

SECTION

STC

STEERING CONTROL SYSTEM

A

B

C

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P

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000004470780

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 is necessary to check symptoms by driving vehicle with customer.

CAUTION:

Customers are not professional. It is dangerous to make an easy guess like “maybe the customer means that...,” or “maybe the customer mentions this symptom”.

>> GO TO 2.

2.CHECK THE STATUS

1. Power steering fluid leakage and check the power steering fluid level. Refer to [ST-7, "Inspection"](#).
2. Check the drive belt tension. Refer to [EM-13, "Checking"](#).
3. Check the power steering gear for damages, cracks and fluid leakage. Refer to [ST-24, "Inspection"](#).
4. Check the relief oil pressure. Refer to [ST-30, "Inspection"](#).

>> GO TO 3.

3.DIAGNOSIS CHART BY SYMPTOM

Perform the diagnosis by symptom. Refer to [STC-19, "Diagnosis Procedure"](#).

>> 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 >

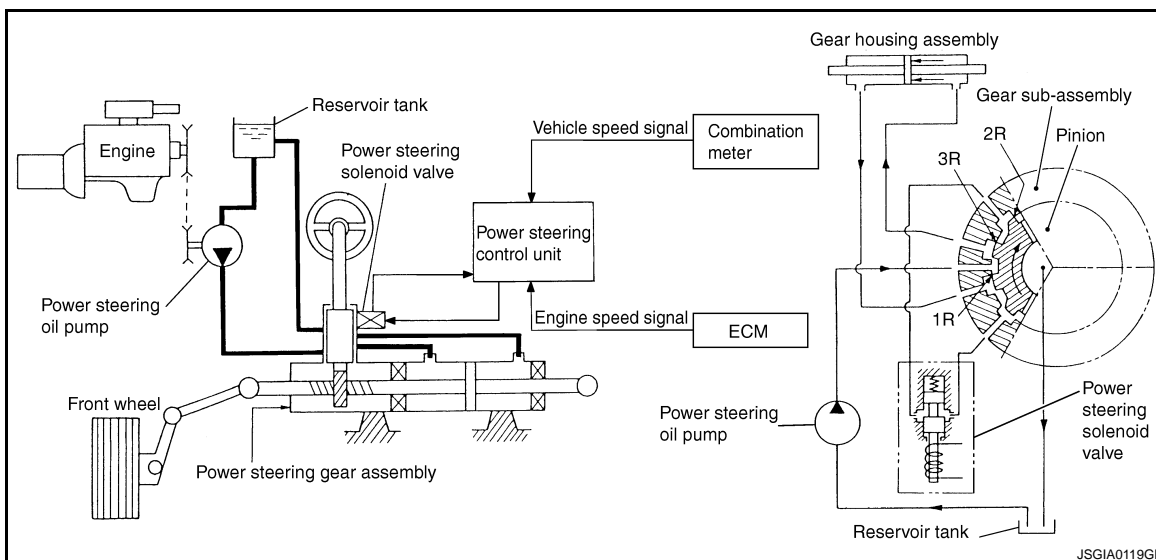
FUNCTION DIAGNOSIS

EPS SYSTEM

