SECTION CHG
CHARGING SYSTEM

CONTENTS

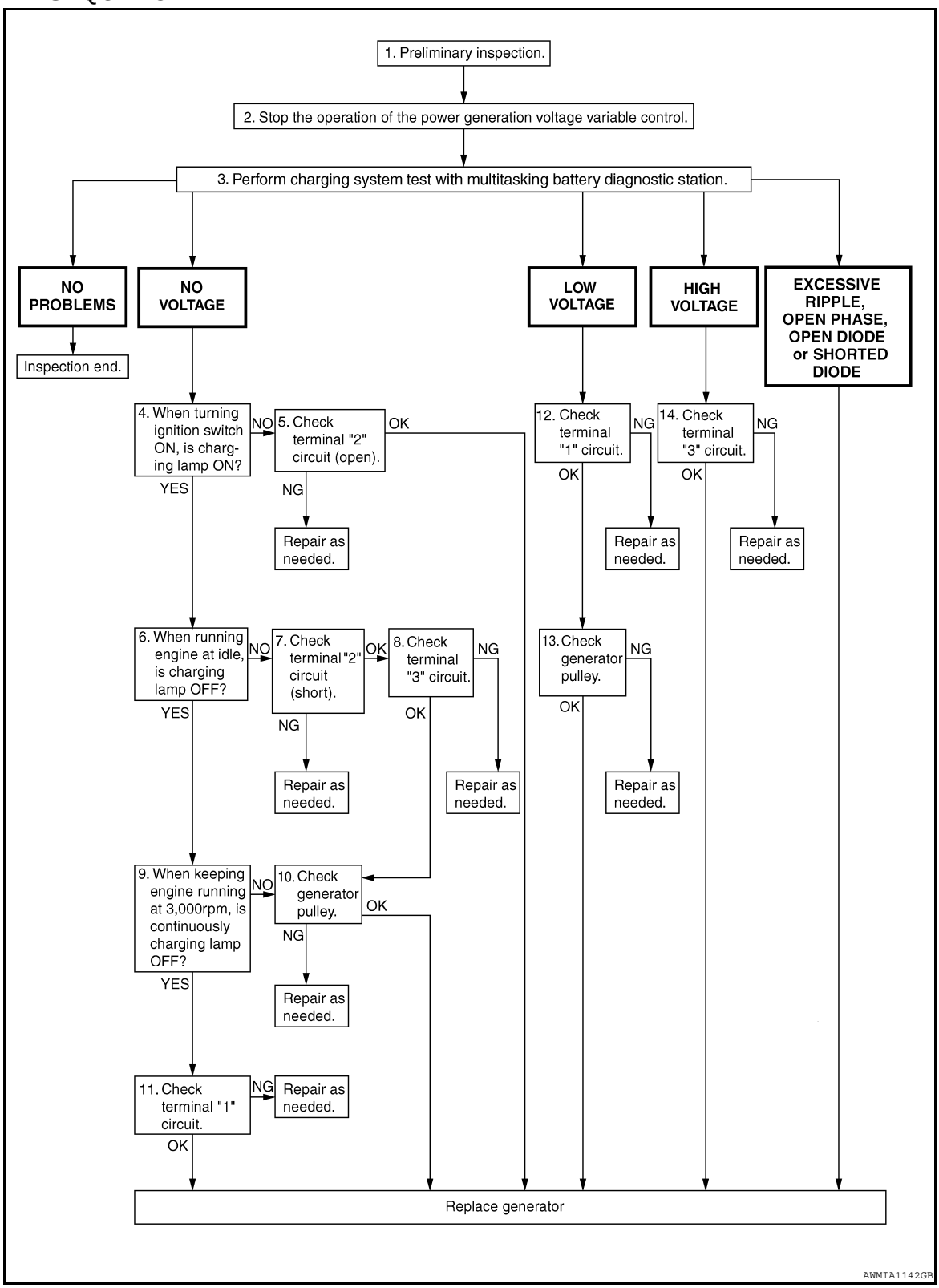
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000005430028

OVERALL SEQUENCE

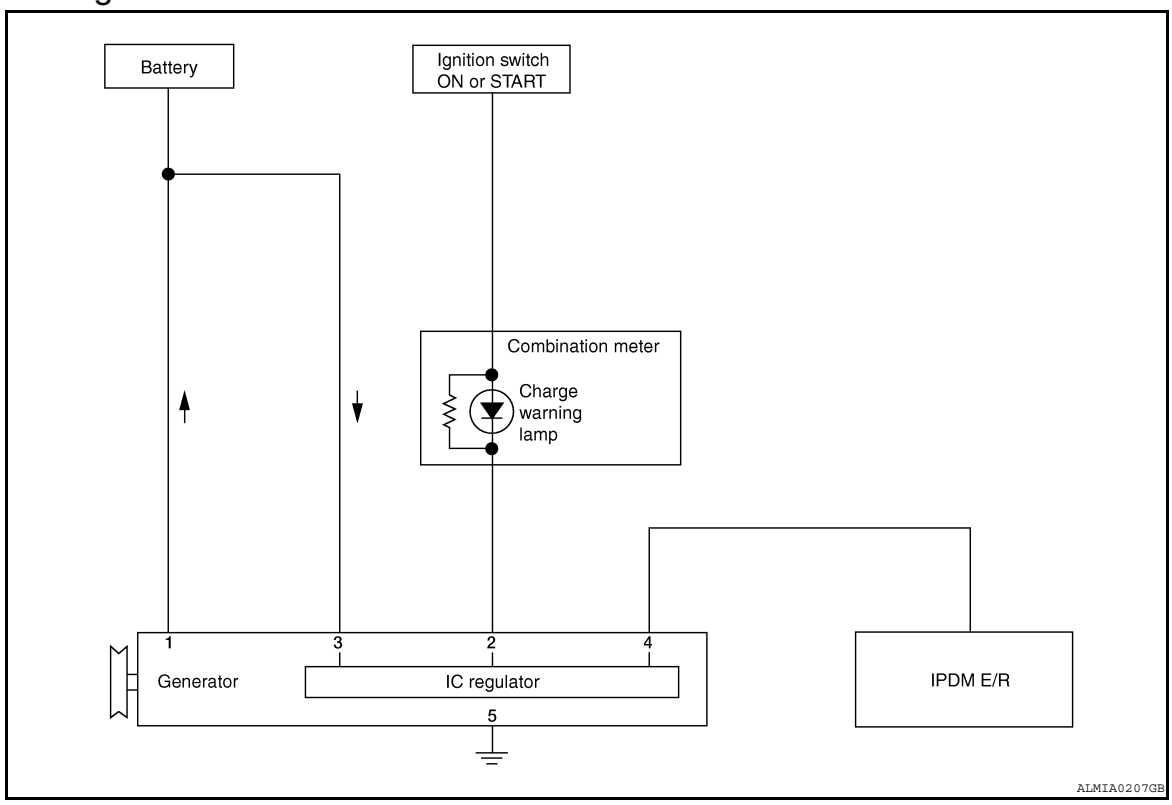


FUNCTION DIAGNOSIS

CHARGING SYSTEM

System Diagram

INFOID:0000000005430029



System Description

INFOID:0000000005430030

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.

