SECTION PWO
POWER OUTLET

CONTENTS

PRECAUTION

POWER SOCKET

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

INFOID:0000000014664670

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. 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, it is recommended that all maintenance and repair be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper repair, 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 Air Bag Diagnosis Sensor Unit or other Air Bag 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 or batteries, and wait at least three minutes before performing any service.**

Precaution for Work

INFOID:0000000014387169

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:

- Water soluble dirt:
- Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
- Then rub with a soft, dry cloth.

- Oily dirt:
- Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
- Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
- Then rub with a soft, dry cloth.

- Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

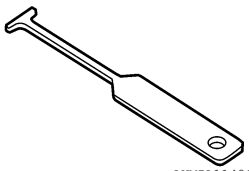
PREPARATION

PREPARATION

Special Service Tool

INFOID:0000000014387170

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

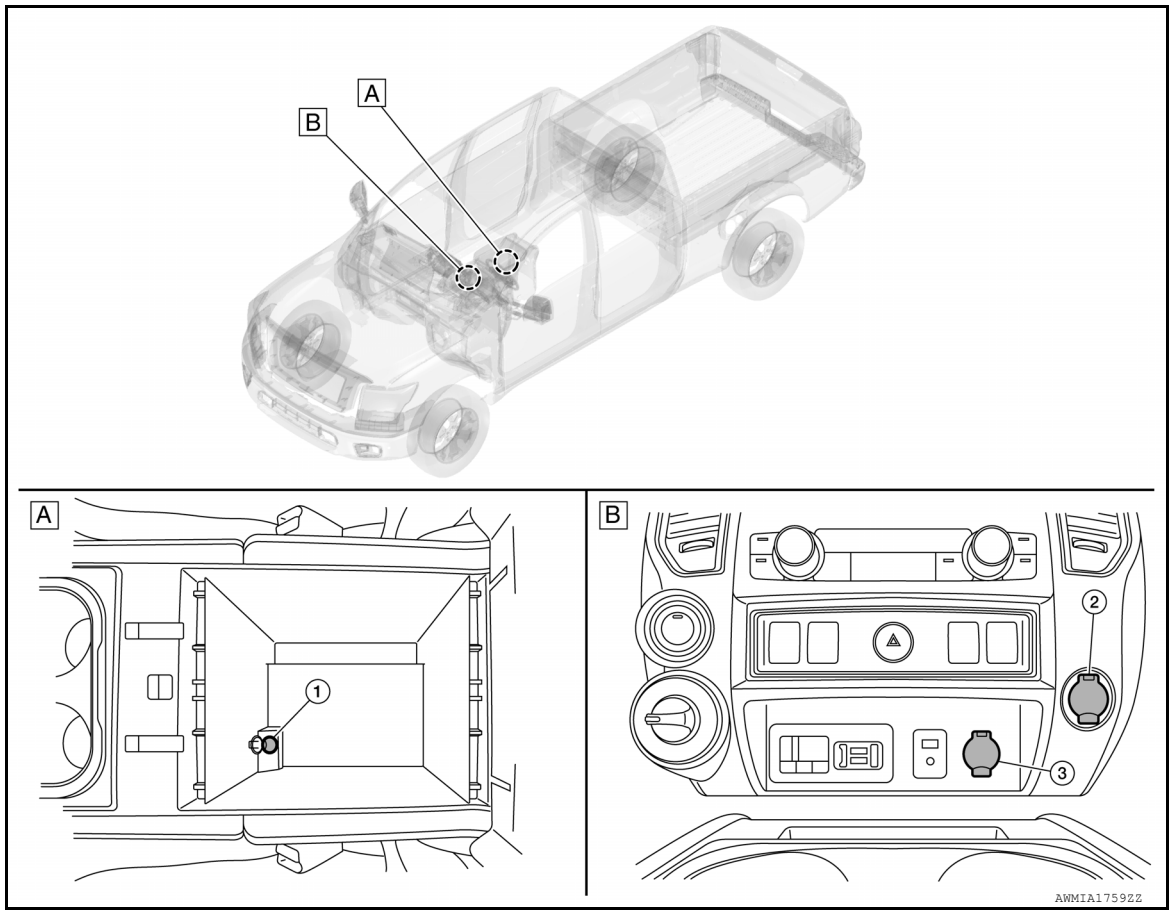
Tool number (TechMate No.) Tool name	Description
— (J-42059) Power socket removal tool  AWMIA1148GB	Removing power sockets

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000014387171



A. View of center console (shown with lid open)
B. Instrument panel
1. Console power socket (if equipped)
2. Front power socket 1
3. Front power socket 2

WIRING DIAGRAM

POWER SOCKET

Wiring Diagram

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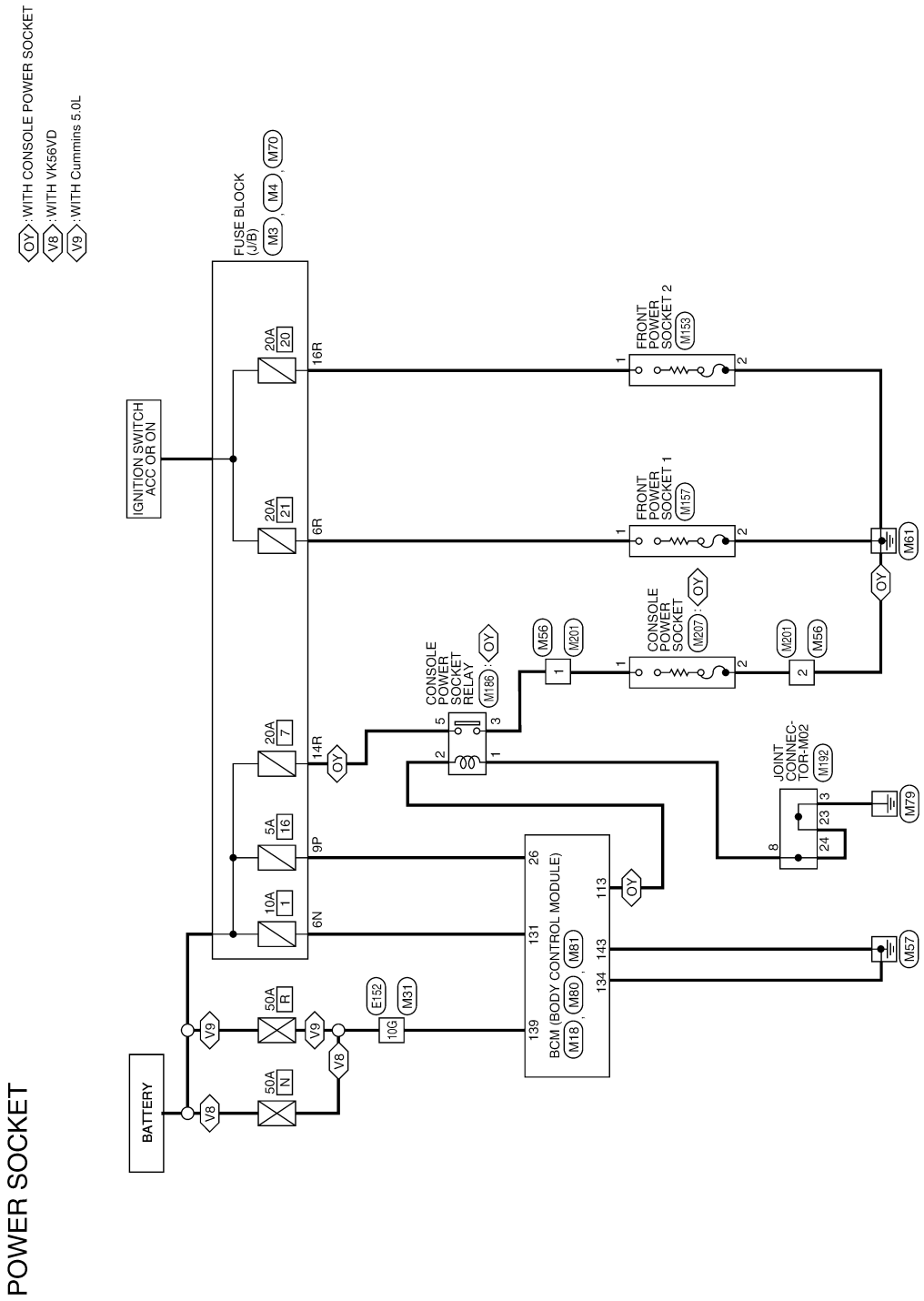

POWER SOCKET CONNECTORS

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1G	G	TO MAIN HARNESS
2G	B/R	TO MAIN HARNESS
3G	W/B	TO MAIN HARNESS
4G	BR/W	TO MAIN HARNESS
5G	BR	TO MAIN HARNESS
6G	P	TO MAIN HARNESS - (WITH VK56VD)
6G	R/W	TO MAIN HARNESS - (WITH CUMMINS 5.0L)
7G	Y	TO MAIN HARNESS
8G	G	TO MAIN HARNESS
9G	R	TO MAIN HARNESS
10G	W	TO MAIN HARNESS
11G	R/G	TO MAIN HARNESS
12G	W/B	TO MAIN HARNESS
13G	BR	TO MAIN HARNESS
14G	Y/B	TO MAIN HARNESS
15G	G/W	TO MAIN HARNESS
16G	G	TO MAIN HARNESS
17G	G/Y	TO MAIN HARNESS
18G	G/Y	TO MAIN HARNESS
19G	Y/V	TO MAIN HARNESS
20G	G/Y	TO MAIN HARNESS
21G	B/Y	TO MAIN HARNESS
22G	G/R	TO MAIN HARNESS
23G	Y/R	TO MAIN HARNESS
24G	G/B	TO MAIN HARNESS
25G	R/W	TO MAIN HARNESS
26G	R	TO MAIN HARNESS
27G	LG	TO MAIN HARNESS
28G	G/B	TO MAIN HARNESS
29G	G/B	TO MAIN HARNESS
30G	BR/Y	TO MAIN HARNESS
31G	P	TO MAIN HARNESS - (WITH CUMMINS 5.0L)
31G	R	TO MAIN HARNESS - (WITH VK56VD)
32G	P	TO MAIN HARNESS
33G	Y/L	TO MAIN HARNESS
34G	GR	TO MAIN HARNESS
35G	G/R	TO MAIN HARNESS
36G	SB	TO MAIN HARNESS
37G	R/W	TO MAIN HARNESS
38G	BR	TO MAIN HARNESS
39G	BR	TO MAIN HARNESS
40G	–	TO MAIN HARNESS
41G	R/G	TO MAIN HARNESS
42G	O	TO MAIN HARNESS
43G	B	TO MAIN HARNESS - (WITH CUMMINS 5.0L)
43G	G	TO MAIN HARNESS - (WITH VK56VD)
44G	R/Y	TO MAIN HARNESS
45G	G	TO MAIN HARNESS
46G	LG	TO MAIN HARNESS
47G	R	TO MAIN HARNESS
48G	W	TO MAIN HARNESS
49G	–	TO MAIN HARNESS
50G	BR	TO MAIN HARNESS
51G	R	TO MAIN HARNESS
52G	L	TO MAIN HARNESS
53G	W	TO MAIN HARNESS
54G	W	TO MAIN HARNESS
55G	G	TO MAIN HARNESS
56G	W	TO MAIN HARNESS
57G	Y	TO MAIN HARNESS
58G	BG	TO MAIN HARNESS
59G	BG	TO MAIN HARNESS
60G	BG	TO MAIN HARNESS
61G	B	TO MAIN HARNESS
62G	W	TO MAIN HARNESS
63G	R	TO MAIN HARNESS
64G	W/L	TO MAIN HARNESS
65G	W/R	TO MAIN HARNESS
66G	BG	TO MAIN HARNESS
67G	BG	TO MAIN HARNESS
68G	B	TO MAIN HARNESS
69G	Y	TO MAIN HARNESS
70G	L	TO MAIN HARNESS
71G	R/W	TO MAIN HARNESS
72G	L/W	TO MAIN HARNESS
73G	SHIELD	TO MAIN HARNESS
74G	W	TO MAIN HARNESS
75G	R	TO MAIN HARNESS
76G	R/G	TO MAIN HARNESS
77G	G	TO MAIN HARNESS
78G	W	TO MAIN HARNESS
79G	–	TO MAIN HARNESS
80G	R	TO MAIN HARNESS
81G	L	TO MAIN HARNESS
82G	R	TO MAIN HARNESS
83G	L	TO MAIN HARNESS
84G	L	TO MAIN HARNESS
85G	W/B	TO MAIN HARNESS
86G	B/R	TO MAIN HARNESS
87G	W/B	TO MAIN HARNESS
88G	P	TO MAIN HARNESS
89G	L	TO MAIN HARNESS
90G	G	TO MAIN HARNESS
91G	G	TO MAIN HARNESS
92G	V/W	TO MAIN HARNESS
93G	BR	TO MAIN HARNESS
94G	G	TO MAIN HARNESS
95G	G	TO MAIN HARNESS
96G	W	TO MAIN HARNESS
97G	R	TO MAIN HARNESS
98G	W/B	TO MAIN HARNESS
99G	BR	TO MAIN HARNESS
100G	GR/W	TO MAIN HARNESS

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	CS06FW-M2
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1N	–	–
2N	W	BATTERY
3N	W	BLOWER FAN RELAY OUT
4N	V	BATTERY
5N	Y	BATTERY
6N	W	BATTERY
7N	L	ACC RELAY OUT
8N	W	IGNITION

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS
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
1P	R	IGNITION
2P	Y	IGNITION
3P	G	IGNITION RELAY OUT
4P	B/W	RR DEF RLY
5P	B/W	RR DEF RLY
6P	O	RR DEF RLY OUT
7P	G	IGNITION
8P	W	IGNITION
9P	L	BATTERY
10P	–	–
11P	–	–
12P	–	–
13P	R	BATTERY
14P	Y	BATTERY
15P	Y/LG	BATTERY
16P	W	BLOWER FAN RELAY OUT

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POWER SOCKET CONNECTORS

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH
Connector Color	GREEN

H.S.

