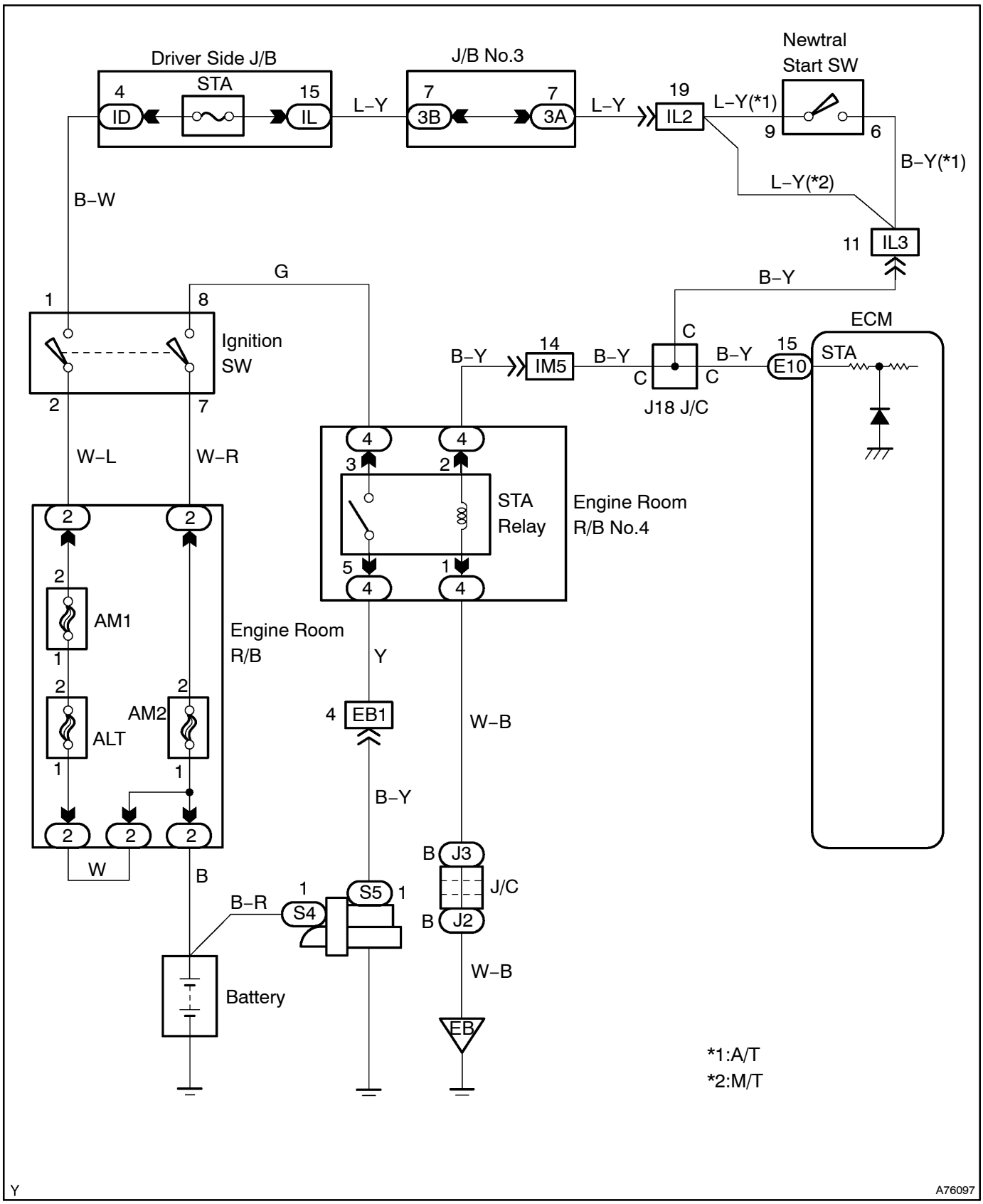
STARTER SIGNAL CIRCUIT

CIRCUIT DESCRIPTION

When the engine is being cranked, the intake air flow is slow, so fuel vaporization is poor. A rich mixture is therefore necessary in order to achieve good start ability. While the engine is being cranked, the battery positive voltage is applied to terminal STA of the ECM. The starter signal is mainly used to increase the fuel injection volume for the starting injection control and after–start injection control.

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

This diagnostic chart is based on the premise that the engine is being cranked under normal conditions. If the engine does not crank, proceed to the problem symptoms table on page 05–443.

When using hand–held tester:

1	READ VALUE OF HAND–HELD TESTER (STA SIGNAL)

(a) Read the STA signal on the hand–held tester while the starter operates.