Component Description

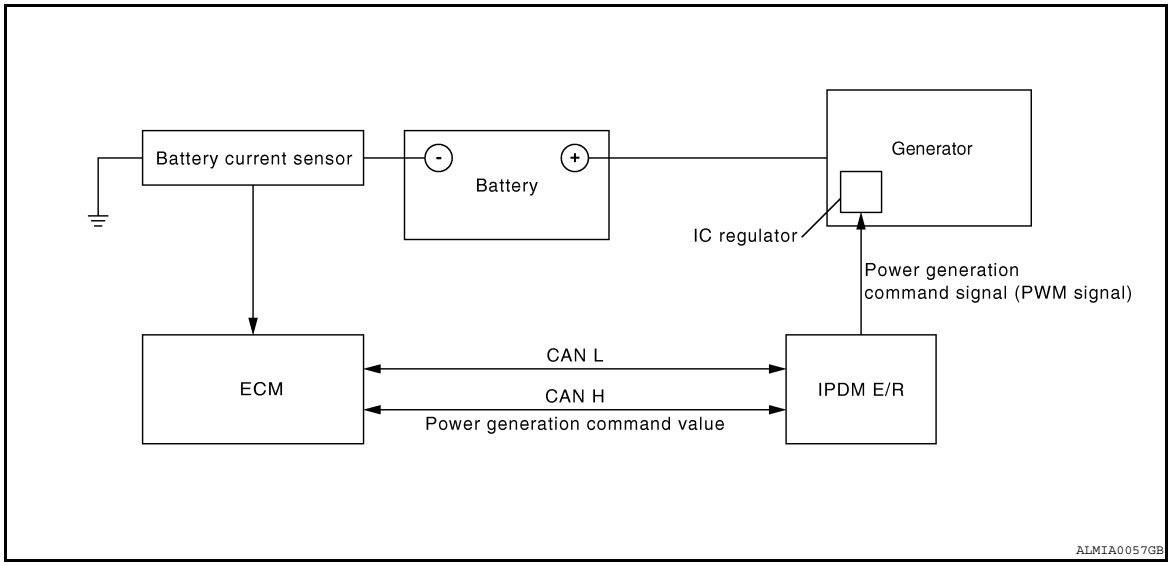
INFOID:0000000005430031

Component part		Description
Generator	Terminal “1”	Refer to CHG-8, "Description".
	Terminal “2”	Refer to CHG-9, "Description".
	Terminal “3”	Refer to CHG-10, "Description".
	Terminal “4”	Used for the power generation voltage variable control system. Refer to CHG-4, "System Description".
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.
IPDM E/R		Used for the power generation voltage variable control system. Refer to CHG-4, "System Description".

POWER GENERATION VOLTAGE VARIABLE CONTROL SYSTEM

System Diagram

INFOID:0000000005430032



System Description

INFOID:0000000005430033

Power generation variable voltage control system has been adopted. By varying the voltage to the generator, engine load due to power generation of the generator is reduced and fuel consumption is decreased.

NOTE:

When any malfunction is detected in the power generation variable voltage control system, power generation is performed according to the characteristic of the IC regulator in the generator.

Component Description

INFOID:0000000005430034

Component part	Description
Battery current sensor	The battery current sensor is installed on the battery cable at the negative terminal. The battery current sensor detects the charging/discharging current of the battery and sends a voltage signal to the ECM according to the current value detected.
ECM	The battery current sensor detects the charging/discharging current of the battery. The ECM judges the battery condition based on this signal. The ECM judges whether to request more output via the power generation voltage variable control according to the battery condition. When performing the power generation voltage variable control, the ECM calculates the target power generation voltage according to the battery condition and sends the calculated value as the power generation command value to the IPDM E/R.
IPDM E/R	The IPDM E/R converts the received power generation command value into a pulse width modulated (PWM) command signal and sends it to the IC regulator.
Generator (IC regulator)	The IC regulator controls the power generation voltage by the target power generation 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.

COMPONENT DIAGNOSIS

CHARGING SYSTEM PRELIMINARY INSPECTION

Inspection Procedure

INFOID:0000000005430035

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 and fusible link.

Unit	Power source (Power supply terminals)	Fuse or Fusible Link
Generator	Battery (terminal 3)	Fuse 29
	Battery (terminal 1)	Fusible Link **A**
Combination meter	Ignition switch ON (terminal 2)	Fuse 4

Is the inspection result normal?

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

3.CHECK GENERATOR GROUND TERMINAL CONNECTION

Check if connector E230 terminal 5 (generator ground harness) is clean and tight.

Is the inspection result normal?

YES >> GO TO 4
NO >> Repair connection.

4.CHECK DRIVE BELT TENSION

Check drive belt tension. Refer to CHG-26, "Removal and Installation".

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair as needed.

POWER GENERATION VOLTAGE VARIABLE CONTROL SYSTEM OPERATION INSPECTION

Inspection Procedure

INFOID:0000000005430036

Regarding Wiring Diagram information. Refer to CHG-11, "COUPE : Wiring Diagram" or CHG-17, "SEDAN : Wiring Diagram".

CAUTION:
When performing this inspection, always use a charged battery that has completed the battery inspection. (When the charging rate of the battery is low, the response speed of the voltage change will become slow. This can cause an incorrect inspection.)

1.CHECK ECM (CONSULT-III)

Perform ECM self-diagnosis with CONSULT-III. Refer to EC-128, "CONSULT-III Function" (QR25DE for California), EC-664, "CONSULT-III Function" (QR25DE except for California) or EC-1171, "CONSULT-III Function" (VQ35DE).

Self-diagnostic results content

No malfunction detected>> GO TO 2
Malfunction detected>> Check applicable parts, and repair or replace corresponding parts.

2.CHECK OPERATION OF POWER GENERATION VOLTAGE VARIABLE CONTROL SYSTEM

1. Connect CONSULT-III and start the engine.
2. The selector lever is in “P” or “N” position and all of the electric loads and A/C, etc. are turned OFF.
3. Select “ALTERNATOR DUTY” in “Active Test” of “ENGINE”, and then check the value of “BATTERY VOLT” monitor when DUTY value of “ALTERNATOR DUTY” is set to 40.0 %.

