SECTION CHG
CHARGING SYSTEM

CONTENTS

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

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

INFOID:0000000009354399

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

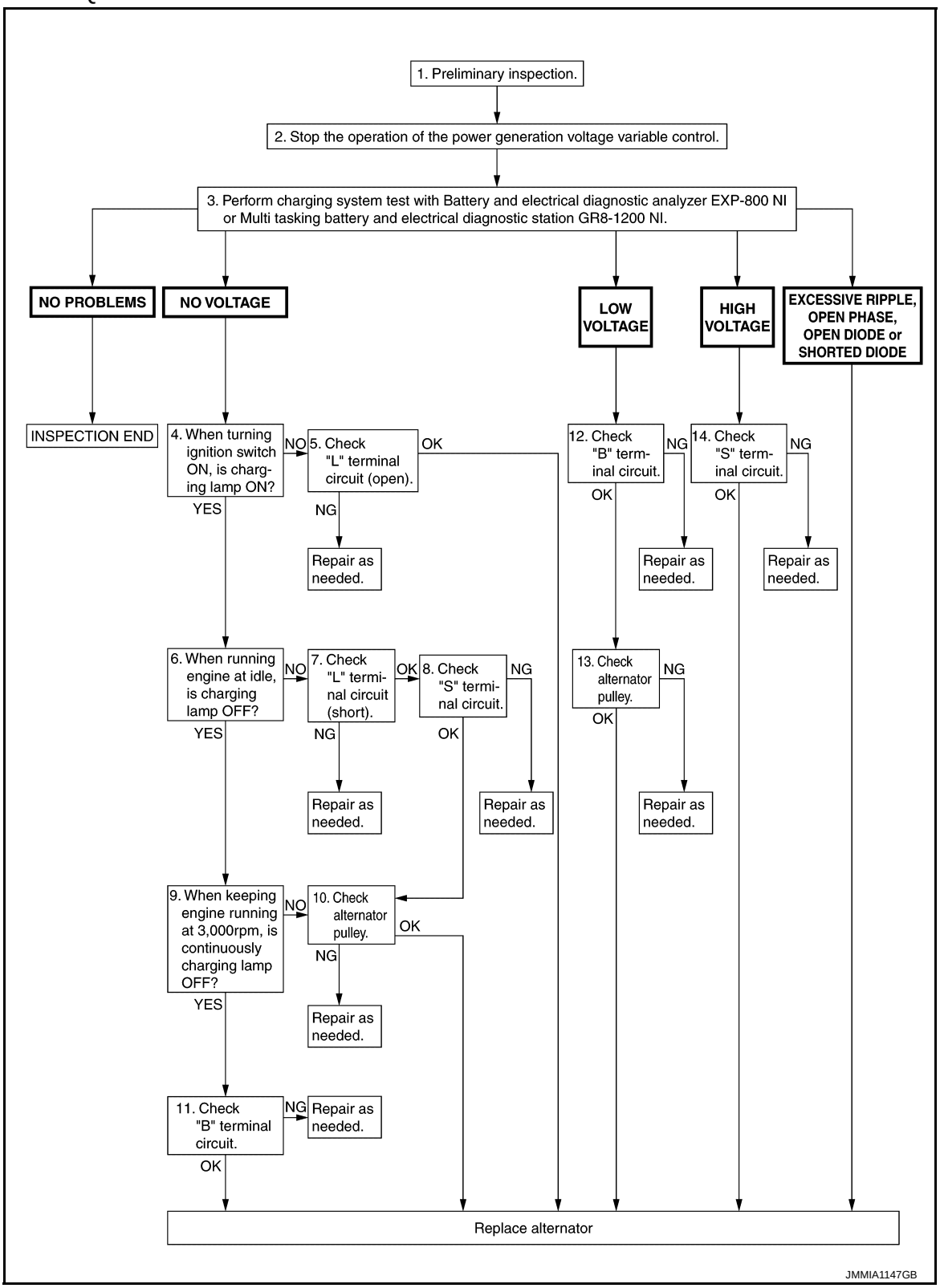
To test the charging system, use the following special service tools:

- 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.

OVERALL SEQUENCE



DETAILED FLOW

NOTE:
To ensure a complete and thorough diagnosis, the battery, starter and alternator test segments must be done as a set from start to finish.

1. PRELIMINARY INSPECTION

Perform the preliminary inspection. Refer to CHG-21, "Inspection Procedure".

>> GO TO 2.

2.STOP POWER GENERATION VOLTAGE VARIABLE CONTROL SYSTEM

Stop the operation of the power generation voltage variable control in either of the following procedures.

