

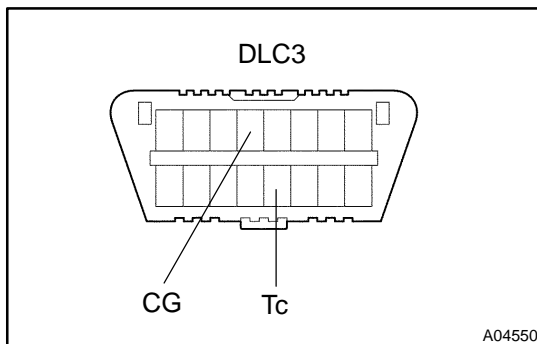
PRE-CHECK

1. DIAGNOSIS SYSTEM

- (a) Check the indicator.
- (1) When the ignition switch is turned ON, check that the ABS warning lights go on for 3 seconds.

HINT:

If the indicator check result is not normal, proceed to troubleshooting for the ABS warning light circuit (See page [DI-579](#)).



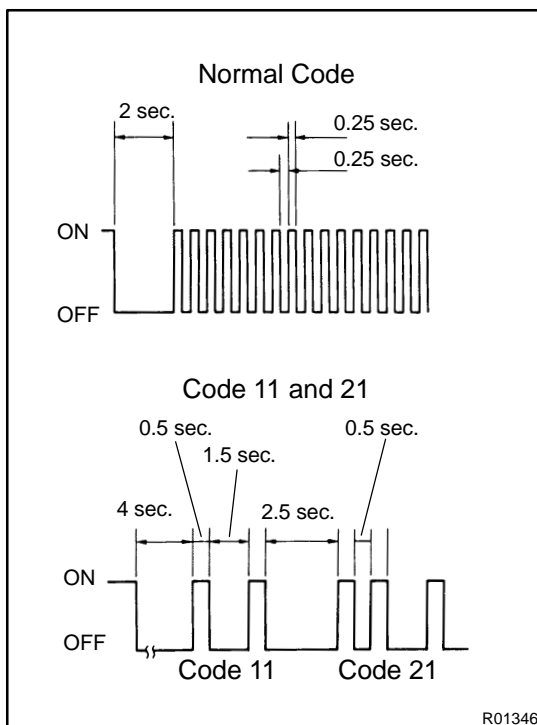
- (b) In case of not using hand-held tester:
Check the DTC.

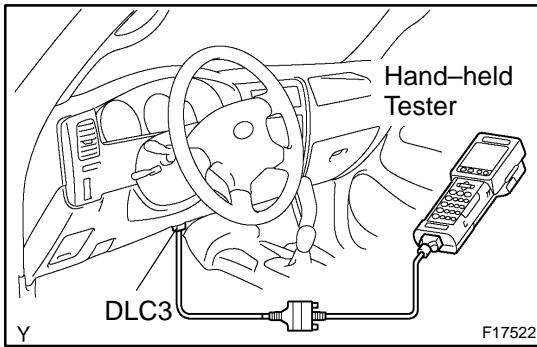
- (1) Using SST, connect terminals Tc and CG of DLC3.
SST 09843-18020 or 09843-18040
- (2) Turn the ignition switch ON.
- (3) Read the DTC from the ABS warning light on the combination meter.

HINT:

- If no code appears, inspect the diagnostic circuit or ABS warning light circuit (See page [DI-579](#) or [DI-581](#)).
 - As an example, the blinking patterns for normal code and codes 11 and 21 are shown on the left.
- (4) Codes are explained in the code table on page [DI-540](#).
 - (5) After completing the check, disconnect terminals Tc and CG of DLC3, and turn off the display.

If 2 or more malfunctions are indicated at the same time the lowest numbered DTC will be displayed 1st.

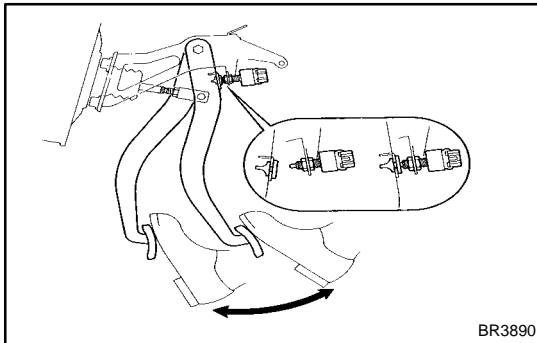




- (c) In case of using hand-held tester:
Check the DTC.
- (1) Hook up the hand-held tester to the DLC3.
 - (2) Read the DTC by following the prompts on the tester screen.

