

Very important:

**Prior to installation,
blow out all oil lines
and air tubes to make
sure debris is not inside
any of the lines or
tubes**

Installation Instructions for Twin Turbos.

Following these instructions is crucial to proper installation!

Prior to installation the engine oil and oil filter should be changed. Also allow engine to idle for 10 minutes after turbos are installed to allow turbos a break-in period. We strongly recommend head studs for boost pressure over 45 psi, and fire rings for boost pressure over 55 psi. Nearly every issue can be solved during installation by adjusting the clocking of the turbos slightly.

1. Begin by removing air box, battery, battery box, and plastic inner wheel well cover (splash guard). These items must be removed before attempting to install twin turbos. Be careful when removing plastic wheel well cover, there are wires mounted on engine side. Battery and inner wheel well cover will be replaced when finished.

Next remove old turbo, old exhaust manifold, and old oil supply lines. Now **On 2003-07 trucks leave the oil drain tube in the truck, you will later be attaching this oil drain line to the lower turbo. refer to the "Oil Drain Lines" section of the instructions.**

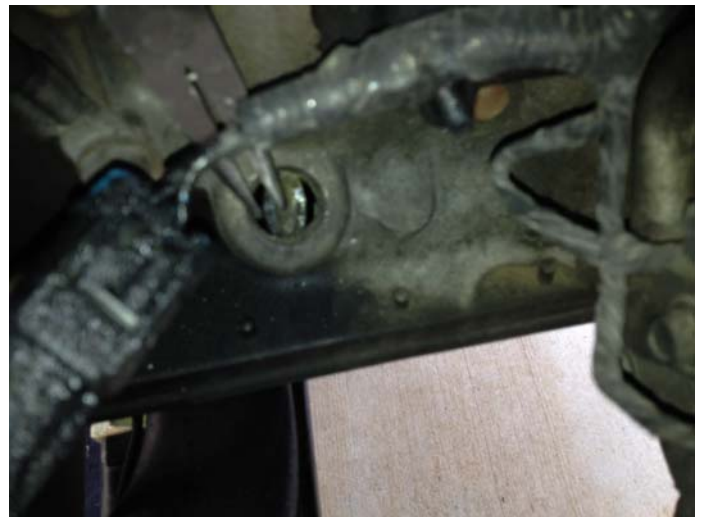
Oil Drain Lines

2003-2009 trucks.

You will use the stock oil drain to attach to the lower turbo's oil drain. Locate the front freeze plug (same height as the back oil drain port). Take a punch or screwdriver and lightly tap on one edge of the freeze plug to get it to rotate or twist inside the hole. Then take a pair of needle nose pliers and remove the freeze plug (**BE VERY CAREFUL NOT TO PUSH THE PLUG INTO THE OIL PAN, OR YOU WILL HAVE TO DROP THE OIL PAN TO RETRIEVE IT**). Insert the provided long drain tube into this front drain port. Make sure it is pushed completely into the hole, both o-rings should be inside the hole.

The long oil drain tube will go from the top turbo to the front oil drain. The stock oil drain tube will go to the lower turbo oil drain.

Truck years 1997-2002 (2nd Generation), the oil drain port is on the passenger side front, lower portion of the block. Plus there is a freeze plug at the rear, the same height as the front oil drain port. 2nd gen trucks will require the drain insert fitting to be inserted into the rear. The rear will be the same procedure as described above for the 2003-2009 trucks, with the removal of the freeze plug. A second (shorter) drain line is provided for this lower turbo.





Top Turbo Oil Drain will go in as shown here, on all trucks that have the front oil port in the block (1997-2013 trucks).

1998.5-2002 trucks: Also note on 2nd Gen trucks, some have a heater line that is in the position shown in the picture to the left. Simply cut this line short and re-attach the rubber heater line after it's cut.

