



## FRONT MOUNT INTERCOOLER 2018+ STI

2021-01-28

PSP-ITR-439

Thank you for purchasing this PERRIN product for your car! 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. If you have any questions, please contact our tech department prior to starting installation. We can be reached in any of the following methods:

Email [Tech@PERRINperformance.com](mailto:Tech@PERRINperformance.com)

Instant Chat off the main page of [www.PERRINperformance.com](http://www.PERRINperformance.com)

Or simply call our tech team at 503-693-1702

### GENERAL MODIFICATION NOTE

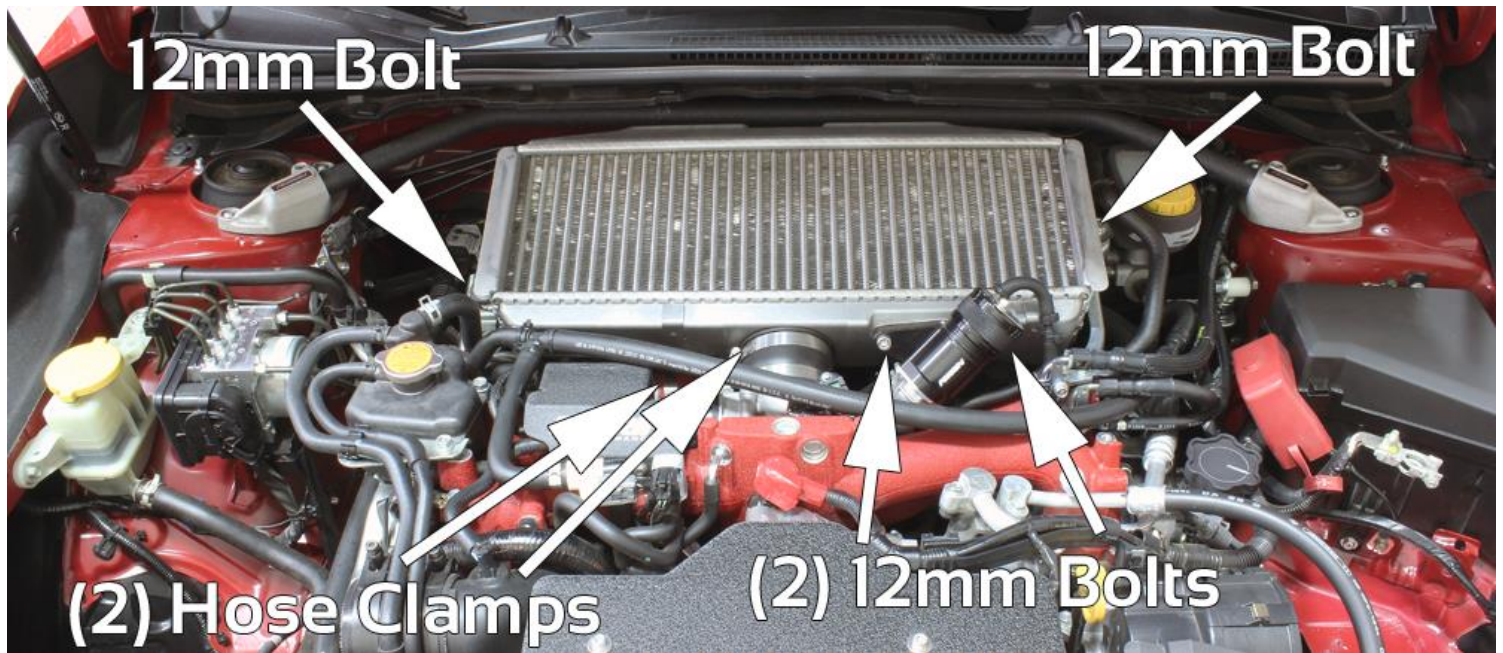
Modifications to any vehicle can change the handling and performance. As with any vehicle extreme care must be used to prevent loss of control or roll-over during sharp turns or abrupt maneuvers. Always wear seat belts, and drive safely, recognizing that reduced speeds and specialized driving techniques 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:

- Do not over tighten T-bolts clamps, as they can crush the boost tubes! Tightening torque of all clamps is 75 in-lbs, or 6.25ft-lbs.
- 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 secondary air pump cover. Take time in moving boost tubes to clear parts.
- Be prepared to empty your windshield washer tank into a container.
- 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/STI Intercooler Bumper Beam
- (1) 2015 STI 5 Piece Boost Tube Set
- (1) Coolant Overflow Tank
- (1) Windshield Washer Tank
- (1) WRX Style BOV Flange Adapter
- (1) 8 Piece Silicone Coupler Kit
- (1) Air Filter
- (1) Intake Tube
- (1) Intake Hardware Subpacket w/Instructions
- (2) Size 24 / 30-45mm Clamps
- (1) Size 32 / 40-60mm Clamps
- (4) Size 36 / 50-70mm Clamps
- (9) Size 48 / 60-80mm Clamps
- (1) 1/2"-1/2" Connector
- (1) 1/2" Tee
- (24") 1/2" Fuel hose
- (6) M8 Fender Washer
- (2) M6x40mm Hex Head Bolt
- (2) M6x25mm Button Head Bolt
- (2) M6 Flat Washer
- (2) M6 Fender Washer
- (2) M6 Nut
- (1) Stencil



- 1) Raise hood and disconnect battery terminals. Remove battery, battery cover, and tray from car.
- 2) Remove existing intercooler from car by removing (2) 12mm bolts securing BOV to intercooler, (2) 12mm bolts securing outer mounting flanges to engine, (1) hose clamp at turbo, and (1) hose clamp at throttle body. Disconnect (3) crank hoses from black steel pipe on front of intercooler. Take note of these hoses as they will be connected up in future step. **NOTE: Some of this hardware will be reused in future steps.**
- 3) 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.
- 4) Remove intake system up to turbo inlet hose connection. This includes: Removing rubber intake elbow (2 hose clamps), air filter box (2 10mm bolts located on chassis and 1 10mm nut on inside of airbox). If aftermarket intake is installed, follow manufacturers instructions to remove.

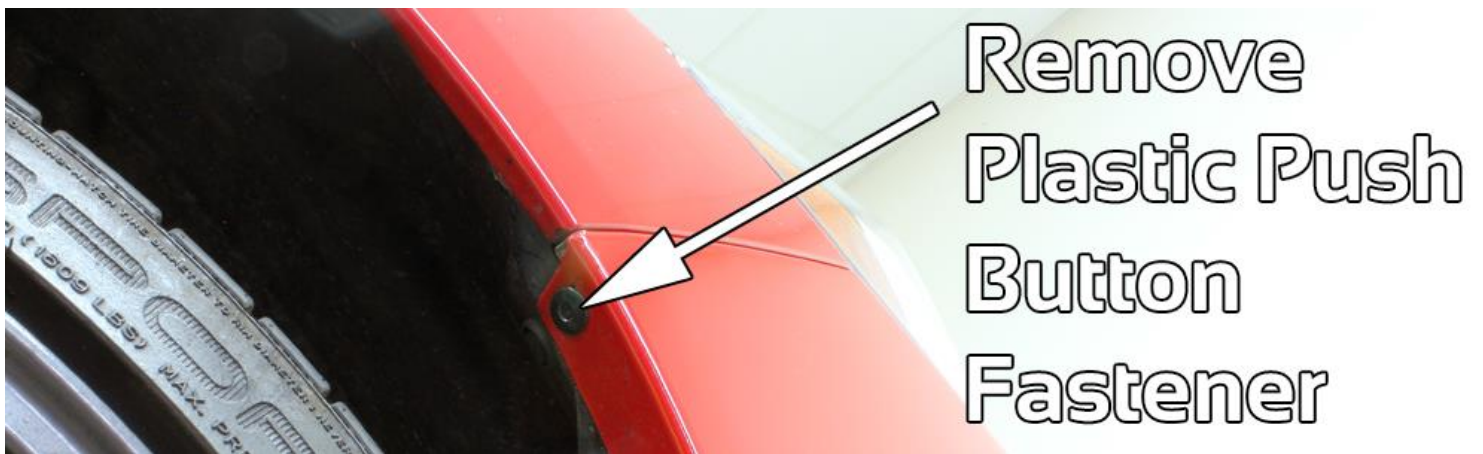


- 5) Remove OEM coolant overflow tank from radiator (snaps onto fan shroud) and drain coolant into suitable container, as this will be reused.
- 6) Remove bumper cover from car. Take care in removing all plastic connectors replace connectors as they can break.
  - a. Under hood, locate and remove (6) 10mm bolts and (3) plastic connectors holding seal to bumper. Remove metal seal from bumper.

