

P0011 / P0012: Camshaft Position - Timing Over-Advanced or System Performance / Retarded (for engine with VVT system)

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

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

DTC Confirmation Procedure

- 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 120 km/h (70 mile/h).
- 6) Keep vehicle speed at 120 km/h (70 mile/h) for 1 minute or longer at 5th gear position or D range.
- 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".

Step	Action	Yes	No
1	Was "Engine and Emission Control System Check" performed?	Go to Step 2.	Go to "Engine and Emission Control System Check".
2	Do you have SUZUKI scan tool?	Go to Step 3.	Go to Step 5.
3	Camshaft position control check 1) With ignition switch turned OFF, connect SUZUKI scan tool. 2) Start engine and warm up to normal operating temperature. 3) Select menu to "Data List". 4) Check that "VVT GAP" displayed on SUZUKI scan tool is 0 – 3°. Is it OK?	Go to Step 4.	Check valve timing referring to "Timing Chain and Chain Tensioner Removal and Installation in Section 1D". If OK, go to Step 5.
4	Camshaft position control check 1) Drive vehicle under following conditions. • Vehicle speed at 80 km/h (50 mile/h). • Gear position at 5th or D range. 2) Check that "VVT GAP" displayed on SUZUKI scan tool is 0 – 5°. Is it OK?	Substitute a known-good ECM and recheck.	Go to Step 5.
5	Oil control circuit visual inspection 1) Remove cylinder head cover referring to "Cylinder Head Cover Removal and Installation in Section 1D". 2) Check oil pressure leakage from oil control circuit. Is it in good condition?	Go to Step 6.	Repair or replace.
6	Oil control valve and oil gallery pipe check 1) Remove oil control valve referring to "Oil Control Valve Removal and Installation (For Engine with VVT) in Section 1D". 2) Remove oil gallery pipe referring to "Timing Chain Cover Removal and Installation in Section 1D". 3) Check oil gallery pipe and oil control valve for clog or sludge. Are they in good condition?	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.

Step	Action	Yes	No
7	Oil control valve electrical circuit check 1) Check that oil control valve circuit is in good condition referring to "DTC P0010: Camshaft Position Actuator Circuit (for engine with VVT system)". Is circuit in good condition?	Repair circuit.	Go to Step 8.
8	Oil control valve check 1) Check oil control valve referring to "Oil Control Valve Inspection (For Engine with VVT) in Section 1D". Is it in good condition?	Replace camshaft timing sprocket.	Replace oil control valve.

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