Also on 2004.5-2007 year of truck the stock turbo waste gate is electronically controlled. You have two options. The first, and easiest option is to simply unscrew the entire sensor from the stock turbo, and wire tie it onto the shock mount. This works very good. The second option is to purchase a boost-fooler and plug it into the sensor wire.

2. It will be helpful if you slightly loosen the bolts (or v-band clamps) on both turbos which will allow you to “clock” the turbos (don’t remove the bolts or clamp or loosen too much as this can damage the turbo(s)). Loosen just enough to be able to rotate the housings. In this installation, if items don’t fit properly, it’s usually just a matter of “clocking” or turning slightly one of the turbos, or “clocking” the down elbow, to get the proper relationship with each other.

As you install this kit, make sure that all air conditioning tubes, heater lines, electrical cords, wastegate tubes etc. are not in contact with any portion of the Twin Turbo Kit (especially with the cast iron (hot) sides of the turbos, as they will melt or wear into these items.

Prep Large Turbo:

3. Attach large turbo to hot pipe (elbow), and to the support bracket as shown in the picture. Remember to place the gasket in between the turbo and hot pipe. A washer should be used on the support bracket bolts going into the turbo. (Note: It's a good idea to wrap this hot pipe with included header wrap.)



Leave the two bolts going through the bracket just barely loose, so they can be adjusted, once the top is on. All of the bolts going through the support bracket should be a little loose to allow the lower turbo to be adjusted to align the hot pipe with the top turbo. If necessary the bracket can be slightly flexed during the installation if the bolts are a little loose, then tightened when everything is aligned.

4. Install oil supply line (steel braided tube without elbows) and oil drain tube to large turbo as shown. The spring over the oil drain line allows it to be bent without kinking. Tighten fittings and clamps snug, but do not over tighten.



5. Place this large turbo, elbow and support bracket assembly in the truck. Simply and carefully set this whole assembly on the truck frame. Do not attach the exhaust yet. **Be very careful not to damage the steel braided oil supply line or the oil drains.** (Picture below shows HT3B turbo, for S400 turbo air outlet will go up.)

Note, the small turbo and manifold are not yet in the truck.



6. Install the small turbo and manifold assembly by holding it in place while putting the bolts into the head. Don't forget the 6 manifold gaskets. **Attach the center manifold gaskets and bolts first (cylinders 3 & 4).** Don't bump or pound on the ends of the 3-piece manifold, as they are press fit together, and can misalign if hit too hard. Once the center manifold bolts are in place, install the remaining stock bolts. Leave out the two top rear bolts (cylinders 5 & 6), to be used to hold the support bracket.

Note: The two provided 10mm bolts go in the lower two center holes.



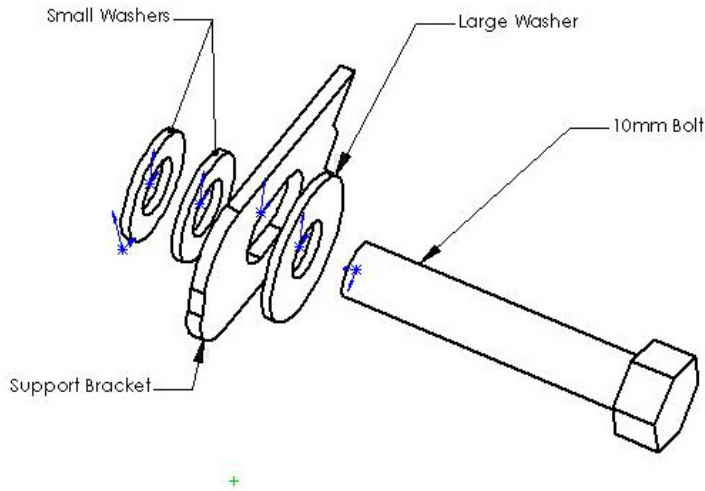
7. Attach the oil drain tube to the upper turbo. For the pipe thread fittings be sure to use teflon tape. For the JIC style fittings do not use teflon tape. (This step can be done now, but is usually better to do at the end of the installation process). This drain will go to the front drain.



