

OIL CHANGING MADE EASY

By Steven Scoleri

Changing the oil in your car every three thousand miles is about the single most important maintenance item you can do for your automobile. It's really very easy, takes about forty minutes, saves money and hassle over taking the car to someone else, and you have the satisfaction of knowing it was done correctly.

WHAT YOU'LL NEED

- * Oil drain pan
- * Ratchet drive (3/8" is a good size)
- * 3" ratchet extension
- * A 3/8" driven socket (proper size obtained from owners manual of the particular car)
- * A rubber mallet
- * Filter wrench designed to fit the end of the oil filter
- * A Bright flashlight, or a fluorescent shop light
- * A floor jack or the jack that was provided with car
- * Two jack stands
- * Rags, paper towels, old newspapers, or clean disposable diapers
- * A plastic funnel
- * A grease pencil
- * Oil (type and amount depending on car, see owners manual)
- * A new aluminum drain bolt gasket
- * An empty gallon plastic milk jug, possibly two
- * Some automotive hand cleaner
- * Some type of coveralls or drop cloth for staying clean while crawling under the car

NOTE: Please read the owners manual of the particular car before proceeding, basic knowledge of the vehicle is required.

Warm the oil by running the engine for several minutes. If the car has just been on the road, wait about an hour before starting this procedure to avoid contacting hot engine parts and hot oil. Warm oil is desirable, hot oil is not. Set the parking brake and/or chock the rear wheels to prevent car from rolling. Raise the hood and remove the oil filler cap on the valve cover (see owners manual). Place the jack under the correct jacking point (see owners manual) usually just aft of the front wheel under the car's frame. Using the jack, raise one side of the car enough to place a jack stand under the frame. Lower the jack gently until the car rests on the jack stand. Repeat the procedure for the other side of the car and remove the jack. Your car is now safely supported by fixed jack stands.

WARNING: NEVER GET UNDER THE CAR IF IT IS ONLY SUPPORTED BY A JACK!

There should now be plenty of clearance to slide some old newspapers and an oil drain pan underneath the car. Locate oil pan drain bolt, (see owners manual) usually obvious. Use the ratchet, and socket to remove the oil pan drain bolt to allow used oil to drain into the pan. Remember turn bolt counter clockwise to loosen and clockwise to tighten. You may find it necessary to gently tap the ratchet handle with the rubber mallet to break loose the drain bolt. Have some paper towels with you under the car to wipe your hands or clean up drips. After the oil is completely drained, then replace/tighten the drain bolt. Be sure to use a new aluminum, deformable gasket when replacing the oil pan drain bolt. Do not use "gorilla" torque on the bolt. Use moderate torque (22-30 ft-lb.) on the ratchet with one hand, then finish with couple light taps on the ratchet handle with the rubber mallet. Wipe up any oil drips/smears with paper towels, remove the newspapers and drain pan full of used oil.

Locate oil filter, (see owners manual) usually in an obscure location, difficult to reach. Sometimes you can access the filter from under the hood rather than under

the car. You can remove/replace the oil filter while the oil is draining out below, thus saving some time. Be sure to use plenty of old rags/newspaper/paper towels/diapers below the filter. Using your filter wrench attached to the 3" extension and ratchet, break the filter loose. Then set the tools aside and spin off the filter by hand. Keep the open end of the filter pointed upwards as you lift it out of the engine compartment to minimize oil spillage. Temporarily place the old filter in the box from the new filter and set it aside.

Apply a thin film of new oil or grease to the gasket of the new filter. Using a clean rag, carefully wipe off the oil filter mating surface on the engine (do not leave any lint or foreign matter on this surface).

NOTE: Sometimes gasket from the old filter sticks to the engine, ensure that this is not the case.

Before proceeding further, use a grease pencil to mark on the closed end of the new filter canister (like the minute hand of a clock). Since the new filter is installed by hand tightening only, it is sometimes difficult to see the filter while trying to turn it; sometimes it is also hard to determine by feel that you have actually turned it at all. Thus, the grease pencil mark is used as a visual indication of filter rotation. Always tighten as hard as you can BY HAND ONLY! NEVER tighten with a filter wrench. After the oil is drained and the drain plug and oil filter is replaced, you may lower the car by performing the jacking procedure in the reverse order.

Now we're ready to use a clean plastic funnel to refill the crankcase with fresh oil. Use a major brand of recommended petroleum-based or synthetic oil (see owners manual). Place the funnel in the oil filler port usually located on the top of the valve cover. Carefully pour in about 1/2 quart less than full crankcase capacity (see owners manual). Full capacity is specified as with or without oil filter change. Always change oil and filter together. Replace the oil filler cap. Then start the car, and let it idle for about 3-5 minutes to warm and circulate the new oil. This will allow the new filter to fill up with oil and give us time to check for leaks at the oil pan drain bolt and the filter. Turn off the ignition and wait about 2-3 minutes for the oil in the engine to drain down to the pan. Now check the oil level with the dipstick, location may vary (see owners manual). Pull the dipstick out and wipe it clean with a fresh paper towel. Reinsert the dipstick, wait a second, then pull it out to read the oil level on the end. Finish filling the engine with fresh oil until the level on the dipstick is at the top line. Do not overfill. The difference between the two lines on the dipstick represents approximately 0.85 quarts. Don't forget to remove the funnel, replace the oil filler cap on the valve cover, and ensure all tools, flashlights, newspapers, rags, etc. are removed from the engine area before closing the hood.

Using your funnel empty the used oil from the drain pan (and from your old filter you left sitting in the new filter's box) into an empty one gallon plastic milk jug (the kind with a screw-on cap). You're now ready to store the used oil until you can get to a service station to deposit it in their recycling tank. Seal the old (empty) oil filter in a plastic Zip-lock bag and deposit it in the trash.

NOTE: PLEASE DO NOT EVER POUR OIL DOWN THE DRAIN, THROW IT IN THE TRASH, OR DUMP IT OUT ON THE GROUND. PROTECT YOUR ENVIROMENT.

Clean up your hands and tools using the automotive hand cleaner, and make an entry in your maintenance logbook (see owner manual). Write down the date and mileage of your oil change. Note also the oil filter part number, and the number of quarts, brand, and viscosity of the oil used.

Congratulations on a job well done. You saved money, learned something about your car, and received the satisfaction of knowing the job was done right.

