

SECTION **STC**

STEERING CONTROL SYSTEM

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STC

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000005462702

DETAILED FLOW

1. COLLECT THE INFORMATION FROM THE CUSTOMER

It is also important to clarify customer complaints before inspection. First of all, reproduce symptoms, and understand them fully. Ask customer about his/her complaints carefully. In some cases, it will be necessary to check symptoms by driving vehicle with customer.

>> GO TO 2.

2. BASIC INSPECTION

1. Check the power steering fluid leakage and the power steering fluid level. Refer to [ST-13. "Inspection"](#).
2. Check the drive belt tension. Refer to [EM-14. "Checking Drive Belts"](#).
3. Check the power steering gear for damages, cracks and oil leakage. Refer to [ST-13. "Inspection"](#).
4. Check the relief oil pressure. Refer to [ST-17. "Inspection"](#).

>> GO TO 3.

3. TROUBLE DIAGNOSIS FOR SYMPTOM

Perform the diagnosis by symptom. Refer to [STC-20. "Description"](#).

>> GO TO 4.

4. FINAL CHECK

Check the input/output standard values for the power steering control unit.

Are the power steering control unit input/output values within standard ranges respectively?

- YES >> Inspection End
NO >> GO TO 2.

EPS SYSTEM

< FUNCTION DIAGNOSIS >

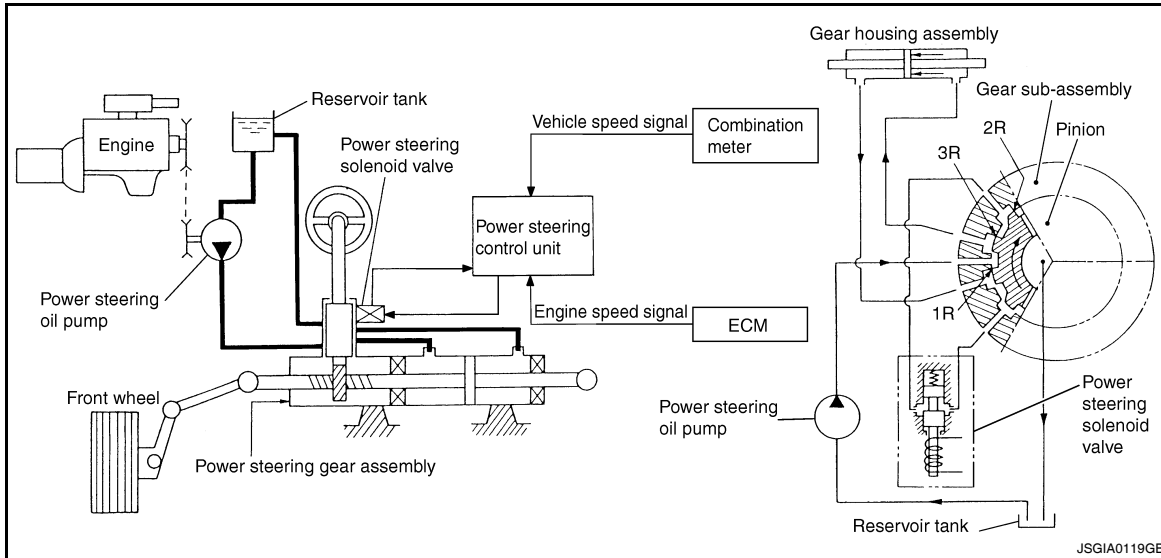
FUNCTION DIAGNOSIS

EPS SYSTEM

System Diagram

INFOID:000000005462703

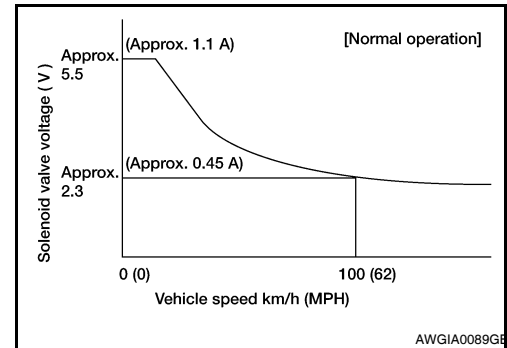
CONTROL DIAGRAM



System Description

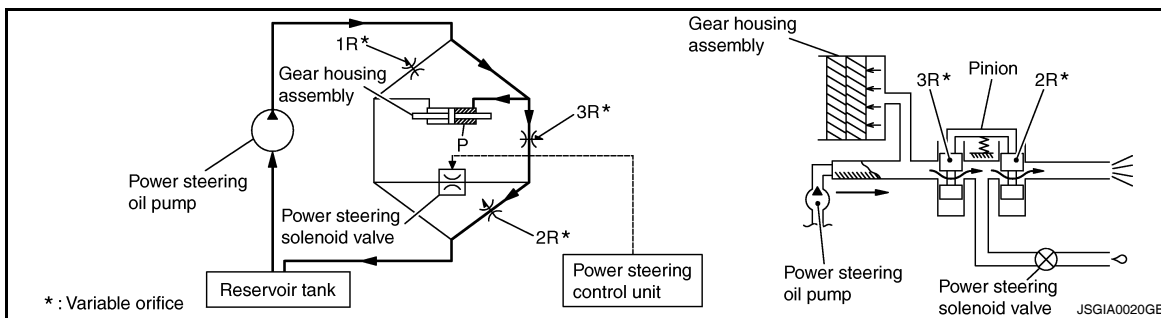
INFOID:000000005462704

- The EPS system controls the power steering solenoid valve through the power steering control unit.
- The valve driving voltage to control the power steering solenoid valve varies according to the vehicle speed.



