

PERRIN

PERFORMANCE

FRONT MOUNT INTERCOOLER 2008-14 STI

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 use of factory service manuals is highly recommended.
- Trimming bumper cover is the most time consuming part of the install. Take extra time while trimming and marking where trimming it necessary.
- Fog lights can be installed but are a tight fit in the pockets the hold them. Modification to the fog light pockets/holes is necessary.
- 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.
- 2008 WRX/STI's have tight clearances next to battery and secondary air pump cover. Take time in moving boost tubes to clear parts.
- There will be a few extra parts included with this kit that may not be used in your installation.

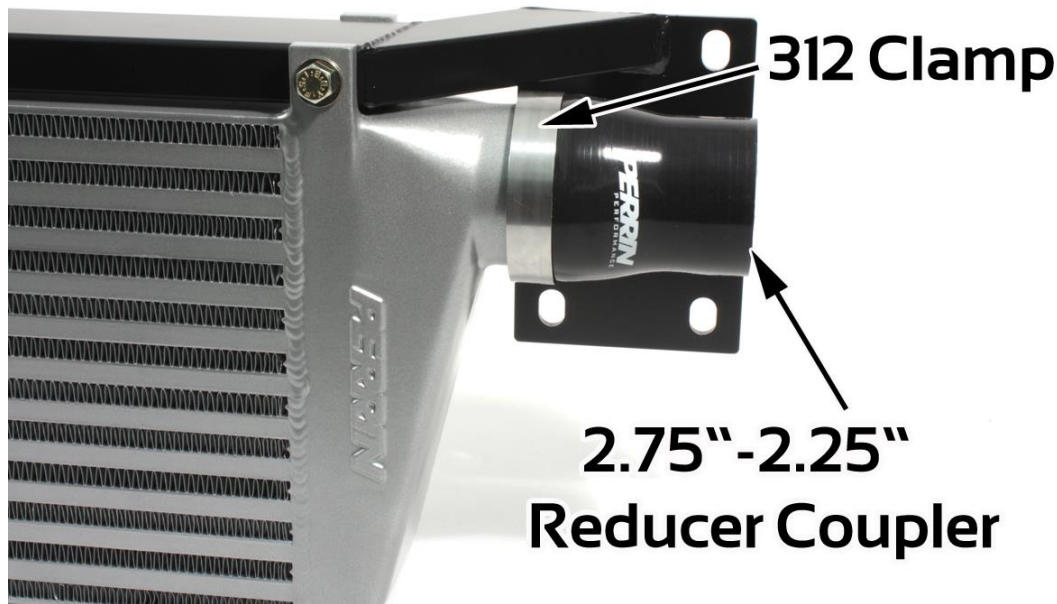
Parts Included with the PERRIN Front Mount Intercooler:

- (1) 08 WRX Intercooler Core Assembly
- (1) 08 WRX Intercooler Bumper Beam
- (1) 08 STI 5 Piece Boost Tube Set
- (1) WRX Style BOV Flange Adapter
- (1) 8 Piece Silicone Coupler Kit
- (2) Size 24 / 30-45mm Clamps
- (1) Size 32 / 40-60mm Clamps
- (6) Size 36 / 50-70mm Clamps
- (7) Size 48 / 60-80mm Clamps
- (1) 3 Hole Flat Bracket
- (12") Body Trim Molding
- (28") Bubble on Top Trim
- (1) 1/2"-1/2" Connector
- (1) 1/2" Tee
- (1) 1/4"-1/4" Connector
- (18") 1/2" Fuel hose
- (1) M8x40mm Hex Head Bolt
- (1) M8 Washer
- (2) M6x40mm Hex Head Bolt
- (2) M6x25mm Button Head Bolt
- (2) M6 Flat Washer
- (2) M6 Fender Washer
- (2) M6 Nut
- (2) Aluminum Spacers
- (12") double sticky tape