- After selecting “ENGINE” of “SELECT SYSTEM” using CONSULT, set the DUTY value of “ALTERNATOR DUTY” to 0 % by selecting “ALTERNATOR DUTY” of “Active Test”. Continue “Active Test” until the end of inspection. (When the DUTY value is 0 or 100 %, the normal power generation is performed according to the characteristic of the IC voltage regulator of the alternator.)
- Turn the ignition switch OFF, and disconnect the battery current sensor connector. [However, DTC (P1550 - P1554) of the engine might remain. After finishing the inspection, connect the battery current sensor connector and erase the self-diagnosis results history of the engine using CONSULT.]

>> GO TO 3.

3.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 4.
LOW VOLTAGE>>GO TO 12.
HIGH VOLTAGE>>GO TO 14.
EXCESSIVE RIPPLE, OPEN PHASE, OPEN DIODE or SHORTED DIODE>>Replace the alternator. 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.

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

Turn the ignition switch ON.

Does the charge warning lamp illuminate?

YES >> GO TO 6.
NO >> GO TO 5.

5.“L” TERMINAL CIRCUIT (OPEN) INSPECTION

Check “L” terminal circuit (open). Refer to CHG-12, "Diagnosis Procedure".

Is the “L” terminal circuit normal?

YES >> Replace alternator. Refer to CHG-23, "Removal and Installation".
NO >> Repair as needed.

6.INSPECTION WITH CHARGE WARNING LAMP (IDLING)

Start the engine and run it at idle.

Does the charge warning lamp turn OFF?

YES >> GO TO 9.
NO >> GO TO 7.

7.“L” TERMINAL CIRCUIT (SHORT) INSPECTION

Check “L” terminal circuit (short). Refer to CHG-14, "Diagnosis Procedure".

Is the “L” terminal circuit normal?

YES >> GO TO 8.
NO >> Repair as needed.

8.“S” TERMINAL CIRCUIT INSPECTION

Check “S” terminal circuit. Refer to CHG-15, "Diagnosis Procedure".

Is the “S” terminal circuit normal?

YES >> GO TO 10.
NO >> Repair as needed.

9. 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 11.
NO >> GO TO 10.

10. INSPECTION OF ALTERNATOR PULLEY

Check alternator pulley. Refer to CHG-24, "Inspection".

Is alternator pulley normal?

YES >> Replace alternator. Refer to CHG-23, "Removal and Installation".
NO >> Repair as needed.

11. "B" TERMINAL CIRCUIT INSPECTION

Check "B" terminal circuit. Refer to CHG-11, "Diagnosis Procedure".

Is "B" terminal circuit normal?

YES >> Replace alternator. Refer to CHG-23, "Removal and Installation".
NO >> Repair as needed.

12. "B" TERMINAL CIRCUIT INSPECTION

Check "B" terminal circuit. Refer to CHG-11, "Diagnosis Procedure".

Is "B" terminal circuit normal?

YES >> GO TO 13.
NO >> Repair as needed.

13. INSPECTION OF ALTERNATOR PULLEY

Check alternator pulley. Refer to CHG-24, "Inspection".

Is alternator pulley normal?

YES >> Replace alternator. Refer to CHG-23, "Removal and Installation".
NO >> Repair as needed.

14. "S" TERMINAL CIRCUIT INSPECTION

Check "S" terminal circuit. Refer to CHG-15, "Diagnosis Procedure".

