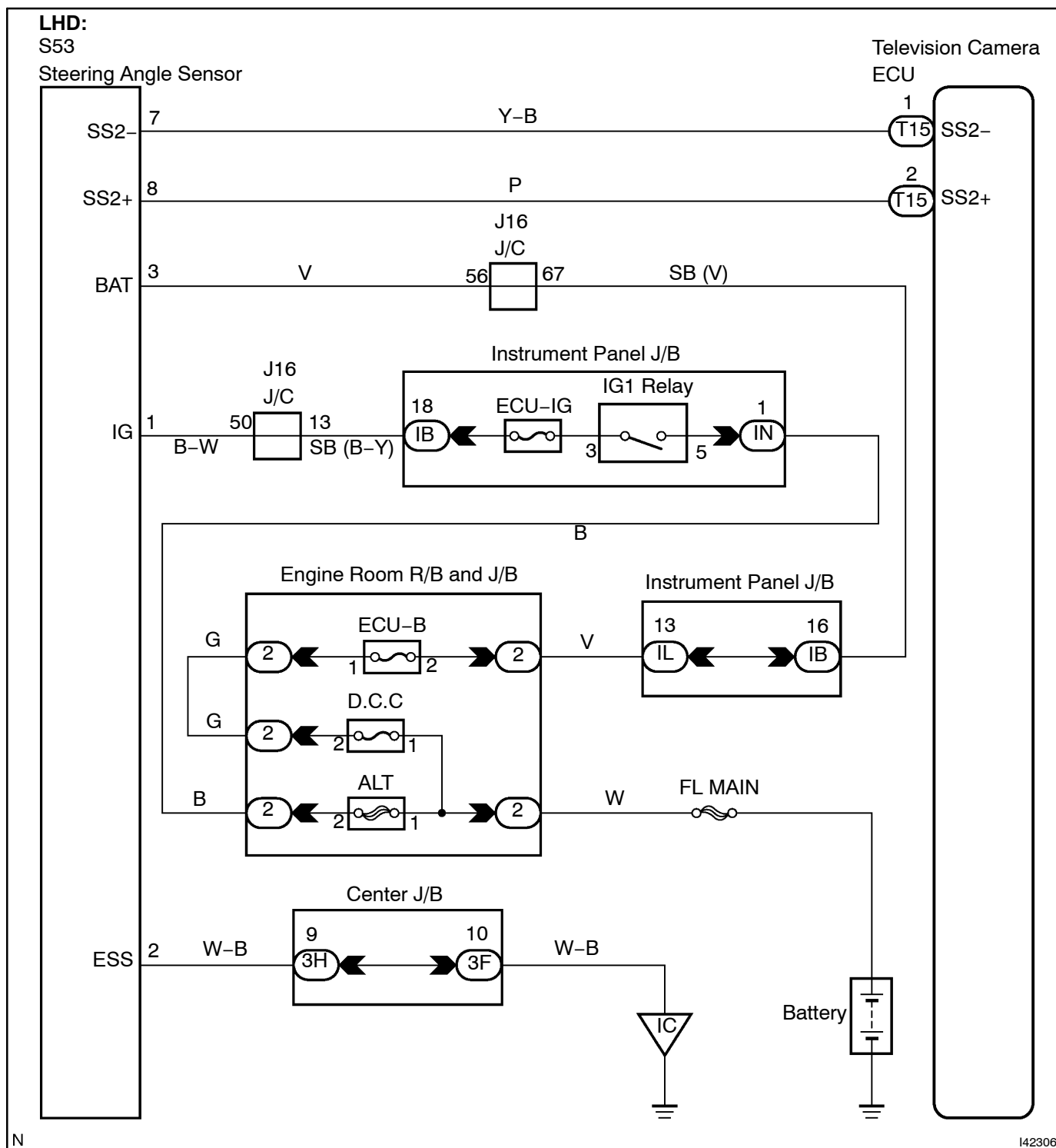


STEERING ANGLE SENSOR CIRCUIT

CIRCUIT DESCRIPTION

The steering angle sensor detects the angle of the steering wheel and sends the resulting signals to the television camera ECU. These signals are used to control parking assist.

