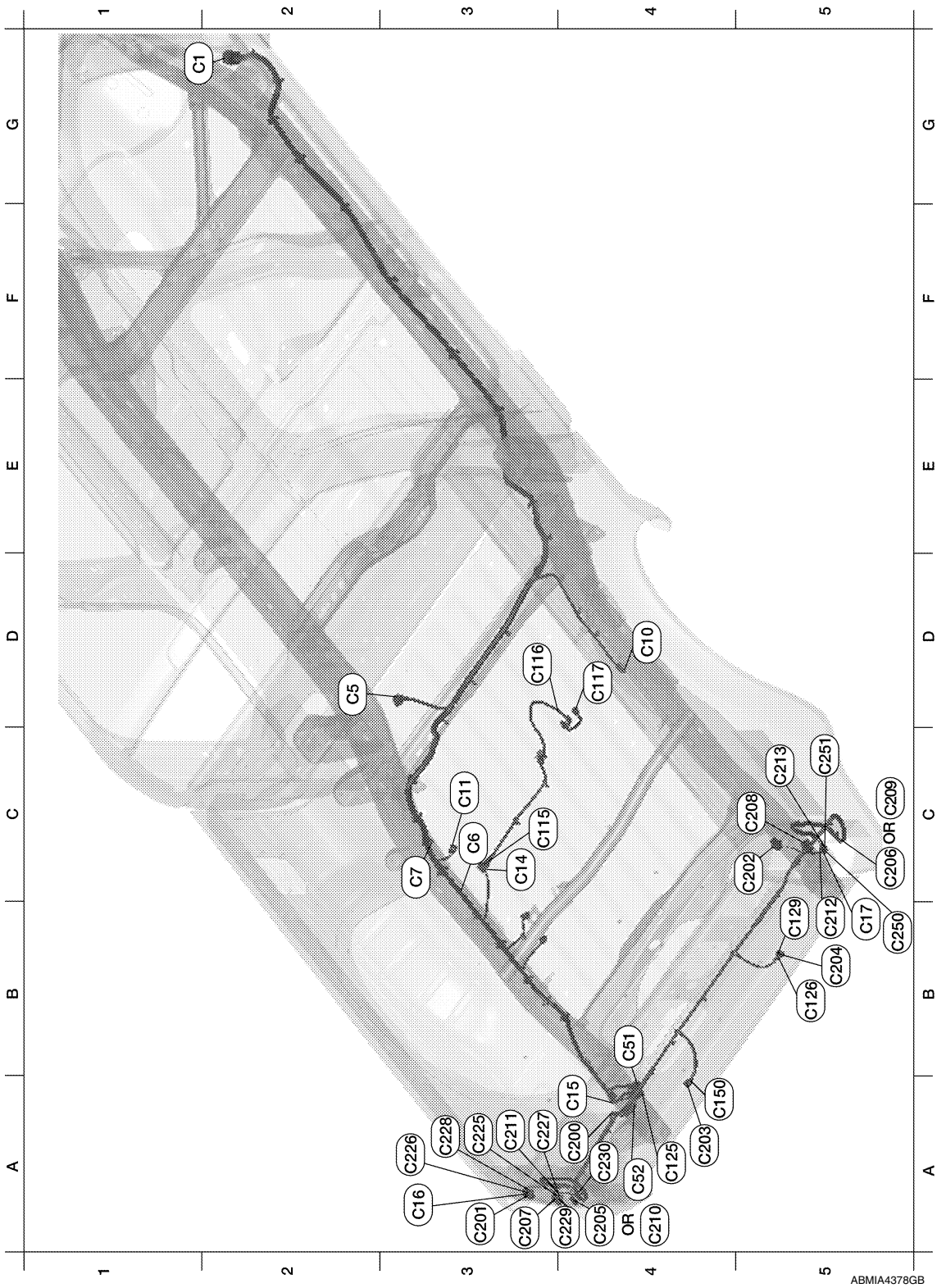
F4	F3	B/1	: A/C compressor	B4	F33	W/16	: To E19
E3	F4	GR/1	: Oil pressure switch	D5	F45	B/6	: To F210
E3	F5	GR/3	: Ignition coil No. 1 (with power transistor)	C5	F46	B/3	: Power steering pressure sensor
E3	F6	GR/3	: Ignition coil No. 2 (with power transistor)	F3	F50	W/6	: Electric throttle control actuator
E3	F7	GR/3	: Ignition coil No. 3 (with power transistor)	A4	F52	GR/ 32	: ECM (with QR25DE)

E2	F8	GR/3	: Ignition coil No. 4 (with power transistor)	E5	F53	B/6	: Mass air flow sensor
C2	F9	G/10	: A/T assembly	B4	F56	BR/ 48	: ECM (with QR25DE)
E4	F10	—	: Engine ground	E5	F61	GR/2	: Intake valve timing control solenoid valve
E3	F11	B/3	: Crankshaft position sensor (POS)	F3	F65	BR/4	: Air fuel ratio (A/F) sensor 1
D2	F13	G/4	: Heated oxygen sensor 2	C1	F66	B/2	: Park/neutral position (PNP) switch
B4	F14	W/24	: To E5	B1	F69	W/2	: Back-up lamp switch
E3	F15	GR/2	: EVAP canister purge volume control solenoid valve (with QR25DE)	Injector sub-harness			
E4	F16	—	: Engine ground	D4	F202	GR/2	: Fuel injector No. 1
E3	F18	B/2	: Knock sensor	D3	F203	GR/2	: Fuel injector No. 2
D3	F21	W/2	: Condenser-1	D3	F204	GR/2	: Fuel injector No. 3
D2	F23	B/3	: Camshaft position sensor (PHASE)	D3	F205	GR/2	: Fuel injector No. 4
D2	F24	GR/2	: Engine coolant temperature sensor	D4	F210	B/6	: To F45
B4	F32	W/16	: To E2				



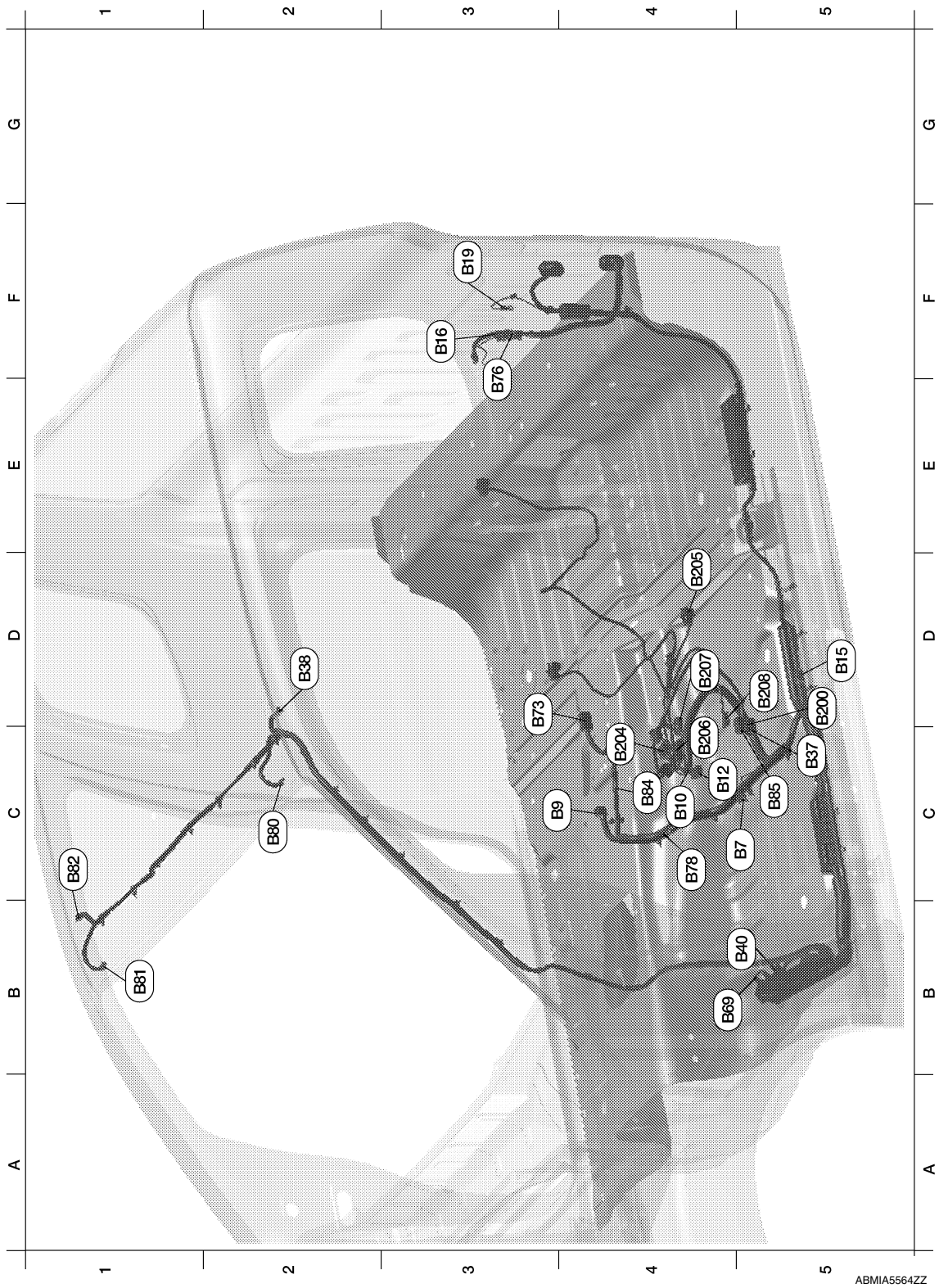
E4	F2	GR/4	: Air fuel ratio (A/F) sensor 1 (bank 2) (with VQ40DE except for Mexico)	F2	F55	B/2	: ATP switch
C5	F3	B/1	: A/C compressor	B2	F57	BR/ 48	: ECM (with VQ40DE except for Mexico)
E2	F9	G/10	: A/T assembly	G1	F58	B/8	: Transfer control device
D4	F10	—	: Engine ground	G2	F59	GR/2	: Wait detection switch

