

ATS

DIESEL PERFORMANCE

INSTALL INSTRUCTIONS

AURORA

VORTEX
MANIFOLD

PLUS
TURBO KIT

5K,A5500,A6K

2013 + DODGE CUMMINS COMPOUNDS





WHAT'S IN THE BOX!

READ INSTRUCTION THOROUGHLY BEFORE BEGINNING INSTALL.
***** WILL REQUIRE CUSTOM TUNING. *****

AURORA VORTEX 5000 PLUS 2013+

1. 2025031000 AURORA TURBO
A. TURBINE HOUSING B. TURBO CARTRIDGE C. COMP HOUSING
2. 2041102326 VORTEX MANIFOLD
3. 202072392 CHARGE PIPE
4. 1050092326 COOLANT RESERVOIR (SILICONE COOLANT LEVEL SENSOR IN TANK)
5. 2020952329 AC LINE
6. 2021041000 T4 TURBO BLANKET (OPTIONAL)
7. 2020082392 UPPER OIL DRAIN BARB
8. 2020122392 LOWER OIL DRAIN BARB
9. 5372K376 90 DEGREE 3/4-3/4 HOSE BARB FITTING
10. 2021922392 VGT ACTUATOR HEAT SHIELD W/ HARDWARE
11. 2024922392 AURORA 5000 EXHAUST OUTLET GASKET
12. 2020762392 68RFE TRANS DIP STICK RELOCATION BRACKET (68RFE ONLY)
13. 68071676AA CAST ELBOW GASKET
14. 2020282392 -4 90-45 15" OIL FEED LINE
15. 4VTX-S -4 45 DEGREE TO 1/8" NPT FITTING
16. (4) MSTUD- 1.5X50MM M10X1.5X50 STUDS
17. (4) 0185918 M10 WHIZ NUTS
18. (2) 11127101 M8X1.25X20MM FLANGE BOLTS
19. 2020591000 ROUND HOLE OIL DRAIN GASKET
20. 2040101000 T4 MOUNT GASKET
21. 1283N108 ORANGE DISCHARGE O-RING
22. 98093A440 M6X1.0X20MM BOLT

AURORA VORTEX 5000 13+ Clamp Kit

- 23.(1) 9956V-0450 4.4" V-BAND CLAMP
- 24.(1) 13448 4.2 V-BAND CLAMP
- 25.(1) 941000-0450 4" T-BOLT BAND CLAMP
- 26.(1) 2023501000 3.50 T-BOLT BAND CLAMP
- 27.(1) 62028 5" WORM DRIVE HOSE CLAMP
- 28.(1) 62025 4" WORM DRIVE HOSE CLAMP
- 29.(1) 62012 #16 HOSE CLAMP
- 30.(2) 62010 #10 HOSE CLAMP
- 31.(1) 62003 #6 HOSE CLAMP
- 32.(3) 62002 1/4" HOSE CLAMP

AURORA VORTEX 5000 PLUS 2013+ (HOSE KIT)

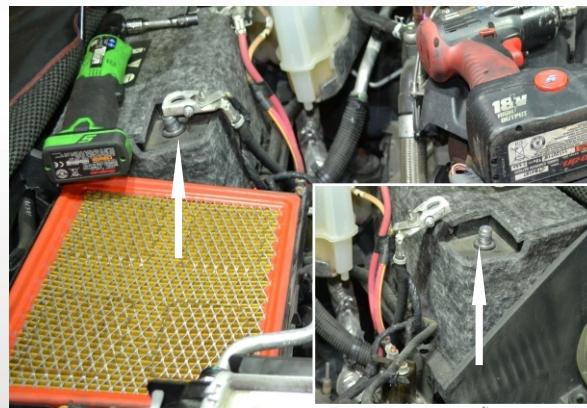
33. 2020402392 (NEW) SILICONE 4"-3" 90 DEGREE REDUCER BOOT
34. 2060342326 SILICONE 2 RING REINFORCED INTAKE BOOT TO FACTORY AIRBOX
35. 2FT.821-10 5/8" PUSH-LOK HOSE
36. 1FT. 28408 5/16" HEATER HOSE
37. 2FT. 27061 3/8" EGR COOLER HOSE
38. 1FT. 28412 3/4" HEATER HOSE

WHAT'S IN THE BOX!

1.) EVACUATE AC USING A CERTIFIED AC VACUUM.



2.) DISCONNECT BOTH BATTERIES. REMOVE PASSENGER SIDE BATTERY. REMOVE TOP HALF OF AIR BOX AND INTAKE DUCTING.



3.) DISCONNECT ACTIVE AIR WIRE HARNESS AND REMOVE WITH AIR BOX.



4.) DRAIN COOLANT FROM SYSTEM BY OPENING THE RADIATOR PETCOCK LOCATED ON THE LOWER DRIVER SIDE PORTION OF THE RADIATOR.

BE SURE AND USE A CONTAINER THAT CAN HOLD 5 GALLONS OR MORE!
REMOVING THE GRILLE MAY AID IN REACHING THE RADIATOR PETCOCK.

