DTC	C0210/33	Right Rear Wheel Speed Sensor Signal
DTC	C0215/34	Left Rear Wheel Speed Sensor Signal
DTC	C1238/38	Foreign Object is Attached on Tip of Rear Speed Sensor RH
DTC	C1239/39	Foreign Object is Attached on Tip of Rear Speed Sensor LH
DTC	C1273/73	Low Output Signal of Rear Speed Sensor RH (Test Mode DTC)
DTC	C1274/74	Low Output Signal of Rear Speed Sensor LH (Test Mode DTC)
DTC	C1277/77	Abnormal Change in Output Signal of Rear Speed Sensor RH (Test Mode DTC)
DTC	C1278/78	Abnormal Change in Output Signal of Rear Speed Sensor LH (Test Mode DTC)

BC

DESCRIPTION

Refer to DTC C0200/31 (see page BC-62).

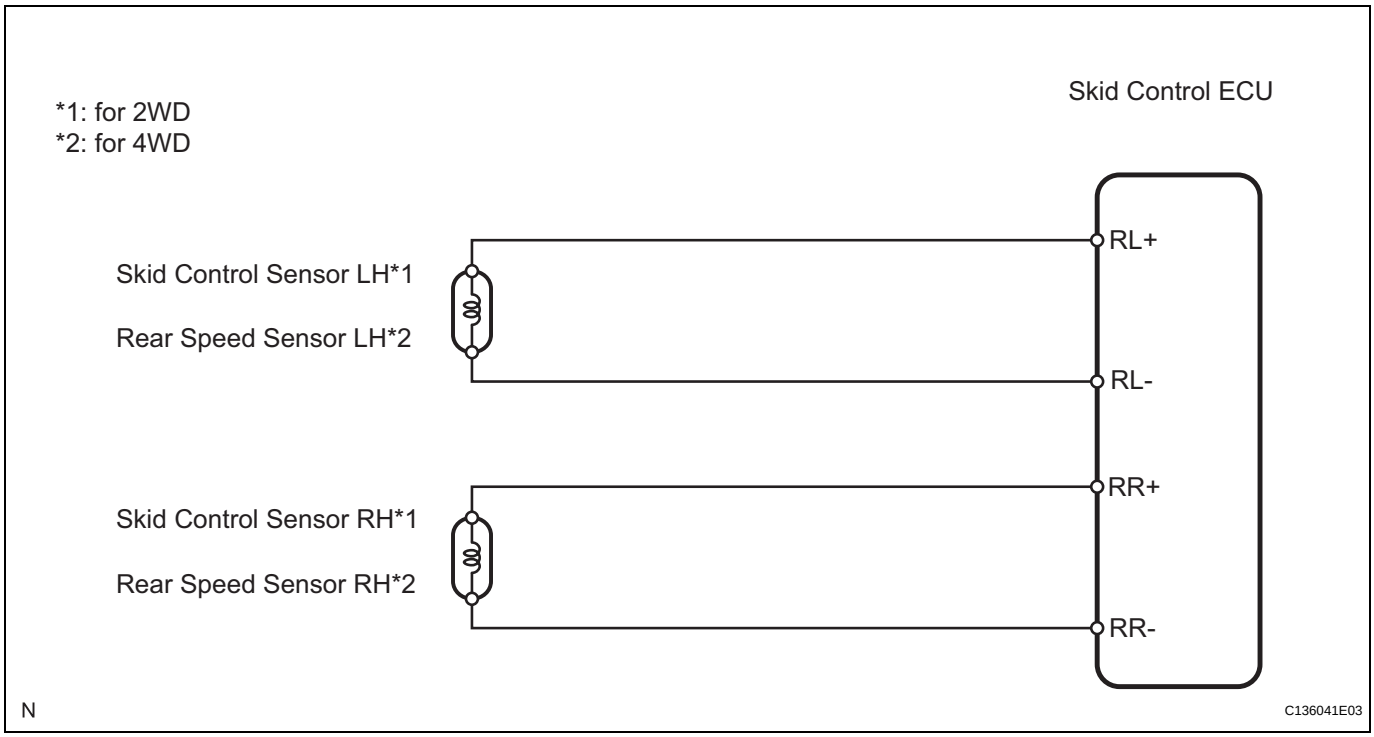
DTCs C1273/73, C1274/74, C1277/77 and C1278/78 can be deleted when the speed sensor sends a vehicle speed signal or the test mode ends. DTCs C1273/73, C1274/74, C1277/77 and C1278/78 are output only in the test mode.

