

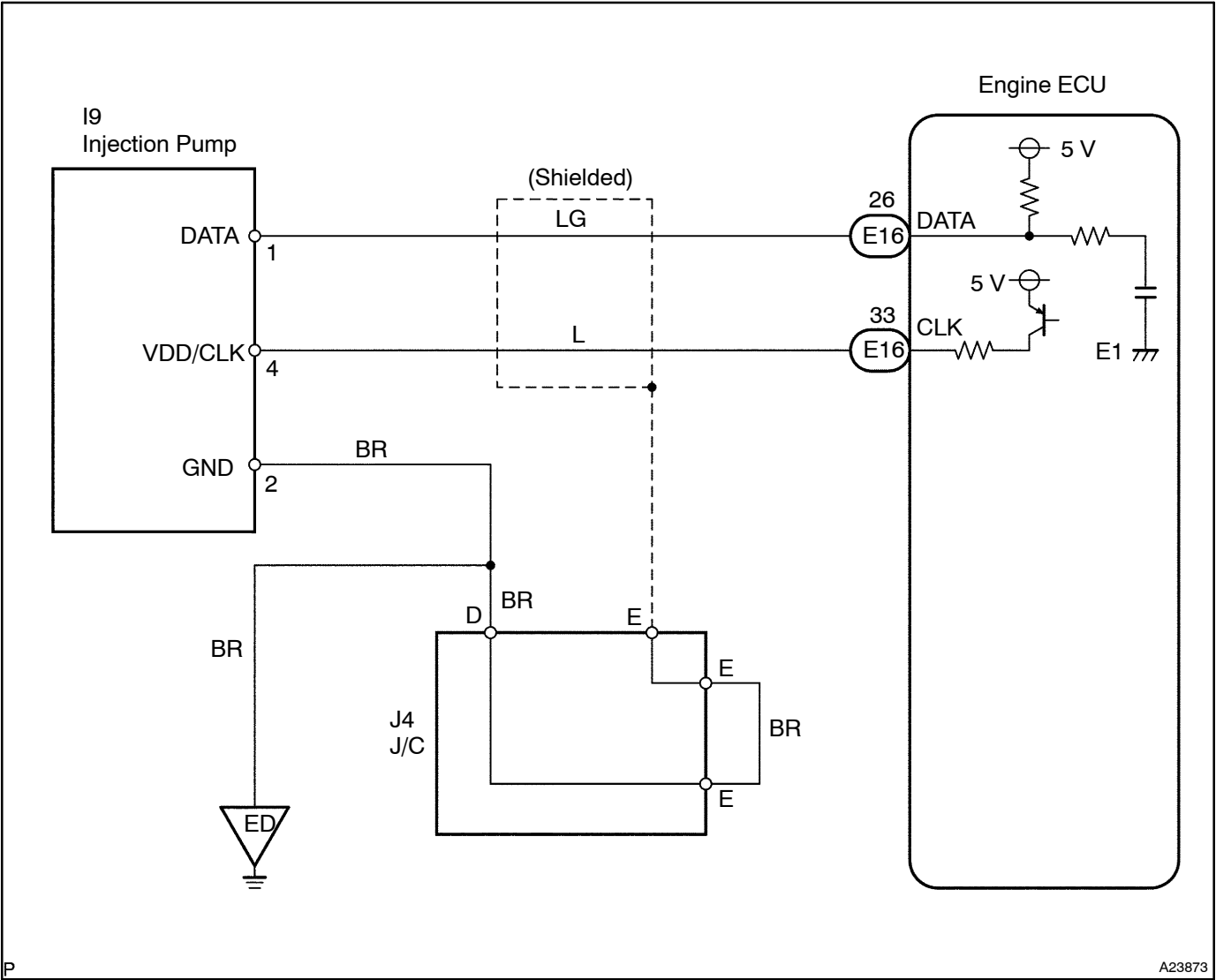
DTC	P 1670/32	Injection Pump System Malfunction
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CIRCUIT DESCRIPTION

The correction system correct variations between each injection pump.

DTC No.	DTC Detection Condition	Trouble Area
P1670/32	Open or short in injection pump correction unit circuit	<ul style="list-style-type: none">• Injection pump correction unit circuit• Injection pump correction unit• Engine ECU

WIRING DIAGRAM



INSPECTION PROCEDURE

- | | |
|---|---|
| 1 | Check for open and short in harness and connector between DATA of engine ECU and DATA of injection pump correction unit (See page IN-19). |
|---|---|

NG

Repair or replace harness or connector.

OK

- | | |
|---|---|
| 2 | Check for open and short in harness and connector between CLK of engine ECU and VDD/CLK of injection pump correction unit (See page IN-19). |
|---|---|

NG

Repair or replace harness or connector.

OK

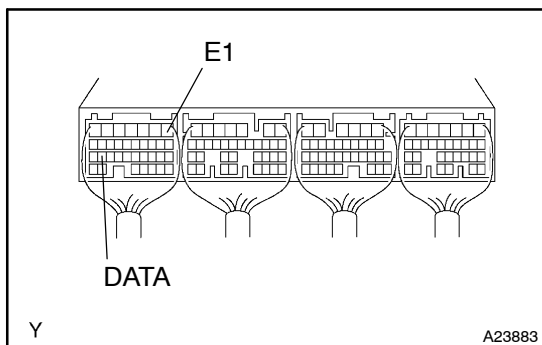
- | | |
|---|--|
| 3 | Check for open in harness in injection pump correction unit terminal GND and body ground (See page IN-19). |
|---|--|

NG

Repair or replace harness or connector.

