

PRE-CHECK

1. DIAGNOSIS SYSTEM

- (a) Release the parking brake lever.
- (b) Check the indicator.

When the ignition switch is turned ON, check that the ABS warning light, BRAKE warning light, TRC OFF indicator light and SLIP indicator light go on for 3 seconds.

HINT:

- When the parking brake is applied or the lever of the brake fluid is low, the BRAKE warning light is lit.
- If the indicator check result is not normal, proceed to troubleshooting for the ABS warning light circuit, BRAKE warning light circuit, TRC OFF indicator light circuit and SLIP indicator light circuit.

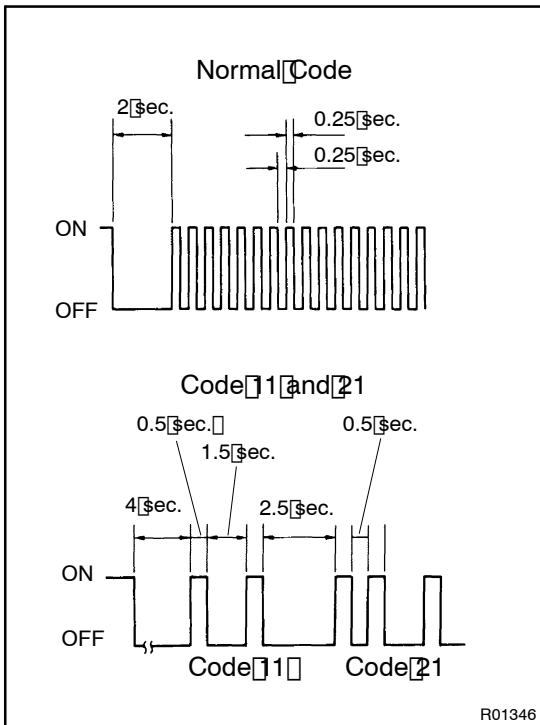
Trouble Area	See page
ABS warning light circuit	DI-303
BRAKE warning light circuit	DI-311
TRC OFF indicator light circuit	DI-306
SLIP indicator light circuit	DI-309

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

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

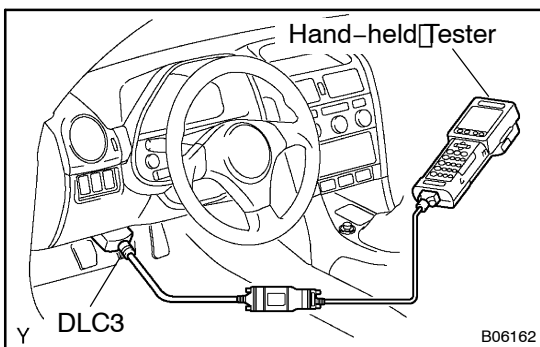
HINT:

- If no code appears, inspect the ABS warning light circuit or TRC OFF indicator light circuit (See page DI-303, DI-306).



- As an example, the blinking patterns for normal code and codes 11 and 21 are shown on the left.

- Codes are explained in the code table on page DI-256.
- After completing the check, disconnect terminals C 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.

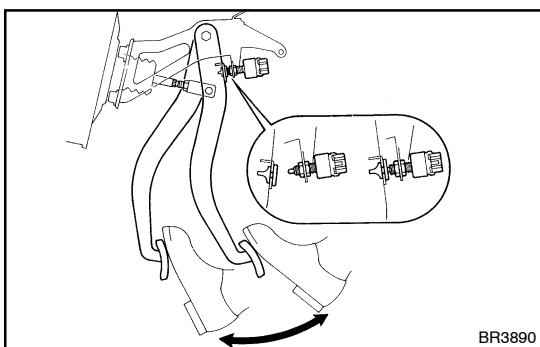


- In case of using hand-held tester: Check the DTC.

- Hook up the hand-held tester to the DLC3.
- Turn the ignition switch ON.
- 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.

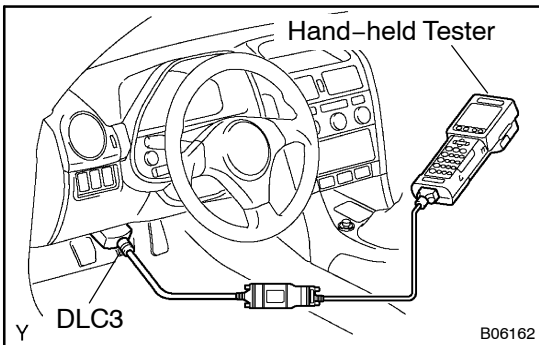


- In case of not using hand-held tester: Clear the DTC.