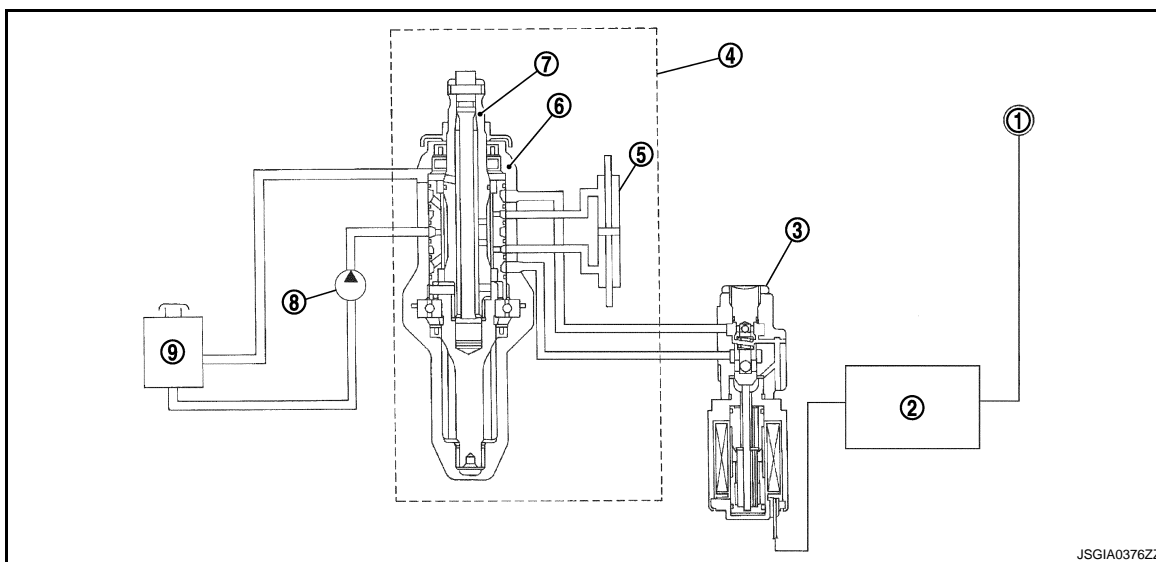
System Diagram

INFOID:000000004499020

CONTROL DIAGRAM



CROSS-SECTIONAL VIEW



- | | | |
|---------------------------|--------------------------------|----------------------------------|
| 1. Combination meter | 2. Power steering control unit | 3. Power steering solenoid valve |
| 4. Steering gear assembly | 5. Gear housing assembly | 6. Gear sub-assembly |
| 7. Pinion | 8. Power steering oil pump | 9. Reservoir tank |

System Description

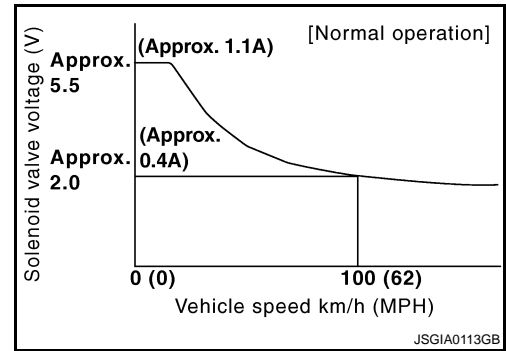
INFOID:000000004470782

- The EPS system controls the power steering solenoid valve through the power steering control unit.

EPS SYSTEM

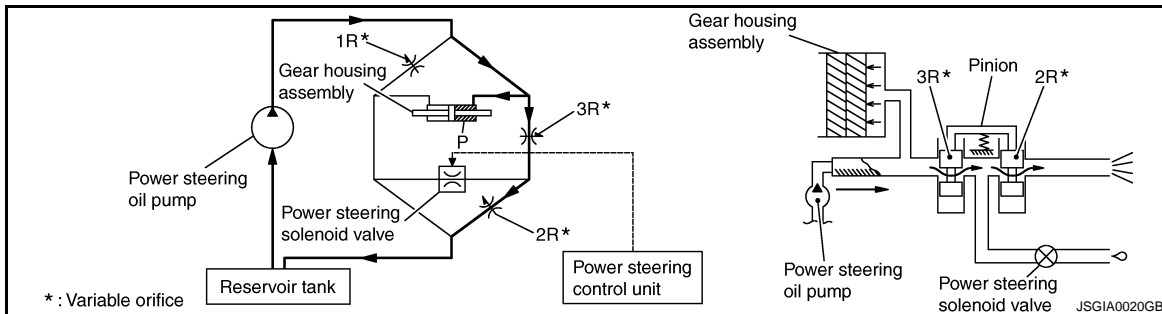
< FUNCTION DIAGNOSIS >

- The valve driving voltage to control the power steering solenoid valve varies according to the vehicle speed.



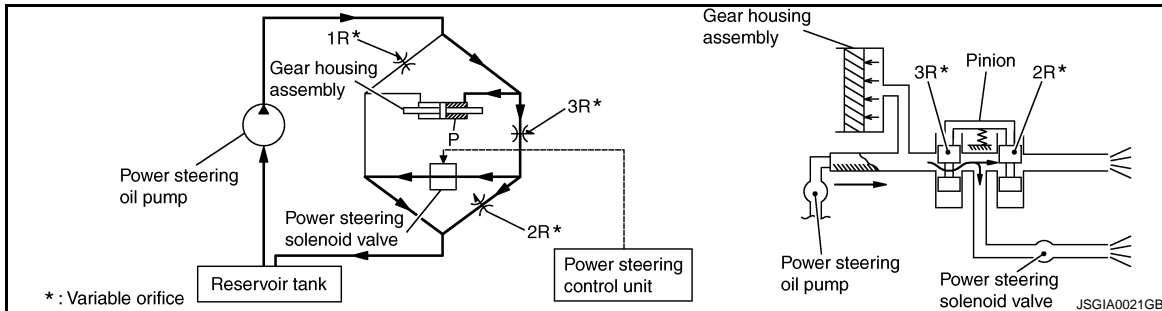
OPERATION PRINCIPLE

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



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

During High-speed Operation (When Turning The Steering Wheel To The Right.)



