

# CHECK ENGINE

Good Maintenance  
Adds Extra Mileage



## CHECK ENGINE LIGHT

The “check engine” light is part of your vehicle’s onboard diagnostics (OBD) system. Computers have control and monitor vehicle performance, regulating such variables as engine speed (RPM), fuel mixture, and ignition timing, and may even tell the automatic transmission when to shift. When the electronic-control system finds a problem it cannot adjust, the computer turns on a yellow warning indicator and stores a “trouble code” in its memory. These diagnostic trouble codes (DTC) help identify the probable source of the problem, such as a malfunctioning sensor or a misfiring engine and can be read with a scan tool or diagnostic computer. Vehicle manufacturers originally used the OBD system to help technicians pinpoint and troubleshoot malfunctions. Exactly what the OBD system looks for depends on the make, model and year of the vehicle. The original systems varied widely in their capabilities and some did little more than check whether the various electronic sensors were hooked up and working. With the advent of the OBD II systems, required under federal laws regulating automotive emissions, automakers were required to install a more sophisticated system that, for all intents and purposes, acts like a built-in emissions monitoring station. The “check engine” light is reserved only for problems that may have an effect on the vehicle emissions systems.



### What does it mean?



If the “check engine” light illuminates, it will either blink or remain constant, depending on the problem. Either way, you should have the vehicle checked by a Qualified Service Technician as soon as possible.

If the light is steady, the problem is not an emergency, but you should schedule an appointment as soon as possible.

A blinking light usually indicates a severe engine misfire allowing unburned fuel to be dumped into the exhaust system. There it can quickly raise the temperature of the catalytic converter to a point where damage is likely, requiring an expensive repair. If this occurs, you should reduce power and have the vehicle checked as soon as possible.

Today’s automotive computers often try to compensate when there’s a problem: so you may not notice deterioration in performance, even though your fuel mileage is suffering and your vehicle may be emitting unacceptable levels of hydrocarbons and/or other pollutants.

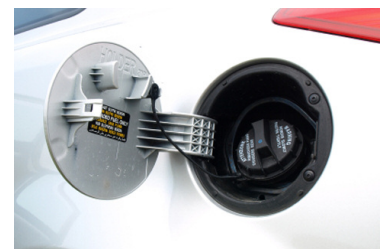
### If the check engine light comes on:

#### Look for a serious problem that requires immediate attention.

Check your dashboard gauges and lights for indications of low oil pressure or overheating. These conditions mean you should pull over and shut off the engine as soon as you can find a safe place to do so.

#### Try tightening your gas cap.

This often solves the problem. Keep in mind that it may take several trips before the light resets. Some vehicles have a separate indicator that warns of a loose gas cap before the condition sets off the “check engine” light.



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## Reduce speed and load.

If the “check engine” light is blinking or you notice any serious performance problems, such as a loss of power, reduce your speed and try to reduce the load on the engine. For example, it would be a good idea to stop towing a trailer. Have the car checked as soon as possible to prevent expensive damage.



## Have the code read and the problem fixed.

Take the vehicle to a professional. Some automotive parts stores will read and interpret the code for you. However, unless there is an easy solution to the problem, you should have the vehicle diagnosed by a qualified service technician.

Just remember, codes do not directly tell what’s wrong, so you have to test to find the real culprit. This is where the real meaning of “codes” comes into play. The only thing a “code” really indicates is which system or circuit to test in order to isolate the actual problem.



Each numerical code has a matching-numbered test procedure. Following that test will direct you to the problem. Each step of each test must be performed in absolute sequence; skipping steps or performing steps out of sequence could make the entire test

worthless. Tests may also give you voltage, resistance, temperature, or time specifications, which are exact values. Close doesn’t count.

Don’t confuse the Check Engine light with the maintenance reminder or service interval light. These lights illuminate when a routine service is due. They are usually triggered by mileage, amount of fuel consumed, or some other type of vehicle-use measurement.

# Things to Watch For

- » The conditions of the battery and charging system are critical to the proper operation of the electronic control system. Both should be routinely checked by measuring cranking and engine running battery voltage
- » Make sure the battery rating meets at least the minimum cranking amperage (CA or CCA) requirement for your vehicle
- » The fan/alternator or serpentine belt on your vehicle is an integral part of the charging system. Belts should be inspected for signs of wear and proper adjustment
- » Loose or corroded cable ends may prevent your battery from maintaining a full state of charge



SERPENTINE BELT

## Proper Maintenance Helps Extend Vehicle Life!

Your driving type or vehicle usage may affect the maintenance intervals below.

You should follow the manufacturer’s service schedule that best matches your vehicle’s operating conditions.

### Those recommendations may include:

- » Change your engine oil at the vehicle manufacturer’s recommended service interval that matches your vehicle’s operating conditions and your driving habits
- » Check your tire inflation pressure monthly
- » Rotate your tires at the vehicle manufacturer’s recommended service interval or every 6 months/15,000 miles
- » Change the engine air filter annually or when visibly restricted.
- » Inspect Brake System every 12months/15,000miles

*Taking the Mystery Out of Maintenance*



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