

PERRIN

PERFORMANCE

FRONT MOUNT INTERCOOLER 2015+ WRX

Installation of this product should only be performed by persons experienced with installation of aftermarket performance parts and proper operation of high performance vehicles. If vehicle needs to be raised off the ground for installation, the installer must use proper jacks, jack-stands and/or a professional vehicle hoist for safety of the installer and to protect property. If the vehicle is lifted improperly, serious injury or death may occur! Please read through all instructions before performing any portion of installation.

GENERAL MODIFICATION NOTE

Modifications to any vehicle can change the handling and performance. As with any vehicle extreme care must be used to prevent loss of control or roll-over during sharp turns or abrupt maneuvers. Always wear seat belts, and drive safely, recognizing that reduced speeds and specialized driving techniques may be required. Failure to drive a vehicle safely may result in serious injury or death. Do not drive a vehicle unless you are familiar with its unique handling characteristics and are confident of your ability to maintain control under all driving conditions. Some modifications (and combinations of modifications) are not recommended and may not be permitted in your state or country. Consult the owner's manual, service manual, instructions accompanying these products, and local laws before purchasing and installing these modifications. You are responsible for the legality and safety of the vehicle you modify using these components.

SPECIAL NOTES:

- The stock intake system will not work with this front mount intercooler. An aftermarket air intake with room for the boost tubes must be used.
- Boost tubes will have tight clearances next to battery and around right side fog light area. Take time in moving boost tubes to clear parts.
- Be prepared to empty your windshield washer tank into a container that can be re-used after installation is complete.
- Installation of this part does require destruction of your OEM windshield washer tank.

Parts Included with the PERRIN Front Mount Intercooler:

- (1) WRX Intercooler Core Assembly
- (1) 2015 WRX Intercooler Bumper Beam
- (1) 2015 WRX 4 Piece Boost Tube Set
- (1) Coolant Overflow Tank Kit
- (1) Windshield Washer Tank Kit
- (1) Turbo Outlet Adapter Flange
- (1) 6 Piece Silicone Coupler Kit
- (1) Size 20 / 23-35mm Clamp
- (2) Size 24 / 30-45mm Clamps
- (1) Size 32 / 40-60mm Clamp
- (4) Size 36 / 50-70mm Clamps
- (7) Size 48 / 60-80mm Clamps
- (6) M8 Fender Washer
- (10) Zip Ties
- (1) Stencil

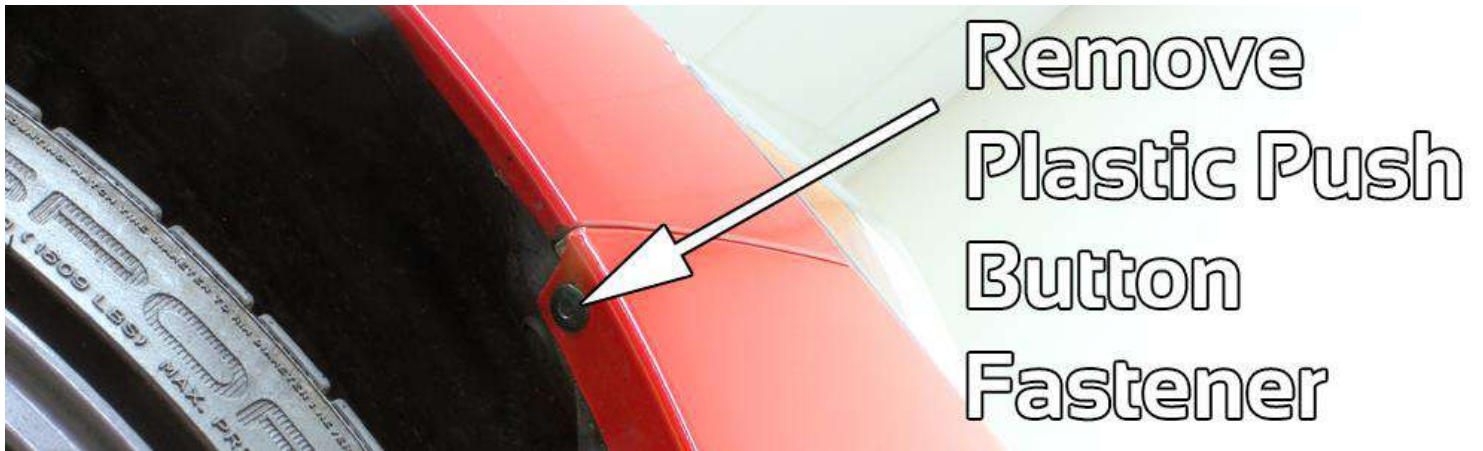


Installation

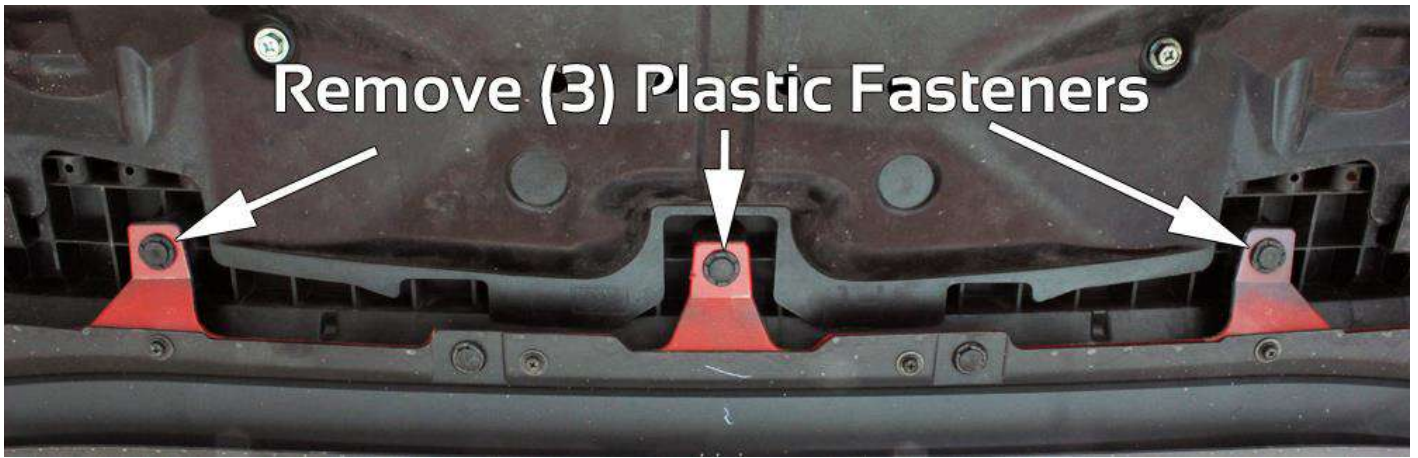
1. Raise hood and disconnect battery terminals. Remove battery, battery cover, and tray from car.
2. If OEM intake is installed, install aftermarket intake now. If aftermarket intake system is installed and it includes any kind of intake shield, remove shield from car at this point. If aftermarket intake uses OEM fresh air scoop, remove before proceeding.
3. Remove OEM coolant overflow tank from radiator (snaps onto fan shroud) and drain coolant into suitable container, as this will be reused.
4. Remove bumper cover from car. Take care in removing all plastic connectors and replace connectors as they can break.
 - a. Under hood, locate and remove (6) 10mm bolts and (3) plastic connectors holding hood seal to bumper. Remove metal seal from car. (STI engine bay shown with PERRIN Radiator shroud installed. WRX model has the same fitting as indicated by the arrows).