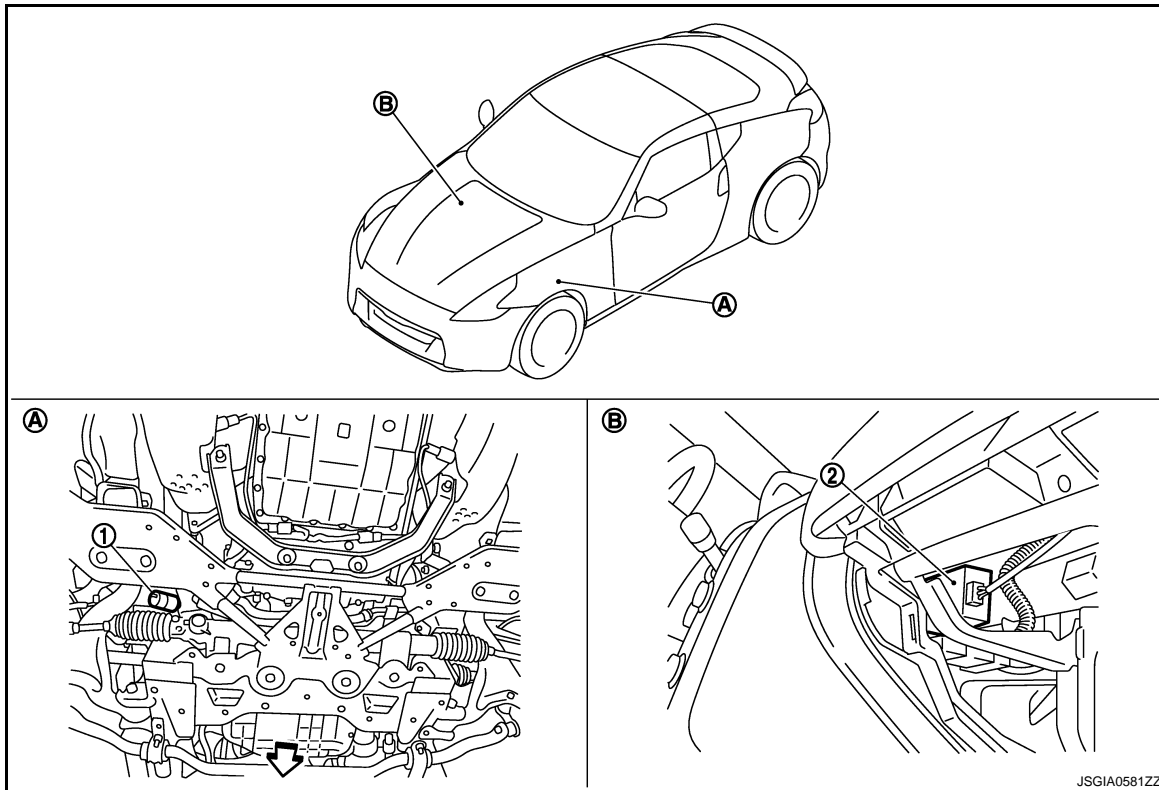
- Power steering solenoid valve is opened during high-speed operation.
- Pinion "1R", "2R" and "3R" are closed depending on steering torque of steering wheel.
- Oil pressure "2R" does not occur because the power steering solenoid valve is on full throttle.
- Oil pressure "P" in the gear housing assembly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

EPS SYSTEM

< FUNCTION DIAGNOSIS >

Component Parts Location

INFOID:000000004470783



1. Power steering solenoid valve
2. Power steering control unit
- A. Steering gear assembly
- B. Glove box assembly removed

↩: Vehicle front

Component Description

INFOID:000000004499021

| Component parts | Reference/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 | STC-11, "Description" |
| ECM | STC-9, "Description" |
| Power steering solenoid valve | STC-7, "Description" |

POWER SUPPLY AND GROUND CIRCUIT

< COMPONENT DIAGNOSIS >

COMPONENT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

Description

INFOID:000000004470785

Power supply to EPS system

Diagnosis Procedure

INFOID:000000004470786

1.CHECK POWER SUPPLY

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

| Power steering control unit | | — | Voltage |
|-----------------------------|----------|--------|---------|
| Connector | Terminal | | |
| M108 | 3 | Ground | 0 V |

4. Turn the ignition switch ON.
CAUTION:
Never start the engine.
5. Check the voltage between power steering control unit harness connector and ground.

| Power steering control unit | | — | Voltage |
|-----------------------------|----------|--------|-----------------|
| Connector | Terminal | | |
| M108 | 3 | Ground | Battery voltage |

Is the inspection result normal?

YES >> GO TO 2.

NO >> Check the following. If any items are damaged, repair or replace damaged parts.

- 10A fuse (#45) open
- Harness for short or open between ignition switch and power steering control unit harness connector No. 3 terminal.
- Ignition switch. Refer to [PCS-114. "Exploded View"](#).

2.CHECK GROUND CIRCUIT

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

| Power steering control unit | | — | Continuity |
|-----------------------------|----------|--------|------------|
| Connector | Terminal | | |
| M108 | 6 | Ground | Existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK TERMINALS AND HARNESS CONNECTORS

Check the 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 error-detected parts.

POWER STEERING SOLENOID VALVE

< COMPONENT DIAGNOSIS >

POWER STEERING SOLENOID VALVE

Description

INFOID:000000004470787

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

Component Function Check

INFOID:000000004732436

1.CHECK POWER STEERING SOLENOID VALVE OPERATION

Check changes in steering force from a halt condition to high-speed driving.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Check the power steering solenoid valve. Refer to [STC-7, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000004470788

1.CHECK POWER STEERING SOLENOID VALVE SIGNAL

1. Turn the ignition switch OFF.
2. Check the voltage between power steering control unit harness connector and ground.

| Power steering control unit | | — | Condition | Voltage (Approx.) |
|-----------------------------|----------|--------|--|-------------------|
| Connector | Terminal | | | |
| M108 | 1 | Ground | Vehicle speed: 0 km/h (0 MPH) (Engine is running) | 4.4 – 6.6 V |
| | | | Vehicle speed: 100 km/h (62 MPH) | 2.4 – 3.6 V |

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 2.