5.) REMOVE PASSENGER SIDE FENDER LINER



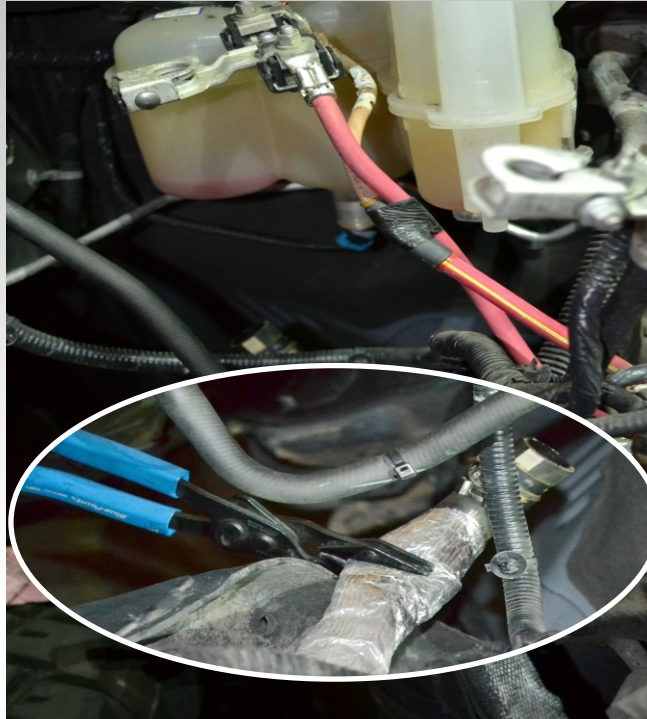
6.) REMOVE THE GRID HEATER RELAY FROM BATTERY TRAY USING A T-20 TORX.

7) REMOVE THE 6 BOLTS FOR THE PASSENGER SIDE BATTERY TRAY. 4 TOP AND 2 BELOW IN FENDER WELL.
REMOVE BATTERY TRAY.



8.) DISCONNECT LARGE HOSE FROM BOTTOM OF COOLANT OVERFLOW RESERVOIR, PINCH OR PLUG TO PREVENT LOSS OF COOLANT IN THE ENGINE.

CUT OEM CLAMPS WITH WIRE CUTTERS. AND UNPLUG COOLANT LEVEL SENSOR ON THE BOTTOM.



9.)DISCONNECT HOSE GOING TO EGR COOLER ON THE ENGINE SIDE.
DISCONNECT THE HOSE GOING TO THE RADIATOR AT TANK SIDE.

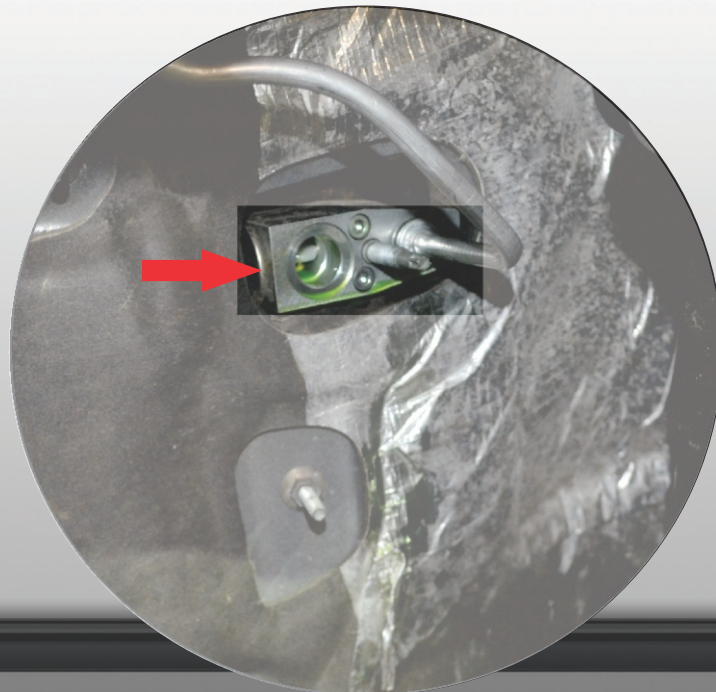


10.) REMOVE COOLANT RESERVOIR FROM FIREWALL.

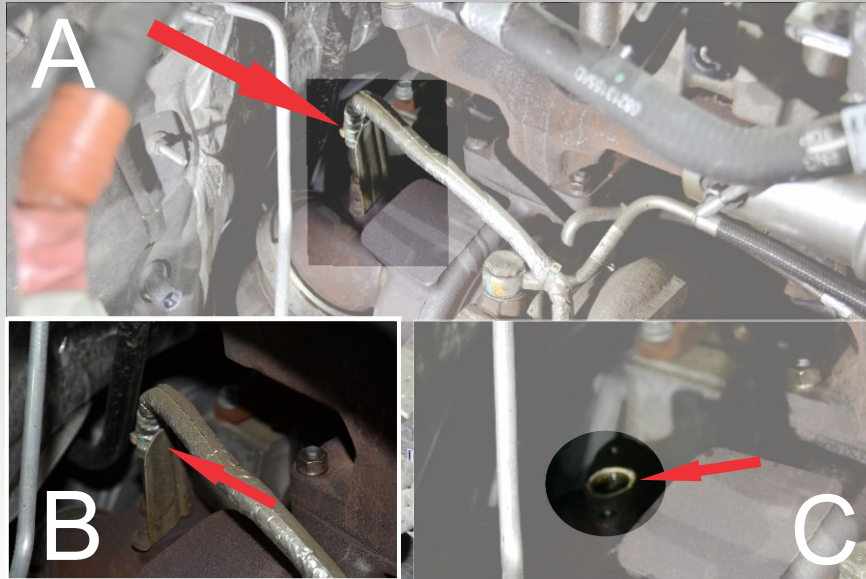


11.) DISCONNECT AC LINES AT FIRE WALL AND REMOVE THE LINE THAT RUNS FROM THE FIREWALL TO THE AC COMPRESSOR.

