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# **BD 2003-2007 5.9L Cummins Stock Replacement & Screamer Turbo**

**Drop-in Turbo**

<b>Part#</b>	<b>Compressor Size</b>	<b>Turbine Size</b>	<b>Description</b>
<b>1045768</b>	63mm	67mm	<b>BD Screamer</b>
<b>1045767</b>	60mm	58mm	<b>Stock Replacement</b>

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## **Pre-Installation**

A new turbocharger will not solve the following failures:

- Oil contamination
- Restrictive oil drain
- Over speed due to a boost leak or clogged air filter
- Exhaust leaks due to faulty bellows, clamps, or seals





Turbo over speed will lead to premature turbo failure. Boost pressure can be used to estimate turbo speed. The table below shows maximum allowable turbo speed for a stock motor at 3500rpm. A turbo intake restriction, clogged filter, high altitude or boost leak will cause increased wheel speed.

<b>Turbo</b>	<b>Estimated Airflow (lb/min)</b>	<b>Max boost (psi)</b>
<b>1045768</b>	75 lb/min	39

## **Turbo Mount Exhaust Brakes**

The BD Diesel Screamer turbo retains the factory turbine outlet. If your stock turbo has a turbo mount exhaust brake it can be transferred to your Screamer turbo. If you plan on purchasing an exhaust brake with your Screamer turbo buy according to the year of truck; see optional accessories section for year ranges and part numbers for BD Diesel exhaust brakes.

## Kit Contents

	<p><b>1407557 (Plug)</b>  <b>1453157 (Small O-ring)</b>  <b>FT-920155095 (Large O-ring)</b></p>		<p><b>1462430</b></p>
			
<p>Turbo; Screamer 03-07 5.9L Cummins</p>	<p>Compressor Cover Plug with 2 O-rings</p>	<p>Oil Drain Gasket</p>	<p>Stud M10-1.5x30 - M10-1.5x42</p>
<p><b>Qty: 1</b></p>	<p><b>Qty: 1</b></p>	<p><b>Qty: 1</b></p>	<p><b>Qty: 2</b></p>

<p><b>3678603</b></p>	<p><b>FT-920156020</b></p>		<p><b>1462441</b></p>
			
<p>O-ring</p>	<p>O-ring</p>	<p>Exhaust Elbow V-Band</p>	<p>Mounting Nuts</p>
<p><b>Qty:1</b></p>	<p><b>Qty: 1</b></p>	<p><b>Qty: 1</b></p>	<p><b>Qty: 4</b></p>

## Optional Accessories

Part	Description	
<p><b>Exhaust Elbow</b></p> <ul style="list-style-type: none"> <li>4.5-07: 1045100</li> </ul>	<p>Turbine outlet exhaust elbow.</p>	
<p><b>BD Diesel Exhaust Brake</b></p> <ul style="list-style-type: none"> <li>03-04: 2023138</li> <li>04.5-07: 2023331</li> <li>06-07: 2023330</li> </ul>	<p>Turbo mount exhaust brake. Will work with a BD Diesel Screamer Turbo or a stock turbo.</p>	
<p><b>BD Diesel Boost Fooler</b></p> <ul style="list-style-type: none"> <li>03-04: 1515935</li> <li>04.5-07: 1515936</li> </ul>	<p>Increases available boost by intercepting the message from the MAP sensor to the ECM. Preventing it from setting an over-boost trouble code.</p>	
<p><b>BD Diesel Hose and Clamp Kit</b></p> <ul style="list-style-type: none"> <li>10452515</li> </ul>	<p>Boots can withstand over 100psi and are secured by rugged, spring-loaded, stainless steel clamps.</p>	

## ***Introduction***

The BD Screamer turbo series is now available for the 2003-2007 Dodge 5.9L Cummins. The Screamer turbo is designed to be a drop-in stock-appearing performance turbocharger that increases boost, decreases drive pressure, and peak EGTs without affecting low-end drivability.

The 5.9L Cummins screamer turbo utilizes 63mm billet compressor wheel and a 67mm high-flow turbine wheel which offers increased turbine flow and efficiency. The screamer is capable of increasing horse power by 100whp over a stock turbo, and with supporting modification it is capable of 625hp.

