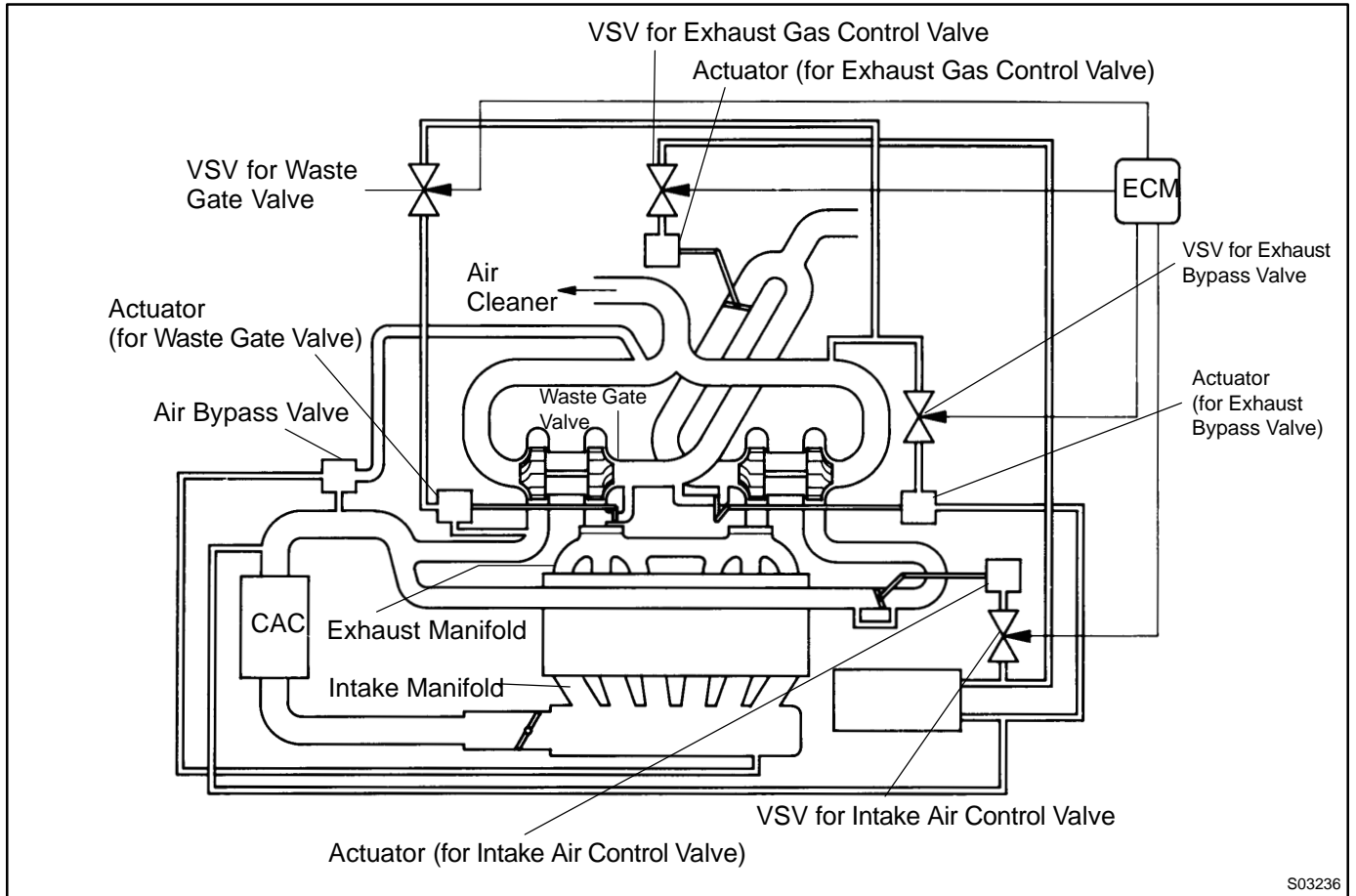


DTC	P1511	Boost Pressure Low Malfunction
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CIRCUIT DESCRIPTION

To control maximum turbocharging pressure the turbocharger system includes a waste gate valve or exhaust bypass valve controlled by an actuator. The actuator is controlled by the manifold pressure which is duty controlled by the VSV based on signals from the ECM.



