IRATE DIESEL PERFORMANCE

Irate Fuel System

FUEL SYSTEM PARTS LIST		
QUANTITIY	**PART**	**TRUCK MODEL**
2	6ORB x 6 JIC Straight	OBS/SD
1	6ORB x 6JIC 90* Fitting	OBS/SD
3	6PL x 6JIC Straight	OBS (2 included in SD kit)
1	6PL x 6JIC 90* Fitting	OBS/SD and Comp
2	Hose clamps	OBS
3	8PL x 8JIC Straight	Comp
1	1/8” NPTx 6JIC Straight	All
1	1/8” NPTx 6JIC 90*	All
2	1/8” NPTx 6JIC 45*	All
1	90* Bulkhead, sealing washer and -10 fitting for pickup tube, 5/8” stainless pickup tube	SD/Comp Pickup tube kit
1	Hose mender	OBS
1	6JIC x 8PL	SD/Comp Kit
1	3/8” PL Hose with quick connect	OBS/SD and Comp
5	1/2” PL Hose	SD Standard
20	1/2" PL Hose	Comp Kit
1	Plug	OBS
1	Turbo O-ring kit	All
2	3/8 bolts for mounting braket	All
1	IDP Weather Proof Wiring Harness	All
1	Fuelab 51502-1 Regulator	All
1	Fuel Pressure Gauge	All

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Remove IC piping and intake Y. It may also be easier to remove the downpipe and turbo to gain access to the back fittings. This will depend upon how much you want to work around them on the Super Duty trucks. But on the OBS trucks, you have no choice but to remove the turbo collector for access to the drivers side rear fitting. The #6 JIC straight fitting goes into the passenger side rear head and the #6 JIC 90* fitting goes in the drivers side rear pointed straight up. You can carefully use some sealant on the NPT side of fitting into the head.

2. Remove factory wiring harness and lay over the the passenger side of the engine bay. This will allow you to get the lines where they need to go to the back ports. The lines will lay just over the top of the heads below the injector harness. You will have to remove the lifting eye on the passenger head and leave it off to route the line properly.

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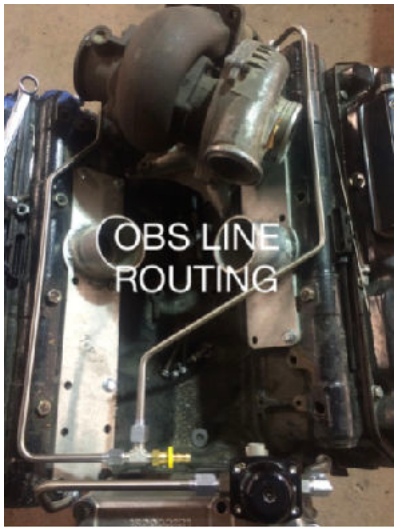
3. For access to the front lines and fittings, remove AC compressor and lay to the side (don't break the lines).

4. Remove Alternator and bracket

5. With AC compressor and Alternator removed you can take the bolts out of the front accessory brackets. Pull the brackets forward so that you can gain access to the front ports on the heads.



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6. Install the 1/8npt x 6 jic 45* fittings into both the front ports on the head pointing straight up.

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7. With all fittings installed you can now install the back lines and connect them to the supplied #6 jic T fitting in the valley of the motor. This is where you will **supply** fuel too. (See pics for reference)

GEN3/Dual pump rear lines.
Can be used on any model

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8. Install the front lines. The short line goes on the driver side head the line has a 15* and a 30* bend. The 15* bend will go down. On the regulator with it facing the front of the engine, the #6 90* o-ring fitting goes on the drivers side and the straight #6 o-ring goes in the passenger. The return comes off the bottom of the regulator as a #6 oring to straight. You can now attach the regulator to this line and install the other line form the passenger side. Attach the lines loosely and get all lined up and then tighten into place. Be sure not to over tighten the JIC fittings as this can cause leaks! The torque spec for the JIC lines is 2.5 wrench flats past finger tight! Be very careful when tightening.

