SECTION SCS
SUSPENSION CONTROL SYSTEM

CONTENTS

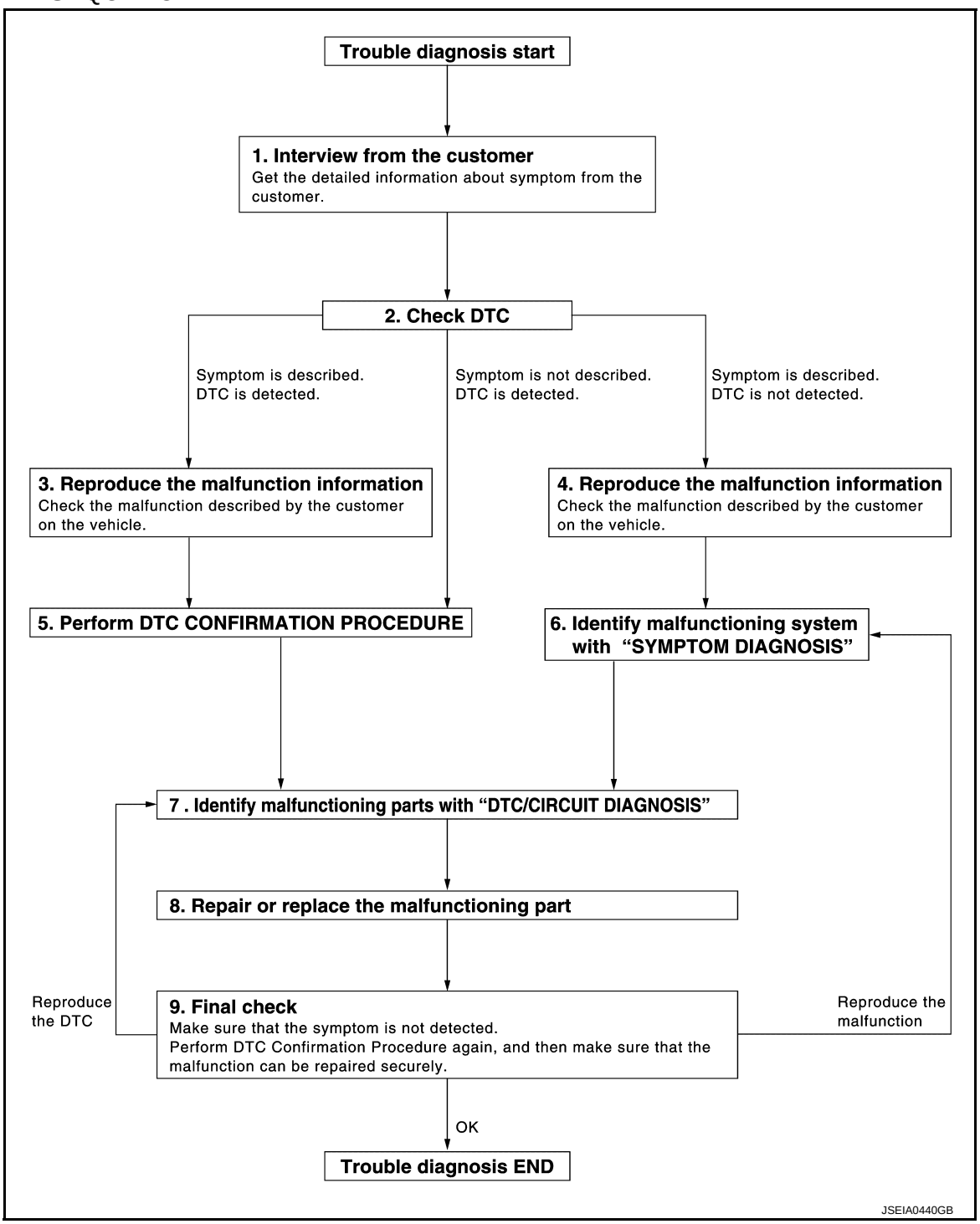
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000007512477

OVERALL SEQUENCE



DETAILED FLOW

1.OBTAIN INFORMATION ABOUT SYMPTOM

Interview the customer to obtain as much information as possible about the conditions and environment under which the malfunction occurs.

>> GO TO 2.

2.CHECK DTC

1. Check for DTC.
2. If a DTC exists, perform the following operations.

- Records the DTCs.
- Erase DTCs
- Check that the root cause clarified with DTC matches to the malfunction information described by the customer.

3. Check also the related service information or others.

Do malfunction information and or DTC exist?

Malfunction information and DTC exist. >>GO TO 3.
Malfunction information exists but no DTC. >>GO TO 4.
No malfunction information, but DTC exists. >>GO TO 5.

3.REPRODUCE THE MALFUNCTION INFORMATION

Check the malfunction described by the customer on the vehicle.
Record the status of each signal when a symptom occurs with “Data Monitor” in CONSULT.
Inspect the relation of the information and the condition when it occurs.

>> GO TO 5.

4.CHECK THE MALFUNCTION

Check the malfunction described by the customer on the vehicle.
Record the status of each signal when a symptom occurs with “Data Monitor” in CONSULT.
Inspect the relation of the information and the condition when it occurs.

>> GO TO 6.

5.PERFORM “DTC CONFIRMATION PROCEDURE”

Perform the “DTC conformation procedure” to the detected DTC and check that the DTC is detected again.
Refer to SCS-53, "DTC Inspection Priority Chart" when multiple DTCs are detected, and then judge the order for performing the diagnosis.

Is any DTC detected?

YES >> GO TO 7.
NO >> Follow GI-7, "How to Follow Test Groups in Trouble Diagnosis" to check.

6.IDENTIFY MALFUNCTIONING SYSTEM WITH “SYMPTOM DIAGNOSIS”

Use the “Symptom diagnosis” from the symptom inspection result in step 4. Then identify where to start performing the diagnosis based on the possible causes and the symptoms.

>> GO TO 7.

7.IDENTIFY MALFUNCTIONING PARTS WITH “COMPONENT DIAGNOSIS”

Perform the inspection with the “component diagnosis” of the applicable system.
NOTE:
The “component diagnosis” mainly consists of the check for an open circuit.
The circuit check in the diagnosis procedure also requires the check for a short circuit. Refer to GI-48, "Circuit Inspection" for details.

>> GO TO 8.

8.REPAIR OR REPLACE THE MALFUNCTIONING PARTS

1. Repair or replace the part detected as malfunctioning.
2. After repairing or replacing, reinstall/reconnect parts or connectors removed/disconnected in the “component diagnosis”, and then erase the DTC.

>> GO TO 9.

9. FINAL CHECK

Perform the “DTC confirmation procedure” or “Component Inspection” to check that the repair is correctly performed. Check that malfunctions are not reproduced when obtaining the malfunction information from the customer, referring to the symptom inspection result in step 3 or 4.

Is the check result normal?

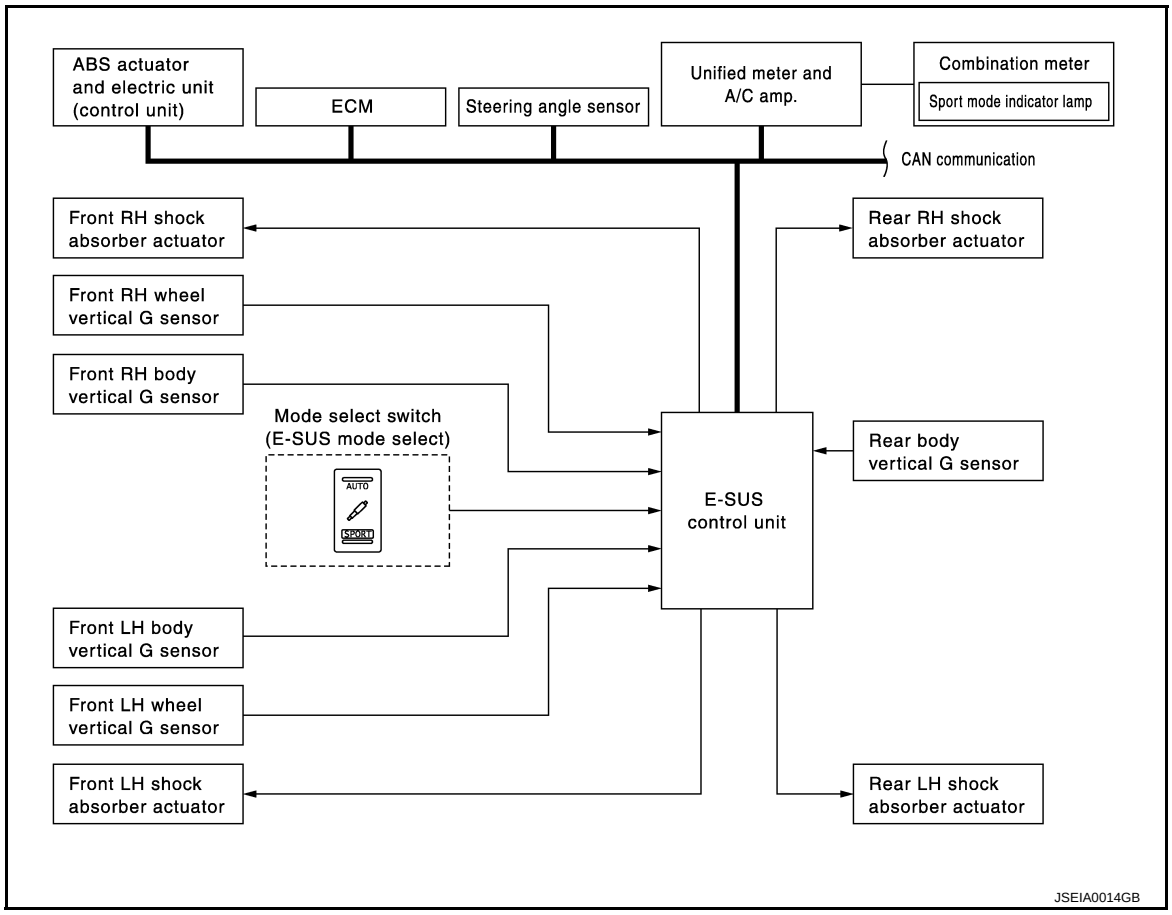
YES >> Trouble diagnosis is completed.
NO-1 >> The DTC is reproduced. GO TO 7.
NO-2 >> The symptom is reproduced. GO TO 6.

SYSTEM DESCRIPTION

CONTINUOUS DAMPING CONTROL SYSTEM

System Diagram

INFOID:0000000007512478



System Description

INFOID:0000000007512479

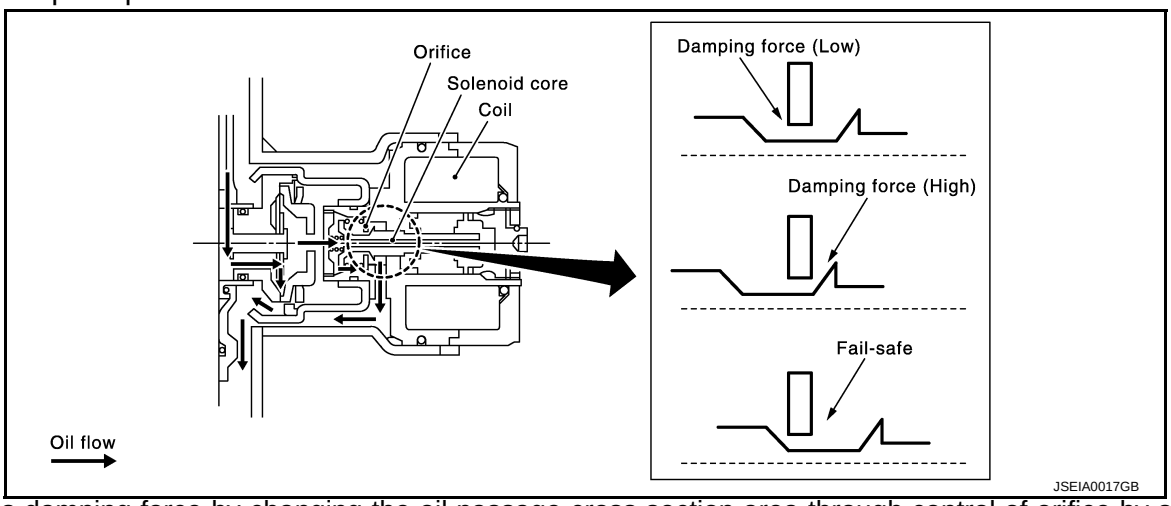
Description

- The Continuous Damping Control system mainly consists of the components such as the E-SUS control unit, front body vertical G sensor, front wheel vertical G sensor, rear body vertical G sensor, and shock absorber actuators on each wheel.
- It calculates the command values to be transmitted to the shock absorber actuator on each wheel based on the information from ECM, ABS actuator and electric unit (control unit) and steering angle sensor via CAN communication and information from the front body vertical G sensor, front wheel vertical G sensor and rear body vertical G sensor.
- The shock absorber actuator on each wheel controls the damping force based on the command values calculated by E-SUS control unit.
- Can perform the self-diagnosis with CONSULT.
- Communicates the signal from each control unit via CAN communication.

