OBD: Frequently Asked Questions

What is OBD and what are its benefits?

OBD stands for "on-board diagnostics," a computer-based system built into all model year (MY) 1996 and newer light-duty cars and trucks. OBD monitors the performance of some of the engines' major components, including individual emission controls. The system provides owners with an early warning of malfunctions by way of a dashboard "Check Engine" light (also known as a Malfunction Indicator Light or MIL, for short). By giving vehicle owners this early warning, OBD protects not only the environment but also consumers, identifying minor problems before they become major repair bills.

For example, by identifying a relatively inexpensive repair like the replacement of a malfunctioning oxygen sensor, OBD can save the owner the cost of replacing the catalytic converter later. By helping to ensure that the vehicle operates within its original design specifications, OBD can help save consumers money by making sure gasoline isn't wasted as a result of, for example, a loose gas cap or incomplete combustion. OBD stores information about the malfunction detected and actually helps the repair technician to diagnose and fix the vehicle. When OBD checks are performed as part of a state's Inspection and Maintenance (I/M) program, they can help save consumers time, taking on average five minutes or less in centralized programs.

Why are states required to include OBD checks as part of their inspection and maintenance (I/M) program(s)?

This computer-based early warning system was required by the 1990 Clean Air Act (CAA) and comes standard on all MY1996 and newer light-duty cars and trucks. The CAA also required that checks of the on-board diagnostic (OBD) system be included in all mandatory I/M programs to help ensure that vehicle owners take this early warning seriously. Many states have already incorporated OBD checks into their I/M programs, and many more are on schedule to do so within the next few years.

Despite numerous improvements in automotive technology, motor vehicles continue to be a major source of air pollution, accounting for approximately 77 percent of the carbon monoxide (CO) and 45 percent of the ozone-causing nitrogen oxides (NO_x) in our nation's air. I/M programs help reduce excess emissions by identifying vehicles in need of repair and requiring that they be fixed. For MY1995 and older vehicles, the most effective way to identify needed repairs is by measuring tailpipe emissions. In some cases, however, a vehicle may need repair before emissions increase. For MY1996 and newer vehicles, the OBD system makes it possible to detect malfunctions before it leads to high emissions. The OBD computer monitors a wide range of emissions controls and lights the "Check Engine" light if a problem is detected.

Why can a vehicle pass a tailpipe test but fail an OBD test?

OBD and tailpipe testing are two different approaches to identify vehicles in need of repair. The OBD system looks for broken or malfunctioning emissions control components while tailpipe tests sample a vehicle's exhaust to see if it is above or below certain prescribed limits. Given the robust nature of today's emissions control components, it is entirely possible for an individual component to malfunction without leading to an immediate increase in emissions at the tailpipe. In such cases, other components (like the catalyst) can

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temporarily compensate for the part that is broken; however, these other components can only do double duty for so long before they, too, begin to malfunction. Because of its ability to monitor individual components, OBD is able to give motorists an "early warning" that repairs are needed; it is because of this "early warning" capability that OBD will sometimes fail vehicles that would otherwise pass a tailpipe test. In addition, OBD also monitors for leaks and other malfunctions in the fuel system—problems that traditional tailpipe tests were not designed to identify. Most state and local areas also include a gas cap pressure test as part of an emission inspection.

Are repair costs going to increase?

Thus far, no increase has been seen. Real world experience from operating programs has shown that the average cost for an OBD-triggered repair is comparable to that associated with repairs triggered as a result of more traditional tailpipe testing of OBD-equipped vehicles. Regardless of the test used to identify a failure in the I/M lane, it is standard operating procedure for a repair technician to consult a vehicle's OBD system before attempting a repair. In fact, the repair community has been using the kind of information provided by OBD systems to diagnose and repair vehicles for more than twenty years. The fact that these systems and the information they provide has been standardized since MY1996 makes using this information easier while leading to more accurate and quicker diagnoses and more cost-effective repairs than possible with earlier OBD systems.

Can the OBD system be repaired, deactivated, or modified?

The rule of thumb when it comes to emissions-related vehicle repair is that any modification that changes the vehicle from a certified configuration to a non-certified configuration is considered tampering: this applies to both vehicle owners and repair facilities and is therefore a Federal offense. Replacing a catalyst with a straight pipe is one traditional example of tampering. Likewise, overriding the OBD system through the use of high-tech defeat devices, non-certified computer chips, etc., would also be considered tampering. The OBD system may, however, be repaired back to its original certified configuration with certified "performance chips" or appropriate aftermarket parts.

Will the repair be covered by warranty?

Warranty coverage varies depending on components and individual manufacturer warranty provisions. In most cases, however, responding sooner rather than later is likely to minimize the individual owner's repair liability. The CAA requires an 8 year or 80,000 mile warranty on the major emissions control components such as the catalytic converter, and a 2 year or 24,000 mile warranty on other emissions control components.