

Thank you for purchasing our front mount turbo system. Please read all instruction before performing any procedures. There are a few tools you may need to obtain before starting the install.

Step 1 manifold and exhaust system removal

- 1) While the engine is hot spray the hardware particular the exhaust manifolds and the oxygen sensors with a penetrating oil. This will ease the removal of hardware.**
- 2) Once the vehicle is fully cooled start by first disconnecting the negative terminal from the battery.**
- 3) The next step is to remove the original exhaust system and oxygen sensors from the truck.**
- 4) The oxygen sensors will be reused when you install your new exhaust system.**
- 5) Now remove the exhaust manifolds or headers.**

Step 2 front end breakdown

- 1) The reason for the front end removal is to make room to install the front section of the crossover piping.**
- 2) Make sure the radiator is fully cooled.**
- 3) Start by removing the serpentine belt.**
- 4) Next remove the coil and bracket if it is still in its original location down by the idler pulley. It will need to be relocated to make room for the turbocharger and header. Reinstall the two bolts back into the idler assembly.**
- 5) Now drain the cooling system this can be done a few ways either from the petcock in the radiator, or carefully with a drain pan in place remove the lower radiator hose and let the coolant drain into the drain pan.**
- 6) You will now need to remove the factory viscous fan if your vehicle is equipped. This can be done a couple of ways, such as using a hammer and chisel to strike the edge of the nut, or with a big adjustable wrench, however we prefer using the factory tool to do this job. It can be purchased or borrowed from your local parts store or from Performance Injection Equipment.**
- 7) Next remove all other hoses and lines from the radiator and remove it and the shroud from the vehicle**
- 8) Now you will need to remove the crank pulley from the harmonic balancer. On some 01-03 trucks this is a one piece unit and requires a different harmonic balancer puller than the older style. If you can unbolt your crank pulley from the balancer with the six bolts, you have an older style which takes the standard type puller. Either way this tool can also be purchased or borrowed from a local parts store or from Performance Injection Equipment.**

- 9) With the balancer and pulley removed turn your attention to the water pump and remove the seven bolts from it. This would probably be a good time to purchase a new water pump if yours has miles on it.
- 10) The turbocharger will return its oil through the timing cover. There are three methods that we can use to accomplish this. First look at the timing cover, see if the cover has a ¼" pipe plug in the front passenger corner under the water pump bolt. See fig 1 for details. If it does than you will simply remove the plug and install the supplied drain back fitting. This cover was used on most 00-03 Dakotas. If your cover does not have this prevision than the second method is to remove the remaining bolts from the cover and with the cover on your work bench drill a 7/16 inch hole in the location in fig 2 and tap the cover with a ¼ pipe tap and install the fitting. Method three is to purchase the timing cover part number 53006705 from your local dealer. It will have the prevision for the drain back.
- 11) Once you have chosen your method for the drain back system the next step is to install the front section of the crossover pipe. It is important **THAT YOU HAVE NOT YET REINSTALLED ANY ITEMS ON THE TIMING COVER EXCEPT FOR THE DRAIN FITTING.**

STEP 3 Installing the crossover pipe and headers.

- 1) Locate the passenger side header. It is the header that has the turbocharger flange on it. Install it with the header gaskets and hardware that is provided. There is not a torque spec for the header. However you want to make them tight. You will be retightening a couple of times after the truck has been driven. The header will relax after it has been cycled a couple of times. Retightening must be done to prevent blown out header gaskets.
- 2) Now locate the front half of the crossover pipe. It is the 90 degree elbow with the flex joint. You will need to install this pipe exactly as described. With the flex joint closest to you insert the pipe so it is beside the oil pan and on top of the frame with the flex joint pointing at the four o'clock position. Now rotate the pipe counterclockwise until it lines up with the coupler on the header. Install the v band clamp but do not tighten at this point. See Fig 3 for details.
- 3) Now install the driver side header with the gasket and the hardware supplied and tighten the hardware.
- 4) If the truck is not already jacked up on jack stands you will need to do so at this time. The last section of the crossover will now need to be installed. You will notice the pipe flexes fairly easy. This is only for the installation. Once all the vband clamps are tight it will become rigid.
- 5) You will notice our vbands are male-female units. This is to prevent leaks and misalignment of the clamps. At this time you can start to tighten the clamps. It is best to work from one side or another not from the middle. This will aid in being able to adjust the piping so the vbands interlock.
- 6) You now have the turbocharger piping assembled except for the down pipe which will be installed later. Next the front end can be reassembled. The order in which you do this does not matter. However wait to put the radiator and shroud back into very last. This will make installing the turbocharger head unit and drain back line easier.

STEP 4 Installing the turbocharger head unit / cold side discharge

- 1) See fig 4 on cutting the inner fender for the air filter. You can use a cutoff wheel to perform this procedure.
- 2) Once the opening is cut out use your cutoff wheel to lightly bevel the edges so you do not cut yourself on the sharp edge.
- 3) Next install the turbocharger head unit using the four 3/8 bolts and a bead of silicone on the T4 flange to seal the turbocharger to the header. Do not fully tighten the hardware just yet. You made need to adjust the turbo and the downpipe for a perfect fit.
- 4) Next you can install your downpipe. It is made in two sections for ease of installation. Start from the turbocharger and then add the rear section.
- 5) Now tighten the vband clamps making sure they stay interlocked as you tighten them.
- 6) You can now move the turbo slightly from side to side to give a nice straight fit along the valve cover edge. This will make room for the spark plug wires.
- 7) Once you have it where you want it you can fully tighten the hardware.
- 8) Now you are ready to install the waste gate. It will be mounted to the flange that is on the passenger side header next to the turbocharger. Use the hardware and gasket that is provided.
- 9) We have included a blow down tube that bolts to the face of the waste gate. This is optional.
- 10) 10) You will notice that the waste gate has two ports. The lower port will be hooked up directly to a vacuum source on the intake manifold. The top port of the waste gate is only used if you have a two stage controller. You will use the two stage controller instructions if you have this option.
- 11) Now you can install the cold side discharge assembly.
- 12) Install the blower hat to the throttle body that is in your kit.
- 13) This unit has two silicone ends as part of it. One fitting is 2.5x3.5. This fitting will slide on the blower hat. Now use the clamps provided to tighten it.
- 14) The other fitting is 2.5x2.5. This fitting connects the turbocharger to the discharge pipe. Slide this in place and tighten with the clamps provided.
- 15) Now bolt the blow off valve to the flange on the cold side discharge assemble.
- 16) You will need to supply a vacuum hose to the upper port on the blow off valve. The lower is left open.

