



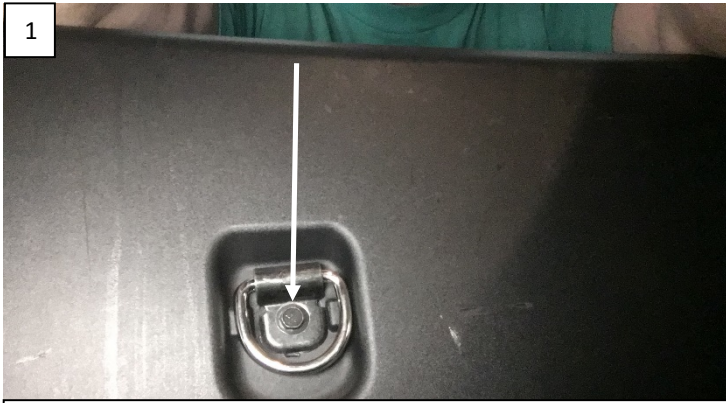
2009-2014 CTS-V Twin Turbo Kit Installation Guide



This is a preliminary guide. We will be continuing to add content and photos to make the install easier for you. If you see something in here that you have questions on, please contact Jon@HuronSpeed.com immediately for clarification. Thank you!

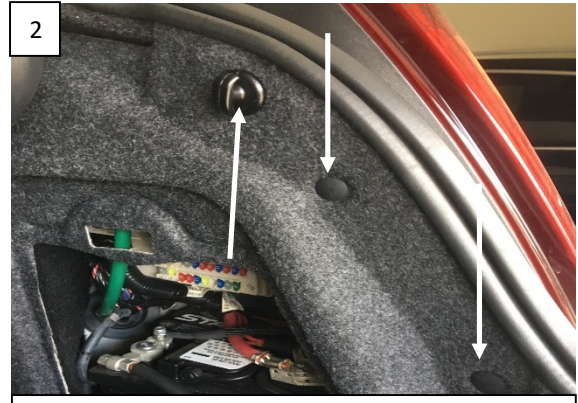
The following install guide is simply that, a guide to help you with installation. It is by no means the exact method to perform installation, simply some tips and tricks we can offer to help you out! Huron Speed is not responsible for anything that may happen to you, the vehicle, or the product during installation.

Furthermore, Huron Speed is not responsible for any installation costs for any reason at all no matter if you are installing or a professional shop is installing. All installation and labor costs no matter the scenario are the responsibility of you the purchaser of the product. Proper fueling and a professional dyno tune is **REQUIRED** to safely run this system on your vehicle. Failure to properly set the car up for boost **WILL** result in damage. If you have **ANY** questions, please reach out and ask and we would be more than happy to assist!
Jon@HuronSpeed.com



1

Remove two bolts in trunk cover with 8mm socket and ratchet. Pull up on cover to remove.



2

Unscrew net tie down on side cover where battery is located and remove two plastic retainers.



3

Pull cover aside to expose battery. Remove positive terminal by lifting lever and moving to the right, remove negative terminal using 10mm socket and ratchet.



4

Remove sight shield by removing 6 panel retainer clips by hand.



5

Remove front body splash shield, 6 retainer clips and 2 bolts with 10mm socket.

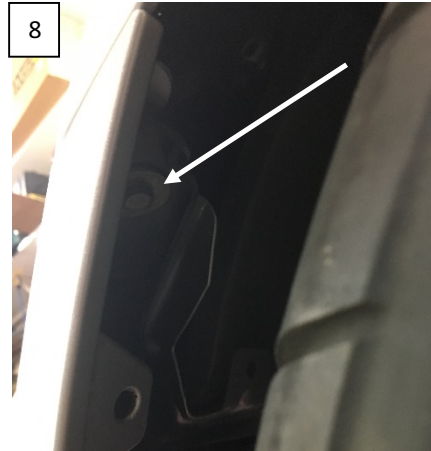


6

Remove 3 retainer clips on underside of fender liner, each side.



