

STR

SECTION

STARTING SYSTEM

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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow (With GR8-1200 NI)

INFOID:000000009325604

STR

STARTING SYSTEM DIAGNOSIS WITH GR8-1200 NI

To test the starting system, use the following special service tool:

- GR8-1200 NI Multitasking battery and electrical diagnostic station

NOTE:

Refer to the diagnostic station Instruction Manual for proper starting system diagnosis procedures.

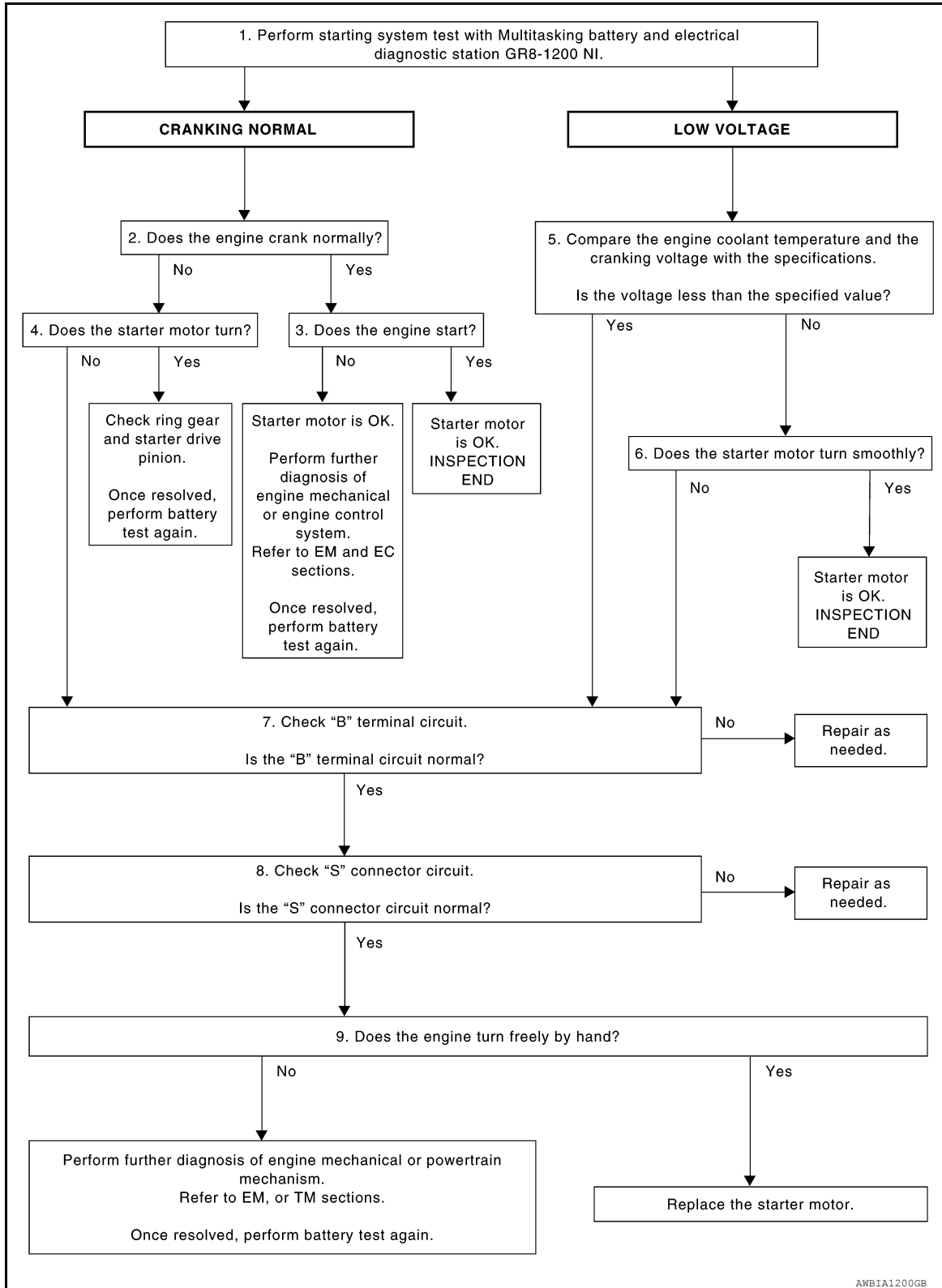
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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[QR25DE]

OVERALL SEQUENCE



DETAILED FLOW

NOTE:

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

1. DIAGNOSIS WITH MULTITASKING BATTERY AND ELECTRICAL DIAGNOSTIC STATION GR8-1200 NI

DIAGNOSIS AND REPAIR WORKFLOW

[QR25DE]

< BASIC INSPECTION >

Perform the starting system test with Multitasking battery and electrical diagnostic station GR8-1200 NI. For details and operating instructions, refer to diagnostic station Instruction Manual.

Test result

CRANKING NORMAL>>GO TO 2.

LOW VOLTAGE>>GO TO 5.

CHARGE BATTERY>>Perform the slow battery charging procedure. (Initial rate of charge is 10A for 12 hours.) Perform battery test again. Refer to diagnostic station instruction manual.

REPLACE BATTERY>>Before replacing battery, clean the battery cable clamps and battery posts. Perform battery test again. Refer to diagnostic station instruction manual. If second test result is "REPLACE BATTERY", then do so. Perform battery test again to confirm repair.

2. CRANKING CHECK

Check that the starter motor operates properly.

Does the engine crank normally?

YES >> GO TO 3.

NO >> GO TO 4.

3. ENGINE START CHECK

Check that the engine starts.

Does the engine start?

YES >> Inspection End.

NO >> Perform further diagnosis of engine mechanical or engine control system. Refer to EM and EC sections. Once resolved, perform battery test again.

4. STARTER MOTOR ACTIVATION

Check that the starter motor operates.

Does the starter motor turn?

YES >> Check ring gear and starter motor drive pinion. Once resolved, perform battery test again.

NO >> GO TO 7.

5. COMPARISON BETWEEN ENGINE COOLANT AND CRANKING VOLTAGE

Compare the engine coolant temperature and verify the cranking voltage is within specifications.

Minimum Specification of Cranking Voltage Referencing Coolant Temperature

Engine coolant temperature [°C (°F)]	Voltage [V]
-30 to -20 (-22 to -4)	8.6
-19 to -10 (-2 to 14)	9.1
-9 to 0 (16 to 32)	9.5
More than 1 (More than 34)	9.9

Is the voltage less than the specified value?

YES >> GO TO 7.

NO >> GO TO 6.

6. STARTER OPERATION

Check the starter operation.

Does the starter motor turn smoothly?

YES >> Inspection End.

NO >> GO TO 7.

7. "B" TERMINAL CIRCUIT INSPECTION

Check "B" terminal circuit. Refer to [STR-11, "Diagnosis Procedure"](#).

Is "B" terminal circuit normal?

YES >> GO TO 8.

NO >> Repair as needed.

8. "S" CONNECTOR CIRCUIT INSPECTION

Check "S" connector circuit. Refer to [STR-13, "Diagnosis Procedure"](#).

DIAGNOSIS AND REPAIR WORKFLOW

[QR25DE]

< BASIC INSPECTION >

Is "S" connector circuit normal?

YES >> GO TO 9.

NO >> Repair as needed.

9. ENGINE ROTATION STATUS

Check that the engine can be rotated by hand.

Does the engine turn freely by hand?

YES >> Replace starter motor.

NO >> Perform further diagnosis of engine mechanical or powertrain mechanism. Once resolved, perform battery test again using Multitasking battery and electrical diagnostic station GR8-1200 NI. Refer to the diagnostic station Instruction Manual for proper testing procedures.

DIAGNOSIS AND REPAIR WORKFLOW

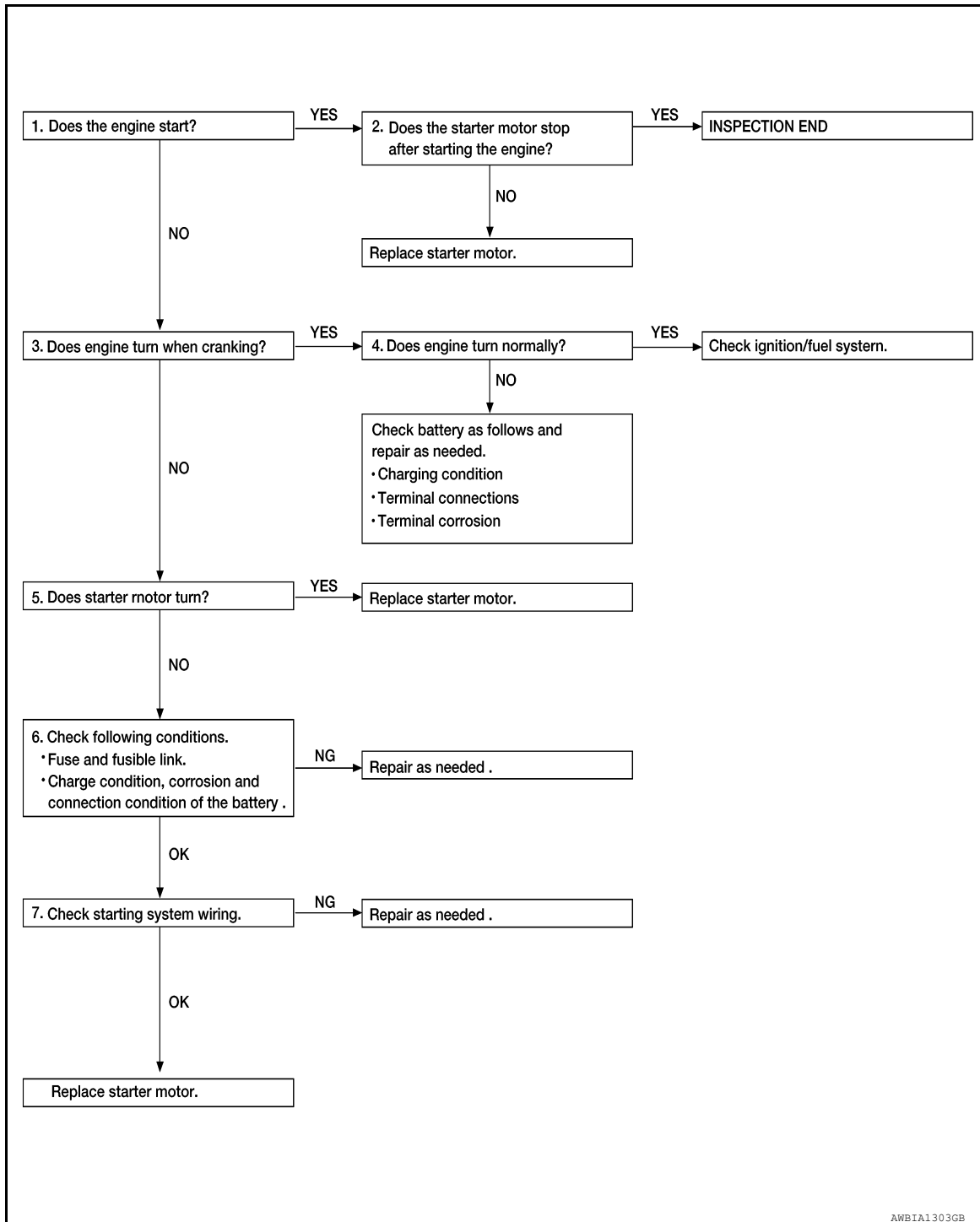
< BASIC INSPECTION >

[QR25DE]

Work Flow (Without GR8-1200 NI)

INFOID:000000009325605

OVERALL SEQUENCE



DETAILED FLOW

NOTE:

If any malfunction is found, immediately disconnect the battery cable from the negative terminal.

1.CHECK ENGINE START

Crank the engine and check that the engine starts.

Does the engine start?

YES >> GO TO 2.

NO >> GO TO 3.

< BASIC INSPECTION >

2. CHECK THAT THE STARTER MOTOR STOPS

Check that the starter motor stops after starting the engine.

Does the starter motor stop?

YES >> Inspection End.

NO >> Replace starter motor. Refer to [STR-30, "Removal and Installation"](#).

3. CHECK THAT THE ENGINE TURNS WHEN CRANKING

Check that the engine turns when cranking.

Does engine turn when cranking?

YES >> GO TO 4.

NO >> GO TO 5.

4. CHECK THE ENGINE SPEED WHEN CRANKING

Check that the engine speed is not low when cranking.

Does engine turn normally?

YES >> Check ignition/fuel system.

NO >> Check charge condition, corrosion and connection condition of the battery. Refer to [PG-3, "How to Handle Battery"](#) (Coupe) or [PG-71, "How to Handle Battery"](#) (Sedan).

5. CHECK STARTER MOTOR ACTIVATION

Check that the starter motor runs at cranking.

Does starter motor turn?

YES >> Replace starter motor. Refer to [STR-30, "Removal and Installation"](#).

NO >> GO TO 6.

6. CHECK POWER SUPPLY CIRCUIT

Check the following conditions:

- Fuse and fusible link
- Charge condition, corrosion and connection of the battery.

Are these inspection results normal?

YES >> GO TO 7.

NO >> Repair as needed.

7. CHECK STARTING SYSTEM WIRING

Check the following:

- "B" terminal circuit. Refer to [STR-11, "Diagnosis Procedure"](#).
- "S" terminal circuit. Refer to [STR-13, "Diagnosis Procedure"](#).

