

## Model Number 20202 2001-2010 GM Duramax<sub>®</sub> 200 Installation Kit

## **Operating and Installation Instructions**

## **CAUTION!**

This product is to be installed only by persons knowledgeable in the repair and modification of vehicle fuel systems and general vehicle systems modification. Only a qualified technician or mechanic who is aware of applicable safety procedures should perform the installation of this product.

### GASOLINE AND OTHER FUELS ARE FLAMMABLE AND CAN BE EXPLOSIVE!

Perform the installation in a well ventilated location only to minimize the build up of fuel vapors. <u>NO</u> open flames, smoking or other sources of ignition are to be present during installation, to prevent fire or explosion that can cause serious injury or death. Grinding, cutting, and drilling must be performed with care to prevent ignition. Draining and removal of all fuel and ventilation of vapors in vehicle and fuel system is recommended when performing such procedures. Proper eye and personal protection is required at all times during installation.

# WARNING!

The Vehicle's fuel system may be under pressure! Do not loosen any fuel connections until relieving all fuel system pressure. Consult an applicable service manual for instructions to relieve fuel system pressure safely.

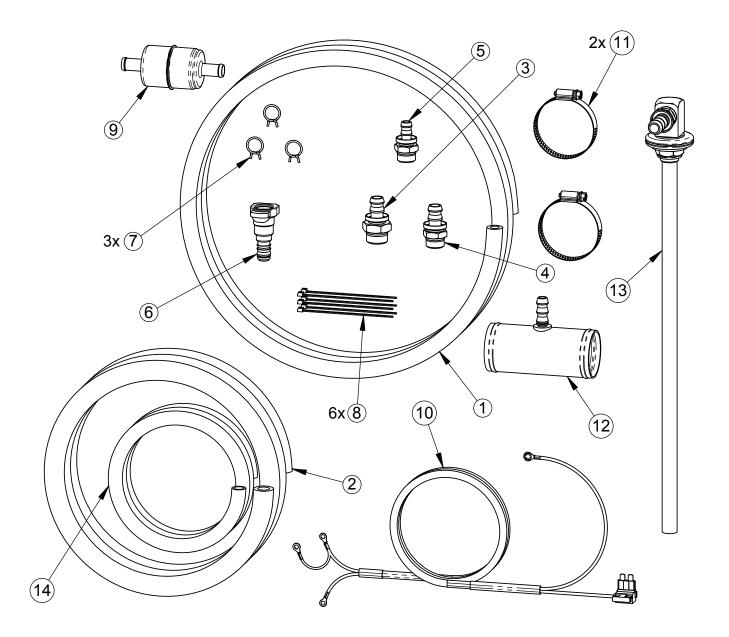
#### Application:

This Installation Kit is intended to work with Fuelab<sub>®</sub> Velocity Series 200 Fuel System, Model 30304. Consult instructions included with Fuelab<sub>®</sub> Velocity Series 200 Fuel System, to complete this set of instructions pertaining to the use of this Installation Kit. This Installation Kit is also intended to be used for replacement of OEM lift pump systems that are originally installed on vehicle. This kit applies to GM Duramax<sub>®</sub> Diesel Vehicles, between and including the years of 2001-2010. If this Kit is not correct, please contact your Fuelab<sub>®</sub> distributor immediately for replacement or selection of an appropriate Installation Kit.

#### **Product Contents:**

Verify the contents of this box, against list of components below and on the next sheet, to ensure that nothing is missing. Contact your Fuelab<sub>®</sub> distributor immediately for replacement. You may have extra parts left over after installation since Fuelab<sub>®</sub> has included extra parts for all years of the application described. While this kit is designed for designated vehicles, vehicle manufacturers routinely change production components, even during the same production year. Please contact Fuelab<sub>®</sub> if the particular vehicle has different descriptions or components that are incompatible as described within these instructions.

