

Fast Fixes

SPECIAL SECTION

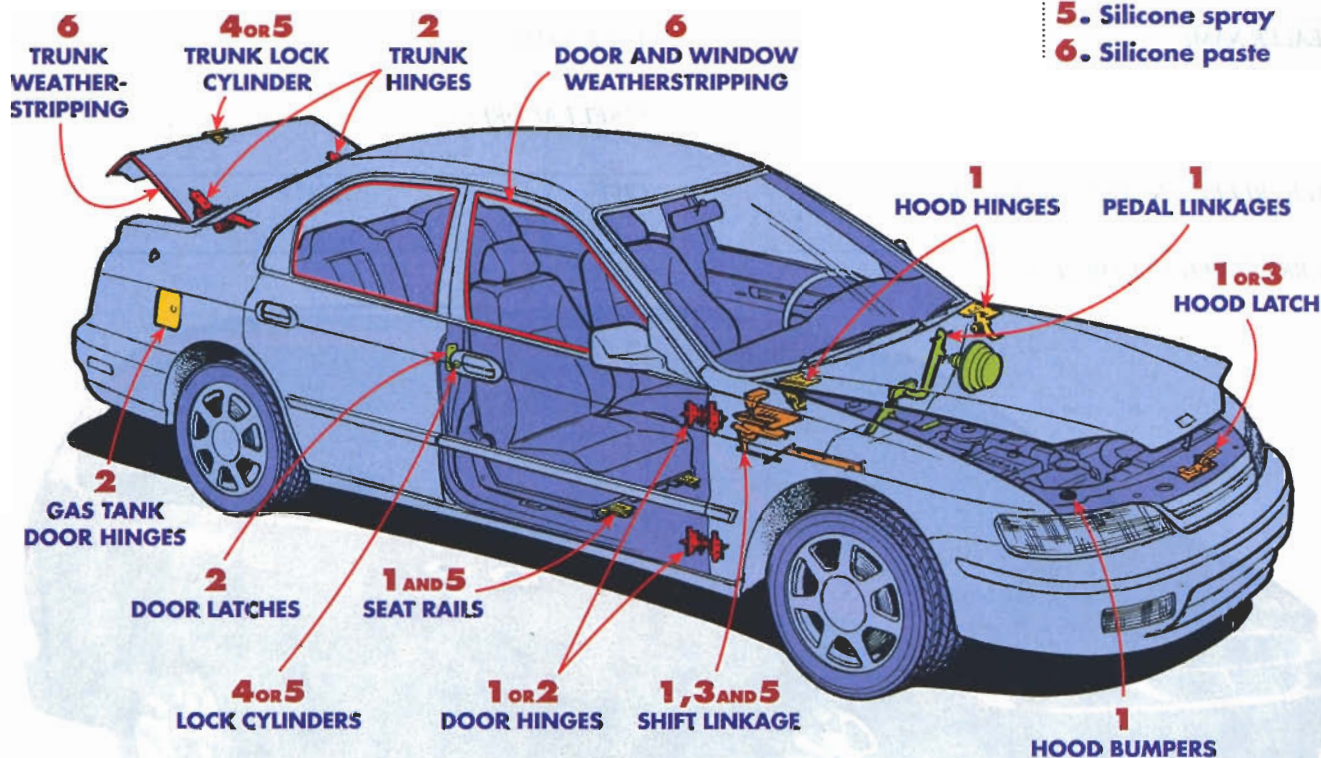
Anyone can do these quick & easy auto care & repair jobs.

FORGOTTEN LUBE JOBS

When you hear creaks and groans emerging from your vehicle as the shine and new car smell begin to fade, it's time to lubricate some often forgotten moving parts.

Owner's manuals tell you a lot about major maintenance like oil changes, but tend to ignore the little things that need regular attention. Here's a map to guide you to some of those forgotten spots and what lubrication to use:

1. White (lithium) grease
2. 30-weight motor oil
3. Chassis grease
4. Graphite
5. Silicone spray
6. Silicone paste

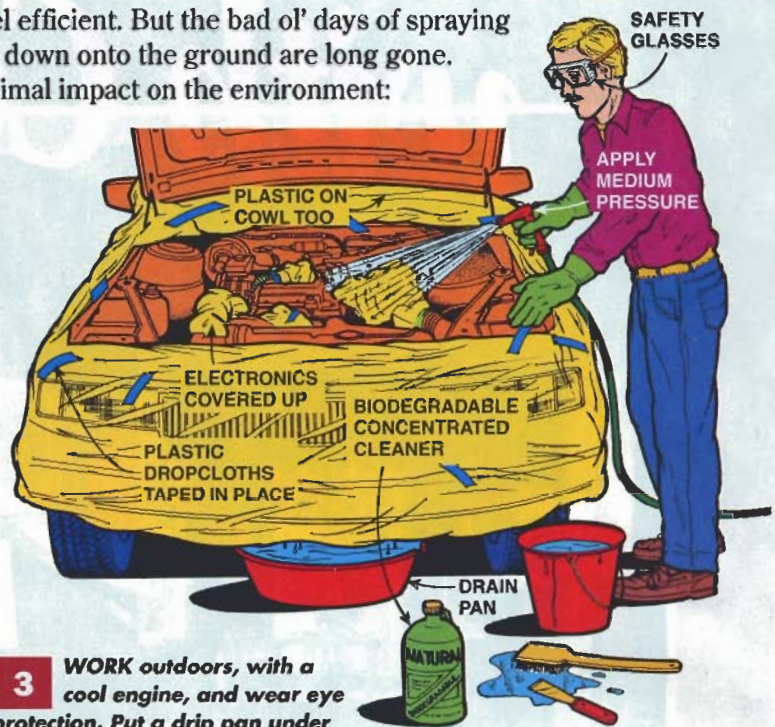


By Paul Brand, Bob Lacivita, David Radtke, Mark Thompson and a cast of thousands

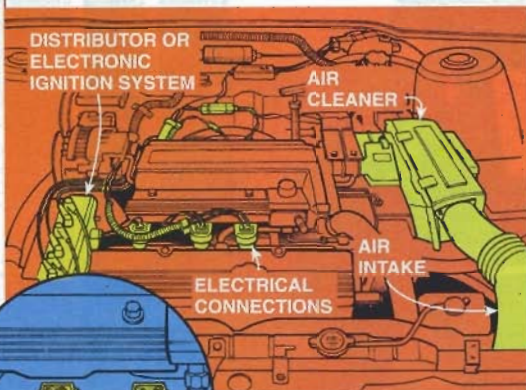
CLEANING UNDER THE HOOD

A clean engine runs cooler and is more fuel efficient. But the bad ol' days of spraying on a powerful solvent and washing the grime down onto the ground are long gone. Here's how to clean under the hood with minimal impact on the environment:

- Only do when necessary.
- Professional engine cleaning operations are set up to dispose of the waste properly—use them when possible.
- If you're going to do it yourself, use a water-based, biodegradable, non-toxic, all-purpose cleaner such as Simple Green or Permatex Enviro-Safe Cleaner & Degreaser.
- Use as little of the cleaner as possible.
- Position a large drip pan under the engine to catch the oily grime. Let it dry out in the pan, then dispose of it in the trash.

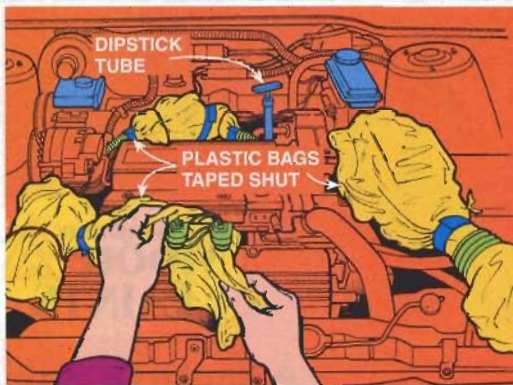


3 WORK outdoors, with a cool engine, and wear eye protection. Put a drip pan under the engine. Remove any heavy grease buildup with a putty knife. Apply the cleaner according to instructions, and wash it off using medium water pressure. Use as little water as possible, rinsing from the top down. Don't use a pressure washer and don't spray water directly onto any electrical wires, oil fill caps or dipsticks. Then remove the plastic covers from the engine components (but not the cowl or fenders), start the engine, and let it idle for 10 to 15 minutes. Finally, lube the hood bumpers, hinges and hood latch with lithium grease.



1 IDENTIFY the areas where you need to seal out the cleaner. Wiring connections, any electronic components and the air cleaner and its intake are the key worry spots. Your owner's manual may help you identify others, but if in doubt, plan on covering it.

