



2017-2019 L5P Duramax Stage 3 High Flow Intake Bundle Kit

Covers installation of PN: WCF100403

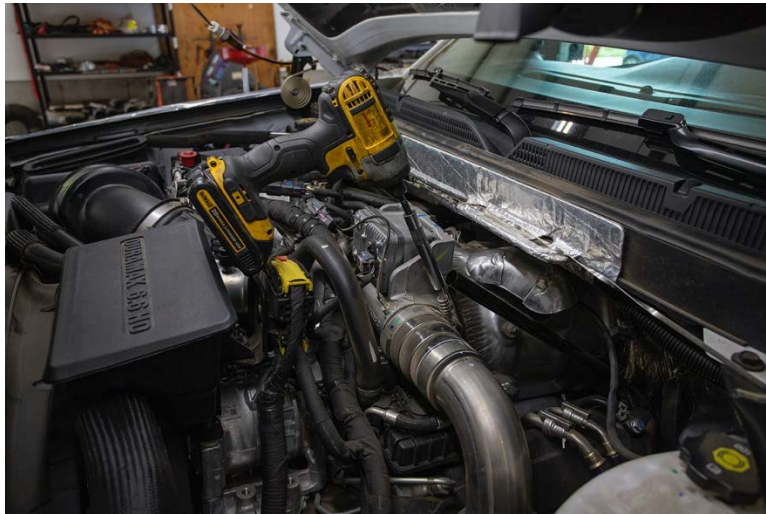


Part 1: Driver Side Intercooler Pipe

1. First, locate the packing list included with the kit and double check you have all items on the list.
2. Leave bubble wrap on piping until install is complete to help protect finish from nicks and scratches.
3. Disconnect the negative battery cables from both batteries.



4. Remove the driver side wheel/tire and inner fender liner.



5. Remove clamp at turbo outlet.



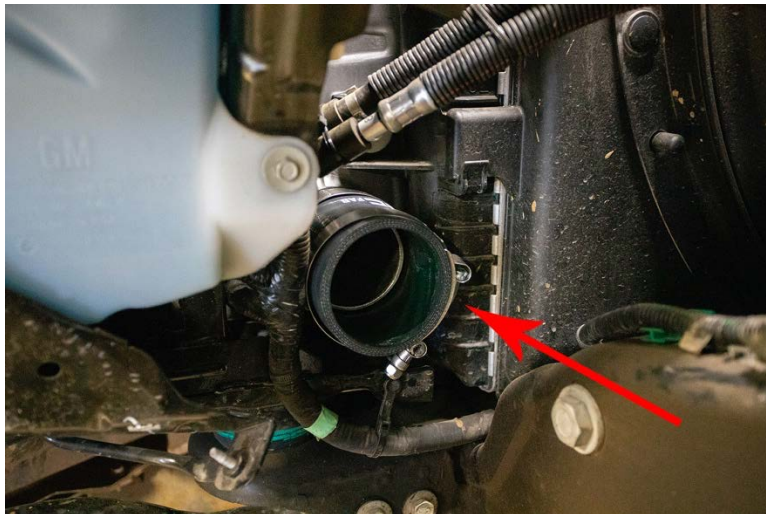
6. Remove clamp at intercooler on driver side bottom.



7. Remove pipe from truck using whatever means is easiest for you. We typically recommend taking the pipe out and down through the wheel well area.



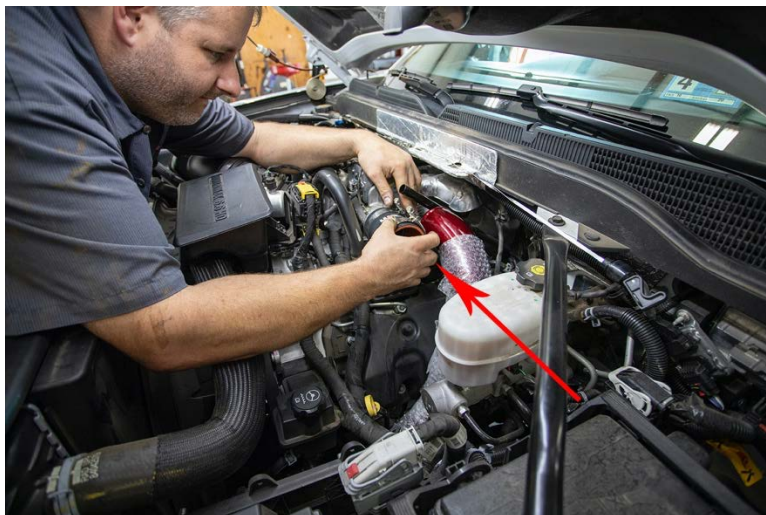
8. Clean off turbo and intercooler connection points with brake cleaner if needed.



