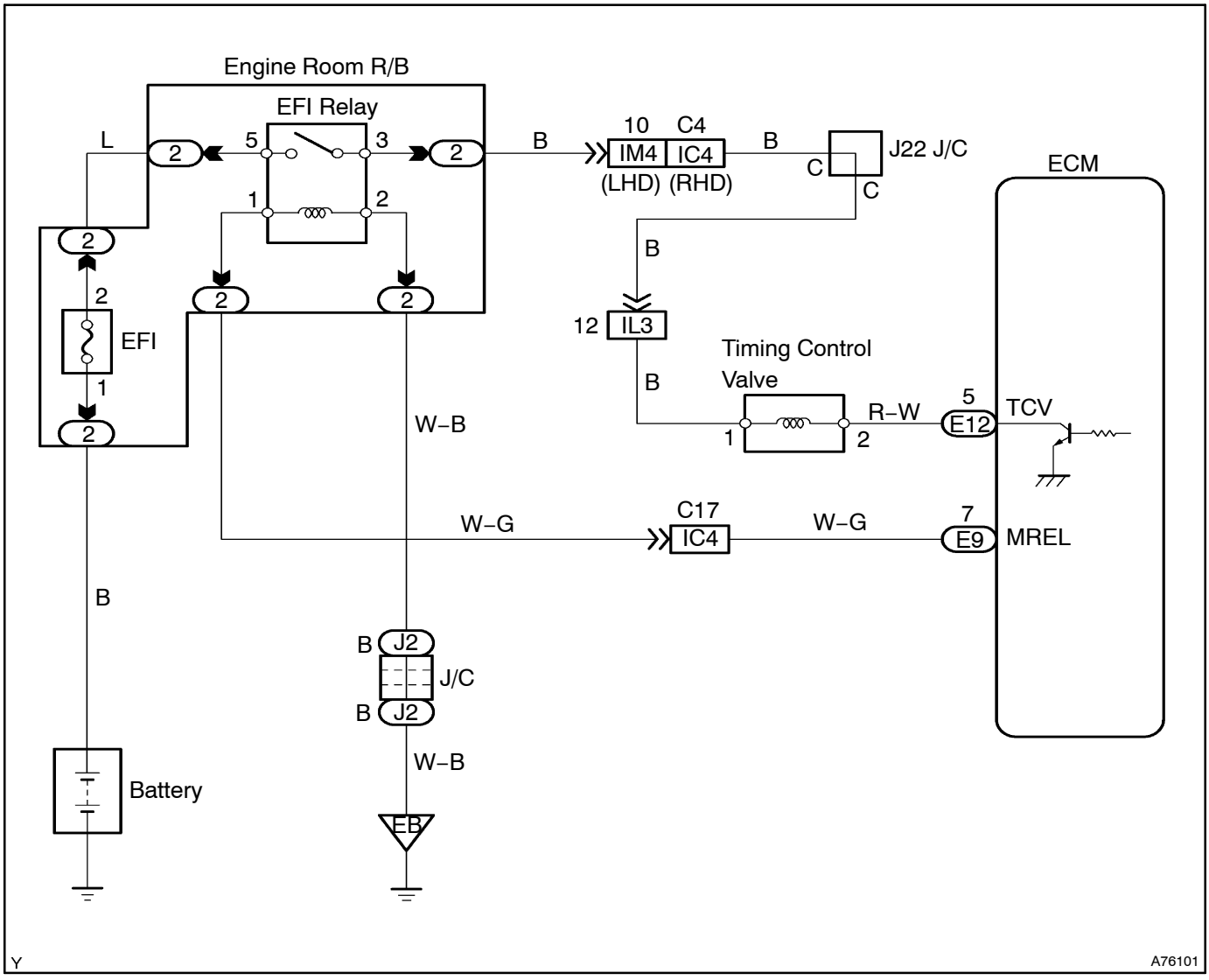
DTC 14 TIMING CONTROL SYSTEM MALFUNCTION

CIRCUIT DESCRIPTION

The ECM control the injection timing by actuating the timing control valve. The timing control valve is mounted on the injection pump and delay one by duty control of pump internal fuel pressure.
The ECM detects the injection advance angle by TDC and NE signals.

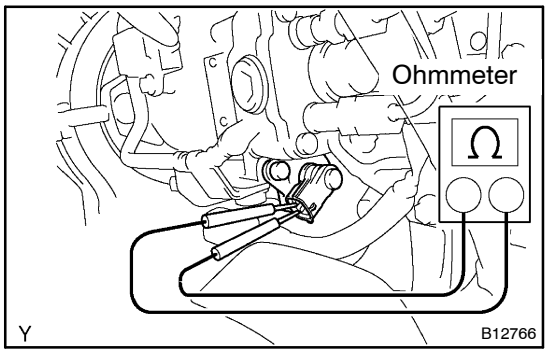
DTC No.	DTC Detection Condition	Trouble Area
14	After engine warm up and during, actual injection timing is different from target value of ECM calculated for several sec.	• Open or short in timer control valve circuit • Timer control valve • Fuel filter (Clogging) • Fuel (Freezing, Air in) • Injection pump (Internal pressure and timer control valve) • ECM