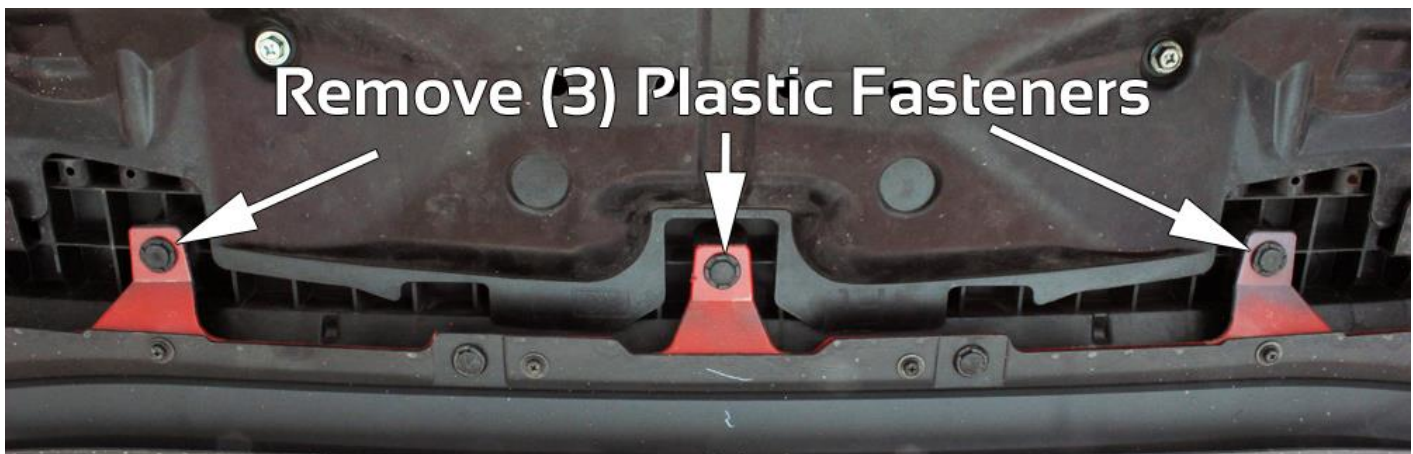




- b. Inside of wheel wells, locate and remove (1) plastic fastener that is released by pushing the center of it in.

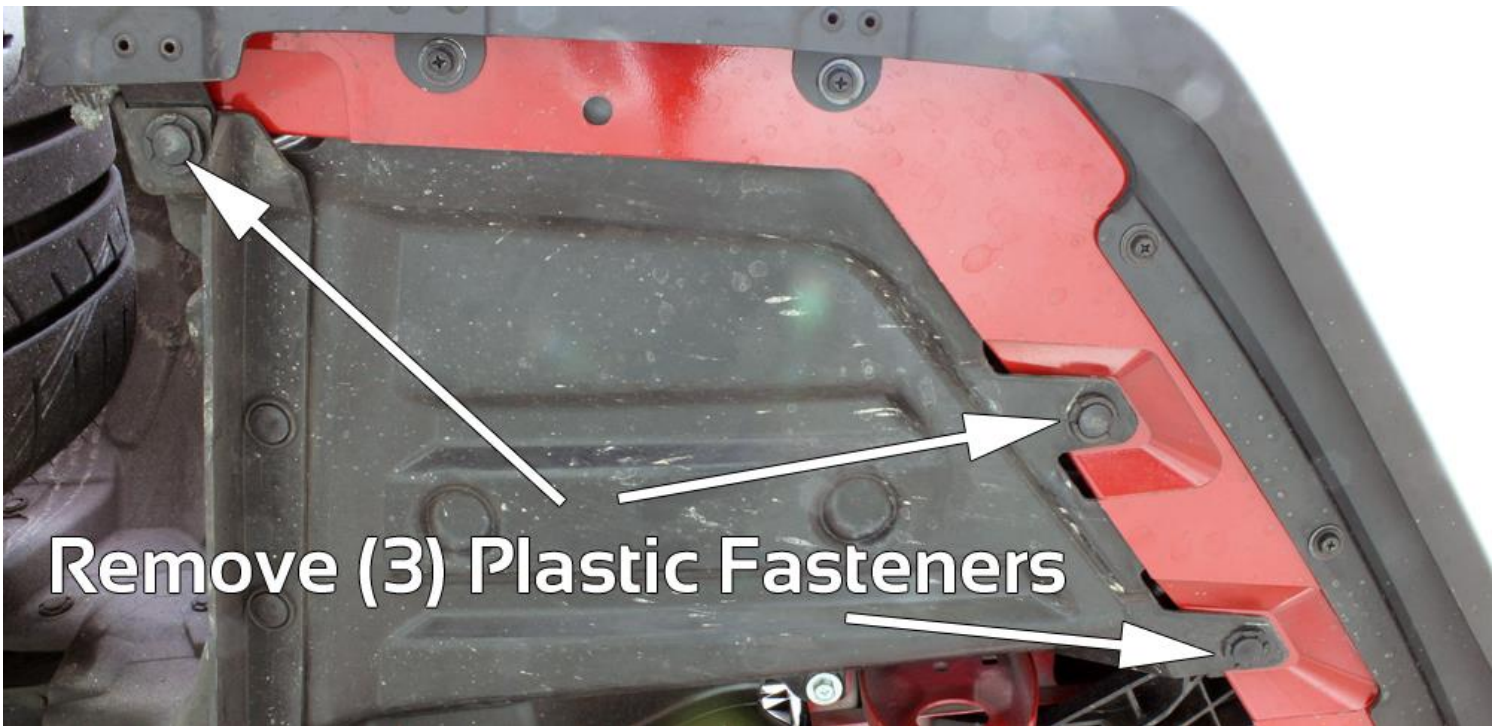


- c. Under the bumper locate and remove (3) plastic fasteners in center of bumper.





- 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.



- 7) Remove (8) 12mm bolts secures bumper support beam to chassis and remove beam from car.





- 8) Locate and remove bumper beam support on right side of car, held on by (4) 17mm headed bolts.