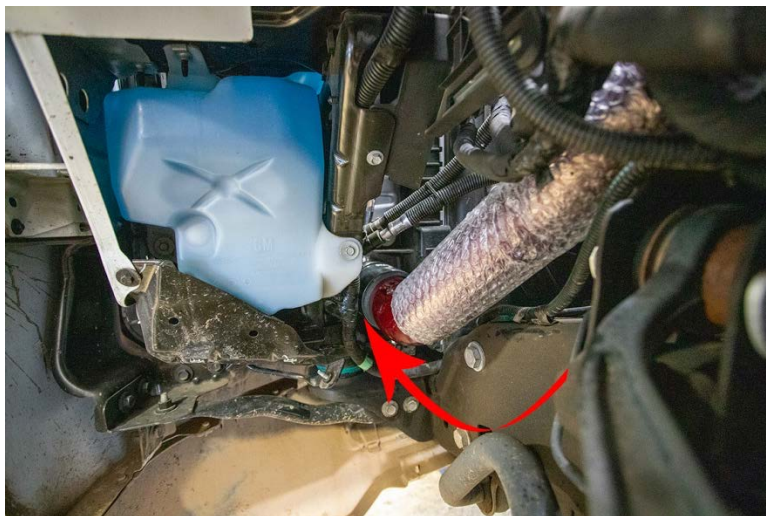
9. Install straight boot at lower intercooler pipe connection



10. Install pipe from top side of engine compartment paying attention to match orientation of original pipe design.



11. Install reducer boot at turbo



12. Seat into bottom boot first to ensure a solid connection at that location then into turbo side.



13. Check for proper engagement of pipe at both boots and tighten all clamps making sure that the clamps are placed just behind the pipe bead roll and square to prevent boost leaks.

14. Remove bubble wrap from piping and clean any fingerprints with damp micro fiber cloth.

Part 2: Passenger Side Intercooler Pipe

1. Leave bubble wrap on piping until install is complete to help protect finish from nicks and scratches.



2. Remove the passenger side wheel/tire and inner fender liner.



3. Unplug MAF Sensor and disconnect intake pipe



4. Unbolt Airbox



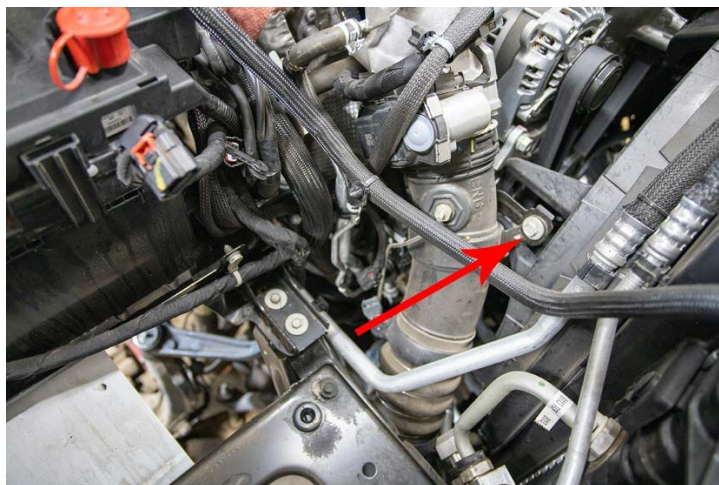
5. Remove Wire Harness Clip and tuck safely out of the way.



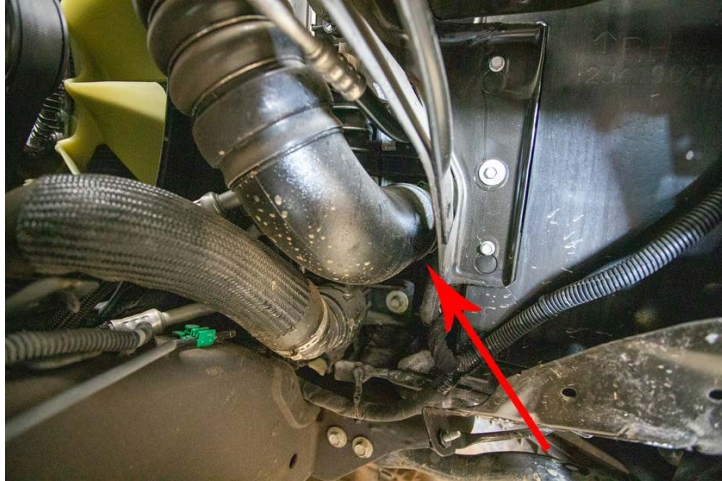
6. Separate Lid from Airbox. Grab Lower Airbox and pull up firmly to unseat the lower airbox from the inner fender.



7. Unplug Charge Air Temp Sensor on Intercooler Pipe.



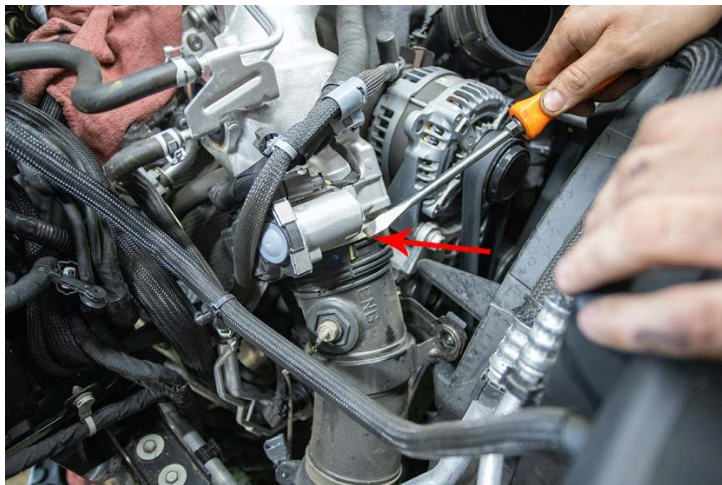
8. Remove Bracket Bolts from the intercooler pipe.



