

DTC P0011 / P0012: Camshaft Position - Timing Over-Advanced or System Performance / -Retarded (For M16 Engine)

System Description

Actual value of advanced valve timing does not reach target value.
Valve timing is advanced although ECM command is most retarding.

DTC Detecting Condition and Trouble Area

DTC detecting condition	Trouble area
Actual value of advanced valve timing does not reach target value, or valve timing is advanced although ECM command is most retarding. (2 driving cycle detection logic)	<ul style="list-style-type: none"> • Oil control valve • Oil galleries of timing sprocket • Intake camshaft timing sprocket (Camshaft position control (VVT) actuator) • Oil control valve circuit • ECM

DTC Confirmation Procedure **WARNING**

- When performing a road test, select a place where there is no traffic or possibility of a traffic accident and be very careful during testing to avoid occurrence of an accident.
- Road test should be carried out by 2 persons, a driver and tester, on a level road.

- 1) Clear DTC. Refer to "DTC Clearance: "
- 2) Start engine and drive vehicle under usual driving condition for 5 minutes or longer until engine is warmed up to normal operating temperature.
- 3) Stop vehicle.
- 4) Run engine at idle speed for 1 minute.
- 5) Start vehicle and increase vehicle speed up to 80 km/h (50 mile/h).
- 6) Keep vehicle speed at 80 km/h (50 mile/h) for 1 minute or longer at 5th gear position.

- 7) Decrease vehicle speed gradually.
- 8) Stop vehicle and turn OFF ignition switch.
- 9) Repeat Step 4) to 7) one time.
- 10) Stop vehicle.
- 11) Check DTC. Refer to "DTC Check: ".

DTC Troubleshooting

NOTE

Before this trouble shooting is performed, read the precautions for DTC troubleshooting referring to "Precautions For DTC Troubleshooting: ".

Step	Action	Yes	No
1	Is DTC P0010 detected together?	Go to "DTC P0010: Camshaft Position Actuator Circuit (For M16 Engine): ".	Go to Step 2.
2	Do you have SUZUKI scan tool?	Go to Step 3.	Go to Step 5.
3	<p>Camshaft position control check</p> <p>1) With ignition switch turned OFF, connect SUZUKI scan tool.</p> <p>2) Start engine and warm up to normal operating temperature.</p> <p>3) Select menu to DATA LIST.</p> <p>4) Check that "VVT GAP" displayed on SUZUKI scan tool is 0 – 5°.</p> <p>Is it OK?</p>	Go to Step 4.	Check valve timing referring to "Timing Chain and Chain Tensioner Removal and Installation: For M16A Engine with VVT in Section 1D". If OK, go to Step 5.

Step	Action	Yes	No
4	<p>Camshaft position control check</p> <p>1) Drive vehicle under following conditions.</p> <ul style="list-style-type: none"> • Vehicle speed at 80 km/h (50 mile/h). • Gear position at 5th. <p>2) Check that "VVT GAP" displayed on SUZUKI scan tool is 0 – 5°.</p> <p>Is it OK?</p>	Substitute a known-good ECM and recheck.	Go to Step 5.
5	<p>Oil control circuit visual inspection</p> <p>1) Remove cylinder head cover referring to "Cylinder Head Cover Removal and Installation: For M16A Engine with VVT in Section 1D".</p> <p>2) Check oil pressure leakage from oil control circuit.</p> <p>Is it in good condition?</p>	Go to Step 6.	Repair or replace.
6	<p>Oil control valve and oil gallery pipe check</p> <p>1) Remove oil control valve referring to "Oil Control Valve Removal and Installation: For M16A Engine with VVT in Section 1D".</p> <p>2) Remove oil gallery pipe referring to "Timing Chain Cover Removal and Installation: For M16A Engine with VVT in Section 1D".</p> <p>3) Check oil gallery pipe and oil control valve for clog or sludge.</p> <p>Are they in good condition?</p>	Go to Step 7.	Clean oil control valve and oil gallery pipe. Replace oil control valve if a problem is not solved after cleaning oil control valve and oil gallery pipe.
7	<p>Oil control valve electrical circuit check</p> <p>1) Check that oil control valve circuit is in good condition referring to "DTC P0010: Camshaft Position Actuator Circuit (For M16 Engine): ".</p> <p>Is circuit in good condition?</p>	Repair circuit.	Go to Step 8.

Step	Action	Yes	No
8	Oil control valve check Check oil control valve referring to "Oil Control Valve Inspection: For M16A Engine with VVT in Section 1D". Is it in good condition?	Replace camshaft timing sprocket.	Replace oil control valve.

LAUNCH