

Irate Diesel T4 Kit Install



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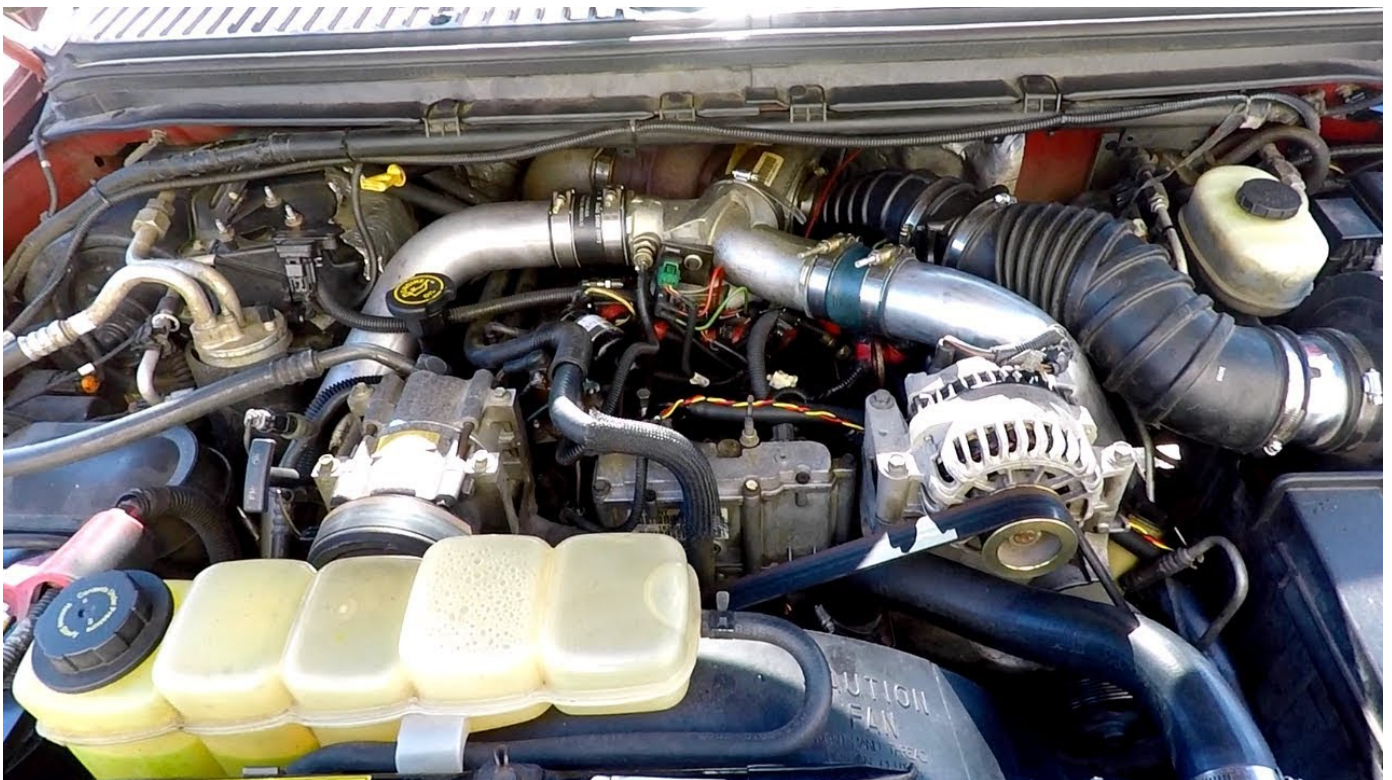
Turbo Kit Parts list		
Quantity	Part	Truck Model
1	Pedestal	OBS/SD
1	L Bracket	OBS/SD
1	Bellowed Up-pipe Assembly	OBS/SD
1	Braided Oil supply line	OBS/SD
1	Stainless Oil drain line	OBS/SD
1	Aluminum turbo drain flange	OBS/SD
1	Aluminum valley drain flange W/O-ring	OBS/SD
1	Stainless Intake Y	OBS/SD
1	Intercooler pipes, SD 2 pipes. OBS 3 pipes	OBS/SD
1	4" stainless intake pipe	OBS/SD
1	Downpipe lower and upper section OBS 3", SD 4".	OBS/SD
1	4" V-band clamp SD downpipe upper to lower connection	SD
1	3.5" or 4" v-band for S300 or S400 style turbo	OBS/SD
1	Band clamp for 2 piece OBS downpipe connection	OBS
1	Compressor intake boot. 4" for S300, 5" for S400 & 5.5" for Race cover.	OBS/SD
2	Clamps for intake boot to turbo and intake pipe.	OBS/SD
1	3/8"NPT X 10JIC 45* fitting	OBS/SD
1	1/2"NPT x 10JIC 45* fitting	OBS/SD
1	1/8"NPT x 6JIC straight fitting	OBS/SD
1	1/4"NPT x 6JIC straight fitting	OBS/SD
1	3/8" plug for intake Y, not used on SD	OBS
1	Pedestal O-rings	OBS/SD
9	M8 flange bolts for pedestal and up-pipes	OBS/SD
4	M10 studs with flat washers and nuts	OBS/SD
4	M8x40 flange bolts and locking flange nuts, up-pipe to manifold.	OBS/SD