8. Find the 4.4 inch v-band clamp that connects the small turbo to the hot pipe (elbow). Remove the nut off the v-band clamp or simply unhook the bolt so the clamp is open, and set the open clamp on the rear of the small turbo's flange where it will mount.

Attach large turbo assembly:

9. Take the large turbo assembly, and attach the support bracket to the two upper bolt holes on the manifold/head (cylinders 5 & 6) as shown below. It is very important that the washers are placed in the configuration that they came in. The support bracket must be spaced from the manifold by two washers, and have another washer on the other side, for proper fit. The configuration is as follows: Bolt, Large Washer, Support Bracket, two small washers, manifold, gasket, head. (See Picture).

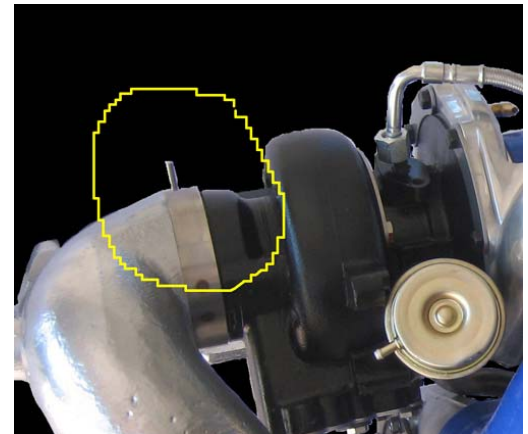


Tighten the bolts most of the way, but do not completely tighten these two bolts...yet.

10. The cast iron hot pipe (elbow) should be in nearly the exact place it should be. (If it's not aligned how it should you may have to loosen the support bracket bolts, either the bottom or top bolts or both.) Attach the cast iron elbow to the turbine housing of the small turbo, using the v-band clamp to hold in place. Tighten the v-band clamp.

Tighten all support bracket bolts.

Before tightening the v-band clamp, the clamp opening must be on the side, NOT THE TOP. It may leak if clamp opening is on the top.



Helpful Hints to complete this part of the installation:

If necessary, loosen the large turbo's v-band clamps, and the small turbos bolts to allow the housings to be clocked/rotated. This will give several places of adjustment if necessary. Having these points of adjustment should allow the proper alignment of all segments. Make sure to tighten all four adjustment points when completed. **Do not allow the cast iron elbow, bolts, or any other part of the twin turbos to touch air conditioning lines, they will wear a hole in the soft aluminum air conditioning lines.**

11. Attach the oil drain/return lines to the fitting you tapped into the engine earlier. Use teflon tape on pipe thread fittings, do not use teflon tape on JIC style threads.

Note: Every set of air conditioning, and transmission dipstick tubes are slightly different. While there should be plenty of clearance, if by chance they do touch the Twin Turbo Kit, they may require some slight bending to get them to fit properly. The transmission dipstick tube can touch the cast iron elbow, but the air conditioning lines CAN NOT touch any part of the Twin Turbo Kit, as they will have holes worn in them.

12. Remove oil fitting from your stock turbo, and screw it into the oil inlet of the small turbo. Then couple it with the longest elbow end of the steel braided hose (as shown below). 12V trucks will have 2 supplied fittings to use.

Then attach the steel braided line from the small turbo to the stock oil feed from the truck, located on the oil filter mount.



Next, remove one of the oil plugs from the top of the oil filter mount, and screw in the provided fitting (should be at the end of the steel braided oil line from the large turbo), then couple the oil line to that fitting.



-
- ~~13. FOR 2ND GEN TRUCKS ONLY: The following picture shows how the oil drain on all 2nd Gen 1994-2001 trucks should be routed, then the lower end of the oil drain simply attaches to the block insert (included with the kit) in the front passenger side of the block.~~

14. Using the stock v-band clamp, attach the coupler on the back of the large turbo to the exhaust.

15. Air intake: Install the 5" or (5.5" on race covers) silicone coupler onto the front of the large turbo and tighten the clamp. Then insert the plastic inlet tube to the front of the large turbo, and tighten the clamp.
On 2nd Gen Trucks the 4 inch, steel 90 degree elbow goes directly from the silicone boot on the front of the turbo, to the air filter. The air filter will sit where the old air box was located.



