DTC	C1711/11	Front Height Control Sensor RH Circuit Malfunction

DTC	C1712/12	Front Height Control Sensor LH Circuit Malfunction

DTC	C1713/13	Right Rear Height Control Sensor Circuit

DTC	C1714/14	Left Rear Height Control Sensor Circuit

DESCRIPTION

The height control sensor sub-assembly controls the resistance value by following changes in vehicle height. The suspension control ECU detects the change in vehicle height from the transformed voltage. The suspension control ECU outputs a constant voltage of 5 V to the SHB terminal of the height control sensor sub-assembly.

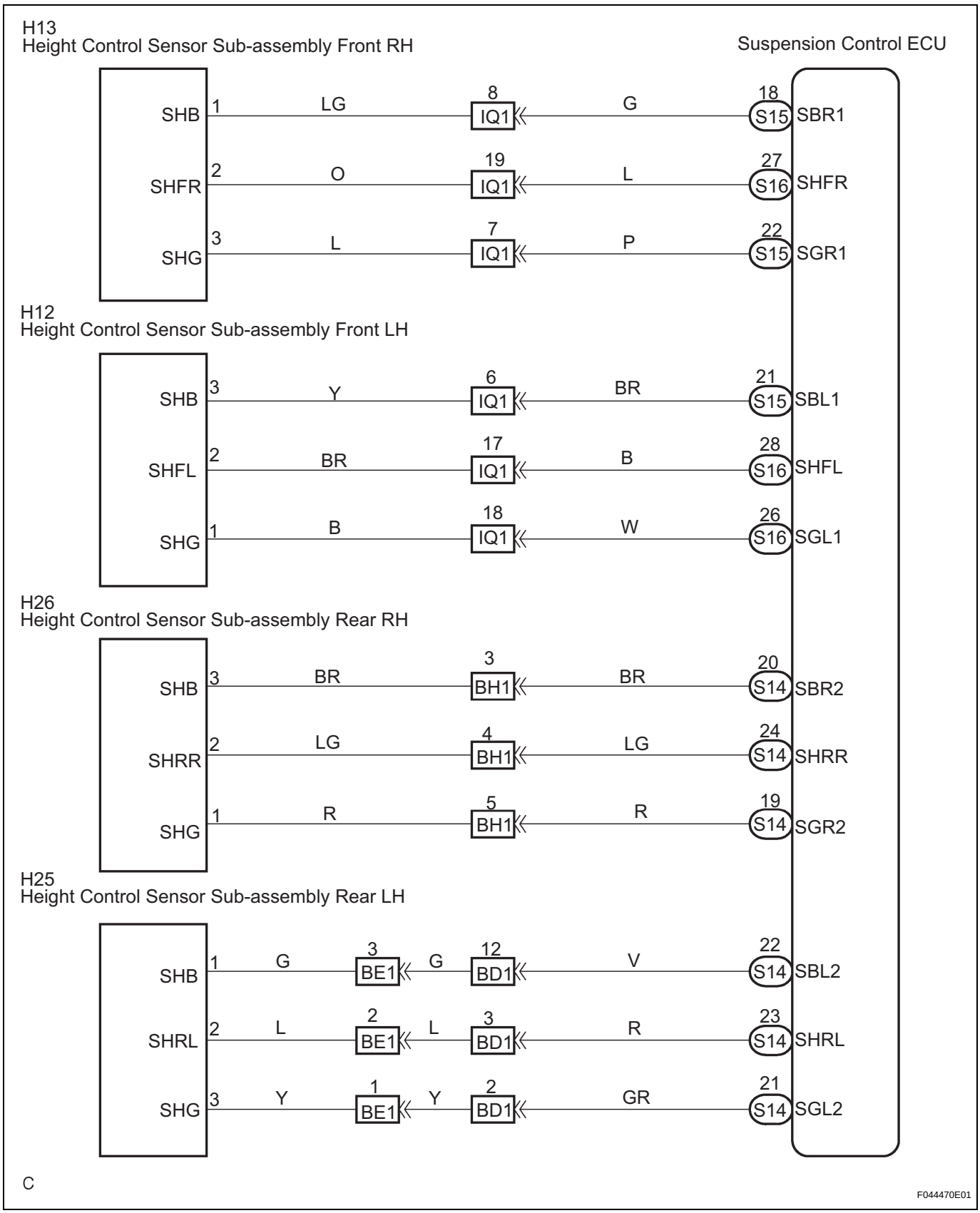
In the height control sensor the voltage is changed due to the resistance. The changed voltage is output from the SHFR terminal of the height control sensor sub-assembly to suspension control ECU, thus the vehicle height is detected.

