

PRE-CHECK

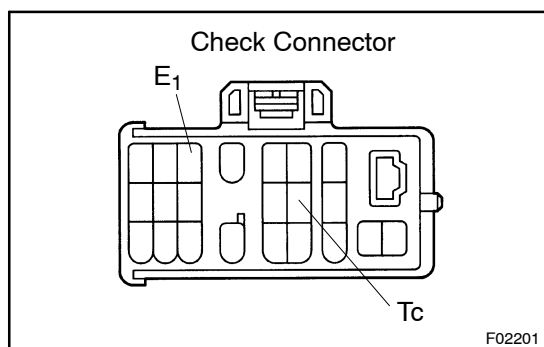
1. DIAGNOSIS SYSTEM

(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 Pub. No. RM588E on page DI-342, DI-344 and DI-347).



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

Check the DTC.

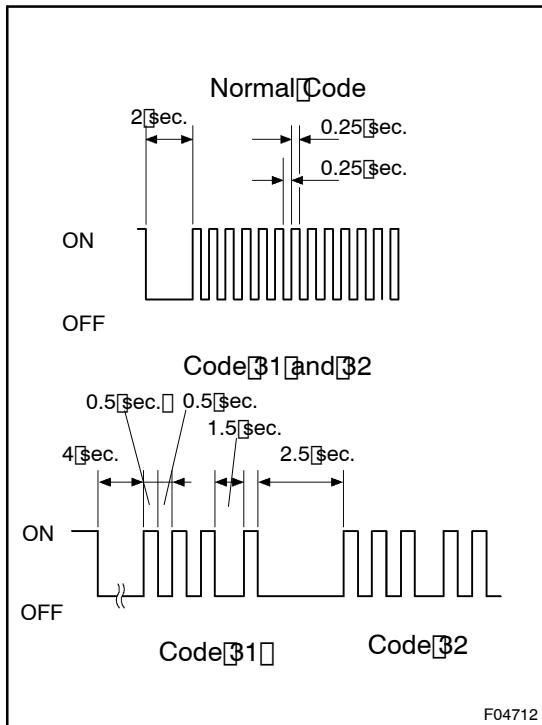
- (1) Using SST, connect terminals Tc and E₁ of check connector.

SST 09843-18020

- (2) Turn the ignition switch ON.
- (3) Read the DTC from the VSC warning light on the combination meter.

HINT:

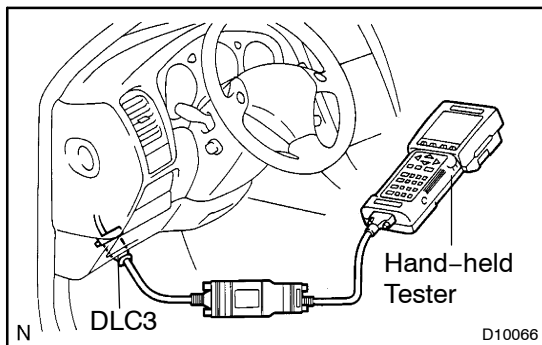
- If no code appears, inspect the diagnostic circuit or VSC warning light circuit (See page DI-352 or See Pub. No. RM588E on page DI-342).



- As an example, the blinking patterns for normal code and code 31 and 32 are shown on the left.

- Codes are explained in the code table on [page DI-362](#).
- After completing the check, disconnect terminals Tc and E₁ of check connector, and turn OFF the display.

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

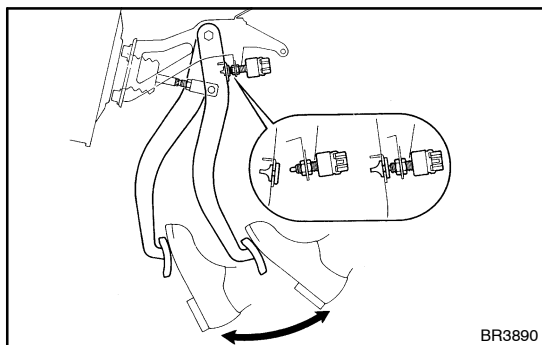


- In case of using hand-held tester:
Check the DTC.

- 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.



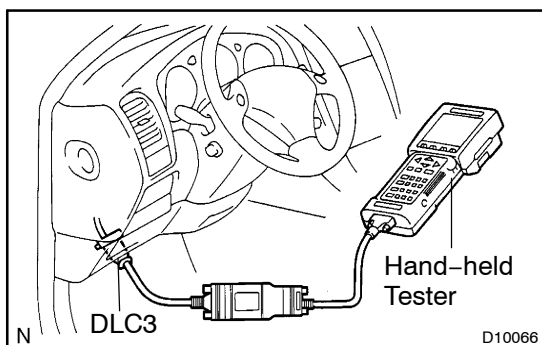
- In case of not using hand-held tester:
Clear the DTC.