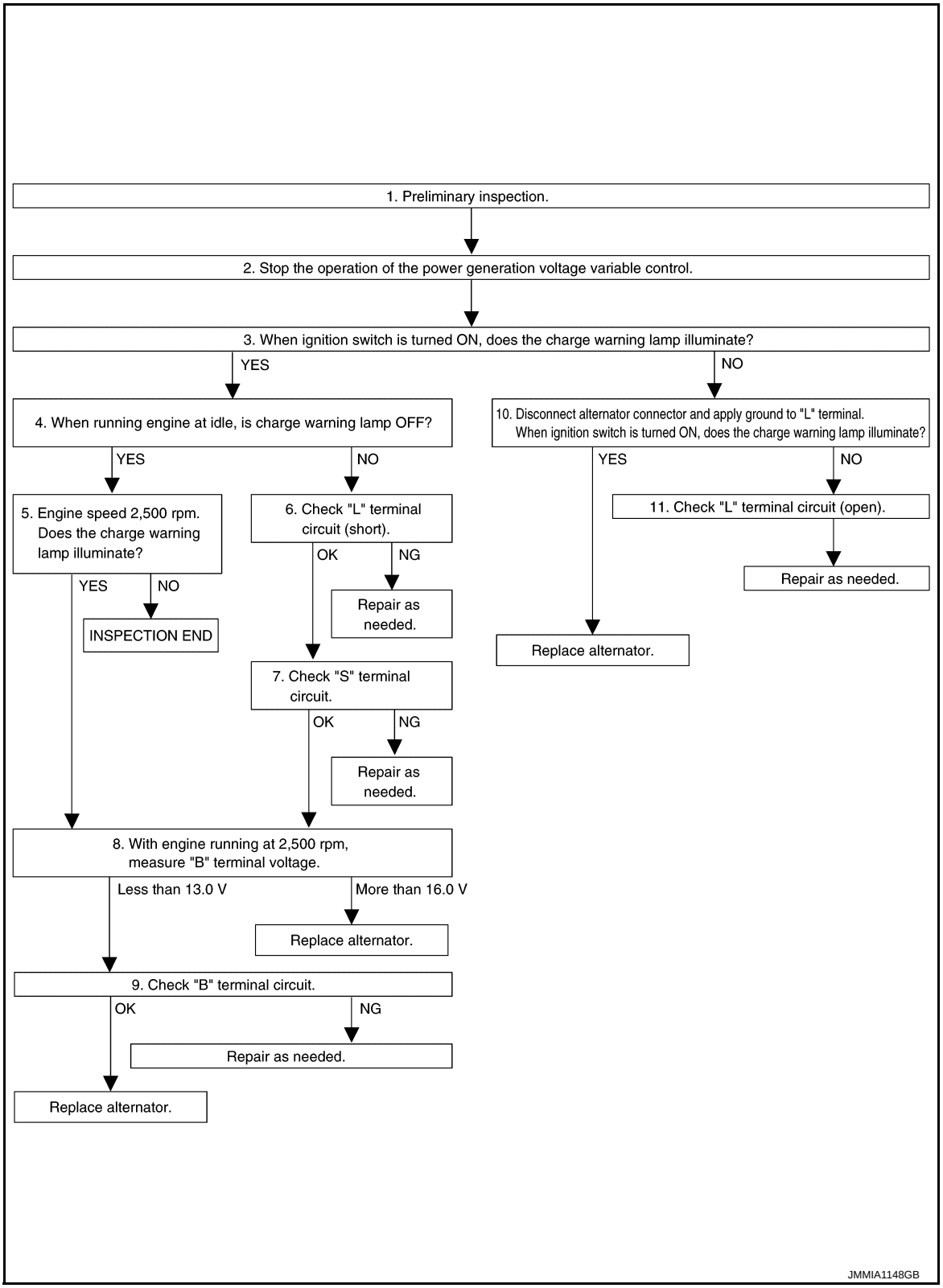
Is the "S" terminal circuit normal?

YES >> Replace alternator. Refer to CHG-23, "Removal and Installation".
NO >> Repair as needed.

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

INFOID:0000000009354400

OVERALL SEQUENCE



DETAILED FLOW

1. PRELIMINARY INSPECTION

Perform the preliminary inspection. Refer to CHG-21, "Inspection Procedure".

>> GO TO 2.

2. STOP POWER GENERATION VOLTAGE VARIABLE CONTROL SYSTEM

Stop the operation of the power generation voltage variable control in either of the following procedures.

- After selecting “ENGINE” of “SELECT SYSTEM” using CONSULT, set the DUTY value of “ALTERNATOR DUTY” to 0 % by selecting “ALTERNATOR DUTY” of “Active Test”. Continue “Active Test” until the end of inspection. (When the DUTY value is 0 or 100 %, the normal power generation is performed according to the characteristic of the IC regulator of the alternator.)
- Turn the ignition switch OFF, and disconnect the battery current sensor connector. [However, DTC (P1550 - P1554) of the engine might remain. After finishing the inspection, connect the battery current sensor connector and erase the self-diagnostic results history of the engine using CONSULT.]

>> GO TO 3.

3. 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 4.
NO >> GO TO 10.

4. INSPECTION WITH CHARGE WARNING LAMP (IDLING)

Start the engine and run it at idle.

Does the charge warning lamp turn OFF?

YES >> GO TO 5.
NO >> GO TO 6.

5. 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 8.
NO >> INSPECTION END

6. “L” TERMINAL CIRCUIT (SHORT) INSPECTION

Check “L” terminal circuit (short). Refer to CHG-14, "Diagnosis Procedure".

Is the inspection result normal?

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

7. “S” TERMINAL CIRCUIT INSPECTION

Check “S” terminal circuit. Refer to CHG-15, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 8.
NO >> Repair as needed.

8. 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 9.
More than 16.0 V>>Replace alternator. Refer to CHG-23, "Removal and Installation".

9. “B” TERMINAL CIRCUIT INSPECTION

Check “B” terminal circuit. Refer to CHG-11, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace alternator. Refer to CHG-23, "Removal and Installation".
NO >> Repair as needed.

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

1. Disconnect alternator connector and apply ground to “L” terminal.
2. Turn the ignition switch ON.

Does the charge warning lamp illuminate?

YES >> Replace alternator. Refer to CHG-23, "Removal and Installation".
NO >> GO TO 11.

11. CHECK “L” TERMINAL CIRCUIT (OPEN)

Check “L” terminal circuit (open). Refer to CHG-12, "Diagnosis Procedure".