2 SPRAY the distributor cap, coil and plug wires with a light coat of WD-40 or similar lubricant. Then cover vulnerable engine

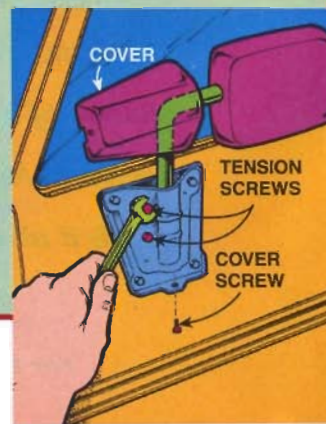


components with plastic bags secured with tape and rubber bands. Put plastic dropcloths on the cowl and both fenders to protect the paint against spotting and overspray.

TIGHTENING A DOOR MIRROR

Does the outside mirror on your truck or sport utility vehicle "self-adjust" every time you slam the door? If so, take 10 minutes to fix it. Here's how:

REMOVE the retaining screw that's usually on the bottom of the cover plate, and gently pry the cover off with a putty knife. Slide the cover up along the mirror rod. Two tension screws should be visible, gripping the mirror rod. Put a dab or two of thread locking adhesive (Loctite blue formula) on the screws, loosening them a bit first to expose some threads, if necessary. Then turn the screws with a wrench or screwdriver until you feel the mirror rod snug itself into the cradle. Don't put too much pressure on the screws or you'll strip them out, or have a mirror too tight to adjust.



UNDERSTANDING A MECHANIC

As far as we know, no one has ever published one of those bilingual phrase books for the average person who has to deal with a mechanic. Here then are a few translations:

When mechanics say: "A caliper's stuck, the pads are down to the metal, a wheel cylinder is frozen and the lines need bleeding."

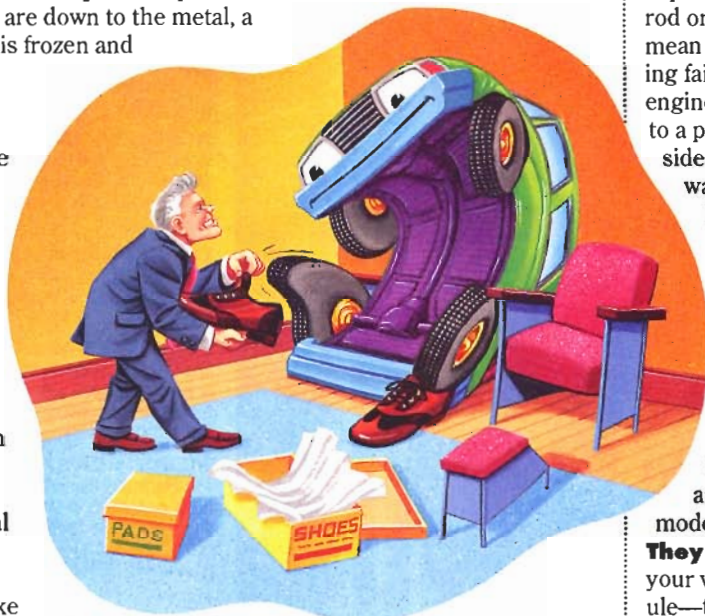
They mean: Your brakes are totally shot. A stuck caliper and frozen wheel cylinder mean these parts are rusted to the point where they no longer work. A pad that's down to the metal no longer has any friction material left, and you've also probably scored the brake drum or rotors. Bleeding the lines refers to removing trapped air and old, contaminated brake fluid. Get a second opinion because this is going to be expensive.

When mechanics say: "The rotors have too much run-out."

They mean: The brake rotors or discs are warped or distorted. As they wobble, they push the brake pads back, and you'll feel a pulsation or vibration in the brake pedal.

When mechanics say: "The tranny's shot. The clutches are toast and the planetary's chewed up."

They mean: Get out your checkbook, because you've got big trouble inside your automatic transmission. It has worn out the multi-disc clutch packs that engage each gear, and debris from the clutches has probably damaged the planetary gearset—the mechanical drive system in the transmission. As with the "your brakes are shot" statement, get a second or third opinion because this repair is going to be pricey.



When mechanics say: "The toe's off, it's got too much camber and it needs more caster."

They mean: You don't need a podiatrist—your car needs its front wheels aligned. "Toe" describes where each front wheel is pointed down the road. "Camber" is the in- or out-tilt of the top of the front tire, and "caster" refers to the fore-aft angle of various suspension components. If any of these are significantly out of alignment, you'll get rapid tire wear and your vehicle may pull to one side.