OPERATION PRINCIPLE

During Parking (When Turning The Steering Wheel To The Right)

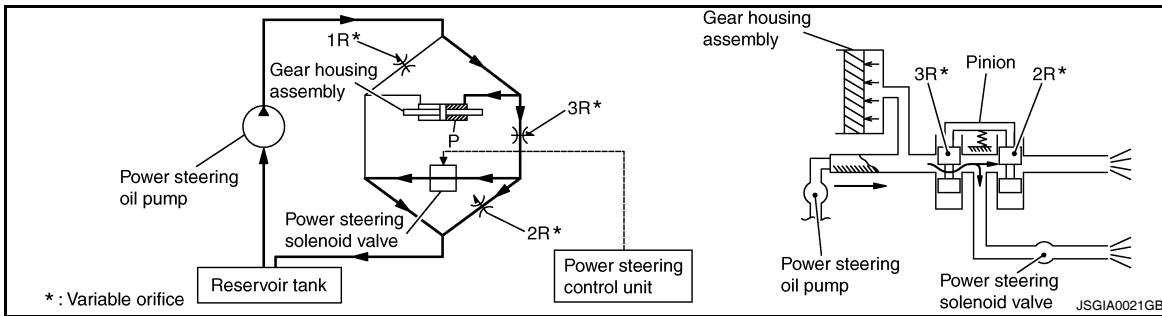


1. Power steering solenoid valve is closed while a vehicle is stopped.
2. Pinion "1R", "2R" and "3R" are closed depending on steering torque of steering wheel.
3. Oil pressure "P" in the gear housing assembly is the sum of oil pressures occurring in "2R" and "3R". This results in a light steering force because of high pressure.

During High-speed Operation

EPS SYSTEM

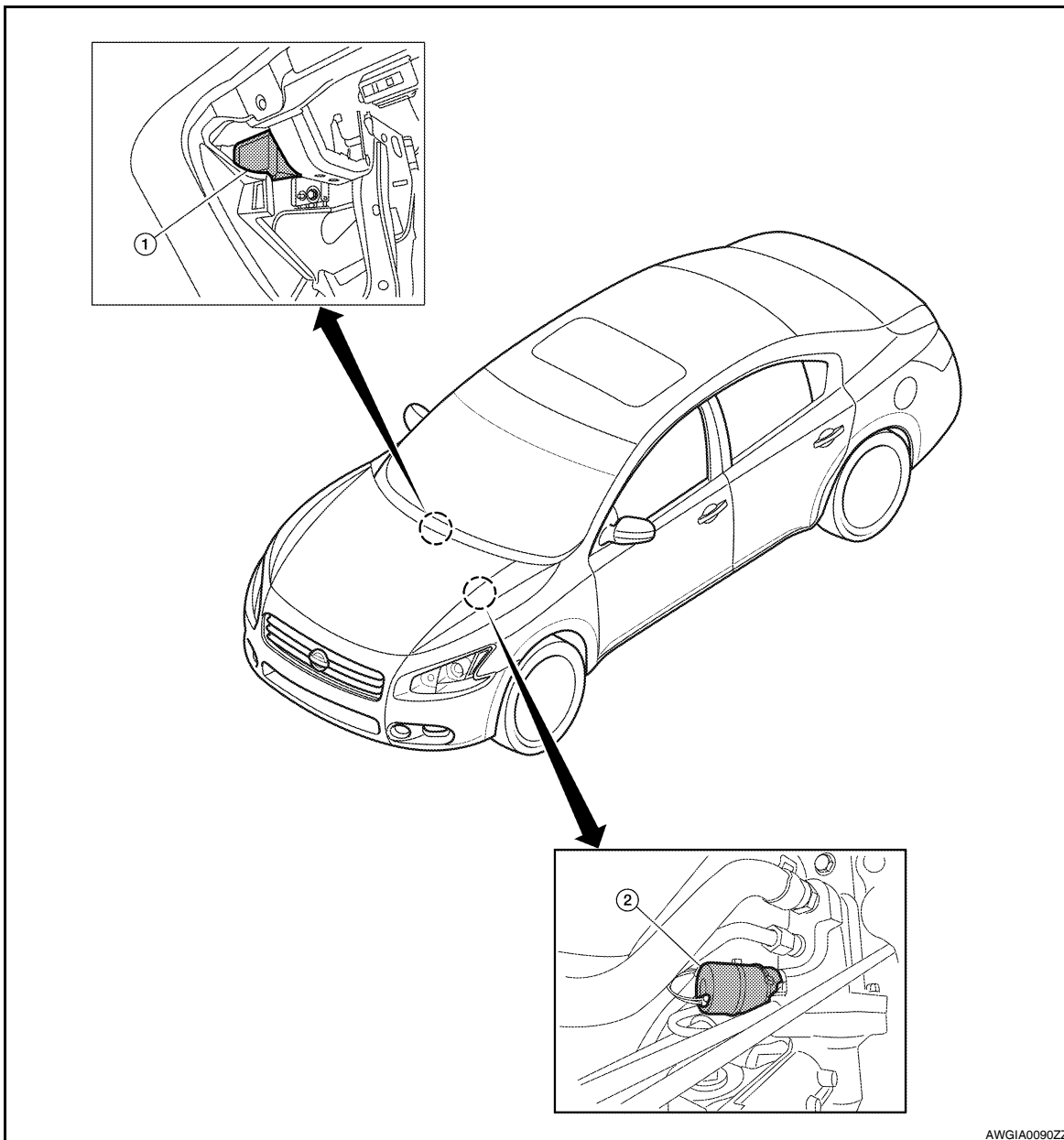
< FUNCTION DIAGNOSIS >



1. Power steering solenoid valve is opened during high-speed operation.
2. Pinion "1R", "2R" and "3R" are closed depending on steering torque of steering wheel.
3. Oil pressure "2R" does not occur because the power steering solenoid valve is on full throttle.
4. Oil pressure "P" in the gear housing assembly includes only oil pressure occurring in "3R" and results in a heavy steering force.