- Using SST, connect terminals C and CG of DLC3. SST 09843-18040
- Turn the ignition switch ON.
- Clear the DTC stored in ECU by depressing the brake pedal 8 or more times within 5 seconds.
- Check that the warning light shows the normal code.
- Remove the SST from the terminals of DLC3. SST 09843-18040

HINT:

The DTC stored in the ECU will be erased when the battery terminal is disconnected for the troubleshooting.



- (f) 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.)

2. FREEZE FRAME DATA

- (a) The vehicle (sensor) status at the occurrence of abnormality of the diagnosis code and during the ABS operating can be memorized and displayed using the hand-held tester.
- (b) Only one record of freeze frame data is stored, however, freeze frame data during the ABS operating is always up-dated. After the storage of freeze frame data, up to 31 ignition "ON" operations are stored and displayed.

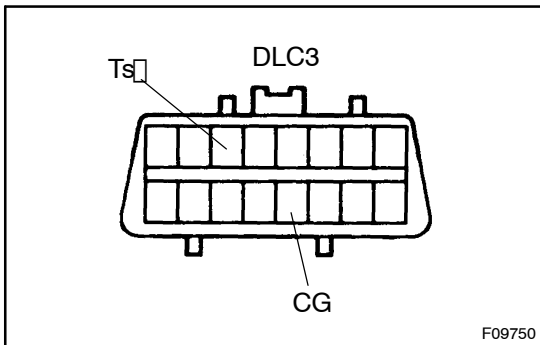
HINT:

If the ignition switch "ON" operation exceeds 31 times, "31" appears on the display.

- (c) If the diagnosis code abnormality occurs, the freeze frame data at the occurrence of the abnormality is stored but the ABS actuation data is deleted.

Hand-held tester display	Measurement Item	Reference Value*
VEHICLE SPD	Vehicle speed	Speed indication of a meter
STOP LIGHT SW	Stop light switch signal	Stop light switch ON: ON, OFF: OFF
# IG ON	Numbers of operations of ignition switch ON after memorizing freeze frame data	0 - 31
MAS CYL PRESS	Master cylinder pressure sensor output voltage	Release brake pedal: 0.3 - 0.9 V Depress brake pedal: 3.2 - 4.5 V
MASS PRESS GRADE	Master cylinder pressure sensor changing declivity	-30 - 200 MPa/s
SYSTEM	Operate system	ABS operate: ABS BA operate: BA
YAW RATE	Yaw rate angle sensor output value	-70 - 70
STEERING ANG	Steering angle sensor output value	Left turn: Increase Right turn: Drop
G (RIGHT & LEFT)	Right and left G	-1.5 - 1.5
G (BACK & FORTH)	Back and forth G	-1.5 - 1.5
VSC / TRC OFF SW	TRAC OFF switch signal	TRAC OFF SW ON: ON OFF: OFF
SHIFT POSITION	Shift lever position	P: P R: R N: N D: D 2: 2 L: L

If no conditions are specifically stated for "Idling", it means the shift lever is at N or P position, the A/C switch is OFF and all accessory switches are OFF.



3. In case of not using hand-held tester: ABS SENSOR SIGNAL CHECK

(a) Procedures for test mode:

- (1) Turn the ignition switch OFF.
- (2) Using SST, connect terminals Ts and CG of DLC3.
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- (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 (See page DI-303).

(b) Check the master cylinder pressure sensor.

- (1) Leaving the vehicle in a stationary condition and the brake pedal in free condition for 1 sec. or more, continue to depress the brake pedal with a force of 98 N (10 kgf, 22 lbf) or more for 1 sec. or more.
- (2) While the vehicle is stopped, release the brake pedal.
- (3) While the vehicle is stopped, quickly depress the brake pedal once or more and check the ABS warning light is lit for 3 sec.

HINT:

Repeat the operation until the ABS warning light is lit.

(c) Check the speed sensor signal.

Drive vehicle straight forward.

Drive vehicle faster than 45 km/h (28 mph) for several seconds.

(d) Stop the vehicle.

