

SECTION **CHG**
CHARGING SYSTEM

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

CONTENTS

PRECAUTION	2	CHARGING SYSTEM PRELIMINARY INSPECTION	16
PRECAUTIONS	2	Diagnosis Procedure	16
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	2	B TERMINAL CIRCUIT	17
Precaution for Power Generation Voltage Variable Control System	2	Description	17
PREPARATION	3	Diagnosis Procedure	17
PREPARATION	3	L TERMINAL CIRCUIT (OPEN)	18
Special Service Tool	3	Description	18
Commercial Service Tool	3	Diagnosis Procedure	18
SYSTEM DESCRIPTION	4	L TERMINAL CIRCUIT (SHORT)	20
COMPONENT PARTS	4	Description	20
Component Parts Location	4	Diagnosis Procedure	20
Component Description	4	S TERMINAL CIRCUIT	21
CHARGING SYSTEM	5	Description	21
System Diagram	5	Diagnosis Procedure	21
System Description	5	SYMPTOM DIAGNOSIS	22
WIRING DIAGRAM	6	CHARGING SYSTEM	22
CHARGING SYSTEM	6	Symptom Table	22
Wiring Diagram	6	REMOVAL AND INSTALLATION	23
BASIC INSPECTION	10	GENERATOR	23
DIAGNOSIS AND REPAIR WORKFLOW	10	Exploded View	23
Work Flow (With EXP-800 NI or GR8-1200 NI)	10	Removal and Installation	23
Work Flow (Without EXP-800 NI or GR8-1200 NI)	13	Inspection	24
DTC/CIRCUIT DIAGNOSIS	16	SERVICE DATA AND SPECIFICATIONS (SDS)	25
		SERVICE DATA AND SPECIFICATIONS (SDS)	25
		Generator	25

PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000012548805

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 Power Generation Voltage Variable Control System

INFOID:000000012548806

CAUTION:

For this model, the battery current sensor that is installed to the battery cable at the negative terminal measures the charging/discharging current of the battery, and performs various controls. If the electrical component or the ground wire is connected directly to the battery terminal, the current other than that being measured with the battery current sensor is charging to or discharging from the battery. This condition causes the malfunction of the control, and then the battery discharge may occur. Do not connect the electrical component or the ground wire directly to the battery terminal.

PREPARATION

< PREPARATION >

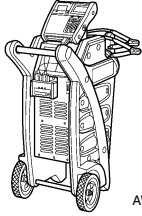
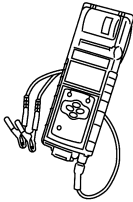
PREPARATION

PREPARATION

Special Service Tool


INFOID:0000000012548807

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

Tool number (TechMate No.) Tool name	Description
<p>— (—) Model GR8-1200 NI Multitasking battery and electrical diagnostic station</p>  <p style="text-align: right;">AWI1A1239ZZ</p>	<p>Tests batteries, starting and charging systems and charges batteries. For operating instructions, refer to diagnostic station instruction manual.</p>
<p>— (—) Model EXP-800 NI Battery and electrical diagnostic analyzer</p>  <p style="text-align: right;">JSMIA0806ZZ</p>	<p>Tests batteries and charging systems. For operating instructions, refer to diagnostic analyzer instruction manual.</p>

Commercial Service Tool

INFOID:0000000012548808

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

A
B
C
D
E
F
G
H
I
J
K
L

CHG

COMPONENT PARTS

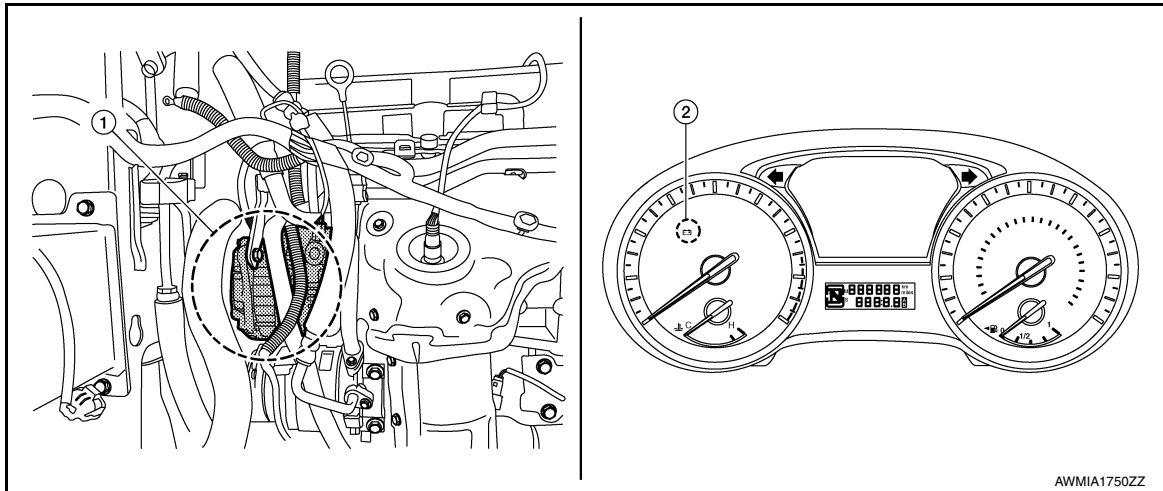
< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:000000012548809



AWMIA1750ZZ

1. Generator

2. Combination Meter

Component Description

INFOID:000000012548810

Component part	Description
Generator (IC regulator)	The IC regulator controls the generator voltage based on the received PWM command signal. When there is no PWM command signal, the generator performs the normal power generation according to the characteristic of the IC regulator.
Combination meter (charge warning lamp)	The IC regulator warning function activates to illuminate the charge warning lamp if any of the following symptoms occur while generator is operating: ·Excessive voltage is produced. ·No voltage is produced.