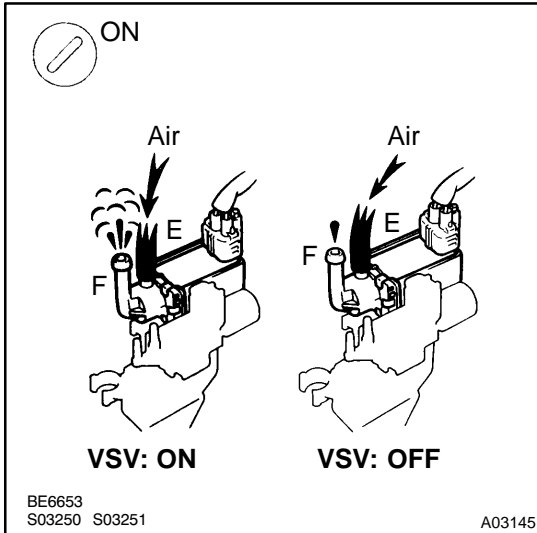
S03236

DTC No.	DTC Detecting Condition	Trouble Area
P1511	Under the following conditions (a), (b) and (c): (a) After the engine is warmed up (b) Engine rotation speed is 2,600 rpm or more (c) At the time of WOT, under the condition with +150 mmHg or less of intake pipe pressure (2 trip detection logic)	<ul style="list-style-type: none"> • Actuator (for waste gate valve, intake air control valve, exhaust gas control valve, and exhaust bypass valve) • Short in VSV for waste gate valve, intake air control valve, exhaust gas control valve and exhaust bypass valve circuit • ECM • Air intake (leakage or clogging)

INSPECTION PROCEDURE

TOYOTA hand-held tester

- | | |
|----------|---|
| 1 | Connect the TOYOTA hand-held tester and check operation of VSV for waste gate valve. |
|----------|---|

**PREPARATION:**

- Connect the TOYOTA hand-held tester to the DLC3.
- Turn ignition switch ON and TOYOTA hand-held tester main switch ON.
- Select the ACTIVE TEST mode on the TOYOTA hand-held tester.

CHECK:

Check operation of VSV when VSV is operated by the TOYOTA hand-held tester.

OK:

VSV is ON:

Air from pipe E flows out through pipe F.

VSV is OFF:

Air does not flow from pipe E to pipe F.

OK

Go to step 3.

NG

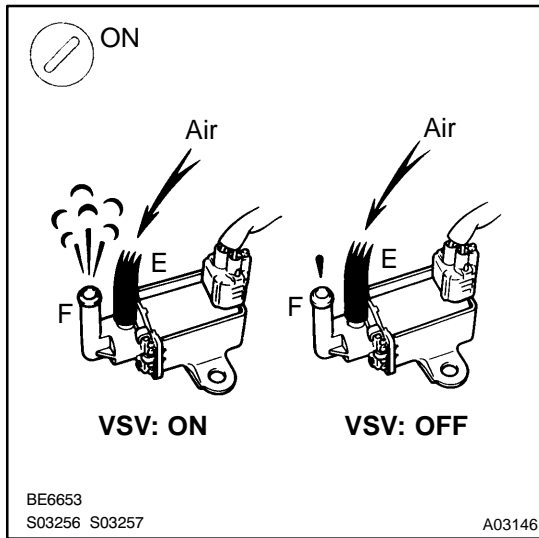
- | | |
|----------|---|
| 2 | Check VSV for waste gate valve (See page SF-63). |
|----------|---|

NG

Replace VSV for waste gate valve.

OK

- 3** Connect the TOYOTA hand-held tester and check operation of VSV for exhaust bypass valve.

**PREPARATION:**

- Connect the TOYOTA hand-held tester to the DLC3.
- Turn ignition switch ON and TOYOTA hand-held tester main switch ON.
- Select the ACTIVE TEST mode on the TOYOTA hand-held tester.

CHECK:

Check operation of VSV when VSV is operated by the TOYOTA hand-held tester.

OK:

VSV is ON:

Air from pipe E flows out through pipe F.

VSV is OFF:

Air does not flow from pipe E to pipe F.

OK

Go to step 5.

NG

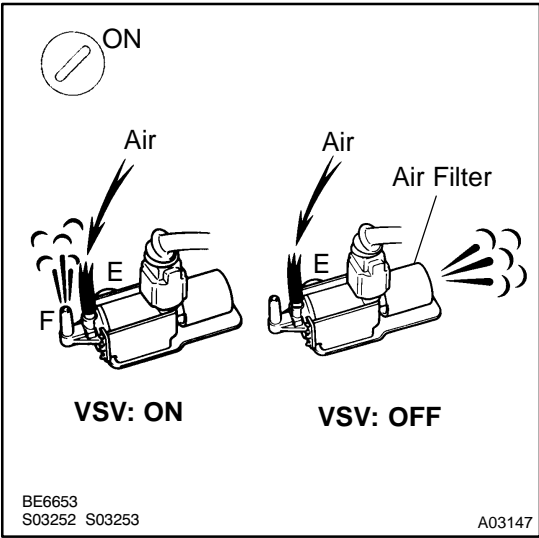
- 4** Check VSV for exhaust bypass valve (See page [SF-67](#)).

NG

Replace VSV for exhaust bypass valve.

OK

5 Connect the TOYOTA hand-held tester and check operation of VSV for intake air control valve.



PREPARATION:

- (a) Connect the TOYOTA hand-held tester to the DLC3.
- (b) Turn ignition switch ON and TOYOTA hand-held tester main switch ON.
- (c) Select the ACTIVE TEST mode on the TOYOTA hand-held tester.

