

How to Check an Engine's Cylinder Compression

By [Deanna Sclar](#) from [Auto Repair For Dummies, 2nd Edition](#)

If your vehicle has been running roughly or losing power, there may be a lack of pressure in one or more cylinders. To determine whether pressure is escaping from the engine, you need to check the compression in the cylinders with a compression gauge, which measures the amount of pressure that the piston exerts on the fuel/air mixture before the spark plug fires the mixture. These gauges don't cost much, and they're easy to use. Some gauges screw into the spark plug opening, and others have to be held in place.

If there isn't enough pressure, it's escaping through one of the valve openings (because the valve is improperly adjusted or worn), down past the rings on the piston or through a blown head gasket.

Here's how to use a compression gauge:

- 1. Have someone sit in the driver's seat with the engine off, the gearshift in Park or Neutral, and the parking brake on.**
- 2. The next step depends on the type of distributor you have:**
 - **On vehicles with distributors:** Pull the big wire that leads to the coil from the center of the distributor cap, and lean the metal connector against an unpainted metal surface as far away from the spark plugs as possible.
 - **On vehicles with distributor-less ignitions:** Disconnect the electrical connector at the ignition control module. If you're not sure what to disconnect, ask a mechanic.
- 3. Disable the fuel injection system so that gasoline mist won't spray out of the spark plug holes and possibly ignite.**

Remove the fuse labelled "Fuel Pump"; then start the car and let it run until it stalls from lack of gasoline.

- 4. Label and remove the boots that connect each spark plug wire and each spark plug.**

If you get the plug wires mixed up, you can really screw up your engine.

- 5. Remove all the spark plugs and lay them down in a clean place.**

Keep the labelled plugs in order to insure that you return each one to its original cylinder when the time comes.

6. Connect the starter switch to the battery.

If you have a remote starter switch, connect one clip to the battery's positive or "plus" terminal, and the other to small terminal of the starter solenoid.

7. Insert the compression gauge

It should fit into the hole in the engine where the first spark plug screwed into the cylinder.

8. If you *don't* have a remote starter switch, have a friend turn on the ignition until the engine cranks over about six times. Otherwise, press the button of the remote starter switch.

Be sure to keep the gauge plug firmly inserted while the engine is cranking. (The car won't run because the engine has been disabled.)

9. Look at the gauge and write down the reading, which will be in *psi*(pounds per square inch)., and then reset the gauge.

10. Repeat these steps for each of the other cylinders.

Don't forget to reset the gauge and crank the engine each time.

11. After you've tested each cylinder, look at the readings.

The highest and lowest shouldn't vary by more than 15 percent. If one or more of the cylinders reads well below the rest, use a trigger-type oil can to send a good squirt of motor oil down the spark plug opening, and retest the compression of that cylinder with the gauge. If the reading is the same, the valves either are worn (and letting pressure escape) or are out of adjustment. If the reading rises dramatically after you insert the oil, you probably need new rings on the piston in that cylinder. If the pressure recorded by the gauges is less than 100 psi, the cylinder definitely isn't mechanically sound.

12. Replace each spark plug in the cylinder it came from.

Make sure that the ignition is off before you reconnect the spark plug wires, and be sure to put the correct spark plug wire boot back on each plug. Screw the plugs in by hand to avoid damaging the threads in the aluminium valve cover.

If the "Check Engine" warning light comes on after you perform a compression test and doesn't disappear in a couple of days, have it reset at the dealership.

Source: <http://www.dummies.com/how-to/content/how-to-check-an-engines-cylinder-compression.html>