Terminal No.	Color of Wire	Signal Name
1	G	ENG START SW NO ESCL
2	–	–
3	R	A/L POWER SUPPLY 5V
4	W/R	A/L SIGNAL
5	–	–
6	–	–
7	–	–
8	–	–
9	–	–
10	SB	COMBI SW IN 5
11	G/Y	COMBI SW IN 4
12	Y	COMBI SW IN 3
13	G/B	COMBI SW IN 2
14	V	COMBI SW IN 1
15	–	–
16	–	–
17	P	GND RF A/L
18	V	SECURITY INDICATOR
19	–	–
20	R	SHIFT P
21	R/W	STEP LAMP CONT
22	–	–
23	Y	AIRCON SW
24	–	–
25	W	BRAKE SW FUSE
26	L	SHORT IN PIN INPUT
27	R/G	BRAKE SW LAMP
28	–	–
29	W	BLOWER FAN SW
30	P	DR DOOR LOCK STATUS
31	–	–
32	Y	REAR DEFOGGER SW
33	–	–
34	–	–
35	R/G	REVERSE SW
36	W/B	HAZARD SW
37	–	–
38	–	–

39	B/R	SHIFT N/P
40	–	–

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1G	G	TO ENGINE ROOM HARNESS
2G	B/R	TO ENGINE ROOM HARNESS
3G	W	TO ENGINE ROOM HARNESS
4G	BR/W	TO ENGINE ROOM HARNESS
5G	–	TO ENGINE ROOM HARNESS
6G	R/W	TO ENGINE ROOM HARNESS
7G	Y	TO ENGINE ROOM HARNESS
8G	G	TO ENGINE ROOM HARNESS
9G	R	TO ENGINE ROOM HARNESS
10G	W	TO ENGINE ROOM HARNESS
11G	R/G	TO ENGINE ROOM HARNESS
12G	W/B	TO ENGINE ROOM HARNESS
13G	BR	TO ENGINE ROOM HARNESS
14G	Y/B	TO ENGINE ROOM HARNESS
15G	G/W	TO ENGINE ROOM HARNESS
16G	G	TO ENGINE ROOM HARNESS
17G	O	TO ENGINE ROOM HARNESS
18G	G/Y	TO ENGINE ROOM HARNESS
19G	Y/V	TO ENGINE ROOM HARNESS
20G	G/Y	TO ENGINE ROOM HARNESS
21G	B/Y	TO ENGINE ROOM HARNESS
22G	G/R	TO ENGINE ROOM HARNESS
23G	Y/R	TO ENGINE ROOM HARNESS
24G	G/B	TO ENGINE ROOM HARNESS
25G	R/W	TO ENGINE ROOM HARNESS
26G	R	TO ENGINE ROOM HARNESS
27G	LG	TO ENGINE ROOM HARNESS
28G	G/B	TO ENGINE ROOM HARNESS
29G	G/B	TO ENGINE ROOM HARNESS
30G	BR/Y	TO ENGINE ROOM HARNESS
31G	R	TO ENGINE ROOM HARNESS
32G	R	TO ENGINE ROOM HARNESS
33G	Y/L	TO ENGINE ROOM HARNESS
34G	GR	TO ENGINE ROOM HARNESS
35G	G/R	TO ENGINE ROOM HARNESS
36G	SB	TO ENGINE ROOM HARNESS
37G	R/W	TO ENGINE ROOM HARNESS
38G	BR	TO ENGINE ROOM HARNESS
39G	BR	TO ENGINE ROOM HARNESS
40G	–	TO ENGINE ROOM HARNESS
41G	R/G	TO ENGINE ROOM HARNESS
42G	O	TO ENGINE ROOM HARNESS
43G	G	TO ENGINE ROOM HARNESS
44G	R/Y	TO ENGINE ROOM HARNESS
45G	G	TO ENGINE ROOM HARNESS
46G	LG	TO ENGINE ROOM HARNESS
47G	R	TO ENGINE ROOM HARNESS
48G	W	TO ENGINE ROOM HARNESS
49G	–	TO ENGINE ROOM HARNESS
50G	BR	TO ENGINE ROOM HARNESS
51G	R	TO ENGINE ROOM HARNESS
52G	L	TO ENGINE ROOM HARNESS
53G	W	TO ENGINE ROOM HARNESS
54G	W	TO ENGINE ROOM HARNESS
55G	G	TO ENGINE ROOM HARNESS
56G	W	TO ENGINE ROOM HARNESS
57G	Y	TO ENGINE ROOM HARNESS
58G	BG	TO ENGINE ROOM HARNESS
59G	BG	TO ENGINE ROOM HARNESS
60G	BG	TO ENGINE ROOM HARNESS
61G	O	TO ENGINE ROOM HARNESS
62G	W	TO ENGINE ROOM HARNESS
63G	O	TO ENGINE ROOM HARNESS
64G	W/L	TO ENGINE ROOM HARNESS
65G	W/R	TO ENGINE ROOM HARNESS
66G	BG	TO ENGINE ROOM HARNESS
67G	O	TO ENGINE ROOM HARNESS
68G	B	TO ENGINE ROOM HARNESS
69G	Y	TO ENGINE ROOM HARNESS
70G	L	TO ENGINE ROOM HARNESS
71G	R/W	TO ENGINE ROOM HARNESS
72G	L/W	TO ENGINE ROOM HARNESS
73G	SHIELD	TO ENGINE ROOM HARNESS
74G	W	TO ENGINE ROOM HARNESS
75G	R	TO ENGINE ROOM HARNESS
76G	R/G	TO ENGINE ROOM HARNESS
77G	BG	TO ENGINE ROOM HARNESS
78G	P	TO ENGINE ROOM HARNESS
79G	–	TO ENGINE ROOM HARNESS
80G	R	TO ENGINE ROOM HARNESS
81G	L	TO ENGINE ROOM HARNESS
82G	R	TO ENGINE ROOM HARNESS
83G	L	TO ENGINE ROOM HARNESS
84G	L	TO ENGINE ROOM HARNESS
85G	W	TO ENGINE ROOM HARNESS
86G	B/R	TO ENGINE ROOM HARNESS
87G	W	TO ENGINE ROOM HARNESS
88G	G	TO ENGINE ROOM HARNESS
89G	P	TO ENGINE ROOM HARNESS
90G	G	TO ENGINE ROOM HARNESS
91G	P	TO ENGINE ROOM HARNESS
92G	V/W	TO ENGINE ROOM HARNESS
93G	BR	TO ENGINE ROOM HARNESS
94G	B	TO ENGINE ROOM HARNESS
95G	G	TO ENGINE ROOM HARNESS
96G	R	TO ENGINE ROOM HARNESS
97G	R	TO ENGINE ROOM HARNESS
98G	W/B	TO ENGINE ROOM HARNESS
99G	R	TO ENGINE ROOM HARNESS
100G	GR/W	TO ENGINE ROOM HARNESS

Connector No.	M56
Connector Name	WIRE TO WIRE
Connector Type	M02FW-LC
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	G	TO CONSOLE SUB HARNESS
2	B	TO CONSOLE SUB HARNESS

AAMIA4983GB

POWER SOCKET CONNECTORS

Connector No.	M70
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FBR-CS
Connector Color	BROWN

H.S.

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

Terminal No.	Color of Wire	Signal Name
1R	L	TAIL LAMP 2
2R	G/R	IGNITION
3R	Y/R	BATTERY
4R	–	–
5R	W	BATTERY
6R	G/W	ACCESSORY
7R	–	–
8R	–	–
9R	–	–
10R	W	BATTERY
11R	–	–
12R	BG	BATTERY
13R	B	ACCESSORY
14R	G/Y	BATTERY
15R	Y	BATTERY
16R	G/R	ACCESSORY

Connector No.	M80
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH24FB-NH
Connector Color	BLACK

H.S.

116	115	114	113	112	111	110	109	108	107	106	105
128	127	126	125	124	123	122	121	120	119	118	117

Terminal No.	Color of Wire	Signal Name
105	G/Y	FR FLASHER
106	–	–
107	W	LOW SIDE START SW LED
108	L/R	SHIFT LOCK SOLENOID OUT
109	–	–
110	–	–
111	P	–
112	–	–
113	L	ACC RELAY OUT
114	W	AS DOOR ANT A
115	BG	AS DOOR ANT B
116	W	ROOM ANT 2 A
117	G/B	FL FLASHER
118	–	–
119	R	RF NIMOCO
120	–	–
121	G	DR DOOR ANT B
122	P	DR DOOR ANT A
123	W	ROOM ANT 1 A
124	G	ROOM ANT 1 B
125	–	–
126	P	IMMO START BUTTON ANT B
127	BG	IMMO START BUTTON ANT A
128	B	ROOM ANT 2 B

Connector No.	M81
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FW-FHA6-SA
Connector Color	WHITE

H.S.

137	136	135	134	133	132	131	130	129
143	142	141	140	139	138			

Terminal No.	Color of Wire	Signal Name
129	R/G	BATTERY SAVER OUT
130	LG	SUPER LOCK/DOOR UNLOCK AS
131	W	BAT BCM FUSE
132	Y	DOOR LOCK AS/RR/RL
133	BR	DOOR UNLOCK AS/RR/RL
134	B	GND2
135	O	DOOR LOCK DR/AS/FL
136	L	ROOM LAMP CONT
137	V	DOOR UNLOCK DR/AS/FL
138	V	BAT REAR DOOR
139	W	BAT-POWER F/L
140	LG	P/W POWER SUPPLY IGN
141	V	P/W POWER SUPPLY BAT
142	Y	BAT FRONT DOOR
143	B	GND1

Connector No.	M153
Connector Name	FRONT POWER SOCKET 2
Connector Type	PHA03FGY
Connector Color	GRAY

H.S.

1
2

Terminal No.	Color of Wire	Signal Name
1	G/R	ACCESSORY
2	B	GROUND

Connector No.	M157
Connector Name	FRONT POWER SOCKET 1
Connector Type	PHA03FGY
Connector Color	GRAY

H.S.

1
2

Terminal No.	Color of Wire	Signal Name
1	G/W	ACCESSORY
2	B	GROUND

Connector No.	M186
Connector Name	CONSOLE POWER SOCKET RELAY
Connector Type	MS02FL-M2-LC
Connector Color	BLUE

H.S.

3	
5	
2	1

Terminal No.	Color of Wire	Signal Name
1	B	GROUND
2	L	ACC OUT
3	G	IGNITION

5	G/Y	IGNITION

Connector No.	M192
Connector Name	JOINT CONNECTOR-M02
Connector Type	NH24FW-J
Connector Color	WHITE

H.S.

4	3	2	1
8	7	6	5
12	11	10	9
16	15	14	13
20	19	18	17
24	23	22	21

Terminal No.	Color of Wire	Signal Name
1	B	GROUND
2	B	GND
3	B	GROUND
4	–	–
5	B	GROUND
6	B	GND
7	B	GROUND
8	B	GROUND
9	B	GROUND
10	B	GND
11	B	GROUND
12	B	GND
13	–	–
14	B	GND
15	B	GROUND
16	B	GND
17	–	–
18	SHIELD	SHIELD
19	SHIELD	SHIELD
20	SHIELD	SHIELD
21	B	GND
22	B	GND
23	B	GROUND
24	B	GROUND

AAMIA4984GB

POWER SOCKET CONNECTORS

Connector No.	M201
Connector Name	WIRE TO WIRE
Connector Type	M02MW-LC
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	G	TO MAIN HARNESS
2	B	TO MAIN HARNESS

Connector No.	M207
Connector Name	CONSOLE POWER SOCKET
Connector Type	PHA03FGY
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
1	G	CONSOLE POWER SOCKET RELAY OUTPUT
2	B	GROUND

AAMIA4985GB

REMOVAL AND INSTALLATION

POWER SOCKET

Removal and Installation

INFOID:0000000014387173

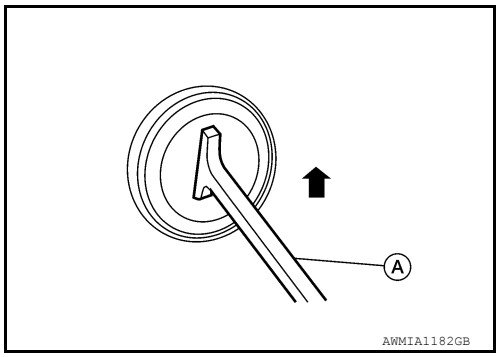
FRONT POWER SOCKETS

NOTE:
If unable to use the tool because of power socket location or access to the harness connector, then further removal of interior components may be required. Refer to IP-14, "Exploded View".

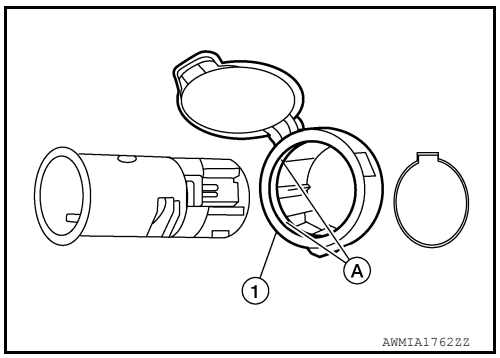
Removal

1. Remove the fuse for the power socket.
2. Insert one end of the Tool (A) into one of the square holes inside the power socket.

Tool number : — (J-42059)



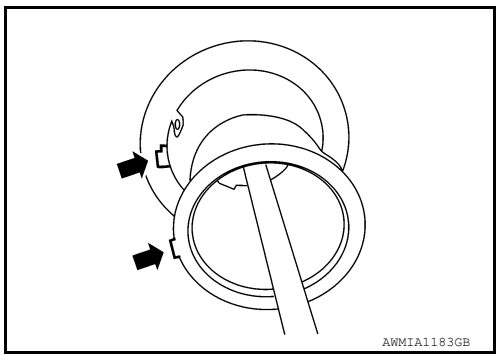
3. Lift up the handle of the Tool until the other end of the Tool is inside the socket and snaps into the other square hole in the power socket.
4. Pull the power socket straight out with the Tool.
5. Disconnect the power socket connector.
6. Remove ring (1) from the power socket finisher while pressing pawls (A).



Installation

Installation is in the reverse order of removal.

NOTE:
Make sure to align the tab with the square notched area during installation.



CONSOLE POWER SOCKET

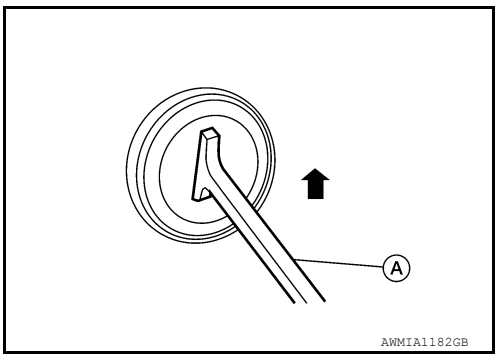
Removal

1. Remove the fuse for the power socket.
2. Remove the console assembly. Refer to IP-24, "Removal and Installation".

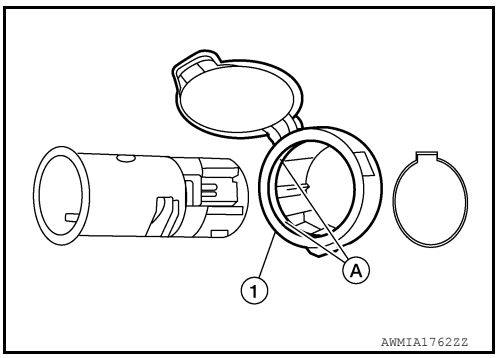
3. Insert one end of the Tool (A) into one of the square holes inside the power socket.

Tool number : — (J-42059)

4. Lift up the handle of the Tool until the other end of the Tool is inside the socket and snaps into the other square hole in the power socket.
5. Pull the power socket straight out with the Tool.



6. Remove the ring (1) from the power socket finisher while pressing pawls (A).



Installation

Installation is in the reverse order of removal.

NOTE:

Make sure to align the tab with the square notched area during installation.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000014664671

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. 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, it is recommended that all maintenance and repair be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper repair, 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 Air Bag Diagnosis Sensor Unit or other Air Bag 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 or batteries, and wait at least three minutes before performing any service.**

Precaution for Work

INFOID:0000000014387175

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:

- Water soluble dirt:

- Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
- Then rub with a soft, dry cloth.

- Oily dirt:

- Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
- Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
- Then rub with a soft, dry cloth.

- Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

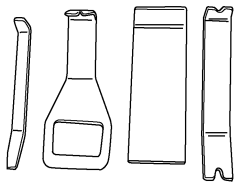
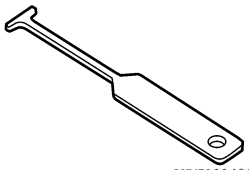
PREPARATION

PREPARATION

Special Service Tool

INFOID:0000000014387176

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

Tool number (TechMate No.) Tool name	Description
— (J-46534) Trim Tool Set  AWJIA0483ZZ	Removing trim components
— (J-42059) Power socket removal tool  AWMIA1148GB	Removing power sockets

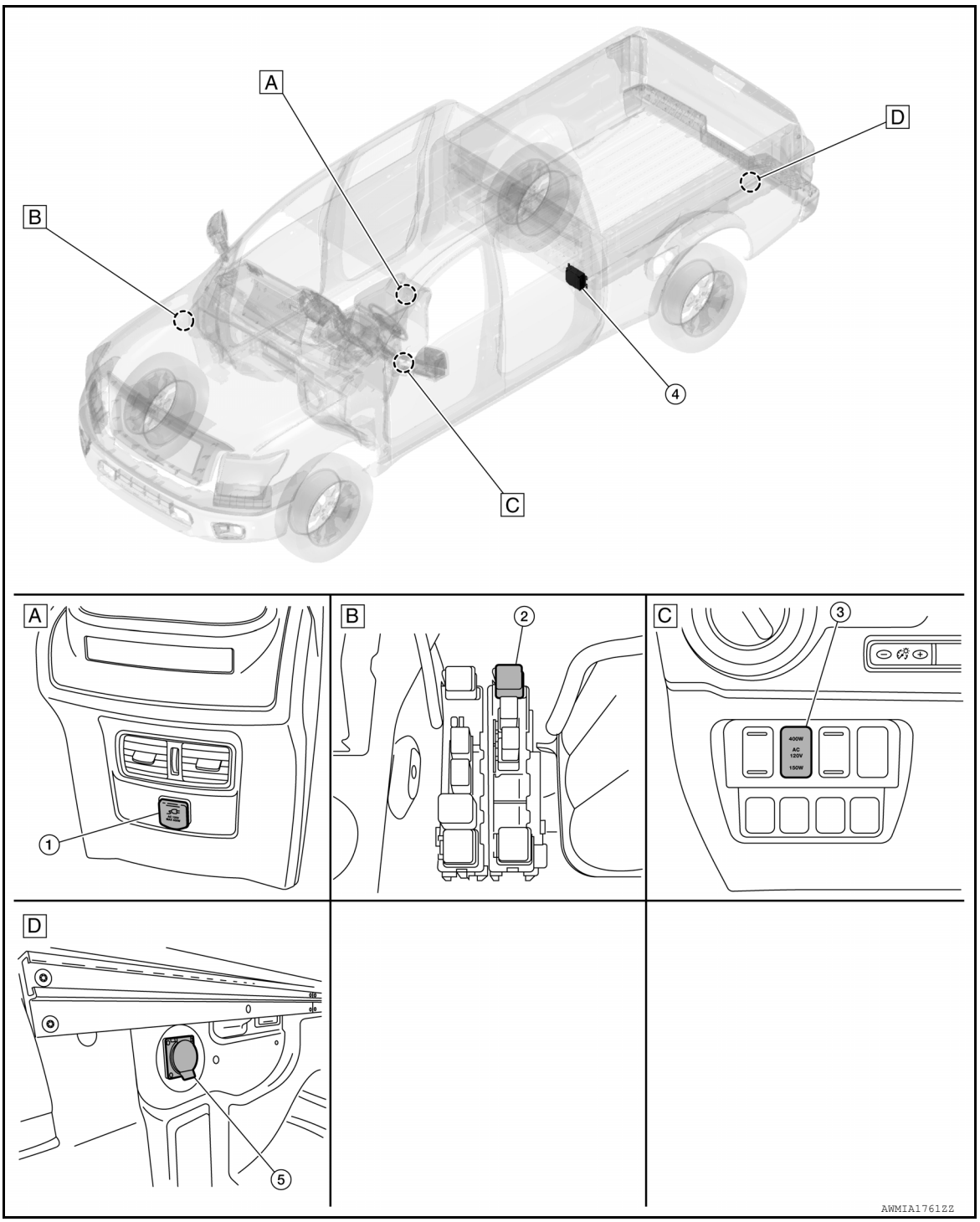
SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000014387177

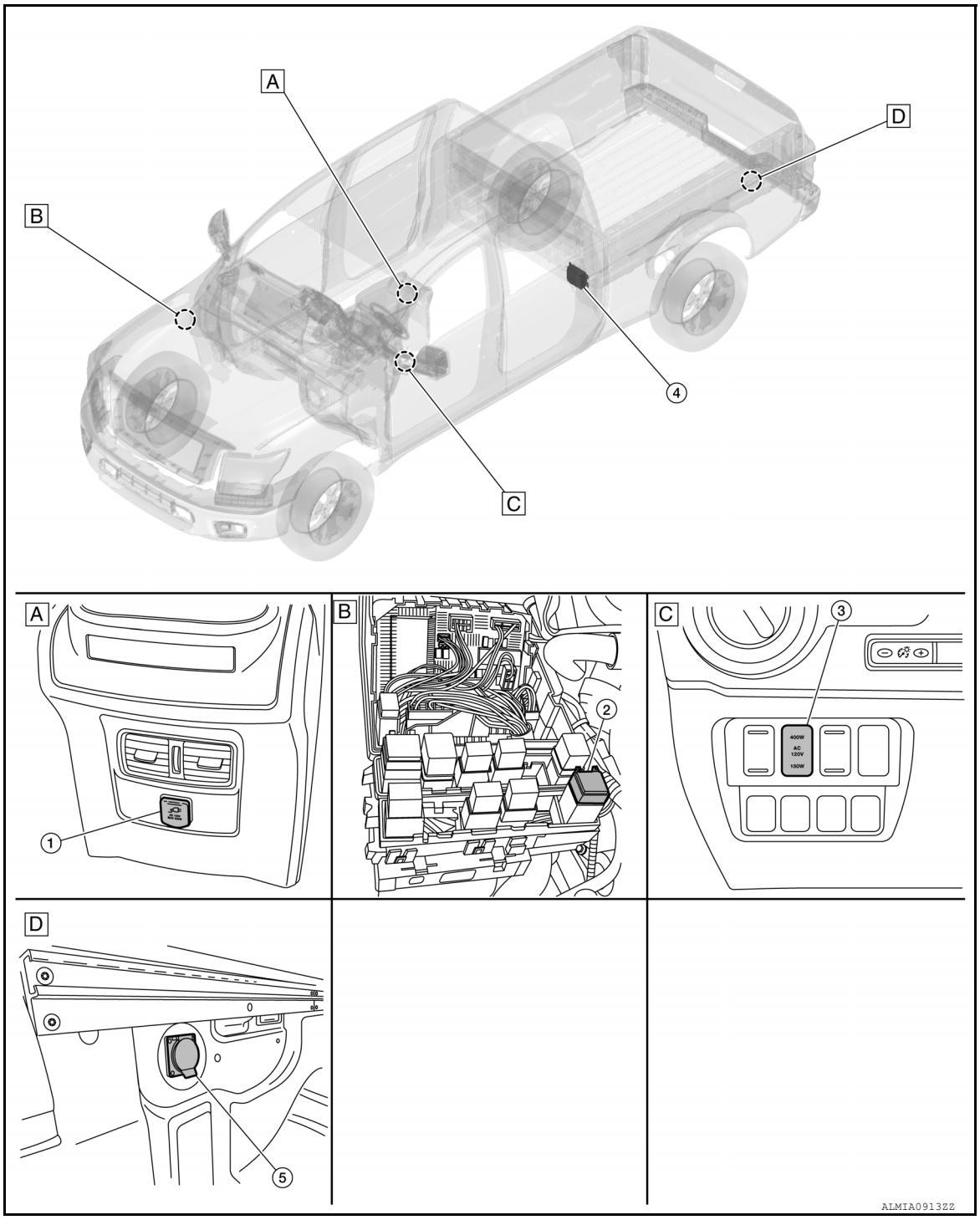
WITH CUMMINS 5.0L



A. View of rear center console
B. RH engine compartment (view with relay box cover removed)
C. View of LH lower instrument panel
D. View of LH inner cargo bed

No.	Component	Reference
1.	AC 120V outlet (console)	PWO-17, "AC 120V Outlet"
2.	Inverter relay	PWO-15, "Component Parts Location"
3.	AC 120V outlet main switch	PWO-17, "AC 120V Outlet Main Switch"
4.	Inverter unit	PWO-17, "Inverter Unit"
5.	Rear AC 120V outlet (bed) (if equipped)	PWO-17, "AC 120V Outlet"

WITH VK56VD



A. View of rear center console
B. RH engine compartment (view with relay box cover removed)
C. View of LH lower instrument panel
D. View of LH inner cargo bed

No.	Component	Reference
1.	AC 120V outlet (console)	PWO-17, "AC 120V Outlet"
2.	Inverter relay	PWO-15, "Component Parts Location"
3.	AC 120V outlet main switch	PWO-17, "AC 120V Outlet Main Switch"
4.	Inverter unit	PWO-17, "Inverter Unit"
5.	Rear AC 120V outlet (bed) (if equipped)	PWO-17, "AC 120V Outlet"

Inverter Unit

INFOID:0000000014387178

The inverter unit converts 12V DC to 120V AC.

AC 120V Outlet Main Switch

INFOID:0000000014387179

The AC outlet main switch allows operation of the inverter unit in 150W AC 120V and 400W AC 120V modes.

AC 120V Outlet

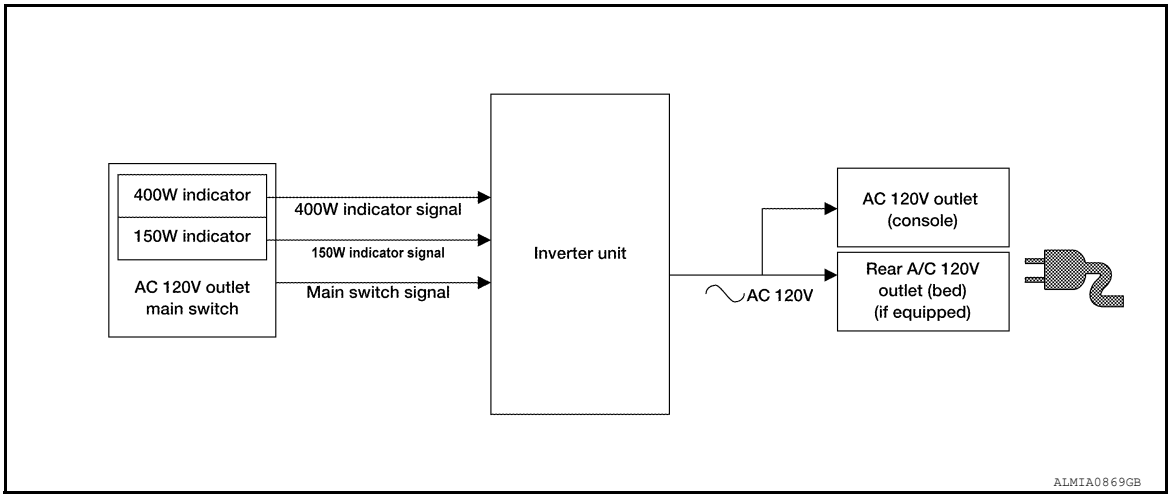
INFOID:0000000014387180

The AC 120V outlet (console) and rear AC 120V outlet (bed) (if equipped) allow use of AC components up to 400W.

SYSTEM

System Diagram

INFOID:0000000014387181



System Description

INFOID:0000000014387182

- When turning ON the AC 120V outlet main switch with the ignition switch ON, the 150W indicator turns ON and the inverter unit is activated, allowing the use of devices up to 150W.
- When the vehicle is placed in P (Park) with the ignition switch ON, turning ON the AC 120V outlet main switch turns ON the 400W indicator and the inverter unit is activated, allowing the use of devices up to 400W.
- The inverter unit converts 12V DC to 120V AC and outputs the converted voltage to the AC 120V outlet (console) and rear AC 120V outlet (bed) (if equipped) two seconds after the AC 120V outlet main switch is turned ON.

Fail-safe

INFOID:0000000014387183

When a malfunction listed below occurs, the inverter unit turns OFF the AC 120V outlet main switch indicator and stops the output.

Malfunction item	Fail-safe condition	Fail-safe cancellation condition
Inverter unit power supply voltage is greater than 15V	When inverter unit input voltage rises above 15V, the output will be suspended to protect the inverter unit.	After the inverter unit power supply voltage drops below 15V, the AC 120V outlet main switch ON ⇒ OFF ⇒ ON operation allows normal return.
Inverter unit power supply voltage is less than 11.5V for 2 seconds or more	When inverter unit input voltage is lowered, the output will be suspended to protect the battery from running out.	After the inverter unit power supply voltage rises above 11.5V, the AC 120V outlet main switch ON ⇒ OFF ⇒ ON operation allows normal return.
Inverter unit power supply voltage is less than 9V		
Inverter unit AC 120V output voltage is greater than 170V	When inverter unit AC 120V output voltage is greater than 170V, the output will be suspended.	After the inverter unit AC 120V output voltage drops below 170V, the AC 120V outlet main switch ON ⇒ OFF ⇒ ON operation allows normal return.
Inverter unit output current is greater than 3.7A (400W mode)	When inverter unit output current rises above 3.7A, the output will be suspended to prevent over current (e.g., connecting an electric appliance exceeding rated output).	After the inverter unit output current drops below 3.7A, the AC 120V outlet main switch ON ⇒ OFF ⇒ ON operation allows normal return.
Inverter unit input current is greater than 13.3A (150W mode)	When inverter unit input current rises above 13.3A, the output will be suspended to prevent over current (e.g., connecting an electric appliance exceeding rated output).	After the inverter unit input current drops below 13.3A, the AC 120V outlet main switch ON ⇒ OFF ⇒ ON operation allows normal return.

Malfunction item	Fail-safe condition	Fail-safe cancellation condition
Inverter unit is overheated	When the inverter unit is overheated [thermistor temperature above 100°C (212°F)], the output will be suspended to protect the inverter unit.	After the inverter unit temperature is lowered, the AC 120V outlet main switch ON ⇒ OFF ⇒ ON operation allows normal return.
Inverter unit output signal (AC 120V output signal) is shorted	When inverter unit output signal is shorted, the output will be suspended.	After recovering from inverter unit output signal short, the AC 120V outlet main switch ON ⇒ OFF ⇒ ON operation allows normal return.