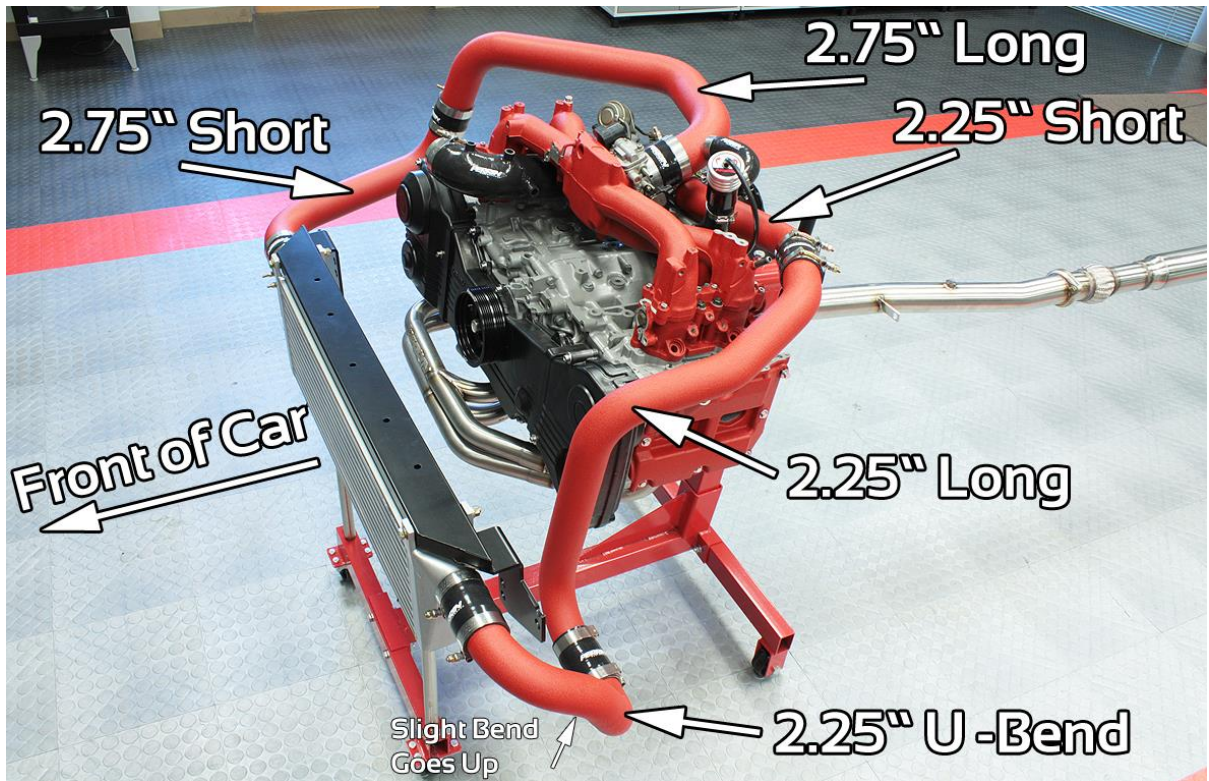
- 1) Raise hood and disconnect battery.
- 2) Remove existing intercooler from car by removing (2) 12mm bolts securing BOV to intercooler, (2) 12mm bolts securing outer mounting flanges to engine and (2) hose clamps located at turbo and throttle body. Take note of the 3 crank case hoses being disconnected. These will be connected up in future steps.
- 3) Remove throttle body coupler from throttle body, remove intercooler support brackets, (2) 12mm bolts on drivers side bracket, and (2) 12mm bolts on passenger side bracket.
- 4) Remove intake system up to turbo inlet hose connection. This includes: Removing rubber intake elbow (2 hose clamps), filter box (2), 10mm bolts located on chassis and (1), 10mm nut on inside of airbox). **NOTE: This step will vary greatly depending on what intake system is being installed.**
- 5) Remove OEM coolant overflow tank from radiator (snaps onto fan shroud) & 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 break. There are roughly 17 connectors that are visible to remove (08-10 cars have 2 hidden connectors behind grill next to the headlights). After all clips are removed, bumper is held by snaps that are under the headlight and where bumper meets the sheet metal at each side of wheel well. Tug bumper away from areas at wheel well to free. Having a second person to help with removing bumper can be helpful. **Note: if car is equipped with foglights, make sure to unplug them before removing bumper.**
- 7) Remove bumper support beam. (8) 12mm bolts attached beam to chassis.
- 8) Locate metal seam and tab at bottom of chassis under bumper support beam. Bend down the protruding tabs or remove by cutting off with tin snips or angle grinder. **NOTE: Failure to do this will result in damage to intercooler core after installation is complete!**
- 9) Temporarily bolt intercooler/support beam to chassis. Look behind intercooler core where it gets close to lower metal seam on chassis. Ensure that no metal is protruding into intercooler core. If there is metal protruding into core, remove intercooler and remove more material.
- 10) Remove intercooler/support beam and install supplied bubble on top rubber molding to metal seam. **Failure to install this item can cause damage to intercooler core!**
- 11) Install intercooler/support beam to chassis using hardware removed previously. Torque 12mm bolts 25ft-lbs. **Note: There are slots in these holes which allow for some adjustment to the fitment vertically on the car. Error towards raising the intercooler up to meet the bottom of headlights. NOTE: If you decided to remove intercooler from support beam, take note of spacers that may have come installed between bumper beam and core, make sure to reuse these if you remove intercooler from bumper beam. Failure to do so will void warranty. Tighten 3/8" bolts securing Intercooler to bumper beam to 20ft-lbs. Over tightening can cause failure of Intercooler tabs.**
- 12) Install supplied 2.75" coupler to right side of intercooler core. Use supplied 48 size clamp to secure to intercooler.
- 13) Install supplied 2.75"-2.25" reducer coupler to left side of intercooler core. Use supplied 48 size clamp to secure to intercooler.

