



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

ENGINE SWITCHING FACT SHEET

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OFFICE OF AIR AND RADIATION

Pursuant to frequent requests for information received by the U.S. Environmental Protection Agency (EPA) regarding the legality and effects of engine switching, this document will summarize federal law and policy pertaining to this matter, and will discuss other related issues.

A. Federal Law

The federal tampering prohibition is contained in section 203(a)(3) of the Clean Air Act (Act), 42 U.S.C. 7522(a)(3). Section 203(a)(3)(A) of the Act prohibits any person from removing or rendering inoperative any emission control device or element of design installed on or in a motor vehicle or motor vehicle engine prior to its sale and delivery to an ultimate purchaser and prohibits any person from knowingly removing or rendering inoperative any such device or element of design after such sale and delivery, and the causing thereof. The maximum civil penalty for a violation of this section by a manufacturer or dealer is \$25,000; for any other person, \$2,500. Section 203(a)(3)(B) of the Act prohibits any person from manufacturing or selling, or offering to sell, or installing, any part or component intended for use with, or as part of, any motor vehicle or motor vehicle engine where a principal effect of the part or component is to bypass, defeat, or render inoperative any device or element of design installed on or in a motor vehicle or motor vehicle engine, and where the person knows or should know that such part or component is being offered for sale or is being installed for such use. The maximum civil penalty for a violation of this section is \$2,500.

EPA received many questions regarding the application of this law to a situation where one engine is removed from a vehicle and another engine is installed in its place. EPA's policy regarding "engine switching" is covered under the provisions of Mobile Source Enforcement Memorandum No. 1A (Attachment 1). This policy states that EPA will not consider any modification to a "certified configuration" to be a violation of federal law if there is a reasonable basis for knowing that emissions are not adversely affected. In many cases, proper emission testing according to the Federal Test Procedure would be necessary to make this determination.

A "certified configuration" is an engine or engine chassis design which has been "certified" (approved) by EPA prior to the production of vehicles with that design. Generally, the manufacturer submits an application for certification of the designs of each engine or vehicle it proposes to manufacture prior to production. The application includes design requirements for all emission related parts, engine calibrations, and other design parameters for each different type of engine (in heavy-duty vehicles), or engine chassis combination (in light-duty vehicles). EPA then "certifies" each acceptable design for use, in vehicles of the upcoming model year.

For light-duty vehicles, installation of a light-duty engine into a different light-duty vehicle by any person would be considered tampering unless the resulting vehicle is identical (with regard to all emission related parts, engine design parameters, and engine calibrations) to a certified configuration of the same or newer model year as the vehicle chassis, or if there is a reasonable basis for knowing that emissions are not adversely affected as described in Memo 1A. The appropriate source for technical information regarding the certified configuration of a vehicle of a particular model year is the vehicle manufacturer.

For heavy-duty vehicles, the resulting vehicle must contain a heavy-duty engine which is identical to a certified configuration of a heavy-duty engine of the same model year or newer as the year of the installed engine. Under no circumstances, however, may a heavy-duty engine ever be installed in a light-duty vehicle.

The most common engine replacement involves replacing a gasoline engine in a light-duty vehicle with another gasoline engine. Another type of engine switching which commonly occurs, however, involves diesel powered vehicles where the diesel engine is removed and replaced with a gasoline engine. Applying the above policy, such a replacement is legal only if the resulting engine-chassis configuration is equivalent to a certified configuration of the same model year or newer as the chassis. If the vehicle chassis in question has been certified with gasoline, as well as diesel engines (as is common), such a conversion could be done legally.

Another situation recently brought to EPA's attention involves the offering for sale of used foreign-built engines. These engines are often not covered by a certified configuration for any vehicle sold in this country. In such a case, there is no way to install such an engine legally. EPA has recently brought enforcement actions against certain parties who have violated the tampering prohibition by performing illegal engine switches.

It should be noted that while EPA's policy allows engine switches as long as the resulting vehicle matches exactly to any certified configuration of the same or newer model year as the chassis, there are some substantial practical limitations to performing such a replacement. Vehicle chassis and engine designs of one vehicle manufacturer are very distinct from those of another, such that it is generally not possible to put an engine into a chassis of a different manufacturer and have it match up to a certified

configuration. Therefore, practical considerations will generally limit engine switches to installation of another engine which was certified to be used in that same make and model (or a "twin" of that make and model, e.g., Pontiac Grand Am and Oldsmobile Calais). In addition, converting a vehicle into a different certified configuration is likely to be very difficult, and the cost may prove prohibitive.

## B. State Laws

Many states also have statutes or regulations prohibiting tampering in general. Most of these laws specifically prohibit tampering by individuals. A few specifically prohibit engine switching, using provisions similar to those stated in EPA's policy. To determine the state law in any given state, the state's Attorney General's office should be contacted. In addition, many states have state or local antitampering inspection programs which require a periodic inspection of vehicles in that area, to determine the integrity of emission control systems. Many programs have established policies for vehicles which have been engine switched. While EPA does not require these programs to fail engine switched vehicles which are not in compliance with federal policy, the Agency does strongly recommend that these programs set their requirements so as to be consistent with the federal law. State or local programs which pass illegally engine switched vehicles may mislead federally regulated parties into believing that engine switching is allowed by federal law.