Component Parts Location

INFOID:000000005462705



AWGIA0090ZZ

EPS SYSTEM

< FUNCTION DIAGNOSIS >

1. Power steering control unit M59
(view with glove box removed)
2. Power steering solenoid valve E14

Component Description

INFOID:000000005462706

Component parts	Function
Power steering control unit	<ul style="list-style-type: none">• Signals from various sensors control the driving voltage to the power steering solenoid valve.• The power steering control unit controls the driving voltage to the power steering solenoid valve for maintaining the power steering assist force when the fail-safe function is activated. (The engine speed signals control EPS system if any vehicle speed signal error is detected.)
Combination meter	Refer to STC-13, "Description" .
ECM	Refer to STC-10, "Description" .
Power steering solenoid valve	Refer to STC-7, "Description" .

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POWER SUPPLY AND GROUND CIRCUIT

< COMPONENT DIAGNOSIS >

COMPONENT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

Description

INFOID:000000005462707

EPS system functions by ignition power supply.

Diagnosis Procedure

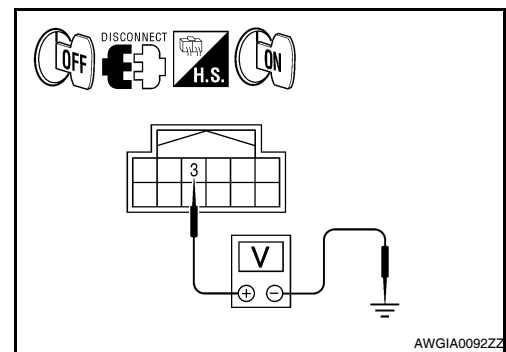
INFOID:000000005462708

Regarding Wiring Diagram information, refer to [STC-16. "Wiring Diagram — ELECTRONICALLY CONTROLLED POWER STEERING SYSTEM —"](#).

1. CHECK POWER SUPPLY

1. Turn the ignition switch OFF.
2. Disconnect power steering control unit connector.
3. Turn the ignition switch ON.
4. Check voltage between power steering control unit connector M59 terminal 3 and ground.

Power steering control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M59	3	—	Ignition switch ON	Battery voltage
			Ignition switch OFF	0V



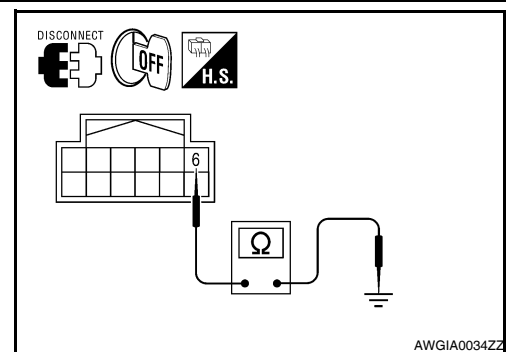
Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair harness or connectors.

2. CHECK GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Check continuity between power steering control unit connector M59 terminal 6 and ground.

Power steering control unit		Ground	Continuity
Connector	Terminal		
M59	6	—	Yes



Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Repair harness or connectors.

3. CHECK TERMINALS AND HARNESS CONNECTORS

Check power steering control unit pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

- YES >> Inspection End
 NO >> Repair or replace damaged parts.

POWER STEERING SOLENOID VALVE

< COMPONENT DIAGNOSIS >

POWER STEERING SOLENOID VALVE

Description

INFOID:000000005462709

Power steering solenoid valve controls the power steering oil pressure in the gear housing assembly.

Diagnosis Procedure

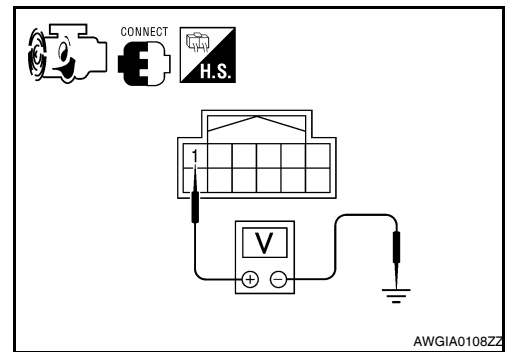
INFOID:000000005462710

Regarding Wiring Diagram information, refer to [STC-16, "Wiring Diagram — ELECTRONICALLY CONTROLLED POWER STEERING SYSTEM —"](#).

1. CHECK POWER STEERING SOLENOID VALVE SIGNAL

1. Start engine.
2. Check voltage between power steering control unit connector M59 terminal 1 and ground.

Power steering control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M59	1	—	Vehicle speed: 0 km/h (0 MPH) (Engine is running)	4.4 - 6.6 V
			Vehicle speed: 100 km/h (62 MPH)	2.5 - 3.7 V



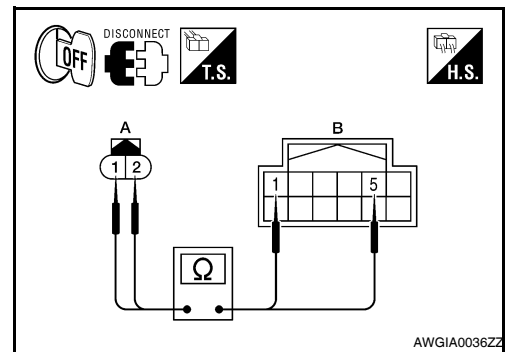
Is the inspection result normal?

- YES >> GO TO 2.
NO >> GO TO 4.

2. CHECK POWER STEERING SOLENOID VALVE HARNESS FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect power steering solenoid valve connector.
3. Disconnect power steering control unit connector.
4. Check continuity between power steering solenoid valve connector E14 (A) terminals 1, 2 and power steering control unit connector M59 (B) terminal 1, 5.

Power steering solenoid valve		Power steering control unit		Continuity
Connector	Terminal	Connector	Terminal	
E14 (A)	1	M59 (B)	1	Yes
	2		5	



Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair harness or connectors.