9.With all lines in place and tight you can now put every thing back together on the truck. (FOR A FUEL SYSTEM YOU STILL NEED TO ROUTE THE SUPPLY AND RETURN RUBBER LINES UNDER THE DRIVERS SIDE BRACKET LIKE THE OEM ONES WERE)

10.Once back together with the fuel supply and return plumbed, the pressure gauge installed, you can key on power and check for leaks. You may have to cycle the key a couple of times to check everything. If no leaks then start the truck and set the fuel pressure on the regulator. We typically set them around 65psi. They can be ran between 60 and 70psi by adjusting the allen bolt on the regulator in for more pressure and out for less.

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If installing a full OBS fuel system:

1. Remove factory quick connect, top inner most fitting by frame rail. Install new supply line to pump with 90* quick connector and attach to back of filter block.

2. Fuel bracket on inside of frame. (Bracket has to go on outside of frame on regular cab trucks.) This is easiest done by clamping the bracket to the frame and drilling two holes for the 3/8” bolts to bolt to the frame. Once the bracket is mounted you can then add onto the black hose as needed with the new supplied hose to attach to the pre pump filter.

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Use the supplied push-lok fitting. Once plumbed and mounted you can now run the new line from the post pump filter to the motor.

3. Once the supply line is attached to the T fitting in the valley you can now run the new line off of the regulator behind the AC compressor also. This line will attach to the factory return hard line on the frame with supplied quick connect fitting on 3/8” fuel line. The return line is located just behind the drivers side front tire, or below the steering shaft. The top hard line is the return line to be used as pictured below.

4. The supplied wiring harness can then be ran. Inspect for leaks. Be sure to route all lines and wiring so that nothing is

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close to high heat sources. **And be sure IPR is plugged back in off of factory fuel bowl harness.**

Superduty&Competition Installation

After dropping the tank and installing the 5/8” pickup tube, mount the fuel bracket to the frame using the supplied 3/8” bolts. This can be mounted right behind the transfer case. Once the filter and pump bracket is mounted to the frame you can now route the 1/2 Push-Lok hose and cut it to the length needed and install the fitting and attach it to the pre pump filter. Run the 1/2” or 3/8” fuel line (depending on competition or standard fuel system) to the motor and connect to the t fitting in the valley using the supplied fitting. (See Pickup tube install instructions at back of packet)

5. Once the supply line is ran you can now run the return line from the regulator back to the factory return line. This line

can be routed behind the alternator where the factory lines were routed.

6. Once all is ran you can prime the system, you may need to crack a filter so that the pump can gain prime easier. This may take a few key cycles to get the filters primed.

7. Check the system after installation for leaks and ensure all fittings and connections are tight and noting is rubbing that could cause future failure.

