

## Lethal Performance 2018+ Mustang GT & GT500 Fuel System

### *Installation Instructions*

Starting from the fuel hat assembly you'll want to follow the specific CP-E / DivisionX fuel hat installation instructions to install the fuel hat. **Please pay attention to the part that talks about setting the pumps to the proper height as well as connecting the venturi hose that draws fuel from the passenger side tank to the driver's side.** You want to make sure that's connected properly or the car will run out of fuel at the ó tank level. For the feed and return fittings on the fuel hat, the Fragola 499210BL will go in the feed port and the 499208BL will be for the return.

Once the hat is installed you can assemble the fuel pressure regulators with the proper fittings by using the supplied fuel system diagram.

Once that's done you can proceed to run the fuel lines. All hoses get routed on the driver's side of the car.

There are (2) 10an Hoses in the kit. The shorter of the two hoses goes from the fuel hat outlet to the inlet of the fuel filter. The fuel filter gets installed under the black plastic piece on the driver's side and can be secured with the supplied loom clamps.

The longer of the 2 hoses goes from the outlet of the fuel filter up the frame rail into the engine bay. You'll then route the hose behind the supercharger where it will enter the passenger side fuel pressure regulator on the port facing the firewall.

The only -8an hose in the kit is the return line which will go from the bottom/return port on the driver's side regulator and run back to the fuel hat return port on the driver's side.

There's 3 -6an hoses in the kit.

The first one is the shortest hose which has a straight fitting on one end and a 90deg fitting on the other. The 90 deg end will attach to the driver's side regulator on the port facing the firewall and the straight end will go into the fitting in the middle of the driver's side Whipple fuel rail.

The 2nd -6an hose also has a 90deg end and a straight end on it. The 90deg end will attach to the bottom/return port of the passenger side regulator and the straight end will connect to the supplied 90deg (499206BL) fitting that screws into the port in the middle of the passenger side Whipple fuel rail.

The last -6an hose has (2) 90deg ends on it. One end will attach to the passenger side regulator port that faces the front of the car and will attach to the DI pump with the supplied black adapter fitting. (644123)

The driver's side regulator uses the black bracket to mount it to the strut tower where the

passenger side only uses a screw to connect it to the silver bracket on the passenger side strut tower. That silver bracket is what's used to hold the factory wire harness to the strut as well.

### **Vaccum lines and Hobbs switch**

The passenger side regulator doesn't require a vacuum hose as it's left open to atmosphere. On our car we set the base pressure on this regulator to 70psi.

For the passenger side regulator you'll run the vacuum hose from the barb fitting under the inlet/throttle body to front passenger side of the supercharger where the vacuum line comes out of the Whipple manifold just above the bypass actuator. You'll T into the vacuum hose there. This will allow your fuel pressure regulator to adjust fuel pressure based on Vac/Boost.

On our car we set the base fuel pressure at 50psi. To set the pressure you can either have the car keyed on so the pumps run but with the engine off or you can have the car running with the vacuum line off of the barb so it's not seeing any vacuum when you set the base pressure.

The Hobbs switch is optional and is used to only have 2 pumps run full time and the 3rd pump turn on over 5psi of boost. To install the hobbs switch you'll use Hobbs switch with the brass barb fitting attached to it and T into the vacuum line by the driver's side regulator. Using the long 14ga wires you'll connect the red wire to one terminal and the black wire to the other terminal. You'll then run the wire through the vehicle to where you mounted the relays for the triple pump wire harness. To control one pump with the hobbs switch you'll cut one of the blue trigger wires on the relay harness and connect the black wire from the hobbs switch to one side of the blue wire you just cut and the red wire to the blue trigger wire going into the relay.

### **Wire Harness Installation** - *(Make sure the negative terminal on the battery is disconnected before starting any wiring)*

We chose to mount our relays in the trunk in the spare tire well. Using the long red power wires for the wire harness you'll run them through the trunk on the passenger side of the vehicle under the door sill plate into the engine bay under the dash to where the battery tray is located.

Using the supplied fusible link (3 wires with butt connectors on one end and a ring terminal on the other end) to one of the positive terminals at the battery distribution/fuse box. Then connect the wires which were run into the engine bay under the battery tray to the butt connectors on the fusible link making sure to crimp and heat shrink each individual connection so that the connections are secured and won't touch each other or any part of the vehicle.

Connecting the relays to the trigger wire from the FPDM. We typically wire this system so the pumps run full time once it's keyed on. Locate the FPDM under the back seat by the driver's side wall next to the fuel pump assembly. Disconnect the wire connector from the FPDM and

pull the loom back to access the wires. You'll cut the Yellow with Gray tracer wire a few inches from the connector and connect the blue wires from the relays to that wire (wireside). Wireside is the wire going back to the PCM not the wire going into the FPDM.

Find a suitable ground for the black wires with the ring terminal coming off of the relays and securely ground them to chassis.

Now you can connect the power/ground wires from the harness to the power/ground wires on the fuel hat. The colored wires are positive and the black wires are negative.

Level sender wires. On the same FPDM connector that you tapped into to trigger the relays you'll cut the 2 smaller gauge wires a few inches from the connector. The (wireside) wires for the level sender will then connect to the 2 remaining small wires on the fuel hat which is how you'll be able to get a proper fuel level reading. It doesn't matter what color wires on the factory harness go to the level sender wires on the fuel hat as they're done by OHMS not positive/negative. Make sure to crimp and heat shrink all connections.

Once everything is installed and you're ready to set the fuel pressure as well as check for leaks you'll connect the negative battery terminal back to the battery. Key the car on which will run the pumps. Check every hose end connection to make sure there's no leaks anywhere. That goes for the connections at the fuel hat, fuel filter, fuel pressure regulators, return ports, DI pump connection and on the fuel rails.

## **ADDENDUM FOR 2020+ SHELBY GT500**

The 2020 Shelby GT500 fuel tank varies slightly from the Mustang GT tank. The main difference is how the siphon system works to pull fuel from the passenger side tank to the driver's side tank.

*Please see images below for reference.*

When installing the DivisionX triple pump fuel hat you will notice the main siphon fitting on the underside of the fuel hat. That will connect to the large corrugated fuel hose that used to connect to the bottom of the factory fuel pump assembly. There is an additional hose on the factor fuel hat coming off of one of the fuel pumps. That additional hose is not used.

You'll then need to access the passenger side fuel sending unit. In the same fashion that you removed the driver's side assembly you'll do on the passenger side. Remove the EVAP hose from the top of the assembly. Remove the lock ring which holds the passenger side sending unit assembly to the tank. Gently start pulling the passenger side assembly out making sure not to damage the float on the level sender.

On the underside of the fuel hat remove the hose for the evap which will allow you to pull the assembly further out of the tank. You will see a T at the bottom with 2 hoses going to each side. Remove each hose from the T. Then you will remove the remaining portion of the T from the fitting on the level sender

assembly completely removing the T out of the tank. Take the large hose that was removed from the bottom of the T and connect it directly to the fitting on the bottom of the sending unit assembly. The smaller hose can be zip tied to the in-tank evap hose to keep it out of the way, preventing it from getting hung up on the level sender float.

Reinstall the Evap hose on the underside of the hat and lower the assembly back into the tank. Install the lock ring and finish by installing the evap hose on the top of the sending unit assembly.

This will allow your fuel system to properly siphon fuel from the passenger tank to the driver's tank while the pumps are running as well as for it to read fuel levels properly on your dash.



