SECTION CHG
CHARGING SYSTEM

CONTENTS

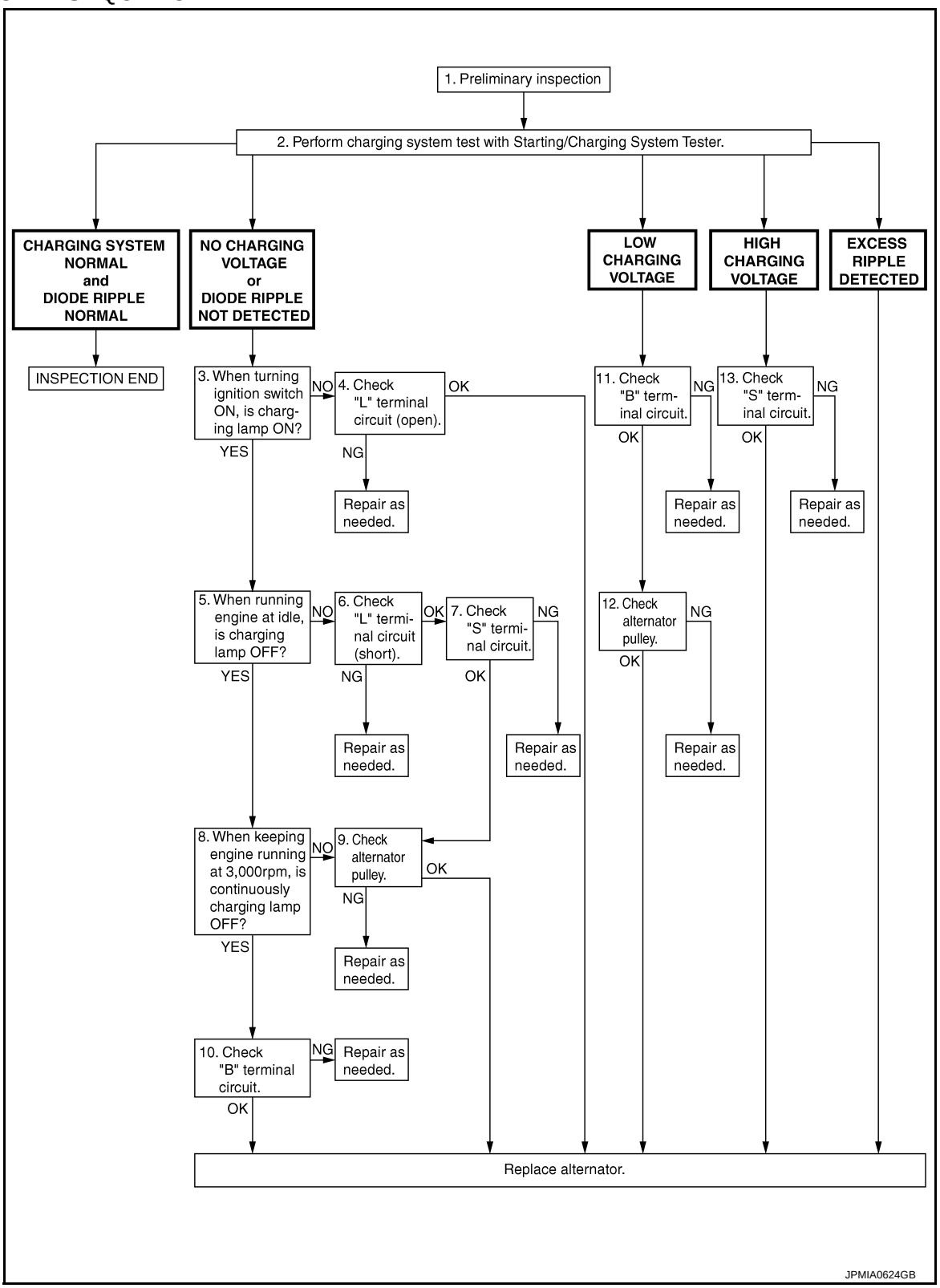
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000006201396

OVEROALL 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-20, "Inspection Procedure".

>> GO TO 2.

2.DIAGNOSIS WITH STARTING/CHARGING SYSTEM TESTER

Perform the charging system test using Starting/Charging System Tester (SST: J-44373). For details and operating instructions, refer to Technical Service Bulletin.

