DIDYN–01

CIRCUIT INSPECTION

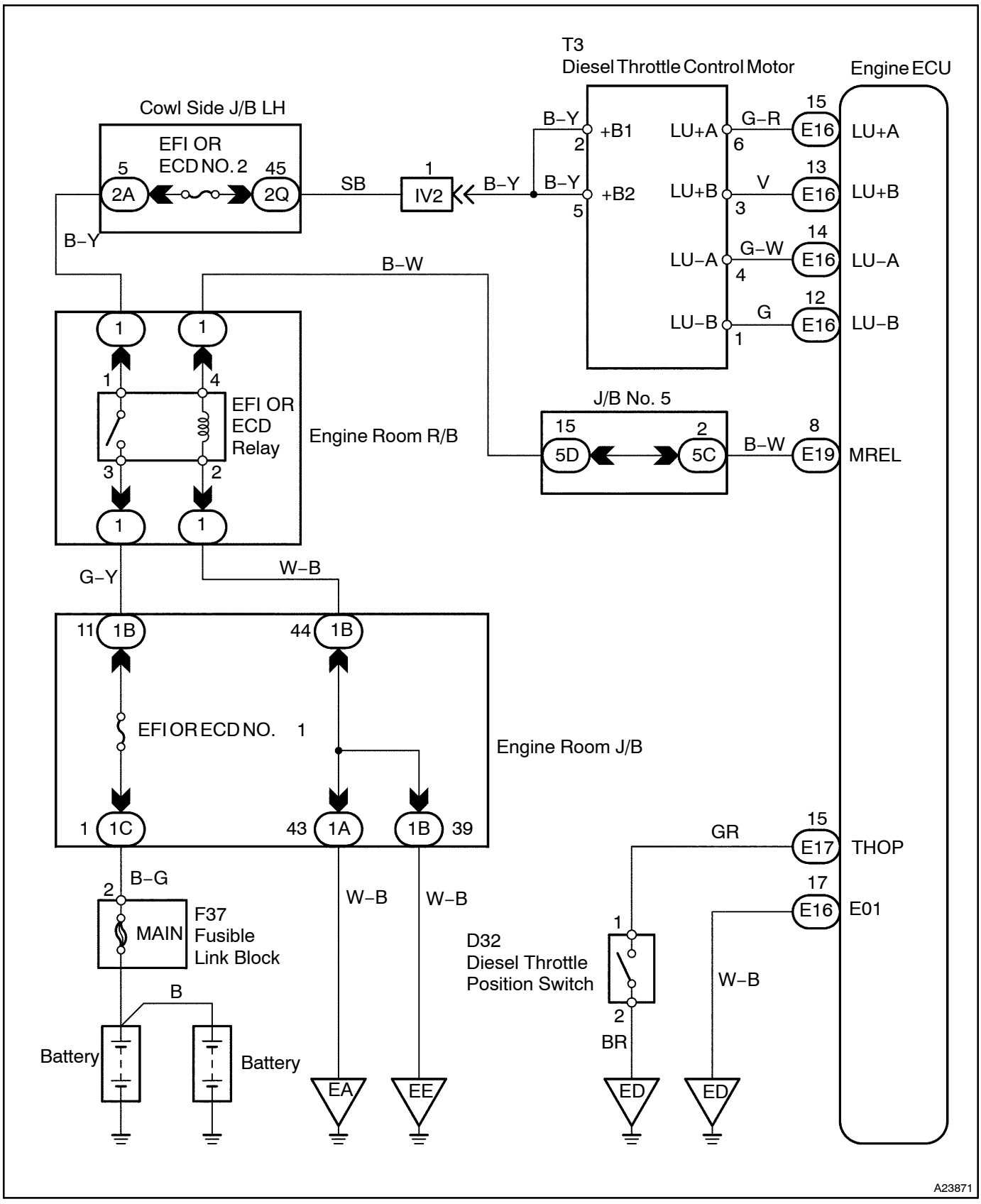
DTC	P 1222/15	Throttle Motor Circuit

CIRCUIT DESCRIPTION

The throttle control motor is operated by the engine ECU and it opens and closes the throttle valve.
The fully open condition of the throttle valve is detected by the diesel throttle position switch, which is mounted on the throttle body.
If this DTC is stored, the engine ECU shuts down the power for the throttle control motor.

