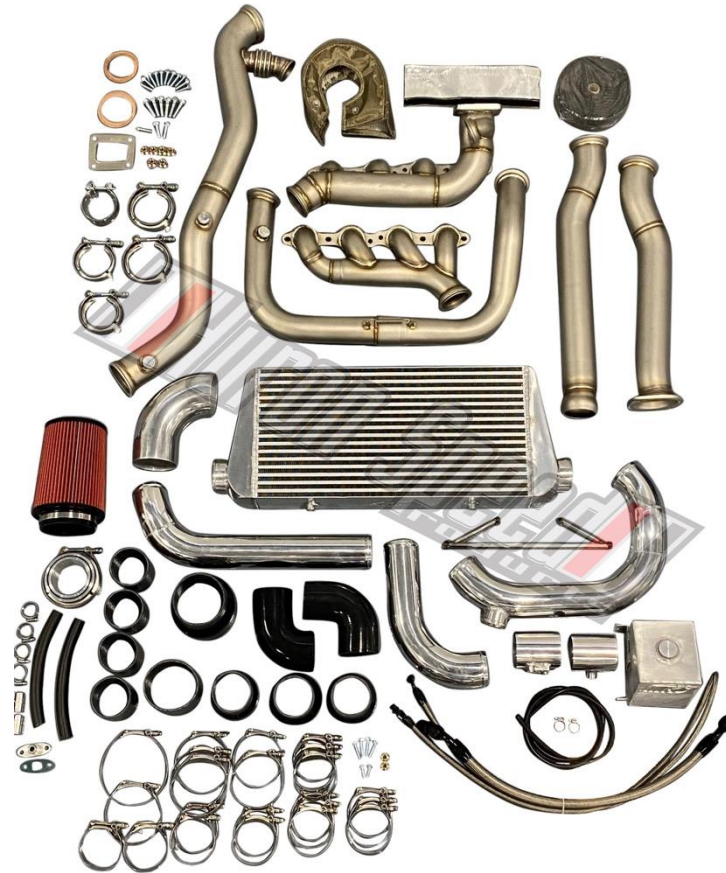


## Huron Speed 2003-13 Truck Single T4 Kit

### Installation Guide



The following install guide is simply that, a guide to help you with installation. It is by no means the exact method to perform installation, simply some tips and tricks we can offer to help you out! Huron Speed is not responsible for anything that may happen to you, the vehicle, or the product during installation.

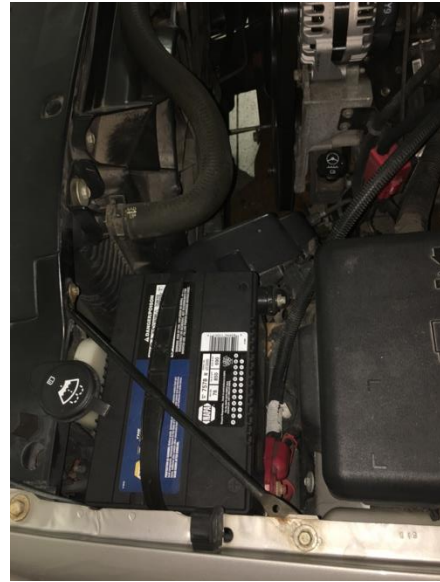
Furthermore Huron Speed is not responsible for any installation costs for any reason at all no matter if you are installing or a professional shop is installing. All installation and labor costs no matter the scenario are the responsibility of you the purchaser of the product. Proper fueling and a professional dyno tune is REQUIRED to safely run this system on your vehicle. Failure to properly set the car up for boost WILL result in damage. If you have ANY questions, please reach out and ask and we would be more than happy to assist!

[Jon@HuronSpeed.com](mailto:Jon@HuronSpeed.com)



## Disassembly

- 1.) Disconnect Battery. Using 8mm wrench, disconnect negative battery cable from battery.



- 2.) Safely lift vehicle using a 2-post lift or a jack and securing with jackstands.