Test result

CHARGING SYSTEM NOMAL>>Charging system is normal and will also show “DIODE RIPPLE” test result.
NO CHARGING VOLTAGE>>GO TO 3.
LOW CHARGING VOLTAGE>>GO TO 11.
HIGH CHARGING VOLTAGE>>GO TO 13.
DIODE RIPPLE NORMAL>>Diode ripple is OK and will also show “CHARGING VOLTAGE” test result.
EXCESS RIPPLE DETECTED>>Replace the alternator. Perform “DIODE RIPPLE” test again using Starting/Charging System Tester (SST: J-44373) to confirm repair.
DIODE RIPPLE NOT DETECTED>>GO TO 4.

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-8, "Diagnosis Procedure".

Is the “L” terminal circuit normal?

YES >> Replace alternator.
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-10, "Diagnosis Procedure".

Is the “L” terminal circuit normal?

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

7.“S” TERMINAL CIRCUIT INSPECTION

Check “S” terminal circuit. Refer to CHG-11, "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 ALTERNATOR PULLEY

Check alternator pulley. Refer to CHG-22, "Inspection".

Is alternator pulley normal?

YES >> Replace alternator.
NO >> Repair as needed.

10. "B" TERMINAL CIRCUIT INSPECTION

Check "B" terminal circuit. Refer to CHG-7, "Diagnosis Procedure".

Is "B" terminal circuit normal?

YES >> Replace alternator.
NO >> Repair as needed.

11. "B" TERMINAL CIRCUIT INSPECTION

Check "B" terminal circuit. Refer to CHG-7, "Diagnosis Procedure".

Is "B" terminal circuit normal?

YES >> GO TO 12.
NO >> Repair as needed.

12. INSPECTION OF ALTERNATOR PULLEY

Check alternator pulley. Refer to CHG-22, "Inspection".

Is alternator pulley normal?

YES >> Replace alternator.
NO >> Repair as needed.

13. "S" TERMINAL CIRCUIT INSPECTION

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

Is the "S" terminal circuit normal?

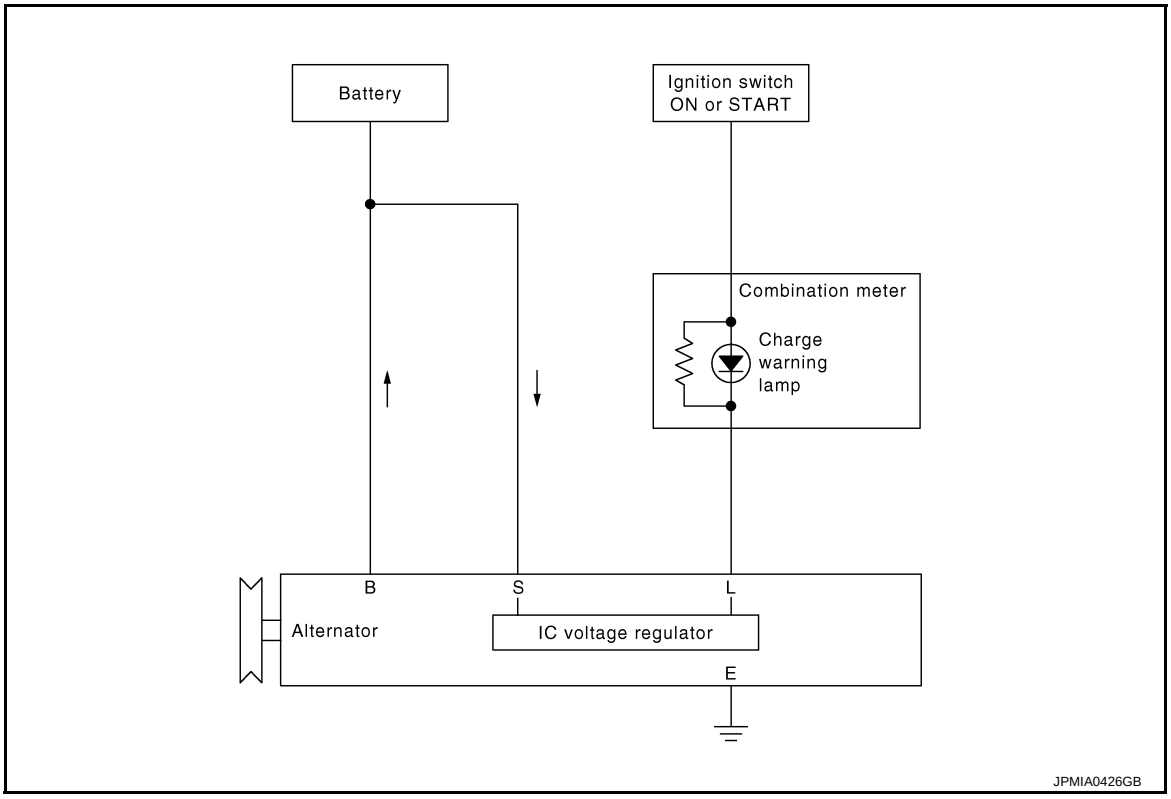
YES >> Replace alternator.
NO >> Repair as needed.