Control unit	Signal status
Steering angle sensor	Transmits mainly the following signals to E-SUS control unit via CAN communication. • Steering angle signal
ABS actuator and electric unit (control unit)	Transmits mainly the following signals to E-SUS control unit via CAN communication. • Vehicle speed signal • Brake pressure control signal • Stop lamp switch signal

Control unit	Signal status
ECM	Transmits mainly the following signals to E-SUS control unit via CAN communication. • Requested torque signal
Unified meter and A/C amp.	Transmits mainly the following signals from E-SUS control unit via CAN communication. • Sport mode indicator lamp signal

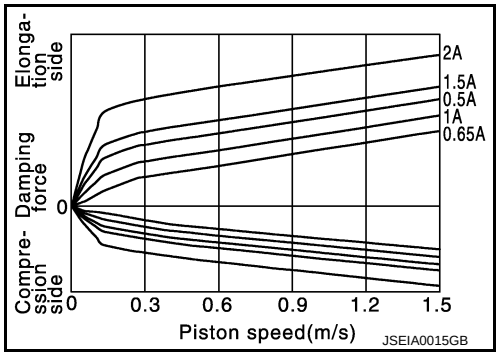
Operation principle



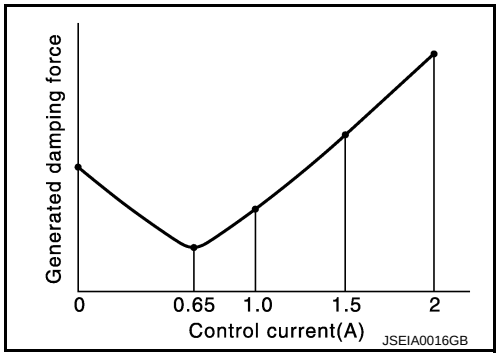
Controls damping force by changing the oil passage cross section area through control of orifice by solenoid core activation.

Operation characteristics

- Changes the damping force control by switching the switch (AUTO mode or SPORT mode).

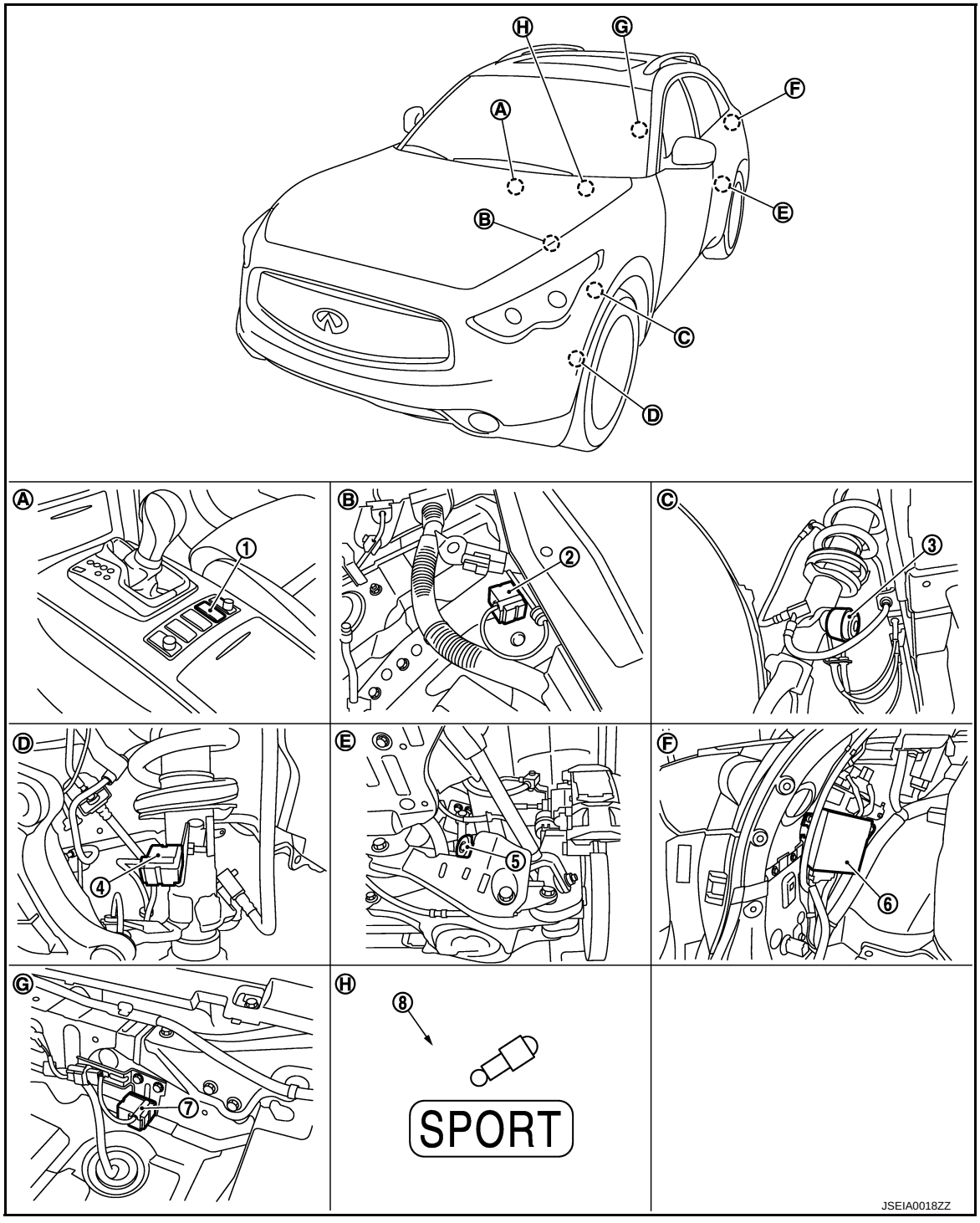


- Changes the damping force depending on the output current to the shock absorber actuators.



Component Parts Location

INFOID:0000000007512480



1. Mode select switch (E-SUS mode select)
2. Front body vertical G sensor (left and right)
3. Front shock absorber actuator (left and right)
4. Front wheel vertical G sensor (left and right)
5. Rear shock absorber actuator (left and right)
6. E-SUS control unit
7. Rear body vertical G sensor
8. Sport mode indicator lamp

A. Center console panel
B. Strut tower
C. Front strut
D. Front strut side
E. Rear strut
F. Trunk room left back
G. Trunk floor
H. Combination meter

Component Description

INFOID:0000000007512481

Component	Reference/function
E-SUS control unit	SCS-40, "Description"
Front body vertical G sensor	SCS-26, "Description"
Front wheel vertical G sensor	SCS-22, "Description"
Rear body vertical G sensor	SCS-30, "Description"
Shock absorber actuator	SCS-32, "Description"
Mode select switch (E-SUS mode select)	SCS-46, "Description"
Sport mode indicator lamp	SCS-48, "Description"
Steering angle sensor	Transmits the steering angle signal to E-SUS control unit via CAN communication.
ABS actuator and electric unit (control unit)	Transmits mainly the following signals to E-SUS control unit via CAN communication. • Vehicle speed signal • Brake pressure control signal • Brake lamp switch signal
ECM	Transmits mainly the following signals to E-SUS control unit via CAN communication. • Requested torque signal
Unified meter and A/C amp.	Transmits mainly the following signals from E-SUS control unit via CAN communication. • Sport mode indicator lamp signal

DIAGNOSIS SYSTEM (E-SUS CONTROL UNIT)

CONSULT Function

INFOID:0000000007512482

FUNCTION

CONSULT can display each diagnostic item using the diagnostic test modes shown following.

Diagnostic test mode	Function
ECU identification	E-SUS control unit part number can be read.
Self-diagnosis result	Self-diagnostic results can be read and erased quickly. *
Data monitor	Input/Output data in the E-SUS control unit can be read.
Active test	CONSULT drives some actuators via E-SUS, and changes some command signal values within the specified range.

*: If the memory in E-SUS control unit is erased, the DTC diagnosis result is also erased.

ECU IDENTIFICATION

E-SUS control unit part number can be read.

SELF-DIAGNOSTIC RESULT

Display Item List

Refer to SCS-53, "DTC Index".

DATA MONITOR

Display Item List

Monitor item (Unit)	Remarks
VEHICLE SPEED (km/h) or (MPH)	Vehicle speed recognized by E-SUS control unit
ST ANGLE SIG (deg)	Steering angle recognized by E-SUS control unit
IGN (V)	Ignition voltage supplied to E-SUS control unit
REQUESTED TRQ (Nm)	Required torque recognized by E-SUS control unit
FR BDY G-SEN VOL (V)	Output voltage from front RH body vertical G sensor
FL BDY G-SEN VOL (V)	Output voltage from front LH body vertical G sensor
R G-SEN VOL (V)	Output voltage from rear body vertical G sensor
FR WHL G-SEN VOL (V)	Output voltage from front RH wheel vertical G sensor
FL WHL G-SEN VOL (V)	Output voltage from front LH wheel vertical G sensor
FR ACTUATOR CRNT (A)	Control current for front RH wheel shock absorber actuator operation
FL ACTUATOR CRNT (A)	Control current for front LH wheel shock absorber actuator operation
RR ACTUATOR CRNT (A)	Control current for rear RH wheel shock absorber actuator operation
RL ACTUATOR CRNT (A)	Control current for rear LH wheel shock absorber actuator operation
G-SEN VOL (V)	Voltage supplied to G-sensor
BRK FLD PRESS (bar)	Fluid pressure recognized by E-SUS control unit when brake is applied
STP LAMP SW (On/Off)	Brake pedal operation status recognized by E-SUS control unit
MODE SW (On/Off)	E-SUS mode lamp condition
FAIL MODE SIG (On/Off)	E-SUS control unit is in fail-safe status.
CONTROL MODE (AUTO/SPORT)	Each control mode status AUTO: AUTO mode SPORT: SPORT mode

ACTIVE TEST

CAUTION:

- **Always perform while the vehicle is stopped.**

- **Always check shock absorber actuator if DTC is detected using the shock absorber actuator active test.**
- Shock absorber actuator
  The control signal from CONSULT forces activation of the shock absorber actuator. The check can be performed by confirming the operation noise.

Test item	Display Item	Display
		Operation half cycle
SHOCK ABSORBER ACTUATOR	FRONT RIGHT ACTUATOR	0.1 seconds – 1 second (cycles in 0.1 seconds)
	FRONT LEFT ACTUATOR	
	REAR RIGHT ACTUATOR	
	REAR LEFT ACTUATOR	
	FOUR WHEEL ACTUATOR	

- Mode lamp
  The control signal from CONSULT forces activation of the mode lamp (ON/OFF) for check.

Test item	Display Item	Display	
		Illumination status	
		ON	OFF
MODE LAMP	SPORT	ON	OFF

DTC/CIRCUIT DIAGNOSIS

C1D01 VEHICLE SPEED SIGNAL

Description

INFOID:0000000007512483

The vehicle speed signal is transmitted from the ABS actuator and electric unit (control unit) to E-SUS control unit via CAN communication.

