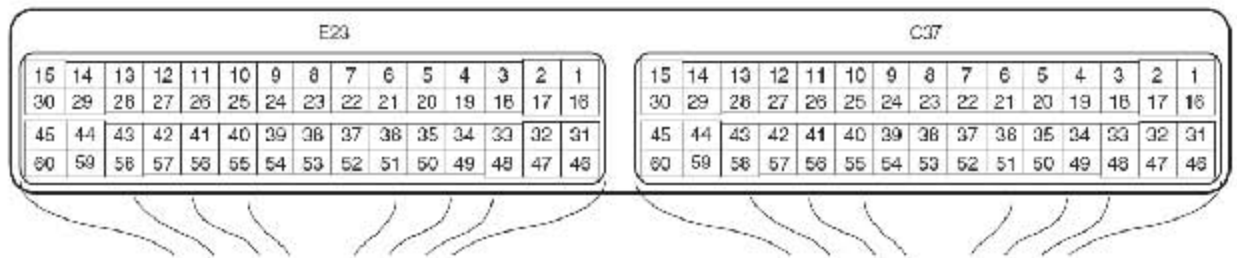
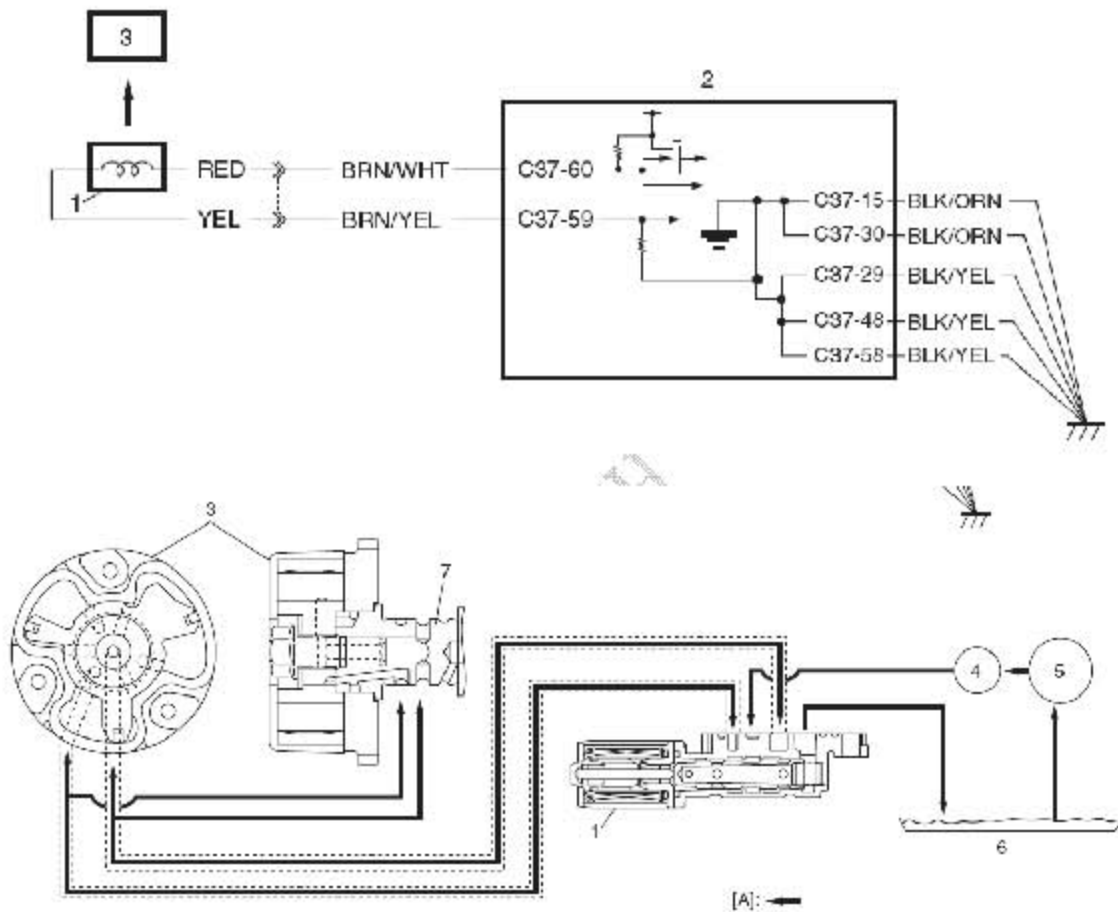