SYSTEM DESCRIPTION

CHARGING SYSTEM

System Diagram

INFOID:0000000006201397



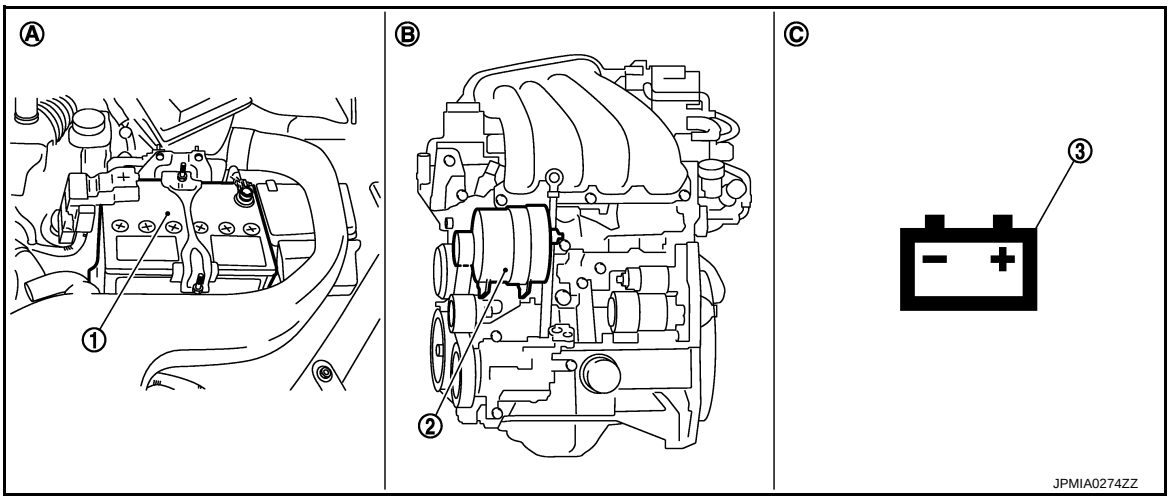
System Description

INFOID:0000000006201398

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:0000000006201399



1. Battery
2. Alternator
3. Charge warning lamp

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

Component Description

INFOID:0000000006201400

Component part		Description
Alternator	“B” terminal	Refer to CHG-7, "Description".
	“S” terminal	Refer to CHG-11, "Description".
	“L” terminal	Refer to CHG-8, "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:0000000006201401

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

Diagnosis Procedure

INFOID:0000000006201402

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.

2.CHECK "B" TERMINAL CIRCUIT

Check voltage between alternator "B" terminal and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Alternator "B" terminal	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.

Terminals			Voltage (Approx.)
(+)	(–)		
	Alternator "B" terminal	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".
NO >> Check harness between battery and alternator for poor continuity.

L TERMINAL CIRCUIT (OPEN)

Description

INFOID:0000000006201403

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:0000000006201404

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.

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 harness connector	Terminal	Ground	Condition	
			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".
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 harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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.

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
Combination meter harness 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-48, "Wiring Diagram - IGNITION POWER SUPPLY - ".

L TERMINAL CIRCUIT (SHORT)

Description

INFOID:0000000006201405

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:0000000006201406

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".

2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

1. Turn the 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 harness connector		Ground	Continuity
Connector No.	Terminal No.		
M34	25		Not existed

Is the inspection result normal?

