

PRE-CHECK

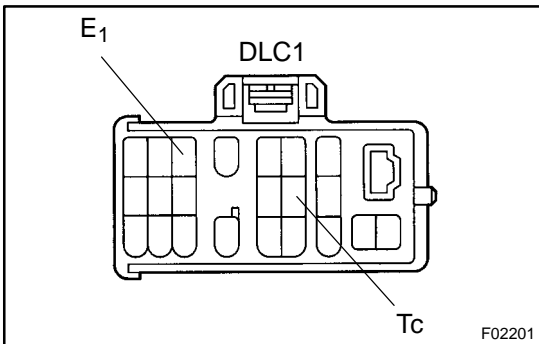
1. DIAGNOSIS SYSTEM

(a) Check the indicator.

When the ignition switch is turned ON, check that the VSC warning light, VSC OFF indicator light and SLIP indicator light goes ON for 3 seconds.

HINT:

- If the ECU stores DTC, VSC warning light and VSC OFF indicator light is ON.
- If the indicator check result is not normal, proceed to troubleshooting for the VSC warning light circuit, VSC OFF indicator light circuit, and SLIP indicator light circuit (See page [DI-706](#) , [DI-708](#) , [DI-711](#)).



(b) In case of not using LEXUS hand-held tester:

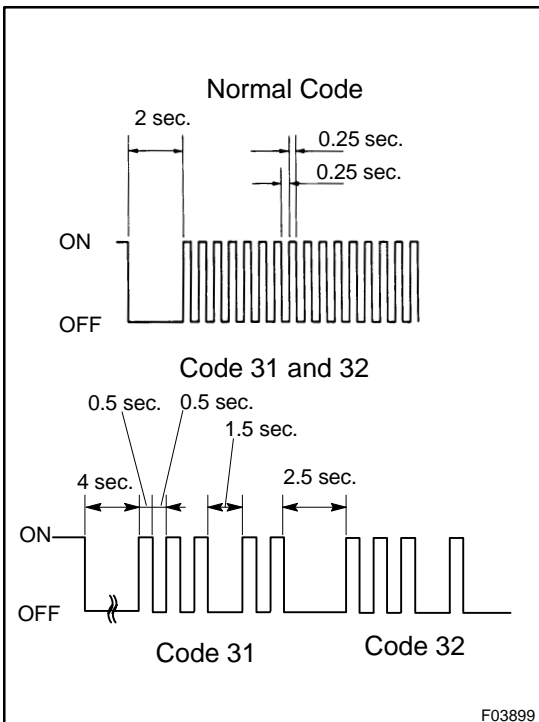
Check the DTC

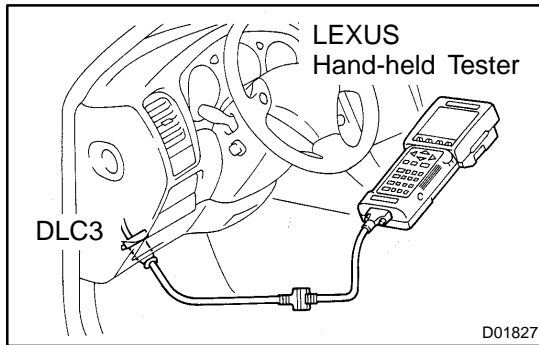
- (1) Using SST, connect terminals Tc and E₁ of DLC1.
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- (2) Turn the ignition switch ON.
- (3) Read the DTC from the VSC warning light on the combination meter.

HINT:

- If no code appears, inspect the diagnostic circuit or VSC warning light circuit (See page [DI-665](#) or [DI-706](#)).
- As an example , the blinking patterns for normal code and code 31 and 32 are shown on the left.
- (4) Codes are explained in the code table on page [DI-677](#) .
- (5) After completing the check, disconnect terminals Tc and E₁ of DLC1 and turn OFF the display.

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

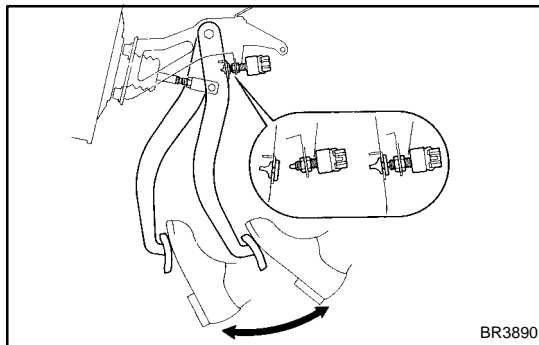




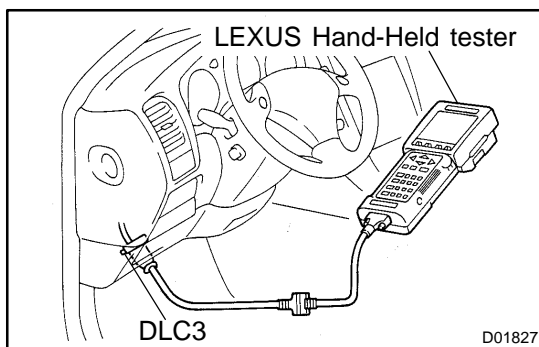
- (c) In case of using LEXUS hand-held tester:
Check the DTC.
- (1) Hook up the LEXUS hand-held tester to the DLC3.
 - (2) Turn the ignition switch ON.
 - (3) Read the DTC by following the prompts on the tester screen.

