



6.7 Powerstroke Emperor Turbo System Installation Instructions

Please check over your packing list and make sure you have all of the components prior to starting the installation.

* Also, make sure if you are installing on an 11-14 model truck that you have the additional parts required to install the emperor system.

**NOTE SPE Recommends the MBRP FAL460 downpipe (or similar) For all year trucks.

SPE Emperor Scorpion Turbo System - Packing List	
Quantity	Description
Machined Parts	
1	Passenger Side Manifold
1	Pedestal
1	Oil Return Pedestal Fitting
1	V-Band Adapter Exhaust
1	Turbo Oil Return Flange
Hardware	
1	1/8" NPT Plug
1	11-14 Fuel Temperature Sensor Plug

8	Manifold Bolts- M8x1.25x35
4	Turbo Bolts M10x1.5x25
4	Pedestal Bolts- M10x1.5x30
2	Turbo Oil Drain Flange Bolts- 3/8x16x3/4
1	3.5" s300 V-Band
2	Scroll Clamp for Inlet Coupler
2	Oil Drain Scroll Clamp #10 (9/16-1 1/16)
2	3" T-Bolt Clamps
4	M10 Washer (for pedestal bolts)
O-Rings & Gaskets	
1	Pedestal Gasket
1	O-Ring 2.5 x 18mm- For Oil Drain Fitting & Turbo Drain Flange
1	O-Ring 2 x 28mm- For Oil Drain Fitting & Turbo Drain Flange
1	Exhaust Manifold Gasket
1	Turbo Gasket- Included with Turbo
Fittings & Hoses	
1	Turbo Inlet Coupler
1	Turbo Drain Tube
1	3" Coupler 4.250 Long
1	Oil Feed Fitting 1/8 to -4
1	Turbo Oil Feed Fitting
1	Oil Feed Hose/Premade Line
1	3/8 coolant cap/ plug

Factory Parts Removal

SPE recommends this system to be installed by a professional or someone capable enough to remove the factory turbo parts. We will not cover the removal process in the instructions thoroughly.

- Drain cooling system via driver side petcock on the primary radiator.
- Remove the factory turbo system including air intake, lower intake manifold, upper intake manifold, factory turbo and pedestal, driver side exhaust manifold and up pipe (including exhaust manifold studs), and downpipe.
- Extract the exhaust manifold studs with an E7 socket for reverse torx. The new exhaust manifold will not use studs.



- Clean mating surfaces including cylinder head, and pedestal surface.

Installation

1. Prep the pedestal. Install the $\frac{1}{8}$ NPT plug using thread sealer into the coolant port. Coolant will not be used in this application. Install the $\frac{1}{8}$ npt x -4 AN oil feed fitting using thread sealer.



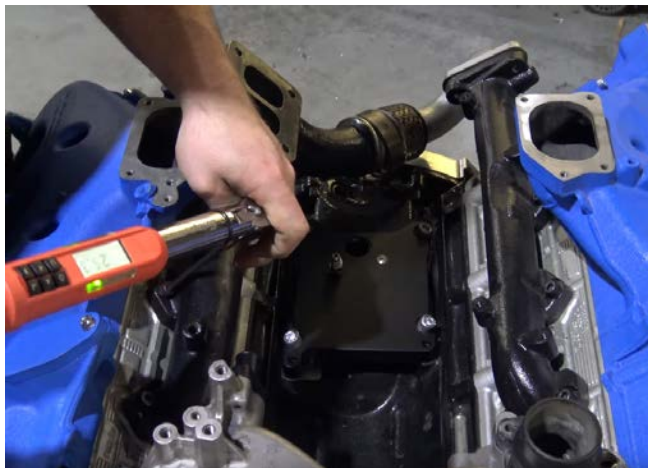
2. Install the gasket for the pedestal on the block.



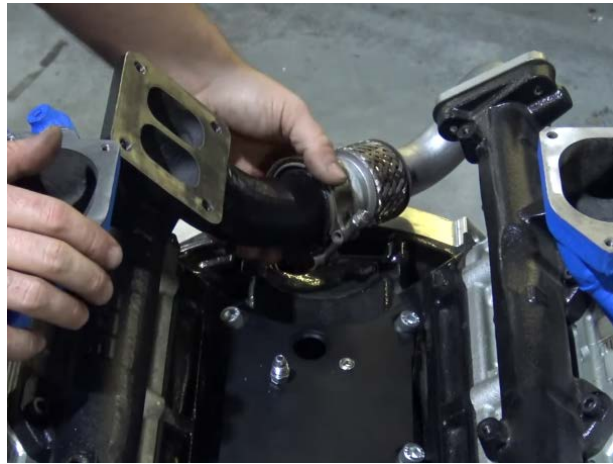
3. Install the pedestal plate with M10x1.5x30 bolts, M10 washers. Torque to 35ftlb.



4. Install the passenger side included exhaust manifold and gasket. If an aftermarket EGT probe or EBP sensor is going to be used you may drill and tap the manifold prior to installing. Make sure to keep the round flange aligned with the driver side up pipe. It may be helpful to keep the 3 bolts for the driver side up pipe loose until everything is seated. Use the supplied bolts M8x1.25x35 and torque them to 25ftlb using a 6mm allen drive.