Irate Diesel T4 Kit Install

- Remove all old turbo components, only parts that will be reused is plenum and intercooler boots if not purchased separately. Downpipe will be removed as well as up-pipes, pedestal and intake components. With Irate Diesel's T4 kit all of the factory components will be replaced with new high quality components.

If installing on a 94-97 OBS model of truck you must have electric fuel, as the T4 turbo will utilize the factory fuel pump port in the block.

If using stock fuel system on Super Duty model trucks it will be necessary to adjust the hardline running to the rear driver side head.



Irate Diesel T4 Kit Install

- After removing the factory components, install the pedestal plate. You can install the oil supply fitting, the 1/8" NPT x 6JIC fitting into the pedestal plate. You can put pipe sealant on this fitting and tighten down. Once fitting is finger tight, tighten 2-3 rotations into pedestal.



Irate Diesel T4 Kit Install

- Once pedestal supply fitting is installed and new o-rings supplied are installed into the factory supply and return ports, you can rub a bit of oil on the o-rings prior to placement. The pedestal can be installed with 4 M8 X 25mm long flange bolts. Be sure no debris get into these ports while working on the vehicle. Tighten down the pedestal plate to the engine block.



Irate Diesel T4 Kit Install

- Next install the 3/8" NPT x 10JIC 45* fitting into the machined IDP aluminum valley drain that has the o-ring on it. Apply pipe sealant to this fitting and hand snug and no more than 2 rotations past finger tight. You can use the machined wrench flats to tighten the fitting. It does not need to be bottomed out in the flange, if you bottom the fitting out the hard line will look short and you will have to re adjust!



Irate Diesel T4 Kit Install

- Next install the valley drain assembly into the valley of the engine. If installing on an OBS model of truck this will be the port your factory fuel pump utilized. On SD model of trucks it is necessary to remove the soft plug that is in the valley. This can be done by drilling a small hole in it and inserting a screw and either holding with pliers or putting a wire around it to hold it and tap lightly to get it to move and wiggle it out. Or put a slide hammer attached to the screw to remove the soft plug.



Irate Diesel T4 Kit Install

- The drain flange doesn't need to be pressed all of the way into the block. The o-ring on the cylinder will seal off the port from the weather. It can have a bit of lubricant added to the o-ring as well to help ease installation of the drain assembly into the motor. The flange stays loose and is able to be rotated around when it comes to installing the stainless turbo drain line.



Irate Diesel T4 Kit Install

- Next install the up-pipes into vehicle. It is easiest to slide back and tilt to the side and drop the driver side down and rotate into place and drop passenger side down second.

