



# ASSEMBLY/INSTALLATION INSTRUCTIONS



AURORA COMPOUND TURBO SYSTEM

2003-2007 RAM 5.9L CUMMINS



Installation Manual v2.0:

## Aurora Compound Turbo Kit

2003-2007 Dodge Cummins 5.9

General Instructions

202-A35-2272 / 202-A36-2272 / 202-A37-2272 / 202-A38-2272 / 202-A46-2272 / 202-A47-2272

**Please read all instructions before installation.**

*High Pressure Charger  
Atmosphere Charger*

- Smallest ATS Turbo in kit
- Largest ATS Turbo in kit

1. Install the ATS manifold (Item 1, Figure 1) using the 10 bolts (Item 17, Figure 3), lock washers (Item 11, Figure 3), and flat washers (Item 15, Figure 3) leaving the top center bolts out. (We'll come back to these two bolts in a few steps.) When bolting the manifold in place be sure to set each of the six gaskets (Item 10, Figure 3) in place before tightening the manifold bolts. (See figure 5) Manifold to head bolt torque is 32ft-lbs.

Figure 5.



2. Bolt the *High Pressure Charger* (Item 3, Figure 1) to the manifold. Using two of the supplied studs (Item 12, Figure 3) install them in the T3 flange closest to the engine. Place the *High Pressure Charger* gasket (Item 2, Figure 3) in position and install the Aurora 3000 using the two supplied bolts (Item 8, Figure 3) and four nuts (Item 16, Figure 3) (See figure 6) Turbo to manifold torque is 32ft-lbs.

Figure 6.



3. Install the oil feed line (Item 11, Figure 1) for the *High Pressure Charger* (See figure 7)  
Oil supply line fitting torque is 18ft-lbs.  
Oil supply fitting torque is 27ft-lbs

Figure 7.



4. Install the oil drain (Item 5, Figure 1) and gasket (Item 3, Figure 3) (See figure 8)  
Oil drain tube bolt torque is 18ft-lbs.

Figure 8.



5. Install the exhaust pipe (Item 9, Figure 1) from the *High Pressure Charger* to the *Atmosphere Charger*. Leave the exhaust clamp (Item 6, Figure 2) loose in place to help with alignment in the next couple steps. (See figure 9)

Figure 9.



6. Set up the bracket (Item 3, Figure 2) with section 1 and section 2 to resemble figure 10. Use bolts (Item 6, Figure 3) and nuts (Item 7, Figure 3) (See figure 10)
7. Bolt the complete bracket in place to the hot pipe and manifold using the two hot pipe bolts (Item 9, Figure 3) and two manifold bolts (Item 10, Figure 3) (See figure 10)  
Manifold to head bolt torque is 32ft-lbs.

8. You may now torque the *High Pressure Charger* exhaust clamp in place. (See figure 9)  
V-Band clamp torque spec is 75in-lbs

Figure 10.



9. Install the wastegate mounting flange (Item 2, Figure 2) and gasket (Item 18, Figure 3). (See figure 11)  
Wastegate mounting flange to manifold torque is 31N.m (23ft-lbs)

Figure 11.



10. Secure the Hyper-Gate45 to the mounting flange with the supplied V-Band clamp (Item 1, Figure 2). Do not forget to put the valve seat into the body before mounting the unit on the exhaust manifold. (See figure 12)  
Wastegate V-band torque is 14N.m (10 ft-lbs)

Figure 12.



11. Line up the wastegate hot pipe (Item 6, Figure 1) to the 5000 charge pipe (Item 9, Figure 1) and tighten the remaining two clamps. (See figure 13)

**Note:** If the V-band clamp is difficult to install between the wastegate hot pipe and *Atmosphere Charger* charge pipe try loosening the charge pipe bracket bolts to give you more room then retighten after the V-band has been torque.

V-band torque is 14N.m (10 ft-lbs)

Figure 13.



12. Bolt the *Atmosphere Charger* (Item 1, Figure 1) to the charge pipe (Item 9, Figure 1). Using the remaining two studs (item 12, Figure 3) install those in the T4 flange. Place the T4 gasket (Item 1, Figure 3) in position and torque the *Atmosphere Charger* down using the four nuts (Item 16, Figure 3). (See figure 14)

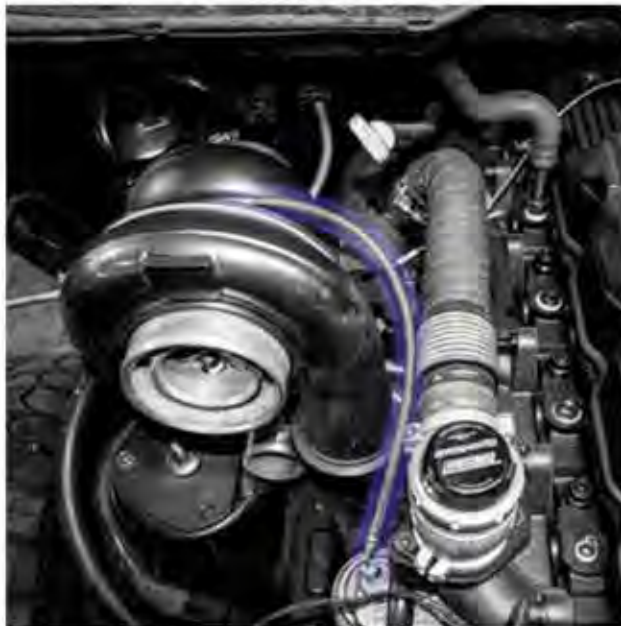
Turbo to T4 flange torque is 32ft-lbs.

