| DTC | C1247/47 | MALFUNCTION IN STROKE SENSOR |
|---|---|---|

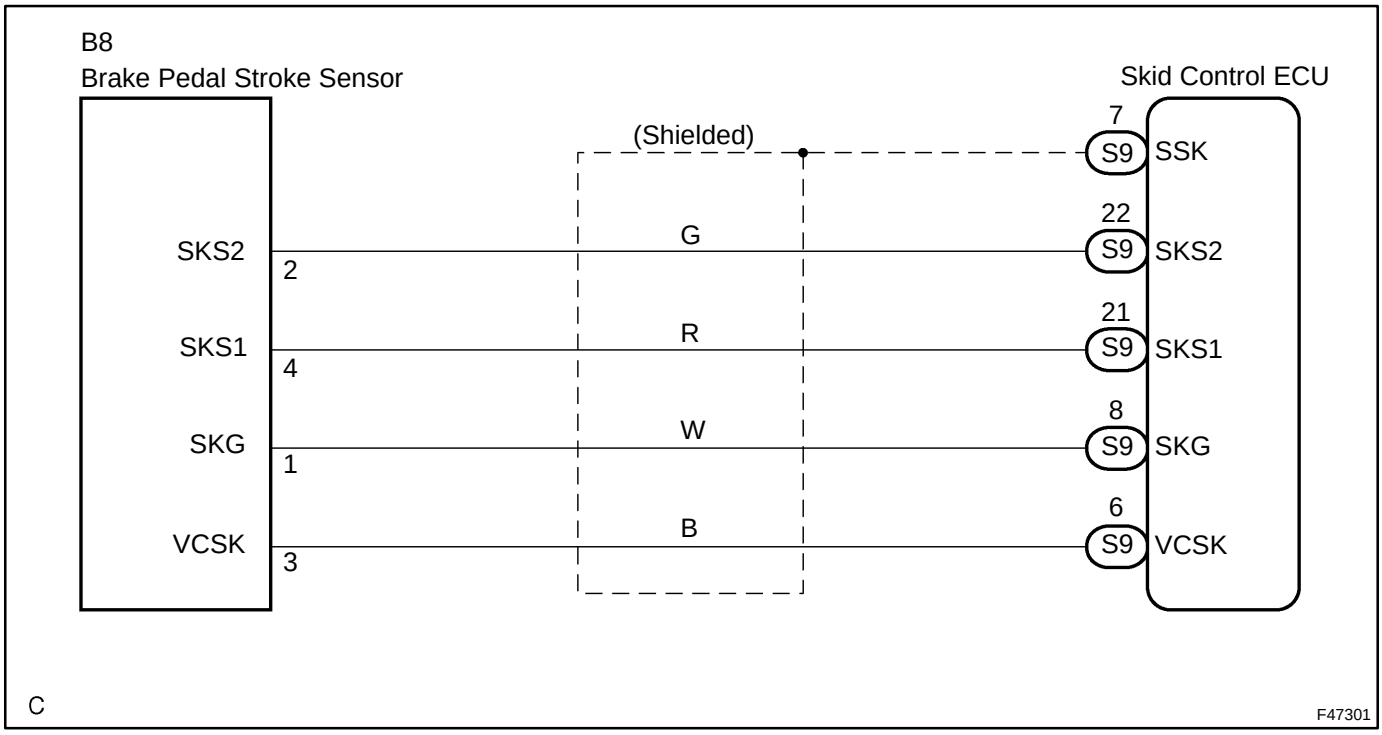
| DTC | C1392/48 | UN–CORRECTION OF A ZERO POINT OF THE STROKE SENSOR |
|---|---|---|

## CIRCUIT DESCRIPTION

The stroke sensor inputs the pedal stroke into the skid control ECU.