HINT:

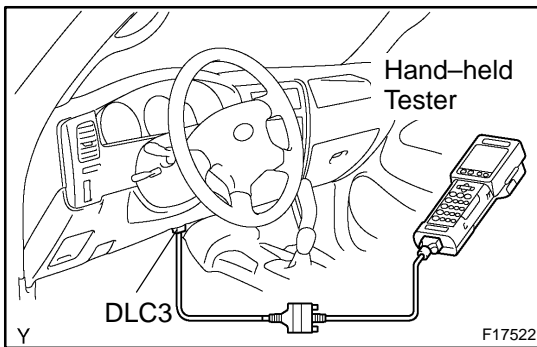
Please refer to the hand-held tester operator's manual for further details.



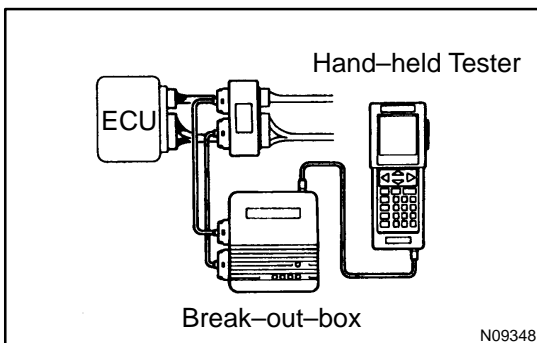
- (d) In case of not using hand-held tester:
Clear the DTC.
- (1) Using SST, connect terminals Tc and CG of DLC3.
SST 09843-18020 or 09843-18040
 - (2) Turn the ignition switch ON.
 - (3) Clear the DTC stored in ECU by depressing the brake pedal 8 or more times within 5 seconds.
 - (4) Check that the warning light shows the normal code.
 - (5) Remove the SST from the terminals of DLC3.
SST 09843-18020 or 09843-18040

HINT:

Disconnecting the battery cable during repairs will not erase the DTC in the ECU.



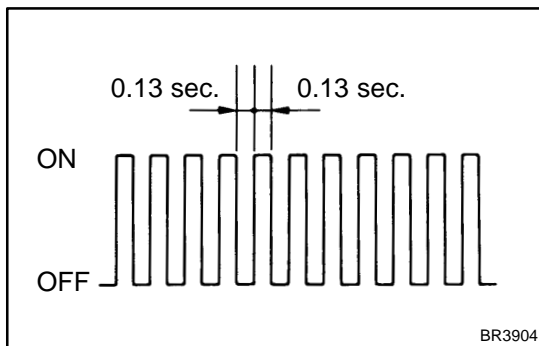
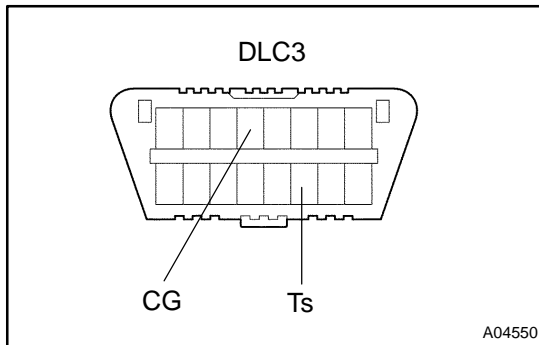
- (e) In case of using hand-held tester:
Clear the DTC.
- (1) Hook up the hand-held tester to the DLC3.
 - (2) Turn the ignition switch ON.
 - (3) Operate the hand-held tester to erase the codes.
(See hand-held tester operator's manual.)



- (f) (Reference):
Using break-out-box and hand-held tester, measure the ECU terminal values.
- (1) Turn the ignition switch OFF.
 - (2) Hook up the break-out-box and hand-held tester to the vehicle.
 - (3) Turn the ignition switch ON.
 - (4) Read the ECU input/output values by following the prompts on the tester screen.

