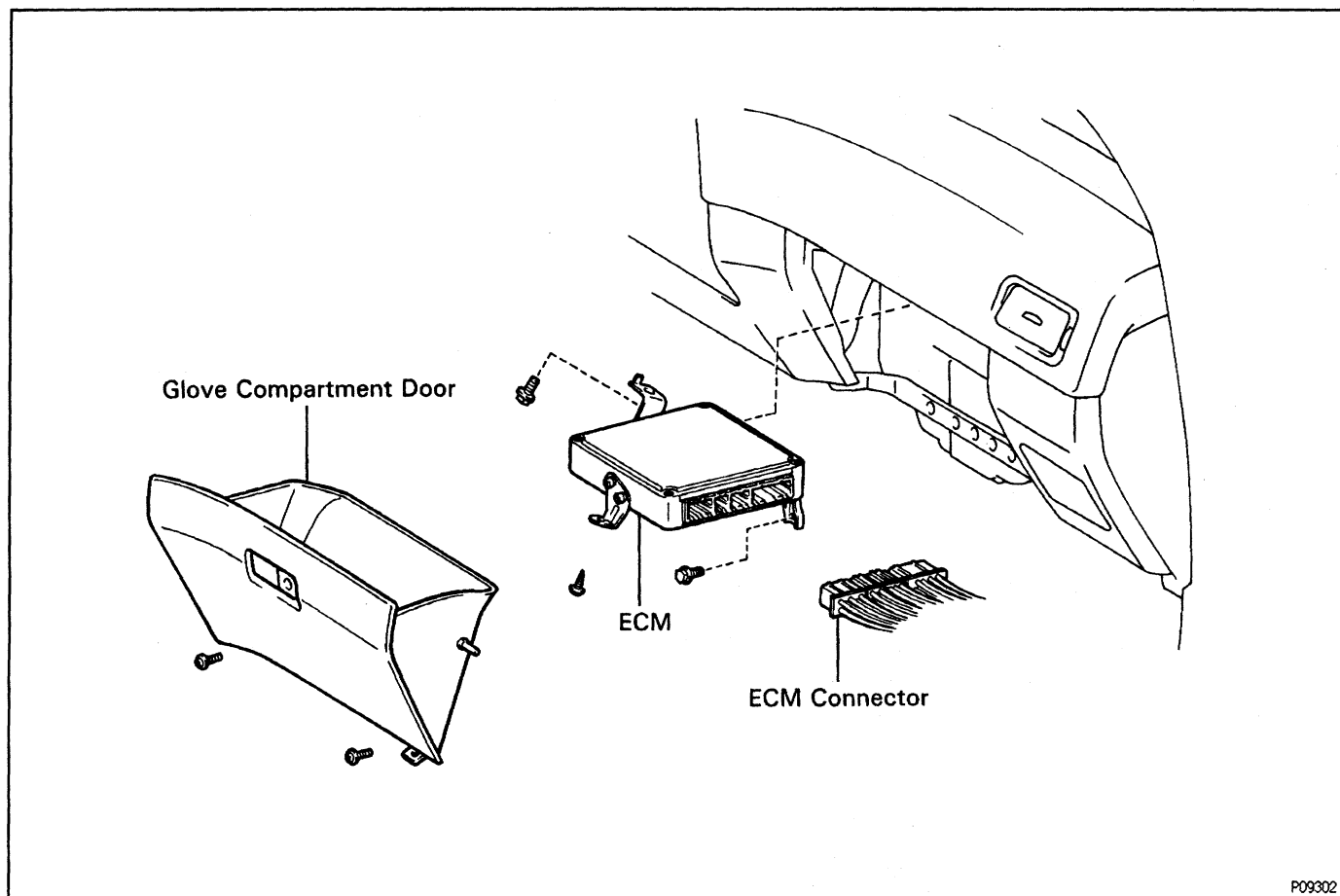


ENGINE CONTROL MODULE (ECM)

ENGINE CONTROL MODULE FOR REMOVAL AND INSTALLATION



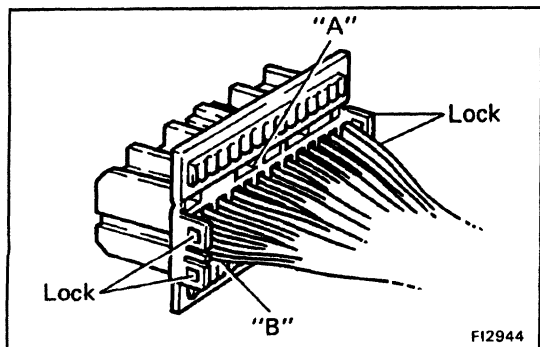
P09302

ENGINE CONTROL MODULE INSPECTION

(See Components for Removal and Installation)

HINT: The SFI circuit can be checked by measuring the resistance and voltage at the wiring connectors of the ECM.

