



FALL
CAR CARE
GUIDE

Fall Car Care Month

Autumn is the perfect time to prepare your vehicle for the upcoming winter months. Frigid temperatures can wreak havoc on integral components on which your vehicle relies. Take advantage of October's milder weather to be sure your transportation is in good condition.

Some maintenance can be performed at home even for those who are mechanically inclined. Sometimes a visual inspection is all it takes to make sure things are in good working order. Other jobs are better left to a professional.

Your local dealership or repair shops might hold special promotions to celebrate national car care month. This October, schedule an appointment with a certified technician to gain peace of mind and ensure your vehicle will perform well during the upcoming winter.

STAY ON TOP OF MAINTENANCE

Make sure to keep a record of the maintenance your vehicle has undergone. Knowing when your next oil change or tire rotation is due makes it easy to schedule appointments before you exceed the recommended intervals.

Check your owner's manual to determine the manufacturer's specific mileage allowance between oil changes. Some new oils claim to allow 15,000 miles before changes.

While your vehicle might still perform, it's best to stick to the recommendations set by the manufacturer to ensure your engine is operating properly.

Your local dealership will be



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able to inform you about these important intervals if your manual is not available.

TIRE INSPECTION

A visual tire inspection is another way to ensure you are safe this season. According to

the Department of Motor Vehicles, low air pressure and worn tires are especially dangerous on wet or slick roads, as both can reduce traction. Before the snow falls, make sure your tires meet national safety standards.

The National Highway Traffic Safety Administration suggests replacing tires once the tread is worn down to 2/32 of an inch. You can easily check your tire's tread depth by purchasing an inexpensive gauge at an auto

parts store.

While you're there, pick up a pressure gauge to make sure your tires are filled to the proper PSI. Most of the time you can find the manufacturer's recommendation on the side of the driver's door.

Heating and Air

The American Automobile Association reports that Americans spend nearly 300 hours driving each year. This makes it incredibly important to make sure your vehicle's heating and cooling system is in good condition, especially for those who experience harsh winters.

With lower temperatures incoming, it can be easy to forget about your vehicle's air conditioning system. Did you know that the AC system is still required for some functions that require heat?

This fall, schedule an appointment to ensure both systems are working properly to keep you safe and comfortable when the temperatures drop.

WHY THE AC SYSTEM IS IMPORTANT

Do you allow your vehicle to warm up before your morning commute? If so, you surely engage the defroster to save yourself from the labor of window scraping.

Without properly protecting yourself, you stand a chance of developing frostbite and dropping your body temperatures to dangerous levels. Most vehicles rely on the air compressor to operate the defrost function. Without a properly working AC system, defrosting is not an option.

Here's why:

Even when the defrost is running at the highest heat setting, your AC system is behind the scenes making sure everything goes as planned. When you activate the defroster, the air compressor engages to remove moisture from the air. This makes



it easier for the heat to clear frost from your front windshield.

CHECKING YOUR HEATING SYSTEM

Before the temperatures drop, ensure all heating func-

tions are operating properly. You should test this system by checking every setting your vehicle offers. This includes each fan speed and the air flow control. Some vehicles rely on different actuators for each mode. If one is bad, you

may lose important heat flow from the floor, dash or defrost.

Make sure to check your fluids as well. Being low on antifreeze can have serious effects on your vehicle's health and your comfort.

If you feel like your system isn't running as efficiently as possible, be sure to schedule an appointment at your local auto-repair shop. Workers there can determine the issue and fix your problem before you're stuck out in the cold.

Fix Your Brakes

When brakes go bad, you're putting yourself and everyone on the road in danger. Know which signs to look for to stay ahead of the problem. Your braking system gives plenty of warning when there is an issue that needs attention.

While cooler temperatures won't directly affect braking performance, fall conditions may introduce factors that make stopping more difficult. Areas that receive snowfall or rain during the autumn months experience road hazards that require premium tire and brake-system conditions.

Have your brakes inspected before these conditions are present.

HOW BRAKES WORK

Most newer vehicles rely on a disc brake system in the front to stop. Its major components include calipers, rotors and brake pads.

When you press your brake pedal and expect to stop, do you know how these intricate components work together? Learning how your brakes work will help you in understanding how important the integrity of each one is to your safety.

Your vehicle's rotor is bolted to a hub, which means they spin in direct relation to the wheel's speed. Brake pads are held in place by a caliper, which relies on hydraulic fluid to operate pistons that squeeze the pads into the rotor. The friction caused between pads and rotors is what ultimately causes your vehicle to stop.

