

CHAPTER 7



ACCEL / DFI



ACCEL's latest offering is the Gen7 engine management system. The preceding system, Gen6, did not offer real-time tuning (on the fly) or closed-loop fuel corrections. The Gen7 offers these features, as well as many more. ACCEL's ECUs all come as a complete unit with the software and data cable needed to utilize your laptop and tune your engine. Some manufacturers have an additional charge for these items, so be sure to check before completing your order.

The ACCEL brand of engine management systems has been in the game for a while now, and in fact was one of the early systems to gain popularity in the United States. ACCEL/DFI is a part of the massive company called Mr. Gasket. This relationship has allowed them the opportunity to create a very large variety of kits that are very easy to install on a diverse array of engine types. They also have tons of premade maps to help get you up and running.

There are two basic versions that are popular. The first, which has been around for probably ten years or better now, is their Generation 6. This was the system that came onto the hot-rod scene and brought fuel injection into the realm of possibility for enthusiasts and racers alike.

The second and latest version is called Generation 7. The new Gen7 hardware and software has dramatically improved the appearance and performance of the ACCEL systems.

Some of the best tuning features of the new Gen7 software are its start-up calibration help menus. With this software, the user can answer simple questions about their engine concerning displacement, injector size, camshaft specs, etc., and the software will automatically generate a base fuel and ignition curve to aid in getting the engine up and running smoothly.

ACCEL Gen 7

COST: \$1,500 to \$2,500

FEATURES: This system has lots of capability for extras like nitrous solenoids or torque converter control. You can grow into some of its features.

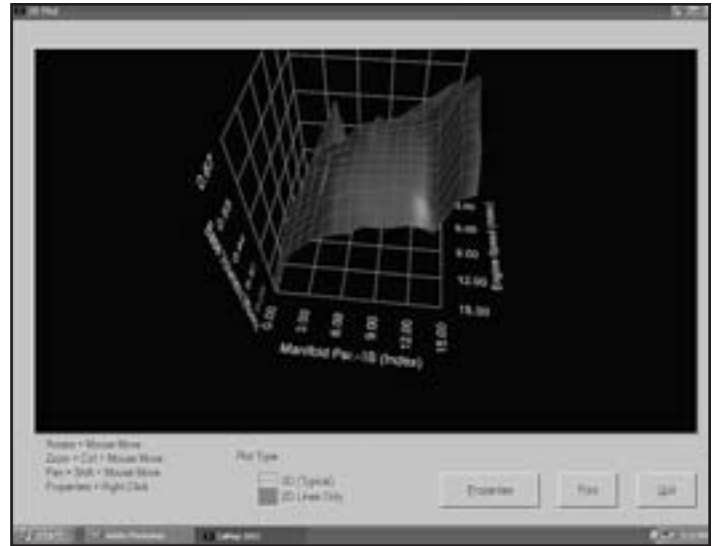
EASE OF INSTALLATION AND TUNING: The software has an easy learning curve, and its simple premade harness makes for direct plug-in to the sensors.

This feature, along with the software's ability to graph the fuel and ignition tables into a nice 3D image, allows the user to quickly find errors in the tables and eliminate common tuning pitfalls that some less experienced users might encounter.

These days, the ACCEL Gen6 units are becoming less and less common, and for that reason, we will spend most of our time on the newer Gen7 units.

The following is a list of the standard components that come in an ACCEL Gen7 kit:

- ECU
- Wire Harness (typically custom-fit to application)



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- Ignition Adapter (per installation)
- Fuel Pump and Main Power Relays
- Coolant Temp Sensor
- Intake Air Temp Sensor
- Manifold Surface Temp Sensor
- Oxygen Sensor
- Data Cable & Calibration Software

Most of the basic kits from ACCEL are custom-fit for a specific application, so when you call the dealer to order a kit for your project, be sure to tell them

exactly what it is you would like to accomplish so that they can make sure you get the right parts to do the job. You don't want to get a box full of parts for a Honda if you are building a small-block Chevy for your project!

If you are planning on having the ECU control lots of other functions, ACCEL also has a variety of options that are available. Be sure to mention these options when you are placing your order.

Here is a list of the optional equipment offered by ACCEL:

- Idle Air Control Valves
- Wideband Oxygen Sensing
- Ignition Modules (for specific ignition types)
- Radiator Fan Control
- Torque Converter Control
- 3 Stages of Nitrous Relay Controls
- Knock Sensing
- Check Engine Light Function
- Air Conditioner Relay Control



The ACCEL Super Ram kit shown here comes with everything needed to install their fuel-injection system on a small-block or big-block Chevy engine. These kits make it very easy for a first-time user to get up and running quickly.

The ACCEL Gen7 can be ordered with a variety of fuel-injection modes in fully sequential, batch fire, and staged injection. The Standard Gen7 ECUs can be ordered to fire standard GM HEI

and Ford TFI ignitions, in addition to their ability to recognize standardized trigger patterns from both Hall-effect



This system is a custom kit for a supercharged small-block Chevrolet engine. You can order a kit from ACCEL to suit a wide variety of different engine types. Be sure to inform your dealer about your project so that they can get you the right combination of parts.