ACDelco
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WINTER

BRAKE CHECK!

Five questions about your brakes and why periodic inspections can save money.

When you press the brake pedal, fluid is forced through lines that run to each wheel. The pressure of the fluid forces brake pads to push against a brake rotor, causing friction that slows the wheel and, consequently, the vehicle. On vehicles with rear drum brakes, the fluid forces shoes against a drum, but the effect is the same—friction slows the turning of the wheel. And now that you know the basics, here are five big questions you may have:

Why do brakes need to be inspected or replaced?

Because their performance is dependent on friction, the parts involved with that action wear down. The friction material on the pads and shoes wears away, and the rotors and drums can be damaged by worn pads/shoes or warp under hard use and the heat generated by the friction. Maintaining and replacing those parts when necessary cannot be ignored, because the longer you drive with worn or inadequate brakes, the worse the performance will get—and it may just prove more expensive when you finally take action.

The brakes shudder and shake when I step on the pedal. What's wrong?

The disc rotors could be warped, creating an uneven surface as the pads try to "grab" them when stopping. Even if that's not the cause, shaking and shuddering under braking can affect braking performance and the condition should be examined immediately.

I heard a squealing sound for a while, but it went away. Does that mean the brakes are OK again?

No! The squeaking/squealing sound was caused by wear indicators built into the disc brake pads as they rubbed against the disc rotor. That means there was only about 1/16 inch /1.6 mm of pad material left. "Burning" through the wear indicators so they no longer make noise (because they were worn away) means you have less than 1/16 inch /1.6 mm of pad material to stop your vehicle. Have the brakes inspected immediately'!

Why is it more expensive to repair the brakes if I wait a while?

That's not always the case, but here's what happens the longer you wait between brake services: As the pads wear beyond their usable life, they can dig into the disc rotors or drums, damaging them enough to require replacement. Severely worn brake pads can also require more work to remove them from the calipers and may require the calipers to be replaced. With regular inspections, you may only have to make periodic pad or shoe replacements, which is typically much less expensive than replacing the pads, rotors and calipers.

But aren't all brake jobs expensive?

They don't have to be. Replacing only the pads when they're worn can prolong the life of other brake components, such as the rotors. There's never a bad time to have your brakes inspected. Your ACDelco-affiliated Professional Service Centre can check the condition of the brakes and measure the life left in the pads. Your technician can also suggest a variety of value-priced ACDelco Advantage, Professional DuraStop and GM Original Service Equipment brake parts options to fit your budget.

REMEMBER: If your brakes are shuddering, shaking, squealing or making a grinding sound when you step on the pedal, have them inspected immediately. It's your safety at stake.

BY THE NUMBERS: ALL THINGS MINI EDITION

35,797– The depth in feet (nearly 6.8 miles) achieved in 1960 by a mini-submarine named Trieste, reaching the Challenger Deep in the Mariana Trench—the deepest known part of all of the oceans.

5,040– The record number of mini-golf holes played by a single player during a 24-hour period between March 28 and 29, 2011, in Waukegan, Ill.—the equivalent of 280 18-hole games.

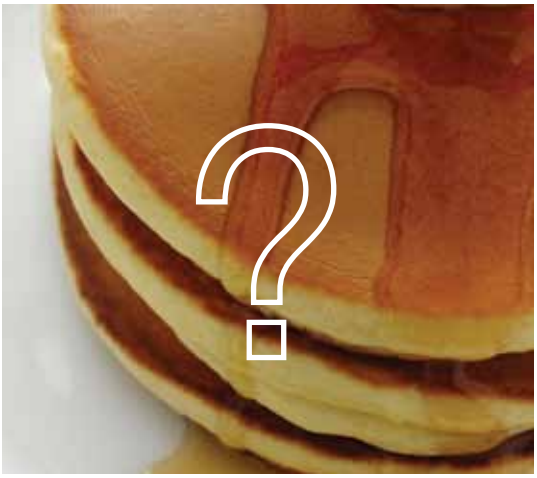
570– The approximate number of mini-marshmallows in a 16-ounce bag.

20– The weight in pounds of Little Pumpkin, a mature mini-horse raised in South Carolina that stood only 14 inches tall.

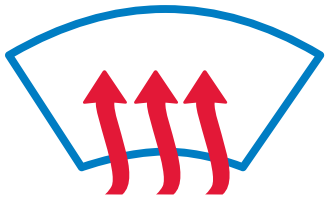
7– The average length in inches above the knee for the original miniskirts introduced in 1965 by London designer Mary Quant.

WHAT'S THAT SMELL?

Do you smell something sweet in your vehicle and you're pretty darn sure you're not driving around with an open bottle of maple syrup? If so, you may want to head to your ACDelco-affiliated Professional Service Centre and have your vehicle's heater core and/or cooling system checked for leaks. Antifreeze has a sweet, slightly syrupy odour that is very apparent with a leaking heater core, because hot antifreeze circulated through the engine is used to provide heat inside your car. You may also notice an oily mist on the windshield or dampness on the carpet—or the coolant leak could be under the hood, but particularly noticeable when you start the vehicle in the morning, as the antifreeze starts flowing through the system. Regardless of the source, if you smell that telltale odour, have your car inspected right away. Whether you stop for pancakes afterward is up to you.



WINTER WARM-UP:



SHOULD I LET MY VEHICLE WARM UP IN COLD WEATHER?

To most Canadian drivers, the ritual of letting their cars warm up a few minutes before driving is a time-honoured one. Although there's the comfort factor of getting into a warm vehicle for that drive to work, the practice has come under scrutiny in recent years for its environmental impact. That's because the advent of electronically controlled fuel injection has virtually eliminated the reasons drivers in decades past, so a prolonged warm-up basically wastes gas. However, that's not to say there aren't valid reasons for a brief warm-up in very cold weather – the most important being the circulation of oil throughout the engine.

In temperatures below freezing, oil can thicken up and flow more slowly, so it's important the engine is warmed up sufficiently to ensure normal oil circulation— and it doesn't take long. A good rule of thumb is the freezing mark: If it's above freezing, no warm-up is needed. If it's below freezing, a minute or two is fine. Beyond that, you're just wasting gas.

TIME FOR A NEW BELT?

The serpentine belt drives many important features under the hood, such as the power steering, alternator and even the air conditioning on most cars. And while the belt doesn't typically need periodic adjustments thanks to an automatic tensioner, it does wear over time.

A broken or snapped serpentine belt can leave you stranded, because it will stop turning the alternator, which is the source of power generation for your vehicle. Inspecting the belt for wear and having a worn one replaced can prevent that. Your ACDelco-affiliated Professional Service Centre can perform the inspection and belt replacement with an ACDelco Professional serpentine belt that matches the original specifications.

HOW TO CHECK A SERPENTINE BELT

- **Cracks—**The most common indicator that the belt is ready for replacement is the appearance of cracks in the belt's ribs, probably every 1/8 inch / 1/3rd of a cm or so.
- **Missing chunks—**If there are chunks or sections of the ribs that are just plain missing, the belt is definitely past its prime and needs replacement.
- **Glazing—**If the back side (the smooth side) of the belt appears shiny and/or glazed, there's a good chance the belt has been or could start slipping—and perhaps you've already heard that in squealing at start-up or during hard acceleration.
- **Scuffing or fraying—**If the edges of the belt appear frayed or like they've been scuffed with something abrasive, the belt not only needs to be replaced, but your technician should probably inspect the serpentine system's pulleys for something that is rubbing against the belt to cause the condition.