HINT:

- Hand-held tester has a "Snapshot" function. This records the measured values and is effective in the diagnosis of intermittent problems.
- Please refer to the hand-held tester/break-out-box operator's manual for further details.

**2. SENSOR SIGNAL CHECK (TEST MODE)**

HINT:

If the ignition switch is turned from ON to ACC or LOCK during test mode, DTC will be erased.

(a) In case of not using hand-held tester:
Check the sensor signal.

- (1) Turn the ignition switch OFF.
- (2) Using SST, connect terminals Ts and CG of DLC3.
SST 09843-18020
- (3) Start the engine.
- (4) Check that the ABS warning light blinks.

HINT:

If the ABS warning light does not blink, inspect the ABS warning light circuit and Ts circuit (See page DI-579, DI-583).

- (5) Keep the vehicle in the stationary condition on the flat place for 6 sec. or more.
- (6) Shift the transfer lever in L4 position.
- (7) Shift the transfer lever in H position.
- (8) Drive vehicle straight forward.

When driving the vehicle with the speed faster than 45 km/h (28 mph) for several seconds, check that the ABS warning light comes off.

HINT:

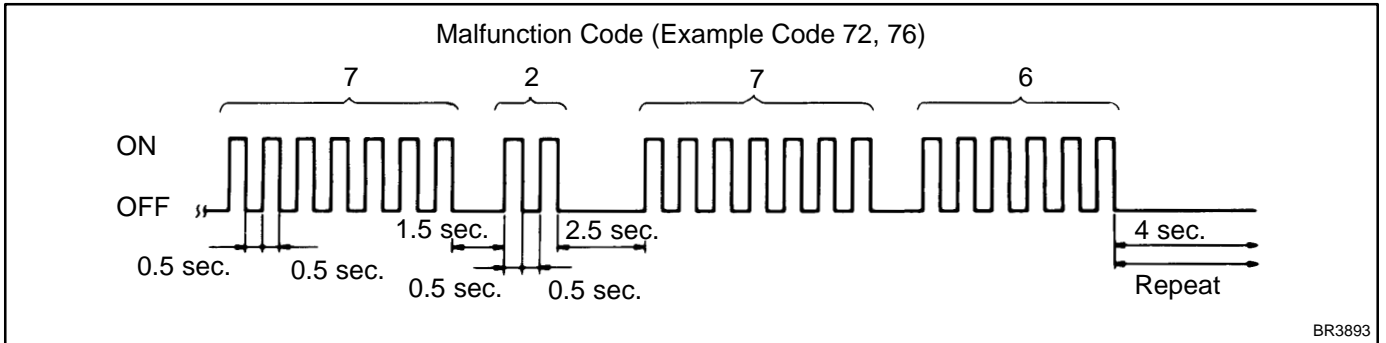
There is a case that the sensor check is not completed if the vehicle has its rear wheels spun or its steering wheel steered during this check.

- (9) Stop the vehicle.
- (10) Check ABS warning light lights up when the rear diff. lock indicator light lights up.

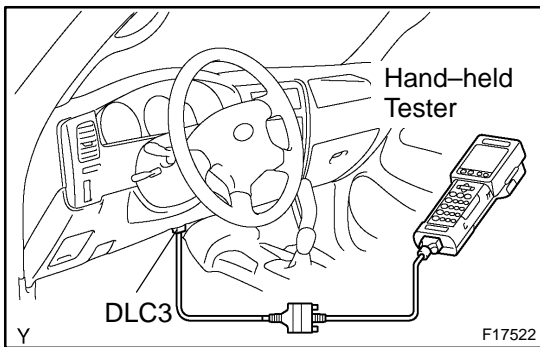
- (11) Using SST, connect terminals Tc and CG of DLC3.
- SST 09843-18020 or 09843-18040
- (12) Read the number of blinks of the ABS warning light.

HINT:

- See the list of DTC on the next page.
- If every sensor is normal, a normal code is output (A cycle of 0.25 sec. ON and 0.25 sec. OFF is repeated).
- If 2 or more malfunctions are indicated at the same time, the lowest numbered code will be displayed 1st.