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

S TERMINAL CIRCUIT

Description

INFOID:0000000006201407

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:0000000006201408

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.

2.CHECK “S” TERMINAL CIRCUIT

Check voltage between alternator harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Alternator harness connector	Terminal		
F60	4	Ground	Battery voltage

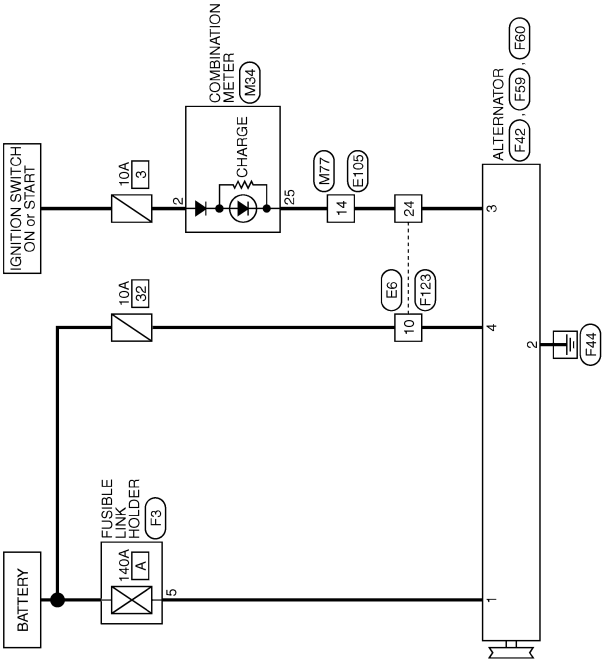
Is the inspection result normal?

YES >> Refer to CHG-2, "Work Flow".
NO >> Check harness for open between alternator and fuse.

CHARGING SYSTEM

Wiring Diagram - CHARGING SYSTEM -

INFOID:0000000006201409



CHARGING SYSTEM

2008/07/15

JCMWM2862GB

CHARGING SYSTEM

Connector No.	E6
Connector Name	WIRE TO WIRE
Connector Type	TK24MW-1V

H.S.

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

Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	–
2	SB	–
3	G	–
4	LG	–
5	L	–
6	BR	–
8	O	–
10	LG	–
11	Y	–
12	P	–
13	L	–
15	LG	–
16	R	–
18	L	–
19	Y	–
20	W	–
21	GR	–
23	W	–
24	L	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	W	–
2	O	–
3	LG	–

4	V	–
5	Y	–
6	G	–
7	R	–
8	GR	–
9	BR	–
10	L	–
11	GR	–
12	P	–
14	L	–
15	V	–
19	R	–
20	P	–
21	L	–
22	L	–
24	LG	–
25	SB	–
30	L	–
31	BR	–
42	Y	–
43	SHIELD	–
51	L	–
52	W	–
53	BR	–
54	Y	–
60	O	–
61	BR	–
62	R	–
63	P	–
69	G	–
70	B	–
71	O	–
72	LG	–
78	L	–
79	V	–
80	Y	–
81	W	–
82	R	–
83	L	–
88	BR	–
89	R	–
90	GR	–
91	R	–
92	O	–
93	BR	–
94	W	–
96	BR	–
97	G	–
99	SB	–
100	L	–

Connector No.	F3
Connector Name	FUSIBLE LINK HOLDER
Connector Type	–

H.S.

5

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

Connector No.	F42
Connector Name	ALTERNATOR
Connector Type	–

H.S.

2

Terminal No.	Color of Wire	Signal Name [Specification]
2	–	–

Connector No.	F59
Connector Name	ALTERNATOR
Connector Type	–

H.S.

1

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

Connector No.	F60
Connector Name	ALTERNATOR
Connector Type	HS03FB

H.S.

5 4 3

Terminal No.	Color of Wire	Signal Name [Specification]
3	L	–
4	P	–

Connector No.	F123
Connector Name	WIRE TO WIRE
Connector Type	TK24FW-1V

H.S.

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

Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	–
2	SB	–
3	G	–
4	Y	–
5	L	–
6	BR	–
8	O	–
10	P	–
11	R	–
12	P	–
13	L	–
15	LG	–
16	R	–
18	L	–
19	Y	–
20	W	–
21	GR	–
23	W	–
24	L	–

JCMWM9316GB

CHARGING SYSTEM

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH

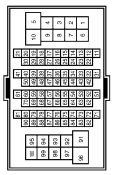
H.S.