ITEM	P/N	Description	Qty
1	FL500	Fuel Line, 1/2", Superflex	12'
2	FL375	Fuel Line, 3/8", Superflex	7'
3	PORB108	10 ORB x 1/2" Push-lok® adapter, Steel	1
4	PORB88	08 ORB x 1/2" Push-lok® adapter, Steel	1
5	PORB86	08 ORB x 3/8" Push-lok® adapter, Steel	1
6	QC500	1/2" QC for return	1
7	WCL500	Clamp for Inlet Straining Filter	3
8	CBT6	Cable Ties, Nylon 5"	6
9	551770	Inlet Straining Filter	1
10	EPH17-3	Extended pump harness with fused adapter kit	1
11	CL32	Filler Neck Clamp	2
12	FNR	Filler Neck Return	1
13	DTK	Draw Tube Kit 1/2", modules / all open tanks, 1/2" Push-lok®	1
14	CBLW	Optional Use Convoluted Cable Wrap	11'



Check above photo and list shown on previous page, to ensure no components are missing or damaged. Contact your Fuelab $_{\ensuremath{\mathbb{R}}}$  distributor immediately for replacement.

# Some items listed in these instructions are included in Lift Pump / Filtration System, sold separately (reference sheet 1, under Application).

## FOLLOW ALL INSTRUCTIONS HEREIN AS WELL AS INSTRUCTIONS INCLUDED WITH THE LIFT PUMP / FILTRATION SYSTEM. BOTH SETS OF INSTRUCTIONS CONTAIN IMPORTANT INFORMATION!

The most difficult step of the installation procedure is removing the vehicle's fuel tank (this step may not be required for all vehicles). With very little room between the top of the fuel tank and the Bed of the vehicle, it may be difficult to get the fuel lines disconnected. Make sure that the fuel tank is as empty as possible. Even at approximately 1/8th of a tank of fuel, a substantial amount of fuel is still inside. Drain as much as possible! The installation may also be performed with the Bed of the vehicle removed, without the requirement of tank removal. If the tank requires drilling during modification however, the fuel tank <u>MUST</u> be removed from the vehicle and completely drained of <u>ALL FUEL</u>. For fuel connections using pipe threaded fasteners (tapered threads or non o-ring or flare connections), use Teflon<sub>®</sub> tape. On connections using Tapered Ends, or Fittings using O-rings, <u>DO NOT</u> use Teflon<sub>®</sub> tape.

In addition to typical professional automotive tools, items you may want to ease the installation, that are not included with this Installation Kit are:

Heat gun or hair dryer and a small amount of oil, to lube the fittings and soften the fuel line for the Pushlok<sub>®</sub> fittings. Additional items that would be helpful include box cutter or shears for the fuel lines and an air source to blow out all the fittings and hoses. A few extra small to medium size hose clamps can also help (**DO NOT** over-tighten worm gear style clamps) as well as additional Cable Ties.

**Step 1:** Inventory all of your parts with the included packing list. Lay out the parts to verify that everything is included (see diagram on previous sheet as well as Contents List on the first sheet). Also inventory and lay out all parts of the Lift Pump / Filtration System (sold separately, shown below – Reference Model 30304).

The System Bracket (item S2) attaches to the Lift Pump / Filtration System (item S1) as shown below. Fuelab<sub>®</sub> recommends attaching the System Bracket to Lift Pump / Filtration System after System Bracket is installed on Front Rail Bracket (item S3, and see next step) for ease of assembly. Dry-fitting your system with rail brackets (explosion view available in companion instructions) is recommended first, to ensure desired bracket adjustment, prior to final assembly.

Make sure to <u>USE</u> Loctite<sub>®</sub> 242 thread adhesive (item S14) on the Captive Studs (items S6) and Acorn Nuts (items S9), prior to final assembly. If the supplied thread adhesive is not used, then unit can vibrate and loosen over time. The thread adhesive is supplied with Lift Pump / Filtration System. Location for Locktite<sub>®</sub> use during the final assembly is highlighted in the companion instructions (instructions for Model 30304).



