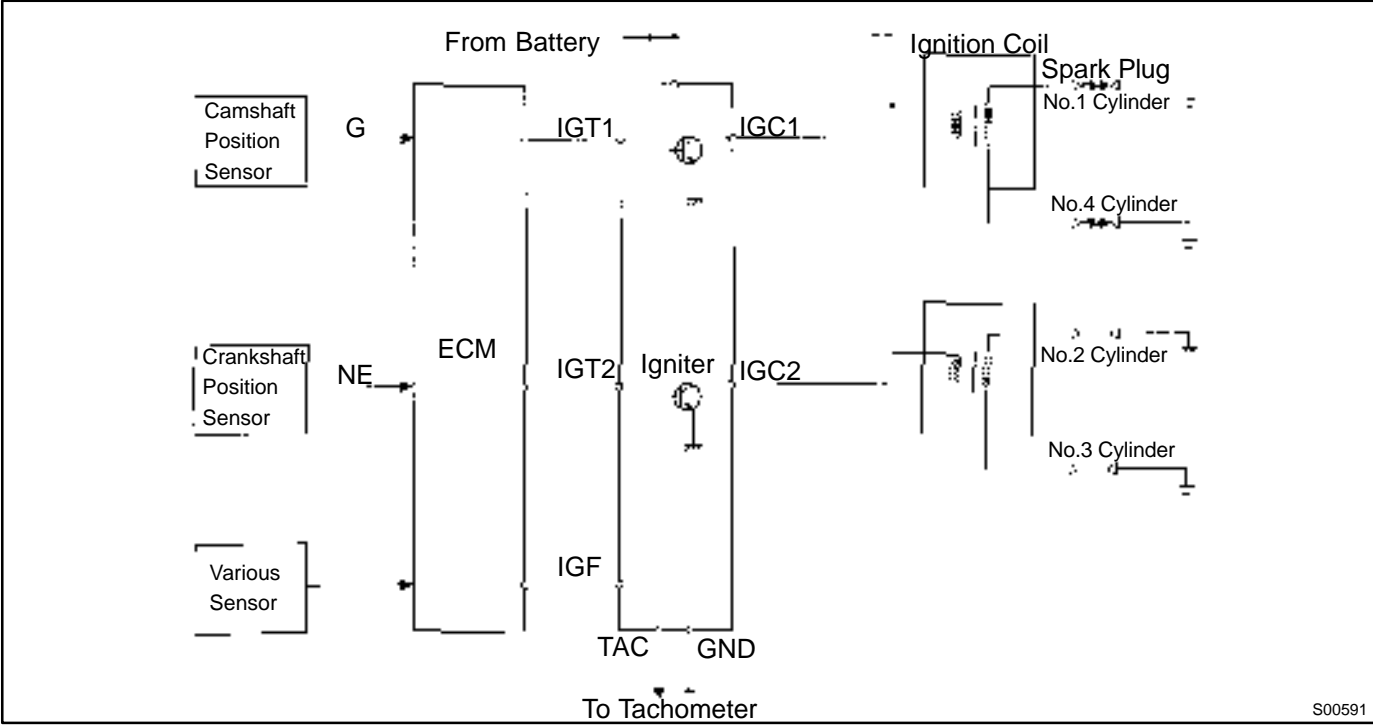


DTC	P1300	Ignition Circuit Malfunction
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CIRCUIT DESCRIPTION

A DIS (Direct ignition system) has been adopted. The DIS improves the ignition timing accuracy, reduces high-voltage loss, and enhances the overall reliability of the ignition system by eliminating the distributor. The DIS is a 2-cylinder simultaneous ignition system which ignites 2 cylinders simultaneously with one ignition coil. In the 2 cylinder simultaneous ignition system, each of the 2 spark plugs is connected to the end of the secondary winding. High voltage generated in the secondary winding is applied directly to the 2 spark plug. The sparks of the 2 sparks plugs pass simultaneously from the center electrode to the ground electrode.

The ECM determines ignition timing and outputs the ignition signals (IGT) for each cylinder. Based on IGT signals, the igniter controls the primary ignition signals (IGC) for all ignition coils. At the same time, the igniter also sends an ignition confirmation signal (IGF) as a fail-safe measure to the ECM.



DTC No.	DTC Detecting Condition	Trouble Area
P1300	No IGF signal to ECM while engine running	<ul style="list-style-type: none"> • Open or short in IGF or IGT1 circuit from igniter to ECM • Igniter • ECM

The diagram illustrates the electrical connections for the Ignition and ECM systems. Key components and their connections include:

- Ignition Switch:** Connected to the Spark Plug via wires B-R, B-W, and 8 B-W.
- Spark Plug:** Connected to the Ignition Coil via wire 7.
- Ignition Coil:** Connected to the Igniter via wire 7.
- Engine Room R/B:** Connected to the Igniter via wire 2.
- Battery:** Connected to the Igniter via wire 1.
- Igniter:** Connected to the ECM via wires 5, 4, 2, and 6.
- ECM (Electronic Control Module):** Includes terminals IGT1, IGT2, and IGF, connected to the Igniter via wires GR, L-Y, and R-L respectively. A 5V supply is also connected to the ECM.
- Tachometer:** Connected to the Igniter via wire 6.

Wire colors and terminal numbers are indicated throughout the diagram to ensure correct installation.

1	Check for spark plug and spark (See page IG-1 ,).
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OK

NG

Go to step 4.