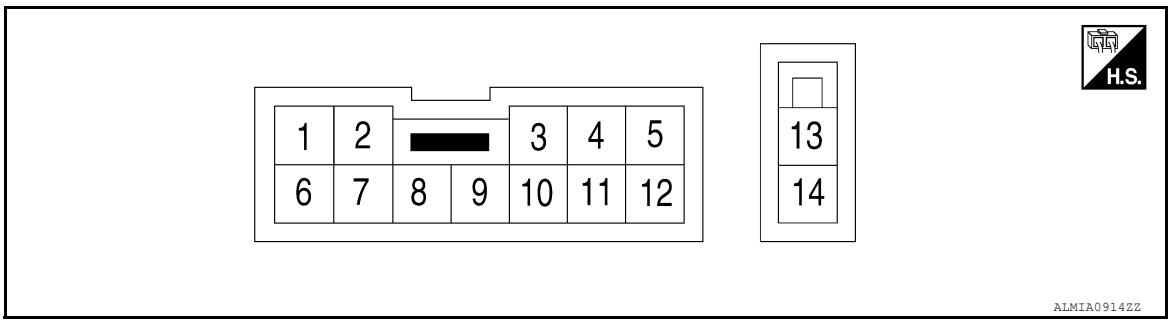
ECU DIAGNOSIS INFORMATION

INVERTER UNIT

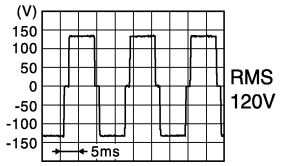
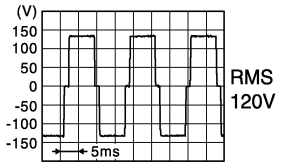
Reference Value

INFOID:0000000014387184

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
1 (G/W)	7 (BR)	AC output 1	Output	Ignition switch ON	AC 120V outlet main switch ON (Using oscilloscope)	Reference value  AC 120V
3 (G)	Ground	400W indicator drive signal	Input	Ignition switch ON	AC 120V outlet main switch OFF	0V
5 (L)		AC sw signal input	Input		AC 120V outlet main switch ON	12V
7 (BR)	1 (G/W)	AC output 2	Output	Ignition switch ON	AC 120V outlet main switch ON (Using oscilloscope)	Reference value  AC 120V
11 (SB)	Ground	RLY output signal	Input	Ignition switch ON	AC 120V outlet main switch OFF	0V
					AC 120V outlet main switch ON	12V
12 (R)		Input park signal	Input	Ignition switch ON	AC 120V outlet main switch OFF	0V
					AC 120V outlet main switch ON with A/T selector lever in P (Park)	12V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
13 (B)	Ground	Ground	—	Ignition switch ON		0V
14 (W)		Battery power supply	Input	Ignition switch ON	AC 120V outlet main switch OFF	0V
					AC 120V outlet main switch ON	Battery voltage

CAUTION:
- **To measure AC 120V output signal, always use the circuit tester or oscilloscope AC range. Never allow the probes to contact each other.**
- **Because of modified sine wave output of the AC 120V output signal, voltage cannot be measured accurately without using a circuit tester that can measure true RMS (root mean square).**

Fail-safe

INFOID:0000000014387185

When a malfunction listed below occurs, the inverter unit turns OFF the AC 120V outlet main switch indicator and stops the output.

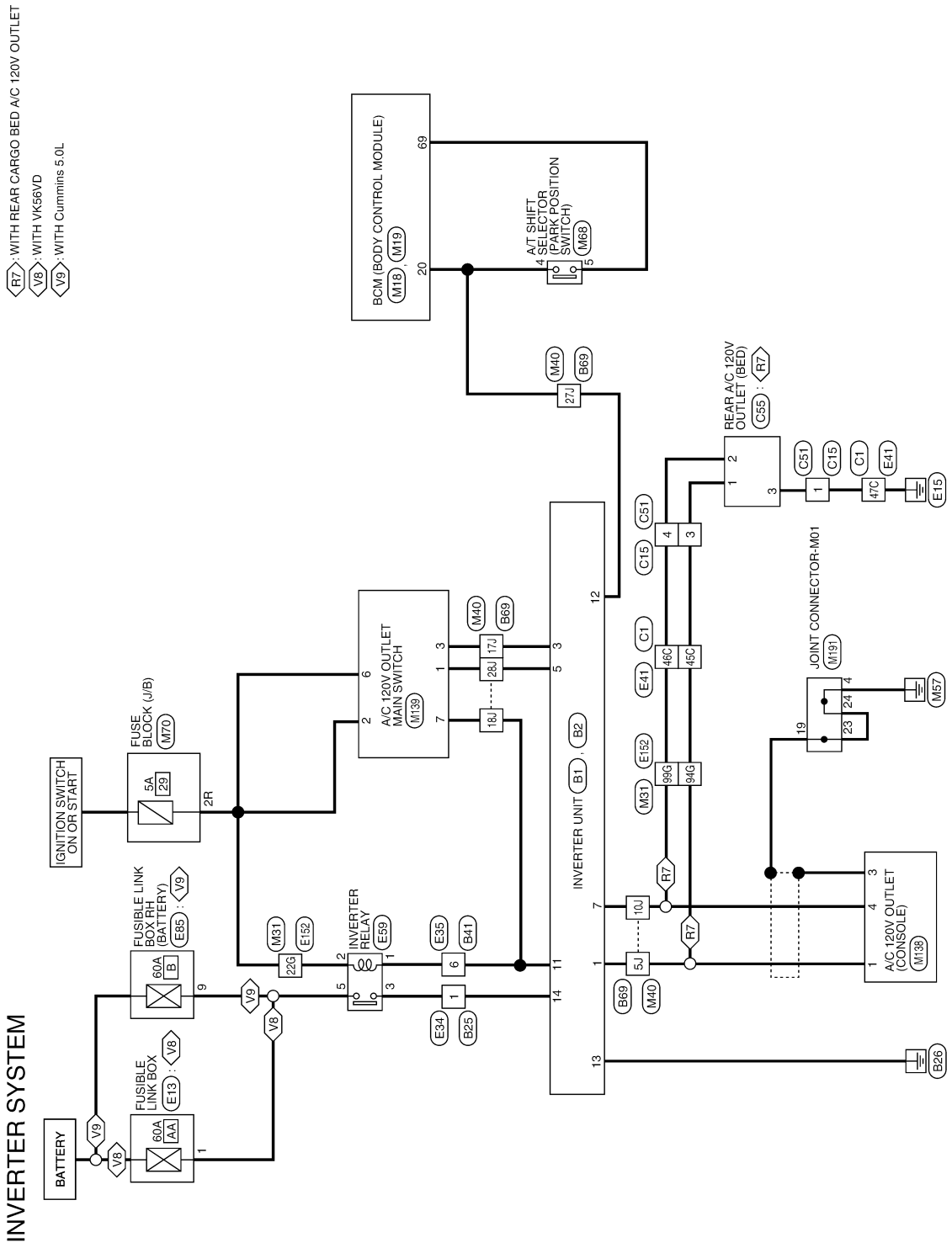
Malfunction item	Fail-safe condition	Fail-safe cancellation condition
Inverter unit power supply voltage is greater than 15V	When inverter unit input voltage rises above 15V, the output will be suspended to protect the inverter unit.	After the inverter unit power supply voltage drops below 15V, the AC 120V outlet main switch ON ⇒ OFF ⇒ ON operation allows normal return.
Inverter unit power supply voltage is less than 11.5V for 2 seconds or more	When inverter unit input voltage is lowered, the output will be suspended to protect the battery from running out.	After the inverter unit power supply voltage rises above 11.5V, the AC 120V outlet main switch ON ⇒ OFF ⇒ ON operation allows normal return.
Inverter unit power supply voltage is less than 9V		
Inverter unit AC 120V output voltage is greater than 170V	When inverter unit AC 120V output voltage is greater than 170V, the output will be suspended.	After the inverter unit AC 120V output voltage drops below 170V, the AC 120V outlet main switch ON ⇒ OFF ⇒ ON operation allows normal return.
Inverter unit output current is greater than 3.7A (400W mode)	When inverter unit output current rises above 3.7A, the output will be suspended to prevent over current (e.g., connecting an electric appliance exceeding rated output).	After the inverter unit output current drops below 3.7A, the AC 120V outlet main switch ON ⇒ OFF ⇒ ON operation allows normal return.
Inverter unit input current is greater than 13.3A (150W mode)	When inverter unit input current rises above 13.3A, the output will be suspended to prevent over current (e.g., connecting an electric appliance exceeding rated output).	After the inverter unit input current drops below 13.3A, the AC 120V outlet main switch ON ⇒ OFF ⇒ ON operation allows normal return.
Inverter unit is overheated	When the inverter unit is overheated [thermistor temperature above 100°C (212°F)], the output will be suspended to protect the inverter unit.	After the inverter unit temperature is lowered, the AC 120V outlet main switch ON ⇒ OFF ⇒ ON operation allows normal return.
Inverter unit output signal (AC 120V output signal) is shorted	When inverter unit output signal is shorted, the output will be suspended.	After recovering from inverter unit output signal short, the AC 120V outlet main switch ON ⇒ OFF ⇒ ON operation allows normal return.

WIRING DIAGRAM

INVERTER UNIT

Wiring Diagram

INFOID:0000000014387186



INVERTER SYSTEM CONNECTORS

Connector No.	B1
Connector Name	INVERTER UNIT
Connector Type	L02FB-MC
Connector Color	BLACK

H.S.

13 14

Terminal No.	Color of Wire	Signal Name
13	B	GROUND
14	W	INVERTER RELAY OUTPUT

Connector No.	B25
Connector Name	WIRE TO WIRE
Connector Type	L02MB-MC
Connector Color	BLACK

H.S.

1 2

Terminal No.	Color of Wire	Signal Name
1	W	TO ENGINE ROOM HARNESS
2	W	TO ENGINE ROOM HARNESS

Connector No.	B2
Connector Name	INVERTER UNIT
Connector Type	TK12MW
Connector Color	WHITE

H.S.

1	2	3	4	5
6	7	8	9	10	11	12

Terminal No.	Color of Wire	Signal Name
1	G/W	AC OUTPUT 1
2	–	–
3	G	400W INDICATOR
4	–	–
5	L	AC SW SIGNAL INPUT
6	–	–
7	BR	AC OUTPUT 2
8	–	–
9	–	–
10	–	–
11	SB	RELAY CONTROL
12	R	INPUT PARK SIGNAL

Connector No.	B41
Connector Name	WIRE TO WIRE
Connector Type	NS12MW-CS
Connector Color	WHITE

H.S.

1	2	3	4	5
6	7	8	9	10	11	12

Terminal No.	Color of Wire	Signal Name
1	Y	TO ENGINE ROOM HARNESS
2	V	TO ENGINE ROOM HARNESS
3	L	TO ENGINE ROOM HARNESS
4	L/G	TO ENGINE ROOM HARNESS
5	R/G	TO ENGINE ROOM HARNESS
6	SB	TO ENGINE ROOM HARNESS
7	P	TO ENGINE ROOM HARNESS
8	L	TO ENGINE ROOM HARNESS
9	SHIELD	TO ENGINE ROOM HARNESS
10	W/G	TO ENGINE ROOM HARNESS
11	L	TO ENGINE ROOM HARNESS
12	BR	TO ENGINE ROOM HARNESS

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INVERTER SYSTEM CONNECTORS

Connector No.	B69
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1J	P	TO MAIN HARNESS
2J	R/Y	TO MAIN HARNESS
3J	L	TO MAIN HARNESS
4J	L/B	TO MAIN HARNESS
5J	G/W	TO MAIN HARNESS
6J	LG/Y	TO MAIN HARNESS
7J	BR/LG	TO MAIN HARNESS
8J	SB/BR	TO MAIN HARNESS
9J	BR	TO MAIN HARNESS
10J	BR	TO MAIN HARNESS
11J	O/B	TO MAIN HARNESS
12J	L	TO MAIN HARNESS
13J	SB/O	TO MAIN HARNESS
14J	Y	TO MAIN HARNESS
15J	–	TO MAIN HARNESS
16J	R	TO MAIN HARNESS
17J	G	TO MAIN HARNESS
18J	SB	TO MAIN HARNESS
19J	O	TO MAIN HARNESS
20J	O/B	TO MAIN HARNESS
21J	Y/R	TO MAIN HARNESS
22J	P	TO MAIN HARNESS
23J	W	TO MAIN HARNESS
24J	W/R	TO MAIN HARNESS
25J	V	TO MAIN HARNESS
26J	L	TO MAIN HARNESS
27J	R	TO MAIN HARNESS
28J	L	TO MAIN HARNESS
29J	G/O	TO MAIN HARNESS
30J	SB	TO MAIN HARNESS
31J	LG	TO MAIN HARNESS
32J	R	TO MAIN HARNESS
33J	L	TO MAIN HARNESS
34J	Y	TO MAIN HARNESS
35J	P	TO MAIN HARNESS
36J	G/R	TO MAIN HARNESS
37J	LG/B	TO MAIN HARNESS
38J	SB	TO MAIN HARNESS
39J	Y/L	TO MAIN HARNESS
40J	BR	TO MAIN HARNESS
41J	L	TO MAIN HARNESS
42J	L	TO MAIN HARNESS
43J	SB	TO MAIN HARNESS
44J	BR	TO MAIN HARNESS
45J	BG	TO MAIN HARNESS
46J	P/Y	TO MAIN HARNESS
47J	Y/GR	TO MAIN HARNESS
48J	V	TO MAIN HARNESS
49J	BR/Y	TO MAIN HARNESS
50J	G/W	TO MAIN HARNESS
51J	–	TO MAIN HARNESS
52J	SHIELD	TO MAIN HARNESS
53J	R	TO MAIN HARNESS
54J	L	TO MAIN HARNESS
55J	R	TO MAIN HARNESS
56J	W	TO MAIN HARNESS
57J	L/G	TO MAIN HARNESS
58J	O	TO MAIN HARNESS
59J	–	TO MAIN HARNESS
60J	SHIELD	TO MAIN HARNESS
61J	G	TO MAIN HARNESS
62J	–	TO MAIN HARNESS
63J	R/W	TO MAIN HARNESS
64J	L/W	TO MAIN HARNESS
65J	SHIELD	TO MAIN HARNESS
66J	B	TO MAIN HARNESS
67J	SHIELD	TO MAIN HARNESS
68J	O/L	TO MAIN HARNESS
69J	SHIELD	TO MAIN HARNESS
70J	BR	TO MAIN HARNESS
71J	L/W	TO MAIN HARNESS
72J	–	TO MAIN HARNESS
72J	–	TO MAIN HARNESS
73J	–	TO MAIN HARNESS
74J	SHIELD	TO MAIN HARNESS
75J	LG/B	TO MAIN HARNESS
76J	R	TO MAIN HARNESS
77J	SHIELD	TO MAIN HARNESS
78J	GR/B	TO MAIN HARNESS
79J	B	TO MAIN HARNESS
80J	W	TO MAIN HARNESS
81J	SHIELD	TO MAIN HARNESS
82J	L/R	TO MAIN HARNESS
83J	–	TO MAIN HARNESS
84J	–	TO MAIN HARNESS
85J	Y/B	TO MAIN HARNESS
86J	G	TO MAIN HARNESS
87J	B/R	TO MAIN HARNESS
88J	SHIELD	TO MAIN HARNESS
89J	GR/R	TO MAIN HARNESS
90J	L	TO MAIN HARNESS
91J	L/B	TO MAIN HARNESS
92J	SB	TO MAIN HARNESS
93J	B	TO MAIN HARNESS
94J	L	TO MAIN HARNESS
95J	LG	TO MAIN HARNESS
96J	R	TO MAIN HARNESS
97J	B/Y	TO MAIN HARNESS
98J	L/B	TO MAIN HARNESS
99J	W/L	TO MAIN HARNESS
100J	SB	TO MAIN HARNESS