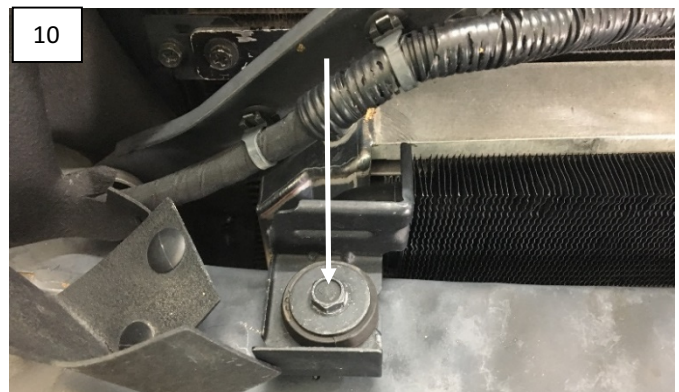
7
Remove 8 retainer clips in each fender well and remove fender well liner.



8
Remove right and left side front bumper cover retainer with 10mm socket.



9
Unplug right and left fog light. Remove 2 retainer clips and 2 bolts with 10mm socket and ratchet in front bumper cover and lift bumper cover off.



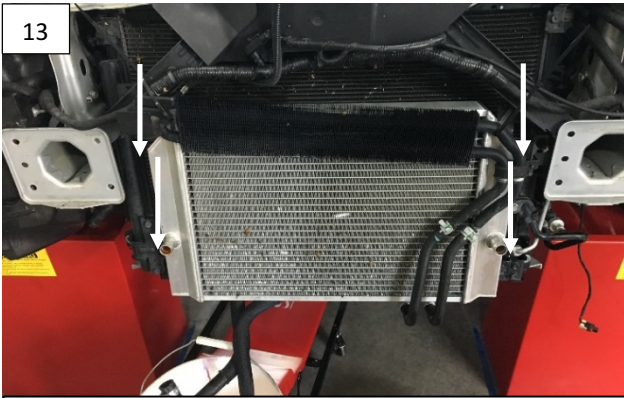
10
Remove bolt that supports power steering cooler on impact bar with 13mm socket.



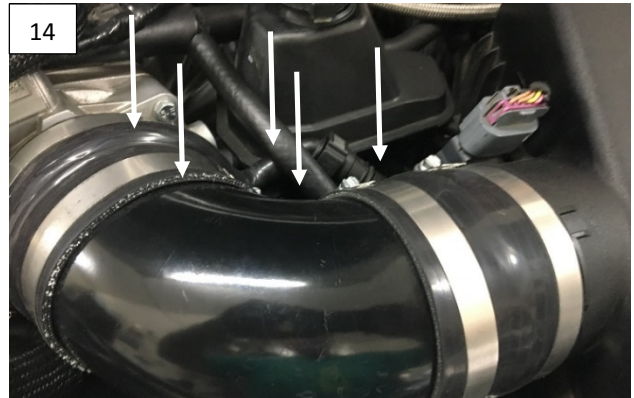
11
Remove eight bolts in front impact bar, use 13mm socket on 7 and 13mm ratchet wrench on upper left bolt, right side. Remove impact bar.



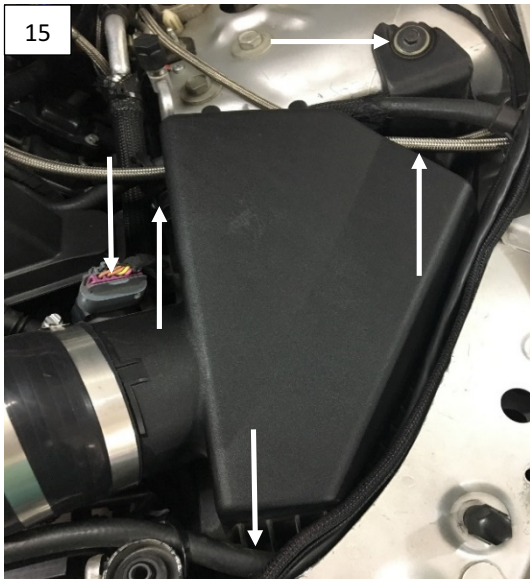
12
Drain intercooler by removing one of the hose clamps and pulling off hose. Use bucket to catch coolant. When coolant is drained remove other hose and drain.