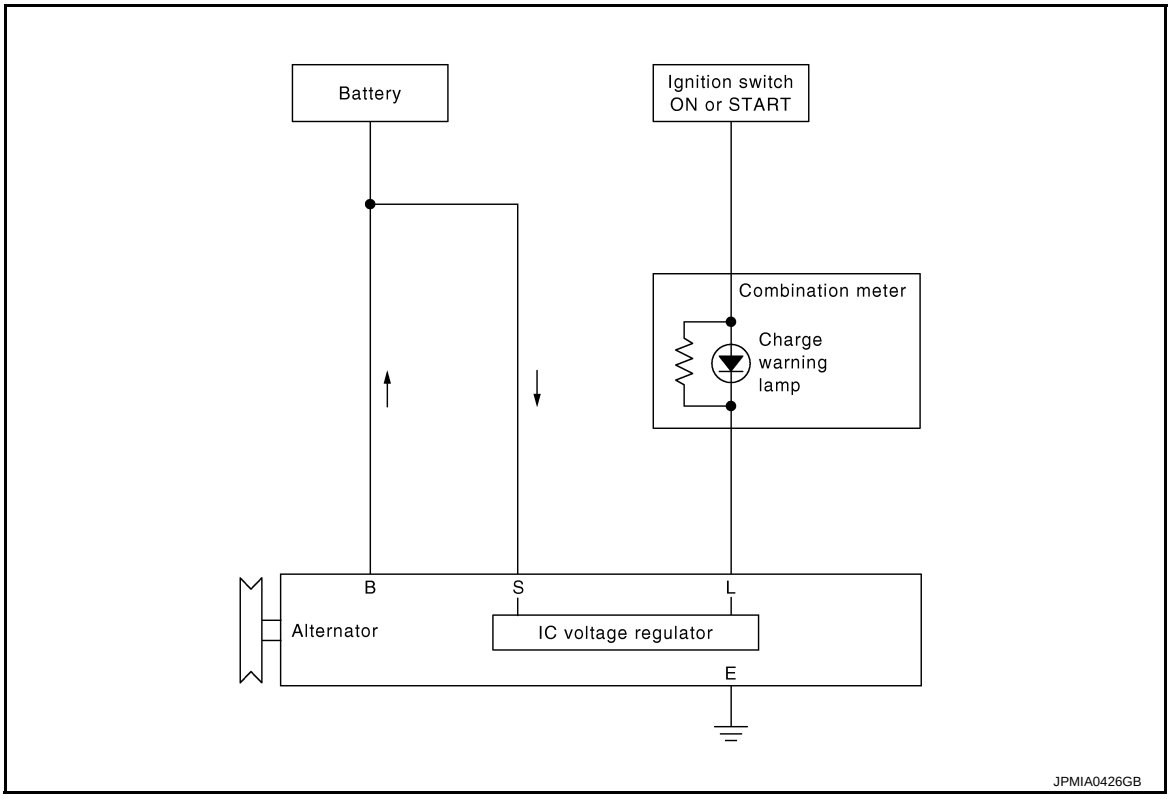
>> Repair as needed.