- b. Inside of wheel wells, locate and remove (1) plastic fastener that is released by pushing the center of it in.



- c. Under the bumper locate and remove (3) plastic fasteners in center of bumper.



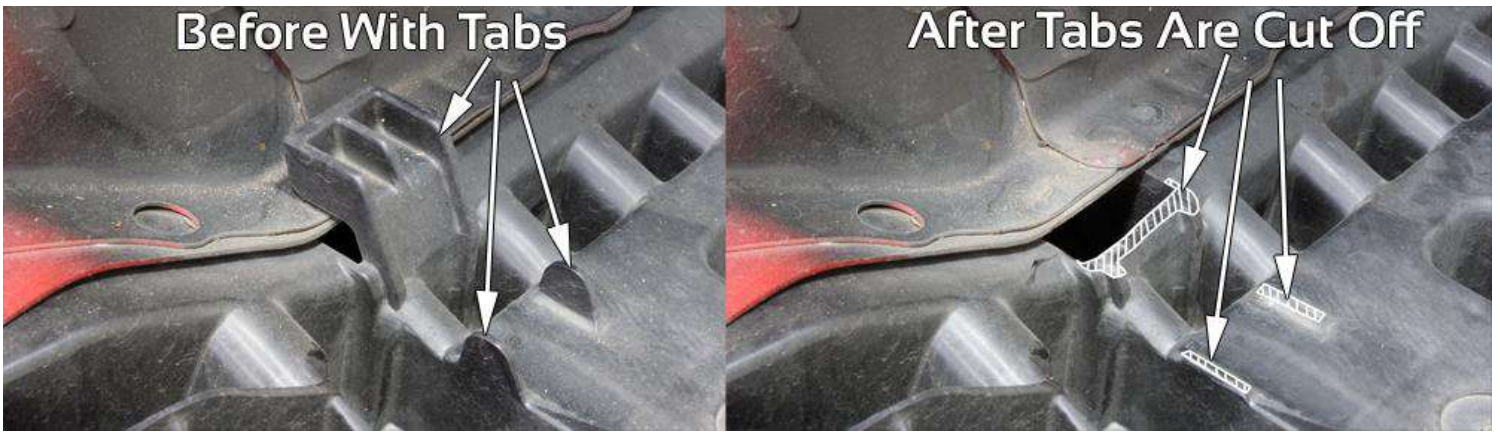
- d. Under the bumper, on both the left and right sides, locate and remove (3) additional plastic fasteners.



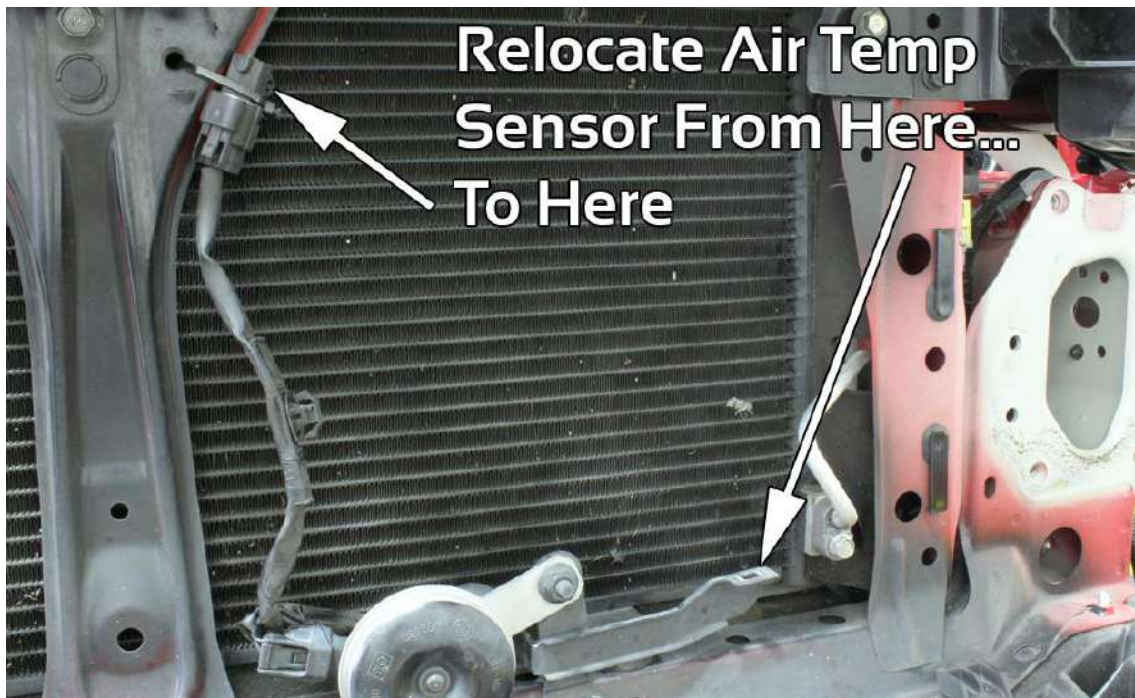
- e. Grab right side bumper where plastic push connector was, and pull straight away from car. Do this until most of the right side has come off, then do this to the other side. There should be enough length of wire (from the fog/blinker lights) to set bumper on the ground. Unplug each connector as shown below.
5. Remove (8) 12mm bolts secures bumper support beam to chassis and remove beam from car.