When mechanics say: "That noise could be a rod or main knock, piston slap, or a bad lifter."

They mean: Your engine is making expensive noises. The most serious, a rod or main bearing knock, could mean badly worn bearings, and bearing failure almost always destroys an engine. Piston slap comes from wear to a piston and causes the piston's side to slap against the cylinder wall—annoying but not necessarily life-threatening. A bad lifter means one of the hydraulic valve lifters is either worn or has a restricted flow of oil inside it. Again, annoying but not life-threatening.

When mechanics say: "The O₂ sensor's bad, and the ECM has dropped out of closed loop and is running in the limp-home mode."

They mean: There's a problem with your vehicle's electronic control module—the computerized engine management system. The oxygen sensor is no longer monitoring the air/fuel ratio being burned. The computer goes into "limp-home mode," indicating that your engine isn't running properly. The "check engine" or "service engine soon" light on your dash should be on.



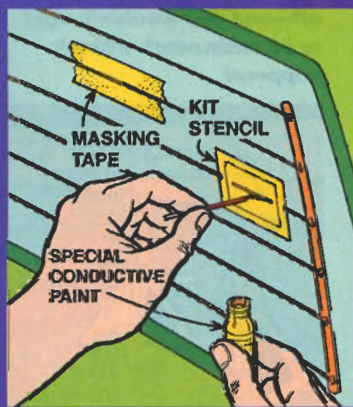
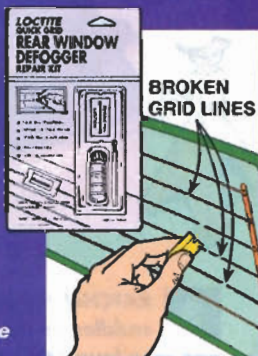
When mechanics say: "The engine's dropped a cylinder."

They mean: Don't look under the car for the dropped cylinder, because they're referring to a consistent misfire from one cylinder that is no longer doing its share of the work. The cause can be a valve, cam, piston ring, cylinder wall problem or a spark/ignition problem.

REPAIRING A REAR WINDOW DEFROSTER

If portions of your factory-installed rear window defroster don't work, take a close look. Each grid "wire" is actually a special conductive paint stenciled onto the glass. If the paint is nicked, scratched off or broken, the defroster's circuit is broken, and no heat is being produced. You can often repair the broken grid yourself using a special conductive paint in Loctite's No. 15067 Quick Grid Rear Window Defogger Repair Kit. It's about \$10 at an auto parts store, and comes in either a copper or silver color, to match your existing grid.

1 CUT out the damaged sections, removing as little as possible. Scrape any residue from the glass with a razor blade. Wipe the area perfectly clean with window cleaner. Align the supplied kit stencil or use two carefully laid strips of masking tape paralleling the original grid.



2 APPLY the special paint carefully and smoothly, overlapping it onto the original paint. Once completely dry, remove the stencil or masking tape. Carefully trim any excess paint with the razor blade.

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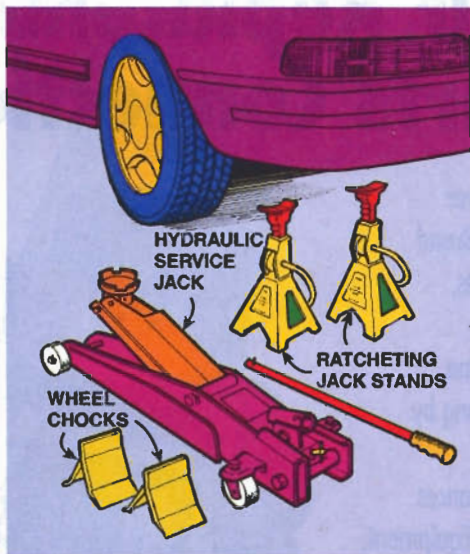


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WORKING SAFELY UNDER THE CAR

Working underneath a vehicle is never a lot of fun, but it can also be deathly dangerous. Here's how to do it safely:

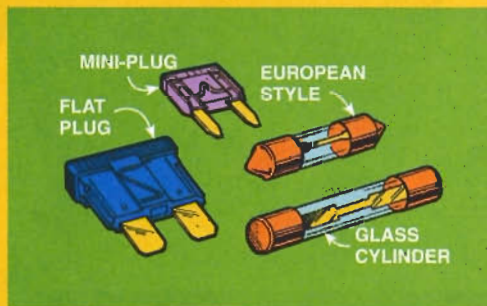
1 YOU need four things: at least two ratcheting jack stands, a set of wheel chocks (which can be home-made), a hydraulic service jack and a level work area. Buy jack stands and a service jack rated to exceed your vehicle's



weight. You can buy everything you need for \$50 to \$100. You can also use drive-up ramps (not shown), as long as wheel, brake or suspension work isn't on your list. NEVER work under any vehicle using just the factory-supplied bumper or scissors jack! Use it only for tire changes and always use wheel chocks.

THE WORD ON FUSES

Your vehicles run as much on electricity as they do on gasoline. Whenever the electricity quits flowing, the first place to check is the fuse panel. But be warned: A modern car can have 20 or more fuses. Sometimes temporary conditions cause a fuse to blow, so all you may need to do is replace the fuse. If it continues to blow, you have a short somewhere that must be tracked down.



It pays to buy a package of spare fuses and an appropriate puller. Usually the vehicle comes with only a few spares, which might not be enough to get you going again. Never use a fuse that's a different amperage from the original.

There are four common types of automotive fuses; the flat plug style in both regular and mini-plug types (the mini-plug fits better in today's

more crowded fuse panels); the familiar glass cylinder; and a look-alike glass cylinder design that has thick, pointed ends and is most common on European models.

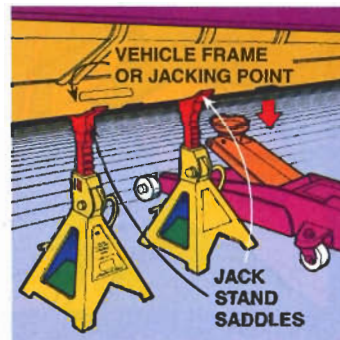
Some pullers also include a fuse tester to ensure the problem is indeed the fuse.

The price for all this trip- and hassle-saving gear? About \$5 to \$10 and it will all fit easily into a corner of your glovebox.

2 POSITION the service jack so its saddle (the part that contacts the vehicle) will not damage any components. Your owner's manual may show the specific jacking points. Wheels not being raised should have chocks placed against them. Pump the jack up slowly, moving it into position.



3 RATCHET the jack stand's saddles up into place, and then lower the service jack until the jack stands are supporting the vehicle. Never put any additional saddles on top of either the service jack or the jack stands, as they can slip off—and you wouldn't want to be underneath when it happens!



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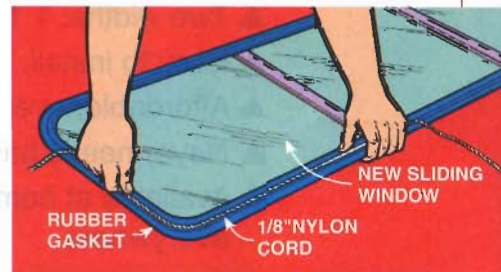
INSTALLING A REAR PICKUP WINDOW

Fast Fixes
SPECIAL

The best way to get fresh air into a pickup cab is through a sliding rear window. They're available at auto parts stores for about \$80 in either clear or tinted glass.

If you have a pickup with a rear window in a rubber gasket mount, you can install one yourself in about an hour. To determine if you have a gasket mount or a glue-in type rear window, look at the interior of the window along the sides. If you see a rubber gasket about the thickness of your finger running around the perimeter, you have a gasket mount. If you don't, this is not a DIY project. Take it to a body shop and have it done right (about \$150). Glue-in windows have a urethane cement that's really tough to cut without special tools and skills.

1 **SQUIRT** a little dishwashing liquid behind the window's rubber gasket to help loosen it. Do this from inside the cab and use a screwdriver to get the liquid behind the gasket. Start peeling the gasket in toward the center of the window using the screwdriver, until it's loose. Have a helper in the pickup bed catch the window as you push it out carefully from inside. Leave any chrome trim in place.



2 **PUT** the new sliding window onto the gasket, and spread a thin film of dishwashing liquid around the gasket's inside edge. Wrap a 1/8-in. nylon cord around the outside of the gasket just in front of the window, leaving at least 6 in. of extra cord at each end at the bottom center.