It's important to check your



brake fluid levels to make sure your calipers have enough to operate efficiently. Any damage to these major components can cause dangerous stopping issues.

SIGNS OF FAILING BRAKES

Fortunately, brakes generally give obvious warning signs

when something is amiss. Correcting problems as soon as they occur gives you a great advantage in saving the other important components.

Some newer vehicles use sensors that determine a brake pad's wear position. This is achieved by a wire loop that is installed in the material at the recommended level of friction.

Once the pad wears down to the wire, it will be cut and recognized by a vehicle's computer. This will trigger a dashboard light to alert its driver that the pads are ready to be changed.

Vehicles that don't feature this technology still make it easy to tell when new pads are required. Have you ever heard

an awful squealing noise when you engage the brakes? That's a good indicator that there is an issue with the pad and rotor mating relationship.

If you let your pads go too far, you will begin feeling vibrations and hear grinding noises. Overused pads will score grooves into the rotor, which can be easily felt.

Wash and Wax

Washing your vehicle is just as important as performing routine maintenance. Regularly cleaning your investment protects its value and protects from early damage. Summer conditions can be treacherous to a vehicle's exterior integrity, making fall the perfect time for a deep clean.

Reconditioning a vehicle after a long summer can take some work. Hot temperatures create plenty of hazards that can ruin a paint job. Manufacturers protect their vehicles' paint with a layer of clear coat. Once it begins peeling, the paint will start fading and require an expensive overhaul to regain its appeal.

CLEANING UP AFTER THE HEAT

If you were unable to keep up with cleaning your vehicle during the summer months, now is the time to take advantage of the cooler weather. An especially hot summer will leave behind many different tarnishes on your vehicle's paint. Here are some common items of debris and how to clean them.

Tar: Summer (or as most Americans know it, construction season) creates many opportunities to drive over fresh asphalt or have it splashed onto your vehicle. The tar that winds up on the lower portion of your car is a substance used in asphalt and it can be tough to clean. Purchase a can of tar remover from your local auto parts store. Apply it to a towel and in small circles, spread the chemical on the tar until it begins to dissolve. Depending on how tarnished your vehicle is, you might need to repeat the process. Once you have completely eradicated the mess, wipe away any streaks and immediately wash the car.

Bugs and bird droppings: Some people think of this as a minor nuisance that creates an ugly car. While this is true, bugs and bird droppings also include high levels of acidity that can penetrate deep into your paint.



Allowing these intrusions to remain on your vehicle is like asking for expensive body-shop repairs. Regularly visiting your local car wash or detail center can make eliminating this type of debris easy. For a DIYer, there are chemicals

on the market that can make removing bugs easy.

IMPORTANCE OF WAX

Whether you prefer the old-fashioned application process of waxing or use

new products that require a quick spray and wipe, wax is a great protectant. It acts as an extra layer of security that keeps a car's clear coat intact. Wax also leaves behind a shiny surface to make your vehicle more attractive.

Fuel Economy

You might find yourself making extra trips to the gas pumps this fall. The Environmental Protection Agency reports that a conventional car's gas mileage is about 12 percent lower at 20 degrees Fahrenheit than it would be at 77 degrees. Considering the cost of fuel, this can amount to a considerable expense.

For those who drive hybrid vehicles, the numbers are even more bleak. The EPA states their fuel economy may drop between 31 to 34 percent under the same conditions. These cooler temperatures also negatively impact the performance of a hybrid's charging battery, which is achieved by a unique braking system.

WHY IS FUEL ECONOMY IMPACTED?

Autumn's chilly temperatures affect your vehicle in many different ways that ultimately decrease its fuel economy. The EPA lays out some surprising factors that you may not have realized:

- Your engine takes longer to reach its optimum temperature. Most shorter trips will use more fuel since an engine won't have enough time to warm up.
- Cold weather causes tire pressure to decrease, which means more fuel is required to make up for the rolling resistance.
- Warming up your vehicle before a commute will lower fuel economy because idling gets zero miles per gallon.
- Winter grades of gasoline sometimes contain less energy than summer blends.

WHAT CAN YOU DO?

Although you won't be able to completely relieve cold weather's effect on fuel economy, there are some things you can do to help.

Keep your vehicle in the warmest condition possible to increase the initial temperature of your engine while



it's not running. Parking your car in the garage during cooler weather gives you a big advantage.