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

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	BATTERY POWER SUPPLY
2	O	IGNITION SIGNAL
3	B	GROUND
4	B	GROUND
5	BR	A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL
7	GR	OVERDRIVE CONTROL SWITCH SIGNAL
9	L	PADDLE SHIFTER SHIFT UP SIGNAL
10	G	PADDLE SHIFTER SHIFT DOWN SIGNAL
13	Y	ILLUMINATION CONTROL SIGNAL
15	LG	AIR BAG SIGNAL
16	O	ENGINE COOLANT TEMPERATURE SIGNAL
19	BR	AMBIENT SENSOR SIGNAL
20	SB	AMBIENT SENSOR GROUND
21	L	CAN-H
22	P	CAN-L
24	B	FUEL LEVEL SENSOR SIGNAL GROUND
25	SB	ALTERNATOR SIGNAL
26	V	PARKING BRAKE SWITCH SIGNAL
27	BR	BRAKE FLUID LEVEL SWITCH SIGNAL
28	B	SECURITY SIGNAL
29	W	WASHER LEVEL SWITCH SIGNAL
30	Y	VEHICLE SPEED SIGNAL (2-PULSE)
31	L	VEHICLE SPEED SIGNAL (8-PULSE)
34	G	FUEL LEVEL SENSOR SIGNAL
35	O	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)
36	G	SEAT BELT BUCKLE SWITCH SIGNAL (PASSENGER SIDE)
37	P	NON-MANUAL MODE SIGNAL
38	O	MANUAL MODE SHIFT DOWN SIGNAL
39	V	MANUAL MODE SHIFT UP SIGNAL
40	LG	MANUAL MODE SIGNAL

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	–
2	O	–
3	LG	–
4	Y	–
5	Y	–
6	G	–
7	R	–
8	GR	–
9	BR	–
10	L	–
11	GR	–
12	P	–
14	SB	–
15	V	–
19	R	–
20	P	–
21	O	–
22	L	–
24	BR	–
25	W	–
30	L	–
31	W	–
42	O	–
43	SHIELD	–
51	W	–
52	SB	–
53	L	–
54	Y	–
60	O	–
61	BR	–
62	G	–
63	P	–
69	W	–
70	B	–
71	P	–
72	O	–
78	SB	–
79	V	–
80	L	–
81	W	–
82	B	–
83	LG	–
88	BR	–
89	G	–
90	GR	–
91	R	–
92	L	–
93	P	–
94	W	–
96	BR	–
97	G	–
99	SB	–
100	Y	–

JCMWM9317GB

SYMPTOM DIAGNOSIS

CHARGING SYSTEM

Symptom Table

INFOID:0000000006201410

Symptom	Reference
Discharged battery	Refer to CHG-2, "Work Flow".
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:0000000006201411

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:

- **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:

- **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 USA AND CANADA : Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:0000000006417480

NOTE:

- This Procedure is applied only to models with Intelligent Key system and NATS (NISSAN ANTI-THEFT SYSTEM).
- Remove and install all control units after disconnecting both battery cables with the ignition switch in the ″LOCK″ position.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If DTC is detected, perform trouble diagnosis according to self-diagnostic results.

For models equipped with the Intelligent Key system and NATS, an electrically controlled steering lock mechanism is adopted on the key cylinder.
For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.
If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both battery cables.
   NOTE:
   Supply power using jumper cables if battery is discharged.
2. Use the Intelligent Key or mechanical key to turn the ignition switch to the ″ACC″ position. At this time, the steering lock will be released.

3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.
5. When the repair work is completed, return the ignition switch to the ″LOCK″ position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT-III.

FOR MEXICO

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

INFOID:0000000006201412

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:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see “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:

- **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 : Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:0000000006417481

NOTE:

- This Procedure is applied only to models with Intelligent Key system and NATS (NISSAN ANTI-THEFT SYSTEM).
- Remove and install all control units after disconnecting both battery cables with the ignition switch in the ″LOCK″ position.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If DTC is detected, perform trouble diagnosis according to self-diagnostic results.

