

6T40 (RPO MH8,MHB) 6T45 (RPO MH7,MHC)

Adaptive Learning

The 6T40/45 are fully equipped with several adaptive learning strategies. As with some other GM applications you will need to erase the adaptive values and perform a "Fast Learn" prior to operating the vehicle. Adapts and fast learn procedures should be performed if any of the following occur:

- Internal Transmission repairs have been performed
- The valve body was replaced
- The Control Solenoid valve assembly was replaced
- The TCM was recalibrated or replaced
- Internal repairs were performed that could effect shift quality

NOTE: Fast learn is not required if a GM New or GM Rebuilt 6T40/6T45 is used. The transmission is fast learned prior to it being shipped from the plant.

To perform a fast learn:

- Use a scan tool capable of performing the fast learn procedure
- TFT 158-230°F (70-110°C), Move the selector in/out of gear 3 times
- Select the fast learn process from the scan tool menu
- Place the transmission in Drive with the vehicle stationary. The TCM will individually apply the clutches and calculate the clutch volume
- Place the transmission in Reverse with the vehicle stationary. The TCM will individually apply the clutches and calculate the clutch volume
- Shut off the engine for at least 30 seconds, open and close the door to allow "RAP" to expire or false DTC's may set, After a minimum of 30 seconds the car can be restarted, power off the scanner
- The process is now complete

The fast learn procedure will not run if:

- DTC's are set
- TFT is not between 158-230 °F (70-110°C)
- The brake switch is not working
- TP is 0% but engine RPM increases during the test
- P/N switch is improperly adjusted or is not functioning correctly
- Line pressure control system is malfunctioning

TRANSMISSION ADAPTIVE VALUES LEARN

Transmission Adaptive Values Learn is a procedure for 6 speed automatic transmissions in which a series of tests are run to allow the transmission control module (TCM) to learn individual clutch characteristics. Once the clutch data is learned, Transmission Adaptive Values Learn translates it into the adaptive data cells, which the TCM uses for clutch control during shifts. The scan tool provides initiation of the Transmission Adaptive Values Learn procedure. This procedure is to be used following transmission repair.

The Transmission Adaptive Values Learn procedure must be performed when one of the following repairs have been made to the vehicle. Failure to perform the procedure after one of the following repairs may result in poor transmission performance, as well as transmission DTCs being set:

- Transmission internal service/overhaul
- Valve body repair or replacement
- Control solenoid valve assembly replacement
- TCM software/calibration update
- Any service in response to a shift quality concern

IMPORTANT: Ensure the following conditions are met before performing the Transmission Adaptive Values Learn procedure:

- **Drive wheels are blocked**
- **Parking brake is applied**
- **Service brake is applied**
- **Zero percent throttle and no external engine RPM control**
- **Transmission fluid temperature (TFT) is between 70-100°C (158-212° F)**
- **Transmission gear selector has been cycled from Park to Reverse 3 times in order to purge air from the reverse clutches.**

1. Use the scan tool to navigate to Transmission Adaptive Values Learn by selecting the following:
 1. Module Diagnosis
 2. Transmission Control Module
 3. Configurations/Reset Functions
 4. Transmission Adaptive Values Learn

IMPORTANT: If at any time during the procedure, required conditions are not met, Transmission Adaptive Values Learn may abort and the process may need to be started again from the beginning.

2. Use the scan tool to perform the Transmission Adaptive Values Learn procedure. As the procedure is being performed, the scan tool data display will provide operator instructions. Follow the scan tool instructions, as required.
3. Once the procedure is complete, shut OFF the engine and power down the TCM. You will lose communication to the scan tool.

4. Restart the engine. This will complete the Transmission Adaptive Values Learn procedure.

IMPORTANT: When the Transmission Adaptive Values Learn procedure is completed, the transmission will remain in a neutral state.

TROUBLESHOOTING

If the Transmission Adaptive Values Learn will not run and the above stated conditions have been met, ensure the following:

- TFT is between 70-100°C (158-212°F)
- Brakes and brake switch are functioning properly
- No active DTCs
- Closed throttle and engine RPM increases above 1,500 RPM while at entrance of the test
- Park/Neutral position switch is properly adjusted and functioning
- Line pressure control is able to provide 1,000 kPa and is within specifications
- Vehicle is not moving or vibrating excessively
- Clutches are properly assembled

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