| DTC No. | Detailed Code | DTC Detecting Condition | Trouble Area |
|---|---|---|---|
| C1247/47 | 171 | Sensor power source voltage (VCSK) is 3.6 V or less or 4.95 V or more for at least 1.2 sec. | • Brake pedal stroke sensor<br>• Skid control ECU<br>• Harness and connector |
| C1247/47 | 172 | Ratio of sensor output voltage 1 (SKS1) to sensor power source voltage (VCSK) is less than 3% or 97% or more for at least 1.2 sec. | • Brake pedal stroke sensor<br>• Skid control ECU<br>• Harness and connector |
| C1247/47 | 173 | Ratio of sensor output voltage 2 (SKS2) to sensor power source voltage (VCSK) is less than 3% or 97% or more for at least 1.2 sec. | • Brake pedal stroke sensor<br>• Skid control ECU<br>• Harness and connector |
| C1247/47 | 174 | Sensor output 1 (SKS1) calculation value becomes 20 mm or more for at least 1.2 sec. at an interval of 0.006 sec. (changes due to interference). | • Brake pedal stroke sensor<br>• Skid control ECU<br>• Harness and connector |
| C1247/47 | 175 | Sensor output 2 (SKS2) calculation value becomes 20 mm or more for at least 1.2 sec. at an interval of 0.006 sec. (changes due to interference). | • Brake pedal stroke sensor<br>• Skid control ECU<br>• Harness and connector |
| C1247/47 | 176 | Zero point stored value (ratio to power source voltage) of sensor output 1 (SKS1) is 0.46 or more or 0.03 or less. | • Brake pedal stroke sensor<br>• Skid control ECU<br>• Harness and connector |
| C1247/47 | 177 | Zero point stored value (ratio to power source voltage) of sensor output 2 (SKS2) is 0.97 or more or 0.48 or less. | • Brake pedal stroke sensor<br>• Skid control ECU<br>• Harness and connector |
| C1247/47 | 179 | • Sum of SKS1/VSCK and SKS2/VSCK is 1.155 or more or 0.845 or less for at least 1 sec.<br>• Difference between sensor output 1 (SKS1) and sensor output 2 (SKS2) is excessively large for at least 0.2 sec. | • Brake pedal stroke sensor<br>• Skid control ECU<br>• Harness and connector |
| C1247/47 | 180 | • Difference between zero point output value and stored value is 0.5 or more for at least 0.05 sec.<br>• Short between SKS1 and SKS2 output line. | • Brake pedal stroke sensor<br>• Skid control ECU<br>• Harness and connector |
| C1392/48 | 178 | Zero point calibration of stroke sensor is unfinished. | • Brake pedal stroke sensor zero point calibration undone (initialization of linear solenoid valve and calibration undone)<br>• Skid control ECU |

## WIRING DIAGRAM



## INSPECTION PROCEDURE

| 1 | CHECK BRAKE PEDAL |
|---|---|

(a) Check that the brake pedal and the brake pedal stroke sensor are properly installed and that the pedal can be operated normally.
(b) Check the brake pedal height.
**OK:**
- **The brake pedal is securely installed.**
- **The pedal height is within the specified range (see page 32–16).**

**NG** → **ADJUST BRAKE PEDAL (SEE PAGE 32–16)**

**OK**

| 2 | READ VALUE OF HAND–HELD TESTER |
|---|---|

(a) Connect the hand–held tester to the DLC3.
(b) Turn the power switch ON (READY).
(c) Select the DATA LIST mode on the hand–held tester.

| Item | Measurement Item / Range (Display) | Normal condition |
|---|---|---|
| PEDAL STROKE | Stroke sensor / min.:0 V, max.: 5 V | When brake pedal is released: 0.7 to 1.3 V |
| PEDAL STROKE 2 | Stroke sensor 2 / min.: 0 V, max.: 5 V | When brake pedal is released: 3.7 to 4.3 V |

(d) Read the pedal stroke sensor voltage value on the hand–held tester screen.
**OK:**
**The Normal condition value displayed on the hand–held tester.**

**NG** → **ADJUST BRAKE PEDAL STROKE SENSOR ASSY**

**OK**

| 3 | PERFORM INITIALIZATION OF LINEAR SOLENIOID VALVE AND CALIBRATION (SEE PAGE 05–958) |
|---|---|

**NEXT**

| 4 | RECONFIRM DTC |
|---|---|

(a) Clear the DTCs (see page 05–975).
(b) Turn the power switch ON (READY).
(c) Check the same DTCs are recorded.
**Result:**

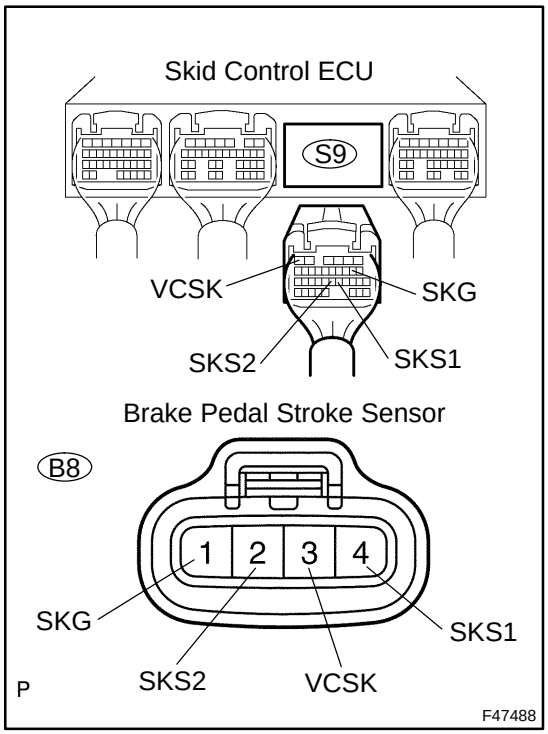
| | |
|---|---|
| DTC is output | A |
| DTC is not output | B |

**B** → **END**

HINT:
This DTC may be memorized due to a malfunction in the connector terminal connection, etc.