HINT:

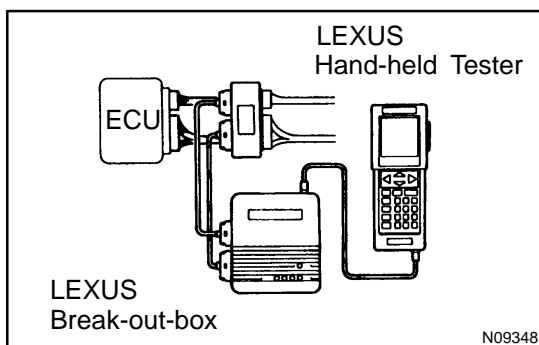
Please refer to the LEXUS hand-held tester operator's manual for further details.



- (d) In case of not using LEXUS hand-held tester:
Clear the DTC.
- (1) Using SST, connect terminals Tc and E₁ of DLC1.
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 - (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 DLC1.
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- (e) In case of using LEXUS hand-held tester:
Clear the DTC.
- (1) Hook up the LEXUS hand-held tester to the DLC3.
 - (2) Turn the ignition switch ON.
 - (3) Operate the LEXUS hand-held tester to erase the codes.
(See LEXUS hand-held tester operator's manual.)



- (f) Reference:
Using LEXUS break-out-box and LEXUS hand-held tester, measure the ECU terminal values.
- (1) Turn the ignition switch OFF.
 - (2) Hook up the LEXUS break-out-box and LEXUS 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:

- LEXUS 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 LEXUS hand-held tester/LEXUS break-out-box operator's manual for further details.

HINT:

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

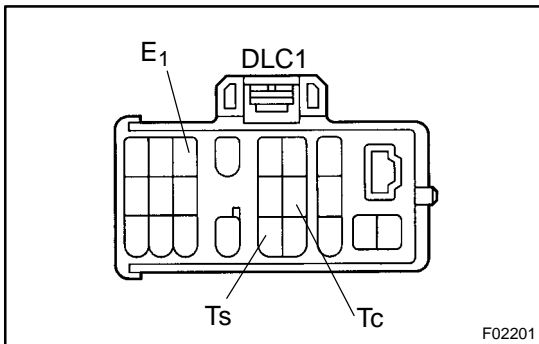
**2. In case of not using LEXUS hand-held tester:
VSC SENSOR CHECK (TEST MODE)**

NOTICE:

When having replaced the yaw rate sensor, deceleration sensor and/or ECU, perform zero point calibration of the yaw rate and deceleration sensors (See step 4.).

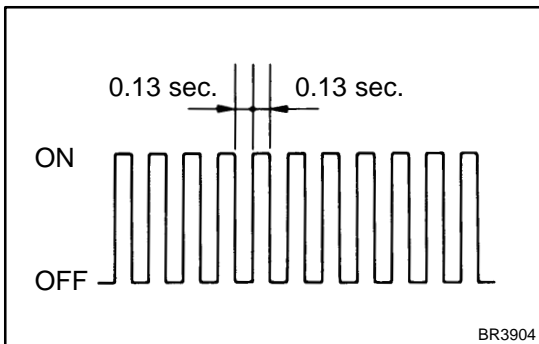
HINT:

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



(a) Procedures for test mode:

- (1) Turn the ignition switch OFF.
- (2) Check that the shift lever position is at P position, turn the steering wheel to the neutral position.
- (3) Using SST, connect terminals Ts and E₁ of DLC1.
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- (4) Start the engine.



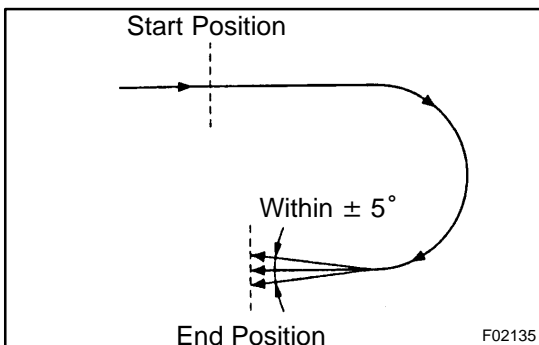
- (5) Check that the VSC warning light blinks.

