

Car & Garage

Replace spark plugs yourself and save \$150!

Change your spark plugs to maintain peak performance and high gas mileage

by Rick Muscoplat

You already know that spark plugs wear out. Well, “burn up” is more like it, because when a spark jumps the gap between two electrodes, it actually burns off (erodes) minute amounts of metal from each one. Over time, the gap grows to the point where the spark can no longer make the jump. That’s when you get misfires, poor gas mileage, lousy acceleration and, ultimately, the dreaded “Check Engine” light.

To keep vehicles running at peak performance for longer service intervals, many car manufacturers install extended-life spark plugs. Because their electrodes are coated with precious metals that have higher melting points, these plugs can sometimes maintain a precise gap for up to 100,000 miles. But even with higher melting points, metals like yttrium (2,779

degrees F), platinum (3,222 degrees F) and iridium (4,429 degrees F) can’t stave off erosion forever. The electrodes eventually erode, increasing the gap, and, well, you’ve already heard the rest of this story.

Replacing spark plugs early makes sense

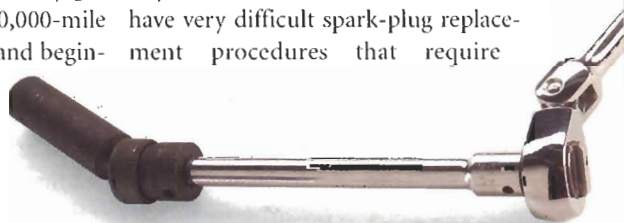
Unlike manufacturers’ guidelines for oil changes, which are overly cautious, the recommendations for spark plug replacement intervals tend to be overly optimistic. For example, if you’ve already got 80,000 miles on a set of 100,000-mile plugs, they’re 80 percent worn and beginning to take a toll on engine performance and gas mileage. Worse

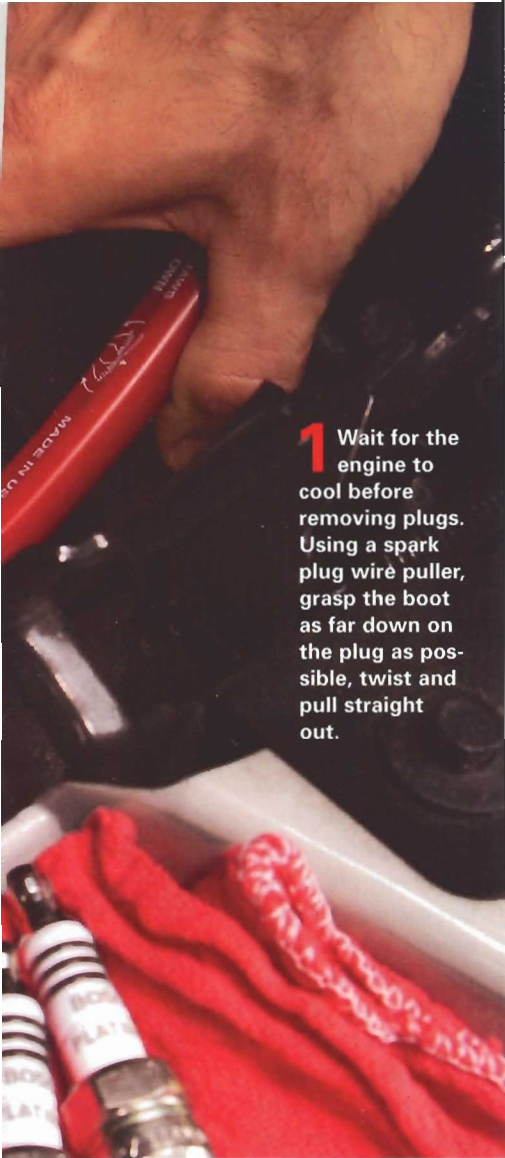
yet, after that many miles, spark plugs have a tendency to seize in the cylinder head. Removing a seized plug can be a costly job, especially if the threads in the cylinder head are damaged in the process. When you consider the gas mile-age fall-off and the possibility of seized plugs, early replacement makes sense.

Do it yourself or take it to a pro?

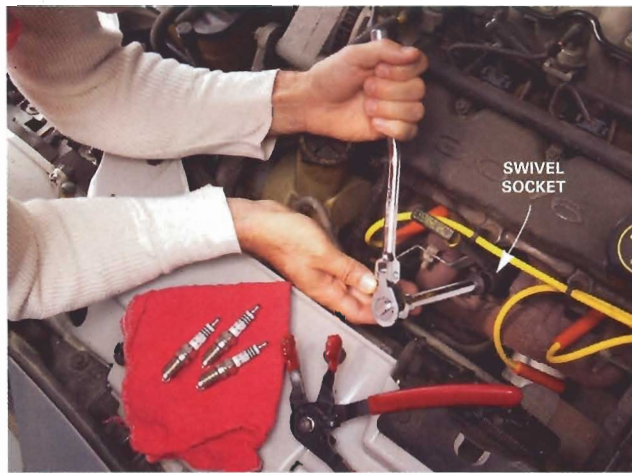
The answer depends on the type of engine in your vehicle. Some of the V-6 models have very difficult spark-plug replacement procedures that require