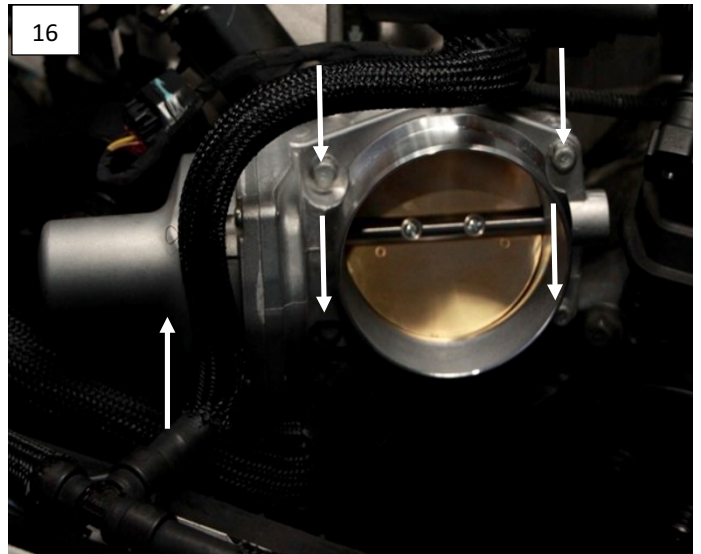
Remove 4 bolts from intercooler with 10mm socket. Remove intercooler.



Loosen 4 clamps on fresh air intake, unplug hose and remove intake.



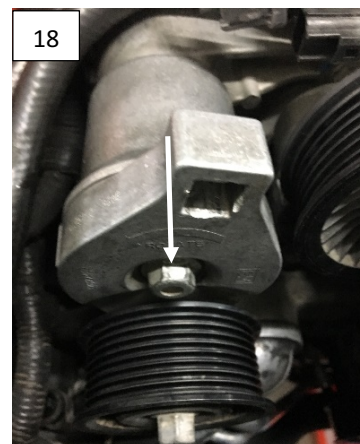
Unplug MAF on air cleaner assembly and re aside for re-use later. Remove 3 upper cover bolts with t25 torx bit and remove cover. Remove 1 bolt on filter box with 10mm socket and remove filter box.



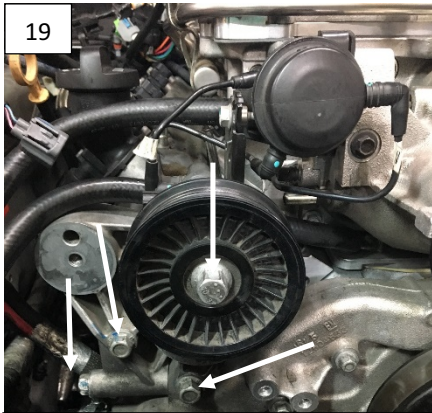
Unplug throttle body and remove 4 bolts with 10mm socket that holds throttle body on supercharger snout. Remove throttle body.



Remove supercharger belt by using ½" drive breaker bar to release the tension. Remove serpentine belt by using 15mm socket and ratchet to release the tension.

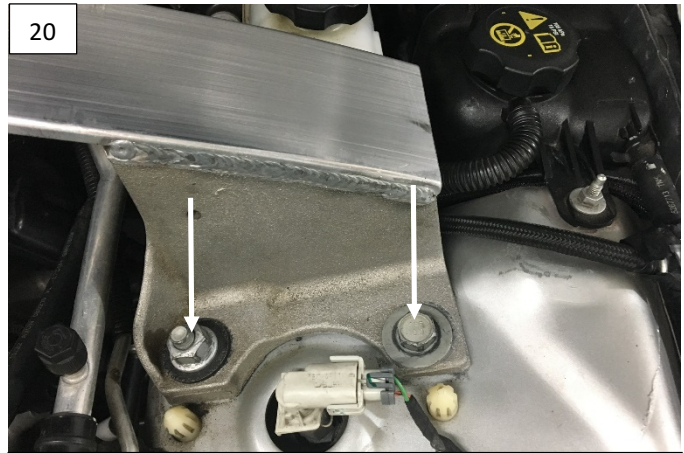


Remove supercharger tensioner by using 15mm socket.



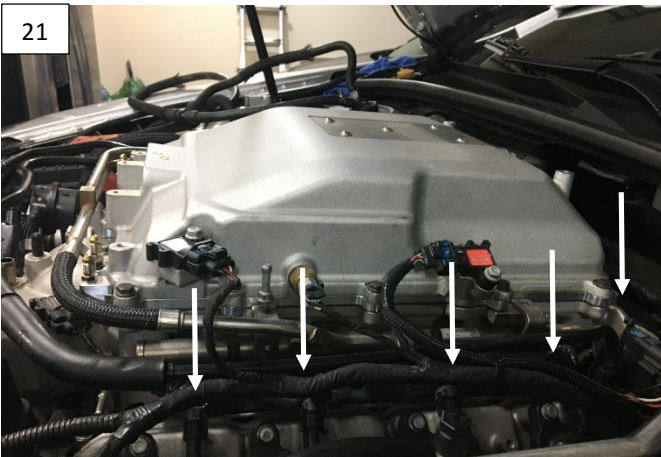
19

Remove serpentine belt tensioner pulley and 2 bolts on serpentine bracket with 15mm socket and extension and remove. This allows access to remove the 3 bolts on the supercharger belt tensioner bracket with 15 mm socket. Reinstall serpentine belt tensioner bracket.



