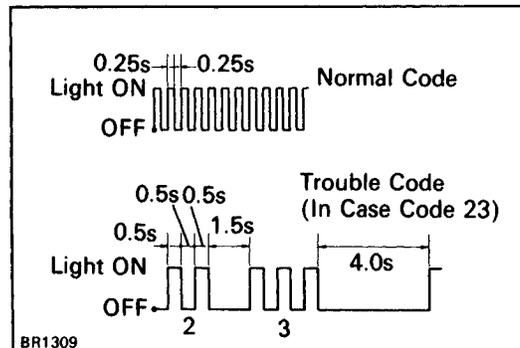


BR3949



BR1309

Diagnosis System

DESCRIPTION

If a malfunction occurs, the system will identify the problem and the ECU will store the codes for the trouble items.

At the same time, the system informs the driver of a malfunction via the "ABS" warning light in the combination meter.

To identify the trouble by the number of blinks (diagnostic trouble code) of the warning light turn on the ignition switch, disconnect the service connector, and use SST to connect Te and E1 of the data link connector 1.

In the event of two codes, that having the smallest number (code) will be identified first.

HINT: The warning light does not show the diagnostic trouble codes while the vehicle is running.

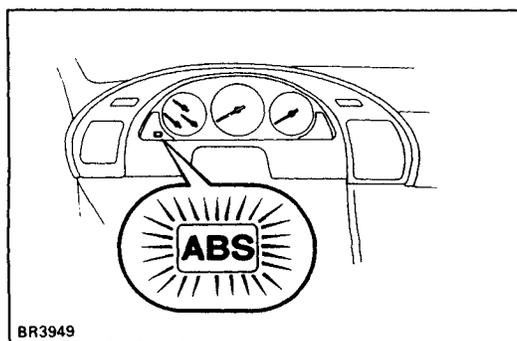
INITIAL CHECK

CHECK ACTUATOR OPERATION NOISE

(a) Start the engine and drive at a speed over 6 km/h (4 mph).

(b) Check that the actuator operation noise is heard.

HINT: A initial check is carried out once each time after the engine has been started and initial speed exceeds 6 km/h (4 mph). The respective functions, in order, of the 3 position solenoid and pump motor in the actuator are checked. However, if the brake pedal is depressed, the initial check is not carried out, but is started after the pedal has been released.



BR3949

INSPECTION OF DIAGNOSIS SYSTEM

1. INSPECT BATTERY POSITIVE VOLTAGE

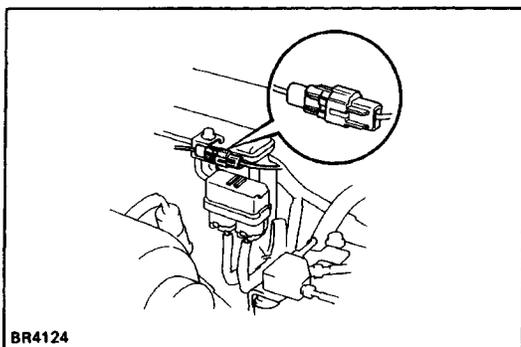
Inspect that the battery positive voltage is about 12 V.

2. CHECK THAT WARNING LIGHT TURNS ON

(a) Turn the ignition switch on.

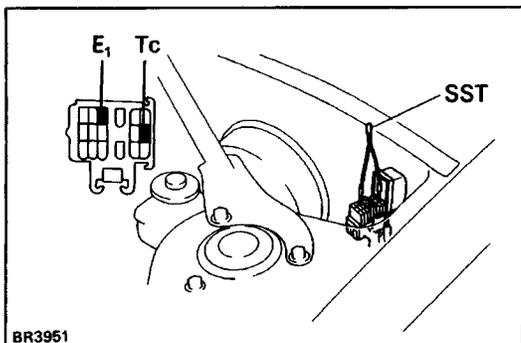
(b) Check that the "ABS" warning light turns on for 3 seconds.

If not, inspect and repair or replace the fuse, bulb and wire harness.

