DTC	C1231/31	MALFUNCTION IN STEERING ANGLE SENSOR

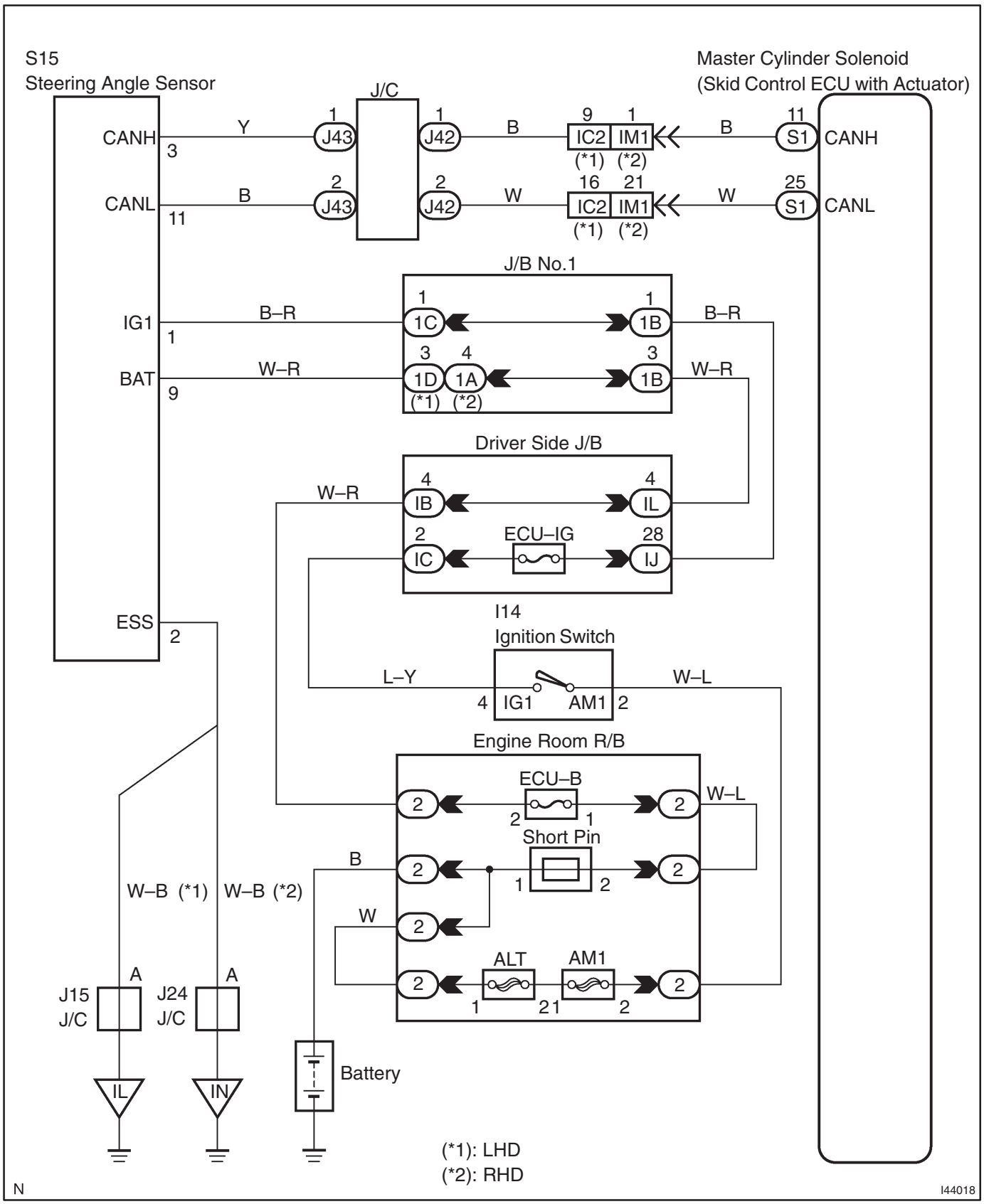
DTC	C1290/66	MALFUNCTION IN ZERO POINT OF STEERING SENSOR

CIRCUIT DESCRIPTION

The steering angle sensor signal is sent to the skid control ECU through the CAN communication system. When there is a malfunction in the communication system, it will be detected by the diagnosis function.

