



IAG Street Series Air / Oil Separator (AOS) For 2017 WRX

Part# IAG-ENG-7152

Tools Required: Ratchet, torque wrench, extensions, needle nose pliers, hose cutter, snips/scissors, flathead screwdriver, hose clamping pliers, pry bar
 Sockets: 10mm, 12mm, 19mm,
 Wrenches: 7/8", 11/16", 8mm, 10mm, 3mm allen, 5mm allen



Congratulations on the purchase of your Air/Oil Separator (AOS) and thank you for choosing IAG Performance. This installation manual is intended to guide you through the removal of the factory PCV system and the installation of the IAG AOS. If you already have an aftermarket catch can or AOS installed, please consult the specific instructions for your hardware to aid in its removal.

Parts List		
Part Name	Quantity	Notes
Air/Oil Separator	1	
Top Coolant Hose Assembly	1	43" Hose Length, 1/2" I.D., -8ORB
Bottom Coolant Hose Assembly	1	15" Hose Length, 1/2" I.D., -8ORB, 1/2" Straight Plastic Barb
Block Breather Hose Assembly	1	2.5" Hose to 90° Fitting to 44" 1/2" Hose
Drain & Lower Breather Hose Assembly	1	90° to Y Fitting / (x2) Hoses (15" & 21")
Block Breather Hose Assembly	1	17" Hose Length, 5/8" I.D., 5/8" 90° Plastic Fitting
Street Series Upper Breather Fitting & O-ring	1	Preinstalled
Street Series Vent Hose Assembly	1	30"L x 3/8" Hose to "Y" Fitting to 11.5"L x 1/2" & 12"L 1/2" Hoses
M4x8mm Fasteners for Breather Top Fitting	3	Preinstalled
AOS Drain Fitting	1	Preinstalled
1/2" Spring Clamp	1	Coolant Hose Spring Clamp
Mounting Bracket	1	
6x10mm Bolt	3	Mounting Bracket to AOS
1/2" High Temp Rubber Cap	1	Preinstalled on top side port of the AOS can
8" Zip Tie	20	
ECU Relocation Bracket	1	
6x20mm Bolts	2	ECU Bracket
6mm Washers	2	ECU Bracket
3/8" Plastic 90° Fitting	1	To AOS PCV
3/8" Hose / PCV Valve Assembly	1	23" Length / AOS PCV to 90° Fitting
3/8" NPT to 3/8" Brass Barb Fitting	1	Block Breather Fitting PCV Replacement Fitting
M6x12mm Bolt	2	Mounting bracket to strut tower



Removal - Please read through the entire removal instructions before proceeding

1. The engine needs to be completely cool before beginning work.
2. Disconnect the negative battery terminal using a 10mm wrench.
3. Using pop clip pliers remove the upper engine cover's (2) pop clips, then remove the cover from the vehicle.



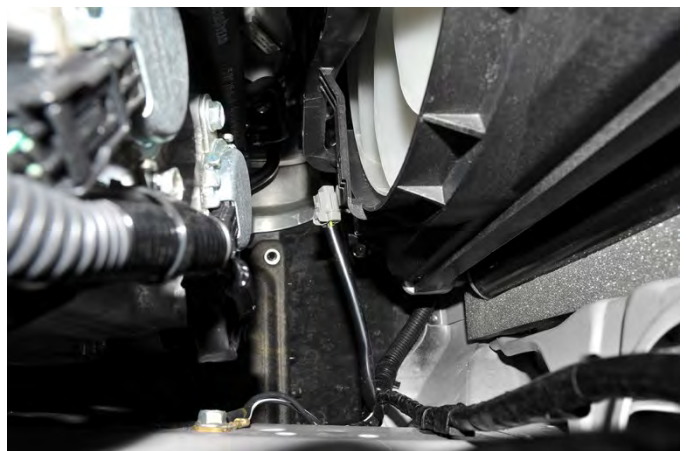


4. Remove the (2) pop clips that hold the intake duct onto the upper core support, then remove the duct from the vehicle.





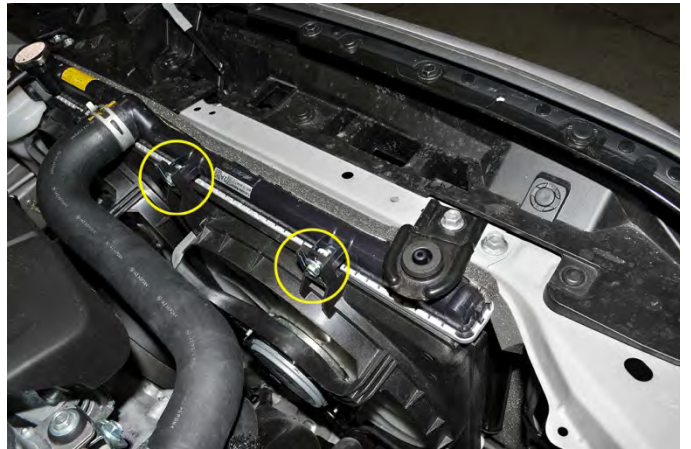
5. Some may find it easier to access things by removing the passenger side radiator fan. This can be done by locating the small grey electrical connector on the lower passenger side radiator fan. Next, disconnect the electrical connector by pinching the plastic spring clip in and pull the connector free.



Shown disconnected above



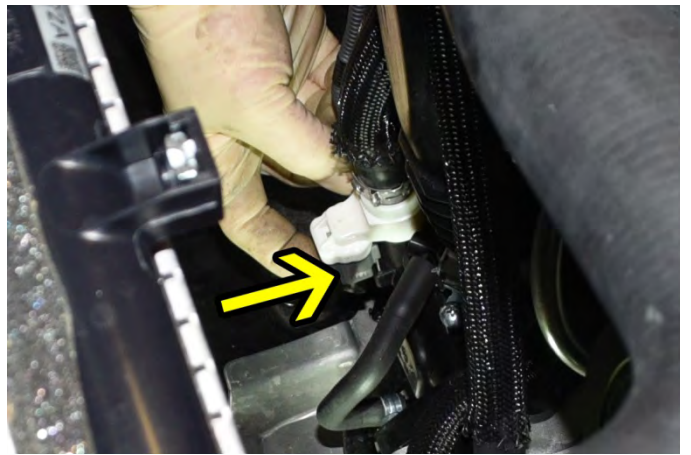
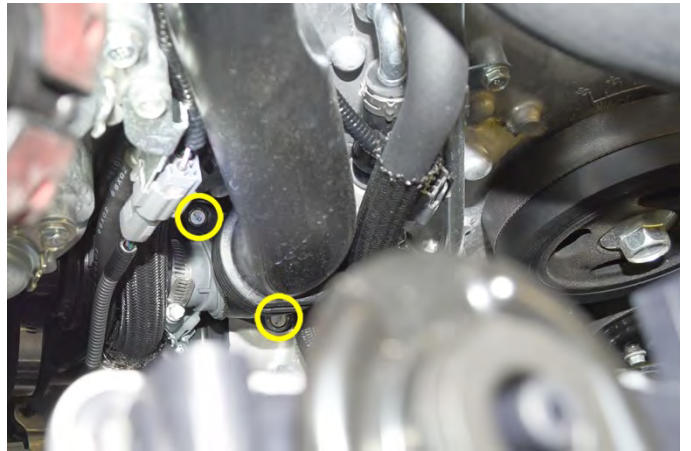
6. Next using a 3/8", ratchet and 10mm socket remove the (2) 10mm bolts from the top passenger side radiator fan. Carefully lift the radiator fan assembly from the vehicle.