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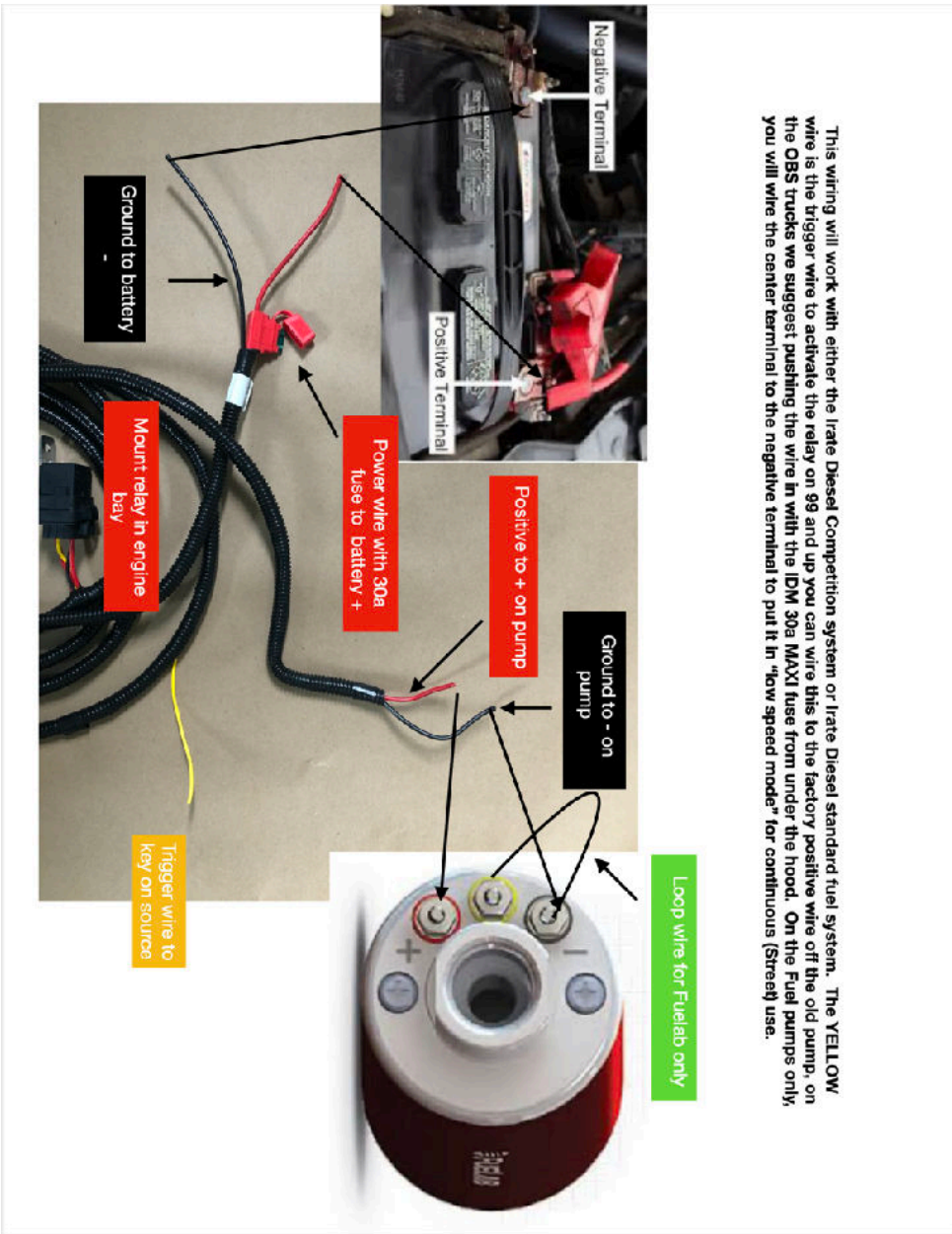
OBS/Superduty Wiring Harness Diagram

This wiring will work with either the Irate Diesel Competition system or Irate Diesel standard fuel system. The YELLOW wire is the trigger wire to activate the relay on 99 and up you can wire this to the factory positive wire off the old pump, on the OBS we suggest using a key on hot power under the hood. On the Fuelab pumps only, you will wire the center terminal to the negative terminal to put it in “low speed mode” for continuous (Street) use.



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5/8” Pickup Tube

These instructions are intended simply to be a guide for the installation of a large pickup assembly into the stock fuel tank of your vehicle. If you have any questions, please don’t hesitate to contact us by telephone or e-mail, we’ll be glad to answer them.

Remove the Fuel Tank from the truck and remove the sending unit assembly by unscrewing the large plastic retainer ring. HINT: Leave the retainer ring in the sun and the tank in the shade; this will make reinstalling the ring easier later.

Measure the distance from the top of the sending unit mounting location on the tank to the bottom of the tank…retain this measurement for later use. For plastic tanks, it is a good idea to have the tank sitting on a pair of 2x4s so that the bottom of the tank retains its “natural droop”.

The “H” marks the approximate location for the Hole that needs to be drilled.