Swivel Socket \$20



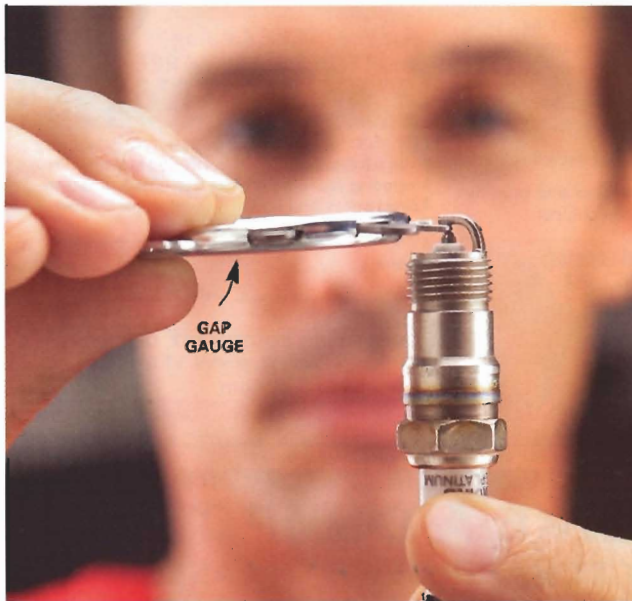


1 Wait for the engine to cool before removing plugs. Using a spark plug wire puller, grasp the boot as far down on the plug as possible, twist and pull straight out.



SWIVEL SOCKET

2 Blow debris away from the spark plug recess before removing the spark plug. Using the swivel spark plug socket and an extension, unscrew the spark plug.



GAP GAUGE

3 Gap all plugs before installation using the manufacturer's specs. Slide a gap gauge between the center and the side electrodes and adjust the electrode to achieve a slight drag on the gauge. Place a small dab of anti-seize compound on the plug threads and hand-thread the plug into the cylinder head.



Gap Gauge \$2

removing portions of the intake manifold. If you're not comfortable with that level of disassembly, you should take your vehicle to a pro. But if you have an engine with easy access to the rear bank, then you can probably do the job yourself. Just be sure you gap the spark plugs properly and use a torque wrench.

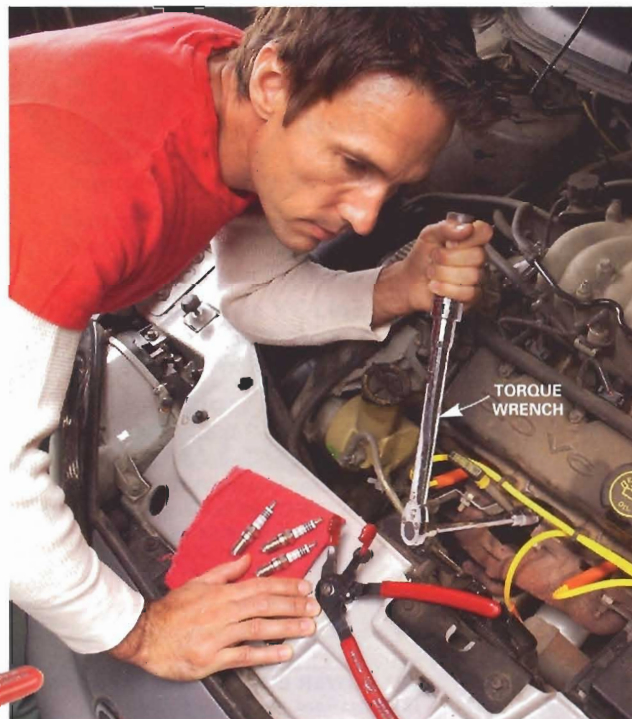
Flex Head Bent Handle Ratchet \$40



The tools shown are available at tooldiscounter.com and CAR-QUEST auto stores.



Spark Plug Wire Puller \$16



TORQUE WRENCH

4 Proper spark plug torque is CRITICAL in today's engines. Always use a torque wrench and the manufacturer's torque specifications! Insufficient torque can result in a plug blowing right out of the cylinder head, taking the threads with it. Too much torque distorts the plug. If you used anti-seize compound on the plug threads, reduce torque by 10 percent.

Spark plug shopping tips

Choosing new spark plugs isn't as easy as it used to be—dozens of choices are available. Here's what you need to know:

Tip 1: It's best to stick with the types of plugs you rode in on. The car manufacturer may have originally installed plugs made with precious metals. Platinum, yttrium and iridium plugs are more expensive than traditional plugs, but the coatings provide much better wear resistance and maintain their gap longer. Never downgrade to a less expensive plug. Your savings will be quickly offset by the shorter service life and reduced gas mileage. Consult your owner's manual or ask the auto parts store for the manufacturer's recommended plug.