7. Next using a $\frac{3}{8}$ " , 3" long extension, ratchet and 12mm socket remove the (2) 12mm bolts that hold the boost pipe to the turbo. Unplug the white crankcase sensor from the grey connector as shown. Leave the BOV attached to the boost pipe and release the pinch clamp on the inlet. In a later step, you will remove the BOV with the boost pipe.

*This can be done from above or below the car. If removing from underneath the car remove the OEM belly pan.



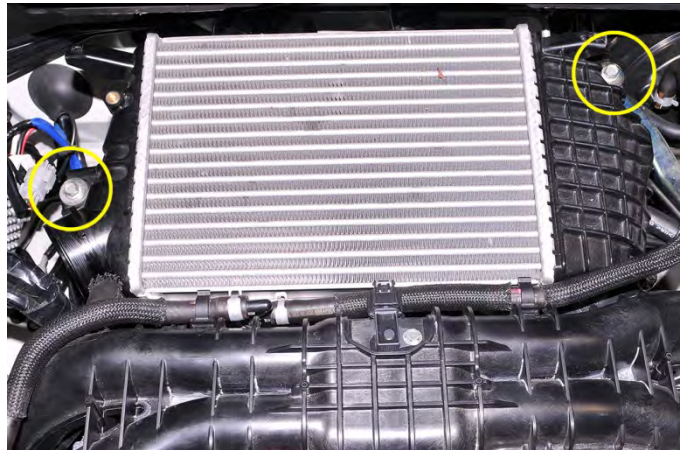


8. Using a flat head screwdriver or 8mm socket and ratchet loosen the hose clamp that holds the boost pipe to the top mount intercooler. Remove the boost pipe from the vehicle by first pulling it free from the blow off valve. Then remove the pipe from the intercooler. If the rubber insert comes out reinsert it back into the pipe.

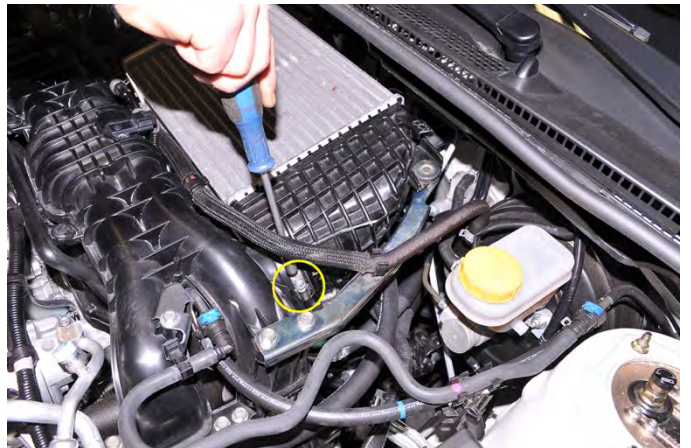




9. Using a 12mm socket, remove the intercooler mounting bolts on either side of the intercooler.



10. Loosen the hose clamp on the intercooler outlet. Then remove the intercooler from the vehicle being careful not to damage the fins or AC lines.





11. Using pliers pry off the hose clamp that holds the white crankcase sensor to the crank case vent hose. Once the clamp is removed, pull the white crankcase sensor free from the hose then plug sensor back into its original location making sure it snaps into the grey electrical connector.





12. Using a 12mm socket, 3" extension and ratchet, remove the (4) 12mm bolts that hold the EGR pipe on the EGR valve and intake manifold. Be careful not to lose or damage the metal gasket at the EGR valve as it is reused. Remove the pipe from the vehicle.



13. Using hose clamp or needle nose pliers loosen the spring clamp that attaches the PCV hose to the PCV valve.



14. Next pull the PCV hose free from the PCV valve and insert the $\frac{3}{8}$ " plastic 90° fitting into the hose. Finally using the OEM spring clamp, secure the fitting in the hose.



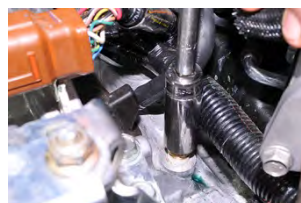
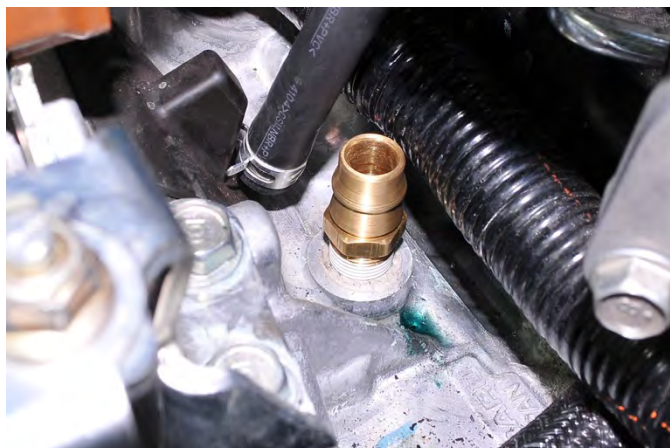