- Using SST, connect terminals Tc and E₁ of check connector.

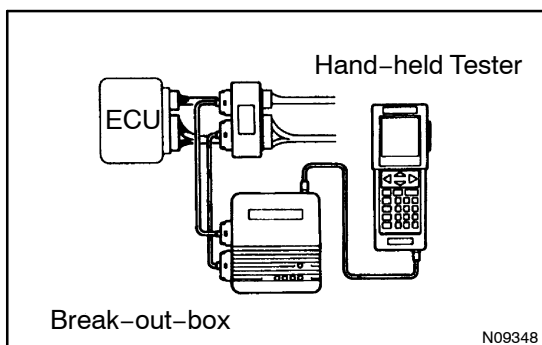
SST 09843-18020

- 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 check connector.

SST 09843-18020



- (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. VSC SENSOR CHECK (TEST MODE)

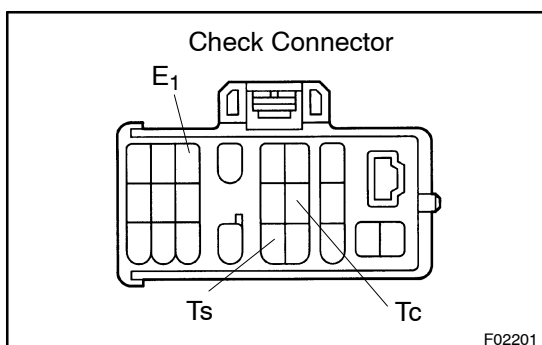
NOTICE:

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 3.).

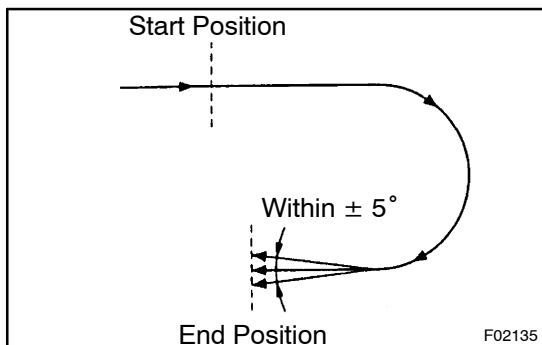
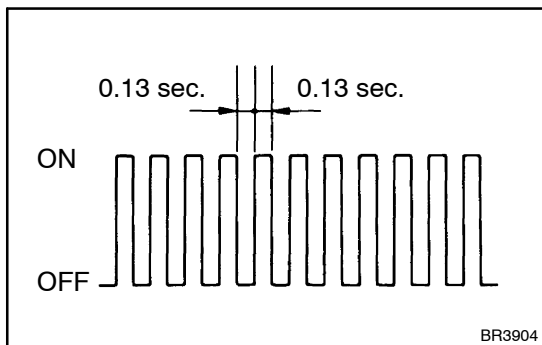
HINT:

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 VSC sensor signal.
- (1) Turn the ignition switch OFF.
 - (2) Check that the shift lever position is at P range, turn the steering wheel to the neutral position.



- (3) Using SST, connect terminals Ts and E₁ of check connector.
- SST 09843-18020
- (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 Pub. No. RM588E on page DI-303 and DI-342).

- (6) 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.

- (7) Check the yaw rate sensor.

Shift the shift lever to the D range 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 range, 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° ± 5° of its start position.
- Do not spin the rear wheels.

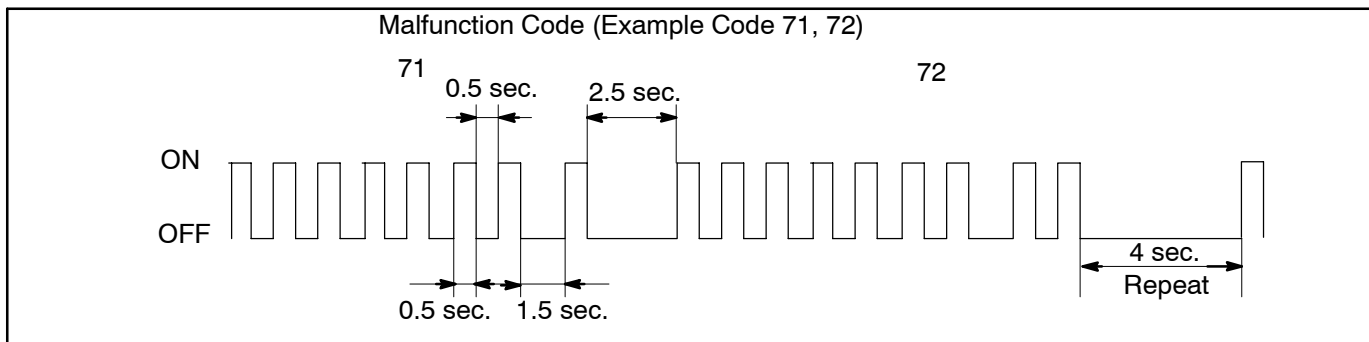
- (8) Using SST, connect terminals Tc and E₁ of check connector.