C2	F11	B/3	: Crankshaft position sensor (POS)	F2	F60	GR/2	: 4LO switch
F3	F12	B/4	: Heated oxygen sensor 2 (bank 2) (with VQ40DE except for Mexico)	D2	F66	B/2	: Park/neutral position (PNP) switch
B2	F14	W/24	: To E5	C2	F67	L/4	: To F250
D5	F16	—	: Engine ground	C2	F68	GR/4	: Air fuel ratio (A/F) sensor 1 (bank 1) (with VQ40DE for Mexico)
C5	F17	GR/2	: EVAP canister purge volume control solenoid valve (with VQ40DE)	E2	F69	W/2	: Back-up lamp switch
C4	F19	B/2	: VIAS control solenoid valve	C2	F70	G/3	: Camshaft position sensor (PHASE) (bank 1)
D4	F20	GR/2	: Fuel injector No. 4	D2	F71	GR/4	: Air fuel ratio (A/F) sensor 1 (bank 1) (with VQ40DE except for Mexico)
D3	F21	W/2	: Condenser-1	B2	F73	B/48	: ECM (with VQ40DE except for Mexico)
D4	F22	GR/2	: Fuel injector No. 6	F3	F74	G/4	: Heated oxygen sensor 2 (bank 2) (with VQ40DE for Mexico)
D2	F24	GR/2	: Engine coolant temperature sensor	F2	F75	L/4	: Heated oxygen sensor 2 (bank 1) (with VQ40DE for Mexico)
E3	F25	B/3	: Camshaft position sensor (PHASE) (bank 2)	E4	F76	GR/4	: Air fuel ratio (A/F) sensor 1 (bank 2) (with VQ40DE for Mexico)
C3	F26	G/8	: To F225	Injector sub-harness			
E2	F27	B/4	: Heated oxygen sensor 2 (bank 1) (with VQ40DE except for Mexico)	D2	F201	G/4	: To F44
C4	F28	GR/2	: Fuel injector No. 2	C4	F206	GR/2	: Fuel injector No. 1
D5	F29	GR/3	: Ignition coil No. 2 (with power transistor)	C3	F207	GR/2	: Fuel injector No. 3
D4	F30	GR/3	: Ignition coil No. 4 (with power transistor)	C3	F208	GR/2	: Fuel injector No. 5
E4	F31	GR/3	: Ignition coil No. 6 (with power transistor)	Ignition coil sub-harness			
B2	F32	W/16	: To E2	B3	F225	G/8	: To F26
B2	F33	W/16	: To E19	B3	F226	GR/3	: Ignition coil No. 1 (with power transistor)
D5	F41	B/2	: Intake manifold runner control valve motor	B3	F227	GR/3	: Ignition coil No. 3 (with power transistor)
D5	F42	B/3	: Intake manifold runner control valve position sensor	C3	F228	GR/3	: Ignition coil No. 5 (with power transistor)
D2	F44	G/4	: To F201	B4	F229	GR/2	: Intake valve timing control solenoid valve (bank 1)
B4	F46	B/3	: Power steering pressure sensor	Knock sensor sub-harness			
B4	F50	W/6	: Electric throttle control actuator	D4	F250	L/4	: To F67
D5	F51	GR/2	: Intake valve timing control solenoid valve (bank 2)	C5	F251	GR/2	: Knock sensor (bank 1)
C5	F53	B/6	: Mass air flow sensor	D4	F252	GR/2	: Knock sensor (bank 2)
A2	F54	B/81	: ECM (WITH VQ40DE except for Mexico)				



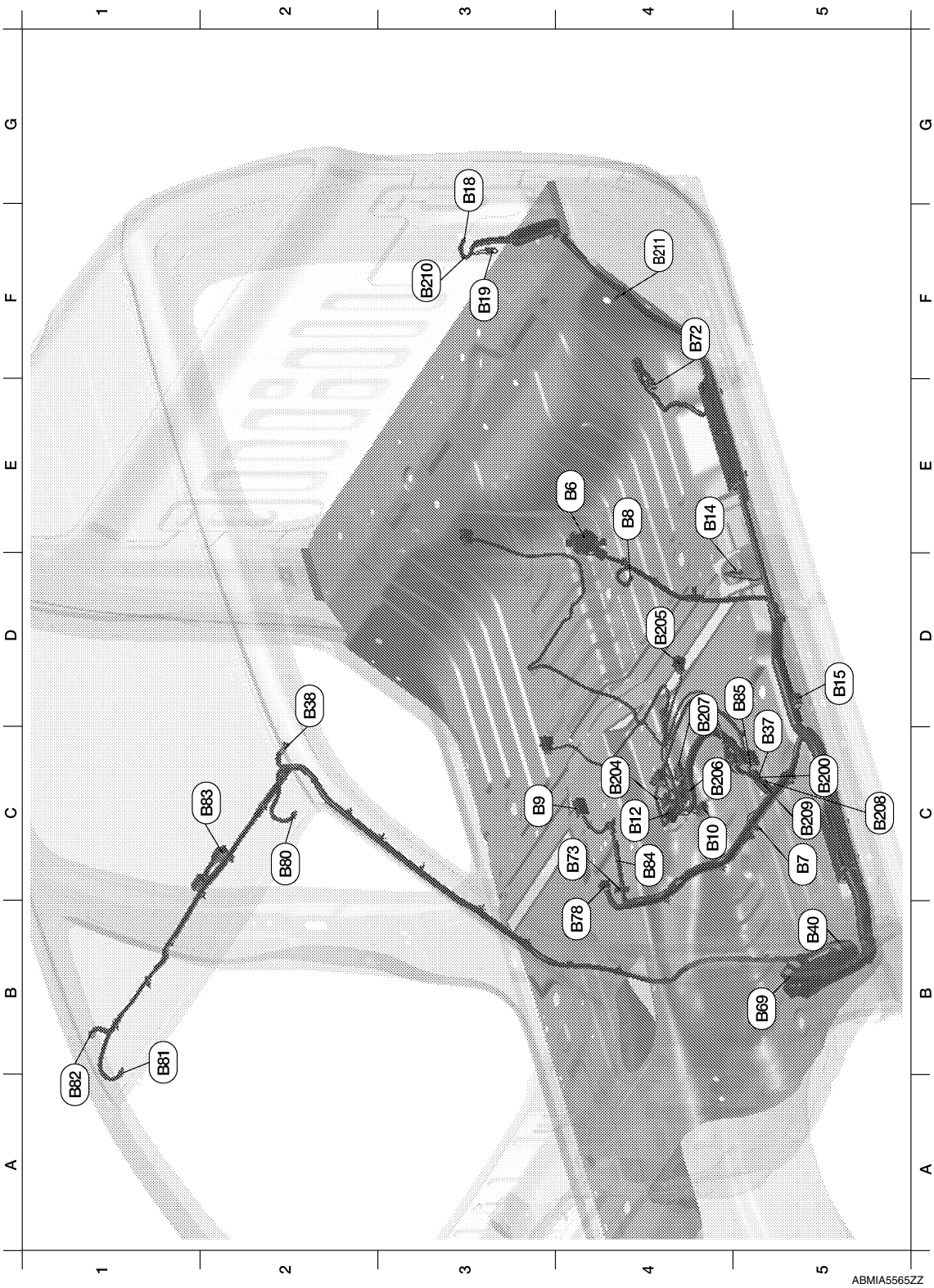
G2	C1	SMJ	: To E41	A3	C201	BR/3	: Rear combination lamp LH
D2	C5	GR/5	: Fuel level sensor unit and fuel pump	C5	C202	BR/3	: Rear combination lamp RH
C3	C6	B/2	: EVAP canister vent control valve	A4	C203	GR/2	: License plate lamp LH
C3	C7	GR/3	: EVAP control system pressure sensor	B5	C204	GR/2	: License plate lamp RH
D4	C10	GR/2	: Rear wheel sensor RH	A4	C205	GR/2	: Rear combination lamp LH (with A/T)

C3	C11	BR/2	: Rear wheel sensor LH	C5	C206	GR/2	: Rear combination lamp RH (with A/T)
C3	C14	GR/4	: To C115	A3	C207	GR/2	: Rear combination lamp LH
B4	C15	GR/8	: To C200	C5	C208	GR/2	: Rear combination lamp RH
A3	C16	B/6	: To C226	C5	C209	GR/2	: Rear combination lamp RH (with M/T)
B5	C17	GR/10	: To C212	A4	C210	GR/2	: Rear combination lamp LH (with M/T)
B4	C51	GR/6	: To C125	A3	C211	B/6	: To C225
A4	C52	B/2	: To C150	B5	C212	GR/10	: To C17
Differential lock sub-harness				C5	C213	B/6	: To C250
C3	C115	GR/4	: To C14	Rear sonar sub-harness			
D3	C116	GR/2	: Differential lock position switch	A3	C225	B/6	: To C211
D4	C117	B/2	: Differential lock solenoid	A3	C226	B/6	: To C16
Trailer sub-harness				A3	C227	B/3	: Rear sonar sensor LH outer
A4	C125	GR/8	: To C51	A3	C228	B/3	: Rear sonar sensor LH inner
B5	C126	B/7	: Trailer	A4	C229	B/3	: Rear sonar sensor RH inner
B5	C129	B/7	: Trailer receptacle	A4	C230	B/3	: Rear sonar sensor RH outer
A4	C150	B/2	: To C52	Rear view camera sub-harness			
Tail lamp sub-harness				B5	C250	B/6	: To C213
A4	C200	GR/8	: To C15	C5	C251	GR/6	: Rear view camera



C5	B7	—	: Body ground	C4	B78	Y/2	: To B157
C3	B9	Y/22	: Air bag diagnosis sensor unit	C2	B80	W/2	: Vanity lamp LH
C4	B10	Y/2	: Front LH side air bag module	B1	B81	W/2	: Vanity lamp RH
C4	B12	W/4	: Seat belt buckle switch LH	C1	B82	Y/2	: RH side curtain air bag module
D5	B15	Y/2	: LH side air bag (satellite) sensor	C4	B84	B/1	: Parking brake switch

