

PERRIN

PERFORMANCE

3" WRX/STI TURBO INLET HOSE

2012-09-24

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
Instant Chat off the main page of 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:

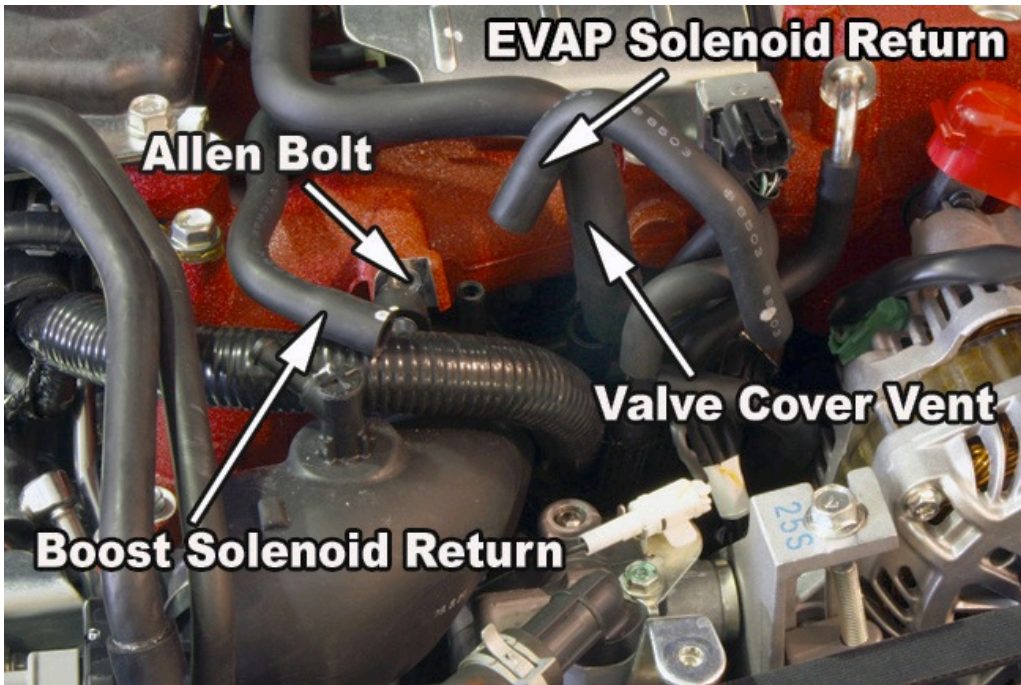
- The use of a factory service manual is highly recommended. These can be downloaded online at <http://techinfo.subaru.com>.
- Due to the PERRIN inlet hose being larger diameter than the OEM inlet hose, it may touch on the intake manifold and power steering pressure line. This is completely normal and nothing to worry about. The 4 layer silicone hose is very resistant to abrasion type wear.
- The PERRIN turbo inlet hose has wire reinforcement throughout hose. During installation, if the hose gets bent, simply bend hose back into shape using your hands.
- Included with your PERRIN turbo inlet hose are a few extra fittings, that may not be used. These are included for custom installs when using catch cans aftermarket boost controllers or any other aftermarket part.
- The 3" Turbo Inlet hose is designed specifically for turbos with a 3.00"-2.75" inlet size. Since this hose is much larger than the factory part, expect clearance issues with the manifold. Take caution as to anything sharp that might cut into the hose, and debure with the correct tool.
- Removal of the TGV sensors, TGV motors and butterfly valves in the TGVs are necessary in order to make clearance for inlet hose on passenger side of motor. Removal of TGVs will cause a CEL that will not cause any damage to engine or hurt performance. CELs can be removed with ECU reflash.
- 07 models do not need to deal with removing TGV motors, and sensors. The newer cars have them built into one part.

Parts Included with the PERRIN Turbo Inlet Hose:

- (1) PERRIN Turbo Inlet Hose
- (1) 3" aluminum coupler
- (1) 2.75" aluminum coupler
- (1) 1.25" aluminum coupler
- (1) Size 24 hose clamp
- (2) Size 48 hose clamp
- (3) 3/8" 90 Degree Connectors
- (2) 1/2"-3/8" Reducer
- (2) 1/2"-3/8" 90 Degree Reducer
- (2) 3/8"-5/16" Reducer
- (1) 1/2" tee
- (13") 1/2" ID fuel hose
- (4) 1/8NPT Brass fittings

Removing factory inlet hose.