20

Remove 1 bolt and 1 nut on each side of the strut tower brace with 18mm socket. Lift off strut tower brace.



21

Unplug coil packs and injectors. Remove 2 bolts in bracket that holds wire loom to back of supercharger with 10mm socket. Remove spark plug wires and remove coil packs and label. Each coil pack has two bolts that can be removed by using a combination of 10mm socket and 10mm ratchet wrench.



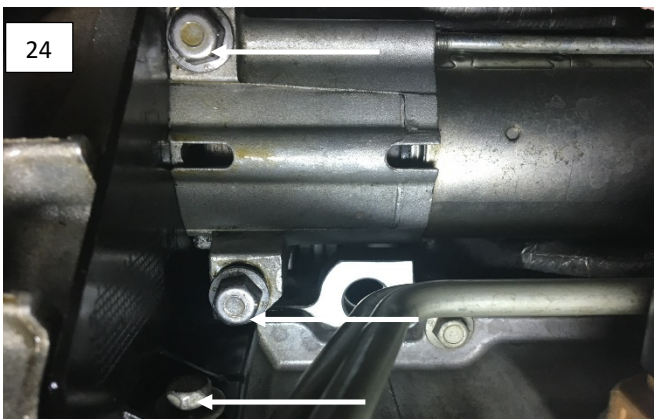
22

Remove spark plugs with 5/8" plug socket and short extension. Certain types of headers require the use of a 5/8" plug socket and 3/4" box end to remove plug #3. Remove header bolts, 6 on each side, with 1/2" ratchet wrench. Dipstick bolt must be removed on right side using 15mm shallow socket. Pull out dipstick before removing right side header bolts.



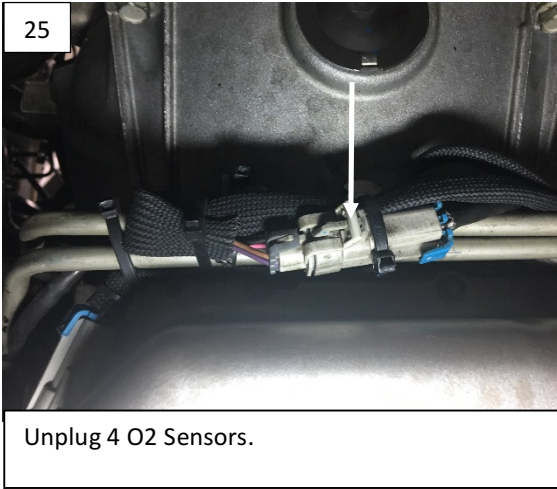
23

May only be required if you have longtube headers. Remove upper and lower steering column bolts to remove left side header. Use 7/16" socket and ratchet wrench. Remove steering column.

