Air Oil Separator for 2015-2021 STI

2026-03-13 PSP-ENG-620

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. Always use appropriate personal proection equipment such as gloves, eye and hearing protection for installation of this product. 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@PERRIN.com
Instant Chat off the main page of www.PERRIN.com
Or simply call our tech team at 503-693-1702

WARNING: **Handling passenger or off-highway motor vehicle parts can expose you to chemicals such as phthalates and lead, which can cause cancer and reproductive harm. To minimize exposure, service the vehicle in a well-ventilated area, wear gloves, and wash your hands.** **WARNING: Handling passenger or off-highway motor vehicle parts can expose you to chemicals such as phthalates and lead, which can cause cancer and reproductive harm. To minimize exposure, service the vehicle in a well-ventilated area, wear gloves, and wash your hands.**

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 PERRIN Air Oil Separator (AOS) was designed to remove a significant amount of the oil and water vapor that normally gets sent to your intake system to be ingested by your engine. There are many variables as to how much oil will make it past our AOS but expect it to remove a significant amount of the crank case blow by. For cars with built engines with excessive blow-by, or have an aftermarket turbo or supercharger, you may still experience oil getting past our Air Oil Separator.
- When installing hoses to barb fittings, a small amount of oil on each fitting will allow hoses to slide on easier.

NPT Notes:

- There are NPT (National Pipe Thread) fittings included with your Air Oil Separator. Throughout the instructions, these notes below will be referred to often. It's important to understand these types of fittings and how they work.
- NPT fittings are a tapered thread that seals when tightened, not bottomed out. Thread fittings in by hand and tighten roughly 1/2 to 1 full turn more until fitting is tight. **NOTE: Use a small amount of Teflon tape or proper thread sealant on threads of each NPT fitting before installing into each part.**
- Angle of the 90 degree fitting can be adjusted after tightening, as long as it is not backed off more than 1/4 of a turn. When in doubt, tighten the fitting versus loosen it.
- There is not a flow direction to the coolant fittings! It does not matter which one goes where as long as they are connected to the throttle body fittings and there is loop from the top to the bottom of the AOS.

Included Parts with PERRIN Air Oil Separator:

QTY	Part Number	Description
1	X-PSP-ENG-620	Air Oil Separator Universal Assembled
1	X-PSP-ENG-623	Bracket for AOS, 2002-07 WRX/STI
1	X-PSP-ENG-624	Bracket for AOS, 2008-21 WRX/STI
1	S-PSP-ENG-620	Subpacket for 2002-21 WRX/STI Air Oil Separator
3	X-HOS-107	3/8" ID Fuel Injection Hose (27346)
3	X-HOS-111	5/16" ID Crank Case Emissions Hose (27069)
85	X-HOS-115	5/16" Heater/Coolant Hose (28408) 50 foot spool
9	X-HOS-120	1/2" Emissions/Crank Case Vent Hose (27019) 250' roll
4	X-HOS-127	5/8"ID Emissions Crank Case Vent Hose (27008) (25' per box)
1	X-PSP-ENG-626BK	Crank Case Vent Bung NPT threads Black Anodized
1	X-CON-056BK	Aluminum 3/8NPT -1/2" Hose Barb 90 Degree Black
3	X-CON-058BK	Aluminum 3/8NPT -1/2" Hose Barb Straight Black
2	X-CON-059BK	Aluminum 3/8NPT -5/8" Hose Barb Straight Black
1	X-CON-067BK	Aluminum 3/8NPT Flange Plug Black
2	X-CON-009	Plastic 1/2"-1/2" Straight
1	X-CON-019	Plastic 1/2"-5/8" Reducer
2	X-CON-020	Plastic 1/2" 90 Degree
1	X-CON-031	Plastic 5/8" Y Connector
1	X-CON-038	Plastic 1/2" Y Connector
1	X-CON-039	Plastic 5/16"- 5/16" Straight
1	X-CON-069	Plastic 1/2" to 5/16" Reduction Tee

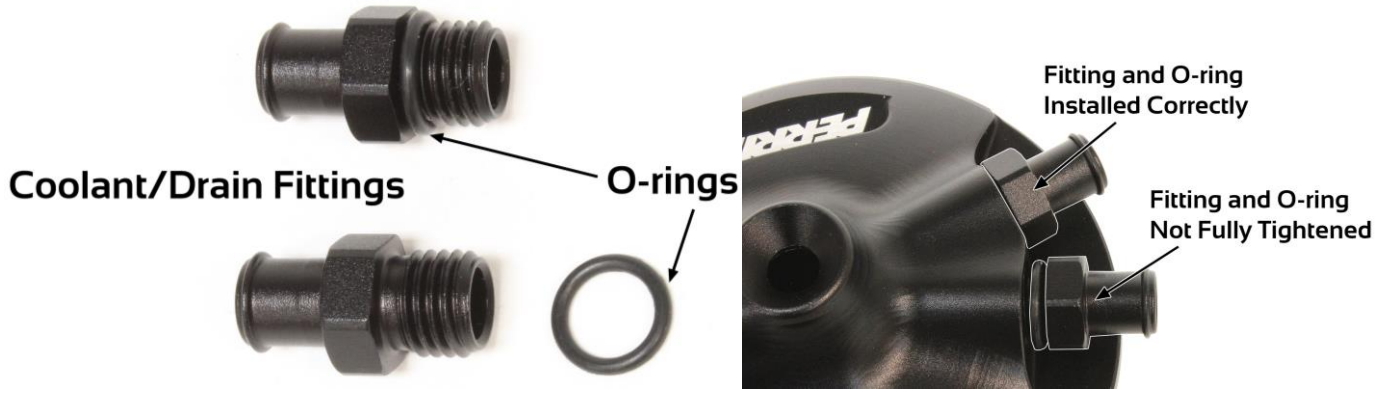
1	X-CON-073	Cap Vinyl for 1/2"-9/16" OD, 3/4" Long Black
1	X-CON-026	Brass 1/4NPT 3/8" Barb Straight
1	X-CON-044	Nickel 1/8NPT 5/16" Barb 90 Degree
2	X-CON-048	Nickel 1/4NPT 1/2" Barb Straight
1	X-CON-053	Aluminum 3/8NPT Female to 1/2" Barb (EDP 240)
1	X-CON-060	Aluminum 3/8NPT Female to 5/8" Barb (EDP 80)
2	X-CON-080	Plastic 1/2" OD Plug
2	X-BLT-00250PPS	1/4NPT Socket Plug Steel
2	X-BLT-M618WF-SS	M6 x 18 Fender Washer SS
2	X-BLT-M6X14CSB-SS	M6 x 14mm Button Head Socket cap screw SS
3	X-BLT-M8WF-SS	M8 Flat Washer Stainless Steel
3	X-BLT-M8X10CSB-SS	M8 X 10 Button Head SS Screw
10	X-CLAMP-002	Clamp Size 2 or 8-16mm
11	X-CLAMP-006	Clamp Size 6 or 12-22mm
2	X-CLAMP-008	Clamp Size 8 or 16-27mm
5	X-CLAMP-17.0	Clamp Oetiker 17.0
15	X-CLAMP-22.6	Oetiker Clamp 22.6
1.625	X-HOS-125	3/4" ID Emissions/Crank Case Vent Hose (27010)
20	X-BLT-CT080B-18	Zip Tie 8" Long
1	X-BLT-GRS-209	Grease for Polyurethane Bushings Packet

WHICH WAY IS THE RIGHT WAY?

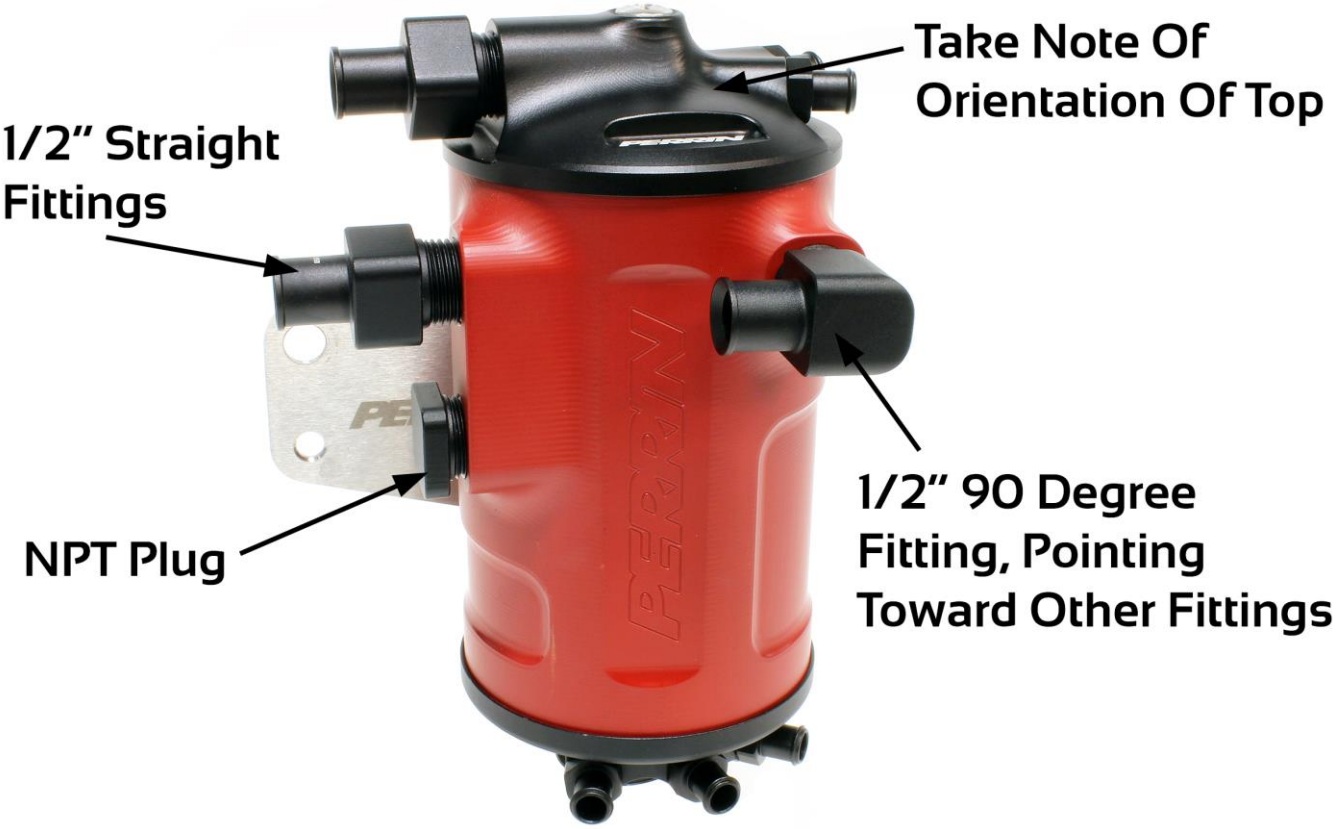
In ALL situations, when describing left and right sides of the vehicle it is always as though you are sitting in the driver's seat looking forward.
Example of a US Market Vehicle: If standing in front of the car, looking at the engine bay, the Drivers side is described as the LEFT side the vehicle.