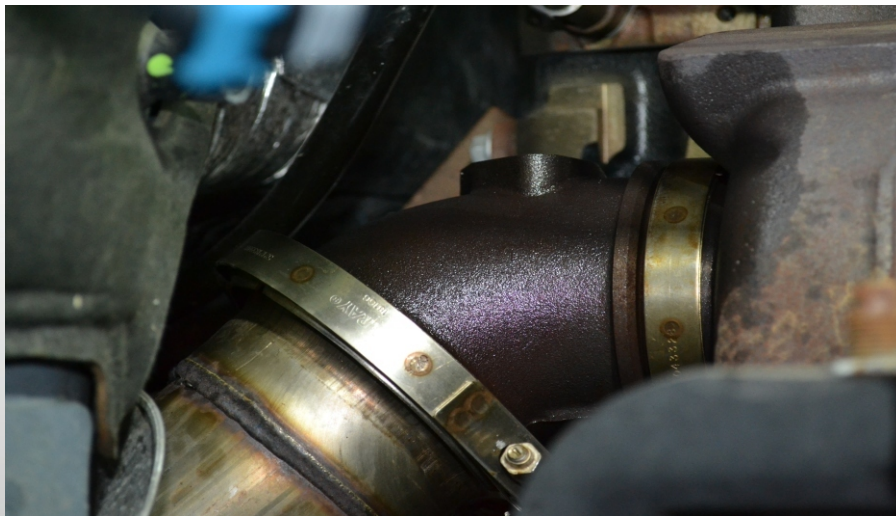
REMOVE O-RINGS FROM OEM AC LINE AND RE USE THEM ON PROVIDED LINE.



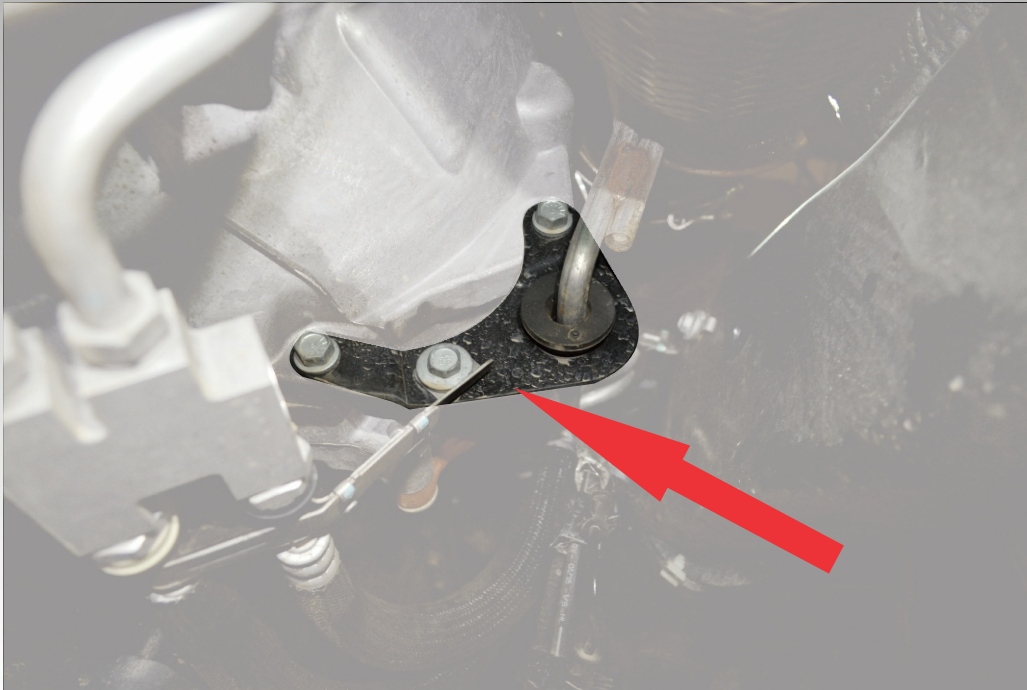
12.) LOCATE FACTORY NOX SENSOR. (FIG. A&B)
REMOVE NOX SENSOR FROM FACTORY EXHAUST ELBOW USING 7/8"(22MM) OPEN END
WRENCH. CUT ZIP TIE AND PLACE OUT OF THE WAY. (FIG. C)



13.) LOOSEN AND REMOVE V-BAND CLAMPS ON BOTH SIDES OF TURBO OUTLET
ELBOW. PENETRATING OIL MAY BE REQUIRED TO AID IN CLAMP REMOVAL.



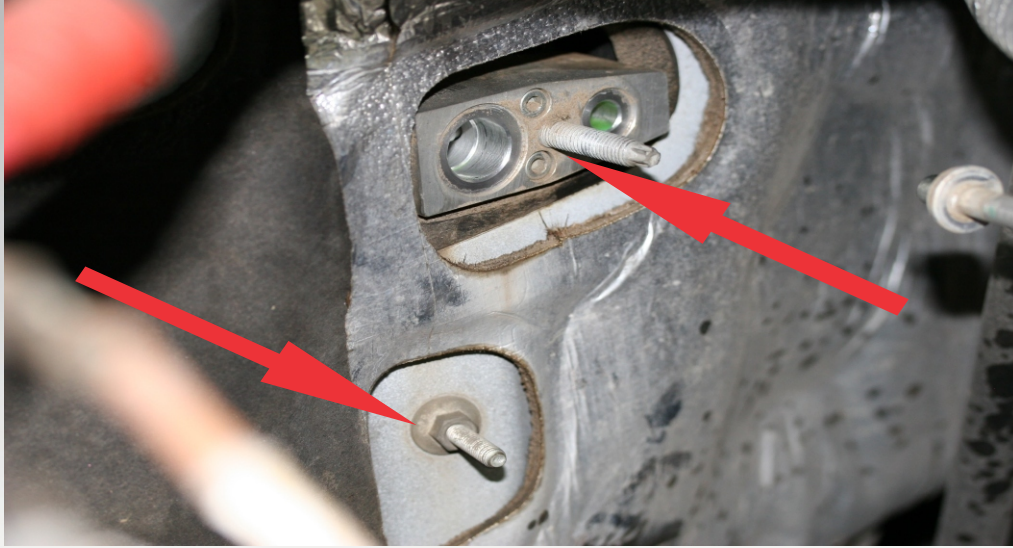
14.) REMOVE BRACKET FROM BELL HOUSING FOR EXHAUST HANGER AT DOWN PIPE. HOOK RATCHET STRAP TO HANGER. FIND POINT TO THE REAR OF THE HANGER FOR OTHER END OF STRAP. PULL EXHAUST SYSTEM BACK A COUPLE INCHES.