16. Install large rubber hose with steel ends, as shown. The ear shown below should align with the ear on the side of the battery box. If it does not, the two rubber boots should be clocked/twisted differently or the cast iron elbow may need to be clocked differently.

The ear on the tube and the battery box must be aligned to properly fit, so it can be bolted on, to properly support the air filter. The two jam nuts can allow the intake to hang a little lower if needed to clear hood.

The Ear on this tube should mount onto the BOTTOM of ear on the side of the battery box.



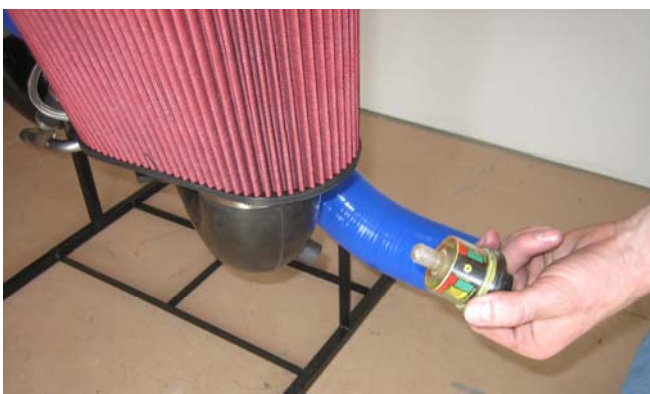
16.



17. Install **both** stock sensors into the rubber tube, install the air filter.

Note: The filter will stick up slightly over the side of the truck.

This is normal. It should however clear the hood of the truck. If it does not you will need to clock/rotate the



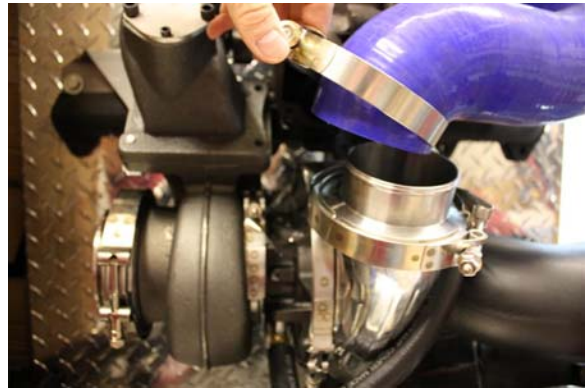
tubes to get the filter in the right place. Make sure the hood does not crush the filter.

18. Attach the metal fitting which is in the end of the silicone tube first to the large turbo air outlet.

Tighten the v-band clamp.

19. Slide the Silicone Charge which connects the large turbo charge air outlet to the small turbo air inlet. Put on the t-bolt clamps and tighten.

20. Put on the polished aluminum charge pipe (goes from small turbo to intercooler), attach required couplers and clamps. Tighten securely. (Helpful Hint: use a small amount of soapy water to help the tube slide into the couplers. **DO NOT USE OIL TO DO THIS** as oil will not dry and tube may slip out under pressure Click the rolled edge of the aluminum hose beyond the steel ring on the steel coupler, then slide the silicone coupler onto the turbo.).



VERY IMPORTANT! Be sure that when truck is started that oil pressure rises to the correct pressure,

We highly recommend oiling the filter with K&N filter oil, especially if being used in dusty environments. Also the K&N filter cleaning and oiling kit can be used to wash the air filter when it gets dirty.

On 2004.5-2007 trucks, remove the rubber cover to on the front, passenger side of the radiator. This needs to be left off, because if it is on it restricts cool air from entering the filter, and makes a substantial difference in EGT's and overall performance.



Completed Pictures