OK

4 Check waveform between terminal DATA of engine ECU connector.



PREPARATION:

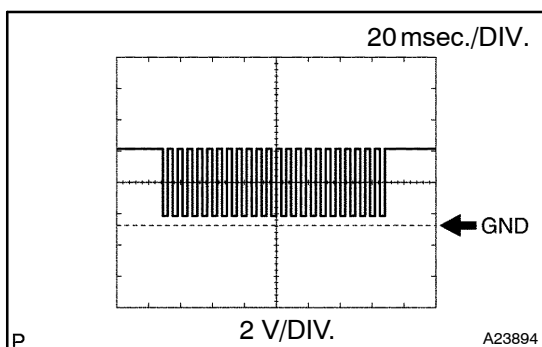
- Remove the glove compartment door.
- Connect an oscilloscope between terminals DATA and E1 of the engine ECU.
- Turn the ignition switch ON.

CHECK:

Within 0.5 seconds after the ignition switch is turned ON, check the waveform between terminals DATA and E1 of the engine ECU.

OK:

The correct waveforms are as shown.

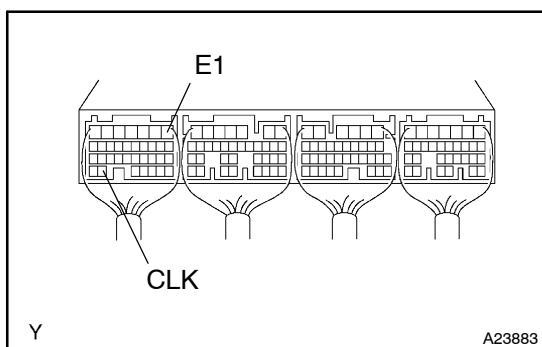


OK

Check and replace engine ECU

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5 Check waveform between terminal CLK of engine ECU connector.



PREPARATION:

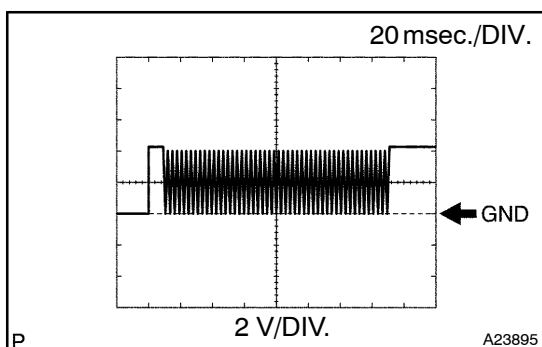
- Remove the glove compartment door.
- Turn the ignition switch ON.
- Connect an oscilloscope between terminals CLK and E1 of the engine ECU.

CHECK:

Within 0.5 seconds after the ignition switch is turned ON, check the waveform between terminals CLK and E1 of the engine ECU.

OK:

The correct waveforms are as shown.

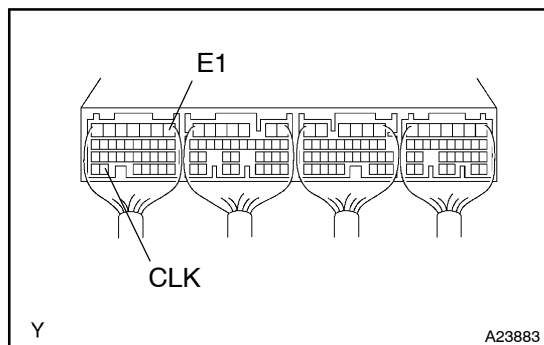


OK

Go to step 7.

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6 Check waveform between terminal CLK of engine ECU connector.



PREPARATION:

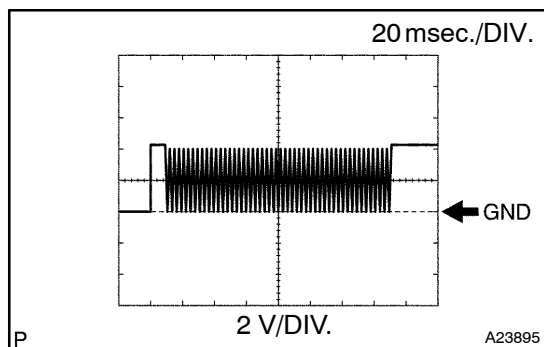
- Remove the glove compartment door.
- Disconnect the injection pump correction unit connector.
- Turn the ignition switch ON.
- Connect an oscilloscope between terminals CLK and E1 of the engine ECU.

CHECK:

Within 0.5 seconds after the ignition switch is turned ON, check the waveform between terminals CLK and E1 of the engine ECU.

OK:

The correct waveforms are as shown.



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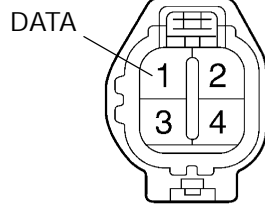
Check and replace engine ECU.

OK

Check and replace injection pump (See Pub No. RM6 17E, page FU -113).

7 Check voltage between DATA of wire harness and body ground.

Wire harness side
Injection pump correction connector



Y

A23902

PREPARATION:

- (a) Disconnect the injection pump correction unit connector.
- (b) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminal DATA of the injection pump correction unit connector and body ground.

OK:

Voltage: 4.5 to 5.5V

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Check and replace engine ECU.

OK

Check and replace injection pump (See Pub No. RM617E, page FU-113).