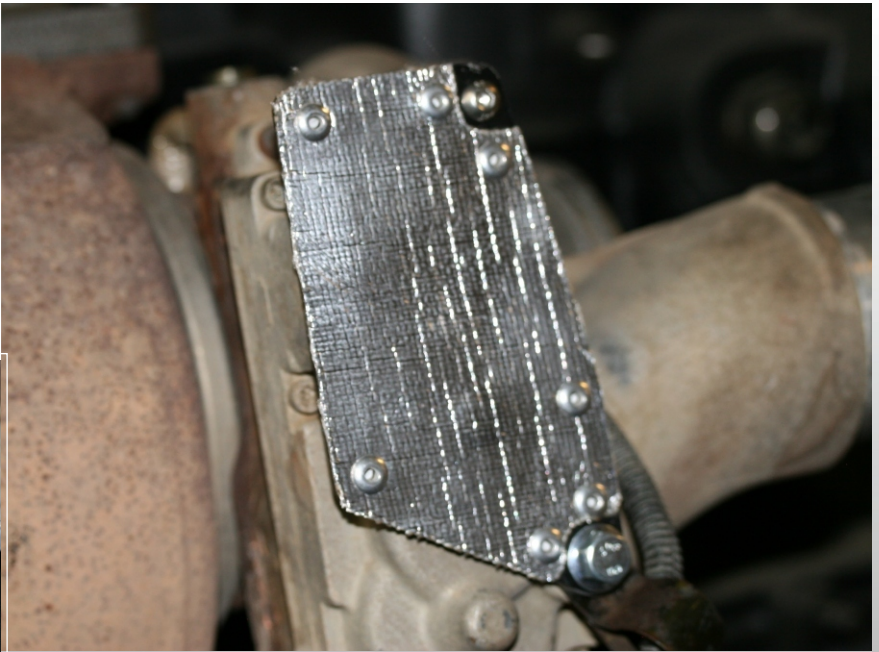
15.) USE ½" SOCKET EXTENSION TO GENTLY BEND TRANSMISSION DIP STICK TUBE, UP AND IN TOWARDS THE EGR COOLER. USE SUPPLIED BRACKET (PN 12 FIG. 1) TO RELOCATE DIPSTICK TUBE.



16.) REMOVE UPPER STUD FROM AC BLOCK.
CUT LOWER THREADED STUD BACK FLUSH WITH NUT.



17.) ASSEMBLE INSULATED HEAT SHIELD AS SHOWN BELOW. (PN10, FIG 1)



18.) INSTALL VORTEX MANIFOLD(PN 2 FIG.1) TO THE BACK OF THE FACTORY TURBO. REUSE THE STOCK CLAMP. **BE SURE NOT TO BEND THE ALIGNMENT PIN.** ONCE THE MANIFOLD IS TIGHT TO THE BACK OF THE TURBO YOU CAN HOOK THE DOWNPIPE BACK UP USING THE STOCK CLAMPS AND NEW GASKET. (Pn13 FIG. 1) YOU CAN NOW REINSTALL THE HANGER ON THE BELL HOUSING. **NOTE: SOME TRUCKS WILL ONLY USE ONE OF THE BOLTS. BE SURE TO TO PUT THE OTHER BOLT BACK IN THE BELL HOUSING.**

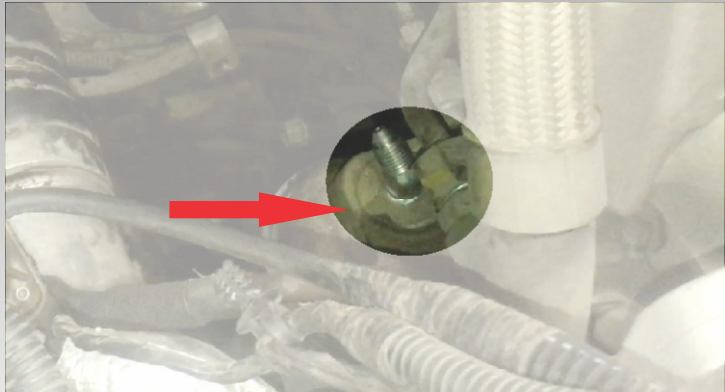
19.)REINSTALL THE NOX SENSOR INTO THE THREADED PORT ON THE VORTEX MANIFOLD.



20.) REMOVE COOLANT LINE DIRECTLY ABOVE OIL FILTER HOUSING. LOCATE 1/8" NPT PLUG ON TOP OF OIL FILTER HOUSING AND REMOVE.



21.) INSTALL PROVIDED 45° FITTING (PN15, FIG.1) AS SHOWN BELOW WITH THREAD SEALANT. REATTACH COOLANT LINE.



22.) LOCATE FREEZE PLUG IN BLOCK UNDER OIL FILTER.
CLEAR PLUG OF ANY DEBRIS.
USE FLAT SCREW DRIVER AND HAMMER TO TAP ONE SIDE OF PLUG.
MAKE SURE TO ONLY ROTATE PLUG ENOUGH TO BE ABLE TO REMOVE AS SEEN BELOW. USE PLIERS TO PULL PLUG OUT.



APPLY SMALL AMOUNT OF OIL TO O-RINGS BEFORE INSTALLING IN FREEZE PLUG PORT.
INSTALL OIL RETURN LINE FITTING(PN 8 FIG. 1) AS SHOWN BELOW. PLACE FITTING INTO FREEZE PLUG PORT. BE SURE TO PUSH FIRMLY TO SEAT BOTH SEALS ON FITTING.



