



TOYOTA

Service Bulletin

Section : Engine

Ref. No. : EG-6009

Date : Feb.,2006

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Area Application : Europe

Model Name : YARIS, YARIS VERSO, TOYOTA RAV4, COROLLA, COROLLA
VERSO, MR2, AVENSIS, CELICA, AVENSIS VERSO, CAMRY,
PREVIA

Model Code : ACV3#, AZT220, AZT25#, ZZT22#, ZZT251, ZZT250, ACM20,
ACR30, ACA2#, ZCA2#, ZZE12#, ZNR1#, ZZW30, ZZT23#,
ZZE11#, NCP1#, NCP2#

Subject : DTC P1345/1349 - VVT-I SYSTEM MALFUNCTION - VVT CONTROLLER INSTALLATION

This Service Bulletin is to highlight an important point during the installation of the VVT controller to avoid DTC P1345 / P1349 to be stored in the engine ECU.

Part No. Information :

New Part No.	New Part Name	Qty
13050-xxxxx	Gear assembly, camshaft timing(*) (*): in drawing referred to as "VVT controller"	-

Production Effective :

VIN	Production Date
-	-

ENGINE

VVT CONTROL

DESCRIPTION OF PHENOMENON:

- MIL turns ON during normal driving
- DTC "P1345" or "P1349" is stored in the engine ECU.

HINT:

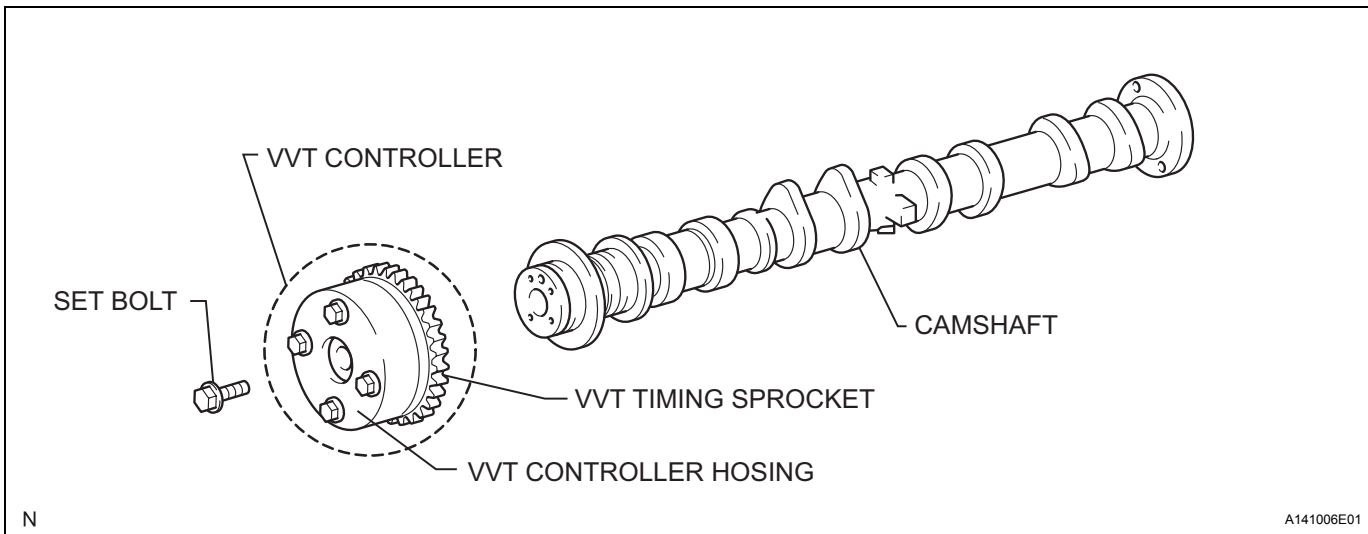
Especially after incorrect installation of the VVT-controller, the above DTC's can appear.

SYSTEM DESCRIPTION AND DTC DETECTION LOGIC:

The ECU controls the intake valve timing according to the driving conditions. The adjustment is performed by the VVT-controller that rotates the camshaft relatively to the crankshaft. The actuation of the VVT controller happens through oil pressure. This oil pressure increase/decrease to the VVT controller is controlled by the OCV. The ECU continuously checks actual intake camshaft adjustment angle and compares this with the target and adjusts accordingly. If the difference between the actual and target adjustment angle is too big, DTC "P1345" or "P1349" is stored in the ECU.

VVT CONTROLLER INSTALLATION (IMPORTANT POINT):

The "VVT controller" is installed on the camshaft by tightening the "set bolt". During the tightening of the set bolt, it is absolutely necessary that the "VVT timing sprocket" doesn't rotate relatively to the "VVT controller".



HINT:

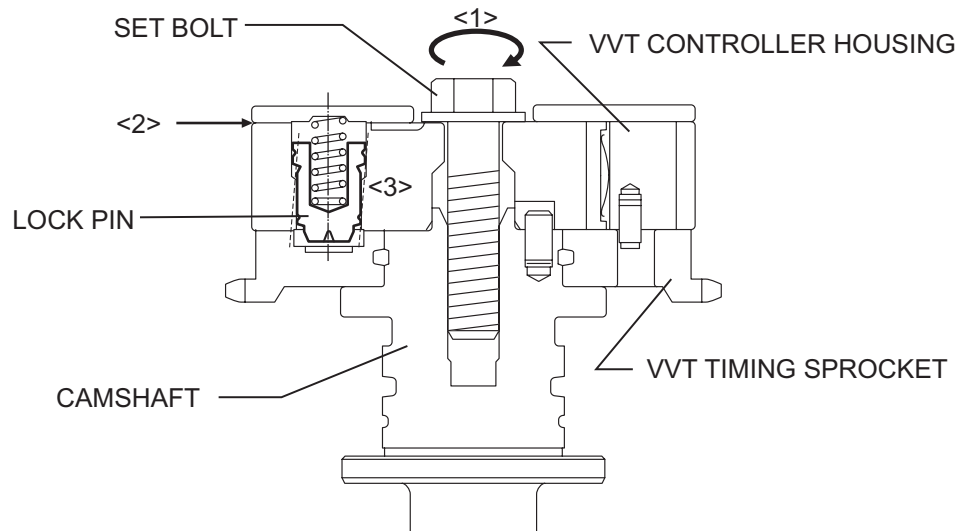
- If during the tightening of the "set bolt" [1.], the "VVT controller housing" rotates relatively (clockwise) to the "VVT timing sprocket", the VVT controller is locked in the retarded position by the "lock pin".
- If the set bolt is then more tightened, a high shear force is applied to the lock pin [2.].
- This causes a slight tilting of the lock pin in its bore and finally a complete jamming of the lock pin [3.].
- The lock pin cannot be disengaged anymore by the oil pressure.
 - (a)VVT controller cannot rotate intake camshaft
 - (b)Big difference between target and actual adjustment angle

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(c)DTC P1345 or P1349



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