DI649–01

DTC	P1126/89*	Magnetic Clutch Circuit Malfunction

*: ETCS trouble code No. is 22.

CIRCUIT DESCRIPTION

Magnetic clutch is mounted between the throttle motor and the valve, and it connects the throttle motor with the throttle valve.
Therefore, the throttle motor opens and closes the throttle valve through the magnetic clutch.
If the electric throttle control system has a malfunction, the magnetic clutch separates the throttle motor from the throttle valve in order not to operate the throttle valve by the throttle motor.
If this DTC is stored, the engine ECU shuts down the power for the throttle motor and the magnetic clutch, and the throttle valve is fully closed by the return spring.
However, the opening angle of the throttle valve can be controlled by the accelerator pedal through the throttle cable.

DTC No.	DTC Detecting Condition	Trouble Area
P1126/89	Condition (a) continue for 0.8 seconds: (a) Magnetic clutch current ≧ 1.4 A or ≦ 0.4 A	• Open or short in magnetic clutch circuit • Magnetic clutch • Engine ECU
	Condition (a) continues for 1.5 seconds: (b) Magnetic clutch current ≧ 1.0 A or ≦ 0.8 A	

WIRING DIAGRAM

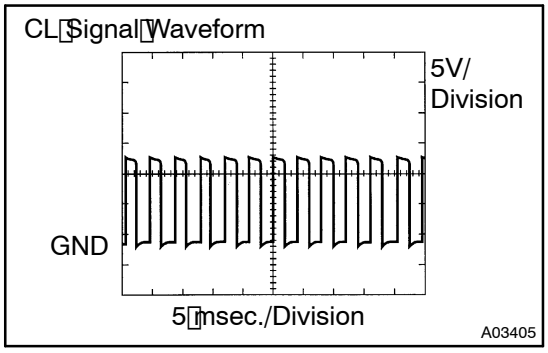
Refer to DTC P1125/89 on page DI–103.

INSPECTION PROCEDURE

HINT:
Read freeze frame data using hand–held tester. Because freeze frame records the engine conditions when the malfunction is detected. When troubleshooting it is useful for determining whether the vehicle was running or stopped, the engine was warmed up or not, the air–fuel ratio was lean or rich, etc. at the time of the malfunction.

1	**Check magnetic clutch circuit.**

When using hand–held tester:
PREPARATION:
(a) Connect the hand–held tester to the DLC3.
(b) Turn the ignition switch ON and push the hand–held tester main switch ON.
CHECK:
Read the magnetic clutch current value on the hand–held tester.
OK:
Current: 0.8 – 1.0 A



When not using hand–held tester:

PREPARATION:

(a) Connect the oscilloscope between terminals CL+ and CL– of the engine ECU connector.

(b) Start the engine.

CHECK:

Check the waveform between terminals CL+ and CL– of the engine ECU when the engine is idling.

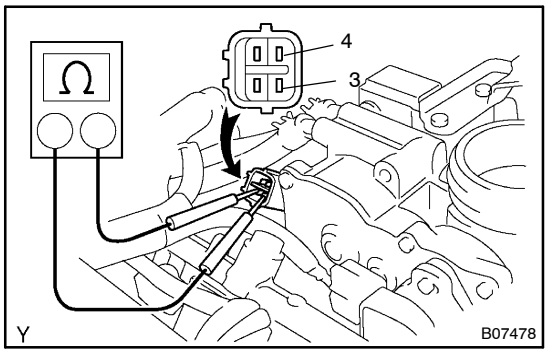
OK:

The correct waveform is as shown.

NG	**Go to step 4.**

OK

2	**Check magnetic clutch.**



PREPARATION:

Disconnect the throttle control motor with the magnetic clutch connector.

CHECK:

Measure the resistance between terminals 3 and 4 of the throttle control motor with the magnetic clutch.

OK:

Resistance: 4.2 – 5.2 Ω at 20°C (68°F)

NG	**Replace throttle control motor with magnetic clutch (See page FI–37).**

OK

3	**Check for open and short in harness and connector between magnetic clutch and engine ECU (See page IN–32).**

NG	**Repair or replace.**

OK

4	**Check operation of magnetic clutch.**

CHECK:

(a) Clear the DTC.

(b) Perform the following steps and check the DTC.

(1) Turn the ignition switch ON.

(2) Start the engine.

(3) Turn the ignition switch OFF and wait 3 seconds.

(4) Turn the ignition switch ON.

OK:

DTC 89 is not stored.

NG → **Replace throttle control motor (with magnetic clutch) (See page FI–37).**

OK

Check and replace engine ECU (See page IN–32).