



INSTALLATION INSTRUCTIONS

HIGH VOLUME FUEL SURGE TANK

DOCUMENT #19-0060

Support: info@radiumauto.com

READ AND UNDERSTAND THESE INSTRUCTIONS COMPLETELY BEFORE BEGINNING INSTALLATION

The Radium Engineering High Volume Fuel Surge Tank (HVFS) is designed to enhance the fuel system by providing resistance to starvation (from fuel slosh) and by increasing the fueling capability of the system. It is designed for fuel injected engines only and should not be used in carbureted applications.

The primary (lift) pump in the vehicle's main fuel tank will no longer directly feed the engine. This pump will now be used to fill and maintain the level of fuel in the surge tank. When selecting this pump, keep in mind that it will now operate at a low pressure because the fluid inside the surge tank will be less than 5 PSI (pounds per square inch).

Another fuel pump (or pumps) will be mounted externally and will be activated via a separate relay and fuse using the same triggered signal as the lift pump. This external pump will be the high pressure source for the engine's fuel demand and must be pressure regulated with a fuel pressure regulator (not included).

Fuel pressure should be checked before and after installation to ensure that there is no difference with the HVFS operating. Any change in fuel pressure can affect engine performance. The Radium Engineering HVFS is fully assembled, pressure tested underwater, and ready to install.

MOUNTING

The HVFS should be firmly mounted to a stable, structural component of the vehicle away from moving parts, and excessive heat. The HVFS should not shake or vibrate excessively during operation. This surge tank is designed to be mounted in a standing vertical orientation only. Surge protection effectiveness will start to suffer if the tank is excessively tilted from the vertical position. At least three mounting bolts should be used (one at each foot). Extra holes are provided in each foot to increase mounting bolt location options.

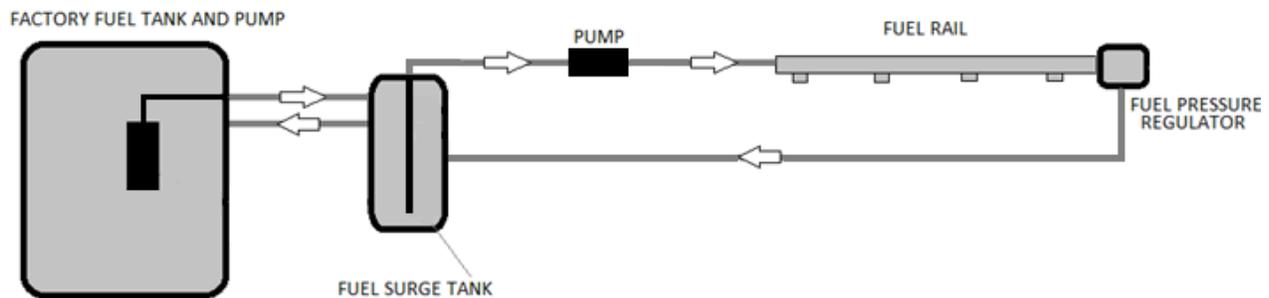


PLUMBING

It is recommended that fuel entering the surge tank is filtered. There are 4 ports; 3 general 3/4-16 (-8AN ORB) threaded ports and 1 fuel pump pickup port. The general ports are for the following: feed from main fuel tank's "lift" pump, return fuel back to main fuel tank, and fuel returning from the fuel pressure regulator. These ports are not specific and can be interchanged to suit the best plumbing and routing of hoses. Included are three -6AN male fittings. If different -AN sizes are required, go to www.radiumauto.com. The center fuel pump pickup port must be connected to the external (high pressure) fuel pump inlet. There is a pickup tube on the opposite side of this fitting.



There are many different ways to plumb this system depending on the many variables. Illustrated below is the most common plumbing schematic.



INITIAL START UP

The surge tank must be fully primed with fuel before the engine will start. To do this, remove the surge tank pump fuse(s) and cycle the vehicle's ignition power several times. This will activate the lift fuel pump for a few seconds each time. After 3-4 cycles it should be ready to start. Replace the surge tank pump fuse(s). If using an external pump to feed the surge tank, power on this pump long enough to fill the HVFST.

ASSEMBLY/SERVICING

Reference this FST assembly video: http://www.youtube.com/watch?v=l_UUhanef10

1. Disconnect all fuel hoses. Use a non marring aluminum wrench if accessible.
2. Use a 3mm Allen wrench and remove the 9 perimeter bolts that hold the top cap to the main body.
3. Lift off top cap.
4. Inspect O-ring.
5. Reassemble in opposite order.
6. Place large O-ring into groove and be careful not to pinch.
7. Torque small perimeter bolts to 25 in-lbs in an alternating cross pattern.