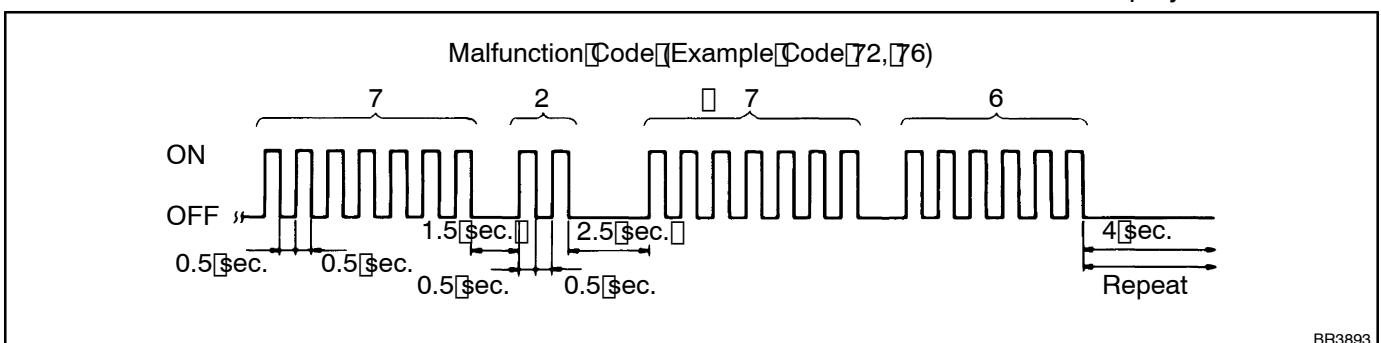
(e) Using SST, connect terminals Tc and CG of DLC3.

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(f) Read the number of blinks of the ABS warning light.

HINT:

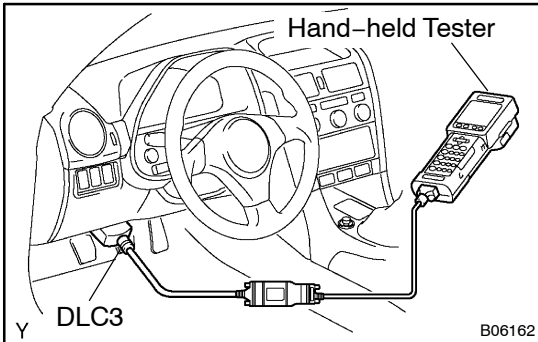
- See the list of DTC shown on the next page.
- If every sensor is normal, a normal code is output (A cycle of 0.25 sec. ON and 0.25 sec. OFF is repeated).
- If 2 or more malfunctions are indicated at the same time, the lowest numbered code will be displayed 1st.



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After doing the check, disconnect the SST from terminals Ts and CG, Tc and CG of DLC3, and turn ignition switch OFF.

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4. In case of using hand-held tester: ABS SENSOR SIGNAL CHECK

Check the speed sensor signal.

- (1) Hook up the hand-held tester to the DLC3.
- (2) Do step (b) to (c) on the previous page and this 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 speed 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 • Right front speed sensor rotor • Right front speed sensor circuit
C1272/72	Low output voltage of left front speed sensor	<ul style="list-style-type: none"> • Left front speed sensor • Sensor installation • Left front speed sensor rotor • Left front speed sensor circuit
C1273/73	Low output voltage of right rear speed sensor	<ul style="list-style-type: none"> • Right rear speed sensor • Sensor installation • Right rear speed sensor rotor • Right rear speed sensor circuit
C1274/74	Low output voltage of left rear speed sensor	<ul style="list-style-type: none"> • Left rear speed sensor • Sensor installation • Left rear speed sensor rotor • Left rear speed sensor circuit
C1275/75	Abnormal change in output voltage of right front speed sensor	<ul style="list-style-type: none"> • Right front speed sensor rotor • Right front speed sensor
C1276/76	Abnormal change in output voltage of left front speed sensor	<ul style="list-style-type: none"> • Left front speed sensor rotor • Left front speed sensor
C1277/77	Abnormal change in output voltage of right rear speed sensor	<ul style="list-style-type: none"> • Right rear speed sensor rotor • Right rear speed sensor
C1278/78	Abnormal change in output voltage of left rear speed sensor	<ul style="list-style-type: none"> • Left rear speed sensor rotor • Left rear speed sensor
C1281/81	Master cylinder pressure sensor output signal is faulty	<ul style="list-style-type: none"> • Master cylinder pressure sensor