On OBS model trucks the driver side firewall may be tight. (New body mounts help a bunch here) You will probably have noticed this upon un installing them. You can take a large bar or porta-power and clearance the firewall behind the driver side head.

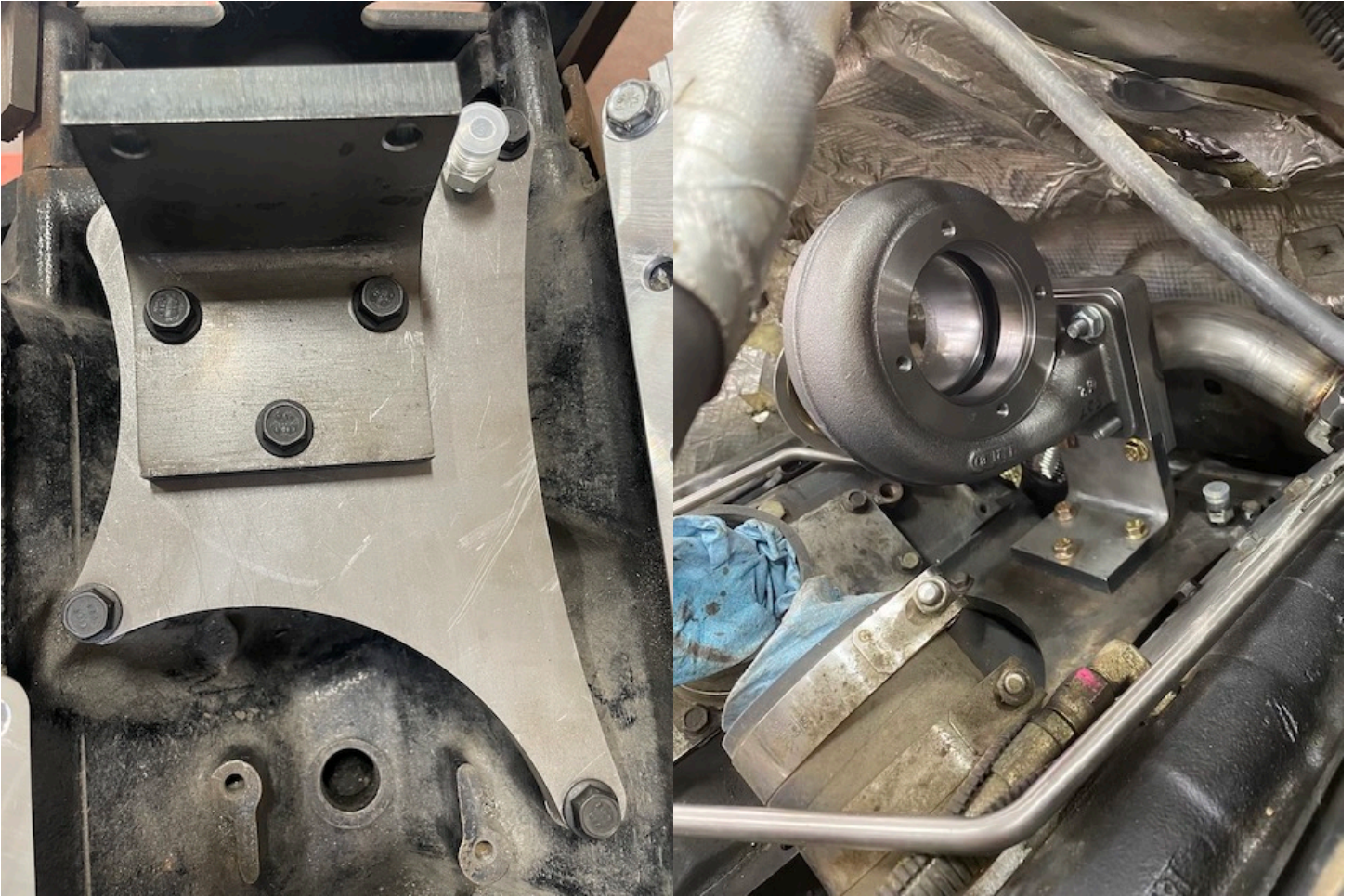
Also if the firewall has not been clearanced for installation of any aftermarket down pipe other than the factory one then you may have to perform that that on the passenger side once moving to installing the down pipe.