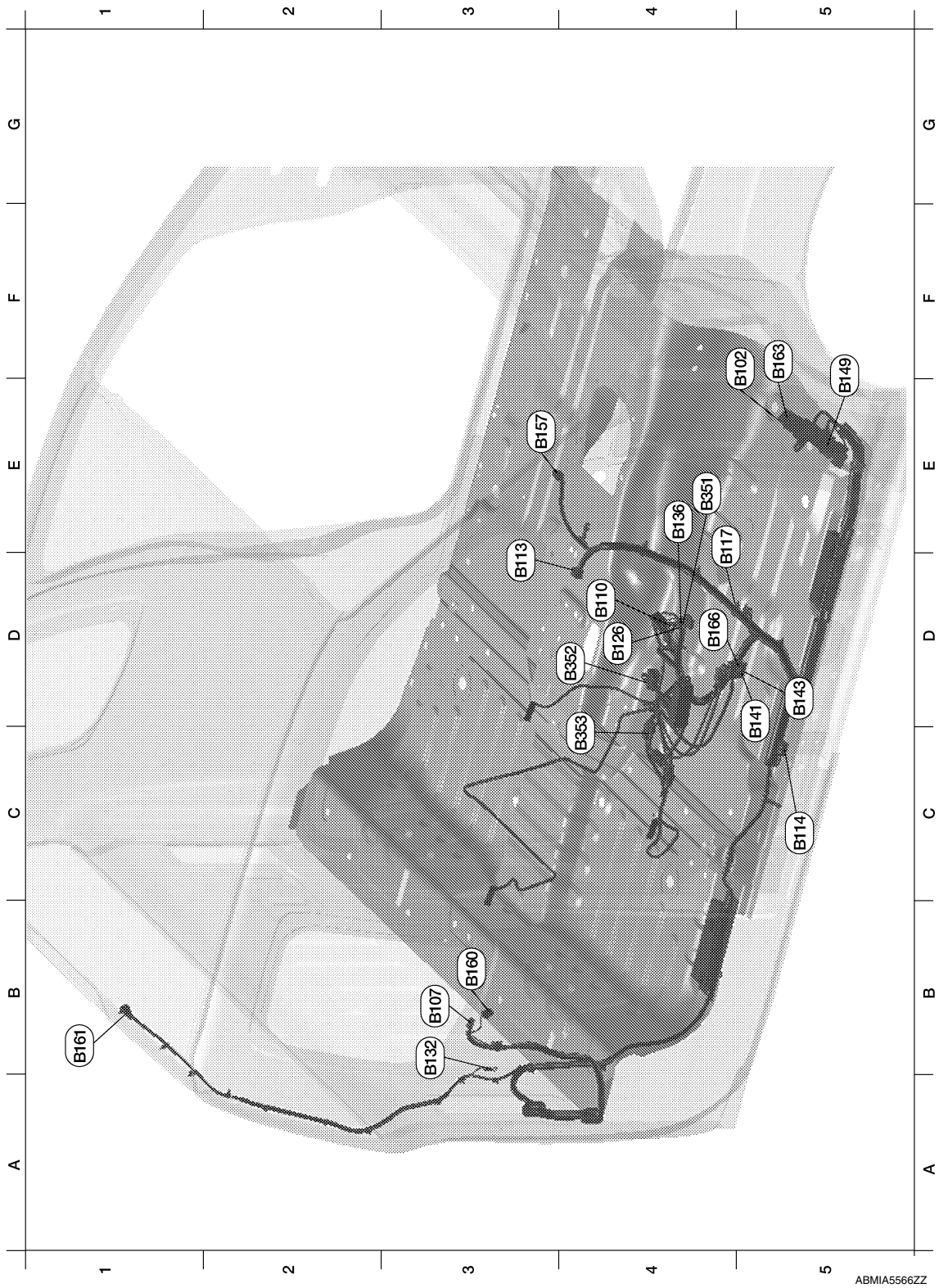
F3	B16	W/8	: To D216	C5	B85	W/3	: Front seat heater LH
F3	B19	—	: Body ground	Front seat LH harness			
C5	B37	W/16	: To B200	D5	B200	W/16	: To B37
D2	B38	Y/2	: LH side curtain air bag module	C4	B204	GR/2	: Sliding motor LH
B5	B40	W/8	: To E34	D4	B205	W/2	: Reclining motor LH
B4	B69	SMJ	: To M40	C4	B206	GR/2	: Lifting motor (front)
D3	B73	B/4	: Yaw rate/side/decel G sensor	D4	B207	GR/2	: Lifting motor (rear)
F3	B76	W/2	: Rear door speaker LH	D5	B208	W/10	: Power seat switch LH



E4	B6	W/12	: To D201	C2	B80	W/2	: Vanity lamp LH
C5	B7	—	: Body ground	B1	B81	W/2	: Vanity lamp RH
E4	B8	W/3	: Front door switch LH	A1	B82	Y/2	: RH side curtain air bag module
C3	B9	Y/22	: Air bag diagnosis sensor unit	C2	B83	GR/10	: Sunroof motor assembly
C4	B10	Y/2	: Front LH side air bag module	C4	B84	B/1	: Parking brake switch

C4	B12	W/4	: Seat belt buckle switch LH	D5	B85	W/3	: Front seat heater LH (without power seats)
E4	B14	Y/2	: Front LH seat belt pre-tensioner	Front seat LH harness			
D5	B15	Y/2	: LH side air bag (satellite) sensor	C5	B200	W/16	: To B37
G3	B18	W/3	: Rear door switch LH	C4	B204	GR/2	: Sliding motor LH
F3	B19	—	: Body ground	D4	B205	W/2	: Reclining motor LH
C5	B37	W/16	: To B200	C4	B206	GR/2	: Lifting motor (front)
D2	B38	Y/2	: LH side curtain air bag module	D4	B207	GR/2	: Lifting motor (rear)
B5	B40	W/8	: To E34	C5	B208	W/10	: Power seat switch LH
B5	B69	SMJ	: To M40	C5	B209	W/3	: Front seat heater LH (with power seats)
F4	B72	GR/4	: Subwoofer	F3	B210	B/1	: Rear window defogger
C4	B73	B/4	: Yaw rate/side/decel G sensor	F4	B211	—	: Body ground
B4	B78	Y/2	: To B157				

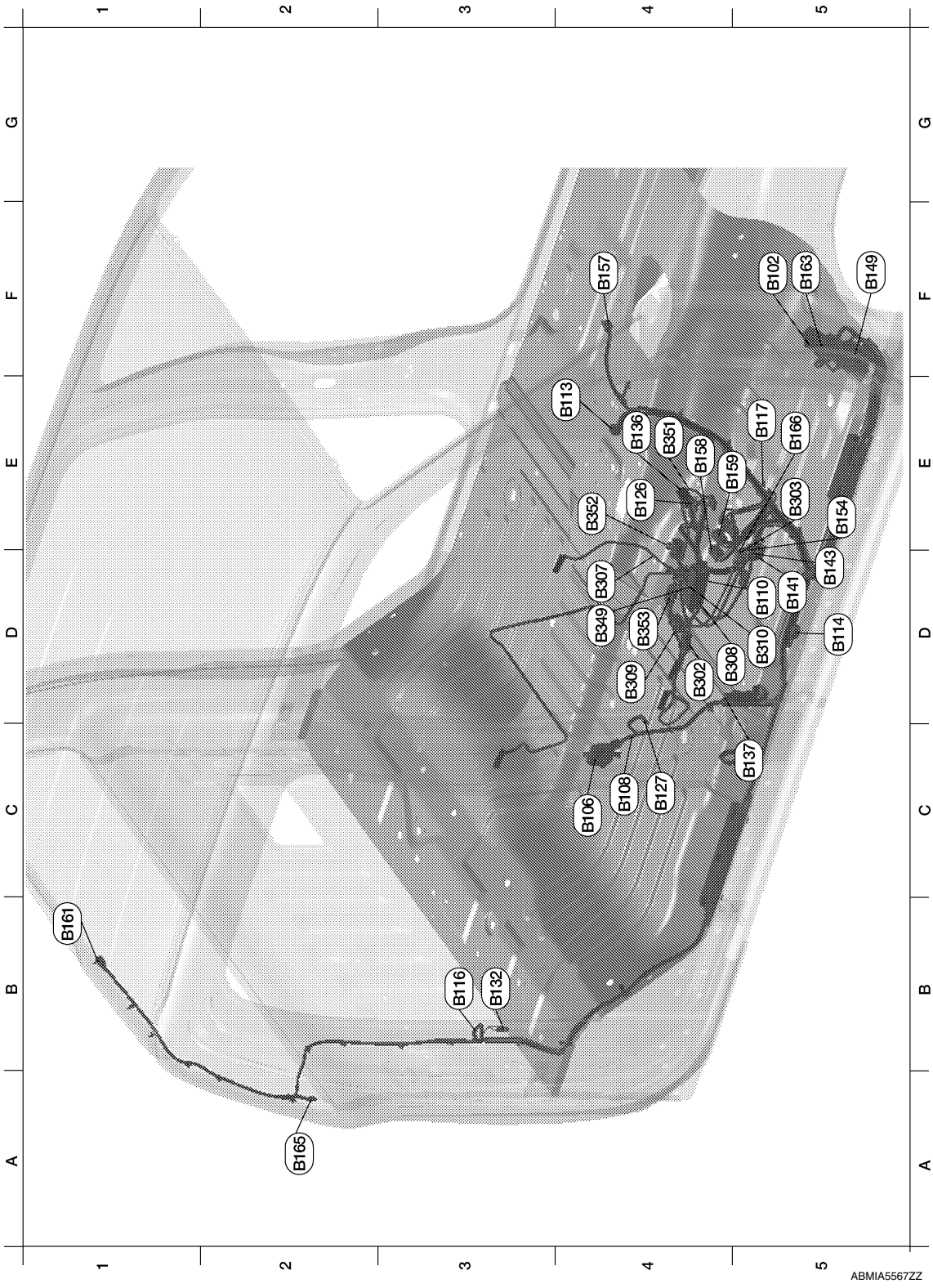
BODY NO. 2 HARNESS (KING CAB MODELS)



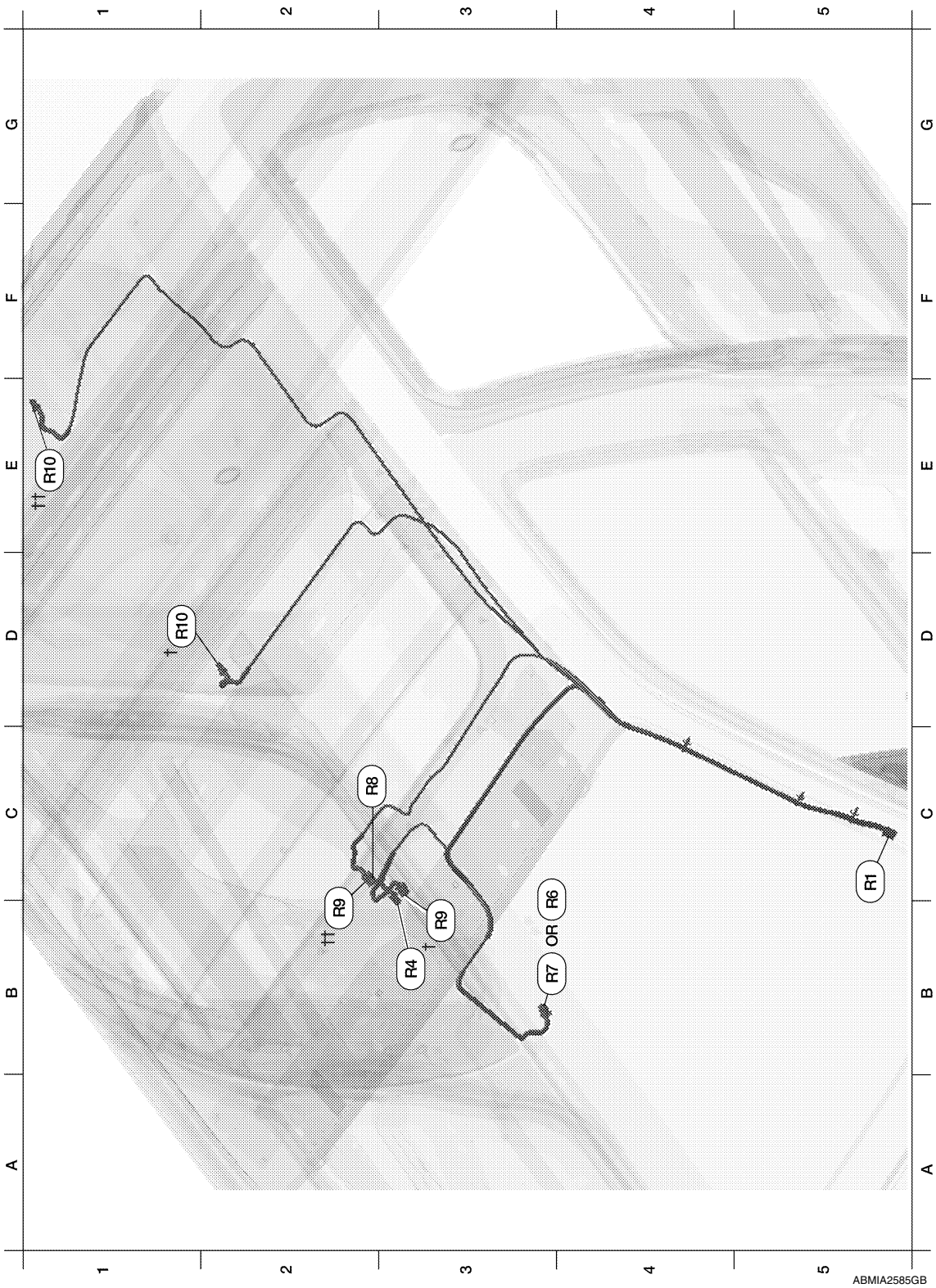
F4	B102	W/2	: To E36	F5	B149	SMJ	: To M36
B3	B107	W/8	: To D302	E3	B157	Y/2	: To B78
D4	B110	W/4	: Seat belt buckle switch RH	B3	B160	W/2	: Rear door speaker RH
D3	B113	Y/22	: Air bag diagnosis sensor unit	B1	B161	W/3	: High-mounted stop lamp assembly
C5	B114	Y/2	: RH side air bag (satellite) sensor	F5	B163	W/16	: To M17