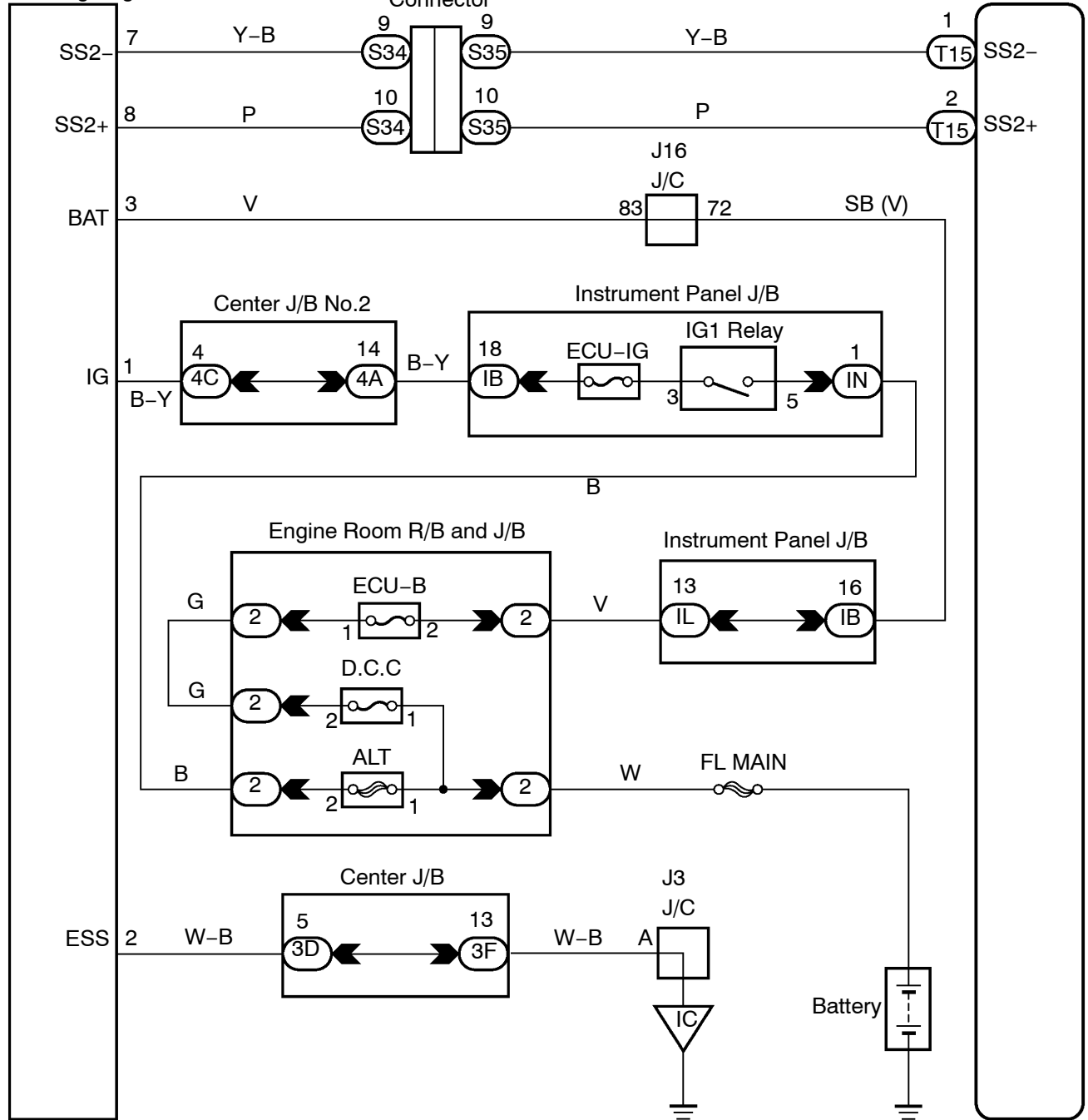
WIRING DIAGRAM



RHD:

S53

Steering Angle Sensor

Television Camera
ECU

N

I42307

INSPECTION PROCEDURE

1 CHECK FOR DTCS

(a) Start the diagnosis mode and check on the individual diagnosis screen whether diagnosis trouble code 5C - 41 or 5C - 42 is displayed or not.

Standard: Diagnosis trouble code 5C - 41 or 5C - 42 is displayed.

Result:

| | | |
|---------|-------------------|---------|
| A | B | C |
| 5C - 42 | DTC is not output | 5C - 41 |

B

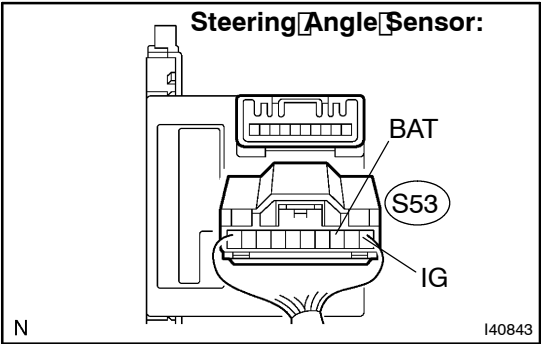
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN ON PROBLEM SYMPTOMS TABLE (SEE PAGE 05-1186)

C

REPLACE STEERING ANGLE SENSOR (SEE PAGE 32-23)

A

2 CHECK HARNESS AND CONNECTOR(STEERING ANGLE SENSOR - BATTERY)



- (a) Disconnect the S53 connector from the steering angle sensor.
- (b) Measure the voltage according to the value(s) in the table below.