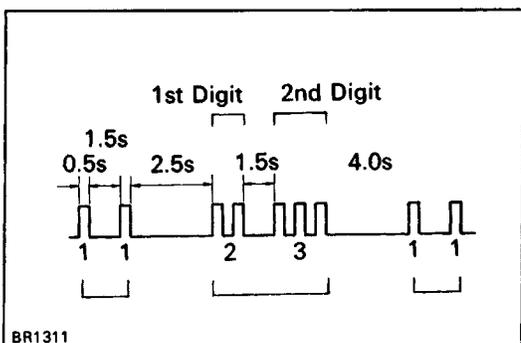


3. READ DIAGNOSTIC TROUBLE CODE

- (a) Turn the ignition switch on.
- (b) Disconnect the service connector.



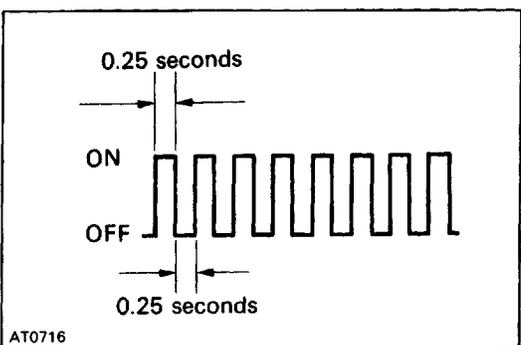
- (c) Using SST, connect terminals Te and E1 of the data link connector 1.
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- (d) In event of a malfunction, 4 seconds later the warning light will begin to blink. Read the number of blinks.

(See DIAGNOSTIC TROUBLE CODE on page BR-60)

HINT: The first number of blinks will equal the first digit of a two digit diagnostic trouble code. After a 1.5 second pause, the 2nd number of blinks will equal the 2nd number of a two digit code. If there are two or more codes, there will be a 2.5 second pause between each, and indication will begin after 4.0 second pause from the smaller value and continue in order to large.

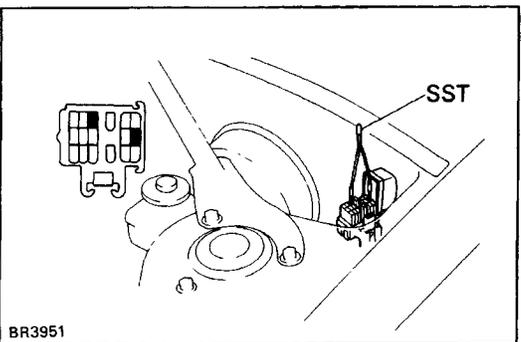


- (e) If the system is operating normally (no malfunction), the warning light will blink once every 0.5 seconds.

- (f) Repair the system.
- (g) After the malfunctioning components has been repaired, clear the diagnostic trouble codes stored in the ECU.

(See page BR-61)

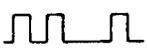
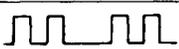
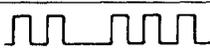
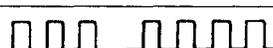
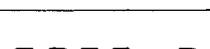
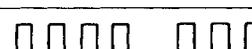
HINT: If you disconnect the battery cable while repairing, all diagnostic trouble codes in the ECU will erased.



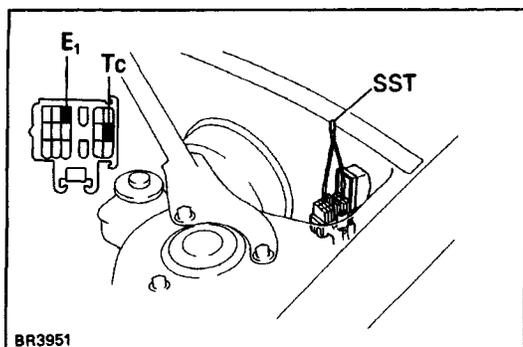
- (h) Remove the SST from terminals Te and E1 of the data link connector 1.

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- (i) Connect the service connector.
- (j) Turn the ignition switch on, and check that the "ABS" warning light goes off after the warning light goes on for 3 seconds.