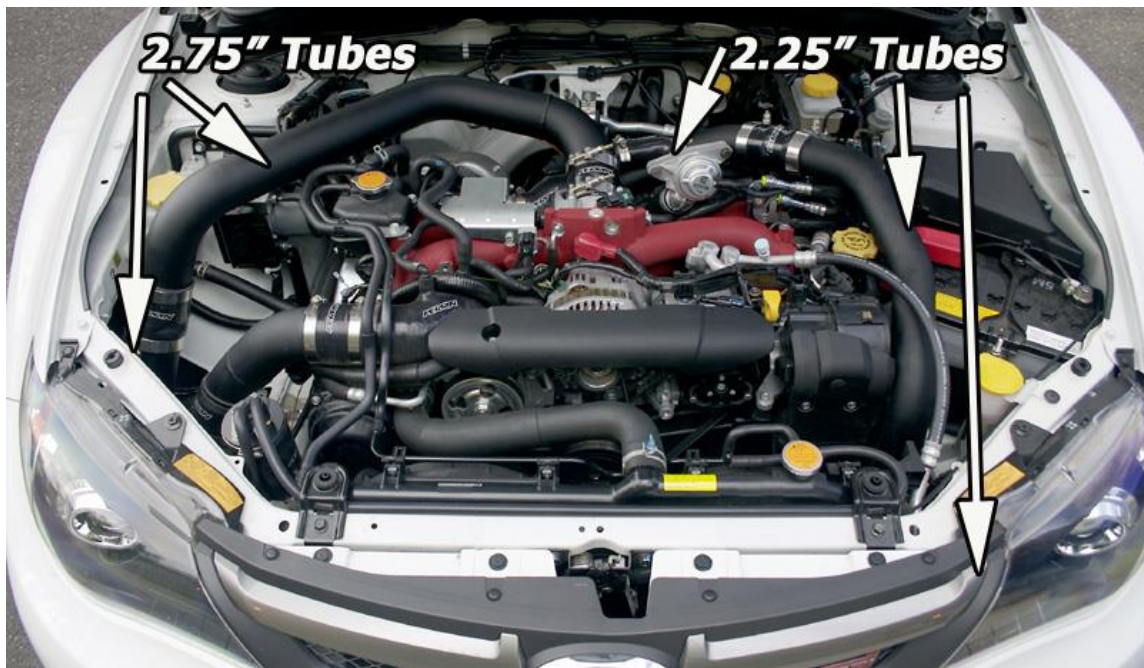
Left Side of Car Shown



- 14) Install coolant reservoir. See instructions included with ASM-ENG-500 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.
- 15) Loosely install all intercooler piping. Reference pictures for correct pipe routing. Be sure to install correct sized couplers and hose clamps to each tube before final installation. Leave all clamps loose until all tubes are installed.