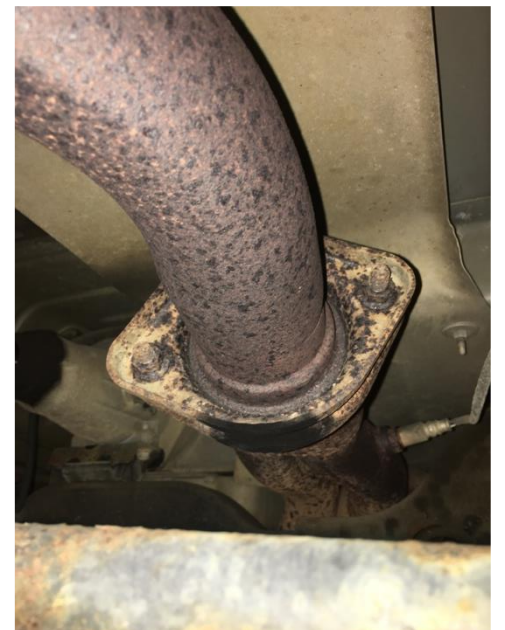
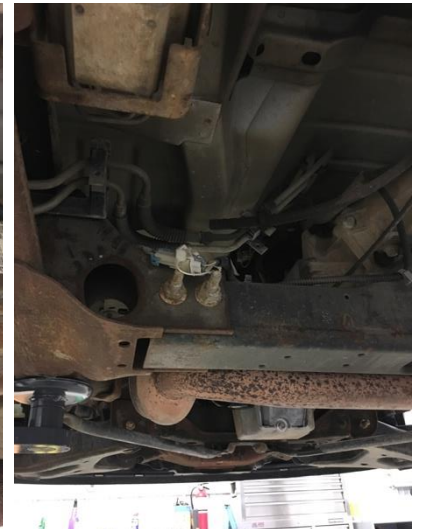
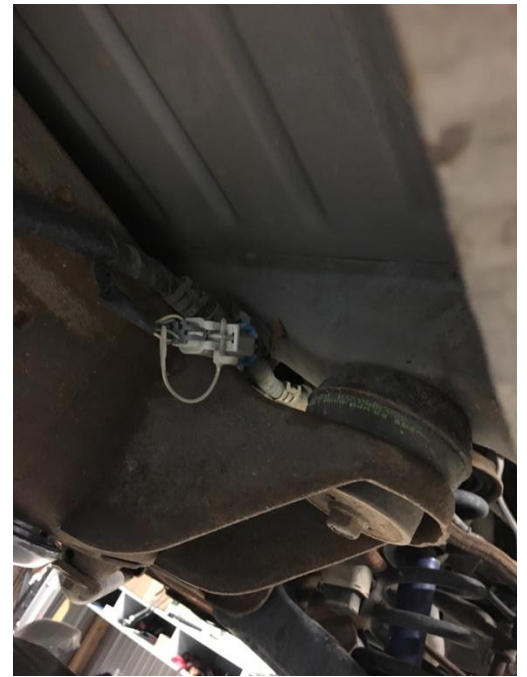


- 3.) Remove both front wheels.  
(stock lugnuts are 22mm) and the wheel well liners.





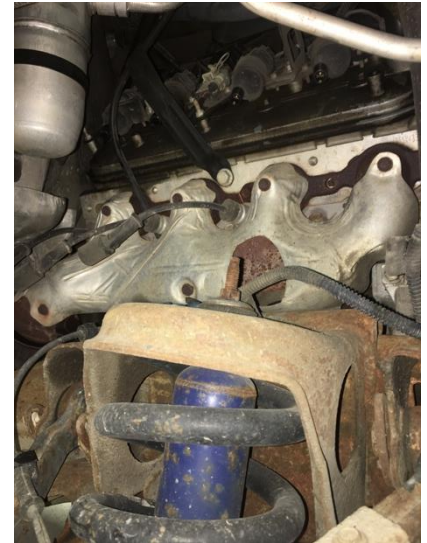
- 4.) From under the truck, begin removing the exhaust from the catback forward.
- A.) Disconnect all (4) O2 sensors:
- Driver Upstream – above PRNDL switch on transmission
  - Passenger Upstream – Behind Cab body mount
  - Driver Downstream – on Transmission crossmember (this sensor will not be re-used)
  - Passenger Downstream – on Frame rail directly behind upstream O2 (this sensor will not be re-used)
- B.) Remove the exhaust Y-pipe:
- Remove the (3) 15mm nuts on each connection of the Y to each exhaust manifold.
  - Remove the connection to the catback exhaust. This is a 2-bolt flange on earlier model trucks and a clamp on later model trucks



5.) Moving back up into the engine bay remove the spark plug wires and spark plugs from each side. Retain the plug wires as they will be re-used.