DTC Logic

INFOID:0000000007512484

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible causes
C1D01	VEHICLE SPEED SIG	• A malfunction is detected in the vehicle speed signal output from the ABS actuator and electric unit (control unit) to CAN communication. • No transmission of vehicle speed signal from the ABS actuator and electric unit (control unit).	• Harness or connector (CAN communication line) • ABS actuator and electric unit (control unit) • E-SUS control unit • Battery low voltage

DTC REPRODUCTION PROCEDURE

CAUTION:

If the CAN signal "Unavailable" or "Broken" is received while the battery voltage is in the low (between 6 V and 9 V) condition, and when intending to perform another self-diagnosis operation to record the DTC history, always start the procedure after checking that the battery voltage is within the specified normal value.

1.CHECK E-SUS CONTROL UNIT SIGNAL

With CONSULT

1. Start the engine.
   CAUTION:
   Always hold the vehicle stopped.
2. Select “DATA MONITOR” of “E-SUS”.
3. Check the value of “IGN” on “DATA MONITOR” screen.

Is the value in “DATA MONITOR” “between 6 V and 9 V” or more?

YES >> GO TO 2.
NO >> Perform the diagnosis for the charging system. Refer to CHG-16, "Symptom Table".

2.DTC REPRODUCTION PROCEDURE

With CONSULT

Perform “E-SUS” self-diagnosis.

Is DTC “C1D01” detected?

YES >> Proceed to diagnosis procedure. Refer to SCS-12, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007512485

1.PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

With CONSULT

Perform “ABS” self-diagnosis.

Is DTC detected?

YES >> Check the detected DTC items.
NO >> GO TO 2.

2.PERFORM SELF-DIAGNOSIS

With CONSULT

Perform “E-SUS” self-diagnosis.

Is another DTC detected?

YES >> Check the detected DTC items. Refer to SCS-53, "DTC Index".
NO >> GO TO 3.

3. CHECK INFORMATION

With CONSULT

1. Select “DATA MONITOR” of “E-SUS”.
2. Check the “VEHICLE SPEED” of “DATA MONITOR” screen. Refer to SCS-49, "Reference Value".

Is each data within standard values?

YES >> Check pin terminal and connection of each harness connector for damage or loose connection. Repair or replace error-detected parts.
NO >> Replace E-SUS control unit. Refer to SCS-56, "Exploded View".

C1D03 STEERING ANGLE SENSOR

Description

INFOID:0000000007512486

The steering angle signal is transmitted from the steering angle sensor to E-SUS control unit via CAN communication.

DTC Logic

INFOID:0000000007512487

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible causes
C1D03	ST ANGLE SPEED SIG	• A malfunction is detected in the steering angle sensor signal output from the steering angle sensor to CAN communication. • No transmission of the steering angle signal from the steering angle sensor.	• Harness or connector (CAN communication line) • Steering angle sensor • E-SUS control unit • Battery low voltage

DTC REPRODUCTION PROCEDURE

CAUTION:

If the CAN signal "Unavailable" or "Broken" is received while the battery voltage is in the low (between 6 V and 9 V) condition, and when intending to perform another self-diagnosis operation to record the DTC history, always start the procedure after checking that the battery voltage is within the specified normal value.

1. CHECK E-SUS CONTROL UNIT SIGNAL

With CONSULT

1. Start the engine.
   CAUTION:
   Always hold the vehicle stopped.
2. Select “DATA MONITOR” of “E-SUS”.
3. Check the value of “IGN” on “DATA MONITOR” screen.

Is the value in “DATA MONITOR” “between 6 V and 9 V” or more?

YES >> GO TO 2.
NO >> Perform the diagnosis for the charging system. Refer to CHG-16, "Symptom Table".

2. DTC REPRODUCTION PROCEDURE

With CONSULT

Perform “E-SUS” self-diagnosis.

Is DTC “C1D03” detected?

YES >> Proceed to diagnosis procedure. Refer to SCS-14, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007512488

1. PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

With CONSULT

Perform “ABS” self-diagnosis.

Is DTC detected?

YES >> Check the detected DTC items.
NO >> GO TO 2.

2. PERFORM SELF-DIAGNOSIS

With CONSULT

Perform “E-SUS” self-diagnosis.

Is another DTC detected?

YES >> Check the detected DTC items. Refer to SCS-53, "DTC Index".

NO >> GO TO 3.

3. CHECK INFORMATION

With CONSULT

1. Select “DATA MONITOR” of “E-SUS”.
2. Check “ST ANGLE SIG”of “DATA MONITOR” screen. Refer to SCS-49, "Reference Value".

Is each data within standard values?

YES >> Check pin terminal and connection of each harness connector for damage or loose connection. Repair or replace error-detected parts.

NO >> Replace E-SUS control unit. Refer to SCS-56, "Exploded View".

C1D05 TORQUE SIGNAL

Description

INFOID:0000000007512489

The required torque signal is transmitted from ECM to E-SUS control unit via CAN communication.

DTC Logic

INFOID:0000000007512490

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible causes
C1D05	REQST TRQ SIG	No transmission of the required torque signal from ECM.	• Harness or connector (CAN communication line) • ECM • E-SUS control unit • Battery low voltage

DTC REPRODUCTION PROCEDURE

CAUTION:

If the CAN signal "Unavailable" or "Broken" is received while the battery voltage is in the low (between 6 V and 9 V) condition, and when intending to perform another self-diagnosis operation to record the DTC history, always start the procedure after checking that the battery voltage is within the specified normal value.

1.CHECK E-SUS CONTROL UNIT SIGNAL

With CONSULT

1. Start the engine.
   CAUTION:
   Always hold the vehicle stopped.
2. Select “DATA MONITOR” of “E-SUS”.
3. Check the value of “IGN” on “DATA MONITOR” screen.

Is the value in “DATA MONITOR” “between 6 V and 9 V” or more?

YES >> GO TO 2.
NO >> Perform the diagnosis for the charging system. Refer to CHG-16, "Symptom Table".

2.DTC REPRODUCTION PROCEDURE

With CONSULT

Perform “E-SUS” self-diagnosis.

Is DTC “C1D05” detected?

YES >> Proceed to diagnosis procedure. Refer to SCS-16, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007512491

1.PERFORM SELF-DIAGNOSIS OF ECM

With CONSULT

Perform “ENGINE” self-diagnosis.

Is DTC detected?

YES >> Check the detected DTC items.
NO >> GO TO 2.

2.PERFORM SELF-DIAGNOSIS

With CONSULT

Perform “E-SUS” self-diagnosis.

Is another DTC detected?

YES >> Check the detected DTC items. Refer to SCS-53, "DTC Index".
NO >> GO TO 3.

3. CHECK INFORMATION

With CONSULT

1. Select “DATA MONITOR” of “E-SUS”.
2. Check “REQUESTED TRQ” of “DATA MONITOR” screen. Refer to SCS-49, "Reference Value".

Is each data within standard values?

YES >> Check pin terminal and connection of each harness connector for damage or loose connection. Repair or replace the error-detected parts.

NO >> Replace E-SUS control unit. Refer to SCS-56, "Exploded View".

C1D07 STOP LAMP SWITCH

Description

INFOID:0000000007512492

The stop lamp switch signal is transmitted from the ABS actuator and electric unit (control unit) to E-SUS control unit via CAN communication.

DTC Logic

INFOID:0000000007512493

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible causes
C1D07	STOP LAMP SW SIG	No transmission of stop lamp switch signal from the ABS actuator and electric unit (control unit).	• Harness or connector (CAN communication line) • ABS actuator and electric unit (control unit) • E-SUS control unit • Battery low voltage

DTC REPRODUCTION PROCEDURE

CAUTION:

If the CAN signal "Unavailable" or "Broken" is received while the battery voltage is in the low (between 6 V and 9 V) condition, and when intending to perform another self-diagnosis operation to record the DTC history, always start the procedure after checking that the battery voltage is within the specified normal value.

1. CHECK E-SUS CONTROL UNIT SIGNAL

With CONSULT

1. Start the engine.
   CAUTION:
   Always hold the vehicle stopped.
2. Select “DATA MONITOR” of “E-SUS”.
3. Check the value of “IGN” on “DATA MONITOR” screen.

Is the value in “DATA MONITOR” “between 6 V and 9 V” or more?

YES >> GO TO 2.
NO >> Perform the diagnosis for the charging system. Refer to CHG-16, "Symptom Table".

2. DTC REPRODUCTION PROCEDURE

With CONSULT

Perform “E-SUS” self-diagnosis.

Is DTC “C1D07” detected?

YES >> Proceed to diagnosis procedure. Refer to SCS-18, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007512494

1. PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

With CONSULT

Perform “ABS” self-diagnosis.

Is DTC detected?

YES >> Check the detected DTC items.
NO >> GO TO 2.

2. PERFORM SELF-DIAGNOSIS

With CONSULT

Perform “E-SUS” self-diagnosis.

Is another DTC detected?

YES >> Check the detected DTC items. Refer to SCS-53, "DTC Index".
NO >> GO TO 3.

3. CHECK INFORMATION

With CONSULT

1. Select “DATA MONITOR” of “E-SUS”.
2. Check “STP LAMP SW” of “DATA MONITOR”. Refer to SCS-49, "Reference Value".

Is each data within standard values?

YES >> Check pin terminal and connection of each harness connector for damage or loose connections. Repair or replace the error-detected parts.
NO >> Replace E-SUS control unit. Refer to SCS-56, "Exploded View".

C1D09 BRAKE FLUID PRESSURE SIGNAL

Description

INFOID:0000000007512495

The brake pressure control signal is transmitted from the ABS actuator and electric unit (control unit) to E-SUS control unit via CAN communication.

DTC Logic

INFOID:0000000007512496

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible causes
C1D09	BRK FLD PRESS SIG	• A malfunction is detected in the brake pressure control signal output from the ABS actuator and electric unit (control unit) to CAN communication. • No transmission of brake pressure control signal from the ABS actuator and electric unit (control unit).	• Harness or connector (CAN communication line) • ABS actuator and electric unit (control unit) • E-SUS control unit • Battery low voltage

DTC REPRODUCTION PROCEDURE

CAUTION:

If the CAN signal "Unavailable" or "Broken" is received while the battery voltage is in the low (between 6 V and 9 V) condition, and when intending to perform another self-diagnosis operation to record the DTC history, always start the procedure after checking that the battery voltage is within the specified normal value.

1. CHECK E-SUS CONTROL UNIT SIGNAL

With CONSULT

1. Start the engine.
   CAUTION:
   Always hold the vehicle stopped.
2. Select “DATA MONITOR” of “E-SUS”.
3. Check the value of “IGN” on “DATA MONITOR” screen.

Is the value in “DATA MONITOR” “between 6 V and 9 V” or more?

YES >> GO TO 2.
NO >> Perform the diagnosis for the charging system. Refer to CHG-16, "Symptom Table".

2. DTC REPRODUCTION PROCEDURE

With CONSULT

Perform “E-SUS” self-diagnosis.

Is DTC “C1D09” detected?

YES >> Proceed to diagnosis procedure. Refer to SCS-20, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007512497

1. PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

With CONSULT

Perform “ABS” self-diagnosis.

Is DTC detected?

YES >> Check the detected DTC items.
NO >> GO TO 2.

2. PERFORM SELF-DIAGNOSIS

With CONSULT

Perform “E-SUS” self-diagnosis.

Is another DTC detected?

YES >> Check the detected DTC items. Refer to SCS-53, "DTC Index".
NO >> GO TO 3.

3. CHECK INFORMATION

With CONSULT

1. Select “DATA MONITOR” of “E-SUS”.
2. Check “BRK FLD PRESS” of “DATA MONITOR” screen. Refer to SCS-49, "Reference Value".

Is each data within standard values?

YES >> Check pin terminal and connection of each harness connector for damage or loose connections. Repair or replace error-detected parts.
NO >> Replace E-SUS control unit. Refer to SCS-56, "Exploded View".