9. Access and locate clip ring at lower intercooler pipe connection through wheel well.



10. Using a pick or flat blade screwdriver, remove clip at lower intercooler pipe connection and pop pipe off of intercooler.



11. Turn lock ring clockwise to remove top connection to engine and slide pipe off of intake flange.



12. Remove pipe by passing it out carefully through passenger wheel well.



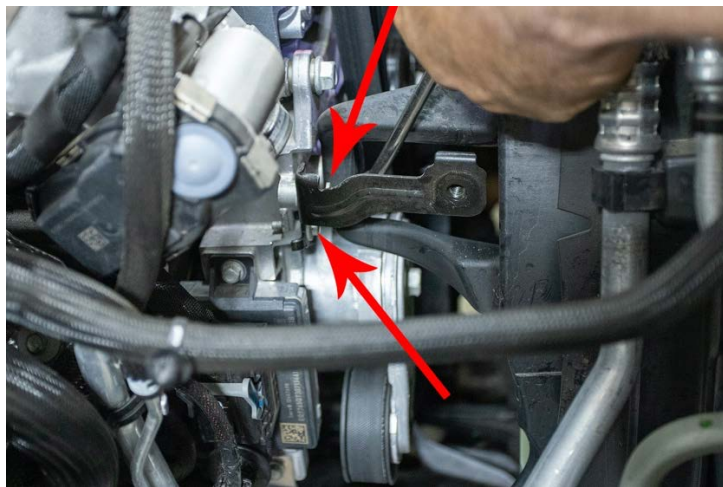
13. Install new clip ring to the new intercooler pipe assembly. **NOTE: Pay close attention to orientation of clip ring on the new pipe as it will only properly engage the pipe and intercooler assembly one way. One groove in the pipe is smaller than the other two. Reference image above to make sure your ring position matches the mounting shown.**



14. Swap charge air temp sensor from OEM intercooler pipe to your new 3.5" intercooler pipe using a pry tool to remove wire harness clip and a 14 mm wrench. Liquid Teflon thread sealant is recommended on the sensor during re-installation for a leak free seal.



15. Install 2 o-rings, dry, in lower grooves as shown. Once o-rings are fully seated, apply transmission assembly lube (such as Trans-Jel or Dr. Tranny's Assembly Goo) to inside of pipe connection, o-rings, and intercooler outlet to help prevent damage during install. **Avoid using petroleum or other synthetic lubricants which may damage o-ring seals.**



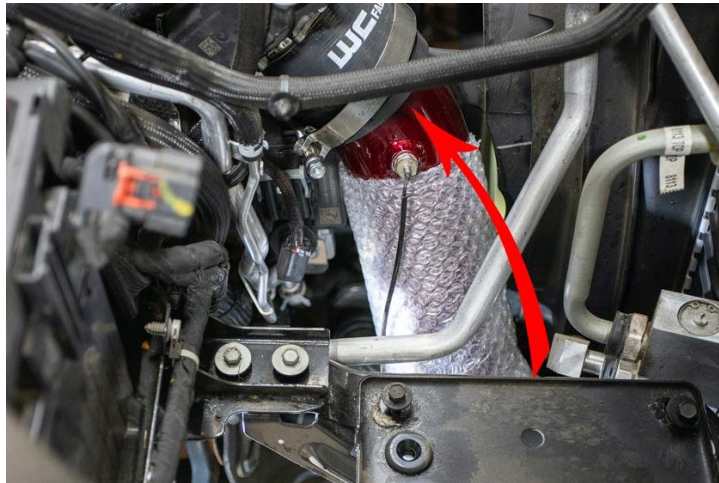
16. Remove OEM Intercooler support bracket from engine as it is no longer required.



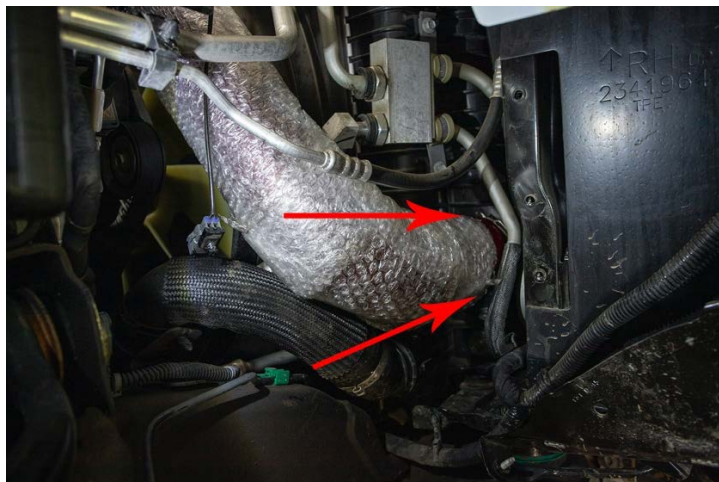
17. Install top boot and clamps onto the engine intake side and leave loose.