24.) INSTALL OIL RETURN FITTING TO BOTTOM OF TURBO CARTRIDGE.
(PN 7 FIG.1)



25.) INSTALL PROVIDED STUDS INTO FLANGE OF VORTEX MANIFOLD. LEAVE APPROX. 1" ABOVE THE FLANGE. (PN16 FIG.1)

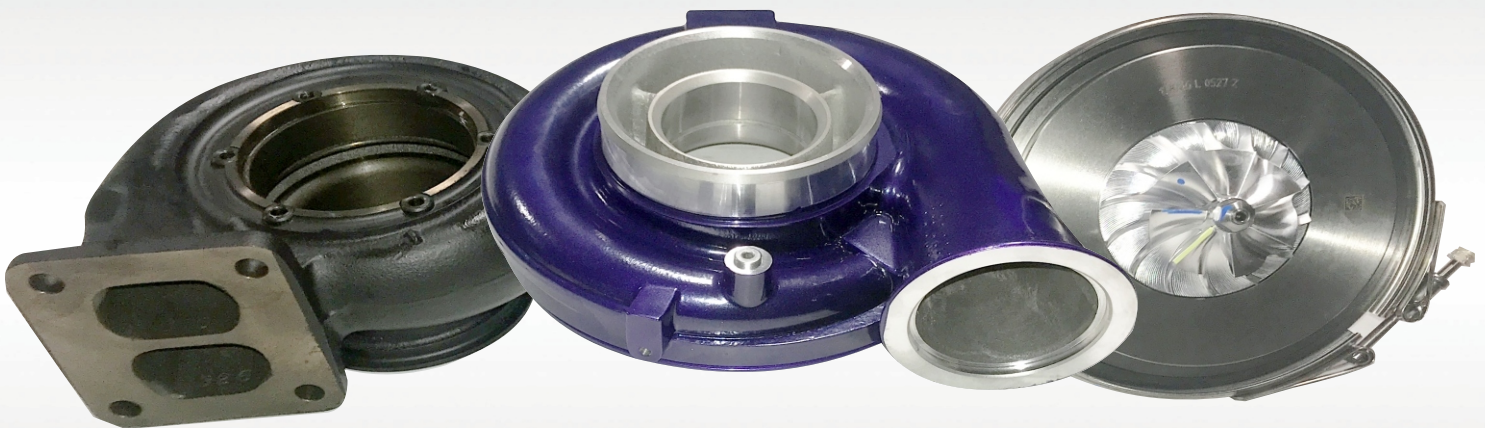
26.) INSTALL T-4 FLANGE GASKET. (PN20 FIG.1)



27.) INSTALL PROVIDED ROUND METAL GASKET (PN 11 FIG.1) TO V-BAND OUTLET OF VORTEX MANIFOLD. BE SURE THE RIB IN THE CENTER OF THE GASKET FACES OUT. BEND TABS INWARD TO SECURE GASKET IN MANIFOLD.



28.) DISASSEMBLE TURBO INTO 3 SECTIONS
(PN 01 A,B,C FIG. 1)

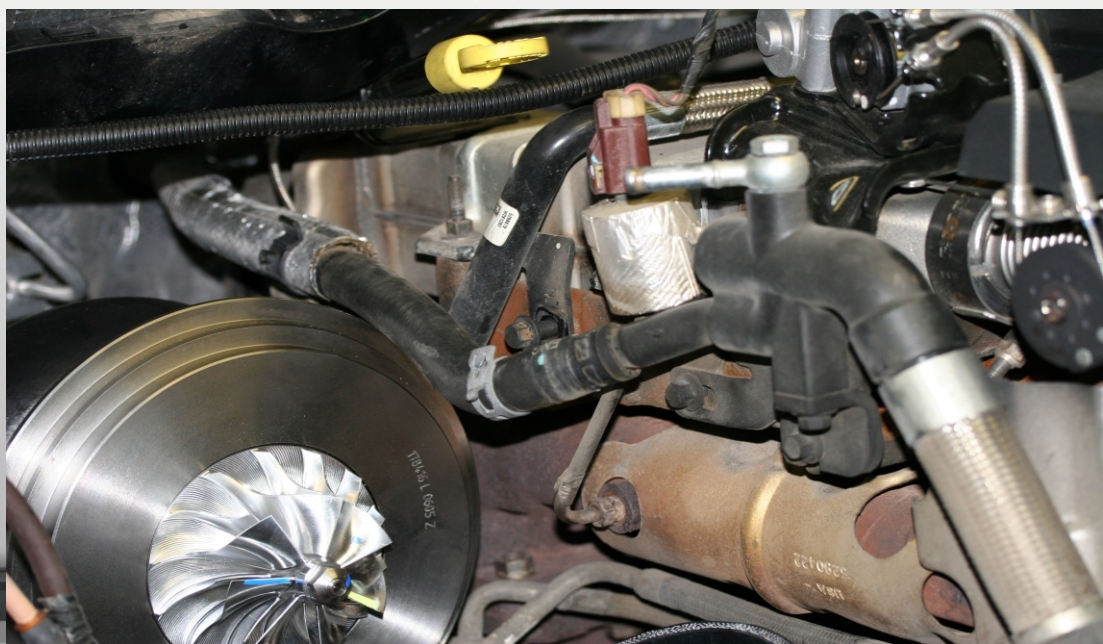


29.) INSTALL TURBO EXHAUST HOUSING. (PN 01,A FIG.1)
INSTALL AND TIGHTEN V-BAND CLAMP ON TURBINE HOUSING OUTLET. (PN 23 FIG.1)
TIGHTEN FLANGE NUTS(PN 17 FIG.1) STARTING FROM THE FIREWALL, ENGINE SIDE FIRST.