6.) Remove the engine oil dipstick tube from its mount on the passenger side cylinder head and remove from the truck. Retain as this will be re-used.

7.) Using a 13mm wrench or socket, remove the 6-bolts per side securing each exhaust manifold to the engine. Remove the exhaust manifolds, these will not be re-used. Retain the OEM exhaust manifold gaskets, if in fine shape they can be re-used (if not we recommend getting a fresh set of OEM gaskets).



8.) Remove the factory air intake tube by loosening the clamp at the throttle body, and then loosening the clamp at the air box. Remove the MAF sensor from the intake tubing (older trucks will be a tube style and later models a card style). Retain the MAF for re-use unless going with a Speed Density tune.

9.) Remove the air box by firmly pulling upward.





- 10.) Remove the coolant overflow tank on the passenger side of the engine bay via the 10mm bolt. This will lose some coolant when disconnecting, but the entire radiator system does not need to be drained. If your truck is equipped with a Y fitting going into the coolant overflow from the water pump (earlier model trucks) like the photo below, you will remove this Y fitting and the portion running to the overflow tank. The remaining hose running to the firewall can how we connected back directly to the water pump. Remove the Coolant overflow tank, this will not be reused.



## Hot-side Installation

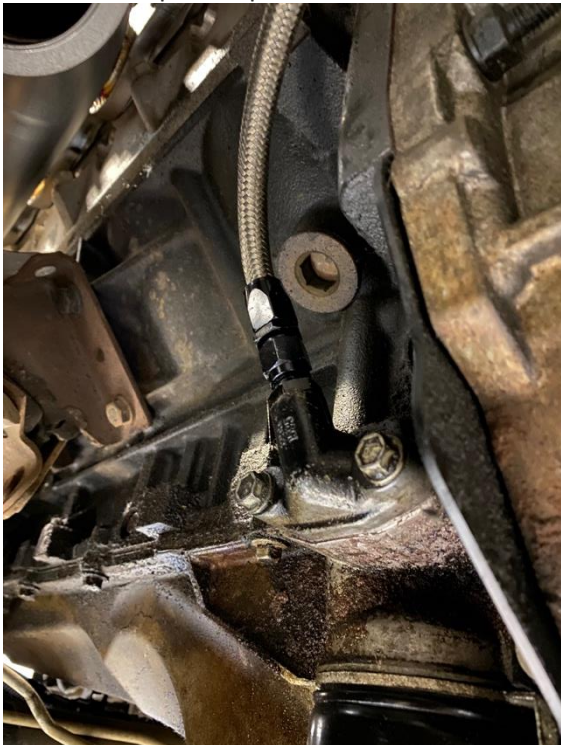
- 1.) Install the Driver's side exhaust manifold from the turbo kit re-using the factory gaskets or new OEM gaskets with the m8x1.25 30mm long bolts supplied in the turbo kit or OEM bolts if you desire. We recommend using a dab of anti-seize on the bolts. Leave loosen enough to wiggle the manifold, do not secure it down tightly at this time.



- 2.) Install the Passenger side exhaust manifold from the turbo kit re-using the factory gaskets or new OEM gaskets with the m8x1.25 30mm long bolts supplied in the turbo kit or OEM bolts if you desire. Leave loosen enough to wiggle the manifold, do not secure it down tightly at this time.



- 3.) Oil feed install. This is easiest done now with the crossover not in the way yet.  
You will remove the 2-bolt flange above the oil filter and drill/tap the top of the spout for 1/8" NPT. Once complete thread in with sealant the 2nd supplied 1/8" npt to -4an fitting and hook the other end of your feed line to it coming from the turbocharger's -4an feed. If your truck is equipped with a factory oil cooler in this location, you will install an optional fitting that will replace the allen headed plug on the driver's side of the engine block near the front as shown in the optional photo below for the feed source.



Optional oil feed location for those with a factory oil cooler:



- 4.) Install the exhaust crossover pipe to each manifold using the supplied 2.5" V-band Clamps and copper v-band gaskets at each connection. This can be broken into the 2 pieces for ease of install. The slip connection is a double joint slip fit that will allow movement while containing the exhaust.







- 5.) With the manifolds and the crossover installed, tighten down both v-band clamps ensuring both flanges are properly aligned with the copper gaskets in place and fully seated. Next tighten down the exhaust manifolds after the crossover connections are snug. Tighten the exhaust manifold bolts down from the center first, working your way out. Torque to 18 ft/lb.
- 6.) On the passenger side re-install the oil dipstick and tube. Some minor massaging may be necessary to properly route around the new turbo manifold.