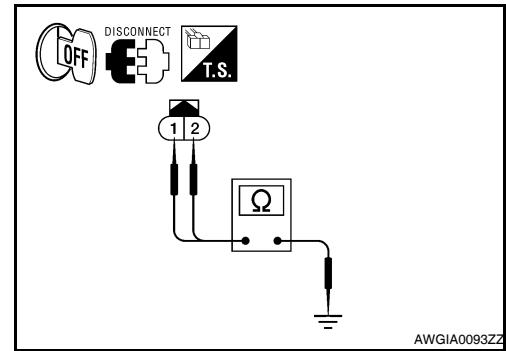
3. CHECK POWER STEERING SOLENOID VALVE HARNESS FOR SHORT

POWER STEERING SOLENOID VALVE

< COMPONENT DIAGNOSIS >

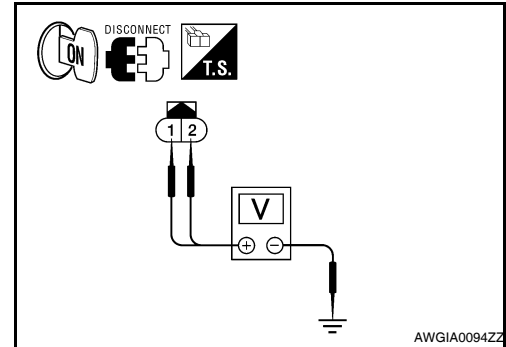
1. Check continuity between power steering solenoid valve connector E14 terminals 1, 2 and ground.

Power steering solenoid valve		Ground	Continuity
Connector	Terminal		
E14	1	—	No
	2		



2. Turn ignition switch ON.
3. Check voltage between power steering solenoid valve connector E14 terminals 1, 2 and ground.

Power steering solenoid valve		Ground	Voltage (Approx.)
Connector	Terminal		
E14	1	—	0V
	2		



Is the inspection result normal?

- YES >> GO TO 4.
NO >> Repair harness or connectors.

4. CHECK POWER STEERING SOLENOID VALVE

Perform power steering solenoid valve component inspection. Refer to [STC-8, "Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 5.
NO >> Replace power steering solenoid valve. Refer to [ST-34, "Exploded View"](#).

5. CHECK TERMINALS AND HARNESS CONNECTORS

1. Check power steering control unit pin terminals for damage or loose connection with harness connector.
2. Check power steering solenoid valve pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

- YES >> Inspection End
NO >> Repair or replace damaged parts.

Component Inspection

INFOID:000000005462711

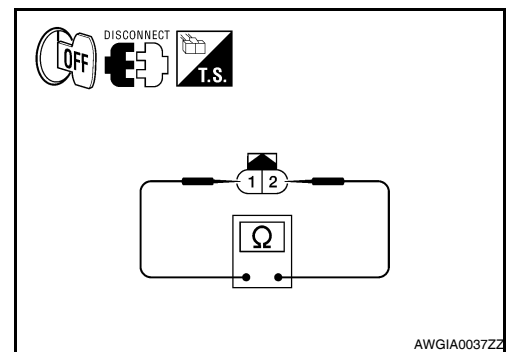
1. POWER STEERING SOLENOID VALVE RESISTANCE CHECK

1. Turn ignition switch OFF.
2. Disconnect power steering solenoid valve connector.
3. Check resistance between power steering solenoid valve terminals 1 and 2

Power steering solenoid valve terminals	Resistance (Approx.)
1 - 2	5 Ω

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Replace power steering solenoid valve. Refer to [ST-34, "Exploded View"](#).



2. POWER STEERING SOLENOID VALVE OPERATION CHECK

POWER STEERING SOLENOID VALVE

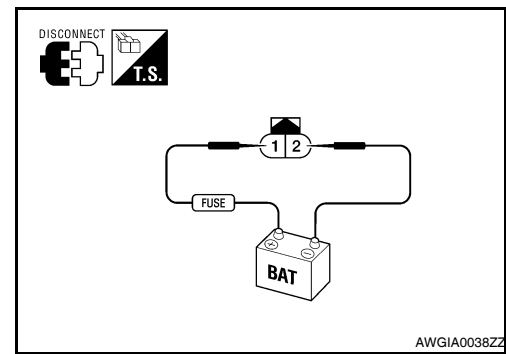
< COMPONENT DIAGNOSIS >

Check power steering solenoid valve by listening for its operation sound while applying battery voltage to power steering solenoid valve terminal 1 (positive) and battery ground to terminal 2 (negative).

Is the inspection result normal?

YES >> Inspection End

NO >> Replace power steering solenoid valve. Refer to [ST-34](#).
["Exploded View"](#).



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ENGINE SPEED SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

ENGINE SPEED SIGNAL CIRCUIT

Description

INFOID:000000005462712

ECM sends engine speed signal to power steering control unit.

Diagnosis Procedure

INFOID:000000005462713

Regarding Wiring Diagram information, refer to [STC-16. "Wiring Diagram — ELECTRONICALLY CONTROLLED POWER STEERING SYSTEM —"](#).

1. PERFORM ECM SELF-DIAGNOSIS

With CONSULT-III

Perform ECM self-diagnosis.

Is any error system detected?

- YES >> Check the error system.
- NO >> GO TO 2.

2. CHECK HARNESS BETWEEN ECM AND POWER STEERING CONTROL UNIT FOR OPEN

1. Turn the ignition switch OFF.
2. Disconnect ECM connector E10.
3. Disconnect power steering control unit connector.
4. Check continuity between ECM connector E10 (A) terminal 94 and power steering control unit connector M59 (B) terminal 10.