2.CHECK HARNESS BETWEEN POWER STEERING SOLENOID VALVE AND POWER STEERING CONTROL UNIT

1. Turn the ignition switch OFF.
2. Disconnect power steering solenoid valve harness connector.
3. Disconnect power steering control unit harness connector.
4. Check the continuity between power steering solenoid valve harness connector and the power steering control unit harness connector.

| Power steering solenoid valve | | Power steering control unit | | Continuity |
|-------------------------------|----------|-----------------------------|----------|------------|
| Connector | Terminal | Connector | Terminal | |
| F45 | 1 | M108 | 1 | Existed |
| | 2 | | 5 | Existed |

5. Check the continuity between power steering control unit harness connector and ground.

| Power steering control unit | | — | Continuity |
|-----------------------------|----------|--------|-------------|
| Connector | Terminal | | |
| M108 | 1 | Ground | Not existed |
| | 5 | | |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK POWER STEERING SOLENOID VALVE

Check the power steering solenoid valve. Refer to [STC-8, "Component Inspection"](#).

POWER STEERING SOLENOID VALVE

< COMPONENT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace gear-sub assembly. Refer to [ST-18, "Exploded View"](#).

4.CHECK TERMINALS AND HARNESS CONNECTORS

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

Is the inspection result normal?

YES >> Replace power steering control unit. Refer to [STC-21, "Exploded View"](#).

NO >> Repair or replace error-detected parts.

Component Inspection

INFOID:000000004470789

1.CHECK POWER STEERING SOLENOID VALVE

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

| Power steering solenoid valve | | Resistance (Approx.) |
|-------------------------------|---|----------------------|
| Terminal | | |
| 1 | 2 | 4 – 6 Ω |

4. Check power steering solenoid valve by listening for its operation sound while applying battery voltage to power steering solenoid valve connector E207 terminals 1 (positive) and 2 (negative).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace gear-sub assembly. Refer to [ST-18, "Exploded View"](#).

ENGINE SPEED SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

ENGINE SPEED SIGNAL CIRCUIT

Description

INFOID:000000004470790

ECM sends engine speed signal to power steering control unit.

Diagnosis Procedure

INFOID:000000004470791

1.PERFORM ECM SELF-DIAGNOSIS

With CONSULT-III

1. Turn the ignition switch ON.

CAUTION:

Never start the engine

2. Perform ECM self-diagnosis. Refer to [EC-128, "CONSULT-III Function"](#).

Is any DTC detected?

YES >> Check the DTC.

NO >> GO TO 2.

2.CHECK HARNESS BETWEEN ECM AND POWER STEERING CONTROL UNIT

1. Turn the ignition switch OFF.
2. Disconnect ECM harness connectors.
3. Disconnect power steering control unit harness connector.
4. Check the continuity between ECM harness connector and power steering control unit harness connector.

| ECM | | Power steering control unit | | Continuity |
|-----------|----------|-----------------------------|----------|------------|
| Connector | Terminal | Connector | Terminal | |
| M107 | 110 | M108 | 10 | Existed |

5. Check the continuity between power steering control unit harness connector and ground.

| Power steering control unit | | — | Continuity |
|-----------------------------|----------|--------|-------------|
| Connector | Terminal | | |
| M108 | 10 | Ground | Not existed |

Is the inspection result normal?

YES >> GO TO 3.

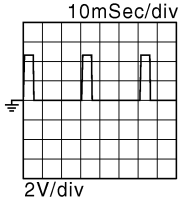
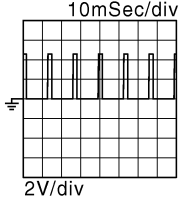
NO >> Repair or replace error-detected parts.

3.CHECK ENGINE SPEED SIGNAL (1)

1. Connect ECM harness connectors.
2. Turn the ignition switch ON.
3. Check the signal between ECM harness connector and ground with oscilloscope.

ENGINE SPEED SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

| ECM | | — | Condition | Voltage (Approx.) |
|-----------|----------|--------|--|--|
| Connector | Terminal | | | |
| M107 | 110 | Ground | Engine is running <ul style="list-style-type: none"> • Warm-up condition • Idle speed |  2V/div JMBIA0076GB |
| | | | Engine is running <ul style="list-style-type: none"> • Warm-up condition • Engine speed: Approx. 2,000 rpm |  2V/div JMBIA0077GB |

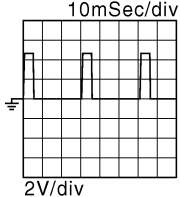
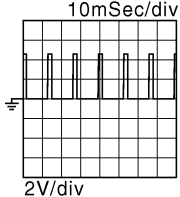
Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace ECM. Refer to [EC-16, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Description"](#).