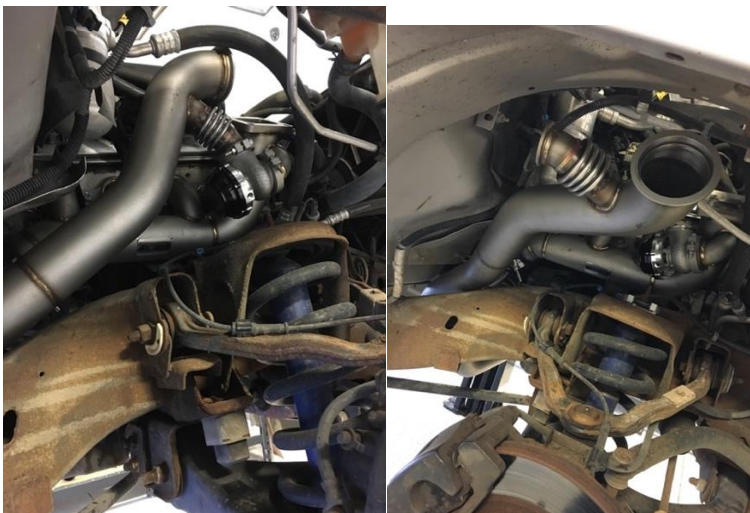


- 7.) Install a fresh set of spark plugs, we recommend at least 1-step colder than stock. (NGK TR6 work well for power levels around 450-600hp, BR7EF for 650 and above). Re-install spark plug wires.

- 8.) Installation of wastegate to the passenger side turbo manifold (comes flanged for a 44-46mm wastegate). Install your vacuum fittings and ensure clearances and all in place depending on if using boost controller or not. Ensuring firing ring/valve seal is in the bottom of the gate when securing to the manifold. Install using the wastegate's inlet clamp and leave loose so the wastegate can still rotate for connection to the downpipe in future step. Access through the wheel well is nice for this.



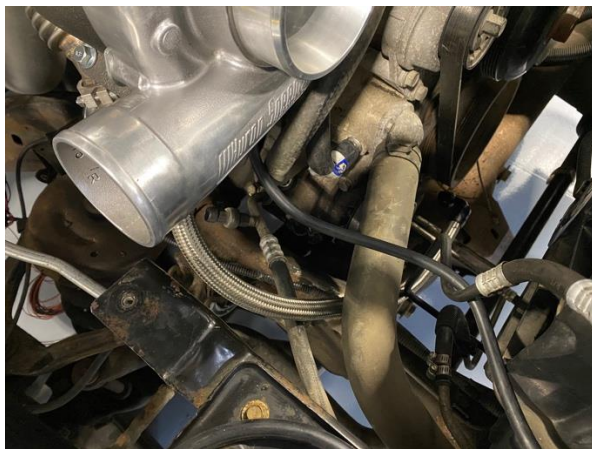
- 9.) Installation of downpipe. Feed the rear end of the downpipe through the wheel well over the frame rail. Rotate downpipe as needed when pushing tube into position. Attach downpipe to wastegate outlet using wastegate's supplied outlet clamp to hold downpipe in place for the time being. You will have supplied (2) second pieces to extend the downpipe into the factory catback location. One comes flanged with the GM Ball and socket connection for newer trucks and the other will come with a 2-bolt connection as noted earlier in the removal in step 4.B and shown in this install (2005). We will install this second piece at a later step.





## 10.) Installation of Turbocharger:

- Install your oil drain flange to the turbo using the supplied drain gasket and bolts.
- Install the supplied -4an to 1/8" NPT feed fitting into the turbo's feed by threading in until snug using thread sealant on the NPT threads only.
- Loosen the compressor cover bolts (most turbos have (8) 13mm bolts around the cover, just crack them loose) so the cover can rotate.
- Loosen the turbine housing bolts (most turbos have (6) 13mm bolts around the housing, just crack them loose) so the housing can rotate.
- Set the Turbocharger into place on the passenger side turbo manifold's T4 flange. Rotate the housings so the compressor cover is facing towards the passenger side of vehicle (see cold side steps ahead for the proper direction depending on your year) and the feed is as straight up as you can get with the drain as straight down as possible.
- At this point once all clocked properly snug some bolts down so the housings do not rotate on removal. Remove turbo.
- On your bench install the Oil Drain Line to the drain fitting on the turbo and tighten down. Snug back down all compressor cover and turbine housing bolts.
- Back to installation, route the attached drain line down to the front crank pulley area and set the turbo back on the T4 flange. Here we find it best to attach the downpipe to the turbocharger prior to bolting the turbocharger down using the supplied 3" V-band clamp. Secure the turbocharger to the T4 flange now using the supplied T4 gasket and (4) M10x1.5 nuts and bolts.