15. Using a 19mm socket, 8" extension and ratchet remove the PCV valve from the engine short block.

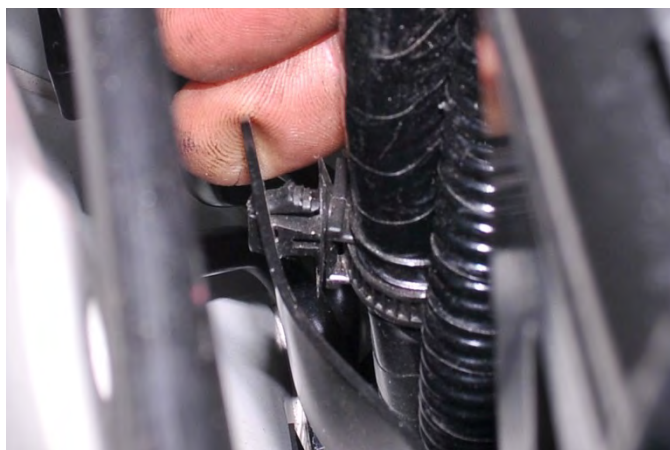
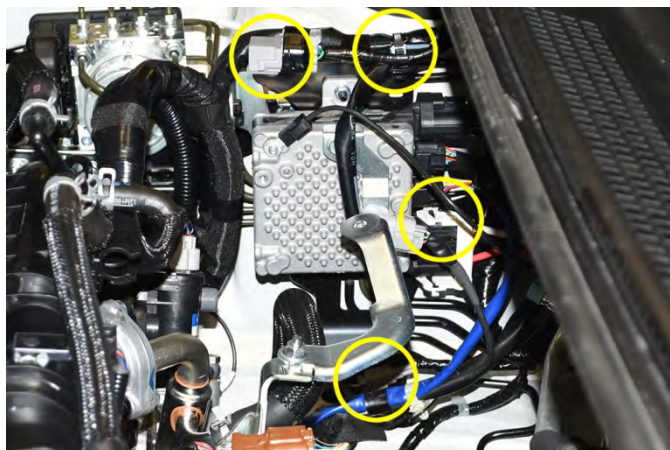


16. Next thread into the block the supplied $\frac{3}{8}$ " NPT to $\frac{5}{8}$ " barb fitting. Using the 19mm socket, ratchet and extension torque the fitting to 15ft / lbs.

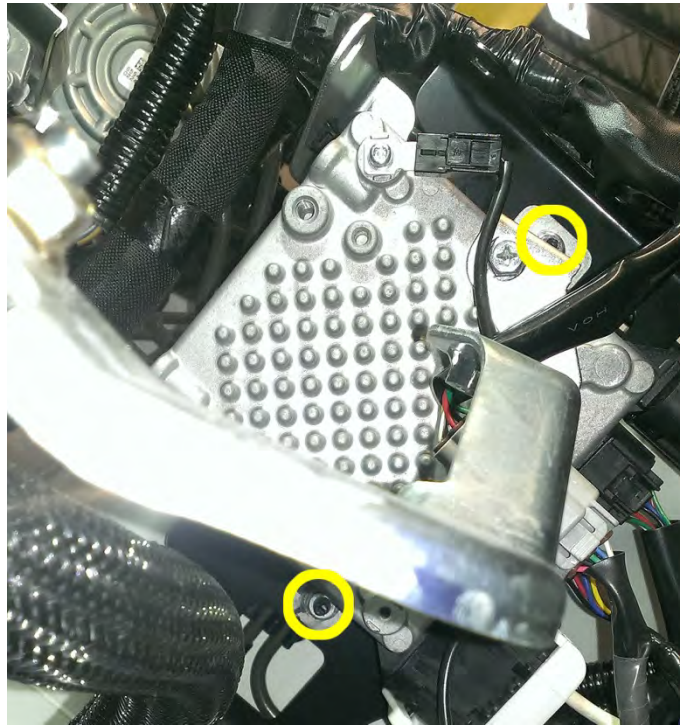




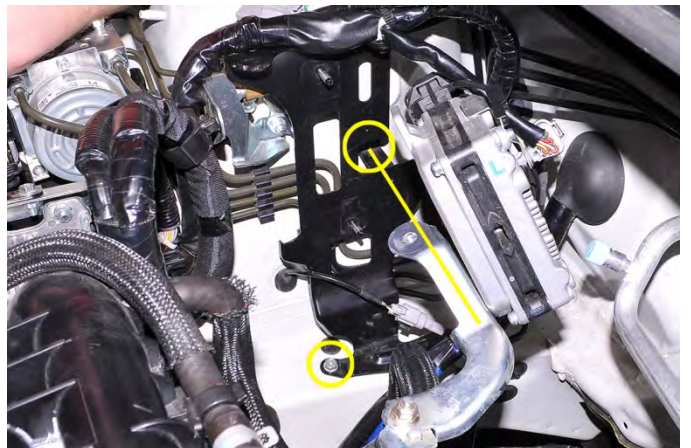
17. Remove the (4) wiring harness retaining clips from the ECU mounting bracket. Using needle nose pliers squeeze the locking tabs to free them from the bracket.

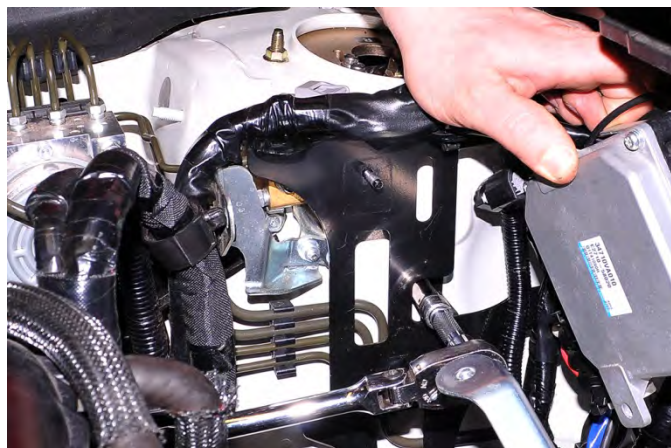


18. Using a 10mm socket, ratchet and 3" extension remove the (2) 10mm nuts that hold the ECU to the bracket. Then pull the ECU free from the bracket and place it aside in the engine bay.

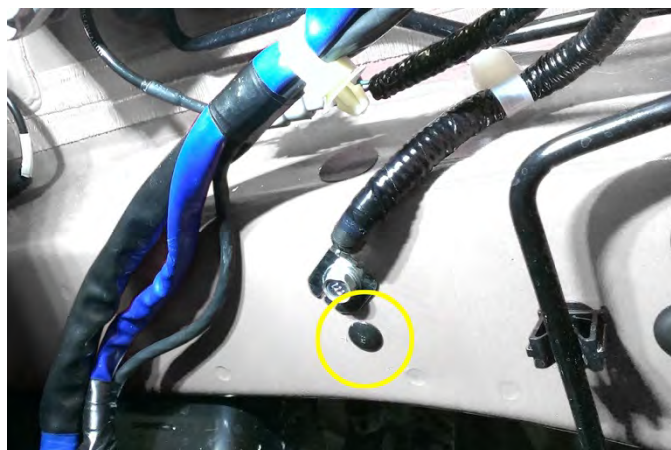


19. Remove the (2) 10mm bolts that hold the ECU bracket to the passenger side strut tower and frame rail as shown. Then remove the bracket from the vehicle.



