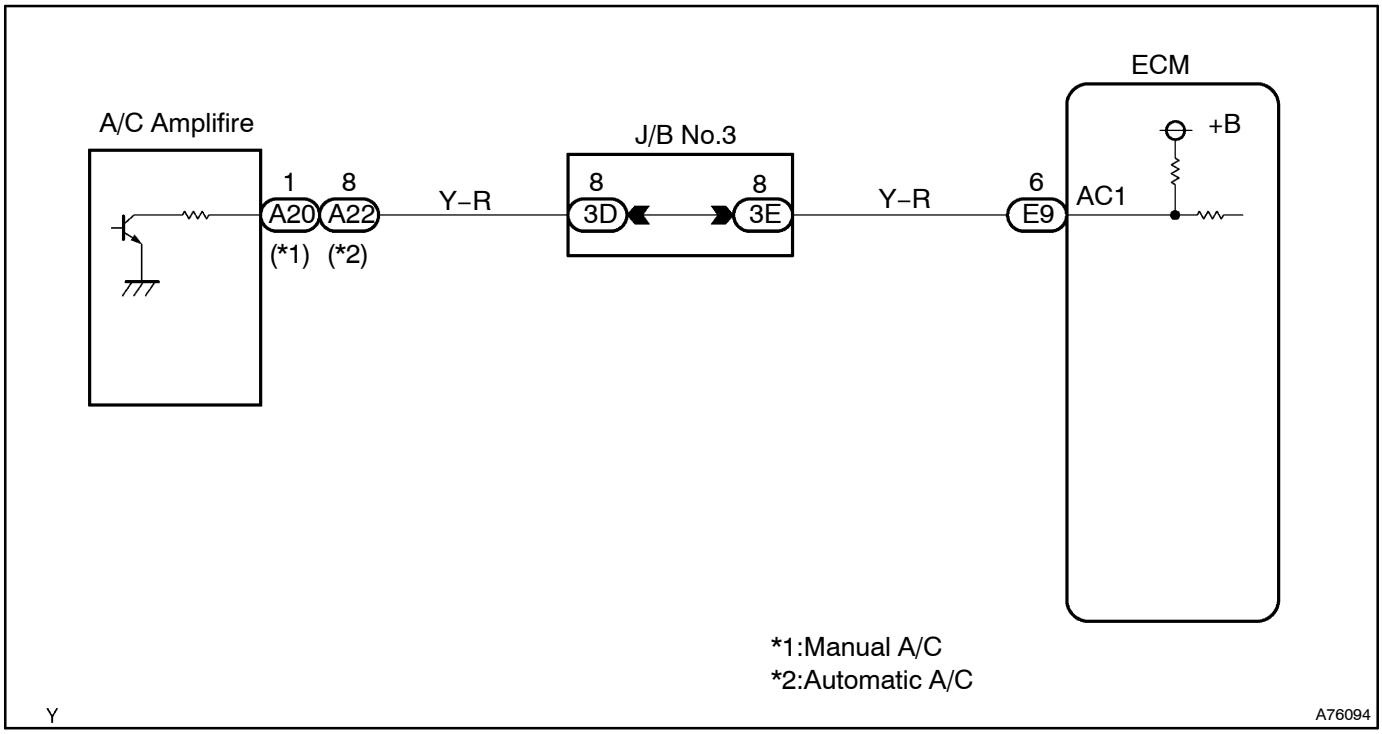
A/C SIGNAL CIRCUIT

CIRCUIT DESCRIPTION

When the A/C compressor is ON, the A/C amplifier sends the A/C signal to the ECM, then ECM increases the fuel injection volume to improve drive ability during engine idling.

WIRING DIAGRAM



INSPECTION PROCEDURE

When using hand–held tester:

1	READ VALUE OF HAND–HELD TESTER(CHECK A/C SIGNAL)

(a) Read the A/C signal on the hand–held tester while the A/C compressor is ON.

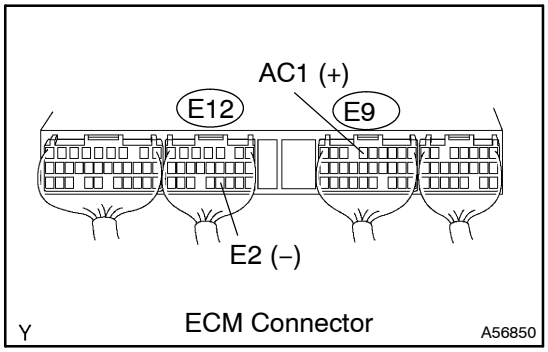
Result:

A/C Switch Condition	OFF	ON
A/C Signal	OFF	ON

OK → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN ON PROBLEM SYMPTOMS TABLE (See page 05–443)**

NG

2 INSPECT ECM



(a) Start the engine.
(b) Measure the voltage between the terminals of the ECM E9 and E12 connector.