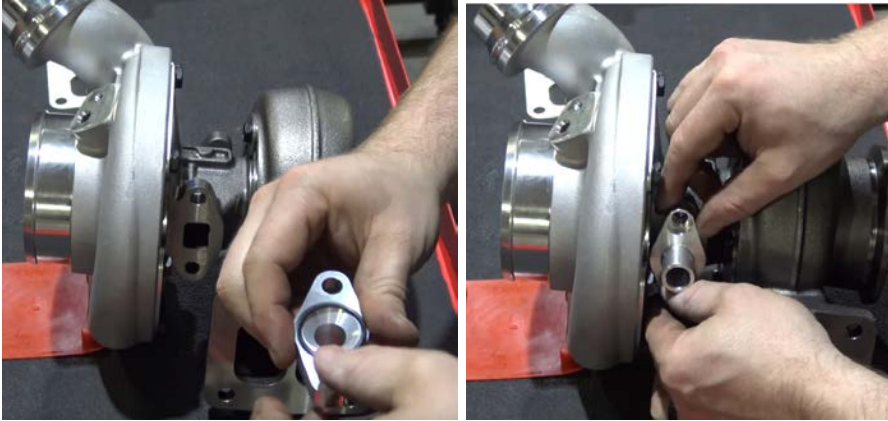
5. Using an 11mm or 7/16 socket, install the factory up pipe clamp and tighten.



6. Using a 13mm wrench, loosen the turbo compressor and turbine housing bolts so they can be clocked correctly for fitment.



7. Install the large 2 x 28 o-ring into the turbo drain flange. Mount the flange to the turbo using the two included 3/8x16x3/4 Allen bolts.



8. Next take the oil drain tube and cut $\frac{1}{2}$ to $\frac{5}{8}$ of an inch off of each end so the tube fits properly. The amount necessary to cut will vary depending on the turbo frame size.



9. Next install the two 2x18 o-rings onto the pedestal drain fitting and lube them thoroughly.



10. Assemble the turbo drain pieces as pictured. Slide on the two provided #10 clamps leaving them loose until clocked properly.



11. Dry fit the turbo and get the drain clocked properly along with the housings before tightening anything. The oil inlet at the top of the turbo center section should be flat. The SPE logo on the compressor cover should clock down slightly.



12. Once everything is clocked correctly you can proceed to tighten the bolts and clamps. Using an 8mm ball allen socket, install the T4 flange gasket with the included four M10x1.5x25 (12.9 black) Allen bolts.



13. Install the downpipe upper elbow with the included s300 to 2015+ downpipe adapter. Use the included V-band clamp and a 2015+ factory clamp. 20+ trucks will require you to cut the tab on the factory downpipe. ****NOTE SPE Recommends the MBRP FAL460 downpipe (or similar) for all year trucks.**



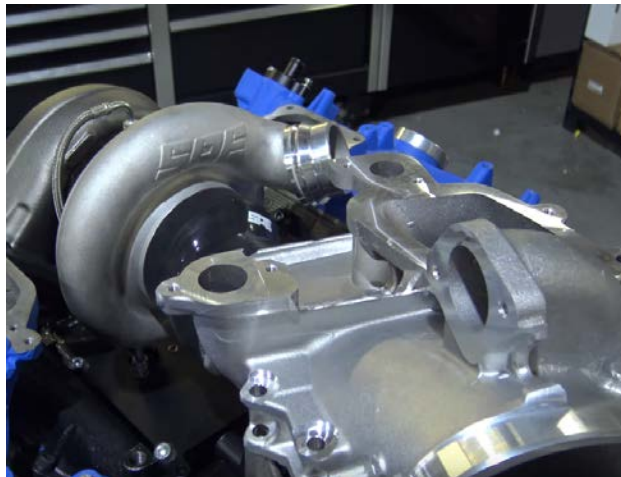
14. Install the supplied ¼ NPT x -4 AN oil feed fitting into the top of the turbo with thread sealer. Proceed to install the premade hose (no sealer) from the pedestal to the top of the turbo, keeping it away from the exhaust housing.



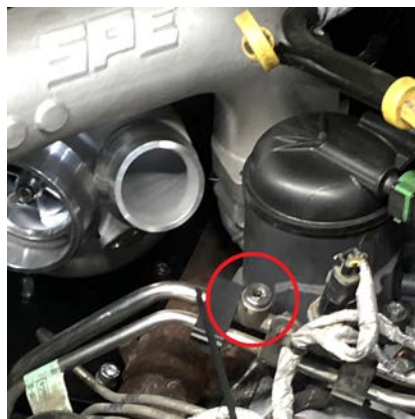
15. Using the supplied plug or cap, block off the turbo coolant feed from the cross over.



16. Install the lower intake manifold with supplied adapter and scroll clamps. The SPE on the adapter will clock to about 1 as pictured. Then install the upper intake manifold.



17. On the 11-14 ONLY install the provided to fuel temp sensor plug as shown reusing the copper washer off of the sensor on the plug. Most tuning companies will be utilizing the harness side already for a switch.



18. On the hotside factory intercooler pipe, you will need to cut the metal band off for the coupler on the intercooler side of the pipe. This is so you can remove the factory coupler and replace it with the SPE provided 3" coupler as shown. Attach the hotside pipe as shown clip on the turbo side coupler first. Then, tighten the intercooler side coupler with the provided T bolts.



19. ****IMPORTANT**** Make sure to perform an oil change after installation due to coolant being able to enter the crankcase. Refill Coolant and bleed the system. The turbo comes pre oiled but make sure to allow the vehicle to idle until the vehicle is at operating temp before driving.

20. After the initial drive check all clamps, bolts, and fluid levels.

For a video installation check out- <https://youtu.be/glldul-Z4h4>