11.) Going back now secure the wastegate inlet clamp we left loose earlier allowing the wastegate to rotate for assembly.



12.) Back under the car we will install the second piece of the downpipe now after the first section is attached to the turbocharger and the wastegate. Earlier model trucks will use the 2-bolt flanged pipe and later model trucks the pipe with the ball flange. Shown below is the earlier model on a 2005 truck.





### 13.) Heater hose extension

Using the supplied heater hose extensions, unions, and clamps find an easy access location to splice them in. You will cut your heater hoses, insert the supplied union fittings in each end and reconnect with the short sections of hose extension, securing with the supplied clamps. This will allow you to route the now longer heater hoses up near the valve cover and away from the turbocharger.



### 14.) Oil Drain

Drain:

For the drain you will want to use the line already attached to the turbo and run it down to the front of the pan. With this routed how you like, mark the location on the pan where it will best clear and route. Recommended to remove the oil pan for this to prevent any metal shavings from entering your oil pan. Drill/tap this for 1/2" NPT. Go slow and use a lot of grease on the bit to catch any shavings. Repeat the same with the tap when running it to help catch shavings as well. Once done use whatever method you can of cleaning out any shaving that may have entered the pan here. Use your best judgment, it is imperative all shavings are removed if any enter the oil pan. The proper method we recommend is to do it with the oil pan out of the car, we are not liable for anything if you do not happen to remove shaving and run into an issue.



## Cold Side

- 1.) First you will remove the top plastic cover in the engine bay over the radiator with the (7) push pins (03-07 truck), and then remove the grill with the (1) 10mm bolt up top and the pulling out removing from the push clips.



- 2.) Remove the factory transmission cooler from the mounting location via the top (2) 10mm bolts and the (2) lower push clips. Push down and out of the way for now if you are keeping this cooler. If replacing with a larger Tru Cool style, you can remove the transmission cooler at this time. Remove the lower brace for the transmission cooler via the (2) 10mm bolts.





- 3.) Remove the (1) lower 10mm bolt holding the bottom portion of the power steering cooler, and move the bottom of the bracket just inside the hood latch brace as shown below for extra clearance to the intercooler.



- 4.) Bolt the intercooler bracket to the (2) open holes on the hood latch bracket using (2) m8x1.25x30mm bolts and (2) M8 nuts on the back side.



- 5.) Install the Intercooler to the bracket via (2) m8x1.25x30mm bolts as shown below.

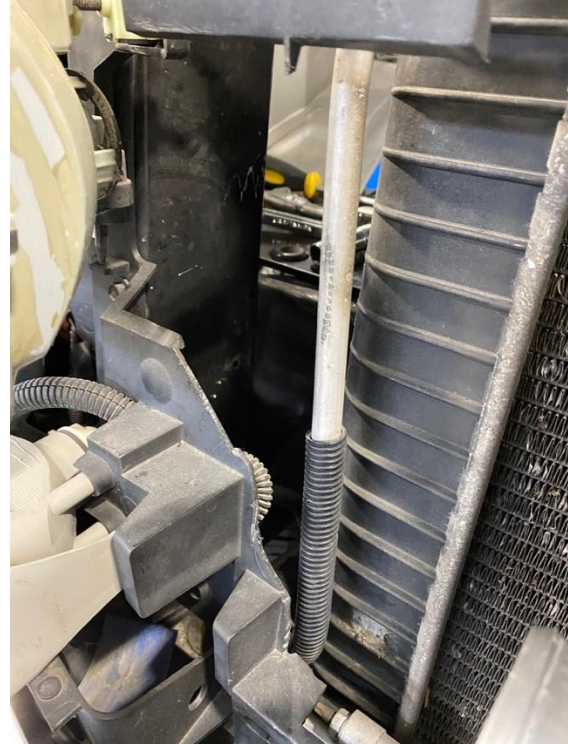


5.A) We supply 2 additional brackets as shown below to mount to the bottom of the intercooler. These brackets are optional with their main goal to give you a location to mount a larger Tru-Cool 40k Transmission cooler which we highly recommend to help keep your transmission temperatures down. Please refer to the photos below for orientation of these brackets, mounting location off the bottom of the intercooler and how the optional Tru-Cool trans cooler can mount!