For models equipped with the Intelligent Key system and NATS, an electrically controlled steering lock mechanism is adopted on the key cylinder.
For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.
If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both battery cables.
   NOTE:
   Supply power using jumper cables if battery is discharged.
2. Use the Intelligent Key or mechanical key to turn the ignition switch to the ″ACC″ position. At this time, the steering lock will be released.

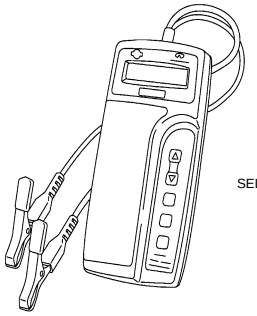
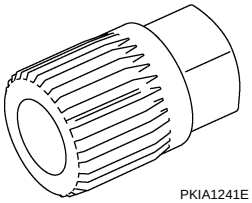
3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.
5. When the repair work is completed, return the ignition switch to the ″LOCK″ position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT-III.

PREPARATION

PREPARATION

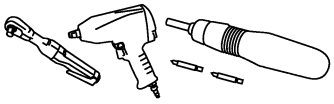
Special Service Tools

INFOID:0000000006417495

Tool number (Kent-Moore No.) Tool name	Description
— (J-44373 Model MCR620) Starting/Charging System Tester  SEL403X	Tests starting and charging systems. For operating instructions, refer to Technical Service Bulletin.
KV10118200 (included in the adapter kit: Mot. 1732) Alternator pulley adapter  PKIA1241E	Removing and installing alternator pulley

Commercial Service Tools

INFOID:0000000006201414

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

PERIODIC MAINTENANCE

CHARGING SYSTEM PRELIMINARY INSPECTION

Inspection Procedure

INFOID:0000000006201415

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.

