

Twin Turbo **Installation Instructions**



PARTS LIST:

1. Turbo Pedestal
2. Wiring and AC heat wrap
3. Exhaust heat wrap
4. Secondary Turbo
5. Exhaust down pipe
- 6 and 7. waste gate hoses
- 8 and 9. Water lines
10. Heater lines
- 11 and 12. Fuel lines
13. Oil return line
- 14 and 15. PCV Breather Hoses
16. Primary Turbo
17. Intercooler Hot pipe
18. Air filter adapter
19. 4" Aluminum cross over tube
20. 3" SS Wastegate exhaust pipe
21. 3" Intake manifold bridge
22. 3" SS exhaust pipe
23. Cold side intercooler tube
24. Air filter
25. Coolant overflow can
26. Intercooler
- 27, 28 and 29. Manifold and up pipes
30. Extended oil return
- 31 and 32. Parts kit
33. Wastegated turbo riser block
34. Turbo mounting bracket
35. Wastegate
36. Fuel filter relocation bracket (LML)
37. Heat shield adapter bracket
38. Fuel filter relocation bracket (LBZ and earlier)
39. Billet PCV valve adapter
40. Secondary turbo billet oil return line adapter
41. Injector heat shield
42. Oil galley plug adapter



STEP 1

- Disconnect batteries
- Remove passenger and driver side fender well liners
- Drain coolant
- Drain Oil
- Remove stock intake system/ mounting tray
- Remove passenger side battery/ mounting tray
- Remove coolant overflow tank
- Remove upper engine harness
- Remove engine belt





STEP 2

Remove stock intercooler (refer to intercooler installation instructions, link).



STEP 3

Remove AC compressor unit/ move it out of the way- DO NOT DISCONNECT HOSES.



STEP 4

Remove intercooler tubes.



STEP 5

Remove PCV (Positive Crankcase Ventilation) from each head.



STEP 6

Loosen hose clamp connecting turbo to intake and remove PCV/intake assembly.



STEP 7
Remove air intake.



STEP 8
Remove alternator.



STEP 9
Remove heater lines.





STEP 10
Remove EGR.



STEP 11
Remove engine harness bracket.



STEP 12
Remove coolant tube.



STEP 13
Remove fuel lines.



STEP 14
Remove glow plug control module and mounting bracket.



STEP 15
Remove glow plug control module and mounting bracket.



STEP 16

Remove stock turbo heat shield (drill out top right spot weld to make removal easier)

Remove all stock exhaust heat shielding
Remove complete exhaust system cat-forward

Remove transmission dipstick





STEP 17

Remove stock turbo (Refer to 4094 turbo installation instructions, link).



STEP 18

Remove intake manifold bridge tube.



STEP 19
Remove fuel lines.



STEP 20
Remove fuel filter/ fuel filter bracket.



STEP 21
Remove passenger side fuel return.



STEP 22
Remove fuel pressure valve assembly.



STEP 23
Remove intake manifold bridge

Now with all components removed from engine you can start assembly of 4094 turbo.

Assemble 4094 turbo.(refer to turbo installation instructions)

- Turbo pedestal
- Riser block with wastegate tube
- Gaskets
- Hardware
- Oil return



STEP 24

Be sure to orient turbo to correct position (use extreme caution not to damage turbo blades).



STEP 24

Strip parts from intake manifold bridge, gaskets and sensors.



STEP 26

Reinstall gaskets in new intake manifold bridge using grease to lubricate seal.



STEP 27
Remove M.A.P. sensor from intake.



STEP 28
Install M.A.P. sensor and intake temperature probe on new intake manifold bridge.

STEP 29
Install brass fitting using Teflon tape, fitting should face rearward, second port is for boost gauge.





STEP 30

Using a hammer carefully tap down water line mounting bracket to make clearance for new intake manifold bridge.