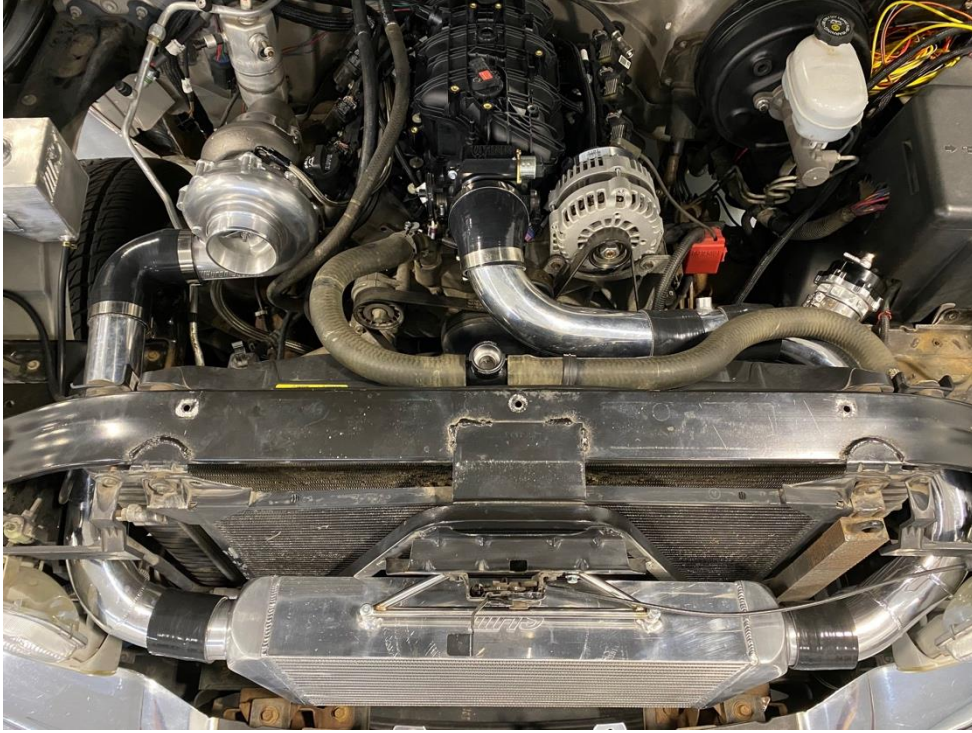
- 6.) Trim the plastic shown below around the headlight area so our cold-side tubes can pass around the radiator to the intercooler.



- 7.) From here you will run the cold side tubes as shown below. We recommend installing all loose and then after go in and add your t-bolt clamps to secure. The driver's side cold side tube from Turbo to Intercooler connects using the 90\* 3" coupler off the turbo. Passenger side connecting the 90\* aluminum tube off the throttle body to the pipe going to the driver's side will use one of (3) options. First being the OEM Barrel style MAF from earlier version trucks if you desire. This will have you use the (2) reducing couplers included. Another option is the supplied 3" tube with later model Card style MAF flange which will connect with the straight 3" couplers. The last option is the 3" tube with the 3/8" NPT IAT sensor bung for those running in Speed Density (No MAF). GM Sensor 25036751 is the threaded IAT sensor part number. You can install your BOV on the flange now as well using the clamp supplied with your BOV and O-ring. Depending on your model of truck and options, you may find this combination of 3-pieces on the passenger side cold-side tubing too long. If so you can eliminate the short, middle tube and connect the other 2 tubes directly together, or to retain the short middle tube simply cut a few inches off the end of the straight section on the tube leading to the TB. (We can assist with this if you like, simply shoot us an email to [huronspeedproducts@gmail.com](mailto:huronspeedproducts@gmail.com) )







8.) You will attach the 4" 90° intake tube to the compressor inlet of the turbo and the supplied air filter at the other end using the supplied 4" straight coupler. The short leg of the 4" tube goes into the Turbo connection.

