

## GM 6L80, 6L90

## Remanufactured TEHCM

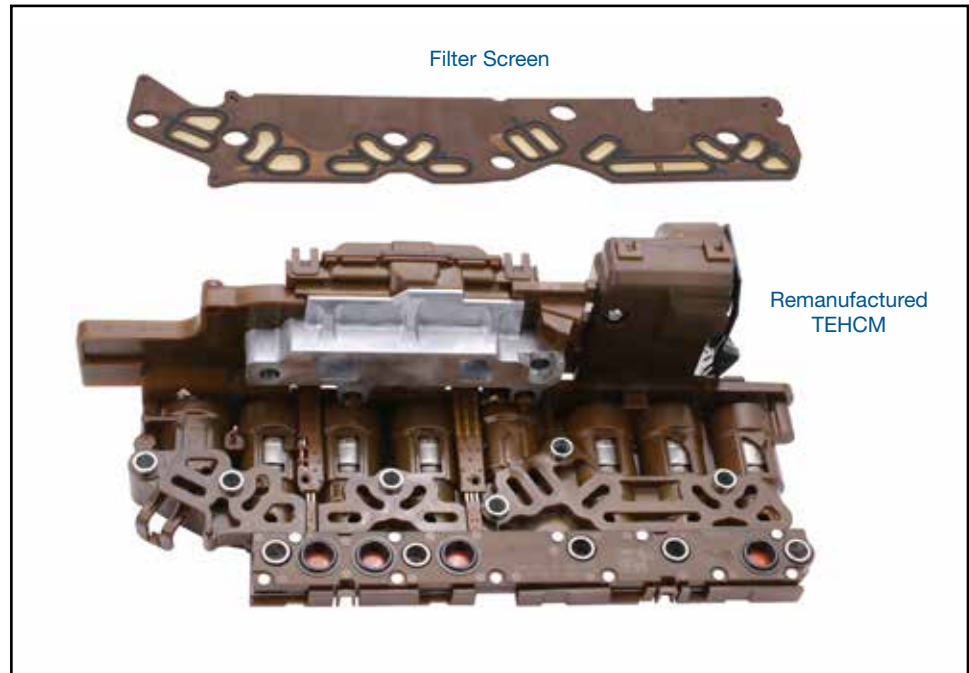
### Part Nos.

### GM6L-TEHCM-C5

- Remanufactured TEHCM
- Filter Screen

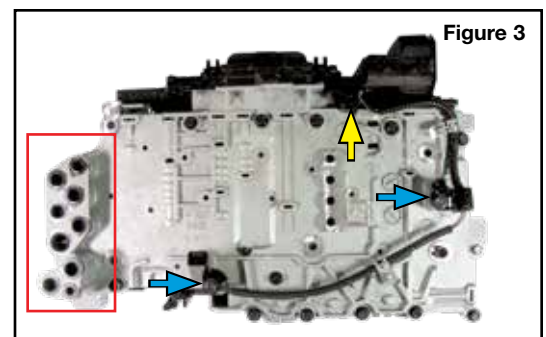
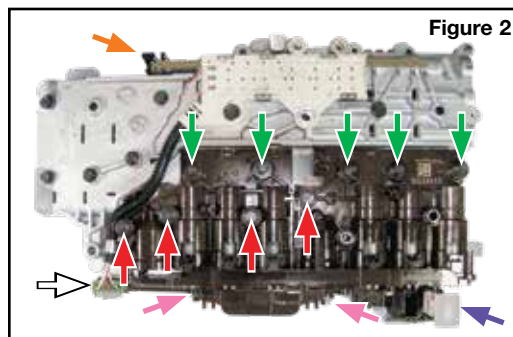
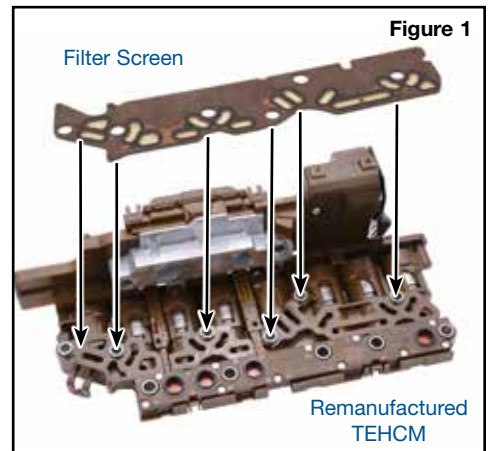
**NOTE:** Typically fits Cadillac 2010-2011; Chevrolet 2010-2013; GMC 2010-2011. OE Part Nos. 24251029, 24251412, 24254908, 24256051, 24256124, 24257141, 24258304, 24275874

