

2015 Corvette: GM TechLink: Reprogramming Procedures for the 8L90 8-Speed Transmission

Subject: Reprogramming Procedures for the 8L90 8-Speed Transmission

Model and Year: 2015 Corvette, Silverado, Sierra, Yukon, Yukon XL, and Escalade

Source: GM TechLink

Page Number: NA

Date: April 10, 2015

Several reprogramming procedures must be performed after replacement of some components on the new 8L90 8-speed transmission available on the 2015 Corvette, Silverado, Sierra, Yukon, Yukon XL, and Escalade. These procedures are covered in detail in the appropriate Service Information. In addition, the reprogramming procedures also will be used on other transmission applications in future GM models.

Solenoid Valve Characterization Reprogramming

Characterization reprogramming is a new programming procedure. If characterization is not completed when required, shift quality can be less than optimal and may cause the customer to return with a shift concern.

The solenoids in the 8-speed transmission require unique performance characteristic data in order to function at maximum efficiency. This data is programmed and stored in the vehicle's Transmission Control Module (TCM). (Fig. 4) When a transmission assembly, TCM, or solenoids are replaced during service, the performance characteristic data for the solenoids must be retrieved from the Techline Information System (TIS) website server (the cloud) and programmed into the TCM.

Fig 4

Reprogramming ensures that the characteristic data relationship is properly matched between the solenoids, valve body, and transmission.

Solenoid Characterization Reprogramming Procedure

1. Document the new Transmission Unique Number (TUN) or Part Unique Number (PUN) as required.
2. Log into TIS2Web/SPS.
3. Type the Vehicle Identification Number (VIN).
4. Select Transmission Control Module – MCVM Operations. (Fig. 5)

Fig 5

5. Select the applicable service procedure performed — currently only replacing transmissions (Replace Transmission button) or replacing the TCM (Refresh Characterization button) (Fig. 6) are allowed — and provide the necessary TUN or PUN. (Fig. 7)

Fig 6

Fig 7

At this point, the system will read the VIN from the Engine Control Module (ECM) using the Multiple Diagnostic Interface (MDI) and then retrieve the applicable genealogy data tree for the given TUN/PUN from the cloud. This data tree accesses the original characterization data so that it may be updated with the new component information. The TCM is updated with the correct solenoid characterization data, and the cloud is updated with the new genealogy relationship.

Transmission Service Fast Learn

The Transmission Service Fast Learn procedure has been a required programming procedure on some current 6-speed transmissions.

Transmission Service Fast Learn is a procedure that is performed after any 8-speed transmission repair. The procedure performs a series of tests which allow the TCM to learn individual clutch apply pressures. These learn pressure values are used by the TCM for clutch control and timing of shifts. A scan tool is used to perform the Transmission Service Fast Learn procedure.

The Transmission Service Fast Learn procedure must be performed when any of the following repairs has been made to the transmission.

- Pressure regulating solenoid replacement
- Valve body repair or replacement
- Any service/repair in response to a shift quality concern
- Any internal transmission service, repair, overhaul, or replacement
- Torque converter replacement
- TCM replacement

- Transmission assembly replacement

Failure to perform the procedure may result in poor transmission performance, DTCs being set, or customer dissatisfaction.

Transmission Service Fast Learn Procedure

1. If a pressure regulating solenoid, TCM or transmission assembly was replaced, perform the Solenoid Valve Characterization Reprogramming.
2. With the ignition on, clear the DTCs with a scan tool.
3. Turn the ignition off and make sure all vehicle systems turn off. It may take up to two minutes for all vehicle control modules to power down.

TIP: If the transmission fluid temperature is not between 167°F (75°C) and 185°F (85°C), the scan tool will not allow you to perform the Service Fast Learn procedure.

4. With the engine running, shift the transmission to the Drive position with the brake applied. Perform the Service Fast Learn procedure with a scan tool. In GDS 2, go to Module Diagnostics > Transmission Control Module > Configuration/Reset Functions > 5. Transmission Service Fast Learn. (Fig. 8) Follow the instructions on the scan tool.
Turn the Ignition off for two minutes.

Fig 8

- *Thanks to Mike Johnston*

Online URL: <https://www.corvetteactioncenter.com/tech/knowledgebase/article/2015-corvette-gm-techlink-reprogramming-procedures-for-the-8190-8-speed-transmission-1198.html>