SYSTEM DESCRIPTION

CHARGING SYSTEM

System Diagram

INFOID:0000000007349764



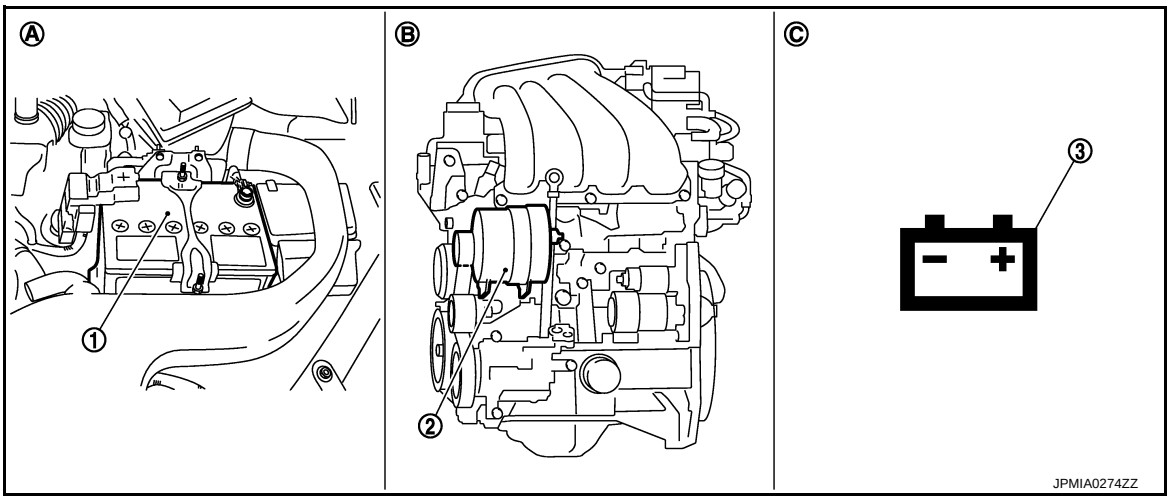
System Description

INFOID:0000000007349765

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

Component Parts Location

INFOID:0000000007349766



1. Battery
2. Alternator
3. Charge warning lamp

A. Engine room (left side)
B. Engine
C. Combination meter

Component Description

INFOID:0000000007349767

Component part		Description
Alternator	“B” terminal	Refer to CHG-11, "Description".
	“S” terminal	Refer to CHG-15, "Description".
	“L” terminal	Refer to CHG-12, "Description".
Combination meter (Charge warning lamp)		The IC voltage regulator warning function activates to illuminate the charge warning lamp, if any of the following symptoms occur while alternator is operating: • Excessive voltage is produced. • No voltage is produced.

DTC/CIRCUIT DIAGNOSIS

B TERMINAL CIRCUIT

Description

INFOID:0000000007349768

"B" terminal circuit supplies power to charge the battery and to operate the vehicle's electrical system.

Diagnosis Procedure

INFOID:0000000007349769

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 "B" 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 "B" TERMINAL CIRCUIT

Check voltage between alternator "B" terminal and ground.

(+)		(–)	Voltage (Approx.)
Alternator			
Connector	Terminal		
F59	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness for open between alternator 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 alternator "B" terminal.

(+)	(–)		Voltage (Approx.)
	Alternator		
	Connector	Terminal	
Battery positive terminal	F59	1	Less than 0.2 V

Is the inspection result normal?

YES >> "B" terminal circuit is normal. Refer to CHG-2, "Work Flow (With EXP-800 NI or GR8-1200 NI)" or CHG-6, "Work Flow (Without EXP-800 NI or GR8-1200 NI)".
NO >> Check harness between battery and alternator for poor continuity.

L TERMINAL CIRCUIT (OPEN)

Description

INFOID:0000000007349770

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

Diagnosis Procedure

INFOID:0000000007349771

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 the applicable Instruction Manual for proper testing procedures.

2.CHECK “L” TERMINAL CIRCUIT (OPEN)

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

Alternator		Ground	Condition	
connector	Terminal		Ignition switch position	Charge warning lamp
F60	3		ON	Illuminate

Does it illuminate?

YES >> “L” terminal circuit is normal. Refer to CHG-2, "Work Flow (With EXP-800 NI or GR8-1200 NI)" or CHG-6, "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 alternator harness connector and combination meter harness connector.

Alternator		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
F60	3	M34	25	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair the harness or connector.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check continuity between combination meter harness connector M34 terminal 2 and 10A fuse [No.3, located in the fuse block (J/B)].

Does continuity exist?

YES >> GO TO 5.
NO >> Repair the harness.

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			
M34	2	Ground	When the ignition switch is in ON position	Battery voltage

Is the inspection result normal?

YES >> Replace combination meter.

NO >> Inspect the power supply circuit. Refer to PG-18, "Wiring Diagram - IGNITION POWER SUPPLY - ".

L TERMINAL CIRCUIT (SHORT)

Description

INFOID:0000000007349772

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

Diagnosis Procedure

INFOID:0000000007349773

1.CHECK “L” TERMINAL CIRCUIT (SHORT)

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

Does charge warning lamp illuminate?

YES >> GO TO 2.
NO >> Refer to CHG-2, "Work Flow (With EXP-800 NI or GR8-1200 NI)" or CHG-6, "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 combination meter harness connector and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M34	25		Not existed

Is the inspection result normal?

YES >> Replace combination meter.
NO >> Repair the harness.

S TERMINAL CIRCUIT

Description

INFOID:0000000007349774

The output voltage of the alternator is controlled by the IC voltage regulator at the “S” terminal detecting the input voltage.
The “S” terminal circuit detects the battery voltage to adjust the alternator output voltage with the IC voltage regulator.

Diagnosis Procedure

INFOID:0000000007349775

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 alternator harness connector and ground.

(+)		(–)	Voltage (Approx.)
Alternator			
Connector	Terminal		
F60	4	Ground	Battery voltage

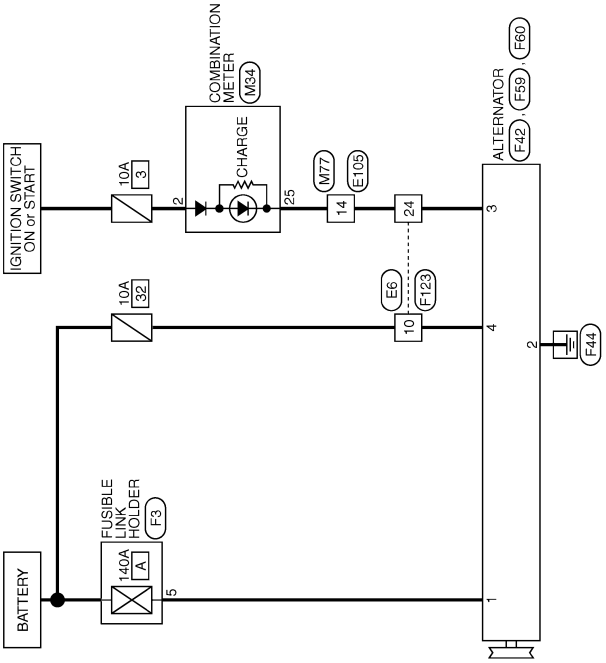
Is the inspection result normal?