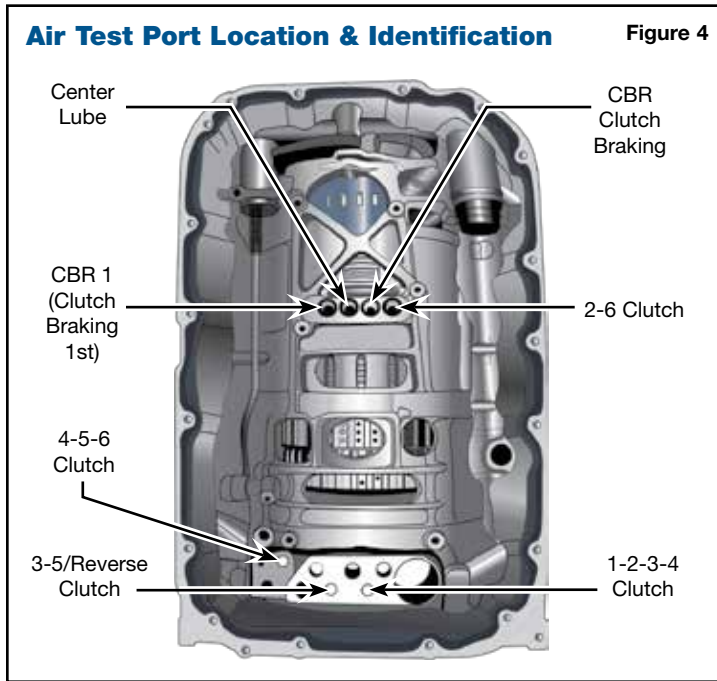
**CAUTION:** Care must be taken when handling the TEHCM. Use an ESD ground strap so static discharge does not damage the module.



### 1. Install TEHCM onto Valve Body

- Install Sonnax filter screen on TEHCM in orientation shown (**Figure 1**).
- Install four 10mm head bolts (red arrows) (**Figure 2**).
- Install two 8mm head bolts on the side (pink arrows). Finger tighten these first, so there is no gap between the TEHCM and the valve body.
- Install five 7mm head bolts (green arrows). Torque all bolts to 71 in-lb (**Figure 2**).
- Install OE detent lever.
- Install TRS onto valve body and ensure the plastic leg is installed into the manual valve as shown (orange arrow). Install TRS harness connector into the TEHCM (white arrow) (**Figure 2**).
- Turn valve body and TEHCM over and install input and output speed sensor and harness and torque attaching two bolts to 100 in-lb (blue arrows) (**Figure 3**).
- Connect electrical connector to TEHCM (yellow arrow) (**Figure 3**).
- Install valve body-to-pump seals (red box) (*not included*) and follow the OE valve body installation instructions (**Figure 3**).





## 2. Air Check

While valve body is out, air-check indicated circuits (Figure 4) using low, regulated air pressure. This will help you discover any issues prior to installing the TEHCM and valve body.

## 3. Install Valve Body & TEHCM onto Transmission Case Indexing the Manual Valve into the Manual Linkage.

- Install valve body to case attaching bolts and torque to 100 in-lb.
- Install case connector sleeve then push in white electrical connector slide lock, pictured at purple arrow (Figure 2).
- Install transmission sump filter and oil pan gasket and pan.

## 4. Fluid Fill & Road Test

- Fill transmission with Dexron VI transmission fluid to factory spec.
- Let engine run to warm up transmission fluid to approximately 185°F.
- Install scan tool J2534 and connect to OE website. Download and install software for programming.

**NOTE:** Install a battery charger before attempting to program.

- Verify transmission fluid temp is correct. Perform fast adapt (battery disconnect will not suffice).
- Proceed to road test section.

## 5. Road Test

- Road test vehicle performing 10–15 upshift and downshift cycles at light throttle through all six speeds.
- Perform 4-5 passing gear maneuvers at high speed.