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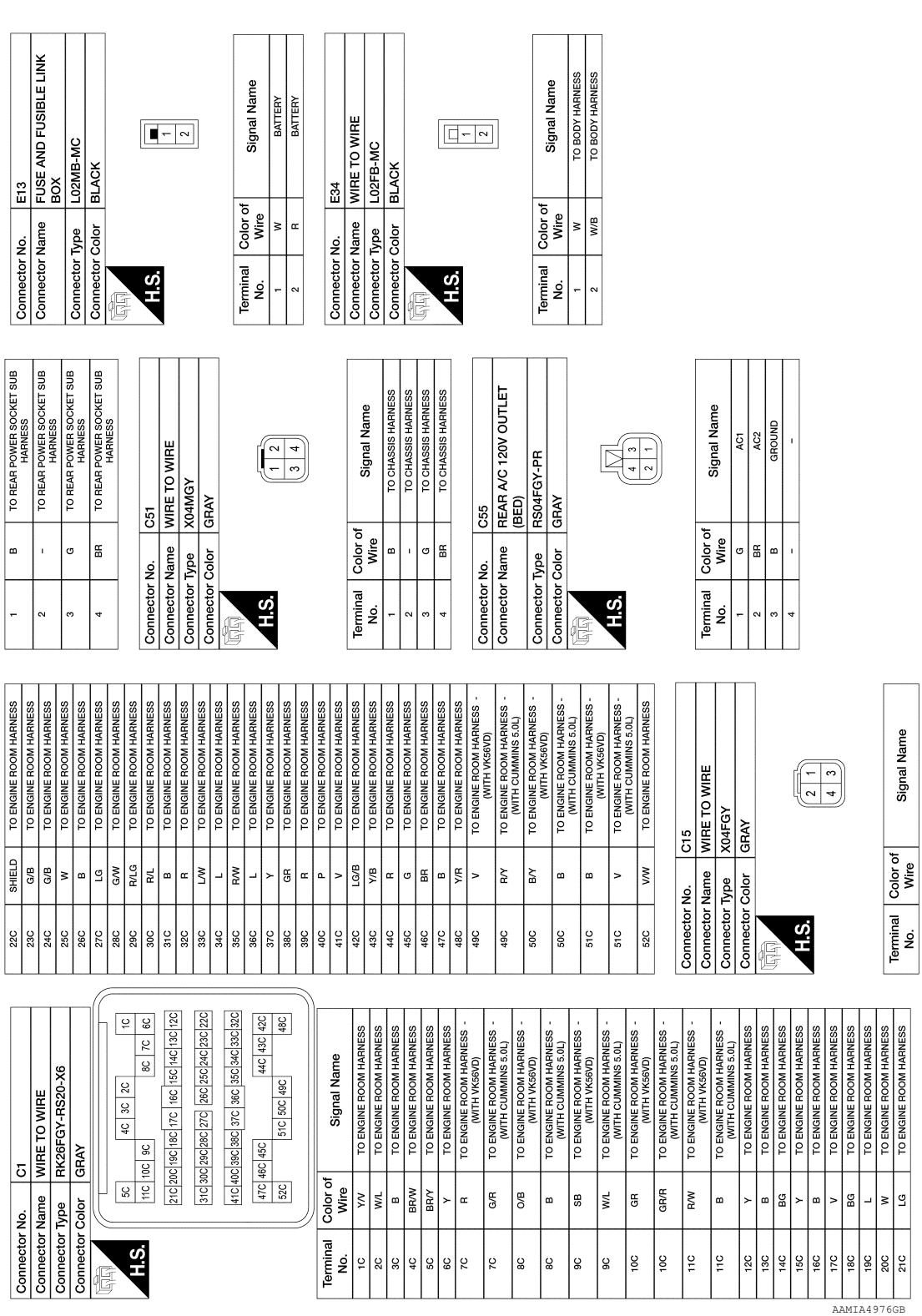
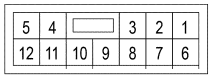
INVERTER SYSTEM CONNECTORS



INVERTER SYSTEM CONNECTORS

Connector No.	E35
Connector Name	WIRE TO WIRE
Connector Type	NS12FW-CS
Connector Color	WHITE

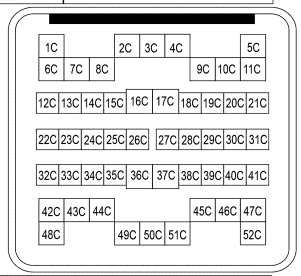
H.S.



Terminal No.	Color of Wire	Signal Name
1	Y	TO BODY HARNESS
2	V	TO BODY HARNESS
3	L	TO BODY HARNESS
4	W	TO BODY HARNESS
5	R/G	TO BODY HARNESS
6	SB	TO BODY HARNESS
7	P	TO BODY HARNESS
8	L	TO BODY HARNESS
9	SHIELD	TO BODY HARNESS
10	B	TO BODY HARNESS
11	R	TO BODY HARNESS
12	BR	TO BODY HARNESS

Connector No.	E41
Connector Name	WIRE TO WIRE
Connector Type	RK26MGY-RS20-X6
Connector Color	GRAY

H.S.



Terminal No.	Color of Wire	Signal Name
1C	Y/V	TO CHASSIS HARNESS
2C	W/L	TO CHASSIS HARNESS
3C	B	TO CHASSIS HARNESS
4C	BR/W	TO CHASSIS HARNESS
5C	BR/Y	TO CHASSIS HARNESS

6C	Y	TO CHASSIS HARNESS
7C	G/R	TO CHASSIS HARNESS - (WITH CUMMINS 5.0L)
7C	R	TO CHASSIS HARNESS - (WITH VK56VD)
8C	B	TO CHASSIS HARNESS - (WITH CUMMINS 5.0L)
8C	O/B	TO CHASSIS HARNESS - (WITH VK56VD)
9C	W/L	TO CHASSIS HARNESS - (WITH CUMMINS 5.0L)
9C	SB	TO CHASSIS HARNESS - (WITH VK56VD)
10C	GR/R	TO CHASSIS HARNESS - (WITH CUMMINS 5.0L)
10C	GR	TO CHASSIS HARNESS - (WITH VK56VD)
11C	B	TO CHASSIS HARNESS - (WITH CUMMINS 5.0L)
11C	R/W	TO CHASSIS HARNESS - (WITH VK56VD)
12C	Y	TO CHASSIS HARNESS
13C	B	TO CHASSIS HARNESS
14C	BG	TO CHASSIS HARNESS
15C	Y	TO CHASSIS HARNESS
16C	B	TO CHASSIS HARNESS
17C	V	TO CHASSIS HARNESS
18C	BG	TO CHASSIS HARNESS
19C	L	TO CHASSIS HARNESS
20C	BG	TO CHASSIS HARNESS
21C	B	TO CHASSIS HARNESS
22C	SHIELD	TO CHASSIS HARNESS
23C	G/B	TO CHASSIS HARNESS
24C	G/Y	TO CHASSIS HARNESS
25C	W	TO CHASSIS HARNESS
26C	B	TO CHASSIS HARNESS
27C	LG	TO CHASSIS HARNESS
28C	G/W	TO CHASSIS HARNESS
29C	R/G	TO CHASSIS HARNESS - (WITHOUT BULB CHECK)
29C	G/R	TO CHASSIS HARNESS - (WITH BULB CHECK)
30C	R/L	TO CHASSIS HARNESS
31C	B	TO CHASSIS HARNESS
32C	R	TO CHASSIS HARNESS
33C	L/W	TO CHASSIS HARNESS
34C	L	TO CHASSIS HARNESS
35C	R/W	TO CHASSIS HARNESS
36C	L	TO CHASSIS HARNESS
37C	Y	TO CHASSIS HARNESS
38C	BR	TO CHASSIS HARNESS
39C	R	TO CHASSIS HARNESS
40C	P	TO CHASSIS HARNESS
41C	V	TO CHASSIS HARNESS
42C	G/B	TO CHASSIS HARNESS
43C	Y/B	TO CHASSIS HARNESS
44C	R	TO CHASSIS HARNESS

45C	G	TO CHASSIS HARNESS
46C	BR	TO CHASSIS HARNESS
47C	B	TO CHASSIS HARNESS
48C	Y/R	TO CHASSIS HARNESS
49C	R/Y	TO CHASSIS HARNESS - (WITH CUMMINS 5.0L)
49C	V	TO CHASSIS HARNESS - (WITH VK56VD)
50C	B	TO CHASSIS HARNESS - (WITH CUMMINS 5.0L)
50C	B/Y	TO CHASSIS HARNESS - (WITH VK56VD)
51C	V	TO CHASSIS HARNESS - (WITH CUMMINS 5.0L)
51C	B	TO CHASSIS HARNESS - (WITH VK56VD)
52C	B	TO CHASSIS HARNESS - (WITHOUT FFV)
52C	L	TO CHASSIS HARNESS - (WITH FFV)
52C	V/W	TO CHASSIS HARNESS

Connector No.	E59
Connector Name	INVERTER RELAY
Connector Type	24347_9F900
Connector Color	BLUE

H.S.

Terminal No.	Color of Wire	Signal Name
1	SB	RELAY CONTROL
2	G/R	IGNITION
3	W	IGNITION
5	W	BATTERY

Connector No.	E85
Connector Name	FUSIBLE LINK BOX RH (BATTERY)
Connector Type	24340_79907
Connector Color	-

H.S.

Terminal No.	Color of Wire	Signal Name
9	B	BATTERY

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INVERTER SYSTEM CONNECTORS

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1G	G	TO MAIN HARNESS
2G	B/R	TO MAIN HARNESS
3G	W/B	TO MAIN HARNESS
4G	BR/W	TO MAIN HARNESS
5G	BR	TO MAIN HARNESS
6G	P	TO MAIN HARNESS - (WITH VK56VD)
6G	R/W	TO MAIN HARNESS - (WITH CUMMINS 5.0L)
7G	Y	TO MAIN HARNESS
8G	G	TO MAIN HARNESS
9G	R	TO MAIN HARNESS
10G	W	TO MAIN HARNESS
11G	R/G	TO MAIN HARNESS
12G	W/B	TO MAIN HARNESS
13G	BR	TO MAIN HARNESS
14G	Y/B	TO MAIN HARNESS
15G	G/W	TO MAIN HARNESS
16G	G	TO MAIN HARNESS
17G	G/Y	TO MAIN HARNESS
18G	G/Y	TO MAIN HARNESS
19G	Y/V	TO MAIN HARNESS
20G	G/Y	TO MAIN HARNESS
21G	B/Y	TO MAIN HARNESS
22G	G/R	TO MAIN HARNESS
23G	Y/R	TO MAIN HARNESS
24G	G/B	TO MAIN HARNESS
25G	R/W	TO MAIN HARNESS
26G	R	TO MAIN HARNESS
27G	LG	TO MAIN HARNESS
28G	G/B	TO MAIN HARNESS
29G	G/B	TO MAIN HARNESS
30G	BR/Y	TO MAIN HARNESS
31G	P	TO MAIN HARNESS - (WITH CUMMINS 5.0L)
31G	R	TO MAIN HARNESS - (WITH VK56VD)
32G	P	TO MAIN HARNESS
33G	Y/L	TO MAIN HARNESS
34G	GR	TO MAIN HARNESS
35G	G/R	TO MAIN HARNESS
36G	SB	TO MAIN HARNESS
37G	R/W	TO MAIN HARNESS
38G	BR	TO MAIN HARNESS
39G	BR	TO MAIN HARNESS
40G	-	TO MAIN HARNESS
41G	R/G	TO MAIN HARNESS
42G	O	TO MAIN HARNESS
43G	B	TO MAIN HARNESS - (WITH CUMMINS 5.0L)
43G	G	TO MAIN HARNESS - (WITH VK56VD)
44G	R/Y	TO MAIN HARNESS
45G	G	TO MAIN HARNESS
46G	LG	TO MAIN HARNESS
47G	R	TO MAIN HARNESS
48G	W	TO MAIN HARNESS
49G	-	TO MAIN HARNESS
50G	BR	TO MAIN HARNESS
51G	R	TO MAIN HARNESS
52G	L	TO MAIN HARNESS
53G	W	TO MAIN HARNESS
54G	W	TO MAIN HARNESS
55G	G	TO MAIN HARNESS
56G	W	TO MAIN HARNESS
57G	Y	TO MAIN HARNESS
58G	BG	TO MAIN HARNESS
59G	BG	TO MAIN HARNESS
60G	BG	TO MAIN HARNESS
61G	B	TO MAIN HARNESS
62G	W	TO MAIN HARNESS
63G	R	TO MAIN HARNESS
64G	W/L	TO MAIN HARNESS
65G	W/R	TO MAIN HARNESS
66G	BG	TO MAIN HARNESS
67G	BG	TO MAIN HARNESS
68G	B	TO MAIN HARNESS
69G	Y	TO MAIN HARNESS
70G	L	TO MAIN HARNESS
71G	R/W	TO MAIN HARNESS
72G	L/W	TO MAIN HARNESS
73G	SHIELD	TO MAIN HARNESS
74G	W	TO MAIN HARNESS
75G	R	TO MAIN HARNESS
76G	R/G	TO MAIN HARNESS
77G	G	TO MAIN HARNESS
78G	W	TO MAIN HARNESS
79G	-	TO MAIN HARNESS
80G	R	TO MAIN HARNESS
81G	L	TO MAIN HARNESS
82G	R	TO MAIN HARNESS
83G	L	TO MAIN HARNESS
84G	L	TO MAIN HARNESS
85G	W/B	TO MAIN HARNESS
86G	B/R	TO MAIN HARNESS
87G	W/B	TO MAIN HARNESS
88G	P	TO MAIN HARNESS
89G	L	TO MAIN HARNESS
90G	G	TO MAIN HARNESS
91G	G	TO MAIN HARNESS
92G	V/W	TO MAIN HARNESS
93G	BR	TO MAIN HARNESS
94G	G	TO MAIN HARNESS
95G	G	TO MAIN HARNESS
96G	W	TO MAIN HARNESS
97G	R	TO MAIN HARNESS
98G	W/B	TO MAIN HARNESS
99G	BR	TO MAIN HARNESS
100G	GR/W	TO MAIN HARNESS

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH
Connector Color	GREEN

H.S.

20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21

Terminal No.	Color of Wire	Signal Name
1	G	ENG START SW NO ESCL
2	-	-
3	R	A/L POWER SUPPLY 5V
4	W/R	A/L SIGNAL
5	-	-
6	-	-
7	-	-
8	-	-
9	-	-
10	SB	COMBI SW IN 5
11	G/Y	COMBI SW IN 4
12	Y	COMBI SW IN 3
13	G/B	COMBI SW IN 2
14	V	COMBI SW IN 1
15	-	-
16	-	-
17	P	GND RF A/L
18	V	SECURITY INDICATOR
19	-	-
20	R	SHIFT P
21	R/W	STEP LAMP CONT
22	-	-
23	Y	AIRCON SW
24	-	-
25	W	BRAKE SW FUSE
26	L	SHORT IN PIN INPUT
27	R/G	BRAKE SW LAMP
28	-	-
29	W	BLOWER FAN SW
30	P	DR DOOR LOCK STATUS
31	-	-
32	Y	REAR DEFOGGER SW
33	-	-
34	-	-
35	R/G	REVERSE SW
36	W/B	HAZARD SW
37	-	-
38	-	-
39	B/R	SHIFT N/P
40	-	-

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INVERTER SYSTEM CONNECTORS

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH
Connector Color	BLACK

H.S.

60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44 43 42 41
80 79 78 77 76 75 74 73 72 71 70 69 68 67 66 65 64 63 62 61

Terminal No.	Color of Wire	Signal Name
41	Y/L	TRAILER LIGHT CHECK RELAY OUT
42	R/Y	CARGO LAMP OUT
43	–	–
44	–	–
45	–	–
46	–	–
47	–	–
48	R	HIGH SIDE START SW LED
49	–	–
50	–	–
51	–	–
52	W	AUDIO DONGLE
53	–	–
54	W/L	PW UART
55	W/B	L&R SENSOR K-LINE
56	–	–
57	–	–
58	–	–
59	P	CAN-L
60	L	CAN-H
61	O	REAR DEFOGGER RELAY OUT
62	W	STARTER RELAY OUT
63	–	–
64	P	BUZZER OUT
65	–	–
66	W	BLOWER FAN RELAY OUT
67	G	IGN ELEC RELAY OUT 2
68	L	MR OUTPUT
69	R/B	AT DEVICE OUT
70	P	IGN USM OUT 1
71	O	DR REQUEST SW
72	G	AS REQUEST SW
73	–	–
74	–	–
75	L/W	COMBI SW OUT 5
76	P	COMBI SW OUT 4
77	L	COMBI SW OUT 3
78	O/B	COMBI SW OUT 2
79	R/W	COMBI SW OUT 1
80	–	–

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4
Connector Color	WHITE

H.S.