Nobody likes to get in a vehicle on a chilly morning without allowing the heater to warm the cabin. However,

the EPA says this is a bad idea for fuel economy and emissions. Most manufacturers recommend driving about 30 seconds after starting the engine. This quick departure allows the motor to warm faster than at idle.

Use the engine oil recommended by your owner's manual. Using an improper viscosity or type (synthetic, conventional, semi-synthetic) can hurt your fuel economy and harm your engine.



All About Oil

Choosing the correct bottle of oil to “top off” your engine is not as easy as it used to be. Before, all you needed to know was which viscosity was required.

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Today, oil contains different additives required to meet tough federal regulations to keep up with fuel economy and emission standards.

While engine oil may look the same as it has for decades, it has truly come a long way. The American Petroleum Institute and the International Lubricants Standardization and Approval Committee oversee setting these standards, keeping manufacturers on their toes.

It's important to know

which “spec” your engine requires and use the correct oil, every time.

UNDERSTANDING MULTI-VISCOSITY

The most distinct feature on a bottle of oil is the viscosity (0W-20, 5W-30, etc.) Check with your owner's manual to find the correct formulation your engine requires. Using the incorrect viscosity can cause strain leading to early failure and poor fuel economy.

What do these alpha-nu-

meric codes really mean?

There is a common misconception that the W in an oil code stands for weight but each quart of oil you pick up will weigh the same, right?

What it really means is winter.

For example, a common type of oil is 5W-20. The prefix of 5W describes the thickness, or viscosity that an oil operates during cold-weather conditions. As the engine warms up to an average 215 degrees F, the oil begins a process of thickening up to a vis-

cosity of 20.

The lower the number, the thinner the viscosity. The reasons engines rely on a multi-viscosity oil is because thinner oils can't offer superior protection during higher temperatures.

CHECK YOUR SPEC

Once you know the correct multi-viscosity formula, you're halfway there. Make sure to take note of any specifications your manufacturer recommends for their engines.

If the suggested oil type is a synthetic, a conventional oil won't have the proper additives to protect the engine properly.

In 2011, General Motors began requiring a dexos-approved oil in most of their new vehicles. Dexos1 is intended for their gasoline engines and dexos2 for their light cars with diesel engines. Using an oil that is not a licensed dexos product can void any warranties and harm your engine.

Holiday Travel

Autumn is a time when many Americans travel the highways to celebrate holidays such as Thanksgiving.

Is your vehicle up for the strain of a long-distance road trip? Make vehicle maintenance a priority if you are planning a trip this fall.

PROFESSIONAL INSPECTION

Schedule an appointment with your local auto-repair shop before you head off far from home. Even if you're only there for regular maintenance, it is a good time to have your vehicle inspected.

Discuss any issues concerning the way your vehicle operates. Some of these issues may be slow starting, hard braking or indicator lights on the dashboard. A professional technician can perform state-of-the-art diagnostic tests that can pinpoint a problem.

Once an issue is diagnosed, make sure it is corrected before you travel. Out-of-town repairs can be costly, as you may break down in a place with a higher cost of living and be stuck with a tow bill.

REPAIRS AWAY FROM HOME

If a part you had replaced locally fails while it is still under warranty, can an out-of-town



repair shop honor the warranty? Most of the time.

Keeping receipts for your auto parts and repairs is crucial to keeping warranties valid on them. Check with the repair shop to find out who they buy their parts from and have them note the parts vendor on your invoice. This will make it easier to obtain warranty work on the road.

Some repair shops also work with their parts vendors to

cover labor costs on warranty items. Again, check locally for any relationships the shop has with its distributor. A lot of auto parts companies will cover labor fees if the replacement job is done with another affiliated shop. Luckily, they are spread around the country.

FILL FLUIDS

Make sure every reservoir in your vehicle is filled to the suggested fill line. Running low on

antifreeze can cause serious problems to your cooling system and engine. You'll also want to pay attention to the brake fluid and washer fluid reservoirs.

Check your oil before a trip and during stops you make along the way.

To check your oil, follow these steps from the Department of Motor Vehicles:

1. Open the hood and locate the engine oil dipstick, usually

labeled with a yellow handle.

2. Remove the dipstick and wipe it with a clean rag.

3. Reinsert the dipstick, then pull it out again.

4. Note the color. Healthy oil should be a golden-honey color, while aging oil will appear black.

5. Check oil levels. It should be even with the MAX line. If it is low, slowly pour oil into the crankcase until desired results are achieved.