

THIS PAGE MUST BE KEPT IN THE VEHICLE AFTER INSTALL OF TRANSMISSION

This transmission must be programmed using GM (AC Delco) programming software after transmission installation and ***BEFORE*** driving the vehicle. Upon completion of programming, the 'Warranty Claim Code' page at the end of the programming sequence should be printed off for the installing shop's records. The 'Automatic Transmission Programming Information Card' must be filled out in its entirety in order for the transmission to be covered under warranty. Complete programming instructions can be found in the remaining pages of the install guide.

Automatic Transmission Programming Information Card

Vehicle Identification Number (VIN): _____

Shop Performing Transmission Replacement: _____

Name of Programmer (Company Name): _____

Warranty Claim Code (Gathered After Programming): _____

Date Programming Performed: _____

If this vehicle is equipped with a Transmission Fluid Cooler Thermal Bypass Valve (pictured below), it ***MUST*** be replaced with a new OE thermal bypass valve in order for this transmission to be covered under warranty. Primary GM Part numbers are 13511136 and 13511137 but can also be found under the category 'Automatic Transmission Oil Cooler Pipes' if using the GM parts catalog. Failure to replace the Thermal Bypass Valve will result in catastrophic failure of the transmission due to overheating.



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ATTENTION

YOUR WARRANTY DEPENDS ON YOUR ADHERENCE TO THESE GUIDELINES

6L80/6L90/6L45/6L50 INSTALLATION GUIDE

General Motors Automatic Transmission

MUST FLATBED VEHICLE TO DEALERSHIP FOR REFLASH*

*Details on Page 4

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PRE-INSTALLATION

Prior to installation of the replacement transmission, determine the cause(s) of failure of the previous unit. Also:

- Check transmission cooler for glycol and/or water contamination.
- Scan vehicle computer, record any codes, and fix all causes of codes before installation of replacement transmission

A restricted and/or contaminated transmission cooling system is the #1 cause of transmission failure after a replacement.

If the transmission has evidence of hard parts failure, the transmission cooler must be replaced. Plate-type oil-to-air (OTA) transmission coolers must always be replaced.

Entire transmission cooling system must be completely cleaned, hot flushed, and flow tested.

FILTER CRUSH

If transmission jack does not rise to the height required for installation, **DO NOT** use a foreign object between the transmission and the jack. This will cause damage to the pan (fig. 1 & 2) and internal filter (fig. 3 & 4) leading to shifting and movement concerns. Instead, lower the vehicle to meet the height of the transmission jack.

Damage of this nature will void your warranty.

Figure 1



Figure 3



Figure 2



Figure 4



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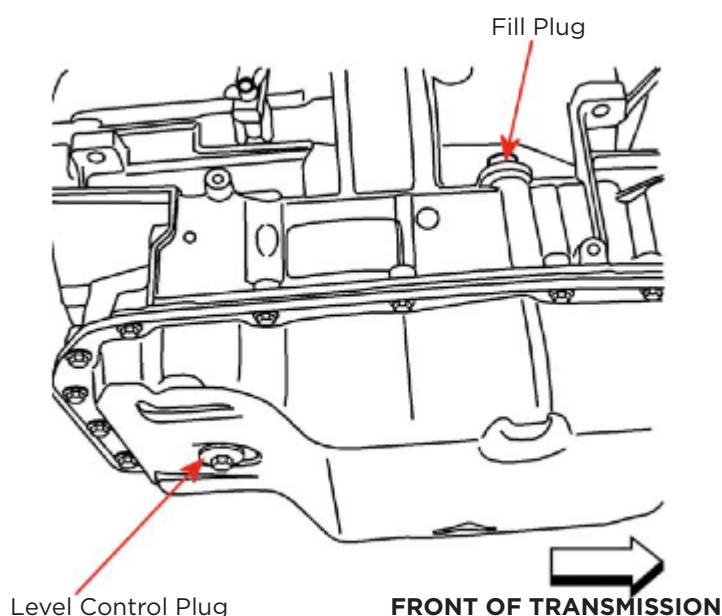
INSTALLATION CHECKLIST