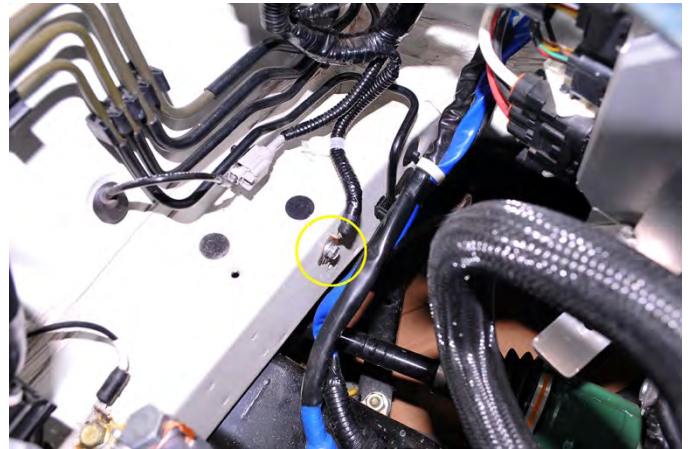
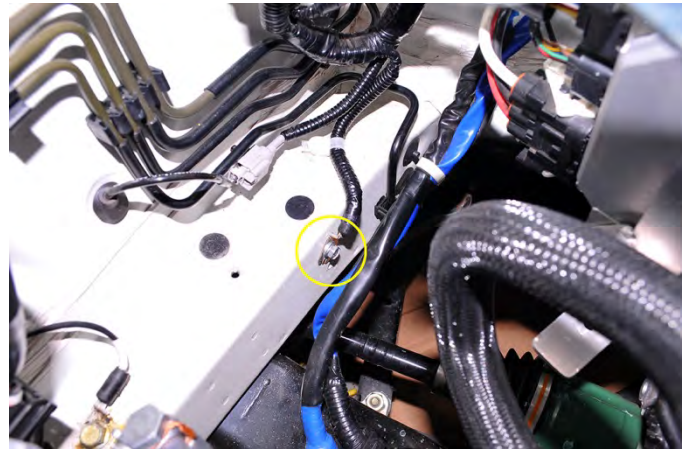


20. Pry out the small plastic plug located on the passenger side frame rail under the ground wire.

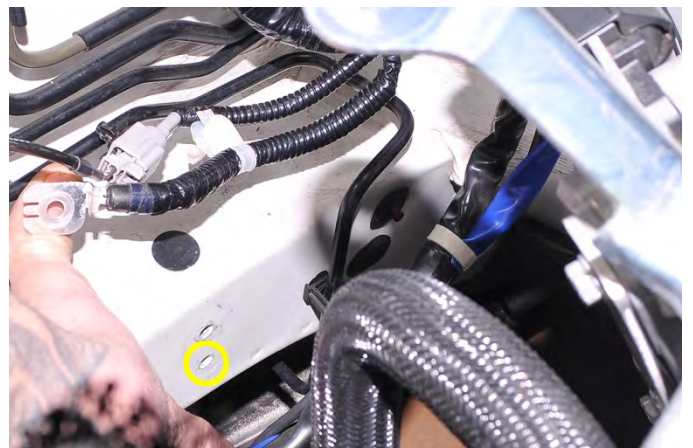


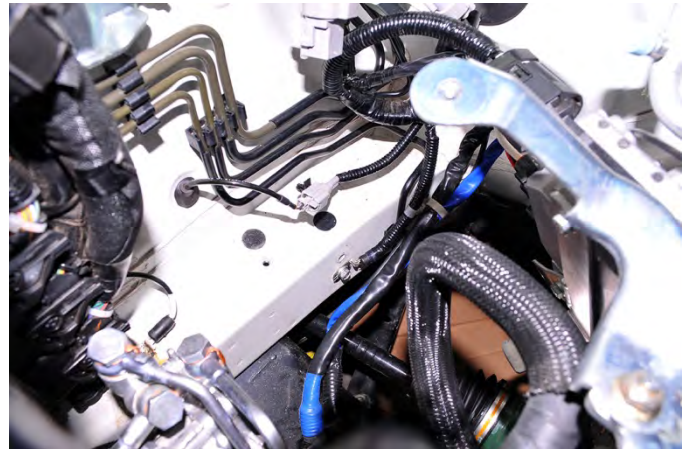


Next using 10mm socket and ratchet remove the 10mm bolt that holds the ground wire to the upper frame rail. Then using needle nose pliers pull the retaining clip from the frame rail. Next, relocate the ground wire to the lower frame bolt hole as shown using the OEM bolt. Tighten the bolt using a 10mm socket and ratchet.

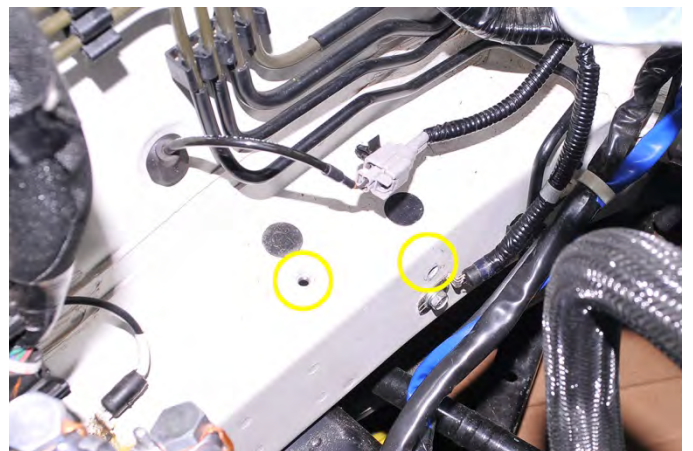


21. Relocate the ground wire to the lower frame bolt hole as shown using the OEM bolt. Tighten the bolt using a 10mm socket and ratchet.



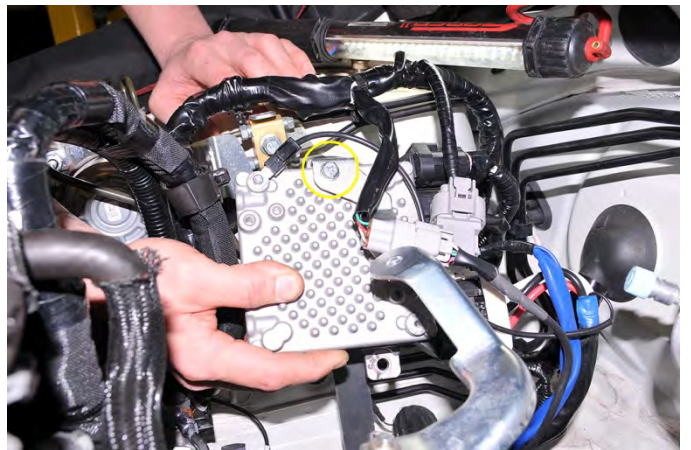


22. Locate the supplied ECU relocation bracket. Attach the bracket using the (2) 10mm bolts that held the original bracket to the body of the vehicle as shown. Using a 10mm socket, 8" extension and ratchet tighten the 10mm bolt on the top frame rail. Then using a 10mm socket and ratchet tighten the 10mm bolt on the side of the frame rail.