C1D0B FRONT WHEEL VERTICAL G SENSOR

Description

INFOID:0000000007512498

Detects the vertical G applied at vehicle front, and outputs it to E-SUS control unit in analog voltage.

DTC Logic

INFOID:0000000007512499

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible causes
C1D0B	FL WHL VER G-SEN	• A malfunction occurs in the output voltage from the front LH wheel vertical G sensor. • A malfunction occurs in the supply voltage to the front LH wheel vertical G sensor.	• Harness or connector • Front wheel LH vertical G sensor • E-SUS control unit

DTC REPRODUCTION PROCEDURE

1.DTC REPRODUCTION PROCEDURE

With CONSULT

1. Turn the ignition switch OFF to ON.
2. Perform “E-SUS” self-diagnosis.

Is DTC “C1D0B” detected?

YES >> Proceed to diagnosis procedure. Refer to SCS-22, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007512500

1.CHECK FRONT LH WHEEL VERTICAL G SENSOR

Check front LH wheel vertical G sensor for damage, disconnection or looseness.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace front LH wheel vertical sensor. Then perform the self-diagnosis.

2.CHECK FRONT LH WHEEL VERTICAL G SENSOR HARNESS

1. Disconnect the E-SUS control unit harness connector and front LH wheel vertical G sensor harness connector.
2. Check the continuity between the E-SUS control unit harness connector and front LH wheel vertical G sensor harness connector.

E-SUS control unit		Front LH wheel vertical G sensor		Continuity
Connector	Terminal	Connector	Terminal	
B38	27	E86	1	Existed
	10		2	
	26		3	

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning harness or connector.

3.CHECK FRONT LH WHEEL VERTICAL G SENSOR POWER SUPPLY CIRCUIT

1. Connect the E-SUS control unit harness connector.
2. Turn the ignition switch ON.
   CAUTION:
   Never start the engine.
3. Check the voltage between front LH wheel vertical G sensor harness connector.

Front LH wheel vertical G sensor			Voltage
Connector	Terminal		
E86	1	3	Approx. 4.75 – 5.25 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace E-SUS control unit. Refer to SCS-56, "Exploded View".

4. PERFORM DATA MONITOR

With CONSULT

1. Connect the front LH wheel vertical G sensor harness connector.
2. Start the engine.
3. Select “DATA MONITOR” of “E-SUS”.
4. Select “FL WHL G-SEN VOL” and “G-SEN VOL” of “DATA MONITOR”.
5. Drive the vehicle and check whether it is within the following range.

FL WHL G-SEN VOL : Approx. 0.5 – 4.5 V
G-SEN VOL : Approx. 4.75 – 5.25 V

Is the inspection result normal?

YES >> Check pin terminal and connection of each harness connector for damage or loose connections.
NO >> Replace front LH wheel vertical G sensor. Refer to SCS-58, "Exploded View".

C1D0C FRONT WHEEL VERTICAL G SENSOR

Description

INFOID:0000000007512501

Detects the vertical G applied at vehicle front, and outputs it to E-SUS control unit in analog voltage.

DTC Logic

INFOID:0000000007512502

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible causes
C1D0C	FR WHL VER G-SEN	• A malfunction occurs in the output voltage from the front RH wheel vertical G sensor. • A malfunction occurs in the supply voltage to the front RH wheel vertical G sensor.	• Harness or connector • Front RH wheel vertical G sensor • E-SUS control unit

DTC REPRODUCTION PROCEDURE

1.DTC REPRODUCTION PROCEDURE

With CONSULT

1. Turn the ignition switch OFF to ON.
2. Perform “E-SUS” self-diagnosis.

Is DTC “C1D0C” detected?

YES >> Proceed to diagnosis procedure. Refer to SCS-24, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007512503

1.CHECK FRONT RH WHEEL VERTICAL G SENSOR

Check front RH wheel vertical G sensor for damage, disconnection or looseness.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace front RH wheel vertical sensor. Then perform the self-diagnosis.

2.CHECK FRONT RH WHEEL VERTICAL G SENSOR HARNESS

1. Disconnect the E-SUS control unit harness connector and front RH wheel vertical G sensor harness connector.
2. Check the continuity between the E-SUS control unit harness connector and front RH wheel vertical G sensor harness connector.

E-SUS control unit		Front RH wheel vertical G sensor		Continuity
Connector	Terminal	Connector	Terminal	
B38	27	E84	1	Existed
	24		2	
	26		3	

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning harness or connector.

3.CHECK FRONT RH WHEEL VERTICAL G SENSOR POWER SUPPLY CIRCUIT

1. Connect the E-SUS control unit harness connector.
2. Turn the ignition switch ON.
   CAUTION:
   Never start the engine.
3. Check the voltage between front RH wheel vertical G sensor harness connector.

Front RH wheel vertical G sensor			Voltage
Connector	Terminal		
E84	1	3	Approx. 4.75 – 5.25 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace E-SUS control unit. Refer to SCS-56, "Exploded View".

4. PERFORM DATA MONITOR

With CONSULT

1. Connect the front RH wheel vertical G sensor harness connector.
2. Start the engine.
3. Select “DATA MONITOR” of “E-SUS”.
4. Select “FR WHL G-SEN VOL” and “G-SEN VOL” of “DATA MONITOR”.
5. Drive the vehicle and check whether it is within the following range.

FR WHL G-SEN VOL : Approx. 0.5 – 4.5 V
G-SEN VOL : Approx. 4.75 – 5.25 V

Is the inspection result normal?

YES >> Check pin terminal and connection of each harness connector for damage or loose connections.
NO >> Replace front RH wheel vertical G sensor. Refer to SCS-58, "Exploded View".

C1D0D FRONT BODY VERTICAL G SENSOR

Description

INFOID:0000000007512504

Detects the vertical G applied at vehicle front, and outputs it to E-SUS control unit in analog voltage.

DTC Logic

INFOID:0000000007512505

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible causes
C1D0D	FL BDY VER G-SEN	• A malfunction occurs in the output voltage from the front LH body vertical G sensor. • A malfunction occurs in the supply voltage to the front LH body vertical G sensor.	• Harness or connector • Front body LH vertical G sensor • E-SUS control unit

DTC REPRODUCTION PROCEDURE

1.DTC REPRODUCTION PROCEDURE

With CONSULT

1. Turn the ignition switch OFF to ON.
2. Perform “E-SUS” self-diagnosis.

Is DTC “C1D0D” detected?

YES >> Proceed to diagnosis procedure. Refer to SCS-26, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007512506

1.CHECK FRONT LH BODY VERTICAL G SENSOR

Check front LH body vertical G sensor for damage, disconnection or looseness.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace front LH body vertical sensor. Then perform the self-diagnosis.

2.CHECK FRONT LH BODY VERTICAL G SENSOR HARNESS

1. Disconnect the E-SUS control unit harness connector and front LH body vertical G sensor harness connector.
2. Check the continuity between the E-SUS control unit harness connector and front LH body vertical G sensor harness connector.

E-SUS control unit		Front LH body vertical G sensor		Continuity
Connector	Terminal	Connector	Terminal	
B38	27	E39	1	Existed
	12		2	
	26		3	

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning harness or connector.

3.CHECK FRONT LH BODY VERTICAL G SENSOR POWER SUPPLY CIRCUIT

1. Connect the E-SUS control unit harness connector.
2. Turn the ignition switch ON.
   CAUTION:
   Never start the engine.
3. Check the voltage between front LH body vertical G sensor harness connector.

Front LH body vertical G sensor			Voltage
Connector	Terminal		
E39	1	3	Approx. 4.75 – 5.25 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace E-SUS control unit. Refer to SCS-56, "Exploded View".

4. PERFORM DATA MONITOR

With CONSULT

1. Connect the front LH body vertical G sensor harness connector.
2. Start the engine.
3. Select “DATA MONITOR” of “E-SUS”.
4. Select “FL BDY G-SEN VOL” and “G-SEN VOL” of “DATA MONITOR”.
5. Drive the vehicle and check whether it is within the following range.

FL BDY G-SEN VOL : Approx. 0.5 – 4.5 V
G-SEN VOL : Approx. 4.75 – 5.25 V

Is the inspection result normal?

YES >> Check pin terminal and connection of each harness connector for damage or loose connection.
NO >> Replace front LH body vertical G sensor. Refer to SCS-57, "Exploded View".

C1D10 FRONT BODY VERTICAL G SENSOR

Description

INFOID:0000000007512507

Detects the vertical G applied at vehicle front, and outputs it to E-SUS control unit in analog voltage.

DTC Logic

INFOID:0000000007512508

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible causes
C1D10	F VERTICAL G-SEN	• A malfunction occurs in the output voltage from the front RH body vertical G sensor. • A malfunction occurs in the supply voltage to the front RH body vertical G sensor.	• Harness or connector • Front body RH vertical G sensor • E-SUS control unit

DTC REPRODUCTION PROCEDURE

1.DTC REPRODUCTION PROCEDURE

With CONSULT

1. Turn the ignition switch OFF to ON.
2. Perform “E-SUS” self-diagnosis.

Is DTC “C1D10” detected?

YES >> Proceed to diagnosis procedure. Refer to SCS-28, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007512509

1.CHECK FRONT RH BODY VERTICAL G SENSOR

Check front RH body vertical G sensor for damage, disconnection or looseness.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace front RH body vertical sensor. Then perform the self-diagnosis.

2.CHECK FRONT RH BODY VERTICAL G SENSOR HARNESS

1. Disconnect the E-SUS control unit harness connector and front RH body vertical G sensor harness connector.
2. Check the continuity between the E-SUS control unit harness connector and front RH body vertical G sensor harness connector.

E-SUS control unit		Front RH body vertical G sensor		Continuity
Connector	Terminal	Connector	Terminal	
B38	27	E20	1	Existed
	11		2	
	26		3	

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning harness or connector.

3.CHECK FRONT RH BODY VERTICAL G SENSOR POWER SUPPLY CIRCUIT

1. Connect the E-SUS control unit harness connector.
2. Turn the ignition switch ON.
   CAUTION:
   Never start the engine.
3. Check the voltage between front RH body vertical G sensor harness connector.

Front RH body vertical G sensor			Voltage
Connector	Terminal		
E20	1	3	Approx. 4.75 – 5.25 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace E-SUS control unit. Refer to SCS-56, "Exploded View".

4. PERFORM DATA MONITOR

With CONSULT

1. Connect the front RH body vertical G sensor harness connector.
2. Start the engine.
3. Select “DATA MONITOR” of “E-SUS”.
4. Select “FR BDY G-SEN VOL” and “G-SEN VOL” of “DATA MONITOR”.
5. Drive the vehicle and check whether it is within the following range.

FR BDY G-SEN VOL : Approx. 0.5 – 4.5 V
G-SEN VOL : Approx. 4.75 – 5.25 V

Is the inspection result normal?

YES >> Check pin terminal and connection of each harness connector for damage or loose connections.
NO >> Replace front RH body vertical G sensor. Refer to SCS-57, "Exploded View".

C1D11 REAR VERTICAL G SENSOR

Description

INFOID:0000000007512510

Detects the vertical G applied at vehicle rear, and outputs it to E-SUS control unit in analog voltage.

DTC Logic

INFOID:0000000007512511

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible causes
C1D11	R VERTICAL G-SEN	• A malfunction occurs in the output voltage from the rear body vertical G sensor. • A malfunction occurs in the supply voltage to the rear body vertical G sensor.	• Harness or connector • rear body vertical G sensor • E-SUS control unit

DTC REPRODUCTION PROCEDURE

1.DTC REPRODUCTION PROCEDURE

With CONSULT

1. Turn the ignition switch OFF to ON.
2. Perform “E-SUS” self-diagnosis.

Is DTC “C1D11” detected?

YES >> Proceed to diagnosis procedure. Refer to SCS-30, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007512512

1.CHECK REAR BODY VERTICAL G SENSOR

Check rear body vertical G sensor for damage, disconnection or looseness.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace rear body vertical sensor. Then perform the self-diagnosis.