1G 2G 3G 4G 5G
6G 7G 8G 9G 10G

Terminal No.	Color of Wire	Signal Name
1G	G	TO ENGINE ROOM HARNESS
2G	B/R	TO ENGINE ROOM HARNESS
3G	W	TO ENGINE ROOM HARNESS
4G	BR/W	TO ENGINE ROOM HARNESS
5G	–	TO ENGINE ROOM HARNESS
6G	R/W	TO ENGINE ROOM HARNESS
7G	Y	TO ENGINE ROOM HARNESS
8G	G	TO ENGINE ROOM HARNESS
9G	R	TO ENGINE ROOM HARNESS
10G	W	TO ENGINE ROOM HARNESS
11G	R/G	TO ENGINE ROOM HARNESS
12G	W/B	TO ENGINE ROOM HARNESS
13G	BR	TO ENGINE ROOM HARNESS
14G	Y/B	TO ENGINE ROOM HARNESS
15G	G/W	TO ENGINE ROOM HARNESS
16G	G	TO ENGINE ROOM HARNESS
17G	O	TO ENGINE ROOM HARNESS
18G	G/Y	TO ENGINE ROOM HARNESS
19G	Y/V	TO ENGINE ROOM HARNESS
20G	G/Y	TO ENGINE ROOM HARNESS
21G	B/Y	TO ENGINE ROOM HARNESS
22G	G/R	TO ENGINE ROOM HARNESS
23G	Y/R	TO ENGINE ROOM HARNESS
24G	G/B	TO ENGINE ROOM HARNESS
25G	R/W	TO ENGINE ROOM HARNESS
26G	R	TO ENGINE ROOM HARNESS
27G	LG	TO ENGINE ROOM HARNESS
28G	G/B	TO ENGINE ROOM HARNESS
29G	G/B	TO ENGINE ROOM HARNESS
30G	BR/Y	TO ENGINE ROOM HARNESS
31G	R	TO ENGINE ROOM HARNESS
32G	R	TO ENGINE ROOM HARNESS
33G	Y/L	TO ENGINE ROOM HARNESS
34G	GR	TO ENGINE ROOM HARNESS
35G	G/R	TO ENGINE ROOM HARNESS
36G	SB	TO ENGINE ROOM HARNESS
37G	R/W	TO ENGINE ROOM HARNESS
38G	BR	TO ENGINE ROOM HARNESS
39G	BR	TO ENGINE ROOM HARNESS
40G	–	TO ENGINE ROOM HARNESS
41G	R/G	TO ENGINE ROOM HARNESS
42G	O	TO ENGINE ROOM HARNESS
43G	G	TO ENGINE ROOM HARNESS
44G	R/Y	TO ENGINE ROOM HARNESS
45G	G	TO ENGINE ROOM HARNESS
46G	LG	TO ENGINE ROOM HARNESS
47G	R	TO ENGINE ROOM HARNESS
48G	W	TO ENGINE ROOM HARNESS
49G	–	TO ENGINE ROOM HARNESS
50G	BR	TO ENGINE ROOM HARNESS
51G	R	TO ENGINE ROOM HARNESS
52G	L	TO ENGINE ROOM HARNESS
53G	W	TO ENGINE ROOM HARNESS
54G	W	TO ENGINE ROOM HARNESS
55G	G	TO ENGINE ROOM HARNESS
56G	W	TO ENGINE ROOM HARNESS
57G	Y	TO ENGINE ROOM HARNESS
58G	BG	TO ENGINE ROOM HARNESS
59G	BG	TO ENGINE ROOM HARNESS
60G	BG	TO ENGINE ROOM HARNESS
61G	O	TO ENGINE ROOM HARNESS
62G	W	TO ENGINE ROOM HARNESS
63G	O	TO ENGINE ROOM HARNESS
64G	W/L	TO ENGINE ROOM HARNESS
65G	W/R	TO ENGINE ROOM HARNESS
66G	BG	TO ENGINE ROOM HARNESS
67G	O	TO ENGINE ROOM HARNESS
68G	B	TO ENGINE ROOM HARNESS
69G	Y	TO ENGINE ROOM HARNESS
70G	L	TO ENGINE ROOM HARNESS
71G	R/W	TO ENGINE ROOM HARNESS
72G	L/W	TO ENGINE ROOM HARNESS
73G	SHIELD	TO ENGINE ROOM HARNESS
74G	W	TO ENGINE ROOM HARNESS
75G	R	TO ENGINE ROOM HARNESS
76G	R/G	TO ENGINE ROOM HARNESS
77G	BG	TO ENGINE ROOM HARNESS
78G	P	TO ENGINE ROOM HARNESS
79G	–	TO ENGINE ROOM HARNESS
80G	R	TO ENGINE ROOM HARNESS
81G	L	TO ENGINE ROOM HARNESS
82G	R	TO ENGINE ROOM HARNESS
83G	L	TO ENGINE ROOM HARNESS
84G	L	TO ENGINE ROOM HARNESS
85G	W	TO ENGINE ROOM HARNESS
86G	B/R	TO ENGINE ROOM HARNESS
87G	W	TO ENGINE ROOM HARNESS
88G	G	TO ENGINE ROOM HARNESS
89G	P	TO ENGINE ROOM HARNESS
90G	G	TO ENGINE ROOM HARNESS
91G	P	TO ENGINE ROOM HARNESS
92G	V/W	TO ENGINE ROOM HARNESS
93G	BR	TO ENGINE ROOM HARNESS
94G	B	TO ENGINE ROOM HARNESS
95G	G	TO ENGINE ROOM HARNESS
96G	R	TO ENGINE ROOM HARNESS
97G	R	TO ENGINE ROOM HARNESS
98G	W/B	TO ENGINE ROOM HARNESS
99G	R	TO ENGINE ROOM HARNESS
100G	GR/W	TO ENGINE ROOM HARNESS

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INVERTER SYSTEM CONNECTORS

Connector No.	M40
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1J	G	TO BODY HARNESS
2J	R/Y	TO BODY HARNESS
3J	L	TO BODY HARNESS
4J	L/B	TO BODY HARNESS
5J	B	TO BODY HARNESS
6J	BR	TO BODY HARNESS
7J	BG	TO BODY HARNESS
8J	SB	TO BODY HARNESS
9J	BR	TO BODY HARNESS
10J	R	TO BODY HARNESS
11J	O/B	TO BODY HARNESS
12J	L	TO BODY HARNESS
13J	W	TO BODY HARNESS
14J	Y	TO BODY HARNESS
15J	–	TO BODY HARNESS
16J	R	TO BODY HARNESS
17J	G	TO BODY HARNESS
18J	SB	TO BODY HARNESS
19J	O	TO BODY HARNESS
20J	O/B	TO BODY HARNESS
21J	Y	TO BODY HARNESS
22J	P	TO BODY HARNESS
23J	W	TO BODY HARNESS
24J	W/R	TO BODY HARNESS
25J	P	TO BODY HARNESS
26J	L	TO BODY HARNESS
27J	R	TO BODY HARNESS
28J	L	TO BODY HARNESS
29J	G/O	TO BODY HARNESS
30J	SB	TO BODY HARNESS
31J	L/G	TO BODY HARNESS
32J	R	TO BODY HARNESS
33J	BG	TO BODY HARNESS
34J	Y	TO BODY HARNESS
35J	P	TO BODY HARNESS
36J	G/R	TO BODY HARNESS
37J	LG	TO BODY HARNESS
38J	SB	TO BODY HARNESS
39J	Y	TO BODY HARNESS
40J	SB	TO BODY HARNESS
41J	L	TO BODY HARNESS
42J	L	TO BODY HARNESS
43J	W	TO BODY HARNESS
44J	BR	TO BODY HARNESS
45J	BG	TO BODY HARNESS
46J	P	TO BODY HARNESS
47J	O	TO BODY HARNESS
48J	V	TO BODY HARNESS
49J	BR	TO BODY HARNESS
50J	G/W	TO BODY HARNESS
51J	–	TO BODY HARNESS
52J	SHIELD	TO BODY HARNESS
53J	R	TO BODY HARNESS
54J	L	TO BODY HARNESS
55J	R	TO BODY HARNESS
56J	W	TO BODY HARNESS
57J	R	TO BODY HARNESS
58J	B	TO BODY HARNESS
59J	–	TO BODY HARNESS
60J	SHIELD	TO BODY HARNESS
61J	G	TO BODY HARNESS
62J	–	TO BODY HARNESS
63J	R/W	TO BODY HARNESS
64J	L/W	TO BODY HARNESS
65J	SHIELD	TO BODY HARNESS
66J	B	TO BODY HARNESS
67J	SHIELD	TO BODY HARNESS
68J	W	TO BODY HARNESS
69J	SHIELD	TO BODY HARNESS
70J	B/R	TO BODY HARNESS
71J	L/W	TO BODY HARNESS
72J	–	TO BODY HARNESS
73J	–	TO BODY HARNESS
74J	SHIELD	TO BODY HARNESS
75J	R	TO BODY HARNESS
76J	O	TO BODY HARNESS
77J	SHIELD	TO BODY HARNESS
78J	W	TO BODY HARNESS
79J	B	TO BODY HARNESS
80J	W	TO BODY HARNESS
81J	SHIELD	TO BODY HARNESS
82J	L/R	TO BODY HARNESS
83J	–	TO BODY HARNESS
84J	–	TO BODY HARNESS
85J	W	TO BODY HARNESS
86J	G	TO BODY HARNESS
87J	W	TO BODY HARNESS
88J	SHIELD	TO BODY HARNESS
89J	R	TO BODY HARNESS
90J	L	TO BODY HARNESS
91J	L/B	TO BODY HARNESS
92J	SB	TO BODY HARNESS
93J	B	TO BODY HARNESS
94J	LG	TO BODY HARNESS
95J	L	TO BODY HARNESS
96J	G	TO BODY HARNESS
97J	B/Y	TO BODY HARNESS
98J	L/B	TO BODY HARNESS
99J	W/L	TO BODY HARNESS
100J	Y	TO BODY HARNESS

Connector No.	M68
Connector Name	A/T SHIFT SELECTOR
Connector Type	TK08FW
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	B	GND
2	B	GND
3	L/R	SHIFT LOCK SOL OUT
4	R	SHIFT P
5	R/B	AT DEVICE OUT
6	LG	TOW MODE SW
7	BR	SHIFT UP
8	V/W	SHIFT DOWN

Connector No.	M70
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FBR-CS
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
1R	L	TAIL LAMP 2
2R	G/R	IGNITION
3R	Y/R	BATTERY
4R	–	–
5R	W	BATTERY
6R	G/W	ACCESSORY
7R	–	–
8R	–	–
9R	–	–
10R	W	BATTERY
11R	–	–
12R	BG	BATTERY
13R	B	ACCESSORY
14R	G/Y	BATTERY
15R	Y	BATTERY
16R	G/R	ACCESSORY

Connector No.	M138
Connector Name	A/C 120V OUTLET (CONSOLE)
Connector Type	NS04FW-CS
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	B	AC1
2	–	–
3	SHIELD	GROUND
4	R	AC2

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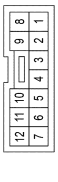
INVERTER SYSTEM CONNECTORS

Connector No.	M139
Connector Name	A/C 120V OUTLET MAIN SWITCH
Connector Type	TK12FW
Connector Color	WHITE

H.S.

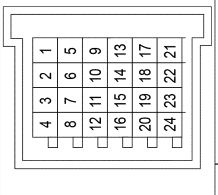


Terminal No.	Color of Wire	Signal Name
1	L	SWITCH OUT
2	G/R	IGNITION
3	G	400W OUTPUT INDICATOR
4	L	ILLUMINATION +
5	GR	ILLUMINATION -
6	G/R	IGNITION
7	SB	150 W OUTPUT INDICATOR
8	–	–
9	–	–
10	–	–
11	–	–
12	–	–

8	B	GND
9	–	–
10	B	GND
11	B	GND
12	B	GND
13	B	GND
14	B	GND
15	B	GND
16	–	–
17	B	GND
18	B	GND
19	SHIELD	GROUND
20	B	GND
21	B	GND
22	B	GND
23	B	GROUND
24	B	GROUND

Connector No.	M191
Connector Name	JOINT CONNECTOR-M01
Connector Type	NH24FW-J
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
1	–	–
2	B	GND
3	B	GND
4	B	GROUND
5	–	–
6	B	GND
7	B	GND

AAMIA4981GB

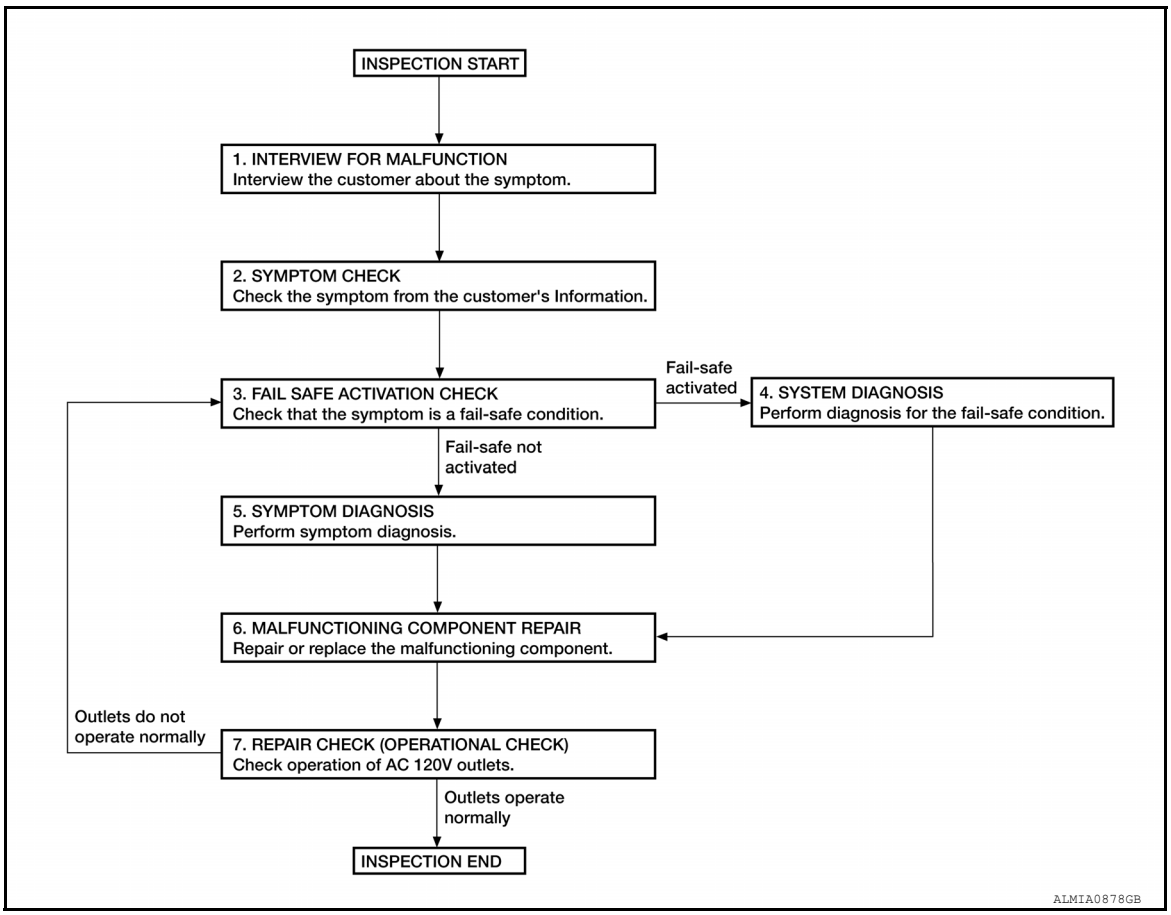
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000014387187

OVERALL SEQUENCE



DETAILED FLOW

1.INTERVIEW FOR MALFUNCTION

Interview the customer about the symptom.