YES >> Refer to CHG-2, "Work Flow (With EXP-800 NI or GR8-1200 NI)" or CHG-6, "Work Flow (Without EXP-800 NI or GR8-1200 NI)".
NO >> Check harness for open between alternator and fuse.

CHARGING SYSTEM

Wiring Diagram - CHARGING SYSTEM -

INFOID:0000000007349776



CHARGING SYSTEM

2008/07/15

JCMWM2862GB

SYMPTOM DIAGNOSIS

CHARGING SYSTEM

Symptom Table

INFOID:0000000007349777

Symptom	Reference
Discharged battery	Refer to CHG-2, "Work Flow (With EXP-800 NI or GR8-1200 NI)" or CHG-6, "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 charge warning lamp turns ON when increasing the engine speed.	

PRECAUTION

PRECAUTIONS

FOR USA AND CANADA

FOR USA AND CANADA : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000007349778

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

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see “SRS AIR BAG”.**
- **Never 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:

Always observe the following items for preventing accidental activation.

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

FOR MEXICO

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

INFOID:0000000007349780

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 “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see “SRS AIR BAG”.**
- **Never 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:

Always observe the following items for preventing accidental activation.

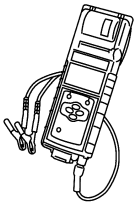
- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

PREPARATION

PREPARATION

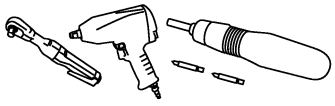
Special Service Tools

INFOID:0000000009354404

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

Commercial Service Tools

INFOID:0000000007349783

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

PERIODIC MAINTENANCE

CHARGING SYSTEM PRELIMINARY INSPECTION

Inspection Procedure

INFOID:0000000007349784

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 terminals connection.

2. CHECK FUSE

Check for blown fuse.

Unit	Power source (Power supply terminals)	Fuse No.
Alternator	Battery (“S” terminal)	32
Combination meter	Ignition switch ON (“L” terminal)	3

Is the inspection result normal?

YES >> GO TO 3.
NO >> Be sure to eliminate the cause of malfunction before installing new fuse.

3. CHECK “E” TERMINAL CONNECTION

Check if “E” terminal (alternator ground harness) is clean and tight.

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair “E” terminal connection.

4. CHECK DRIVE BELT TENSION

Check drive belt tension. Refer to EM-16, "Checking".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair as needed.