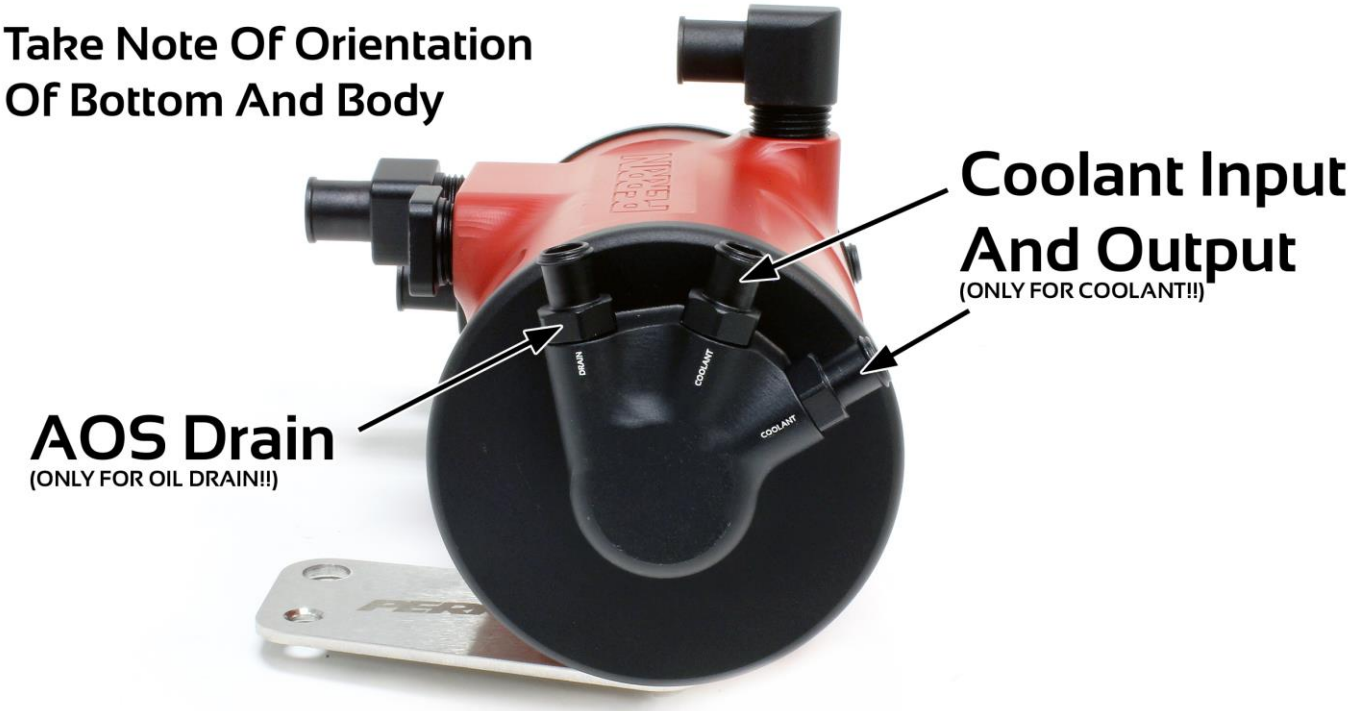
1. Installation Of Fittings On AOS

Each AOS is pre-assembled and does not require it to be taken apart to do the install. During the installation process, you may need to loosen and re-orient the parts or you may want to take it apart completely in order to install the fittings. If you do take it apart follow the instructions at the end that goes over how to maintain your AOS.

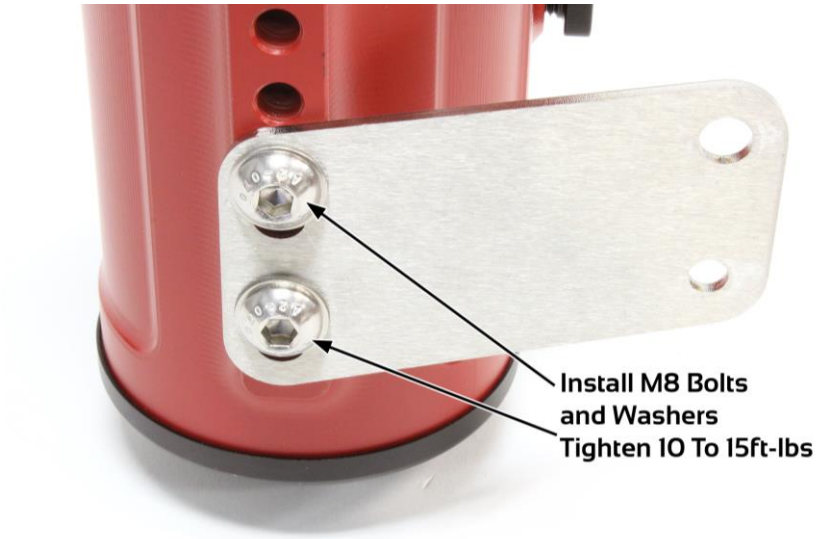


a. Install supplied O-rings to each of the 5/16" barb fittings as shown and apply a small amount of the supplied grease to the O-rings. Thread (3) of the fittings into the ports on the AOS bottom, and (2) fittings into the ports on the AOS top.
b. As you tighten the fittings into each port make sure that the O-ring is fully seated and isn't sticking out as it's tightened. Tighten fittings to 5-8ft-lbs or just past hand tight. These fittings seal using O-rings and do not need to be overly tight to seal, like the NPT fittings.
c. Using diagram below and the NPT fitting notes above, install (1) 5/8" barb straight NPT fitting (marked 059) into the port of the AOS top.
d. Using diagram below and the NPT fitting notes above, install (1) 1/2" barb straight NPT fitting (marked 058) into the single side port on the AOS body. **NOTE: There are 90-degree fittings included that can be installed instead. If you choose to install these fittings due to other aftermarket parts, they will not affect how the AOS functions.**
e. Using diagram below and the NPT fitting notes above, install fitting into the upper fitting on the double side port on the AOS.
    i. For 2015-16 models, install the supplied 1/2" barb straight fitting (marked 058).
    ii. For 2017-21 modes, install the supplied 5/8" barb straight fitting (marked 059).
f. Using diagram below and the NPT fitting notes above, install (1) NPT plug fitting into the remaining open port on the AOS.
g. Loosen the center screw about half of a turn and rotate the top until the top fitting is aimed similar to the picture below.





h. Rotate the AOS bottom until it is oriented like the picture above.
i. Tighten center screw to secure all AOS parts together. **NOTE: Further adjustments can be made in later steps, so there is no need to make it perfect at this time. If the center screw was loosened too far, check that the O-ring is in the small groove in the bottom of the AOS. See the last section on how to maintain your AOS to make sure this is done correctly.**



j. Install supplied bracket (marked 624) to the lowest set of holes on the AOS body (will mount the AOS as high up in the car as possible) using supplied M8 button head bolt and washers. Tighten screws to 10 to 15ft-lbs. **NOTE: There are many sets of holes to mount the bracket to. As long as the oil drain is higher than the engine block fitting, you can mount it to one of the other locations.**

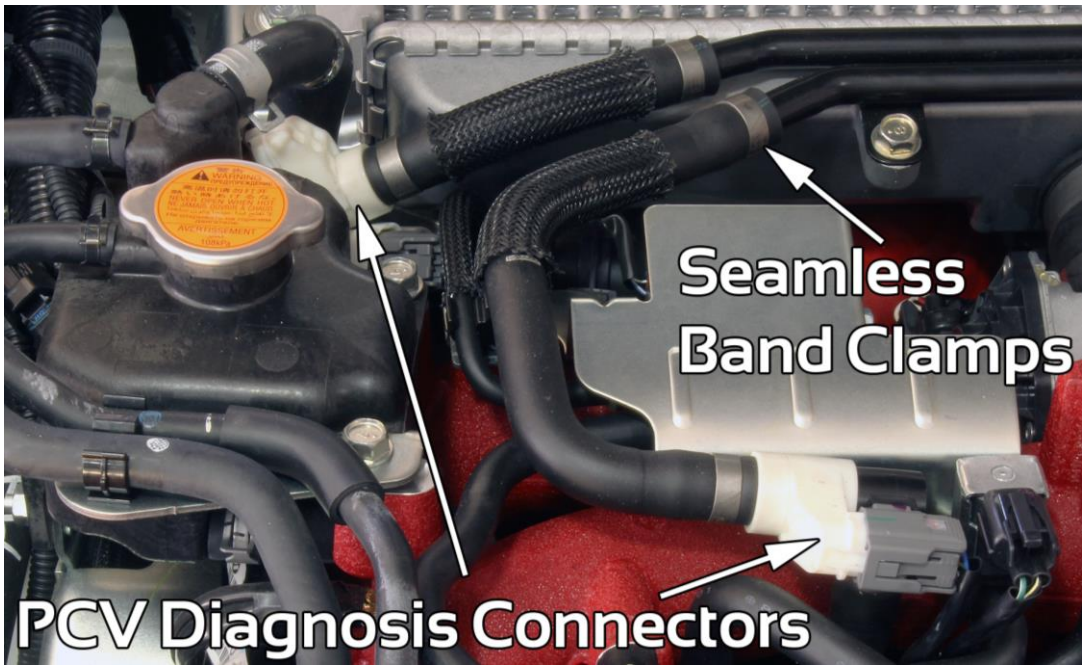


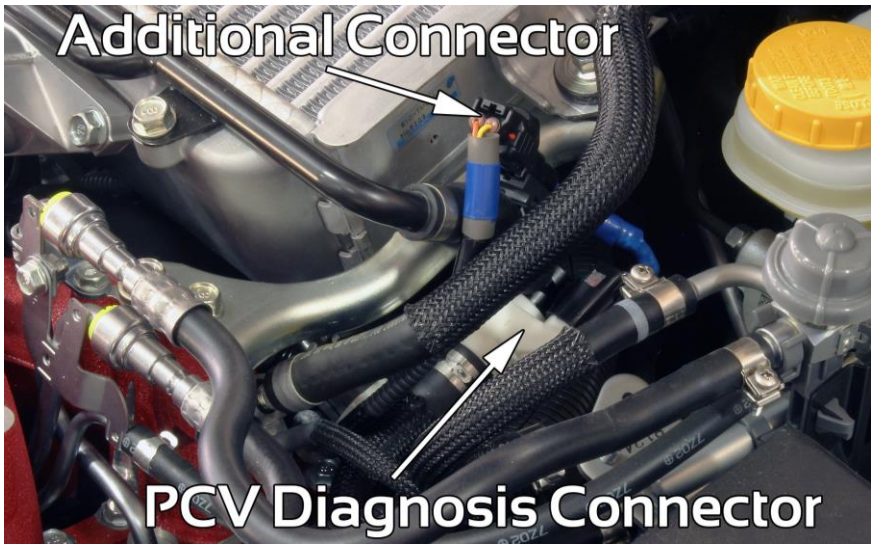
2. Mounting of AOS to Chassis for 2015-2021 STI

a. If there is strut bar installed, remove at this time as this will interfere with removing the intercooler from the engine bay.
b. Locate (2) and remove M8 bolts on either side of intercooler. Loosen (2) bolts securing intercooler bracket to engine. Then locate and remove (2) M8

bolts securing bypass valve to intercooler. Locate and loosen the hose clamp holding the throttle body coupler to intercooler. Leave hose clamp securing coupler to throttle body. Locate and loosen hose clamp holding hot side intercooler coupler to turbocharger outlet.