SOME TRUCKS WITH AFTERMARKET EGT SENSORS WILL NEED TO ADJUST SENSOR INPUT LEAD TO CLEAR TURBINE HOUSING.



30.) LOOSELY INSTALL TURBO CARTRIDGE,(PN 01,B FIG.1) INTO TURBINE HOUSING. (EXHAUST HOUSING) CLOCK OIL DRAIN TO CLEAR VGT MODULE HEAT SHIELD AND TIGHTEN BOLTS OR CLAMPS AT TURBINE HOUSING. INSTALL OIL DRAIN LINE WITH PROVIDED HOSE CLAMP.

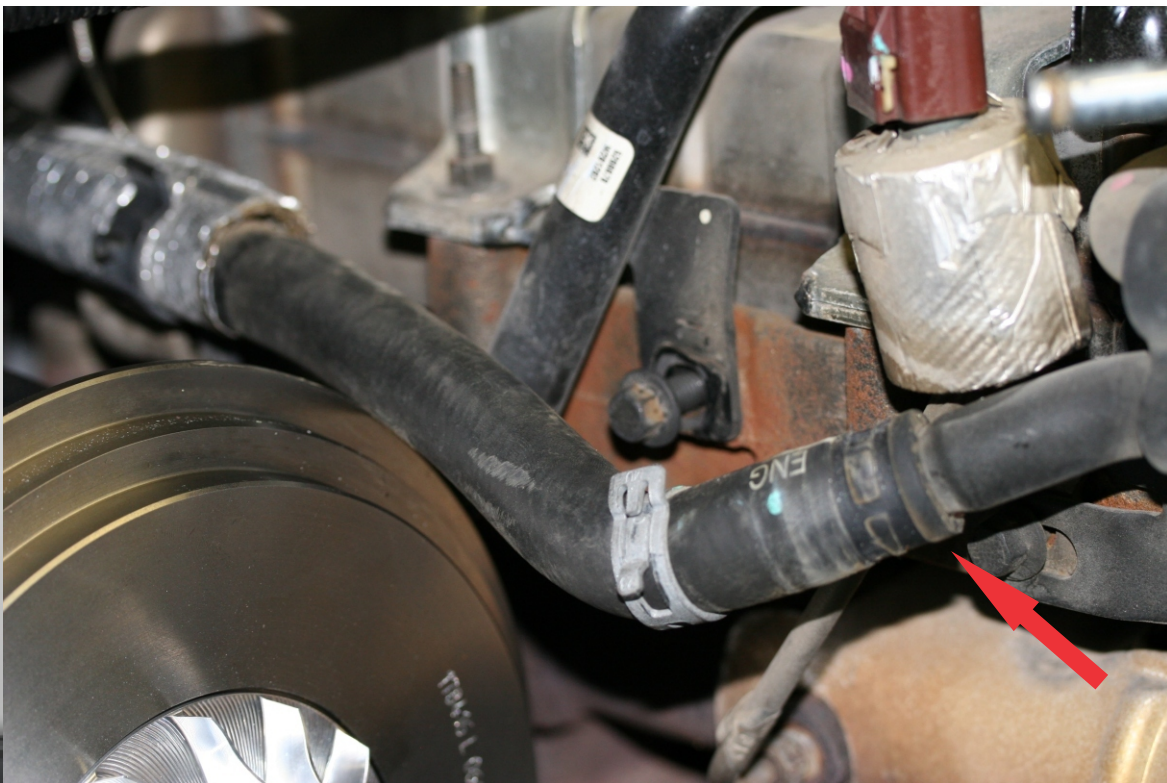


31.) REINSTALL THE STUD TO THE AC BLOCK.
INSTALL PROVIDED AIR CONDITIONING LINE(PN 5 FIG.1) TO FIRE WALL AND AC COMPRESSOR.

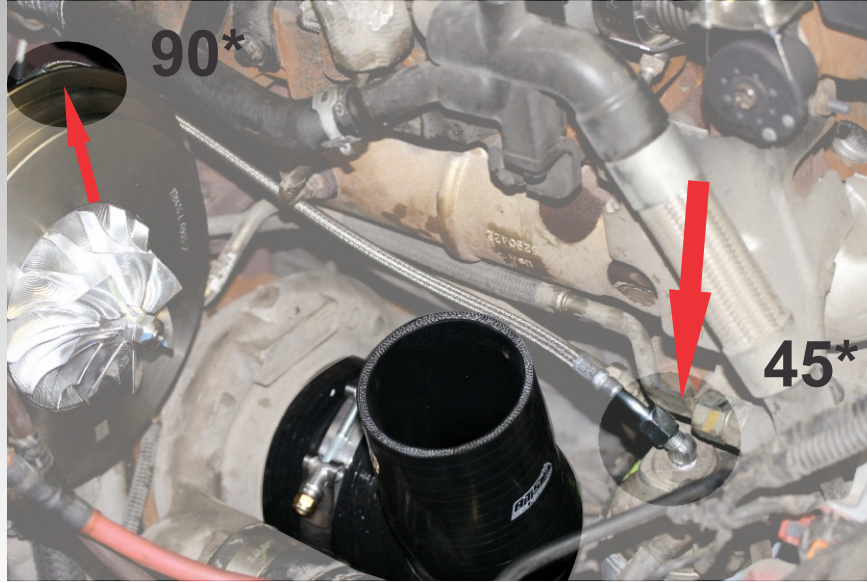
GENTLY BEND 1/4" LINE AS NEEDED BY HAND TO RELOCATE FOR PROVIDED COOLANT RESERVOIR.



32.) NOTE CLEARANCE AT HEATER CORE HOSE.
REMOVE HOSE CUT 1/2" OFF END OF HOSE AND REATTACH.