CHECK:

Check operation of VSV when VSV is operated by the TOYOTA hand-held tester.

OK:

VSV is ON:

Air from pipe E flows out through pipe F.

VSV is OFF:

Air does not flow from pipe E to pipe F.

OK → Go to step 7.

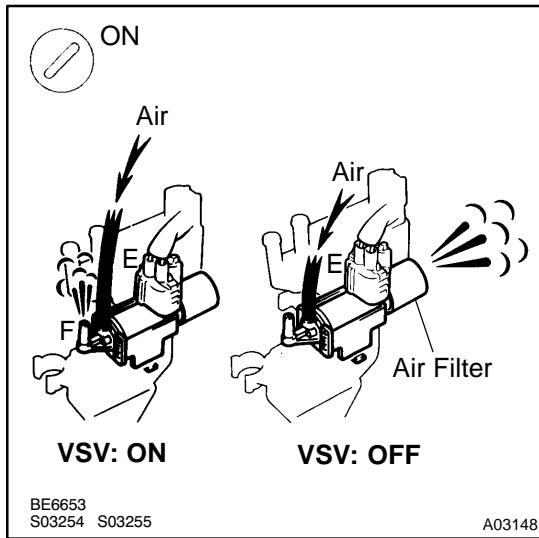
NG

6 Check VSV for intake air control valve (See page SF-61).

NG → Replace VSV for intake air control valve.

OK

- 7** Connect the TOYOTA hand-held tester and check operation of VSV for exhaust gas control valve.

**PREPARATION:**

- Connect the TOYOTA hand-held tester to the DLC3.
- Turn ignition switch ON and TOYOTA hand-held tester main switch ON.
- Select the ACTIVE TEST mode on the TOYOTA hand-held tester.

CHECK:

Check operation of VSV when VSV is operated by the TOYOTA hand-held tester.

OK:

VSV is ON:

Air from pipe E flows out through pipe F.

VSV is OFF:

Air does not flow from pipe E to pipe F.

OK

Go to step 10.

NG

- 8** Check VSV for exhaust gas control valve (See page [SF-65](#)).

NG

Replace VSV for exhaust gas control valve.

OK

- 9** Check for open and short in harness and connector between EFI main relay (Marking: EFI MAIN) and ECM (See page [IN-28](#)).

NG

Repair or replace harness or connector.

OK

Check and replace ECM (See page [IN-28](#)).

10 Check connection of vacuum hose (See page [EC-2](#)).

NG

Repair or replace.

OK

11 Check turbocharger components (See page [TC-18](#)).

NG

Replace turbocharger components.

OK

Check and replace ECM (See page [IN-28](#)).

OBDII scan tool (excluding TOYOTA hand-held tester)

1 Check VSV for waste gate valve (See page [SF-63](#)).

NG

Replace VSV for waste gate valve.

OK

2 Check VSV for exhaust bypass valve (See page [SF-67](#)).

NG

Replace VSV for exhaust bypass valve.

OK

3 Check VSV for intake air control valve (See page SF-61).

NG

Replace VSV for intake air control valve.

OK

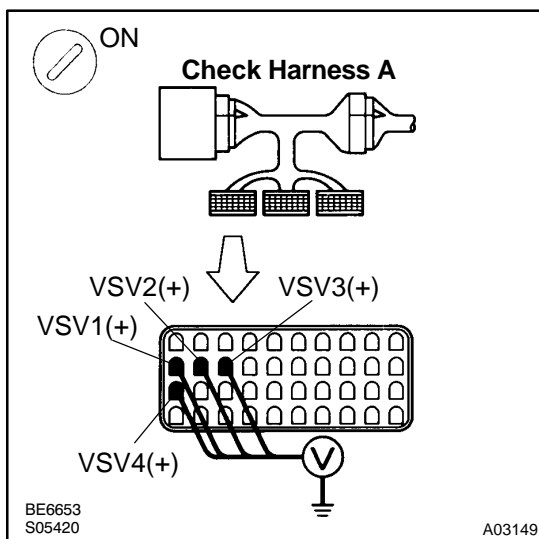
4 Check VSV for exhaust gas control valve (See page SF-65).

NG

Replace VSV for exhaust gas control valve.

OK

5 Check voltage between terminal VSV1 ~ VSV4 of ECM connector and body ground.



PREPARATION:

- Connect Check Harness A (See page DI-164).
- Turn ignition switch ON.

CHECK:

Measure voltage between terminal VSV1 ~ VSV4 of ECM connector and body ground.

OK:

Voltage: 9 – 14 V

NG

Check and repair harness or connector between VSV for waste gate valve and ECM (See page IN-28).

OK

6 Check connection of vacuum hose (See page [EC-2](#)).

NG

Repair or replace.

OK

7 Check operation of turbocharger components (See page [TC-18](#)).

NG

Replace turbocharger components.

OK

Check and replace ECM (See page [IN-28](#)).