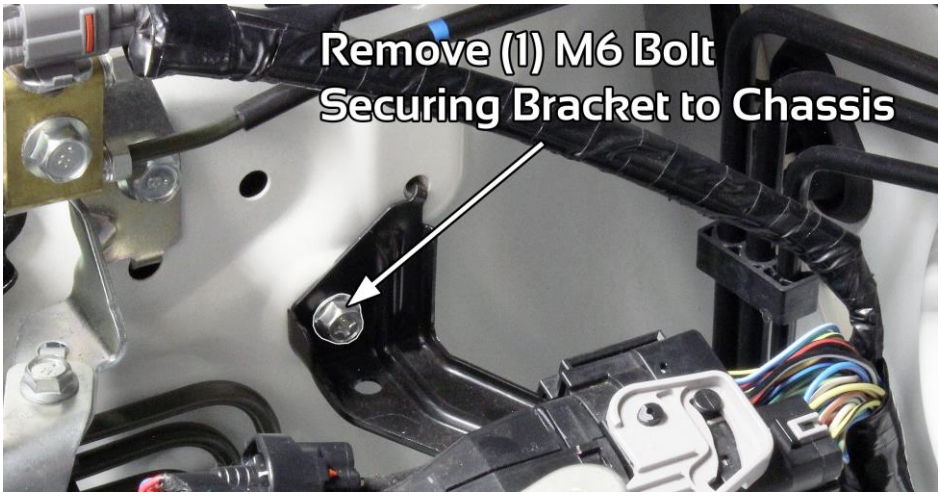
c. Locate steel crank case vent pipe and hoses bolted to the top of intercooler. Disconnect hoses from steel pipes.
   i. For models with pinch type clamps, simply remove clamp from hose where it meets the steel piping in 3 locations.
   ii. For models (2018+) with seamless band clamps securing hoses to steel pipes, follow hoses to the (3) electrical connectors (PCV diagnosis connectors). Remove both the electrical connection and hose connection together. Take care as these can be tricky to push the button and pull the connector out at the same time. **NOTE: On right side, there is an additional plug to remove see pictures below showing this.**



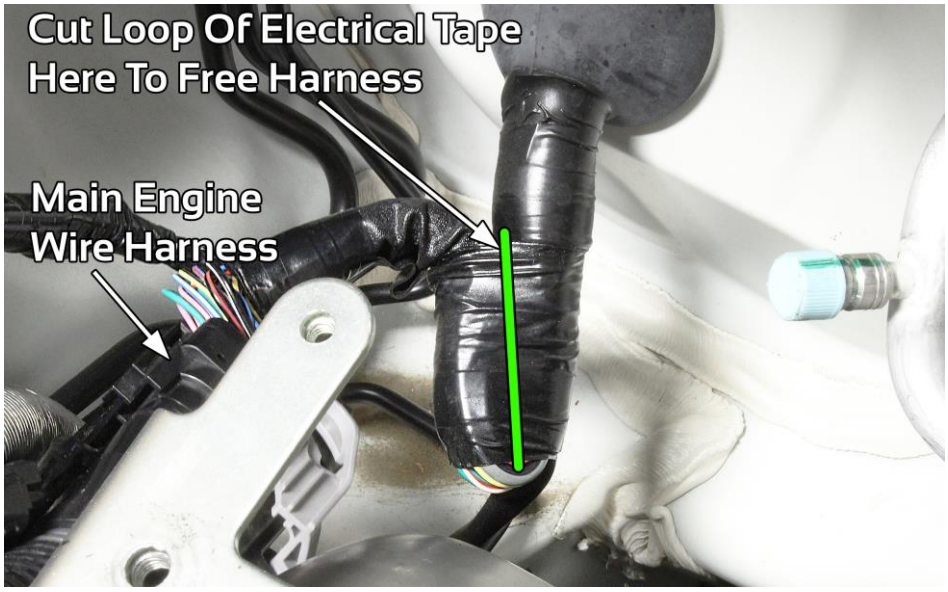


d. Lift up on sides and back of intercooler to free from both the throttle body and turbo outlet. Wiggle and pull on intercooler until both the throttle body coupler and turbo outlet coupler are free. Remove intercooler from engine bay. **NOTE: This step can be difficult, make sure that the hose clamps are very loose to ensure they are not holding anything up.**

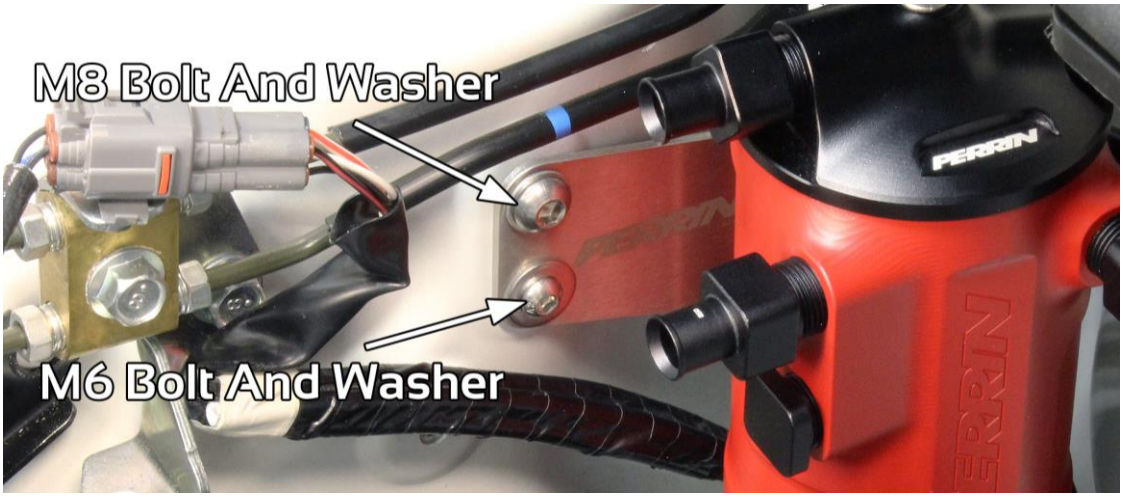
e. Locate main engine wire harness/plug and bracket located on right side shock tower. There are two options for how to proceed.
   i. Option1: Simply bend OEM bracket down toward frame rail (roughly 45 degrees). This will require some force and the paint on the bracket may crack slightly. After this is bend down, remove M6 bolt, bend the small tab that was resting inside of hole in shock tower. Then follow the mounting instructions below.
   ii. Option2: This method is preferred as it leave the most room around the AOS and allows for the future install of things like turbo kits. Remove bolts securing bracket to chassis, then pull bracket with harness away from shock tower. Lift up the small clip securing bracket to main plug and slide bracket from plug. Then unclip the wire harness from the brackets to free this up.



iii. Cut section of electrical tape as shown to free harness from itself.



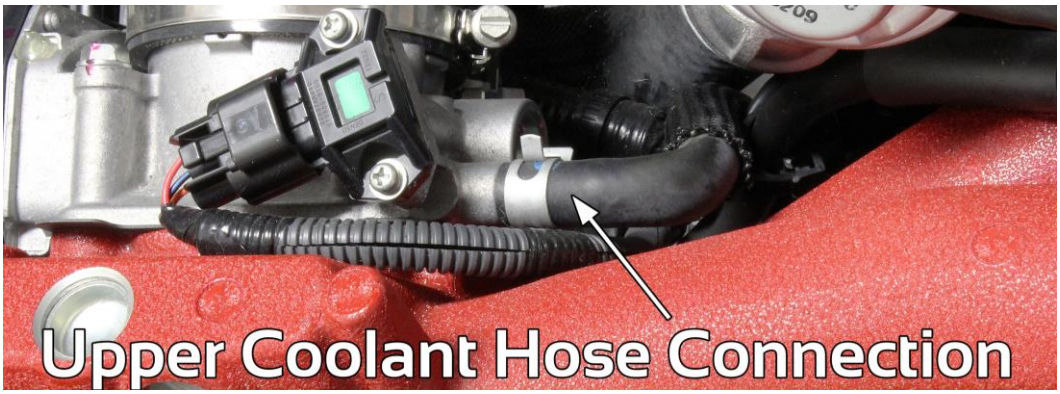
f. Using supplied M6 and M8 button head screws, and washers, mount AOS with bracket to shock tower as shown but leave bolts loose as you will need to remove to install some of the hoses in later steps.

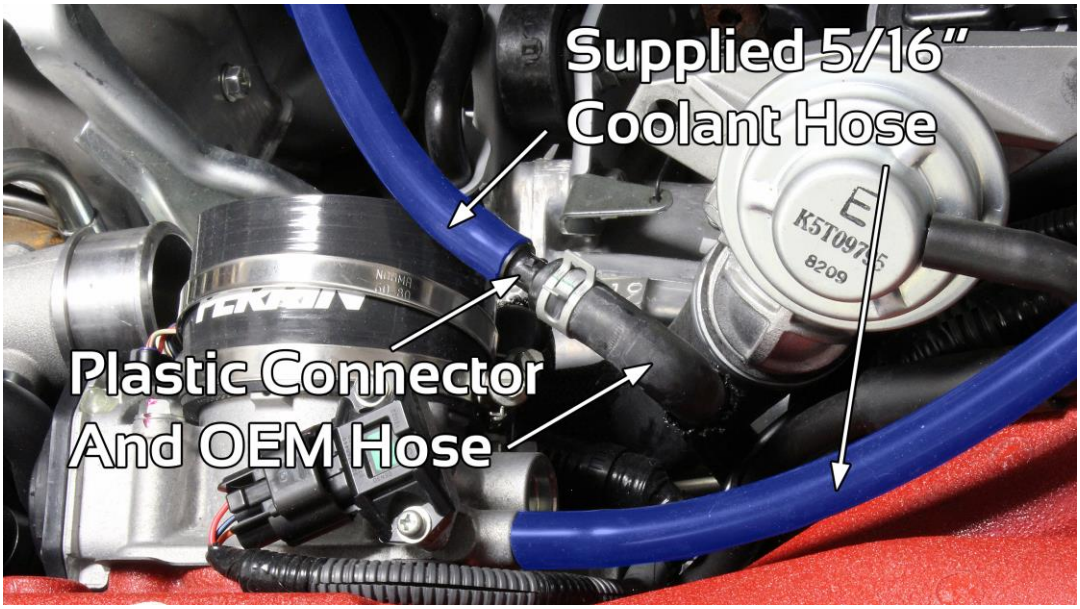


g. Using supplied M6 and M8 hardware, mount AOS with bracket to shock tower as shown above but leave bolts loose as you will need to remove to install some of the hoses in later steps.

