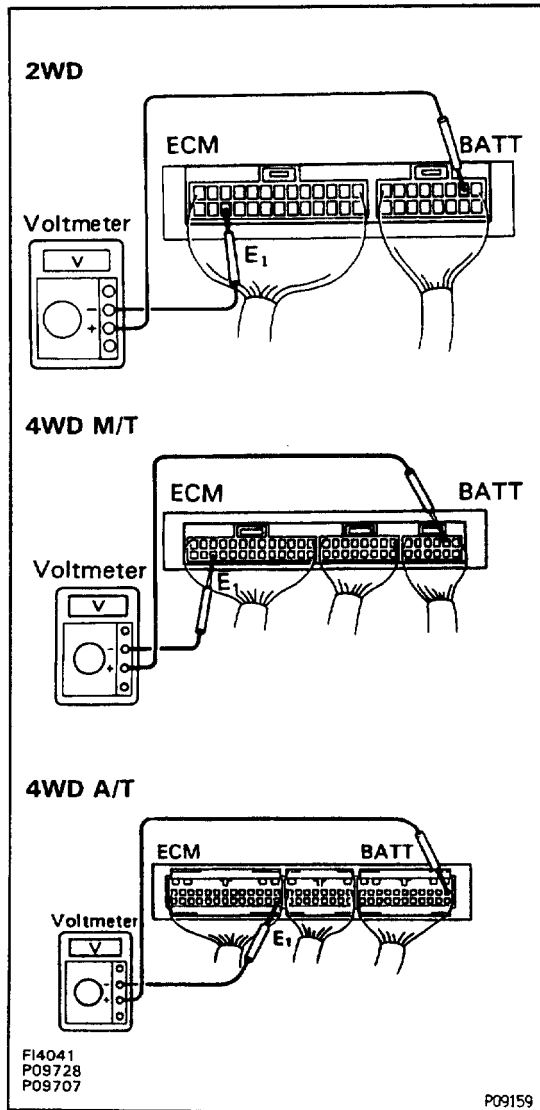


ENGINE CONTROL MODULE (ECM) ECM INSPECTION

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



1. INSPECT VOLTAGE OF ECM

Check the voltage between each terminal of the wiring connectors.

- Turn the ignition switch ON.
- Measure the voltage at each terminal.

HINT:

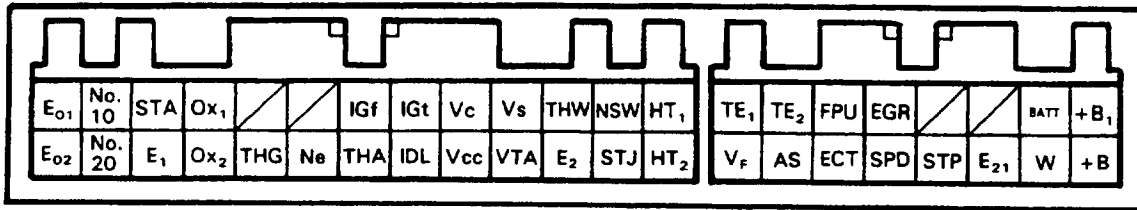
- Perform all voltage measurements with the connectors connected.
- Verify that the battery voltage is 11 V or more when the ignition switch is ON.

Voltage at ECM Wiring Connectors

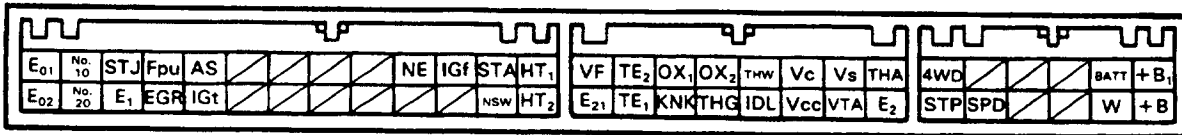
Terminals	Condition		STD voltage
BATT - E ₁	-		9 - 14
+B - E ₁	Ignition switch ON		
+B ₁ - E ₁			
IDL - E ₂ (E ₂₁)	Ignition switch ON	Throttle valve open	9 - 14
V _{CC} - E ₂ (E ₂₁)		-	4.5 - 5.5
VTA - E ₂ (E ₂₁)		Throttle valve fully closed	0.3 - 0.8
		Throttle valve fully open	3.2 - 4.9
V _C - E ₂ (E ₂₁)	Ignition switch ON	-	6 - 10
V _s - E ₂ (E ₂₁)		Measure plate fully closed	0.5 - 2.5
		Measure plate fully open	5 - 10
	Idling		2 - 8
THA - E ₂ (E ₂₁)	Ignition switch ON	Intake air temperature 20°C (68°F)	0.5 - 3.4
THW - E ₂ (E ₂₁)	Ignition switch ON	Coolant temperature 80°C (176°F)	0.2 - 1.0
STA - E ₁	Ignition switch START position		6 - 12
No. 10/No. 20 - E ₀₁ /E ₀₂	Ignition switch ON		9 - 14
IG _t - E ₁	Idling		0.7 - 1.0
W - E ₁	No trouble (MIL off) and engine running		9 - 14
STJ - E ₁	Ignition switch START position	Coolant temperature 80°C (176°F)	6 - 12
STP - E ₁	Stop light switch ON		7.5 - 14