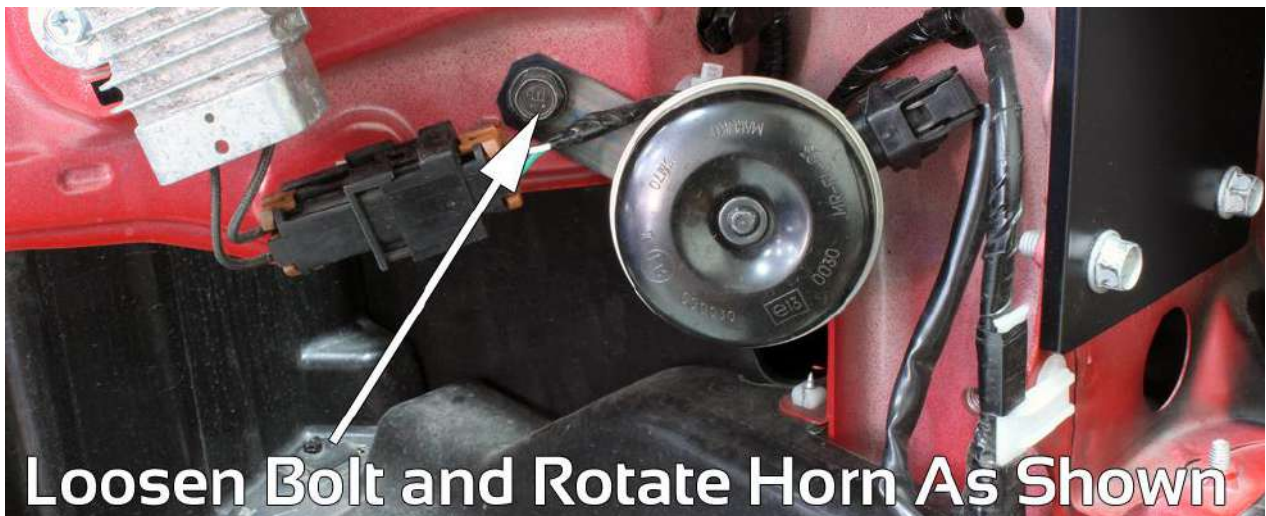
6. Locate plastic tabs as shown in picture below. Trim these pieces off both sides of splash guard to allow intercooler to sit flush in future steps.



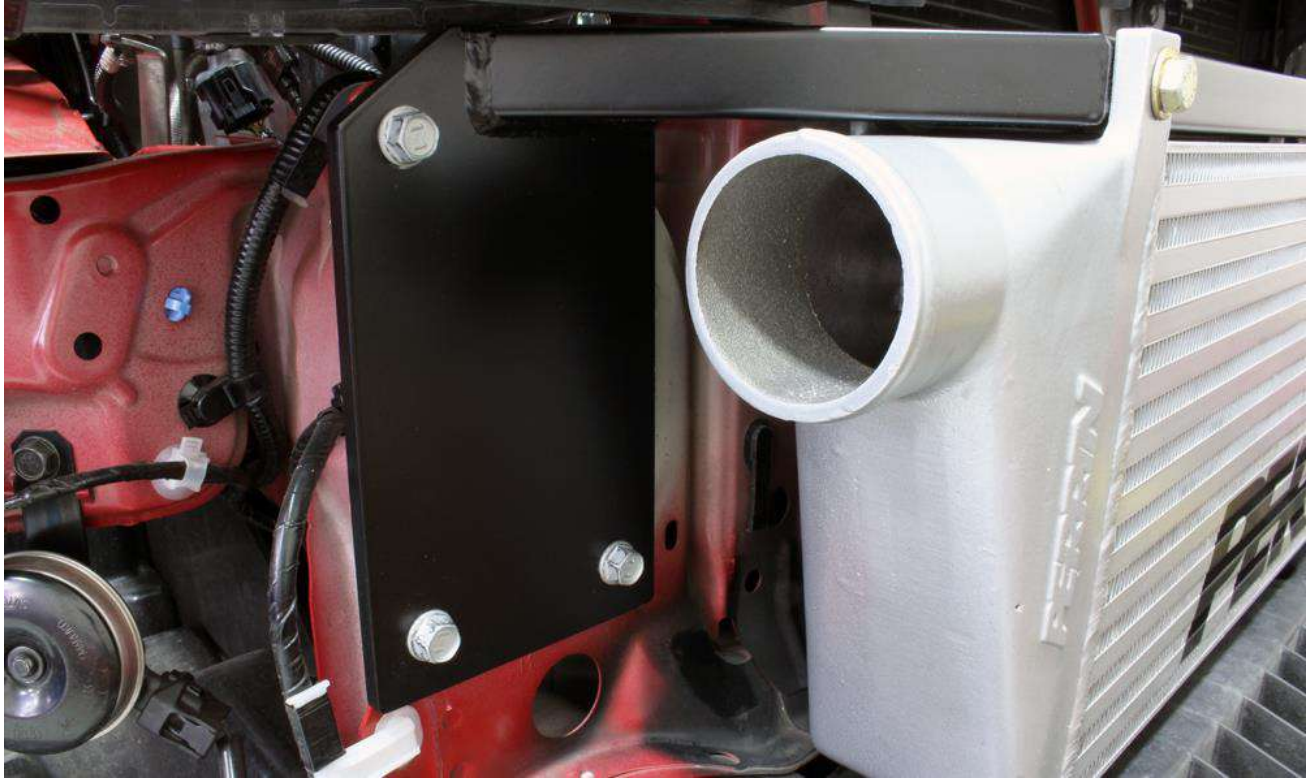
7. Locate air temp sensor as shown in picture and relocate to radiator support as shown using zip tie.



8. Locate horn on right side of car, loosen bolt and rotate out of the way as shown below. This is done to make room for boost tube to pass through. This may need to be re-adjusted once boost tube is installed.



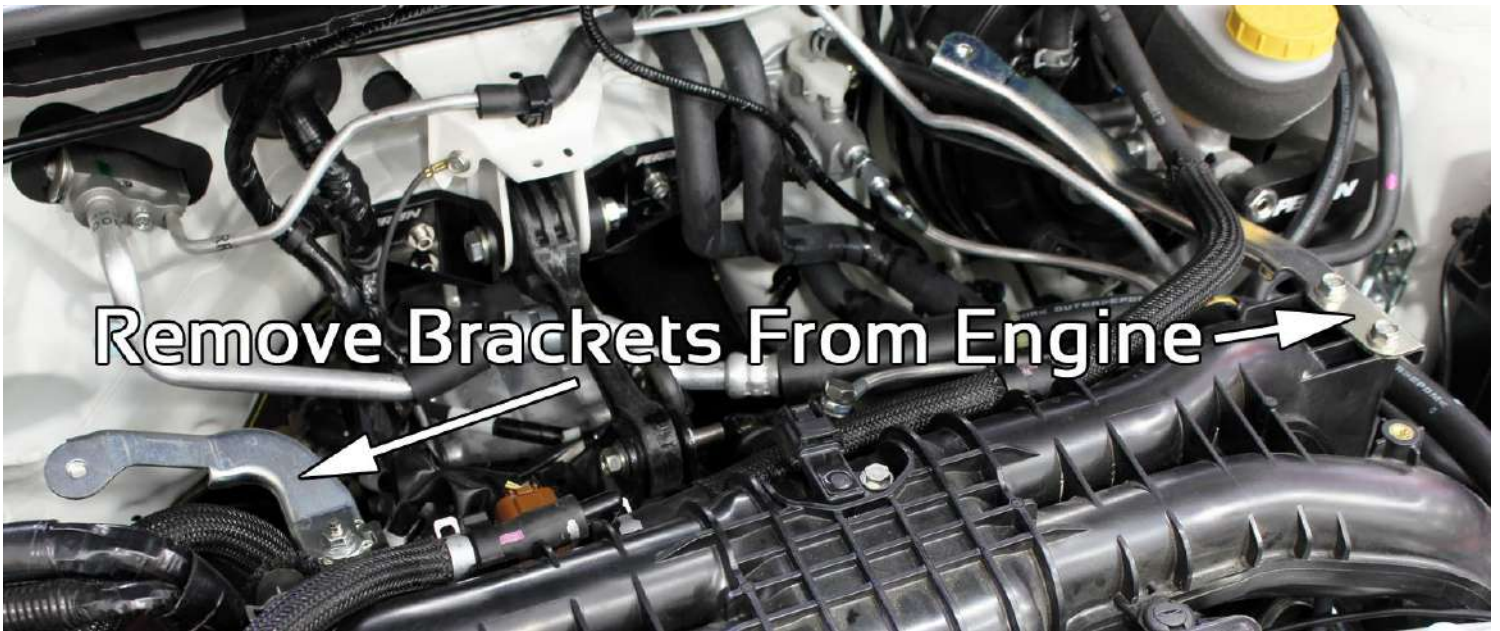
9. Bolt intercooler and support beam to chassis using OEM bolts and supplied M8 fender washers. Torque 12mm bolts 25ft-lbs. **NOTE: The bottom edge of core may touch plastic portion of splash guard, this is normal.**
10. Follow instructions to install supplied windshield washer tank. **NOTE: These instructions will show you how to remove the bumper just as the above instructions do, which can be skipped.**