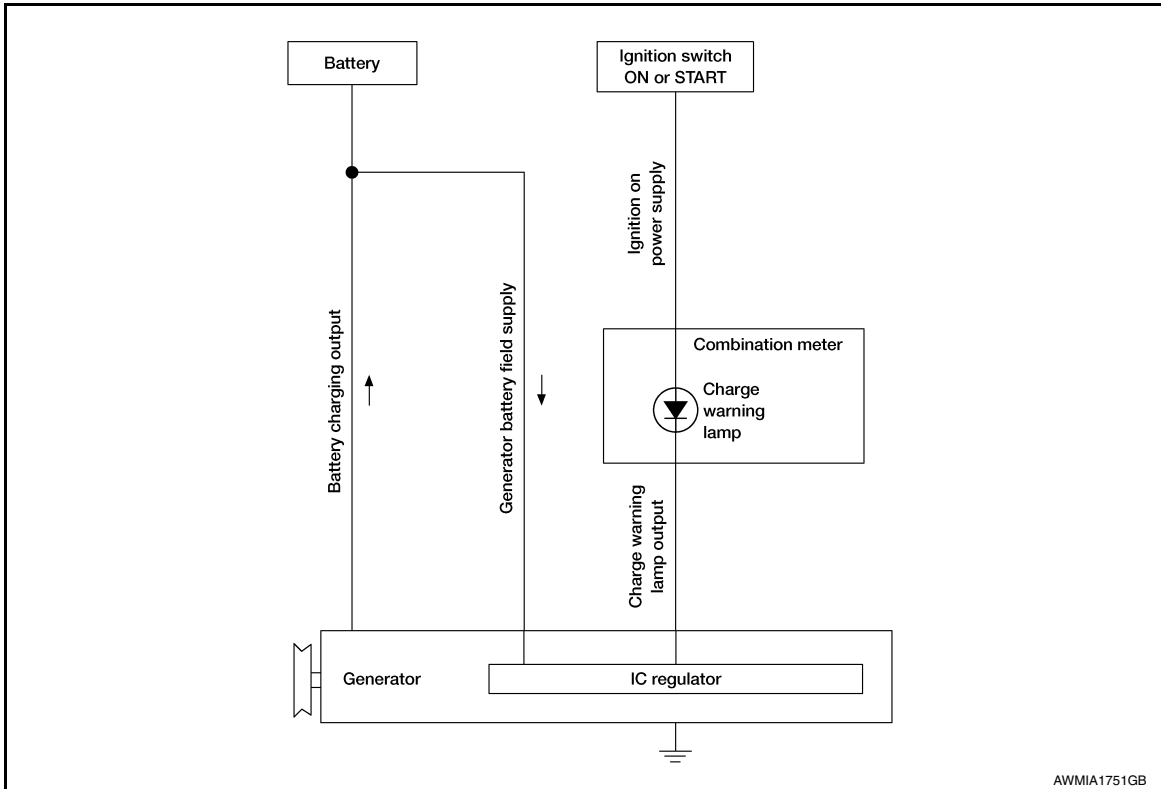
CHARGING SYSTEM

< SYSTEM DESCRIPTION >

CHARGING SYSTEM

System Diagram

INFOID:0000000012548811



AWMIA1751GB

System Description

INFOID:0000000012548812

The generator provides DC voltage to operate the vehicle's electrical system and to keep the battery charged. The voltage output is controlled by the IC regulator.