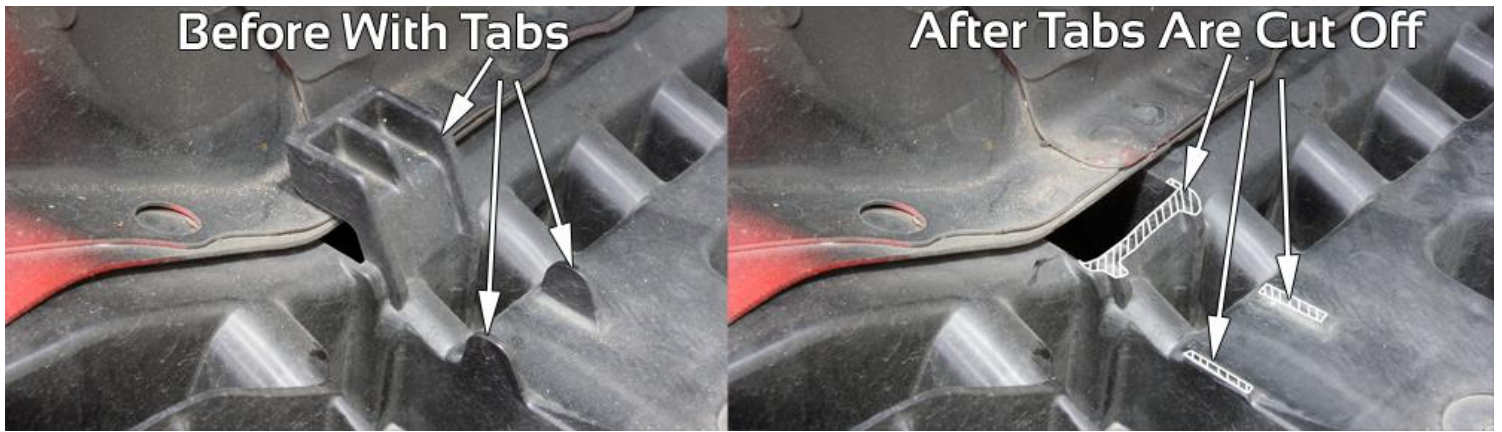
**Remove on 2018+ WRX/STI**



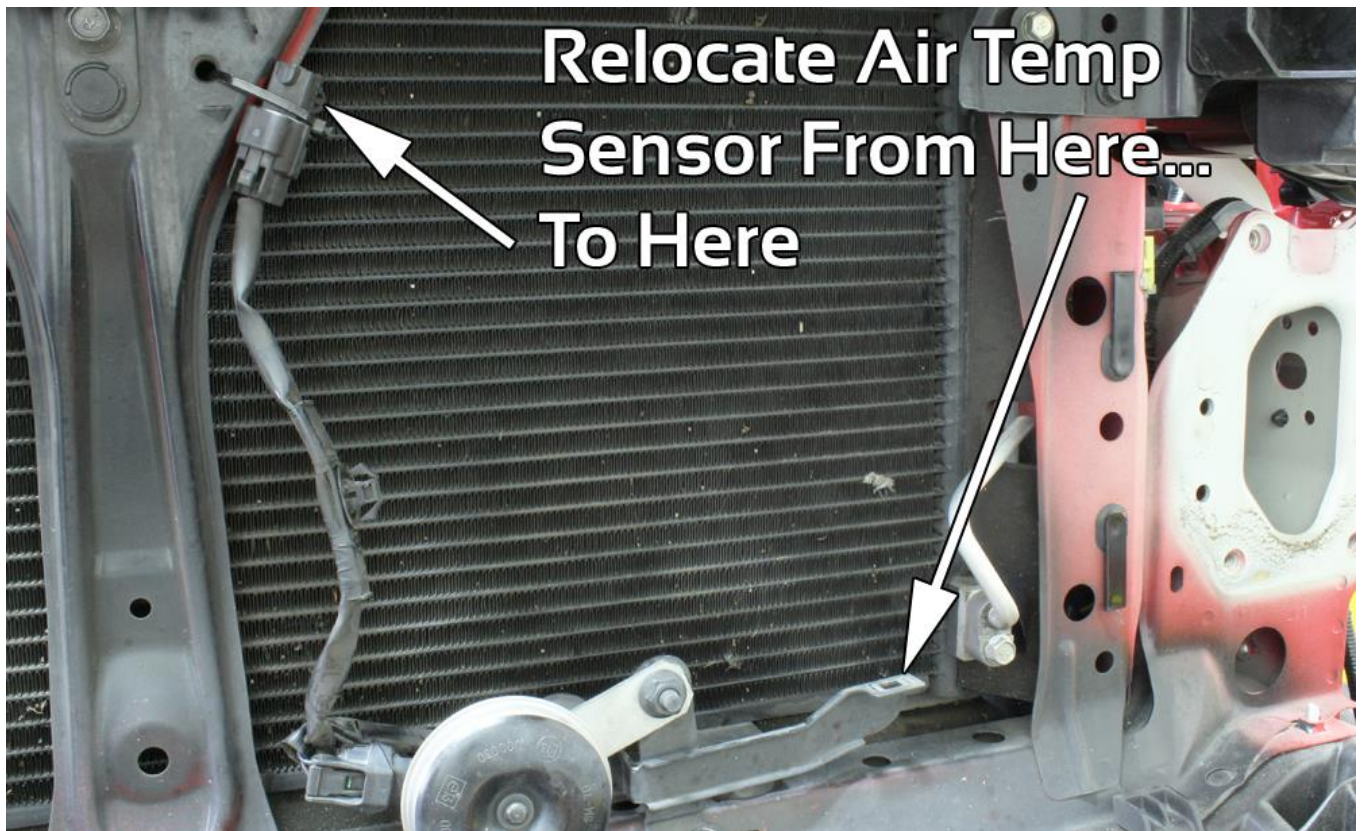
**Right Side  
Bumper Beam  
Support**

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



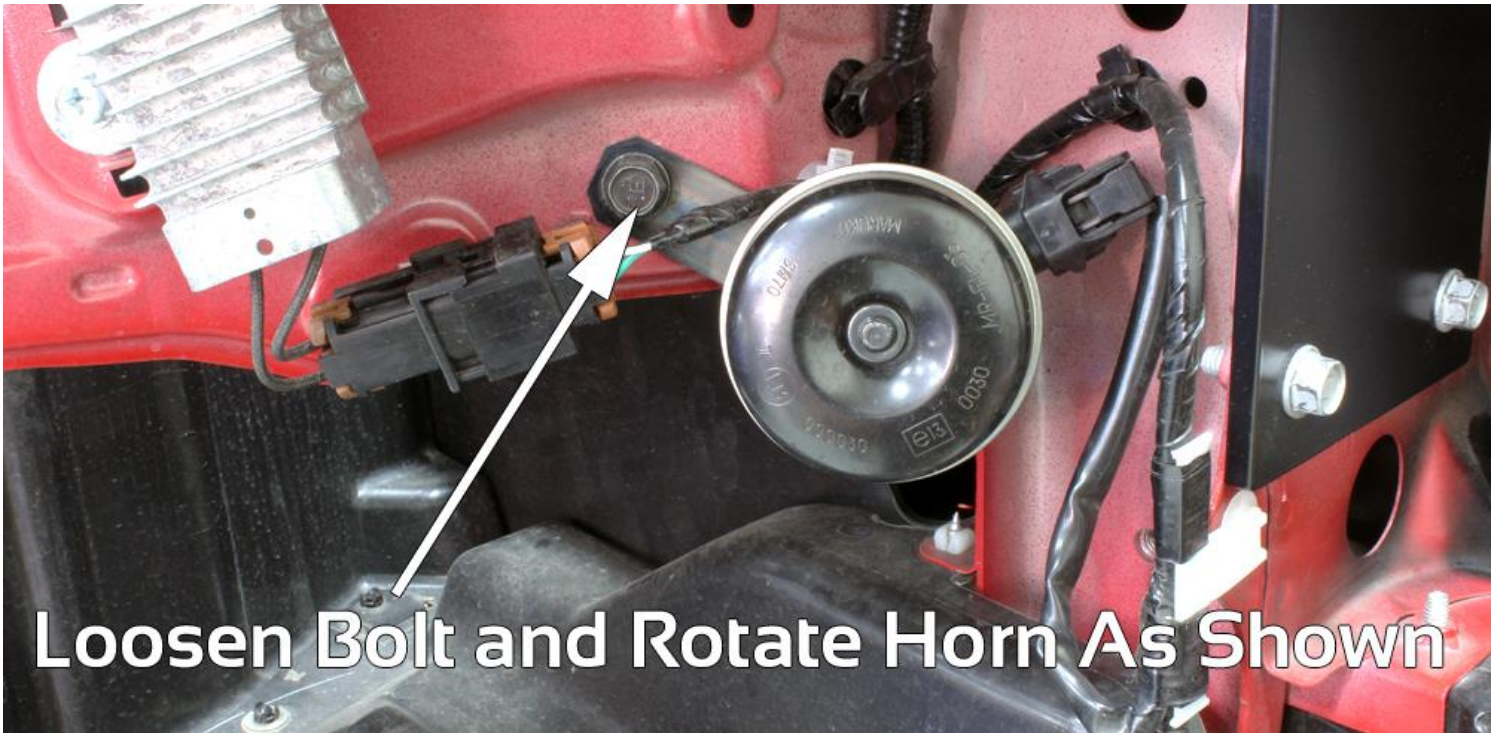


10) Locate air temp sensor as shown in picture and relocate to radiator support as shown using zip tie.

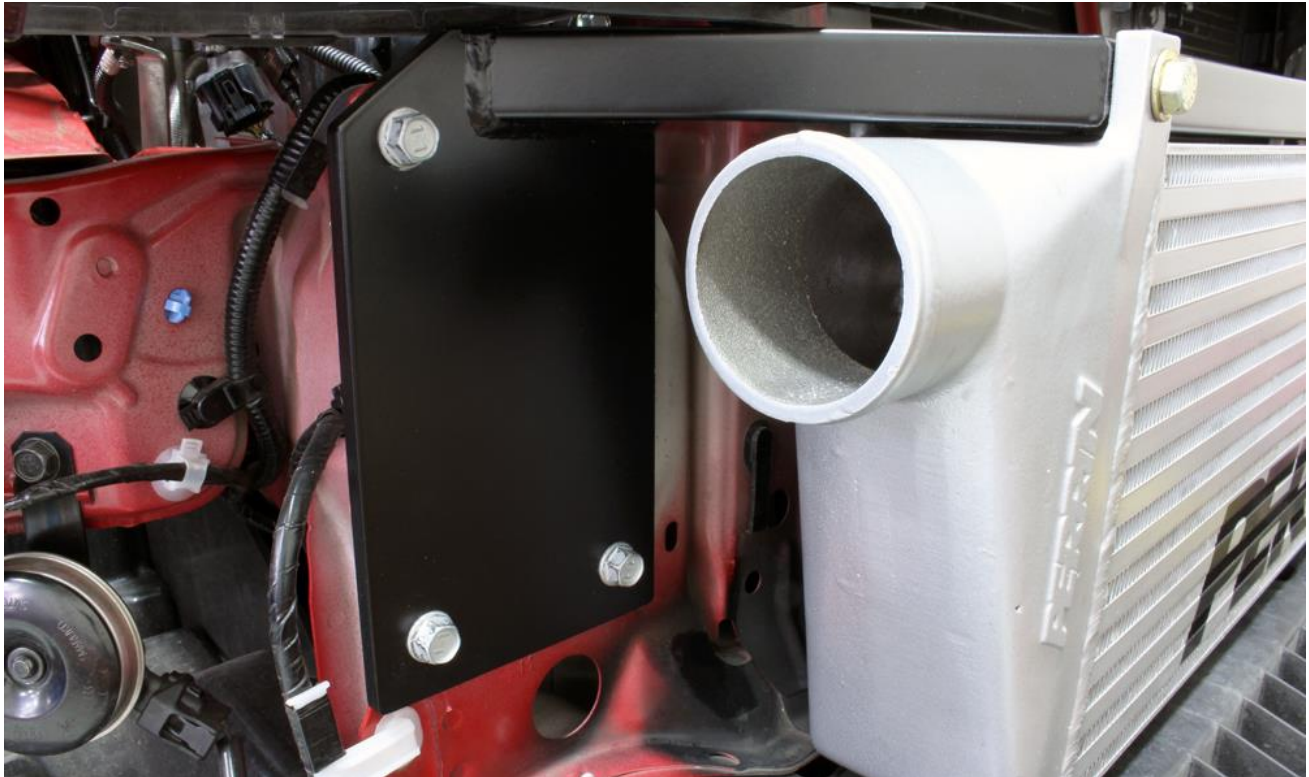


11) Locate horn on right side of car, loosen bolt and rotate out of the way as shown below. This is done to make room for boost tube to pass through.