E4	B117	—	: Body ground	D4	B166	W/3	: Front seat heater RH
D4	B126	Y/2	: Front RH side air bag module	Front seat RH harness			
B3	B132	—	: Body ground	E4	B351	W8	: To B136
E4	B136	W/8	: To B351	D4	B352	B/18	: Occupant classification system control unit
D5	B141	W/32	: Bluetooth® control unit	C4	B353	B/3	: Occupant classification system sensor
D5	B143	W/8	: Bluetooth® control unit				

BODY NO. 2 HARNESS (CREW CAB MODELS)



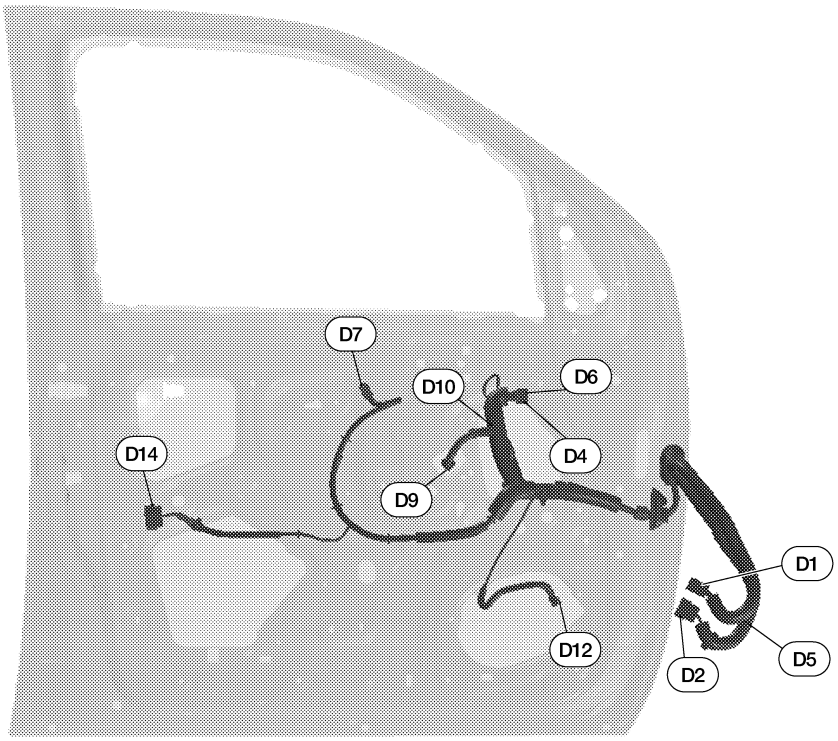
F5	B102	W/2	: To E36	D4	B158	W/8	: Audio amplifier
C4	B106	W/12	: To D301	E4	B159	W/24	: Audio amplifier
C4	B108	W/3	: Front door switch RH	B1	B161	W/3	: High-mounted stop lamp assembly
D4	B110	W/4	: Seat belt buckle switch RH	F5	B163	W/16	: To M17
E4	B113	Y/22	: Air bag diagnosis sensor unit	A2	B165	B/1	: Rear window defogger
D5	B114	Y/2	: RH side air bag (satellite) sensor	E5	B166	W/3	: Front seat heater RH (without power seats)
B3	B116	W/3	: Rear door switch RH	Front seat RH harness			
E5	B117	—	: Body ground	D4	B302	W/2	: Reclining motor RH
E4	B126	Y/2	: Front RH side air bag module	E5	B303	W/16	: To B154
C4	B127	Y/2	: Front RH seat belt pretensioner	D4	B307	W/3	: Front seat heater RH (with power seats)
B3	B132	—	: Body ground	D4	B308	W/6	: Power seat switch RH
E4	B136	W/8	: To B351	D4	B309	GR/2	: Sliding motor RH
C5	B137	B/3	: Belt tension sensor	D4	B310	W/8	: To B349
D5	B141	W/32	: Bluetooth® control unit	D4	B349	W/8	: To B310
D5	B143	W/8	: Bluetooth® control unit	E4	B351	W/8	: To B136
F5	B149	SMJ	: To M36	E4	B352	B/18	: Occupant classification system control unit
E5	B154	W/16	: To B303	D4	B353	B/3	: Occupant classification system sensor
F4	B157	Y/2	: To B78				



C5	R1	W/24	: To M1	B3	R9†	W/3	: Front room/map lamp assembly (with sunroof)
B3	R4	W/3	: Sunroof switch	B2	R9††	W/3	: Front room/map lamp assembly (without sunroof)
B3	R6	W/7	: Auto anti-dazzling inside mirror (without homelink universal transceiver)	D1	R10†	W/2	: Room lamp 2nd row (king cab)

B3	R7	B/10	: Auto anti-dazzling inside mirror (with homelink universal transceiver)	E1	R10††	W/2	: Room lamp 2nd row (crew cab)
C3	R8	W/4	: Microphone				

FRONT DOOR LH HARNESS



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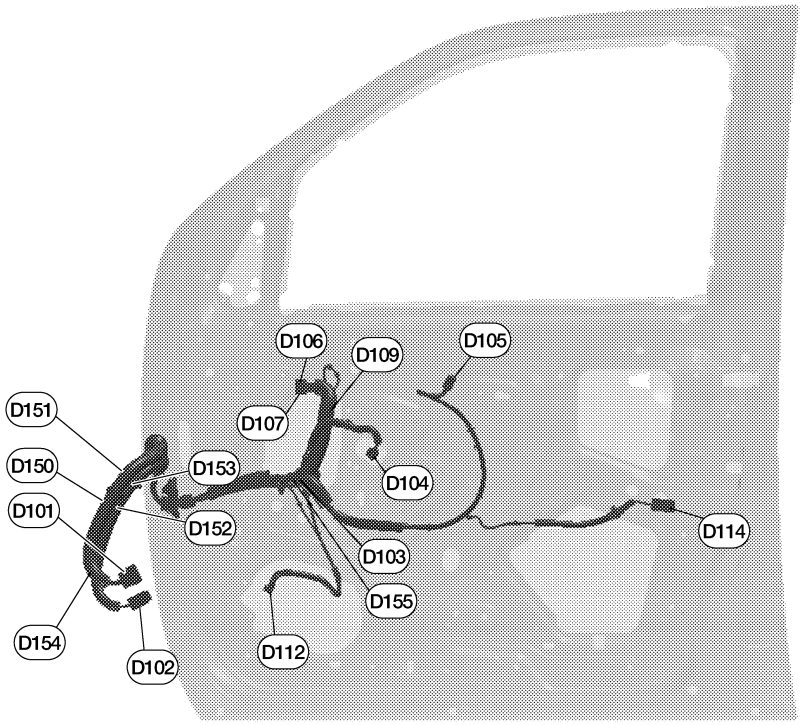
D1	W/12	: To M9	D7	W/16	: Main power window and door lock/unlock switch
D2	BR/12	: To M8	D9	BR/2	: Front power window motor LH
D4	B/10	: Door mirror LH (with heated mirror)	D10	Y/2	: Front door satellite sensor LH
D5	Y/4	: To M25	D12	W/2	: Front door speaker LH
D6	B/3	: Door mirror LH (without heated mirror)	D14	GR/6	: Front door lock assembly LH



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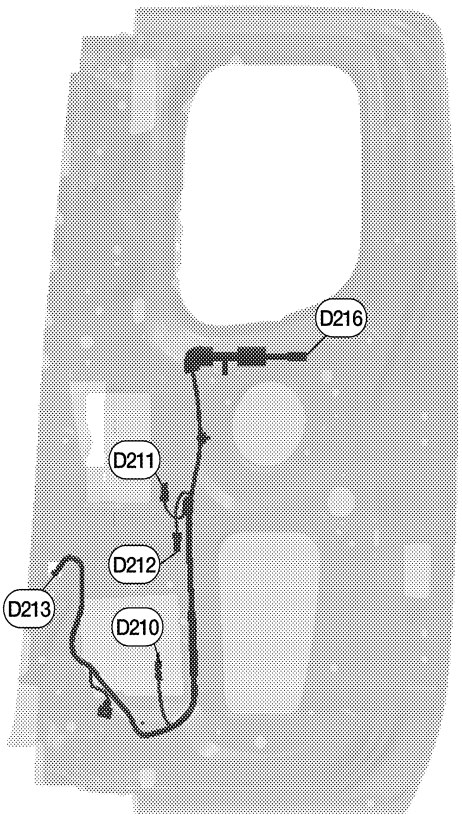
D101	W/10	: To D152	D114	GR/2	: Front door lock actuator RH
D102	W/12	: To D150	Front door RH sub-harness		
D103	Y/4	: To D155	D150	W/12	: To D102
D104	BR/2	: Front power window motor RH	D151	W/12	: To M74
D105	W/12	: Power window and door lock/unlock switch RH	D152	W/10	: To D101
D106	B/3	: Door mirror RH (without heated mirror)	D153	W/10	: To M75
D107	B/10	: Door mirror RH (with heated mirror)	D154	Y/4	: To M23
D109	Y/2	: Front door satellite sensor RH	D155	Y/4	: To D103
D112	W/2	: Front door speaker RH			

REAR DOOR LH HARNESS (KING CAB MODELS)



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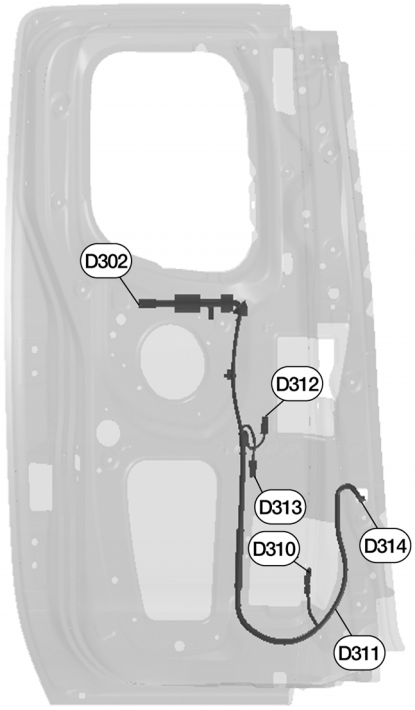
D210	Y/2	: Front LH seat belt pre-tensioner	D213	W/3	: Front door switch LH
D211	B/2	: Rear door switch upper LH	D216	W/8	: To B16
D212	B/2	: Rear door switch lower LH			