#### Getting to Know the Vehicle

Most Duramax Trucks originally were not equipped with lift pumps. The CP3 Injection Pump draws fuel through the OEM Filter Assembly. The OEM Filter Assembly is along the side of the engine, towards the rear. The figure to the right shows the OEM Filter Assembly and its features. Maintenance of the filter system includes occasionally draining of water (contaminated fuel) at the drain, located at the bottom of the Filter Assembly as well as Filter Element replacement. The Filter Assembly includes a hand pump on top of the assembly that allows a "manual priming" of the fuel system after Filter Assembly maintenance.

Some vehicle's fuel systems have had modifications that include the addition of an aftermarket fuel lift pump as well as additional Filters added. Inspect the engine compartment for additional filters, fuel lines as well as inspect for the presence of the OEM Filter Assembly. Under the vehicle, along both Frame Rails, inspect for an aftermarket lift pump assembly or additional aftermarket fuel filter assemblies.

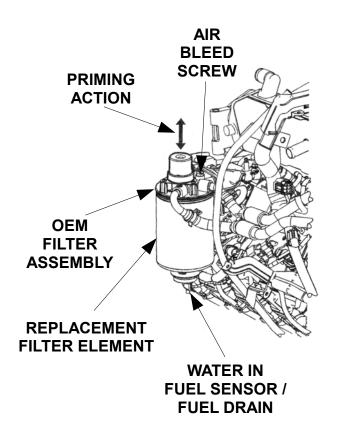
#### Plan for Build

<u>ANY</u> aftermarket lift pump assembly that has been installed <u>MUST</u> be removed from the vehicle. The OEM Filter Assembly can be retained for use, however the following procedure (filter replacement) will have to be performed during installation:

- Unplug the Water in Fuel (WIF) Sensor Electrical Connector.
- Remove the lower, outer casing of the Filter Element using a filter or strap wrench, loosening the Filter Element from the Filter Assembly.
- Loosen and remove Air Bleed Screw from Filter Assembly.
- Loosen the Water in Fuel (WIF) from the Filter Element.
- Use ONLY a new replacement Filter Element.
- Using new o-ring, re-install the Water in Fuel (WIF) Sensor into the new Replacement Filter Element.
- Re-Install the Replacement Filter Element to the rest of the Filter Assembly.
- Re-Plug the Water in Fuel (WIF) Sensor Electrical Connector.
- Use hand pump in Filter Assembly to draw fuel from the rest of the fuel system until the fuel comes out of the Air Bleed Screw Port. Re-Install Air Bleed Screw.

The installation of the Fuelab Lift Pump / Filtration System can also be performed retaining the Fuel Line from underneath of the vehicle leading to the OEM Filter Assembly (on installations retaining the OEM Filter Assembly).

While retaining the use of the Filter Assembly can be a convenience for plumbing, Fuelab does not recommend the use of additional aftermarket filter assemblies due to possible performance shortcomings.



#### OEM FUEL FILTER ASSEMBLY FEATURES

**Step 2:** Disconnect the Vehicle's Battery (or batteries, as diesel trucks typically have more than one) by disconnecting the Negative or Ground Terminal(s) of each Battery to disable the Vehicle's Electrical System.

**Step 3:** Loosely attach the System Bracket (item S2) and bushings (items S7) to the Front Rail Bracket (item S3), using the four (4) Captive Studs (items S6), Stud Washers (items S8) and Acorn Nuts (items S9). Follow the companion instructions for proper assembly orientation. For convenience, the Wiring Harness (item 10) can be attached to the Lift Pump / Filtration System, prior to final installation (reference Step 11, of these instructions). Be sure to note proper wiring polarity, otherwise permanent damage to Lift Pump will result.

**Step 4:** Find a suitable place to mount the Lift Pump / Filtration System. On a short bed truck, the space is very tight. The Lift Pump / Filtration System normally mounts on the inside of the vehicle's frame.



Placing the Lift Pump / Filtration System into position as a dry-fit (such that the thread adhesive is not being used, and the fasteners are loose) can be helpful, to determine the desired adjustment position of the bracket system as well as determining the desired placement along the vehicle's frame. Multiple height positions are possible by attaching the System Bracket through using the different hardware positions of the Front Rail Bracket. <u>DO NOT</u> position to where the Lift Pump / Filtration System can rub against the cab body. **<u>SPECIAL NOTE:</u>** GM Frame Rail appears differently than as shown in photos.

