

How to Perform a Basic Drive Cycle

Here are step-by-step instructions on how to perform a basic, yet very effective, drive cycle that will complete the readiness monitors for your vehicle's emissions control system.

Step One: How to Prepare Your Vehicle

Have the fuel tank between 30 and 70 percent full. Some systems, especially the EVAP system, need to have a specific level of fuel in order for the tests to be trusted. If the fuel tank is near empty or completely full, many of the basic tests will not run at all.

The vehicle must also have a good alternator and a strong battery. If you have to occasionally jump-start your vehicle, all of the memory from the powertrain control module (PCM) is erased, which includes the data that accurately tracks the results from various stages of the Drive Cycle. Also, if the battery is weak or undercharged, some of the most important tests will never run.

The vehicle must sit overnight, or for at least eight hours, in an environment that is less than 90° F. The engine temperature needs to match the air temperature in order to establish an accurate baseline for the testing. If the outside temperature is over 90° F, the fuel is too volatile and the EVAP system won't even try to run its tests, though some of the other emissions systems may run their tests.

The keys must be out of the ignition and all of the doors must be closed while the vehicle sits over night because many of the onboard computers "boot up" when the keys are in the ignition. Also, many of the onboard computers still run until all of the doors are closed after the vehicle is shut off and the keys are removed.

Step Two: The Cold Start

Start the vehicle and let it idle for two to three minutes in Park or Neutral. While it is idling, turn on the head lights, heater/defroster, and rear defroster for a three to five minute warm-up phase. Let the idle speed settle down to near the normal speed.

Next, put the vehicle in gear and drive through city streets at about 25 mph. Go up to about 35 to 40 mph a few times before slowing down to stop. Don't roll through the stop; be sure the car is really stopped, just like you learned in driving school. Accelerate from each stop in a normal fashion—not overly conservative, but not like you are competing in a drag race either.

Step Three: A Short Freeway Trip

After the vehicle has been cold started and driven for a few miles on city streets, the next step is to take it on a short freeway trip.

Enter the freeway on-ramp and allow enough room with respect to other vehicles so that you can do a 1/2 to 3/4 throttle acceleration up to freeway speed.

When you have accelerated up to around 60 mph and have safely merged into the flow of traffic, stay in the slow lane and maintain a steady speed of 55 to 60 mph for a minimum of five miles. Please use the cruise control to help you maintain speed.

Find a nice, long off ramp to exit from the freeway. As you exit, take your foot off of the accelerator and let the vehicle coast down until it stops under its own power as you complete your exit from the freeway. Do not use the foot brake and do not shift gears until the very end of this "coast down" phase.

Step Four: More City Driving

After you have completed the freeway trip, drive through the city streets for a repeat of the second part of Step Two.

Go up to about 35 to 40 mph a few times and then maintain a city speed of 25 mph before slowing down to stop. Again, don't roll through the stop and make sure to accelerate normally.

Pull in to a parking place and let the engine idle for one to two minutes and then shut it off.

Step Five: Have your Readiness Monitors Checked and Verified

Drive your vehicle to your regular shop and have them re-check your readiness monitors, present codes, and pending codes. They should do this as a courtesy and for free.

If all of your monitors are "ready" and there are no present or pending codes, then your vehicle has been properly repaired and is ready for an emissions inspection and for normal driving.