REAR DOOR RH HARNESS (KING CAB MODELS)



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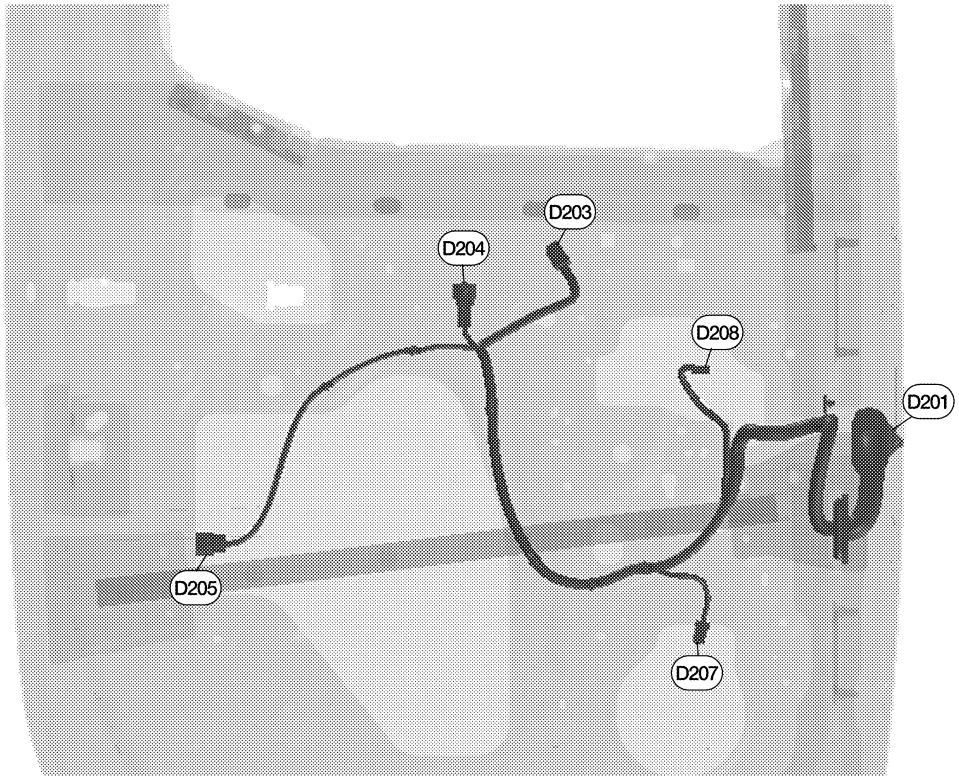
D302	W/8	: To B107	D312	B/2	: Rear door switch upper RH
D310	Y/2	: Front RH seat belt pre-tensioner	D313	B/2	: Rear door switch lower RH
D311	B/3	: Belt tension sensor	D314	W/3	: Front door switch RH

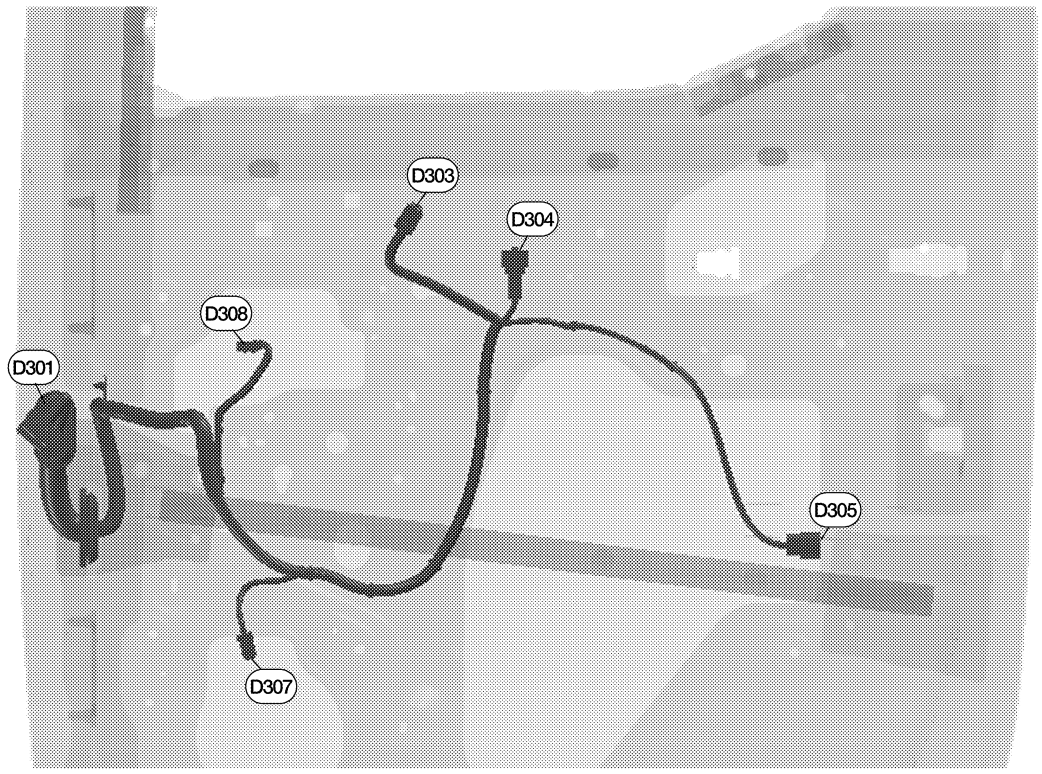
REAR DOOR LH HARNESS (CREW CAB MODELS)



ABMIA2588GB

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

REAR DOOR RH HARNESS (CREW CAB MODELS)



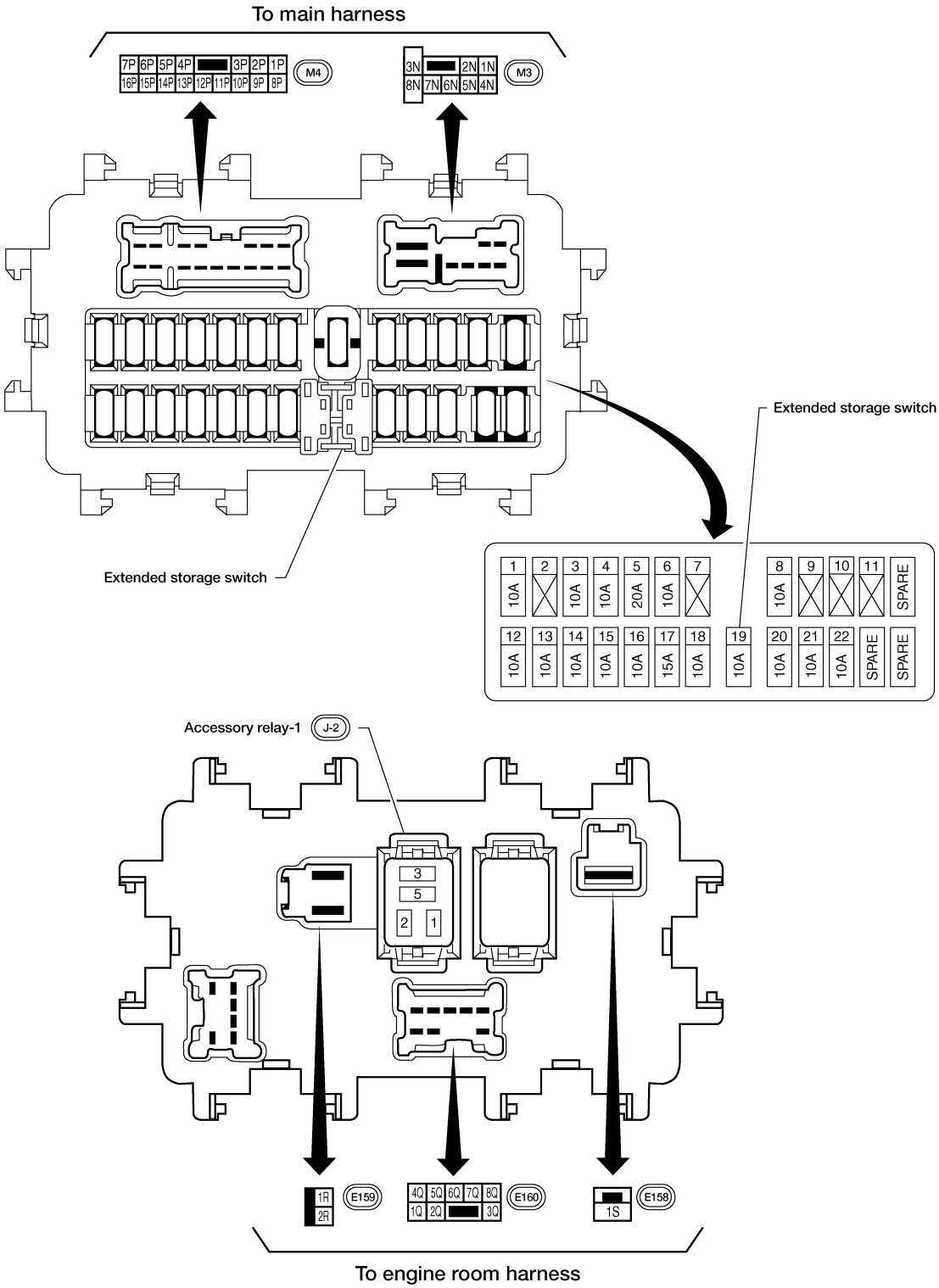
ABMIA2589GB

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

FUSE BLOCK - JUNCTION BOX (J/B)