4.CHECK ENGINE SPEED SIGNAL (2)

1. Turn the ignition switch OFF.
2. Connect power steering control unit harness connector.
3. Check the signal between power steering control unit harness connector and ground with oscilloscope.

| Power steering control unit | | — | Condition | Voltage (Approx.) |
|-----------------------------|----------|--------|--|--|
| Connector | Terminal | | | |
| M108 | 10 | Ground | Engine is running <ul style="list-style-type: none"> • Warm-up condition • Idle speed |  2V/div JMBIA0076GB |
| | | | Engine is running <ul style="list-style-type: none"> • Warm-up condition • Engine speed: Approx. 2,000 rpm |  2V/div JMBIA0077GB |

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace power steering control unit. Refer to [STC-21, "Exploded View"](#).

5.CHECK TERMINALS AND HARNESS CONNECTORS

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

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace error-detected parts.

VEHICLE SPEED SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

VEHICLE SPEED SIGNAL CIRCUIT

Description

INFOID:000000004499018

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

Diagnosis Procedure

INFOID:000000004499019

1.PERFORM COMBINATION METER SELF-DIAGNOSIS

With CONSULT-III

1. Turn the ignition switch ON.
2. Perform combination meter self-diagnosis. Refer to [MWI-33, "CONSULT-III Function \(METER/M&A\)"](#).

Is any DTC detected?

- YES >> Check the DTC.
NO >> GO TO 2.

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

1. Turn the ignition switch OFF.
2. Disconnect combination meter harness connector.
3. Disconnect power steering control unit harness connector.
4. Check the continuity between combination meter harness connector and power steering control unit harness connector.

| Combination meter | | Power steering control unit | | Continuity |
|-------------------|----------|-----------------------------|----------|------------|
| Connector | Terminal | Connector | Terminal | |
| M53 | 3 | M108 | 8 | Existed |

5. Check the continuity between power steering control unit harness connector and ground.

| Power steering control unit | | — | Continuity |
|-----------------------------|----------|--------|-------------|
| Connector | Terminal | | |
| M108 | 8 | Ground | Not existed |

Is the inspection result normal?

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

3.CHECK VEHICLE SPEED SIGNAL (1)

1. Connect combination meter harness connector.
2. Check the combination meter input/output standard values. Refer to [MWI-56, "Reference Value"](#).

Is the inspection result normal?

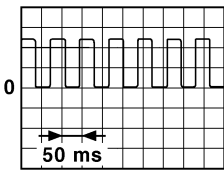
- YES >> GO TO 4.
NO >> Replace combination meter Refer to [MWI-94, "Exploded View"](#).

4.CHECK VEHICLE SPEED SIGNAL (2)

1. Turn the ignition switch OFF.
2. Connect power steering control unit harness connector.
3. Check the signal between power steering control unit harness connector and ground with oscilloscope.

VEHICLE SPEED SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

| Power steering control unit | | — | Condition | Voltage (Approx.) |
|-----------------------------|----------|--------|---|--|
| Connector | Terminal | | | |
| M108 | 8 | Ground | Vehicle speed: 40 km/h (25 MPH) CAUTION: Check air pressure of tire under standard condition. | NOTE: The maximum voltage varies depending on the specification (destination unit).  <small>JSNIA0015GB</small> |

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace power steering control unit. Refer to [STC-21, "Exploded View"](#).

5.CHECK TERMINALS AND HARNESS CONNECTORS

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

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace error-detected parts.

POWER STEERING CONTROL UNIT

< ECU DIAGNOSIS >

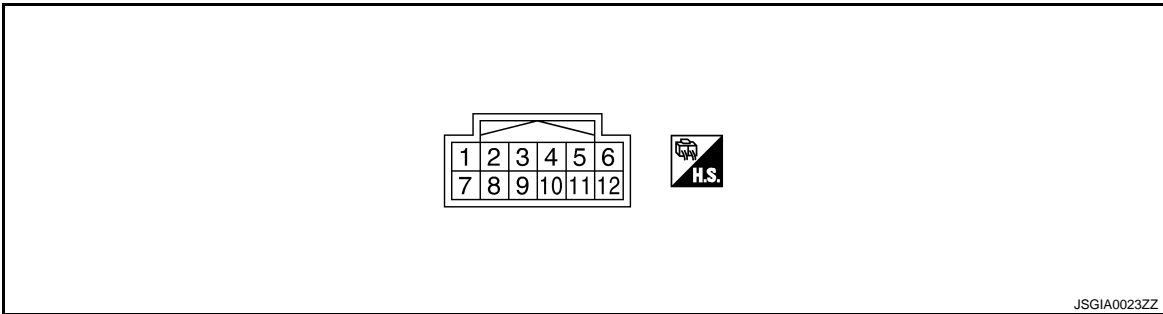
ECU DIAGNOSIS

POWER STEERING CONTROL UNIT

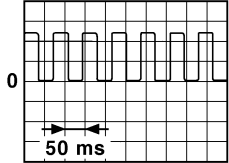
Reference Value

INFOID:000000004470794

TERMINAL LAYOUT



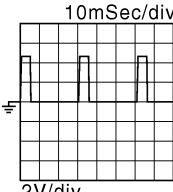
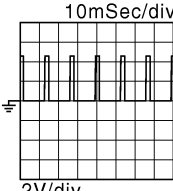
PHYSICAL VALUES