DTC No.	DTC Detection Condition	Trouble Area
P1222/15	Open or short in throttle control motor circuit	• Open or short in throttle control motor circuit • Open or short in diesel throttle position switch circuit • Throttle control motor • Throttle valve • Throttle drive gear • Diesel throttle body • Diesel throttle position switch • Engine ECU
	Open or short in diesel throttle position switch circuit	

WIRING DIAGRAM

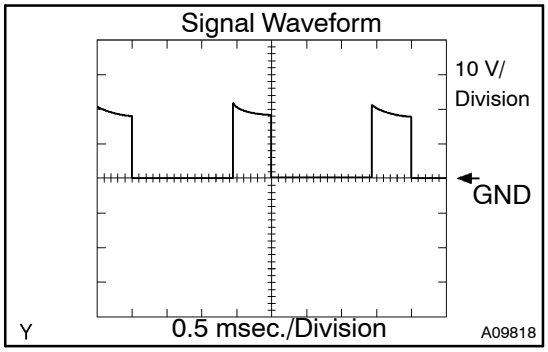


INSPECTION PROCEDURE

HINT:

Read freeze frame data using the intelligent tester II. Freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, freeze frame data can help determine if the vehicle was running or stopped, if the engine was warmed up or not, and other data from the time the malfunction occurred.

1	Check throttle control motor circuit.



PREPARATION:

(a) Connect the oscilloscope between terminals LU+A, LU+B, LU–A, LU–B and E01 of the engine ECU.

(b) Start the engine.

CHECK:

Check the waveform between terminals LU+A, LU+B, LU–A, LU–B and E01 of the engine ECU when the engine is racing.

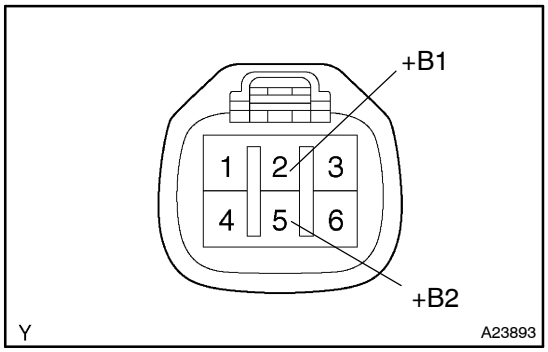
OK:

The correct waveforms are as shown.

OK	Go to step 5.

NG

2	Check voltage of throttle control motor circuit.



PREPARATION:

(a) Disconnect the throttle control motor.

(b) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminals 2 and 5 of the throttle control motor connector and body ground.

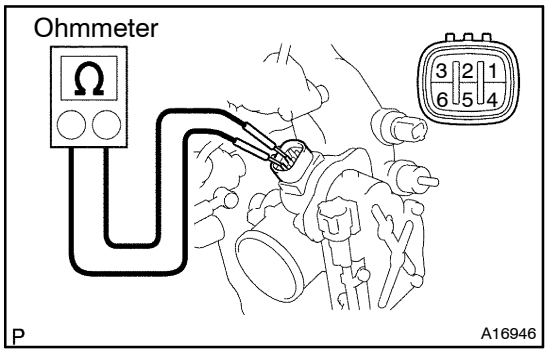
OK:

Voltage: 9 to 14 V

NG	Check for open in harness and connector between EFI OR ECD relay and throttle control motor (See page IN–19).

OK

3	**Check throttle control motor.**



PREPARATION:

Disconnect the throttle control motor connector.

CHECK:

- Measure the resistance between terminals 1, 3 and 2 of the throttle control motor.
- Measure the resistance between terminals 4, 6 and 5 of the throttle control motor.

OK:

Resistance: 18 t o 2 2 Ω at 20 °C (68 °F)

NG	**Replace diesel throttle body assembly (See Pub No. RM896E, page ED –1).**

OK

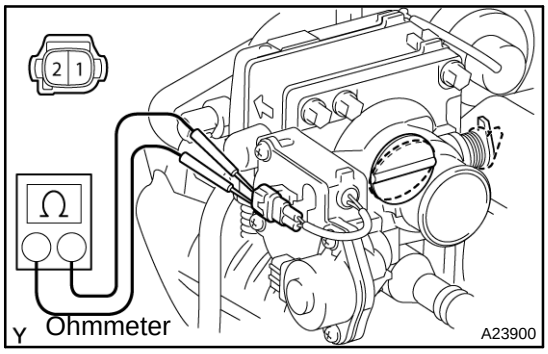
4	**Check for open and short in harness and connector between throttle control motor and engine ECU (See page IN–19).**

NG	**Repair or replace harness or connector.**

OK

Check and replace engine ECU (See page IN–19).

5	**Check diesel throttle position switch.**



PREPARATION:
Disconnector the diesel throttle position switch.
CHECK:
Measure the resistance between terminal of the diesel throttle position switch.
OK:

Throttle Valve Position	Diesel throttle position switch signal
Fully closed	10 kΩ or higher
Fully open	Below 1 Ω

NG → **Replace diesel throttle body assembly (See Pub No. RM896E, page ED−1).**

OK

6	**Check for open and short in harness and connector between diesel throttle position switch and engine ECU (See page IN−19).**

NG → **Repair or replace harness or connector.**

OK

7	**Check for open and short in harness and connector between diesel throttle position switch and body ground (See page IN−19).**

NG → **Repair or replace harness or connector.**

OK

Check and replace engine ECU (See page IN−19).