Upon installing the up-pipes into the truck, install the L bracket to the pedestal and loosely install 3 M8 x 25mm bolts into L bracket to pedestal. Then line up the up-pipes and start the last two 8mm x 25mm flange bolts into the L bracket to up-pipes flange. These can be installed all finger tight until all bolts are in place and then tightened down.

On OBS trucks you may need to remove the up-pipes if firewall needs to be clearanced for proper fitment of the down-pipe. We have done a lot of work on the downpipes over the last several updates and they fit very well. However with sagging body mounts or anything of that nature it can cause less room for the down-pipe to fit on OBS model trucks. **BE SURE TO CHECK DOWNPIPE FIREWALL CLEARANCE WITH JUST UP-PIPES AND TURBINE.** In case modification is necessary to save time and work of having to remove complete turbo.

Irate Diesel T4 Kit Install

- Once up-pipes are installed the bolts to the manifolds can be installed. This will be the M8 x45mm flange bolts and serrated flange nuts. It is recommended to re-torque these bolts once you have put a few heat cycles on the setup.



Irate Diesel T4 Kit Install

- Once the up-pipes are installed and tightened down the turbine housing can be installed using the 4 M10x40mm studs, washers and nuts. It is a bit easier to tighten the top nuts on the turbine housing and then tightened down the lower nuts as they have a bit easier access than the top nuts.
- The turbo can be installed in sections for S300's and for S400/ GT42 style turbos that have the standard V-band covers. If using an S400 turbo with a race cover it is necessary to install the turbo as one unit as the covers are so large that they will not clear the plenum and head area.
- The oil supply line can also be installed on the plate at the time of installing the turbo as well. Be sure that the line doesn't kink when tightening it onto the fittings on the pedestal and center section when the time comes to do so.



Irate Diesel T4 Kit Install

- Once the turbine housing is in, the rest of the turbo can be installed. The center section and compressor cover will all need to be left loose and aligned for proper fitment. The center section has to be properly aligned for the oil drain line to line up correctly.
- Before installing the center section you can install the 1/4NPTx6JIC supply fitting into the S3/S4 series turbos as well as installing the drain flange and fitting for the drain line. Aligning the fitting close to the picture below so that it can be rotated once installed when aligning for the oil drain line.
- The Irate Diesel T4 kit utilizes a stainless hard line. This is due to the fact that using a soft line in the valley can cause it to be kinked and not drain the oil back as efficiently. The fittings will need to be aligned on the bottom of the turbo so that it is aiming at the fitting in the valley of the motor.



Irate Diesel T4 Kit Install

- Once the drain fittings are aligned you can move to installing the oil drain line. With the center section loose on the turbine housing to allow it to rotate you can start the oil line on the bottom fitting of the turbo and rotate forward while spinning the drain assembly to rotate the line and the fittings together. This is a tricky process, but once done is a fail proof setup.