**NOTE:** A small 2-3 upshift flare or overlap issue, clunk into 4th Gear and a 3-2 downshift clunk is common during adaptive relearn. This condition will typically resolve itself within the 10–15 shift cycles after reset is performed.

## Transmission Diagnostic Tips

This remanufactured TEHCM has been through a rigorous inspection and rebuild process, then a comprehensive, functional hydraulic and electronic test to ensure it meets OE performance and quality. It is designed to eliminate many pressure-, shift- and converter-related complaints, but will not correct complaints that stem from other areas of the transmission.

The following are common areas of failure or root causes for symptoms that could be attributed to valve body/TEHCM issues that should also be examined or addressed during your transmission build. A brake and clutch application chart (Figure 5) is below for additional aid in diagnosing problems.

- Forward slip or solenoid performance codes related to the 1-2-3-4 solenoid may be caused by a cracked 1-2-3-4 apply piston.
- Delayed Reverse or flared 2-3 upshift may be caused by a cracked 3-5-R drum or the pump support sealing rings leaking or a bad bushing.
- A broken or split sump filter may be caused by pressure regulator bore wear or a worn pump rotor or slide assembly. See [www.sonnax.com](http://www.sonnax.com) for pump repairs.

GM 6L80/90 Clutch & Brake Application Chart Figure 5

Gear Range	1-2-3-4 Clutch	3-5 Reverse Clutch	4-5-6 Clutch	2-6 Clutch	Low & Reverse Clutch	Low Clutch Sprag
Park					ON*	
Reverse		ON			ON	
Neutral					ON*	
1 <sup>st</sup> Braking	ON				ON	Holding
D-1 <sup>st</sup> Gear	ON					Holding
D-2 <sup>nd</sup> Gear	ON			ON		
D-3 <sup>rd</sup> Gear	ON	ON				
D-4 <sup>th</sup> Gear	ON		ON			
D-5 <sup>th</sup> Gear		ON	ON			
D-6 <sup>th</sup> Gear			ON	ON		

\*Only applied with no load.

### Quality Report

Sonnax designs its TEHCM remanufacturing processes to ensure all units achieve the highest level of operational performance. This quality report details the intensive inspection, build and test procedures this TEHCM underwent to verify it meets OE performance and quality standards.

Sonnax remanufactured TEHCM GM6L-TEHCM-C5 addresses failed components, circuit faults, and can be VIN-programmed to your specific vehicle. In remanufacturing the TEHCM, failed components are replaced and each unit is given a complete diagnostic test to ensure full functional performance consistent with a new OE TEHCM. This provides a significant cost savings over an OE replacement.

Sonnax has built a sophisticated electro-hydraulic test for the TEHCM that mimics a full and varied drive event, using data acquired from the various sensors and switches during actual vehicle drive cycles. This allows the Sonnax test to validate all TCM communication paths, each solenoid and pressure switch, and the fluid temperature sensor by essentially 'driving' the TEHCM as if it were in a vehicle (Figures 6 & 7). A vehicle VIN remains on the Sonnax remanufactured TEHCM, and will be overwritten by the transmission shop technician with the new vehicle VIN during the reprogramming process. After installation, this remanufactured TEHCM must be reprogrammed on the vehicle using a J2534 device in order to function correctly.

Prior to the end-of-line test, each TEHCM goes through an ultrasonic cleaning process and the solenoids go through a rigorous flushing process to remove all dirt and debris – no matter how hidden. The commonly failed pressure switches are all replaced with new

parts, and a new filter plate/screen assembly is installed. The fully tested TEHCM is serialized, the test data stored, and is packaged in a mylar bag with a protective connector cover to prevent inadvertent static discharge issues during the shipping, handling and receiving processes.

### Cleaning & Inspection Process



- TEHCM is ultrasonically cleaned to remove all surface debris.
- Solenoids are rigorously flushed to remove all internal dirt and debris.
- Solenoids are tested to ensure proper resistance.
- Original pressure switch components are discarded and the cavities thoroughly cleaned.

### Rebuilding Process



- Failed components are replaced.
- New filter plate/screen assembly is installed.
- New pressure switches are installed.
- A vehicle VIN remains on the TEHCM, and will be overwritten by the transmission shop technician when reprogramming the remanufactured TEHCM on vehicle to the new VIN.

**Figure 6 – Solenoid Pressure Test**

Sonnax reman unit solenoid pressure match OE