Terminal Arrangement

INFOID:0000000012563576



ABMIA6560GB

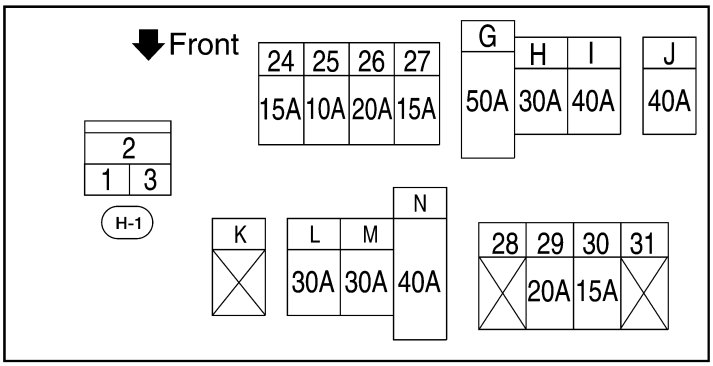
FUSE, FUSIBLE LINK AND RELAY BOX

Terminal Arrangement

INFOID:0000000012563577

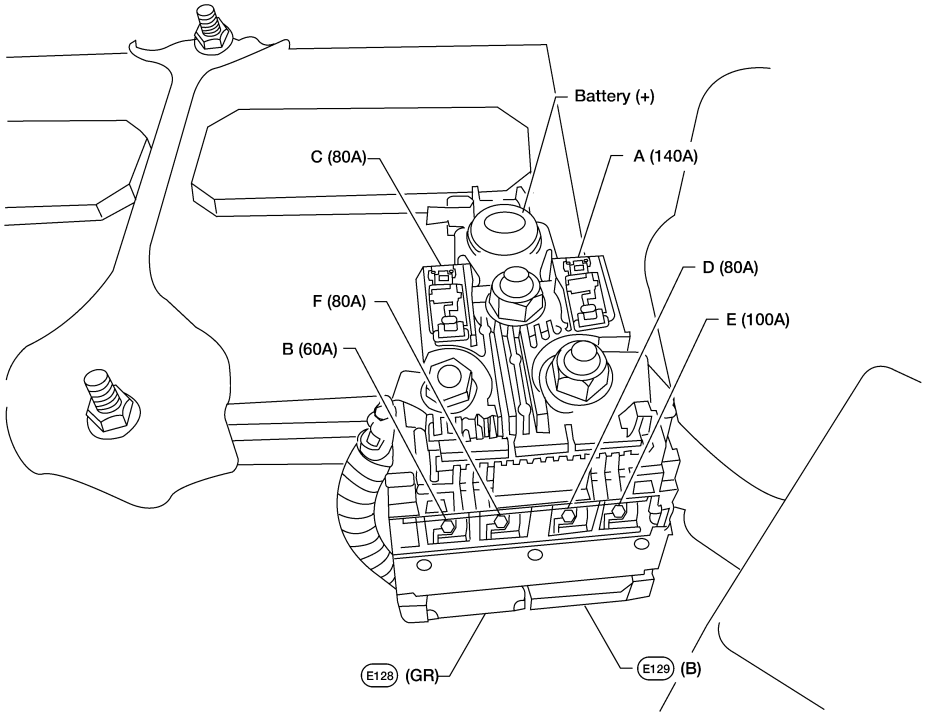
FUSE AND FUSIBLE LINK BOX

FUSE AND FUSIBLE LINK BOX



NO. 24 - 31 : FUSE G-N : FUSIBLE LINK

FUSIBLE LINK BOX (BATTERY)

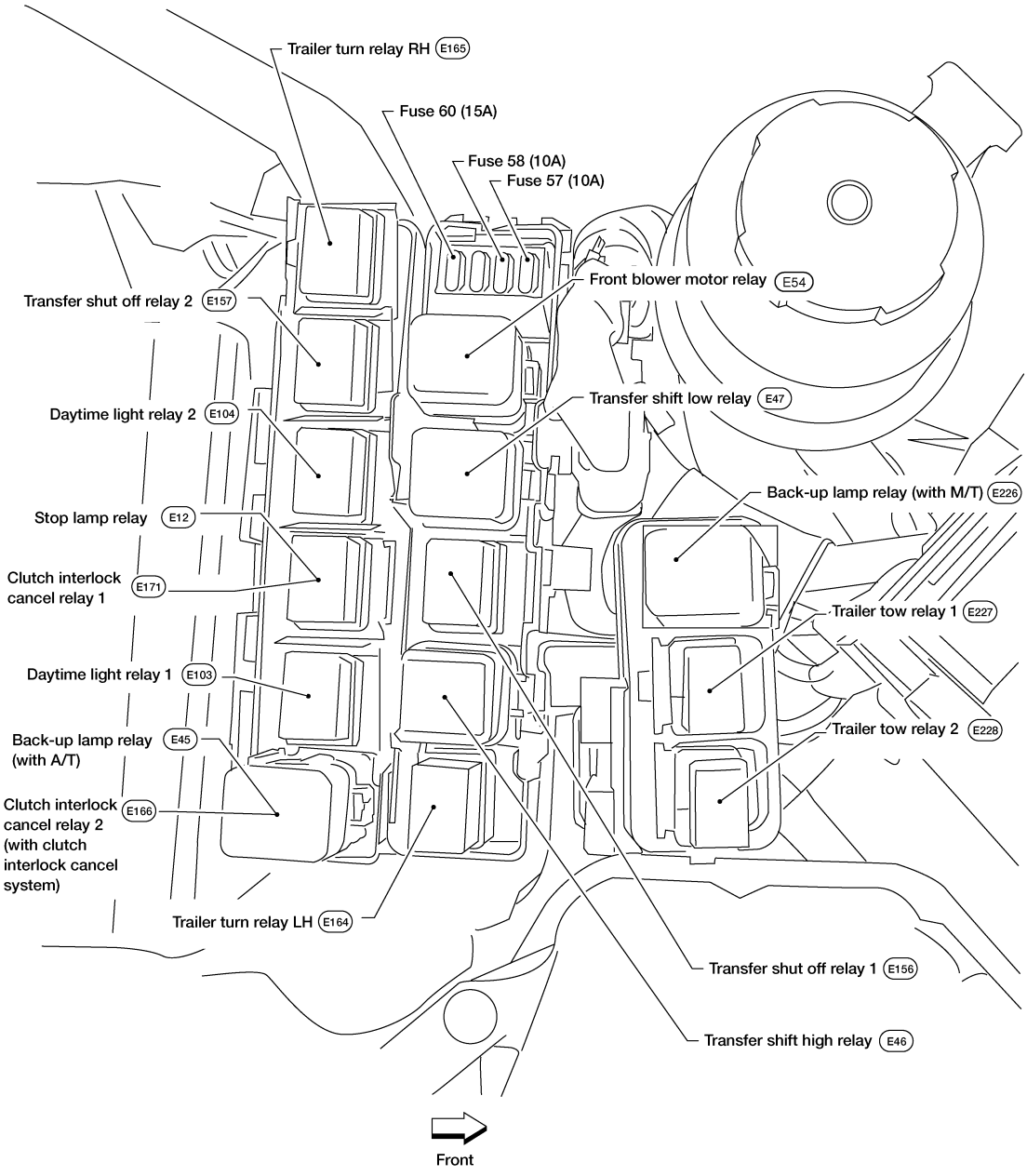


ABMIA1482GB

FUSE AND RELAY BOX

Terminal Arrangement

INFOID:0000000012563578

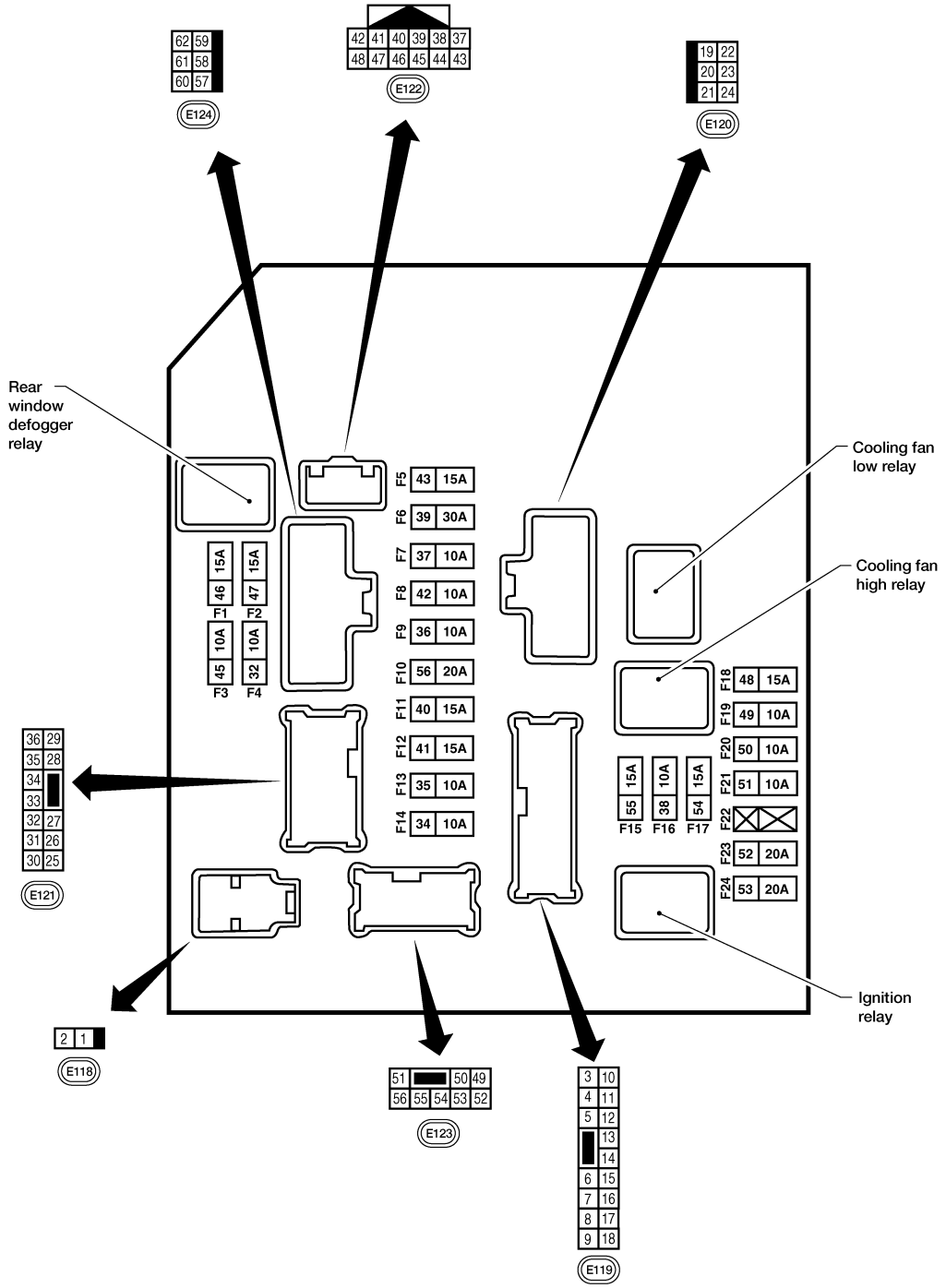


ABMIA6561GB

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

IPDM E/R Terminal Arrangement

INFOID:0000000012563579



ABMIA6562GB

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.

