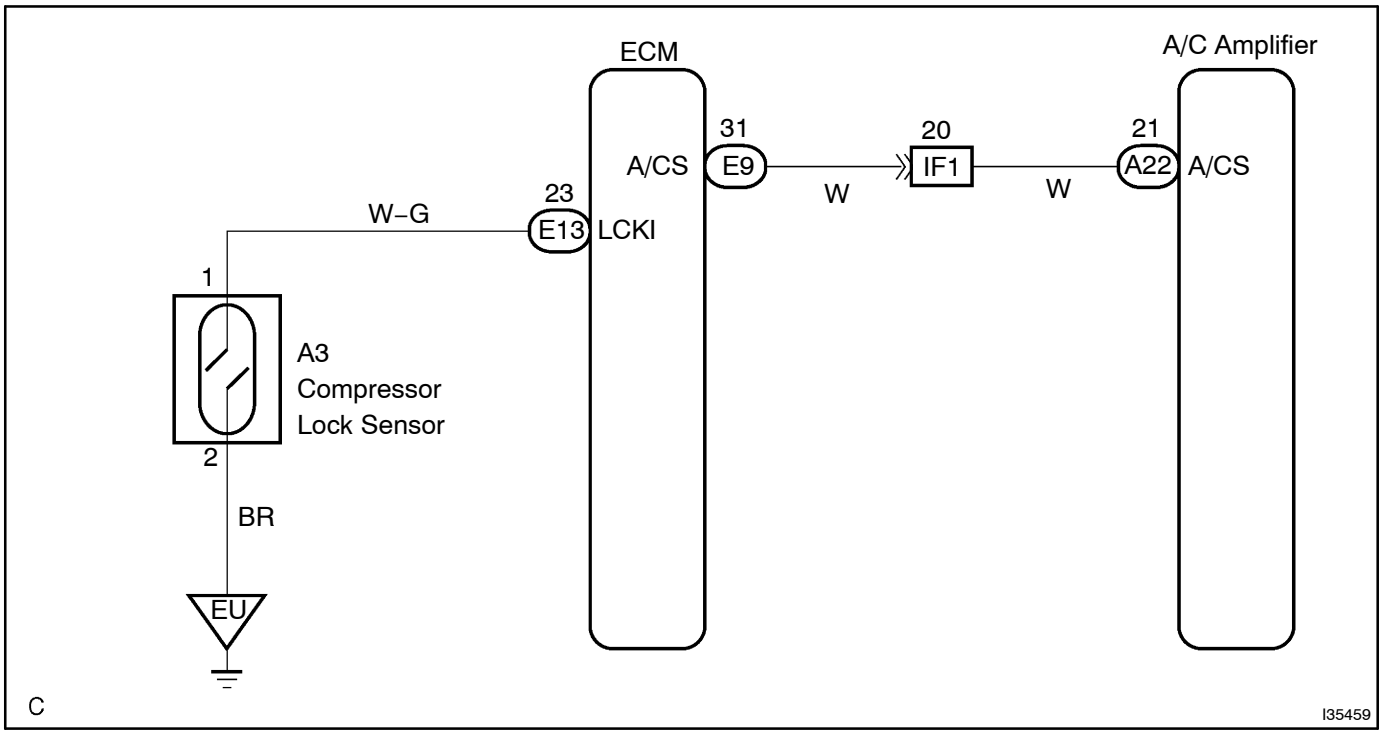
DTC 22 COMPRESSOR LOCK SENSOR CIRCUIT

CIRCUIT DESCRIPTION

This sensor sends 4 pulses per engine revolution to the A/C amplifier. If the ratio of the compressor speed divided by the engine speed is smaller than a predetermined value, the A/C amplifier turns the compressor off, and the indicator flashes at about 1 sec. intervals.

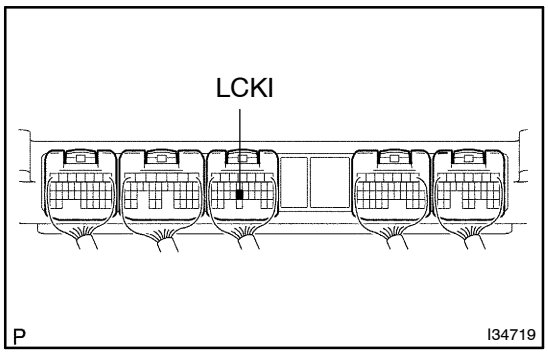
DTC No.	Detection Item	Trouble Area
22	Following conditions are detected for 3 sec. or more. (a) Engine speed : 450 rpm or more. (b) Ratio between engine and compressor speed deviates 20 % or more in comparison to normal operation.	• Cooler compressor assy • Compressor drive belt • Compressor lock sensor • Harness or connector between ECM and compressor lock sensor, A/C amplifier • A/C amplifier • ECM