HINT:

If the VSC warning light does not blink, inspect the VSC warning light circuit and Ts terminal circuit (See page [DI-667](#) and [DI-706](#)).

(b) Check the steering angle sensor.

Turn the steering wheel either to left or right for 450° or more from the vehicle stationary condition, and turn back the steering wheel to the straight ahead position.



(c) Check the yaw rate sensor.

Shift the shift lever to the D position and drive the vehicle at the vehicle speed of approx. 5 km/h (3 mph), turn the steering wheel either to left or right for 90° or more, and maintain 180° circular drive for the vehicle.

Stop the vehicle and shift the shift lever to the P position, check that the VSC buzzer sounds for 3 sec.

If the VSC buzzer sounded, the sensor check is in normal completion.

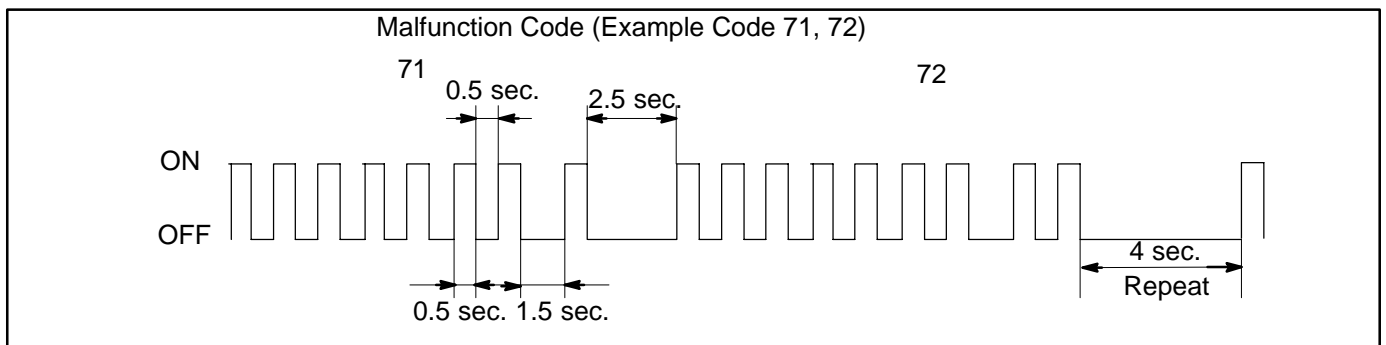
If the VSC buzzer does not sound, do the sensor check again. If the VSC buzzer still won't sound, there is malfunction in the VSC sensor, so check the DTC.

HINT:

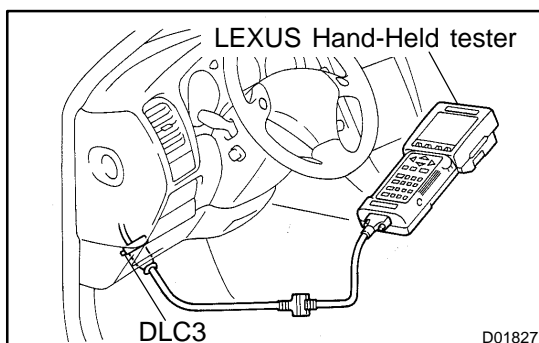
- Drive the vehicle circularly by 180°. At the end of the turn, the direction of the vehicle should be within $180^\circ \pm 5^\circ$ of its start position.
 - Do not spin the wheels.
- (d) Read the DTC.
- (1) Using SST, connect terminals Tc and E₁ of DLC1.
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 - (2) Read the number of blinks of the VSC 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.



- (3) After doing the check, disconnect the SST from terminals of DLC1 and turn ignition switch OFF.
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3. In case of using LEXUS hand-held tester: CHECK VSC SENSOR SIGNAL

NOTICE:

When having replaced the yaw rate sensor, deceleration sensor and/or ECU, perform zero point calibration of the yaw rate and deceleration sensors (See step 7.). Make sure that this operation should be done before starting the following.

- (a) Hook up the LEXUS hand-held tester to the DLC3.

- (b) Do steps (a)-(2) and from (a)-(4) to (c) on the previous page.
- (c) Read the DTC by following the prompts on the tester screen.