18. Install new intercooler pipe upwards carefully through passenger side wheel opening paying attention not to damage charge air temp sensor.



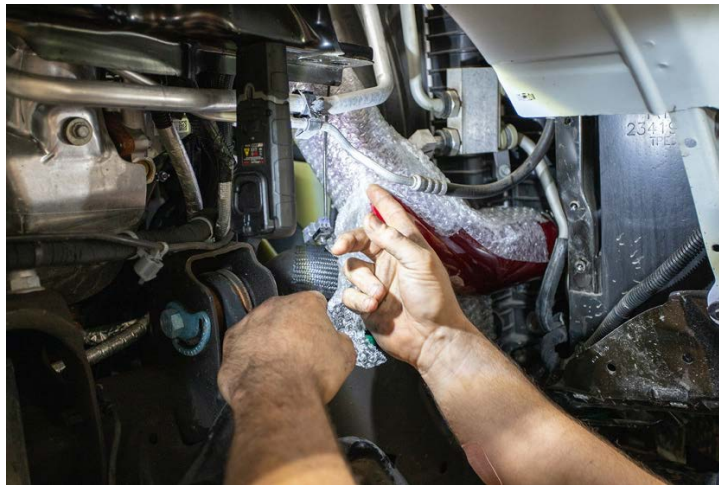
19. Slide pipe into upper boot and slowly put lower end on the intercooler. Make sure to stay square with the intercooler as much as possible.



20. Move to lower assembly and fully seat the clip ring so that it is engaged / down all the way. Adjust pipe at upper connection as necessary once lower clip is seated. Lower airbox brackets have been removed for illustration purposes. It is not necessary for installation but can provide additional workspace if needed for accessing the clip assembly.



21. Tighten upper clamps.

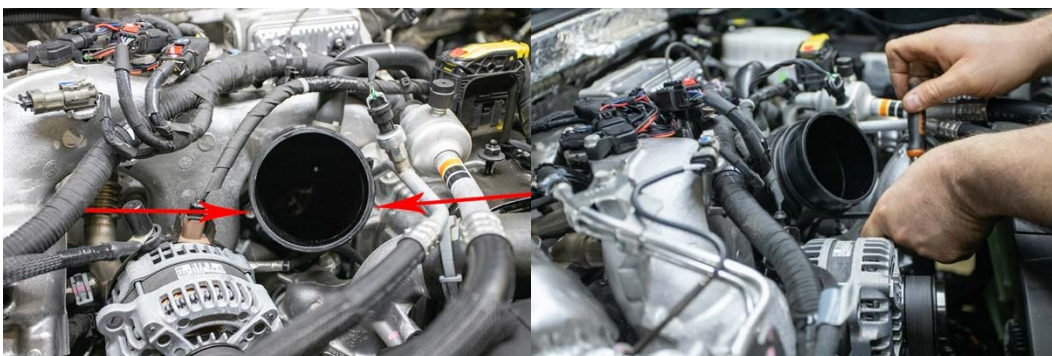


22. Remove bubble wrap from piping and clean any fingerprints with damp microfiber cloth.

23. Reconnect charge air temp sensor.

Part 3: Turbo Intake Horn

1. Remove resonator and intake piping if it isn't already.



2. To remove OEM intake horn, locate and remove bolts shown in images above. This can be done using a long $\frac{1}{4}$ " extension and 13mm swivel socket. There is no reason to remove any other items for access.



3. Remove retaining PCV hose retaining clip using a small pick or pry tool. Disconnect hose and remove OEM horn. Normally the PCV hose and clamp may be removed and reinstalled without damage. If your clamp is damaged during the removal process you may replace it with a standard hose clamp.
4. Once the two bolts are removed and the PCV hose is disconnected, the OEM horn can be removed. This requires a twisting motion of the horn to just the right position and slight force to pull it out from between the y-bridge.



5. Boost testing (Boost Tester Kit Sold Separately) is always recommended whenever intercooler pipes have been serviced or boots and clamps have been moved. While the factory turbo intake horn is removed, this is the time to test for boost leaks. This can be done by spraying a mild soap/water solution at all connection points with pressure in the system.



6. After boost testing is complete, the new turbo intake horn can be installed. Install O-ring into the groove of your new intake horn using a very small amount of grease to hold in place if needed on

the pipe and seals to prevent damage / nicks during installation. **Avoid using petroleum or other synthetic lubricants which may damage the o-ring seal.**

