



## Inline Fuel Pumps Make Your Fuel Injection Conversion Easier

You're in the process of converting your vintage carbureted vehicle to fuel injection so that you can enjoy the many benefits, including more power, better fuel mileage and an all-around better behaved engine. But what are you going to do about a fuel pump? The fuel tank on your pride and joy doesn't have a large enough hole where the sender goes to accommodate an in-tank pump and you don't really feel like spending the money for a new tank or to customize the existing tank.

So what's the answer? It just might be an inline pump. An inline pump is an electric fuel pump that, as the name suggests, can be placed inline with the fuel supply line. It is typically mounted on the frame although where it is mounted is only limited by your creativity.



The Walbro GSL392 Inline Fuel Pump

Electric fuel pumps, including inline pumps, generally push the fuel more efficiently than they can pull the fuel. For this reason, it is best to mount inline pumps as close to the fuel tank as possible.

Ideally, the pump should also be mounted lower or equal to the position of the tank, preventing the pump from having to fight gravity. Unfortunately, mounting the pump below the tank and sometimes even at the same level is not always a practical solution.

Fortunately, there are pumps that can handle being mounted above the tank. The Walbro series of inline fuel pumps are just such a pump and can pull to a height of six feet. This isn't recommended however, since it will certainly shorten the life of the pump but at least you can feel comfortable that if your application demands that you mount the pump slightly above the tank you won't have a problem.

Another factor to consider when using an inline pump is that it is very important to install a filter between the tank and the pump. These pumps are very precisely machined units and a small amount of grit can easily damage the pump. In fact, Walbro won't warranty the pumps if they find they contain grit. So installing a pre-filter is very important.

In many applications in our shop, we use a small clear nylon filter as a pre-filter. It doesn't contain a super-fine filter element so it can flow a substantial amount of fuel while still filtering well enough to protect the pump. And, since the body of the filter is clear, it's obvious when the filter element becomes dirty and needs replacement.

When installing these pumps, and as a general rule with any type of high-pressure fuel pump installation, you must not use regular fuel hose anywhere between the pump and the engine. Normal fuel hose is rated at 50psi and, since most fuel injection applications will run at pressures approaching and, in many cases, exceeding that pressure, it is absolutely imperative that high-pressure fuel injection hose be used. Also we recommend using hard line wherever possible.

Arizona TPI is a Walbro dealer and stocks the GSL392 high-pressure pump as well as the GSL395, a lower pressure pump designed for TBI and other applications that run in the 10-30PSI range. These pumps normally sell for \$149 but we made a special buy and have them on sale right now for \$132.50

## The Perfect System is Perfect!

If you're planning to swap a modern electronic fuel injection engine into your project car, one of the things you have to consider is what type of computer and wiring harness you'll use. More often than not, folks choose to use the computer that came with the engine and often this can be a good solution.

As these computer systems become more sophisticated, it often requires special programming to remove features that the OEM computer was used to in the original vehicle but don't exist in its new home. These features might include secondary oxygen sensors, canister purge, vehicle anti-theft, etc.

Fortunately, our good friends at Painless Performance have come up with a great solution. They have developed what they call their Perfect System. This consists of a tiny engine computer and the associated wiring harness. The computer comes pre-tuned for the engine so it's just a matter of mounting the computer, hooking up the wiring, hooking up the fuel lines and turning the key.

Currently the Perfect System is available for Chevy TPI, LT1, LS1, LS2 and Ford 4.6L and 5.0L engines. The engineers at Painless have burned up a lot of dyno time coming up with a program for each of these engines that creates more torque and horsepower than the stock computer as well as better gas mileage. With the LS1 system, the engine with the stock computer will generate 320HP. When running with the Perfect System, this same engine puts out 371HP. Quite an impressive increase!

Most recently we used this system on an LS1 engine installed in a beautiful '32 Ford Highboy. As usual with this system, we were very impressed with the results. The combination of the 370+HP LS1 along with a very light vehicle like the '32 Ford makes for a very fun-to-drive vehicle!