ECM		Power steering control unit		Continuity
Connector	Terminal	Connector	Terminal	
E10 (A)	94	M59 (B)	10	Yes

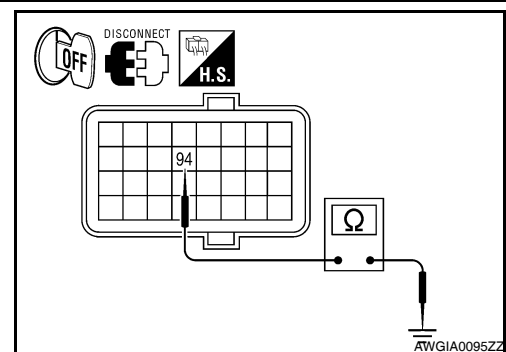
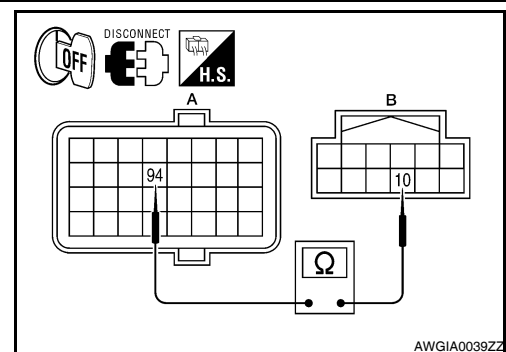
Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Repair harness or connectors.

3. CHECK HARNESS BETWEEN ECM AND POWER STEERING CONTROL UNIT FOR SHORT

1. Check continuity between ECM connector E10 terminal 94 and ground.

ECM		Ground	Continuity
Connector	Terminal		
E10	94	—	No



ENGINE SPEED SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

- Turn ignition switch ON.
- Check voltage between ECM connector E10 terminal 94 and ground.

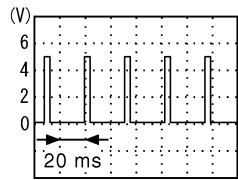
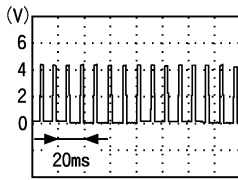
ECM		Ground	Voltage (Approx.)
Connector	Terminal		
E10	94	—	0V

Is the inspection result normal?

- YES >> GO TO 4.
 NO >> Repair harness or connectors.

4. CHECK ENGINE SPEED SIGNAL (ECM SIDE)

- Turn the ignition switch OFF.
- Connect ECM connector E10.
- Start the engine.
- Check signal between ECM connector E10 terminal 94 and ground with oscilloscope.

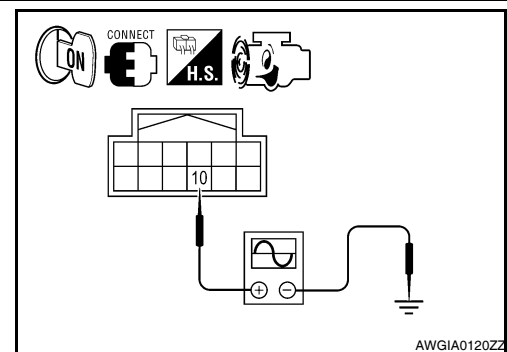
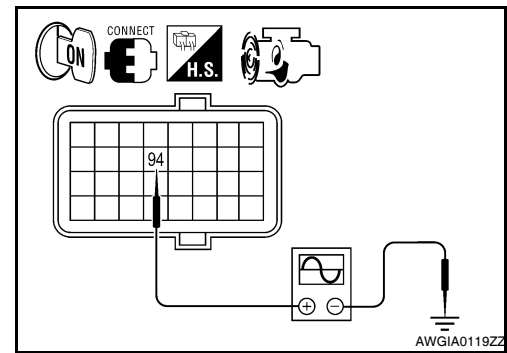
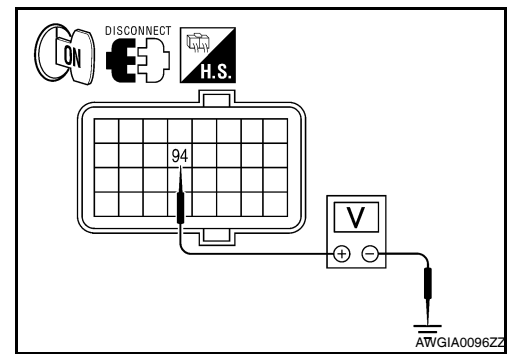
ECM			Value (Approx.)
Connector	Terminal	Condition	
E10	94 - Ground	Engine speed: At idle (Warm-up condition)	 <p style="text-align: right; font-size: small;">JSGIA0143ZZ</p>
		Engine speed: Approx. 2,000 rpm (Warm-up condition)	 <p style="text-align: right; font-size: small;">PBIA3655J</p>

Is the inspection result normal?

- YES >> GO TO 5.
 NO >> Replace ECM.

5. CHECK ENGINE SPEED SIGNAL (POWER STEERING CONTROL UNIT SIDE)

- Turn the ignition switch OFF.
- Connect power steering control unit harness connector.
- Start the engine.
- Check signal between power steering control unit harness connector M59 terminal 10 and ground with oscilloscope.



ENGINE SPEED SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

Power steering control unit			Value (Approx.)
Connector	Terminal	Condition	
M59	10 - Ground	Engine speed: At idle (Warm-up condition)	
		Engine speed: Approx. 2,000 rpm (Warm-up condition)	

Is the inspection result normal?

YES >> GO TO 6.

NO >> Replace power steering control unit. Refer to [STC-23, "Removal and Installation"](#).

6. CHECK TERMINALS AND HARNESS CONNECTORS

1. Check power steering control unit pin terminals for damage or loose connection with harness connector.
2. Check ECM pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace damaged parts.

VEHICLE SPEED SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

VEHICLE SPEED SIGNAL CIRCUIT

Description

INFOID:000000005462714

Combination meter sends vehicle speed signal to power steering control unit.

Diagnosis Procedure

INFOID:000000005462715

Regarding Wiring Diagram information, refer to [STC-16, "Wiring Diagram — ELECTRONICALLY CONTROLLED POWER STEERING SYSTEM —"](#).

1. PERFORM COMBINATION METER SELF-DIAGNOSIS

Perform combination meter self-diagnosis.