## ***Tools Required for Installation***

- 7mm-22mm Metric Socket and Wrench Set
- 5/16"-9/16" Socket and Wrench Set
- Hose Clamp Plier
- Torque Wrench
- 21mm Crows foot

## ***Installation***

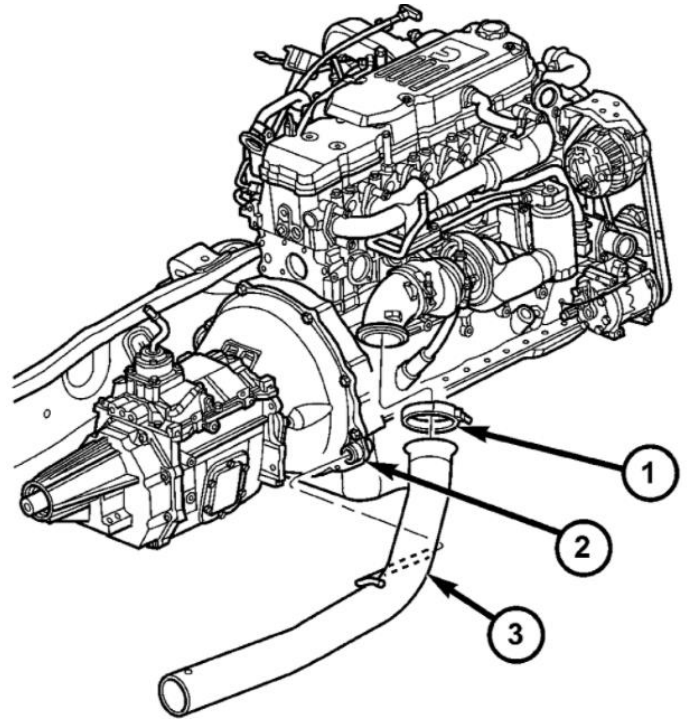
### ***Removal***

1. Disconnect the battery and raise the vehicle.

2. Remove the passenger side inner fender well with a 5/16" socket.



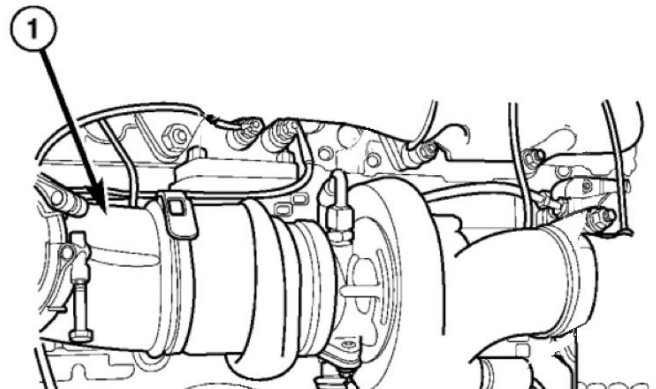
3. Disconnect the exhaust pipe from the turbo exhaust elbow.
  - Saturate the bolts and nuts with heat valve lubricant. Allow 5 minutes for penetration.
  - Remove the exhaust pipe-to-extension pipe clamp using a 11mm socket. Separate the exhaust pipe and extension pipe
  - Remove the exhaust pipe-to-turbo elbow clamp using a 10mm socket.
  - Remove the exhaust pipe from the transmission support.



- |  |
|--|
| 1 - Exhaust pipe to turbo clamp<br>2 - Transmissin support<br>3 - Exhaust pipe |
|--|

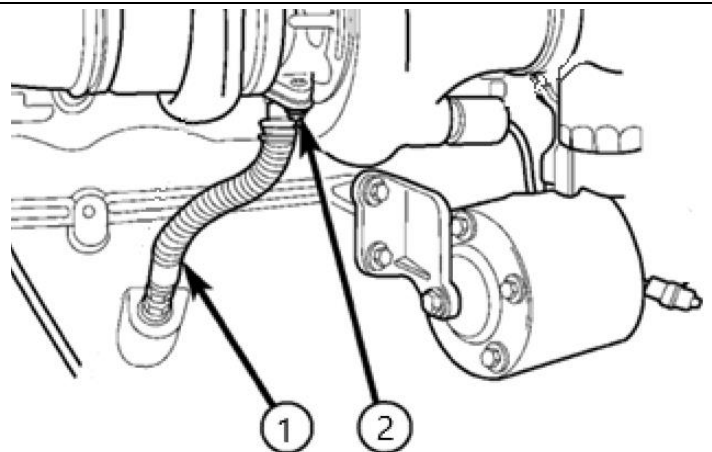
4. Remove the exhaust elbow from the turbo by removing the v-band clamp using a 10mm socket.