- 12) 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.**
- 13) 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.**

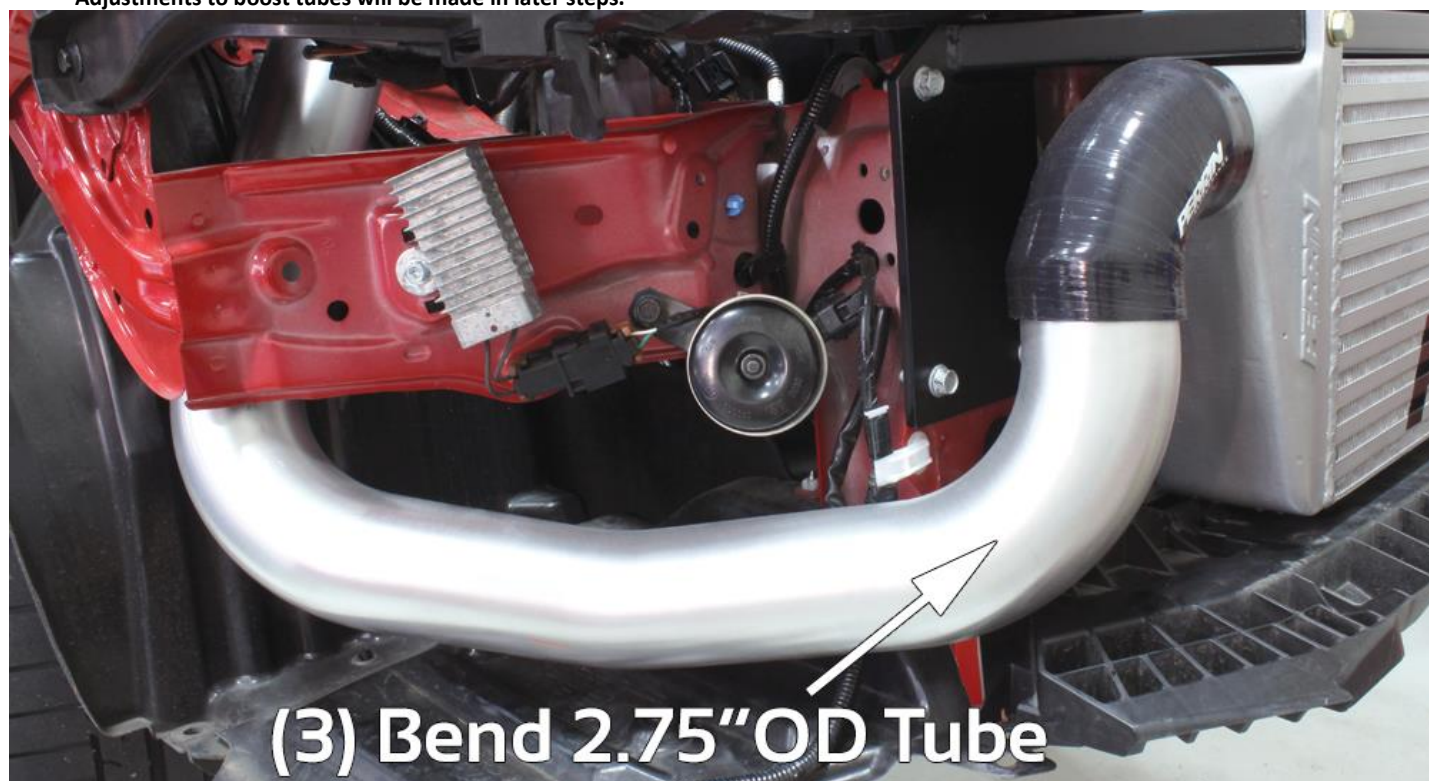


- 14) Install supplied 2.75" 90 degree couplers to both sides of intercooler core. Use supplied 48 size clamps to secure to intercooler.
- 15) Locate area below washer tank and cut hole as shown in both engine splash guard and fender well splash guard. This is done to make room for the 2.75"OD 3 Bend, U shaped boost tube to pass through.





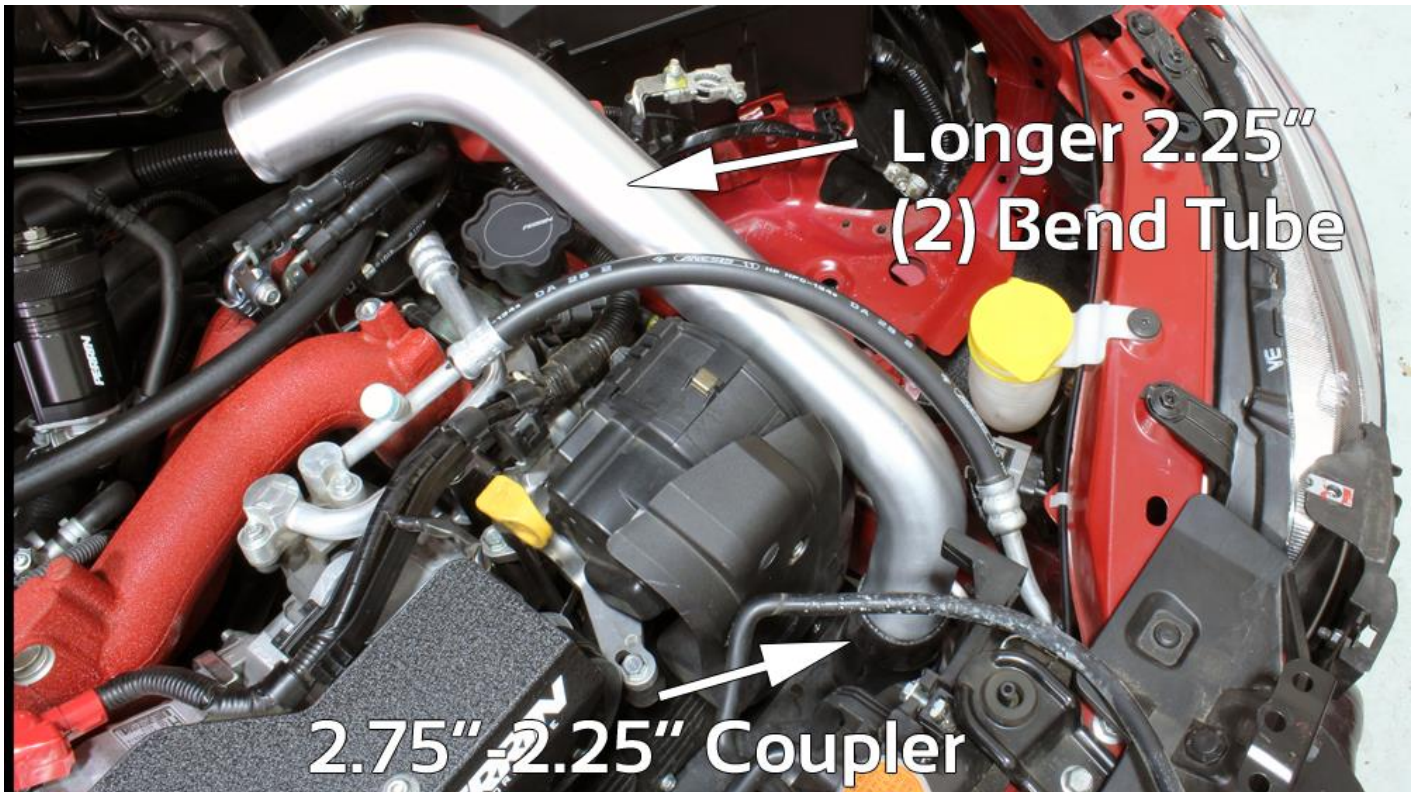
- 16) Install (3) Bend U Shaped 2.75" tube on left side of intercooler as shown. Use supplied 48 size clamp to secure to 90 degree coupler. **NOTE: Adjustments to boost tubes will be made in later steps.**