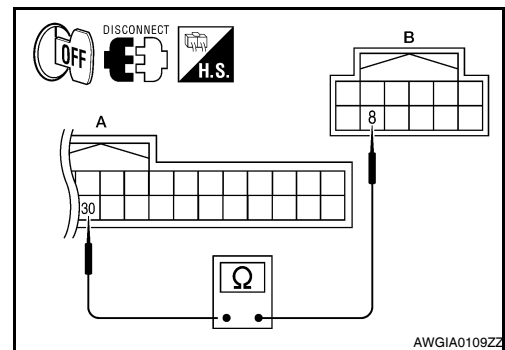
Is any error system detected?

- YES >> Check the error system.
- NO >> GO TO 2.

2. CHECK HARNESS BETWEEN COMBINATION METER AND POWER STEERING CONTROL UNIT FOR OPEN

1. Turn the ignition switch OFF.
2. Disconnect combination meter connector.
3. Disconnect power steering control unit connector.
4. Check continuity between combination meter connector M24 (A) terminal 30 and power steering control unit connector M59 (B) terminal 8.

Combination meter		Power steering control unit		Continuity
Connector	Terminal	Connector	Terminal	
M24 (A)	30	M59 (B)	8	Yes



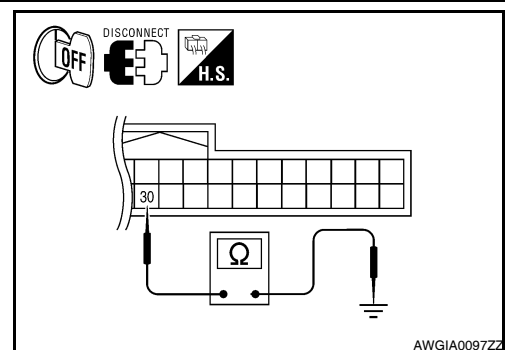
Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Repair harness or connectors.

3. CHECK HARNESS BETWEEN COMBINATION METER AND POWER STEERING CONTROL UNIT FOR SHORT

1. Check continuity between combination meter connector M24 terminal 30 and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M24	30	—	No



VEHICLE SPEED SIGNAL CIRCUIT

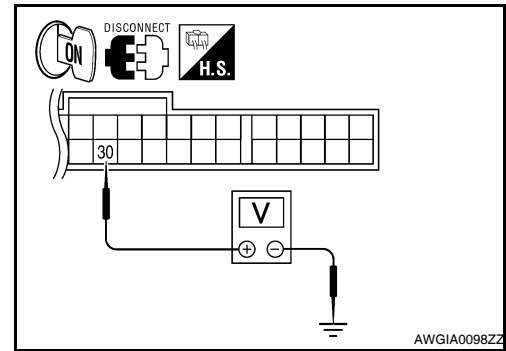
< COMPONENT DIAGNOSIS >

2. Turn ignition switch ON.
3. Check voltage between combination meter connector M24 terminal 30 and ground.

Combination meter		Ground	Voltage (Approx.)
Connector	Terminal		
M24	30	—	0V

Is the inspection result normal?

- YES >> GO TO 4.
 NO >> Repair harness or connectors.



4. CHECK VEHICLE SPEED SIGNAL (COMBINATION METER SIDE)

1. Turn the ignition switch OFF.
2. Connect combination meter connector.
3. Check combination meter input/output standard values. Refer to [MWI-50. "Reference Value"](#).

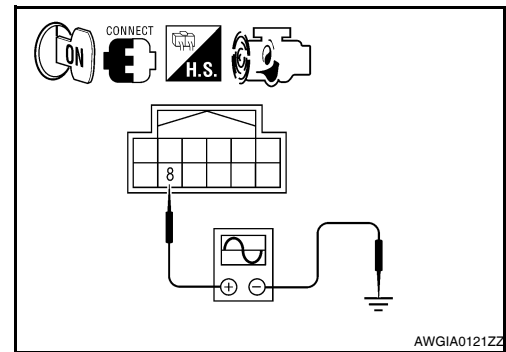
Is the inspection result normal?

- YES >> GO TO 5.
 NO >> Replace combination meter. Refer to [MWI-140. "Removal and Installation"](#).

5. CHECK VEHICLE SPEED SIGNAL (POWER STEERING CONTROL UNIT SIDE)

1. Turn the ignition switch OFF.
2. Connect power steering control unit connector.
3. Start the engine.
4. Check signal between power steering control unit connector M59 terminal 8 and ground with oscilloscope.

Power steering control unit			Value (Approx.)
Connector	Terminal	Condition	
M59	8 - Ground	Vehicle speed: 40 km/h (25 MPH) CAUTION: Check air pressure of tire under standard condition.	<p>ELF1080D</p>



Is the inspection result normal?

- YES >> GO TO 6.
 NO >> Replace power steering control unit. Refer to [STC-23. "Removal and Installation"](#).

6. CHECK TERMINALS AND HARNESS CONNECTORS

1. Check power steering control unit pin terminals for damage or loose connection with harness connector.
2. Check combination meter pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

- YES >> Inspection End
 NO >> Repair or replace damaged parts.