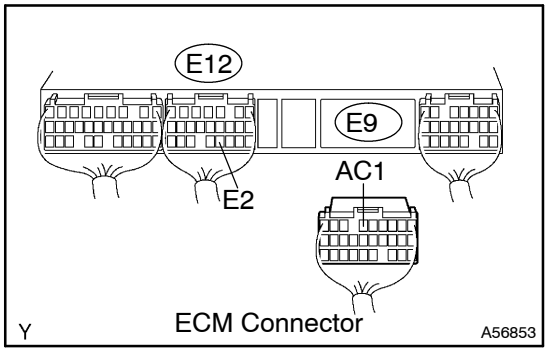
Voltage:

Symbols (Terminal No.)	A/C switch condition	Specified condition
AC1 (E9 – 6) ⇔ E2 (E12 – 20)	ON	Below 1.5 V
	OFF	9 – 14 V

OK → **CHECK AND REPLACE ECM**

NG

3 CHECK HARNESS AND CONNECTOR(ECM – A/C AMPLIFIER)



(a) Disconnect the A/C amplifier A20 connector (Manual A/C) (See page 55–127).
(b) Disconnect the A/C amplifter A22 connector (Automatic A/C) (See page 55–47).
(c) Disconnect the ECM E9 connector.
(d) Check the continuity between the wire harness side connector.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
AC1 (A20 – 1) (Manual A/C) (Terminal arrangement on 55–2) ⇔ AC1 (E9 – 6)	Continuity
AC1 (A22 – 8) (Automatic A/C) (Terminal arrangement on 55–2) ⇔ AC1 (E9 – 6)	

Standard (Check for short):

Symbols (Terminal No.)	Specified condition
AC1 (E9 – 6) ⇔ E2 (E12 – 20)	No continuity

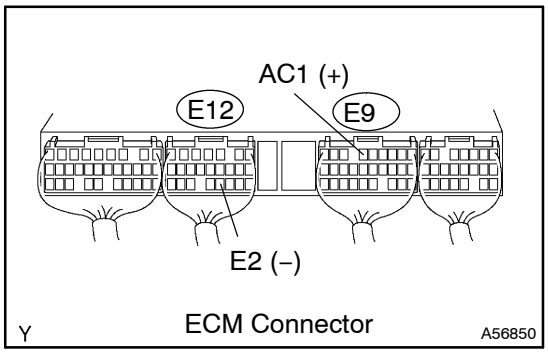
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

CHECK AND REPLACE AIR CONDITIONING AMPLIFIER ASSY

When not using hand–held tester:

1	INSPECT ECM(CHECK VOLTAGE)



(a) Start the engine.
(b) Measure the voltage between the terminals of the ECM E12 and E9 connector.

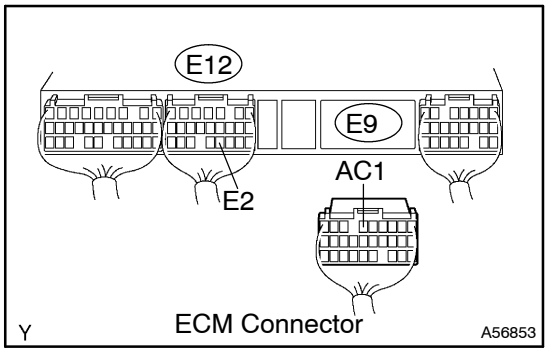
Voltage:

Symbols (Terminal No.)	A/C switch condition	Specified condition
AC1 (E9 – 6) ⇔ E2 (E12 – 20)	ON	Below 1.5 V
	OFF	9 – 14 V

OK → **CHECK AND REPLACE ECM**

NG

2	CHECK AND REPLACE HARNESS AND CONNECTOR(ECM – A/C AMPLIFIER)



(a) Disconnect the A/C amplifier A20 connector (Manual A/C) (See page 55–127).
(b) Disconnect the A/C amplifter A22 connector (Automatic A/C) (See page 55–47).
(c) Disconnect the ECM E9 connector.
(d) Check the continuity between the wire harness side connector.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
AC1 (A20 – 1) (Manual A/C) (Terminal arrangement on 55–2) ⇔ AC1 (E9 – 6)	Continuity
AC1 (A22 – 8) (Automatic A/C) (Terminal arrangement on 55–2) ⇔ AC1 (E9 – 6)	

Standard (Check for short):

Symbols (Terminal No.)	Specified condition
AC1 (E9 – 6) ⇔ E2 (E12 – 20)	No continuity

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

OK

CHECK AND REPLACE AIR CONDITIONING AMPLIFIER ASSY