BASIC INSPECTION

BATTERY

How to Handle Battery

INFOID:0000000012563580

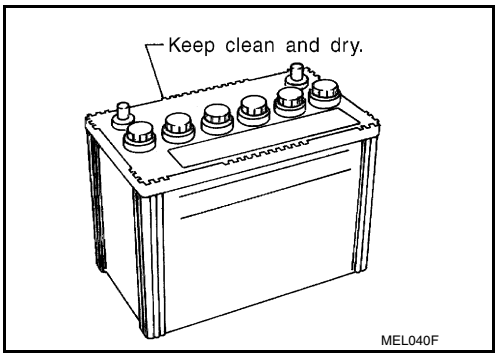
CAUTION:

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

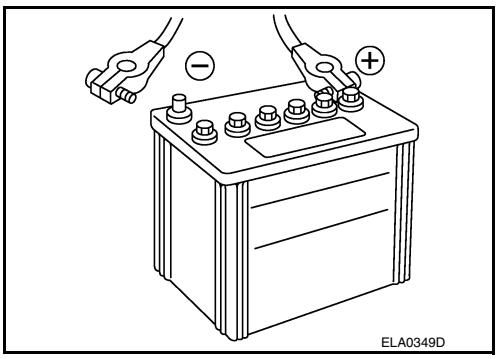
METHODS OF PREVENTING OVER-DISCHARGE

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

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



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



Work Flow

INFOID:0000000012563581

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

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

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

NOTE:

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

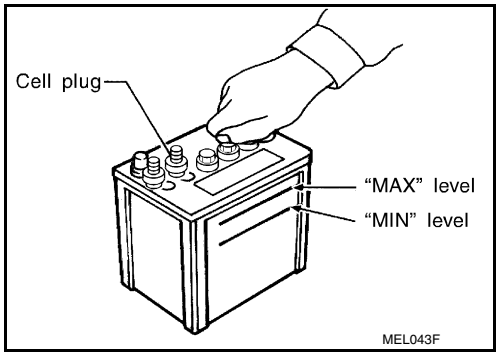
BATTERY DIAGNOSIS WITHOUT EXP-800 NI OR GR8-1200 NI

Checking Electrolyte Level

WARNING:

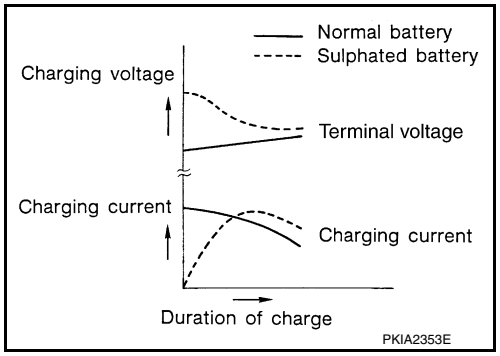
Never allow battery fluid to come in contact with skin, eyes, fabrics, or painted surfaces. After touching a battery, never touch or rub your eyes until you have thoroughly washed your hands. If acid contacts eyes, skin or clothing, immediately flush with water for 15 minutes and seek medical attention.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

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



SULFATION

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



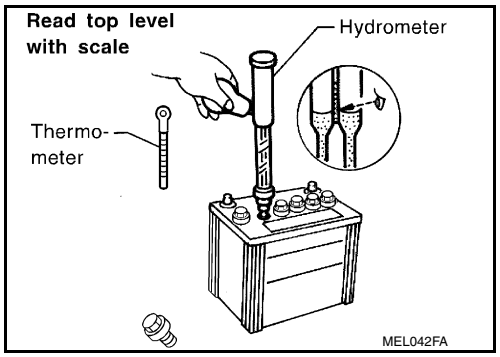
Specific Gravity Check

NOTE:

Check the charge condition of the battery.

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

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



Hydrometer Temperature Correction

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

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

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

Charging The Battery

CAUTION:

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

Charging Rates (Standard Charge)

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

Charging Rates (Quick Charge)

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

NOTE:

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

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

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL

ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Special Repair Requirement

INFOID:0000000012563582

Required Procedure After Battery Disconnection

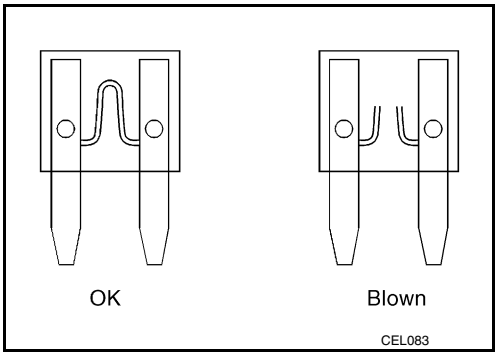
System	Item	Reference
Engine Control System	Idle Air Volume Learning	EC-126 (QR25DE) EC-604 (VQ40DE FOR USA AND CANADA) EC-1098 (VQ40DE FOR MEXICO)
Roof	Sunroof Memory Reset/Initialization	RF-5
Audio, Visual & Navigation System	Audio (Radio Preset)	Refer to Owner's Manual.
	Navigation System	Refer to Owner's Manual.

FUSE INSPECTION

How To Check

INFOID:0000000012563583

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

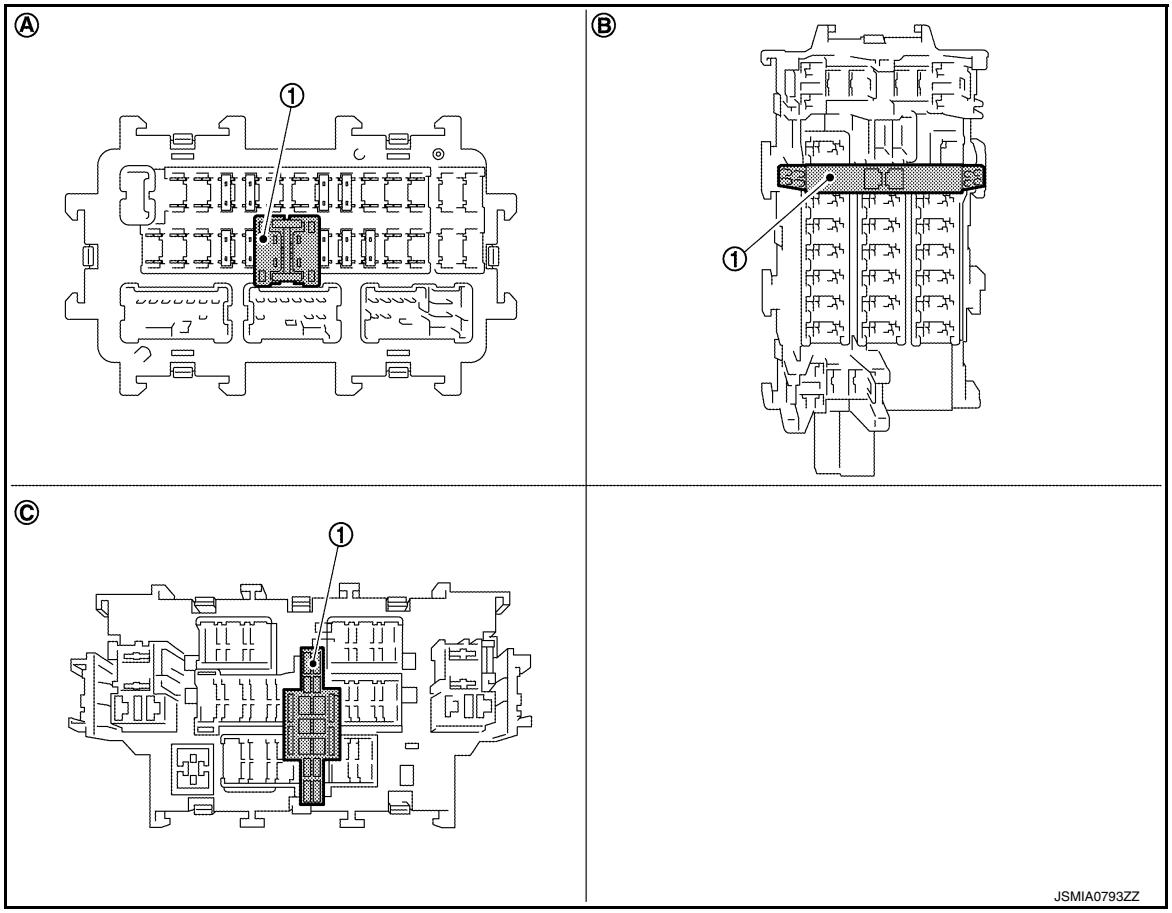


EXTENDED STORAGE SWITCH (IF EQUIPPED)

NOTE:

- When extended storage switch is pulled out, a message may be shown in the meter or display. To turn message/display off, push extended storage switch in.
- The following information is related to extended storage switch (shipping mode). For information related to BCM transit mode, refer to BCS-8, "System Description".

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



① Extended storage switch

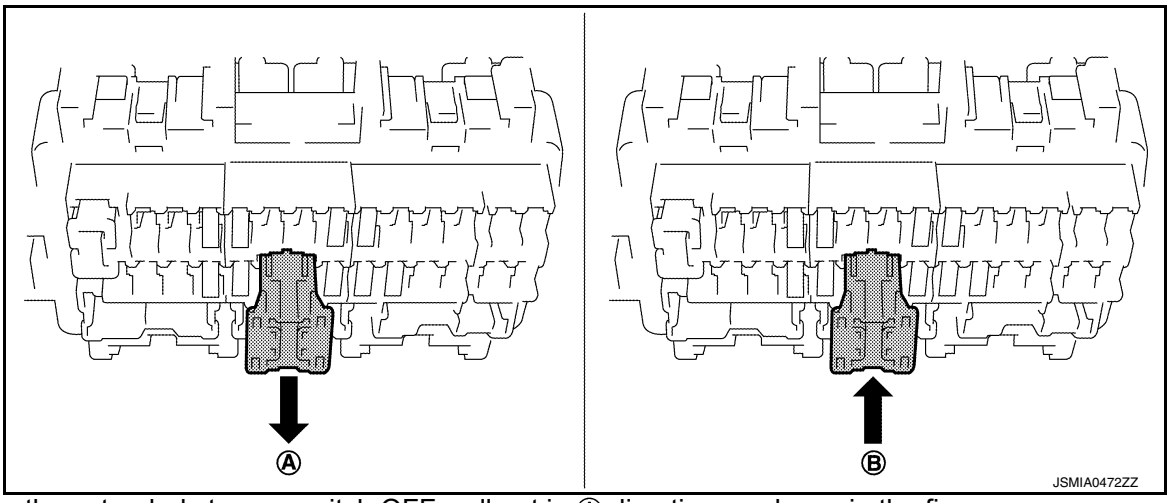
Ⓐ Type A Ⓑ Type B Ⓒ Type C

Remove the extended storage switch if it interferes when checking fuses.