POWER STEERING CONTROL UNIT

< ECU DIAGNOSIS >

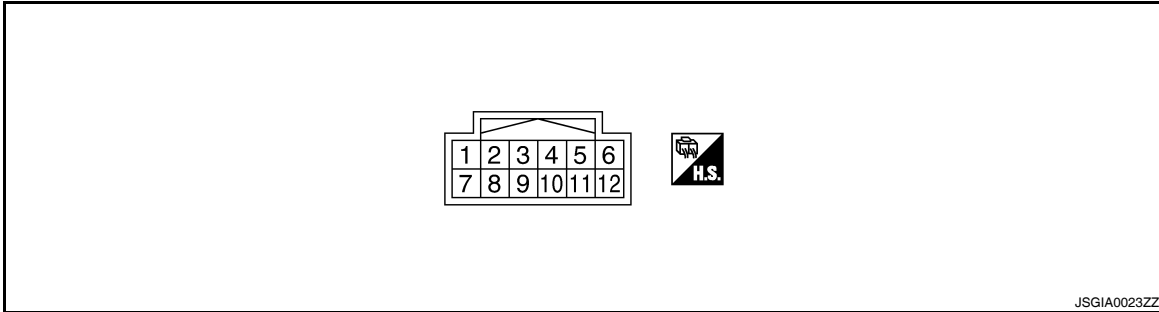
ECU DIAGNOSIS

POWER STEERING CONTROL UNIT

Reference Value

INFOID:000000005462716

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No.		Wire color	Description		Condition	Value (Approx.)
+	-		Signal name	Input/Output		
1	Ground	R/Y	Power steering solenoid valve voltage	Output	Vehicle speed: 0 km/h (0 MPH) (Engine is running)	4.4 - 6.6 V
					Vehicle speed: 100 km/h (62 MPH)	2.5 - 3.7 V
3	Ground	G	Ignition power supply	Input	Ignition switch: ON	Battery voltage
					Ignition switch: OFF	0 V
5	Ground	LG/W	Power steering solenoid valve ground	—	Always	0 V
6	Ground	B	Ground	—	Always	0 V
8	Ground	L/B	Vehicle speed signal	Input	Vehicle speed: 40 km/h (25 MPH) CAUTION: Check air pressure of tire under standard condition.	<p>ELF1080D</p>
10	Ground	V/W	Engine speed signal	Input	Engine speed: At idle (Warm-up condition)	<p>JSGIA0143ZZ</p>
					Engine speed: Approx. 2,000 RPM (Warm-up condition)	<p>PBIA3655J</p>

CAUTION:

POWER STEERING CONTROL UNIT

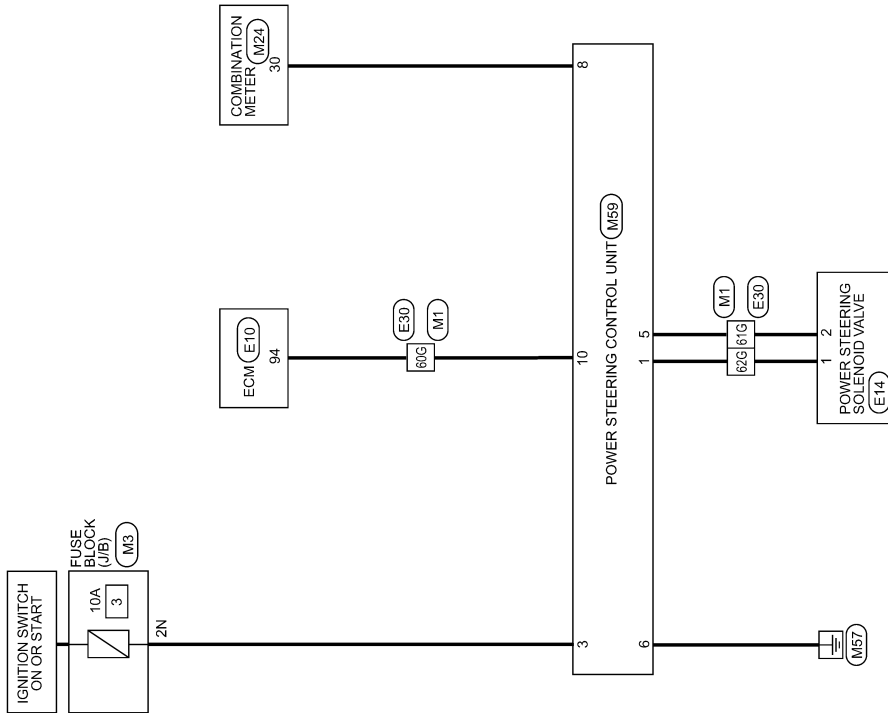
< ECU DIAGNOSIS >

When using circuit tester or oscilloscope to measure voltage for inspection, be sure not to extend forcibly any connector terminals.

Wiring Diagram — ELECTRONICALLY CONTROLLED POWER STEERING SYSTEM —

INFOID:000000005462717

ELECTRONICALLY CONTROLLED POWER STEERING SYSTEM



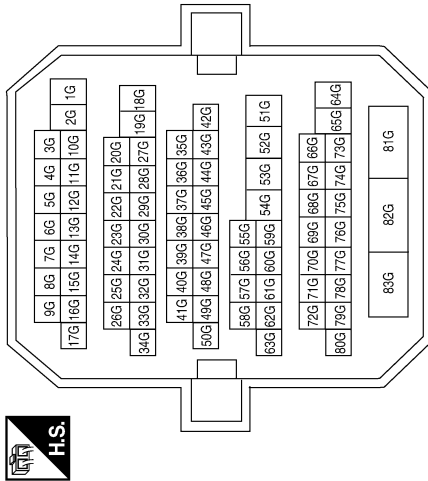
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POWER STEERING CONTROL UNIT

< ECU DIAGNOSIS >

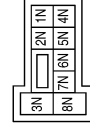
ELECTRONICALLY CONTROLLED POWER STEERING SYSTEM CONNECTORS

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



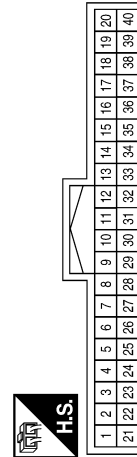
Terminal No.	Color of Wire	Signal Name
60G	V/W	-
61G	LG/W	-
62G	R/Y	-

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



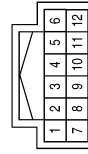
Terminal No.	Color of Wire	Signal Name
2N	G	-

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
30	L/B	2P/R OUT

Connector No.	M59
Connector Name	POWER STEERING CONTROL UNIT
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	R/Y	SOL
2	-	-
3	G	IGN
4	-	-
5	LG/W	SOL GND
6	B	GND

Terminal No.	Color of Wire	Signal Name
7	-	-
8	L/B	VEHICLE SPEED (2P)
9	-	-
10	V/W	ENG TACHO
11	-	-
12	-	-

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STC

POWER STEERING CONTROL UNIT

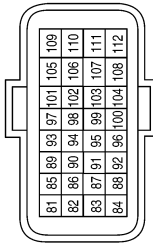
< ECU DIAGNOSIS >

Connector No.	E14
Connector Name	POWER STEERING SOLENOID VALVE
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	V	POWER
2	LG	GND

