

Flash Electrically Erasable Programmable Read Only Memory (EEPROM)

Description

Flash EEPROM is contained in an integrated circuit internal to the PCM. The flash EEPROM contains the vehicle strategy, including calibration information specific to the vehicle, and is capable of being reprogrammed or reflashed repeatedly.

As part of the calibration there is an area referred to as the vehicle identification (VID) block in the PCM. The VID block must be programmed when installing a new PCM as described under Programming the VID Block for a New PCM. Not carrying out this procedure may generate DTCs P1635 Tire Axle Out of Acceptable Range or P1639 Vehicle ID Block Corrupted, Not Programmed. The VID block in an existing PCM can also be tailored to accommodate various hardware or parameter changes made to the vehicle since production. This is described under Making Changes to the VID Block, and also under Making Changes to the PCM Calibration. The VID block contains many items used by the strategy for a variety of functions. Some of these items include the vehicle identification number (VIN), engine serial number, octane adjust, fuel octane, fuel type, vehicle speed limit, tire size, axle ratio, the presence of speed control, and four wheel drive electronic shift on the fly (ESOF) versus manual shift on the fly (MSOF). Only items applicable to the vehicle hardware and supported by the VID block are displayed on the scan tool.

When changing items in the VID block, the strategy places range limits on certain items such as tire and axle ratio.

Some vehicles must have the engine serial number programmed. The DTC P264F Engine Serial Number Not Programmed Or Incompatible may set if the procedure is not carried out.

Each of the procedures described below use the scan tool. Reprogramming can be carried out by a local Ford dealer or any non-Ford facility. There are other enhanced scan tools that may have reprogramming capabilities available. Refer to the scan tool manufacturers manual for instructions.

Programming The VID Block For A New PCM

The VID block on a replacement PCM is blank and requires programming. There are 2 procedures available. The first is an automatic data transfer from the old PCM to the new PCM, the second is manual data entry into the new PCM.

Automatic data transfer is carried out if the old PCM is capable of communicating. This is done by using a scan tool to retrieve data from the old PCM before removing it from the vehicle. The stored data can be downloaded to the new PCM after installation.

Manual data entry must be carried out if the old module is damaged and incapable of communicating. Install a new PCM. Using a compatible scan tool, select and execute Module/Parameter reprogramming. Refer to the scan tool manufacturers manual for instructions. Make certain that all parameters are included. Incorrectly programming tire size in revolutions per mile, (revolutions per mile - 63,360 divided by the tire circumference in inches), axle ratio, 4x4 or 4x2, and MSOF or ESOF may set DTC P1635 or P1639. You may be instructed to contact the As Built Data Center for the information needed to manually update the VID block with the scan tool. Contact the center only if the old PCM cannot be used or the data is corrupt. For Ford Lincoln-Mercury technicians, contact your National Hotline or the Professional Technician Society (PTS) web site for as built data. Non-Ford technicians, use the Motorcraft® web site at motorcraft.com. From the Motorcraft® home page, use the search function to find the Module Programming or As Built Data.

Programming The Engine Serial Number For A New PCM

The engine serial number on a replacement PCM is blank and requires programming. Manual data entry is required. If the old PCM is capable of communicating, the engine serial number is available using a compatible scan tool. Refer to the scan tool manufacturers manual for instructions.

Making Changes To The VID Block

A PCM which is programmed may require changes to be made to certain VID information to accommodate vehicle hardware. Refer to PCM/Module Reprogramming on the scan tool.

Making Changes To The PCM Calibration

At certain times, the entire flash EEPROM needs to be reprogrammed. This is due to changes made to the strategy or calibration after production. Refer to PCM Reprogramming on the scan tool.

Making Changes To The GPCM And NOx Module Calibration

At certain times, the entire flash EEPROM needs to be reprogrammed. This is due to changes made to the strategy or calibration after production. For some vehicles, the GPCM and NOx modules are reprogrammed with the PCM and are all programmed at the same time. Refer to PCM Reprogramming on the scan tool.

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