

DTC	P0300	Random/Multiple Cylinder Misfire Detected
DTC	P0301	Cylinder 1 Misfire Detected
DTC	P0302	Cylinder 2 Misfire Detected
DTC	P0303	Cylinder 3 Misfire Detected
DTC	P0304	Cylinder 4 Misfire Detected
DTC	P0305	Cylinder 5 Misfire Detected
DTC	P0306	Cylinder 6 Misfire Detected

CIRCUIT DESCRIPTION

Misfire:

The ECM uses the crankshaft position sensor and camshaft position sensor to monitor changes in the crankshaft rotation for each cylinder.

The ECM counts the number of times the engine speed change rate indicates that misfire has occurred. When the misfire rate equals or exceeds the count indicating that the engine condition has deteriorated, the MIL lights up.

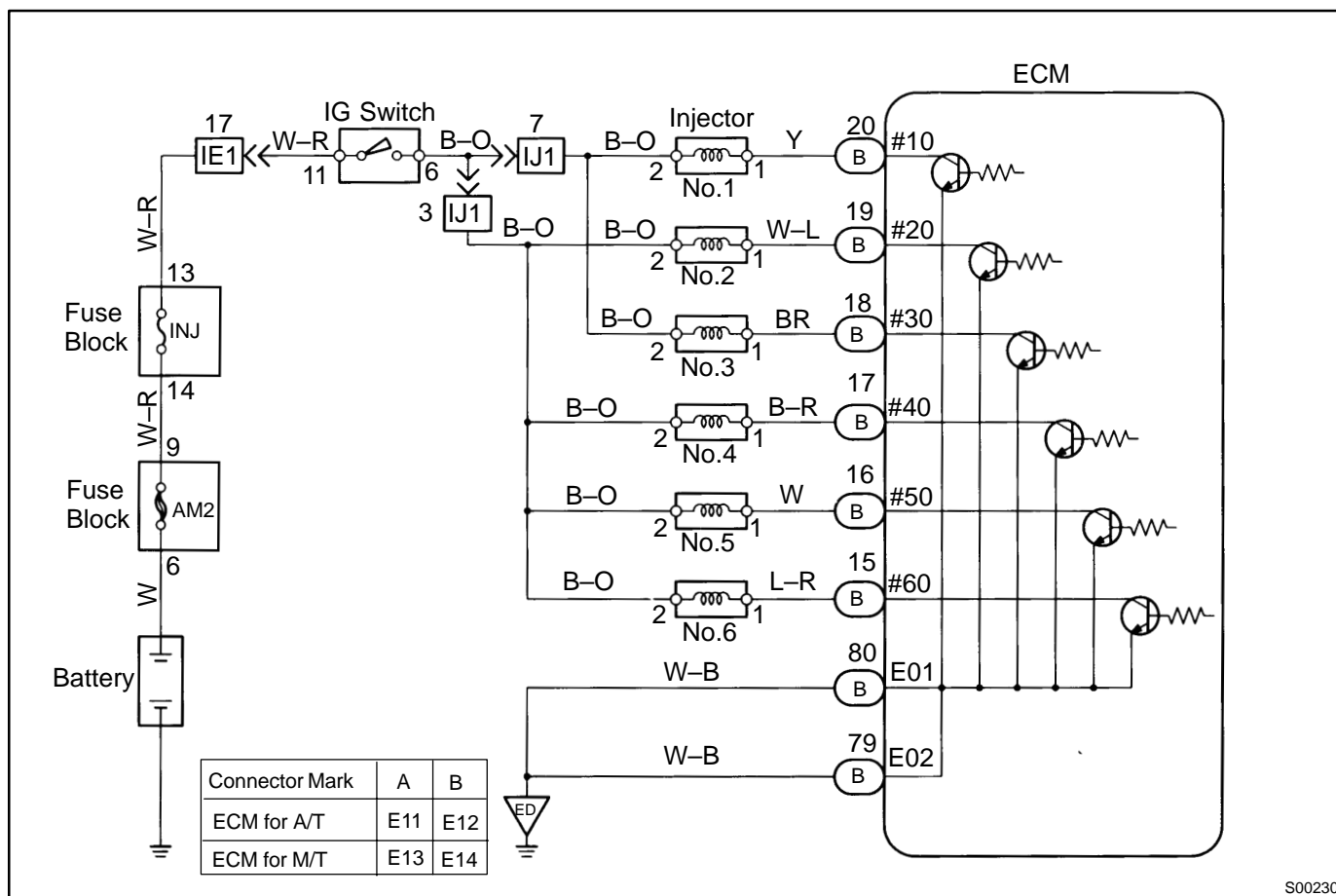
If the misfire rate is high enough and the driving conditions will cause catalyst overheating, the MIL blinks when misfiring occurs.