A
B
C
D
E
F
G
H
I
J
K
L

CHG

CHARGING SYSTEM

< WIRING DIAGRAM >

WIRING DIAGRAM

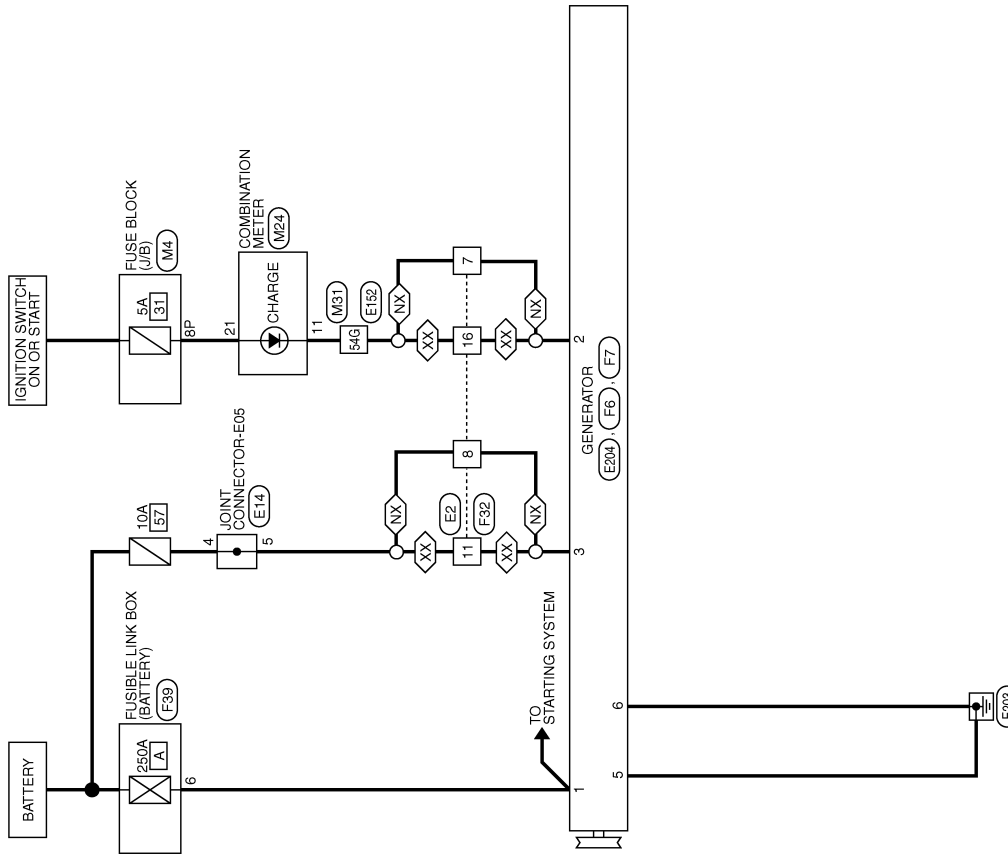
CHARGING SYSTEM

Wiring Diagram

INFOID:000000012548813

(NX) : EXCEPT FOR MEXICO
(XX) : FOR MEXICO

CHARGING SYSTEM



ABMWA3557GB

CHARGING SYSTEM

< WIRING DIAGRAM >

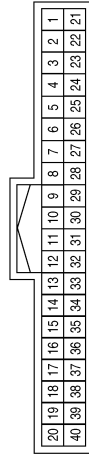
CHARGING SYSTEM CONNECTORS

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



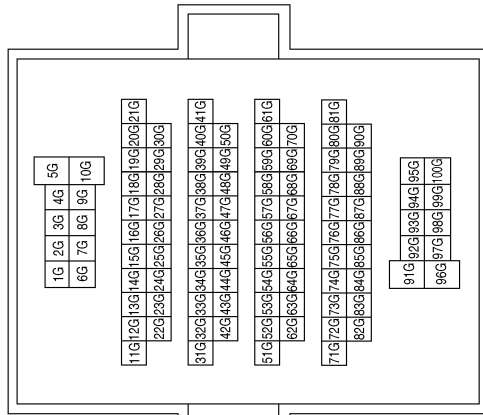
Terminal No.	Color of Wire	Signal Name
8P	BG	-

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE

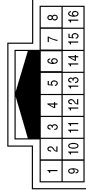


Terminal No.	Color of Wire	Signal Name
11	BG	ALTERNATOR (CHARGE)
21	BG	IGN

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



Connector No.	E2
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7	P	-
8	LG	-
11	LG	-
16	P	- (FOR MEXICO)

ABMIA7984GB

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

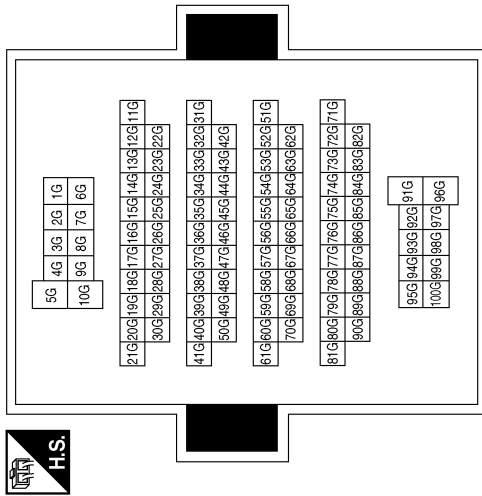
CHG

CHARGING SYSTEM

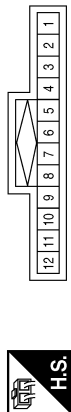
< WIRING DIAGRAM >

Terminal No.	Color of Wire	Signal Name
54G	P	-

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



Connector No.	E14
Connector Name	JOINT CONNECTOR-E05
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
4	LG	-
5	LG	-

Connector No.	F7
Connector Name	GENERATOR
Connector Color	BLACK

Connector No.	F6
Connector Name	GENERATOR
Connector Color	-

Connector No.	E204
Connector Name	GENERATOR
Connector Color	-



Terminal No.	Color of Wire	Signal Name
2	GR	-
3	Y	-

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



Terminal No.	Color of Wire	Signal Name
5	B	-
6	B	-

ABMIA7985GB

CHARGING SYSTEM


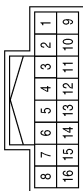
< WIRING DIAGRAM >

Connector No.	F39
Connector Name	FUSIBLE LINK BOX (BATTERY)
Connector Color	-

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

Connector No.	F32
Connector Name	WIRE TO WIRE
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
7	GR	-
8	Y	-
11	Y	-
16	GR	-(FOR MEXICO)

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

CHG

ABMIA7986GB

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow (With EXP-800 NI or GR8-1200 NI)

INFOID:0000000012548814

CHARGING SYSTEM DIAGNOSIS WITH EXP-800 NI OR GR8-1200 NI

To test the charging system, use the following special service tools:

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

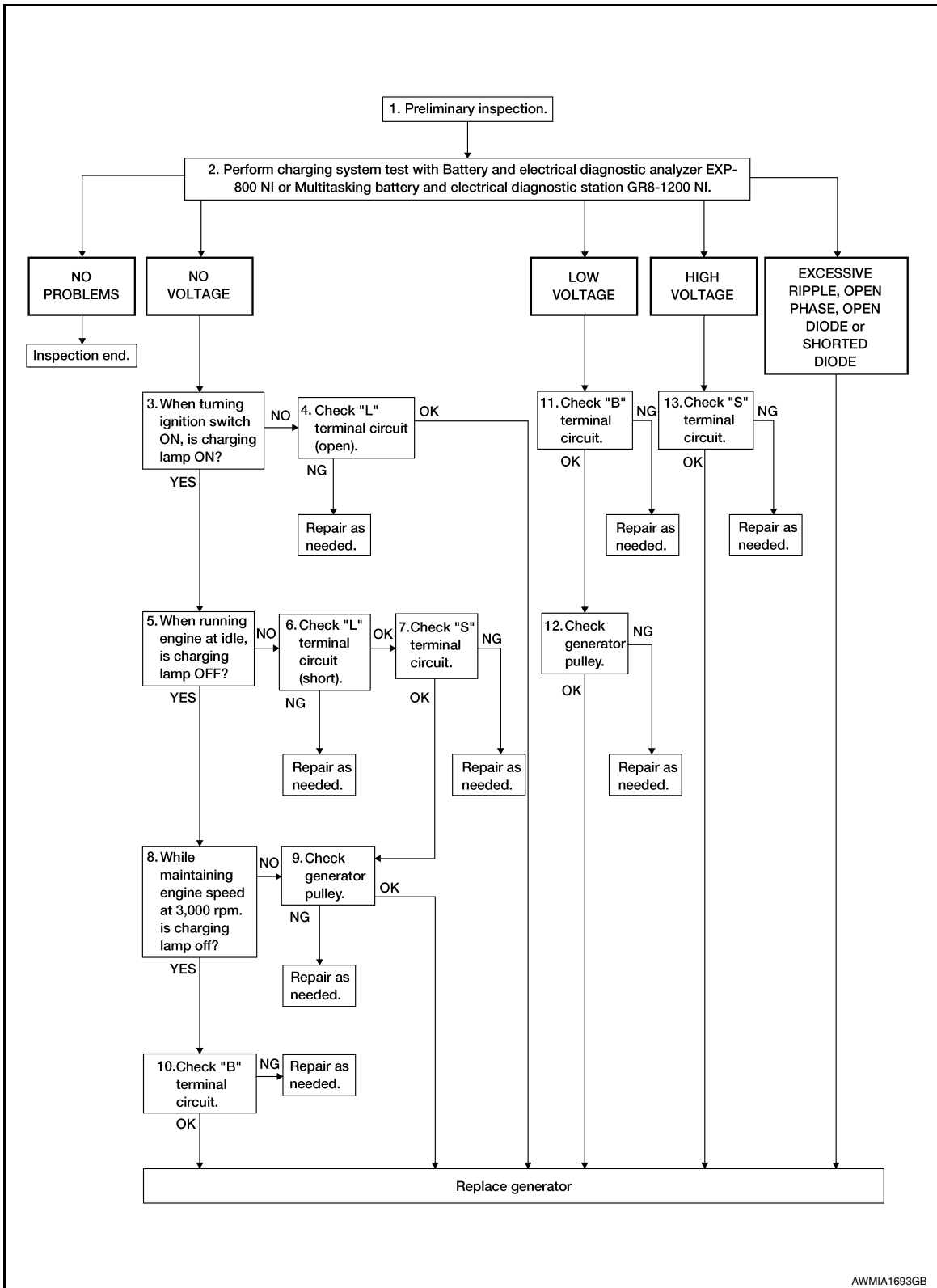
NOTE:

Refer to the applicable Instruction Manual for proper charging system diagnosis procedures.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

OVERALL SEQUENCE



DETAILED FLOW

NOTE:

To ensure a complete and thorough diagnosis, the battery, stator and generator test segments must be done as a set from start to finish.

1. PRELIMINARY INSPECTION

Perform the preliminary inspection. Refer to [CHG-16. "Diagnosis Procedure"](#).

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

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

>> GO TO 2.

2. DIAGNOSIS WITH EXP-800 NI OR GR8-1200 NI

Perform the charging system test using Multitasking battery and electrical diagnostic station GR8-1200 NI or Battery and electrical diagnostic analyzer EXP-800 NI. Refer to the applicable Instruction Manual for proper testing procedures.

Test result

NO PROBLEMS>>Charging system is normal and will also show "DIODE RIPPLE" test result.

NO VOLTAGE>>GO TO 3.

LOW VOLTAGE>>GO TO 11.

HIGH VOLTAGE>>GO TO 13.

EXCESSIVE RIPPLE, OPEN PHASE, OPEN DIODE or SHORTED DIODE>>Replace the generator. Refer to [CHG-23. "Removal and Installation"](#). Perform "DIODE RIPPLE" test again using Multitasking battery and electrical diagnostic station GR8-1200 NI or Battery and electrical diagnostic analyzer EXP-800 NI to confirm repair.

3. INSPECTION WITH CHARGE WARNING LAMP (IGNITION SWITCH IS ON)

Turn the ignition switch ON.

Does the charge warning lamp illuminate?

YES >> GO TO 5.

NO >> GO TO 4.

4. "L" TERMINAL CIRCUIT (OPEN) INSPECTION

Check "L" terminal circuit (open). Refer to [CHG-18. "Diagnosis Procedure"](#).

Is the "L" terminal circuit normal?

YES >> Replace generator. Refer to [CHG-23. "Removal and Installation"](#).

NO >> Repair as needed.

5. INSPECTION WITH CHARGE WARNING LAMP (IDLING)

Start the engine and run it at idle.

Does the charge warning lamp turn OFF?

YES >> GO TO 8.

NO >> GO TO 6.

6. "L" TERMINAL CIRCUIT (SHORT) INSPECTION

Check "L" terminal circuit (short). Refer to [CHG-20. "Diagnosis Procedure"](#).

Is the "L" terminal normal?

YES >> GO TO 7.