DTC No.	DTC Detection Condition	Trouble Area
C0210/33 C0215/34	When one of following conditions is met: 1. At vehicle speed of 10 km/h (6 mph) or more, open or short in sensor signal circuit continues for 1 second or more. 2. Momentary interruption of sensor signal from abnormal wheel occurs 255 times or more. 3. Open in speed sensor signal circuit continues for 0.5 seconds or more. 4. With IG1 terminal voltage 9.5 V or more, sensor power supply voltage decreases for 0.5 seconds or more.	• Skid control sensor (for 2WD) • Rear speed sensor (for 4WD) • Skid control sensor circuit (for 2WD) • Rear speed sensor circuit (4WD) • Sensor installation • Foreign matter on sensor rotor
C1238/38 C1239/39	When either condition below is met: 1. At vehicle speed of 20 km/h (12 mph) or more, noise in malfunctioning wheel sensor signal condition continues for 5 seconds or more. 2. At vehicle speed of 10 km/h (6 mph) or more, noise input occurs once per rotor rotation for 15 seconds or more.	• Skid control sensor (for 2WD) • Rear speed sensor (for 4WD) • Skid control sensor circuit (for 2WD) • Rear speed sensor circuit (for 4WD) • Sensor installation
C1273/73 C1274/74	Detected only during test mode.	• Skid control sensor (for 2WD) • Rear speed sensor (for 4WD) • skid control sensor circuit (for 2WD) • Rear speed sensor circuit (for 4WD) • Sensor installation • Foreign matter on sensor rotor

DTC No.	DTC Detection Condition	Trouble Area
C1277/77 C1278/78	Detected only during test mode.	• Skid control sensor (for 2WD) • Rear speed sensor (for 4WD) • Skid control sensor circuit (for 2WD) • Rear speed sensor circuit (for 4WD) • Sensor installation

HINT:
- DTC C0210/33 and C1238/38 relate to the skid control sensor RH.
- DTC C0215/34 and C1239/39 relate to the skid control sensor LH.

WIRING DIAGRAM



BC

INSPECTION PROCEDURE

NOTICE:
Check the speed sensor signal in test mode after cleaning or replacement (see page BC-28).

1	CHECK HARNESS AND CONNECTOR (MOMENTARY INTERRUPTION)

(a) Using the DATA LIST of the intelligent tester, check for any momentary interruption in the wire harness corresponding to a DTC (see page BC-23).

Skid control ECU

Item (Display)	Measurement Item / Range (Display)	Normal Condition	Diagnostic Note
RR SPD OPN Open	RR speed sensor open detection / ERROR or NORMAL	ERROR: Momentary interruption NORMAL: Normal	-
RL SPD OPN	RL speed sensor open detection / ERROR or NORMAL	ERROR: Momentary interruption NORMAL: Normal	-

OK:
There are no momentary interruptions.

HINT:
Perform this inspection before removing the sensor and connector.

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

OK

2	READ VALUE OF INTELLIGENT TESTER (REAR SPEED SENSOR)

(a) Check the DATA LIST for proper functioning of the rear speed sensor.

Skid control ECU

Item (Display)	Measurement Item / Range (Display)	Normal Condition	Diagnostic Note
RR WHEEL SPD	Wheel speed sensor (RR) reading : min.: 0 km/h (0 mph), max.: 326 km/h (202.8 mph)	Similar to speed indicated on speedometer	-
RL WHEEL SPD	Wheel speed sensor (RL) reading : min.: 0 km/h (0 mph), max.: 326 km/h (202.8 mph)	Similar to speed indicated on speedometer	-

BC

OK:
There is almost no difference between actual wheel speed and displayed speed value.

HINT:
There is a tolerance of +-10% in the speedometer indication.

NG → **Go to step 5**

OK

3	PERFORM TEST MODE INSPECTION (SIGNAL CHECK)

(a) Perform a TEST MODE inspection and check for DTCs (see page BC-28).

OK:
No DTCs output.

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

OK

4	RECONFIRM DTC

(a) Clear the DTC(s) (see page BC-47).
(b) Start the engine.
(c) Drive the vehicle at a speed of 20 km/h (12 mph) or more for at least 60 seconds.

