

*This is an informal guide for the DIYer that wants to learn but is a little unsure. It is not a professional guide, there might even be typos. If you disagree with something, don't use the guide or write your own. This user (me), the forum, staff, nor anyone else is responsible for failure to follow the guide, damage or mishaps from the information here. What you do to your car is your own responsibility.*

The following guide will show how to check the transmission fluid level in a GM 6-Speed 6T40 transmission (3rd gen 6T40 paired with the 1.5T in 2016-2018 Malibus). I'll break it down into 3 separate parts:

- 1. Background, Tools**
- 2. Process**
- 3. Cleanup**

Time required: 45 minutes including driving and cleanup

## **1. Background, Tools**

### **Background**

Checking the fluid level and condition of a GM 6-speed 6T40 is an adventure. GM didn't use a dipstick in this model; they use a fluid level plug. There is speculation about why: 1) they think owners of these cars wouldn't understand the process for checking fluid with a dipstick, 2) the transmission shouldn't lose fluid or gain fluid nor would adding or removing fluid correct this problem if it occurred, 3) cost savings via material and warranty. The correct answer is all of the above as I will explain.

The basic process: you need to heat the transmission fluid to 85-95°C (185-203F), remove the front driver's side tire, level the car all while maintaining the engine on and transmission fluid temp in the correct range, then remove the fluid level check plug. If it pours out, you are overfilled - allow to drain to a tiny stream or quick drip and reinstall the check plug. If nothing comes out, you are underfilled and need to add fluid until it drips out fast. If it drips out or slow runs, you are in the correct range and can reinstall the plug.

Getting the transmission fluid to 85-95°C and equipping an app to monitor is cumbersome. Because of the design of this transmission, even if you have a dipstick (as some 6T40 models once did), you need to check with the fluid temp in the same 85-95°C range. This is because the transmission has a Fluid Level Control Valve. The valve is designed to control the fluid level in the valve body. The fluid level control valve contains a temperature sensitive strip of metal that reacts to fluid temperature changes and opens or closes a fluid passage. At temperatures below 60°C (140F), the thermostatic element allows fluid to drain from the valve body cover area into the sump. As the temperature of the transmission fluid increases, the thermostatic element traps fluid in the valve body and the fluid level rises. Because of this, if an owner were to pull a dipstick, even if that dipstick had a hot and cold indicator, the owner would get a inconsistent reading unless they knew how to read transmission fluid temp and how to get the temp to the right range. So... solution? Save money on a non-dipstick system and stop owners from messing with the fluid thus causing damage.

## Tools

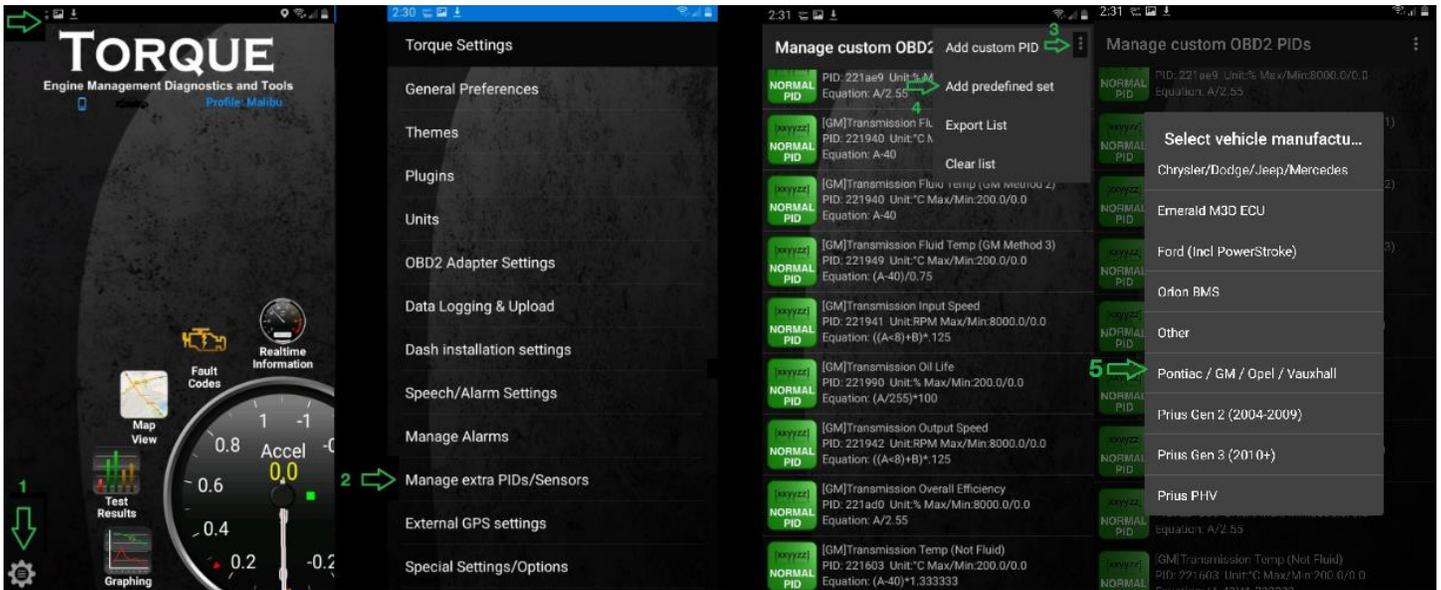
The actual tools needed are fairly limited. All you really need is the torque pro app on a phone, drain pan, and an 11mm socket. That said, this is a DIY so you also need stuff to take off the front tire as you just can't reach it under the car nor do I ever get under cars. Here are the tools needed:



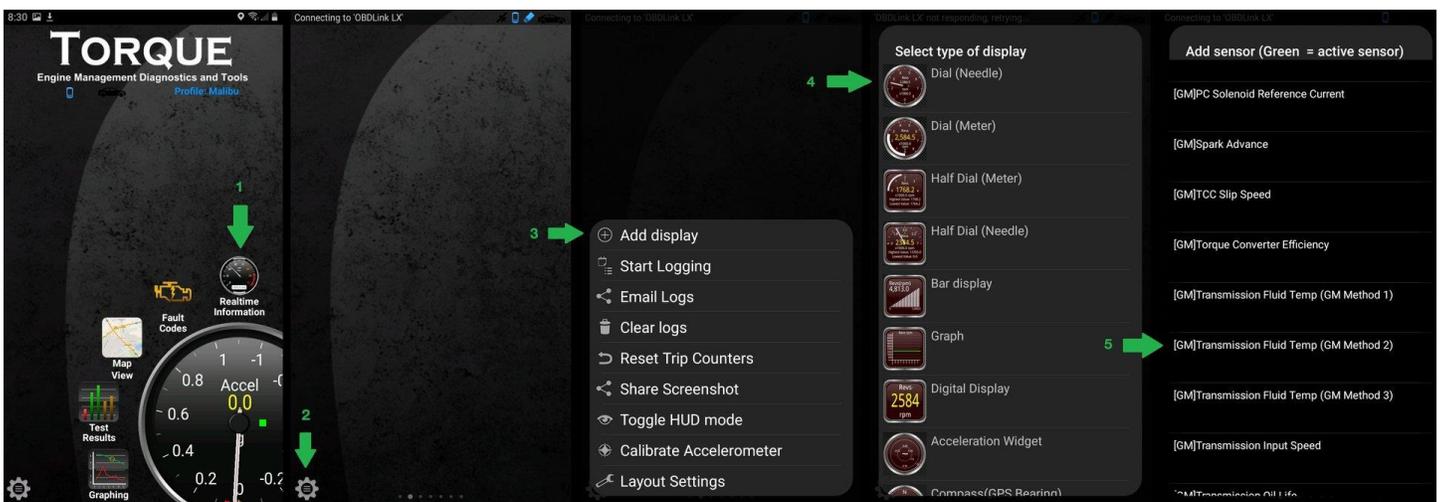
- 1) torque wrench and 19mm socket for the wheel lug nuts. You can also use 3/4 but it is slightly more loose. I like exact fit.
- 2) ratcheting screwdriver (or wrench) with 11mm hex socket. You can also use 7/16 hex socket but it is slightly more loose.
- 3) jack stand because I don't trust floor jacks 100%.
- 4) drain pan for possible excess fluid
- 5) bluetooth dongle - I use [BlueDriver](#) routinely but the app doesn't do trans fluid temp and it can be stubborn with Torque Pro. So I also include the [OBDLink LX](#) which works perfectly with Torque Pro every time.
- 6) phone with Torque Pro (\$4.99). I honestly don't know if Torque Lite/free reads it.... never tried but you can.
- 7) gloves as the fluid will be hot. These are thermal resistant.
- 8) shop/paper towels
- 9) breaker bar for wheel lugs
- 10) Not pictured - floor jack. You can probably use the car jack WITH a jack stand but I trust those even less.
- 11) Cardboard for drips (optional)