3. Coolant Feed Connections

a. Locate upper coolant hose and fitting on throttle body as shown below. Slide pinch clamp back, remove hose from fitting and install supplied 5/16”-5/16” adapter into hose. Secure with OEM pinch clamp. **NOTE: The lower coolant fitting on throttle body can be used in place of the upper coolant fitting. The installation instructions will be the same except for all connections will be made under the throttle body. A small amount of coolant will come out of hose, be prepared to catch some with a paper towel or rag.**

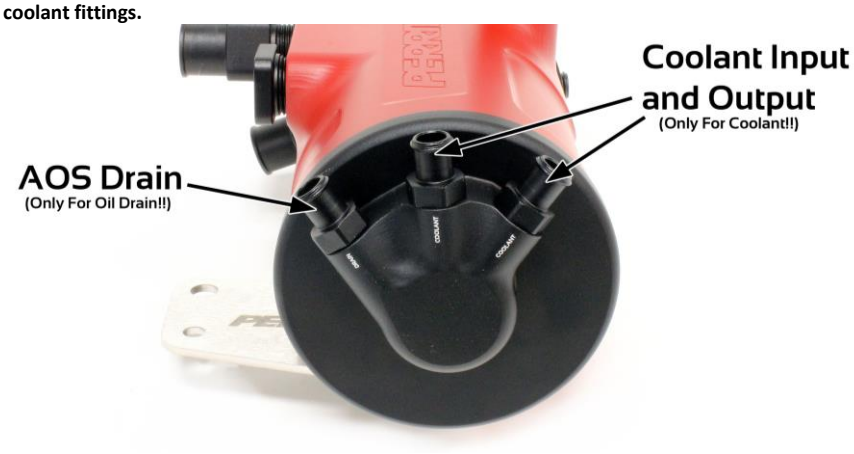




b. Install supplied 5/16” coolant hose to plastic adapter fitting and secure with supplied size 2 hose clamp. Install another one of supplied size 2 hose clamps to the other end of the hose, then connect hose to coolant fitting on throttle body as shown above. This creates a giant loop of the coolant hose that will be cut in the next few steps.



c. Using the picture above as a rough guide for hose routing. Start with routing the loop of hose from the plastic fitting/OEM coolant hose toward the firewall and then to the middle fitting on the AOS bottom. **IMPORTANT NOTE: The picture above illustrates hose routing in a way to make it clear for installation purposes only. Take time and route hoses under and around things such as the bypass valve hose, vacuum hoses, wire harnesses and brackets. Then route toward firewall, behind wire harnesses and over the AC components to make a nice clean run toward the AOS bottom.**
   i. Do NOT connect this hose to the drain fitting or engine damage will occur! See picture below to make sure this is done correct.
   ii. **NOTE: It does not matter which side of the loop of hose connects to this fitting as there is no flow direction to this. If you choose to connect them opposite how we describe them, that will not affect how the part works as long as it is connected to the coolant fittings.**



d. Install supplied size 2 hose clamp (or lower profile pinch clamps) over hose but do not tighten currently. **NOTE: Included with each kit are two different types of clamps, a worm drive type and a lower profile crimp type. The crimp type clamp requires the use of a nipper/single ear crimping tool to secure. If you are not familiar with this type of clamp, install the supplied worm drive clamp.**

e. Trim and connect remaining length of hose (connected to fitting on throttle body) to either of the upper coolant fittings on the AOS. Install supplied size 2 hose clamp (or lower profile pinch clamp) over hose but do not tighten currently. **NOTE: Included with each kit are two different types of clamps, a worm drive type and a lower profile crimp type. The crimp type clamp requires the use of a nipper/single ear crimping tool to secure. If you are not familiar with this type of clamp, install the supplied worm drive clamp.**

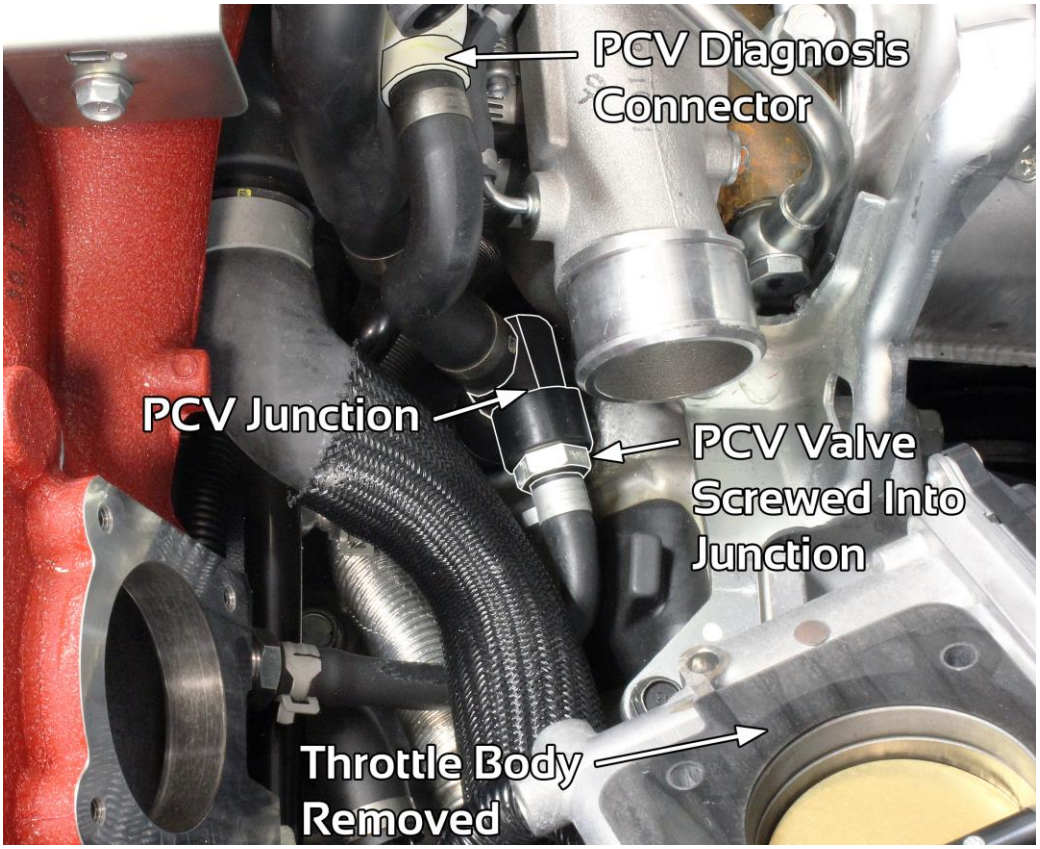


f. Use remaining length of hose to create a loop from the remaining coolant fittings on the top and bottom. **NOTE: Make sure you do NOT connect one of these to the drain fitting on the bottom. Engine damage will occur if this is done incorrectly! See the diagram above showing where to connect hose to!**

g. Install supplied size 2 clamps (or lower profile pinch clamps) over hoses, then install hoses to fitting and secure with clamps. **NOTE: Included with each kit are two different types of clamps, a worm drive type and a lower profile crimp type. The crimp type clamp requires the use of a nipper/single ear crimping tool to secure. If you are not familiar with this type of clamp, install the supplied worm drive clamp.**

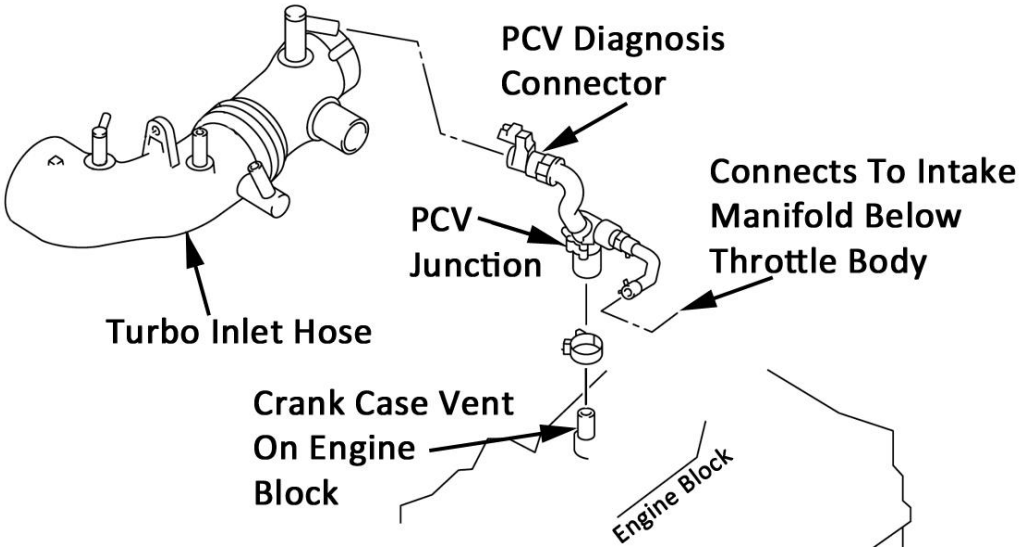
h. Tighten all hose clamps and secure coolant hoses along firewall and engine using supplied zip ties.

i. Make any final changes to the orientation of the AOS bottom and top, then secure center bolt.



4. Crank Case Vent Connection and AOS Drain Connection

a. Locate and remove (4) bolts securing throttle body to intake manifold. Move throttle body away from the intake manifold as shown.
b. Using the above and below pictures for reference, disconnect the PCV diagnosis connector from the turbo inlet hose, then disconnect the small hose from the side of the PCV junction.
c. Using a flat head screw driver placed between loop on the OEM clamps then locate and remove the PCV junction with hose (connected to the rear crank case vent) from the engine leaving only the large fitting exposed on the engine block. **NOTE: The PCV valve is screwed into this junction and will be used in future step.**

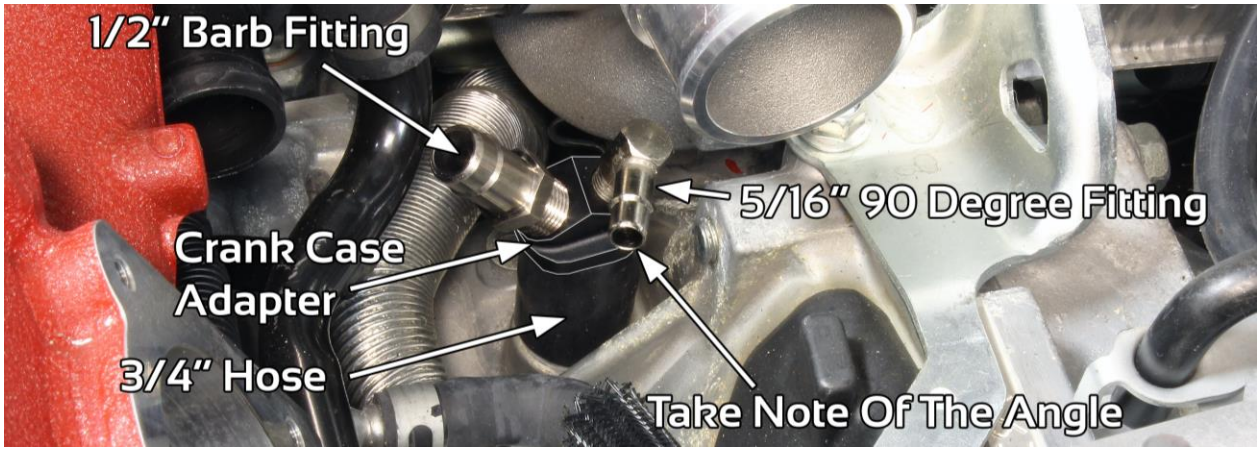


d. Remove white PCV diagnosis connector from hose, then cap left open fitting with supplied plug, then reinstall PCV diagnosis connector back into turbo inlet hose. **NOTE: 2018-21 models use a band clamp to secure the hose to the PCV diagnosis connector. If you have this type of clamp, you can pull this off with extreme force, or it may need to be cut off. A cut off wheel type tool is recommended for this but other tools may work.**
    i. If aftermarket turbo inlet hose is installed, use the included 1/2” Plugs in the kit to plug spigot coming off the turbo inlet hose.



e. Using diagram below, install supplied 1/2" straight fitting and 5/16” 90 degree fitting into PERRIN crank case vent adapter. If other custom parts are installed (such as a turbo kit), it is ok to rotate this fitting (or the entire junction) in a different direction. It is important that oil to travels downhill from the AOS bottom, so take care in the orientation of this fitting! **See NPT Notes above regarding installation of this fitting.**

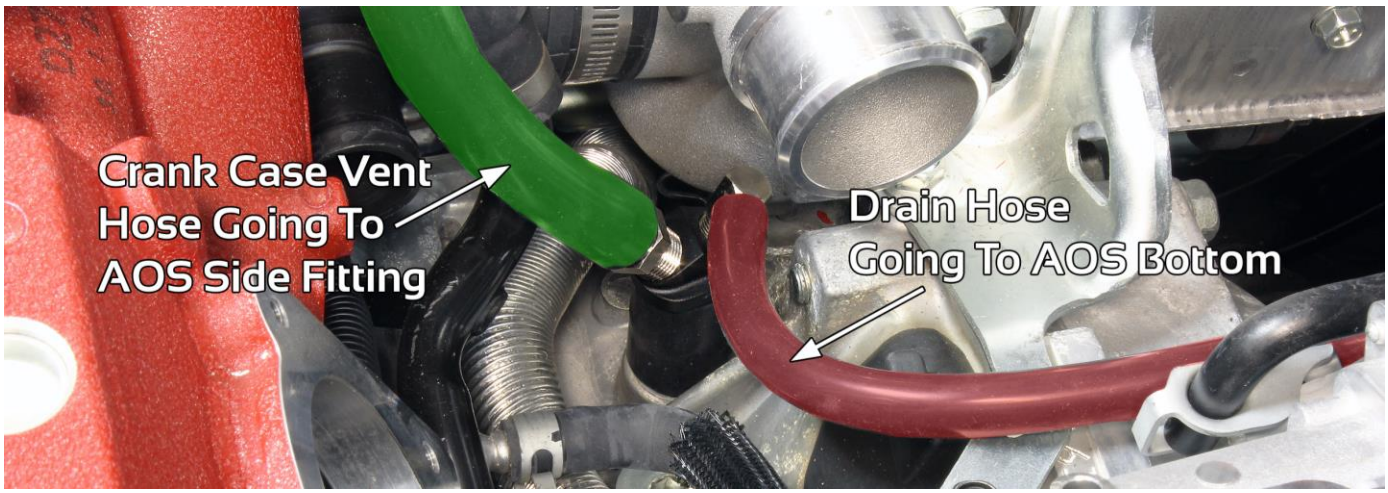
f. Install supplied 3/4" hose to the left open fitting on the engine block and secure with supplied size 8 or 16-27mm clamp. Then install crank case vent fitting and secure with remaining size 8 or 16-27mm clamp.