Are the inspection results normal?

YES >> Replace starter motor. Refer to [STR-30, "Removal and Installation"](#).

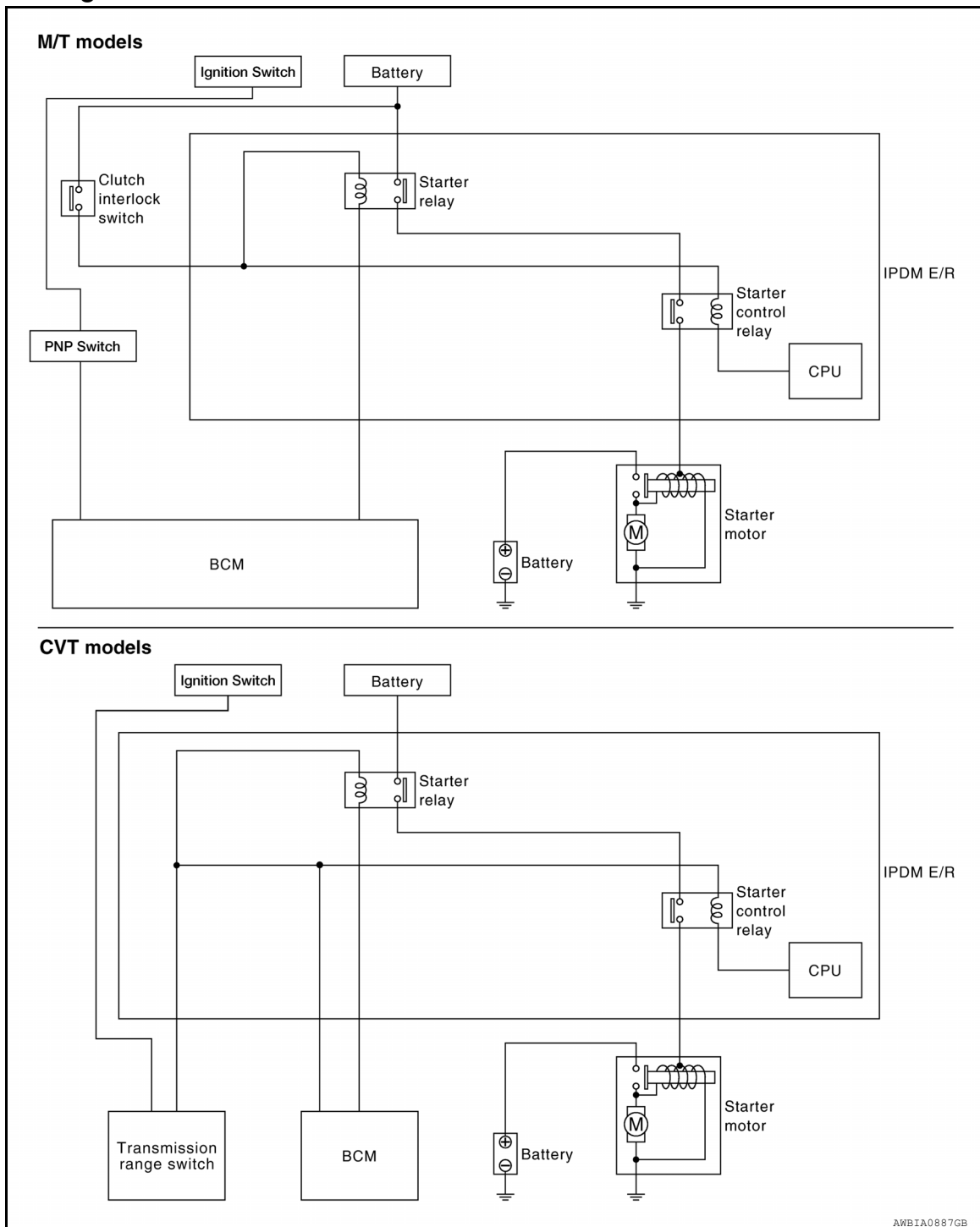
NO >> Repair as needed.

SYSTEM DESCRIPTION

STARTING SYSTEM

System Diagram

INFOID:000000007418581



System Description

INFOID:000000007418582

The starter motor plunger closes and provides a closed circuit between the battery and the starter motor. The starter motor is grounded to the cylinder block. With power and ground supplied, the starter motor operates.

STARTING SYSTEM

< SYSTEM DESCRIPTION >

[QR25DE]

Component Description

INFOID:000000007418583

Component part	Description
Transmission range switch (CVT models)	Transmission range switch supplies power to the starter relay and starter control relay inside IPDM E/R when the shift selector is placed in the P or N position.
Clutch interlock switch (M/T models)	The switch turns ON and electric power is supplied to the starter relay and starter control relay inside IPDM E/R when the clutch pedal is depressed.
BCM	BCM controls the starter relay inside IPDM E/R.
IPDM E/R	CPU inside IPDM E/R controls the starter control relay.
Starter motor	The starter motor plunger closes and the motor is supplied with battery power, which in turn cranks the engine, when the "S" terminal is supplied with electric power.

DTC/CIRCUIT DIAGNOSIS

B TERMINAL CIRCUIT

Description

INFOID:000000007418584

STR

The "B" terminal is constantly supplied with battery power.

Diagnosis Procedure

INFOID:000000007418585

Regarding Wiring Diagram information, refer to [STR-14, "Wiring Diagram - Coupe With QR25DE"](#) or [STR-20, "Wiring Diagram - Sedan With QR25DE"](#).

CAUTION:

Perform diagnosis under the condition that the engine cannot start by the following procedure.

1. Remove fuel pump fuse.
2. Crank or start the engine (where possible) until the fuel pressure is depleted.

1.CHECK TERMINAL B POWER SUPPLY VOLTAGE

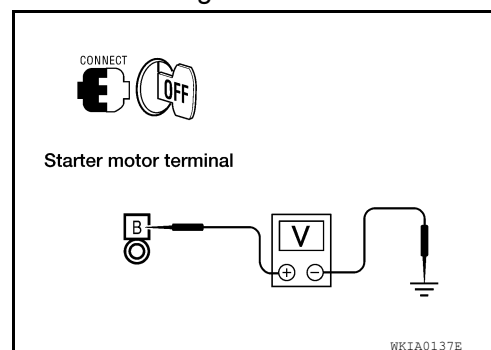
1. Turn ignition switch OFF.
2. Make sure that starter motor connector F27 terminal B connection is clean and tight.
3. Check voltage between starter motor connector F27 terminal B and ground.

B - ground**Battery voltage**

Is there battery voltage present?

YES >> GO TO 2

NO >> Check harness between battery and starter motor for open circuit.

**2.CHECK BATTERY CABLE (VOLTAGE DROP TEST)**

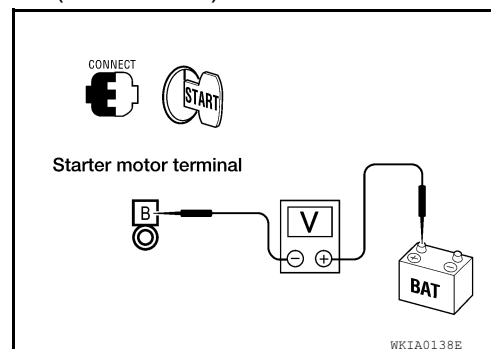
1. Shift CVT selector lever to "P" or "N" position. (CVT models)
Press and hold the clutch pedal fully with the control lever in neutral. (M/T models)
2. Check voltage between battery positive terminal and starter motor connector F27 terminal B while cranking the engine.

While cranking the engine**Terminal B - B+ terminal****Less than 0.5V**

Is the voltage drop less than 0.5V?

YES >> GO TO 3

NO >> Check harness between the battery and the starter motor for high resistance.

**3.CHECK GROUND CIRCUIT STATUS (VOLTAGE DROP TEST)**

B TERMINAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[QR25DE]

Check voltage between starter motor case and battery negative terminal while cranking the engine.

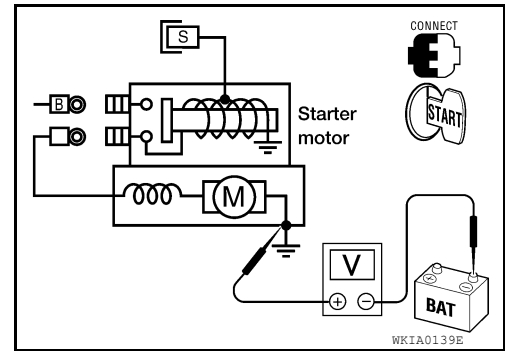
While cranking the engine

Starter case - B- terminal

Less than 0.2V

Is the voltage drop less than 0.2V?

- YES >> Terminal B circuit is OK. Further inspection is necessary.
Refer to [STR-3, "Work Flow \(With GR8-1200 NI\)"](#) or
[STR-7, "Work Flow \(Without GR8-1200 NI\)"](#).
- NO >> Check the starter motor case to engine mounting for high resistance.



S CONNECTOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[QR25DE]

S CONNECTOR CIRCUIT

Description

INFOID:000000007418586

The starter motor magnetic switch is supplied with power when the ignition switch is placed in the START position while the shift selector is in the P or N position (CVT models) or the clutch pedal is fully depressed (M/T models).

Diagnosis Procedure

INFOID:000000007418587

Regarding Wiring Diagram information, refer to [STR-14, "Wiring Diagram - Coupe With QR25DE"](#) or [STR-20, "Wiring Diagram - Sedan With QR25DE"](#).

CAUTION:

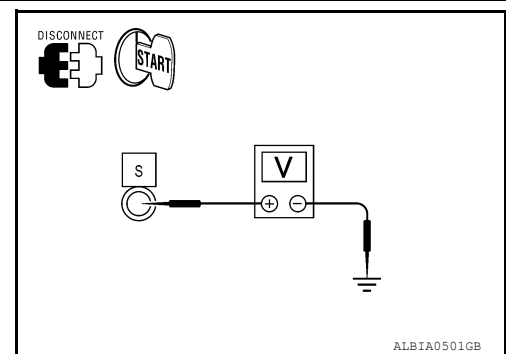
Perform diagnosis under the condition that engine cannot start by the following procedure.

1. Remove fuel pump fuse.
2. Crank or start the engine (where possible) until the fuel pressure is released.

1.CHECK "S" CONNECTOR CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect starter motor connector F28.
3. Shift CVT selector lever to "P" or "N" position. (CVT models)
Press and hold the clutch pedal fully with the control lever in neutral. (M/T models)
4. Check voltage between starter motor harness connector F28 terminal S and ground with the ignition in START.

With ignition switch in START
S - ground Battery voltage



Is battery voltage present?

YES >> "S" circuit is OK. Further inspection is necessary. Refer to [STR-3, "Work Flow \(With GR8-1200 NI\)"](#) or [STR-7, "Work Flow \(Without GR8-1200 NI\)"](#).

NO >> GO TO 2

2.CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Check the following terminals and connectors for damage, bent pins and loose connections.
 - IPDM E/R harness connector F10
 - Starter motor harness connector F28

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair the terminal and connector.

3.CHECK HARNESS CONTINUITY

1. Disconnect IPDM E/R connector F10.
2. Check continuity between starter motor harness connector F28 terminal S and IPDM E/R harness connector F10 terminal 80.

S - 80 Continuity exists

3. Check continuity between starter motor harness connector F28 terminal S and ground.

S - ground Continuity does not exist

Is there proper continuity between the two pins?

YES >> Further inspection is necessary. Refer to [STR-3, "Work Flow \(With GR8-1200 NI\)"](#) or [STR-7, "Work Flow \(Without GR8-1200 NI\)"](#).