1. Follow factory service manual for removal of intake manifold and inlet hose. Keep track of vacuum hose connections as these will all be reconnected in future steps.



2. Once intake manifold and turbo inlet hose is removed, remove TGV housings from upper casting. (6) 10mm bolts/nuts per side.
3. Each TGV housing has one sensor and one motor. Remove both from each of the housings.
4. Remove butterfly valves from inside of TGV housings by removing 2 screws holding each valve. Be careful when removing the butterfly valve screws, they are very delicate and can strip easy. NOTE: Grinding the backside of screws is necessary to alleviate the "locking" stamp.
5. Tap shafts out of TGV body, and remove any seal, or bearing that didn't come out with the shaft.
6. Drill and tap a 1/8NPT hole in each end of the TGV housings, and plug using supplied 1/8NPT plugs. Note: Do not tap 1/8NPT too deep into housing as this will not allow for proper seal. Make sure to use grease or antiseize on threads of 1/8NPT plug before tightening.
7. Reinstall TGV housings to upper manifold making sure to use new gaskets and torque to factory specs.
8. If aftermarket fuel rails are installed skip to step 10. If OEM fuel rails are installed continue to step 9.
9. Set manifold on engine, slide inlet hose under manifold and carefully slide onto turbo. (NOTE: A BENT AWL WILL AID IN SLIPPING THE NEW HOSE OVER TURBO. CAREFUL NOT PUNCTURE HOSE WITH AWL!) Some slight bending of OEM fuel line will be necessary to clear bottom of inlet hose. Simply push the hard line toward block to add clearance. Check for clearance and adjust before going to step 10.
10. Put manifold onto engine, but leave loose. Slip PERRIN 3" Inlet hose over turbo. Tighten down hose clamp. NOTE: depending on turbo inlet size, hose may be loose, but tightening clamp down will suck up the difference. If turbo inlet is smaller than 2.75" will not seal properly and a small rubber silicone shim may be needed to take up difference.
11. Install aluminum coupler for blow-off valve return hose and connect return hose. Use supplied size 24 clamp to secure. NOTE: Due to the tight clearances with existing hoses, the BOV return hose will be very tight between the crankcase vent and the black steel pipe for the crank case vent equalization tubes. Some bending of the black steel vent pipe will be necessary.
12. Install manifold to engine using bolts removed earlier, and new gaskets. NOTE: It will be necessary to push manifold into inlet hose in order to get it to fit. This is where some of the tight clearances are. It helps to have one person push the manifold, while another installs and tightens the 8 bolts.
13. Using below picture as a guide, locate crank case vent that may be connected to turbo inlet hose, or to engine depending on how intake manifold was removed. NOTE: 02-03 cars do not have this electrical connection on end of hose or on inlet hose.
 - a. 02-03 cars simply unplug hose from inlet hose or crank case vent and discard. Skip to step 14.
 - b. All other cars, unplug PCV diagnosis connector from inlet hose and remove plastic connector (white or grey) from crank case hose. NOTE: Remove hose and connector (shown below) from engine block if not done when intake manifold was removed.



Pin shown being removed from PCV diagnosis connector

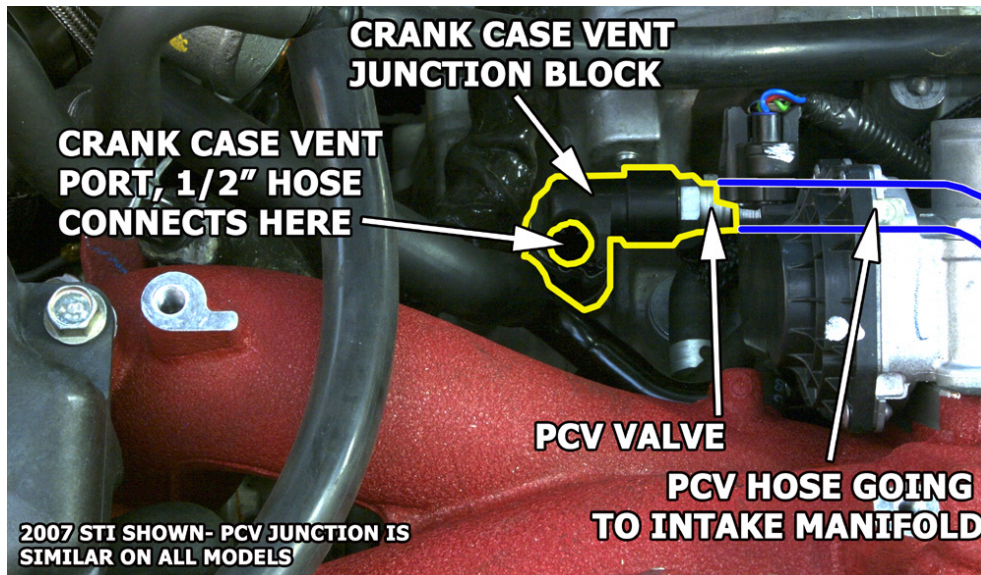
- c. Remove PCV diagnosis wire harness from inlet hose by twisting off. Take note of female pins exposed in harness plug.