HINT:

- If DTC C1711/11, C1712/12, C1713/13 or C1714/14 is output, the vehicle height control is suspended. Height control OFF switch on the combination meter assembly comes on and the vehicle height indicator "N" comes on or blink.
- If the normal signal is output from the height control sensor sub-assembly while suspending the vehicle height control, the vehicle height control is resumed. The operation is also resumed when the ignition switch is turned off once, then turned on again.

DTC No.	DTC Detecting Condition	Trouble Area
C1711/11	With the ignition switch ON, a voltage of 4.7 V or more or 0 3 V or less at each height control sensor sub assembly is 0.3 sub-assembly is detected for 1 sec.	1. Height control sensor sub-assembly front RH 2. Right front height control sensor circuit 3. Suspension control ECU
C1712/12		1. Height control sensor sub-assembly front LH 2. Left front height control sensor circuit 3. Suspension control ECU
C1713/13		1. Height control sensor sub-assembly rear RH 2. Right rear height control sensor circuit 3. Suspension control ECU
C1714/14		1. Height control sensor sub-assembly rear LH 2. Left rear height control sensor circuit 3. Suspension control ECU

WIRING DIAGRAM



HINT:
Proceed to troubleshooting following the flow chart, regardless of whether or not DTCs C1711/11, C1712/12, C1713/13 or C1714/14 are displayed.

SC

1	RECONFIRM DTC

(a) Check DTCs (See page SC-28).
(1) Confirm if DTC C1761/61 and/or C1774/74 is recorded.
OK:
DTC C1761/61 and/or C1774/74 is not output.
HINT:
If either DTCC1761/61 (ECU malfunction) or C1774/74 (power source circuit) is displayed, carry out the necessary inspection. If they are output at the same time, carry out the necessary inspection for DTC C1774/74 first.

NG → **REPAIR CIRCUIT INDICATED BY OUTPUT CODE**

OK

2	READ VALUE OF INTELLIGENT TESTER

HINT:
When not using the intelligent tester, go to step 3.
(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch to the ON position, and push the intelligent tester main switch ON.
(c) Select the item below in the DATA LIST, and read its value displayed on the intelligent tester.

AIRSUS

Item	Normal condition
FR HEIGHT	Min.: -80 mm (-3.15 in.) Max.: 80 mm (3.15 in.)
FL HEIGHT	Min.: -80 mm (-3.15 in.) Max.: 80 mm (3.15 in.)
RR HEIGHT	Min.: -80 mm (-3.15 in.) Max.: 80 mm (3.15 in.)
RL HEIGHT	Min.: -80 mm (-3.15 in.) Max.: 80 mm (3.15 in.)

(d) Check the vehicle height value of each sensor while pressing the height control switch "UP" and "DOWN".
OK:
Vehicle height value changes

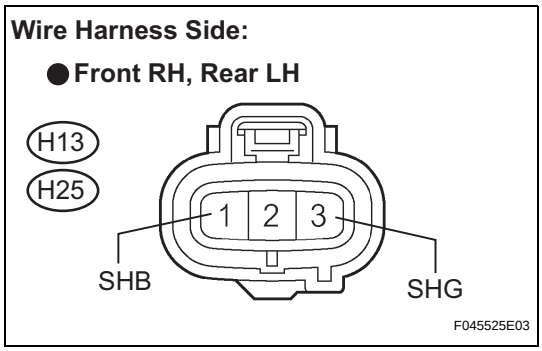
NG → **Go to step 3**

OK

REPLACE SUSPENSION CONTROL ECU

SC

3	CHECK HARNESS AND CONNECTOR (HEIGHT CONTROL SENSOR SUB-ASSEMBLY POWER SOURCE)



(a) Disconnect the height control sensor sub-assembly connector.
(b) Turn the ignition switch ON.
(c) Measure the voltage according to the values in the table below.

