202-A35-2272-INST



## Installation Manual v1.0: P/N 202-A35-2272 Aurora 3000/5000 Compound Turbo Kit 2003-2007 Dodge Cummins 5.9

# Please read all instructions before installation.



Figure 1.

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Figure 2.



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.



Bolt the ATS Aurora 3000 (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 T3 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 torgue is 32ft-lbs.

Figure 6.



 Install the oil feed line (Item 11, Figure 1) for the Aurora 3000 (See figure 7) Oil supply line fitting torque is 18ft-lbs. Oil supply fitting torque is 27ft-lbs



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 3000 to the 5000. Leave the exhaust clamp (Item 6, Figure 2) loose in place to help with alignment in the next couple steps. (See 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)
- 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 Aurora 3000 exhaust clamp in place. (See figure 9) V-Band clamp torque spec is 75in-lbs



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)



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 5000 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)



12. Bolt the ATS Aurora 5000 (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 Aurora 5000 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 Aurora 5000 as shown in Figure 15. (See figure 15)Oil supply line fitting torque is 18ft-lbs.
  - Oil supply fitting torque is 27ft-lbs



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 Aurora 5000 oil drain.



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.



- 16. You may now reinstall the passenger side factory intercooler pipe you previously removed in the teardown. This will connect the outlet of the Aurora 3000 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 16.



 Rotate the Aurora 5000 compressor housing and install the supplied V-band clamp (Item 5, Figure 2) (See figure 19)

V-Band clamp torque spec is 75in-lbs



- 19. With both turbos now clocked in the correct position tighten both the Aurora 3000 and 5000 compressor housings.
- 20. Insert the boost line (Item 19, Figure 3) onto the Aurora 5000 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.



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.



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



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)



- 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)

![](_page_12_Picture_2.jpeg)

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

![](_page_12_Picture_4.jpeg)

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28. You are now ready to install the Map sensor conditioner that has been supplied in the kit. Locate the MAP sensor on the intake manifold, unplug the factory conector and place the Map sensor conditioner between the sensor and the factory harness. This will smooth the signal from the boost sensor if it spikes boost pressures above 32 PSI. (See figure 26)

![](_page_13_Picture_3.jpeg)

29. You are now complete with your ATS Aurora 3000 / 5000 install. Start the vehicle up and double check for oil, exhaust, and boost leaks

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![](_page_14_Picture_2.jpeg)

## Have Any Questions?

Thank you for purchasing the 202-A35-2272. Please check our website at <u>http://www.atsdiesel.com</u> 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 Information**

Toll Free: 800-949-6002 Local: 303-431-7973 Fax: 303-431-0135 Website: www.ATSDiesel.com Email: 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 <u>mailto:Suggestions@ATSDiesel.com</u>.

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PN:2023021000

PN:2049212272

# **Bill of Materials**

#### Figure 1 breakdown

- 1. (Qty:1) Aurora 5000 (71mm/2.8), Turbo Only, T4, 1.10 A/R
- 2. (Qty:1) Aurora 5000 Outlet Pipe
- 3. (Qty:1) Aurora 3000 (58mm), Turbo Only, T3, .85 A/R
- 4. (Qty:1) Aurora 5000 Oil Drain Tube
- 5. (Qty:1) Aurora 3000 Oil Drain Tube
- 6. (Qty:1) S1 Down Pipe
- 7. (Qty:1) S2 Down Pipe
- 8. (Qty:1) Hot Pipe (Aurora 3000 to 5000)
- 9. (Qty:1) Wastegate Hot Pipe (Manifold to Hot Pipe)
- 10. (Qty:1) Aurora 3000 Oil Feed
- 11. (Qty:1) Aurora 5000 Oil Feed
- 12. (Qty:1) ATS T3 Wastegated Manifold

#### Figure 2 breakdown

#### 1. (Qty:1) Wastegate Assembly

- 45mm Turbosmart Wastegate
- Wastegate Valve Seat
- Large Wastegate V-Band Clamp
- Small Wastegate V-Band Clamp
- 2. (Qty:1) Wastegate Mounting Flange
- 3. (Qty:1) Charge Pipe Bracket
- 4. (Qty:2) Exhaust V-Band Clamp
- 5. (Qty:1) Charge Pipe V-Band Clamp
- 6. (Qty:1) 90° Charge Pipe Boot
- 7. (Qty:1) 4.5" T-Bolt Clamp
- 8. (Qty:1) 3.5" T-Bolt Clamp

#### Figure 3 breakdown

- 1. (Qty:1) T4 Steel Gasket
- 2. (Qty:1) T3 Steel Gasket
- 3. (Qty:2) Oil Drain Gasket
- 4. (Qty:2) Oil Inlet Fitting
- 5. (Qty:2)
- 6. (Qty:6)
- 7. (Qty:2)
- 8. (Qty:2)
- 9. (Qty:2)
- 10. (Qty:6) Exhaust Manifold Gasket
- 11. (Qty:10)
- 12. (Qty:4)
- 13. (Qty:1) Oil Outlet Fitting
- 14. (Qty:2)
- 15. (Qty:10)
- 16. (Qty:8)
- 17. (Qty:1)
- 18. (Qty:1) Steel Wastegate Flange Gasket
- 19. (Qty:1) Wastegate Boost Line
- 20. (Qty:2) Spring Clamp

#### Figure 4 breakdown

- 1. (Qty:1) Intake Box
- 2. (Qty:4) Intake box bolts
- 3. (Qty:2) Bracket Bolts
- 4. (Qty:2) Intake Tube Clamps
- 5. (Qty:1) Intake Bracket
- 6. (Qty:1) Filter with Clamp
- 7. (Qty:1) Intake Tube