“BATTERY VOLT”	
2 seconds after setting the DUTY value of “ALTERNATOR DUTY” to 40.0 %	**: 12 - 13.6 V**

4. Check the value of “BATTERY VOLT” monitor when DUTY value of “ALTERNATOR DUTY” is set to 80.0%.

“BATTERY VOLT”	
20 seconds after setting the DUTY value of “ALTERNATOR DUTY” to 80.0 %	**: +0.5 V or more against the value of “BATTERY VOLT” monitor when DUTY value is 40.0 %**

Is the measurement value within the specification?

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

3.CHECK IPDM E/R (CONSULT-III)

Perform IPDM E/R self-diagnosis with CONSULT-III. Refer to PCS-17, "CONSULT - III Function (IPDM E/R)".

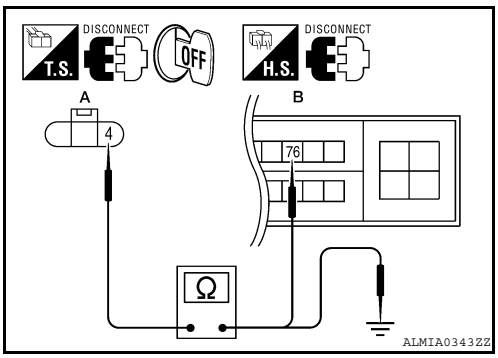
Self-diagnostic results content

No malfunction detected>> GO TO 4
Malfunction detected>> Check applicable parts, and repair or replace corresponding parts.

4.CHECK HARNESS BETWEEN GENERATOR AND IPDM E/R

1. Turn ignition switch OFF.
2. Disconnect generator connector and IPDM E/R connector.

3. Check continuity between generator harness connector F7 (A) terminal 4 and IPDM E/R harness connector F10 (B) terminal 76.



A		B		Continuity
Connector	Terminal	Connector	Terminal	
F7	4	F10	76	Yes

4. Check continuity between generator harness connector F7 (A) terminal 4 and ground.

A		—	Continuity
Connector	Terminal		
F7	4	Ground	No

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-47, "Removal and Installation".
NO >> Repair harness or connector between IPDM E/R and generator.

B TERMINAL CIRCUIT

Description

INFOID:0000000005430037

The terminal “1” (B) circuit supplies power to charge the battery and operate the vehicles electrical system.

Diagnosis Procedure

INFOID:0000000005430038

Regarding Wiring Diagram information. Refer to CHG-11, "COUPE : Wiring Diagram" or CHG-17, "SEDAN : Wiring Diagram".

1.CHECK TERMINAL “1” CONNECTION

1. Turn ignition switch OFF.
2. Check if terminal “1” is clean and tight.

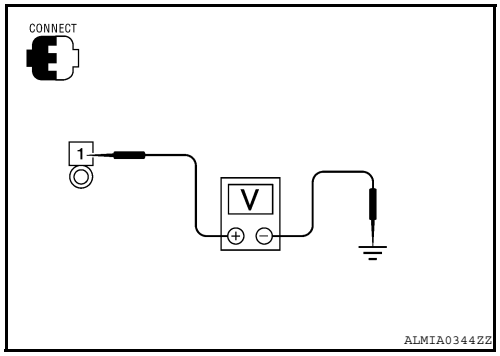
Is the inspection result normal?

YES >> GO TO 2
NO >> Repair terminal “1” connection. Confirm repair by performing complete Starting/Charging system test. Refer to diagnostic station instruction manual.

2.CHECK TERMINAL “1” CIRCUIT

Check voltage between generator connector F6 terminal 1 and ground.

1 - ground **Battery voltage**



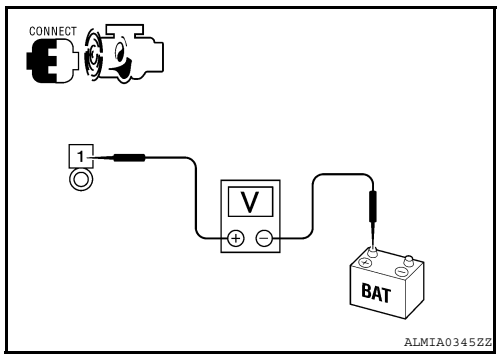
Is the inspection result normal?

YES >> GO TO 3
NO >> Check harness for open between generator and fusible link.

3.CHECK TERMINAL “1” CONNECTION (VOLTAGE DROP TEST)

1. Start engine, then engine running at idle and warm.
2. Check voltage between battery positive terminal and generator connector F6 terminal 1.

1 - B+ **Less than 0.2V**



Is the inspection result normal?

YES >> Terminal “1” circuit is normal. Refer to CHG-2, "Work Flow".
NO >> Check harness between battery and generator for high resistance.

L TERMINAL CIRCUIT

Description

INFOID:0000000005430039

The terminal “2” (L) circuit controls the charge warning lamp. The charge warning lamp illuminates 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 will go off. If the charge warning lamp illuminates with the engine running, a malfunction is indicated.

Diagnosis Procedure

INFOID:0000000005430040

Regarding Wiring Diagram information. Refer to CHG-11, "COUPE : Wiring Diagram" or CHG-17, "SEDAN : Wiring Diagram".

1.CHECK CHARGE WARNING LAMP CIRCUIT CONNECTION

Check to see if generator connector F7 terminal 2 is clean and tight.

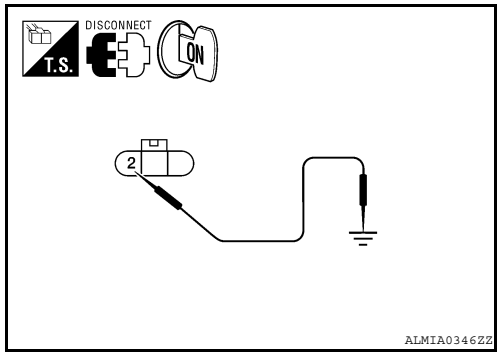
Is the connection secure?

YES >> GO TO 2
NO >> Repair the connection. Confirm repair by performing complete Starting/Charging system test. Refer to diagnostic station instruction manual.

2.CHECK CHARGE WARNING LAMP CIRCUIT

1. Disconnect generator connector F7.
2. Apply ground to generator harness connector F7 terminal 2 with the ignition switch in the ON position.

Charge lamp should illuminate



Does it illuminate?