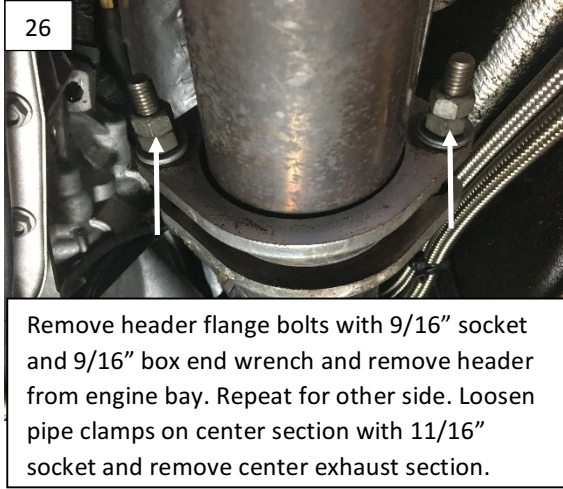


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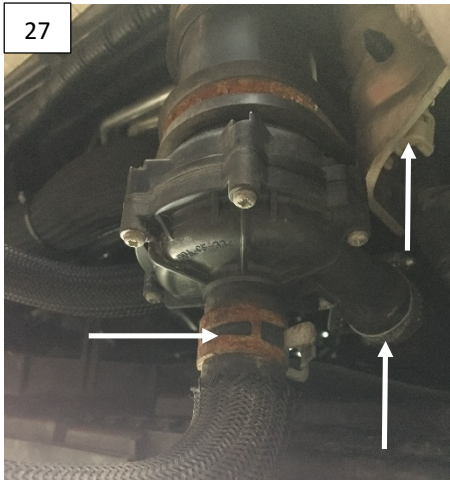
May only be required if you have longtube headers. Remove 2 starter bolts using 13mm socket with long extension and one bolt holding on the plastic flex plate cover with 10mm socket. Remove power wire to the starter by removing nut with 1/2" deep well socket. Unplug and remove starter to remove header.



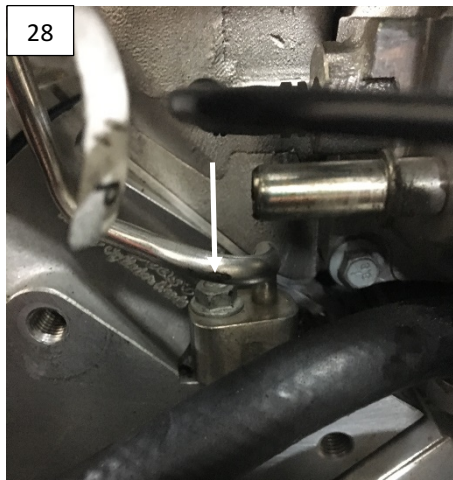
25
Unplug 4 O2 Sensors.



26
Remove header flange bolts with 9/16" socket and 9/16" box end wrench and remove header from engine bay. Repeat for other side. Loosen pipe clamps on center section with 11/16" socket and remove center exhaust section.



27
Remove coolant lines to intercooler pump. Remove 2 bolts on intercooler pump mount using 13mm deep well socket.



28
Remove hose from steam port fitting on right and left side, remove steam port fittings. Use 10mm socket on left side and 10mm box end on right side.



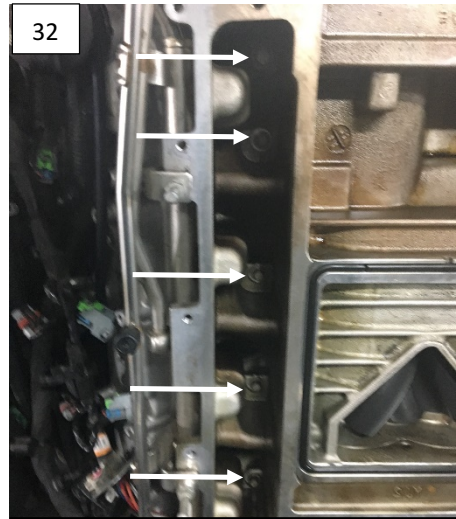
29
Disconnect fuel line using quick disconnect tool.



30
Remove coolant lines to supercharger intercooler brick on back of supercharger and disconnect 8 plugs/hoses from supercharges and lid.



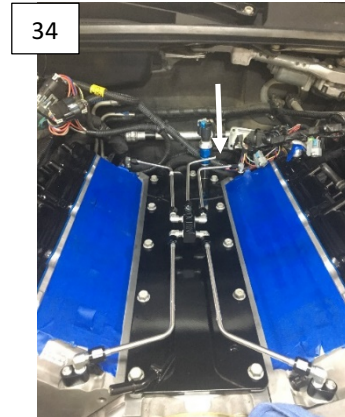
31 Remove 17 supercharger lid bolts using 10mm socket and extension. Lift lid off (coolant may drain from the rear intercooler brick lines).



32 Loosen 10 bolts (5 each side) in supercharger using 8mm socket with long extension. Bolts will remain captive in supercharger so no need to remove. Lift off supercharger.



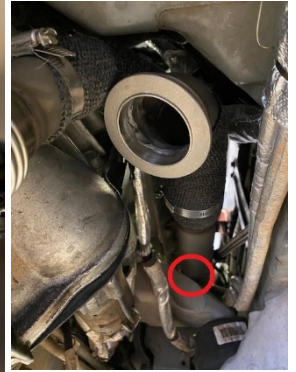
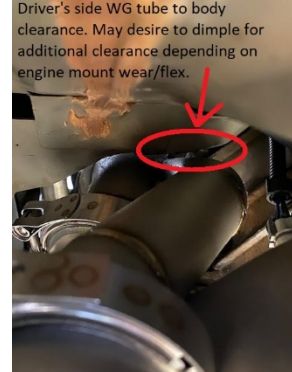
33 Tape off intake ports on heads with blue painters tape to keep out foreign objects.