**Note:** Put this elbow aside, it will get used with the new turbo.



- |                         |
|-------------------------|
| 1 - Turbo Exhaust Elbow |
|-------------------------|

5. Remove the oil drain line from the turbo with a 10mm socket, discard the gasket.



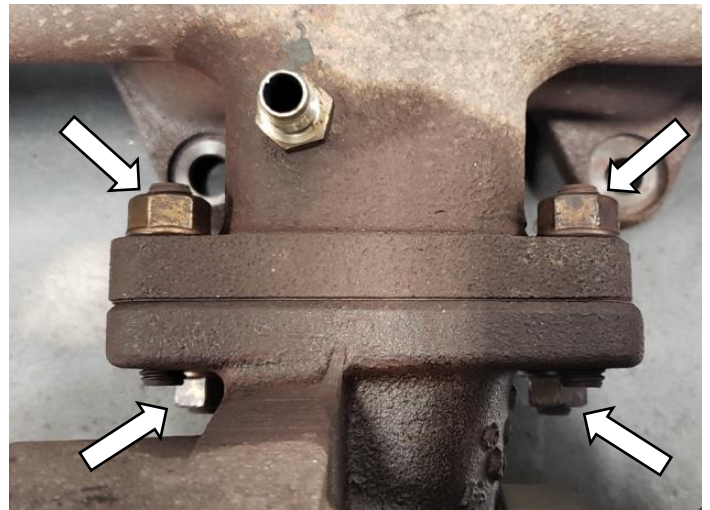
- |   |
|---|
| 1 - Turbo oil drain tube bolt<br>2 - Turbo oil drain tube |
|---|

6. Disconnect the turbo oil feed using a 21mm wrench.



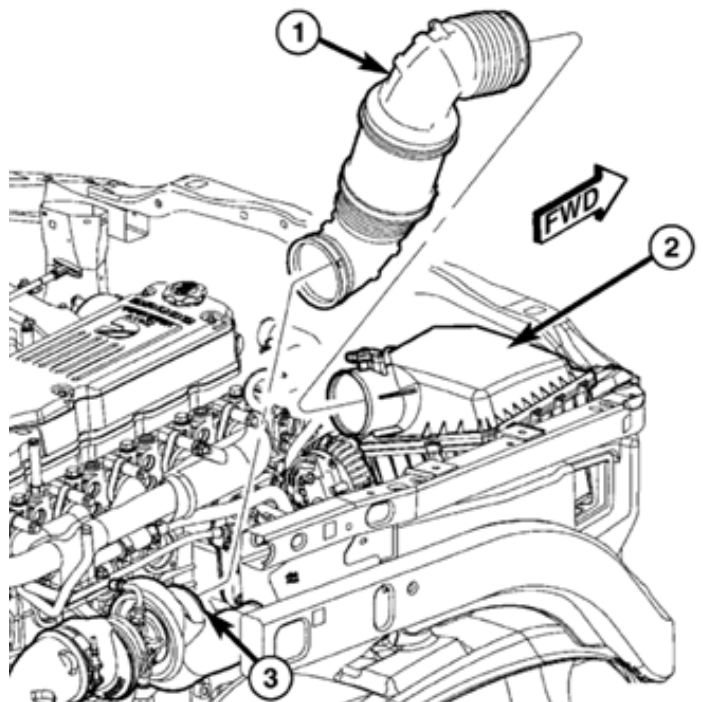
7. Remove the two lower turbo mounting nuts with a 15mm socket and extension.

Break lose the two upper turbo mounting nuts with a 15mm wrench.