(d) Check if the same DTC(s) is output (see page BC-47).
Result

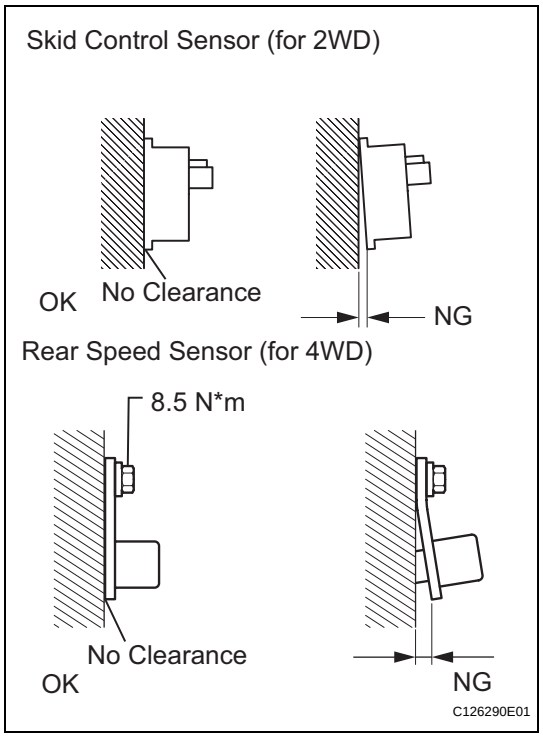
Result	Proceed to
DTC is not output	A
DTC is output	B

B → **Go to step 11**

A

END

5 INSPECT SKID CONTROL SENSOR OR REAR SPEED SENSOR (INSTALLATION)



(a) Check the speed sensor installation.
OK:
for 2WD
There is no clearance between the sensor and rear axle carrier.
for 4WD
The installation bolt is tightened properly and there is no clearance between the sensor and rear axle carrier.
Torque: 8.5 N*m (87 kgf*cm, 75 in.*lbf)
HINT:
Check the speed sensor signal after the replacement (see page BC-28).

NG → **CHECK AND REPLACE SKID CONTROL SENSOR OR REAR SPEED SENSOR**

OK

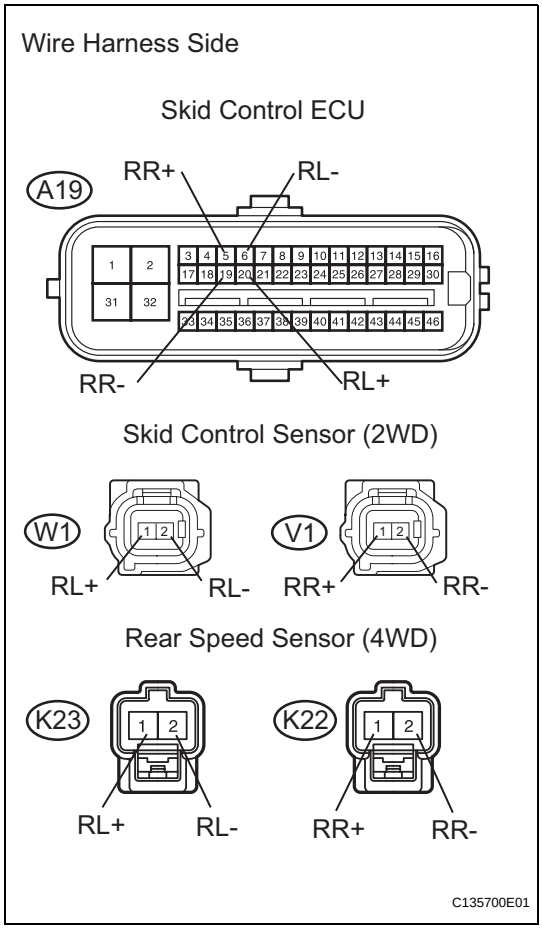
6 CHECK SKID CONTROL SENSOR OR REAR SPEED SENSOR (TIP)

(a) Remove the skid control sensor (for 2WD) or rear speed sensor (for 4WD).
(b) Check the sensor tip.
OK:
No scratches or foreign matter on the sensor tip.

NG → **CLEAR OR REPLACE SKID CONTROL SENSOR OR REAR SPEED SENSOR**

OK

7	CHECK WIRE HARNESS (SKID CONTROL ECU - REAR SPEED SENSOR)



(a) Disconnect the A19 ECU connector.
(b) Disconnect W1 and V1 sensor connectors for 2WD. Disconnect K23 and K22 sensor connectors for 4WD.
(c) Measure the resistance of the wire harness side connectors.