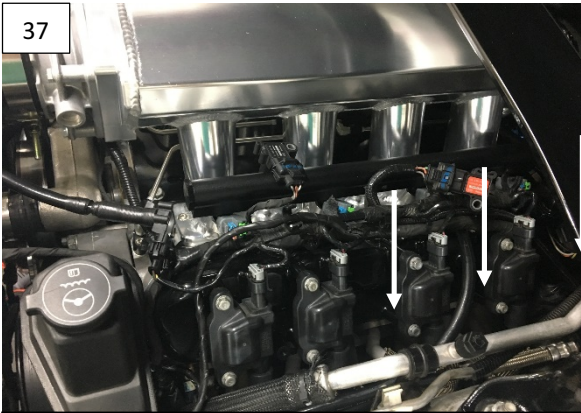
34 Install oil supply fitting under oil sending unit ONLY if using oil cooled turbochargers. Air-cooled turbochargers do not require this. Install provided fittings for turbo oil supply and Install steam vents.



35 Remove blue tape and install new intake with injectors/fuel rails and throttle body. Torque tb to 89in/lbs and intake to 44in/lbs first pass and 89in/lbs final pass. Connect fuel line to fuel rail.



36 Test fit exhaust manifolds using 9/16" ratchet wrench. We recommend wrapping the area shown on the PS with the supplied wrap. Reinstall steering column and starter (leave starter wiring off for future step). Note DS clearance of WG tube to body as well as PS log to cradle. Depending on wear of engine mounts, you may want to add some clearance in these 2 areas with a small dimple above the DS WG tube and small grind on PS Cradle under the Log. This may not be necessary but can be done for additional clearance to prevent vibration.



37

Install coil packs, spark plugs and wires. Plug in coil pack and fuel injectors. Connect fuel line to fuel rail.



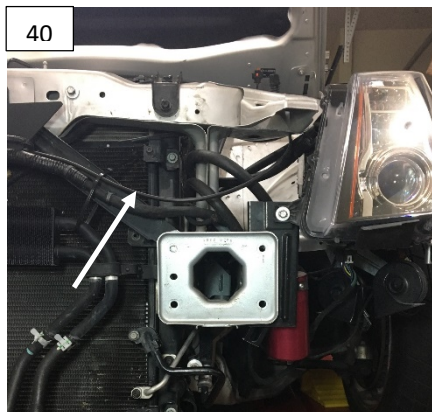
38

Remove the red map sensor shown above from supercharger and connect the red one to your intake manifold. We simply removed the wrap on the MAP sensor wiring so we could route the plug back to the new location without any extension required. Re-wrap when complete. Re-connect brake boost hose to intake. IAT2 sensor from supercharger is not required as your MAF also reads IAT.



39

Dipstick mounting tab will need to be modified to fit. Install dipstick with 15mm shallow socket.



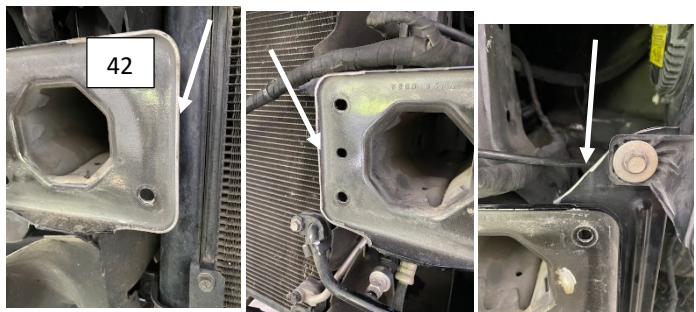
40

Remove brace on both sides. Use 10mm socket to remove bolt. This needs to be removed to install intercooler.