- d. Using needle nose pliers remove small electrical pin (male type) inside of PCV diagnosis connector (white or grey connector removed earlier). Insert pin into female pins on PCV diagnosis plug and harness. Tape end of plug to secure pin and keep pin from grounding out on engine. This will not connect to anything when reinstalling intake manifold.



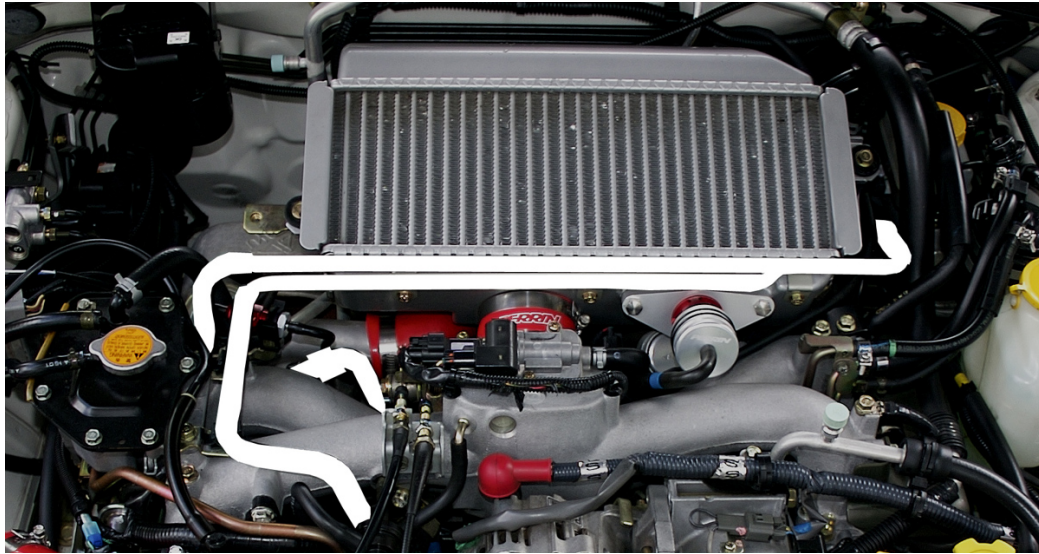
Pin shown inserted into PCV diagnosis harness.

14. Install supplied 1/2" fuel hose to crank case vent fitting locetaed on block. Route hose up toward right side of vehicle.