**Step 5:** Loosen the hose clamps on the filler tube and the over flow tube to the fuel tank, located on the inside of the fender well. Then loosen the 2 bolts that secure the tank strap until only a few threads are holding it up. Once you have lowered the tank slightly, you must remove the electrical connector and the feed and return fuel lines on top of the tank. For the fuel lines, use a pair of needle nose pliers, squeeze the tabs on either side and pull the fuel line out.

Once the tank is lowered, remove the lock ring and remove the fuel tank module. Use caution not to bend or damage the fuel tank level sender arm and sensor.

With the fuel tank removed, pour or pump out the remaining fuel from the tank before performing modifications. As written in the <u>CAUTION</u> section on the first sheet of the instructions, removal of all the fuel is <u>REQUIRED</u> if drilling, grinding or cutting is performed on the fuel tank itself, to prevent ignition or fire. Modification of the fuel tank itself is not required, if modification to the fuel tank module is performed only. Removal of fuel from the fuel tank module is <u>REQUIRED</u>.

Inspect the fuel tank module and its sealing gasket for cracks or damage. Replace components as necessary with OEM replacement components if damaged components are found. Inspect all fuel lines and emission lines as well as line disconnects for extreme brittleness, cracks or damage. Fuel lines must be replaced with fuel compatible hose <u>ONLY</u>.

**Step 6:** Modifying the fuel tank module or fuel tank.

This Installation Kit and Instructions can allow modification of the fuel tank to install the Draw Tube Kit (Item 13) directly to the fuel tank instead of the fuel tank module. Modification of the fuel tank module is recommended, as the fuel tank module acts as a baffle for the fuel, to reduce "fuel slosh" that can result in loss of fuel pressure at low tank fuel levels, during braking or acceleration of the vehicle.

Fuel tank module's appearance and design varies within different vehicle types and model years. Photos shown in these instructions may appear differently than the vehicle being modified. General modification of the fuel tank module is considered universal, although fuel line location, emission line location and fuel tank module configuration may vary.

Locate a flat spot on top of the fuel tank module that is approximately 2" in diameter on top of the fuel tank module. Some fuel tank modules have a plug installed (example in photo) that can be removed for this purpose. At this location (centered), a 3/4" hole is to be drilled through the top to allow the installation of the Draw Tube Kit (Item 13). Deburr hole, and inspect for cracks or splits. The plastic of the fuel tank module can be brittle, use caution during all drilling. For Duramax trucks, the supply port may have to be "ground off" first by rotary power tool, prior to drilling.



#### SPECIAL NOTE:

The vehicle's fuel tank module may appear differently than as shown to the left, due to various configurations produced over the various models produced. The Draw Tube Kit installation is considered universal. Due to variations of depth between various fuel tanks, the draw tube included in this kit (Item 13) will have to be cut to the correct length. If too much length is cut from the draw tube, then the vehicle will prematurely "run out of fuel" while significant fuel still remains in tank. If the draw tube is too long, then the tube can be crushed upon installation of the fuel tank.

To derive the correct length to cut from the end of the Draw Tube Kit (Item 13), loosen and remove the locking nut and washer from the Draw Tube Kit (Item 13). The remaining rubber grommet and rubber washer should remain on the Draw Tube Kit. Insert the draw tube into the fuel tank module, until it hits the bottom of the fuel tank module.

**SPECIAL NOTE:** Some fuel tank modules are spring loaded when inserted in the tank. Fuel tank modules such as these that can change length, when inserted in the tank. Fuel tank modules in this configuration must first be dry-fitted into the fuel tank prior to continuing, to ensure that the proper length of the draw tube is determined. In cases such as this, it is important to remove the fuel from the tank, and support the fuel tank along the outside of tank (or along straps) during this measurement procedure. This is done so that the tank's center is not pushed up during measurement (for higher accuracy).