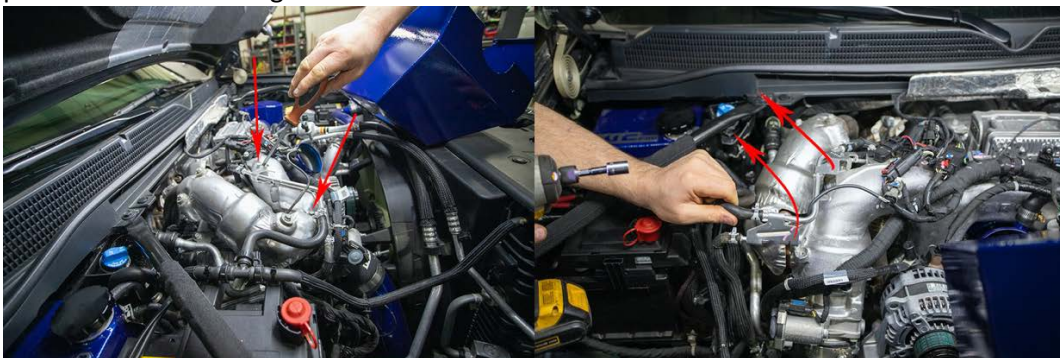


7. Install supplied 8mm studs into turbocharger first. The short end of the stud will thread into the turbo. Only hand tight is necessary. Next, install your new horn. Use a piece of shop towel to hold nut in end of socket when installing new horn or use grease to hold the nut in socket during install.
8. Reconnect PCV line to port on your new intake horn.
9. Clean fingerprints with damp microfiber cloth

Part 4: Intake with Air Box



1. Remove Lower air box mounting plate.
2. Remove 10mm bolts and set aside for later re-use. Remove and discard lower air box mounting plate which will no longer be used.



3. Unbolt retaining tabs (2x 10mm bolts) shown. Shift coolant hardline gently out of the way to provide clearance for new air box installation preventing scratches to the powder coat finish.



4. Install lower air box as shown. It may be necessary to gently bend rear wall of the box to clear the fender brace if you choose to leave in place as shown. **This box goes in without force.**

Do not damage with excessive force on install. You may also remove the fender brace before completing this step and reinstall after lower air box assembly is in place if preferred.



5. With lower air box in place, loosely install rear OEM bolt indicated to locate assembly.



6. Adjust air box position, then use a paint pen to mark location on the lower brace that needs to be drilled for the included nutsert. Remove lower air box and drill marked hole as shown. Verify that nothing is under the location being drilled before making the required hole in the bracket.



7. Install supplied nutsert, reinstall lower air box and install saved OEM 10mm fasteners from Step 2 working clockwise from rearmost engine side first, completing fender side last. Adjust box alignment as necessary while completing this process.



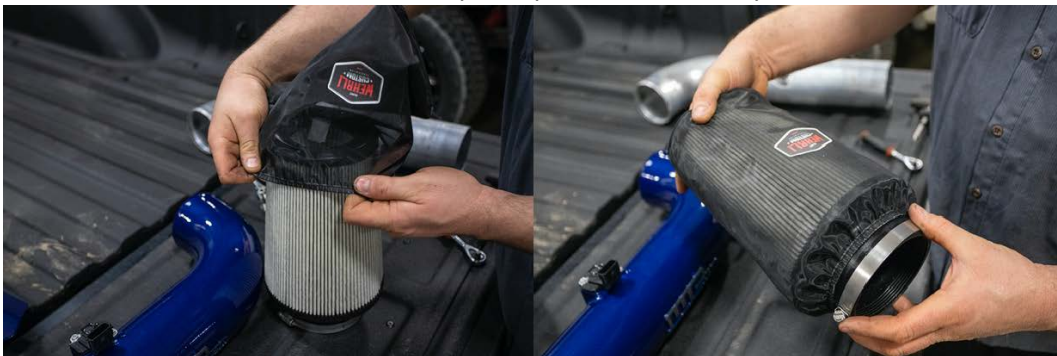
8. Note: Build tolerances vary from truck to truck. Many trucks will require no adjustments for your air box installation. However, on some trucks, the fender brace may contact the air box as shown in this image. To correct this, first loosen the brace at the fender using a 13mm wrench.



9. Next loosen the connection at the firewall and slide brace away from air box to achieve clearance (as shown above). Re-tighten brace once proper fitment is achieved.



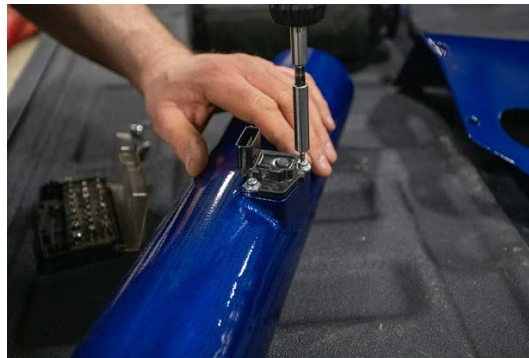
10. Install supplied pipe seal on lower air box and trim to fit saving excess for use on the lid in Step 19. Next install coolant line retainer clip into pre-drilled hole in your new air box assembly.



11. Install pre-filter cover and clamp on air filter as shown.



12. Using a tape measure and a marker, place small mark at 2" from filter end of your new intake pipe to help set mounting depth. Install filter onto pipe leaving mark exposed. **Improper filter depth can cause air restriction on your new intake.** Do not tighten filter clamp at this time.



13. Remove MAF sensor from OEM air intake and reinstall on your new air intake pipe using supplied hardware and maintaining correct orientation. **The Original MAF sensor screws will not work.** Do not try to install them on your new pipe.



14. Install hump boot and clamps onto intake horn paying close attention to match alignment of horn lip to hump shown as indicated in image above.