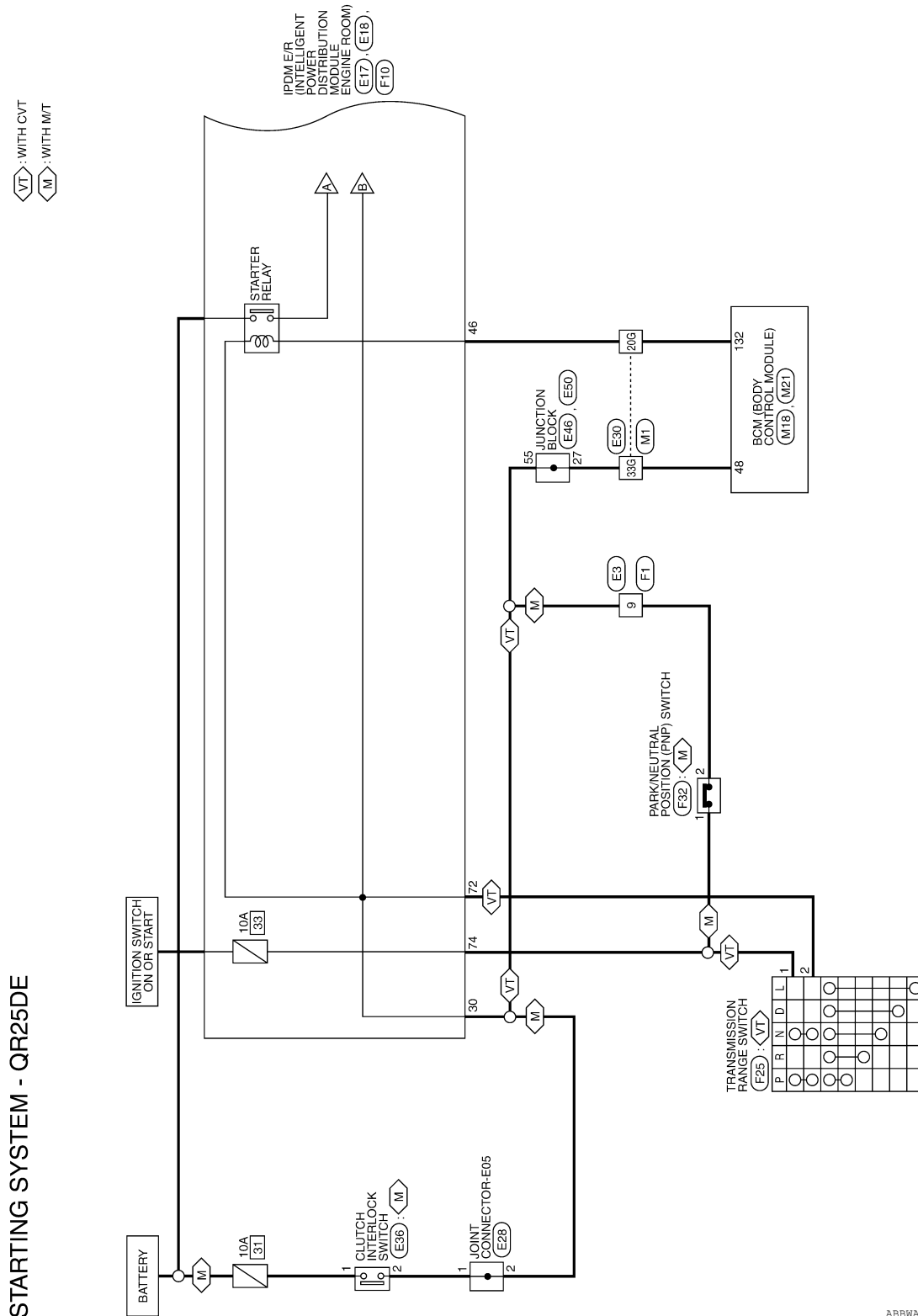
NO >> Repair the harness.

WIRING DIAGRAM

STARTING SYSTEM

Wiring Diagram - Coupe With QR25DE

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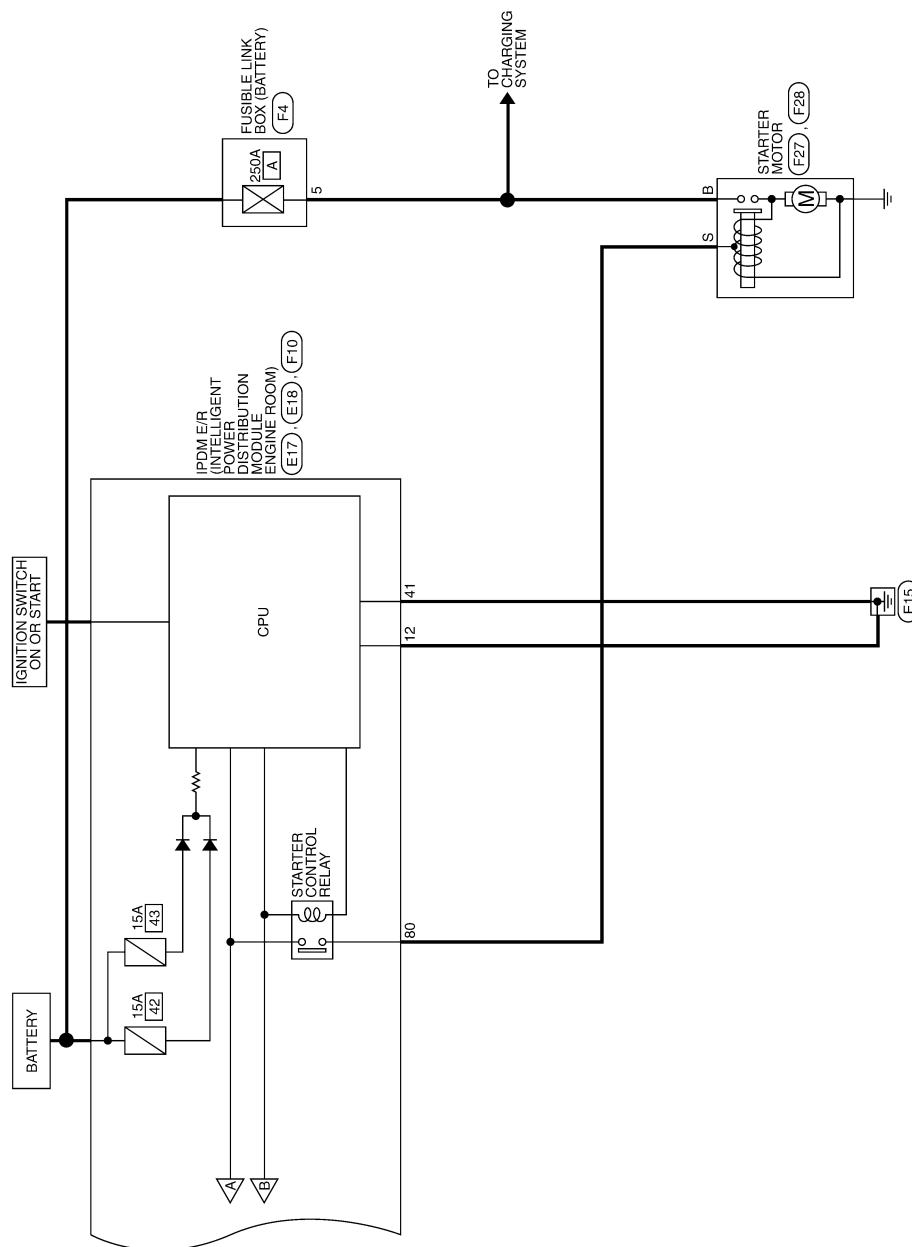


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STARTING SYSTEM

< WIRING DIAGRAM >

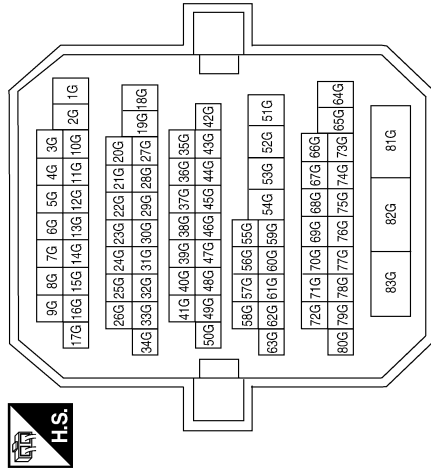
[QR25DE]



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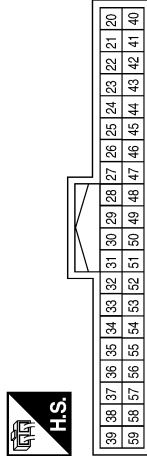
STARTING SYSTEM CONNECTORS - QR25DE

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



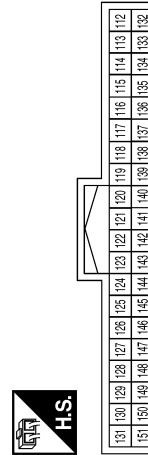
Terminal No.	Color of Wire	Signal Name
20G	R	-
33G	R/G	-

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GREEN



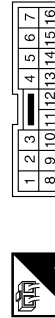
Terminal No.	Color of Wire	Signal Name
48	R/G	SHIFT N/P

Connector No.	M21
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
132	R	ST CONT USM

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



Terminal No.	Color of Wire	Signal Name
9	BR	-

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



Terminal No.	Color of Wire	Signal Name
41	B	GND (SIGNAL)
46	BR	START CONT

STARTING SYSTEM

< WIRING DIAGRAM >

[QR25DE]

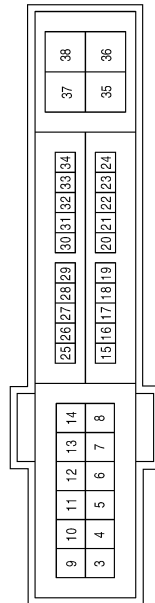
Connector No.	E28
Connector Name	JOINT CONNECTOR-E05
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	R	-
2	R	-

Terminal No.	Color of Wire	Signal Name
12	B	GND (POWER)
30	R	CLUTCH I/L SW (WITH M/T)
30	BR	ECM (WITH CVT)

Connector No.	E18
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



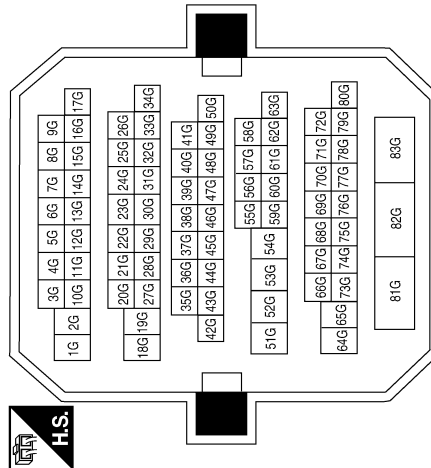
Connector No.	E36
Connector Name	CLUTCH INTERLOCK SWITCH
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
1	W	-
2	R	-

Terminal No.	Color of Wire	Signal Name
20G	BR	-
33G	BR	-

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



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STARTING SYSTEM

< WIRING DIAGRAM >

[QR25DE]

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

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



Terminal No.	Color of Wire	Signal Name
9	W	—

Connector No.	E50
Connector Name	JUNCTION BLOCK
Connector Color	WHITE

56	55
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Terminal No.	Color of Wire	Signal Name
55	BR	—

Connector No.	E46
Connector Name	JUNCTION BLOCK
Connector Color	WHITE

31	30	29	28	27	26	25
40	39	38	37	36	35	34
33	32					



Terminal No.	Color of Wire	Signal Name
27	BR	—

Terminal No.	Color of Wire	Signal Name
72	W	NPSW
74	L	START_IG_EGI
80	R	STARTER_MOTOR

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



53	54	55	56	57	58
47	48	49	50	51	52
69	70	71	72	73	74
75	76	77	78		
59	60	61	62	63	64
65	66	67	68		
81	82				
79	80				

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



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

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STARTING SYSTEM

< WIRING DIAGRAM >

[QR25DE]

Connector No.	F28
Connector Name	STARTER MOTOR
Connector Color	-



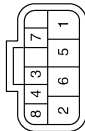
Terminal No.	Color of Wire	Signal Name
S	R	START

Connector No.	F27
Connector Name	STARTER MOTOR
Connector Color	-



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

Connector No.	F25
Connector Name	TRANSMISSION RANGE SWITCH
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	L	-
2	W	-

Connector No.	F32
Connector Name	PARK/NEUTRAL POSITION (PNP) SWITCH
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	L	-
2	W	-

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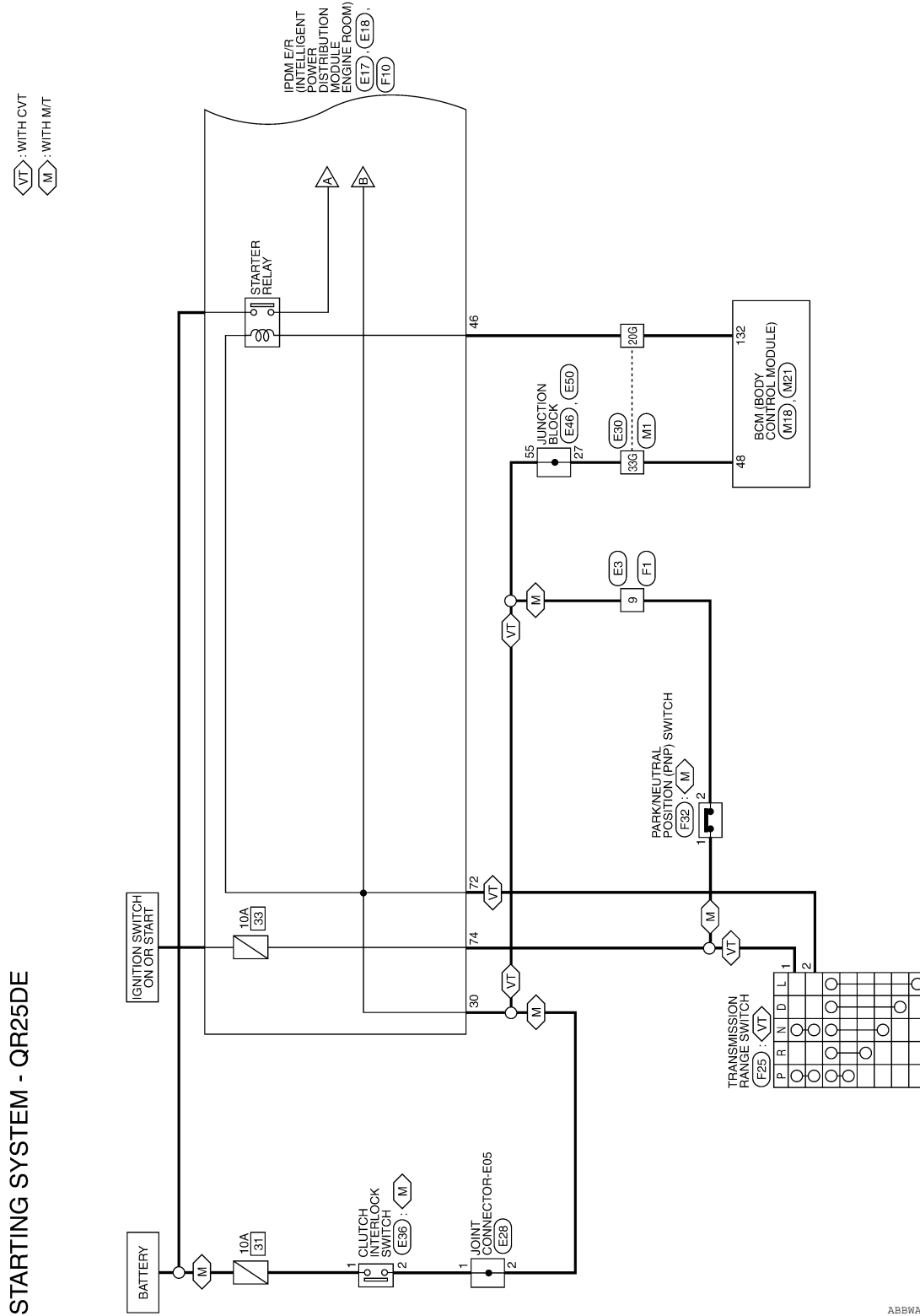
STARTING SYSTEM