STEP 5 Installing the oil supply and return lines

- 1) First locate the oil sending unit which you will find to the left of the distributor. Unscrew the sending unit and remove it from the vehicle.
- 2) Locate the brass tee assembly and screw it into the block where you removed the sender from.
- 3) Clock the assembly so the blue an fitting is facing the front of the vehicle.
- 4) Now you can reinstall the factory oil sender in the top port of the tee.
- 5) Locate the #4 braided line and screw the straight end on to the #4 an fitting and, the 90 degree end to the top port of the turbocharger.

- 6) You may notice that the hole in the #4 flange on the turbocharger is very small. It is approximately .064". DO NOT DRILL THE FITTING. The seals will be damaged in the turbocharger if you do not restrict the oil flow.
- 7) Next locate the #8 drain line, screw one end on the turbo drain fitting and the other to the timing cover fitting.
- 8) Now take the lower radiator hose and cut off about three inches from the end that slides on to the radiator. This is done to give room to the radiator hose so it does not interfere with the cross over pipe.
- 9) Now the radiator and shroud can be reinstalled.

STEP 6 installing the electronics

- 1) First start by removing the spark plugs and installing the plugs that were provided. IT IS IMPORTANT TO USE THE PLUGS WE PROVIDE.
- 2) At this time inspect the wires, cap and rotor for wear. The ignition system is going to be under heavy demand; it needs to be 100%. If you have any doubt replace the parts.
- 3) Next install the injectors in the kit. We recommend reinstalling the injector safety clips to prevent a possible fire.
- 4) Now you will need to install the 2 bar map sensor provided. Make sure the vacuum port that the factory map sensor was originally plugged in is the one you have the 2 bar map plugged into. At this time you need to remove the original map sensor from your vehicle. The plug to the original can either be cut off or can be stripped back and tee spliced. We prefer the tee splice method so the truck can be reverted to stock if ever the need arises. You will notice there are three wires coming out of the 2 bar pigtail. We have marked them 0, 1, and 2. The 0 is the 5volt supply, the 1 is the pcm signal, and the 2 is the ground. On most vehicles the 5 volt supply is violet with a white trace, the pcm signal is dark green with a red trace, and the ground is black with a white trace. If your vehicle does not have these colors than contact us and we can assist you. At this time you can splice your wires together using one of the two methods and solder your connections.
- 5) You can now install the gauge cluster provided in your kit. You will follow the directions that the manufacture provided to complete the installation.
- 6) Now you can relocate the coil to the fender or wherever you would like.

STEP 7 Wrapping up

- 1) At this point the radiator can be refilled if it has not yet been.
- 2) The battery cable can be reconnected.
- 3) It is important that the battery be fully charged before completing the next step. If the truck has sat a while or the battery is old you may need to put a charger on it. This will help stabilize the voltage when you load the SCT tuner.

- 4) Remove the SCT from the package and connect it to the OBD port on the truck. The key will need to be on to complete the next steps. The unit will prompt you. Just follow the steps on the screen. If you have any questions please call us.
- 5) Once the tune has loaded and the SCT screen says successful you can unplug the SCT and start the truck.
- 6) At this point you must complete the exhaust system and reinstall the o2 sensors before driving.

STEP 8 Test drive

- 1) Now that the exhaust system is complete lets go for a drive.
- 2) First start the truck and check for any exhaust, oil, or coolant leaks.
- 3) Now start the vehicle and allow it to warm up. Note the AFR on the wideband. The range should be between 13.5 and 15.0.
- 4) You will want to drive the truck in an area that is not overly crowded. Cruising at all speeds the AFR should read between 13.0-14.7. Note what yours is.
- 5) Next disable the overdrive and slowly ease your foot on the pedal until the vacuum boost gauge is reading 1.-2 lbs of boost. The AFR should be 11.0-12.8. Note what yours is.
- 6) Now you can make a full wide open pass. At this point the AFR should be 11.0-12.0. Note what yours is. We do recommend making wide open passes on a chassis dyno or a track. We do not condone any street racing or aggressive driving of any kind.
- 7) If your numbers were all in the acceptable ranges your installation is complete. If your numbers are not in this range please contact Performance Injection Equipment by telephone for further instruction.
- 8) After you have driven the vehicles for the first time allow it to cool fully and retighten the header hardware. This step will need to be performed two or more times before the header has fully relaxed. After that just a periodic check on the hardware is required to insure the life of the gasket.

DO NOT DRIVE THE VEHICLE IF THE NUMBERS ARE NOT IN RANGE. DAMAGE TO THE VEHICLE MAY OCCUR. PERFORMANCE INJECTION EQUIPMENT IS NOT RESPONSIBLE FOR DAMAGES OF ANYKIND TO THE VEHICLE, its ELECTRONICS, OR TO THE POWERTRAIN!