33.) ATTACH PROVIDED STEEL BRAIDED OIL FEED LINE,(PN 14 FIG.1) WITH 45° END AT OIL FILTER HOUSING AND 90° END AT TURBO.
INSTALL PROVIDED 90° TURBO INTAKE BOOT. (PN 33 FIG.1)
INSTALL PROVIDED TURBO BLANKET OVER TURBINE HOUSING. (PN 6 FIG.1)-OPTIONAL



34.) INSTALL COMPRESSOR HOUSING AS SHOWN.(PN 01,C FIG.1)
NOTE CLEARANCE AT COMP HOUSING AND OEM DRIVE PRESSURE SENSORTUBE. BEND TUBE AS NEEDED TO CLEAR COMP HOUSING.



35.) PLACE SUPPLIED O-RING (PN 21 FIG. 1) IN CHARGE PIPE (PN 3 FIG. 1) TO FLANGE. INSTALL PROVIDED CHARGE PIPE INTO LOWER BOOT FIRST. THEN CLOCK TURBO AND ALIGN BOTH FLANGES TOGETHER. LEAVE BOTTOM BOOT LOOSE TO ALLOW BETTER ALIGNMENT OF CHARGE PIPE AND COMP HOUSING. THERE SHOULD BE 1/8" - 1/4" CLEARANCE BETWEEN THE CHARGE PIPE AND COOLANT HOSE.



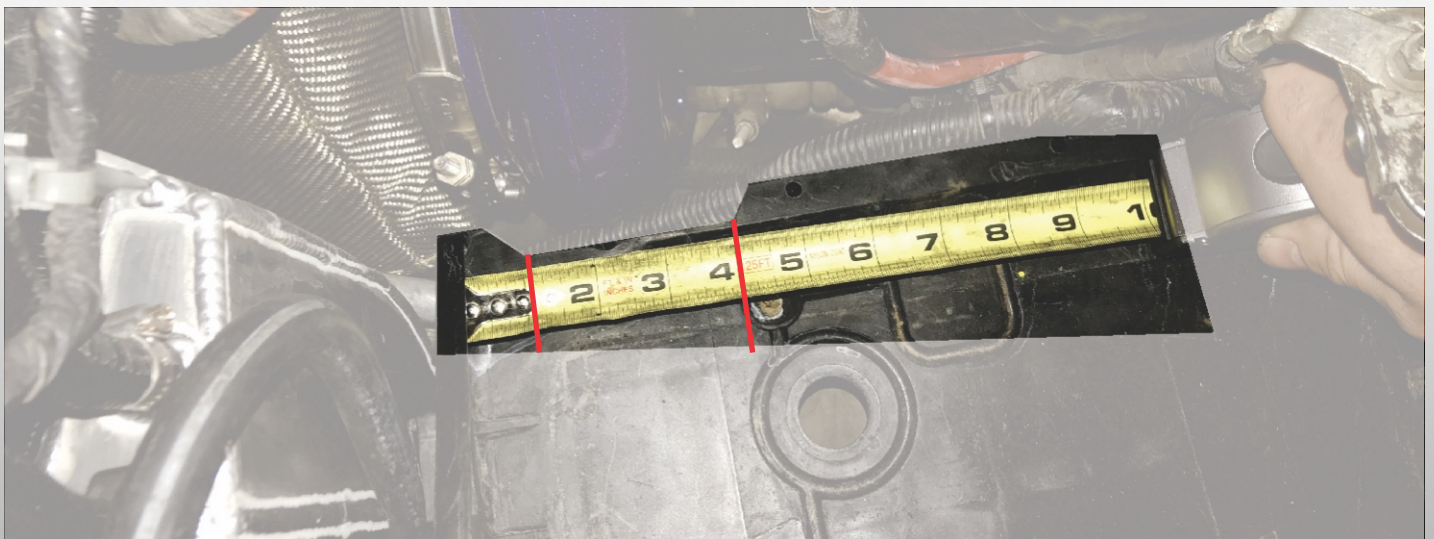
36.) USING VISE GRIPS, CLAMP THE V-BAND CLAMP (PN 24 FIG.1) AROUND THE CHARGE PIPE AND COMP HOUSING.



37.) INSTALL PROVIDED COOLANT OVERFLOW TANK. (PN 4 FIG.1) LOOSEN FITTING ON EGR COOLER AND TURN TOWARDS FIREWALL. CONNECT ALL HOSES (PN 36,37 FIG.1) BACK TOGETHER USING PROVIDED HOSE AND CLAMPS (PN 32 FIG.1) FOR ITEMS 1 & 3 AS SHOWN BELOW. CUT HOSES AS NEEDED TO FIT.



38.) TRIM BATTERY TRAY TO CLEAR COMP HOUSING. AND RE INSTALL.



39.) REINSTALL GRID HEATER RELAY.

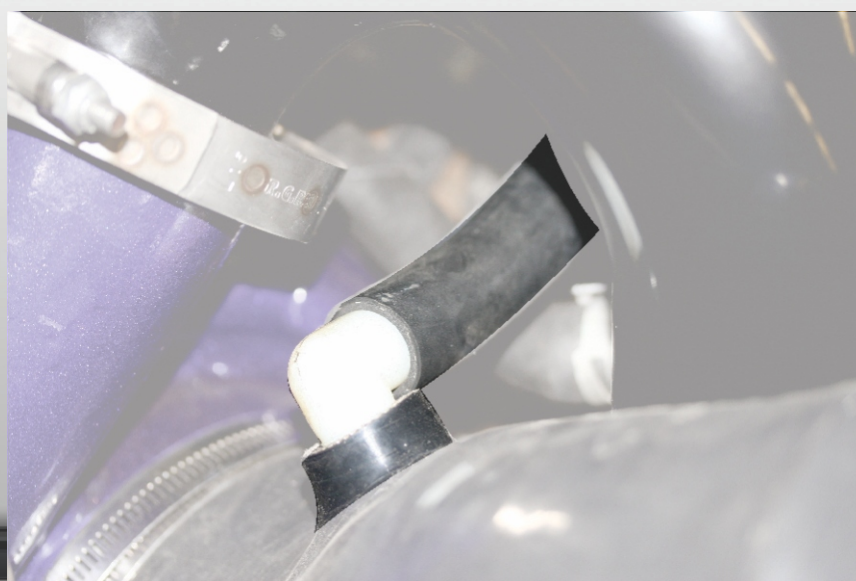
40.) REINSTALL THE LOWER PORTION OF THE AIRBOX AND PLUG IN ACTIVE AIR MOTOR.

