

Industry Trends

GM Carburetors Die; Replaced by EFI

As one of the most highly regarded automotive innovations, electronically and mechanically controlled fuel injection systems are going to be the dominant type of engine in the future. In fact, General Motors (GM) claims that, by 1990, 100% of their vehicles will operate on electronic fuel injection systems.

That's because a carburetor engine cannot guarantee the type of precision control that a fuel injection system can. There are various forms of fuel injection systems now in use by vehicle manufacturers. The two most common types are the Electronic Fuel Injection (EFI) Port Injection system and the Continuous Fuel Injection (CFI) system.

The EFI system is characterized as an intermittent system. In other words, fuel flows in short spurts as the injectors turn on and off. On the other hand, the CFI system is known as a mechanical system because its basic operation is not electronically controlled.

Regardless of the different characteristics of the EFI and CFI systems, both function in the same general way. Namely, both systems inject finely atomized gasoline into an engine's cylinder intake valves. Injecting fuel in this manner insures that each cylinder's air/fuel ratio will be the same regardless of engine speed.

Motorists whose vehicles are equipped with fuel injection systems can expect improved engine performance along with a decrease in fuel consumption and the ability to meet both the EPA's exhaust emissions regulations and the CAFE requirements.

Fuel injection systems provide a much more efficient method of supplying fuel to an engine. And it's easy to see that in the next ten years carbureted gasoline engines will be a thing of the past.

Editor's Note: Special thanks to Tim Guerra, NAPA Echlin's Marketing Services Manager, for providing this information on fuel injection systems.

EPA Skips Oil

The Environmental Protection Agency (EPA) has officially decided not to list used oil targeted for recycling as a hazardous waste. This should be quite a relief for repair shops, machine shops or service stations who otherwise would have faced strict reporting demands and liability mandates.

According to petroleum industry lobbyists, the EPA's proposed ruling would have led to a significant increase in "midnight dumping" of used oil into drains, sewers and illegal landfills.

Combustion System Burns Clean

Cleaner exhaust combustion without a catalytic converter is a reality, according to a report from the British Motor Industry. That's because a combustion system which leads to clean, fuel efficient engines has been developed by AE, a British specialist engine component manufacturer, and Sonex Research Inc. in Annapolis, MD. These newly developed engines do not need catalytic equipment.

Instead, the new combustion system uses a toroidal piston, located just below the engine's crown, in conjunction with a revised inlet manifold and an air proportioning valve. The developers of this new engine system claim that it will clean up gaseous emissions, suppress detonation and allow for a significant tolerance to low-grade fuels.

GM Makes ETAK Navigation System an '89 Option

General Motors (GM) plans to offer an on-board computer navigation system as an option on 1989 model cars.

The navigation system, called ETAK Navigator, uses an orientation system that consists of motion sensors mounted on a car's front wheels and an electronic compass in the rear window. The computerized portion of the navigator is the size of a shoe box and fits in the car's trunk. A tape drive, which accepts maps recorded on special tapes, can be placed anywhere in the passenger

compartment, but is usually located under the driver's seat. A four-inch television display screen, which continuously displays a map showing the location of the driver's car and the driver's destination, is attached to the front of the vehicle's instrument panel.

The system makes use of moving maps to help drivers find their destinations. As the car moves, the map is updated and re-created on the screen each second.

Restraint and Protection on Lawmakers' Minds

Congress is expected to act on important legislation affecting the entire automotive aftermarket in 1987.

This legislation includes a passive restraint law, in which a tax would be levied on buyers of 1990 model vehicles that don't have passive restraint systems such as air bags. This particular law would also give a tax break to those buyers who purchase vehicles with the passive restraint devices.

Other legislation to be acted on includes the introduction of a law that allows domestic parts manufacturers easier access to, and greater protection for, the design patents of domestic products. In short, this new law, if passed, will help protect domestic manufacturers from counterfeit parts.

British Companies Introduce New Diesel Engine

Two British companies, Perkins Engines and the Austin Rover Group, have unveiled a diesel engine which they say will offer substantially improved fuel economy and performance over existing diesels. And, this new engine may soon be available in U.S. cars.

The new diesel engine's design eliminates the need for a combustion pre-chamber, which is used in existing diesels. Instead, air and fuel are injected directly into the combustion chamber. This is the first time this kind of technology has been achieved at engine speeds high enough for car applications.

The developers of this new diesel engine claim that the engine offers 40% better fuel economy than comparably sized gasoline engines. Other benefits claimed by the developers include outstanding durability and driveability similar to gasoline engines.