Code No.	Light Pattern	Diagnosis	Trouble Part
11		Open circuit in control relay circuit	-Actuator inside wire harness -Control relay
12		Short circuit in control relay circuit	-Wire harness and connector of control relay circuit
13		Open circuit in control relay circuit	-Actuator inside wire harness -Control relay
14		Short circuit in control relay circuit	-Wire harness and connector of control relay circuit
21		Open or short circuit in 3 position solenoid of front right wheel	-Actuator solenoid -Wire harness and connector of actuator solenoid circuit
		Open or short circuit in 3 position solenoid of front left wheel	
		Open or short circuit in 3 position solenoid of rear right wheel	
		Open or short circuit in 3 position solenoid of rear left wheel	
31		Front right wheel speed sensor signal malfunction	-Speed sensor -Sensor rotor -Wire harness and connector of speed sensor
		Front left wheel speed sensor signal malfunction	
		Rear right wheel speed sensor signal malfunction	
		Rear left wheel speed sensor signal malfunction	
		Open circuit in front left or rear right wheel speed sensor	
		Open circuit in front right or rear left wheel speed sensor	
		Wrong both rear axle hubs	-Rear sensor rotors
41		Abnormal battery positive voltage (9.5 V less than or 16.2 V more than)	-Battery -Voltage regulator
		Malfunction in deceleration sensor	-Deceleration sensor -Deceleration sensor installation -Wire harness and connector of deceleration sensor
		Open or short circuit in deceleration sensor	
51		Pump motor of actuator locked or open circuit in pump motor circuit in actuator	-Pump motor, relay and battery -Wire harness, connector and ground bolt or actuator pump motor circuit
		Malfunction in ECU	-ECU

*: For 2WD * : For 4WD



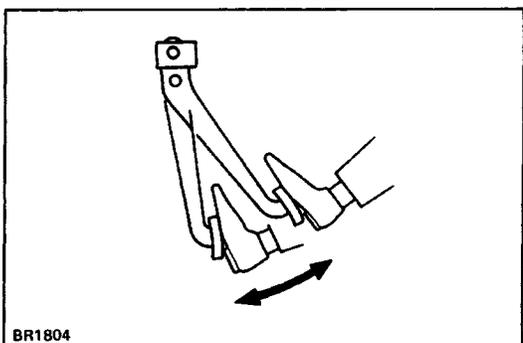
CLEARING OF DIAGNOSTIC TROUBLE CODES

CLEAR DIAGNOSTIC TROUBLE CODES

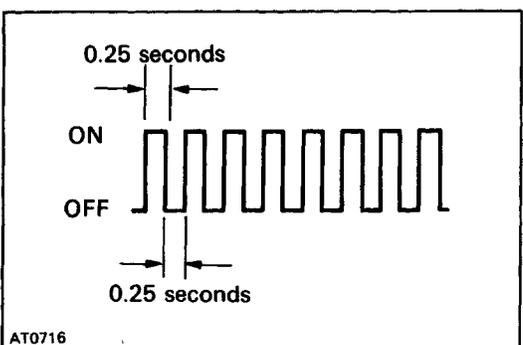
- (a) Turn the ignition switch on.
 (b) Using SST, connect terminals Tc and E1 of the data link connector 1.

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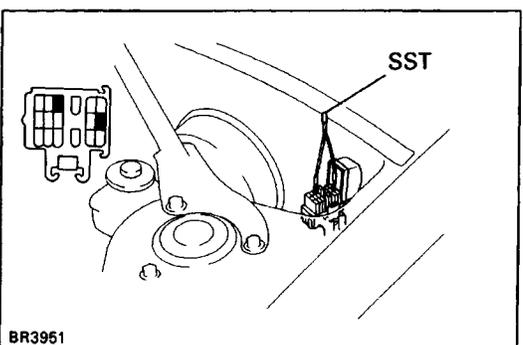
HINT: Keep the vehicle stopped vehicle speed 0 km/h (0 mph).



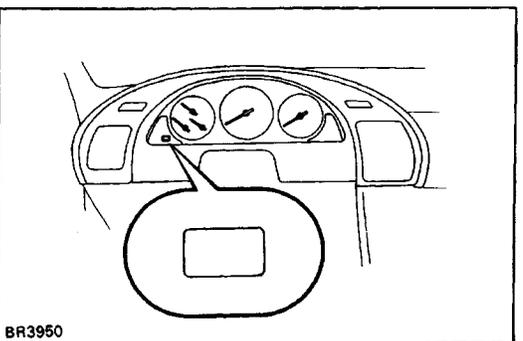
- (e) Clear the diagnostic trouble codes stored in ECU by depressing the brake pedal 8 or more times within 3 seconds.



- (d) Check that the warning light shows the normal code.



- (e) Remove the SST from terminals Tc and E1 of the data link connector 1.
 SST 09843-18020



- (f) Check that the warning light goes off.