15. Reinstall coolant hardline.



16. Install Intake pipe with filter assembly into hump boot at horn and adjust pipe placement and filter depth as necessary to allow a gap as shown in image above between filter and air box seal.



17. Adjust pipe depth at intake horn boot to allow proper seating of clamps to the pipe bead roll seal and then tighten assembly. Do not push pipe in past the point when you feel bead roll enter opening in hump boot.



18. Reinstall MAF sensor connector and install remaining pipe seal on upper air box lid trimming excess. Check pre-filter placement & filter clamp is tightened before proceeding to next step.



19. NOTE: When installing upper lid of your intake air box some amount of misalignment may occur between the box and lid as shown in the images above. Follow steps below to properly adjust alignment and complete your installation. Do not force screws into holes.



20. Adjust lid to align front air box mounting holes and loosely install supplied fasteners to locate the assembly.



21. With front fasteners in place, adjust lid and air box wall to align holes and install rear fasteners.

Maintenance: Your new air filter is a high quality replaceable dry media filter (WCF100717) built to our specifications. We recommended OEM scheduled maintenance intervals with regular inspection. This air filter assembly is not washable, but maintenance intervals may be extended by using compressed air from the inside of the filter to blow out dirt. Once filter is dirty to the point of beginning to collapse it is time to replace. Outerwear pre-filter cover may be removed and washed with warm water & dish soap solution and allowed to air dry before re-installation. Boost testing is always recommended whenever intercooler pipes have been serviced or boots and clamps have been moved.

Part 5: Downpipe

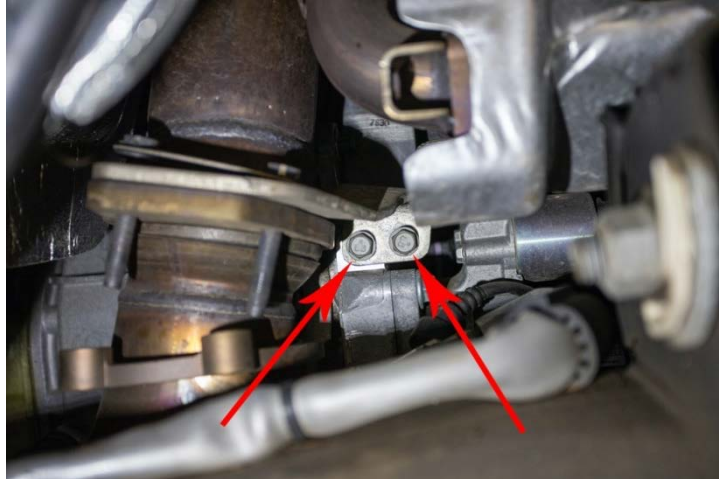
1. First, locate the packing list included with the kit and double check you have all items on the list.
2. **IMPORTANT!** This product features a fiberglass heat wrap. Wear gloves and eye protection when handling and during installation.



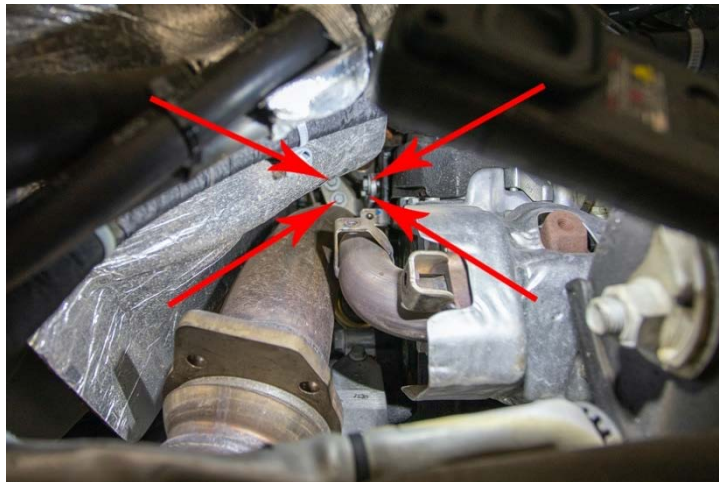
3. Working through passenger wheel well opening, remove rear heat shield on passenger side exhaust manifold (3x 10mm bolts)
4. Remove front pipe of exhaust from down pipe (4x 15mm bolts)



5. Remove lower down pipe support bracket near where down pipe connects to exhaust system.



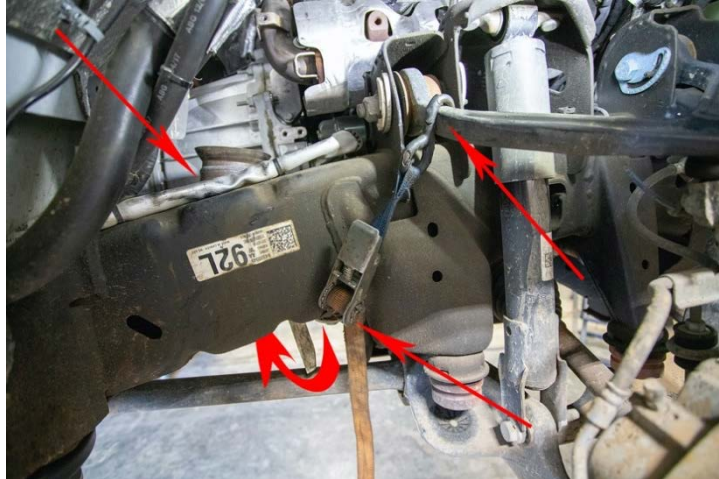
6. Remove lower down pipe support bracket which connects to engine block.