11. Remove plastic engine cover from car by removing (2) plastic fasteners at the back of the car and then pulling straight up on the front section. **Take note that the front section is easily damaged during removal. Take care is pulling up slowly to release from car.**



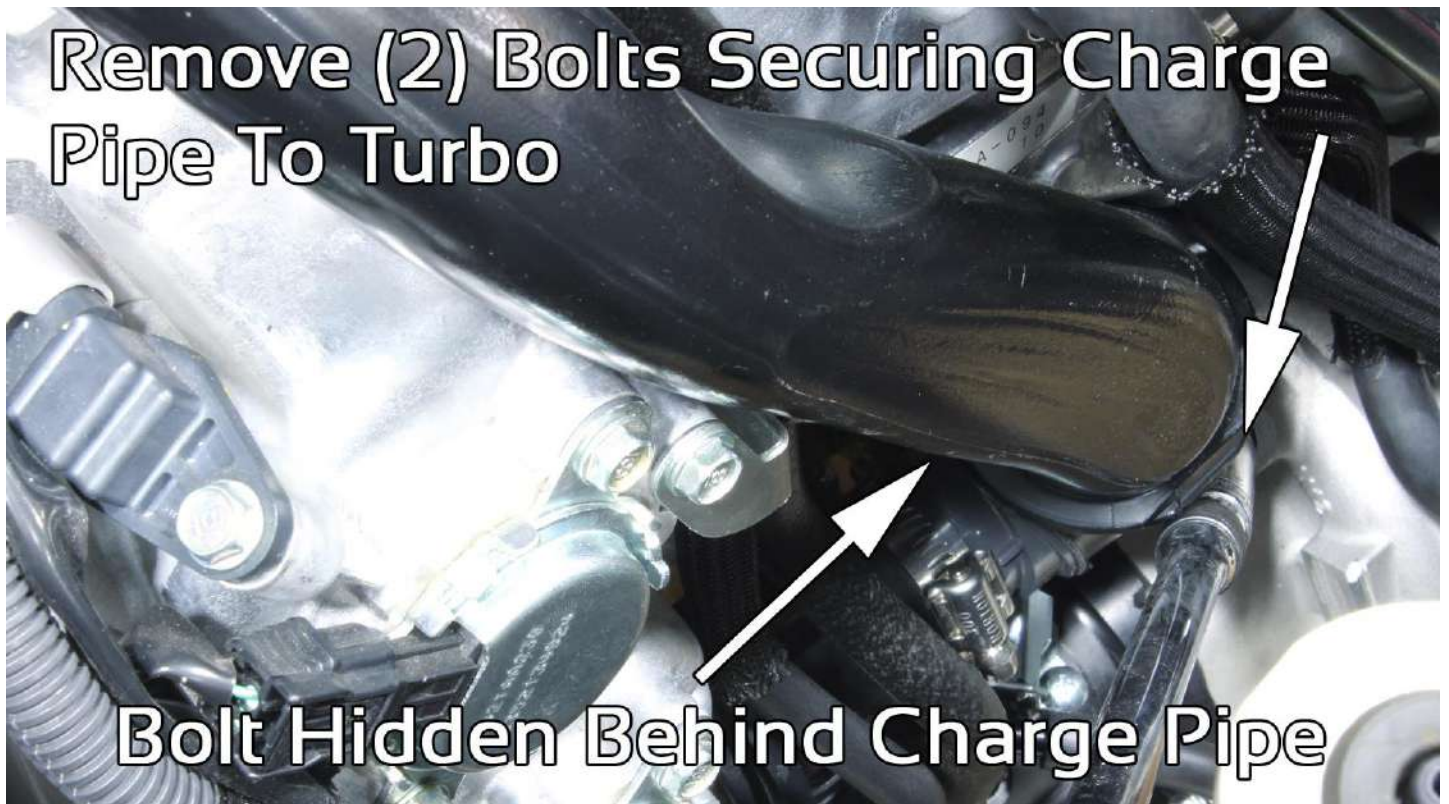
12. Remove existing intercooler from car by removing (2) 12mm bolts securing outer mounting flanges to engine, (1) hose clamp at boost tube, and (1) hose clamp at throttle body. Pull up from the rear of the intercooler to free from connections. Note: This step can be difficult as the intercooler is very tight at the boost tube connection. Some wiggling or spraying down with oil may help with removal.



13. Remove rubber coupler from throttle body. Remove all intercooler support brackets that were holding intercooler. Left side has (2) 12mm bolts at the intake manifold. Right side is (2) pieces, with one bracket bolted to engine block and one bolted to intake manifold.
14. Remove battery tie down bolts, and lift battery up high enough to slide plastic tray out from under it. Set battery back down and slide all the way to the left side of the car. Reinstall battery tie down off center as shown in picture below. This step is done to add clearance for boost tube to pass through engine bay.