NO >> Repair as needed.

7. "S" TERMINAL CIRCUIT INSPECTION

Check "S" terminal circuit. Refer to [CHG-21. "Diagnosis Procedure"](#).

Is the "S" terminal circuit normal?

YES >> GO TO 9.

NO >> Repair as needed.

8. INSPECTION WITH CHARGE WARNING LAMP (ENGINE AT 3,000 RPM)

Increase and maintain the engine speed at 3,000 rpm.

Does the charge warning lamp remain off?

YES >> GO TO 10.

NO >> GO TO 9.

9. INSPECTION OF GENERATOR PULLEY

Check generator pulley. Refer to [CHG-24. "Inspection"](#).

Is generator pulley normal?

YES >> Replace generator. Refer to [CHG-23. "Removal and Installation"](#).

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

NO >> Repair as needed.

10. "B" TERMINAL CIRCUIT INSPECTION

Check "B" terminal circuit. Refer to [CHG-17. "Diagnosis Procedure"](#).

Is "B" terminal circuit normal?

YES >> Replace generator. Refer to [CHG-23. "Removal and Installation"](#).

NO >> Repair as needed.

11. "B" TERMINAL CIRCUIT INSPECTION

Check "B" terminal circuit. Refer to [CHG-17. "Diagnosis Procedure"](#).

Is "B" terminal circuit normal?

YES >> GO TO 12.

NO >> Repair as needed.

12. INSPECTION OF GENERATOR PULLEY

Check generator pulley. Refer to [CHG-24. "Inspection"](#).

Is generator pulley normal?

YES >> Replace generator. Refer to [CHG-23. "Removal and Installation"](#).

NO >> Repair as needed.

13. "S" TERMINAL CIRCUIT INSPECTION

Check "S" terminal circuit. Refer to [CHG-21. "Diagnosis Procedure"](#).

Is the "S" terminal circuit normal?

YES >> Replace generator. Refer to [CHG-23. "Removal and Installation"](#).

NO >> Repair as needed.

Work Flow (Without EXP-800 NI or GR8-1200 NI)

INFOID:0000000012548815

OVERALL SEQUENCE

Before performing a generator test, make sure that the battery is fully charged. A 30-volt voltmeter and suitable test probes are necessary for the test.

- Before starting, inspect the fusible link.

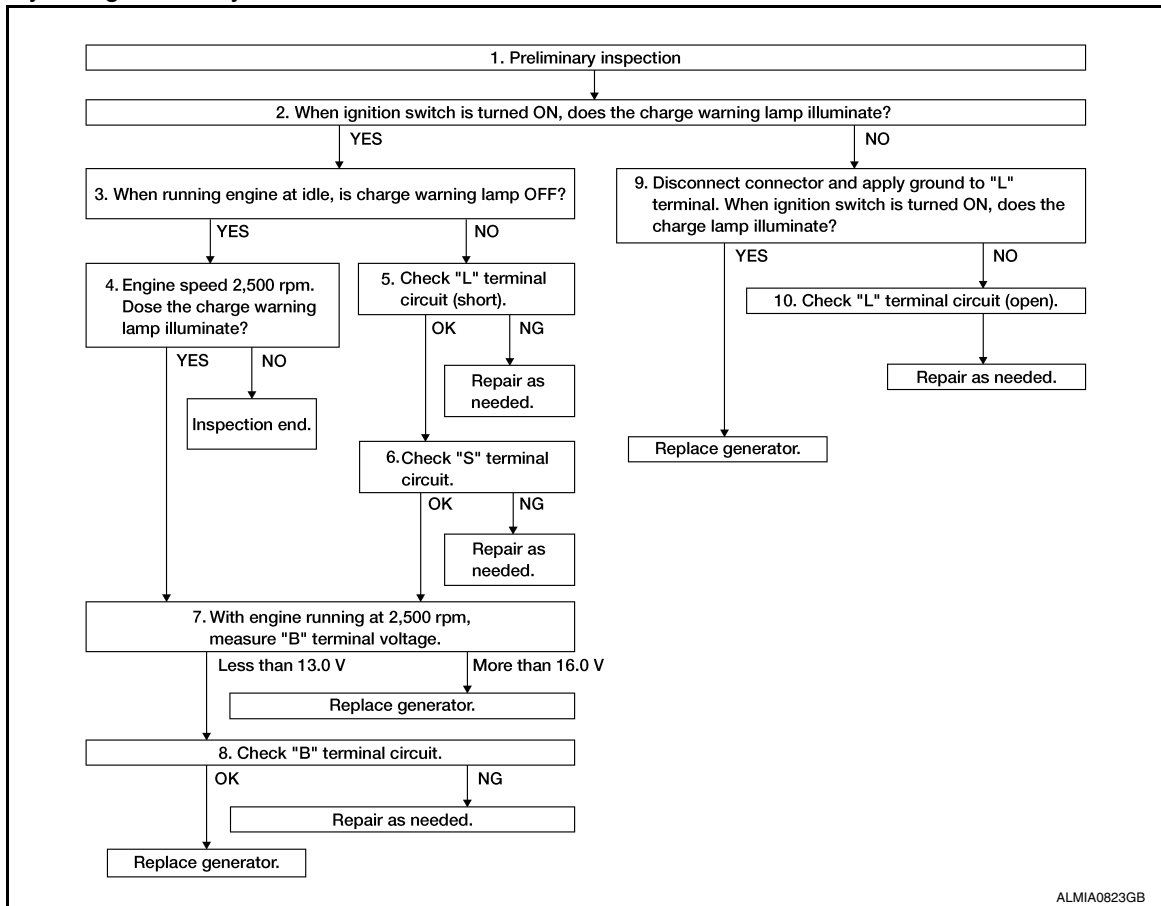
A
B
C
D
E
F
G
H
I
J
K
L
N
O
P

CHG

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

- Use fully charged battery.