Once the tube hits the bottom of the fuel tank module, a gap will form between the top of the fuel tank module and the bottom of the rubber grommet of the Draw Tube Kit. Measure this gap and write it down. Add 1/4" to 3/8" to this earlier measurement. Cut this calculated length of tube from the plastic tube portion of the Draw Tube Kit (Item 13). This cut should be performed at an angle, to prevent the bottom of the fuel tank module from closing off fuel flow, should the measurement be off, or fuel tank is later dented or tank shape is changed after tank installation.

Remove fuel tank module from tank (if applicable) and reinstall the modified Draw Tube Kit (Item 13) back into the fuel tank module. Re-install the kit washer and locking nut back onto the threads of the Draw Tube Kit. Orientate the outlet of the draw tube kit to point toward the same direction as the original path of fuel lines. Tighten the nut until the rubber grommet slightly compresses. See photo to right as example (note: draw tube fitting is not pictured).

Remove and discard the original in-tank fuel pump from the fuel tank module (if present), and wire tie any wiring from pump, to secure (wiring of fuel pump is no longer required, do not short wires together). Original Duramax vehicles do not have an in-tank fuel pump. Wiring is still required for the





fuel tank level sender. Remove other unneeded components within the fuel tank module as well including additional straining filters (such as shown in the photo to the left).

To install the new return line, cut the filler tube by removing 1-1/4". Loosely install the assembly clamps on each end of the filler tube. Take care so the adapter or Filler Neck Return (Item 12) allows for returning fuel to exit toward the tank.

Rotate and adjust the Filler Neck Return (Item 13) adapter. Install enough length of Fuel Line (Item 2) to reach the Lift Pump / Filtration System. When the fuel tank is reinstalled, continue installation of filler tube to the Filler Neck Return.

Drill a 1/2" hole in the side of the fuel tank module (as shown in picture). Drill an additional two holes approximately 3/4" in diameter at the bottom of the fuel tank module as shown as well. This step allows adequate fuel flow to enter the fuel tank module. Deburr all holes drilled and use compressed air to blow out remaining plastic chips (machining burrs) and loose debris. Take time to double check and clean or wipe the surface of the fuel tank module that mate against the fuel tank / module seal.



Remove all internal parts from module Drill two 3/4" holes in bottom, one for draw tube and one for fuel flow. Be sure one hole is directly below where draw tube is mounted above

Install the modified fuel tank module (example shown to the right). Take extra care to ensure that the fuel tank level sender arm and sensor do not get damaged upon installation. Before seating the fuel tank module, ensure that the gasket seal is in its proper position prior to setting it in place. Re-attach the fuel tank module's lock ring to secure the fuel tank module back into fuel tank. Position the fuel tank back under the vehicle to begin the process of reinstallation.

**Step 7:** Use a lift or secured jack to lift the tank toward the body of the vehicle. Connect the fuel system inlet fuel line (Item 1) to the draw tube. Attach the return line (Item 2) to the supplied quick connect (Item 6). Connect the quick connect to the new return of the fuel tank module. Be sure to connect the injector pump overfill as well as emission vent lines and electrical lines. Be sure that all electrical and fuel lines clear between tank and body of the vehicle, such that the fuel lines are not pinched. Reinstall the filler tube as well with corresponding band clamps, with the Filler Neck Return (Item 12) adapter.

Secure the tank, install the mounting straps, and install the mounting strap bolts to complete the reinstallation of the fuel tank.



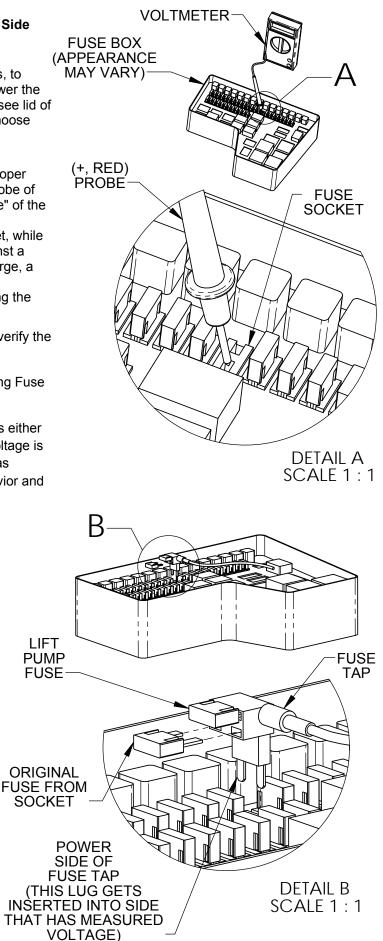
# Topic: Finding proper Fuse Position, Socket Power Side and Fuse Tap Orientation