>> GO TO 2.

2.SYMPTOM CHECK

Check the symptom from the customer's information.

>> GO TO 3.

3.FAIL-SAFE ACTIVATION CHECK

Check that the symptom is a fail-safe condition.

Is fail-safe activated?

YES >> GO TO 4.
NO >> GO TO 5.

4.SYSTEM DIAGNOSIS

Perform diagnosis for the fail-safe activated system. Specify the malfunctioning component.

>> GO TO 6.

5.SYMPTOM DIAGNOSIS

Perform symptom diagnosis. Specify the malfunctioning component.

>> GO TO 6.

6.MALFUNCTIONING COMPONENT REPAIR

Repair or replace the malfunctioning component.

>> GO TO 7.

7.REPAIR CHECK (OPERATION CHECK)

Check operation of AC 120V outlets.

Do the outlets operate normally?

YES >> Inspection End.
NO >> GO TO 3.

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000014387188

Regarding Wiring Diagram information, refer to PWO-22, "Wiring Diagram".

1.CHECK FUSE AND FUSIBLE LINK

Check that the following fuse and fusible link are not blown:

Signal name	Fuse or Fusible Link No. or Letter
Ignition switch ON or START	29 (5A)
Battery power supply (with Cummins 5.0L)	B (60A)
Battery power supply (with VK56VD)	AA (60A)

Is the fuse or fusible link blown?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit.
NO >> GO TO 2.

2.CHECK INVERTER RELAY

Check inverter relay. Refer to PWO-34, "Component Inspection (Inverter Relay)".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace inverter relay.

3.CHECK INVERTER UNIT POWER SUPPLY CIRCUIT

1. Connect inverter relay connector.
2. Disconnect inverter unit connector B2.
3. Connect a fused jumper wire between inverter unit connector B2 and ground.
4. Turn ignition switch ON.
5. Check voltage between inverter unit connector B1 and ground.

Inverter unit		Ground	Voltage (Approx.)
Connector	Terminal		
B1	14	—	Battery voltage

Is the inspection result normal?

YES >> GO TO 7.
NO >> GO TO 4.

4.CHECK INVERTER RELAY POWER SUPPLY CIRCUITS

1. Turn ignition switch OFF.
2. Disconnect inverter relay connector E59.
3. Check voltage between inverter relay connector E59 and ground.

Inverter relay		Ground	Voltage (Approx.)
Connector	Terminal		
E59	3	—	Battery voltage

4. Turn ignition switch ON.
5. Check voltage between inverter relay connector E59 and ground.

Inverter relay		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
E59	1	—	Ignition switch ON	Battery voltage
			Ignition switch OFF	0V

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace the inverter relay power supply circuit.

5.CHECK INVERTER UNIT POWER SUPPLY CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect inverter unit connector B1.
3. Check continuity between inverter relay connector E59 and inverter unit connector B1.

Inverter relay		Inverter unit		Continuity
Connector	Terminal	Connector	Terminal	
E59	3	B1	14	Yes

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace the inverter unit power supply circuit.

6.CHECK INVERTER RELAY COIL CIRCUIT FOR OPEN

Check continuity between inverter relay connector E59 and inverter unit connector B1.

Inverter relay		Inverter unit		Continuity
Connector	Terminal	Connector	Terminal	
E59	2	B1	11	Yes

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair or replace the inverter unit coil circuit.

7.CHECK INVERTER UNIT GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between inverter unit connector B1 and ground.

Inverter unit		Ground	Continuity
Connector	Terminal		
B1	13	—	Yes

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair or replace the inverter unit ground circuit.

Component Inspection (Inverter Relay)

INFOID:0000000014387189

1.CHECK INVERTER RELAY

1. Turn ignition switch OFF.
2. Disconnect inverter relay connector.
3. Apply battery voltage to inverter relay terminal 1 and ground to terminal 2.
4. Check continuity between inverter relay terminals 3 and 5.

Inverter relay terminals	Condition	Continuity
3 and 5	Battery voltage applied to terminal 1 and ground to terminal 2	Yes
	Voltage and ground removed	No

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace inverter relay.

AC 120 V OUTLET MAIN SWITCH POWER SUPPLY CIRCUIT

Diagnosis Procedure

INFOID:0000000014387190

Regarding Wiring Diagram information, refer to PWO-22, "Wiring Diagram".

1.CHECK FUSE

Check that the following fuse is not blown:

Signal name	Fuse No.
Ignition switch ON or START	29 (5A)

Is the fuse blown?

YES >> Replace the blown fuse after repairing the affected circuit.
NO >> GO TO 2.

2.CHECK POWER SUPPLY FOR AC 120V OUTLET MAIN SWITCH

1. Turn ignition switch ON.
2. Check for voltage between the AC 120V outlet main switch connector M139 and ground.

AC 120V outlet main switch		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M139	2	—	Ignition switch ON	Battery voltage
			Ignition switch OFF	0V

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair or replace the AC 120V main switch power supply circuit.

AC 120 V OUTLET MAIN SWITCH INPUT SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000014387191

Regarding Wiring Diagram information, refer to PWO-22, "Wiring Diagram".

1.CHECK AC 120V OUTLET MAIN SWITCH INPUT SIGNAL

1. Turn ignition switch ON.
2. Turn the AC 120V outlet main switch ON.
3. Check for voltage between the inverter unit harness connector B2 and ground.

Inverter unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
B2	5	—	AC 120V outlet main switch OFF	0V
			AC 120V outlet main switch ON	Battery voltage

Is the inspection result normal?

YES >> Inspection End.
NO >> GO TO 2.

2.CHECK AC 120V OUTLET MAIN SWITCH

Check AC 120V outlet main switch. Refer to PWO-37, "Component Inspection (AC 120V Outlet Main Switch)".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace AC 120V outlet main switch. Refer to PWO-49, "Removal and Installation".

3.CHECK HARNESS BETWEEN INVERTER UNIT AND AC 120V OUTLET MAIN SWITCH

1. Disconnect inverter unit connector B2.
2. Check for continuity between the inverter unit connector B2 and AC 120V outlet main switch connector M139.

Inverter unit		AC 120V outlet main switch		Continuity
Connector	Terminal	Connector	Terminal	
B2	5	M139	1	Yes

3. Check for continuity between inverter unit connector B2 and ground.

Inverter unit		Ground	Continuity
Connector	Terminal		
B2	5	—	No

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair or replace the AC 120V outlet main switch input signal circuit.

Component Inspection (AC 120V Outlet Main Switch)

INFOID:0000000014387192

1.CHECK AC 120V OUTLET MAIN SWITCH

1. Turn ignition switch OFF.
2. Disconnect AC 120V outlet main switch connector M139.
3. Check continuity between terminals 1 and 2 of AC 120V outlet main switch.

AC 120V outlet main switch terminals	Condition	Continuity
1 and 2	AC 120V outlet main switch ON	Yes
	AC 120V outlet main switch OFF	No

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace AC 120V outlet main switch. Refer to PWO-49, "Removal and Installation".

AC 120 V POWER OUTPUT CIRCUIT

Diagnosis Procedure

INFOID:0000000014387193

Regarding Wiring Diagram information, refer to PWO-22, "Wiring Diagram".

1.CHECK HARNESS BETWEEN INVERTER UNIT AND AC 120V OUTLETS

1. Turn ignition switch OFF.
2. Disconnect inverter unit connector B2, AC 120V outlet (console) connector M138 and rear AC 120V outlet (bed) connector C55.
3. Check continuity between inverter unit connector B2 and AC 120V outlet (console) connector M138.

Inverter unit		AC 120V outlet (console)		Continuity
Connector	Terminal	Connector	Terminal	
B2	1	M138	1	Yes
	7		4	

4. Check continuity between inverter unit connector B2 and rear AC 120V outlet (bed) connector C55.

Inverter unit		Rear AC 120V outlet (bed)		Continuity
Connector	Terminal	Connector	Terminal	
B2	1	C55	1	Yes
	7		2	

5. Check continuity between inverter unit connector B2 and ground.

Inverter unit		Ground	Continuity
Connector	Terminal		
B2	1	—	No
	7		

6. Check continuity between inverter unit connector B2 terminals 1 and 7.

Inverter unit			Continuity
Connector	Terminal		
B2	1	7	No

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the harness or connectors.

2.CHECK INVERTER UNIT OUTPUT SIGNAL

1. Connect inverter unit connector B2, AC 120V outlet (console) connector M138 and rear AC 120V outlet (bed) connector C55.
2. Turn ignition switch ON.
3. Turn the AC 120V outlet main switch ON (AC 120V outlet main switch 150W indicator ON).
4. Check voltage between inverter unit connector B2 terminals 1 and 7.

CAUTION:

- **To measure AC 120V output signal, always use the circuit tester AC range.**
- **Never allow the probes to contact each other.**

(+)	(-)	Condition	Voltage (Approx.)
Inverter unit connector B2		AC 120V outlet main switch	
Terminal			
1	7	All indicators OFF	0V
		150W indicator ON	AC 120V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace inverter unit. Refer to PWO-47, "Removal and Installation".

3. CHECK AC 120V OUTLET (CONSOLE) VOLTAGE

1. AC 120V outlet main switch ON (AC 120V outlet main switch 150W indicator ON).
2. Check voltage between AC 120V outlet front M138 terminals 1 and 4.

CAUTION:
- **To measure AC 120V output signal, always use the circuit tester AC range.**
- **Never allow the probes to contact each other.**

(+)	(-)	Condition	Voltage (Approx.)
AC 120V outlet (console) connector M138		AC 120V outlet main switch	
Terminal			
1	4	OFF	0V
		ON	AC 120V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AC 120V outlet front. Refer to PWO-50, "Removal and Installation - Front".

4. CHECK AC 120V OUTLET (CONSOLE) GROUND CIRCUIT

1. AC 120V outlet main switch OFF.
2. Turn ignition switch OFF.
3. Disconnect AC 120V outlet front connector.
4. Check continuity between AC 120V outlet front connector M138 terminal 3 and ground.

AC 120V outlet (console)		Ground	Continuity
Connector	Terminal		
M138	3	—	Yes

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair AC 120V outlet (console) ground circuit.

5. CHECK REAR AC 120V OUTLET (BED) VOLTAGE

1. Turn ignition switch ON.
2. AC 120V outlet main switch ON (AC 120V outlet main switch 150W indicator ON).
3. Check voltage between rear AC 120V outlet (bed) C55 terminals 1 and 2.

CAUTION:
- **To measure AC 120V output signal, always use the circuit tester AC range.**
- **Never allow the probes to contact each other.**

(+)	(-)	Condition	Voltage (Approx.)
Rear AC 120V outlet (bed) connector C55		AC 120V outlet main switch	
Terminal			
1	2	OFF	0V
		ON	AC 120V

Is the inspection result normal?

YES >> GO TO 6.
NO >> Replace rear AC 120V outlet (bed). Refer to PWO-50, "Removal and Installation - Rear".

6. CHECK REAR AC 120V OUTLET (BED) GROUND CIRCUIT

1. Turn the AC 120V outlet main switch OFF.
2. Turn ignition switch OFF.
3. Disconnect rear AC 120V outlet (bed) connector C55.
4. Check continuity between rear AC 120V outlet (bed) connector C55 and ground.

Rear AC 120V outlet (bed)		Ground	Continuity
Connector	Terminal		
C55	3	—	Yes

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair rear AC 120V outlet (bed) ground circuit.

AC 120 V OUTLET MAIN SWITCH INDICATOR CIRCUIT

Diagnosis Procedure (150W Indicator)

INFOID:0000000014387194

Regarding Wiring Diagram information, refer to PWO-22, "Wiring Diagram".

1.CHECK POWER SUPPLY FOR AC 120V OUTLET MAIN SWITCH INDICATOR

1. Turn ignition switch ON.
2. Check for voltage between the AC 120V outlet main switch connector M139 and ground.

AC 120V outlet main switch		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M139	6	—	Ignition switch ON	Battery voltage
			Ignition switch OFF	0V

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the AC 120V outlet main switch indicator power supply circuit.

2.CHECK AC 120V OUTLET MAIN SWITCH 150W INDICATOR GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AC 120V outlet main switch connector M139 and inverter unit connector B2.
3. Check continuity between AC 120V outlet main switch connector M139 and inverter unit connector B2.

AC 120V outlet main switch		Inverter unit		Continuity
Connector	Terminal	Connector	Terminal	
M139	7	B2	11	Yes

Is the inspection result normal?

YES >> Replace AC 120V outlet main switch. Refer to PWO-49, "Removal and Installation".
NO >> Repair or replace the AC 120V outlet main switch 150W indicator ground circuit.

Diagnosis Procedure (400W Indicator)

INFOID:0000000014387195

Regarding Wiring Diagram information, refer to PWO-22, "Wiring Diagram".

1.CHECK AC 120V OUTLET MAIN SWITCH INDICATORS

Check AC 120V outlet main switch indicators. Refer to PWO-43, "Component Inspection (AC 120V Outlet Main Switch Indicators)".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace AC 120V outlet main switch.

2.CHECK POWER SUPPLY FOR AC 120V OUTLET MAIN SWITCH INDICATOR

1. Turn ignition switch ON.
2. Check for voltage between the AC 120V outlet main switch connector M139 and ground.

AC 120V outlet main switch		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M139	6	—	Ignition switch ON	Battery voltage
			Ignition switch OFF	0V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the AC 120V outlet main switch indicator power supply circuit.

3. CHECK AC 120V OUTLET MAIN SWITCH 400W INDICATOR GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AC 120V outlet main switch connector M139 and inverter unit connector B2.
3. Check continuity between AC 120V outlet main switch connector M139 and inverter unit connector B2.

AC 120V outlet main switch		Inverter unit		Continuity
Connector	Terminal	Connector	Terminal	
M139	3	B2	3	Yes

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace the AC 120V outlet main switch 400W indicator ground circuit.

4. CHECK P RANGE SWITCH SIGNAL CIRCUIT

1. Disconnect shift lock control unit connector M68.
2. Check continuity between shift lock control unit connector M68 and inverter unit connector B2.

Shift lock control unit		Inverter unit		Continuity
Connector	Terminal	Connector	Terminal	
M68	4	B2	12	Yes

Is the inspection result normal?

YES >> Replace inverter unit. Refer to PWO-47, "Removal and Installation".
NO >> Repair or replace the P range switch signal circuit.

Component Inspection (AC 120V Outlet Main Switch Indicators)

INFOID:0000000014387196

1. CHECK AC 120V OUTLET MAIN SWITCH INDICATORS

1. Turn ignition switch OFF.
2. Disconnect AC 120V outlet main switch connector M139.
3. Apply battery voltage to AC 120V outlet main switch terminal 6 and ground to terminal 7.

AC 120V outlet main switch terminals	Condition	150W indicator
6 and 7	Battery voltage applied to terminal 6 and ground to terminal 7	ON
	Voltage and ground removed	OFF

4. Apply battery voltage to AC 120V outlet main switch terminal 6 and ground to terminal 3.

AC 120V outlet main switch terminals	Condition	400W indicator
6 and 3	Battery voltage applied to terminal 6 and ground to terminal 3	ON
	Voltage and ground removed	OFF

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace AC 120V outlet main switch. Refer to PWO-49, "Removal and Installation".