Standard:

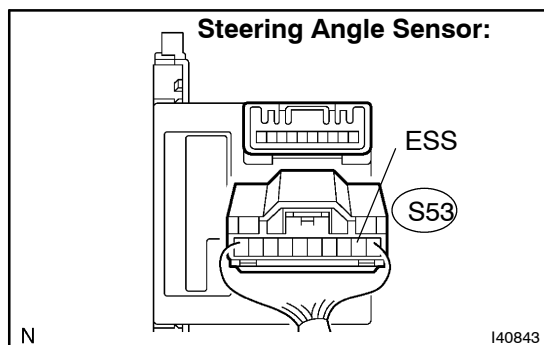
| Tester connection (Terminal No.) | Condition | Specified condition |
|----------------------------------|-----------|---------------------|
| IG (S53-1) - Body ground | IG SW ON | 10 to 14 V |
| BAT (S53-3) - Body ground | Always | 10 to 14 V |

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR (STEERING ANGLE SENSOR - BATTERY)

OK

3 CHECK HARNESS AND CONNECTOR(STEERING ANGLE SENSOR – BODY GROUND)



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

Standard:

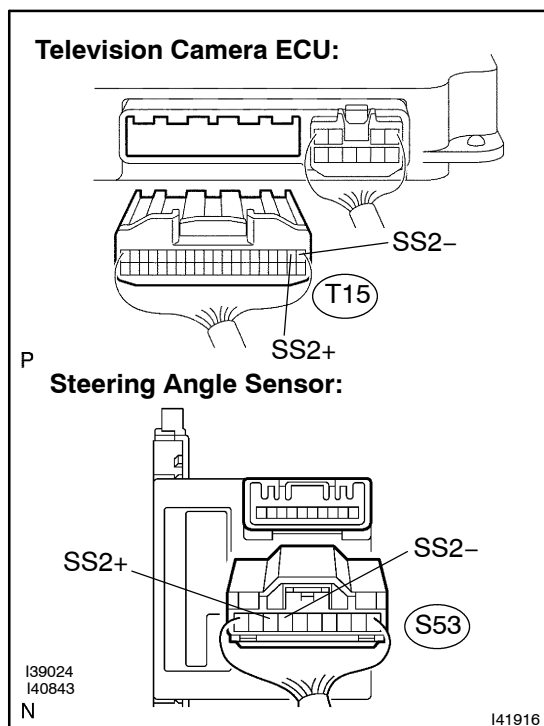
| Tester connection (Terminal No.) | Condition | Specified condition |
|-------------------------------------|-----------|---------------------|
| ESS (S53-2) – Body ground | Always | Below 1 Ω |

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR (STEERING ANGLE SENSOR – BODY GROUND)

OK

4 CHECK HARNESS AND CONNECTOR(STEERING ANGLE SENSOR – TELEVISION CAMERA ECU)



- (a) Disconnect the T15 connector from the television camera ECU.
- (b) Measure the resistance according to the value(s) in the table below.

Standard:

| Tester connection (Terminal No.) | Condition | Specified condition |
|-------------------------------------|-----------|-------------------------|
| SS2+ (S53-8) – SS2- (T15-2) | Always | Below 1 Ω |
| SS2- (S53-7) – SS2- (T15-1) | Always | Below 1 Ω |
| SS2+ (S53-8) – Body ground | Always | 10 k Ω or higher |
| SS2- (S53-7) – Body ground | Always | 10 k Ω or higher |

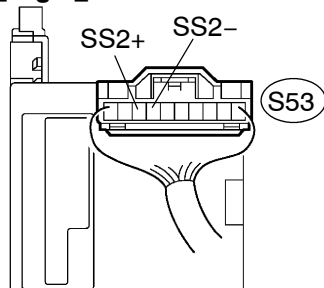
NG

REPAIR OR REPLACE HARNESS OR CONNECTOR (STEERING ANGLE SENSOR – TELEVISION CAMERA ECU)

OK

5 INSPECT STEERING ANGLE SENSOR

Steering Angle Sensor:

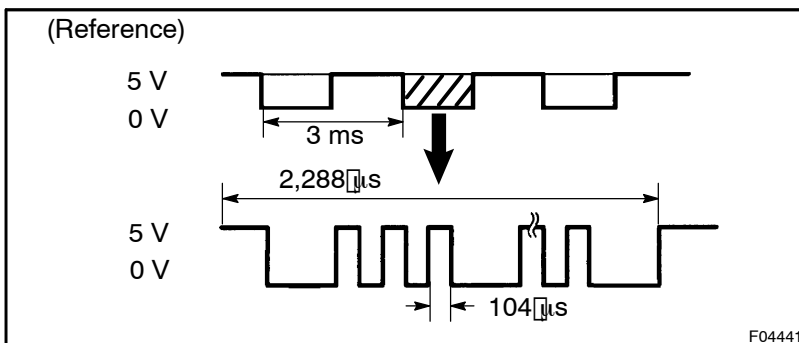


N

I40844

- Connect the S53 connector to the steering angle sensor.
- Connect the oscilloscope to terminals 8 (SS2+) and 7 (SS2-) of the steering angle sensor.
- Turn the steering column shaft slowly and check the signal waveform.

OK:



HINT:

The above signal waveform does not repeat ON and OFF regularly and this ON-OFF interval changes case by case according to the data.

NG

REPLACE STEERING ANGLE SENSOR
(SEE PAGE 32-23)

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN ON PROBLEM SYMPTOMS TABLE
(SEE PAGE 05-1186)