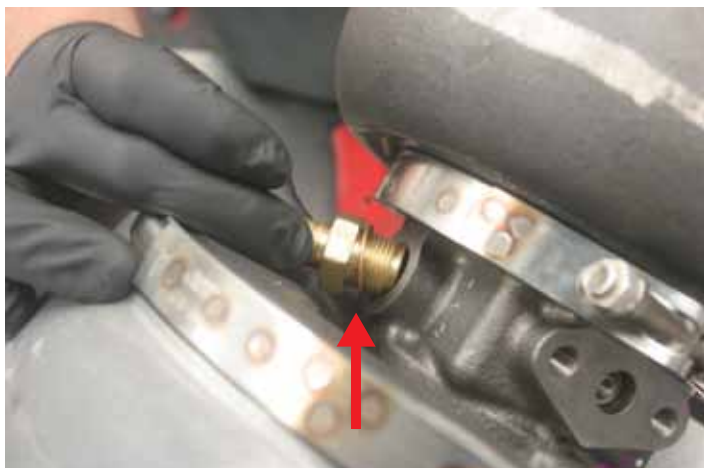
STEP 31

Install new intake manifold bridge.



STEP 32

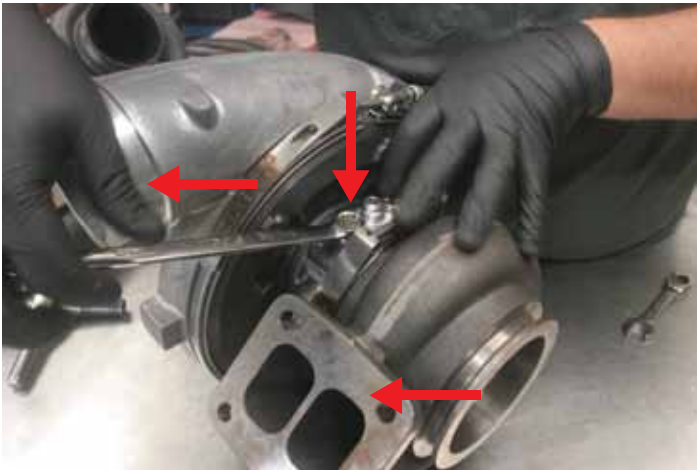
Install new oil return gasket and braided oil feed line using supplied copper gasket.



STEP 33

Prepare large turbo.

- Brass water lines with copper washers
- Billet oil feed and return lines with o-rings



STEP 34

Install billet fittings with o-rings. Loosen v band clamps to position turbo roughly as shown.



STEP 35

Remove fuel rail heat shield and install it on new aluminum bracket. Install on engine.



STEP 36

Install 4094 turbo assembly.



STEP 37

Install oil return line and oil feed line. Install turbo pedestal bolts. Install PPE intercooler kit. (Refer to intercooler instructions.)



STEP 38
Install new exhaust up-pipes and manifolds.



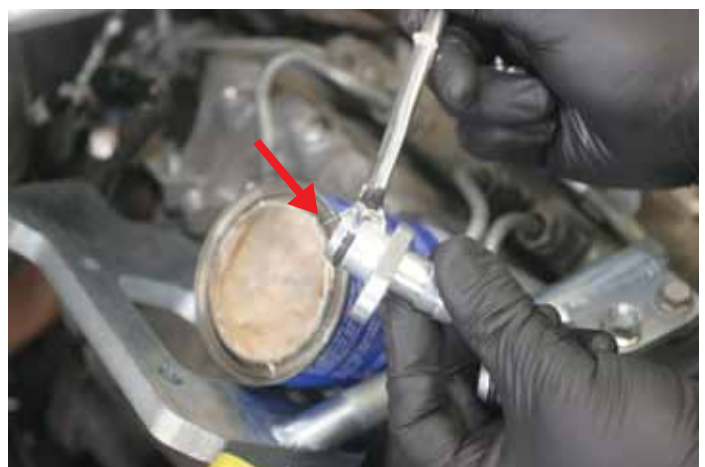
STEP 39
Install aluminum heat shield.



STEP 40
Install turbo mounting bracket.



STEP 41
Install turbo mounting bracket.



STEP 42
Install billet PCV valve using grease to lubricate the o-rings.



STEP 43

Install turbo mounting bracket.



STEP 44

Bend dipstick towards turbo mounting bracket as shown. Final adjustment done when turbo is installed. Be careful not to pull dipstick out of engine block.