< WIRING DIAGRAM >

[QR25DE]

Wiring Diagram - Sedan With QR25DE

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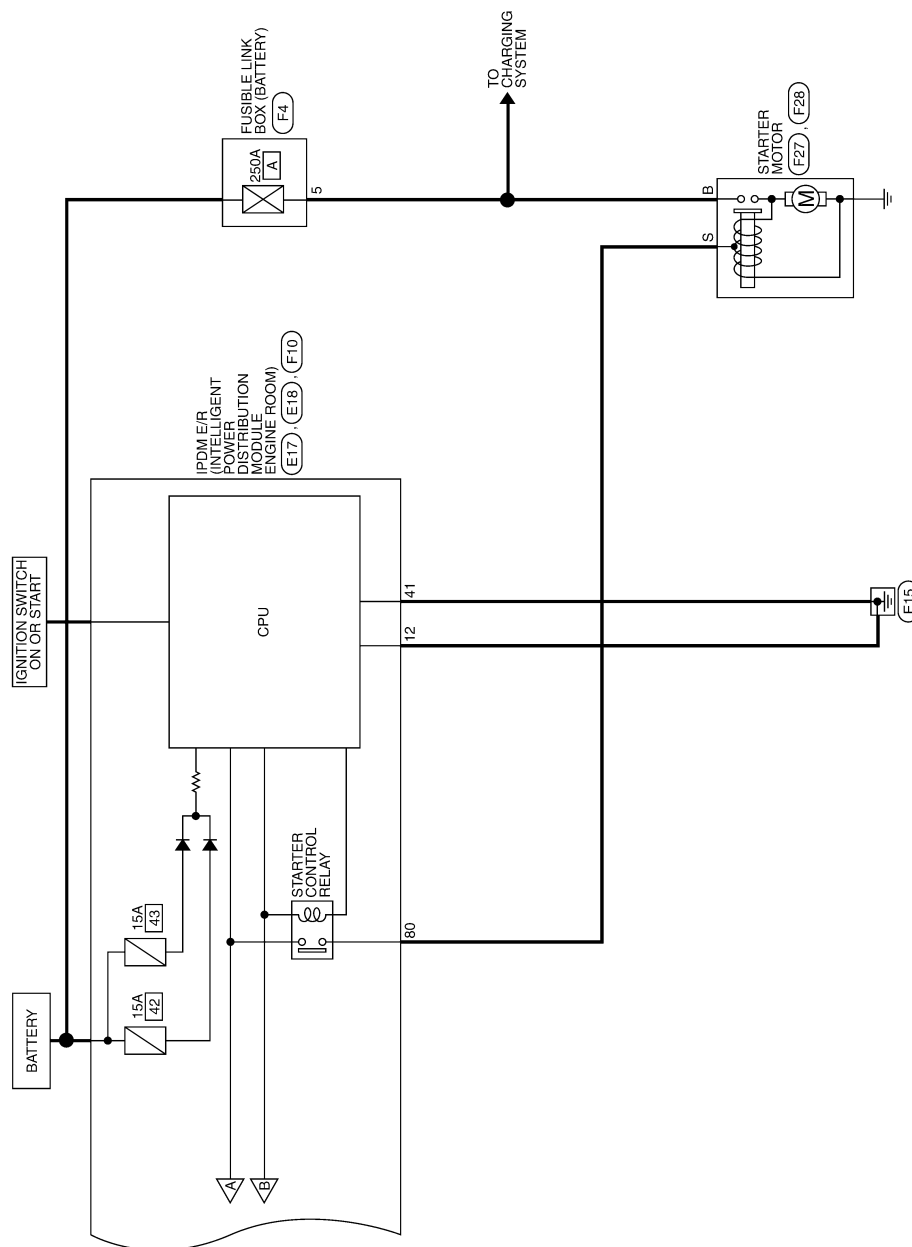


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STARTING SYSTEM

< WIRING DIAGRAM >

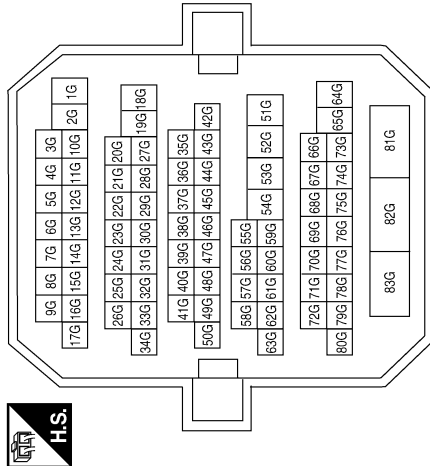
[QR25DE]



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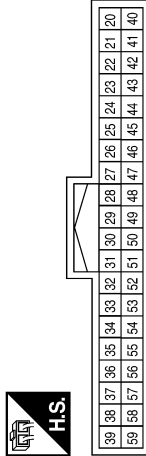
STARTING SYSTEM CONNECTORS - QR25DE

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



Terminal No.	Color of Wire	Signal Name
20G	R	-
33G	R/G	-

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GREEN



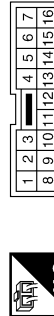
Terminal No.	Color of Wire	Signal Name
48	R/G	SHIFT N/P

Connector No.	M21
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GRAY



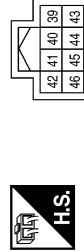
Terminal No.	Color of Wire	Signal Name
132	R	ST CONT USM

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



Terminal No.	Color of Wire	Signal Name
9	BR	-

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



Terminal No.	Color of Wire	Signal Name
41	B	GND (SIGNAL)
46	BR	START CONT

STARTING SYSTEM

< WIRING DIAGRAM >

[QR25DE]

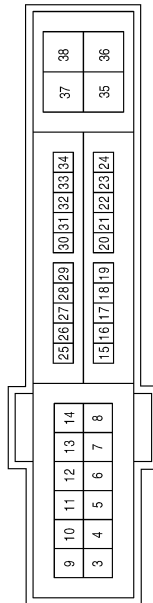
Connector No.	E28
Connector Name	JOINT CONNECTOR-E05
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	R	-
2	R	-

Terminal No.	Color of Wire	Signal Name
12	B	GND (POWER)
30	R	CLUTCH I/L SW (WITH M/T)
30	BR	ECM (WITH CVT)

Connector No.	E18
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



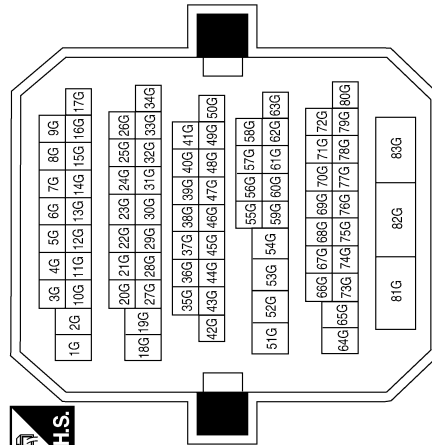
Connector No.	E36
Connector Name	CLUTCH INTERLOCK SWITCH
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
1	W	-
2	R	-

Terminal No.	Color of Wire	Signal Name
20G	BR	-
33G	BR	-

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



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STARTING SYSTEM

< WIRING DIAGRAM >

[QR25DE]

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

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



Terminal No.	Color of Wire	Signal Name
9	W	—

Connector No.	E50
Connector Name	JUNCTION BLOCK
Connector Color	WHITE

56	55
----	----



Terminal No.	Color of Wire	Signal Name
55	BR	—

Connector No.	E46
Connector Name	JUNCTION BLOCK
Connector Color	WHITE

31	30	29	28	27	26	25
40	39	38	37	36	35	34
33	32					



Terminal No.	Color of Wire	Signal Name
27	BR	—

Terminal No.	Color of Wire	Signal Name
72	W	NPSW
74	L	START_IG_EGI
80	R	STARTER_MOTOR

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



53	54	55	56	57	58
47	48	49	50	51	52
69	70	71	72	73	74
75	76	77	78		
59	60	61	62	63	64
65	66	67	68		
81	82				
79	80				

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



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

ABBIA0754GB

STARTING SYSTEM

< WIRING DIAGRAM >

[QR25DE]

Connector No.	F28
Connector Name	STARTER MOTOR
Connector Color	-



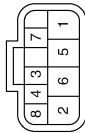
Terminal No.	Color of Wire	Signal Name
S	R	START

Connector No.	F27
Connector Name	STARTER MOTOR
Connector Color	-



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

Connector No.	F25
Connector Name	TRANSMISSION RANGE SWITCH
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	L	-
2	W	-

Connector No.	F32
Connector Name	PARK/NEUTRAL POSITION (PNP) SWITCH
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	L	-
2	W	-

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ABBIA0755GB

SYMPTOM DIAGNOSIS

STARTING SYSTEM

Symptom Table

INFOID:000000007418590

Symptom	Reference
No normal cranking	Refer to STR-3, "Work Flow (With GR8-1200 NI)" or STR-7, "Work Flow (Without GR8-1200 NI)" .
Starter motor does not rotate	

PRECAUTION

PRECAUTIONS

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

INFOID:000000007418591

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 Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:000000007418592

NOTE:

- Before removing and installing any control units, first turn the push-button ignition switch to the LOCK position, then disconnect both battery cables.
- After finishing work, confirm that all control unit connectors are connected properly, then re-connect both battery cables.
- Always use CONSULT to perform self-diagnosis as a part of each function inspection after finishing work. If a DTC is detected, perform trouble diagnosis according to self-diagnosis results.

This vehicle is equipped with a push-button ignition switch and a steering lock unit.

If the battery is disconnected or discharged, the steering wheel will lock and cannot be turned.

If turning the steering wheel is required with the battery disconnected or discharged, 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. Carry the Intelligent Key or insert it to the key slot and turn the push-button ignition switch to ACC position. (At this time, the steering lock will be released.)
3. Disconnect both battery cables. The steering lock will remain released with both battery cables disconnected and the steering wheel can be turned.
4. Perform the necessary repair operation.

PRECAUTIONS

< PRECAUTION >

[QR25DE]

-
5. When the repair work is completed, re-connect both battery cables. With the brake pedal released, turn the push-button ignition switch from ACC position to ON position, then to LOCK position. (The steering wheel will lock when the push-button ignition switch is turned to LOCK position.)
 6. Perform self-diagnosis check of all control units using CONSULT.

PREPARATION

< PREPARATION >

[QR25DE]

PREPARATION

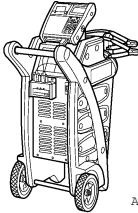
PREPARATION

Special Service Tool

INFOID:000000007418593


STR

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
<p>— (—) Model GR8-1200 NI Multitasking battery and electrical diagnostic station</p>  <p>AWI1A1239ZZ</p>	<p>Tests batteries, starting and charging systems and charges batteries. For operating instructions, refer to diagnostic station instruction manual.</p>

Commercial Service Tool

INFOID:000000007418594

Tool name	Description
<p>Power tool</p>  <p>PIIB1407E</p>	<p>Loosening nuts, screws and bolts</p>

STARTER MOTOR

< REMOVAL AND INSTALLATION >

[QR25DE]

REMOVAL AND INSTALLATION

STARTER MOTOR

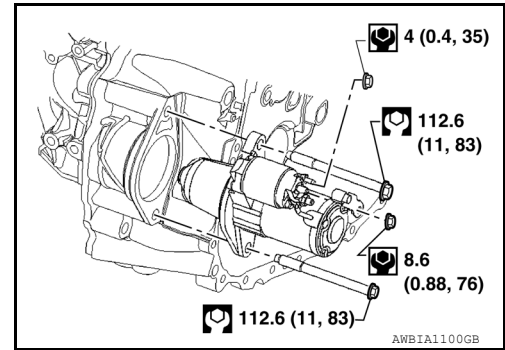
Removal and Installation

INFOID:000000007418595

M/T MODELS

Removal

1. Disconnect the negative battery terminal.
2. Disconnect the starter motor harness connectors.
3. Remove the two starter motor bolts using power tools.
4. Remove the starter motor.



