2005 Cadillac XLR: GM TechLink: Keyless Ignition System

From GM TechLink, August 2004:

The 2005 Corvette keyless access system uses a coded transmitter fob. With the transmitter fob inside the passenger compartment, pressing the START button on the instrument panel starts the engine. The engine is turned OFF by briefly pressing the OFF/ACC button.

TIP: In most respects, this system is identical to the one used on the Cadillac XLR, covered in the February 2004 TechLink. However, there are some differences in the keyless access system when the Corvette is equipped with a manual transmission.

The ignition is not designed to turn off on vehicles equipped with a manual transmission unless the transmission is in Reverse. This means the ignition state will be Key On, Engine Off if the transmission is not in Reverse when the OFF/ACC button is pressed.

This can affect some service procedures because the engine control module (ECM) remains awake in the Key On, Engine Off state.

TIP: When performing any service procedure calling for turning the ignition OFF on a manual transmission car, be sure to place the transmission in Reverse before pressing the OFF/ACC button.

After a reprogramming event or after performing a CKP System Variation Learn Procedure, it's necessary to turn the ignition OFF for a period of time, to allow the data to be written to long term memory. If the transmission is not in Reverse, the data will never be written to long term memory because the ECM is waiting for the ignition state to be OFF.

If the engine is started or the ignition is turned back to RUN under the assumption that the ignition had been turned off after the procedure, the write is aborted and all of the learned information is lost.

In the case of an ECM reprogramming or replacement, it could appear that the ECM did not properly program. With a CKP learn, the ECM will not store the learned values, which may cause DTCs to set.

TIP: If battery voltage drops below 9v, electronic control modules shut down.

- *Thanks to Morgan Chemello and Bob Vandenbush*

Condition	Button Press	What Happens
Engine OFF, ignition OFF	Press START	Ignition ON, engine starts
Automatic Transmission in Park, engine running	Press OFF/ACC	Engine OFF, ignition OFF, RAP enabled for up to 20 minutes.
Automatic Transmission in Park, engine OFF, ignition OFF	Press OFF/ACC	ACC enabled.
Manual Transmission in Reverse, engine running	Press OFF/ACC	Engine OFF, ignition OFF, RAP enabled for up to 20 minutes.
Manual Transmission not in Reverse, engine running	Press OFF/ACC	Key On, Engine Off
Either transmission, engine OFF, ignition OFF:	Press OFF/ACC	ACC enabled
Either transmission, engine OFF, ignition OFF:	Press OFF/ACC for 5 seconds	Key On, Engine Off

NOTE: All situations assume the correct fob is inside the vehicle.

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