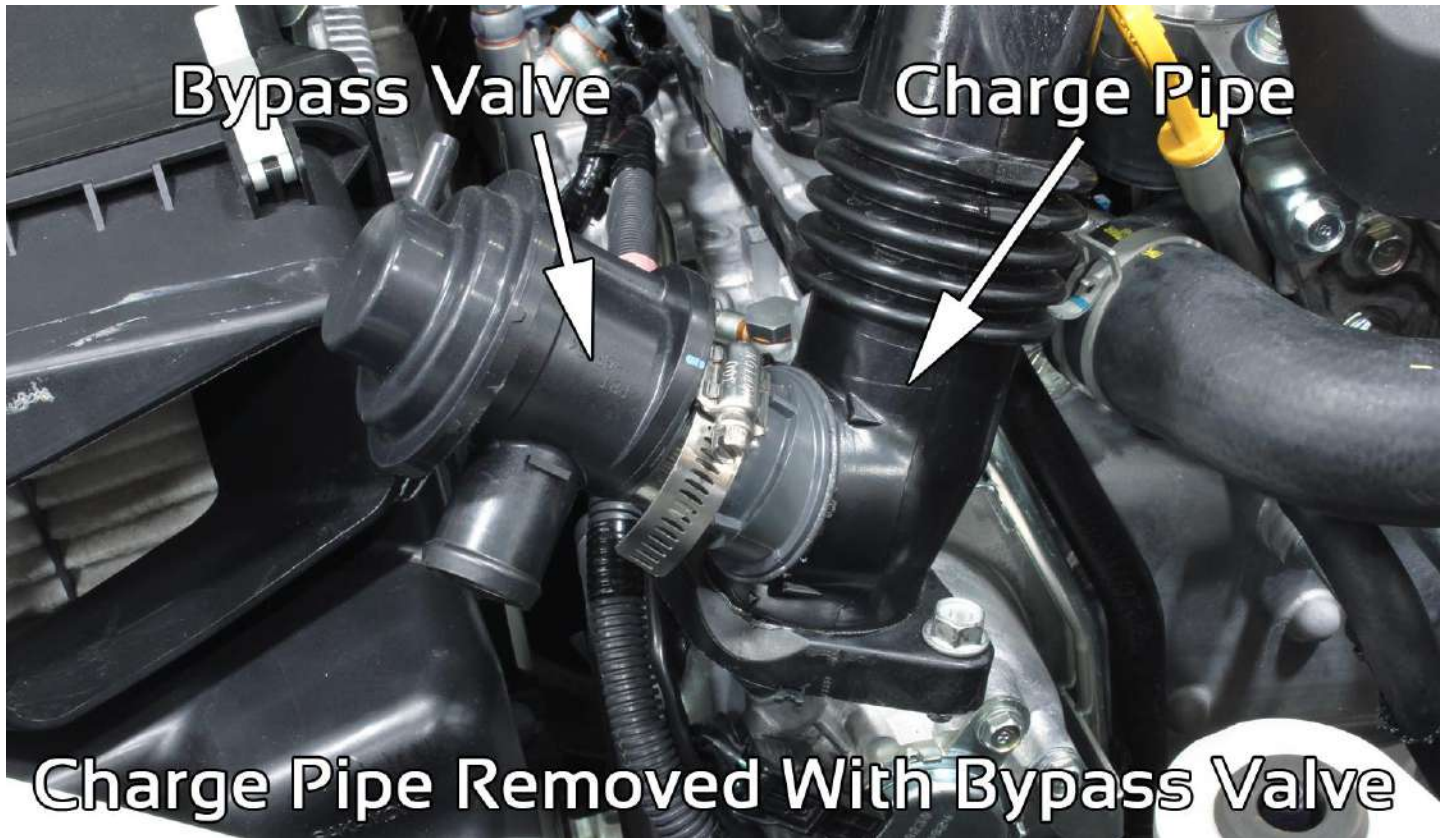
15. Remove (2) 10mm bolts holding right side radiator fan to radiator. Unplug electrical connector and remove fan from engine bay. This is done to gain access to charge pipe and turbocharger.
16. Using a long extension, remove (2) 12mm bolts securing OEM plastic charge pipe to turbo.



17. Using long needle nose pliers, pinch and move down hose clamp securing bypass valve to the plastic turbo inlet pipe. **NOTE: This step can be difficult as orientation of clamp may be in a hard to reach spot depending on tools being used. Alternatively, you can remove the lower splash guard to access clamp.**



18. Remove vacuum hose from bypass valve and (2) crank case vent hoses on plastic turbo inlet pipe.
19. Remove OEM plastic charge pipe from intercooler. **NOTE: This connection can be very tight and spraying a small amount of penetrating oil around coupler can aid in removal.**
20. Carefully remove charge pipe with bypass valve attached from engine bay.



21. Remove O-Ring from OEM charge pipe and place into supplied PERRIN adapter flange.



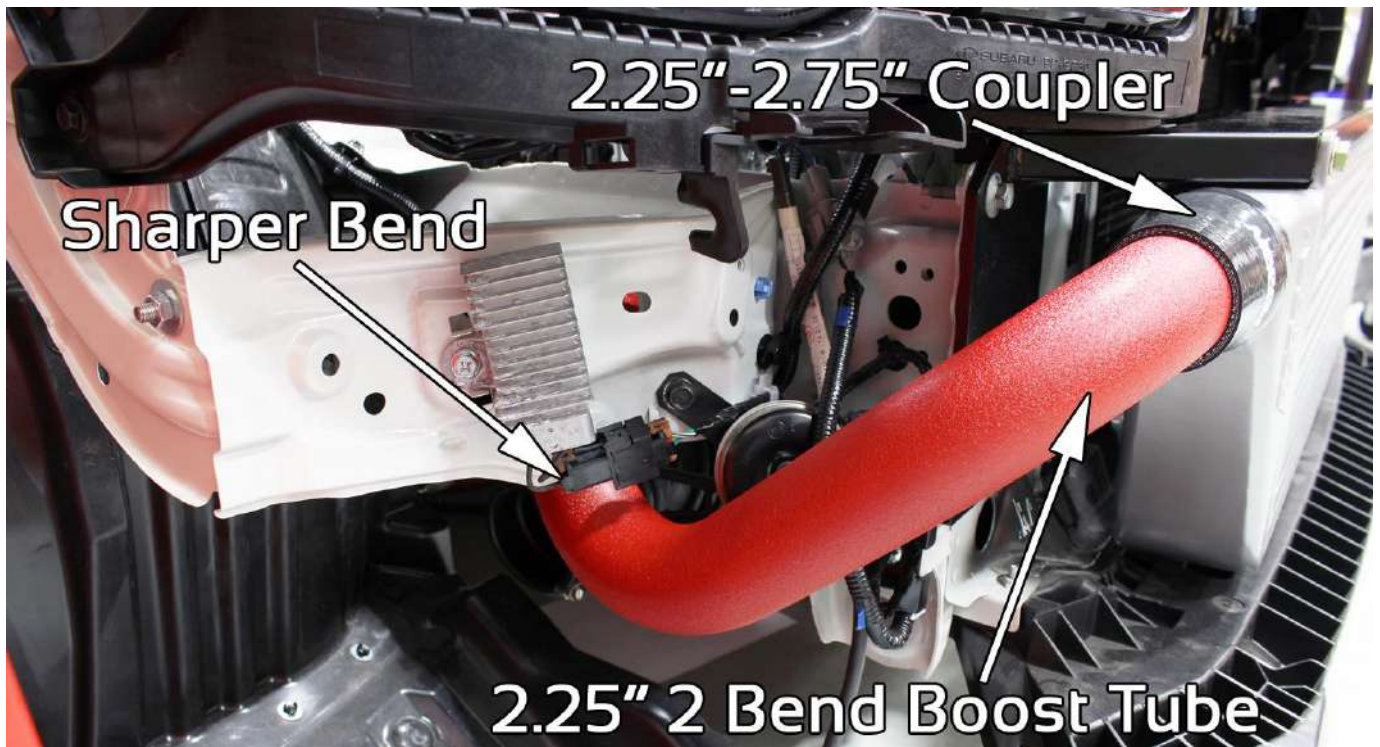
22. Install flange to turbo using supplied M8 bolts. Tighten bolts to 15ft-lbs.
23. Remove bypass valve from OEM charge pipe. **NOTE: This connection is very tight and will require some decent force to remove.**
24. Install size 36, 32 and 24 hose clamps onto turbo coupler, then install bypass valve into coupler. Orient bypass valve similar to picture, as this will aid in the next step. Leave clamps loose for now.