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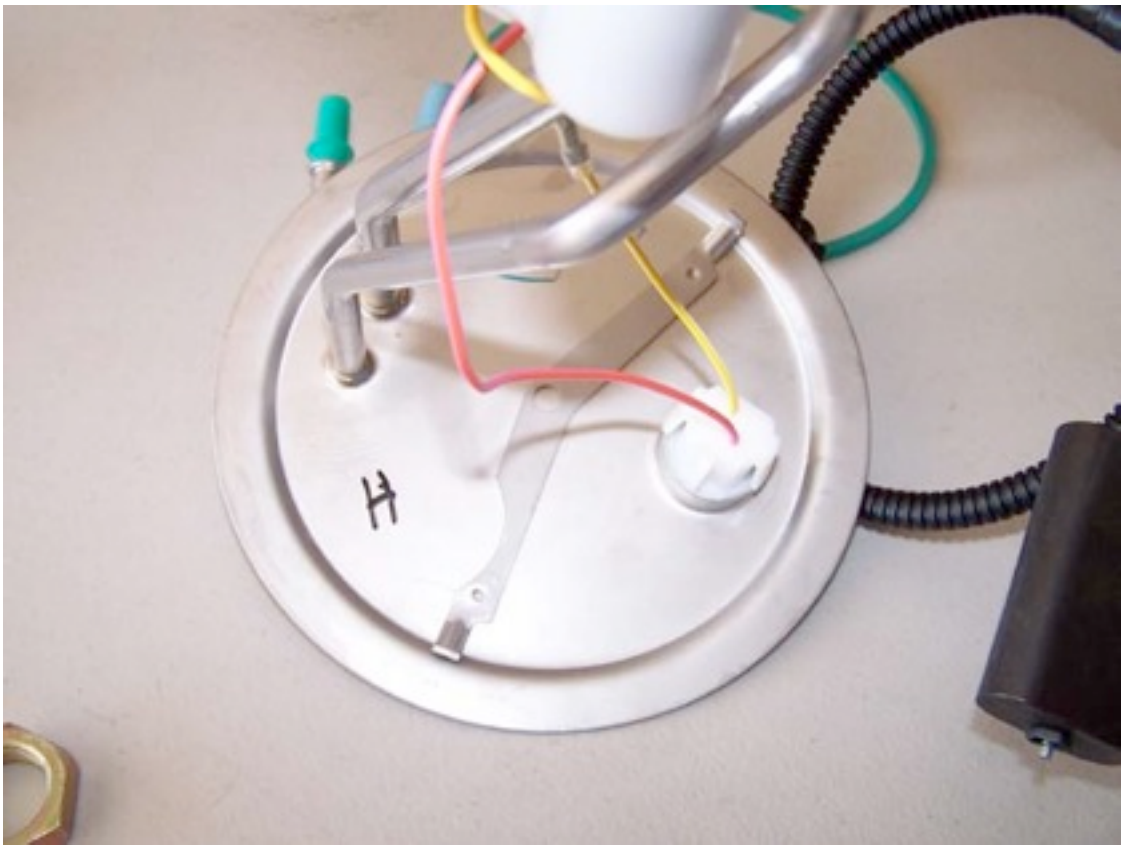

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We recommend the use of a stepped drill bit for drilling the sending unit plate, these typically result in the best quality hole. The hole should be drilled just large enough for the bulkhead fitting to fit through without leaving too much gap around it.

After drilling and de-buring the hole and cleaning the pickup assembly, the bulkhead fitting installs from the top (with a sealing washer on top side of the factory sending unit plate) and is secured with the large nut on the bottom as seen in pictures on the next page. TIGHTEN NUT SECURELY.

Slide the tube sleeve (large end first) over the pickup tube, then the tube nut. The sleeve should protrude through the bottom of the nut as shown.

Secure the pickup tube to the bulkhead fitting as shown.