Direction of fitting shown that works for most installations. Fitting can be rotated in any other direction as long as oil draining from the AOS can maintain a downhill path to fitting.

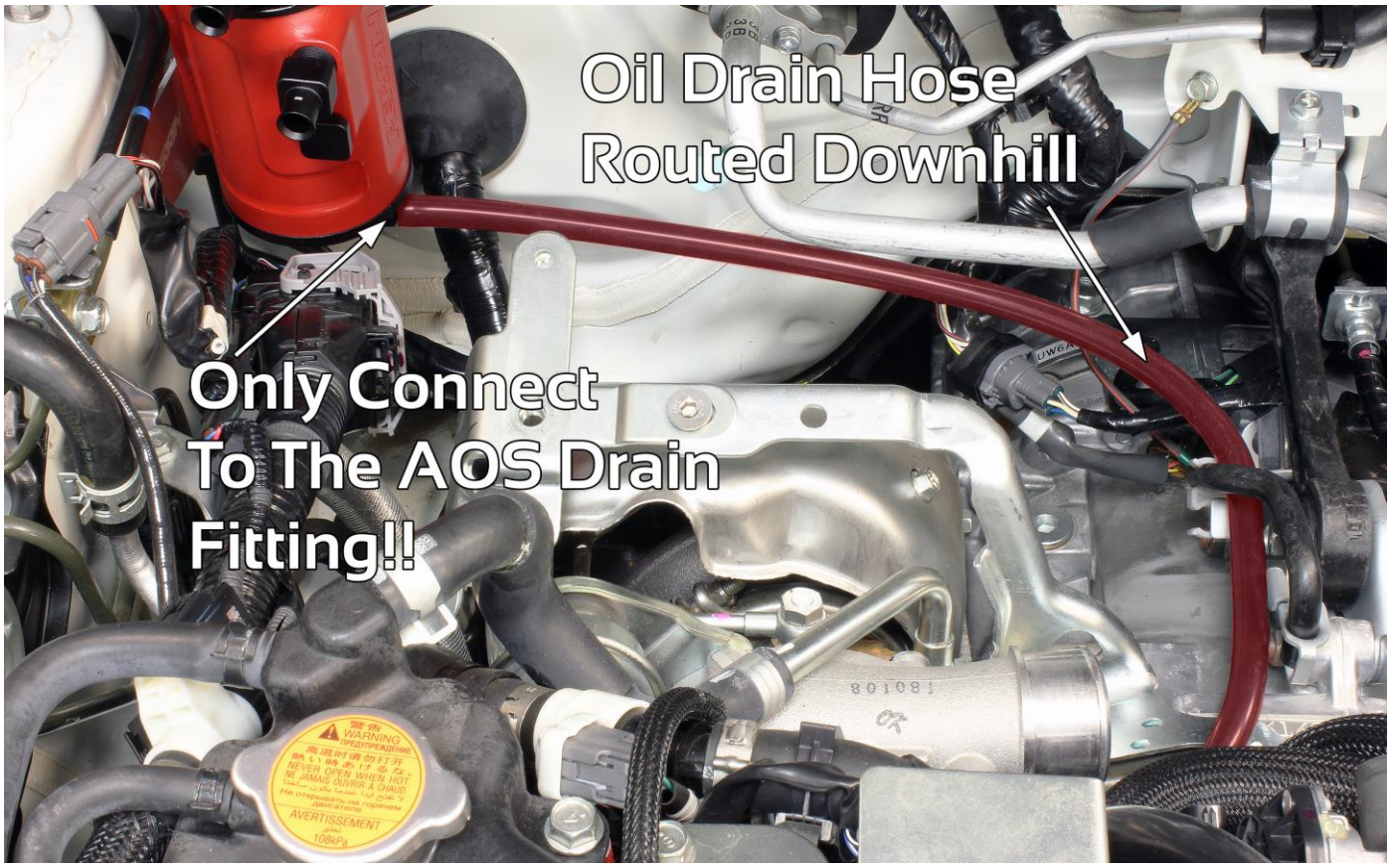
g. Connect supplied 1/2” crank case hose to 1/2" fitting on PERRIN crank case adapter and secure with supplied size 006 or 12-22mm hose clamp (or lower profile pinch clamp). **NOTE: Included are two different types of clamps, a worm drive type and a lower profile crimp type. The crimp type clamp requires the use of a nipper/single ear crimping tool to secure. If you are not familiar with this type of clamp, install the supplied worm drive clamp.**

h. Route hose away from engine for now as this will be re-routed in later steps.

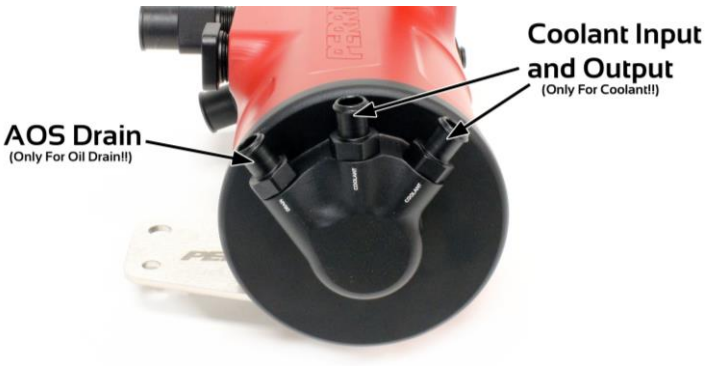


i. Connect supplied 5/16” emissions hose to 5/16” fitting on PERRIN crank case adapter and secure with supplied size 002 or 8-16mm hose clamp (or lower profile pinch clamp). **NOTE: Included are two different types of clamps, a worm drive type and a lower profile crimp type. The crimp type clamp requires the use of a nipper/single ear crimping tool to secure. If you are not familiar with this type of clamp, install the supplied worm drive clamp.**

j. Route this hose toward the middle of the engine, then back toward the firewall, then to the bottom of the AOS. Using pictures below as guide, follow this path to ensure that the drain hose goes uphill to the AOS bottom.



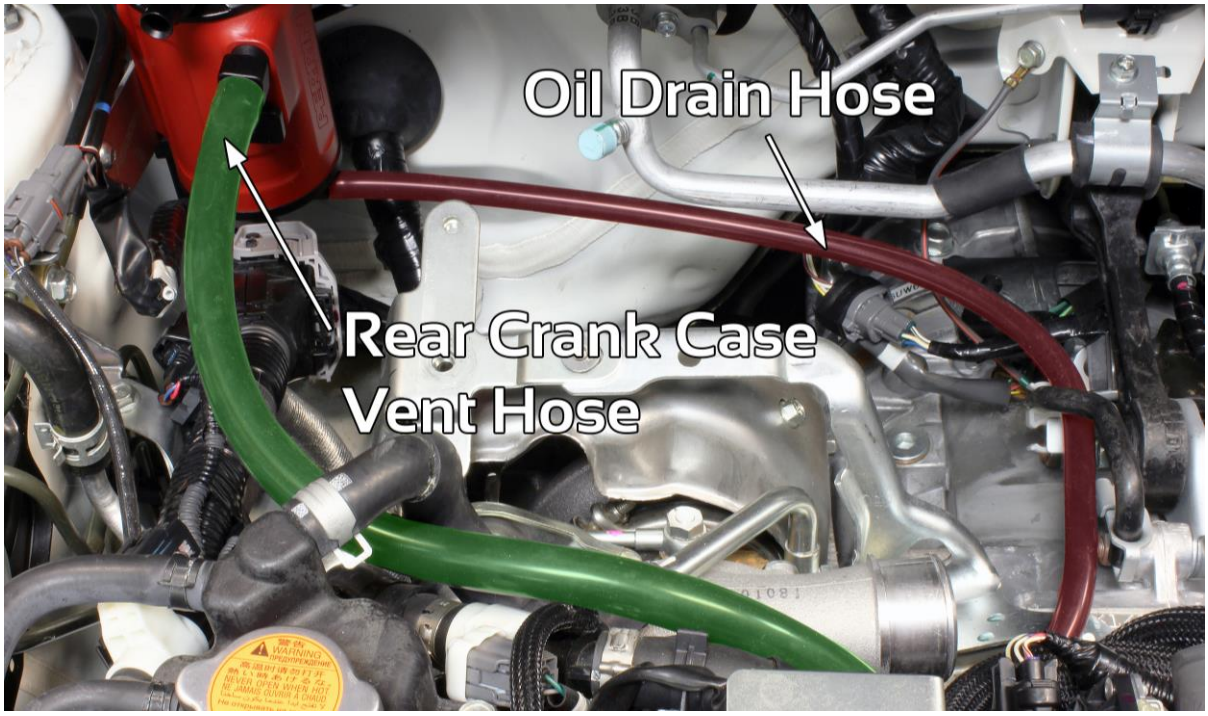
k. Connect hose to the oil drain fitting (should be the forward most fitting) on the bottom of the AOS and secure hose with supplied size 002 or 8-16mm hose clamp. We do not recommend using one of the crimp type clamps to secure as this hose may need to be removed during general maintenance.