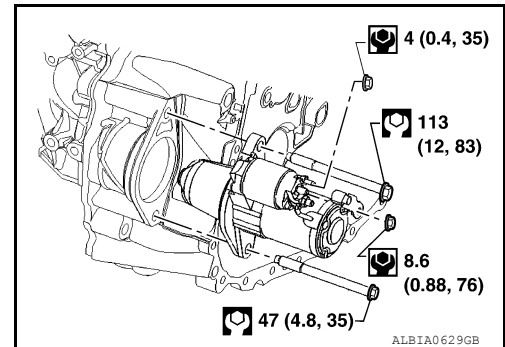
Installation

Installation is in the reverse order of removal.

CVT MODELS

Removal

1. Remove the battery and battery tray. Refer to [PG-69, "Removal and Installation \(Battery Tray\)"](#) for Coupe, and [PG-141, "Removal and Installation \(Battery Tray\)"](#) for Sedan.
2. Disconnect the starter motor harness connectors.
3. Remove the starter motor bolts using power tools.
4. Remove the starter motor.



Installation

Installation is in the reverse order of removal.

STARTER MOTOR

< SERVICE DATA AND SPECIFICATIONS (SDS)

[QR25DE]

SERVICE DATA AND SPECIFICATIONS (SDS)

STARTER MOTOR

Starter

INFOID:000000007418596

STR

Application		QR25DE	
		M/T model	CVT model
Type*		Mitsubishi M000T22272	Mitsubishi M000TA0173
		Reduction gear type	
System voltage		12V	
No-load	Terminal voltage	11V	
	Current	Less than 90A	
	Revolution	More than 2,000 rpm	

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

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow (With GR8-1200 NI)

INFOID:000000009325608

STARTING SYSTEM DIAGNOSIS WITH GR8-1200 NI

To test the starting system, use the following special service tool:

- GR8-1200 NI Multitasking battery and electrical diagnostic station

NOTE:

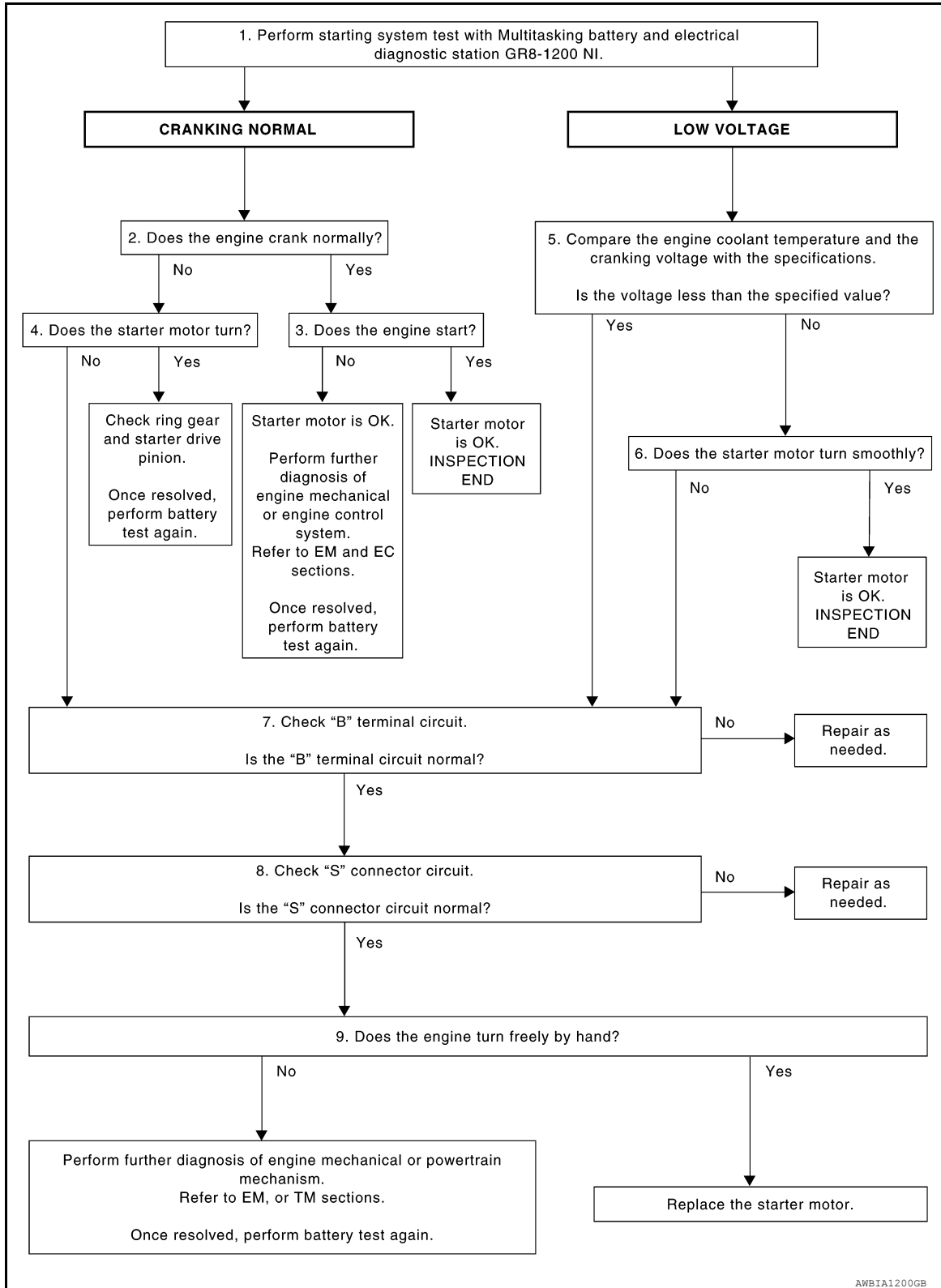
Refer to the diagnostic station Instruction Manual for proper starting system diagnosis procedures.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[VQ35DE]

OVERALL SEQUENCE



DETAILED FLOW

NOTE:

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

1. DIAGNOSIS WITH MULTITASKING BATTERY AND ELECTRICAL DIAGNOSTIC STATION GR8-1200 NI

DIAGNOSIS AND REPAIR WORKFLOW

[VQ35DE]

< BASIC INSPECTION >

Perform the starting system test with Multitasking battery and electrical diagnostic station GR8-1200 NI. For details and operating instructions, refer to diagnostic station Instruction Manual.

Test result

CRANKING NORMAL>>GO TO 2.

LOW VOLTAGE>>GO TO 5.

CHARGE BATTERY>>Perform the slow battery charging procedure. (Initial rate of charge is 10A for 12 hours.) Perform battery test again. Refer to diagnostic station instruction manual.

REPLACE BATTERY>>Before replacing battery, clean the battery cable clamps and battery posts. Perform battery test again. Refer to diagnostic station instruction manual. If second test result is "REPLACE BATTERY", then do so. Perform battery test again to confirm repair.

2. CRANKING CHECK

Check that the starter motor operates properly.

Does the engine crank normally?

YES >> GO TO 3.

NO >> GO TO 4.

3. ENGINE START CHECK

Check that the engine starts.

Does the engine start?

YES >> Inspection End.

NO >> Perform further diagnosis of engine mechanical or engine control system. Refer to EM and EC sections. Once resolved, perform battery test again.

4. STARTER MOTOR ACTIVATION

Check that the starter motor operates.

Does the starter motor turn?

YES >> Check ring gear and starter motor drive pinion. Once resolved, perform battery test again.

NO >> GO TO 7.

5. COMPARISON BETWEEN ENGINE COOLANT AND CRANKING VOLTAGE

Compare the engine coolant temperature and verify the cranking voltage is within specifications.

Minimum Specification of Cranking Voltage Referencing Coolant Temperature

Engine coolant temperature [°C (°F)]	Voltage [V]
-30 to -20 (-22 to -4)	8.6
-19 to -10 (-2 to 14)	9.1
-9 to 0 (16 to 32)	9.5
More than 1 (More than 34)	9.9

Is the voltage less than the specified value?

YES >> GO TO 7.

NO >> GO TO 6.

6. STARTER OPERATION

Check the starter operation.

Does the starter motor turn smoothly?

YES >> Inspection End.

NO >> GO TO 7.

7. "B" TERMINAL CIRCUIT INSPECTION

Check "B" terminal circuit. Refer to [STR-39, "Diagnosis Procedure"](#).

Is "B" terminal circuit normal?

YES >> GO TO 8.

NO >> Repair as needed.

8. "S" CONNECTOR CIRCUIT INSPECTION

Check "S" connector circuit. Refer to [STR-41, "Diagnosis Procedure"](#).

DIAGNOSIS AND REPAIR WORKFLOW

[VQ35DE]

< BASIC INSPECTION >

Is "S" connector circuit normal?

YES >> GO TO 9.

NO >> Repair as needed.

9. ENGINE ROTATION STATUS

Check that the engine can be rotated by hand.

Does the engine turn freely by hand?

YES >> Replace starter motor.

NO >> Perform further diagnosis of engine mechanical or powertrain mechanism. Once resolved, perform battery test again using Multitasking battery and electrical diagnostic station GR8-1200 NI. Refer to the diagnostic station Instruction Manual for proper testing procedures.

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DIAGNOSIS AND REPAIR WORKFLOW

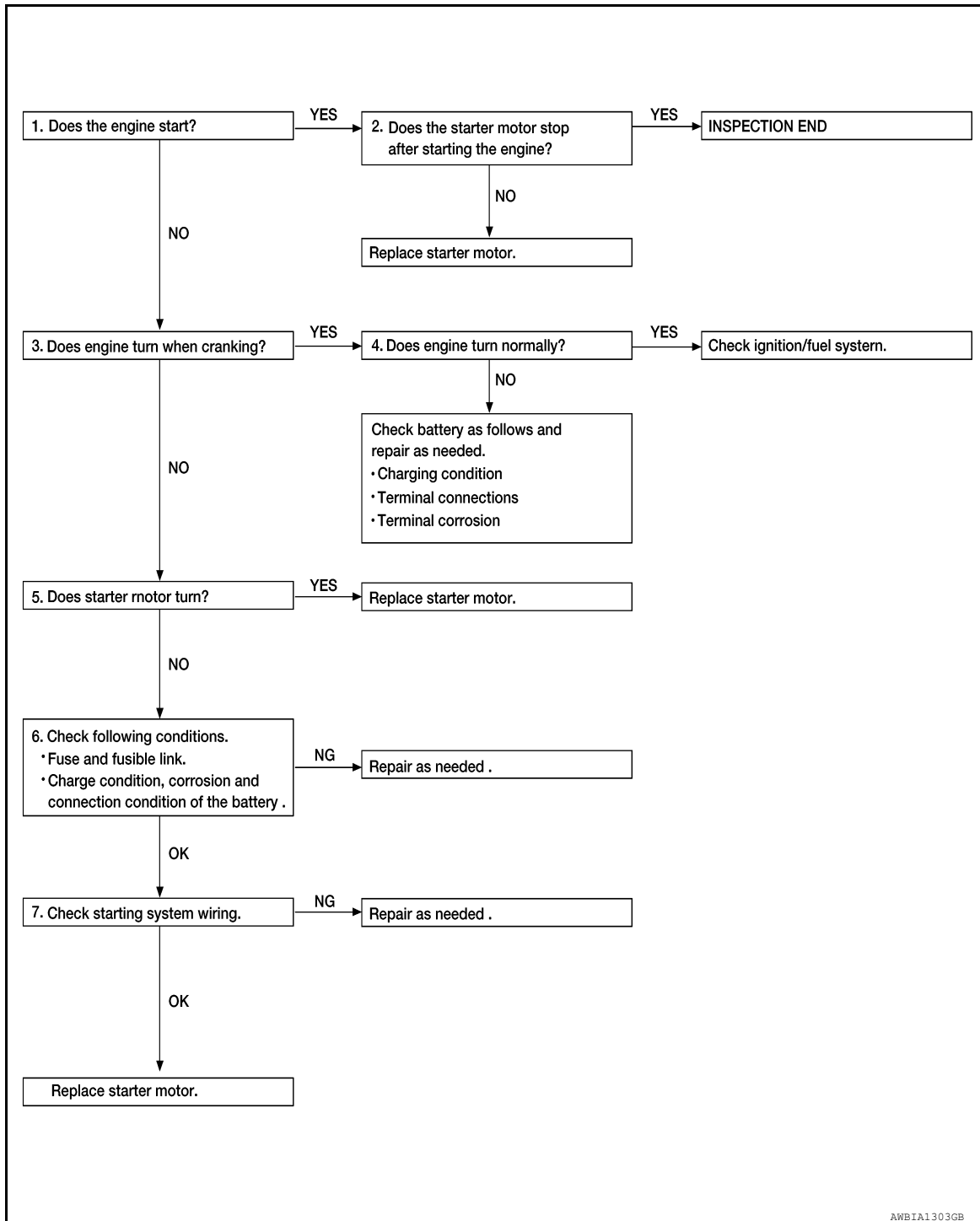
< BASIC INSPECTION >

[VQ35DE]

Work Flow (Without GR8-1200 NI)

INFOID:000000009325609

OVERALL SEQUENCE



DETAILED FLOW

NOTE:

If any malfunction is found, immediately disconnect the battery cable from the negative terminal.

1. CHECK ENGINE START

Crank the engine and check that the engine starts.

Does the engine start?

YES >> GO TO 2.

NO >> GO TO 3.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[VQ35DE]

2.CHECK THAT THE STARTER MOTOR STOPS

Check that the starter motor stops after starting the engine.

Does the starter motor stop?

YES >> Inspection End.

NO >> Replace starter motor. Refer to [STR-56, "Removal and Installation"](#).