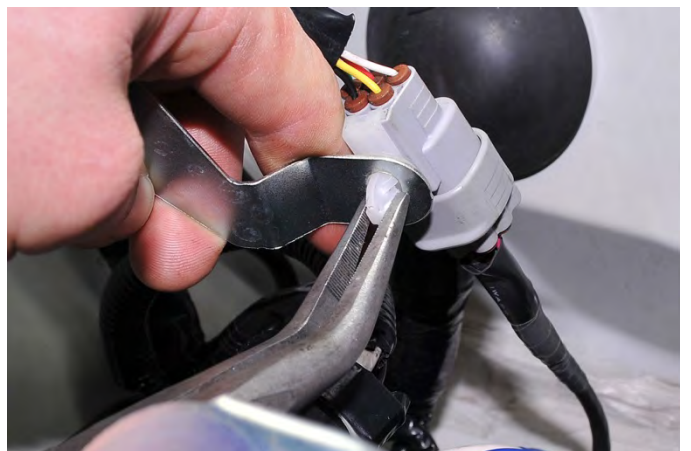




23. Using a 10mm socket and ratchet remove the 10mm bolt that secures the wiring harness onto the ECU.

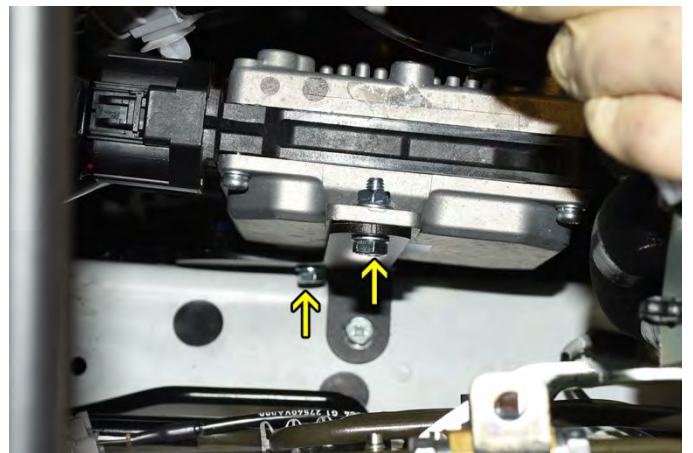


Next, remove the wiring retaining clip from the bracket and remove the bracket from the vehicle.





24. Locate the supplied (2) 6mm x 15mm bolts, (2) 6mm flat washers and the original (2) nuts that secured the ECU to the ECU bracket. Next using a 10mm socket, 3" extension, ratchet and 10mm wrench attach the ECU to the relocation bracket as shown. (Bolt head and washer on the bracket side, nuts on the ECU side)



25. Next, install the (2) AOS coolant lines onto the AOS (Lines come pre-assembled). **The short line of the two attaches to the bottom of the AOS. Thread them on by hand and tighten using $\frac{3}{8}$ " open end wrench.





26. Install the bracket onto the AOS using the (3) small allen bolts as shown. The third hole from the bottom of the AOS should be oriented to the lowest allen bolt hole on the bracket. Tighten the three allens.

****Note in April 2016 the mounting bracket for the AOS was changed. This affected routing of the wiring harness. Some pictures after "Step 34" may show the older mounting solution. The older images will not affect the install of AOS's with the most current mounting bracket.***



27. The Street Series upper breather fitting and o-ring ships preinstalled. The o-ring fits as shown. The breather fitting is located on the top of the AOS.



28. The breather fitting comes preinstalled and should be clocked so that it matches the picture to the right. If necessary for fitment, remove the (3) 4mm x 8 allen bolts that hold the fitting using a 3mm allen wrench, turn the fitting and thread the bolts back thru the breather fitting into the AOS. Then secure the port fitting.

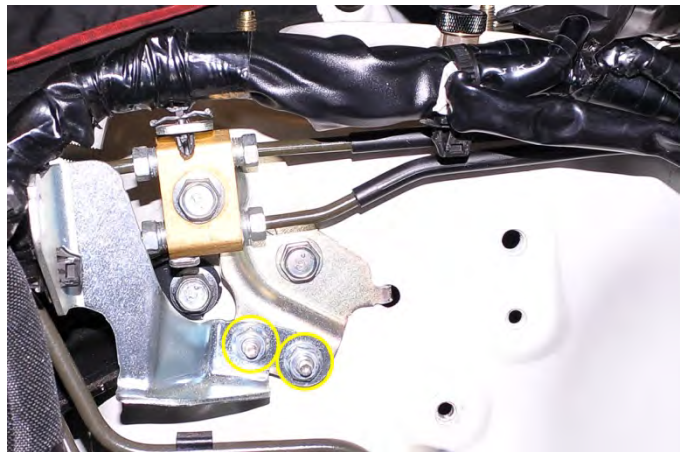


29. Thread the PCV hose assembly into the upper breather hose as shown. Tighten the fitting using an 11/16" wrench.



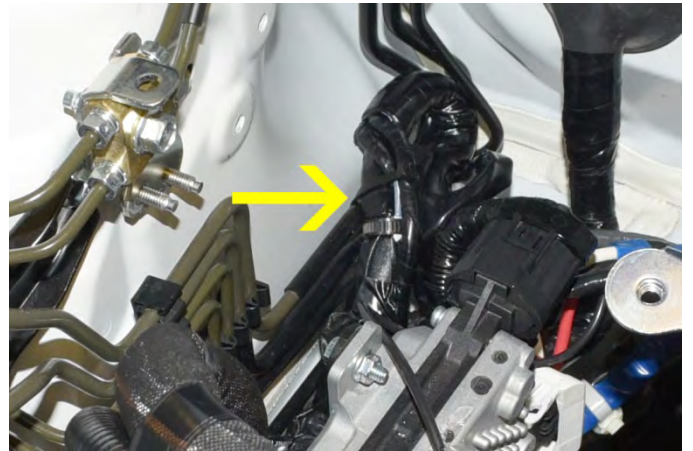


30. Using a 10mm socket and ratchet remove the (x2) 10mm nuts securing the wiring harness bracket. Unclip the harness from the bracket and remove the bracket from the vehicle. Next, unclip the harness from the brake line bracket.



31. Now that the harness is free, push the harness down towards the frame rail to make clearance for the AOS. Then secure the harness to the brake lines using a supplied zip tie as shown.





32. Using your hand's, pry or pull to bend the brake lines up next to the strut tower. Next push the rear 3 brake lines back towards the firewall to make space for the AOS.