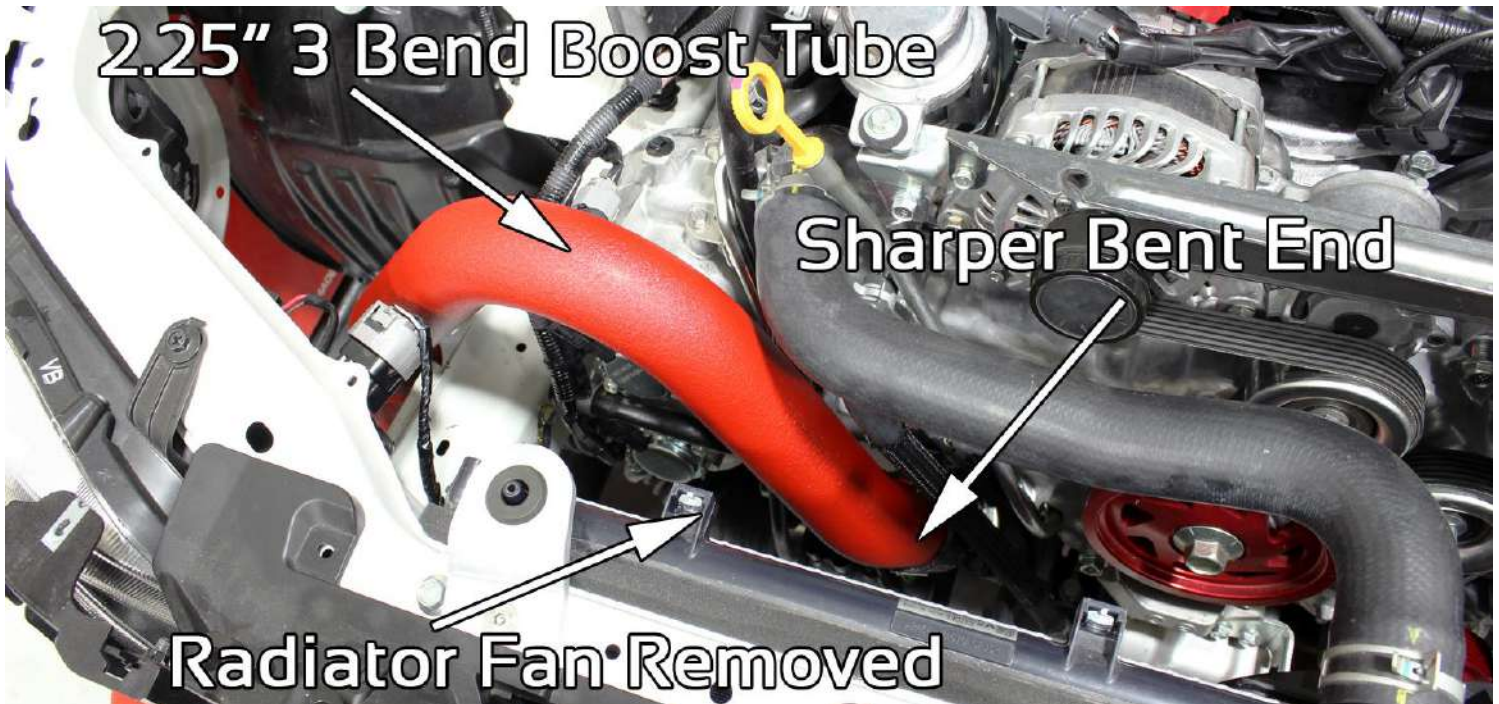
25. Remove pinch clamp that secures bypass valve to plastic turbo inlet. Install supplied size 20 hose clamp onto plastic turbo inlet.



26. Install turbo coupler with bypass valve to turbo adapter flange at the same time. **Note: This step is tricky to line up all 3 components together. Take time ensuring coupler is completely on turbo adapter flange and bypass valve is seated into plastic turbo inlet pipe.**
27. Tighten size 32 or 40-60mm clamp to secure coupler to turbo adapter flange. Tighten size 24 or 30-45mm clamp to secure bypass valve to coupler. Finally tighten size 20 or 23-45mm clamp securing bypass valve to plastic inlet pipe. In all instances, make sure that clamp is behind the beads to ensure that the connections will come apart or leak over time.
28. Reconnect bypass valve vacuum line to bypass valve. Reconnect (2) crank case vent hoses to plastic turbo inlet pipe.



29. Install supplied 2.75"-2.25" reducer coupler to right side of intercooler and place (1) size 48/60-80mm clamp and (1) Size 36 /50-70mm over coupler, but leave loose.
30. Install 2.25" 2-Bend boost tube to intercooler making sure to place side with sharper bend away from intercooler.
31. Install supplied 2.25" coupler onto boost tube on sharper bent end. Slide on size 36/50-70mm size clamps over coupler but leave loose.