3.CHECK THAT THE ENGINE TURNS WHEN CRANKING

Check that the engine turns when cranking.

Does engine turn when cranking?

YES >> GO TO 4.

NO >> GO TO 5.

4.CHECK THE ENGINE SPEED WHEN CRANKING

Check that the engine speed is not low when cranking.

Does engine turn normally?

YES >> Check ignition/fuel system.

NO >> Check charge condition, corrosion and connection condition of the battery. Refer to [PG-3, "How to Handle Battery"](#) (Coupe) or [PG-71, "How to Handle Battery"](#) (Sedan).

5.CHECK STARTER MOTOR ACTIVATION

Check that the starter motor runs at cranking.

Does starter motor turn?

YES >> Replace starter motor. Refer to [STR-56, "Removal and Installation"](#).

NO >> GO TO 6.

6.CHECK POWER SUPPLY CIRCUIT

Check the following conditions:

- Fuse and fusible link
- Charge condition, corrosion and connection of the battery.

Are these inspection results normal?

YES >> GO TO 7.

NO >> Repair as needed.

7.CHECK STARTING SYSTEM WIRING

Check the following:

- "B" terminal circuit. Refer to [STR-39, "Diagnosis Procedure"](#).
- "S" terminal circuit. Refer to [STR-41, "Diagnosis Procedure"](#).

Are the inspection results normal?

YES >> Replace starter motor. Refer to [STR-56, "Removal and Installation"](#).

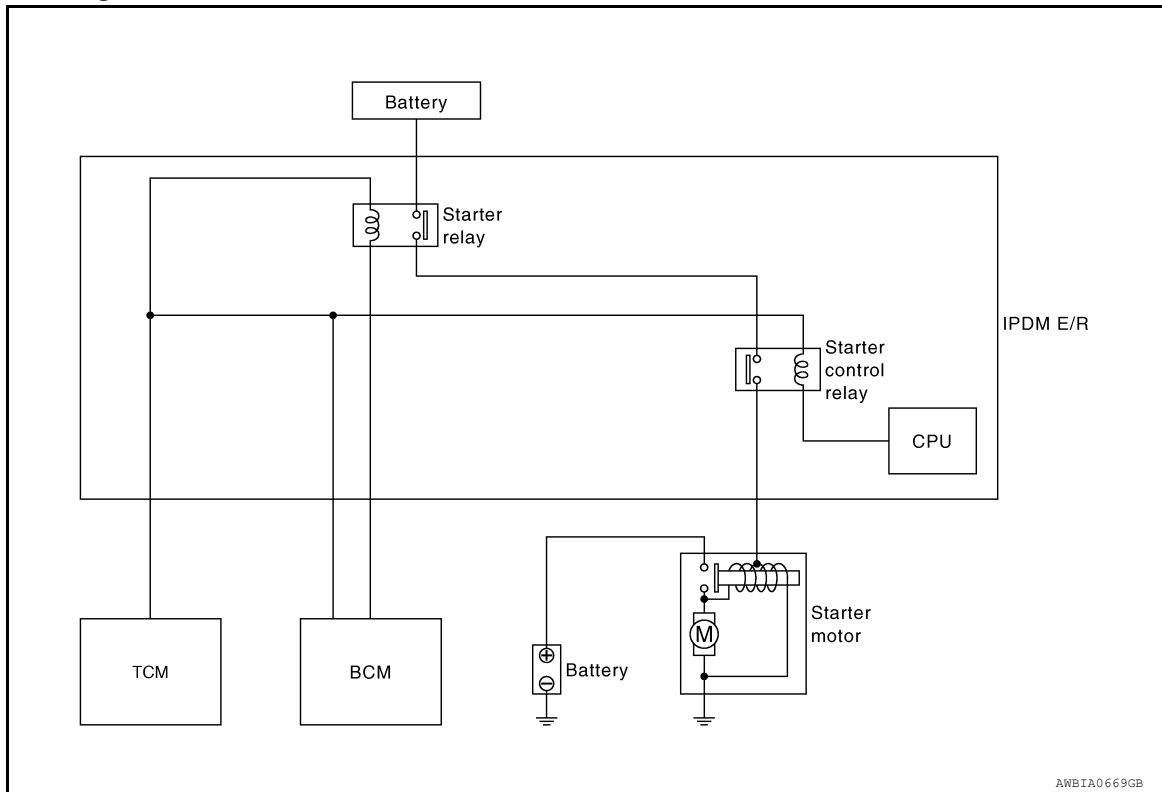
NO >> Repair as needed.

SYSTEM DESCRIPTION

STARTING SYSTEM

System Diagram

INFOID:000000007418598



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System Description

INFOID:000000007418599

The starter motor plunger closes and provides a closed circuit between the battery and the starter motor. The starter motor is grounded to the cylinder block. With power and ground supplied, the starter motor operates.

Component Description

INFOID:000000007418600

Component part	Description
TCM	TCM supplies power to the starter relay and starter control relay inside IPDM E/R when the shift selector is placed in the P or N position.
BCM	BCM controls the starter relay inside IPDM E/R.
IPDM E/R	CPU inside IPDM E/R controls the starter control relay.
Starter motor	The starter motor plunger closes and the motor is supplied with battery power, which in turn cranks the engine, when the "S" terminal is supplied with electric power.

DTC/CIRCUIT DIAGNOSIS

B TERMINAL CIRCUIT

Description

INFOID:000000007418601

STR

The "B" terminal is constantly supplied with battery power.

Diagnosis Procedure

INFOID:000000007418602

Regarding Wiring Diagram information, refer to [STR-42, "Wiring Diagram - Coupe With VQ35DE"](#) or [STR-47, "Wiring Diagram - Sedan With VQ35DE"](#).

CAUTION:

Perform diagnosis under the condition that the engine cannot start by the following procedure.

1. Remove fuel pump fuse.
2. Crank or start the engine (where possible) until the fuel pressure is depleted.

1. CHECK TERMINAL B POWER SUPPLY VOLTAGE

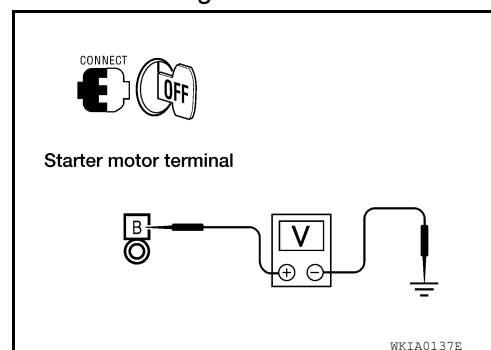
1. Turn ignition switch OFF.
2. Make sure that starter motor connector F27 terminal B connection is clean and tight.
3. Check voltage between starter motor connector F27 terminal B and ground.

B - ground**Battery voltage**

Is there battery voltage present?

YES >> GO TO 2

NO >> Check harness between battery and starter motor for open circuit.

**2. CHECK BATTERY CABLE (VOLTAGE DROP TEST)**

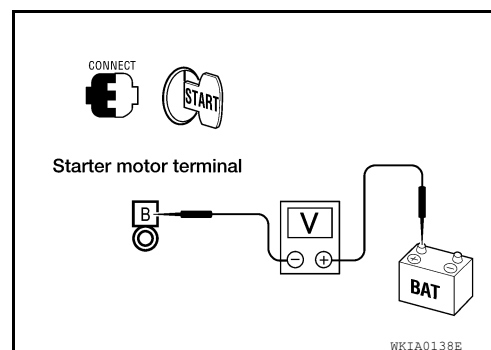
1. Shift CVT selector lever to "P" or "N" position.
2. Check voltage between battery positive terminal and starter motor connector F27 terminal B while cranking the engine.

While cranking the engine**Terminal B - B+ terminal****Less than 0.5V**

Is the voltage drop less than 0.5V?

YES >> GO TO 3

NO >> Check harness between the battery and the starter motor for high resistance.

**3. CHECK GROUND CIRCUIT STATUS (VOLTAGE DROP TEST)**

B TERMINAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[VQ35DE]

Check voltage between starter motor case and battery negative terminal while cranking the engine.

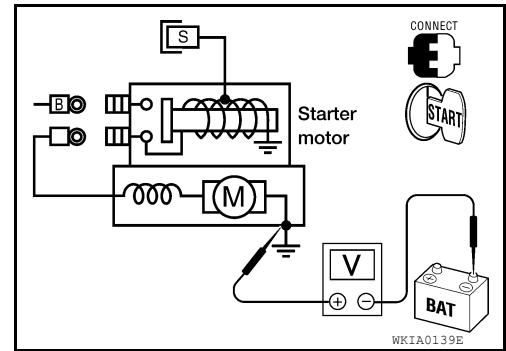
While cranking the engine

Starter case - B- terminal

Less than 0.2V

Is the voltage drop less than 0.2V?

- YES >> Terminal B circuit is OK. Further inspection is necessary.
Refer to [STR-32. "Work Flow \(With GR8-1200 NI\)"](#) or
[STR-36. "Work Flow \(Without GR8-1200 NI\)"](#).
- NO >> Check the starter motor case to engine mounting for high resistance.



S CONNECTOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[VQ35DE]

S CONNECTOR CIRCUIT

Description

INFOID:000000007418603

The starter motor magnetic switch is supplied with power when the ignition switch is placed in the START position while the shift selector lever is in the P or N position.

Diagnosis Procedure

INFOID:000000007418604

Regarding Wiring Diagram information, refer to [STR-42, "Wiring Diagram - Coupe With VQ35DE"](#) or [STR-47, "Wiring Diagram - Sedan With VQ35DE"](#).

CAUTION:

Perform diagnosis under the condition that engine cannot start by the following procedure.

1. Remove fuel pump fuse.
2. Crank or start the engine (where possible) until the fuel pressure is released.

1. CHECK "S" CONNECTOR CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect starter motor connector F28.
3. Shift CVT selector lever to "P" or "N" position.
4. Check voltage between starter motor harness connector F28 terminal S and ground with the ignition in START.

With ignition switch in START
S - ground Battery voltage

Is battery voltage present?

YES >> "S" circuit is OK. Further inspection is necessary. Refer to [STR-32, "Work Flow \(With GR8-1200 NI\)"](#) or [STR-36, "Work Flow \(Without GR8-1200 NI\)"](#).

NO >> GO TO 2

2. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Check the following terminals and connectors for damage, bent pins and loose connections.
 - IPDM E/R harness connector F10
 - Starter motor harness connector F28

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair the terminal and connector.

3. CHECK HARNESS CONTINUITY

1. Disconnect IPDM E/R connector F10.
2. Check continuity between starter motor harness connector F28 terminal S and IPDM E/R harness connector F10 terminal 80.

S - 80 Continuity exists

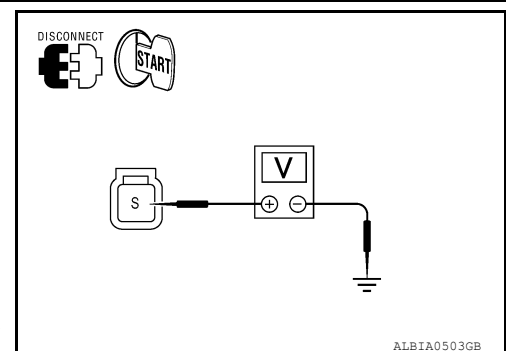
3. Check continuity between starter motor harness connector F28 terminal S and ground.

S - ground Continuity does not exist

Is there proper continuity between the two pins?

YES >> Further inspection is necessary. Refer to [STR-32, "Work Flow \(With GR8-1200 NI\)"](#) or [STR-36, "Work Flow \(Without GR8-1200 NI\)"](#).

NO >> Repair the harness.