| Terminal No. (Wire color) | | Description | | Condition | Value (Approx.) |
|------------------------------|--------|--|------------------|---|--|
| + | - | Signal name | Input/ Output | | |
| 1 (LG) | Ground | Power steering solenoid valve control voltage | Output | Vehicle speed: 0 km/h (0 MPH) (Engine is running) | 4.4 – 6.6 V |
| | | | | Vehicle speed: 100 km/h (62 MPH) | 2.4 – 3.6 V |
| 3 (G) | Ground | Ignition switch power supply | Input | Ignition switch: ON | Battery voltage |
| | | | | Ignition switch: OFF | 0 V |
| 5 (B) | Ground | Power steering solenoid valve ground | — | Always | 0 V |
| 6 (B) | Ground | Ground | — | Always | 0 V |
| 8 (L) | Ground | Vehicle speed signal | Input | Vehicle speed: 40 km/h (25 MPH) CAUTION: Check air pressure of tire under standard condition. | NOTE: The maximum voltage varies de- pending on the specification (destination unit).  |

JSNIA0015GB

POWER STEERING CONTROL UNIT

< ECU DIAGNOSIS >

| Terminal No. (Wire color) | | Description | | Condition | Value (Approx.) |
|------------------------------|--------|---------------------|------------------|--|--|
| + | - | Signal name | Input/ Output | | |
| 10 (R) | Ground | Engine speed signal | Input | Engine is running <ul style="list-style-type: none"> • Warm-up condition • Idle speed |  10mSec/div 2V/div JMBIA0076GB |
| | | | | Engine is running <ul style="list-style-type: none"> • Warm-up condition • Engine speed: Approx. 2,000 rpm |  10mSec/div 2V/div JMBIA0077GB |

CAUTION:

When using circuit tester or oscilloscope to measure voltage for inspection, never forcibly extend any connector terminals.

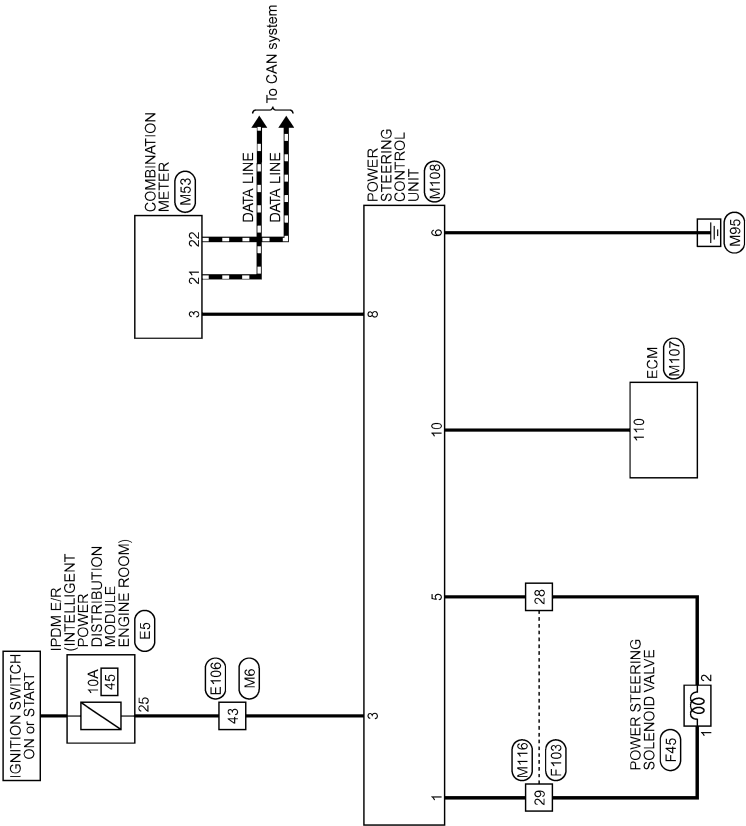
POWER STEERING CONTROL UNIT

< ECU DIAGNOSIS >

Wiring Diagram - ELECTRONICALLY CONTROLLED POWER STEERING SYSTEM -

INFOID:000000004470795

ELECTRONICALLY CONTROLLED POWER STEERING SYSTEM



2008/09/12

JCGWA0200GE

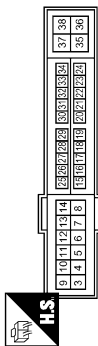
STC

POWER STEERING CONTROL UNIT

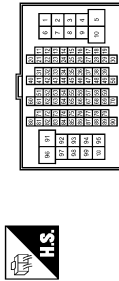
< ECU DIAGNOSIS >

ELECTRONICALLY CONTROLLED POWER STEERING SYSTEM

| | |
|----------------|---|
| Connector No. | E5 |
| Connector Name | IPDM E/R INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Type | TH20FW-CS12-M4-1V |