SST 09843-18020

- (9) Read the number of blinks of the VSC warning light.

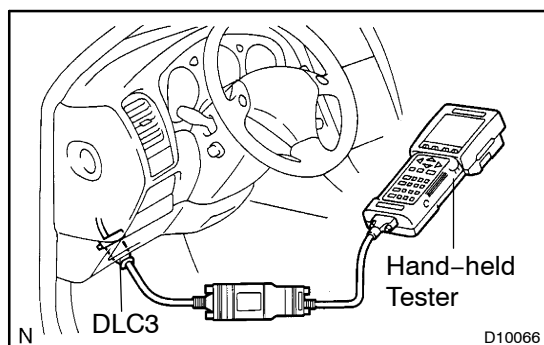
HINT:

- See the list of DTC shown on step 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.



- (10) After doing the check, disconnect the SST from terminals of check connector, and turn ignition switch OFF.

SST 09843-18020



- (b) In case of using hand-held tester:
Check the VSC sensor signal.
- (1) Hook up the hand-held tester to the DLC3.
 - (2) Do steps (a)–(2) and (4) – (7) (See 2 pages before).
 - (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 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

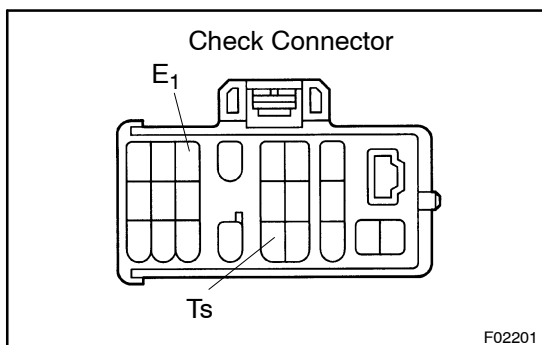
3. IF NECESSARY, PERFORM ZERO POINT CALIBRATION OF YAW RATE AND DECELERATION SENSORS

HINT:

- When having replaced the yaw rate sensor, deceleration sensor or the ECU, make sure to perform yaw rate and deceleration sensors' zero point calibration. Be sure to complete this step 3. once it is started.
- During step 3., a not-replaced sensor also requires zero point calibration.

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 points 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 lit switch ON, using SST, repeat a cycle of short and open between terminals Ts and E₁ of check connector 4 times or more within 8 sec. Check that the VSC warning light is lit indicating the recorded zero point is erased.

SST 09843-18020

- (4) Turn the ignition switch OFF.
- (b) Obtain zero point of the yaw rate sensor.
 - (1) Make the terminals Ts and E₁ of check connector 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 lit 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 for about 15 sec. and then starts blinking. (Normal code)

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

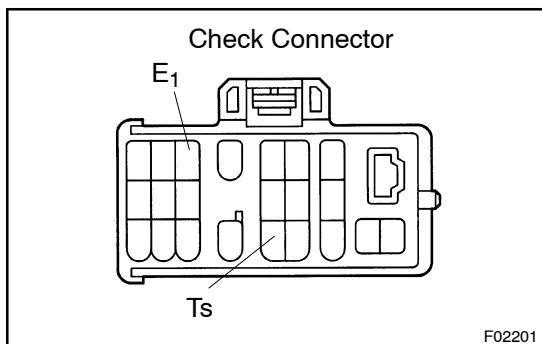
HINT:

If the ignition switch is not turned OFF in step (a)–(4), make sure that the VSC warning light blinks for 2 sec. Then 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).



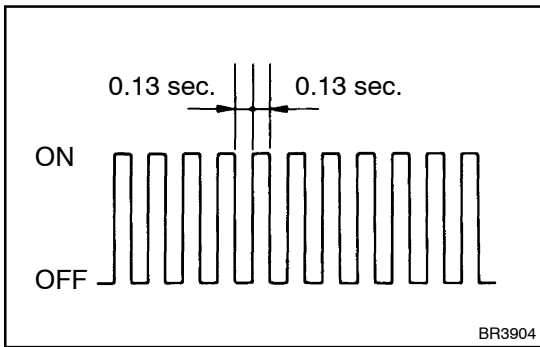
- (1) Using SST, connect the terminals Ts and E₁ of check connector.

SST 09843-18020

- (2) Turn the ignition switch ON.

HINT:

Place 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 check connector disconnected.

SST 09843-18020