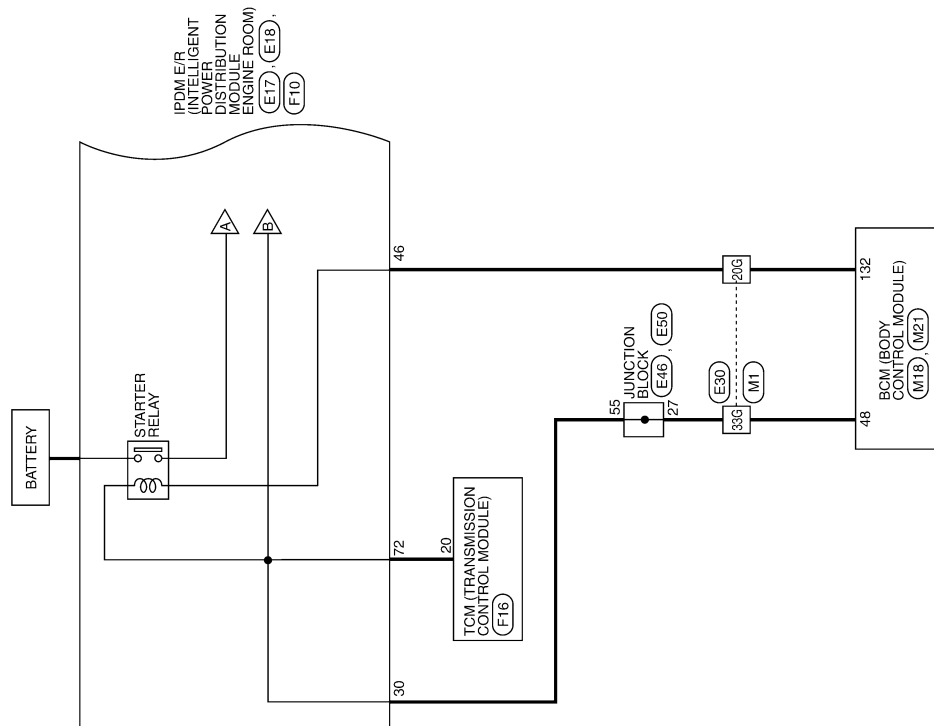


WIRING DIAGRAM

STARTING SYSTEM

Wiring Diagram - Coupe With VQ35DE

INFOID:000000007418605



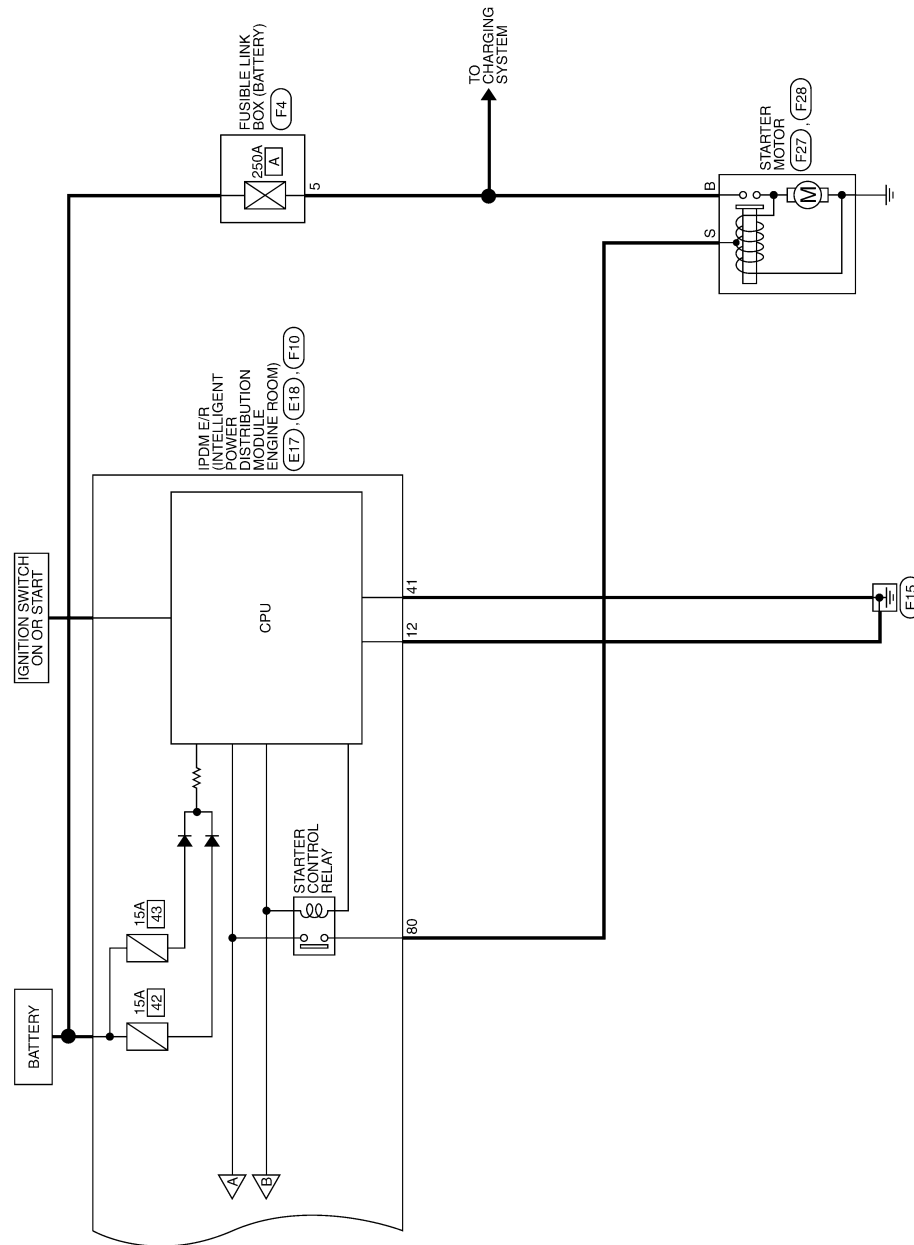
STARTING SYSTEM - VQ35DE

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STARTING SYSTEM

< WIRING DIAGRAM >

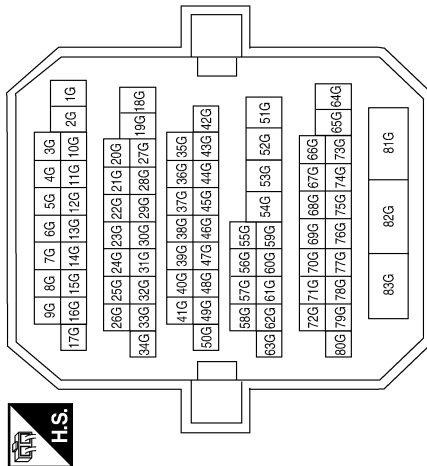
[VQ35DE]



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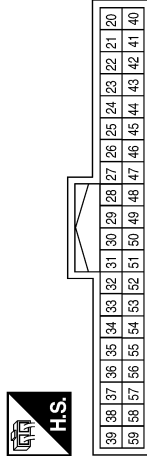
STARTING SYSTEM CONNECTORS - VQ35DE

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



Terminal No.	Color of Wire	Signal Name
20G	R	-
33G	R/G	-

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GREEN



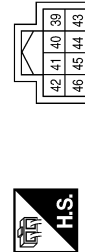
Terminal No.	Color of Wire	Signal Name
48	R/G	SHIFT N/P

Connector No.	M21
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
132	R	ST CONT USM

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

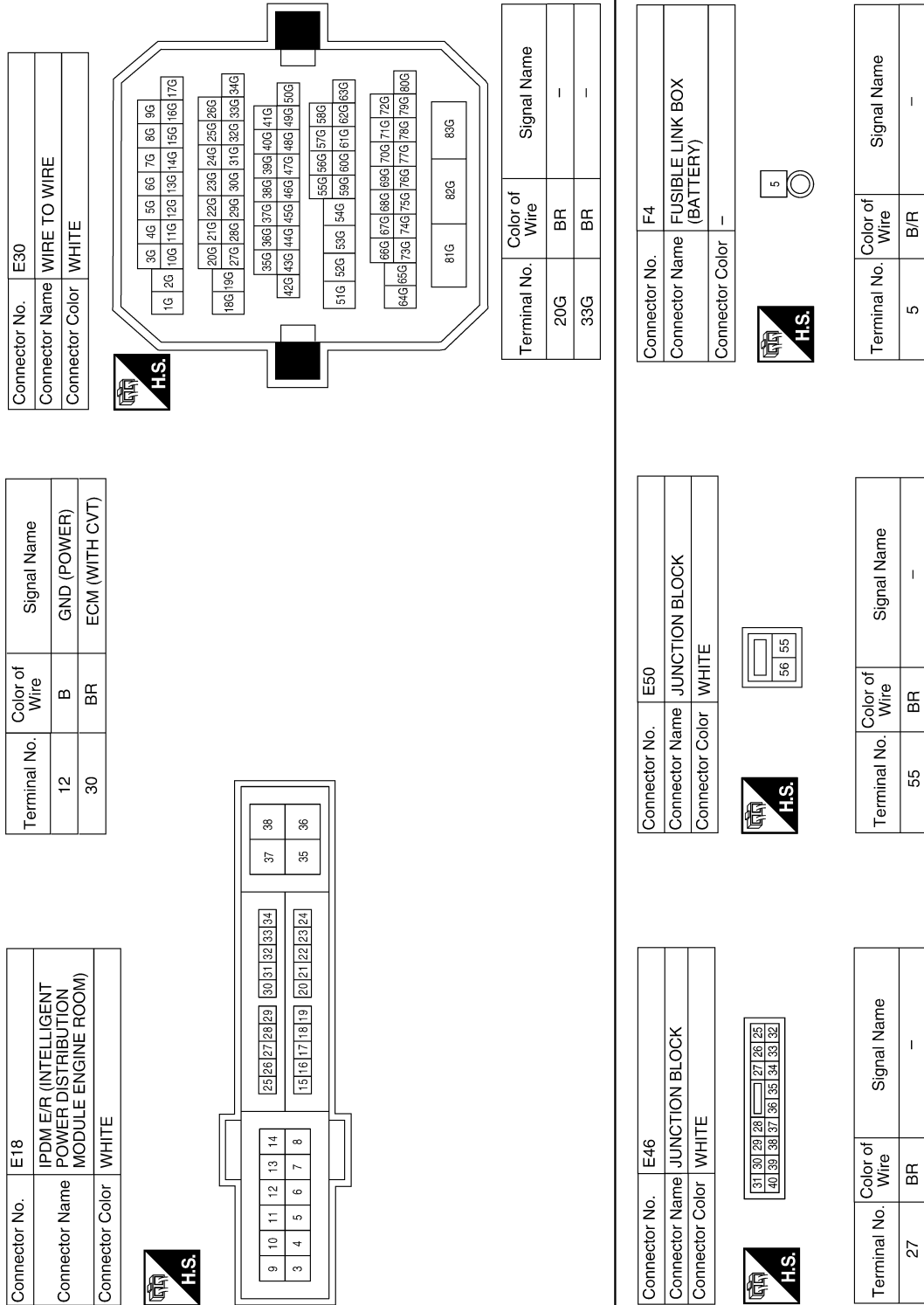


Terminal No.	Color of Wire	Signal Name
41	B	GND (SIGNAL)
46	BR	START CONT

STARTING SYSTEM

< WIRING DIAGRAM >

[VQ35DE]



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STARTING SYSTEM

< WIRING DIAGRAM >

[VQ35DE]

Connector No.	F16
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Color	BLACK



31	32	33	34	35	36	37	38	39	40	47	48
21	22	23	24	25	26	27	28	29	30	45	46
11	12	13	14	15	16	17	18	19	20	43	44
1	2	3	4	5	6	7	8	9	10	41	42

Terminal No.	Color of Wire	Signal Name
20	W	ST_RLY

Terminal No.	Color of Wire	Signal Name
72	W	NPSW
80	R	STARTER MOTOR

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



53	54	55	56	57	58	69	70	71	72	73	74	75	76	77	78
47	48	49	50	51	52	59	60	61	62	63	64	65	66	67	68
81	82	79	80												

Connector No.	F28
Connector Name	STARTER MOTOR
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
S	R	START

Connector No.	F27
Connector Name	STARTER MOTOR
Connector Color	-



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

ABBIA1057GB

STARTING SYSTEM

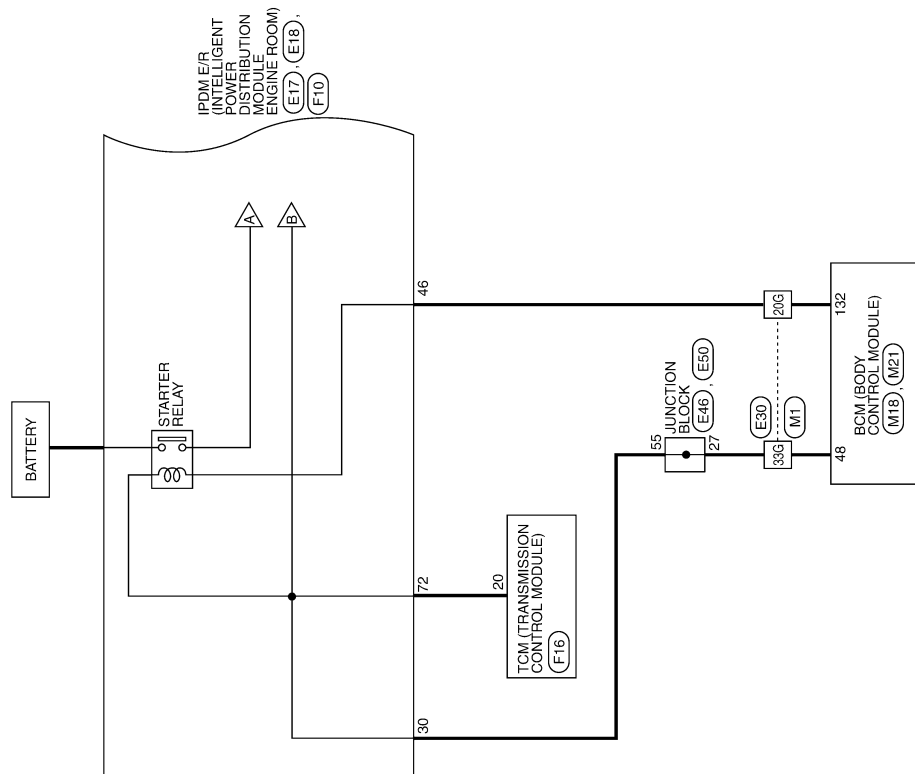
< WIRING DIAGRAM >

[VQ35DE]