Over View of Boost Tubes Orientation



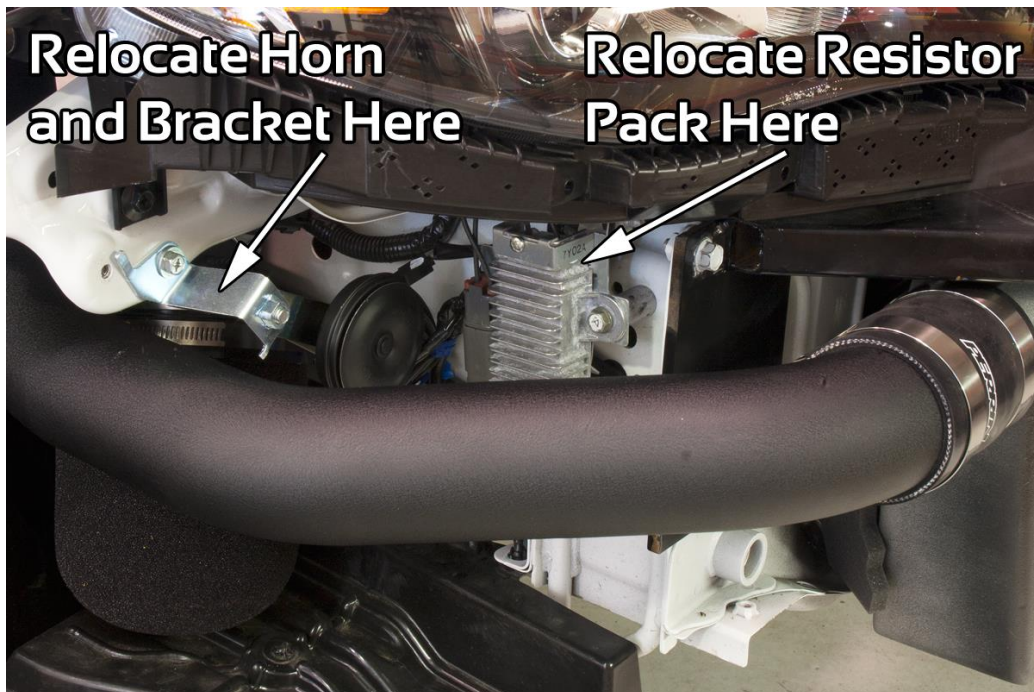
Over View of Boost Tubes Installed on car.

- Shortest 2.25" 2-Bend tube connects to turbocharger using supplied 2"-2.25" step type coupler. This coupler is slightly oversized to fit over stock turbos as well all stock location aftermarket turbos. Simply tighten clamp down to suck up the difference in size. Use 32 size clamp on turbo side of coupler, and 36 size clamp on boost tube side. NOTE: Cars with aftermarket turbos will have slight clearance issues with boost tube and throttle body. Take care to ensure hose clamp is not resting on wires. Also "re-clocking" of turbo can help add clearance here. **Note: Damage to wiring can short out other electrical components.**
- Longest 2.25" 4-Bend tube connects to tube mentioned above, and travels to front of car, and below radiator. Where tube passes through fender area, make sure it passes through opening closest to front of car. Use 36 size clamps on both silicone couplers. Take care when installing tube as bending AC line up slightly and fuel lines down slightly is necessary to add proper clearance. Loosening fuel line connection on intake manifold may be necessary.

Installer is responsible for adequate clearance from fuel line to boost tube. Failure to properly alleviate tension on these lines, can eventually wear lines. Fire injury and death can result!



- 2.25" U-Bend tube connects from tube installed above, and to intercooler core. Make sure to point bend in middle of tube up to clear fog lights. Use 36 size clamps on both silicone couplers. **NOTE: In order for "U" Bend and long 2.25" to pass through lower chassis, cutting of plastic splash shield is necessary. Use sharp utility knife or dermal to add clearance.**
- Shortest 2.75" 2-Bend tube connects to intercooler core and routes toward front fender well hole. **NOTE: Connect 45 degree bent end to intercooler core.** Use 48 size clamps on both silicone couplers.
 1. Locate horn and headlight resistor hanging from chassis and relocate as shown below.
 2. Relocate headlight resistor to threaded hole on chassis using (2) supplied aluminum spacers (1) M6x40 Hex Bolt to secure. **NOTE: Stack spacers to add clearance to chassis. This protects chassis from damage from resistor when hot.**
 3. Remove horn from bracket and chassis. Using picture below, re-orientate horn to bracket and chassis to make room for boost tube to pass through.
 4. Install supplied trim around edge on chassis where boost tube passes by.



