Superior Wheel Installation Guide
(No Turbo removal)

This is the process used to install the Turbo Wheel without having to remove the Turbo from your Engine. It should take a maximum of 5 hours.

Tools:

- 1/4" drive, ratchet.
- 1/4" drive, 12 point, 5/16 socket.
- 1/4" drive, 4" extension & 6" "wobbly" extension.
- Phillips Screwdriver. (#6)
- An 8 & 10mm socket.
- 5/8 box end wrench.

Procedure:

- Start by removing the Intake hose
    - Remove all of the Intake tubes, exposing the turbo inlet.
    - Remove the 2 bolts from the CCV intake mount.
    - Move the CCV mount, exposing the 2 Philips screws. Remove the CCV filter from the valve cover. (watch for the O rings)
- Loosen the "V" clamp that connects the turbo to the "Y" pipe.
- Remove the waste gate actuator off the turbo housing followed by the compressor housing. (Remove the 2 bolts that hold the Waste gate actuator to the turbo, move it up and back)
- Loosen the "V" clamp that connects the turbo to the down (exhaust) pipe. Drop the down pipe (the clamp for the down pipe is a pain to break loose just loosen the bolt on it shoot it with some PB blaster tap it with a long screw driver and a hammer and it will pop loose).
- Remove all the bolts (5/16ths) from the turbo housing. (you will need the 6" wobbly to remove the bottom back bolt, due to the valve cover) Split the turbo, exposing the stock turbo wheel.
- With a screwdriver, wrapped with tape, insert it in the exhaust side of the turbo, just enough to get a screwdriver in there to keep the turbine from turning when you remove the old wheel. Catch one of the vanes, with the 5/8ths wrench; remove the stock wheel (left to loosen). Make sure you use a clean rag, the vanes are razor sharp. Loosen the bolts with the ratchet, and then use a cordless screwdriver to back everything out.
- Install the Superior Wheel, Torque to 10 inch pounds (or, real snug. it's tightening in it direction of rotation).
- Remove the old wheel.
- Reverse the assembly procedure and you are done.
- Install the new Compressor wheel, (**Do Not Over-tighten**) hand tight, and then using a wrench about a 1/4 turn. Same as in removal, then Tighten with the ratchet.
- Make sure when you put the down pipe back that you have it aligned right so the clamp seats good and that the exhaust is not rubbing anywhere.

PS: After the install, and after 4 or 5 warm-up cool-downs, check and re-tighten all turbo bolts. Use Red Loc-titer.

Installation with picture details

(Figure 1) This is what it looked like under the hood before you begin.

(Figure 2) Turbo after you removed all the intake components.

(Figure 3) Here you see the "Y-Pipe" removed.

The clamp on that holds it on the turbo must be removed, the boost tubes that connect it to the intercooler must be removed, and you can just loosen the top clamps on the boots that go to the intake ports and lift the y-pipe out of them.

It is recommended that you thoroughly clean this whole area with some simple green and some warm water and a brush before you start.

Pictured is the Dual Relief Valve on the MAP sensor line to eliminate over boosting.

(Figure 4)

Now that you can get to it easier, you can loosen the clamp that holds the down pipe on the turbo. You will have to bang on it a little to get it to come loose.

Do that very carefully, then pull it right off the joint and push it onto the turbo. You should be able to tap on the down pipe and pull it away from the turbo.

You can see the crowbar used to tap on the clamp wedged in between the down pipe and the turbo.

(Figure 5)

If you look close, you can see the black handle of a screwdriver that was stuck into the exhaust side of the turbo.

The end of the screwdriver is padded with duct tape and wedged into the vanes of the exhaust wheel of the turbo.

Doing this "binds" that wheel and keeps it from turning which keeps the compressor wheel from turning when you take out the original wheel and when you install your new Superior Wheel.

(Figure 6)

Here you see the compressor side housing removed and the original wheel has been removed.

PS: Even though you can't see it, the waste gate actuator is still mounted on the back of this housing, and the rod that connects it to the waste gate is also still connected. Most people say you have to take this off in order to do this job. Taking that off requires you to remove a very tiny clip in order to take off that rod. It is VERY EASY TO LOSE..! If you do, then you have to go to your local ford dealer to get a new one.