2.CHECK REAR BODY VERTICAL G SENSOR HARNESS

1. Disconnect the E-SUS control unit harness connector and rear body vertical G sensor harness connector.
2. Check the continuity between the E-SUS control unit harness connector and rear body vertical G sensor harness connector.

E-SUS control unit		Rear body vertical G sensor		Continuity
Connector	Terminal	Connector	Terminal	
B38	30	B56	1	Existed
	14		2	
	25		3	

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning harness or connector.

3.CHECK REAR BODY VERTICAL G SENSOR POWER SUPPLY CIRCUIT

1. Connect the E-SUS control unit harness connector.
2. Turn the ignition switch ON.
   CAUTION:
   Never start the engine.
3. Check the voltage between rear body vertical G sensor harness connector.

Rear body vertical G sensor			Voltage
Connector	Terminal		
B56	1	3	Approx. 4.75 – 5.25 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace E-SUS control unit. Refer to SCS-56, "Exploded View".

4. PERFORM DATA MONITOR

With CONSULT

1. Connect the rear body vertical G sensor harness connector.
2. Start the engine.
3. Select “DATA MONITOR” of “E-SUS”.
4. Select “R G-SEN VOL” and “G-SEN VOL” of “DATA MONITOR”.
5. Drive the vehicle and check whether it is within the following range.

R G-SEN VOL : Approx. 0.5 – 4.5 V
G-SEN VOL : Approx. 4.75 – 5.25 V

Is the inspection result normal?

YES >> Check pin terminal and connection of each harness connector for damage or loose connections.
NO >> Replace rear body vertical G sensor. Refer to SCS-59, "Exploded View".

C1D12 SHOCK ABSORBER ACTUATOR

Description

INFOID:0000000007512513

Integrated into each the shock absorbers on wheels and opens or closes the orifice by moving the solenoid core vertically with the control current from E-SUS control unit to regulate the damping force.

DTC Logic

INFOID:0000000007512514

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible causes
C1D12	FR ACTUATOR SIG	An open or short circuit is detected in the front RH wheel shock absorber actuator.	• Harness or connector • Malfunction of the front RH wheel shock absorber actuator • E-SUS control unit

DTC REPRODUCTION PROCEDURE

1.DTC REPRODUCTION PROCEDURE

With CONSULT

1. Start the engine and drive. Or select “E-SUS”, “FRONT RIGHT ACTUATOR” of “ACTIVE TEST”, and perform the active test. Refer to SCS-10, "CONSULT Function".
2. Perform “E-SUS” self-diagnosis.

Is DTC “C1D12” detected?

YES >> Proceed to diagnosis procedure. Refer to SCS-32, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007512515

1.CHECK FRONT RH SHOCK ABSORBER ACTUATOR CIRCUIT (1)

1. Disconnect the E-SUS control unit harness connector.
2. Check the resistance between the E-SUS control unit harness connector.

E-SUS control unit		Resistance
Connector	Terminal	
B38	3	Approx. 0.65 Ω
	2	

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 2.

2.CHECK FRONT RH SHOCK ABSORBER ACTUATOR CIRCUIT (2)

1. Disconnect the front RH shock absorber actuator harness connector.
2. Check the continuity between the E-SUS control unit harness connector and front RH shock absorber actuator harness connector.

E-SUS control unit		Front RH shock absorber actuator		Continuity
Connector	Terminal	Connector	Terminal	
B38	3	E83	1	Existed
	2		2	

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning harness or connector.

3.CHECK FRONT RH SHOCK ABSORBER ACTUATOR

Perform the front RH shock absorber actuator. Refer to SCS-33, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the front RH shock absorber. Refer to FSU-27, "Exploded View".

4.PERFORM DATA MONITOR

With CONSULT

1. Start the engine.
2. Select “DATA MONITOR” of “E-SUS”.
3. Select “FR ACTUATOR CRNT” of “DATA MONITOR” screen.
4. Drive the vehicle and check whether it is within the following range.

FR ACTUATOR CRNT : Approx. 0.65 – 2.0 A

Is the inspection result normal?

YES >> Check pin terminal and connection of each harness connector for damage or loose connections. Repair or replace error-detected parts.
NO >> Replace E-SUS control unit. Refer to SCS-56, "Exploded View".

Component Inspection

INFOID:0000000007512516

1.PERFORM ACTIVE TEST

With CONSULT

1. Connect the E-SUS control unit harness connector and front RH shock absorber actuator harness connector.
2. Select “FRONT RIGHT ACTUATOR” in “ACTIVE TEST”.
3. On the display, change the “Operation half cycle”, and check that the operation noise is heard from the actuator.

Test item	Display Item	Display
		Operation half cycle
SHOCK ABSORBER ACTUATOR	FRONT RIGHT ACTUATOR	0.1 seconds – 1 second (cycle in 0.1 seconds)

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace the front RH wheel shock absorber. Refer to FSU-27, "Exploded View".

C1D13 SHOCK ABSORBER ACTUATOR

Description

INFOID:0000000007512517

Integrated into each the shock absorbers on wheels and opens or closes the orifice by moving the solenoid core vertically with the control current from E-SUS control unit to regulate the damping force.

DTC Logic

INFOID:0000000007512518

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible causes
C1D13	FL ACTUATOR SIG	An open or short circuit is detected in the front LH wheel shock absorber actuator.	• Harness or connector • Malfunction of the front LH wheel shock absorber actuator • E-SUS control unit

DTC REPRODUCTION PROCEDURE

1.DTC REPRODUCTION PROCEDURE

With CONSULT

1. Start the engine and drive. Or select “E-SUS”, “FRONT LEFT ACTUATOR” of “ACTIVE TEST”, and perform the active test. Refer to SCS-10, "CONSULT Function".
2. Perform “E-SUS” self-diagnosis.

Is DTC “C1D13” detected?

YES >> Proceed to diagnosis procedure. Refer to SCS-34, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007512519

1.CHECK FRONT LH SHOCK ABSORBER ACTUATOR CIRCUIT (1)

1. Disconnect the E-SUS control unit harness connector.
2. Check the resistance between the E-SUS control unit harness connector.

E-SUS control unit		Resistance
Connector	Terminal	
B38	5	Approx. 0.65 Ω
	4	

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 2.

2.CHECK FRONT LH SHOCK ABSORBER ACTUATOR CIRCUIT (2)

1. Disconnect the front LH shock absorber actuator harness connector.
2. Check the continuity between the E-SUS control unit harness connector and front LH shock absorber actuator harness connector.

E-SUS control unit		Front LH shock absorber actuator		Continuity
Connector	Terminal	Connector	Terminal	
B38	5	E85	1	Existed
	4		2	

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunction harness or connector.

3.CHECK FRONT LH SHOCK ABSORBER ACTUATOR

Perform the front LH shock absorber actuator. Refer to SCS-35, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the front LH shock absorber. Refer to FSU-27, "Exploded View".

4.PERFORM DATA MONITOR

With CONSULT

1. Start the engine.
2. Select “DATA MONITOR” of “E-SUS”.
3. Select “FL ACTUATOR CRNT” of “DATA MONITOR” screen.
4. Drive the vehicle and check whether it is within the following range.

FL ACTUATOR CRNT : Approx. 0.65 – 2.0 A

Is the inspection result normal?

YES >> Check pin terminal and connection of each harness connector for damage or loose connections. Repair or replace error-detected parts.
NO >> Replace E-SUS control unit. Refer to SCS-56, "Exploded View".

Component Inspection

INFOID:0000000007512520

1.PERFORM ACTIVE TEST

With CONSULT

1. Connect the E-SUS control unit harness connector and front LH shock absorber actuator harness connector.
2. Select “FRONT LEFT ACTUATOR” in “ACTIVE TEST”.
3. On the display, change the “Operation half cycle”, and check that the operation noise is heard from the actuator.

Test item	Display Item	Display
		Operation half cycle
SHOCK ABSORBER ACTUATOR	FRONT LEFT ACTUATOR	0.1 seconds – 1 second (cycle in 0.1 seconds)

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace the front LH wheel shock absorber. Refer to FSU-27, "Exploded View".

C1D14 SHOCK ABSORBER ACTUATOR

Description

INFOID:0000000007512521

Integrated into each the shock absorbers on wheels and opens or closes the orifice by moving the solenoid core vertically with the control current from E-SUS control unit to regulate the damping force.

DTC Logic

INFOID:0000000007512522

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible causes
C1D14	RR ACTUATOR SIG	An open or short circuit is detected in the rear RH wheel shock absorber actuator.	• Harness or connector • Malfunction of the rear RH wheel shock absorber actuator • E-SUS control unit

DTC REPRODUCTION PROCEDURE

1.DTC REPRODUCTION PROCEDURE

With CONSULT

1. Start the engine and drive. Or select “E-SUS”, “REAR RIGHT ACTUATOR” of “ACTIVE TEST”, and perform the active test. Refer to SCS-10, "CONSULT Function".
2. Perform “E-SUS” self-diagnosis.

Is DTC “C1D14” detected?

YES >> Proceed to diagnosis procedure. Refer to SCS-36, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007512523

1.CHECK REAR RH SHOCK ABSORBER ACTUATOR CIRCUIT (1)

1. Disconnect the E-SUS control unit harness connector.
2. Check the resistance between the E-SUS control unit harness connector.

E-SUS control unit		Resistance
Connector	Terminal	
B38	8	Approx. 0.65 Ω
	9	

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 2.

2.CHECK REAR RH SHOCK ABSORBER ACTUATOR CIRCUIT (2)

1. Disconnect the rear RH shock absorber actuator harness connector.
2. Check the continuity between the E-SUS control unit harness connector and rear RH shock absorber actuator harness connector.

E-SUS control unit		Rear RH shock absorber actuator		Continuity
Connector	Terminal	Connector	Terminal	
B38	8	B57	1	Existed
	9		2	

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning harness or connector.

3.CHECK REAR RH SHOCK ABSORBER ACTUATOR

Perform the rear RH shock absorber actuator. Refer to SCS-37, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the rear RH shock absorber. Refer to RSU-10, "Exploded View".

4.PERFORM DATA MONITOR

With CONSULT

1. Start the engine.
2. Select “DATA MONITOR” of “E-SUS”.
3. Select “RR ACTUATOR CRNT” of “DATA MONITOR” screen.
4. Drive the vehicle and check whether it is within the following range.

RR ACTUATOR CRNT : Approx. 0.65 – 2.0 A

Is the inspection result normal?

YES >> Check pin terminal and connection of each harness connector for damage or loose connections. Repair or replace error-detected parts.
NO >> Replace E-SUS control unit. Refer to SCS-56, "Exploded View".

Component Inspection

INFOID:0000000007512524

1.PERFORM ACTIVE TEST

With CONSULT

1. Connect the E-SUS control unit harness connector and rear RH shock absorber actuator harness connector.
2. Select “REAR RIGHT ACTUATOR” in “ACTIVE TEST”.
3. On the display, change the “Operation half cycle”, and check that the operation noise is heard from the actuator.

Test item	Display Item	Display
		Operation half cycle
SHOCK ABSORBER ACTUATOR	REAR RIGHT ACTUATOR	0.1 seconds – 1 second (cycle in 0.1 seconds)

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace the rear RH wheel shock absorber. Refer to RSU-10, "Exploded View".

C1D15 SHOCK ABSORBER ACTUATOR

Description

INFOID:0000000007512525

Integrated into each the shock absorbers on wheels and opens or closes the orifice by moving the solenoid core vertically with the control current from E-SUS control unit to regulate the damping force.

DTC Logic

INFOID:0000000007512526

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible causes
C1D15	RL ACTUATOR SIG	An open or short circuit is detected in the rear LH wheel shock absorber actuator.	• Harness or connector • Malfunction of the rear LH wheel shock absorber actuator • E-SUS control unit

DTC REPRODUCTION PROCEDURE

1.DTC REPRODUCTION PROCEDURE

With CONSULT

1. Start the engine and drive. Or select “E-SUS”, “REAR LEFT ACTUATOR” of “ACTIVE TEST”, and perform the active test. Refer to SCS-10, "CONSULT Function".
2. Perform “E-SUS” self-diagnosis.