ECM Terminals

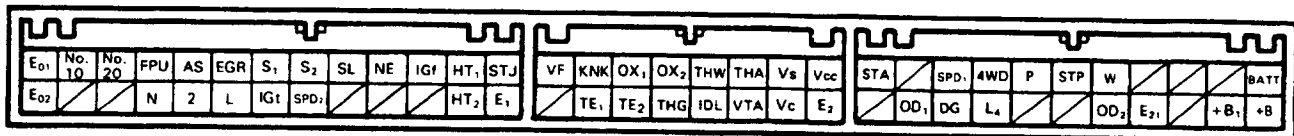
2WD



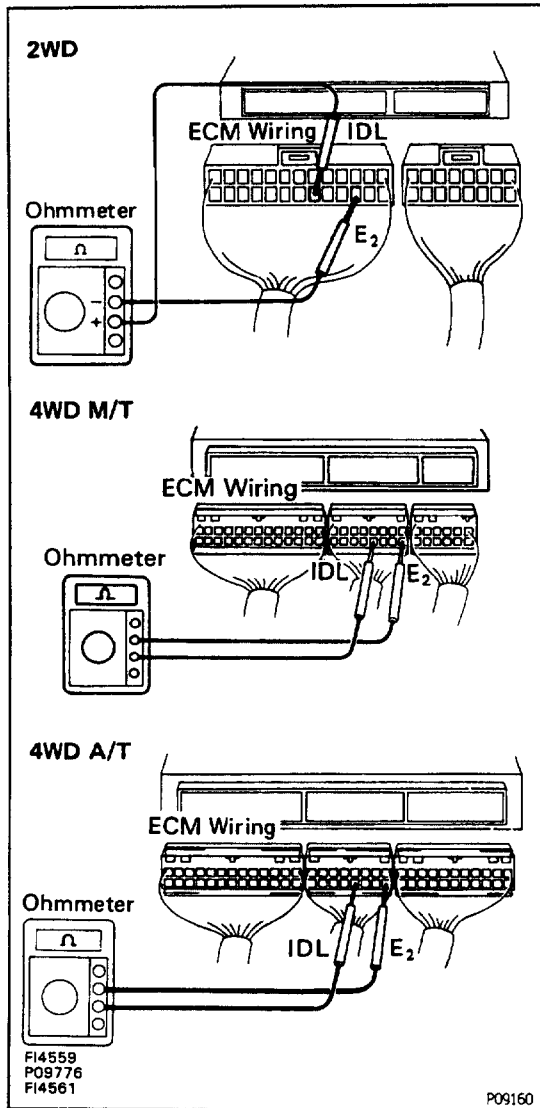
4WD M/T



4WD A/T



F14286
P09752
F12796



2. INSPECT RESISTANCE OF ECM

NOTICE:

- Do not touch the ECM terminals.
- The tester probe should be inserted into the wiring connector from the wiring side.

Check the resistance between each terminal of the wiring connectors.

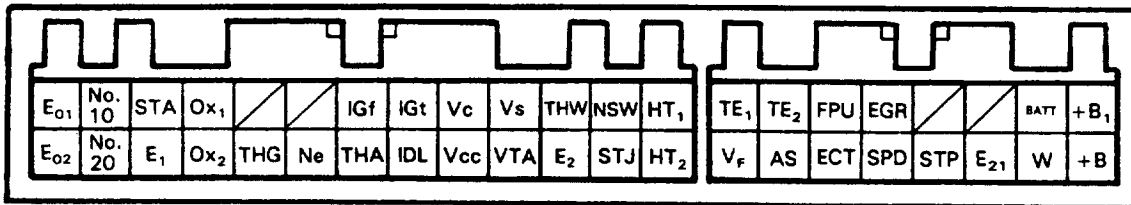
- Disconnect the connectors from the ECM.
- Measure the resistance at each terminal.

Resistance of ECM Wiring Connectors

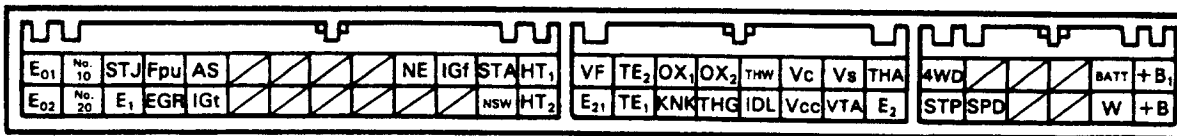
Terminals	Condition	Resistance (kΩ)
IDL - E ₂ (E ₂₁)	Throttle valve open	Infinity
	Throttle valve fully closed	2.3 or less
VTA - E ₂ (E ₂₁)	Throttle valve fully open	3.1 - 12.1
	Throttle valve fully closed	0.47 - 6.1
V _{CC} - E ₂ (E ₂₁)	-	3.9 - 9.0
THA - E ₂ (E ₂₁)	Intake air temperature 20°C (68°F)	2 - 3
THW - E ₂ (E ₂₁)	Coolant temperature 80°C (176°F)	0.2 - 0.4
+B - E ₂ (E ₂₁)	-	0.2 - 0.4
V _C - E ₂ (E ₂₁)	-	0.1 - 0.3
V _S - E ₂ (E ₂₁)	Measuring plate fully closed	0.02 - 0.4
	Measuring plate fully open	0.02 - 1.00
Ne - E ₁	Cold	0.185 - 0.275
	Hot	0.240 - 0.325
STJ - E ₁	-	Infinity
FPU - E ₁	-	Infinity
HT ₁ - E ₁	-	Infinity

ECM Terminals

2WD



4WD M/T



4WD A/T