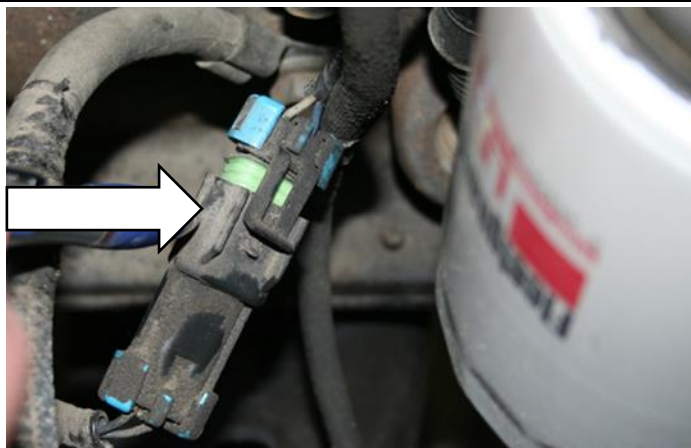
8. Lower the vehicle.

9. Disconnect the air intake hose using a 7mm socket.



- 1 - Air inlet tube  
2 - Air filter housing  
3 - Turbo

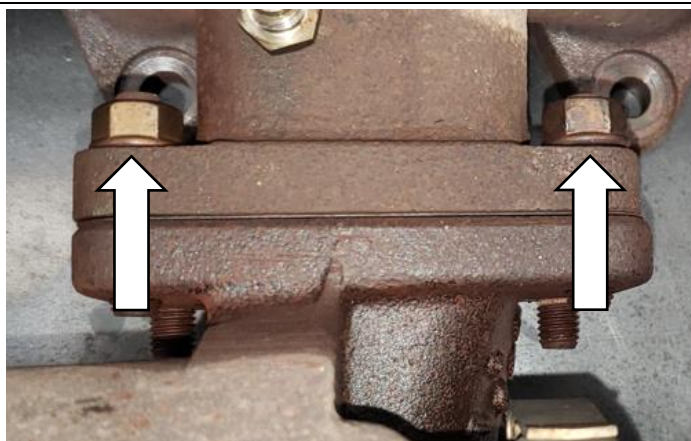
10. On 04.5-07 trucks, you will need to disconnect the wastegate solenoid connector.



11. Disconnect the intercooler inlet pipe from the turbo compressor outlet. Use 7/16" socket for the hose band clamp.



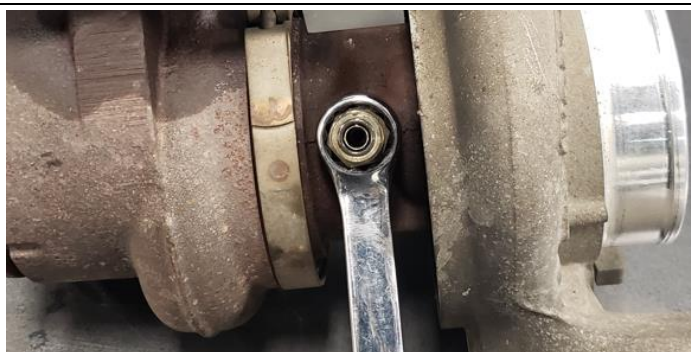
12. Remove the two upper turbo mounting nuts with a 15mm wrench.



13. Remove the turbo and gasket from the exhaust manifold.

14. If the turbo is not being installed immediately, cover the opening to prevent material from entering into the manifold.

15. Remove the turbocharger oil supply fitting and put it aside. This fitting will get used on the new turbo.





## Installation

For **2003-2004.5** make sure the compressor cover plug with 2 O-rings is installed on the compressor cover.



For **2004.5-2007** make sure the solenoid is installed on the compressor cover.

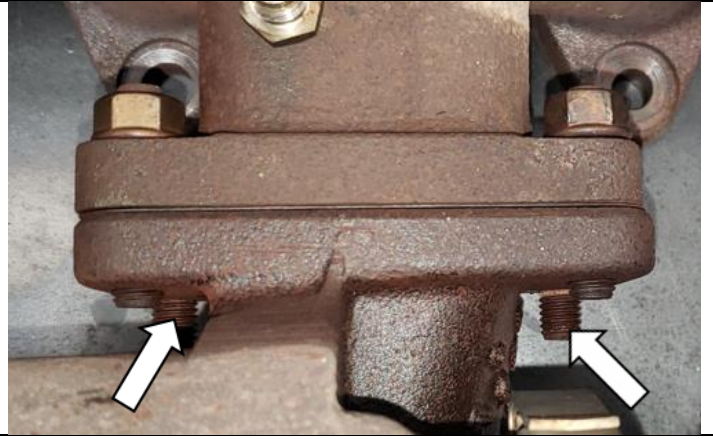


Be sure to torque either the plug or solenoid to **13.5 Nm (10 ftlbs)**.