This kit uses a Fuse Tap Assembly in the wiring harness, to allow a power tap from the Under-Hood Fuse Box to power the Lift Pump / Filtration System. Possible Fuse Positions (see lid of Fuse Box) for this application include Fuse Numbers (choose one):

#### 9 or 10.

A Test Light or Voltmeter is required to determine the proper orientation of the Fuse Tap. Use the (Positive - Red) probe of the Test Light or Voltmeter to determine the "Power Side" of the Fuse Socket. For the proper leg of the Fuse Tap to be referenced, place probe into one side of the Fuse Socket, while the other Probe (Negative – Black) is placed firmly against a good grounded metal surface. If the probe size is too large, a small straitened paperclip can be used to help establish readings. Check the following conditions before installing the Fuse Tap:

- Check Door or Lid Label for Fuse Block, to verify the correct location of the Fuse (see list above).
- Remove Original Fuse from the Socket, using Fuse Pulling Tool or Needle Nose Pliers.
- With Ignition Key in the "OFF" position, does either side of the Fuse Socket have voltage? If voltage is measured, then look for alternate location, as voltage indicates the wrong operating behavior and therefore is a wrong Fuse Position.
- With Ignition Key in the "ON" position, does either side of the socket have voltage? If no voltage is detected, then re-inspect test equipment and proper Fuse Position. If voltage is measured, then note which side (of the two positions) had measured voltage. This side will be considered to be the "Socket Power Side". When inserting the Fuse Tap, note that the "Power Side" of the Fuse Tap must be inserted into the Socket Power Side to have the proper Fuse Tap Orientation. SPECIAL NOTE: Ignition Key may have to be cycled (OFF-ON-OFF) while observing the Voltmeter or Test Light, as power may be intermittent (depending on the actual circuit being tested).
- Note the Fuse and position of the fuses within the Fuse Tap (bottom fuse is the original fuse removed from the socket, while the "upper" fuse is the fuse for the Lift Pump).



**Step 8:** Secure the wiring harness and fuse (Item 10) in the engine bay. <u>**DO NOT**</u> make the final connection of the power lines at this time. This will be your last step before starting the vehicle.



Run the wiring harness (Item 10) along the driver side frame rail and secure with Cable Ties (Items 8).

Connect the supplied wiring harness (Items 8) to the Lift Pump / Filtration System as described.

Connect the two black connectors to the speed control center yellow terminal of Lift Pump and black negative (-) terminal of Lift Pump. Connect the red wire to the Red (+) terminal of the pump.

#### SPECIAL NOTE: Attach

the thinner *pig-tail* black wire to center yellow terminal as shown.

Tighten snugly, but do not over tighten the ring terminals with the supplied washers and nuts.

#### **DOUBLE CHECK!**

Reverse polarity can result in a permanently damaged fuel pump, be sure to correctly attach the harness per the color coded scheme.



**Step 9:** The Fuel Line (Items 1 and 2) and Push-lok® fittings (PO188 and PO166) are very tight. Use a small amount of oil on the fittings and use a heat gun to soften the fuel lines slightly, to fully seat them.

**Special Note:** Photo below shows an **INCOMPLETE** installation of the fuel line at the inlet side of the Lift Pump. For a complete installation, the hose must fully seal against the yellow ring of the Push-lok® fitting (see photo on next sheet to see the proper installation of the Fuel Line).

Additional hose clamps (not supplied) at the Push-lok® connection points can be used, however is not necessary.