DTC No.	DTC Detection Condition	Trouble Area
C1231/31	When ECU IG1 terminal voltage is 9.5 V or more, the steering angle sensor malfunction signal is received.	• Steering angle sensor • Steering angle sensor circuit • Steering angle sensor power supply • CAN communication system
C1290/66	The steering angle sensor zero point calibration position vastly differs from the recorded value.	Steering angle sensor

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

When replacing the master cylinder solenoid, perform zero point calibration (see page 05–744).

HINT:

- When U0073/94, U0100/65, U0123/62, U0124/95 or U0126/63 is output together with C1231/31 and C1290/66, inspect and repair the trouble areas indicated by U0073/94, U0100/65, U0123/62, U0124/95 or U0126/63 first.
- When the speed sensor or the yaw rate and deceleration sensor has trouble, DTCs of the steering angle sensor may be output even when the steering angle sensor is normal. When DTCs of the speed sensor (C0200/31, C0205/32, C0210/33, C0215/34, C1235/35, C1236/36, C1238/38, C1239/39) or yaw rate and deceleration sensor (C1232/32, C1234/34, C1243/43, C1244/44, C1245/45, C1381/97) are output together with other DTCs of the steering angle sensor, inspect and repair the speed sensor and yaw rate and deceleration sensor first, and then inspect and repair the steering angle sensor.
- Start the inspection from step 1 when using the intelligent tester II and start from step 3 when not using the intelligent tester II.

1	READ VALUE OF INTELLIGENT TESTER II (STEERING ANGLE SENSOR)

(a) Connect the intelligent tester II to the DLC3.

(b) Turn the ignition switch to the ON position and push the intelligent tester II main switch ON.

(c) Select ”DATA LIST” mode on the intelligent tester II.

Item	Measurement Item/Range (Display)	Normal Condition	Diagnostic Note
Steering Angle Sensor	Steering angle sensor/ min.: –1152 deg/s, max.: 1150.875 deg/s	Left turn: Increase Right turn: Decrease	–

(d) Check that the steering wheel turning angle value of the steering angle sensor displayed on the intelligent tester II changes when turning the steering wheel.

OK:

Steering angle sensor value changes.

Result:

OK (When troubleshooting in accordance with the DTC CHART.)	A
OK (When troubleshooting in accordance with the PROBLEM SYMPTOMS TABLE.)	B
NG	C

B → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (SEE PAGE 05–759)**

C → **Go to step 3**

A

2 RECONFIRM DTC

(a) Clear the DTCs (see page 05–766).
(b) Drive the vehicle at a speed of approximately 6 mph (10 km/h) or more for 10 seconds or more.
(c) Check if the same pending DTCs are detected (see page 05–766).

Result:

DTC is output	A
DTC is not output	B

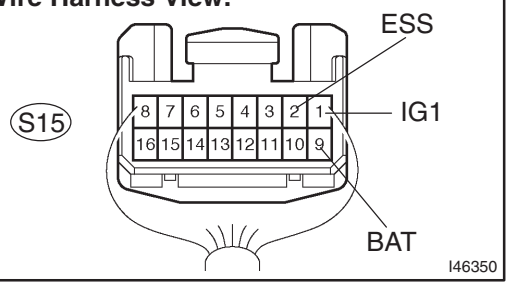
B → **END**

A

REPLACE MASTER CYLINDER SOLENOID (SEE PAGE 32–12)

3 INSPECT STEERING ANGLE SENSOR (TERMINAL VOLTAGE AND CONTINUITY)

Steering Angle Sensor Wire Harness View:



(a) Remove the steering wheel and the column cover lower.
(b) Disconnect the steering angle sensor connector.
(c) Measure the voltage according to the value(s) in the table below.

Standard:

Tester Connection	Condition	Specified Condition
S15–1 (IG1) – Body ground	Ignition switch ON	10 to 14 V
S15–9 (BAT) – Body ground	Always	10 to 14 V

(d) Measure the resistance according to the value(s) in the table below.

Standard:

Tester Connection	Condition	Specified Condition
S15–2 (ESS) – Body ground	Ignition switch OFF	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR (IG1, BAT OR ESS CIRCUIT)**

OK

REPLACE STEERING ANGLE SENSOR (SEE PAGE 32–26)

HINT:

- When troubleshooting in accordance with the DTC CHART, check DTCs before replacing the steering angle sensor (see page 05–766).
- When troubleshooting in accordance with the PROBLEM SYMPTOMS TABLE, be sure to follow the table before replacing the steering angle sensor (see page 05–759).