YES >> Check generator function. Refer to CHG-2, "Work Flow".
NO >> GO TO 3

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn ignition switch OFF.
2. Disconnect the generator connector F7.
3. Disconnect the combination meter connector M24.
4. Check continuity between generator harness connector F7 (A) terminal 2 and combination meter harness connector M24 (B) terminal 25.

A		B		Continuity
Connector	Terminal	Connector	Terminal	
F7	2	M24	25	Yes

Is continuity present?

YES >> Replace the combination meter. Refer to MWI-153, "Removal and Installation".
NO >> Repair the harness or connector.

S TERMINAL CIRCUIT

Description

INFOID:0000000005430041

The output voltage of the generator is controlled by the IC regulator at terminal “3” (S) detecting the input voltage from battery. Terminal “3” circuit detects the battery voltage to adjust the generator output voltage with the IC regulator.

Diagnosis Procedure

INFOID:0000000005430042

Regarding Wiring Diagram information. Refer to CHG-11, "COUPE : Wiring Diagram" or CHG-17, "SEDAN : Wiring Diagram".

1.CHECK VOLTAGE REGULATOR CIRCUIT CONNECTION

Check to see if connector F7 terminal 3 is clean and tight.

Is the inspection result normal?

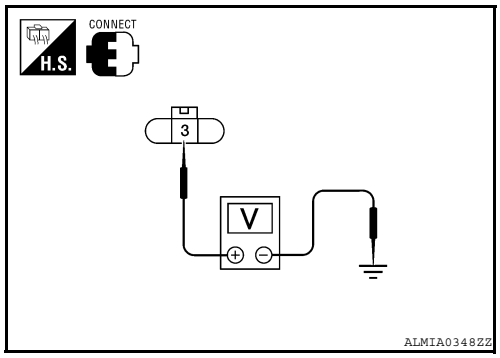
YES >> GO TO 2

NO >> Repair terminal connection. Confirm repair by performing complete Starting/Charging system test. Refer to diagnostic station instruction manual.

2.CHECK VOLTAGE REGULATOR CIRCUIT

Check voltage between generator harness connector F7 terminal 3 and ground.

3 - ground	**Battery voltage**



Does battery voltage exist?

YES >> Refer to CHG-2, "Work Flow".

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

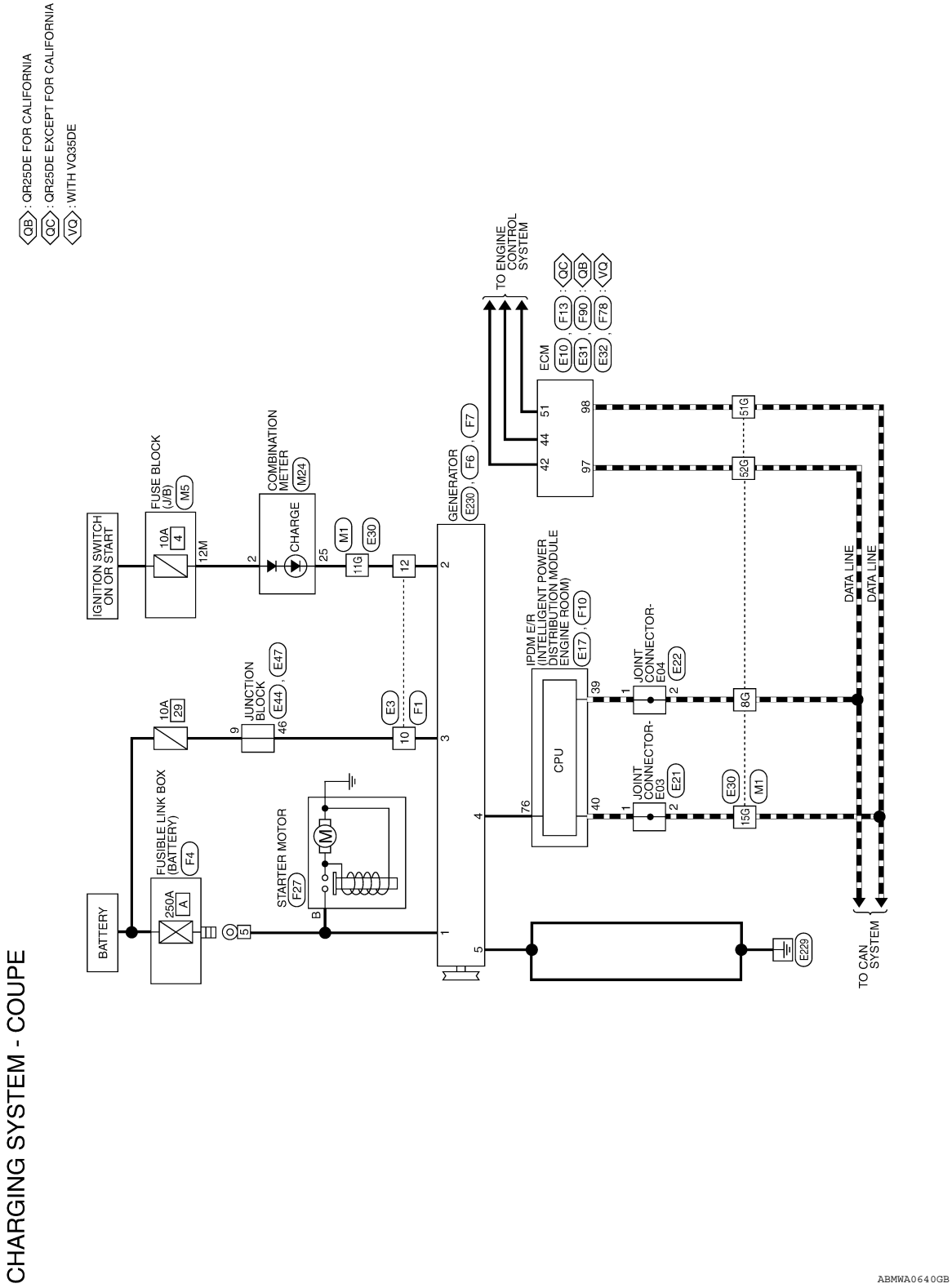
WIRING DIAGRAM

CHARGING SYSTEM

COUPE

COUPE : Wiring Diagram

INFOID:0000000005430043



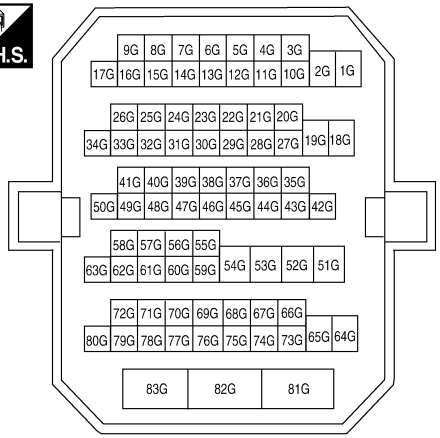
CHARGING SYSTEM - COUPE

ABMWA0640GB

CHARGING SYSTEM CONNECTORS - COUPE

Connector No.	M1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

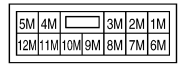
H.S.