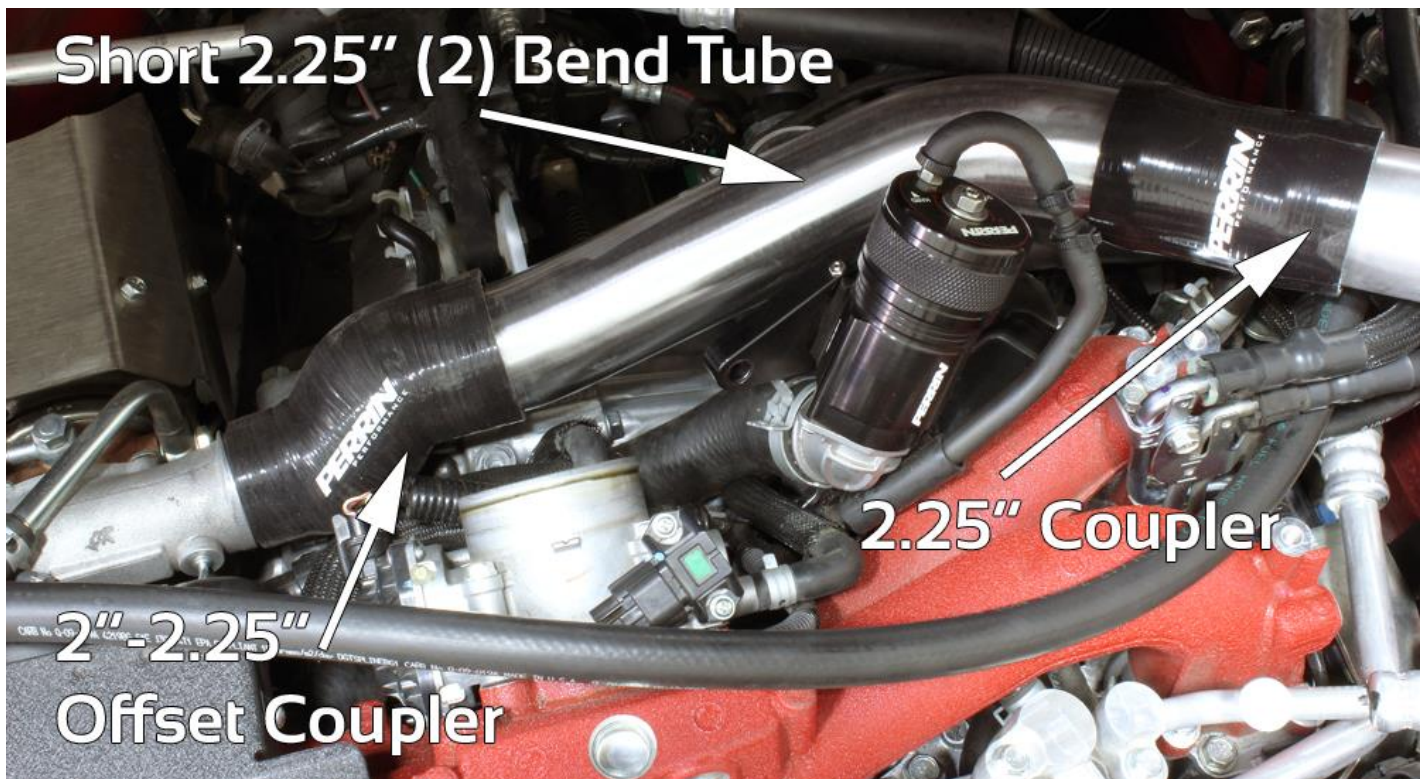
- 17) Install longer (3) bend 2.75" tube on left side of intercooler as shown. Use supplied 48 size clamp to secure to 90 degree coupler. **NOTE: Adjustments to boost tubes will be made in later steps.**
- 18) Install supplied 2.75"-2.25" reducer coupler to left side U Bend tube and secure using supplied 48 size clamp. **NOTE: Make sure and install clamp so it is easy to access in later steps.**



- 19) Install long 2.25" (2) bend tube into 2.75"-2.25" reducer coupler and secure using supplied 36 size clamp. **NOTE: This tube is bent slightly different from end to end, if tube doesn't appear to line up properly, flip 180 degrees and reinstall.**



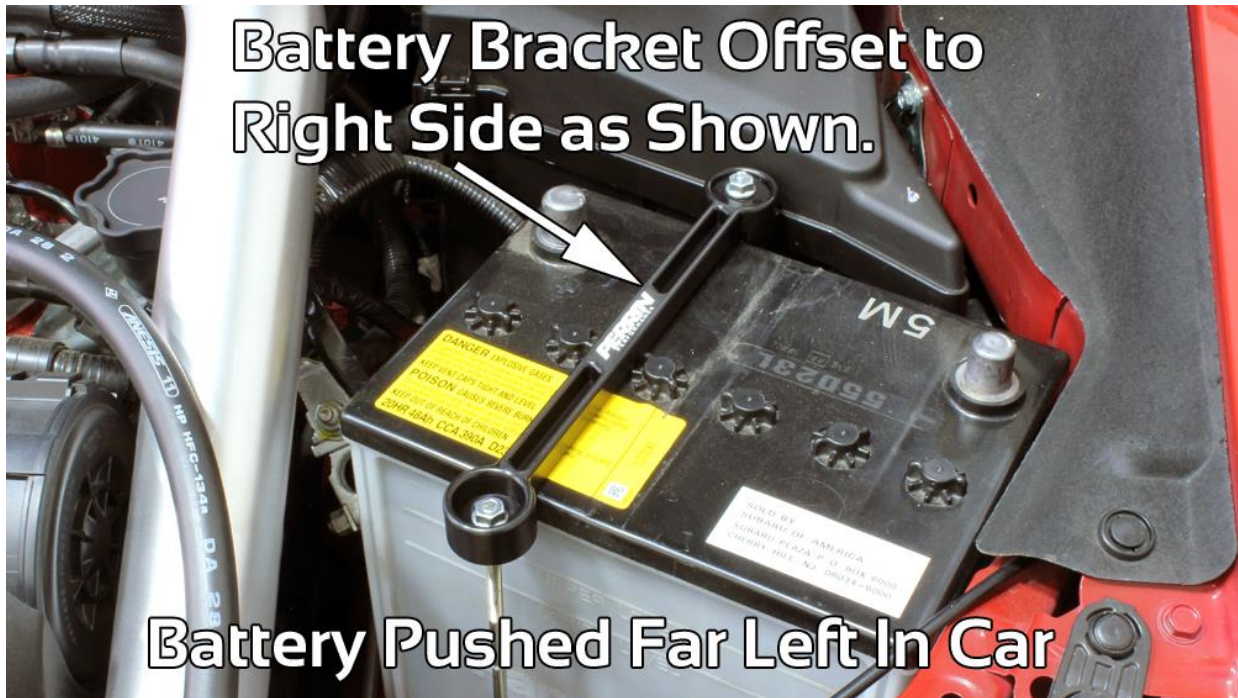
- 20) Install supplied 2.25" coupler onto 2.25" tube in above step and secure using supplied 36 size clamp.  
21) Install supplied 2-2.25" offset coupler to turbo as shown below and secure with supplied 32 size clamp.



- 22) Install short 2.25" tube as shown into both couplers in above steps, and secure each end with supplied 36 size clamps.