OEM Brake Line Position Shown Above



Pulling Brake Lines Upward Shown Above

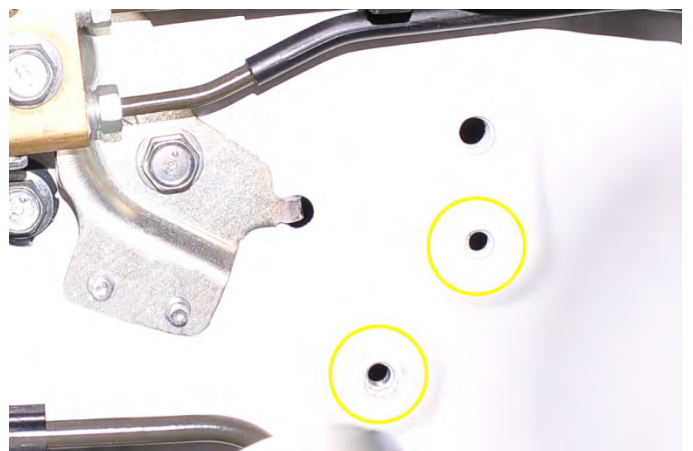


New Brake Line Position Shown Above



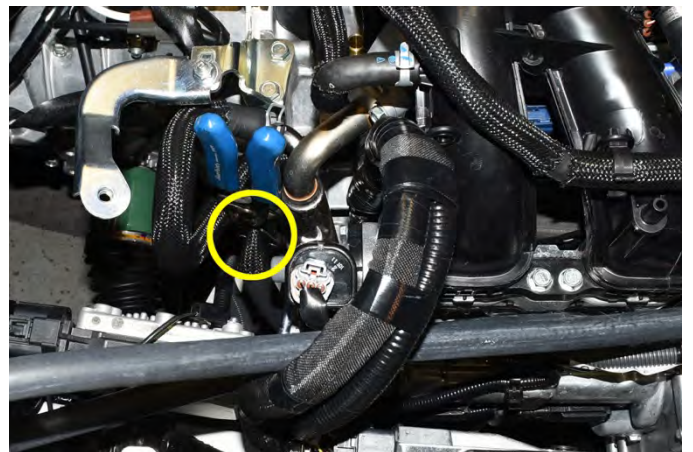
New Brake Line Position at Firewall Shown Above

33. Install the AOS using the two holes on the strut tower shown in the picture. Guide the lower and upper coolant hose underneath the main wire harness while installing the AOS. Start the upper M6x12mm bolt first then start the lower M6x12mm bolt. Once both bolts have been slightly threaded finish tightening them.



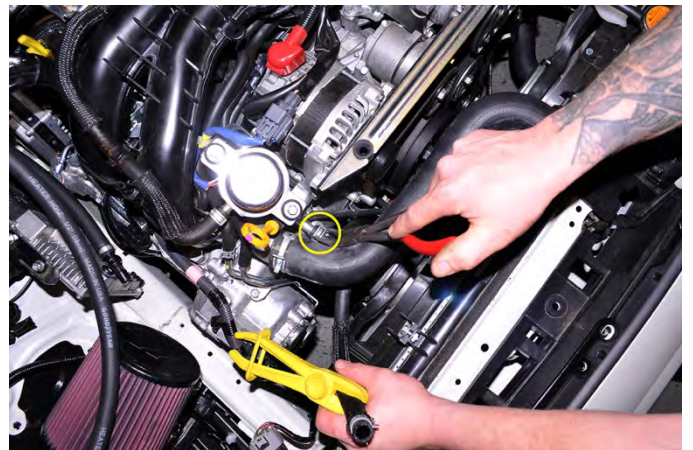


34. To minimize coolant loss, pinch off the coolant hose that connects the turbo to the engine coolant port and the lower coolant hose that connects to the EGR tube using hose clamping pliers.





35. Using needle nose pliers remove the spring clamp at the turbo coolant port. Next, loosen the spring clamp on the coolant line at the engine and rotate the hose towards the strut tower so that it can meet up with the lower AOS coolant hose.



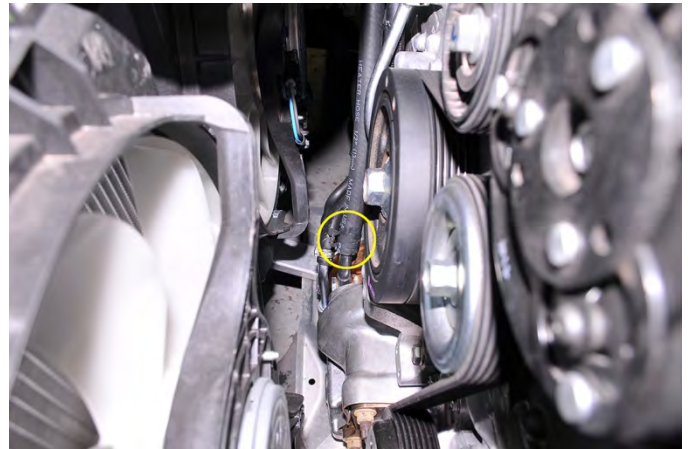


36. Slide the OEM coolant hose onto the lower AOS coolant hose straight fitting. Next using pliers and the OEM spring clamp secure the OEM hose to the fitting.



37. Slide the supplied spring clamp onto the end of the AOS upper coolant hose then route the hose as shown to the turbo coolant port. Secure the hose to the turbo coolant port with the spring clamp using pliers.





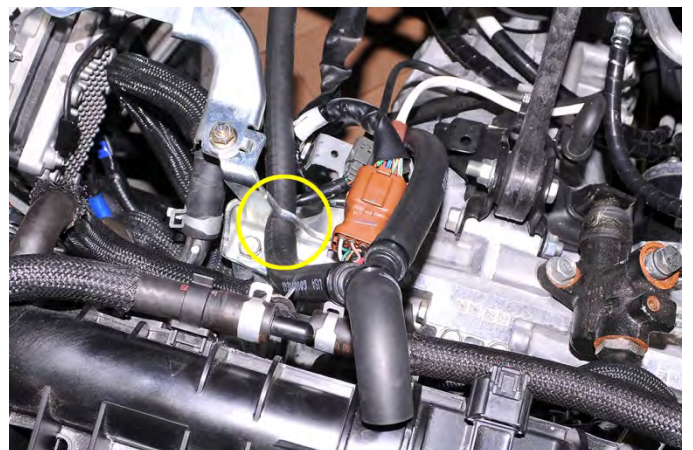
38. Remove all the hose clamping / pinching pliers.

**** If you lost coolant you will have to top it off and bleed the coolant the system when the AOS install is complete.***

39. Locate the block breather / drain hose assembly.



Route the shorter of the two 1/2" hoses thru the hole on the intercooler mounting bracket.