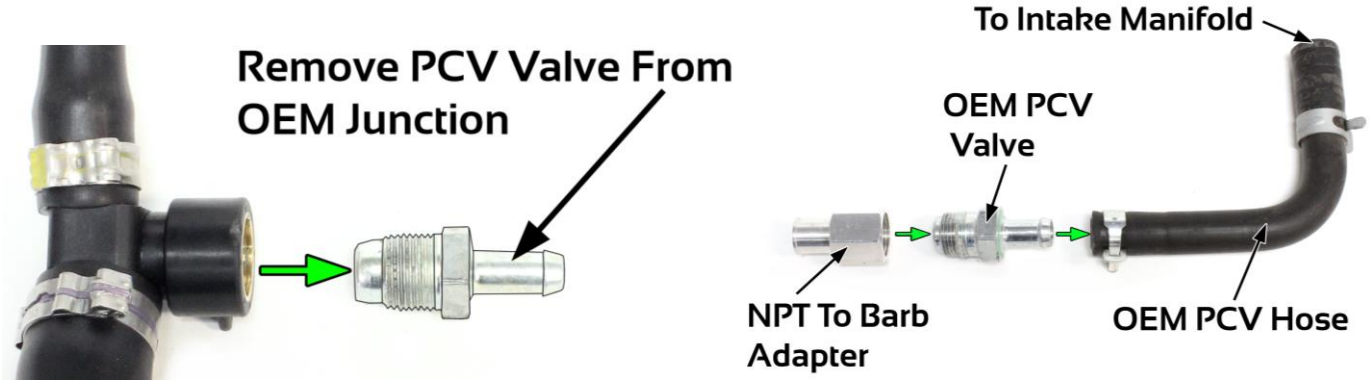
l. Once hose routing is to your liking, using supplied zip ties, secure hose along the way to make sure it maintains its downhill trajectory from the AOS to the engine.

m. Route the 1/2" emissions hose between intake manifold and turbo as shown below, then connect it to one of the side fittings. Secure hose to AOS using supplied size 6 or 12-22mm clamps (or lower profile pinch clamp). **NOTE: Included are two different types of clamps, a worm drive type and a lower profile crimp type. The crimp type clamp requires the use of a nipper/single ear crimping tool to secure. If you are not familiar with this type of clamp, install the supplied worm drive clamp.**



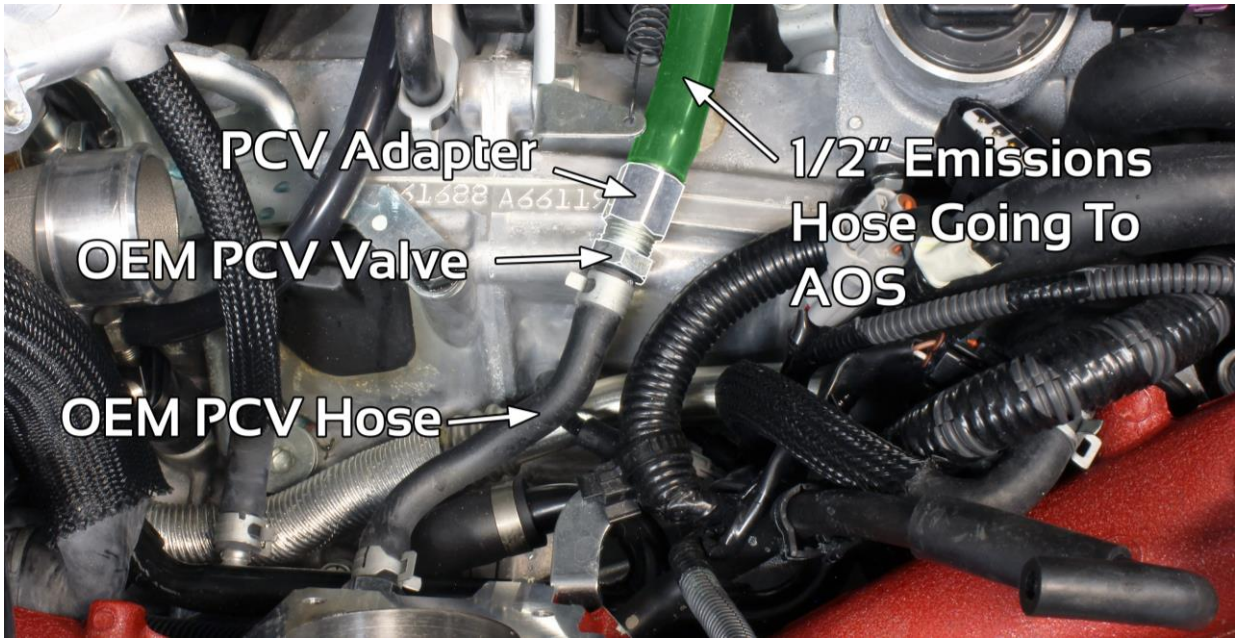
5. AOS Outlet and PCV Connection

a. Locate PCV junction removed from engine block in earlier step and remove PCV valve from junction as shown in picture above. **NOTE: This fitting has thread locking compound applied to the threads and can be hard to remove from the junction. Warming up the fitting to 200F can help make this come apart easier. Also the use of a vise is recommended to hold the junction while removing.**



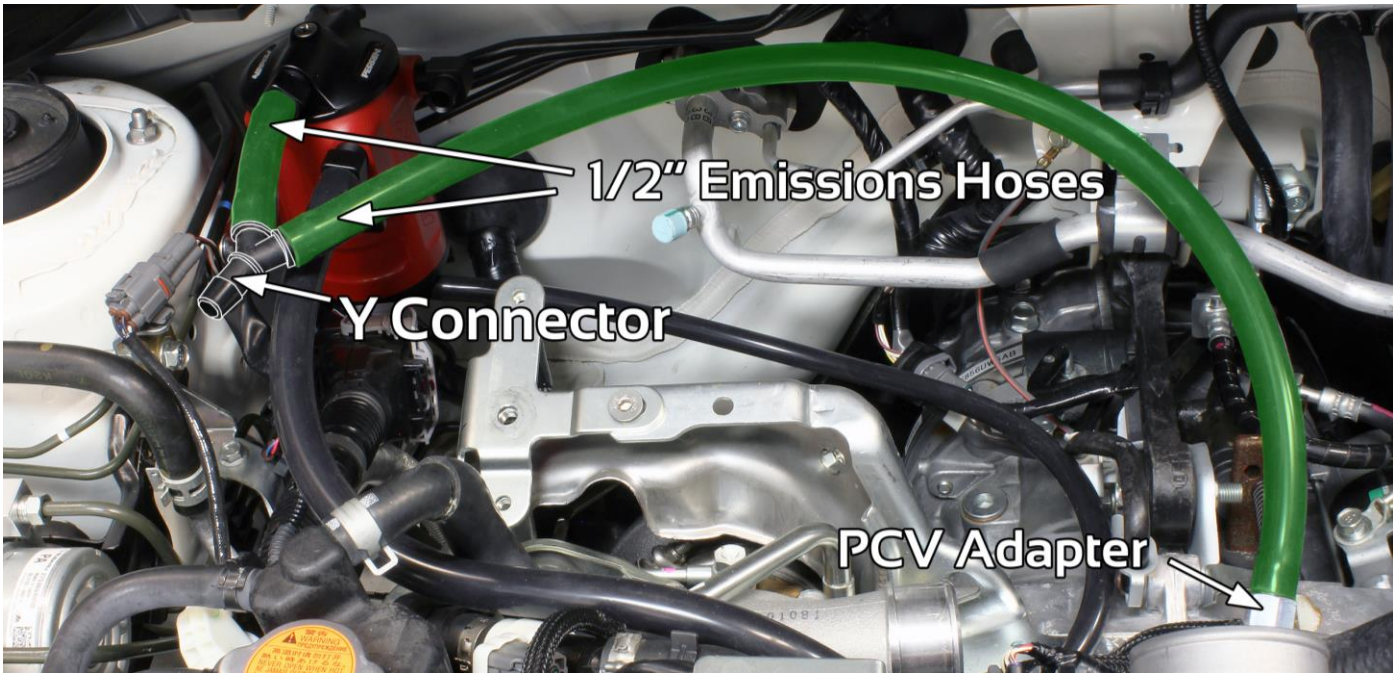
b. Install PCV valve into supplied 1/2” barb to NPT adapter as shown below. Then install fitting into hose under throttle body. **See NPT Notes above regarding installation of this fitting.**

c. Connect supplied 1/2” emissions hose to 1/2” barb fitting on adapter, then route hose toward the firewall, and secure with supplied size 6 or 12-22mm clamps (or lower profile pinch clamp). **NOTE#1: Included are two different types of clamps, a worm drive type and a lower profile crimp type. The crimp type clamp requires the use of a nipper/single ear crimping tool to secure. If you are not familiar with this type of clamp, install the supplied worm drive clamp. NOTE#2: Some planning ahead will make the next few steps easier. This hose will route to the firewall, then over to the top of the AOS. You may find you need to re-route this slightly during the next few steps to get the cleanest installation.**



d. Using picture below as a guide, cut a 3.5 to 4.0" piece of 1/2" emissions hose from the other end of the previously installed hose and connect this to the top fitting on the AOS and secure with supplied size 6 or 12-22mm clamp(or lower profile pinch clamp). **NOTE: Included are two different types of clamps, a worm drive type and a lower profile crimp type. The crimp type clamp requires the use of a nipper/single ear crimping tool to secure. If you are not familiar with this type of clamp, install the supplied worm drive clamp.**

e. Using picture below as a guide, install one of the dual legs of the "Y" connector to the hose coming off the top of the AOS. Then route hose from 1/2" barb to NPT PCV adapter across firewall to the remaining dual leg of the "Y" connector. This plastic connector is designed to NOT need a hose clamp to secure hose to fitting.



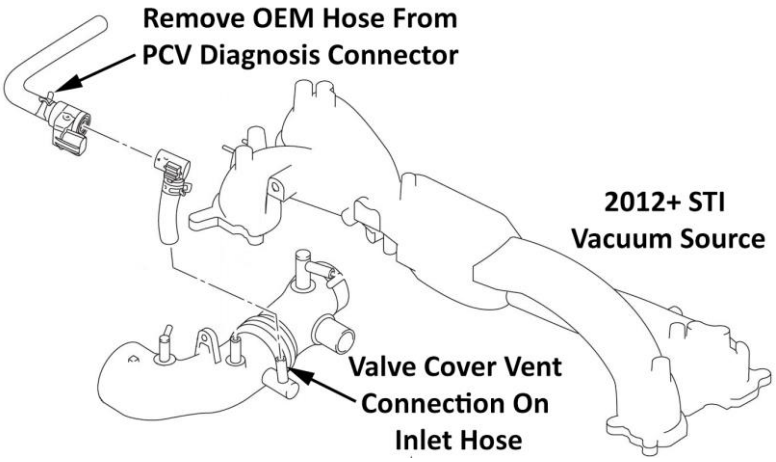
f. Reinstall throttle body to intake manifold, making sure gasket is placed in the correct orientation. Then tighten (4) bolts to 6ft-lbs.

g. Temporarily install intercooler into engine bay and triple check the routing of this hose is still to your liking and free of pinched off hoses, kinks and clear of moving parts. If hose routing is to your liking, reinstall intercooler to engine.