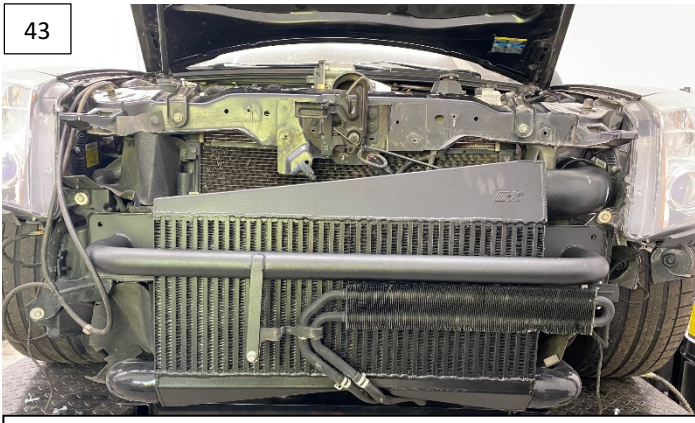
41

Unclip the Power Steering cooler and flip the (2) hoses with each other to prevent hose kinking.



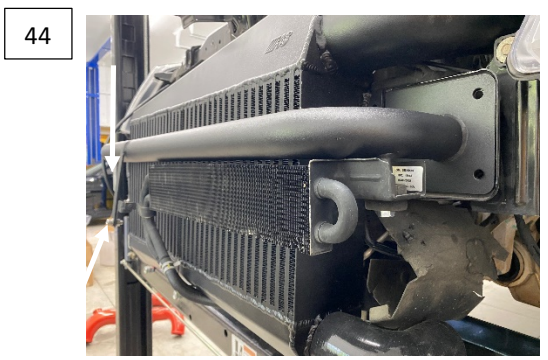
42

Lightly grind down the inside lips on each side the bumper beams as well as a little in the area around where the DS headlight mounts as shown.



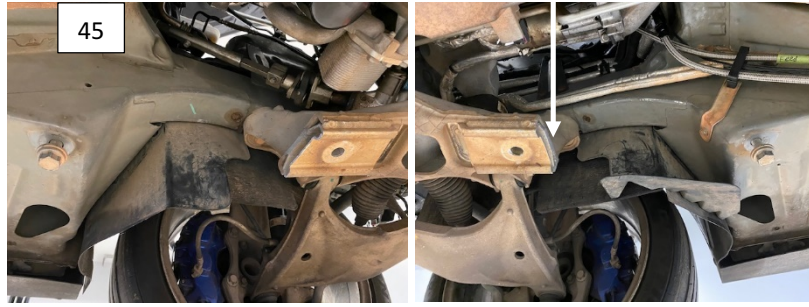
43

2 people helps here. Install Intercooler/bumper bar combo with the (8) supplied M8x1.25 bolts and nuts into the bumper beam holes. Intercooler mounts on front side of bar



44

Re-install the power steering cooler to the mounts on the bumper bar using the short m8x1.25 bolt w/ nut and and thread in another m8x1.25 bolt into the bung on the bar



45

Cut the aluminum chassis braces off as shown on each side. We supply replacement braces to bolt in place.



46

Install the supplied replacement chassis braces on the backside using the OEM bolt in the OEM bolt hole. Line up the other end in the middle of the remaining area left on the cut off OEM chassis braces and mark the new hole location. Remove, drill hole through so you will be able to bolt down with the supplied hardware. Both sides.



47

Locate your previously removed starter wire and trim locator tab off one side as shown. This will allow you to rotate the wiring up as shown in second photo for much more clearance around the manifold.



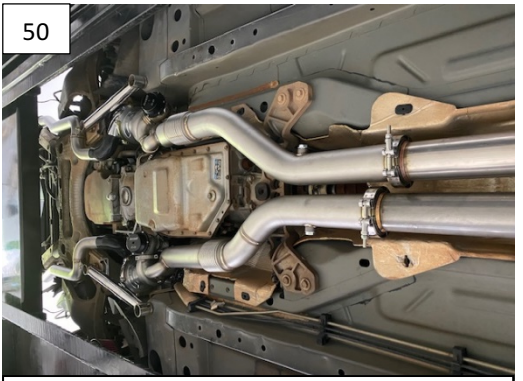
48

This photo shows the passenger side starter wire out of the way with new clearance to manifold.



49

Loosen compressor cover bolts on each turbo so the housings can rotate. Test fit each turbo securing with the supplied V_band clamps to manifolds. Note the orientation of the housings and snug a bolt or 2 down in place to secure. Remove both turbos to snug back down all bolts once clocked correctly and re-install with clamps snug but allow for turbos to rotate some on the v-band for next exhaust alignment



50

Test fit downpipes onto the turbochargers using the supplied v-band clamps. Snug them down but leave just loose enough so the downpipes can rotate some for alignment.