Is DTC “C1D15” detected?

YES >> Proceed to diagnosis procedure. Refer to SCS-38, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007512527

1.CHECK REAR LH SHOCK ABSORBER ACTUATOR CIRCUIT (1)

1. Disconnect the E-SUS control unit harness connector.
2. Check the resistance between the E-SUS control unit harness connector.

E-SUS control unit		Resistance
Connector	Terminal	
B38	6	Approx. 0.65 Ω
	7	

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 2.

2.CHECK REAR LH SHOCK ABSORBER ACTUATOR CIRCUIT (2)

1. Disconnect the rear LH shock absorber actuator harness connector.
2. Check the continuity between the E-SUS control unit harness connector and rear LH shock absorber actuator harness connector.

E-SUS control unit		Rear LH shock absorber actuator		Continuity
Connector	Terminal	Connector	Terminal	
B38	6	B30	1	Existed
	7		2	

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning harness or connector.

3.CHECK REAR LH SHOCK ABSORBER ACTUATOR

Perform the rear LH shock absorber actuator. Refer to SCS-39, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the rear LH shock absorber. Refer to RSU-10, "Exploded View".

4.PERFORM DATA MONITOR

With CONSULT

1. Start the engine.
2. Select “DATA MONITOR” of “E-SUS”.
3. Select “RL ACTUATOR CRNT” of “DATA MONITOR” screen.
4. Drive the vehicle and check whether it is within the following range.

RL ACTUATOR CRNT : Approx. 0.65 – 2.0 A

Is the inspection result normal?

YES >> Check pin terminal and connection of each harness connector for damage or loose connections. Repair or replace error-detected parts.
NO >> Replace E-SUS control unit. Refer to SCS-56, "Exploded View".

Component Inspection

INFOID:0000000007512528

1.PERFORM ACTIVE TEST

With CONSULT

1. Connect the E-SUS control unit harness connector and rear LH shock absorber actuator harness connector.
2. Select “REAR LEFT ACTUATOR” in “ACTIVE TEST”.
3. On the display, change the “Operation half cycle”, and check that the operation noise is heard from the actuator.

Test item	Display Item	Display
		Operation half cycle
SHOCK ABSORBER ACTUATOR	REAR LEFT ACTUATOR	0.1 seconds – 1 second (cycle in 0.1 seconds)

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace the rear LH wheel shock absorber. Refer to RSU-10, "Exploded View".

C1D16 E-SUS CONTROL UNIT

Description

INFOID:0000000007512529

- Controls the shock absorber actuators on 4 wheels according to the signals from each sensors.
- Stops the control signal to the shock absorber, when detecting any malfunction in the electrical system. The damping force is maintained at approximately the intermediate level between the maximum and the minimum values.

DTC Logic

INFOID:0000000007512530

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible causes
C1D16	CONTROL UNIT	A malfunction occurs inside the E-SUS control unit.	E-SUS control unit

DTC REPRODUCTION PROCEDURE

1. DTC REPRODUCTION PROCEDURE

With CONSULT

1. Turn the ignition switch OFF to ON.
2. Perform “E-SUS” self-diagnosis.

Is DTC “C1D16” detected?

YES >> Proceed to diagnosis procedure. Refer to SCS-40, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007512531

1. PERFORM SELF-DIAGNOSIS

With CONSULT

1. Turn the ignition switch OFF to ON.
2. Perform “E-SUS” self-diagnosis and check whether DTC “C1D16” is detected.

CAUTION:
Even when a record exists in the diagnosis history, replace E-SUS control unit.

Is DTC “C1D16” detected?

YES >> Replace E-SUS control unit. Refer to SCS-56, "Exploded View".
NO >> Check pin terminal and connection of each harness connector for damage or loose connections. Repair or replace error-detected parts.

C1D18 IGN POWER SUPPLY

Description

INFOID:0000000007512532

Power supply for E-SUS control unit.

DTC Logic

INFOID:0000000007512533

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible causes
C1D18	IGN VOLT	A malfunction is detected in the IGN supply voltage to E-SUS control unit.	• Harness or connector • E-SUS control unit

DTC REPRODUCTION PROCEDURE

1.DTC REPRODUCTION PROCEDURE

With CONSULT

1. Turn the ignition switch OFF to ON.
2. Perform “E-SUS” self-diagnosis.

Is DTC “C1D18” detected?

YES >> Proceed to diagnosis procedure. Refer to SCS-41, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007512534

1.CHECK E-SUS CONTROL UNIT GROUND

1. Turn the ignition switch OFF.
2. Disconnect the E-SUS control unit harness connector.
3. Check the continuity between the E-SUS control unit harness connector and ground.

E-SUS control unit		—	Continuity
Connector	Terminal		
B38	18, 19	Ground	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning harness or connector.

2.CHECK E-SUS CONTROL UNIT POWER SUPPLY CIRCUIT

1. Turn the ignition switch ON.
   CAUTION:
   Never start the engine.
2. Check the voltage between the E-SUS control unit harness connector and ground.

E-SUS control unit		—	Voltage
Connector	Terminal		
B38	1	Ground	Battery voltage
	17		

Is the measured value “9.0 V” or less?

YES >> Check the following items, and repair or replace the malfunctioning parts.
- Open circuit in 10 A fuse (#16)
- Short circuit between the 10 A fuse (#16) connector and E-SUS control unit harness connector terminal 1, 17
- Battery or ignition switch

NO >> GO TO 3.

3.CHECK TERMINAL

Check that there is no malfunction in the pin terminals and connection of the E-SUS control unit harness connector.

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace the malfunctioning parts.

4.CHECK E-SUS CONTROL UNIT SIGNAL

With CONSULT

1. Connect the E-SUS control unit harness connector.
2. Start the engine.
   CAUTION:
   Always hold the vehicle stopped.
3. Select “DATA MONITOR” of “E-SUS”.
4. Check the value of “IGN” on “DATA MONITOR” screen.

Is the value in “DATA MONITOR” “16 V” or more?

YES >> Perform the diagnosis by symptom for the charging system. Refer to CHG-16, "Symptom Table".
NO >> Replace E-SUS control unit. Refer to SCS-56, "Exploded View".

C1D23 E-SUS CONTROL UNIT

Description

INFOID:0000000007512535

Performs good/no good judgment of the E-SUS control unit reprogramming.

DTC Logic

INFOID:0000000007512536

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible causes
C1D23	C/U REPRO ERROR	A malfunction is detected at E-SUS control unit re-programming.	E-SUS control unit

DTC REPRODUCTION PROCEDURE

1.DTC REPRODUCTION PROCEDURE

With CONSULT

1. Turn the ignition switch OFF to ON.
2. Perform “E-SUS” self-diagnosis.

Is DTC “C1D23” detected?

YES >> Proceed to diagnosis procedure. Refer to SCS-43, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007512537

1.PERFORM E-SUS CONTROL UNIT REPROGRAMMING

With CONSULT

Reprogram E-SUS control unit.

Is it completed successfully?

YES >> GO TO 2.
NO >> GO TO 3.

2.PERFORM SELF-DIAGNOSIS

With CONSULT

Perform “E-SUS” self-diagnosis.

Is DTC “C1D23” detected?

YES >> GO TO 3.
NO >> INSPECTION END

3.PERFORM E-SUS CONTROL UNIT REPROGRAMMING AGAIN

With CONSULT

1. Reprogram E-SUS control unit.
2. Perform “E-SUS” self-diagnosis.

Is DTC “C1D23” detected?

YES >> Replace E-SUS control unit. Refer to SCS-56, "Exploded View".
NO >> GO TO 4.

4.ERASE ERROR RECORD

Erase the memory of E-SUS control unit self-diagnosis result (history).

>> End

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000007512538

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detectability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H line, CAN-L line) allowing a high rate of information communication with less wiring. Each control unit communicates data but selectively reads required data only.

DTC Logic

INFOID:0000000007512539

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
U1000	CAN COMM CIRCUIT	E-SUS control unit is not communicate CAN communication signal for 2 seconds or more.	• CAN communication error • Malfunction of E-SUS control unit

DTC CONFIRMATION PROCEDURE

1. DTC REPRODUCTION PROCEDURE

With CONSULT

1. Turn the ignition switch OFF to ON.
2. Perform “E-SUS” self-diagnosis.

Is DTC “U1000” detected?

YES >> Proceed to diagnosis procedure. Refer to SCS-44, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007512540

Proceed to LAN-30, "CAN System Specification Chart".

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000007512541

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detectability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H line, CAN-L line) allowing a high rate of information communication with less wiring. Each control unit communicates data but selectively reads required data only.

DTC Logic

INFOID:0000000007512542

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
U1010	CONTROL UNIT (CAN)	Detecting error during the initial diagnosis of CAN controller of E-SUS control unit.	Malfunction of E-SUS control unit

DTC CONFIRMATION PROCEDURE

1.DTC REPRODUCTION PROCEDURE

With CONSULT

1. Turn the ignition switch OFF to ON.
2. Perform “E-SUS” self-diagnosis.

Is DTC “U1010” detected?

YES >> Proceed to diagnosis procedure. Refer to SCS-45, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007512543

1.CHECK E-SUS CONTROL UNIT

Check E-SUS control unit harness connector for disconnection and deformation.

Is the inspection result normal?

YES >> Replace E-SUS control unit. Refer to SCS-56, "Exploded View".
NO >> Repair or replace error-detected parts.

MODE SELECT SWITCH (E-SUS MODE SELECT)

Description

INFOID:0000000007512544

- Mode select switch (E-SUS mode select) can be switched to SPORT mode or AUTO mode manually.
- When the ignition switch is turned to ON, the mode lamp briefly illuminates, but it is not a malfunction.

Selection mode	Target driving scene
AUTO mode	Normal driving (basic position)
SPORT mode	Sport-conscious driving

Component Function Check

INFOID:0000000007512545

1.CHECK MODE SELECT SWITCH (E-SUS MODE SELECT) OPERATION

Operate the mode select switch (E-SUS mode select) and check that the sport mode indicator lamp in the combination meter turns ON/OFF correctly.

Condition	Sport mode indicator lamp illumination status
Mode select switch (E-SUS mode select): SPORT	ON
Mode select switch (E-SUS mode select): AUTO	OFF

Is the inspection result normal?

YES >> INSPECTION END
NO >> Proceed to diagnosis procedure. Refer to SCS-46, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000007512546

1.CHECK MODE SELECT SWITCH (E-SUS MODE SELECT)

Check mode select switch (E-SUS mode select). Refer to SCS-47, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Mode select switch (E-SUS mode select) is malfunctioning. Replace Mode select switch (E-SUS mode select).

2.CHECK MODE SELECT SWITCH (E-SUS MODE SELECT) HARNESS

1. Disconnect E-SUS control unit harness connector.
2. Disconnect mode select switch (E-SUS mode select) connector.
3. Check the continuity between mode select switch (E-SUS mode select) harness connector and E-SUS control unit harness connector.

E-SUS control unit		Mode select switch (E-SUS mode select)		Continuity
Connector	Terminal	Connector	Terminal	
B38	20	M179	1	Existed

4. Check the continuity between mode select switch (E-SUS mode select) harness connector and ground.

Mode select switch (E-SUS mode select)		—	Continuity
Connector	Terminal		
M179	3	Ground	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> If the open or short in harness, repair or replace harness.

3.CHECK COMBINATION METER

1. Connect E-SUS control unit harness connector.
2. Connect mode select switch (E-SUS mode select) harness connector.
3. Check the indication and operation of combination meter are normal. Refer to MWI-43, "Diagnosis Description".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair or replace combination meter.

Component Inspection

INFOID:0000000007512547

1. CHECK MODE SELECT SWITCH (E-SUS MODE SELECT)

1. Turn the ignition switch OFF.
2. Disconnect mode select switch (E-SUS mode select) harness connector.
3. Check the continuity between mode select switch (E-SUS mode select) connector terminals.