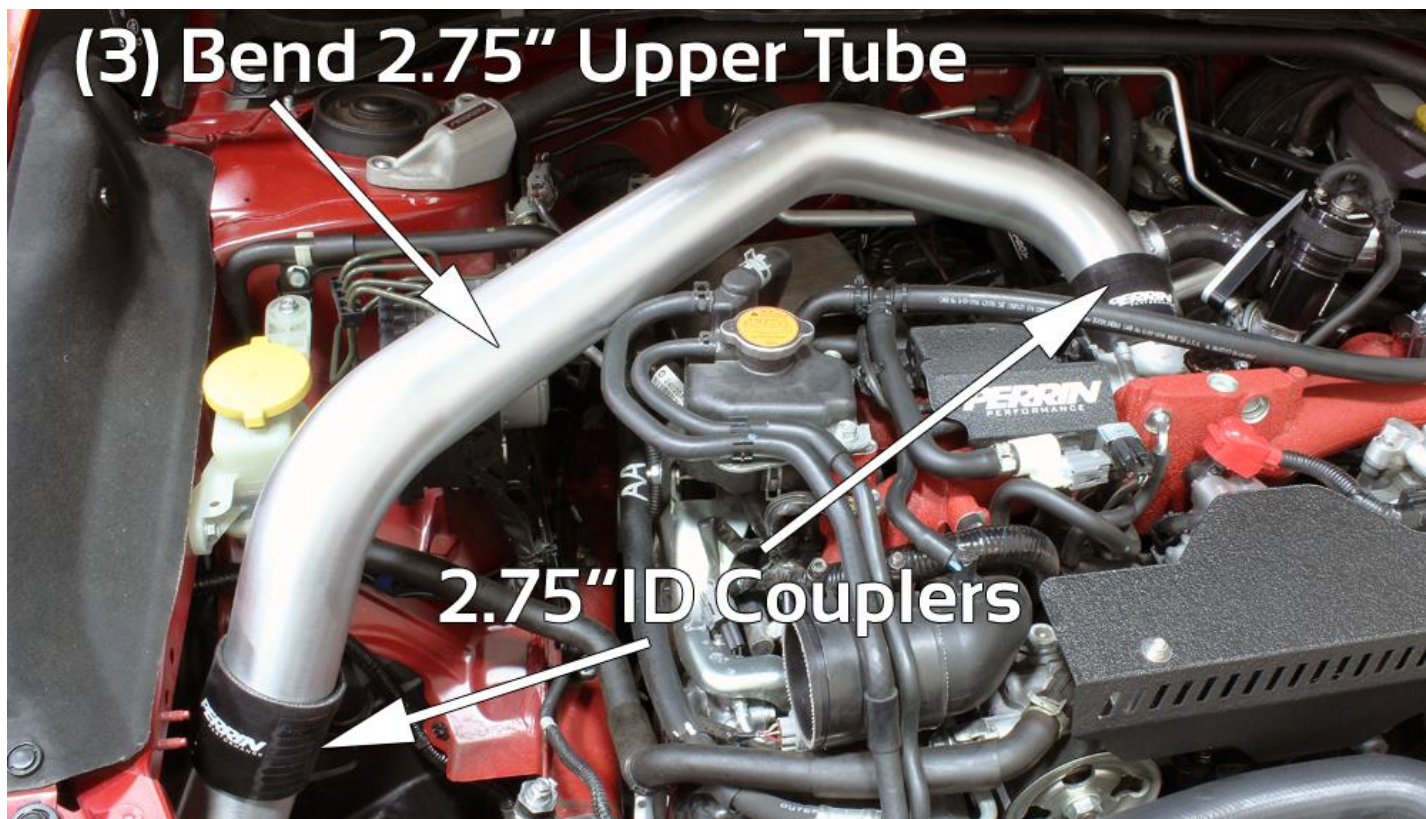


- 23) Set battery into engine bay, making sure to remove battery tray and battery cover. Slide battery as far left as possible, then secure with brackets and hardware as was removed in earlier step. You will notice that the bracket will line up with right side of battery as shown in pictures below. This is normal and is done to make room for tubes to fit next to battery and engine. **NOTE: If you are have installed PERRIN Fender shouds, make sure battery terminals do not touch the shroud. Adjust battery over and or install battery tie down to center of battery and take extreme care with boost tube routing.**

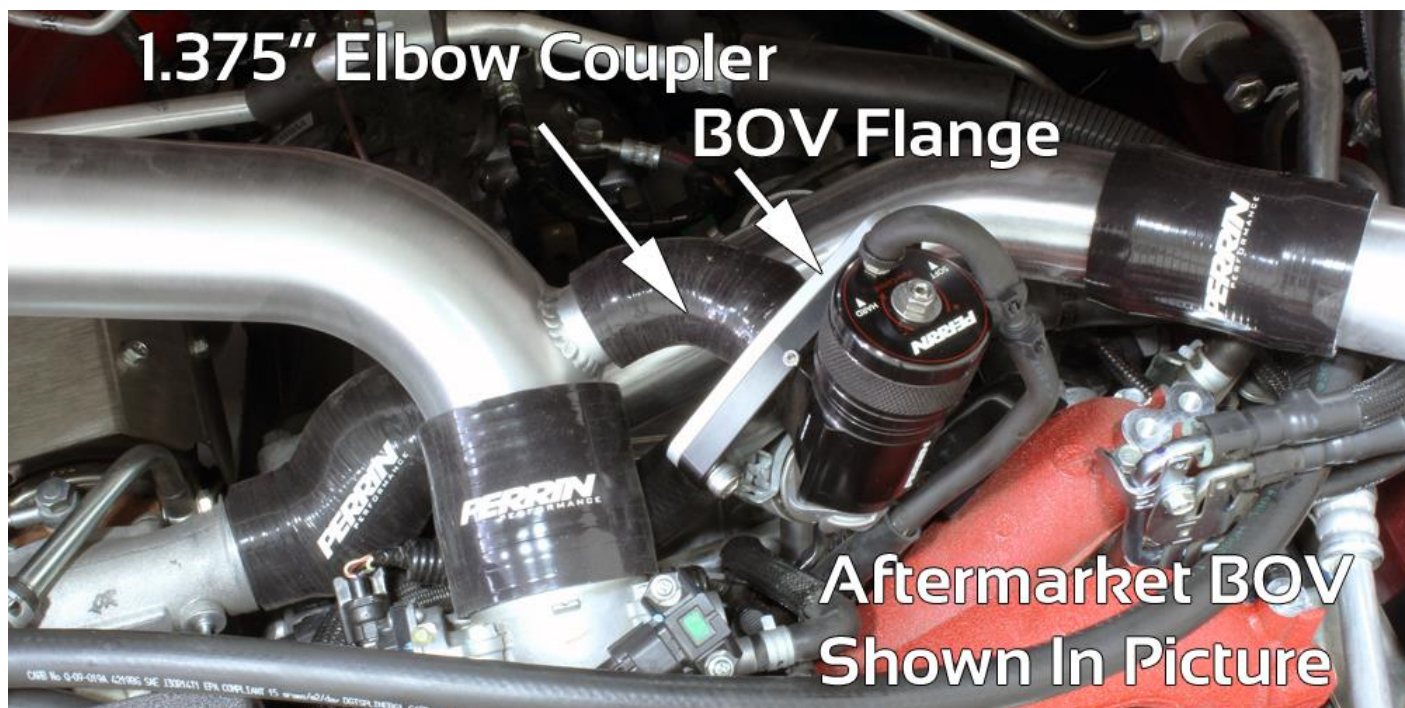


- 24) Adjust the rotation and length that tubes are pushed into the couplers. Adjust tubes so they do not hit the engine, and/or other parts of the car that will cause damage to the tubes. Tighten all clamps. **NOTE: These may need to be adjusted one more time before the install is complete.**
- 25) Install supplied 2.75" coupler to throttle body and to 2.75" tube on left side of car. Slide (2) 48 size clamps on each coupler.
- 26) Install (3) bend 2.75" upper tube to throttle body and to left side 2.75" tube.



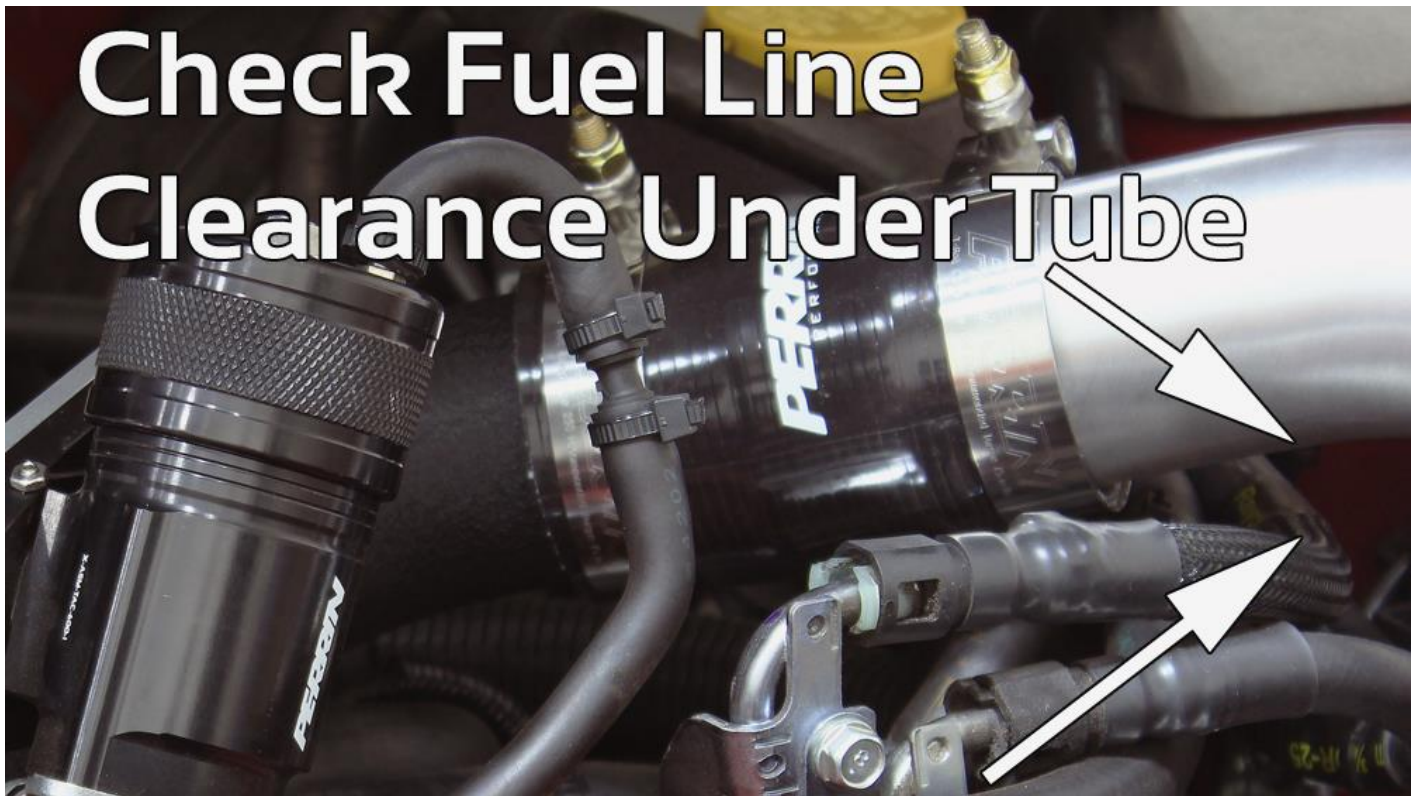


- 27) Adjust the rotation and length that tubes are pushed into the couplers. Adjust tubes so they do not hit on the engine, and/or other parts of the car that will cause damage to the tubes. Tighten all T-bolt clamps. **NOTE: These may need to be adjusted one more time before the install is complete.**