51



Re-install primary O2 sensors in the O2 bungs in the downpipes closest to the turbochargers



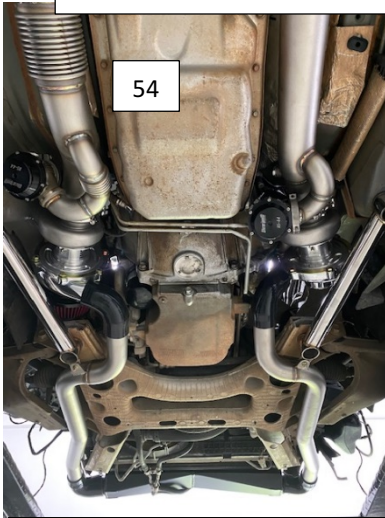
52

Install wastegates. Having the turbos and downpipes loose enough to rotate here will allow you to properly align both inlet and outlet. If running boost off the WG Spring, ensure the top port is open, and one lower port has a fitting open with the other plugged off. Clamp wastegate to the section with the flex tube first to allow easier alignment.



53

Install the (2) supplied chassis braces using the OEM bolt at one end and our supplied large bolt/nut in the hole you previously drilled.



54

Install Cold-side tubes from turbo outlets using the supplied 90* couplers off each turbo and run up to each side of the intercooler installing with the other (2) 90* couplers. Secure tubes to the tab on the chassis brace using the supplied M6 bolt/nut on each side. Secure the couplers using the supplied 2" T-bolt clamps

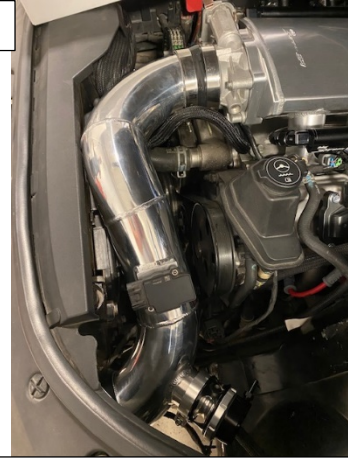


55



Up front, locate the OEM MAF sensor and trim off the locator tab as circled

56



Install MAF sensor into 3.5" Cold-side tube along with BOV. Ensure fitting is installed on the BOV for vacuum reference. After both, install to car using the supplied coupler with one end to Throttle body and other to the intercooler outlet. Removing some wire loom and re-routing MAF wire may be required to reach new location. Once done re-wrap and secure wire.

57



Run your boost/vacuum reference lines for Wastegates and BOVs. If you purchased our optional kit, splice the supplied CNC piece in line of the brake booster hose as the source. For basic hook up of just the WGs and BOV, run one port to the BOV using the supplied 1/4" vacuum hose cut to length and secure with supplied spring clamps. Run another port using the supplied hose down to the wastegate area down low ensuring it has sufficient clearance to anything hot. Run this into one of the supplied Tee fittings and a shorter length hose from the other 2 ports off the Tee to the lower port on each wastegate. Secure all connections with the spring clamps. Ensure other lower ports on the wastegates are plugged and the top is vented. If running a boost controller, hook up per their instructions.

Re-install your engine bay covers and go over all new connection points; all T-bolt and V_band clamps, all nuts/bolts and ensure all are not snug down and tight. Ensure nothing is resting on or close to any hot-side tubing or turbocharger. Re-install the front bumper cover (some very minor trimming may be required on the inner grill mounting area near the outlet tube of the intercooler.) Ensure all fluids are topped off.

Note: Air-cooled turbochargers come pre-greased from Comp. They require adding 7-8 pumps of their proprietary grease every ~3k miles. This is easy to do and keep on schedule with your oil changes. If you need assistance, we can set you up with a tube of their grease as well as the small grease gun for your maintenance. Some blue smoke upon initial start up as well as after re-greasing is normal, this is just excess grease burning off and will clear up.



Note:

Ensure your set-up has a proper fuel system to support the new power (If installing new Injectors, do NOT run the car without the computer flashed for the larger injectors). We recommend running NGK BR7EF plugs. If running the car prior to tuning do NOT get into any boost prior to tuning or you WILL damage the engine. Proper fueling and a professional dyno tune is REQUIRED to safely run this system on your vehicle, remember.