ALMIA0823GB

DETAILED FLOW

1. PRELIMINARY INSPECTION

Perform the preliminary inspection. Refer to [CHG-16, "Diagnosis Procedure"](#).

>> GO TO 2.

2. INSPECTION WITH CHARGE WARNING LAMP (IGNITION SWITCH IS TURNED ON)

When ignition switch is turned ON.

Does the charge warning lamp illuminate?

YES >> GO TO 3.

NO >> GO TO 9.

3. INSPECTION WITH CHARGE WARNING LAMP (IDLING)

Start the engine and run it at idle

Does the charge warning lamp turn OFF?

YES >> GO TO 4.

NO >> GO TO 5.

4. INSPECTION WITH CHARGE WARNING LAMP (ENGINE AT 2,500 RPM)

Increase and maintain the engine speed at 2,500 rpm.

Does the charge warning lamp illuminate?

YES >> GO TO 7.

NO >> Inspection End.

5. "L" TERMINAL CIRCUIT (SHORT) INSPECTION

Check terminal "L" circuit for (short). Refer to [CHG-20, "Diagnosis Procedure"](#).

Is the inspection result normal?

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

- YES >> GO TO 6.
- NO >> Repair as needed.

6. "S" TERMINAL CIRCUIT INSPECTION

Check terminal "S" circuit. Refer to [CHG-21. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> GO TO 7.
- NO >> Repair as needed.

7. MEASURE "B" TERMINAL VOLTAGE

Start engine. With engine running at 2,500 rpm, measure "B" terminal voltage.

What voltage does the measurement result show?

- Less than 13.0 V >> GO TO 8.
- More than 16.0 V >> Replace generator. Refer to [CHG-23. "Removal and Installation"](#).

8. "B" TERMINAL CIRCUIT INSPECTION

Check "B" terminal circuit. Refer to [CHG-17. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Replace generator. Refer to [CHG-23. "Removal and Installation"](#).
- NO >> Repair as needed.

9. INSPECTION WITH CHARGE WARNING LAMP (IGNITION SWITCH IS ON)

1. Disconnect generator connector and apply ground to "L" terminal.
2. Turn the ignition switch ON.

Does the charge warning lamp illuminate?

- YES >> Replace generator. Refer to [CHG-23. "Removal and Installation"](#).
- NO >> GO TO 10.

10. CHECK "L" TERMINAL CIRCUIT (OPEN)

Check "L" terminal circuit (OPEN). Refer to [CHG-18. "Diagnosis Procedure"](#).

>> Repair as needed.

A
B
C
D
E
F
G
H
I
J
K
L

CHG

N
O
P

CHARGING SYSTEM PRELIMINARY INSPECTION

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

CHARGING SYSTEM PRELIMINARY INSPECTION

Diagnosis Procedure

INFOID:0000000012548816

1. CHECK BATTERY TERMINALS CONNECTION

Check if battery terminals are clean and tight.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair battery terminal connection. Confirm repair by performing complete Charging system test using EXP-800 NI or GR8-1200 NI (if available). Refer to the applicable Instruction Manual for proper testing procedures.

2. CHECK FUSE

Check for blown fuse and fusible link.

Unit	Power source (Power supply terminals)	Fuse or Fusible Link
Generator	Battery (terminal 3)	Fuse 57
	Battery (terminal 1)	Fusible Link A
Combination meter	Ignition switch ON (terminal 2)	Fuse 31

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the blown fuse or fusible link after repairing the affected circuit.

3. CHECK GENERATOR GROUND TERMINAL CONNECTION

Check if connector E204 terminals 5 and 6 are clean.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair connection.

4. CHECK DRIVE BELT TENSION

Check drive belt tension. Refer to [CHG-23, "Removal and Installation"](#).

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair as needed.

B TERMINAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

B TERMINAL CIRCUIT

Description

INFOID:000000012548817

"B" terminal circuit supplies power to charge the battery and to operate the vehicles electrical system.

Diagnosis Procedure

INFOID:000000012548818

Regarding Wiring Diagram information. Refer to [CHG-6, "Wiring Diagram"](#).

1.CHECK "B" TERMINAL CONNECTION

1. Turn ignition switch OFF.
2. Check if "B" terminal is clean and tight.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair terminal "B" connection. Confirm repair by performing complete Charging system test using the EXP-800 NI or GR8-1200 NI (if available). Refer to applicable Instruction Manual for proper testing procedures.

2.CHECK "B" TERMINAL CIRCUIT

Check voltage between generator "B" terminal and ground.

(+)		(-)	Voltage (Approx.)
Generator			
Connector	Terminal		
F6	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check harness for open between generator and fusible link.

3.CHECK "B" TERMINAL CONNECTION (VOLTAGE DROP TEST)

1. Start engine, then engine running at idle and warm.
2. Check voltage between battery positive terminal and generator connector "B" terminal.

(+)		(-)	Voltage (Approx.)
Generator			
Connector	Terminal		
F6	1	Battery positive terminal	Less than 0.2V

Is the inspection result normal?

YES >> "B" terminal circuit is normal. Refer to [CHG-10, "Work Flow \(With EXP-800 NI or GR8-1200 NI\)"](#) or [CHG-13, "Work Flow \(Without EXP-800 NI or GR8-1200 NI\)"](#).

NO >> Check harness between battery and generator for continuity.