7. Remove upper down pipe support bracket which connects to the back of the cylinder head.



8. Remove front rubber exhaust hanger from exhaust system near transmission. This step allows the exhaust to drop to allow room for down pipe removal.



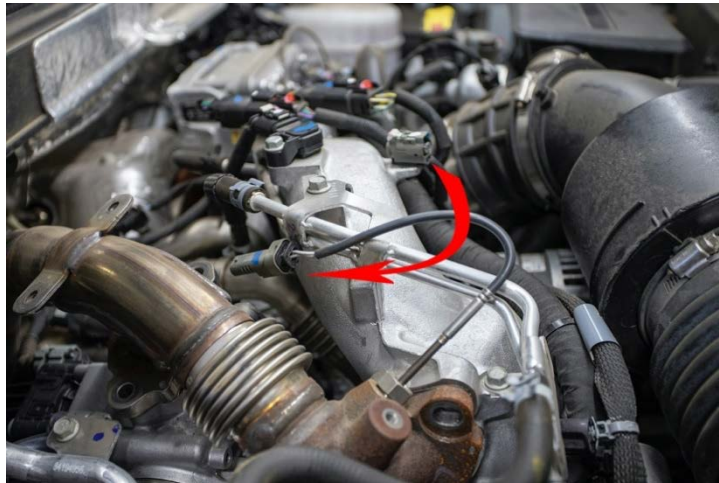
9. Ratchet strap placed around front of exhaust pipe near joint and wrapped under frame rail, and clipped at upper control arm may help provide leverage if needed to draw exhaust down and out of the way. Note: This image is for illustration purposes and was taken after the downpipe had already been removed.
10. Remove, inspect for damage, and keep the exhaust 'donut' style gasket used between the OEM down pipe and the exhaust. This will be re-used later on when you install your new down pipe. If your gasket has been damaged, contact your dealership to purchase a new part before continuing with your installation.
11. The following steps detail temporary removal of the EGR pipe to allow access to the V-band clamp at the top of the down pipe where it mates to the SCR.



12. Remove EGR Heat Shield.



13. Remove EGR upper mounting bolts. There are two more bolts not visible in this picture where this pipe connects to the SCR under the cowl which also need to be taken out in order for the pipe to be completely free of the engine.



14. Unplug EGR Temp sensor.



15. Remove EGR Pipe and set aside being careful not to damage riveted on gaskets which will be needed for reinstallation later.



16. Remove sound insulator from passenger side rear valve cover.



17. Now you have access to remove the temp sensor from the down pipe.



18. Remove top bracket from down pipe. There are no good sight lines to the bolts holding this part in but the items removed in the steps above will allow enough room for you to access this bracket through the passenger wheel opening and from the engine bay above.

19. Remove heat shield on SCR and temp sensor.



20. Loosen V-band clamp at inlet for downpipe. At this point your down pipe should be completely loose.



21. Rotate downpipe counter clockwise for removal out the passenger side.



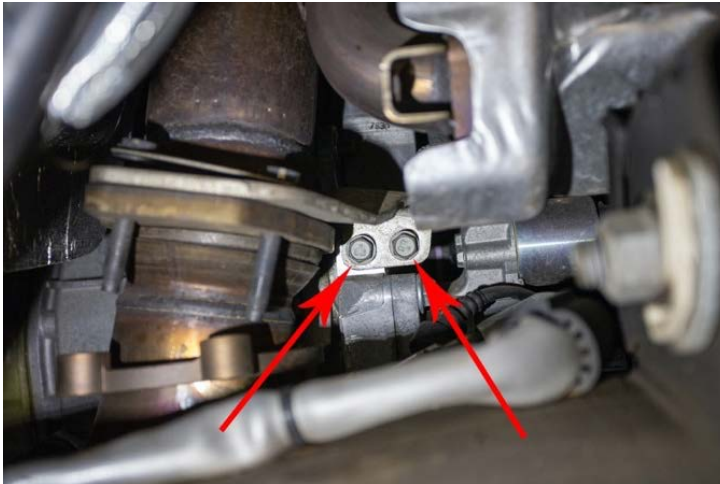
22. Install downpipe temperature sensor taken from stock part into the new down pipe.
23. Install new pipe back through the passenger side fender well.
24. Transfer saved exhaust 'donut' gasket from step 10 to allow your new down pipe to properly seal up to the rest of the exhaust system on re-assembly.