HINT:

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

DTC of the VSC sensor check function:

Code No.	Diagnosis	Trouble Area
C0371 / 71	Yaw rate sensor output signal malfunction	<ul style="list-style-type: none"> • Yaw rate sensor • Yaw rate sensor circuit
C1208 / 72	Steering position sensor output signal malfunction	<ul style="list-style-type: none"> • Steering position sensor • Steering position sensor circuit

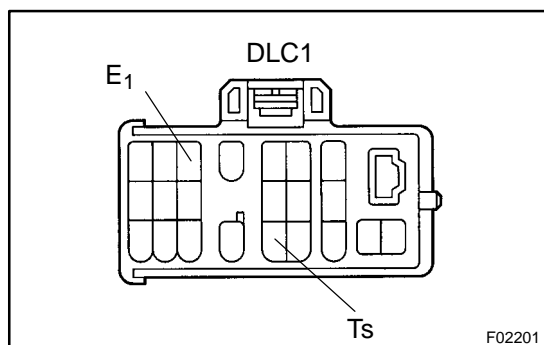
4. IF NECESSARY, PERFORM ZERO POINT CALIBRATION OF YAW RATE AND DECELERATION SENSORS

HINT:

- When having replaced the yaw rate sensor, deceleration sensor or/and the ECU, make sure to perform yaw rate and deceleration sensors zero point calibration.
- This operation is also required when the deceleration sensor or yaw rate sensor has been replaced since the calibrated zero point of both sensors will be erased.

NOTICE:

- **While obtaining the zero point, do not give any vibration to the vehicle by tilting, moving or shaking it and keep it in a stationary condition. (Do not start the engine.)**
 - **Be sure to do this on a level surface (within an inclination of 1 %).**
- (a) Clear the zero point of the yaw rate and deceleration sensors.
 - (1) Shift the shift lever to P range.
 - (2) Turn the ignition switch ON in a stationary condition.



- (3) With the ignition switch ON, using SST, repeat a cycle of short and open between terminals Ts and E₁ of DLC1 4 times or more within 8 sec. Check that the VSC warning light is lit indicating the recorded zero point is erased.

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- (4) Turn the ignition switch OFF.
- (b) Obtain zero point of the yaw rate sensor.
 - (1) Make the terminals Ts and E₁ of DLC1 disconnected.

- (2) Turn the ignition switch ON.

HINT:

The vehicle should be in a stationary condition with the shift lever in P range.

- (3) Check that the lighted VSC warning light goes off about 15 sec. after the ignition switch is turned ON.

HINT:

Even if the ignition is not turned OFF in step (a)-(4) and remains ON, the yaw rate sensor zero point calibration can be completed. In this case, the VSC warning light is lit about 15 sec. and starts blinking. (Normal code)

- (4) After ensuring that the VSC warning light remains OFF for 2 sec., turn the ignition switch OFF.

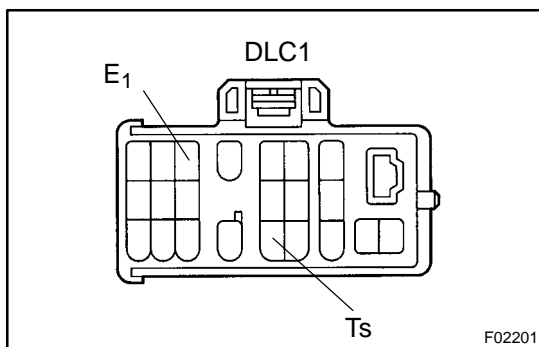
HINT:

If the ignition switch is not turned OFF in step (a)-(4), ensure the blinking light for 2 sec. and turn the ignition switch OFF.

- (c) Perform deceleration sensor zero point calibration.

NOTICE:

After step (b) (the yaw rate sensor zero point calibration), the VSC warning light goes off. At this time, if the vehicle is driven without performing step (c) (deceleration sensor zero point calibration), deceleration sensor zero point calibration malfunction will be detected and the VSC warning light will light up. Therefore, perform step (c) right after step (b).



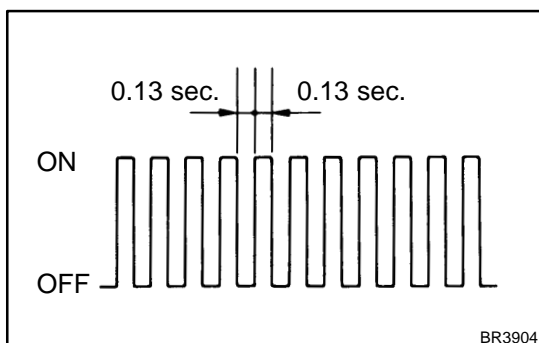
- (1) Using SST, connect the terminals Ts and E₁ of DLC1.

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- (2) Turn the ignition switch ON.

HINT:

Make the vehicle in a stationary condition with the shift lever in P range.



- (3) After turning the ignition switch ON, check that the VSC warning light is lit for about 4 sec. and then starts quick blinking at 0.13 sec. intervals.

- (4) After ensuring the blinking of the VSC warning light for 2 sec., turn the ignition switch OFF.

- (5) Remove the SST and make the terminals Ts and E₁ of DLC1 disconnected.

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