L TERMINAL CIRCUIT (OPEN)

< DTC/CIRCUIT DIAGNOSIS >

L TERMINAL CIRCUIT (OPEN)

Description

INFOID:000000012548819

The "L" terminal circuit controls the charge warning lamp. The charge warning lamp turns ON when the ignition switch is set to ON or START. When the generator is providing sufficient voltage with the engine running, the charge warning lamp turns OFF. If the charge warning lamp illuminates with the engine running, a malfunction is indicated.

Diagnosis Procedure

INFOID:000000012548820

Regarding Wiring Diagram information. Refer to [CHG-6, "Wiring Diagram"](#).

1. CHECK "L" TERMINAL CONNECTION

1. Turn ignition switch OFF.
2. Check if "L" terminal is clean and tight.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair "L" terminal connection. Confirm repair by performing complete Charging system test using EXP-800 NI or GR8-1200 NI (if available). Refer to applicable Instruction Manual for proper testing procedures.

2. CHECK "L" TERMINAL CIRCUIT (OPEN)

1. Disconnect the generator connector.
2. Apply ground to generator harness connector terminal.
3. Check condition of the charge warning lamp with the ignition switch in the ON position.

Generator		Ground	Condition	
Connector	Terminal		Ignition switch position	Charge warning lamp
F7	2		ON	Illuminate

Does it illuminate?

YES >> "L" terminal circuit is normal. Refer to [CHG-10, "Work Flow \(With EXP-800 NI or GR8-1200 NI\)"](#) or [CHG-13, "Work Flow \(Without EXP-800 NI or GR8-1200 NI\)"](#).

NO >> GO TO 3.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the battery cable from the negative terminal.
2. Disconnect the combination meter connector.
3. Check continuity between generator harness connector and combination meter harness connector.

Generator		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
F7	2	M24	11	Yes

is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace the harness or connectors.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check continuity between combination meter harness connector and fuse block (J/B).

Combination meter		Fuse block (J/B)		Continuity
Connector	Terminal	Connector	Terminal	
M24	21	M4	8P	Yes

L TERMINAL CIRCUIT (OPEN)

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace the harness or connectors.

5.CHECK POWER SUPPLY CIRCUIT

1. Connect the battery cable to the negative terminal.
2. Check voltage between combination meter harness connector and ground.

(+)		(-)	Condition	Voltage (Approx.)
Combination meter				
Connector	Terminal			
M24	21	Ground	When the ignition switch is in ON position	Battery voltage

Is the inspection result normal?

YES >> Replace the combination meter. Refer to [MWI-85. "Removal and Installation"](#).

NO >> Repair or replace the harness or connectors.

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

CHG

L TERMINAL CIRCUIT (SHORT)

< DTC/CIRCUIT DIAGNOSIS >

L TERMINAL CIRCUIT (SHORT)

Description

INFOID:000000012548821

The terminal "L" circuit controls the charge warning lamp. The charge warning lamp turns ON when the ignition switch is set to ON or START. When the generator is providing sufficient voltage with the engine running, the charge warning lamp turns off. If the charge warning lamp illuminates with the engine running, a malfunction is indicated.

Diagnosis Procedure

INFOID:000000012548822

Regarding Wiring Diagram information, refer to [CHG-6, "Wiring Diagram"](#).

1. CHECK "L" TERMINAL CIRCUIT (SHORT)

1. Turn ignition switch OFF.
2. Disconnect generator connector.
3. Turn ignition switch ON.

Does charge warning lamp illuminate?

YES >> GO TO 2.

NO >> Refer to [CHG-10, "Work Flow \(With EXP-800 NI or GR8-1200 NI\)"](#) or [CHG-13, "Work Flow \(Without EXP-800 NI or GR8-1200 NI\)"](#).

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

1. Turn ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect combination meter connector.
4. Check continuity between the combination meter harness connector and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M24	11		No

Is the inspection result normal?

YES >> Replace the combination meter. Refer to [MWI-85, "Removal and Installation"](#).

NO >> Repair or replace the harness or connectors.

S TERMINAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

S TERMINAL CIRCUIT

Description

INFOID:000000012548823

The output voltage of the generator is controlled by the IC regulator at terminal "S" detecting the input voltage from battery.

The "S" terminal circuit detects the battery voltage to adjust the generator output voltage with the IC voltage regulator.

Diagnosis Procedure

INFOID:000000012548824

Regarding Wiring Diagram information. Refer to [CHG-6, "Wiring Diagram"](#).

1. CHECK "S" TERMINAL CONNECTION

1. Turn ignition switch OFF.
2. Check if "S" terminal is clean and tight.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair "S" terminal connection. Confirm repair by performing complete Charging system test using EXP-800 NI or GR8-1200 NI (if available). Refer to the applicable Instruction Manual for proper testing procedures.

2. CHECK "S" TERMINAL CIRCUIT

Check voltage between generator harness connector and ground.

(+) Generator		(-) Ground	Voltage (Approx.) Battery voltage
Connector	Terminal		
F7	3		

Is the inspection result normal?

YES >> Refer to [CHG-10, "Work Flow \(With EXP-800 NI or GR8-1200 NI\)"](#) or [CHG-13, "Work Flow \(Without EXP-800 NI or GR8-1200 NI\)"](#).

NO >> Check harness for open between generator and fuse.

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

CHG

CHARGING SYSTEM

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

CHARGING SYSTEM

Symptom Table

INFOID:000000012548825

Symptom	Reference
Battery discharged	Refer to CHG-10, "Work Flow (With EXP-800 NI or GR8-1200 NI)" or CHG-13, "Work Flow (Without EXP-800 NI or GR8-1200 NI)" .
The charge warning lamp does not illuminate when the ignition switch is set to ON.	
The charge warning lamp does not turn OFF after the engine starts.	
The charging warning lamp turns ON when increasing the engine speed.	