- Inspect flex plate for cracks or any damage.
- Compare bolt pattern on flex plate to bolt pattern on new torque converter.
- Inspect crankshaft pilot bore for wear and apply grease to aid with installation.
- Compare replacement transmission and torque converter to original before installation.
- Verify all dowel pins are present, clean, and in good condition - these are critical for proper alignment.
- Verify torque converter is properly and completely installed into input shaft and pump.
- Verify transmission is flush against engine block before tightening bell housing bolts.
- Install supplied tailshaft housing gaskets and seals.
- If 4WD application, inspect and/or replace transfer case input shaft seal.
- Inspect transmission mounts, carrier bearing, driveshaft, yoke, and U-joints (main causes of broken cases/vibration).

FLUID FILL & CHECK PROCEDURE WITHOUT DIPSTICK

Some 6L80/6L90/6L45/6L50 transmissions don't use a dipstick. Proper fluid level is achieved when fluid begins to drip from the Level Control Plug opening.

Fill transmission only with synthetic fluid included with transmission purchase or Dexron VI. This transmission will require approximately 10 quarts of fluid. Actual amount of fluid needed may vary depending on residual fluid from the dyno process.



1. Verify vehicle is on level ground when performing fluid fill and check procedure.
2. Verify drive wheels are blocked and parking brake is applied.
3. Remove fill plug and add 5 quarts of fluid through fill hole.
4. Start engine and run at idle.
5. Remove level control plug from oil pan.
6. Add fluid through fill hole until fluid begins to run from level control opening in pan.
7. With the brake applied, shift transmission through each gear range - hold in each range for at least three (3) seconds. When complete, shift vehicle back into PARK.
8. Verify transmission fluid temperature (TFT) is between 86°F and 122°F.
9. If fluid does not drip from opening (underfill condition), add fluid until fluid drips slightly.
10. If fluid runs from opening when Level Control Plug is removed (overfill condition), allow fluid to flow until only a slight drip remains.
11. Reinstall Level Control Plug. Reinstall Fill Plug.
12. **REFLASH TCM TO LATEST CALIBRATION. (See page 4)**
13. Road test vehicle to check transmission operation.
14. Perform final fluid level check.

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REFLASHING GUIDELINES

This is an electronically-controlled transmission. The following information is VERY important to understand and perform correctly. Failure to do so may cause damage to your new transmission and/or be the main cause of performance problems.

Check for proper installation of all vehicle ground connections. Erratic transmission performance may be caused by faulty ground(s) at various connection locations under the hood.

Inspect transmission wiring harness for damaged wires or connectors. Verify proper function of the entire electrical system including the battery, alternator, mass air flow sensor, and throttle position sensor.

1. Battery must be load checked with a battery tester before attempting a reflash. If battery fails test, it must be charged or replaced depending on test results.
2. A special programming charger or maintainer is required to be installed during the reflash process.

**DO NOT INSTALL A BATTERY CHARGER AT ANY TIME DURING THE REFLASH PROCESS!
UNSTABLE VOLTAGE DURING PROGRAMMING WILL CAUSE DAMAGE TO TCM.**

Tools Required for Reflash

- Pass-thru J2534-compliant vehicle reflash hardware such as MDI2 or equivalent.
- GM / AC Delco Service reprogramming subscription.
- Hi-speed internet connection. (Ethernet cable preferred - loss of wireless connection can cause programming issues.)
- Visit Acdelcotds.com for PC requirements.

Reflash Procedure

Please note: your local dealership can perform the following steps for a nominal charge, after transmission installation. If you do not have the proper equipment, do not attempt to perform these procedures.

Login into the GM / Acdelco website: Acdelcotds.com.

Start and follow prompts on GM Service Programming System (SPS) site.

Verify that the Engine Control Module (ECM) and Transmission Control Module (TCM) are programmed to the latest available factory OEM calibrations. If not programmed properly, the Malfunction Indicator Lamp (MIL) warning light on the dash may illuminate, and the transmission may only operate in fail-safe or "limp" mode.

Transmissions equipped with aftermarket calibrations will void the warranty.