Terminal No.	Color of Wire	Signal Name
8G	P	–
11G	BR	–
15G	L	–
51G	L	–
52G	P	–

Connector No.	M5
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

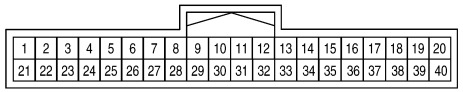
H.S.



Terminal No.	Color of Wire	Signal Name
12M	O	–

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE

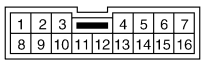
H.S.



Terminal No.	Color of Wire	Signal Name
2	O	IGN
25	BR	CHG

Connector No.	E3
Connector Name	WIRE TO WIRE
Connector Color	WHITE

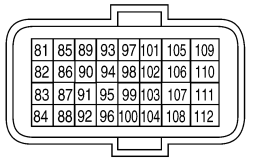
H.S.



Terminal No.	Color of Wire	Signal Name
10	W	–
12	LG	–

Connector No.	E10
Connector Name	ECM (QR25DE EXCEPT FOR CALIFORNIA)
Connector Color	BLACK

H.S.



Terminal No.	Color of Wire	Signal Name
97	P	CAN-L
98	L	CAN-H

ABMIA1714GB

Connector No.	E17
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
39	P	CAN-L
40	L	CAN-H

Connector No.	E21
Connector Name	JOINT CONNECTOR-E03
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	L	–
2	L	–

Connector No.	E22
Connector Name	JOINT CONNECTOR-E04
Connector Color	WHITE

H.S.

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

Connector No.	E30
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
8G	P	–
11G	LG	–
15G	L	–
51G	L	–
52G	P	–

Connector No.	E31
Connector Name	ECM (QR25DE FOR CALIFORNIA)
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
97	P	CAN-L
98	L	CAN-H

ABMIA1715GB

Connector No.	E32
Connector Name	ECM (WITH VQ35DE)
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
97	P	CAN-L
98	L	CAN-H

Connector No.	E44
Connector Name	JUNCTION BLOCK
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
9	BR	–

Connector No.	E47
Connector Name	JUNCTION BLOCK
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
46	W	–

Connector No.	E230
Connector Name	GENERATOR
Connector Color	–

H.S.

Terminal No.	Color of Wire	Signal Name
5	B	GND

Connector No.	F1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
10	G	– (WITH QR25DE)
10	O	– (WITH VQ35DE)
12	BR	–

Connector No.	F4
Connector Name	FUSIBLE LINK BOX (BATTERY)
Connector Color	–

H.S.

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

ABMIA1716GB

Connector No.	F6
Connector Name	GENERATOR
Connector Color	–

H.S.

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

Connector No.	F7
Connector Name	GENERATOR
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
2	BR	CHG
3	G	BATT (WITH QR25DE)
3	O	BATT (WITH VQ35DE)
4	Y	–

Connector No.	F10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
76	GR	ALT-C

Connector No.	F13
Connector Name	ECM (QR25DE EXCEPT FOR CALIFORNIA)
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
42	Y	CURSEN
44	B	GNDA-CURSEN
51	BR	AVCC1-CURSEN

ABMIA1717GB

Connector No.	F27
Connector Name	STARTER MOTOR
Connector Color	–

H.S.

B

Terminal No.	Color of Wire	Signal Name
B	B/R	BATT

Connector No.	F78
Connector Name	ECM (WITH VQ35DE)
Connector Color	BROWN

H.S.

33	37	41	45	49	53	57	61	65	69	73	77
34	38	42	46	50	54	58	62	66	70	74	78
35	39	43	47	51	55	59	63	67	71	75	79
36	40	44	48	52	56	60	64	68	72	76	80

Terminal No.	Color of Wire	Signal Name
42	G	CURSEN
44	O	GNDA-CURSEN
51	P	AVCC1-CURSEN

Connector No.	F90
Connector Name	ECM (QR25DE FOR CALIFORNIA)
Connector Color	BROWN

H.S.

33	37	41	45	49	53	57	61	65	69	73	77
34	38	42	46	50	54	58	62	66	70	74	78
35	39	43	47	51	55	59	63	67	71	75	79
36	40	44	48	52	56	60	64	68	72	76	80

