

Changing Oil the Right Way

Changing the oil in your car is more than a simple "drain and fill"...

How often you should change your car's oil depends on when it was built. On cars manufactured before oil filters were common, you need to change the oil every thousand miles in order to prevent sludge buildup in the pan and oil galleries. On cars from the late thirties, forties and fifties, every two thousand miles is usually good. More modern cars only require an oil change every three to six thousand miles.

Changing the oil is no big deal, but there is a right and a wrong way to do it. The right way is to take the car out for a twenty-minute drive so the engine is thoroughly warmed up before draining the oil out of the engine. Sludge, dirt, water and acids settle out of the oil when a car has been sitting. When you drain a cold engine, some of these contaminants remain in the oil galleries and pan, thus defeating much of the purpose of the oil change. If you drain the engine after it is warmed up and the oil has been circulating under pressure, these damaging by-products of combustion will be held in suspension in the oil and will drain out with it.

Make sure you set the hand brake. Then jack up the car and put it on sturdy jack stands at all four corners so that it sits level. Now slide a drip pan or one of the special flat plastic containers available at auto supply stores under the motor pan and roll under your car. Then loosen and remove the drain plug. Wear heavy neoprene gloves while you work, so the hot oil won't burn your hands.

Let the oil drain completely. Inspect your old oil for metal particles or traces of coolant. If you find either, you need to make repairs. Metal particles could mean damaged bearings, and water could mean a blown head gasket or cracked head or block.

Set your old oil aside until you can pour it into proper containers and take it to a recycling center or service station to dispose of it properly. Don't be tempted to dump it down a drain or into the soil. Doing so is illegal and toxic to living things. Oil can be recycled. The disposal fees, if any, are usually quite nominal.

Check the copper washer on the drain plug to make sure it is not cracked or deformed. If it is, replace it with a fresh one. When the oil is finished draining, put the plug back in the pan and tighten it with your fingers until snug. Now take it up one quarter turn more with your wrench. Don't over-tighten it.

Changing Filters:

The rule of thumb is: change the filter at every other oil change or at least twice a year. Of course, if you are driving the car frequently in a dusty area, you should change the filter with each oil change.

On more modern cars, using a full flow, self-contained filter, slide your catch pan over until it is under the filter. Now, using a filter wrench, loosen the filter and remove it. If the filter seems stuck, drive a large Phillips screwdriver through it. Using the screwdriver as a lever, unscrew the filter. Smear a little oil or grease on your new replacement filter's gasket to keep it from sticking. Then screw it back on by hand. Snug it up 1/2 to 3/4 turn with a filter wrench.

On older cars, the oil filters were the bypass type and were in canisters on top of the engine. If your car is equipped with this type of filter, loosen and lift off the top of the canister. Then grab a rag to catch any drips when you lift out the filter. After the filter is removed, wipe the canister out with a rag soaked in solvent or gasoline. When the canister is completely clean, drop the new filter cartridge into it making sure the filter is right side up according to the arrows on it. Oil is actually forced up through the filter and out the top of these old style filters. Smear a little oil on the seal, then reinstall the canister lid and snug it up. Don't over tighten it though. If you do, you will deform its top and cause it to leak.

Add Fresh Oil:

While there is much more to do under the car, it is best to climb out from under the car and add your new oil at this time. I have known more than one service person that got so busy with all the other little things involved with routine maintenance that he forgot to add oil to the engine when he let it down off the lift. Running an engine with no oil in it can be disastrous, so add oil now according to your owner's manual specifications. Don't forget to add an extra quart if you changed the filter.

Which type of oil you add depends more on climatic conditions and how worn your engine is than anything else. In cold climates, a 5W-30 multi-viscosity oil may be a good choice. With worn engines that consume a little oil, a 10W-50 is probably a good selection. For most cars and most conditions, 10W-40 is probably your best bet.

There are a number of myths surrounding engine oil, and believers defend them with almost religious intensity. One myth is that detergent oil will loosen sludge and cause trouble in an older engine that has not been running detergent oil. Tests have proven this to be false. The detergents in today's engine oils are not powerful enough to do that. What they will do is gradually erode sludge away, which is a good thing. The only time detergent oil might be a problem is if your car is an older European model that uses rubber gaskets. I have heard (though I have never been able to verify it) that the detergent in modern oils will cause such gaskets to deteriorate.

As for the myth that single viscosity oils are necessary for older cars, this too was tested and proven untrue. Today's multi-viscosity detergent oils are much better than anything available forty or fifty years ago and better for day-to-day use than single weight oils. The additives in them prevent sludge, carbon and varnish buildup. They retard rust that results from the combination of acids and moisture that develops as a natural by-product of combustion, and they keep the oil from foaming when sloshed around under pressure in your engine. They also make it easier to start your engine on a cold day, because they make the oil thinner when it is cold so that it gets to the bearings more quickly during startup. The newer synthetic oils are reported to be even better yet.

Of course you should follow the manufacturer's instructions when adding oil to your car. Which brand of oil you choose is largely a matter of preference, but, with the possible exceptions of some very rare and specialized situations, modern multi-viscosity detergent oil works just fine in most old cars.

Checking the Transmission and Differential:

If your car is equipped with a standard transmission, grab your adjustable wrench and roll back under the car. On the side of the transmission, there will be an inspection plug about half way up on the case. Loosen and remove it. Now insert your finger into the hole in a straight and level position. Gear oil should just touch the bottom of your finger if the transmission is cold. If the transmission is still warm, a little oil might run out.

If your transmission is low on oil, you can use a plastic squeeze bottle to squirt in enough to fill the transmission to just below the inspection plug. If the oil on your finger comes out black or smells burned, empty it from the casing by removing the drain plug or a side plate bolt. Then refill with the correct oil. Most old car standard transmissions require mineral oil or hypoid gear oil. Use hypoid oil in the differential. The weight depends on the climate where you live, though 90W is usually specified in manuals for most applications.

There is usually no specified interval in your shop manual for changing the lubricant in your transmission or differential. If your car is thirty to forty years old or older, it would definitely make sense to change the oil in them. Moisture condenses inside their casings and causes rusting and pitting. Dirt can also enter them through the small vents on the axle housing or on top of the transmission and damage the gears.