DTC No.	DTC Detecting Condition	Trouble Area
P0300	Misfiring of random cylinders is detected during the any particular 200 or 1,000 revolutions	<ul style="list-style-type: none"> • Ignition system • Injector • Fuel line pressure • EGR • Compression pressure • Valve clearance not to specification • Valve timing • Mass air flow meter • Engine coolant temp. sensor
P0301 P0302 P0303	For any particular 200 revolutions of the engine, misfiring is detected which can cause catalyst overheating (This causes MIL to blink)	
P0304 P0305 P0306	For any particular 1,000 revolutions of the engine, misfiring is detected which causes a deterioration in emission (2 trip detection logic)	

HINT:

When the 2 or more codes for a misfiring cylinder are recorded repeatedly but no Random Misfire code is recorded, it indicates that the misfires were detected and recorded at different times.

WIRING DIAGRAM



S00230

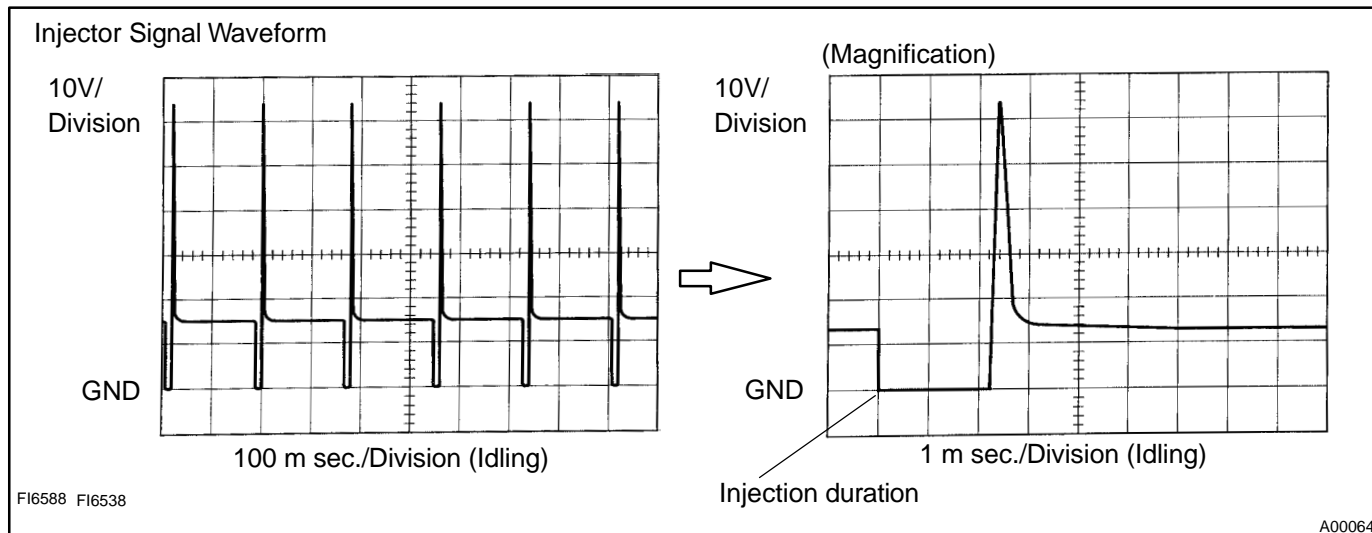
Reference: INSPECTION USING OSCILLOSCOPE

INJECTOR SIGNAL WAVEFORM

With the engine idling, measure between terminals #10 – #60 and E01 of ECM.

HINT:

The correct waveform are as shown.