## 2. Process

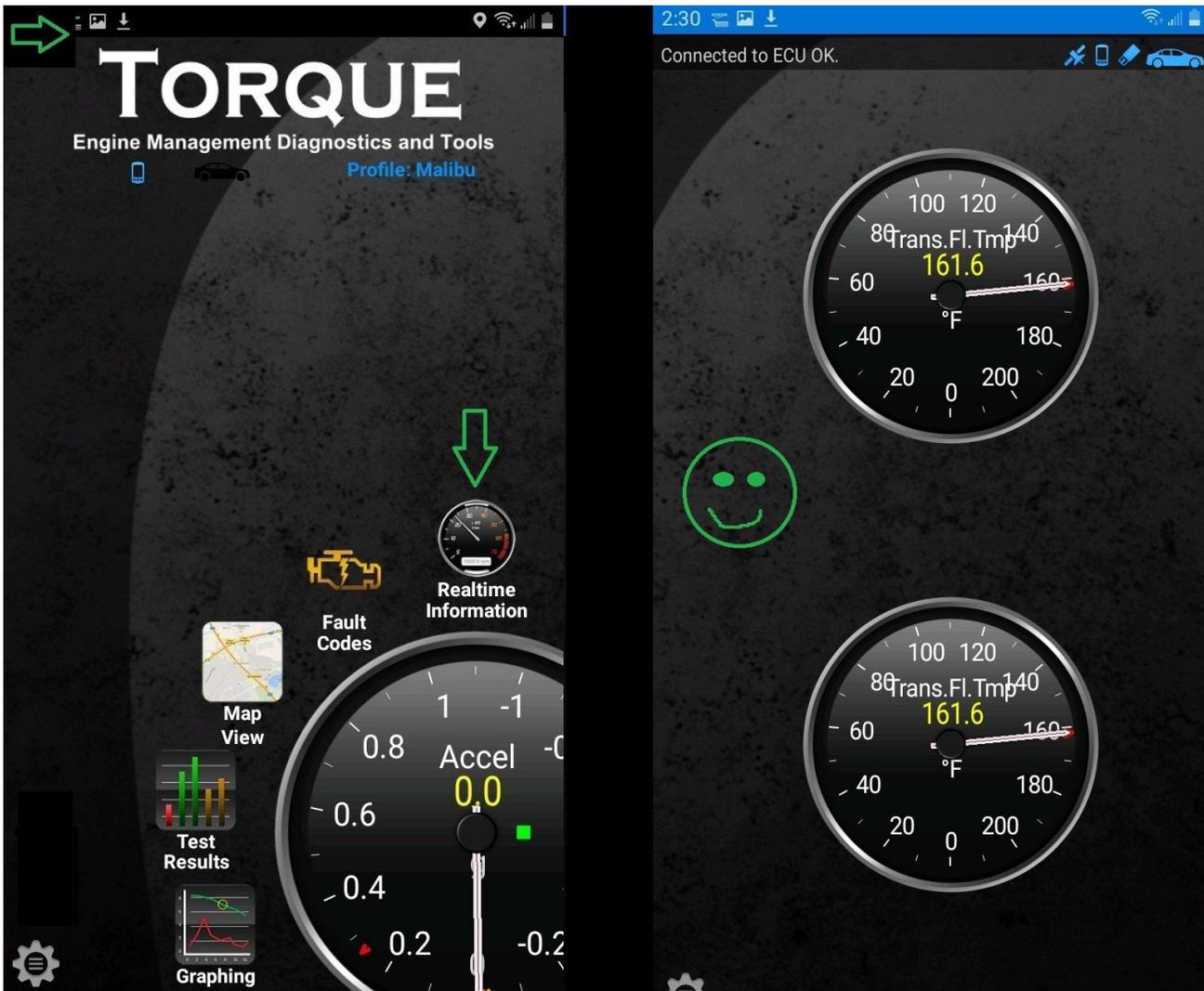
- 1) Start by downloading and installing Torque Pro from the Play store. If you have an iPhone, Apple does not believe you are capable and doesn't want you to continue. Good luck, you're on your iOwn.
- 2) Gather all tools you will need so they are ready near the level spot you will eventually park the car.
- 3) Enter the car, turn on the engine.
- 4) Plug the bluetooth dongle into the car OBD2 port by the hood release and pair with your phone.
- 5) Start the Torque app.
- 6) Add the GM PIDs to your options by clicking Settings (2), Manage extra PIDs/Sensors (2), then click the 3 dots in the upper right (3), and select Add Predefined Set (4). Select Pontiac / GM / Opel (4). See photo:



- 7) Go to Realtime Information (1) and select settings gear in the lower left (2). Click Add Display (3), Dial (4), then [GM]Transmission Fluid Temp (GM Method 2) (5), then medium (not pictured). See photo:



8) Go to Realtime Information and scroll left or right until you see the gauge(s) you added. It will look like this:



9) Now you are ready. The process of heating the fluid to 185-203F involves about 10 minutes of driving on a 75F day. The fastest way is to warm up the engine normally in D then use L2 to keep the RPMs between 3000-4000 RPM while speeding up and letting the engine slow down. This works because you are moving slow enough to not allow cooling from air. Try to time reaching 185F for arrival at your level parking spot. When you idle the transmission fluid temp will slowly increase and be right around a perfect 190-195F by the time you pull the plug.

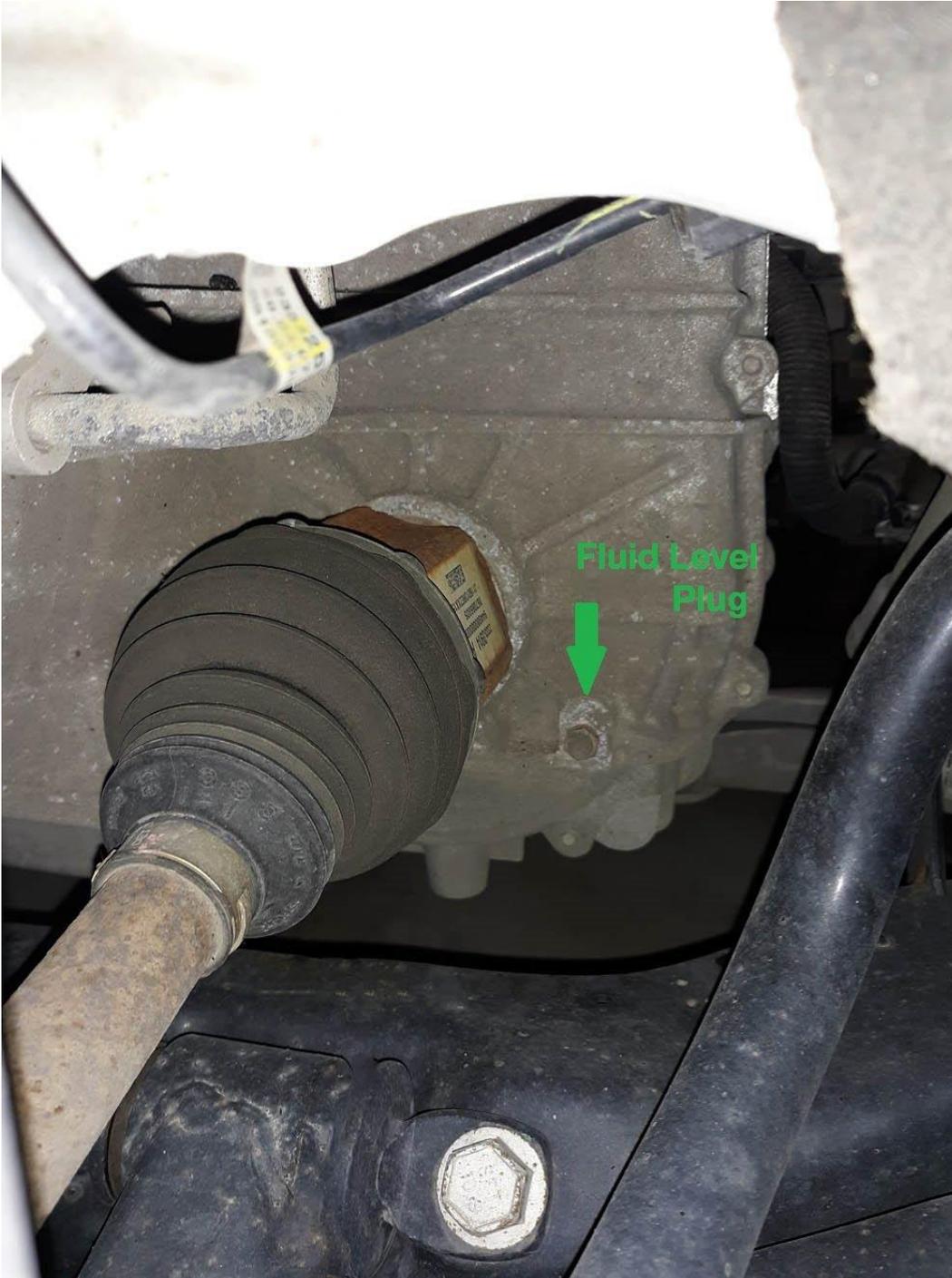
10) Park the car and leave the engine on (being in L2 will prevent Auto Stop). Shift to R, hold 5 seconds, shift to D and hold for 5 seconds, back to R, back to D, and finally P. Keep the engine on.