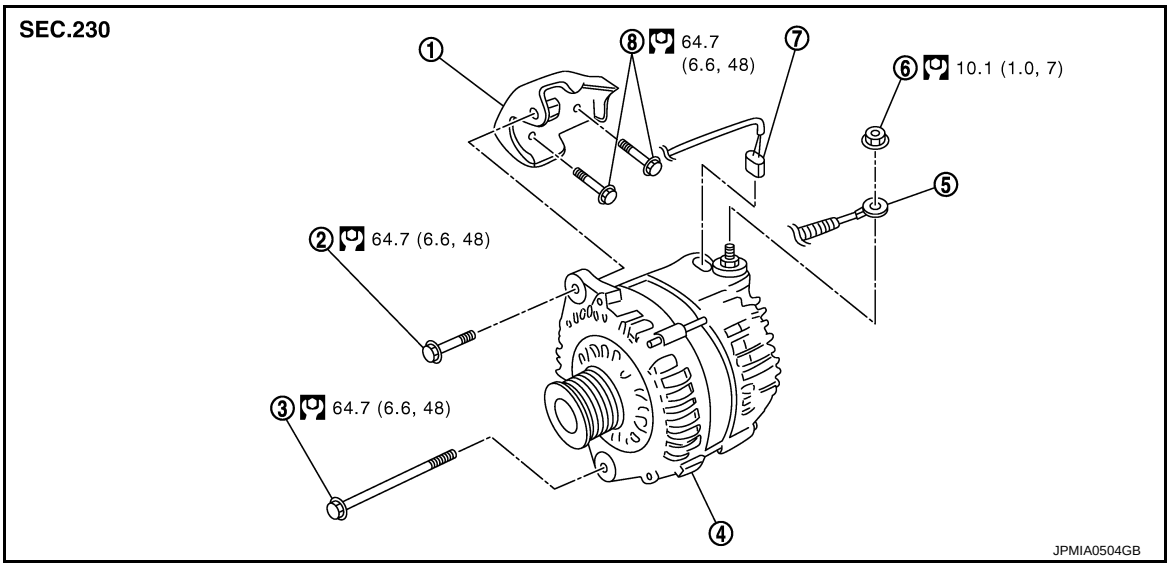
REMOVAL AND INSTALLATION

ALTERNATOR

Exploded View

INFOID:0000000006201416

REMOVAL

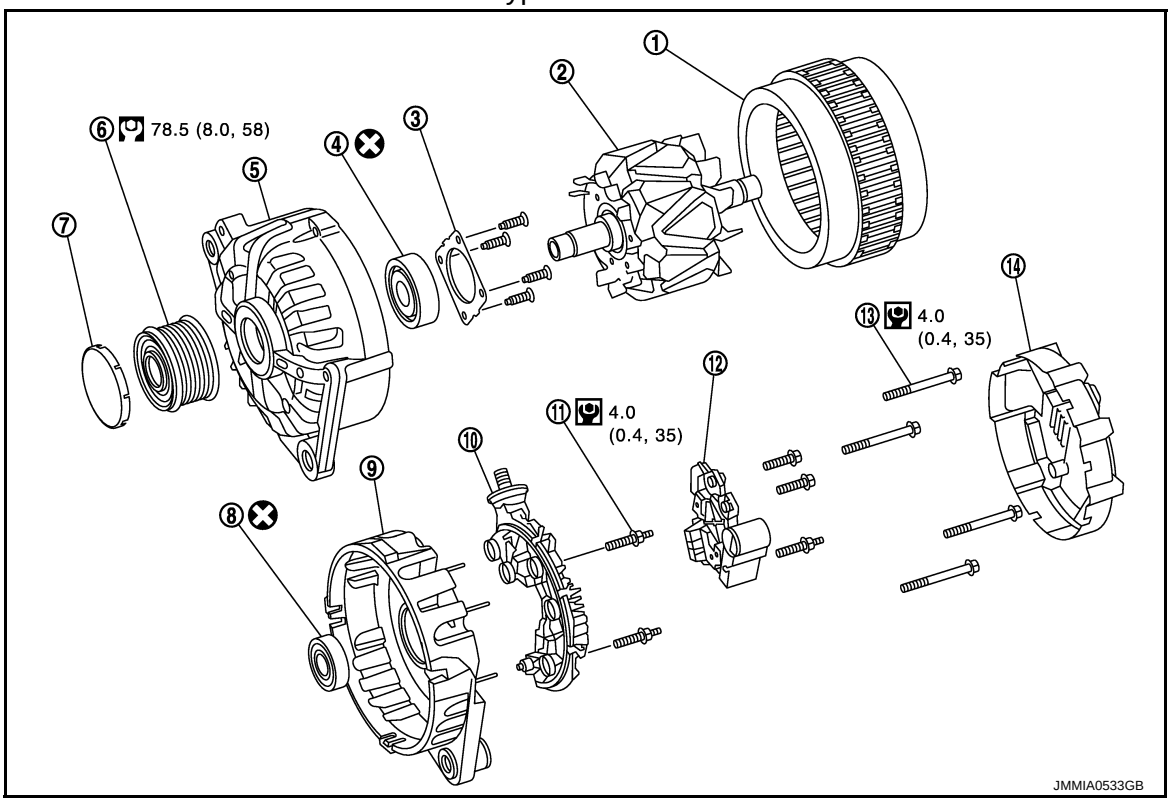


1. Alternator bracket
2. Upper alternator mounting bolt
3. Lower alternator mounting bolt
4. Alternator
5. “B” terminal harness
6. “B” terminal nut
7. Alternator connector
8. Alternator bracket mounting bolts

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

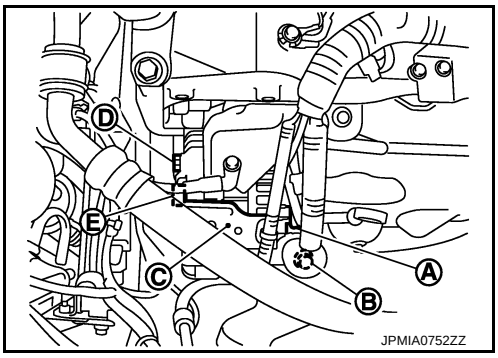
Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

INFOID:0000000006201417

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:0000000006201418

ALTERNATOR PULLEY INSPECTION

Perform the following.

- Make sure that alternator pulley does not rattle.
- Make sure that alternator pulley is tight. Refer to CHG-21, "Exploded View".

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Alternator

INFOID:0000000006201419

Applied model		QR25DE
Type		2611949
		VALEO 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
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
Regulated output voltage	[V]	11.4 - 15.6
Minimum length of brush	[mm (in)]	—
Brush spring pressure	[N (g, oz)]	—
Slip ring minimum outer diameter	[mm (in)]	—
Rotor (Field coil) resistance	[Ω]	2.12 - 2.22