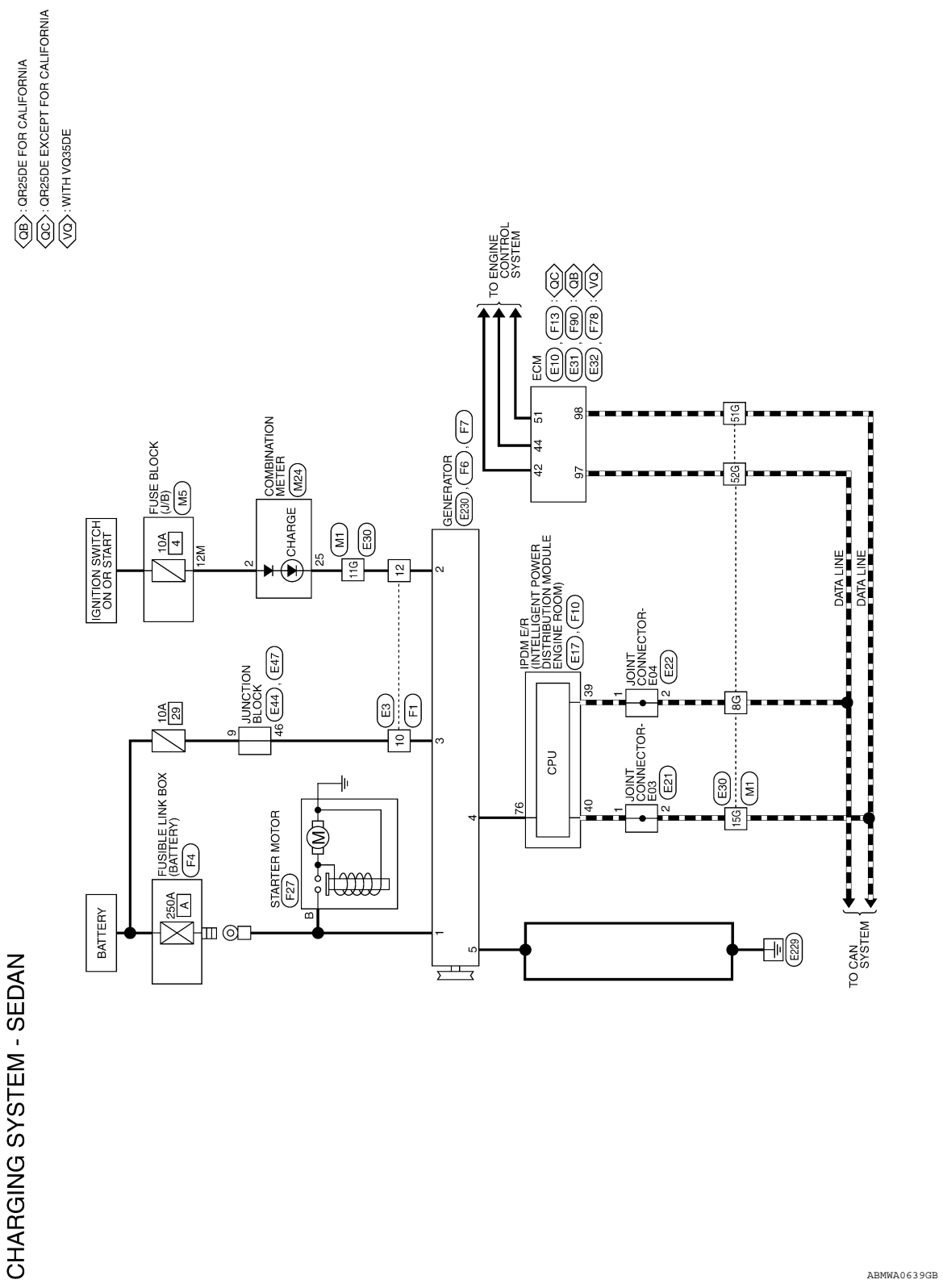
Terminal No.	Color of Wire	Signal Name
42	Y	CURSEN
44	B	GNDA-CURSEN
51	BR	AVCC1-CURSEN

ABMIA1718GB

SEDAN

SEDAN : Wiring Diagram

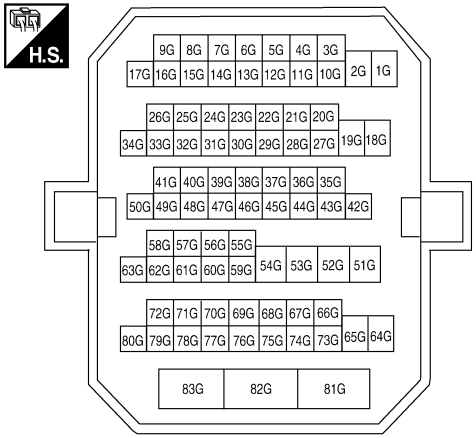
INFOID:0000000005430044



CHARGING SYSTEM - SEDAN

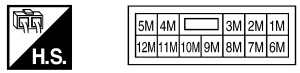
CHARGING SYSTEM CONNECTORS - SEDAN

Connector No.	M1
Connector Name	WIRE TO WIRE
Connector Color	WHITE



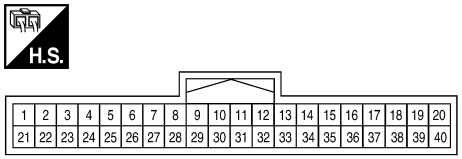
Terminal No.	Color of Wire	Signal Name
8G	P	–
11G	BR	–
15G	L	–
51G	L	–
52G	P	–

Connector No.	M5
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



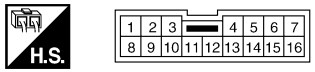
Terminal No.	Color of Wire	Signal Name
12M	O	–

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE



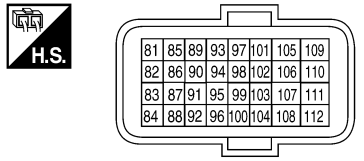
Terminal No.	Color of Wire	Signal Name
2	O	IGN
25	BR	CHG

Connector No.	E3
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
10	W	–
12	LG	–

Connector No.	E10
Connector Name	ECM (QR25DE EXCEPT FOR CALIFORNIA
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
97	P	CAN-L
98	L	CAN-H

ABMIA1709GB

Connector No.	E17
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE

H.S.

42	41	40	39
46	45	44	43

Terminal No.	Color of Wire	Signal Name
39	P	CAN-L
40	L	CAN-H

Connector No.	E21
Connector Name	JOINT CONNECTOR-E03
Connector Color	WHITE

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	L	–
2	L	–

Connector No.	E22
Connector Name	JOINT CONNECTOR-E04
Connector Color	WHITE

H.S.

4	3	2	1

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

Connector No.	E30
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1G	2G	10G	11G	12G	13G	14G	15G	16G	17G
18G	19G	27G	28G	29G	30G	31G	32G	33G	34G
35G	36G	37G	38G	39G	40G	41G			
42G	43G	44G	45G	46G	47G	48G	49G	50G	
51G	52G	53G	54G	55G	56G	57G	58G		
64G	65G	73G	74G	75G	76G	77G	78G	79G	80G
66G	67G	68G	69G	70G	71G	72G			
3G	4G	5G	6G	7G	8G	9G			
59G	60G	61G	62G	63G					
81G		82G		83G					

Terminal No.	Color of Wire	Signal Name
8G	P	–
11G	LG	–
15G	L	–
51G	L	–
52G	P	–

Connector No.	E31
Connector Name	ECM (QR25DE FOR CALIFORNIA)
Connector Color	BLACK

H.S.

81	85	89	93	97	101	105	109
82	86	90	94	98	102	106	110
83	87	91	95	99	103	107	111
84	88	92	96	100	104	108	112

Terminal No.	Color of Wire	Signal Name
97	P	CAN-L
98	L	CAN-H

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Connector No.	E32
Connector Name	ECM (WITH VQ35DE)
Connector Color	BLACK

H.S.

81	85	89	93	97	101	105	109
82	86	90	94	98	102	106	110
83	87	91	95	99	103	107	111
84	88	92	96	100	104	108	112

Terminal No.	Color of Wire	Signal Name
97	P	CAN-L
98	L	CAN-H

Connector No.	E44
Connector Name	JUNCTION BLOCK
Connector Color	BROWN

H.S.

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

Terminal No.	Color of Wire	Signal Name
9	BR	–

Connector No.	E47
Connector Name	JUNCTION BLOCK
Connector Color	WHITE

H.S.

