

# '99-'03 7.3L Turbo Removal and Reinstall

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**IMPORTANT:** Before starting installation, please be sure that all items which were supplied with the kit are accounted for.

\*Turbo Re-Install Kit-GTP38 P/N GZ-14-009



## Recommended Tools:

\*Metric socket and wrench set

\*Common screwdrivers

\*Torque wrench

- 1) Disconnect both batteries.
- 2) Remove Powerstroke engine cover (if installed)
- 3) Disconnect CAC inlet and outlet tubes from the spider. (fig 1)
- 4) Disconnect the AIH leads, IAT sensor connector, MAP & waste-gate pressure hoses, & remove the waste-gate solenoid from the spider. (label as required) (fig 2)
- 5) Remove the wastegate actuator tube from the actuator.
- 6) Remove the air filter intake tube to the turbo housing.
- 7) Remove the clamp at the aft flange of the spider connecting it to the turbo. (fig 3)
- 8) Loosen the upper clamps from the spider to the plenum.
- 9) Remove the spider by pulling it free from the plenum boots.
- 10) Discard the o-ring seal in the turbo outlet (new o-ring included in the turbo re-install kit)
- 11) Remove the Marmon clamp at the for the exhaust up-pipe.
- 12) Disconnect the EBPV linkage clip. Slide the clip towards the turbo to disengage. You can leave the actuator connected until later. (fig 4)



(Fig 1)



(Fig 2)



(Fig 3)



(Fig 4)

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13) Loosen the Marmon clamp at the back of the turbo. Using a deep-well socket and a long extension makes this easier. The clamp may be stuck on the flanges and takes a bit of prying to free. Once free spread the clamp sufficiently to allow it to be positioned over the collector "baby's butt". This is accomplished by disengaging the T-bolt from the clamp which requires the nut to be backed off fully. (fig 5)



(Fig 5)

14) Remove the two turbo mounting bolts. (fig 6)

15) Lift the turbo off of the pedestal, at the same time you should be able to free the EBPV actuator from the valve arm. (fig 7)

16) Turbo can be removed towards the front of the engine.

17) Remove and discard the turbo to pedestal O-rings. (fig 7)

18) If removing the pedestal, remove the EBPV Solenoid connector, and remove the (4) bolts holding the pedestal to the block. Remove and discard the pedestal to block O-rings.

19) If pedestal was removed, clean the mating surface and install new O-rings. Reinstall the pedestal and torque bolts to 18 ft/lbs.

20) Clean the pedestal to turbo mounting surface and install new O-rings into the grooves.

21) Remove the old EBPV retainer clip and install new clip from kit. (fig 7)

22) Reinstall the turbo in a similar manor as to how you removed it from the engine.

23) Before tightening the turbo down, make sure the EBPV actuator is engaged with the lever. Secure with the new EBPV clip.

24) Install new turbo mounting bolts and torque down to 18 ft/lbs. (fig 6)

25) Align the up-pipe collector with the turbo flange ensuring that the pin on the collector engages with the hole in the turbine housing. This may be difficult to do, loosening the exhaust manifold to up-pipe bolts may allow more movement to aid in aligning the flanges properly. Once aligned by hand, you can install the clamp to the flanges by sliding off of the collector and onto the turbo/collector flange. Using a bungee cord around the collector may help in holding the collector to the turbo. (fig 8 & 9)

26) Tighten the Marmon clamp to 60 in/lb. (fig 5)

27) Reinstall the downpipe to the turbo outlet by aligning the flanges and installing the Marmon clamp. Torque to 60 in/lbs.

28) Install new O-ring to compressor outlet flange.



(Fig 6)



(Fig 7)



(Fig 8)



(Fig 9)

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- 30) Reinstall spider into the plenum boots. You will be required to work one of the boots around the spider flange. Using a small common screwdriver or cotter pin removal tool will help. (fig 10)
- 31) Align the turbo compressor housing with the spider housing. Make sure the O-ring seal stays in place. The housings must be aligned properly to ensure no leaks. Align them by hand, then install the clamp to keep the flanges together while tightening down the band clamp. (fig 11)
- 32) Tighten down the (4) clamps on the plenum boots. Do not over tighten or you may deform the plenums. Riffraff PRI's allow full tightening of these clamps.
- 33) Reinstall the wastegate solenoid, MAP hose, wastegate pressure tube, AIH wires, and the IAT sensor connector to the spider.
- 34) Reinstall the air filter intake tube to the turbo housing and tighten clamps.
- 35) Reinstall the wastegate actuator and air intake tubing.
- 36) Align the drivers and passenger side CAC pipes with the spider and install the boots onto the spider. Tighten clamps to 60 in-lbs.
- 37) Reinstall the Powerstroke engine cover.
- 38) Reconnect the batteries.
- 39) Start the engine and check for leaks.



(Fig 10)



(Fig 11)



(Fig 12)

Pictures and instructions provided by Ken (woodnthings) and the whole FTE crew!

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