- (13) After doing the check, disconnect the SST from terminals of DLC3, and turn the ignition switch OFF.
- SST 09843-18020 or 09843-18040



- (b) In case of using hand-held tester:
 - Check the sensor signal.
 - (1) Hook up the hand-held tester to the DLC3.
 - (2) Do step (3) to (9) on the previous page.
 - (3) Read the DTC by following the prompts on the tester screen.

HINT:

Please refer to the hand-held tester operator's manual for further details.

DTC of sensor check function:

Code No.	Diagnosis	Trouble Area
C1271 / 71	Low output voltage of right front speed sensor	<ul style="list-style-type: none"> • Right front speed sensor • Sensor installation • Sensor rotor
C1272 / 72	Low output voltage of left front speed sensor	<ul style="list-style-type: none"> • Left front speed sensor • Sensor installation • Sensor rotor
C1273 / 73	Low output voltage of right rear speed sensor	<ul style="list-style-type: none"> • Right rear speed sensor • Sensor installation • Sensor rotor
C1274 / 74	Low output voltage of left rear speed sensor	<ul style="list-style-type: none"> • Left rear speed sensor • Sensor installation • Sensor rotor
C1275 / 75	Abnormal change in output voltage of right front speed sensor	Right front speed sensor rotor
C1276 / 76	Abnormal change in output voltage of left front speed sensor	Left front speed sensor rotor
C1277 / 77	Abnormal change in output voltage of right rear speed sensor	Right rear speed sensor rotor
C1278 / 78	Abnormal change in output voltage of left rear speed sensor	Left rear speed sensor rotor
C1279 / 79*1	Deceleration sensor is faulty	<ul style="list-style-type: none"> • Deceleration sensor • Sensor installation
C1282 / 82*2	Malfunction of 4WD detecting switch	4WD detecting switch
C1283 / 83*2	Malfunction of L4 detecting switch	L4 detecting switch

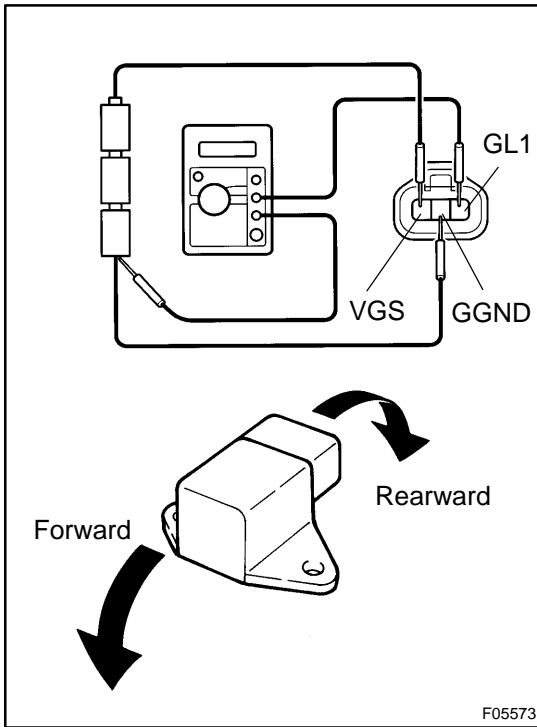
*1: 4WD and pre-runner.

*2: 4WD.

3. DECELERATION SENSOR OPERATION DIAGNOSIS SYSTEM

CAUTION:

While checking the deceleration sensor operating diagnosis system, ABS does not work and brake system works as a conventional brake system.



4. 4WD AND PRE-RUNNER: ABS DECELERATION SENSOR CHECK

- (a) Connect 3 dry batteries of 1.5 V in series.
- (b) Connect VGS terminal to the batteries' positive (+) terminal, and GGND terminal to the batteries' negative (-) terminal, apply about 4.5 V between VGS and GGND terminals.

NOTICE:

Do not apply voltage of 6 V or more to terminals VGS and GGND.

- (c) Check the output voltage of GL1 terminals.

Symbols	Condition	Standard Value
GL1	Horizontal	About 2.3 V
GL1	Lean forward	0.4 V - about 2.3 V
GL1	Lean rearward	About 2.3 V - 4.1 V

HINT:

- If the sensor is tilted too much it may show the wrong value.
- If dropped, the sensor should be replaced with a new one.
- The sensor removed from the vehicle should not be placed upside down.