1. Using the new gaskets (FT-920156020 & 3922794) provided in the kit, install the oil supply fitting from the old turbo to the Screamer turbo. Tighten fitting to **36 N.m (27 ft.lbs)** with a 19mm socket.

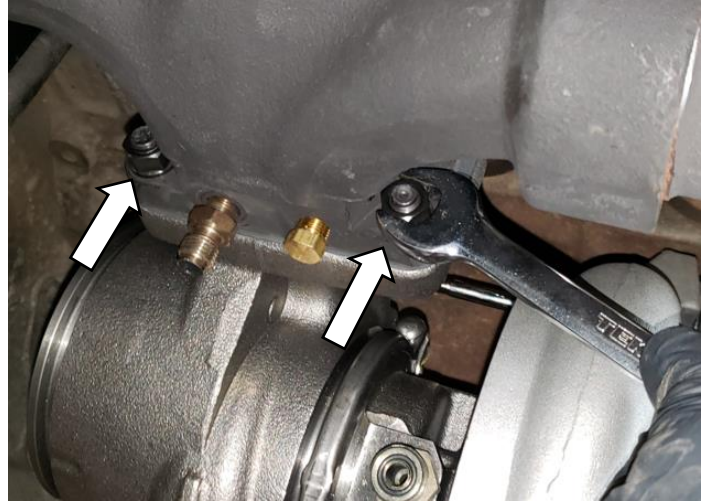


- From 2003 - 2004.5 the two rear manifold factory studs are too short so you must replace those two factory studs with the supplied studs (1462430).



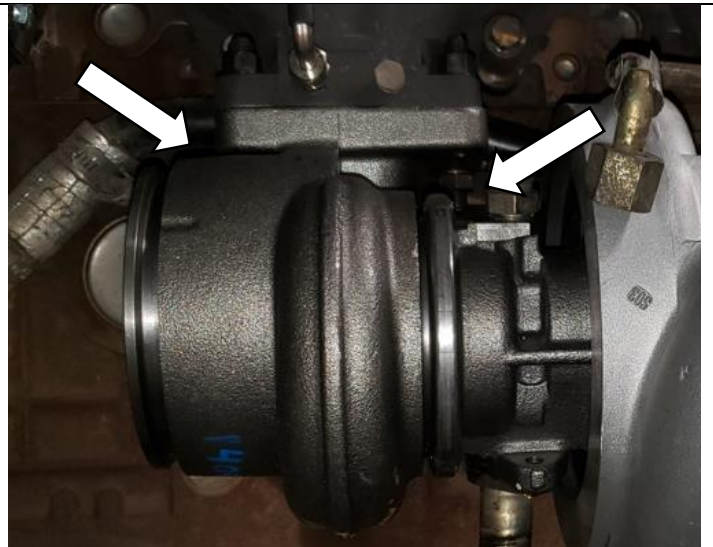
- Secure the turbo to the exhaust manifold with the two upper turbo mounting nuts. Use the NEW gasket provided with the turbo, and tighten nuts to **43 N.m (32ft. lbs)** with a 15mm socket.

**Important! Improper torque of flange can lead to exhaust leak, gasket failure and flange damage.**

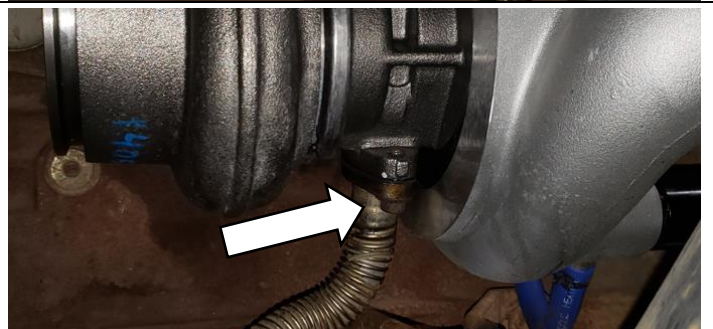


- Raise the vehicle.