STEP 45
Install 3" exhaust pipe after it has been wrapped.



STEP 46
Slightly bend the AC line up to allow clearance for pipe.



STEP 47
Install waste gated exhaust tube with gasket.



STEP 48
Put anti seize on all exhaust clamps.



STEP 49
Loosely install clamps.



STEP 50
Place bolts in flange. Install turbo gasket.



STEP 51

Having a friend help you, install the turbo using a few nuts to hold it in place. Also make sure to bend dipstick into final position. Leave bolts loose. Tighten bolts after wastegate installation. Install turbo gasket.



STEP 52

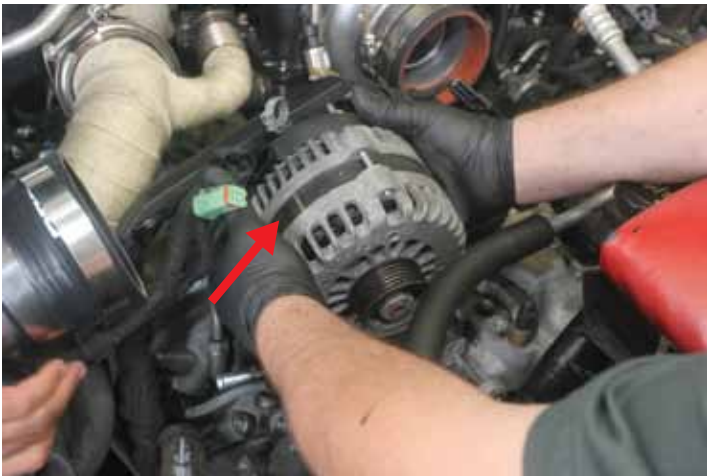
Install CP3 fuel lines according to your fuel setup, and all wiring in valley of motor.



STEP 53

Put silicone connectors on turbos.

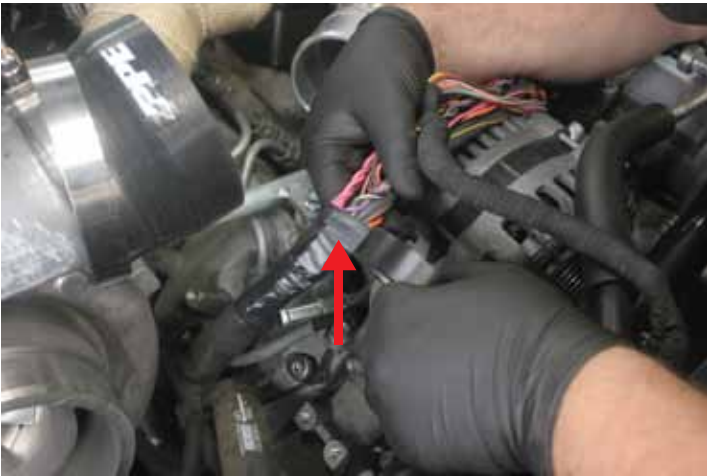




STEP 54
Reinstall alternator.



STEP 55
Remove plastic protector from wiring loom and rewrap with electrical tape.



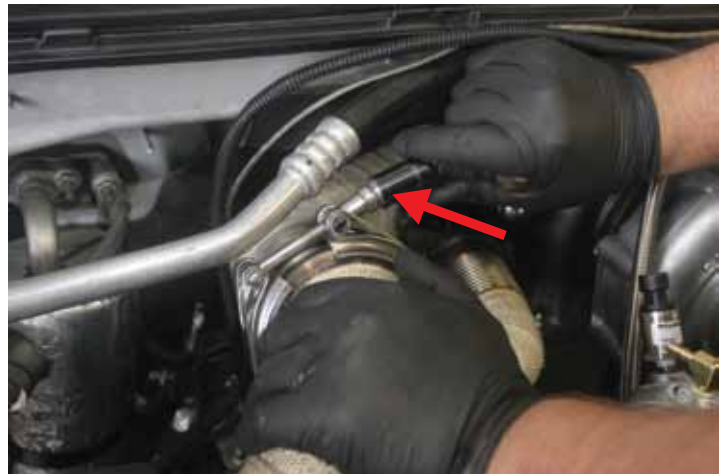
STEP 56
Push wrapped harness down behind alternator.
Reconnect all wiring connections.
Prepare wastegate for installation.