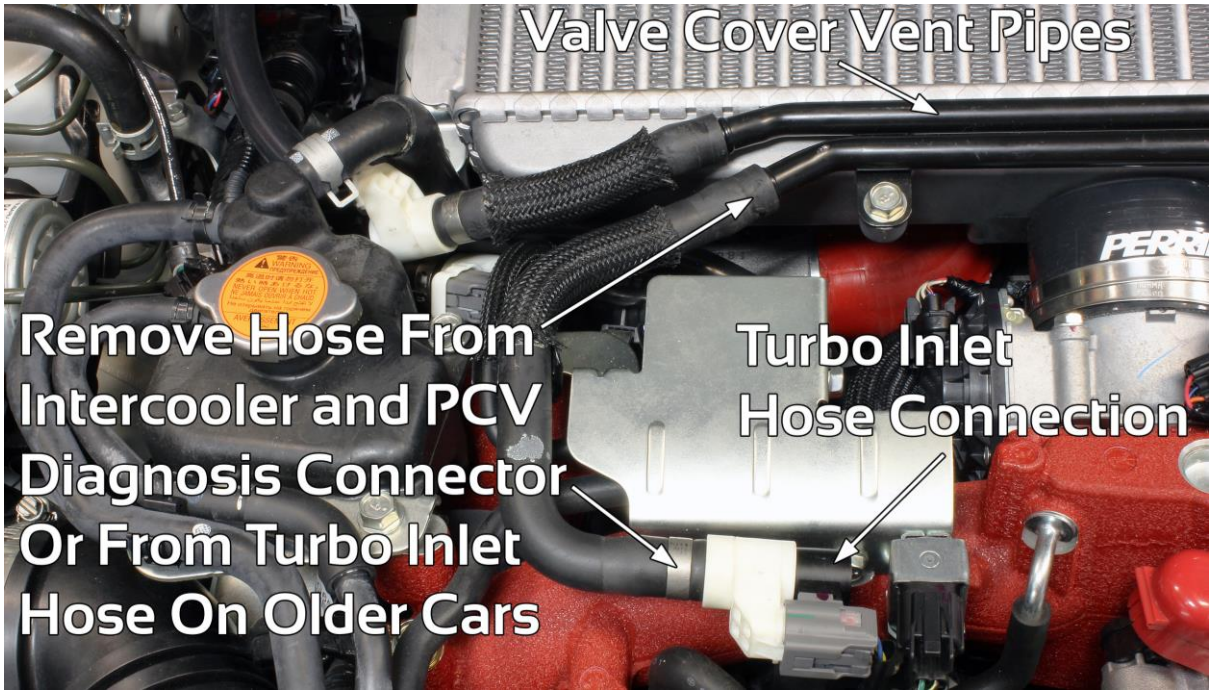
   i. Make sure to get turbo coupler fully installed all the way around the turbo and the throttle body coupler fully installed all the way around the throttle body. Tighten hose clamps to secure both connections.

   ii. Reinstall (2) bolts securing bypass valve to intercooler and (2) bolts securing intercooler to brackets. Tighten bolts to 14ft-lbs.

   iii. Reconnect crank case vent hoses to intercooler. **NOTE: For engines that have multiple PCV diagnosis connector, make sure they are fully plugged in or a check engine light may occur.**

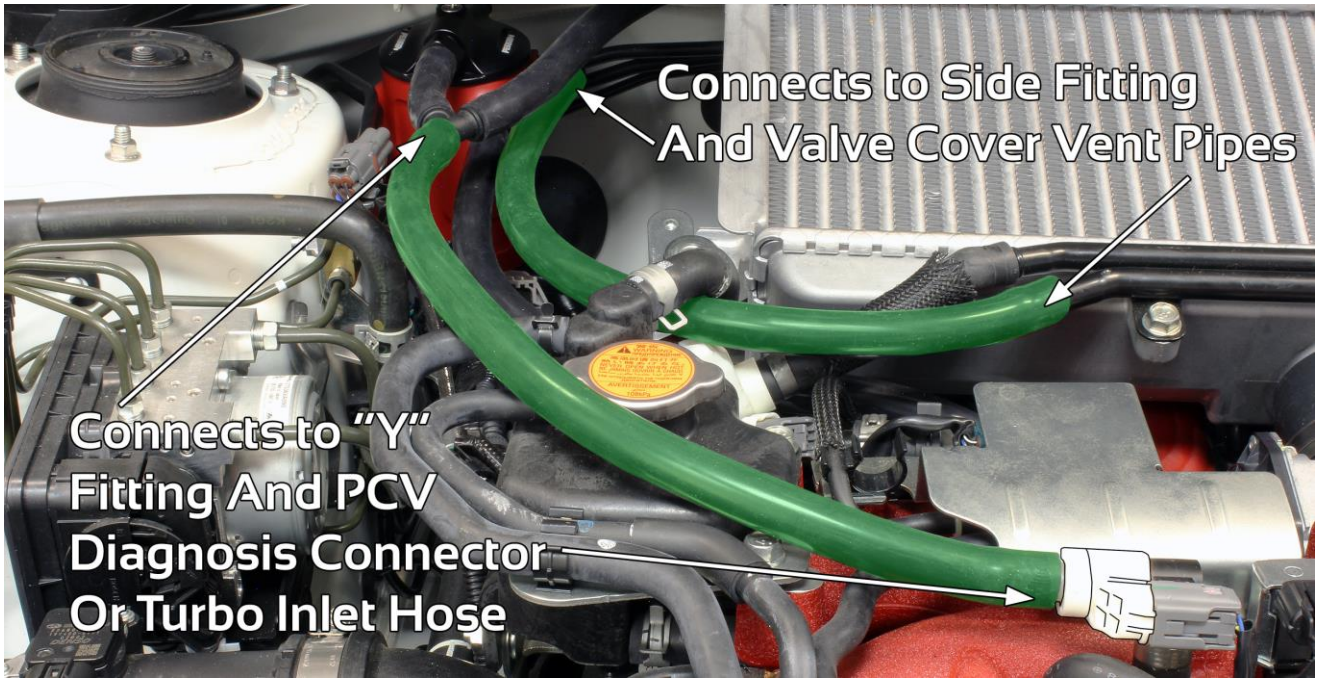


h. Locate valve cover vent pipes bolted to the intercooler (blacand take note of the hose coming off it going to the turbo inlet hose (heads toward the front of the engine). The pipes look different between different model years, but they have the same functionality of creating a large “Y” connector for the left and right valve cover vent hoses. See the picture above showing the 2 styles you will find.
    i. Using the picture below, locate the hose connecting the intercooler to the PCV diagnosis connector at the turbo inlet connection. Remove hose from the intercooler side and from the PCV diagnosis connector. NOTE: For 2018+ models the hose will be secured by crimped on clamps. These can be cut off, or with some decent amount of force and some kind of spray lube, can be pulled off. The OEM hose will not be re-installed.



Above picture shows 2018-21 model with slightly different valve cover vent piping compared to the 2015-17 model.

    i. Using picture below as a guide, connect the remaining 1/2" emissions hose to pipe on open connector on the PCV diagnosis connector and route the hose to previously install “Y” connector and trim to best fit. Routing of the hose can vary from the picture as you may want to route hose around the coolant overflow tank or if aftermarket parts are installed it may need to route slightly different.
    ii. Using picture below as a guide, connect the remaining 1/2" emissions hose to the pipe on the intercooler (pointing toward the front of the car) and route hose to the side fitting on the AOS body. Routing of the hose can vary from the pictures to suite your installation needs based on other parts that may be installed. Secure hose with supplied size 6 or 12-22mm clamp (or lower profile pinch clamp). **NOTE: Included are two different types of clamps, a worm drive type and a lower profile crimp type. The crimp type clamp requires the use of a nipper/single ear crimping tool to secure. If you are not familiar with this type of clamp, install the supplied worm drive clamp.**



Above picture shows 2018-21 model with slightly different valve cover vent piping compared to the 2015-17 model.

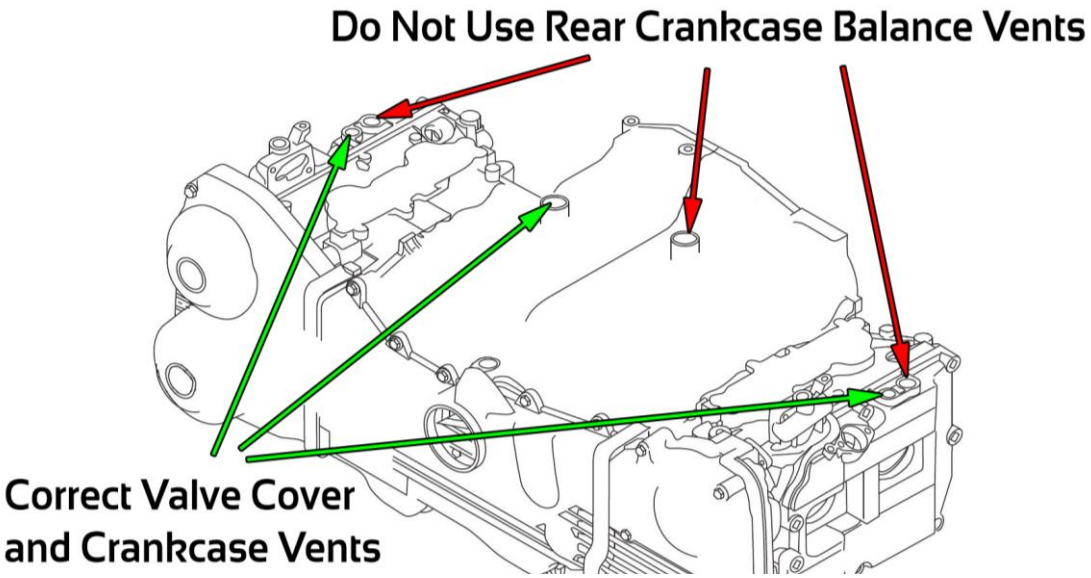
6. Final Checks

a. Double check that all hoses and vacuum lines are connected and secured using a clamp (where noted to use a clamp). Any leak in the system can cause the engine to run poorly and will lead to unsafe engine conditions.
b. Check that all bolts and hardware securing AOS are tightened down.
c. Using supplied zip ties, secure emissions hoses to engine and other hoses to reduce the chance of abrasion wearing down hoses over time.
d. Reconnect battery.
e. Start engine and let it run for about 30 seconds. Turn off engine and inspect hoses for leaks.
f. Restart engine and allow engine to warm up completely, then triple check all hose connections (mostly looking for coolant leaks). Fix any leaks that you find and then proceed to the next step.
g. After roughly 10 minutes of driving, recheck all fittings for signs of leaking. If leaks are found stop and fix ASAP.

Optional Dual Valve Cover Vent Installation

The PERRIN AOS has an extra port on it that can be used to connect both the left and right valve cover vents separately to the AOS. If the above instructions are followed, both left and right vents are jointed together (using the piping on the intercooler), then connected to the AOS. Alternatively you can remove these pipes, and run separate hoses from the AOS to the valve cover vents. This method may work better or be a "cleaner" installation when aftermarket parts such as front mounted intercoolers are installed.

Use the diagram below to help with guidance as to where the valve cover vents are located.

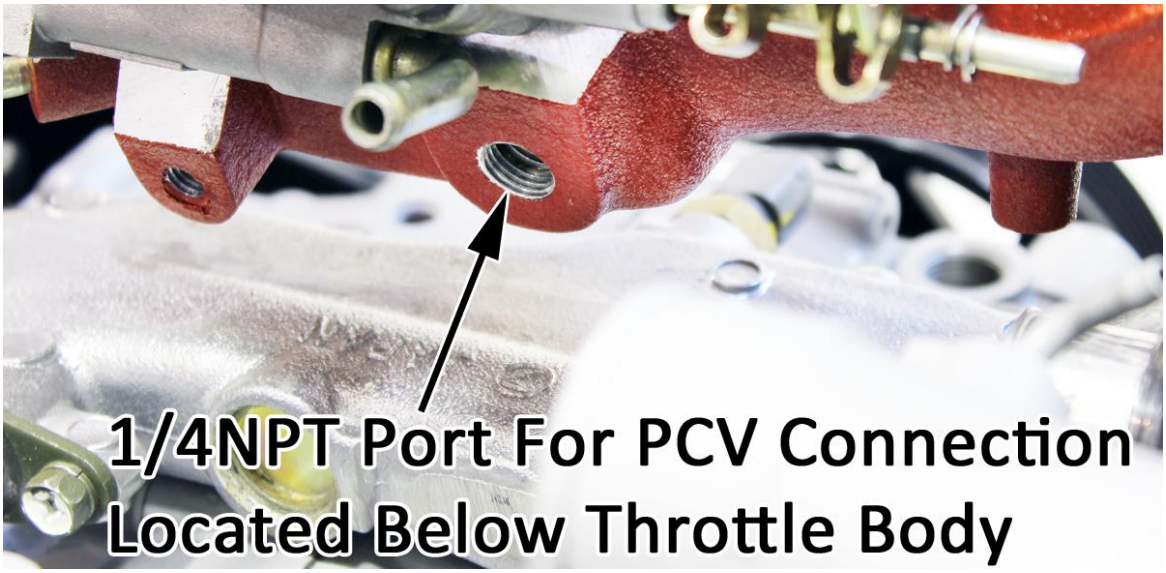


Optional PCV Delete for Cars with Built Engines

For those who understand the reason they may want to remove the PCV valve from the engine (to reduce further oil getting into the manifold) please follow the below alternate instructions below. While we do not recommend this for street driven cars, some racecars may want to disconnect the PCV side of the system as this can lead to additional oil vapors getting into the intake manifold.

