



## What's New is Old

Automobile manufacturers have always been constantly looking for new and innovative ways of changing their products to capture the eye of car buyers to get them to choose their vehicles. With fuel economy becoming a big concern to meet the government EPA's tighter standards and the motoring public's concern with vehicle performance, we have seen some major changes in new vehicles. While some may seem new, most have been redesigned from older engineering.

The idea of cylinder deactivation is becoming increasingly popular as car manufacturers strive to reduce fuel consumption. Cylinder deactivation effectively creates a variable displacement engine, which means you can enjoy the on-demand power of a large capacity V8 engine together with the fuel economy of a smaller 4 or 6-cylinder engine depending on the load requirements of the vehicle. Variable displacement engines are available in a few select domestic vehicles such as GM, Dodge and Ford pickups and Jeep's Grand Cherokee. Some manufacturers boast of up to a 20% increase in fuel economy on the highway over a conventional engine of similar displacement. While some say this is new technology, Cadillac tried this in the mid 80's on some of their engines using mechanical technology. However, newer computer technology has been developed for the control of cylinder deactivation that promises to be a more reliable design.

Manufacturers are constantly improving aerodynamics by lowering ride heights and utilizing flush wheel covers to improve vehicle stability. This has been used in racecars for many years. It lessens surface resistance reducing air friction and reduces air turbulence under the vehicle. Remember, in the mid 70's, the Olds Delta 88, Chevy Monte Carlo's and Chrysler Newport's with solid wheel covers?

We will see more vehicles with reduced engine and transmission fluid warm-up time allowing better lubrication, reduced friction and higher engine efficiencies. This technology has been around since 1995, which is used in Ford Power Stroke diesels. The computer operates a valve, which restricts the exhaust to keep the heat at the engine warming it up faster in colder weather.

To maintain factory warranties, we are seeing more manufacturers requiring synthetic oils. The major functional difference is that they lower friction and improve fuel economy. In addition, its' lower volatility helps reduce oil consumption and carbon dioxide emissions. The Germans developed synthetic oil during the Second World War when petroleum resources were depleted.

Ford and Toyota are constantly improving their development of hybrid-electric vehicles, which are particularly effective in urban environments reducing exhaust emissions and lowering the consumption of fuel. GM developed an electric car in 1997 which the U.S. Government forced cancellation of the program in 2003.

Manufacturers are developing new 4-wheel-drive system that automatically disengages the driveline at the transfer case and wheels so the front axle, part of the transfer case and universal joints don't rotate in the two-wheel-drive setting. All manufacturers have used this technology prior to 1988, only it had to be done manually.



Allison automatic transmissions have been redesigned. We are seeing them in the new larger gas and diesel GM pickup trucks with 4 and 5 speed transmissions. This is just a lighter version derived from heavy-duty trucks and buses Allison transmissions that have been around since the 1970's.

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