

THINKING OF SWITCHING TO AN IN-LINE ELECTRIC FUEL PUMP?



TOP FOUR REASONS WHY YOU SHOULD SWITCH TO AN IN-LINE ELECTRIC FUEL PUMP

1 Ease of accessibility for installation and serviceability

You may have a modified or custom fuel system that requires semi-regular removal of the fuel pump for testing or maintenance.

2 Increased pump performance is required

Sometimes, after engine modifications, a stock pump may no longer provide the performance required to keep up.

3 You want the consistency and performance of an electric pump by switching from a mechanical pump

Your car may have a stock mechanical pump driven from the engine, but your stock tank is not designed to accommodate an in-tank pump.

4 We don't all have large project car budgets

Most project cars are hobbies, which means that spending can be limited to a restrictive household budget.

What You Should Know Before Deciding on Switching to an In-Line Electric Fuel Pump

Over 100 years of fuel system engineering has seen everything from simple gravity-fed fuel systems and mechanical fuel pumps to in-line electric fuel pumps and, eventually, to today's in-tank electric fuel pumps/fuel modules. The in-tank electric design, when combined into a single module, contains the fuel pump, fuel filter/regulator, and sending unit. In-tank pumps reduce the risk of fuel starvation, allow for sound dampening when the pump is active, and are less likely to overheat due to the fuel's cooling effect. Whether you have an in-tank electric fuel pump or an older car with a mechanical fuel pump, switching to an in-line electric fuel pump could provide advantages that range from ease of accessibility for installation, serviceability, or cost-effective replacement solution. An in-line electric fuel pump can even be a reliable replacement when relocating a fuel tank or converting to a fuel cell from an older gravity-fed tank.

Regardless of the desired application, you'll first need to understand that the basic function of any fuel pump is to efficiently create positive pressure within the fuel lines, between the tank and the engine. The fuel pump also must maintain system pressure, even after the engine has been shut off, to reduce the amount of cranking time required during engine restart. These

basic functions also need to be taken into consideration when selecting and installing an in-line electric fuel pump.

Changing to an in-line electric fuel pump, from any existing fuel pump system, can create issues like risk of leaks or damage if not installed properly. Switching from an in-tank electric fuel pump can create vehicle maneuverability issues because the fuel pickup may not always draw fuel consistently from the tank, thus causing fuel starvation under hard cornering or encountering extreme angles off-road. Due to the issues listed above, an in-line electric fuel pump may not be the best choice for racing or extreme off-road conditions.

If you've decided to switch to an in-line electric fuel pump, select the best in-line pump that fits within your budget. Buying the most inexpensive pump available may sound like a good idea at first, but can be detrimental in the long run. Think about a positive displacement in-line pump that draws fuel from the tank with less effort than a non-positive displacement pump. While a non-positive displacement pump relies on gravity and has to be mounted below the tank line to work effectively, a positive displacement pump can be mounted safely above the tank line



(73 psi) of fuel pressure and work for most general applications. Screw-type pumps have been used successfully by European original equipment manufacturers for a long time. They are capable of supporting applications that require 500-600 kPa (73-87 psi) of fuel pressure and are most suitable for high-heat applications and high temperature regions. Most importantly, no matter which pump you choose, consider a good quality filter (eg. 31 micron) mounted between the fuel supply and the new in-line fuel pump to protect your investment.

Gerotor-type pumps, which have been around a long time, are capable of supporting applications that require 200-500 kPa (29-73 psi) of fuel pressure and work for most general applications.

where it is less likely to get damaged. Additionally, you should ensure that the in-line pump selected contains an internal check valve to keep fuel from bleeding back into the tank which will reduce initial crank time and decrease wear and tear on the fuel injection system. Good positive displacement pumps are available in both gerotor-type and screw-type configurations. Gerotor-type pumps, which have been around a long time, are capable of supporting applications that require 200-500 kPa (29-

To switch from an in-tank pump to an in-line pump, remove the electric fuel pump from its housing and replace it with a simple draw straw that reaches far enough into the fuel tank without creating any obstruction or restriction. The same is true when switching from a mechanical pump in that it needs to be removed from the engine and a blocking plate installed in its place. By

not removing the in-tank or mechanical pump, the in-line electric pump will be forced to work harder, and could cause the new in-line pump to wear prematurely due to the unnecessary restriction created from the original pump remaining static. If replacing an in-tank electric fuel pump, make sure that the factory in-tank fuel pump assembly does not consist of a primary pump with a secondary transfer pump such as those found within twin chamber fuel tanks.

In-line electric fuel pump location is important to consider no matter what type of fuel system you are modifying. It's important to choose a location where the performance integrity of the in-line pump will not be compromised from chassis flex, potentially causing fuel lines to break or become disconnected or from road debris damage. Choose an in-line electric fuel pump mounting position as close to the fuel tank as possible to improve fuel pumping efficiency.

In summary, making the change to an in-line electric fuel pump may require a complete system overhaul and it's important to consider all the variables required to make such a switch. If an in-line pump is the desired system direction, then make sure to select a pump that is capable of supporting the flow and pressure requirements. Whenever possible remove all unnecessary restrictions in the fuel system prior to in-line pump installation. Finally, mount and plumb the pump in a location that is both safe from possible road debris and adheres to the manufactures recommended installation specifications.

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