WIRING DIAGRAM



INSPECTION PROCEDURE

1 CHECK TIMER CONTROL VALVE ASSY

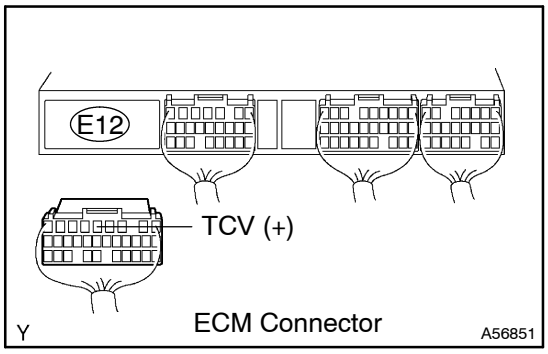


(a) Check the timer control valve for resistance.
(1) Using an ohmmeter, measure the resistance between the terminals.
Resistance: 10 – 14 Ω at 20°C (68°F)

NG → **REPLACE TIMER CONTROL VALVE ASSY**

OK

2 INSPECT ECM(CHECK VOLTAGE)



(a) Disconnect the ECM E12 connector.
(b) Turn the ignition switch ON.
(c) Measure the voltage between the terminals of the ECM connector.
Voltage:

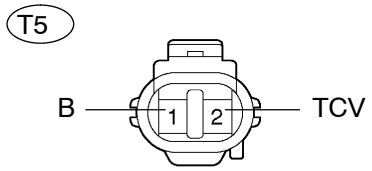
Symbols (Terminal No.)	Specified condition
TCV (E12 – 5) ⇔ Body ground	9 – 14 V

OK → **Go to step 4**

NG

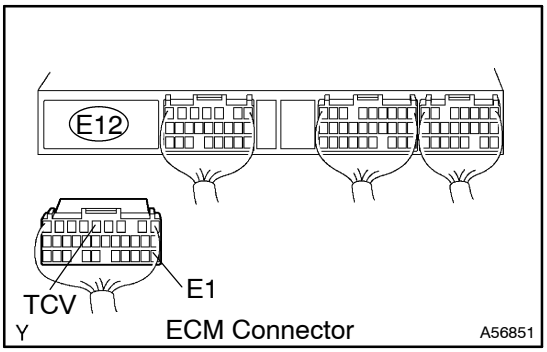
3	CHECK HARNESS AND CONNECTOR(ECM – TIMER CONTROL VALVE ASSY, TIMER CONTROL VALVE ASSY – EFI RELAY)

Wire Harness Side



Timer Control Valve Connector

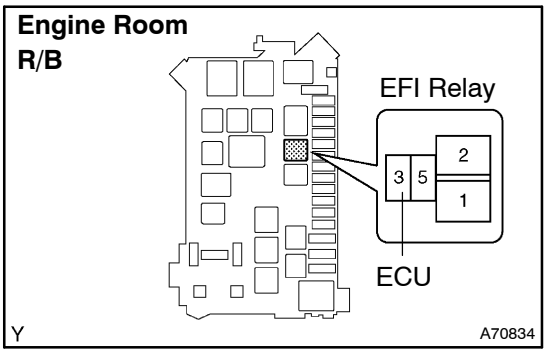
A73804



ECM Connector

A56851

Engine Room R/B



A70834

(a) Disconnect the timer control valve connector.
(b) Disconnect the ECM E12 connector.
(c) Remove the EFI relay from the engine room R/B.
(d) Check the continuity between the wire harness side connector.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
TCV (T5 – 2) ⇔ TCV (E12 – 5)	Continuity
B (T5 – 1) ⇔ ECU (EFI relay terminal 3 of R/B)	

Standard (Check for short):

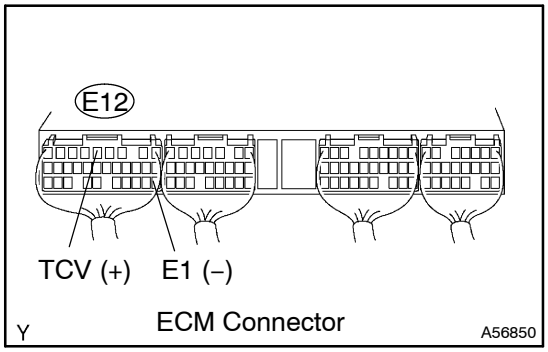
Symbols (Terminal No.)	Specified condition
TCV (E12 – 5) ⇔ E1 (E12 – 22)	No continuity
B (T5 – 1) ⇔ Body ground	

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

OK

CHECK FOR ECM POWER SOURCE CIRCUIT (See page 05–380)

4 INSPECT ECM



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

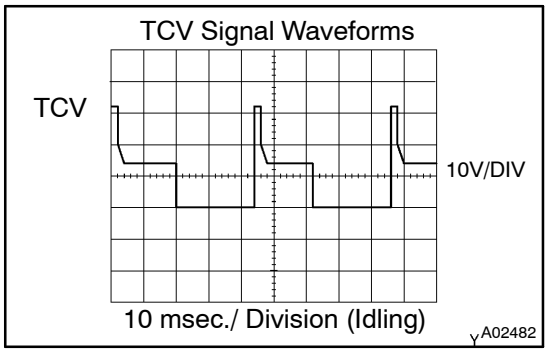
Voltage:

Symbols (Terminal No.)	Specified condition
TCV (E12 – 5) ⇔ E1 (E12 – 22)	9 – 14 V

(c) Check the output waveform.

Item	Contents
Terminal	TCV ⇔ E1
Equipment set	10V/DIV 10ms/DIV
Condition	During idling

HINT:
The correct waveform is as shown.



NG → CHECK AND REPLACE ECM

OK

5 CHECK FUEL FILTER CLOGGING, FUEL FLEEZING AND FUEL AIR IN

NG → REPAIR OR REPLACE

OK

CHECK AND REPLACE INJECTION OR SUPPLY PUMP ASSY (See page 11–81)