1. REMOVE GLOVE COMPARTMENT DOOR



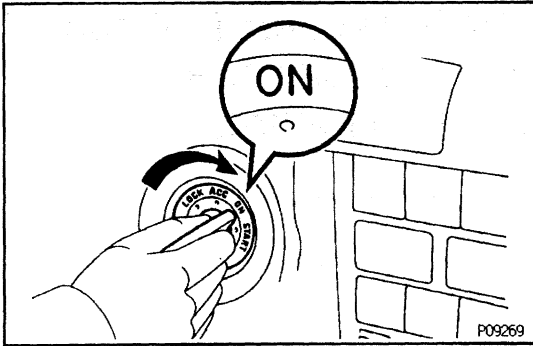
F12944

2. PREPARATION

- Disconnect the 4 connectors from the ECM.
- Carefully remove the locks so that the tester probe(s) can easily come in.

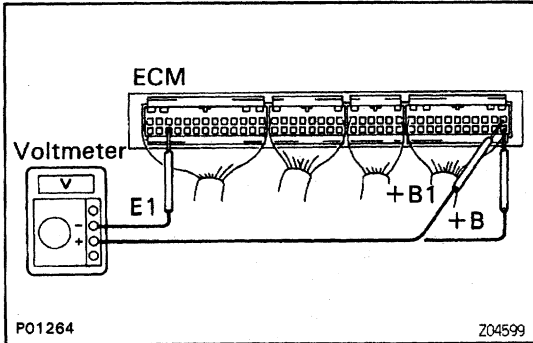
NOTICE: Pay attention to sections "A" and "B" in the illustration which can easily be broken.

- Reconnect the 4 connectors to the ECM.



3. INSPECT VOLTAGE OF ENGINE CONTROL MODULE

(a) Turn the ignition switch ON.



(b) Measure the voltage between each terminal of the wiring connectors.

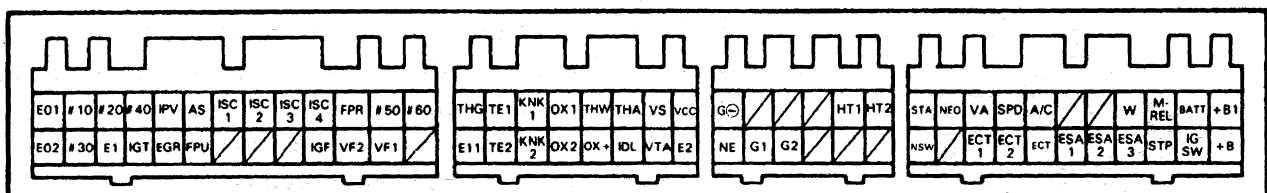
HINT:

- Perform all voltage measurements with the connectors connected.
- Verify that the battery voltage is 11 V or more when the ignition switch is ON.

ECM Wiring Connectors Voltage

Terminals	Condition		STD voltage (V)
BATT - E 1	-		9 - 14
IGSW - E1	IG SW ON		
M-REL - E 1			
+B _ EB1 -B _			
IDL - E2	IG SW ON	Throttle valve open	9 - 14
vcc-E2		-	4.5 - 5.5
VTA - E 2		Throttle valve fully closed (Throttle opener must be cancelled first)	0.3 - 0.8
		Throttle valve fully open	3.2 - 4.9
VCC - E2		-	4.5 - 5.5
VS - E2		Measuring plate fully closed	3.5 - 4.5
		Measuring plate fully open	0.2 -0.5
		Idling	1.2 - 2.4
	3,000 rpm	0.8 - 1.3	