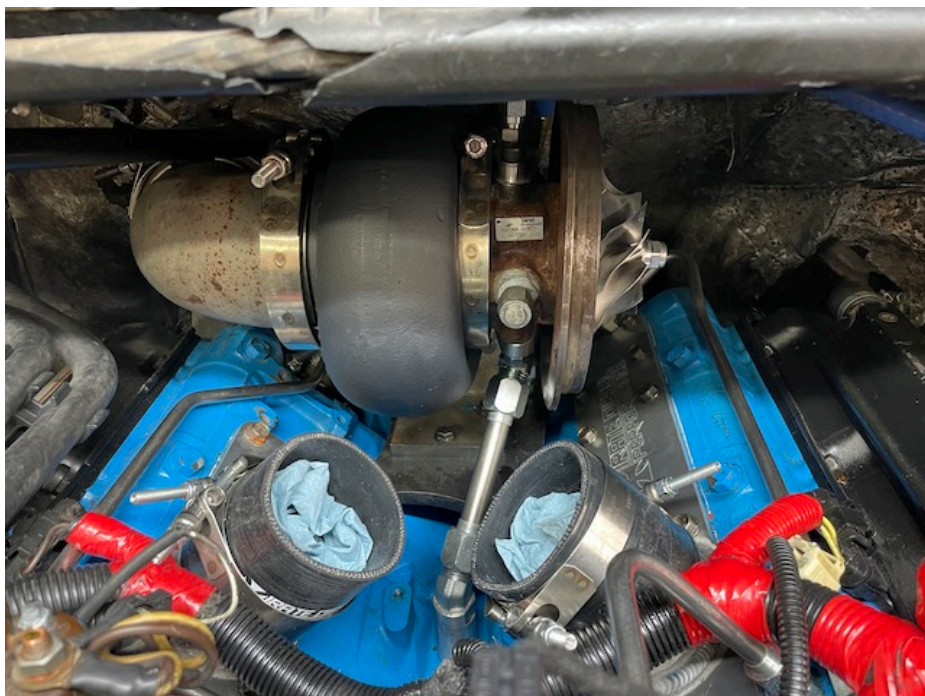
Irate Diesel T4 Kit Install

- After the oil drain line is installed and tightened down the center section can be tighten to the turbine housing.
- After tightening down the turbine housing the oil supply line can be connected the the fitting in the top of the center section for the oil supply. This is a 1/4" NPT x 6 JIC fitting installed earlier. Again, be sure not to kink the line when it is being tightened down as this is a braided line with teflon lining.
- After the oil lines are installed and tightened down you can install the downpipe and get it connected up to the turbine housing. On the OBS models they will drop in from the top for the upper section. There may be the need to clearance the firewall for install. (Be sure to check with just the up-pipes in place, before fully installing the turbo.)



Irate Diesel T4 Kit Install

- Once downpipe is fitted and installed the upper and lower sections can be tightened down. The OBS downpipe will utilize one V-band clamp and one band clamp for the mid section connection. The SD will use a 90* elbow with a v-band at the turbine then at the upper to lower connection of the downpipe.