Stealth boost tube shown with resistor and horn relocated

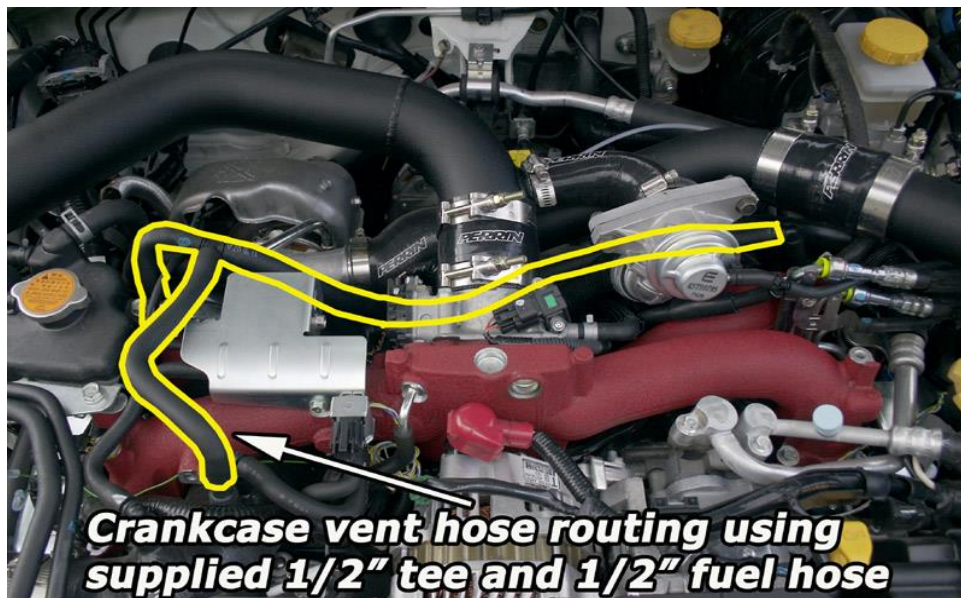
- Longest 2.75" 3-Bend tube connects to tube mentioned above and to throttle body. Use 48 size clamps on both silicone couplers.
- 16) Install blow off valve/compressor recirc valve to 2.75" Long boost tube. Depending on what BOV/CRV you have, you may not need to use supplied flange, or bracket. Simply connect to supplied silicone hose and tighten clamps. If installing the OEM BOV, or a 100% recirculation BOV, follow the below instructions.

- a. Connect supplied silicone elbow to 1.375" nipple on longest 2.75" boost tube. Install BOV adapter flange to coupler and secure with size 24 size clamp on each end of hose. See figure below.
- b. Using bolt removed from intercooler bracket (previous step), bolt supplied straight 3 hole bracket to back side of intake manifold below factory BOV location. This is a protrusion in the intake manifold casting that is threaded M8x1.25mm.
- c. In one step, install blow-off valve to supplied flange (making sure to use OEM gasket between) using one OEM M8 bolt removed earlier. Install remaining bolt through bracket, then through BOV, then through flange. Tighten bolt/BOV flange/bracket together making sure not to kink the BOV return hose. See figure below.



OEM BOV Being Connected to FMIC boost tube. Note there is no kink in BOV tube.

- 17) Using supplied 1/2" tee, 1/2" connector and 1/2" fuel hose to connect valve cover vent hoses to turbo inlet hose. Using diagram below, connect 1/2" tee to right side vent hose, and turbo inlet hose connection. Connect remaining leg to supplied 1/2" fuel hose and route hose under boost tubes toward left side of car. Connect 1/2" connector to Left side valve cover vent hose. Connect 1/2" fuel hose to connector, making sure to trim hose to length.



1/2" Fuel Hose, and Connectors Highlighted to Show Routing

- 18) 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. **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.**
- 19) Install appropriate intake system into vehicle. PERRIN Cold Air Intake or similar intake is required for this installation. Consult our sales team to purchase proper.
- 20) 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, disconnect battery and proceed to next step.

- 21) Trim bumper cover to adequately clear new intercooler and tubing (below are some basic guidelines). Fog light holes will need to be trimmed slightly. Take time when cutting bumper cover. It is better to cut a little off at a time, than a large piece at once.
- 22) Re-install bumper cover, making sure to re-install all plastic connectors removed in previous steps.
- 23) Connect battery and proceed to test drive.

Bumper Cutting Guidelines:

- 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 roughly 3-3.25" back from center of lower bumper, mark a straight line going left to right on plastic bumper. The width of the intercooler is about 32" across where the bumper needs to be trimmed. Using this data, mark edges on the left and right sides on bumper where you do not need to continue your cutting.
- Use these marks at 32" to blend your cutting line up to sides of bumper. These lines will cut into your fog light covers and this is normal.
- Using a new utility/box knife, (or Exacto knife) make a light scribe mark at the 3"-3.25" mark. Go over scribed line over and over until knife cuts through bumper cover. It helps to cut bumper when ambient temp is above 65degrees.
- After lower bumper is trimmed, using same knife cut between painted area and black plastic on upper bumper. Make 3-5 passes at the cut line until the knife cuts through the plastic. **NOTE: Cutting center brace can help make this a little easier.**
- Remove fog light covers/trim pieces, and test fit bumper to car. Bumper will not fit, but note area around fog light holes where boost tubes contact bumper. Start trimming back these areas until boost tubes clear bumper. **NOTE: One of the clips and clip holes will be removed to make clearance. Take care to remove as little material as possible or your fog light covers will not stay snapped on. Included with kit is some double sticky tape to help with keeping fog light cover installed.**
- 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.

COMMON QUESTIONS:

- My 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.
- My 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.