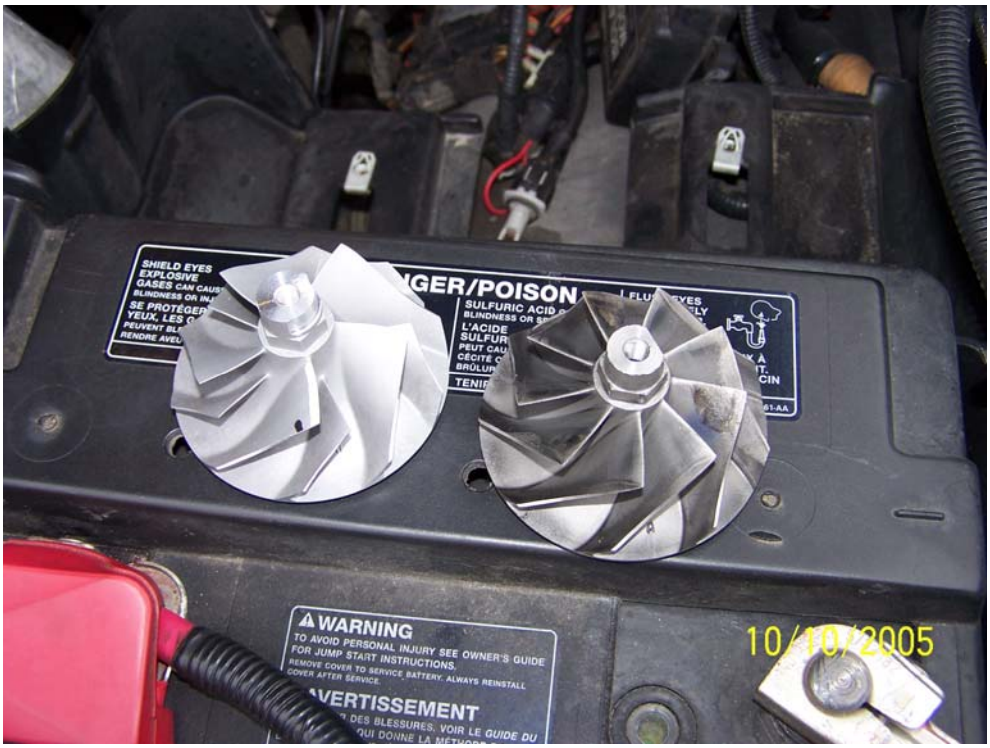
The easy way to do this is to leave it connected.

Just pull the compressor housing away from the turbo, and then carefully rotate it around as you see in the picture so it is out of your way.

It is tricky, but you can get a ratchet in there and you can get the old wheel off the shaft.

Also, the bolts that hold the housing on are 5/16" 12 point bolts. Use a 1/4" drive with an extension and a universal joint as needed to get these out.

When re-installing you might, use some Loc-Tite on the threads.



(Figure 7) Here is a picture of your new SUPERIOR WHEEL next to your original piece.

(Figure 8) Here is your new SUPERIOR WHEEL installed.

Now is a real good time to check the end play in the shaft that connects the two wheels through the turbo. A little side to side play is ok, but no part of the wheel should come into contact with the housing that surrounds it.

(Figure 9)

Here is your new SUPERIOR WHEEL with the compressor housing re-installed.

You can clearly see the waste gate actuator; it is the gold colored canister in the upper right.

Leaving it attached with its connecting rod attached has saved you a lot of time and aggravation!

PS: You need to use 1/4" drive sockets that are 12 point design in order to get these bolts out and then back in.

(Figure 10) Re-install the down pipe into the turbo and put the clamp back on.

(Figure 11) Here is the Y-Pipe re-installed.

Take your time with this one, get everything back together and lined up real good, then tighten everything up.

(Figure 12)

And here you have the intake re-installed..!

Now is a good time to clean up your tools, double check every thing that you did to make sure you did not forget anything, and then start your engine Allow time to warm up, and listen really close for anything that sounds wrong when idling.

This is a good time to get cleaned up while your engine is warming up. Take your vehicle for a test run.

You will love the way the new wheel "sings" when it starts making some real boost..! This project is not too hard, just time consuming.

General Notes:

You'll have a tough time climbing around on top of the engine, and you'll be plenty sore then next day.

Take your time, stay focused on each task as you do it, and be careful not to break anything and you will do just fine.

Be sure to check the bolts that hold the compressor side of the turbo together as they may loosen up after a couple of warm ups and cool downs.

Note: A special thanks go to John Littlefield and all the guys at FordTruckEnthusiasts.com for the pictures and details.