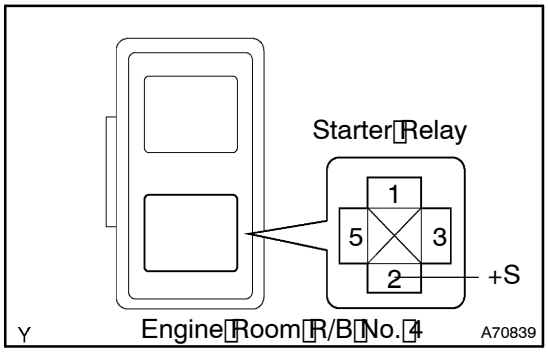
Result:

Ignition Switch Position	ON	STA
STA Signal	OFF	ON

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

NG

2	CHECK HARNESS AND CONNECTOR (ECM – STARTER RELAY)



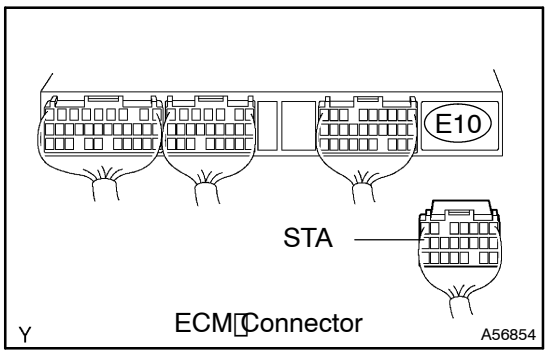
(a) Disconnect the ECM E10 connector.

(b) Remove the starter relay from the engine room R/B No. 4.

(c) Check the continuity between the wire harness side connector.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
+S (STA relay terminal 2 of R/B) ⇔ STA (E10 – 15)	Continuity



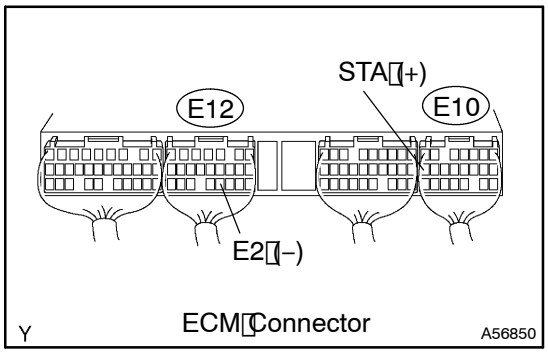
NG: REPAIR OR REPLACE HARNESS OR CONNECTOR (ECM – STARTER RELAY)

OK

REPAIR OR REPLACE HARNESS OR CONNECTOR (ECM – BATTERY)

When not using hand-held tester:

1	INSPECT ECM (CHECK VOLTAGE)



(a) Turn the ignition switch ON.
(b) Measure the voltage between the terminals of the ECM E10 and E12 connector.

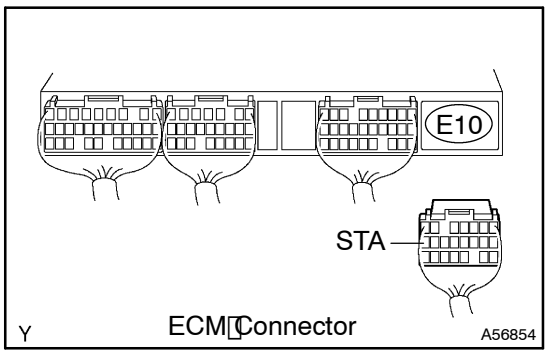
Voltage:

Symbols (Terminal No.)	Condition	Specified condition
STA (E10 – 15) ⇔ E2 (E12 – 20)	Cranking	6.0 V or more

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

NG

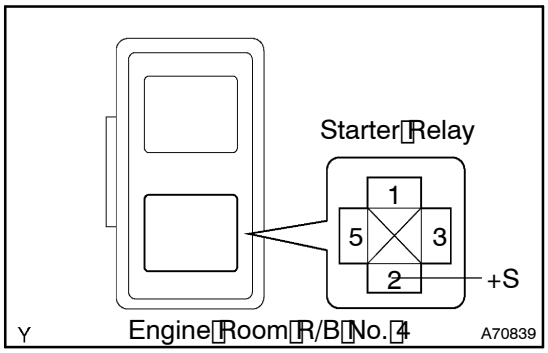
2	CHECK HARNESS AND CONNECTOR (ECM – STARTER RELAY)



(a) Disconnect the ECM E10 connector.
(b) Remove the starter relay from the engine room R/B No.4.
(c) Check the continuity between the wire harness side connector.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
+S (STA relay terminal 2 of R/B) ⇔ STA (E10 – 15)	Continuity



NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR (ECM – STERTER RELAY)**

OK

REPAIR OR REPLACE HARNESS OR CONNECTOR (ECM – BATTERY)