

DTC	P1692	OCV FOR VVTL OPEN MALFUNCTION (BANK 1)
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DTC	P1693	OCV FOR VVTL CLOSE MALFUNCTION (BANK 1)
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CIRCUIT DESCRIPTION

Refer to DTC P1690 (OCV for VVTL Circuit Malfunction) on page [05-290](#).

DTC No.	DTC Detecting Condition	Trouble Area
P1692	In the condition that the engine speed is 6,200 rpm or less and the oil pressure switch on for 5 sec. or more	<ul style="list-style-type: none"> • Open or short in oil control valve circuit • Oil control valve (for VVTL)
P1693	In the condition that the water temperature is 60°C or more, the engine speed is 6,200 rpm or more, and the oil pressure switch OFF for 1 sec. or more	<ul style="list-style-type: none"> • Oil pressure switch for VVTL • ECM

WIRING DIAGRAM

Refer to DTC P1690 (OCV for VVTL Circuit Malfunction) on page [05-290](#).

Hand-held tester:


1	PERFORM ACTIVE TEST BY CAMSHAFT TIMING OIL CONTROL VALVE ASSY(for VVTL)
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- Start the engine and warmed it up.
- Connect the hand-held tester and select VVTL from ACTIVE TEST menu.
- Maintain engine speed at 1,500 – 2,500 rpm.
- Check the engine speed when operate the OCV for VVTL by the hand-held tester.

Result:

VVTL system is OFF (OCV is OFF): Normal engine speed

VVTL system is ON (OCV is ON): Rough engine speed or engine stalled


Go to step 4

OK

2	PERFORM ACTIVE TEST BY ENGINE OIL PRESSURE SWITCH ASSY(for VVTL)
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- Start the engine and warmed it up.
- Connect the hand-held tester and select VVTL from ACTIVE TEST menu.
- Disconnect the oil pressure switch for VVTL connector.
- Maintain engine speed at 3,500 – 4,000 rpm.
- Measure continuity between the oil pressure switch and body ground when operate the OCV by the hand-held tester.

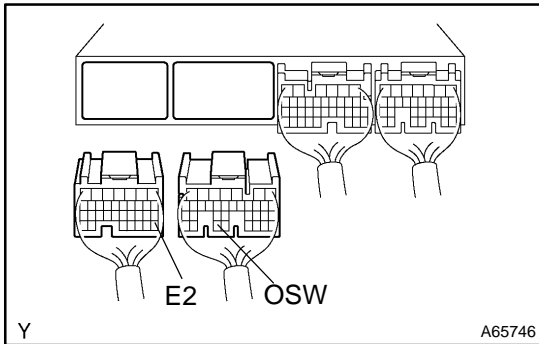
Result:

VVTL system is OFF (OCV is OFF): No continuity

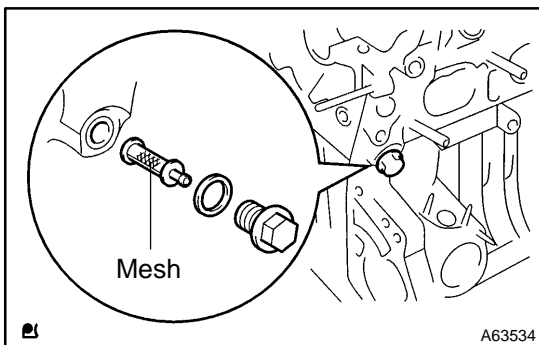
VVTL system is ON (OCV is ON): Continuity


REPLACE ENGINE OIL PRESSURE SWITCH ASSY

OK

3 CHECK HARNESS AND CONNECTOR(OIL PRESSURE SWITCH for VVTL - ECM)

- Disconnect the oil pressure switch connector.
- Disconnect the ECM E3 and E4 connector.
- Check continuity between the terminals OSW of the ECM connector and oil pressure switch connector.
Resistance: 1 Ω or less
- Check for short between the terminals OSW and E2 of the ECM connector.
Resistance: 1 M Ω or more