11) Keep the car in P and set the emergency/parking brake.

12) Remove front driver side wheel (loosen lugs with breaker bar, raise car with jack, jack stand, remove lugs, remove tire). Use gloves as things are hot.

13) After removing the wheel you must lower the car back down to normal ride height so the transmission is level. The center of the hub will be 13" off the ground with 225/55R17 wheels on an LT. If you have a different wheel size, measure the center of the front passenger hub and match the driver side front. Don't worry about the body of the car being higher - the center of the wheel hub is what matters.

14) Locate fluid level plug. See photo:



15) Verify you are still between 185F and 203F in the Torque App.

16) Position drain pan and cardboard under fluid level plug.

17) Open fluid level plug with 11mm bit and screwdriver or wrench if hard to turn. This is a counter-clockwise lefty-loosey turn. Remember gloves as it is HOT (I didn't forget I just couldn't hold my phone with those gloves). See Photo:



18) If fluid pours out, you are overfilled. Allow it to slow to a trickle or quick drip and quickly replace plug. If it quickly drips or slow drips out, quickly replace the plug as fluid is correct. If nothing comes out, verify fluid temp is still between 185F and 203F in the torque app. If it is, you must add fluid until it drips. This is not pictured in this guide - you will need to remove the fill plug (see guide [HERE](#)), insert funnel, and pour in Dexron VI fluid until it drips all while maintaining 185-203F then replace plug. The fluid level plug torque is 12Nm. I didn't use a torque wrench as that isn't very tight, it is just light hand tight. You should also note the color: it should be between pink-dark brown in a healthy transmission. See NOTE #1.

19) Wipe up any fluid with shop or paper towels.

20) Turn the engine off and remove your bluetooth dongle.

21) Reinstall wheel with lugs hand tight, lower car, and torque to 100 ft-lb. I like to torque to 30 ft-lb while raised then lower until the tire just touches the ground and torque up to 100.

22) Release parking brake and go drive your *fluid level correct* transmission.

All said, when I did two drain and fills and checked, mine was a tiny stream that became a fast drip of what I would call dark pink fluid. I only had the plug out maybe 3 seconds. When on towel it was pink though it looks dark pink dripping out.

NOTE #1: I have performed this on a friend's 6T40 after a dealer fluid exchange and it poured out like a hose so be prepared for that possibility. That owner had some harsh shifts following dealer service – the dealer said no problem all normal. I suspected high or low fluid following the service and it ended up being over by almost a quart. The car immediately returned to totally smooth operation. Extra fluid = higher pressure and eventually air and foam. Yuck.

### **3. Cleanup**

I don't have pictures but I want to treat cleanup as importantly as the background and process. Only a couple tablespoons or so dripped out of my transmission when I pulled and restored the plug. Even small amounts should be captured and disposed of properly. My local AutoZone takes transmission fluid.