# DTC P0010: Camshaft Position Actuator Circuit (For M16 Engine)

## System and Wiring Diagram



[A]: Oil flow	3. Camshaft timing sprocket	6. Oil pan
1. Oil control valve	4. Oil filter	7. Intake camshaft
2. ECM	5. Oil pump	

## Circuit Description

Actual valve timing fails to become close to target advance level of each function although advance control function or retarded advance control function is at work.

## DTC Detecting Condition and Trouble Area

DTC detecting condition	Trouble area
Monitor signal of oil control valve is different from command signal. (Circuit open or short) (1 driving cycle detection logic)	• Oil control valve • Oil control valve circuit • ECM

## DTC Confirmation Procedure

- 1) Clear DTC. Refer to "DTC Clearance: ".
- 2) Start engine and keep it at idle for 10 seconds.
- 3) Check DTC. Refer to "DTC Check: ".

## NOTE

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

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	<b>Oil control valve electrical circuit check</b> 1) Disconnect connectors from ECM with ignition switch turned OFF. 2) Check for proper connection at "C37-60" and "C37-59" terminals of ECM connector. 3) If OK, measure resistance between "C37-60" and "C37-59" terminals of ECM connector. Is resistance below 10 Ω?	Go to Step 3.	Go to Step 8.

Step	Action	Yes	No
3	<b>Oil control valve electrical circuit check</b> Was resistance more than 6.5 $\Omega$ in Step 2?	Go to Step 4.	Go to Step 7.
4	Oil control valve electrical circuit check for power short 1) Turn ON ignition switch. 2) Measure voltage between "C37-60" terminal of ECM connector and engine ground. Is voltage below 1 V?	Go to Step 5.	"RED", "BRN/WHT", "YEL" or "BRN/YEL" wire is shorted to power supply circuit.
5	<b>Oil control valve electrical circuit check for ground short</b> 1) Disconnect connector from oil control valve with ignition switch turned OFF. 2) Measure resistance between "C37-60" terminal of ECM connector and engine ground. Is resistance infinity?	Go to Step 6.	"BRN/WHT" wire is shorted to ground circuit.
6	<b>Oil control valve electrical circuit check for ground short</b> 1) Measure resistance between "C37-59" terminal of ECM connector and engine ground. Is resistance infinity?	Go to Step 9.	"BRN/YEL" wire is shorted to ground circuit.
7	<b>Oil control valve electrical circuit check for short</b> 1) Disconnect connector from oil control valve with ignition switch turned OFF. 2) Measure resistance between "C37-60" and "C37-59" terminals of ECM connector. Is resistance infinity?	Go to Step 9.	"BRN/WHT" wire is shorted to "BRN/YEL" wire.

Step	Action	Yes	No
8	<p><b>Oil control valve electrical circuit check</b></p> <p>1) Disconnect connector from oil control valve with ignition switch turned OFF.</p> <p>2) Measure resistance between "C37-60" terminal of ECM connector and "BRN/WHT" wire terminal of oil control valve connector and between "C37-59" terminal of ECM connector and "BRN/YEL" wire terminal of oil control valve connector.</p> <p>Is resistance below 1 <math>\Omega</math>?</p>	Go to Step 9.	"BRN/WHT" wire or "BRN/YEL" wire circuit is open or high resistance.
9	<p>Oil control valve check</p> <p>Check oil control valve referring to "Oil Control Valve Inspection: For M16A Engine with VVT in Section 1D".</p> <p>Is resistance within specified value?</p>	Substitute a known-good ECM and recheck.	Faulty oil control valve.

LAUNCH