STEP 57

With all exhaust tubes loose and secondary turbo bolts loose, install wastegate. Then tighten wastegate clamps.



STEP 58

Now tighten all exhaust clamps and turbo bolts.



STEP 59

Reinstall water coolant tube using grease to lubricate the o-ring.



STEP 60

Install water lines on turbo.



STEP 61

Install coolant tank.
Put bracket on coolant tank loose.



STEP 62

Install water lines from coolant tank.





STEP 63

Connect water lines for turbos, small turbo feeds big turbo and then is returned back to engine.



STEP 64

Install wastegate hoses.



STEP 65
Install PCV lines. Hose goes underneath turbo.



STEP 66
Re-install glow plug control module and mounting bracket.



STEP 67
Re-install glow plug control module and mounting bracket.



STEP 68

Install hot side intercooler tube. (Keep plastic bag to minimize scratches.) Tighten clamps last.
*Clearance pipe by denting slightly for you specific setup.



STEP 69

Install hot side intercooler tube. (Keep plastic bag to minimize scratches.) Tighten clamps last.
*Clearance pipe by denting slightly for you specific setup.



STEP 70

Install cold side intercooler pipe. Tighten clamps last.



STEP 71

Install 4" crossover tube. Tighten clamps last.

STEP 72

Rotate turbo compressor housing until fit is correct.

Remember to tighten turbo housing v-band clamps.

Tighten down all intercooler tubes.

DO NOT OVERTIGHTEN CLAMPS. CLAMPS CAN DAMAGE ALUMINUM TUBES.

Tighten by hand until snug, watch for tube deformation.





STEP 73

Remove steel oil pan, mark and drill aluminum oil pan for 1/2" pipe fitting. Tap out for 1/2" pipe. Then install 1/2" pipe to 5/8" hose barb. This is for secondary turbo oil drain return.

- * Make sure to remove all of the metal shavings with the oil pan removed. Then clean and de-burr. Then re-install oil pan.



STEP 74

Install wastegate lines. Top of wastegate goes to 4" crossover tube. Side of wastegate goes to 3" intake manifold.



STEP 75

Install wastegate hose into 4" cross over tube.



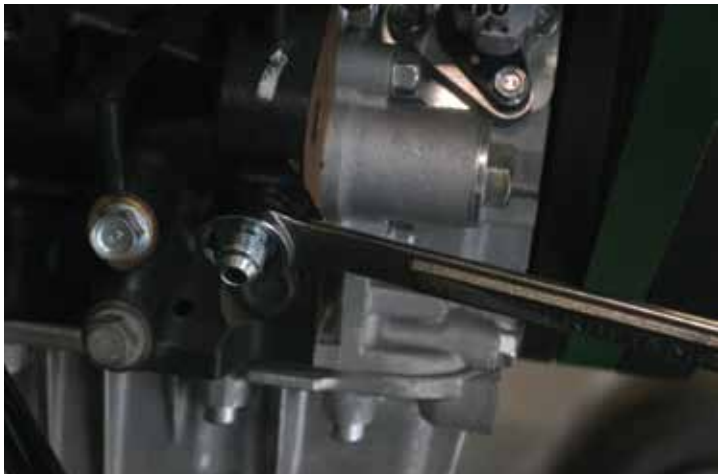
STEP 76

Install large turbo oil feed line..



STEP 77

Remove oil galley plug to install oil feed line fitting. Install exhaust system with 4" down pipe.





STEP 78

Install heater lines. Using the stock heater line adaptors, one will have hose clamp and one needs to be cut free from the crimp fitting.





STEP 79

Cut crimp fitting, be careful not to cut through plastic hose barb (heater line).



STEP 80

Install fuel filter relocating bracket, use bracket as template drill holes. Install fuel lines. Mount fuel filter back as far as it can go before plastic drain touches fender well.



STEP 81

Install mass air flow sensor into 6" air flow adapter. Note, do not bend mass air flow sensor bolt tabs. Then install air filter.



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