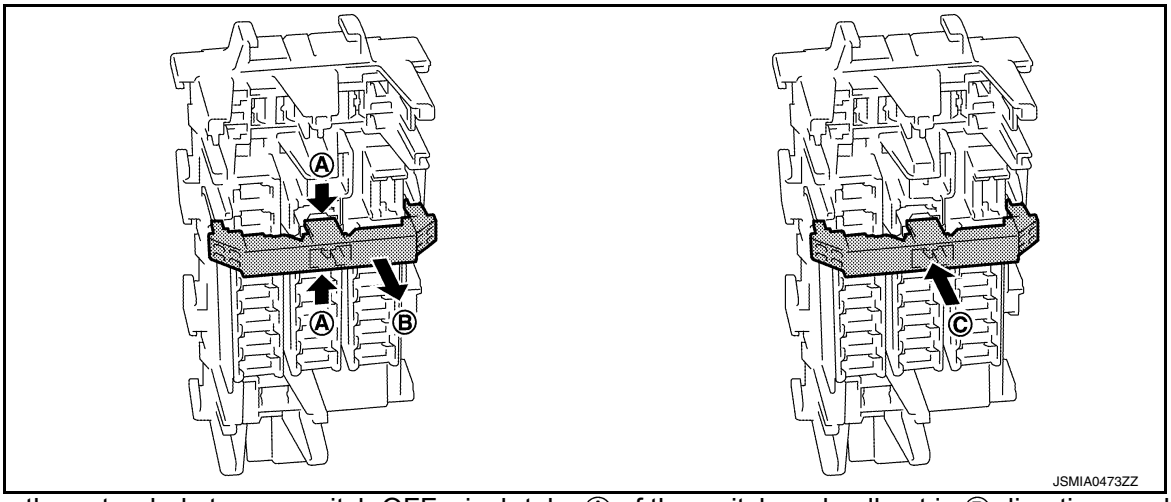
How/When to turn Extended Storage Switch ON/OFF

CAUTION:

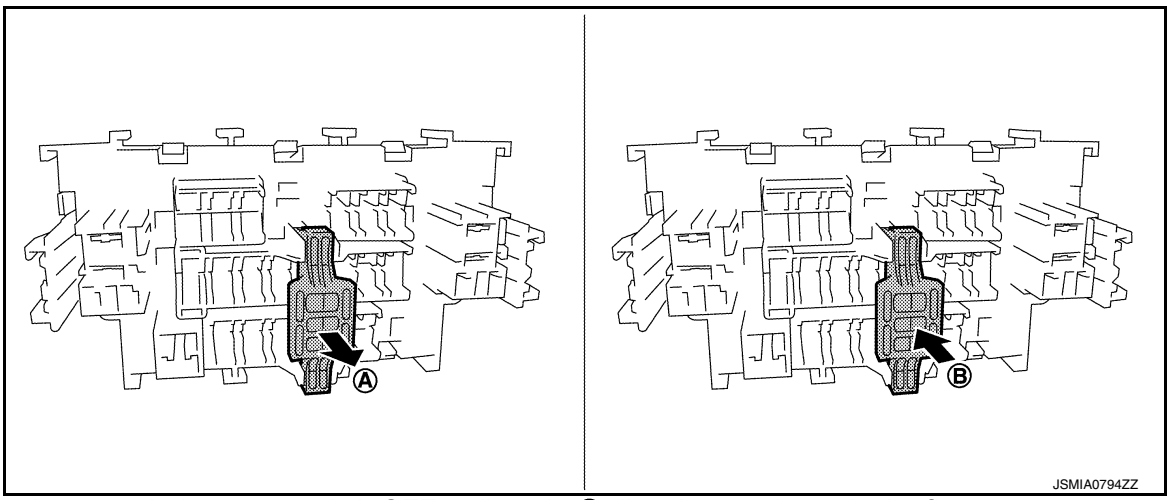
- **Turn the ignition switch OFF when operating the extended storage switch.**
- **Under normal conditions, keep the extended storage switch in ON state. Never operate the extended storage switch except when necessary.**
- Type A



- To turn the extended storage switch OFF, pull out in Ⓐ direction as shown in the figure.
- To turn the extended storage switch ON, press in Ⓑ direction as shown in the figure.
- Type B



- To turn the extended storage switch OFF, pinch tabs Ⓐ of the switch and pull out in Ⓑ direction as shown in the figure.
- To turn the extended storage switch ON, press in Ⓒ direction as shown in the figure.
- Type C

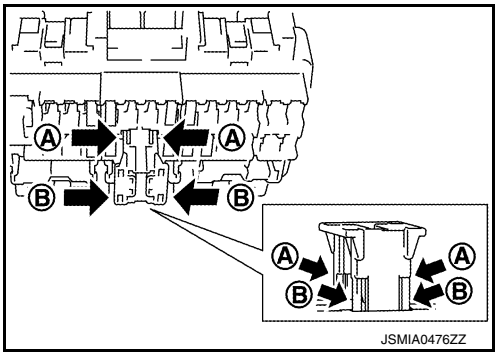


- To turn the extended storage switch OFF, pull out in Ⓐ direction as shown in the figure.
- To turn the extended storage switch ON, press in Ⓑ direction as shown in the figure.

How To Remove Extended Storage Switch

Type A

1. Turn the ignition switch OFF.
2. Turn the extended storage switch OFF.
3. Pinch tabs Ⓐ and tilt to disengage the extended storage switch. Pinch tabs Ⓑ to remove the extended storage switch.



CAUTION:

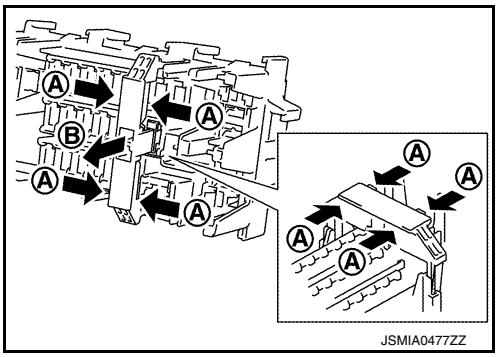
For bus bar type extended storage switch, never replace bus bar with a fuse, or fuse may continually open.

NOTE:

- Extended storage switch and fuse (or bus bar) are removed together. Remove fuse (or bus bar) from extended storage switch, if necessary.
- Install removed fuse (or bus bar) to fuse block.
- Extended storage switch is for transportation and storage. Reinstallation of switch is not required after removal, but fuse (or bus bar) must be reinstalled/pushed back in to activate all electrical systems and turn message off (which may be shown in meter/display).

Type B

1. Turn the ignition switch OFF.
2. Turn the extended storage switch OFF.
3. Pinch tabs Ⓐ and firmly pull out the extended storage switch in Ⓑ direction.



CAUTION:

For bus bar type extended storage switch, never replace bus bar with a fuse, or fuse may continually open.

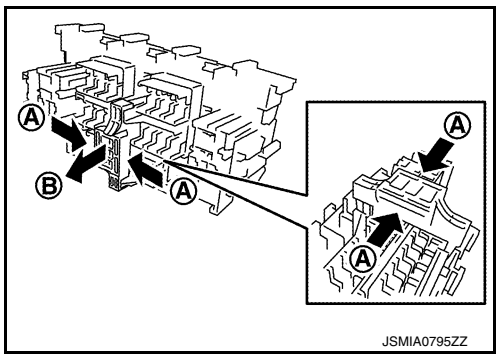
NOTE:

- Extended storage switch and fuse (or bus bar) may be removed together. Remove fuse (or bus bar) from extended storage switch, if necessary.
- Install removed fuse (or bus bar) to fuse block.
- Extended storage switch is for transportation and storage. Reinstallation of switch is not required after removal, but fuse (or bus bar) must be reinstalled/pushed back in to activate all electrical systems and turn message off (which may be shown in meter/display).

Type C

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

3. Pinch tabs Ⓐ and firmly pull out the extended storage switch in Ⓑ direction.



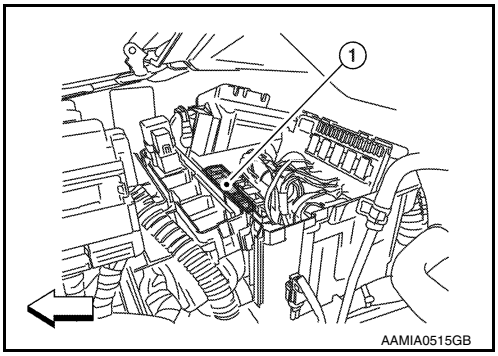
CAUTION:
For bus bar type extended storage switch, never replace bus bar with a fuse, or fuse may continually open.
NOTE:
- Extended storage switch and fuse (or bus bar) are removed together. Remove fuse (or bus bar) from extended storage switch, if necessary.
- Install removed fuse (or bus bar) to fuse block.
- Extended storage switch is for transportation and storage. Reinstallation of switch is not required after removal, but fuse (or bus bar) must be reinstalled/pushed back in to activate all electrical systems and turn message off (which may be shown in meter/display).

FUSIBLE LINK INSPECTION

Fusible Link

INFOID:0000000012563584

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



1 : Fusible link

⇦: Vehicle front

CAUTION:

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

REMOVAL AND INSTALLATION

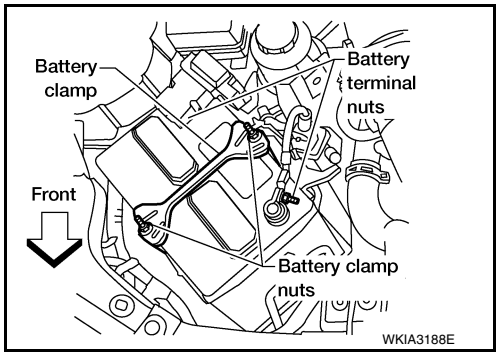
BATTERY

Removal and Installation

INFOID:0000000012563585

REMOVAL

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



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Connect positive battery terminal first.

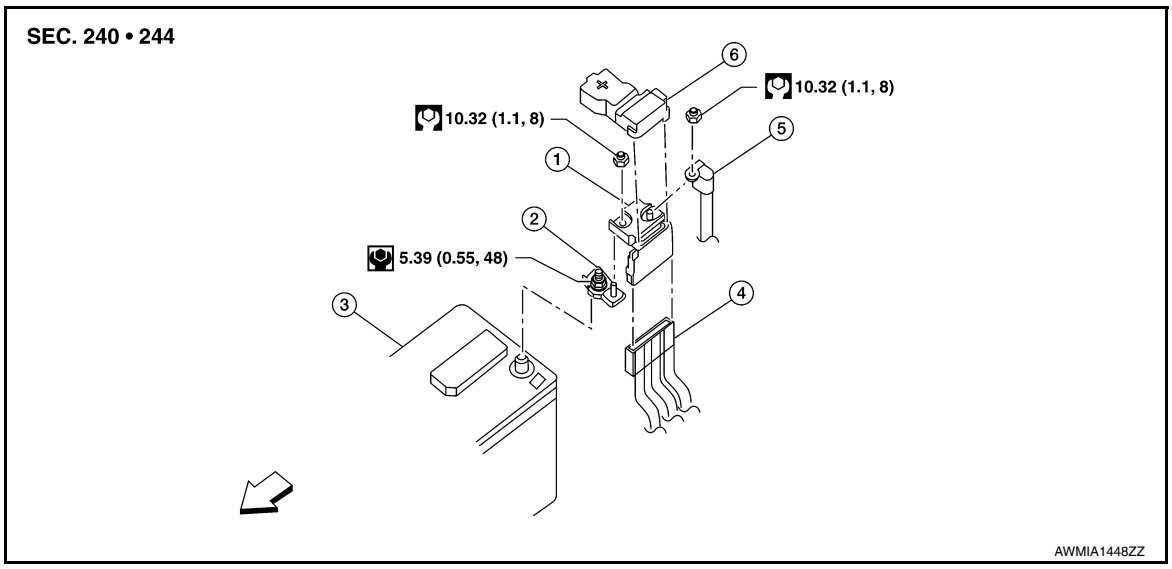
Battery clamp nuts	**: 3.92 N·m (0.40 kg-m, 35 in-lb)**
Battery terminal nut	**: 3.4 N·m (0.35 kg-m, 30 in-lb)**

Reset electronic systems as necessary. Refer to PG-83, "ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Special Repair Requirement".

BATTERY TERMINAL WITH FUSIBLE LINK

Exploded View

INFOID:0000000012563586



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

⇦ Front

Removal and Installation

INFOID:0000000012563587

REMOVAL

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

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

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

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

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

Reset electronic systems as necessary. Refer to PG-83, "ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Special Repair Requirement".

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Battery

INFOID:0000000012563588

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

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