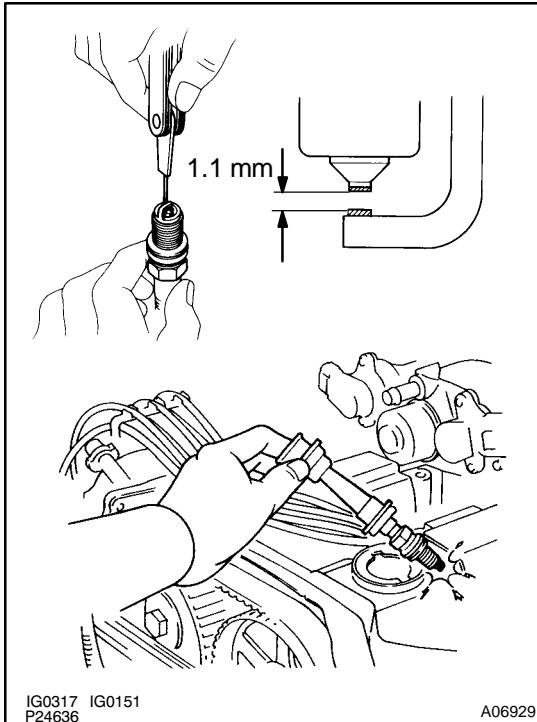


FI6588 FI6538

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INSPECTION PROCEDURE

1 Check spark plug and spark of misfiring cylinder.

**PREPARATION:**

- (a) Remove No.3 timing belt cover. (See page IG-1).
- (b) Disconnect the high-tension cord.
- (c) Remove the spark plug.

CHECK:

- (a) Check the carbon deposits on electrode.
- (b) Check electrode gap.

OK:

- (1) No large carbon deposit present.
Not wet with gasoline or oil.
- (2) Electrode gap: 1.1 – 1.3 mm (0.043 – 0.051 in.)

PREPARATION:

- (a) Install the spark plug to the high-tension cord.
- (b) Ground the spark plug.
- (c) Disconnect injector connector.

CHECK:

Check if spark occurs while the engine is being cranked.

NOTICE:

To prevent excess fuel being injected from the injectors during this test, don't crank the engine for more than 5 – 10 sec. at a time.

OK:

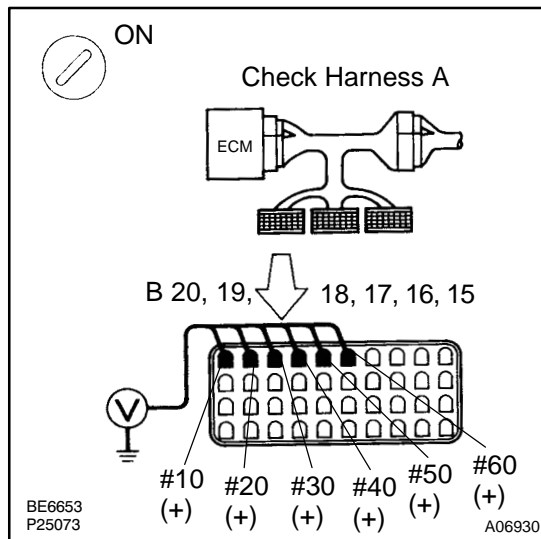
Spark jumps across electrode gap.

NG

Replace or check ignition system (See page IG-1).

OK

2 Check voltage of ECM terminal for injector of failed cylinder.



PREPARATION:

- Connect Check HArness A (See page [DI-18](#)).
- Turn ignition switch ON.

CHECK:

Measure voltage between applicable terminal of ECM and body ground.

OK:

Voltage: 9 – 14 V

OK

Go to step 4.

NG

3 Check resistance of injector of misfiring cylinder (see page SF-19).

NG

Replace injector.

OK

Check for open and short in harness and connector between injector and ECM (See page [IN-29](#)).

4 Check fuel pressure (See page SF-6).

NG

Check and repair fuel pump, pressure regulator, fuel pipe line and filter (See page SF-1).

OK

5 Check injector injection (See page SF–25).

NG

Replace injector.

OK

6 Check EGR system (See page EC–8).

NG

Repair EGR system.

OK

7 Check mass air flow meter and engine coolant temp. sensor (See page [DI-24](#), [DI-33](#)).

NG

Repair or replace.

OK

Check the compression pressure (See page EM–3), valve clearance (See page EM–4) and valve timing (See page EM–15).