Mode select switch (E-SUS mode select) Terminal	Condition	Continuity
1 – 3	When mode select switch (E-SUS mode select): SPORT	Existed
	When mode select switch (E-SUS mode select): AUTO	Not existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace mode select switch (E-SUS mode select).

SPORT MODE INDICATOR LAMP

Description

INFOID:0000000007512548

The following is the indications of indicator lamp after the engine start.

SPORT MODE INDICATOR LAMP

Condition	Sport mode indicator lamp
AUTO mode	OFF
SPORT mode	ON

Component Function Check

INFOID:0000000007512549

1.SPORT MODE INDICATOR LAMP OPERATION CHECK

Check that the sport mode indicator lamp in the combination meter turns ON/OFF correctly when operating the mode select switch (E-SUS mode select).

Is the inspection result normal?

YES >> INSPECTION END
NO >> Proceed to diagnosis procedure. Refer to SCS-48, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000007512550

1.CHECK MODE SELECT SWITCH (E-SUS MODE SELECT)

Perform the trouble diagnosis for mode select switch (E-SUS mode select). Refer to SCS-46, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Check mode select switch (E-SUS mode select). Refer to SCS-47, "Component Inspection".

2.CHECK SELF-DIAGNOSIS

With CONSULT

Perform “E-SUS” self-diagnosis.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check items displayed by self-diagnosis.

3.CHECK COMBINATION METER

Check the indication and operation of combination meter are normal. Refer to MWI-43, "Diagnosis Description".

Is the inspection result normal?

YES >> Replace E-SUS control unit. Refer to SCS-56, "Exploded View".
NO >> Repair or replace combination meter. Refer to MWI-117, "Exploded View".

ECU DIAGNOSIS INFORMATION

E-SUS CONTROL UNIT

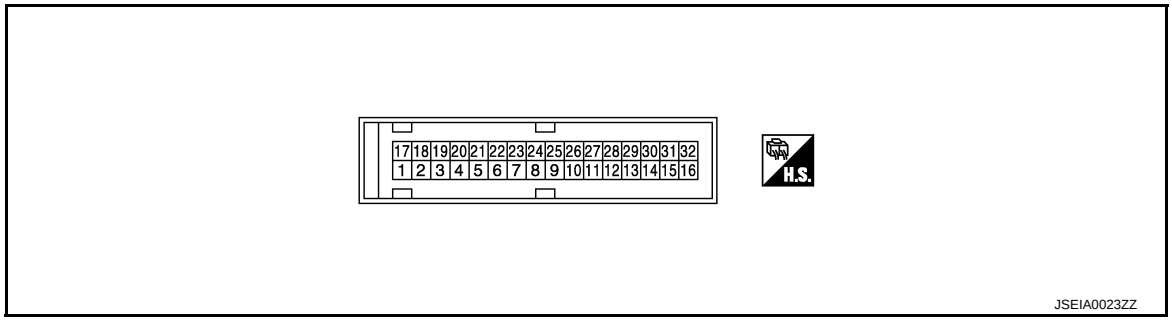
Reference Value

INFOID:0000000007512551

VALUES ON THE DIAGNOSIS TOOL

Monitor item	Condition	Value/Status
VEHICLE SPEED	Vehicle stopped	0 km/h (MPH)
	While driving for a period of time after the engine starts. **CAUTION:** **Check tire pressure in normal condition.**	Almost in accordance with the speedometer display. (Within ±10%)
ST ANGLE SIG	Neutral	Approx. 0 deg
	Steering	0 – 780 deg
IGN	Always	Battery voltage
REQUESTED TRQ	• Engine: At idle speed after warm-up • Selector lever: P or N position	Approx. 26 Nm
FR BDY G-SEN VOL	When stopped	Approx. 2.35 – 2.65 V
	While driving	Approx. 0.5 – 4.5 V
FL BDY G-SEN VOL	When stopped	Approx. 2.35 – 2.65 V
	While driving	Approx. 0.5 – 4.5 V
R G-SEN VOL	When stopped	Approx. 2.35 – 2.65 V
	While driving	Approx. 0.5 – 4.5 V
FR WHL G-SEN VOL	When stopped	Approx. 2.35 – 2.65 V
	While driving	Approx. 0.5 – 4.5 V
FL WHL G-SEN VOL	When stopped	Approx. 2.35 – 2.65 V
	While driving	Approx. 0.5 – 4.5 V
FR ACTUATOR CRNT	Vehicle stopped	Approx. 0.65 A
	While driving	Approx. 0.65 – 2.0 A
FL ACTUATOR CRNT	Vehicle stopped	Approx. 0.65 A
	While driving	Approx. 0.65 – 2.0 A
RR ACTUATOR CRNT	Vehicle stopped	Approx. 0.65 A
	While driving	Approx. 0.65 – 2.0 A
RL ACTUATOR CRNT	Vehicle stopped	Approx. 0.65 A
	While driving	Approx. 0.65 – 2.0 A
G-SEN VOL	Ignition switch ON	Approx. 4.75 – 5.25 V
BRK FLD PRESS	Brake deactivated	Approx. 0 bar
	Brake activated	–40 – 300 bar
STP LAMP SW	Depress the brake	On
	Do not depress the brake	Off
MODE SW	Sport mode	On
	Auto mode	Off
FAIL MODE SIG	Fail-safe mode	On
	Normal mode	Off
CONTROL MODE	Sport mode	SPORT
	Auto mode	AUTO

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
1 (L)	Ground	E-SUS control unit power supply	Input	Ignition switch ON	Battery voltage
2 (P)	—	Front RH shock absorber actuator LOW terminal	—	—	—
3 (V)	—	Front RH shock absorber actuator HI terminal	—	—	—
4 (G)	—	Front LH shock absorber actuator LOW terminal	—	—	—
5 (Y)	—	Front LH shock absorber actuator HI terminal	—	—	—
6 (LG)	—	Rear LH shock absorber actuator HI terminal	—	—	—
7 (V)	—	Rear LH shock absorber actuator LOW terminal	—	—	—
8 (L)	—	Rear RH shock absorber actuator HI terminal	—	—	—
9 (P)	—	Rear RH shock absorber actuator LOW terminal	—	—	—
10 (BG)	Ground	Front LH wheel vertical G sensor output voltage	Input	Ignition switch ON	Approx. 2.35 – 2.65 V
11 (SB)	Ground	Front RH body vertical G sensor output voltage	Input	Ignition switch ON	Approx. 2.35 – 2.65 V
12 (R)	Ground	Front LH body vertical G sensor output voltage	Input	Ignition switch ON	Approx. 2.35 – 2.65 V
14 (G)	Ground	Rear body vertical G sensor output voltage	Input	Ignition switch ON	Approx. 2.35 – 2.65 V
17 (L)	Ground	E-SUS control unit power supply	Input	Ignition switch ON	Battery voltage
18 (B)	Ground	Ground	—	Always	0 V
19 (B)	Ground	Ground	—	Always	0 V
20 (W)	—	Mode switch terminal	—	—	—
23 (G)	—	Mode lamp terminal	—	—	—
24 (W)	Ground	Front RH wheel vertical G sensor output voltage	Input	Ignition switch ON	Approx. 2.35 – 2.65 V

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
25 (Y)	Ground	Rear body vertical G sensor ground	—	Always	0 V
26 (BR)	Ground	Front vertical G sensor ground	—	Always	0 V
27 (GR)	Ground	Front vertical G sensor power supply	Output	Ignition switch ON	Approx. 4.75 – 5.25 V
29 (P)	—	CAN-L	—	—	—
30 (LG)	Ground	Rear vertical G sensor power supply	Output	Ignition switch ON	Approx. 4.75 – 5.25 V
32 (L)	—	CAN-H	—	—	—

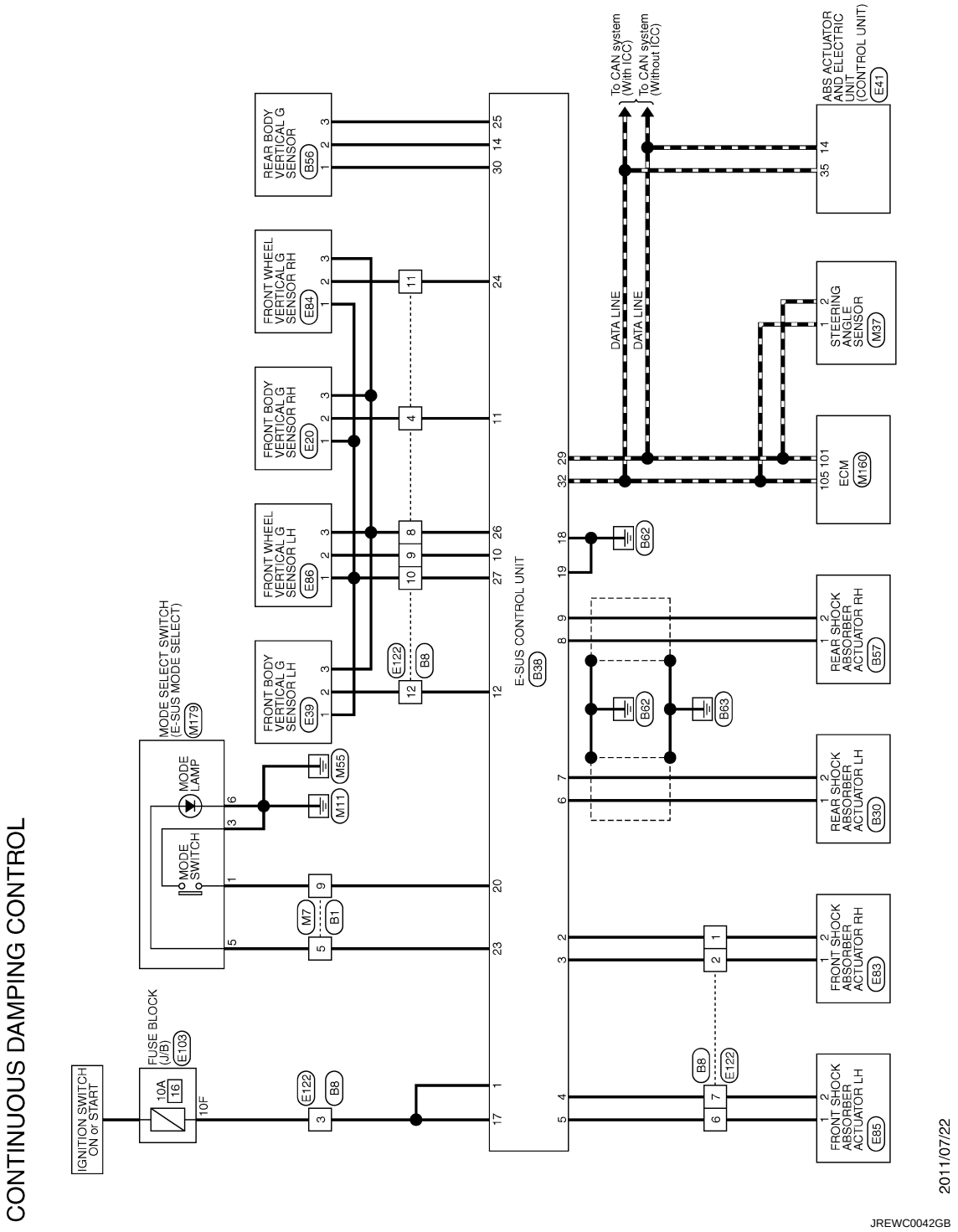
CAUTION:

Never extend connector terminals forcibly, when checking voltage using a circuit tester for voltage inspection.

Wiring Diagram - Continuous Damping Control SYSTEM -

INFOID:0000000007512552

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if notdescribed in wiring diagram), refer to GI-13, "Connector Information".



Fail-safe

INFOID:0000000007512554

Continuous Damping Control system

- When detecting any malfunction in each component of the system, it enters the fail-safe status.
- The damping force is simultaneously maintained at approximately the intermediate level between the maximum and the minimum values, when entering the fail-safe status.
- Even if the switch is operated in the fail-safe status, lamp illuminates in SPORT mode or AUTO mode.