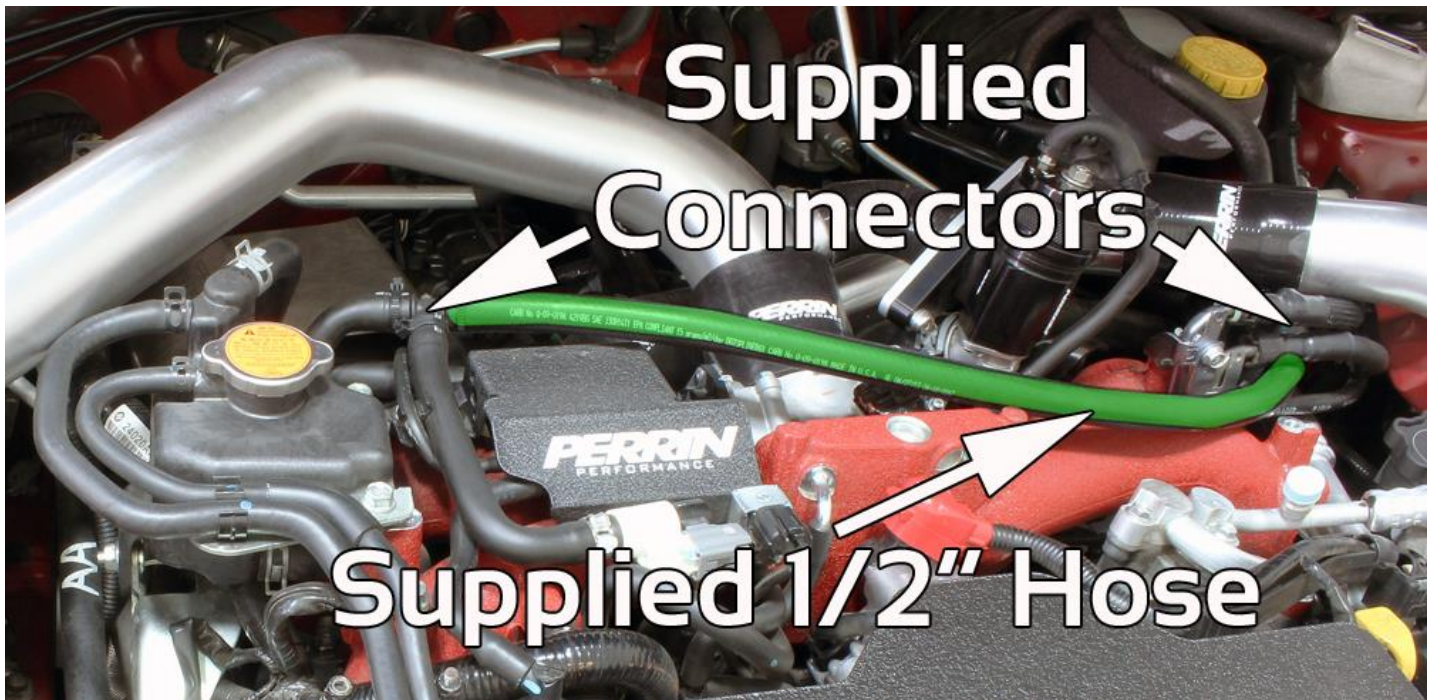


- 28) Install supplied 1.375" elbow coupler to (3) bent 2.75" upper tube as shown in picture below. Connect supplied BOV flange to tube, and using hardware removed in Step 2, install OEM BOV to flange making sure to place gasket between flanges. Secure with (2) supplied 24 size clamps. **NOTE: This flange is not necessary to use if using certain aftermarket BOV's.**
- 29) With all boost tubes installed and roughly adjusted, make one final adjustment to all tubes making sure to add as much clearance to all of them as well as align clamps in a direction that makes it easy to access in the future. **NOTE: The tight areas will be under the tubes at the throttle body, fuel lines, and above the ABS unit.**



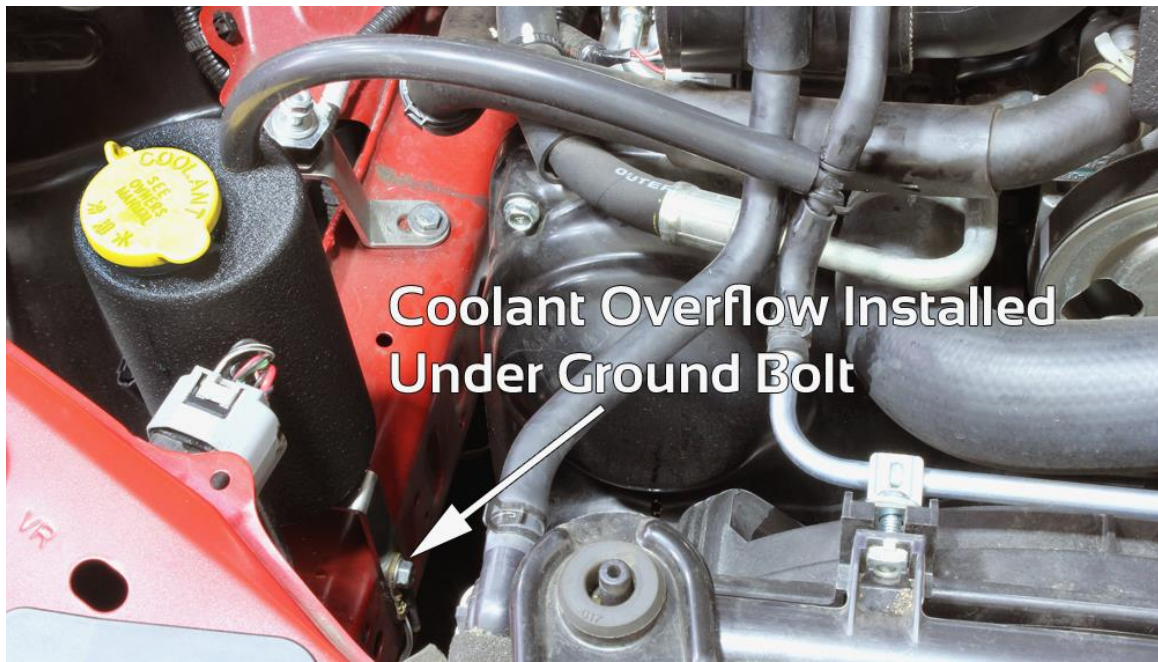


- 30) Install supplied 1/2" Tee to crank case vent hoses and to supplied 1/2" hose as shown in picture below.
- 31) Install supplied 1/2" to 1/2" connector to other end of 1/2" hose and connect to remaining crank case vent hose on left side of engine. NOTE: Routing hose under or over intake manifold will work, picture shows over intake manifold for illustration purposes.



- 32) Install coolant reservoir. See instructions included with ASM-ENG-502 for installation of coolant overflow tank. Follow the directions for the vehicle you have. You can use the instructions for other years if you choose to do a custom install or have other parts installed that may affect the installation of the PERRIN Coolant Overflow.



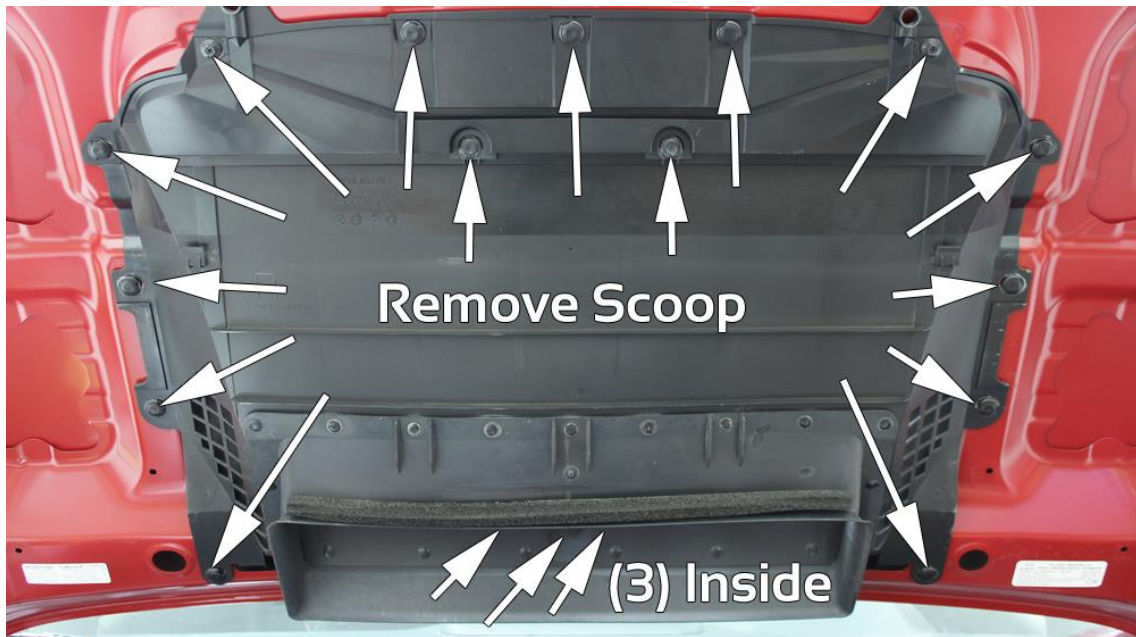


- 33) Add fluid drained from coolant overflow tank in earlier step.
- 34) Using picture below, remove (10) plastic push in connectors and remove them fiber type hood protector.