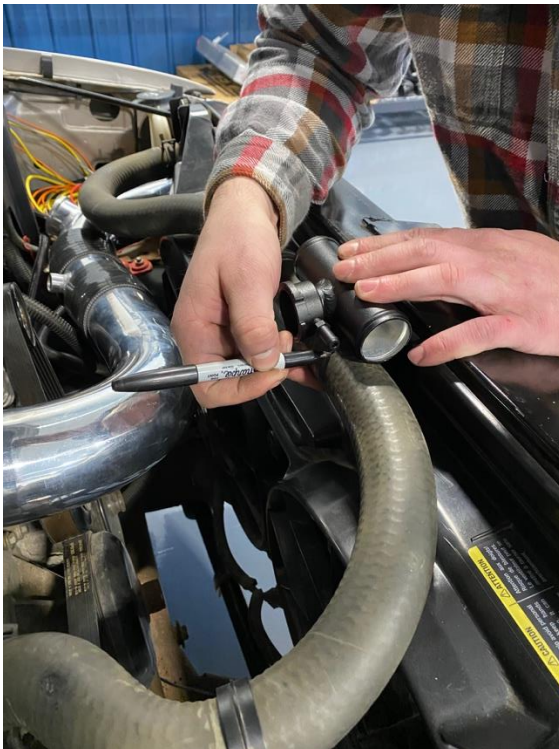




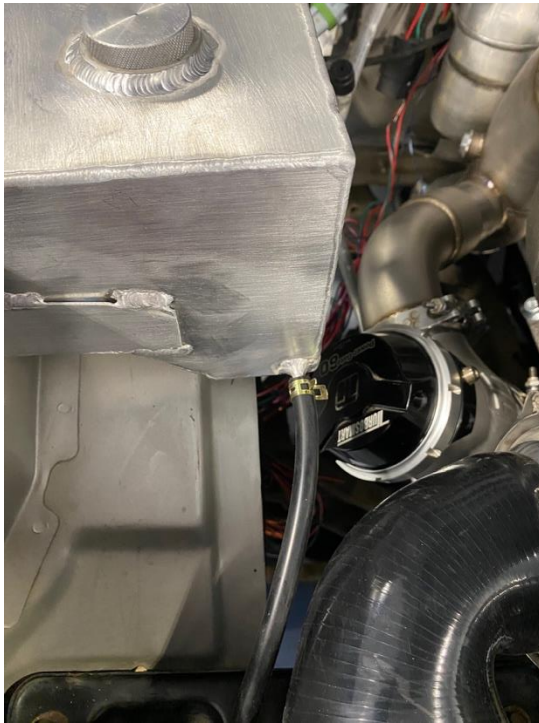
- 9.) Install the fabricated coolant overflow tank over on the passenger side fender in the OEM slot. You will use a self tapping screw to secure the other bracket.



- 10.) Next is to install the new Coolant fill location. This must be in this location as it has to be the highest point in the system. Mark as we shown below leaving yourself enough hose to fit up to the neck of the Fill T.



11.) Run the supplied ¼" Hose from the outlet on the Fill Tee to the Overflow tank, securing with the spring clamps as shown



12.) Install the supplied turbo blanket securing with the (2) supplied springs





- 13.) From here you will run your vacuum lines and set up your PCV system per your preferences. The Bottom port on the wastegate and the BOV both need a boost/vacuum reference line. We would recommend running a Tee off the brake booster line to get all of your boost/vacuum reference which you can get everything you need by adding our Huron Speed Boost/Vacuum reference kit. The top port on the wastegate is left open to vent unless hooking up a boost controller then use their hook-up instructions.
- 14.) For the PCV we recommend running a can from Mightymouse or Motion Race-works. If you need a vacuum source from the suction side of the turbo you can tap in a barn fitting into the top of the air filter and attach a line to that.
- 15.) Ensure the truck has proper fueling upgrades for your desired power levels.
- 16.) Reinstall the front grill using the same clips and bolts. 07.5-13 trucks will require trimming out some of the center clips to prevent them from hitting the intercooler.
- 17.) Reinstall the upper radiator cover using the push clips.
- 18.) Down low for exhaust we supply a 4" Stainless vband flange for you to add on additional exhaust if you desire!
- 19.) Professional tuning is required. If you upgraded the fuel system, consult your tuner prior to firing up the setup.