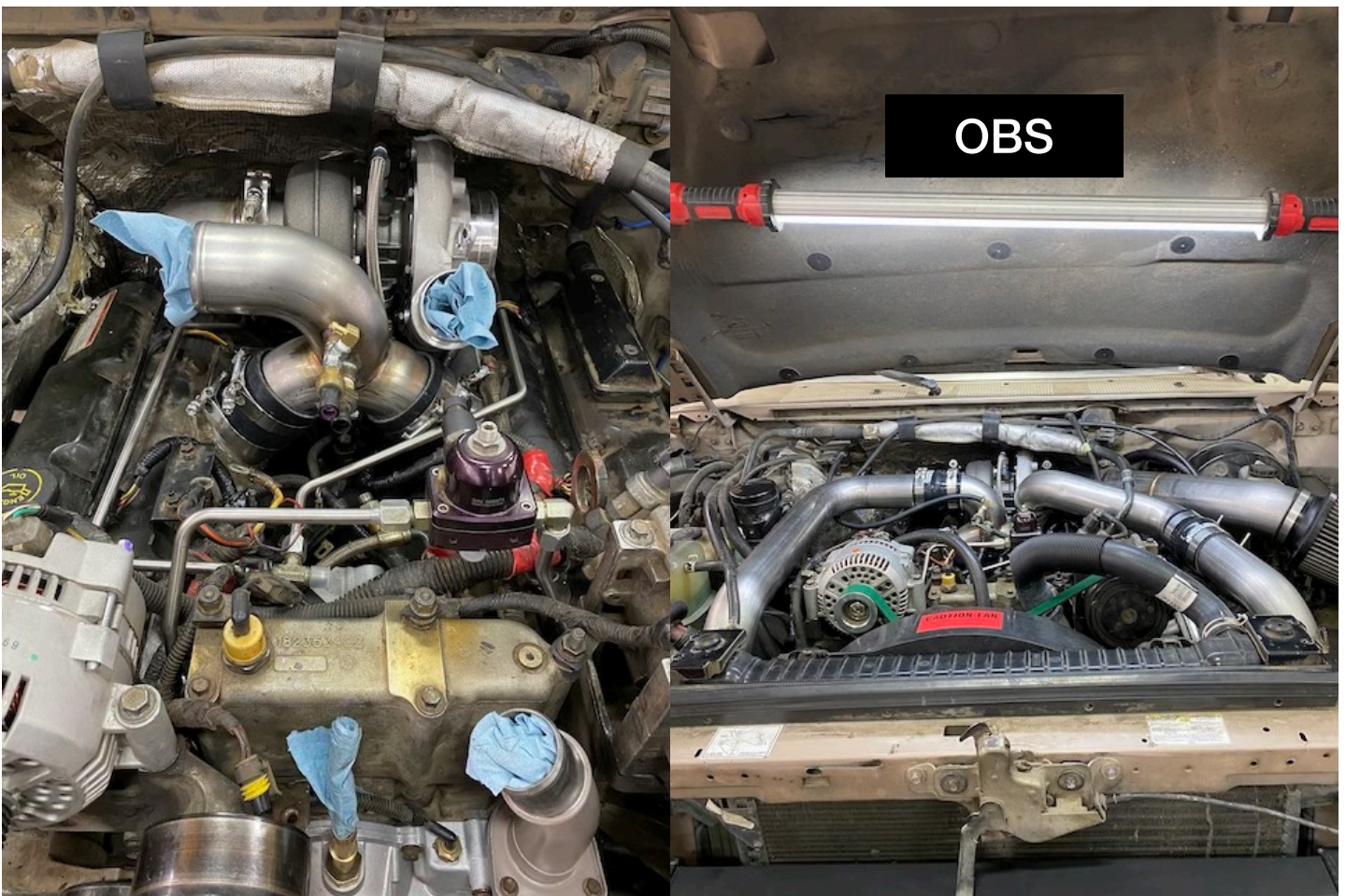
Irate Diesel T4 Kit Install

- After installing the downpipe and checking to ensure the oil lines are all tightened up, the next step is installing the intercooler piping and intake pipe
- Install the 4" intake boot onto the compressor cover of the turbo. The coupler will run right over the valve cover of the driver side CCV doghouse. The intake coupler can be left loose until after the intercooler piping is put into place.
- Also at this time you can install a piece of 5/8" hose to the CCV and vent it to atmosphere. If wanted you can install a catch can. We do not recommend going back into the intake.
- On a Super Duty model truck it will be the same process of installing as it was removing the pipes.
- If installing pipes on an OBS model truck, you can refer to our instructions for installing the intercooler for step by step instructions of the process.
- Once the intercooler pipes are installed and aligned and all couplers are tightened down then you can install the intake pipe into the coupler on the compressor cover. The 4" intake pipe will need to run toward the fender and aim the filter at a downward angle toward the fender so its resting on its nose.