- Tighten the 2 lower turbo mounting nuts to **43 N.m (32 ft.lbs)** with a 15mm socket.

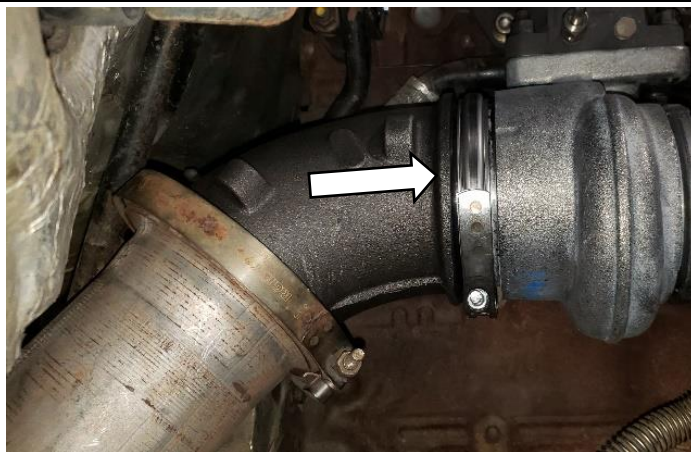


- Using the new gasket provided in the kit, install the oil drain tube to the turbo. Tighten the drain tube bolts to **24 N.m (18ft.lbs)** with a 10mm socket.





7. Connect the exhaust elbow to the turbo using the new v-band clamp provided in the kit. Tighten the v-band clamp to **11.3 N.m (100in.lbs)** using a 10mm socket.



8. Connect the exhaust pipe to the turbo and tighten the v-band clamp to **11.3 N.m (100 in.lbs)** using an 11mm socket.



9. Lower the vehicle.

10. On 04.5-07 trucks, connect the wastegate solenoid connector.



11. Pre lubricate the turbo. Pour 50 to 60cc (2 to 3 oz), of clean 15w40 engine oil in the oil supply inlet. Carefully rotate the turbocharger by hand to disturb the oil thoroughly.

12. Install and tighten the oil supply line with a 21mm wrench. Torque to **24 N.m (18 ft. lbs)** with a 21mm crow's foot.



13. Position the intercooler inlet pipe to the turbo. With the clamp in position, tighten the clamp nut to **11 N.m (95 in. lbs)** with a 7/16" socket.



14. Position the air inlet hose to the turbo. Tighten the clamp to **4 N.m (35 in. lbs)** with a 7mm socket.



15. Connect the battery and start the engine and check for leaks

## Troubleshooting

<b>Error Code</b>	<b>Possible Causes</b>	<b>Solution</b>
<b>P0234</b>  Turbocharger Overboost Condition	<ul style="list-style-type: none"> <li>• Wastegate Stuck</li> <li>• Turbocharger and/or wastegate damaged</li> <li>• Wastegate control valve damaged (04.5-07)</li> </ul>	Install a BD boost fooler (1515935, 1515936) or consult with your preferred aftermarket tuning provider.
<b>P0236</b>  MAP Sensor Too High Too Long	<ul style="list-style-type: none"> <li>• MAP sensor intermittent condition</li> </ul>	Follow OE diagnostic testing procedure to determine the fault.
<b>P0243</b>  Wastegate Pressure Control PWM (04.5-07)	<ul style="list-style-type: none"> <li>• Fused ignition switch output open</li> <li>• Wastegate solenoid control circuit open</li> <li>• Wastegate solenoid control circuit shorted to ground</li> <li>• Wastegate solenoid control circuit shorted to voltage wastegate solenoid.</li> <li>• Engine control module</li> </ul>	Follow OE diagnostic testing procedure to determine the fault.
<b>P0299</b>  Low Boost Pressure/ Turbocharger Underboost	<ul style="list-style-type: none"> <li>• Intake air system restriction</li> <li>• Intake air system leak</li> <li>• Boost pressure sensor</li> <li>• In rare instances with the Screamer, fueling conditions underperform for turbo requirements</li> </ul>	Follow OE diagnostic testing procedure to determine the fault.  In the rare instance of under fueling, consult with your preferred aftermarket tuning provider.