- 35) 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.**





- 36) Make sure all tubes are adjusted properly so ensure proper clearance is had. 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 to roughly 75in-lbs. **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.**
- 37) Install included intake system using special filter, intake tube and hardware subpacket with instructions. There will be some readjusting of boost tubes to ensure there is clearance around all tubes in order for to fit.
- 38) Connect battery and start vehicle. Check for fluid leaks, boost leaks, and clearance around all boost tubes prior to road test. If leaks are not present, and clearances are good, proceed to next step.
- 39) Follow bumper installation guidelines below, then connect battery and proceed to test drive.

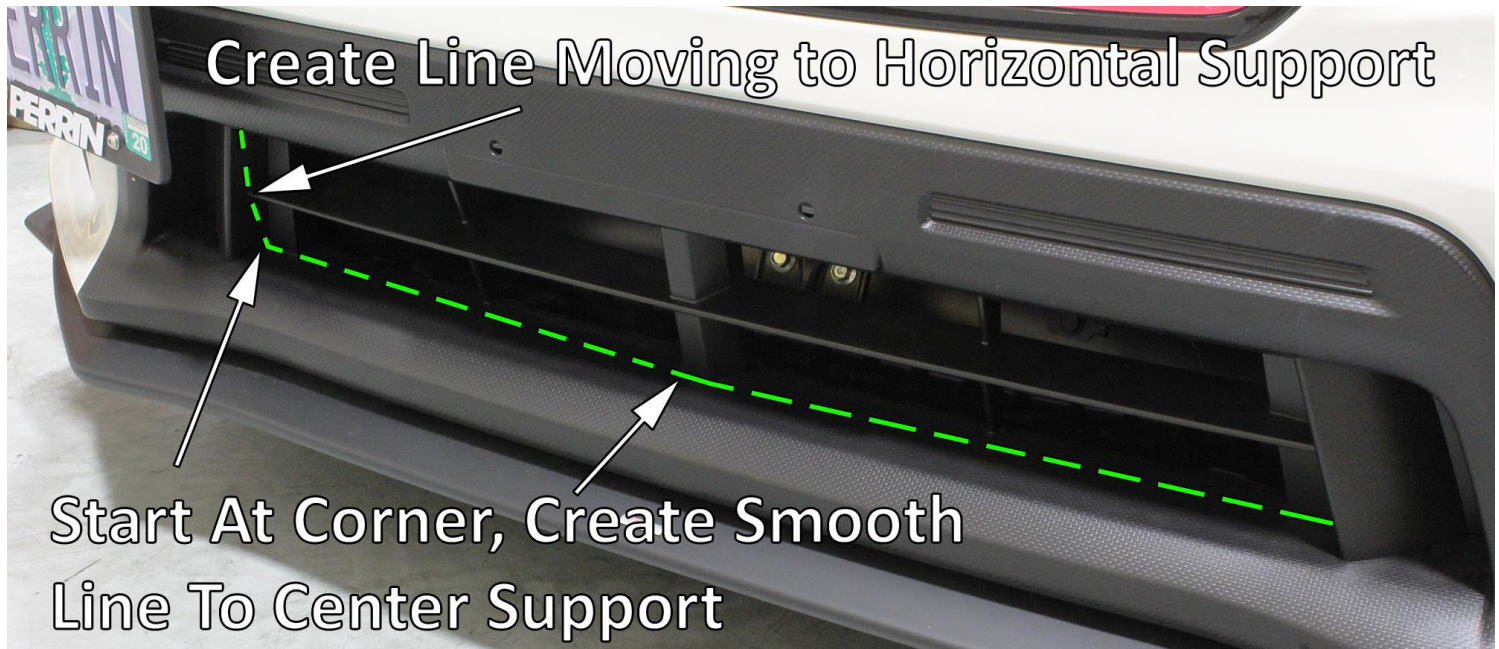
### COMMON QUESTIONS:

- 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.

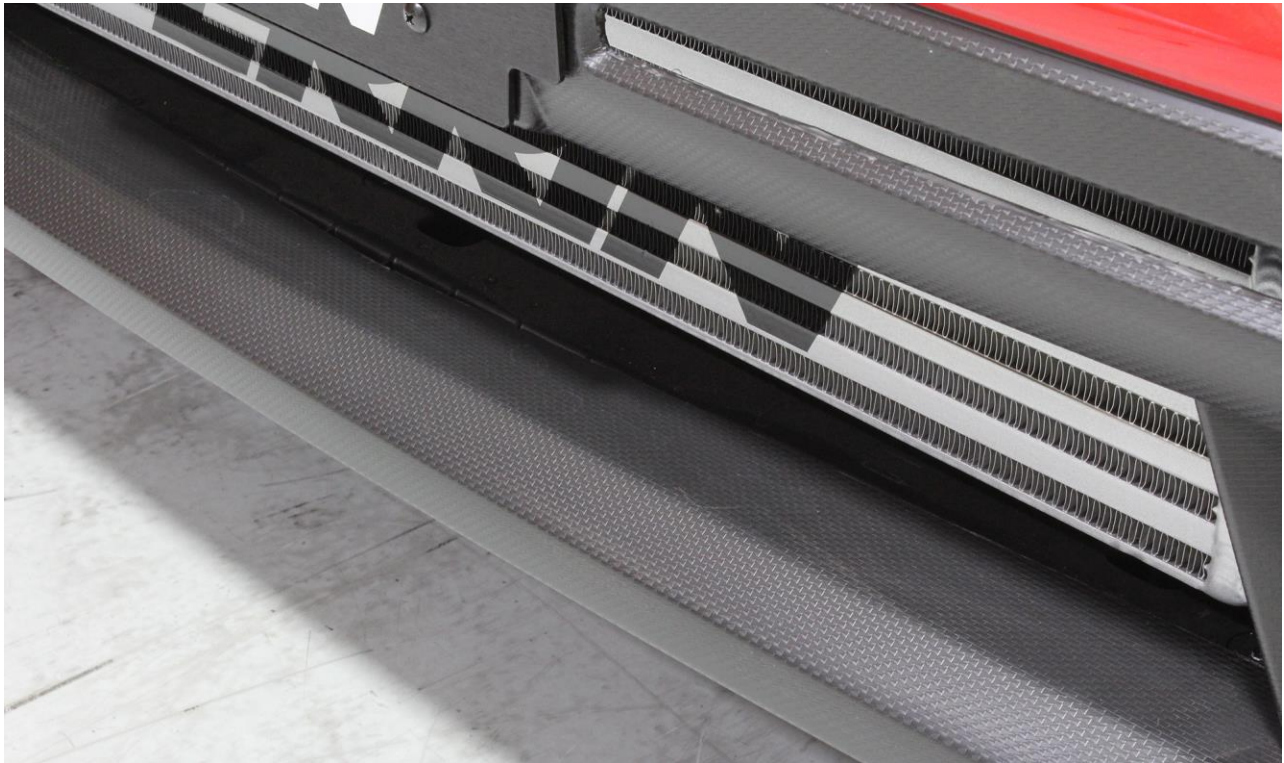
### Bumper Cutting Guidelines for 2018+ Cars:

- How should I trim my bumper cover? We highly recommend using a new utility/box knife, (or Exacto knife) to trim all plastic. This leaves a much nicer edge than using a dermal or air tool as these tend to cut by melting the plastic. But using either tool requires a steady hand and marking bumper very accurate. **CAUTION: Utility knives are very sharp, take extra precaution when cutting to avoid injury.**
- Using masking tape and diagram below, mark a straight line going left corner of grill to the center support. Continue with line to right side making sure to match left side.
- From the corners, make a line vertically as shown below (removing the horizontal grill part).





- Using a new utility/box knife, (or Exacto knife) make a light scribe mark on the correct taped edge. Go over scribed line over and over until knife cuts through bumper cover. It helps to cut bumper when ambient temp is above 65degrees.
- Once bumper is trimmed properly, no additional cleanup should be necessary. But if your edges are a little wavy, you can clean up cut edge with knife, sand paper or even an air tool.



Questions, Comments and Suggestions Contact: [Tech@PERRINperformance.com](mailto:Tech@PERRINperformance.com)  
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