Figure 14.



13. Install the oil feed line fitting (Item 13, Figure 3) and line (Item 10, Figure 1) for the *Atmosphere Charger* as shown in Figure 15. (See figure 15)  
 Oil supply line fitting torque is 18ft-lbs.  
 Oil supply fitting torque is 27ft-lbs

Figure 15.



14. On the Passenger side engine towards the front, just under the oil filter there is an oil galley freeze plug. Using a flat head screw driver or small punch tap the edge of this plug to twist it in. Once twisted in similar to Figure 16, grab the plug with a pair of pliers and remove it to open a hole for the *Atmosphere Charger* 5000 oil drain.

Figure 16.



15. Install the oil drain (Item 4, Figure 1) with gasket (Item 3, Figure 3) as shown in Figure 17 using the supplied bolts (Item 6, Figure 3) (See figure 17)  
 Oil drain tube bolt torque is 18ft-lbs.

Figure 17.



16. You may now reinstall the passenger side factory intercooler pipe you previously removed in the teardown. This will connect the outlet of the *High Pressure Charger* to the inlet of your intercooler. T-bolt clamp torque spec is 75in-lbs.
17. Install the 90° boot (Item 6, Figure 2) and intercooler pipe (Item 2, Figure 1) using the supplied clamps (Item 7, Figure 2) and (Item 8, Figure 2) (See figure 18)

Figure 18.



18. Rotate the *Atmosphere Charger* compressor housing and install the supplied V-band clamp (Item 5, Figure 2) (See figure 19)  
V-Band clamp torque spec is 75in-lbs

Figure 19.



19. With both turbos now clocked in the correct position tighten both the *High Pressure Charger* and *Atmosphere Charger* compressor housings.
20. Insert the boost line (Item 19, Figure 3) onto the *Atmosphere Charger* boost elbow and route it to the bottom open port on the wastegate using the barb fitting supplied in the Turbosmart wastegate kit resembling Figure 20. Use the two supplied spring clamps to secure the line (Item 20, Figure 3). (See figure 20)  
**Note:** Leave one top port open on the wastegate. This will be a vent for the gate and is a necessity for correct operation.

Figure 20.



21. Install the S1 Downpipe (Item 6, Figure 1) using the supplied clamp (Item 4, Figure 2) (See figure 21)  
V-Band clamp torque spec is 75in-lbs.

Figure 21.



22. Install the S2 downpipe (Item 7, Figure 1) using the supplied clamp (Item 4, Figure 2) (See figure 22)  
V-Band clamp torque spec is 75in-lbs

Figure 22.



23. Install the lower box in place and bolt the bracket (Item 5, Figure 4) using the supplied bolts (Item 3, Figure 4). (See figure 23)

Figure 23.



24. Install the air filter (Item 6, Figure 4) on the top lid using the supplied clamp.
25. Bolt the air box lid in place using the supplied bolts (Item 2, Figure 4).
26. Install the intake boot (Item 7, Figure 4) using the clamps (Item 4, Figure 4). (See figure 24)

Figure 24.



27. Bolt the MAF sensor in place and plug the connector in as shown in figure 21. (See figure 25)

Figure 25.



28. You are now complete with your *ATS High Pressure Charger / Atmosphere Charger* install. Start the vehicle up and double check for oil, exhaust, and boost leaks.

# NOTES

# NOTES

# NOTES



## HAVE ANY QUESTIONS?

Thank you for purchasing the Aurora Compound Turbo Kit for the 2003-2007 Ram 5.9L Cummins!

Please check our website at <http://www.atsdiesel.com> for technical support and other products such as the 5-Star™ torque converter, ATS High Performance Valve Body and ATS High Performance Transmission. Please call or e-mail our Technical Service Department, 8:00am to 5:30pm Mountain Standard Time, Monday through Friday.

## CONTACT US

Toll Free: 800-949-6002  
Local: 303-431-7973  
Fax: 303-431-0135  
Website: [www.ATSDiesel.com](http://www.ATSDiesel.com)  
Email: [info@ATSDiesel.com](mailto:info@ATSDiesel.com)

We strive to make our instructions as clear and complete as possible. To achieve this, our instructions are under constant construction. We encourage you to visit our website to check for the most up-to-date manuals and diagrams as well as other information. If you have any suggestions as to how we can improve this installation manual, let us know at <mailto:Suggestions@ATSDiesel.com>.