You will NOT use the included "Y" connector for the top connection on the AOS, and you will also NOT use the PCV valve and adapter if you follows these instructions. If done correctly, you will have a single hose coming off the top of the AOS and going to turbo inlet connection.

1. Locate and remove the fitting screwed into the port on intake manifold just below the throttle body.
2. Install supplied 1/4NPT plug into manifold. **NOTE: This is a tapered type of fitting and seals when tight, not when bottomed out. Take care in not over tightening fitting as this can damage intake manifold. See NPT Notes above regarding installation of this fitting.**

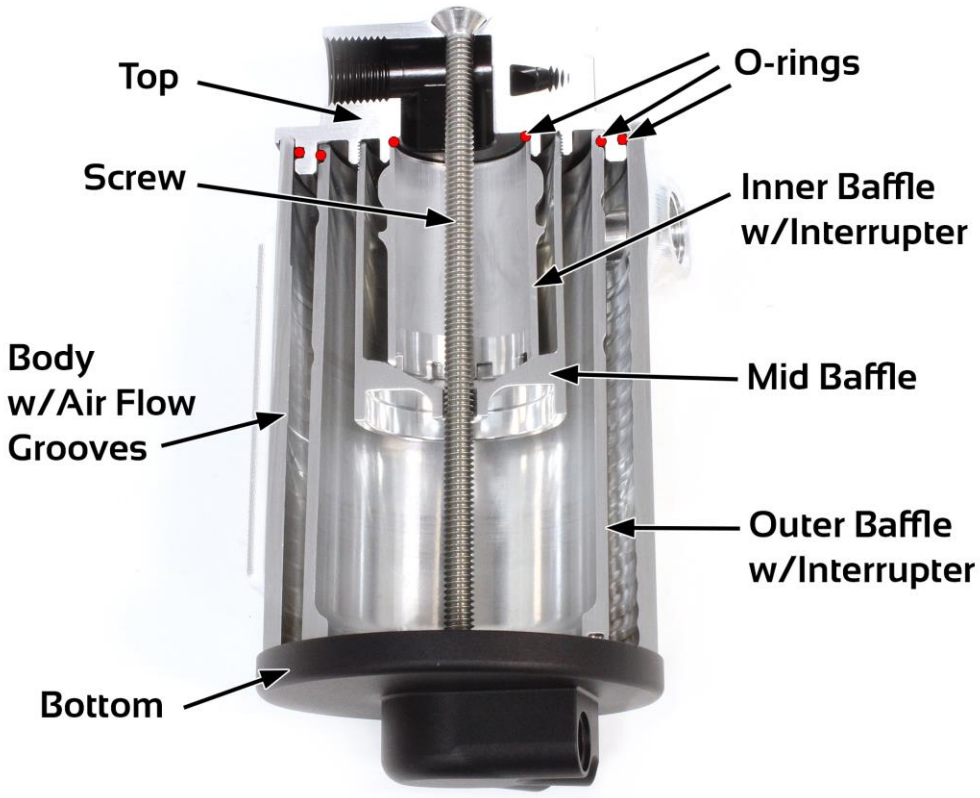


Optional Rear Crank Case Vent for Cars with Built Engines

We have found that to help control oil entering the AOS you can remove the rear crank case vent hose from the system, leaving only valve cover vents to do the job of venting crank case pressures. Consult your tuner to decide if this is the best setup for your car. The valve cover vents will easily handle the amount of blow-by coming out of the engine.

1. Remove fitting on AOS body used for the rear crank case vent and install supplied 3/8NPT plug into the body.
2. Remove 1/2" fitting on PERRIN crank case vent junction and install supplied 1/4NPT plug.
3. This turns the PERRIN crank case vent junction into a drain-only for your AOS.

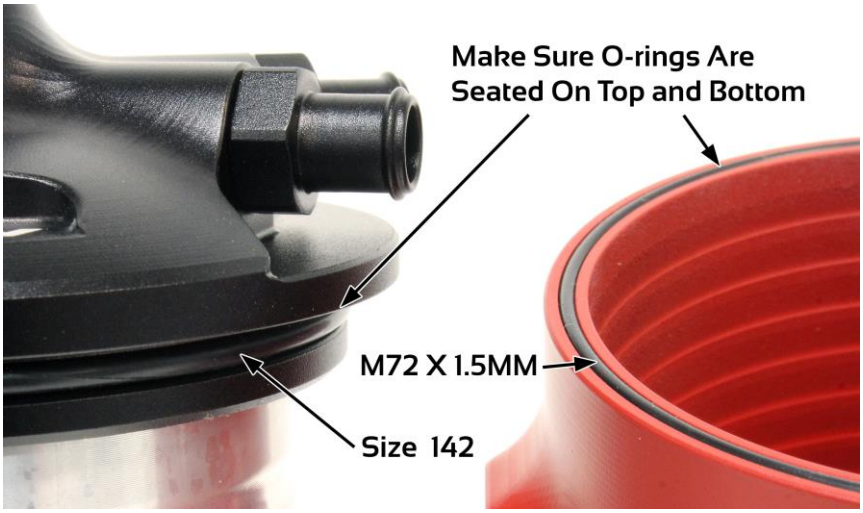




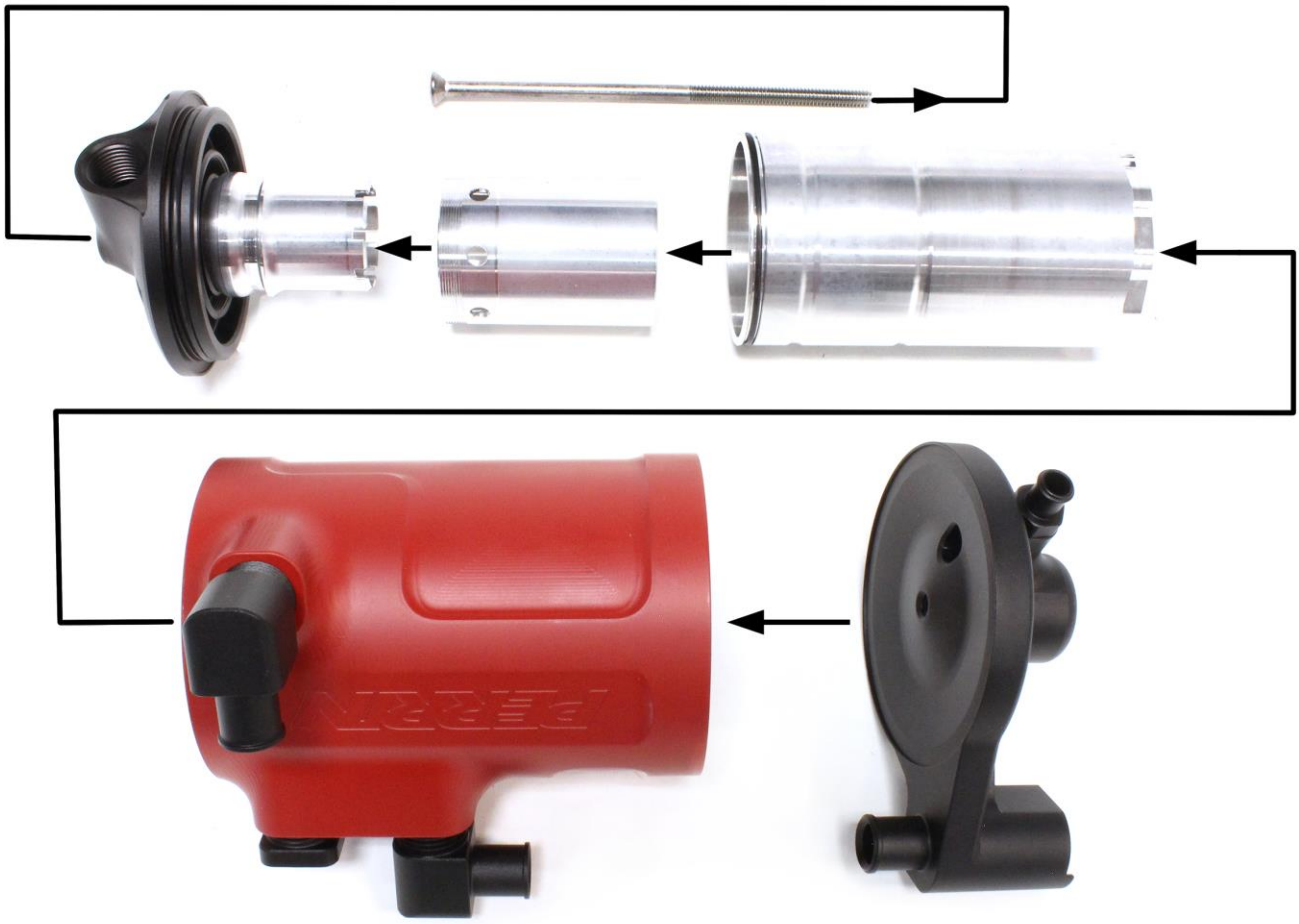
Maintaining your Air Oil Separator

There is very little maintenance required with the PERRIN AOS. From time to time, you may want to remove it and clean out some of the oil residue from the inside. Before taking apart, double check you have the spare O-ring for the body in case you find the O-ring is damaged.

- Disconnect crank case hoses from AOS. Leaving coolant hoses and oil drain hoses attached to the top and bottom, remove bolt from top of AOS, then pull AOS away from the bottom and carefully remove body from top.
- Remove outer baffle w/ interrupter from top (held in with an O-ring), unscrew the mid baffle and then the inner baffle can be removed. NOTE: The inner baffle may fall out with the mid baffle or may require a slight amount of force to pull it out.
- Using paper towels and/or a biodegradable degreaser, clean out as needed until AOS is free of sludge.



- Locate and remove O-rings from the AOS top and AOS body. Inspect them thoroughly remove them from bottom to ensure it is not cut or cracked. **NOTE: Do NOT use brake cleaner to clean O-ring as damage may occur.**
- Reinstall O-rings into their respective grooves, making sure they are fully seated and not sticking out. Applying a small amount of oil or grease to these will make the next few steps easier to install and align.
- Using the diagram below, start with installing the smallest diffuser into the top, then screw in the next largest one to lock them both in place. Tighten this diffuser firmly by hand and do not use a wrench to tighten. Install the largest diffuser into the top making sure that the O-ring is installed.



- Install the AOS body to the top, then install the entire assembly to the bottom. Make sure that the small O-ring on the bottom of the AOS body is in the groove and not sticking out, or the O-ring can become damaged and create a leak.
- Reinstall the long screw through the AOS, make any alignment changes to the top and body, then tighten screw to hand tight.
- Reattached the crank case hoses as they were before.
- If you find any leaking afterward, check that the o-rings are lined up and check that the AOS body is lined up with groove in bottom.

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