Connect the Lift Pump / Filtration System's fuel hose as indicated in the directions and run the pressurized supply Fuel Line (Item 1) along the frame rail to the injection pump. The supplied smaller Fuel Line (Item 2), smaller Push-lok® Fitting (Item 5) is used for the return line.

Below is a photo of the Lift Pump / Filtration with the Inlet Straining Filter (Item 9) installed, use supplied Clamps (Items 7) to secure hose to Straining Filter. The Straining filter is required to prevent foreign particles in the fuel from jamming the Lift Pump. Note directional arrow printed on the Straining Filter. The printed arrow <u>MUST</u> point toward the Lift Pump / Filtration System.



**SPECIAL NOTE:** Inlet and Return fittings may appear differently in all photos than the fittings supplied with this kit.

The Lift Pump / Filtration System has its plumbing ports labeled, as well as these parts are shown in supplied instructions from the Lift Pump / Filtration System. If routed efficiently, approximately 1' of fuel line will remain after installation.

Run the fuel supply line (Item 1) along the frame rail and up to the injection pump. Use Cable Ties (Items 8) or line clamps (not supplied) as necessary; make sure the lines are secured away from the steering shaft. Empty the factory fuel filter as may be required, by opening the yellow valve or remove OEM filter.

**Step 10:** Disconnect the factory fuel supply line and install the Push-lok® fitting, Push-lok® adaptor and fuel supply line.

**Step 11:** <u>DOUBLE CHECK</u> the fuel lines, to make sure the tank straps are tight, the fill tube and overflow tubes are reconnected.

Step 12: Connect the power/ground wire to the battery and the bulk of the installation should be complete.

Be sure to fill the fuel tank of the vehicle with at least two gallons of fuel. If fuel system is operating (during starting) but Lift Pump / Filtration System does not build pressure, then additional fuel may be required to add to the fuel tank.

Before the first crank, cycle the key to run 3 times to attempt to prime the Lift Pump / Filtration System. When attempting to start, the engine may operate momentarily and die. This is due to the fuel left in the fuel rail and injection pump. Several attempts may be required to successfully start the engine (driving out initial air in the system). Filling the filter with diesel can make the priming process quicker, in order to start the engine faster.

Below is a photo of the finished installation of the Lift Pump / Filtration System.



If you installed correctly you will only see a small part of the bracket and filter showing, **<u>DO NOT</u>** position to where the Lift Pump / Filtration System rubs against the cab body.

Check for leaks after running for five minutes at all connections and pump, if no leaks are found, Road test the vehicle for proper performance.

The pressure adjustment screw is factory preset. The pressure adjustment screw can be adjusted for a slight variation in pressure. The Lift Pump / Filtration System has an 1/8"-27 NPT gauge port for auxiliary gauge or auxiliary pressure switch use (not supplied, a plug is already installed in this port).

For racing applications **ONLY** (exceeding 700 Horsepower), higher flow rates from this Lift Pump / Filtration System are possible. At the higher pump speed, the Fuelab<sub>®</sub> Vortex Manifold may not regulate the fuel pressure adequately, requiring an external bypass style regulator such as the Fuelab<sub>®</sub> Model 50101 Adjustable Bypass Regulator. Additional modification of the OEM fuel tank and additional wiring requirements (including aftermarket electrical relay) is **REQUIRED** for this mode of operation. Contact your Fuelab<sub>®</sub> Dealer for more information pertaining to higher horsepower support using this product.

#### LIMITED LIFETIME WARRANTY

FUELAB, a division of FCP, Inc., having its principal place of business at 1605 Eastport Plaza Drive, Suite 125, Collinsville, IL 62234, USA ("Manufacturer") warrants its FUELAB products (the "Products") as follows:

#### 1. Limited Lifetime Warranty

Manufacturer warrants that the Products sold hereunder will be free from defects in material and workmanship from the date of purchase for so long as the original purchaser owns the Products. This Limited Lifetime Warranty does not extend to any subsequent owner or transferee of the Products. If the Products do not conform to this Limited Lifetime Warranty during the warranty period (as herein above specified), Buyer shall notify Manufacturer in writing of the claimed defects and demonstrate to Manufacturer's satisfaction that said defects are covered by this Limited Lifetime Warranty. If the defects are properly reported to Manufacturer within the warranty period, and the defects are of such type and nature as to be covered by this Limited Lifetime Warranty, Manufacturer shall, at its option and own expense, furnish replacement Products or replacement parts for the defective Products or refund the purchase price. Removal of Products from vehicle, shipping to Manufacturer and installation of the replacement Products or replacement parts shall be at purchaser's expense. (Vehicle means any automotive, bike or marine transportation device powered by an internal combustion engine to which the Product is attached. This Product is **NOT** intended or designed for use on aircraft, experimental or otherwise.)

#### 2. Other Limits

THE FOREGOING IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. This Limited Lifetime Warranty does not cover any damage due to: (a) transportation; (b) storage; (c) improper use; (d) failure to follow instructions for the Products or to perform any preventive maintenance; (e) modification; (f) unauthorized repair; (g) normal wear and tear; or (h) external causes such as accidents, abuse, or other actions beyond Manufacturer's reasonable control. This Limited Lifetime Warranty also does not apply to Products upon which repairs have been effected or attempted by persons other than pursuant to written authorization by Manufacturer. This Limited Lifetime Warranty is not extended if we repair or replace the Products.

#### 3. Exclusive Obligation

THIS LIMITED LIFETIME WARRANTY IS EXCLUSIVE. The sole and exclusive obligation of Manufacturer shall at its option be to repair or replace the defective Products in the manner and for the period provided above or to refund the purchase price. Manufacturer shall not have any other obligation with respect to the Products or any part thereof, whether based on contract, tort, strict liability or otherwise.

#### 4. Other Statements

ORAL OR OTHER WRITTEN STATEMENTS BY MANUFACTURER'S EMPLOYEES, REPRESENTATIVES AND/OR RESELLERS DO NOT CONSTITUTE WARRANTIES, SHALL NOT BE RELIED UPON BY BUYER, AND ARE NOT A PART OF THE CONTRACT FOR SALE OR THIS LIMITED LIFETIME WARRANTY.

#### 5. Entire Obligation

This Limited Lifetime Warranty states the entire obligation of Manufacturer with respect to the Products. If any part of this Limited Lifetime Warranty is determined to be void or illegal, the remainder shall remain in full force and effect.

#### 6. Warranty Service

#### How Do You Get Service?

If something goes wrong with your Product, contact FUELAB at 618-344-3300, or send an e-mail with proof of purchase to: info@fuelab.com for a Return Authorization Number (RMA). After receiving your RMA send the product postage paid, fully insured, with a brief written description of the problem to:

FUELAB Warranty Department, 1605 Eastport Plaza Drive, Suite 125, Collinsville, IL 62234

We will inspect your Product and contact you within three business days of receipt to give the results of our inspection and an estimate of the labor and/or parts charges required to fix the Product, if applicable. If covered under this Limited Lifetime Warranty, Manufacturer will repair or replace the Product and return it to you at no cost or refund the purchase price. If the Product is NOT covered under this warranty and if you authorize repairs, we will return the repaired Product to you COD, or prepaid via credit card, within three business days. If we find no issues with the returned product and it meets all performance specifications, there will be a \$25 charge to cover technician labor and inspection time. Additional return shipping charges will apply. We will return the repaired Product to you COD, or prepaid via credit card, within three business days.

#### **Limitation of Liability**

THE REMEDIES DESCRIBED ABOVE ARE YOUR SOLE AND EXCLUSIVE REMEDIES AND OUR ENTIRE LIABILITY FOR ANY BREACH OF THIS LIMITED LIFETIME WARRANTY, OUR LIABILITY SHALL UNDER NO CIRCUMSTANCES EXCEED THE ACTUAL AMOUNT PAID BY YOU FOR THE DEFECTIVE PRODUCT, NOR SHALL WE UNDER ANY CIRCUMSTANCES BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL OR PUNITIVE DAMAGES OR LOSSES, WHETHER DIRECT OR INDIRECT.

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