Standard resistance:

for 2WD (LH Side)

Tester Connection	Specified Condition
A19-20 (RL+) - W1-1 (RL+)	Below 1 Ω
A19-6 (RL-) - W1-2 (RL-)	Below 1 Ω
A19-20 (RL+) - Body ground	10 kΩ or higher
A19-6 (RL-) - Body ground	10 kΩ or higher

for 2WD (RH Side)

Tester Connection	Specified Condition
A19-5 (RR+) - V1-1 (RR+)	Below 1 Ω
A19-19 (RR-) - V1-2 (RR-)	Below 1 Ω
A19-5 (RR+) - Body ground	10 kΩ or higher
A19-19 (RR-) - Body ground	10 kΩ or higher

for 4WD (LH Side)

Tester Connection	Specified Condition
A19-20 (RL+) - K23-1 (RL+)	Below 1 Ω
A19-6 (RL-) - K23-2 (RL-)	Below 1 Ω
A19-20 (RL+) - Body ground	10 kΩ or higher
A19-6 (RL-) - Body ground	10 kΩ or higher

for 4WD (RH Side)

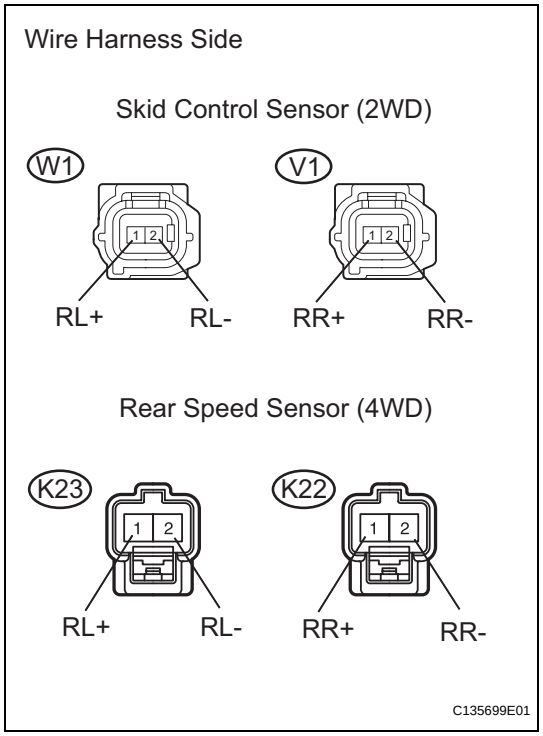
Tester Connection	Specified Condition
A19-5 (RR+) - K22-1 (RR+)	Below 1 Ω
A19-19 (RR-) - K22-2 (RR-)	Below 1 Ω
A19-5 (RR+) - Body ground	10 kΩ or higher
A19-19 (RR-) - Body ground	10 kΩ or higher

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

OK

BC

8 CHECK SKID CONTROL ECU (SENSOR INPUT VOLTAGE)



(a) Disconnect the W1 and V1 sensor connectors for 2WD. Disconnect the K23 and K22 sensor connectors for 4WD.

(b) Measure the voltage of the wire harness side connectors.

Standard voltage:

for 2WD

Tester Connection	Condition	Specified Condition
W1-1 (RL+) - Body ground	Ignition switch ON	5.7 to 17.3 V
V1-1 (RR+) - Body ground	Ignition switch ON	5.7 to 17.3 V

for 4WD

Tester Connection	Condition	Specified Condition
K23-1 (RL+) - Body ground	Ignition switch ON	5.7 to 17.3 V
K22-1 (RR+) - Body ground	Ignition switch ON	5.7 to 17.3 V

NG → **REPLACE ABS AND TRACTION ACTUATOR ASSEMBLY**

OK

9 RECONFIRM DTC

(a) Clear the DTC(s) (see page BC-47).

(b) Start the engine.

(c) Drive the vehicle at a speed of 20 km/h (12 mph) or more for at least 60 seconds.

(d) Check if the same DTC(s) is output (see page BC-47).

Result

Result	Proceed to
DTC is output	A
DTC is not output	B

B → **END**

A

10 REPLACE SKID CONTROL SENSOR OR REAR SPEED SENSOR

(a) Replace the skid control sensor (2WD) or rear speed sensor (4WD).

NEXT

BC

11	RECONFIRM DTC

(a) Clear the DTC(s) (see page BC-47).
(b) Start the engine.
(c) Drive the vehicle at a speed of 20 km/h (12 mph) or more for at least 60 seconds.
(d) Check if the same DTC(s) is output (see page BC-47).

Result

Result	Proceed to
DTC is output	A
DTC is not output	B

B → **END**

A → **REPLACE ABS AND TRACTION ACTUATOR ASSEMBLY**