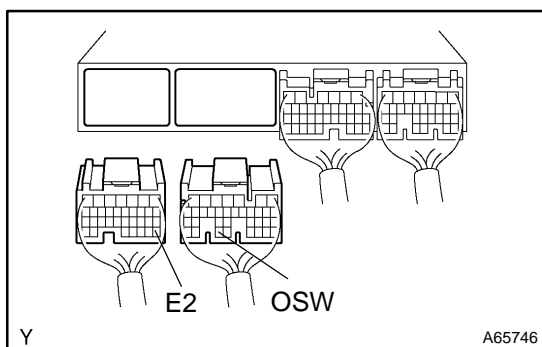
NG**REPAIR OR REPLACE HARNESS AND CONNECTOR****OK****CHECK AND REPLACE ECM****4 CHECK OIL CONTROL VALVE FILTER**

- Remove the generator. (See page 19-15)
- Remove the oil control valve filter.
- Check the oil control valve filter.
 - Confirm that the filter is clear.
- Place a new gasket on the bolt and install the filter.
Torque: 29 N·m (300 kgf·cm, 22 ft·lbf)

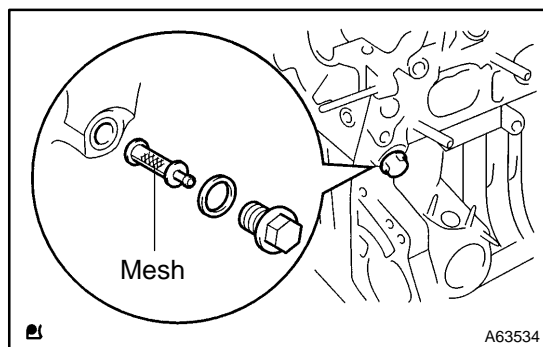
NG**REPLACE OIL CONTROL VALVE FILTER****OK****5 INSPECT CAMSHAFT TIMING OIL CONTROL VALVE ASSY(for VVTL)
(See page 10-12)****NG****REPLACE CAMSHAFT TIMING OIL CONTROL VALVE ASSY****OK****CHECK FOR INTERMITTENT PROBLEMS**

OBD II scan tool (excluding hand-held tester) :**1 CHECK ENGINE OIL PRESSURE SWITCH ASSY(for VVTL)**

- (a) Disconnect the oil pressure switch for VVTL connector.
- (b) Ignition switch OFF.
- (c) Measure continuity between the oil pressure switch and body ground.

Resistance: No continuity**NG****REPLACE ENGINE OIL PRESSURE SWITCH ASSY****OK****2 CHECK HARNESS AND CONNECTOR(OIL PRESSURE SWITCH for VVTL - ECM)**

- (a) Disconnect the oil pressure switch connector.
- (b) Disconnect the ECM E3 and E4 connector.
- (c) Check continuity between the terminals OSW of the ECM connector and oil pressure switch connector.
- (d) Check for short between the terminals OSW and E2 of the ECM connector.

Resistance: 1 Ω or less**Resistance: 1 MΩ or more****NG****REPAIR OR REPLACE HARNESS AND CONNECTOR****OK****3 CHECK OIL CONTROL VALVE FILTER**

- (a) Remove the generator. (See page 19-15)
- (b) Remove the oil control valve filter.
- (c) Check the oil control valve filter.
 - (1) Confirm that the filter is clear.
- (d) Place a new gasket on the bolt and install the filter.

Torque: 29 N·m (300 kgf·cm, 22 ft·lbf)**NG****REPLACE OIL CONTROL VALVE FILTER****OK**

4	INSPECT CAMSHAFT TIMING OIL CONTROL VALVE ASSY(for VVTL) (See page 10-12)
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REPLACE CAMSHAFT TIMING OIL CONTROL VALVE ASSY

OK

CHECK AND REPLACE ECM