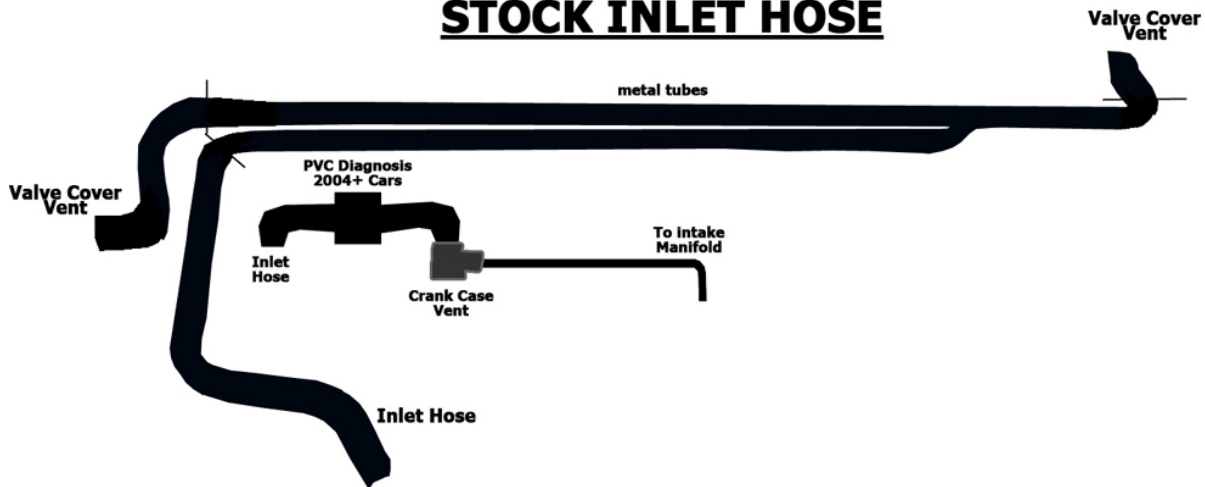
The above diagram shows closeup of crank case vent junction. Note: OEM crank case vent hose is removed in the picture leaving behind an open fitting.

15. Using below three diagrams for reference. Cut right side valve cover vent hose below retaining clip and install 1/2" tee to bridge both ends of hose. **NOTE: Alternatively, 1/2" tee can be placed anywhere along the rubber hose leading all the way up to the Inlet hose.**
16. Connect 1/2" fuel hose (from step 14) to open spigot on 1/2" tee. Trim hose to length and make sure to route hose away from any moving parts. (Throttle linkage on 02-05 WRX's).



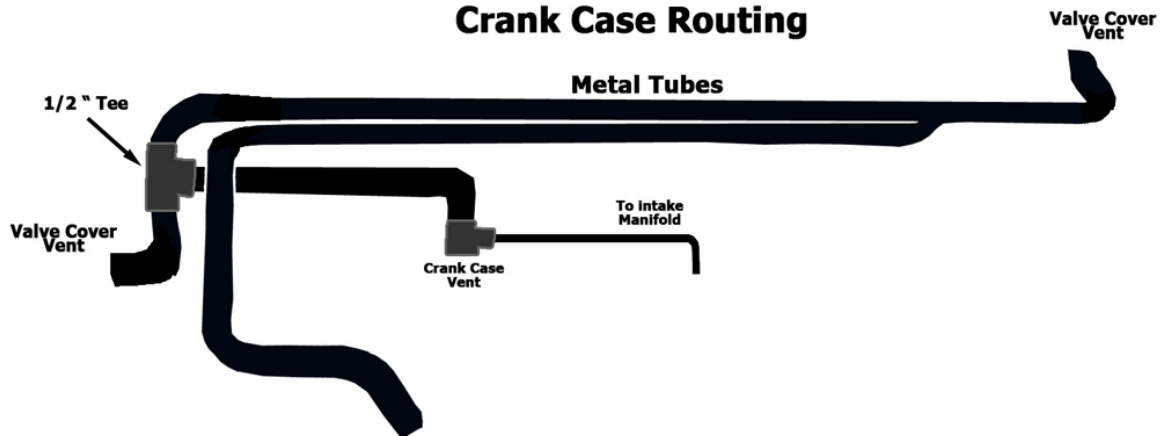
Above diagram showing typical crank case, and valve cover vent hose routing highlighted in white. Note the “Y” junction on front of intercooler is actually hard piping, not rubber hose.