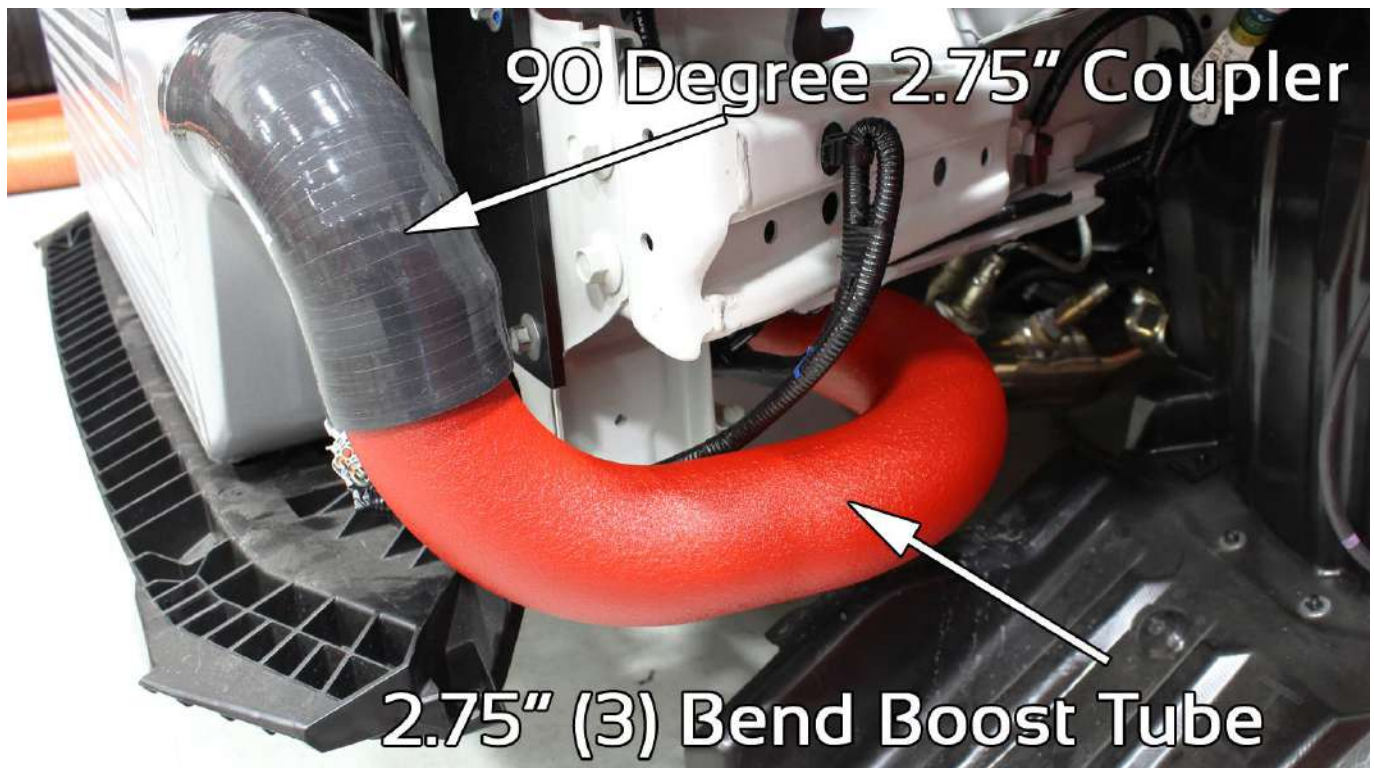


32. Install 2.25" (3) bend boost tube into turbo coupler making sure to place slightly sharper bent end into the coupler. **Note: If you get this backward it will not line up with the next boost tube very well and sit close to the radiator. This is a good check to ensure it is correct.**
33. Adjust boost tubes starting at the area around the horn and intercooler connections. Tighten clamps at intercooler, then move to adjusting the next boost tube. Tighten all clamps and double check boost tube is sitting in the desired position. **Note: Wiggle the tubes around a bit to ensure they do not hit on the engine or at the chassis next to the horn area.**
34. Reinstall radiator fan to radiator, making sure that small round tabs on the bottom are lined up with lower holes on radiator. Install (2) bolts removed earlier to secure fans to radiator. Plug in electrical connection on fan. Make sure that there is 1/2" of clearance between radiator fan and boost tube.

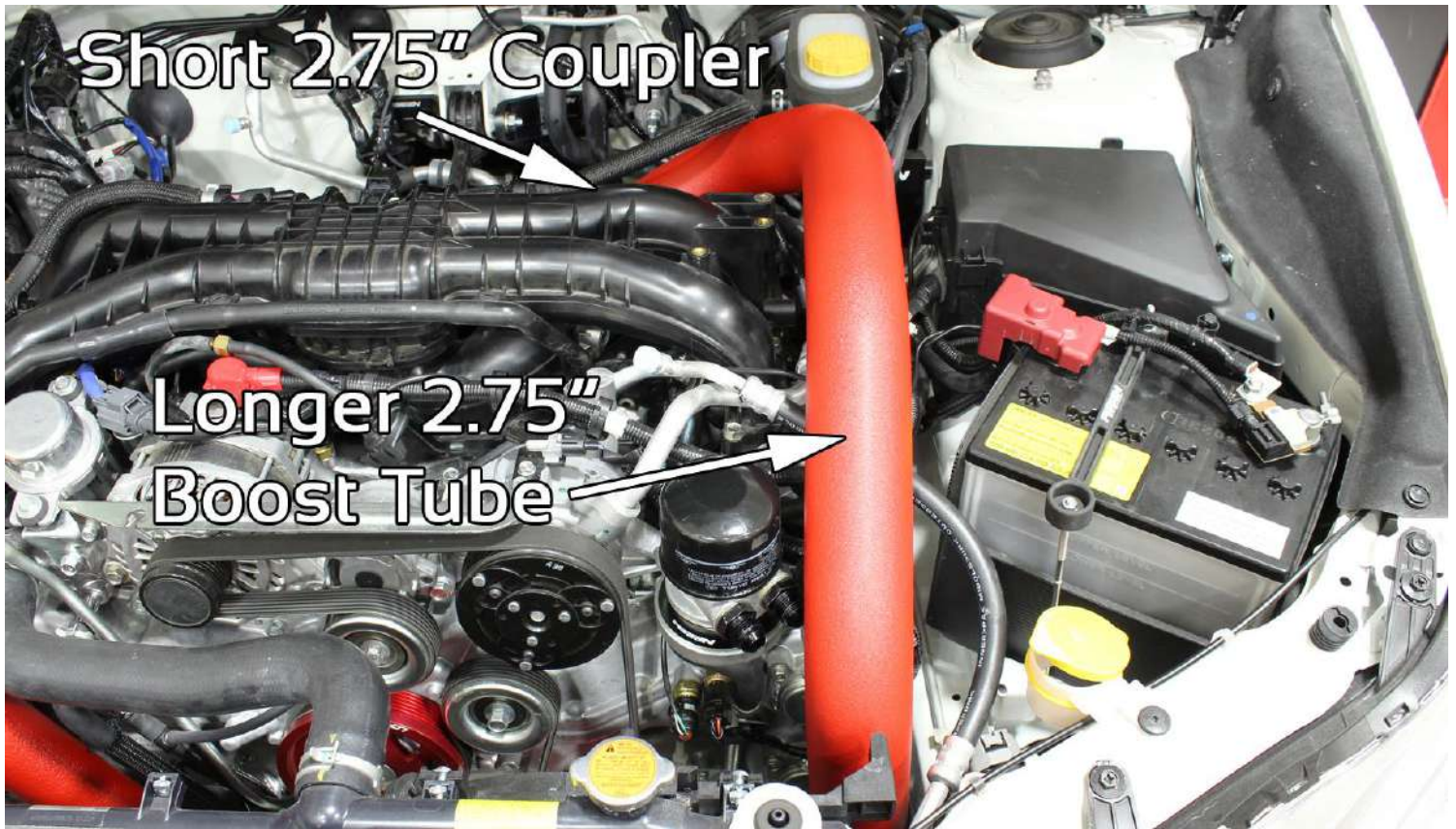
35. Locate area below washer tank and cut hole as shown in both engine splash guard and fender well splash guard. This is done to make room for the 2.75"OD 3 Bend, U shaped boost tube to pass through. **NOTE: You may find you will need additional trimming after completing the installation of all remaining boost tube.**



36. Install supplied 2.75" 90 degree bend silicone coupler onto intercooler and install (2) size 48/60-80mm Clamps. Leave clamps loose.
37. Install 2.75" 3 Bend, "U" Bend boost tube into coupler and route under frame rail as shown below.
38. Install longer 2.75" coupler onto boost tube and install (2) size 48/60-80mm Clamps. Make sure and aim clamps in a way that makes them easy to tighten in future steps. Leave clamps loose.