25. Tighten V-band clamp to hold pipe in place but do not fully tighten.



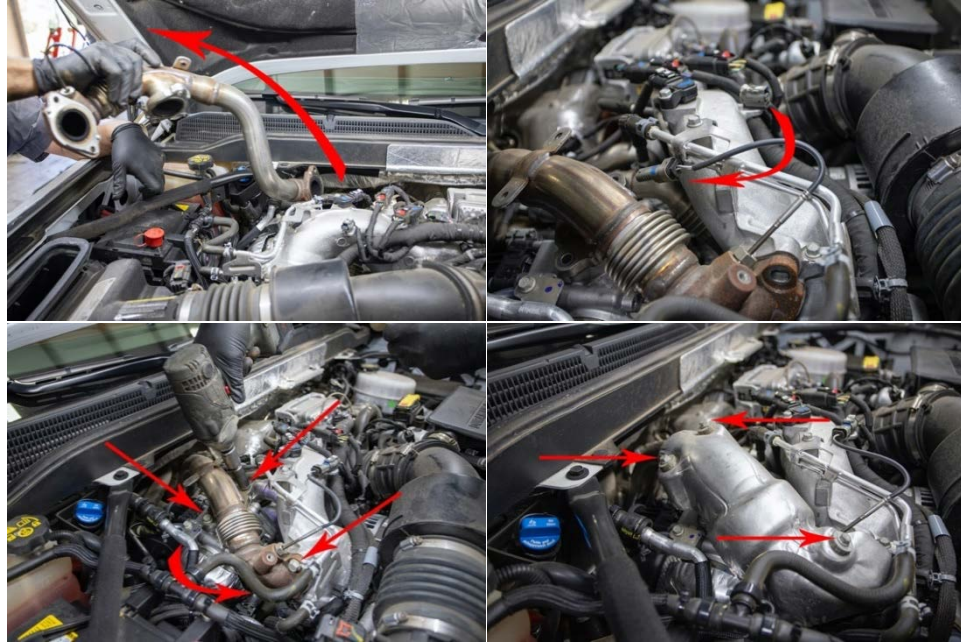
26. Reinstall upper downpipe bracket.



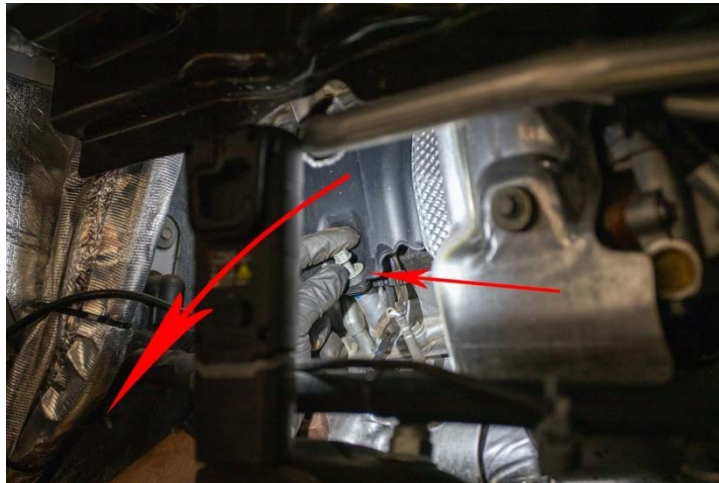
27. Reinstall lower downpipe bracket.

28. Fully tighten v-band clamp at the top of the down pipe and ensure that the connection is properly seated.

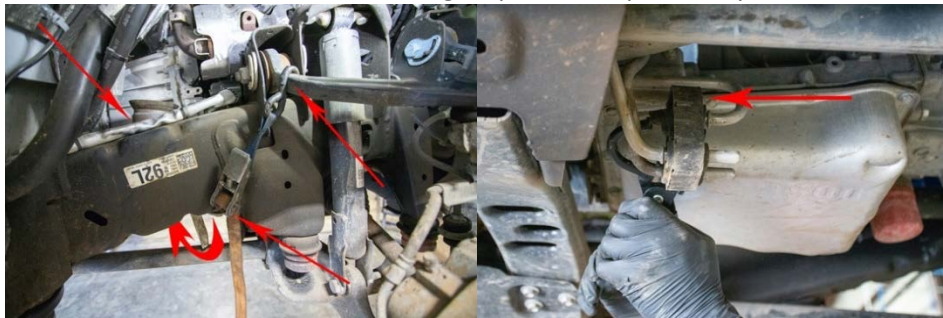
29. Reinstall temp sensor and heat shield onto SCR reversing removal steps outlined previously.



30. Reinstall EGR pipe reversing removal steps outlined previously.



31. Reinstall sound shield on valve cover reversing step outlined previously.



32. Lift exhaust system back into place and reinstall exhaust hanger.



33. Reinstall lower v-band clamp to connect exhaust system to bottom of downpipe.



34. Reinstall rear heat shield on passenger side exhaust manifold (3x 10mm bolts)

35. Reinstall Fender Liner, wheel and tire.

36. Reconnect battery cables.

37. Start truck and check for any leaks after some idle time.

38. This part has been ceramic coated and may burn off oils during the first few drive cycles, especially during a regen which may result in unusual smoke / odors from the installation area on the truck. This is completely normal and will go away after the first few heat cycles of the part.

Any Questions, Comments, or Feedback?

Reach us by Email- Sales@wcfab.com

Or the shop phone- 630-277-8239

Thank you for purchasing from Wehrli Custom Fabrication!