Voltage (Front RH): (C1711/11)

Tester Connection	Specified Condition
H13-1 (SHB) - H13-3 (SHG)	4.75 to 5.25 V

Voltage: (Front LH): (C1712/12)

Tester Connection	Specified Condition
H12-1 (SHG) - H12-3 (SHB)	4.75 to 5.25 V

Voltage: (Rear RH): (C1713/13)

Tester Connection	Specified Condition
H26-1 (SHG) - H26-3 (SHB)	4.75 to 5.25 V

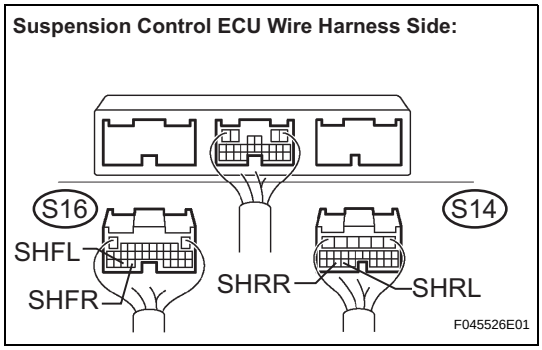
Voltage: (Rear LH): (C1714/14)

Tester Connection	Specified Condition
H25-1 (SHB) - H25-3 (SHG)	4.75 to 5.25 V

NG → **Go to step 6**

OK

4	CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - HEIGHT CONTROL SENSOR SUB-ASSEMBLY)



(a) Disconnect the suspension control ECU S16 or S14 connector.
(b) Measure the resistance according to the values in the table below.

Resistance (Front RH): (C1711/11)

Tester Connection	Specified Condition
S16-27 (SHFR) - H13-2 (SHFR)	Below 1 Ω
S16-27 (SHFR) - Body ground	10 kΩ or higher

Resistance: (Front LH): (C1712/12)

Tester Connection	Specified Condition
S16-28 (SHFL) - H12-2 (SHFL)	Below 1 Ω
S16-28 (SHFL) - Body ground	10 kΩ or higher

Resistance: (Rear RH): (C1713/13)

Tester Connection	Specified Condition
S14-24 (SHRR) - H26-2 (SHRR)	Below 1 Ω
S14-24 (SHRR) - Body ground	10 kΩ or higher

SC

Resistance: (Rear LH): (C1714/14)

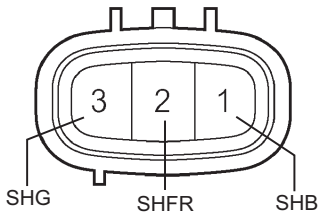
Tester Connection	Specified Condition
S14-23 (SHRL) - H25-2 (SHRL)	Below 1 Ω
S14-23 (SHRL) - Body ground	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

5 INSPECT HEIGHT CONTROL SENSOR SUB-ASSEMBLY

Height Control Sensor Sub-assembly Front RH:



(a) HEIGHT CONTROL SENSOR FRONT RH: (C1711/11)

(1) Measure the resistance according to the values in the table below.

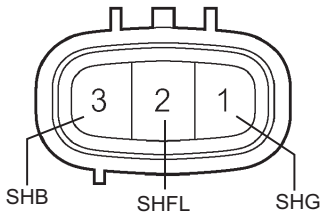
Resistance

Tester Connection	Specified Condition
1 (SHB) - 3 (SHG)	4.3 +- 1.3 kΩ
1 (SHB) - 2 (SHFR)	Repeat about 0.4 to 3.9 kΩ

Result

Result	Proceed to
OK	A
NG	B

Height Control Sensor Sub-assembly Front LH:



(b) HEIGHT CONTROL SENSOR FRONT LH: (C1712/12)

(1) Measure the resistance according to the values in the table below.

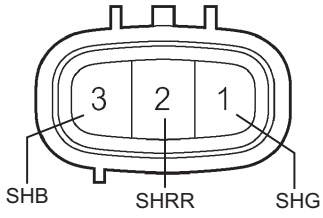
Resistance

Tester Connection	Specified Condition
1 (SHG) - 3 (SHB)	4.3 +- 1.3 kΩ
2 (SHFL) - 3 (SHB)	Repeat about 0.4 to 3.9 kΩ

Result

Result	Proceed to
OK	A
NG	C

Height Control Sensor Sub-assembly Rear RH:



(c) HEIGHT CONTROL SENSOR REAR RH: (C1713/13)

(1) Measure the resistance according to the values in the table below.