39. Install shorter 2.75" coupler onto throttle body and install (2) size 48/60-80mm Clamps. Leave clamps loose.
40. Install longer (3) bend 2.75" tube onto throttle body and into 2.75" coupler connected to "U" bend boost tube.



41. Take note of clearance around AC line and other parts on the car. Adjust boost tubes until you have at least 1/2" of clearance around all parts. See picture below regarding AC line that will need to be moved over a little.



42. Route brake booster hose under boost tube as shown. This is necessary to ensure hose does not rub through boost tube over time.



43. Using picture below, double check that boost tubes and couplers match. Start with tightening clamps at the throttle body and move your way down to the intercooler. Just as in other steps, give them a good wiggle and adjust any tubes away from things they hit. Double check that all clamps are placed behind the beads on the tubes.





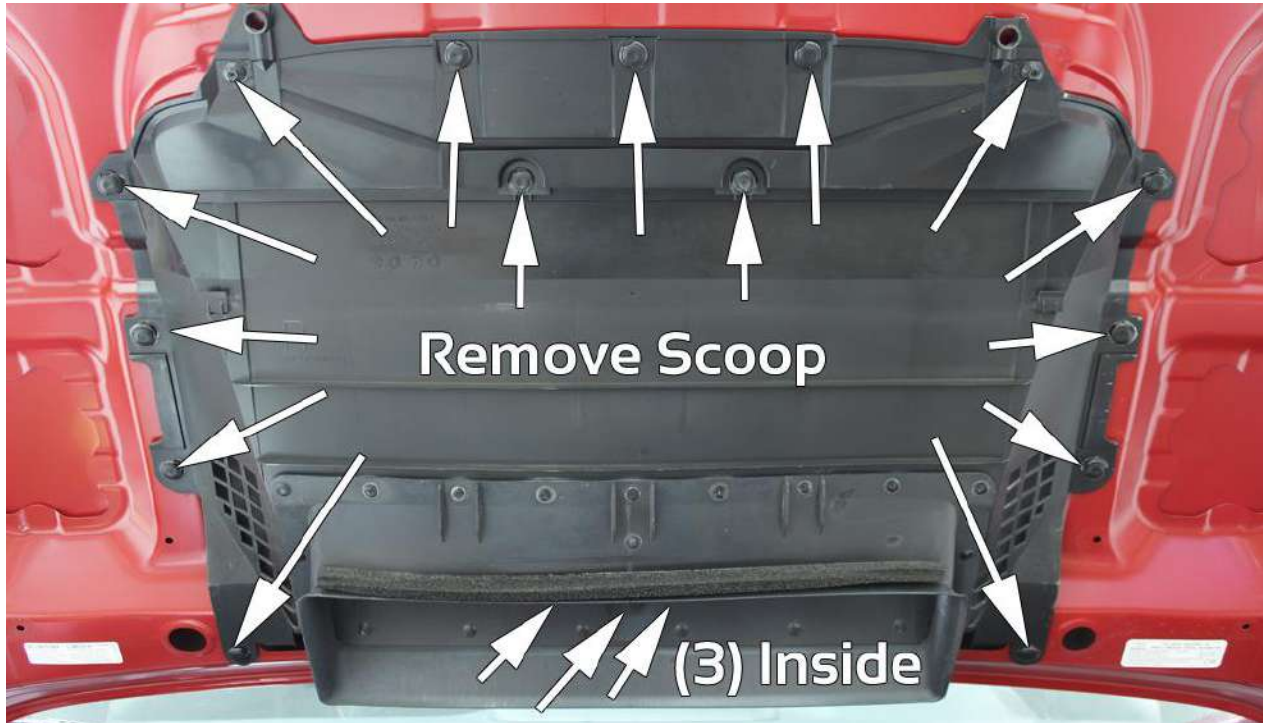
Coolant Overflow and Intake Installed

44. Install coolant reservoir. See separate instructions included with ASM-ENG-503 for installation of coolant overflow tank. Depending on the car and other aftermarket parts installed it is possible to install this in many locations. Instructions included should work for most applications.
45. Add fluid drained from coolant overflow tank in earlier step.
46. Before continuing, install intake system to car (follow instructions that came with it), connect battery, start car and ensure there are no leaks and that car start and runs like normal.
47. Using picture below, remove (10) plastic push in connectors and remove the fiber type hood protector.



Remove Hood Blanket

48. Using picture below, remove (16) plastic connectors and (2) bolts, then remove hood scoop. **NOTE: This step is important as failure to do so will cause damage to boost tubes as they may rub on scoop.**



49. Double check that all tubes are adjusted properly and ensure proper clearance around all components. Ensure all clamps are placed behind bead on boost tube as this ensures tubes will not leak and blow off under boost. Tighten all clamps using 7mm nut driver. Do not over tighten clamps as these special narrow band clamps have high clamping/sealing capabilities with very little torque. **NOTE: Failure to seal tubes properly can lead to engine damage and poor performance. If possible, have a pressure test done at a shop to ensure there is no boost leak in your system.**
50. Follow bumper installation guidelines below, then proceed to test drive.

Bumper Installation Guidelines:

- Decide if you want to leave the grill installed, remove for a more aggressive look, or trim out larger opening as shown below.
 - If you choose to leave grill on, reinstall bumper in the opposite way it was removed in earlier steps.
 - If you choose to remove grill (as shown below) unsnap from either corner and slowly work your way around entire grill. Once free, decide to trim off plastic tabs (as you can see in the below picture). Use a utility knife or X-Acto knife to trim off. After trimmed, install bumper the same way it was removed in earlier steps.
- Locate and remove right side fog light/cover from bumper. Located area as pictured below, and cut away using picture below as a guide. Again, use a utility knife, or X-acto knife to trim off. Air tools or similar will work but do not create as nice of an edge.



- Reinstall bumper following the opposite instructions during the removal process. During this process, you may find that a boost tube will need to be moved or adjusted, this is totally normal.
- Also included with every intercooler is a stencil to allow you to paint a logo on the front. Line stencil up with intercooler core (Aligns logo for best location) and press down in all corners and edges. Using automotive spray paint, spray a few coats on, remove stencil, and apply a clear coat to ensure logo holds up to road debris.



COMMON QUESTIONS:

- Car doesn't start? Check all vacuum connections and boost tube connections. Lastly check that the MAF sensor is pointed the right direction on the intake system. The plug should be facing front of car.
- Boost tubes keep blowing off? Make sure clamps are placed behind the bead on the tube when tightening. This will ensure that if clamps are tight enough they can't pop off. A small amount of blow-by will produce oil in the boost tubes. If this gets between the tubing and the coupler, this can also cause the boost tubes to pop off. Lastly, make sure that the hose clamps are tight enough and recheck periodically.