Reflash Troubleshooting

Programming problems are often caused by the following issues:

- Antivirus Programs: be sure that your PC does not have an active antivirus program.
- Firewalls: firewalls should be turned off to allow programming.
- Java: be sure that your PC is running the latest version of Java.
- Vehicle Battery Voltage: during programming the vehicle battery needs to remain fully charged to 12.6 volts.
- Aftermarket Components: aftermarket electronic components can impede the programming process.
- Loss of internet connection.

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RESET TRANSMISSION ADAPTS

The Reset Transmission Adapts is a procedure for automatic transmissions in which the shift pressure learn values of each individual clutch is reset to zero or a base calibrated value, in the transmission control module (TCM).

Once the transmission adapts are set to zero or a calibrated value, the vehicle is then road test under various drive cycle events for the TCM to relearn shift pressure values for the best possible shift feel in all gear ranges.

1. Perform any adjustments, programming or setup procedures that are required when a component or module is removed or replaced.
2. Clear the DTCs.
3. Ignition OFF, all vehicle systems OFF, this may take up to 2 minutes.

Note: Do not cycle or turn the ignition switch OFF until directed to do so below.

4. Ignition ON, engine running, with a scan tool Reset Transmission Adapts.
5. Perform the Road Test below.
6. Ignition OFF for 2 minutes.

ROAD TEST

Verify transmission fluid temperature (TFT) is between **158-212 F**

Garage Shifts:

1. Apply the brake pedal and ensure the parking brake is set.
2. Move the gear selector through the following ranges **5 times** each:
 - **PARK to REVERSE**
 - **REVERSE to NEUTRAL**
 - **NEUTRAL to DRIVE**
 - **DRIVE to REVERSE**
 - **REVERSE to DRIVE**

3. Pause 2 to 3 seconds in each gear position.

Upshifts and TCC Apply:

1. Place the gear selector in the DRIVE position.
2. Accelerate the vehicle using a steady throttle position between 15 and 20 percent. Hold the throttle steady.
3. As the transmission upshifts (1-6 gears), there should be a noticeable shift feel or engine speed change within 1 to 2 seconds of the commanded gear change.
4. Monitor TCC PC solenoid pressure command while driving and check TCC slip speed when the pressure command indicates that the TCC is commanded to apply:
When the TCC applies, slip speed should be controlled to below 100 RPM when the transmission is not shifting and the throttle is held steady.
5. Repeat steps 1-4 **10 times**.

Part Throttle Step-In Downshifts:

1. Place the gear selector in the DRIVE position.
2. Accelerate the vehicle at light throttle (5-15 percent) until 3rd gear is just achieved.
3. Quickly increase throttle angle until commanded gear indicates that a downshift to 2nd gear is commanded.
4. Repeat steps 2 to 4 at higher speed to achieve 4th gear and then step in to command a 4th gear to 3rd gear downshift.
5. Repeat steps 2 to 4 at higher speed to achieve 5th gear and then step in to command a 5th to 4th gear downshift.
6. Repeat steps 2 to 4 at higher speed to achieve 6th gear and then step in to command a 6th gear to 5th gear downshift.
7. Repeat steps 1-6 **5 times**.

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Coasting Downshifts:

1. Place the gear selector in the DRIVE position.
2. Accelerate the vehicle to 6th gear with the TCC applied.
3. Release the throttle and gradually apply the brakes.
4. Repeat steps 1-3 **5 times**.

Be advised that it may take several days of driving for the transmission to fully adapt.

A final system scan is required after the road test or if problems are detected during the test drive. If codes are present, compare to original code scan recorded prior to transmission replacement.

Use a scan tool to check for Diagnostic Trouble Codes (DTCs) stored by the ECM and the TCM. Perform diagnostic and/or repair procedures to correct these codes.

TROUBLESHOOTING GUIDE

Aftermarket/performance air filters are shipped pre-oiled and can contaminate the Mass Air Flow sensor. MAF sensor must be tested with a voltmeter at the sensor - some vehicle computers may compensate for out-of-range signal.

Your scanner will only display compensated values.

A volumetric efficiency test (VE test) is highly recommended to ensure the accuracy of the vehicle's MAF sensor.