Resistance

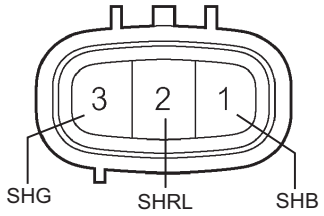
Tester Connection	Specified Condition
1 (SHG) - 3 (SHB)	4.3 +- 1.3 kΩ
2 (SHRR) - 3 (SHB)	Repeat about 0.4 to 3.9 kΩ

Result

Result	Proceed to
OK	A
NG	D

SC

Height Control Sensor Sub-assembly Rear LH:



(d) HEIGHT CONTROL SENSOR REAR LH: (C1714/14)

(1) Measure the resistance according to the values in the table below.

Resistance

Tester Connection	Specified Condition
1 (SHB) - 3 (SHG)	4.3 +- 1.3 kΩ
1 (SHB) - 2 (SHRL)	Repeat about 0.4 to 3.9 kΩ

Result

Result	Proceed to
OK	A
NG	E

B → **REPLACE HEIGHT CONTROL SENSOR SUB-ASSEMBLY FRONT RH**

C → **REPLACE HEIGHT CONTROL SENSOR SUB-ASSEMBLY FRONT LH**

D → **REPLACE HEIGHT CONTROL SENSOR SUB-ASSEMBLY REAR RH**

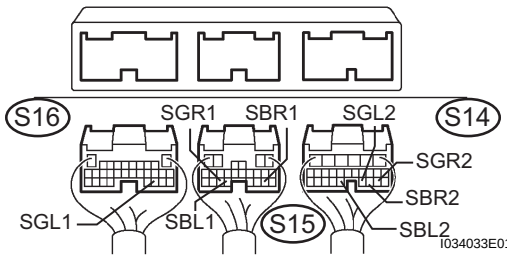
E → **REPLACE HEIGHT CONTROL SENSOR SUB-ASSEMBLY REAR LH**

A

REPLACE SUSPENSION CONTROL ECU

6 CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU- HEIGHT CONTROL SENSOR SUB-ASSEMBLY)

Suspension Control ECU Wire Harness Side:



(a) Disconnect the suspension control ECU connectors.

(b) Measure the resistance according to the values in the table below.

Resistance (Front RH): (C1711/11)

Tester Connection	Specified Condition
S15-18 (SBR1) - H13-1 (SHB)	Below 1 Ω
S15-22 (SGR1) - H13-3 (SHG)	Below 1 Ω
S15-18 (SBR1) - Body ground	10 kΩ or higher
S15-22 (SGR1) - Body ground	10 kΩ or higher

Resistance: (Front LH): (C1712/12)

Tester Connection	Specified Condition
S15-21 (SBL1) - H12-3 (SHB)	Below 1 Ω
S16-25 (SGL1) - H12-1 (SHG)	Below 1 Ω
S15-21 (SBL1) - Body ground	10 kΩ or higher
S16-25 (SGL1) - Body ground	10 kΩ or higher

SC

Resistance: (Rear RH): (C1713/13)

Tester Connection	Specified Condition
S14-19 (SGR2) - H26-1 (SHG)	Below 1 Ω
S14-20 (SBR2) - H26-3 (SHB)	Below 1 Ω
S14-19 (SGR2) - Body ground	10 kΩ or higher
S14-20 (SBR2) - Body ground	10 kΩ or higher

Resistance: (Rear LH): (C1714/14)

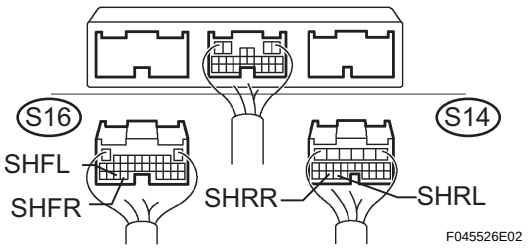
Tester Connection	Specified Condition
S14-21 (SGL2) - H25-3 (SHG)	Below 1 Ω
S14-22 (SBL2) - H25-1 (SHB)	Below 1 Ω
S14-21 (SGL2) - Body ground	10 kΩ or higher
S14-22 (SBL2) - Body ground	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

7 CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - HEIGHT CONTROL SENSOR SUB-ASSEMBLY)

Suspension Control ECU Wire Harness Side:



(a) Disconnect the suspension control ECU S16 or S14 connector.

(b) Measure the resistance according to the values in the table below.