STOCK INLET HOSE



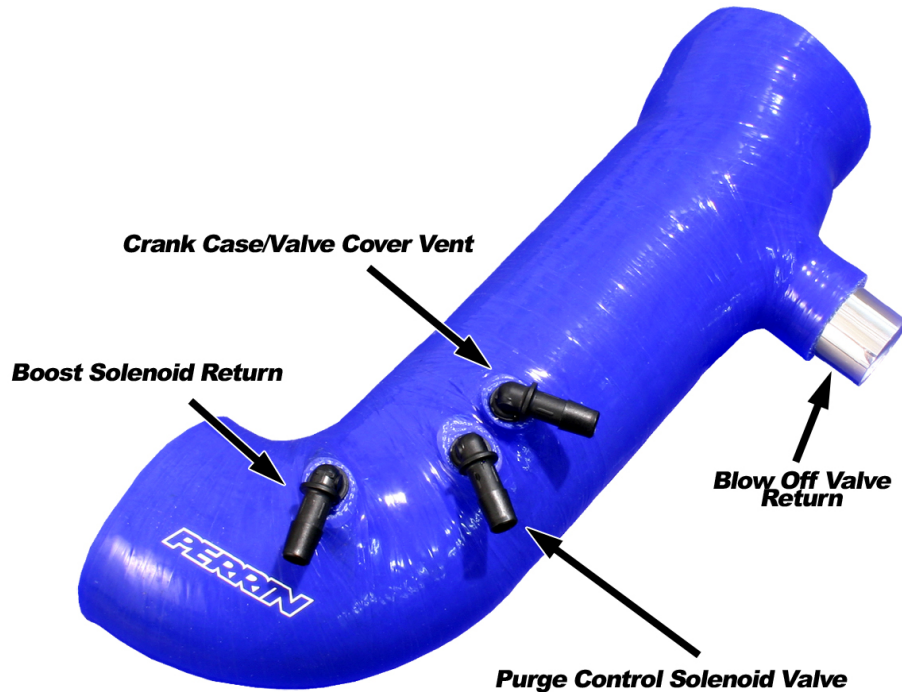
Above diagram showing crank case, and valve cover vent hose routing with picture from above removed. Note the “Y” junction on front of intercooler is actually hard piping, not rubber hose. If you have an 02-03 car, you will not see the PCV diagnosis connector, but rather a single hose traveling from crank case vent to oem inlet hose.

PERRIN Inlet Hose Crank Case Routing



Above diagram showing crank case, and valve cover vent hose after the hose routing is complete.

17. Using the below diagram, install plastic fittings into inlet hose as shown. **NOTE: The added fittings in the kit can be used in any configuration, the below diagram is what we feel works best for most cars. Also placement of fittings in hose can be moved around to suite your needs best.**
18. The forward most spigot goes to boost solenoid return hose. **NOTE:02-07 cars, this hose comes from passenger side shock tower where OEM boost solenoid is located. On 08+ STI's this hose comes from top of intake manifold where solenoid is mounted.**
19. The second spigot connects to the purge control solenoid hose. **NOTE: On 02-07 cars, this hose comes from the small round fitting connected to front of intake manifold. On 08+ STI, this hose comes from solenoid mounted on front of intake intake manifold behind power steering pump (also removed earlier during install).**
20. The third spigot connects to crank case/valve cover vent hose. This hose comes from small piping on front of intercooler, and crosses over intake manifold.



21. Install intake system into inlet hose using either 2.75" or 3" aluminum coupler. Depending on your intake system, the aluminum coupler may not be necessary to use, and **will** be loose in 3" inlet hose. Tightening clamp will take up the difference.
22. Reinstall intercooler to car following factory service manual.
23. Start car and check for vacuum leaks. If car runs normal, then proceed to test drive car. If car runs rough or not at all, check for vacuum or boost leaks. **NOTE: Installation of the 3" PERRIN Inlet hose does not effect how the car runs, and does not require a retune.**
24. Proceed to test drive car.

Common Questions

- Do I really have to remove my TGVs- No if you are ok with the very very tight clearance between the turbo and TGV sensor and are willing to fight a little to get it on. We will not warranty any part do to wear in this area if TGVs are left in place. But there is a performance gain from having the TGVs removed!
- My car doesn't idle or run very well- check that all vacuum connections are connected and routed appropriately. Any leak in these can cause car to run poorly.
- The aluminum coupler is smaller than the ID of the tube- The ID of the 3" inlet hose is 3". We supply a 2.75" coupler, which makes connecting the PERRIN intakes and other aftermarket intakes very simple. Even though the coupler is smaller, the silicone hose will clamp down the .25" difference.
- The inlet hose is smashed in to the power steering line- Since the 3" hose is a tight fit, expect some clearance issues with this line. 02 cars may have issues with clearing do to the older Power steering line being bent differently. Some bending may be necessary in order to better clear the inlet hose. Loosening this power steering line and rotating it out of the way will help with clearance.

Questions, Comments and Suggestions Contact: Tech@PERRINperformance.com
Visit Our Website for Instant Chat Options at www.PERRINperformance.com
Call Our Tech Team at 503-693-1702