Wiring Diagram - Sedan With VQ35DE

INFOID:000000007418606

STARTING SYSTEM - VQ35DE

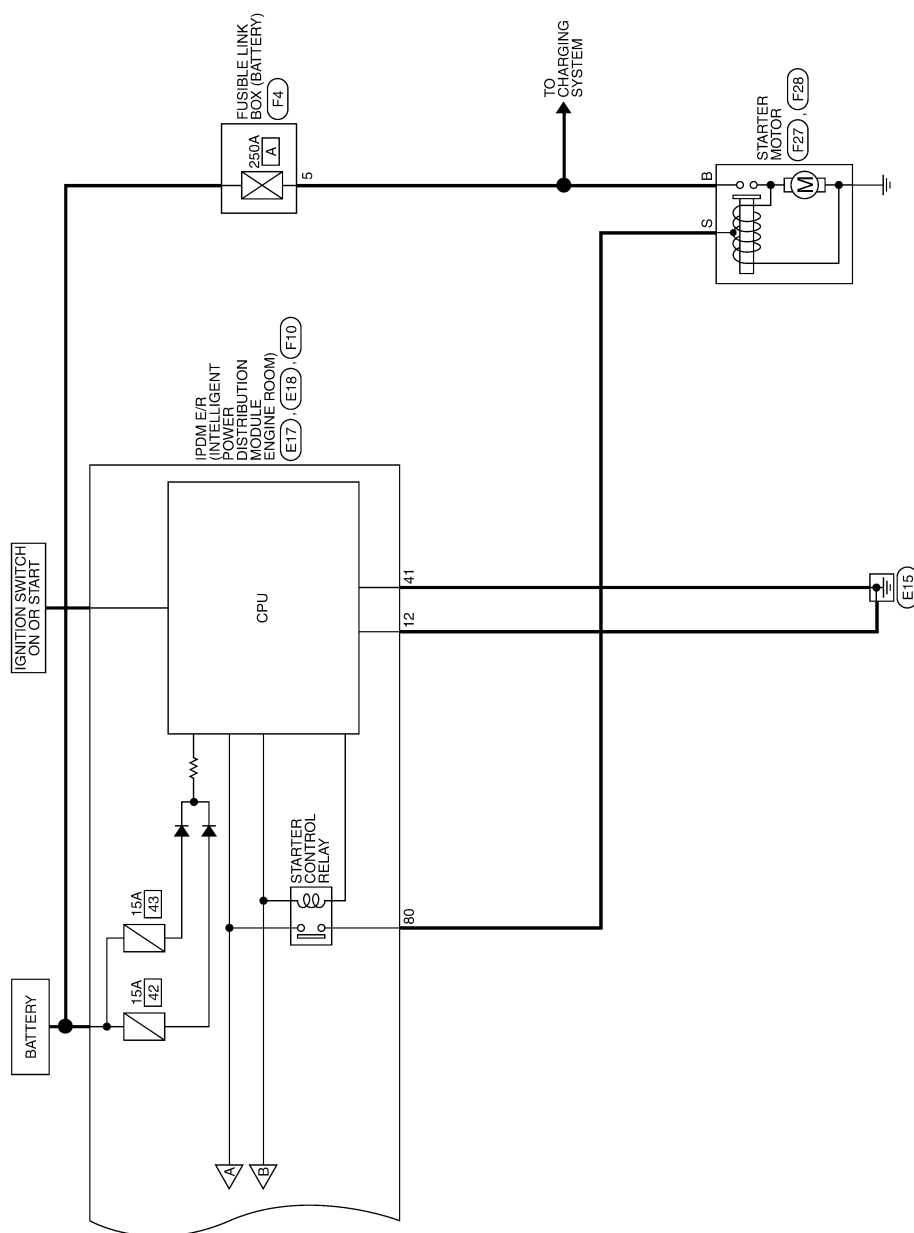


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STARTING SYSTEM

< WIRING DIAGRAM >

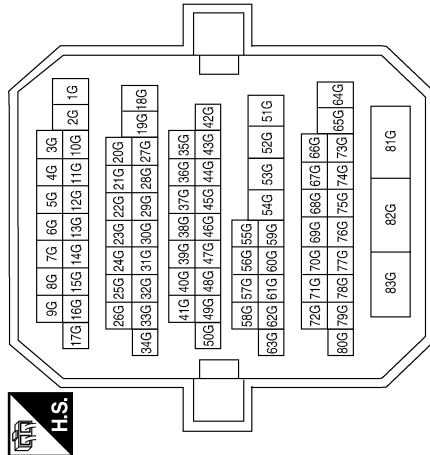
[VQ35DE]



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STARTING SYSTEM CONNECTORS - VQ35DE

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



Terminal No.	Color of Wire	Signal Name
20G	R	-
33G	R/G	-

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GREEN



39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20
59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40

Terminal No.	Color of Wire	Signal Name
48	R/G	SHIFT N/P

Connector No.	M21
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GRAY



131	130	129	128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113	112
151	150	149	148	147	146	145	144	143	142	141	140	139	138	137	136	135	134	133	132

Terminal No.	Color of Wire	Signal Name
132	R	ST CONT USM

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



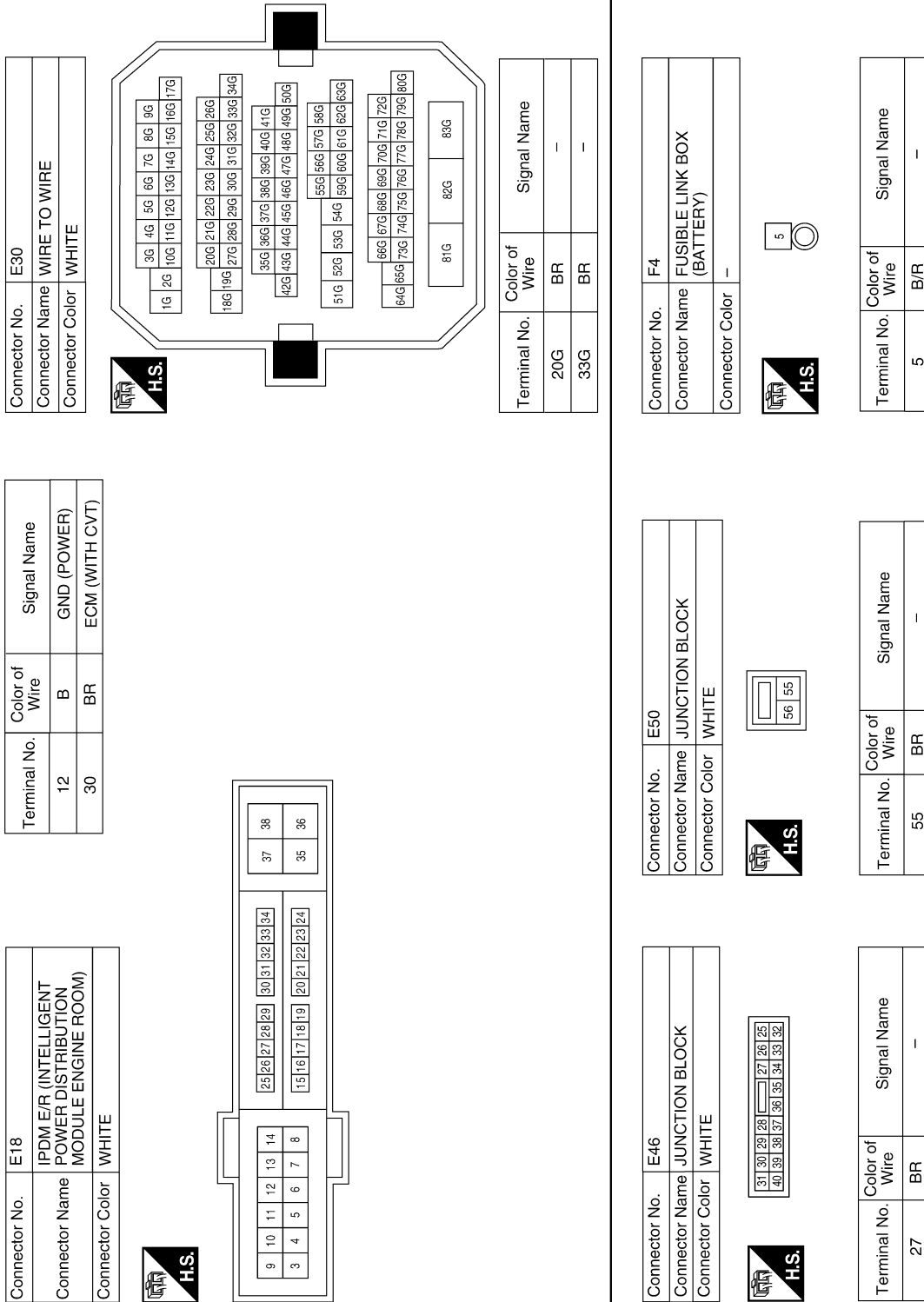
42	41	40	39
46	45	44	43

Terminal No.	Color of Wire	Signal Name
41	B	GND (SIGNAL)
46	BR	START CONT

STARTING SYSTEM

< WIRING DIAGRAM >

[VQ35DE]



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STARTING SYSTEM

< WIRING DIAGRAM >

[VQ35DE]

Connector No.	F16
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Color	BLACK



31	32	33	34	35	36	37	38	39	40	47	48
21	22	23	24	25	26	27	28	29	30	45	46
11	12	13	14	15	16	17	18	19	20	43	44
1	2	3	4	5	6	7	8	9	10	41	42

Terminal No.	Color of Wire	Signal Name
20	W	ST_RLY

Terminal No.	Color of Wire	Signal Name
72	W	NPSW
80	R	STARTER_MOTOR

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



53	54	55	56	57	58
47	48	49	50	51	52
69	70	71	72	73	74
75	76	77	78	81	82
59	60	61	62	63	64
65	66	67	68	79	80

Connector No.	F28
Connector Name	STARTER MOTOR
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
S	R	START

Connector No.	F27
Connector Name	STARTER MOTOR
Connector Color	-



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

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

SYMPTOM DIAGNOSIS

STARTING SYSTEM

Symptom Table

INFOID:000000007418607

Symptom	Reference
No normal cranking	Refer to STR-32. "Work Flow (With GR8-1200 NI)" or STR-36. "Work Flow (Without GR8-1200 NI)" .
Starter motor does not rotate	

PRECAUTION

PRECAUTIONS

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

INFOID:000000007418608

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 Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:000000007418609

NOTE:

- Before removing and installing any control units, first turn the push-button ignition switch to the LOCK position, then disconnect both battery cables.
- After finishing work, confirm that all control unit connectors are connected properly, then re-connect both battery cables.
- Always use CONSULT to perform self-diagnosis as a part of each function inspection after finishing work. If a DTC is detected, perform trouble diagnosis according to self-diagnosis results.

This vehicle is equipped with a push-button ignition switch and a steering lock unit.

If the battery is disconnected or discharged, the steering wheel will lock and cannot be turned.

If turning the steering wheel is required with the battery disconnected or discharged, 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. Carry the Intelligent Key or insert it to the key slot and turn the push-button ignition switch to ACC position. (At this time, the steering lock will be released.)
3. Disconnect both battery cables. The steering lock will remain released with both battery cables disconnected and the steering wheel can be turned.
4. Perform the necessary repair operation.

PRECAUTIONS

< PRECAUTION >

[VQ35DE]

5. When the repair work is completed, re-connect both battery cables. With the brake pedal released, turn the push-button ignition switch from ACC position to ON position, then to LOCK position. (The steering wheel will lock when the push-button ignition switch is turned to LOCK position.)
6. Perform self-diagnosis check of all control units using CONSULT.

PREPARATION

< PREPARATION >

[VQ35DE]

PREPARATION

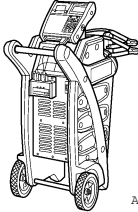
PREPARATION

Special Service Tool

INFOID:000000007418610


STR

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
<p>— (—) Model GR8-1200 NI Multitasking battery and electrical diagnostic station</p>  <p>AWI1A1239ZZ</p>	<p>Tests batteries, starting and charging system and charges batteries. For operating instructions, refer to diagnostic station instruction manual.</p>

Commercial Service Tool

INFOID:000000007418611

Tool name	Description
<p>Power tool</p>  <p>PIIB1407E</p>	<p>Loosening nuts, screws and bolts</p>

REMOVAL AND INSTALLATION

STARTER MOTOR

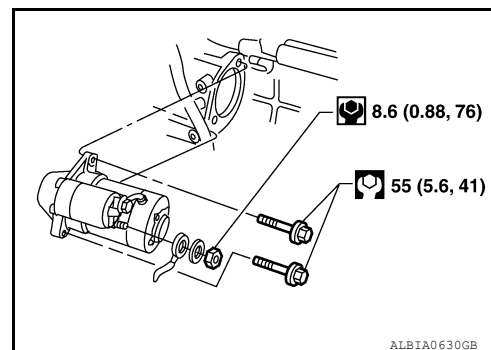
Removal and Installation

INFOID:000000007418612

CVT MODELS

Removal

1. Remove the battery and battery tray. Refer to [PG-68. "Removal and Installation \(Battery\)"](#) for Coupe, and [PG-140. "Removal and Installation \(Battery\)"](#) for Sedan.
2. Disconnect the starter motor harness connectors.
3. Remove the starter motor bolts using power tools.
4. Remove the starter motor.



Installation

Installation is in the reverse order of removal.

STARTER MOTOR

< SERVICE DATA AND SPECIFICATIONS (SDS)

[VQ35DE]

SERVICE DATA AND SPECIFICATIONS (SDS)

STARTER MOTOR

Starter

INFOID:0000000007418613

STR

Application		VQ35DE
		CVT model
Type*		Mitsubishi M000TA0072
		Reduction gear type
System voltage		12V
No-load	Terminal voltage	11V
	Current	Less than 90A
	Revolution	More than 2,400 rpm

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