Pull the hose thru until the 90° 5/8" hose lines up with the brass barb fitting on the engine block. Push the 90° 5/8" hose onto the brass barb and secure it with a zip tie. Trim the excess off the zip tie.

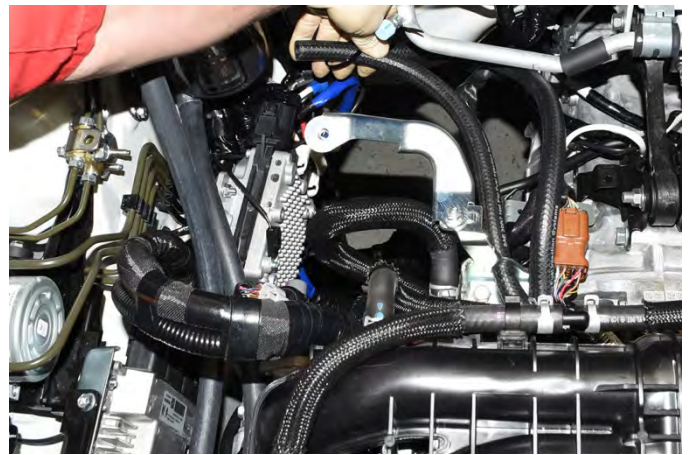


40. Locate the supplied 1/2" cap included with the AOS kit. Attach the cap to the highest of the three AOS side ports on the can. Secure the cap with a zip tie and trim off the excess.



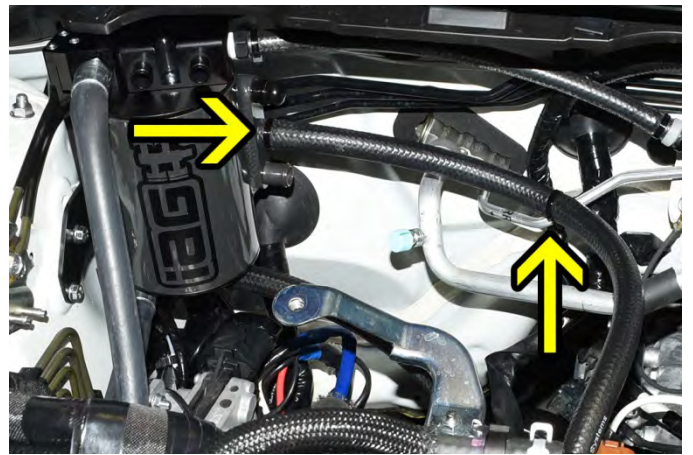


41. Locate the AOS ½" oil drain line that runs thru the intercooler support bracket. Attach the line to the lower drain port on the AOS. Make sure the line is not kinked or obstructed. Secure the line with a zip tie and trim the excess.





42. Locate the AOS ½" breather hose and route it to the middle AOS can port. Secure the hose the can with a zip tie. Next, secure the ½" breather hose to the small AC line at the firewall. Make sure the line is free of kinks and is not obstructed. Trim the excess off the zip ties.



43. Reinstall the OEM EGR pipe and gasket using the (4) OEM 12mm bolts. Torque is 14ft. / lbs. *Make sure before installing the EGR pipe that the OEM O-ring is in place on the intake manifold.

*Short bolts go into the intake manifold.





44. Locate 3/8" PCV Hose Assembly coming out of the AOS breather top. Route the line behind the firewall harness as shown. Then connect the hose end to the 90° plastic barb fitting at the back of the intake manifold. Secure the hose to the barb fitting using the supplied zip ties and trim off the excess.





45. Locate the Street Series vent hose assembly.



Install the shorter of the two hoses coming off the “Y” fitting onto the upper AOS breather vent hose that is closest to the strut tower.

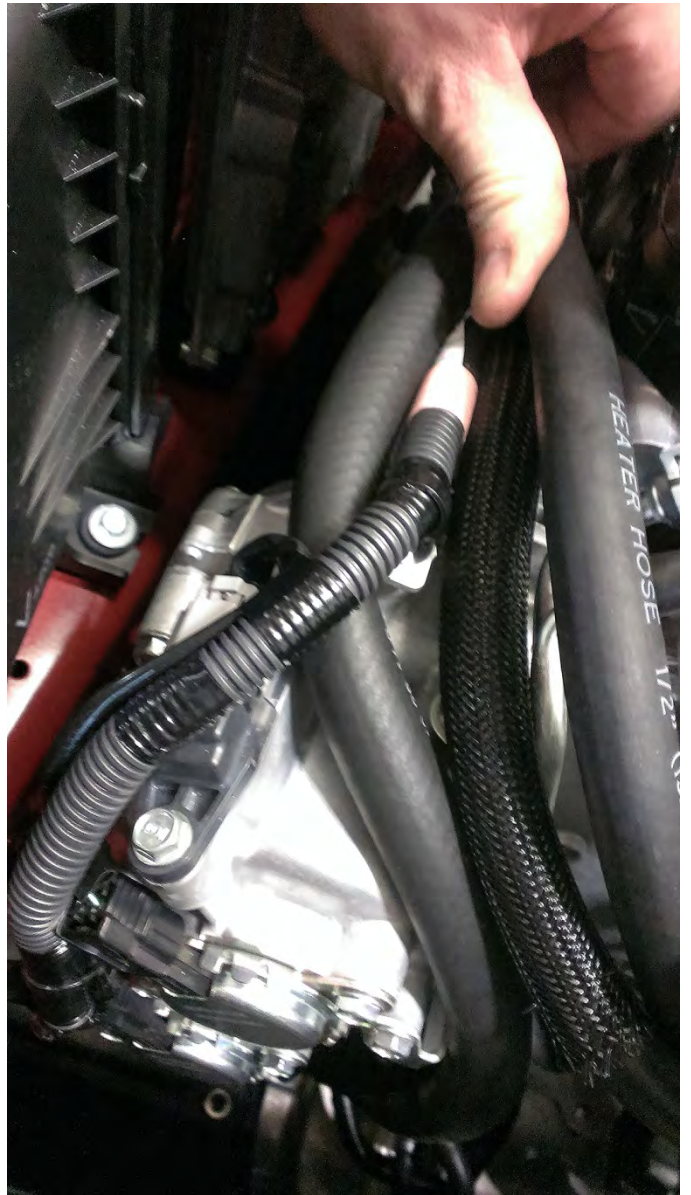


Next, install the other short hose onto the remaining AOS vent port.