GENERATOR

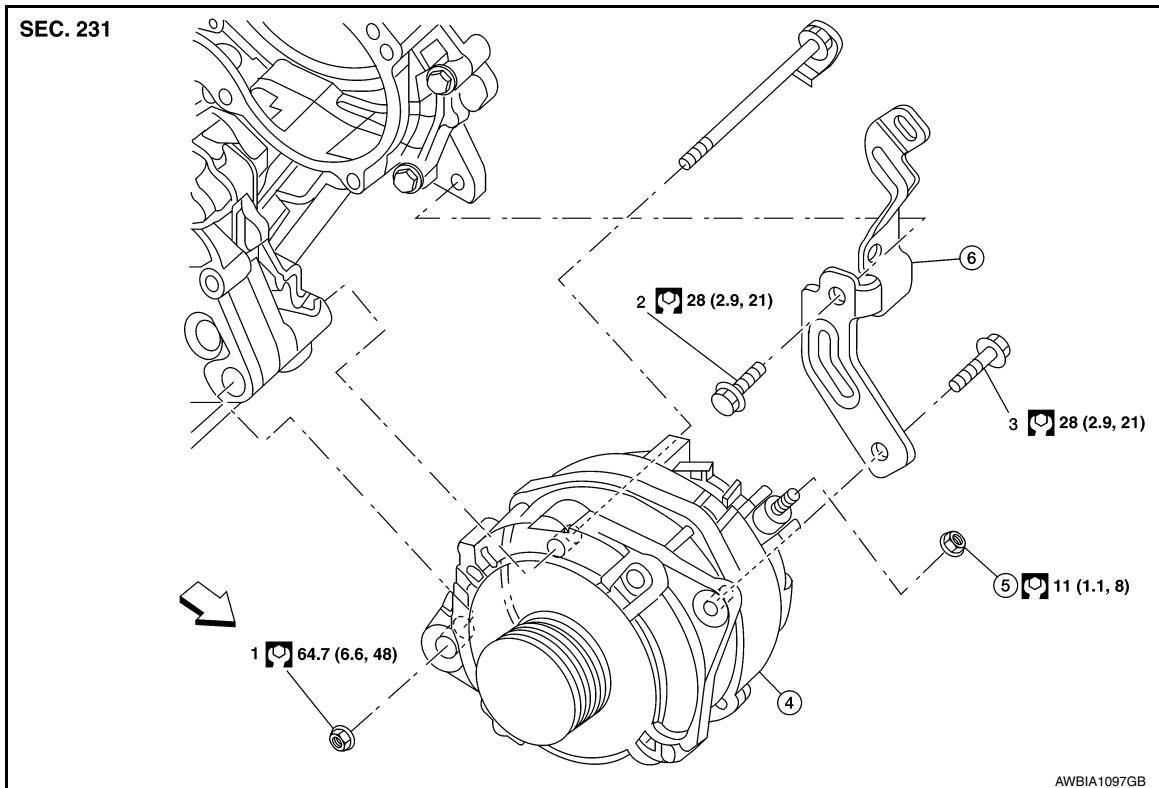
< REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION

GENERATOR

Exploded View

INFOID:0000000012548826



- 1 - 3 Tightening order
4. Generator
5. B terminal nut
6. Generator bracket
← Front

Removal and Installation

INFOID:0000000012548827

REMOVAL

1. Remove the battery tray. Refer to [PG-95, "Removal and Installation"](#).
2. Remove the radiator. Refer to [CO-15, "Removal and Installation"](#).
3. Remove the fan shroud and motor assembly. Refer to [CO-17, "Exploded View"](#).
4. Remove the front wheel and tire (RH) using power tool. Refer to [WT-59, "Adjustment"](#).
5. Remove the drive belt auto-tensioner. Refer to [EM-14, "Removal and Installation of Drive Belt Auto-tensioner"](#).
6. Disconnect the harness connectors from generator.
7. Release the harness retainers.
8. Remove the bolts and generator bracket.
9. Remove the generator.

INSTALLATION

Installation is in the reverse order of removal.

- Temporarily tighten bolts and nut then tighten nut and bolts in the specified numerical order. Refer to [CHG-23, "Exploded View"](#).

CAUTION:

Be sure to tighten "B" terminal nut carefully.

- Install generator and check tension of belt. Refer to [EM-12, "Checking Drive Belt"](#).

GENERATOR

< REMOVAL AND INSTALLATION >

- For this model, the power generation voltage variable control system that controls the power generation voltage of the generator has been adopted. Therefore, the power generation voltage variable control system operation inspection should be performed after replacing the generator, and then make sure that the system operates normally. Refer to [CHG-5. "System Description"](#).

Inspection

INFOID:000000012548828

GENERATOR PULLEY INSPECTION

Perform the following.

- Make sure that generator pulley does not rattle.
- Make sure that generator pulley nut is tight.

NOTE:

Replace the generator as an assembly if necessary.

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Generator

INFOID:0000000012548829

Application	VQ35DE
Type*	A003TJ3991ZC
	Mitsubishi
Nominal rating	12V-150A
Ground polarity	Negative
Minimum revolution under no-load	1,000 rpm
Hot output current (when 13.5 volts are applied)	More than 122A/2,500 rpm More than 144A/5,000 rpm
Regulated output voltage	14.1 - 14.7V @ 20°C (68°F)
Adjustment range of power generation voltage variable control	11.4 - 15.6 V

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

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

CHG