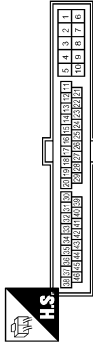
| | |
|----------------|-----------------|
| Connector No. | E106 |
| Connector Name | WIRE TO WIRE |
| Connector Type | TH80FW-CS16-TM4 |



| | |
|----------------|-------------------------------|
| Connector No. | F45 |
| Connector Name | POWER STEERING SOLENOID VALVE |
| Connector Type | RS02FBR-D6Y |



| | |
|----------------|--------------|
| Connector No. | F103 |
| Connector Name | WIRE TO WIRE |
| Connector Type | TK36FW-NS10 |



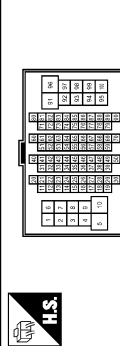
| | |
|-----------------------------|----|
| Terminal No. | 25 |
| Color of Wire | G |
| Signal Name [Specification] | — |

| | |
|-----------------------------|----|
| Terminal No. | 43 |
| Color of Wire | G |
| Signal Name [Specification] | — |

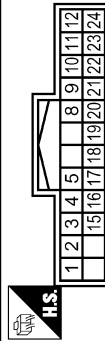
| | |
|-----------------------------|----------|
| Terminal No. | 1 |
| Color of Wire | LG |
| Signal Name [Specification] | EPS SOL+ |
| Terminal No. | 2 |
| Color of Wire | B |
| Signal Name [Specification] | EPS SOL- |

| | |
|-----------------------------|----|
| Terminal No. | 28 |
| Color of Wire | B |
| Signal Name [Specification] | — |
| Terminal No. | 29 |
| Color of Wire | LG |
| Signal Name [Specification] | — |

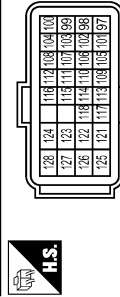
| | |
|----------------|-----------------|
| Connector No. | M6 |
| Connector Name | WIRE TO WIRE |
| Connector Type | TH80MW-CS16-TM4 |



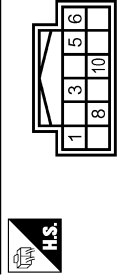
| | |
|----------------|-------------------|
| Connector No. | M33 |
| Connector Name | COMBINATION METER |
| Connector Type | TH24FW-1H |



| | |
|----------------|--------------------|
| Connector No. | M107 |
| Connector Name | ECM |
| Connector Type | RK24FGY-R26 R-LH-Z |



| | |
|----------------|-----------------------------|
| Connector No. | M108 |
| Connector Name | POWER STEERING CONTROL UNIT |
| Connector Type | TH12FW-1H |



| | |
|-----------------------------|----|
| Terminal No. | 43 |
| Color of Wire | G |
| Signal Name [Specification] | — |

| | |
|-----------------------------|--------------------------------|
| Terminal No. | 3 |
| Color of Wire | L |
| Signal Name [Specification] | VEHICLE SPEED SIGNAL (2-PULSE) |
| Terminal No. | 21 |
| Color of Wire | L |
| Signal Name [Specification] | CAN-H |
| Terminal No. | 22 |
| Color of Wire | P |
| Signal Name [Specification] | CAN-L |

| | |
|-----------------------------|-------|
| Terminal No. | 110 |
| Color of Wire | R |
| Signal Name [Specification] | TACHO |

| | |
|-----------------------------|-------------------|
| Terminal No. | 1 |
| Color of Wire | LG |
| Signal Name [Specification] | EPS SOL+ |
| Terminal No. | 3 |
| Color of Wire | G |
| Signal Name [Specification] | IGN |
| Terminal No. | 5 |
| Color of Wire | B |
| Signal Name [Specification] | EPS SOL- |
| Terminal No. | 6 |
| Color of Wire | B |
| Signal Name [Specification] | GND |
| Terminal No. | 8 |
| Color of Wire | L |
| Signal Name [Specification] | VEHICLE SPEED(2P) |
| Terminal No. | 10 |
| Color of Wire | R |
| Signal Name [Specification] | ENG TACHO |