Tip 2: Some plugs have adjustable-plug gaps and others have a fixed gap, but gap is *always* important. If the store recommends a fixed-gap plug, check your owner's manual to make sure it's the correct gap. If it isn't, find another brand. If the gap is adjustable, make sure you check (and adjust if necessary) the gap on each plug before installation.

The auto parts store computer showed eight different plug choices for a 1999 Ford Taurus. Prices ranged from \$1.79 for a traditional plug to \$14.99 for iridium. We chose the \$2.79 double platinum type because that's what had been installed at the factory.



Single Platinum Plug \$1.79



Double Platinum Plug \$2.79



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WHY STRUGGLE?
Hauling heavy loads unassisted can strain your arms and back!

New Product

Got a car that reeks of cigarette smoke?

Forget about those wimpy scent trees—they just mask bad odors. Professional auto detailers can get rid of the smoke smell for about \$59 to \$79. But you can do it yourself for less than \$15. Here's how.

First, clean the inside of all the windows with an ammonia-based glass cleaner. If your vehicle is equipped with a cabin air filter, remove it and purchase a new one.

With the windows rolled up, spray the headliner, fabric, carpet and door panels with Dakota Non-Smoke odor eliminator. Keep the spray nozzle at least 14 in. from all surfaces.

Next, set your heating system to the "recirculate" or MAX AC mode and find the return air vent (**Photo 2**). With the fan turned to high, spray a three-second burst into the return intake vent.

Move the vehicle outside and start the engine. Leave the car, close the doors and allow it to run for 15 minutes. Then turn off the engine and open all the windows so the car can air out. Clean the windows again. Finish the job by installing the new cabin air filter.



1 Starting with the ceiling fabric, hold the can 14 in. away and spray all fabric and carpet.

2 To find the return air duct, set the fan on high and the mode to "recirculate" or MAX AC. Hold a paper towel under the dash. The recirculating air will suck the paper towel toward the return air duct.

Buyer's Guide

Buy Dakota Non-Smoke odor eliminator for \$14 from www.dakotaproducts.com or www.topoftheline.com.

Expert Advice

Ask "Bob the Mechanic"

Q My owner's manual suggests changing the oil and filter every 7,500 miles. But the quick-change stores all recommend 3,000 miles. Is this a scam to grab more business?

Kevin Ballard, Renton, WA

A The truth is, how often you should change your oil depends on your driving habits, the temperature conditions and the type of oil you use. Oil change intervals of 3,000 miles are critical for severe driving conditions. Short trips and stop-and-go driving are hard on your oil, and thus on your engine, too. Engines need a rich fuel mixture at startup. A certain portion of these rich combustion gases gets into the crankcase. There, the raw fuel and sooty exhaust gases mix with the oil, forming acids and grit. On long trips, the oil gets hot enough to burn off the fuel and acids, but it doesn't on short trips.

If the majority of your trips are less than 5 miles and include stop-and-go traffic, your driving is considered severe service. That's also true if you routinely drive in extreme temperatures (above 90 degrees F or below freezing) or use your vehicle for towing or hauling.

But for some drivers, changes every 7,500 miles are perfectly adequate. You qualify if you take long highway commutes to work (highway speeds for more than 20 minutes). You can also use the 7,500-mile interval if you switch to the newer synthetic oils, even if your driving is considered severe service. Synthetic oils are far superior to conventional oils.

My advice is to use synthetic oil and change it every 7,500 miles along with the filter. That's a safe method for all driving conditions. It saves the hassle of frequent oil changes and costs about the same as using conventional oil and changing it twice as often.

Bob Lacivita, ASE/GM Certified Master Technician

New Product

Portable power stations keep you and your toys on the go

If you've ever used a portable jump starter on your car, you know how handy they are. But have you taken a look at them lately? Jump starters have morphed into a multifunction tool that belongs in every trunk or garage. In addition to jump-starting capabilities, today's models include an air compressor, lighting, 12-volt DC outlets and even a DC-to-AC inverter for powering plug-in appliances like laptops. All the models can be recharged from receptacles and/or a cigarette lighter. Look for these features and specifications:

- Battery. Minimum 17AH (amp/hour) battery.
- Jump starting. Minimum 350 to 400 amps.



- Air compressor. Minimum 100 psi and an integral pressure gauge.
- DC-AC inverter. 400 watts. That's enough to power most laptops for four hours.

Extra features worth having:

- Polarity sensitivity. Alerts you if you've hooked up the battery cables backward. The feature can prevent expensive damage to your car's charging system.

- Keyless on/off. Allows you to hook up the jumper cables and start the jump from inside the car with a wireless transmitter.
- Built-in recharging transformer. Just plug it into the end of an extension cord to recharge; no wall adapter needed.

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