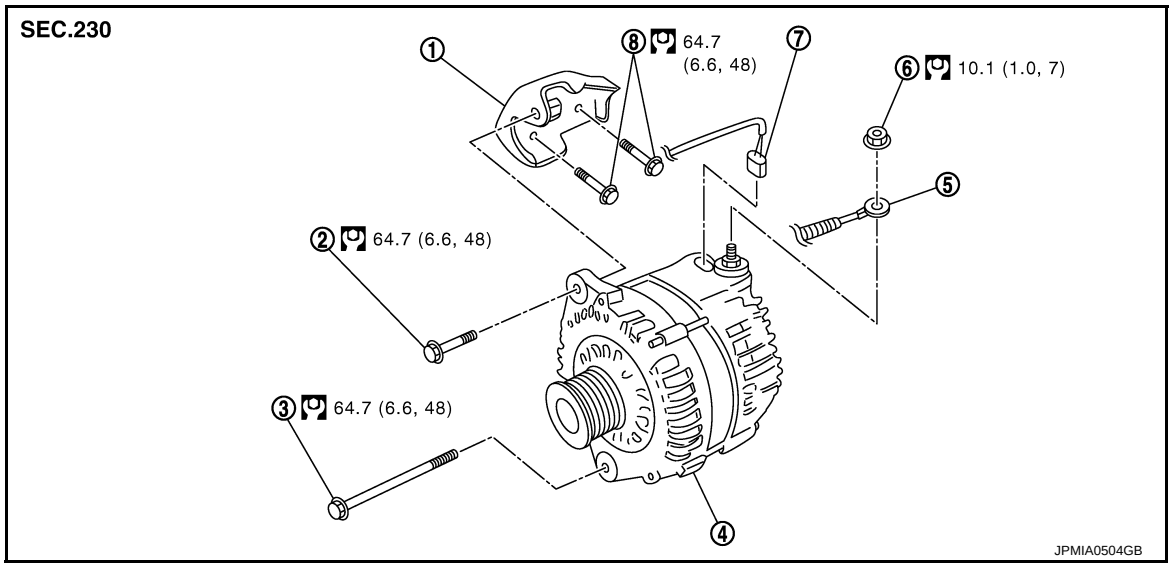
REMOVAL AND INSTALLATION

ALTERNATOR

Exploded View

INFOID:0000000007349785

REMOVAL

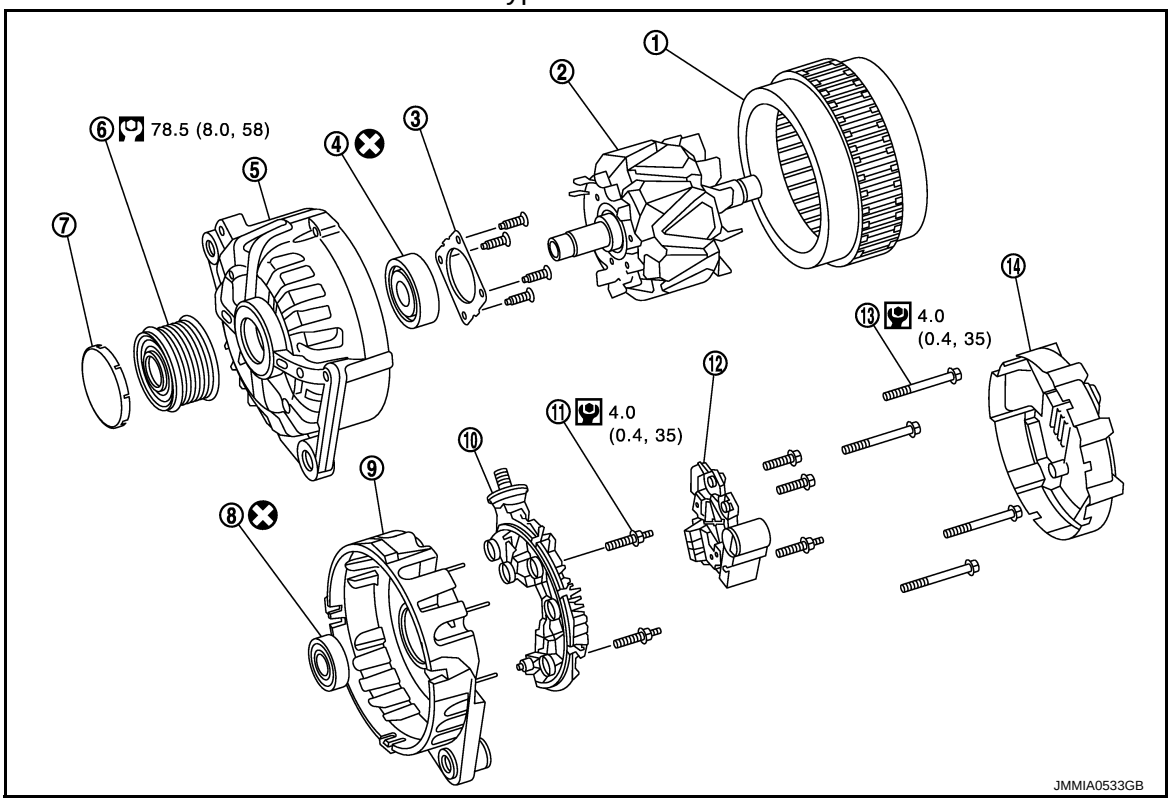


1. Alternator bracket
2. Upper alternator mounting bolt
3. Lower alternator mounting bolt
4. Alternator
5. “B” terminal harness
6. “B” terminal nut
7. Alternator connector
8. Alternator bracket mounting bolts

Refer to GI-4, "Components" for symbols in the figure.