JCGWA0201GE

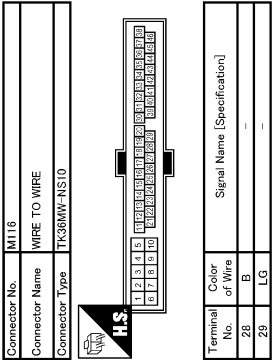
POWER STEERING CONTROL UNIT

< ECU DIAGNOSIS >

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STC

ELECTRONICALLY CONTROLLED POWER STEERING SYSTEM



Fail-Safe

EPS system

JCGWA0202GE
INFOID:000000004470796

POWER STEERING CONTROL UNIT

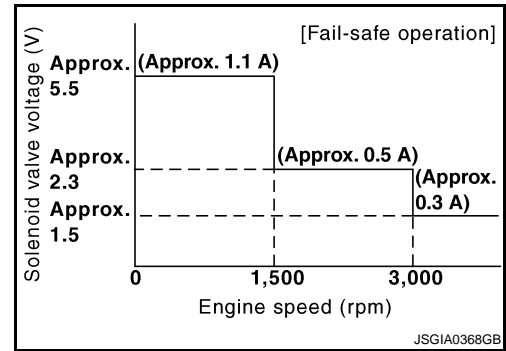
< ECU DIAGNOSIS >

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

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 canceled when a vehicle speed signal of 2 km/h (1.2 MPH) or more is inputted or the ignition switch is turned OFF→ON. EPS system restores the normal operation at that time.



| Mode | Warn- ing lamp | DTC | Detection point (malfunction part) | Error area and root cause |
|-----------|-------------------|-----|------------------------------------|--|
| Fail-safe | — | — | Vehicle speed signal input | <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. |

UNBALANCE STEERING WHEEL TURNING FORCE (TORQUE VARIATION)

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

UNBALANCE STEERING WHEEL TURNING FORCE (TORQUE VARIATION)

Description

INFOID:000000004470797

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

Diagnosis Procedure

INFOID:000000004470798

1.CHECK SYSTEM FOR POWER SUPPLY AND GROUND

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

2.CHECK SYSTEM FOR VEHICLE SPEED SIGNAL

Perform trouble diagnosis for vehicle speed signal. Refer to [STC-11, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK SYSTEM FOR ENGINE SPEED SIGNAL

Perform trouble diagnosis for engine speed signal. Refer to [STC-9, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected 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-2, "NVH Troubleshooting Chart"](#).

NO >> Repair or replace error-detected parts.

PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000004495127

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

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the "SRS AIRBAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

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

When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors while ignition switch is ON or engine is running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration may activate the sensor(s), deploy the airbag(s), possibly cause serious injury. When using air or electric power tools or hammers, always turn OFF ignition switch, disconnect the battery, and wait 3 minutes or more before performing any service.

Precaution Necessary for Steering Wheel Rotation after Battery Disconnect

INFOID:000000004495128

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. 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.
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.

POWER STEERING CONTROL UNIT

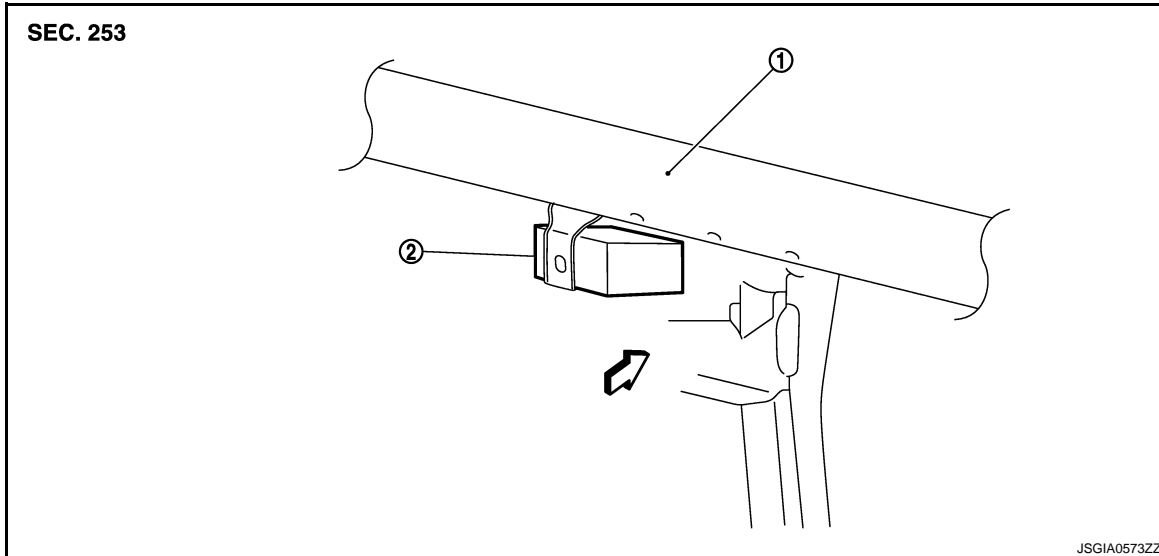
< ON-VEHICLE REPAIR >

ON-VEHICLE REPAIR

POWER STEERING CONTROL UNIT

Exploded View

INFOID:000000004470801



1. Steering member
2. Power steering control unit

⇐: Vehicle front

Removal and Installation

INFOID:000000004470802

REMOVAL

1. Remove glove box assembly. Refer to [IP-11, "Exploded View"](#).
2. Disconnect power steering control unit connector.
3. Remove power steering control unit.

INSTALLATION

Install in the reverse order of removal.

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