**A**

| 5 | CHECK HARNESS AND CONNECTOR(SKID CONTROL ECU – BRAKE PEDAL STROKE SENSOR) |
|---|---|




(a) Disconnect the skid control ECU connector and brake pedal stroke sensor connector.
(b) Measure the resistance according to the value(s) in the table below.
**Standard:**

| Tester Connection | Specified Condition |
|---|---|
| S9–6 (VCSK) – B8–3 (VCSK) | Below 1 Ω |
| S9–8 (SKG) – B8–1 (SKG) | Below 1 Ω |
| S9–21 (SKS1) – B8–4 (SKS1) | Below 1 Ω |
| S9–22 (SKS2) – B8–2 (SKS2) | Below 1 Ω |

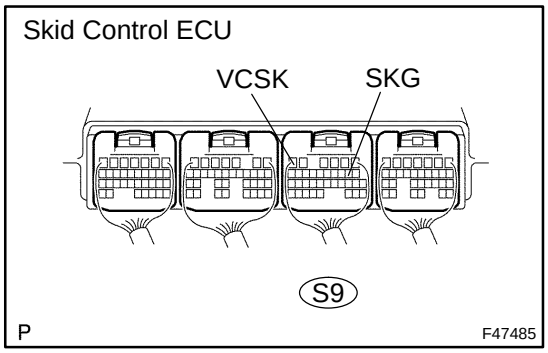
(c) Measure the resistance according to the value(s) in the table below.
**Standard:**

| Tester Connection | Specified Condition |
|---|---|
| S9–6 (VCSK) – Body ground | 10 kΩ or higher |
| S9–8 (SKG) – Body ground | 10 kΩ or higher |
| S9–21 (SKS1) – Body ground | 10 kΩ or higher |
| S9–22 (SKS2) – Body ground | 10 kΩ or higher |

**NG** → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

**OK**

## 6 INSPECT SKID CONTROL ECU TERMINAL VOLTAGE(VCSK, SKG TERMINAL)




(a) Measure the voltage according to the value(s) in the table below.

HINT:

Measure the voltage from behind the connector with the connector connected to the skid control ECU.

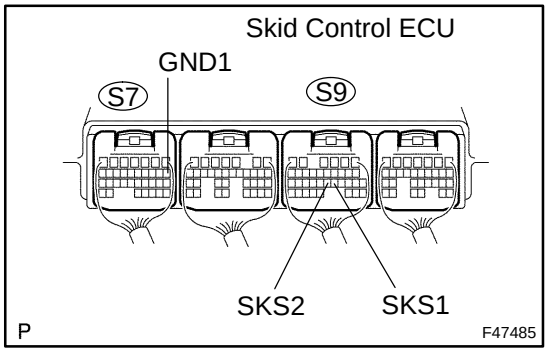
**Standard:**

| Tester Connection | Specified Condition |
|---|---|
| S9–6 (VCSK) – S9–8 (SKG) | 3.6 to 4.95 V |

**NG** → **REPLACE SKID CONTROL ECU ASSY (SEE PAGE 32–68)**

**OK**

## 7 INSPECT SKID CONTROL ECU TERMINAL VOLTAGE(SKS1, SKS2 TERMINAL)




(a) Measure the voltage according to the value(s) in the table below.

HINT:

- Measure the voltage from behind the connector with the connector connected to the skid control ECU.
- Slowly depress the brake pedal and check if the voltage between the skid control ECU terminal changes in accordance with the pedal operation.

**Standard:**

| Tester Connection | Specified Condition |
|---|---|
| S9–21 (SKS1) – S7–1 (GND1) | 1.8 to 3.1 V |
| S9–22 (SKS2) – S7–1 (GND1) | 1.8 to 3.1 V |

**NG** → **REPLACE BRAKE PEDAL STROKE SENSOR ASSY**

**OK**

**REPLACE SKID CONTROL ECU ASSY(SEE PAGE 32–68)**

**NOTICE:**

**When replacing the skid control ECU assy, perform initialization of linear solenoid valve and calibration (see page 05–958).**