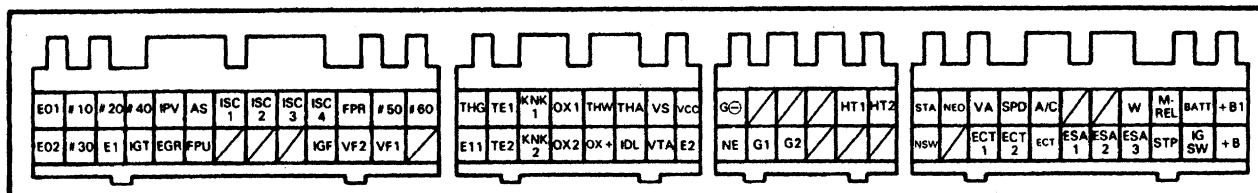
ECM Terminals



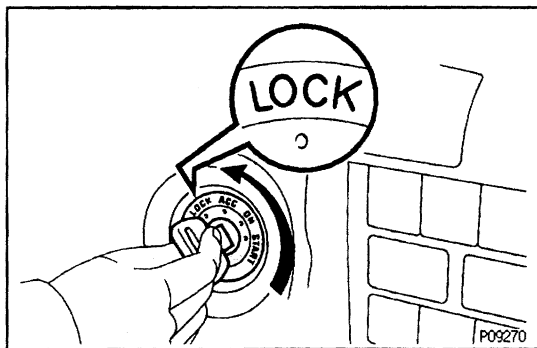
ECM Wiring Connectors Voltage (Cont'd)

Terminals	Condition		STD voltage (il)
#10 – E01 C – E02 #60	IG SW ON		9 – 14
THA – E2	IG SW ON	Intake air temp. 20°C (68°F)	0.5 – 3.4
THW – E2		Engine coolant temp. 80°C (1 760F)	0.2–1.0
STA – E i	Cranking		6 or more
IGT – E1	Idling		Pulse generation
ISC 1 C – E1 ISC4	IG SW ON		9 – 14
W– EI	No trouble (malfunction indicator lamp light off) and engine running		9 – 14
IGF – E1	iG SW ON		2.0 or less
G1 GE2 –G(–)	Idling		Pulse generation
NE –G(–)			
KNK 1 KNK 2 –E1			
VF1 VF2 –E1	Maintain engine speed at 2,500 rpm for 120 seconds after warming up then return to idling		1.8 – 3.2
NSW – E 1	IG SW ON	Shift position P or N	3 or less
		Ex. shift position P or N	9 – 14
SPD – E 1		Rotate driving wheel slowly	Pulse generation
TE1 TE2 –E1		Data link connector 1 TE 1 – E 1 not connected	9 – 14
		Data link connector 1 TE 1 – E 1 connected	1.5 or less
A/C – E 1		Air conditioning ON	7.5 – 14
		Air conditioning OFF	1.5 or less
STP – E 1		Stop light SW ON (Brake pedal depressed)	
	Stop light SW OFF		1.5 or less

ECM Terminals

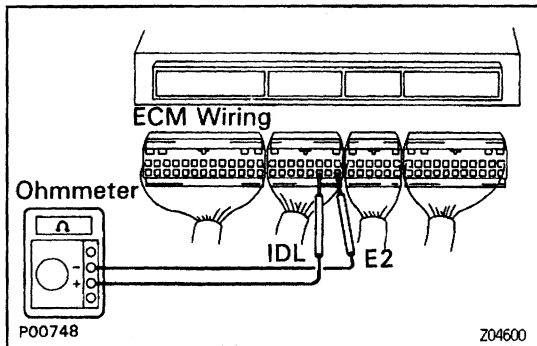


P01399



4. INSPECT RESISTANCE OF ENGINE CONTROL MODULE

- Turn the ignition switch to LOCK.
- Disconnect the 4 connectors from the ECM.



- Measure the resistance between each terminal of the wiring connectors.

NOTICE:

Do not touch the ECM terminals.

The tester probe should be inserted in the wiring connector from the wiring side.

ECM Wiring Connectors Resistance

Terminals	Condition	STD resistance (9)
IDL - E2	Throttle valve open	Infinity
	Throttle valve fully closed (Throttle opener must be cancelled first)	2,300 or less
VTA - E2	Throttle valve fully open	2,000 - 10,200
	Throttle valve fully closed (Throttle opener must be cancelled first)	200 - 5,700
VCC - E2	—	2,500 - 5,900
VS - E2	Measuring plate fully closed	200 - 600
	Measuring plate fully open	20 - 1,200
THA - E2	Intake air temp. 200°C (680°F)	2,000 - 3,000
THW - E2	Engine coolant temp. 80°C (176°F)	200 - 400
G1 GE2 - G(-)	Cold (-10°C (11 41°F) to 50°C (122°F))	185 - 275
	Hot (50°C (122°F) to 100°C (212°F))	240 - 325
NE - G(-)	Cold (-10°C (14°F) to 50°C (122°F))	185 - 275
	Hot (50°C (122°F) to 100°C (212°F))	240 - 325
ISC 1 ISC4 - +B ISC4 - +B1	—	10 - 30

ECM Terminals

