

How to Check Fluid Levels

Maintaining proper fluid levels is an essential and easy maintenance task. Even armchair mechanics can perform this one. It's fun, quick, and can add thousands of miles to the life of your car.

This procedure is particularly important if you're planning on a long road trip and want to travel safely and efficiently.

The systems that need checking include the following:

- engine
- transmission
- radiator/cooling system
- brakes
- battery
- window washer
- air conditioner

Let's break them down.

Engine. It's often been said that oil is the lifeblood of your car. Clichés usually become clichés because they contain a grain of truth. In this case, truer words were never spoken.

The oil in the crankcase of your engine is critical to long and healthy motor life. Without it, your engine would freeze up in a matter of minutes. Checking your oil level is a fairly simple procedure. Experts generally agree that it's best to drive the car first before checking it. So take a little spin, then find a cool, shady spot to pop the hood.

Let the car sit for at least five minutes before checking, to give the oil time to settle into the sump.

With the hood open (and securely propped, so it doesn't bonk you on the head), locate the dipstick. It will be near the front of the engine, close to you, and sometimes has a brightly colored handle — yellow, red, or some other noticeable color. Find it? OK, remove it and wipe it with a clean rag or towel. Reinsert it into hole, then slowly remove it again. Check the level. The oil mark should fall between the two hash marks on the dipstick. If it's below the lower level, you need to add oil -- a quart will usually do it. Before you do so, though, wipe the dipstick again and check it a second time. Still low? Add a quart and recheck it. (It's best to add the oil, then start the engine to circulate it, then let it sit for another five minutes before rechecking.) If it's still below the lower hash mark, you may need to add another quart, but be careful not to overfill it, as this can lead to other problems.

For more information, we wrote a How To. on a complete oil change procedure.

<http://www.edmunds.com/how-to/how-to-change-your-oil-the-real-down-and-dirty.html>

Automatic Transmission/Transaxle. The automatic transmission fluid should be checked with the engine running. The transmission dipstick is typically located behind the oil dipstick, and doesn't stick

up as high. If you have trouble locating it, consult your owner's manual. Oftentimes it will have the same colorful markings (yellow, red, etc.) as the oil dipstick.

Start the engine and locate the transmission fluid dipstick. Before you do, though, make sure to remove any loose clothing hanging from your neck, such as a scarf, sweater, necktie, or long jewelry. These could get caught in a running fan belt and cause you to have a close encounter of the mechanical kind.

With the engine running, extract the transmission dipstick. Wipe it clean and reinsert it, then extract it again. It will have similar markings to the oil dipstick, one mark for too low, another for too high.

(Note: Transmission fluid will almost never be low. The automatic transmission / transaxle is a sealed system, requiring little maintenance. If your fluid is low, it most likely means you have a leak in the system, such as a worn seal or a crack somewhere. Have you noticed an oily patch on your driveway where you park? Is it red, or reddish-brown? If so, you may have a transmission leak and will need to see a mechanic.)

Even if the level is OK, note the color and consistency of the fluid. If it is very dark or black, check your records and owner's manual and plan on getting it changed; it's probably overdue.

Manual Transmission. This is done with the engine off. For most cars, you have to get under the car and remove the fill plug with a wrench. Stick your finger in and feel for fluid. If you can feel fluid on the tip of your finger, it's probably OK. Again, as above, note the color of the fluid and consult your owner's manual for exact procedures and service interval.

Many cars these days have a hydraulic clutch system, which needs brake fluid to keep the parts lubricated. An easy way to tell if your car has one is to check under the hood and look for a small plastic reservoir-similar to the one used for brake fluid, but smaller. Once you've located it, remove the lid and check the level. It should be at least two-thirds full. If not, fill to the "full" line with brake fluid.

Radiator/Cooling System. This should be done when the engine is cool or lukewarm, not cold.

Please note: *The contents of the radiator are pressurized and can scald you if the system is opened when it is hot. Also, never check the radiator when the engine is running.*

Locate the radiator cap. It should be in the center of the engine compartment, in the very front. Use a rag to remove it. Look down into the radiator and see if you can spot fluid. If it's near the top, you're in good shape. If not, you'll need to add some.

Engine coolant is added on a 50/50 basis -- 50 percent water, 50 percent coolant. Read the instructions on the coolant container for details.

You may want to also check the fluid level in the coolant reservoir. This is a plastic container just to the side of the radiator, with a hose connecting the two. It serves as an overflow receptacle for excess radiator coolant (since the fluid expands and contracts with heat). Pop the lid open and fill it about two-thirds of the way full.

Here's a more complete How To. on maintaining your cooling system.

<http://www.edmunds.com/how-to/how-to-maintain-your-vehicles-cooling-system.html>

Brakes. Like the transmission, the braking system is a sealed network. If it repeatedly gets low on fluid, you need to locate the source of the problem, either by yourself or with the help of a mechanic. A leaky braking system is nothing to play around with.

To check the fluid level, locate the brake fluid reservoir. It's usually in the engine compartment. If you can't find it, consult your owner's manual. Remove the lid and check the level. It should be at least two-thirds full. If not, fill to the "full" line with brake fluid.

Note: *Avoid getting water in the braking system, at all costs. Therefore, do not do this procedure in the rain, unless in a garage or under an overhang.*

Here are some Edmunds.com links about brakes and braking safety.

<http://www.edmunds.com/how-to/how-to-change-your-brake-pads.html>

<http://www.edmunds.com/car-technology/brakes-drum-vs-disc.html>

<http://www.edmunds.com/driving-tips/keep-your-braking-distance-more-than-just-slowing-down.html>

Battery. Some cars have what is called a "maintenance-free battery." This means the battery is sealed and should not be tampered with. You'll be able to tell right away, since the battery has a flat top with no openings.

Most cars, however, still utilize traditional battery design, with six cells that need occasional refilling. Access to the cells comes through six screw caps, or, more commonly these days, two rows of plastic caps that pressure-fit over three cells each. Either pry the caps off with a flat-head screwdriver, or unscrew the six caps.

It's best to fill battery cells with distilled water, since it lacks contaminants and trace elements that can cause a corrosive buildup around the battery terminals.

The battery cells should be filled to the bottom of the fill hole, no further.

CAUTION: *Battery acid has sulfuric acid in it, which is highly caustic to skin and eyes. Wear eye protection and gloves when doing this procedure.*

Here are some links to articles on batteries:

<http://www.edmunds.com/car-technology/a-shocking-expose-your-cars-battery.html>

<http://www.edmunds.com/how-to/jump-start.html>

Window Washer. Some newer cars and trucks now have a light that comes on to indicate when this receptacle needs refilling. It's typically located in the engine compartment, underneath the windshield. It looks a lot like the coolant overflow reservoir, but will be located closer to the rear of the engine compartment. Also, both of the caps will be labeled "coolant" and "windshield," or something similar, to distinguish one from the other.

Some vehicles, such as SUVs and minivans, may have a second receptacle, located in the rear of the vehicle, to supply the rear wipers.

If you're unable to locate these fluid reservoirs, consult your owner's manual.

Many people will augment the water in these receptacles with Windex or some other glass cleaner, to increase the cleaning power of the fluid. This is a particularly good idea in summer, when dead insects on the windshield can reduce visibility.

Air Conditioner. The average home mechanic doesn't have the tools or know-how to check this fluid level (which is actually a gas, not a fluid). We mention it here because it should be checked. Best to find a certified air conditioning mechanic to have this done.

Remember, maintaining proper fluid levels insures safe and trouble-free driving. It takes only a few minutes, and can often catch a problem before it becomes a crisis.