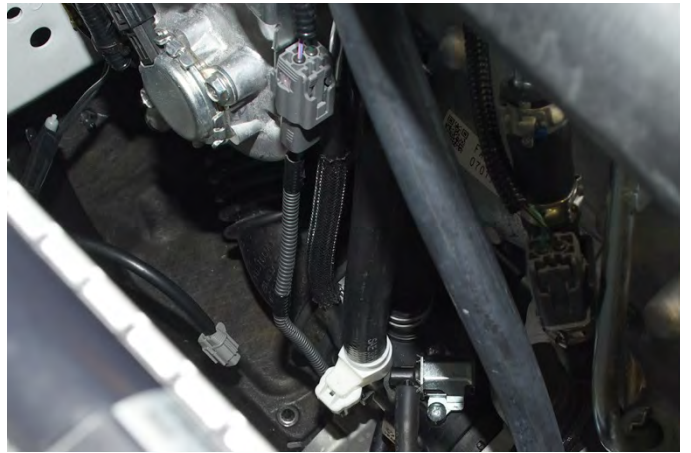


46. Route the long $\frac{3}{8}$ " hose along the passenger side of the engine and along the front of the engine as shown.



Route the hose down to the crankcase ventilation sensor port at the inlet. Trim the hose to fit on the white crankcase sensor. Secure the hose on the sensor with a zip tie. Trim the excess off the zip tie.



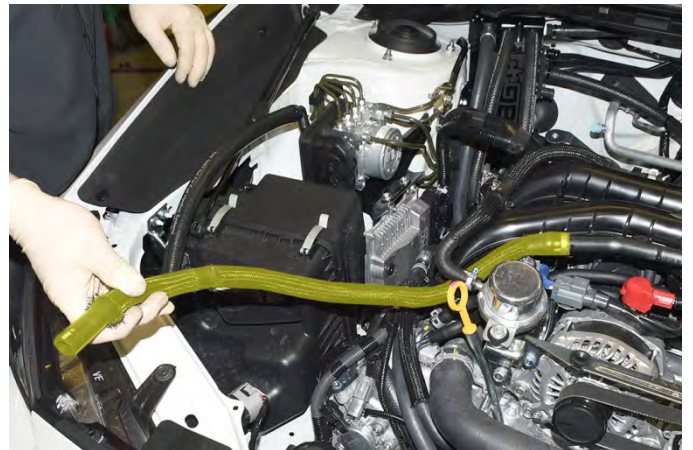




47. Secure the AOS breather hoses at the passenger side of the engine using a zip tie as shown.

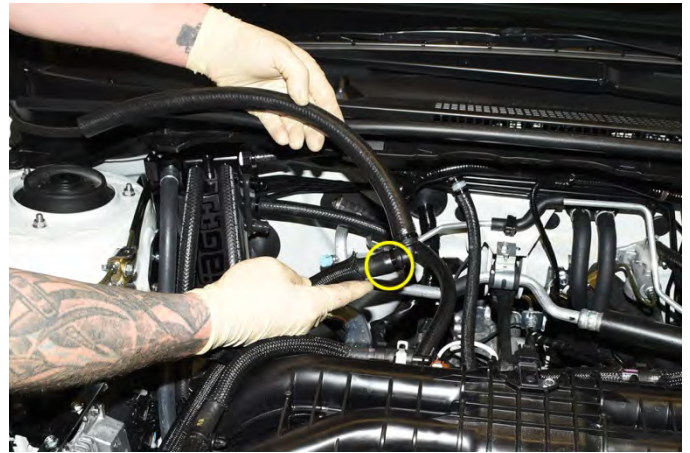


48. Twist the OEM crankcase breather hose approximately 180 degrees and thread it under the other hoses as shown towards the firewall.



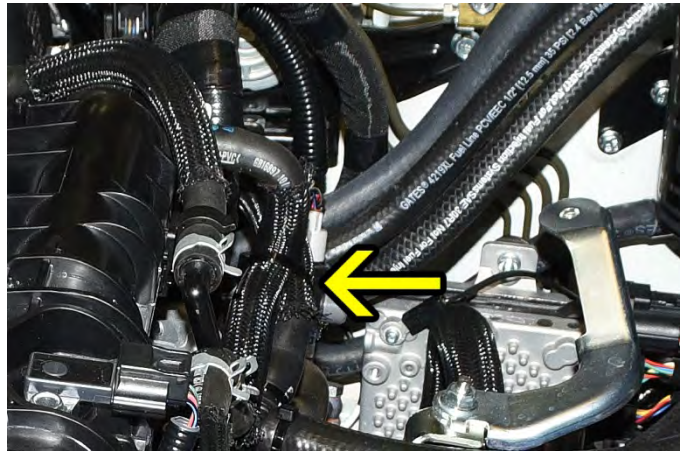


49. Locate the supplied 5/8" hose with the 90° 5/8" barb fitting. Attach the 5/8" 90° barb fitting into the OEM crankcase breather hose. Then attach the hose to the lowest port on the side of the AOS. Secure the hose with a zip tie and trim off the excess.

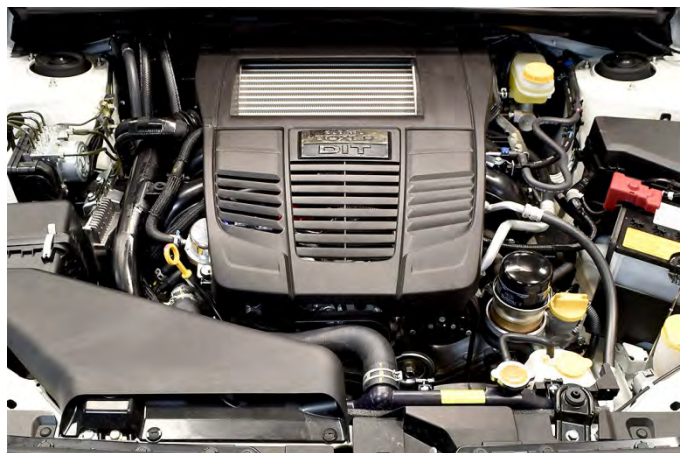




50. Finally secure the 5/8" hose away from the EGR pipe by attaching it to the manifold vacuum hose with a provided zip tie as shown



51. Reinstall the intercooler, boost pipe, intake air duct and engine cover using the OEM hardware. Reattach the negative battery terminal.



52. Before proceeding, please look over the checklist below:

Check Over List



Are all coolant fittings tight?

Are (2) coolant clamps correctly fitted on the turbo coolant pipe and the turbo coolant hose?

Was any coolant spilled in the engine bay cleaned up?

Are the boost pipe bolts tight?

Is the Blow Off Valve clamp secured?

Are the intercooler hose clamps tight?

Are the following connections zip tied:

- OEM 5/8" Block Breather Hose
- 5/8" 90° Block Breather Assembly
- All AOS connections
- Vent hose to inlet

53. After you have reviewed the checklist, proceed to start the vehicle and check for leaks. After the engine has heat cycled, you can check the coolant level and replace any coolant that was lost during installation.