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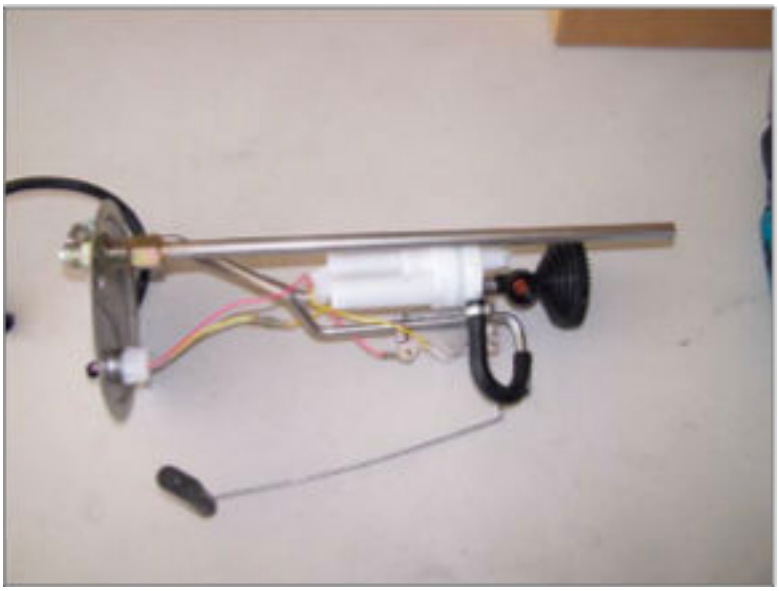


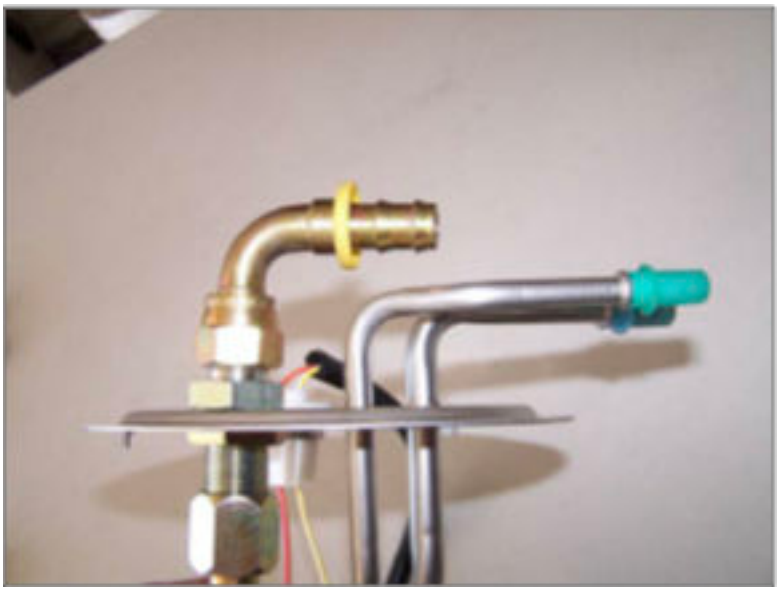
Note: the pickup tube is longer than the stock pickup assembly. Using the measurement you took earlier along with a tubing cutter, shorten the pickup tube to 1/4" shorter than the fuel tank depth. This will insure that the tube is not resting on the bottom of the tank when installed. Check end of tube for burs and clean before proceeding.

When installed in the truck, the 90° hose end will be pointing in the same direction as the stock pickup and return lines as shown in the picture to the right.

Installation of this fitting requires some muscle. We recommend keeping the fitting cool and the hose warm until you're ready to work with them. It is sometimes beneficial to put the end of the hose into a bucket of hot water just prior to installing the fitting as this helps to soften the hose temporarily, making it easier to work with.

Installation is simply a matter of pushing the hose onto the fitting until it seats in the bottom of the yellow stop disc. As

easy as that sounds, this typically requires putting the fitting in a bench vise and putting your weight into getting the hose onto it. Rest assured, once it's on, the only way it's coming off is with some kind of cutting tool.



Once the sending unit is modified and cleaned, it can be reinstalled into the tank, and the tank reinstalled into the truck. Pay close attention to the stock fuel lines, making sure to reconnect the return line as it will still be in use and you don't want any leaks. Capping the stock pickup tube on top of the tank is recommended as it will keep debris out and prevent unwanted fuel leakage. Also, don't forget to reconnect the sending unit wiring harness or your fuel level gauge won't work.

Make sure you use a backup wrench on the bulkhead fitting when tightening the 90° hose end! You're now ready to finish plumbing the rest of your fuel system.