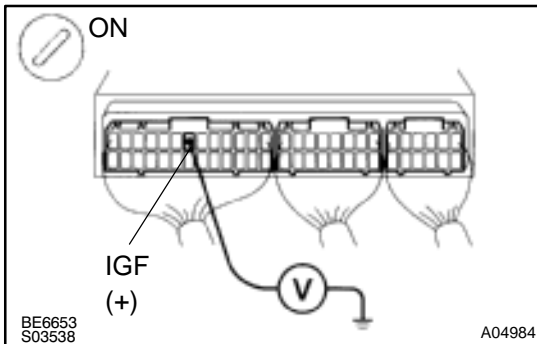
2	Check for open and short in harness and connector in IGF signal circuit between ECM and igniter (See page IN-27).
---	--

OK

NG

Repair or replace harness or connector.

- 3 Disconnect igniter connector and check voltage between terminal IGF of ECM connector and body ground.**

**PREPARATION:**

- (a) Disconnect the igniter connector.
- (b) Remove the lower finish panel.
- (c) Turn ignition switch ON.

CHECK:

Measure voltage between terminal IGF of ECM connector and body ground.

OK:

Voltage: 4.5 – 5.5 V

OK

Replace igniter.

NG

Check and replace ECM (See page [IN-27](#)).

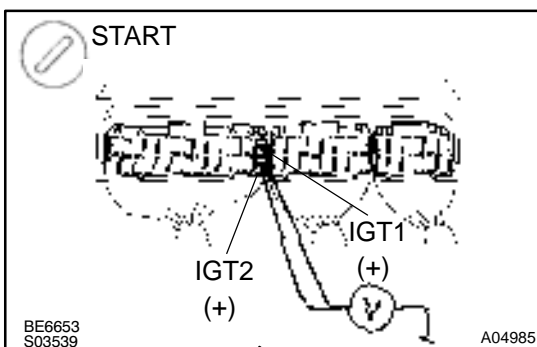
- 4 Check for open and short in harness and connector in IGT1 and IGT2 signal circuits between ECM and igniter (See page [IN-27](#)).**

NG

Repair or replace harness or connector.

OK

- 5 Check voltage between terminals IGT1,2 of ECM connector and body ground.**

**PREPARATION:**

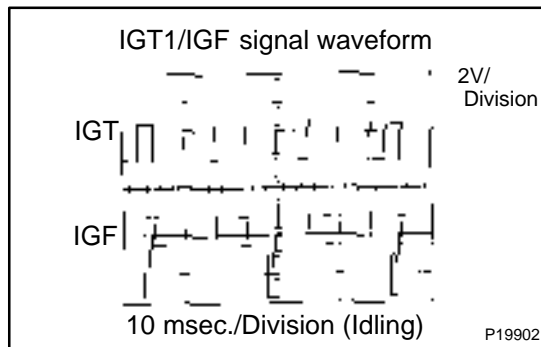
Remove the lower finish panel.

CHECK:

Measure voltage between terminals IGT1 and IGT2 of ECM connector and body ground when engine is cranked.

OK:

Voltage: More than 0.1 V and less than 4.5 V

Reference: INSPECTION USING OSCILLOSCOPE

- During idling, check waveform between terminals IGT1 and E1 of ECM.

HINT:

The correct waveform are as shown.

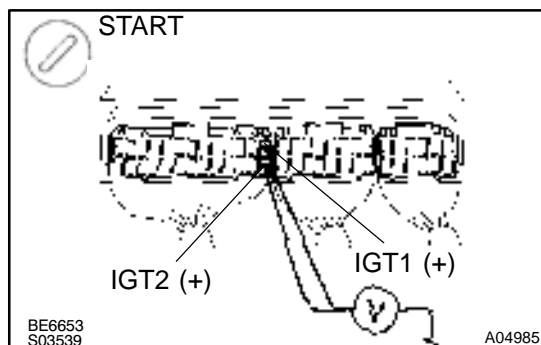
IGT2 signal waveform is same as the IGT1 signal waveform.

NG

Check and replace ECM (See page [IN-27](#)).

NG**6**

Disconnect igniter connector and check voltage between terminals IGT1 and IGT2 of ECM connector and body ground.

**PREPARATION:**

- Disconnect the igniter connector.
- Remove the lower finish panel.

CHECK:

Measure voltage between terminals IGT1 and IGT2 of ECM connector and body ground when engine is cranked.

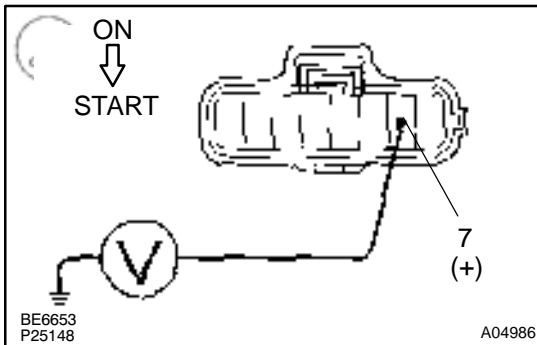
OK:

Voltage: More than 0.1 V and less than 5 V

NG

Check and replace ECM (See page [IN-27](#))

OK

7 Check voltage between terminal 7 of igniter connector and body ground.**PREPARATION:**

Disconnect the igniter connector.

CHECK:

Measure voltage between terminal 7 of igniter connector and body ground, when ignition switch is turned to "ON" and "START" position.

OK:

Voltage: 9 – 14 V

NG**Check and repair igniter power source circuit.****OK****8 Check for open and short in harness and connector between ignition switch and ignition coil, ignition coil and igniter (See page [IN-27](#)).****NG****Repair or replace harness or connector.****OK****9 Check ignition coil (See page [IG-1](#))****NG****Replace ignition coil.****OK****Replace igniter.**