DTC Inspection Priority Chart

INFOID:0000000007512555

When multiple DTCs are detected simultaneously, check one by one depending on the following priority list.

Priority	Priority order item (DTC)
1	• U1000 CAN COMM CIRCUIT • U1010 CONTROL UNIT (CAN)
2	Other than the above

DTC Index

INFOID:0000000007512556

DTC	Display Items	Reference
C1D01	VEHICLE SPEED SIG	SCS-12, "DTC Logic"
C1D03	ST ANGLE SPEED SIG	SCS-14, "DTC Logic"
C1D05	REQST TRQ SIG	SCS-16, "DTC Logic"
C1D07	STOP LAMP SW SIG	SCS-18, "DTC Logic"
C1D09	BRK FLD PRESS SIG	SCS-20, "DTC Logic"
C1D0B	FL WHL VER G-SEN	SCS-22, "DTC Logic"
C1D0C	FR WHL VER G-SEN	SCS-24, "DTC Logic"
C1D0D	FL BDY VER G-SEN	SCS-26, "DTC Logic"
C1D10	F VERTICAL G-SEN	SCS-28, "DTC Logic"
C1D11	R VERTICAL G-SEN	SCS-30, "DTC Logic"
C1D12	FR ACTUATOR SIG	SCS-32, "DTC Logic"
C1D13	FL ACTUATOR SIG	SCS-34, "DTC Logic"
C1D14	RR ACTUATOR SIG	SCS-36, "DTC Logic"
C1D15	RL ACTUATOR SIG	SCS-38, "DTC Logic"
C1D16	CONTROL UNIT	SCS-40, "DTC Logic"
C1D18	IGN VOLT	SCS-41, "DTC Logic"
C1D23	C/U REPRO ERROR	SCS-43, "DTC Logic"
U1000	CAN COMM CIRCUIT	SCS-44, "DTC Logic"
U1010	CONTROL UNIT (CAN)	SCS-45, "DTC Logic"

SYMPTOM DIAGNOSIS

SPORT MODE INDICATOR LAMP DOES NOT TURN ON

Description

INFOID:0000000007512557

Sport mode indicator lamp does not turns ON when mode select switch (E-SUS mode select) is operated to SPORT mode.

Diagnosis Procedure

INFOID:0000000007512558

1.CHECK SPORT MODE INDICATOR LAMP

Perform the trouble diagnosis of sport mode indicator lamp. Refer to SCS-48, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Check that there is no malfunction in each harness connector pin terminal or disconnection.
NO >> Repair or replace the specific malfunctioning part.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000007512559

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

WARNING:

Always observe the following items for preventing accidental activation.

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

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

WARNING:

Always observe the following items for preventing accidental activation.

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

Precautions for terminology

INFOID:0000000007512560

The Continuous Damping Control is the trademark owned by ThyssenKrupp ZF Sachs AG.

Precautions for diagnosis

INFOID:0000000007512561

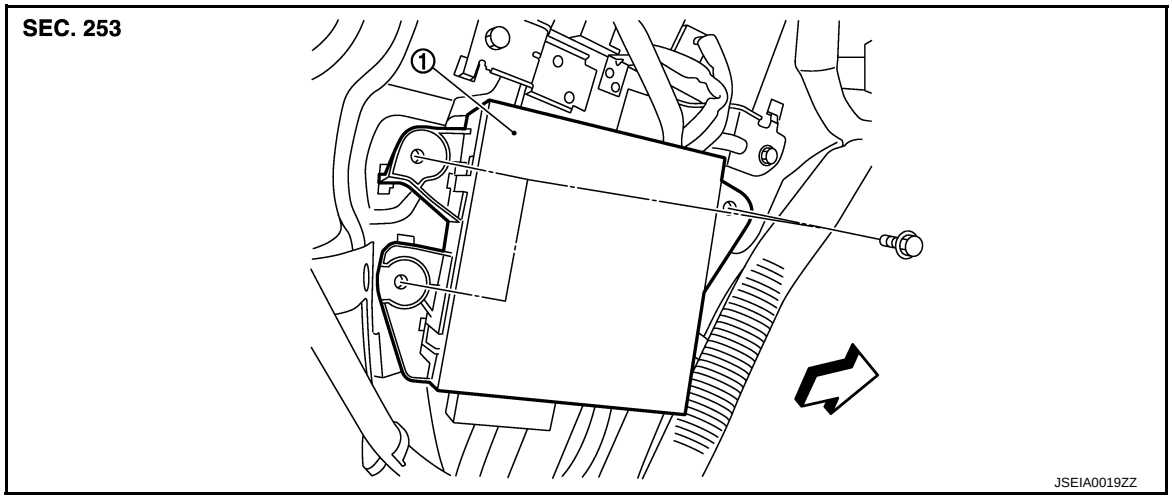
When disconnecting the harness connector from E-SUS control unit, disconnect it only after checking that the lock lever on the harness connector is opened.

REMOVAL AND INSTALLATION

E-SUS CONTROL UNIT

Exploded View

INFOID:0000000007512562



1. E-SUS control unit

⇦: Vehicle front

Removal and Installation

INFOID:0000000007512563

REMOVAL

1. Turn the ignition switch OFF.
2. Remove the luggage side finisher lower (LH). Refer to INT-29, "Exploded View".
3. Disconnect the E-SUS control unit connector.
4. Remove the E-SUS control unit mounting bolts.
5. Remove the E-SUS control unit from vehicle.

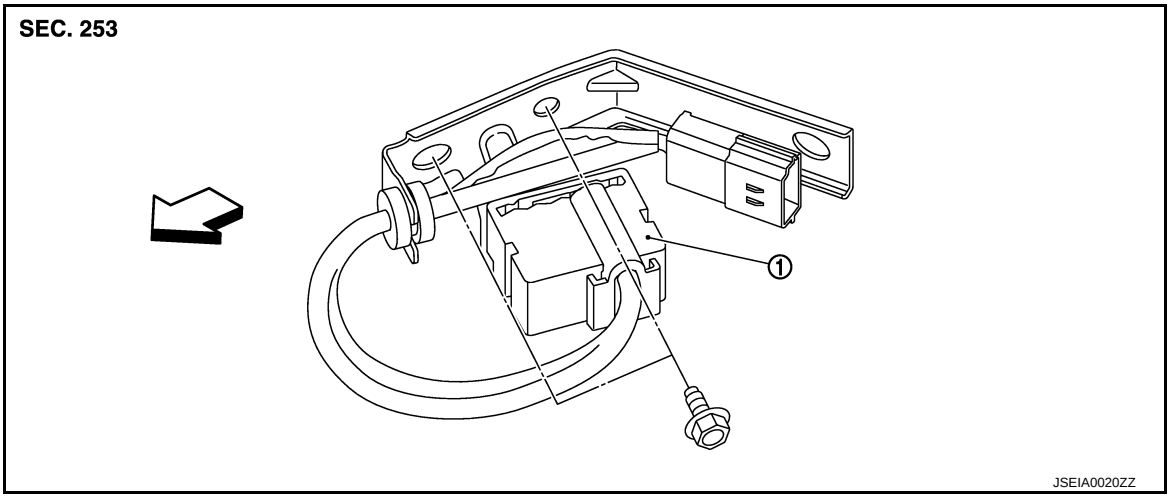
INSTALLATION

Install in the reverse order of removal.

FRONT BODY VERTICAL G SENSOR

Exploded View

INFOID:0000000007512564



1. Front body vertical G sensor

⇦: Vehicle front

NOTE:
The above figure shows left side. Right side is the mirror image.

Removal and Installation

INFOID:0000000007512565

REMOVAL

1. Turn the ignition switch OFF.
2. Remove the engine room covers (LH/RH). Refer to EM-175, "Exploded View".
3. Disconnect the front body vertical G sensor connector.
4. Remove the front body vertical G sensor mounting bolts.
5. Remove the front body vertical G sensor from vehicle.

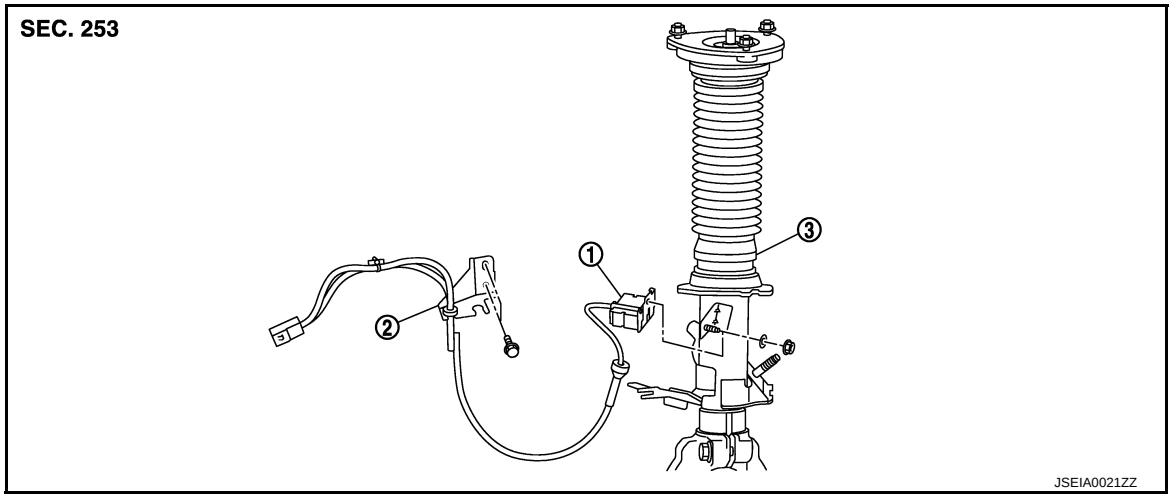
INSTALLATION

Install in the reverse order of removal.

FRONT WHEEL VERTICAL G SENSOR

Exploded View

INFOID:0000000007512566



1. Front wheel vertical G sensor
2. Bracket
3. Front strut

NOTE:
The above figure shows left side. Right side is the mirror image.

Removal and Installation

INFOID:0000000007512567

REMOVAL

1. Turn the ignition switch OFF.
2. Remove the air cleaner case. Refer to EM-178, "Exploded View".
3. Disconnect the front wheel vertical G sensor connector.
4. Remove the front tire.
5. Remove the bracket mounting bolts.
6. Remove the front wheel vertical G sensor mounting nut.
7. Remove the front wheel vertical G sensor from front strut.

INSTALLATION

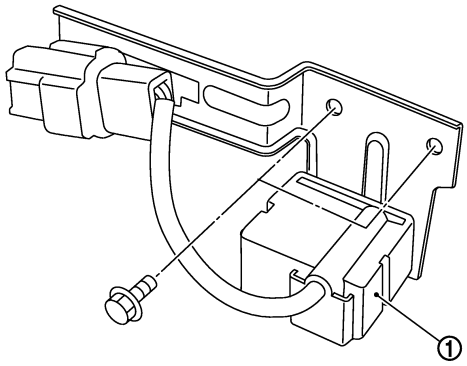
Install in the reverse order of removal.

REAR BODY VERTICAL G SENSOR

Exploded View

INFOID:0000000007512568

SEC. 253



JSEIA0022ZZ

1. Rear body vertical G sensor

Removal and Installation

INFOID:0000000007512569

REMOVAL

1. Turn the ignition switch OFF.
2. Remove the Luggage floor spacer. Refer to INT-29, "Exploded View".
3. Disconnect the rear body vertical G sensor connector.
4. Remove the rear body vertical G sensor mounting bolts.
5. Remove the rear body vertical G sensor from vehicle.

INSTALLATION

Install in the reverse order of removal.

SHOCK ABSORBER ACTUATOR

Removal and Installation

INFOID:0000000007512570

Refer to FSU-27, "Exploded View" (front shock absorber), RSU-10, "Exploded View" (rear shock absorber) for removal and installation.

CAUTION:

Never disassemble the shock absorber because the shock absorber actuator is integrated into the shock absorber.