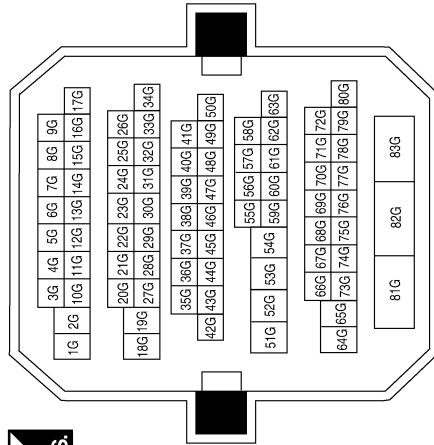
Connector No.	E10
Connector Name	ECM
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
94	GR	TACHO (CABIN)

Terminal No.	Color of Wire	Signal Name
60G	GR	-
61G	LG	-
62G	V	-

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



Fail Safe

EPS system

ABGIA0034GB

INFOID:000000005462718

POWER STEERING CONTROL UNIT

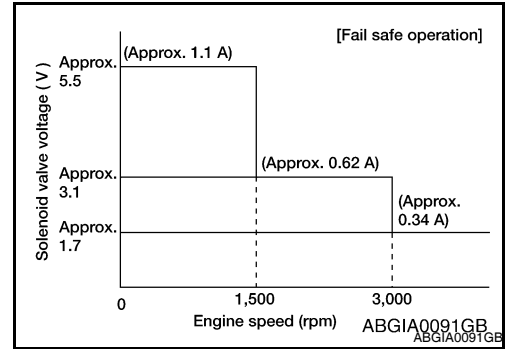
< ECU DIAGNOSIS >

- EPS system enters the fail-safe mode (that allows the steering force to be controlled without impairing the drive ability) if any of the input/output signals to/from EPS system (power steering control unit) deviate from the standard.

NOTE:

The system enters the fail-safe mode if the engine speed remains at 1,500 RPM or more for over 10 seconds while the vehicle is stopped. This is normal.

- The fail-safe function is cancelled when a vehicle speed signal of 2 km/h (1.2 MPH) or more is inputted or the key switch is turned OFF→ ON. EPS system restores the normal operation at that time.



Function	Warning lamp	DTC No.	Detection point (malfunction part)	Malfunction part and cause
Fail-safe function	—	—	Vehicle speed signal	<ul style="list-style-type: none"> • Engine speed is 1,500 RPM or more and there is no vehicle speed signal input for over 10 seconds during vehicle travel. • Vehicle speed signal has abruptly dropped from 30 km/h (19 MPH) or more to 2 km/h (1.2 MPH) or less within 1.4 seconds.

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UNBALANCE STEERING WHEEL TURNING FORCE (TORQUE VARIATION)

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

UNBALANCE STEERING WHEEL TURNING FORCE (TORQUE VARIATION)

Description

INFOID:000000005462719

- Hard steering when fully turning the steering wheel.
- Light steering when driving at a high speed.

Diagnosis Procedure

INFOID:000000005462720

1. CHECK SYSTEM FOR POWER SUPPLY AND GROUND

Perform trouble diagnosis for power supply and ground circuit. Refer to [STC-6, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> GO TO 2.
- NO >> Repair or replace damaged parts.

2. CHECK SYSTEM FOR VEHICLE SPEED SIGNAL

Perform trouble diagnosis for vehicle speed signal. Refer to [STC-13, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Repair or replace damaged parts.

3. CHECK SYSTEM FOR ENGINE SPEED SIGNAL

Perform trouble diagnosis for engine speed signal. Refer to [STC-10, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair or replace damaged parts.

4. CHECK SYSTEM FOR POWER STEERING SOLENOID VALVE

Perform trouble diagnosis for power steering solenoid valve. Refer to [STC-7, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Perform the symptom diagnosis for the steering system. Refer to [ST-8, "NVH Troubleshooting Chart"](#).
- NO >> Repair or replace damaged parts.

PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000005711365

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.

Precautions Necessary for Steering Wheel Rotation after Battery Disconnect (Early Production, With Electronic Steering Column Lock)

INFOID:000000005885917

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-III 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 >

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-III.

EPS CONTROL UNIT

< REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION

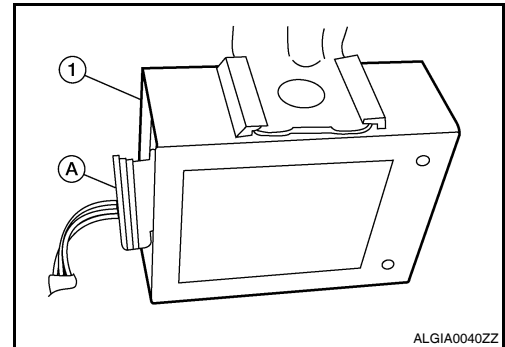
EPS CONTROL UNIT

Removal and Installation

INFOID:000000005462723

REMOVAL

1. Disconnect negative battery terminal. Refer to [PG-65, "Removal and Installation \(Battery\)"](#).
2. Remove audio/navi unit. Refer to [AV-70, "Removal and Installation"](#) (base audio), [AV-161, "Removal and Installation"](#) (Bose w/ monochrome display), [AV-322, "Removal and Installation"](#) (Bose w/ color display), [AV-487, "Removal and Installation"](#) (Bose w/ color display w/navi) or [AV-657, "Removal and Installation"](#) (Bose w/ color w/ rr ctl) or [AV-827, "Removal and Installation"](#) (Bose w/ color w/ navi w/rr ctl).
3. Remove automatic drive position control unit. Refer to [ADP-196, "Removal and Installation"](#).
4. Remove EPS control unit (1) from the bracket.
5. Disconnect EPS control unit connector (A) and remove the EPS control unit (1).



INSTALLATION

Installation is in the reverse order of removal.