WIRING DIAGRAM

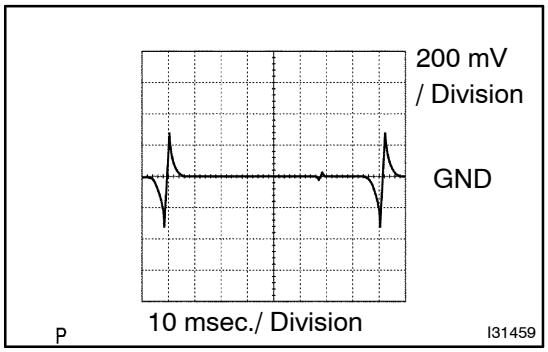


INSPECTION PROCEDURE

1	INSPECT ECM(LCKI)



(a) Remove the ECM.
(b) Start the engine.
(c) Operate the A/C system.
(d) Check the signal waveform between the terminal LCKI of ECM and body ground.
Standard:
The correct waveform appears as shown in the illustration.



OK → **Go to step 6**

NG

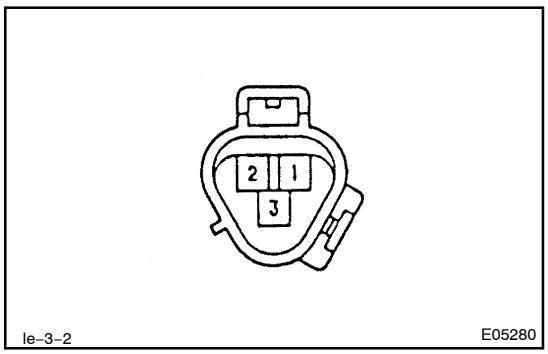
2	CHECK COOLER COMPRESSOR ASSY

(a) Check and adjust the compressor drive belt tension (See page 55–10).
(b) Check that the cooler compressor assy does not lock while the engine is running and the A/C system is operating.
Standard: Cooler compressor assy does not lock during the operation.

NG → **REPLACE COOLER COMPRESSOR ASSY**

OK

3	INSPECT COOLER COMPRESSOR ASSY(COMPRESSOR LOCK SENSOR)



(a) Disconnect the cooler compressor assy connector.
(b) Measure resistance between the terminal 1 and 2 of the cooler compressor assy connector.
Standard: 165 to 205 Ω at 20°C (68°F)

NG → **REPLACE COOLER COMPRESSOR ASSY**

OK

4	CHECK HARNESS AND CONNECTOR(ECM – AIR CONDITIONING AMPLIFIER)

(a) Check for open or short in the harness and the connector between the ECM and the A/C amplifier (See page 01–35).

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

OK

5	CHECK HARNESS AND CONNECTOR(COOLER COMPRESSOR ASSY – BODY GROUND)

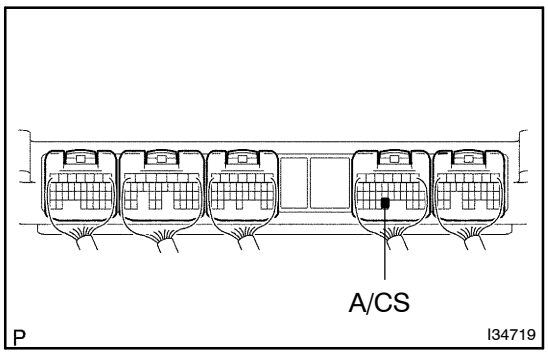
(a) Check for open or short in the harness and the connector between the cooler compressor assy and body ground (See page 01–35).

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

OK

REPLACE ECM

6	INSPECT ECM(A/CS)

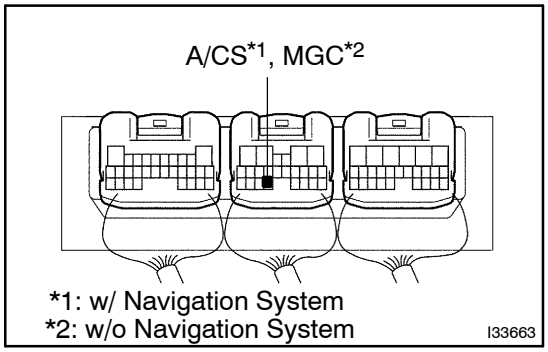


(a) Remove the ECM.
(b) Operate the A/C system.
(c) Measure the voltage between the terminal A/CS of ECM and body ground under each condition.
Standard:
Magnetic clutch is engaged: Below 1.0 V
Magnetic clutch is not engaged: 10 to 14 V

NG	REPLACE ECM

OK

7	INSPECT AIR CONDITIONING AMPLIFIER(A/CS*1, MGC*2)



(a) Remove the A/C amplifier.
(b) Operate the A/C system.
(c) Measure the voltage between the terminal A/CS*1, MGC*2 of the A/C amplifier and body ground under each condition.

*1: w/ Navigation System
*2: w/o Navigation System

Standard:
Magnetic clutch is engaged: Below 1.0 V
Magnetic clutch is not engaged: 10 to 14 V

NG	REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE AIR CONDITIONING AMPLIFIER