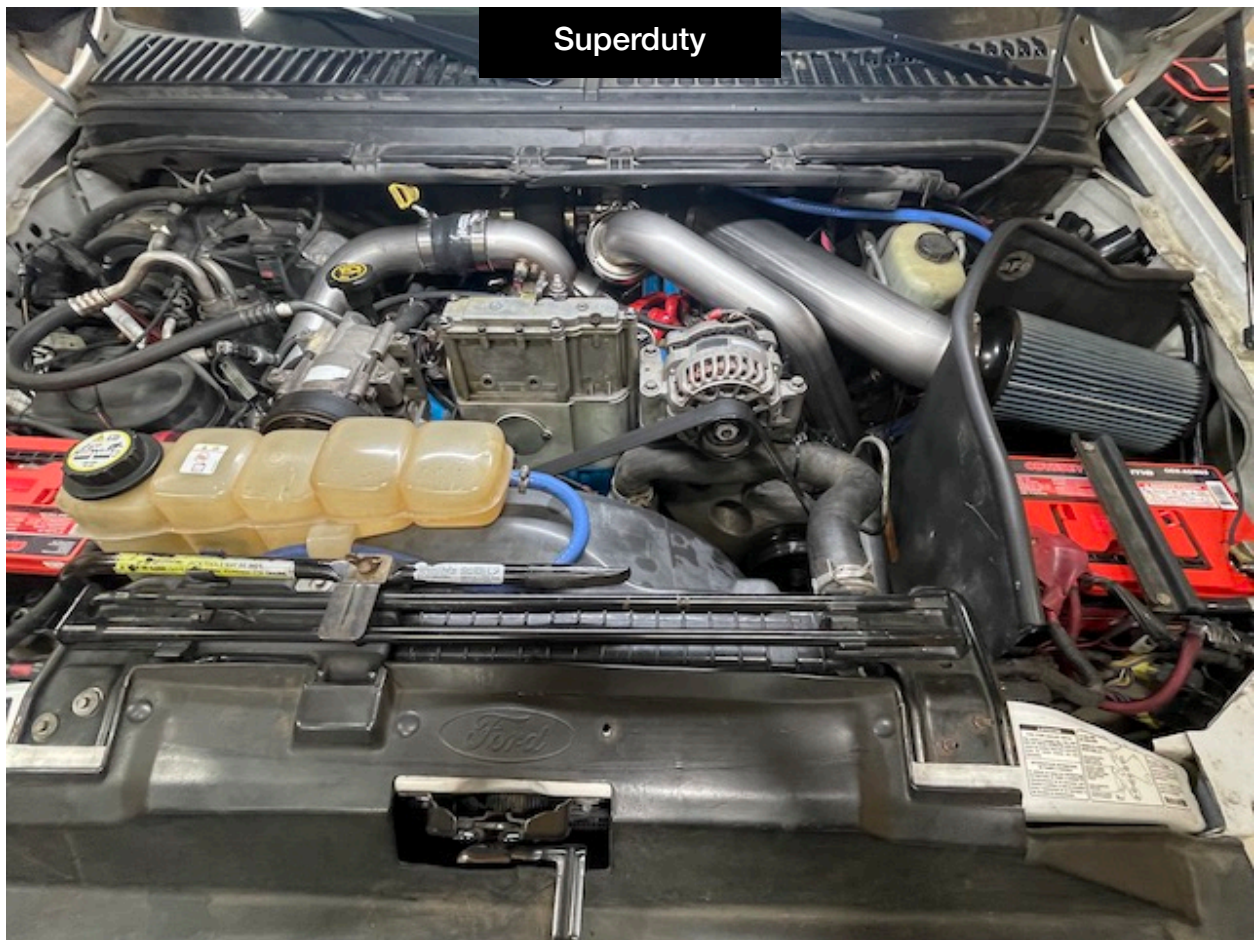
Irate Diesel T4 Kit Install

- The intake pipe will have to be aligned properly for fitment of the pipes and the air filter, we recommend using our S&B filter as the “6637” style filter does not flow enough and takes up too much space by the fender well to fit correctly with the intercooler piping.



Irate Diesel T4 Kit Install

- Utilizing the AFE Stage2 intakes on the SD model trucks: We have been able to run our intake pipe into an AFE air box. We removed the plastic intake pipe of the AFE kit and used our S&B 4" air filter. Or a 4-4.5 bushing can be used to maintain the AFE style of filter.



Irate Diesel T4 Kit Install