SYMPTOM DIAGNOSIS

NO OUTPUT FROM AC 120 V OUTLET

Diagnosis Procedure

INFOID:0000000014387197

1.CHECK FAIL-SAFE ACTIVATION

Check if the symptom is caused by a fail-safe operation. Refer to PWO-21, "Fail-safe".

Is fail-safe operating?

YES >> Repair the part causing fail-safe operation.
NO >> GO TO 2.

2.CHECK INVERTER UNIT POWER SUPPLY CIRCUIT

Check inverter unit power supply circuit. Refer to PWO-33, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning parts.

3.CHECK AC 120V OUTLET MAIN SWITCH POWER SUPPLY CIRCUIT

Check AC 120V outlet main switch power supply circuit. Refer to PWO-36, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace the malfunctioning parts.

4.CHECK AC 120V OUTLET MAIN SWITCH INPUT SIGNAL CIRCUIT

Check AC 120V outlet main switch input signal circuit. Refer to PWO-37, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace the malfunctioning parts.

5.CHECK INVERTER UNIT POWER OUTPUT CIRCUIT

Check inverter unit power output circuit. Refer to PWO-39, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Refer to GI-47, "Intermittent Incident".
NO >> Repair or replace the malfunctioning parts.

AC 120 V OUTLET MAIN SWITCH INDICATOR DOES NOT TURN ON

Diagnosis Procedure

INFOID:0000000014387198

1.CHECK FAIL-SAFE ACTIVATION

Check if the symptom is caused by a fail-safe operation. Refer to PWO-21, "Fail-safe".

Is fail-safe operating?

YES >> Repair the part causing fail-safe operation.
NO >> GO TO 2.

2.CHECK INVERTER UNIT POWER SUPPLY CIRCUIT

Check inverter unit power supply circuit. Refer to PWO-33, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning parts.

3.CHECK AC 120V OUTLET MAIN SWITCH POWER SUPPLY CIRCUIT

Check AC 120V outlet main switch power supply circuit. Refer to PWO-36, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace the malfunctioning parts.

4.CHECK AC 120V OUTLET MAIN SWITCH INPUT SIGNAL CIRCUIT

Check AC 120V outlet main switch input signal circuit. Refer to PWO-37, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace the malfunctioning parts.

5.CHECK AC 120V OUTLET MAIN SWITCH INDICATOR CIRCUIT

Check AC 120V outlet main switch indicator circuit. Refer to PWO-42, "Diagnosis Procedure (150W Indicator)".

Is the inspection result normal?

YES >> Refer to GI-47, "Intermittent Incident".
NO >> Repair or replace the malfunctioning parts.

NORMAL OPERATING CONDITION

Description

INFOID:0000000014387199

Because of modified sine wave output, the AC 120V outlet may not operate normally the electric appliance of which electric power consumption is 150W or less.

- Electric appliances requiring a large amount of electric power consumption at startup (e.g., CRT-based TV, power tool)
- Measuring instruments for data requiring accuracy (e.g., medical equipment, measuring instrument)
- Microprocessor-controlled appliances (e.g., microprocessor-controlled blanket)

Noise may be caused in radio or TV, depending on the electric appliance.

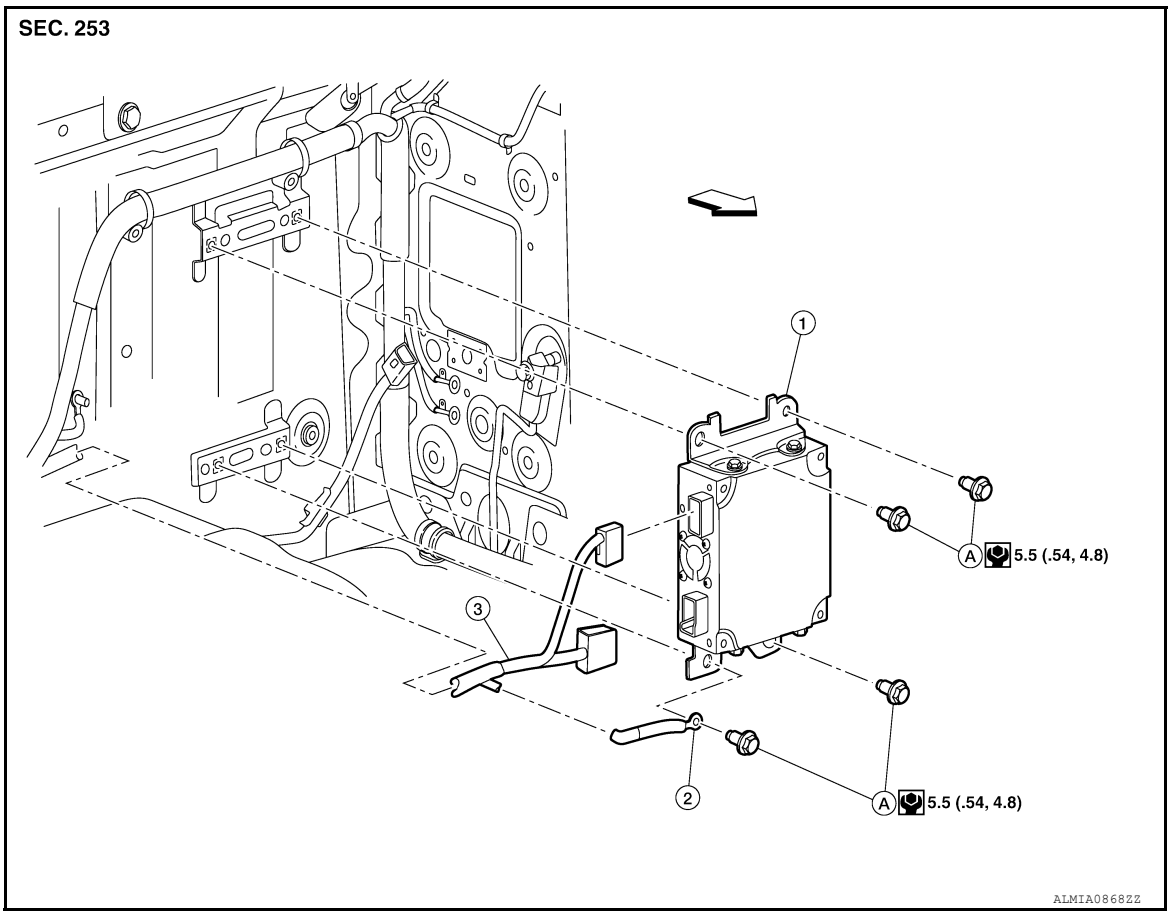
REMOVAL AND INSTALLATION

INVERTER UNIT

Removal and Installation

INFOID:0000000014387200

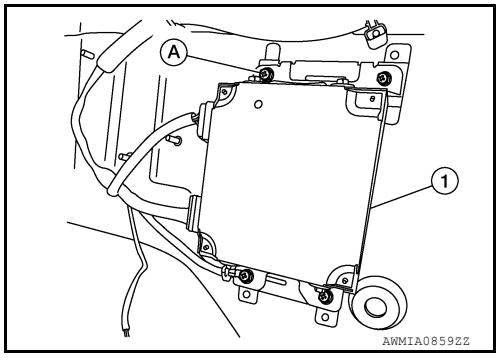
Exploded View



1. Inverter assembly
2. Ground connection
3. Electrical connectors
A. Inverter assembly bolt
⇦ Front

REMOVAL

1. Remove inverter unit fuse.
2. Remove the LH rear seat. Refer to SE-116, "LH SEAT : Removal and Installation".
3. Remove the rear step plate.
4. Remove the LH lower pillar trim.
5. Remove the LH upper pillar trim.
6. Position the rear back panel aside.
7. Remove the inverter unit bolts (A).
8. Disengage the hooks from the inverter bracket.
9. Disconnect the two harness connectors from the inverter unit.
10. Remove the inverter unit (1).



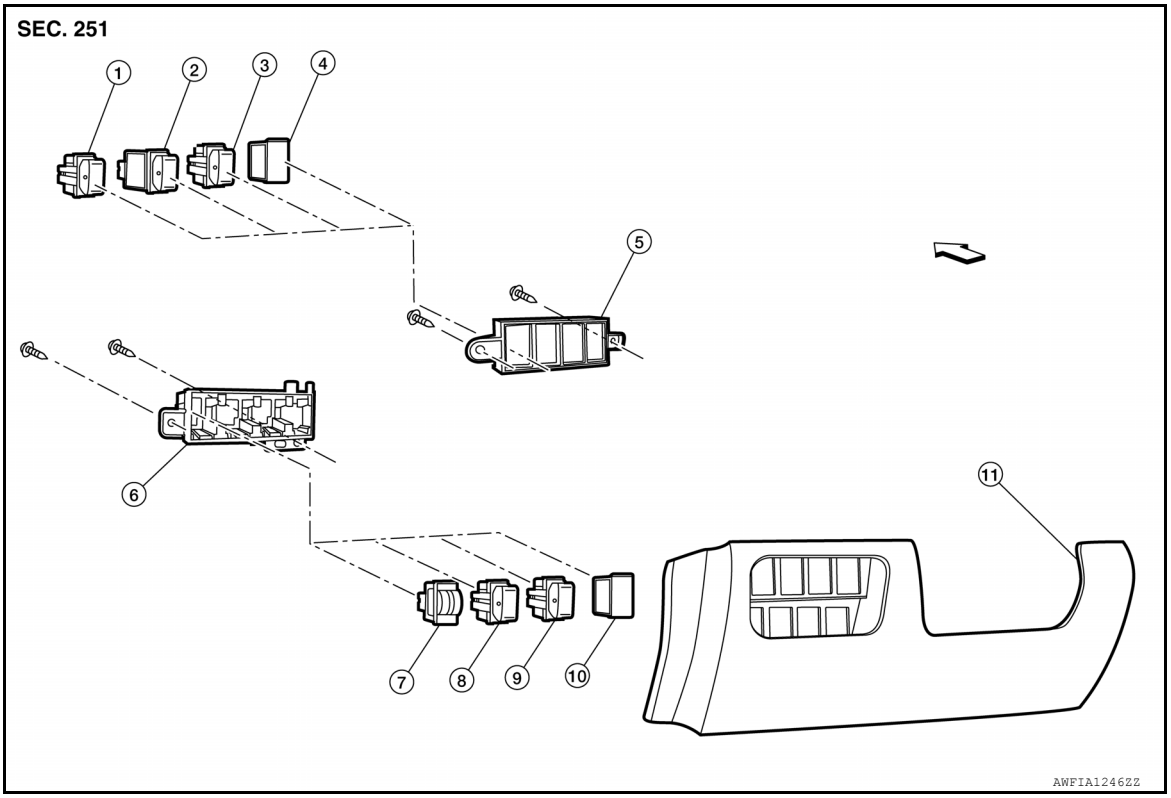
INSTALLATION

Installation is in the reverse order of removal.

AC 120V OUTLET MAIN SW

Exploded View

INFOID:0000000014387201



1.	Front fog lamp switch (if equipped)	2.	AC 120v outlet main switch	3.	Cargo lamp switch
4.	Mask	5.	Upper switch carrier	6.	Lower switch carrier
7.	Headlamp aiming switch (if equipped)	8.	Differential lock mode switch (if equipped)	9.	Hill descent control switch
10.	Mask	11.	Instrument lower panel LH	⇦	Front

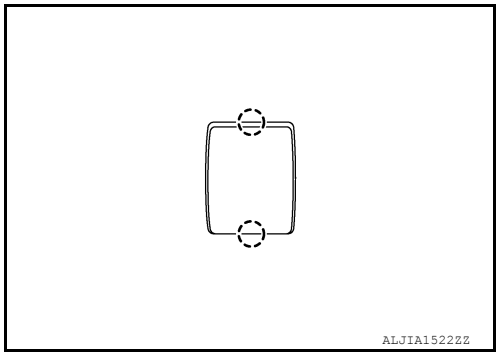
Removal and Installation

INFOID:0000000014387202

REMOVAL

1. Remove instrument lower panel LH. Refer to IP-22, "Removal and Installation".
2. Remove upper switch carrier.
3. Release pawls using suitable tool and remove AC 120V outlet main switch from upper switch carrier.

◌ : Pawl



INSTALLATION

Installation is in the reverse order of removal.

AC 120 V OUTLET

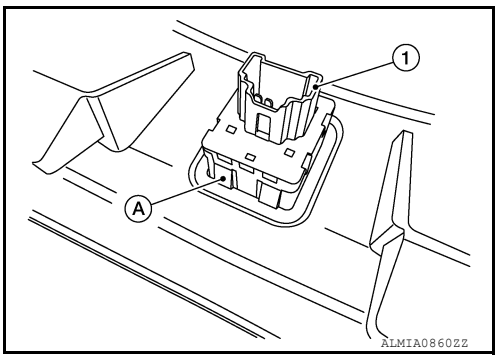
Removal and Installation - Front

INFOID:0000000014387203

AC 120V OUTLET FRONT

REMOVAL

1. Remove center console rear finisher. Refer to IP-23, "Exploded View".
2. Release the pawl (A) from the back of the center console rear finisher.
3. Remove the AC 120V outlet (1).



INSTALLATION

Installation is in the reverse order of removal.

Removal and Installation - Rear

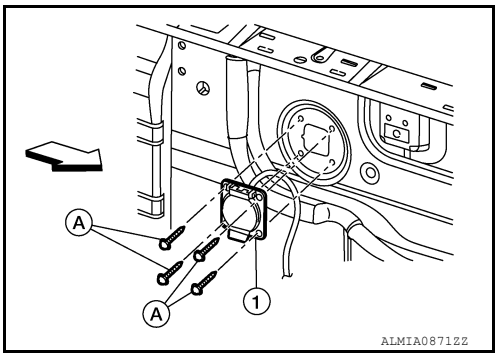
INFOID:0000000014387204

AC 120V OUTLET (CARGO BED)

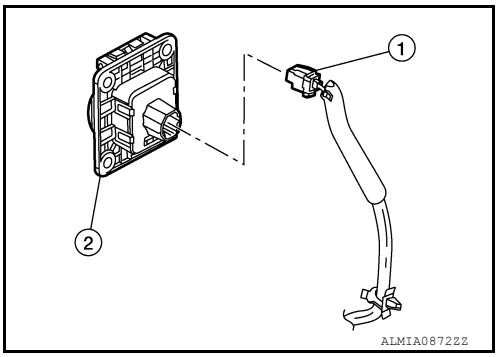
REMOVAL

1. Remove the fuse for the AC 120V outlet.
2. Remove the rivets (A) attaching the AC 120V outlet finisher (1) to the cargo bed.

⇦ : Front



3. Disconnect the harness connector (1) from the AC 120V outlet (2).
4. Remove the AC 120V outlet.



Installation

Installation is in the reverse order of removal.

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

AC 120V Power Outlet

INFOID:0000000014387205

Rated voltage output		AC 120V (+/- 10%)
Operating voltage range		DC 11.5V to 15V (Inverter terminal)
Rated power output	Low power mode	150W
	High power mode	400W
Output over current protection	High power mode	3.7A or more
Input over current protection	Low power mode	13.3A or more
Output frequency		60Hz (+/- 10%)
Parasitic current		< 1mA
Max. input current		45A (during continuous power)
Rated continuous power		400W @ 40°C (104°F) Maximum
Overheat protection (Thermistor)		100°C (212°F)