3 **OPEN** the sliding glass and push the window and gasket into place on your pickup, from the outside. Make sure you've got the cord ends inside. Have a helper hold the window in place while you slowly pull the cord toward the dashboard, seating the gasket. Pull the cord from the bottom and work both ways equally. Make sure the gasket is tight along the inside of the cab. Wash the window and you're ready to go out and catch a breeze.

USING ANTI-SEIZE LUBRICANTS

Remember the last time you struggled to remove a lug nut from a flat tire? Or the spark plugs? Or just about anything? It's not that you're getting weaker (well, probably not . . .), it's that the metal bond has been getting stronger, courtesy of corrosion, heat, and sometimes chemical reactions. The solution is to apply "anti-seize lubricant" on metal fasteners or components you think you might want to remove at some point. It's especially recommended for spark plugs on aluminum cylinder head engines, oxygen sensors, hinges, wheel lug nuts, and assemblies exposed to heat or corrosion.

APPLY enough anti-seize lubricant to coat the threads of the fastener, or where there's metal-to-metal contact. This thick, sticky, silvery lube won't wash away and resists heat and corrosion. It comes in cans with a brush applicator, in tubes or in aerosol sprays and costs as little as \$3. Keep some on hand and use it whenever you're assembling automotive or other metal components that you may want to take apart.



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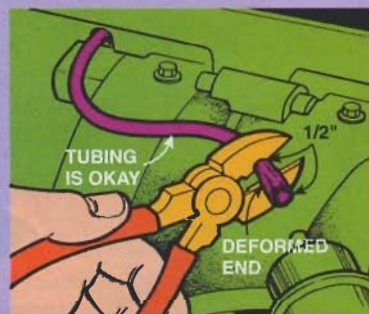
CHECKING AND REPLACING VACUUM HOSES

Age takes its toll on rubber. Split, cracked or loose vacuum hose connections can lead to a variety of performance problems: too-fast or rough idle speeds, hesitation, stalling and other driveability problems.

Vacuum hoses also supply engine vacuum to a number of other systems, including the heater, air conditioner and power brakes. Checking and replacing them is simple, and can work wonders.



1 LOOK things over, checking for cracked, split or missing hoses. If you don't know whether any hoses are missing, look for the emission information label, which shows hose routing. Hoses should be soft and flexible, not stiff. Wiggle the hose connection, looking for signs of looseness; vacuum connections must be tight and leak-free. Replace any hoses that look bad or fit poorly. New hoses cost only pennies a foot. Take the old one with you to ensure a proper match.



2 PULL apart each connection and inspect the end of the tube. (If the hose is hard to remove, split it with a utility knife, because too much yanking can break the part it's attached to—and that will be expensive!) If the tubing is in good condition, but the end holds its flared shape or shows any signs of cracking or splitting, simply cut about half an inch off the end with a knife or wire cutters. The fresh end ensures a good, tight seal.

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WHAT TO DO IF THE ENGINE OVERHEATS

That billowing cloud of steam from the front of the car, plus the ominous flashing light or needle stuck in the Red Zone of your engine's temperature gauge, both mean the same thing: The engine is on the verge of meltdown.

Cool down the engine before it goes nuclear, and it'll probably escape permanent harm. Here's what to do:

- Turn off the air conditioner and turn on the heater full blast. This pulls heat from the engine.
- If you're in stop-and-go traffic, take the next exit or side road so you can drive faster to get air moving through the radiator.
- If the engine begins to cool back to normal (check the gauge), continue on your way, but stop at a service station to check the coolant level.
- If the engine continues to get hotter and steam is coming from the engine compartment, pull off the road, shut off the engine and open the hood. *Wait 20 minutes* before inspecting the radiator and hoses for leaks. They're really hot and will cause severe burns.
- Refill the radiator *after another 20 minutes of waiting*. Add water or coolant through the plastic overflow tank (you may want to keep an extra gallon container of a 50/50 mix of coolant and water in the trunk for just such occasions). If you have a car without an overflow tank, use a heavy rag to flip up the lever of the radiator cap or turn it one notch and quickly stand back. If it's still steaming, wait until it cools before adding water and coolant.
- Keep the hood up and try to start the engine. If it starts, examine the radiator and hoses for leaks. You can sometimes jury-rig a fix for a leaky hose that will get you to a service station. If you can't fix the hose, or if the radiator is what's leaking, call a tow truck. Continuing to drive an engine that's overheating will destroy it. **TFH**

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