

HOWELL

***ENGINE DEVELOPMENTS, INC.
FUEL INJECTION APPLICATIONS***

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Engine Swap Emissions Requirements

Several states have adopted fairly rigid rules about swapping engines into other chassis. These are primarily designed to prevent the creation of high pollution vehicles. The swapping of ECM controlled EFI engines usually results in a lower pollution level than what was originally in the vehicle, particularly if it was a carbureted engine.

Howell Engine Development harnesses are classified as factory replacement harnesses and are able to duplicate the production engine emissions functions when properly used and complimented with the correct chassis parts, catalytic convertor, etc. HED can supply vehicle speed sensors for most installations to meet state regulations.

California, and most other states, require functioning emission controls on 1965 and later vehicles. To assist in your understanding of these rules, we have reprinted here, in its entirety, the Guidelines for Performing Legal Engine Changes put out by the Department of Consumer Affairs.

Guidelines for Performing Legal Engine Changes

Engine changes continue to present problems and challenges to car owners and technicians. Here are some tips to keep you and your customers on the straight and narrow.

Our recommendation is to rebuild and reinstall the original engine/ transmission and emission control configuration. When rebuilding an engine it must be rebuilt to the original equipment specifications. However, if you so decide to change the engine, the following guidelines must be observed to ensure that the vehicle will be eligible for smog certification or registration:

*Make sure the engine and emission control configuration on exhaust-controlled vehicles are ***certified to the year of the vehicle or newer***, and to the same or a more stringent new vehicle certification standard.

*Voiding the vehicle manufacturers s emission warranty will not be allowed.

**** Mixing and matching emission control system components could cause problems and is generally not allowed.***

Engine and emission control systems must be a California Air Resources Board (ARB) or U.S. Environmental Protection Agency (EPA) certified engine chassis configuration that meets or exceeds the requirements for the year and class of vehicle in which it is installed.

*A federally certified engine cannot be used in a vehicle that was originally certified for California.

*The installed engine and host chassis must retain all of their original emission control equipment. Diesel-to-gasoline conversions must have all gasoline engine and chassis emission control systems installed (such as fillpipe restrictor, catalytic converter and evaporative emission system).

*Don't mix engine and vehicle classifications. A heavy-duty engine cannot be installed in a light-duty exhaust-controlled chassis even if they have the same displacement. Non-emissions controlled powerplants such as industrial or off-road use-only engines may not be placed in any exhaust-controlled vehicle.

*No internal or external engine modifications (cams, pistons, intakes, etc.) may be performed unless the parts are ARBexempted or EPA-certified for use in the installed engine.

*If a computer-controlled engine is to be installed in a non-computerized vehicle, the Check Engine Light and Assembly Line Data Link (ALDL) and all sensors, switches, wiring harnesses needed to make the system fully functional, must also be installed. The installation of the new engine must allow the testing of the ignition timing and the FJGR system.

Make sure the host vehicle's transmission is compatible with the new engine and computer system.

*These vehicles must pass a complete smog inspection (visual, functional, and tailpipe).

The preceding are guidelines for performing engine changes--they are not certification procedures. All exhaust emission controlled vehicles with engine changes must be inspected by an official referee station and must have a referee engine change label installed.

Remember, state and federal anti-tampering laws generally prohibit any modification to the vehicle's original emission control system configuration as certified by the manufacturer. In addition, Section 3362.1 of the California Code of Regulations prohibits any engine change that degrades the effectiveness of a vehicle's emission control system.