41.) INSTALL THE 5" END OF THE INTAKE HOSE (PN 34 FIG.1) ONTO THE TURBO AND LEAVE THE CLAMP LOOSE.

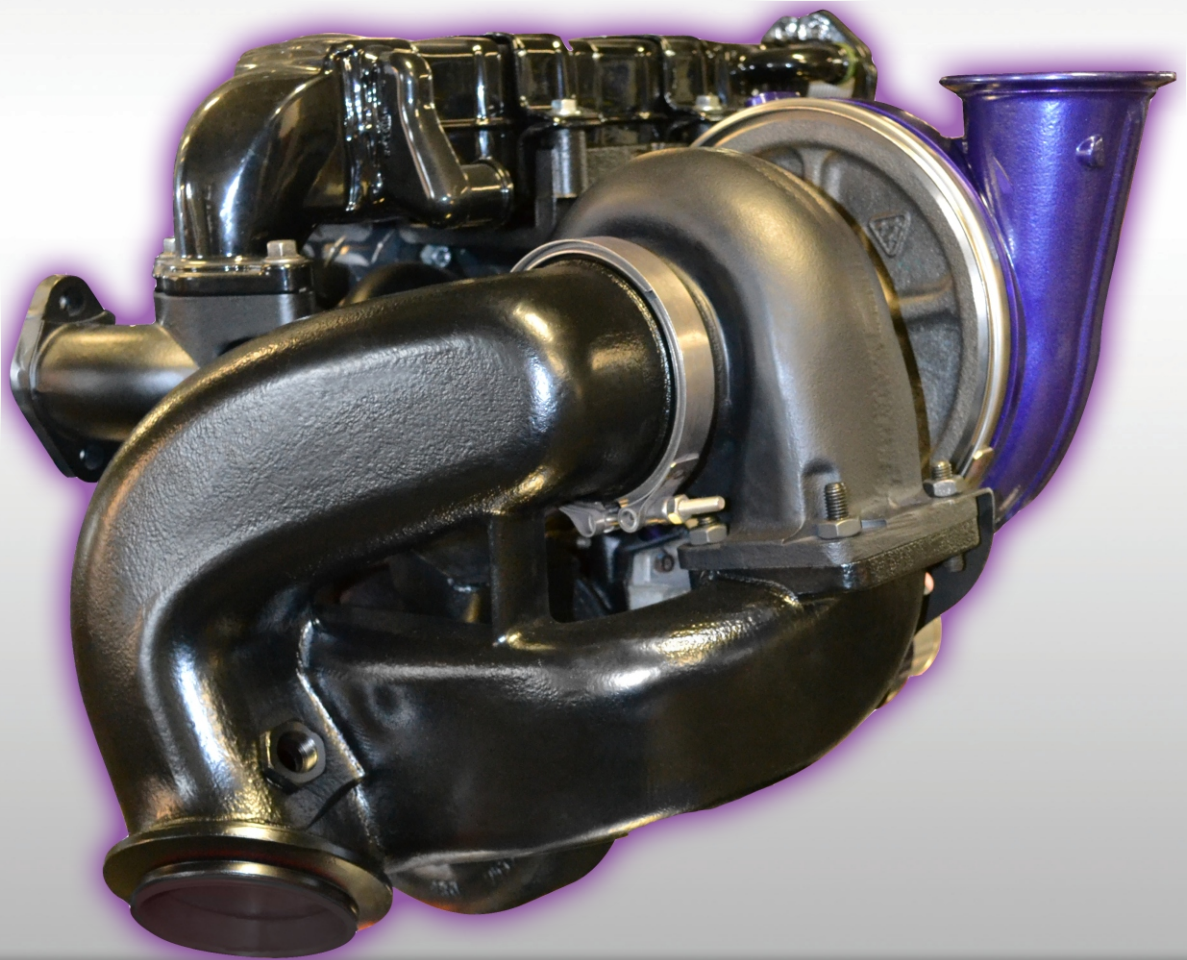
42.) INSTALL AIRBOX LID INTO INTAKE HOSE AND THEN ONTO AIRBOX. BE SURE TO PLUG IN IAT AND MAF SENSORS.



43.) INSTALL 90° BARB FITTING INTO INTAKE BOOT. RECONNECT CCV LINE WITH PROVIDED HOSE. (PN 9,38 FIG.1)



44. FILL RADIATOR WITH APPROVED COOLANT (PN) M512106 OAT. RECHARGE AC SYSTEM
- 45.) CONNECT BATTERIES.
- 46.) START VEHICLE AND CHECK TO ENSURE THERE ARE NO LEAKS.
- 47.) AFTER NO LEAKS ARE DETECTED REINSTALL FENDER LINER.
- 48.) INSTALL TUNING.
- 49.) ENJOY COMPOUNDS!!!



**THANK YOU FOR
CHOOSING
ATS DIESEL PERFORMANCE!
FOR TECH QUESTIONS
PLEASE CALL
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We encourage you to visit our Technical support website for the most up - to - date manuals and diagrams as well as other information.

www.atsdiesel.com/ATSWebsite/Technical.asp

If you have any suggestions as to how we can improve this install manual, let us know at Suggestions@atsdiesel.com

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