42	41
46	45	44	43

Terminal No.	Color of Wire	Signal Name
46	W	–

Connector No.	E230
Connector Name	GENERATOR
Connector Color	–

H.S.

5

Terminal No.	Color of Wire	Signal Name
5	B	GND

Connector No.	F1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
10	G	– (WITH QR25DE)
10	O	– (WITH VQ35DE)
12	BR	–

Connector No.	F4
Connector Name	FUSIBLE LINK BOX (BATTERY)
Connector Color	–

H.S.

5

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

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Connector No.	F6
Connector Name	GENERATOR
Connector Color	–

H.S.

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

Connector No.	F7
Connector Name	GENERATOR
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
2	BR	CHG
3	G	BATT (WITH QR25DE)
3	O	BATT (WITH VQ35DE)
4	Y	–

Connector No.	F10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
76	GR	ALT-C

Connector No.	F13
Connector Name	ECM (QR25DE EXCEPT FOR CALIFORNIA)
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
42	Y	CURSEN
44	B	GNDA-CURSEN
51	BR	AVCC1-CURSEN

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Connector No.	F27
Connector Name	STARTER MOTOR
Connector Color	–

H.S.

B

Terminal No.	Color of Wire	Signal Name
B	B/R	BATT

Connector No.	F78
Connector Name	ECM (WITH VQ35DE)
Connector Color	BROWN

H.S.

33	37	41	45	49	53	57	61	65	69	73	77
34	38	42	46	50	54	58	62	66	70	74	78
35	39	43	47	51	55	59	63	67	71	75	79
36	40	44	48	52	56	60	64	68	72	76	80

Terminal No.	Color of Wire	Signal Name
42	G	CURSEN
44	O	GNDA-CURSEN
51	P	AVCC1-CURSEN

Connector No.	F90
Connector Name	ECM (QR25DE FOR CALIFORNIA)
Connector Color	BROWN

H.S.

33	37	41	45	49	53	57	61	65	69	73	77
34	38	42	46	50	54	58	62	66	70	74	78
35	39	43	47	51	55	59	63	67	71	75	79
36	40	44	48	52	56	60	64	68	72	76	80

Terminal No.	Color of Wire	Signal Name
42	Y	CURSEN
44	B	GNDA-CURSEN
51	BR	AVCC1-CURSEN

ABMIA1713GB

SYMPTOM DIAGNOSIS

CHARGING SYSTEM

Symptom Table

INFOID:0000000005430045

Symptom	Reference
Battery discharged	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 charging warning lamp turns ON when increasing the engine speed.	

PRECAUTION

PRECAUTIONS

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

INFOID:0000000005774523

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

WARNING:

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

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

WARNING:

- **When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

Precaution for Power Generation Voltage Variable Control System

INFOID:0000000005430048

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.

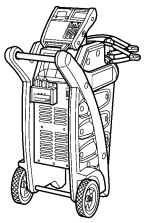
PREPARATION

PREPARATION

Special Service Tool

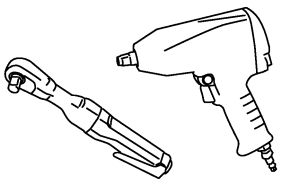
INFOID:0000000005430049

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
— (—) Model GR-8 Multitasking Battery Diagnostic Station  AWIIA1239ZZ	Tests batteries, starting and charging systems. For operating instructions, refer to diagnostic station instruction manual.

Commercial Service Tool

INFOID:0000000005430050

Tool name	Description
Power tool  PBIC0190E	Loosening bolts and nuts

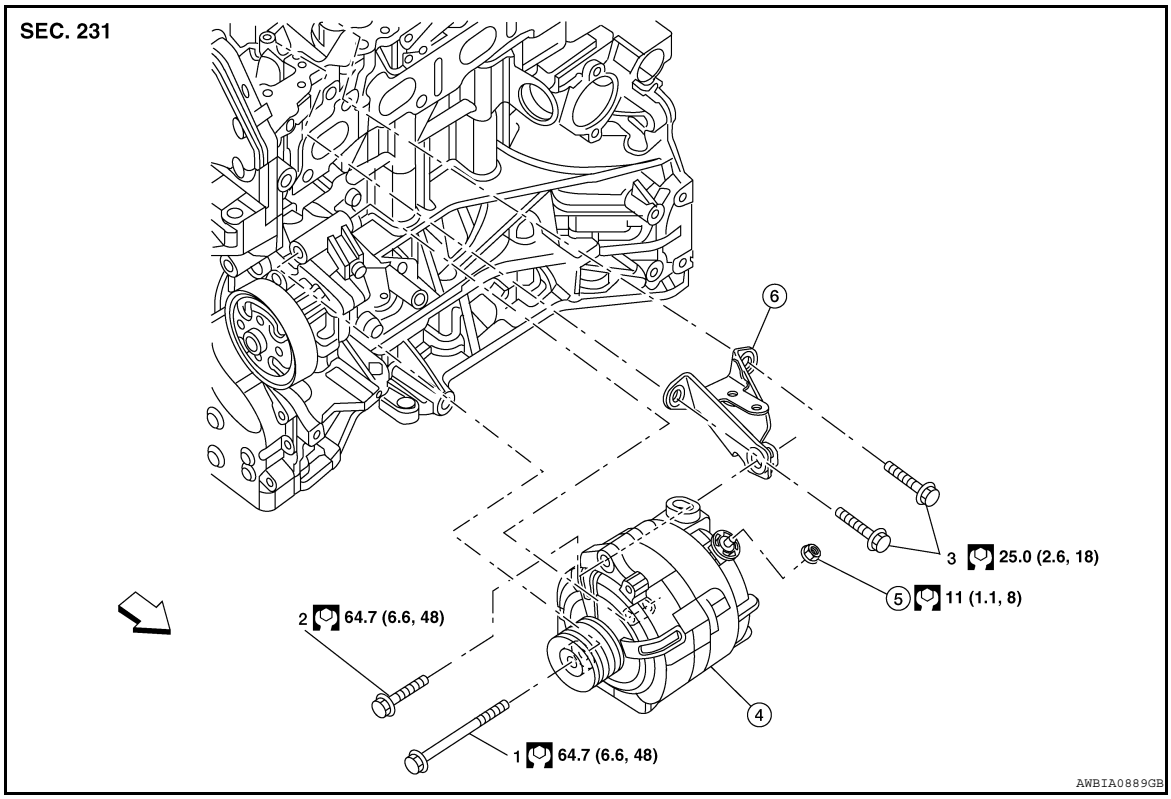
ON-VEHICLE REPAIR

GENERATOR

Removal and Installation

INFOID:0000000005430051

QR25DE



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

Removal

1. Disconnect the battery negative terminal. Refer to PG-70, "Removal and Installation (Battery)" (Coupe models) or PG-142, "Removal and Installation (Battery)" (Sedan models).
2. Remove RH fender protector side cover. Refer to EXT-20, "Removal and Installation" (Coupe models) or EXT-42, "Removal and Installation" (Sedan models).
3. Remove drive belt. Refer to EM-16, "Removal and Installation".
4. Remove engine room cover.
5. Remove “B” terminal nut.
6. Disconnect generator harness connectors.
7. Remove generator ground harness bolt.
8. Remove generator bolts, using power tools.
9. Remove generator assembly upward.