Resistance (Front RH): (C1711/11)

Tester Connection	Specified Condition
S16-27 (SHFR) - H13-2 (SHFR)	Below 1 Ω
S16-27 (SHFR) - Body ground	10 kΩ or higher

Resistance: (Front LH): (C1712/12)

Tester Connection	Specified Condition
S16-28 (SHFL) - H12-2 (SHFL)	Below 1 Ω
S16-28 (SHFL) - Body ground	10 kΩ or higher

Resistance: (Rear RH): (C1713/13)

Tester Connection	Specified Condition
S14-24 (SHRR) - H26-2 (SHRR)	Below 1 Ω
S14-24 (SHRR) - Body ground	10 kΩ or higher

Resistance: (Rear LH): (C1714/14)

Tester Connection	Specified Condition
S14-23 (SHRL) - H25-2 (SHRL)	Below 1 Ω
S14-23 (SHRL) - Body ground	10 kΩ or higher

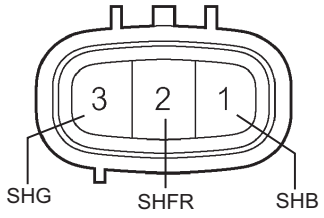
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

SC

8 CHECK HEIGHT CONTROL SENSOR SUB-ASSEMBLY

Height Control Sensor Sub-assembly Front RH:



(a) HEIGHT CONTROL SENSOR FRONT RH: (C1711/11)

(1) Measure the resistance according to the values in the table below.

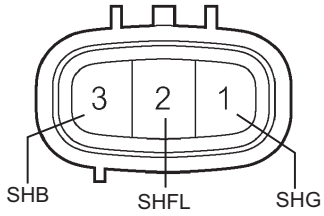
Resistance

Tester Connection	Specified Condition
1 (SHB) - 3 (SHG)	4.3 +- 1.3 kΩ
1 (SHB) - 2 (SHFR)	Repeat about 0.4 to 3.9 kΩ

Result

Result	Proceed to
OK	A
NG	B

Height Control Sensor Sub-assembly Front LH:



(b) HEIGHT CONTROL SENSOR FRONT LH: (C1712/12)

(1) Measure the resistance according to the values in the table below.

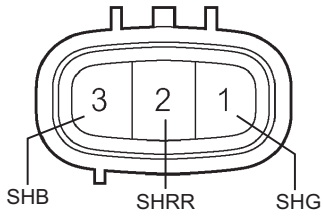
Resistance

Tester Connection	Specified Condition
1 (SHG) - 3 (SHB)	4.3 +- 1.3 kΩ
2 (SHFL) - 3 (SHB)	Repeat about 0.4 to 3.9 kΩ

Result

Result	Proceed to
OK	A
NG	C

Height Control Sensor Sub-assembly Rear RH:



(c) HEIGHT CONTROL SENSOR REAR RH: (C1713/13)

(1) Measure the resistance according to the values in the table below.

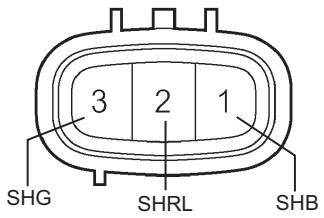
Resistance

Tester Connection	Specified Condition
1 (SHG) - 3 (SHB)	4.3 +- 1.3 kΩ
2 (SHRR) - 3 (SHB)	Repeat about 0.4 to 3.9 kΩ

Result

Result	Proceed to
OK	A
NG	D

Height Control Sensor Sub-assembly Rear LH:



(d) HEIGHT CONTROL SENSOR REAR LH: (C1714/14)

(1) Measure the resistance according to the values in the table below.

Resistance

Tester Connection	Specified Condition
1 (SHB) - 3 (SHG)	4.3 +- 1.3 kΩ
1 (SHB) - 2 (SHRL)	Repeat about 0.4 to 3.9 kΩ

Result

Result	Proceed to
OK	A

SC

Result	Proceed to
NG	E

B → **REPLACE HEIGHT CONTROL SENSOR SUB-ASSEMBLY FRONT RH**

C → **REPLACE HEIGHT CONTROL SENSOR SUB-ASSEMBLY FRONT LH**

D → **REPLACE HEIGHT CONTROL SENSOR SUB-ASSEMBLY REAR RH**

E → **REPLACE HEIGHT CONTROL SENSOR SUB-ASSEMBLY REAR LH**

A

REPLACE SUSPENSION CONTROL ECU