DISASSEMBLY

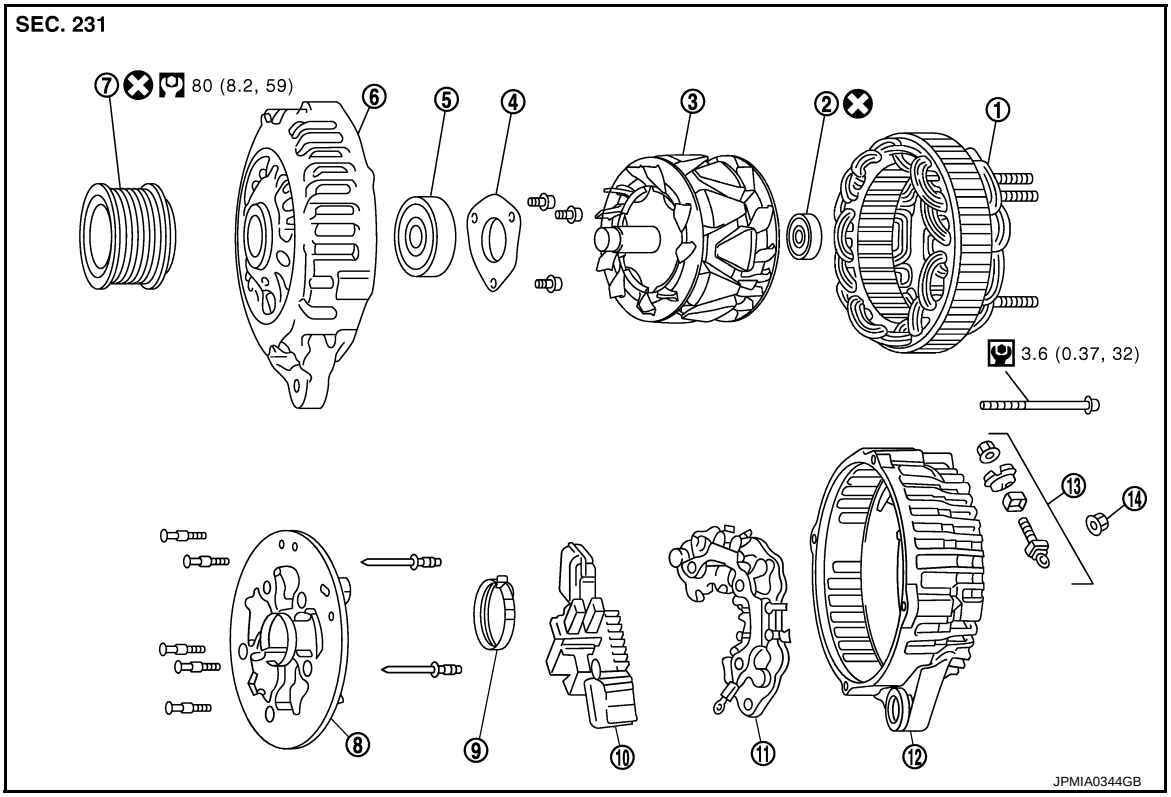
Type: 2611949



1. Stator assembly
2. Rotor assembly
3. Retainer
4. Front bearing
5. Front bracket
6. Pulley
7. Pulley cap
8. Rear bearing
9. Rear bracket
10. Circuit board assembly
11. Stud bolt
12. IC voltage regulator assembly
13. Through bolt
14. Rear cover

Refer to GI-4, "Components" for symbols in the figure.

Type: LR1110-713



1. Stator
2. Rear bearing
3. Rotor
4. Retainer
5. Front bearing
6. Front cover
7. Pulley
8. Fan guide
9. Labyrinth seal
10. IC voltage regulator assembly
11. Diode assembly
12. Rear cover
13. Terminal assembly
14. “B” terminal nut

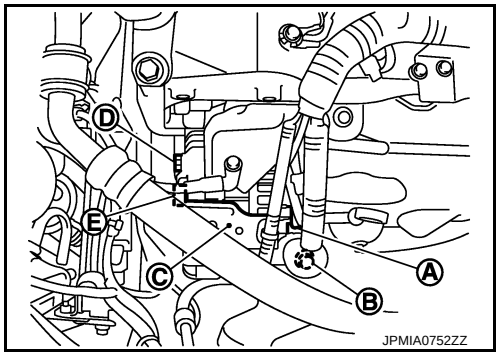
Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

INFOID:0000000007349786

REMOVAL

1. Disconnect the battery cable from the negative terminal.
2. Remove drive belt. Refer to EM-16, "Exploded View".
3. Disconnect alternator connector (A).
4. Remove “B” terminal nut (B) and “B” terminal harness.
5. Remove harness bracket (C).
6. Remove upper alternator mounting bolt (D), using power tools.
7. Remove lower alternator mounting bolt (E), using power tools.



8. Remove alternator upward from the vehicle.

INSTALLATION

Note the following items, and then installation is the reverse order of removal.

CAUTION:

- **Be careful to tighten “B” terminal nut carefully.**
- **Install alternator, and check tension of belt. Refer to EM-16, "Checking".**

Inspection

INFOID:0000000007349787

ALTERNATOR PULLEY INSPECTION

Perform the following.

- Make sure that alternator pulley does not rattle.
- Make sure that alternator pulley is tight. Refer to CHG-22, "Exploded View".

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Alternator

INFOID:0000000007349788

Applied model		QR25DE	
Type		2611949	LR1110-713
		VALEO make	HITACHI make
Nominal rating	[V - A]	12 - 110	
Ground polarity		Negative	
Minimum revolution under no-load (When 13.5 V is applied)	[rpm]	Less than 1,200	Less than 1,100
Hot output current (When 13.5 V is applied)	[A/rpm]	More than 74/1,800 More than 103/2,500 More than 117/5,000	More than 70/1,800 More than 91/2,500 More than 110/5,000
Regulated output voltage	[V]	11.4 - 15.6	14.1 - 14.7