Installation

Installation is in the reverse order of removal.

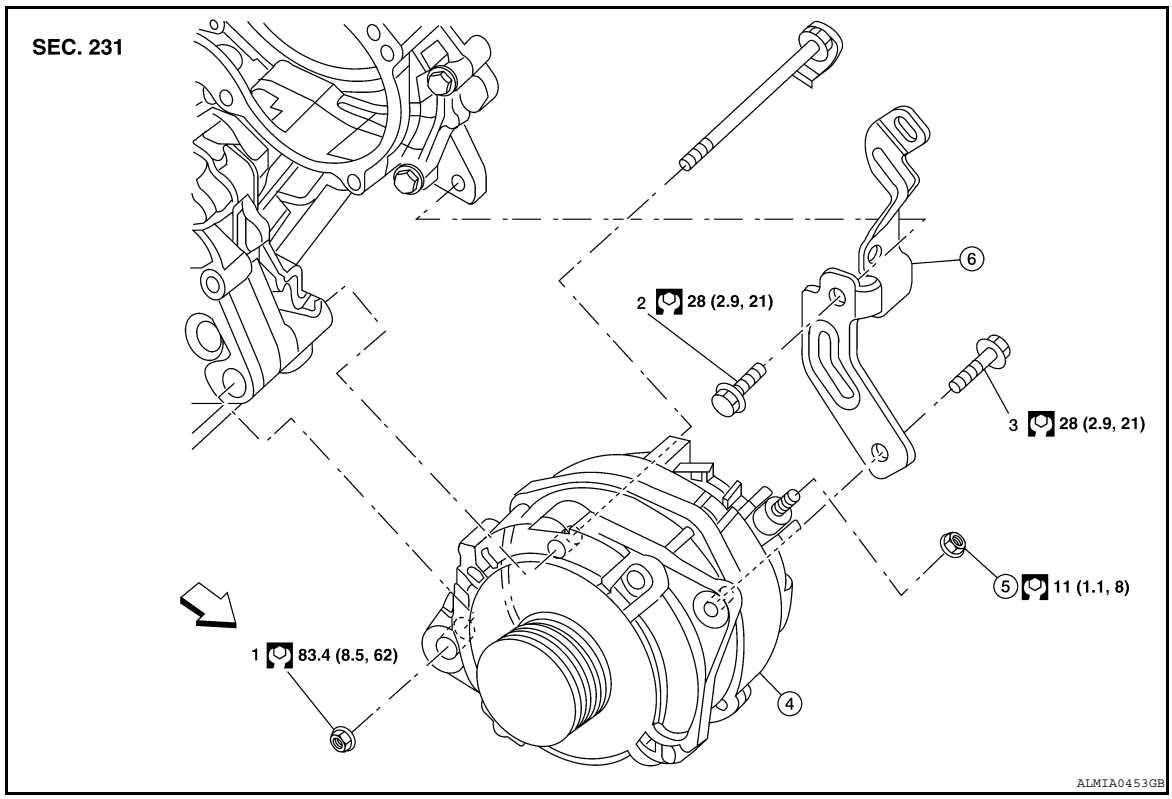
CAUTION:

Be sure to tighten “B” terminal nut carefully.

- Install generator and check tension of belt. Refer to EM-16, "Checking Drive Belts".
- 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-4, "System Description".

VQ35DE



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

REMOVAL

1. Disconnect the battery negative terminal. Refer to PG-70, "Removal and Installation (Battery)" (Coupe models) or PG-142, "Removal and Installation (Battery)" (Sedan models).
2. Remove engine under cover. Refer to EXT-14, "Removal and Installation" (Coupe models) or EXT-36, "Removal and Installation" (Sedan models).
3. Partially drain engine coolant. Refer to CO-34, "Changing Engine Coolant".
4. Remove engine room cover.
5. Remove RH front wheel and tire assembly. Refer to WT-65, "Adjustment".
6. Remove RH fender protector side cover. Refer to EXT-20, "Removal and Installation" (Coupe models) or EXT-42, "Removal and Installation" (Sedan models).
7. Remove air cleaner and duct assembly. Refer to EM-129, "Removal and Installation".
8. Remove battery tray. Refer to PG-71, "Removal and Installation (Battery Tray)" (Coupe models) or PG-143, "Removal and Installation (Battery Tray)" (Sedan models).
9. Remove cooling fan assembly. Refer to CO-39, "Removal and Installation".
10. Evacuate A/C system. Refer to HA-29, "HFC-134a (R-134a) Service Procedure".
11. Remove drive belt. Refer to EM-120, "Removal and Installation".
12. Release clip and reposition power steering tube.
13. Remove the A/C compressor. Refer to HA-31, "Removal and Installation for Compressor - VQ35DE Models".
14. Remove A/C idler pulley.
15. Disconnect oil pressure switch.
16. Disconnect the generator harness connectors.

17. Remove the generator bolt and nuts, using power tools.
18. Slide the generator out and remove.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Be sure to tighten “B” terminal nut carefully.

- Install generator and check tension of belt. Refer to EM-120, "Checking Drive Belts".
- 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-4, "System Description".

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Generator

INFOID:0000000005430053

Application	QR25DE	VQ35DE
Type*	TG11S092	A003TJ1791ZC
	Valeo	Mitsubishi
Nominal rating	14V-110A	12V-130A
Ground polarity	Negative	
Minimum revolution under no-load	1,200 rpm	1,000 rpm
Hot output current (When 13.5 volts is applied)	More than 46A/1,500 rpm More than 68A/1,800 rpm More than 91A/2,500 rpm More than 105A/5,000 rpm	More than 61A/1,500 rpm More than 109A/2,500 rpm More than 129A/5,000 rpm
Regulated output voltage	13.5V @ 5,000 rpm @ 20°C	14.1 - 14.7V @ 20°C
Adjustment range of power generation variable voltage control	11.4 - 15.6V	11.4 - 15.6V

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