

FA20DIT AOS INSTALLATION GUIDE

TOOLS USED:

7-19mm DEEP AND SHALLOW sockets/ ¼" & 3/8" socket wrenches/various extensions & a 3/8" drive swivel adaptor.

Assorted pliers for clamps and hose trimming.

Assorted wrenches can help.

VEHICLE USED FOR GUIDE: 2014 FXT

REMOVAL OF FACTORY HOSES:

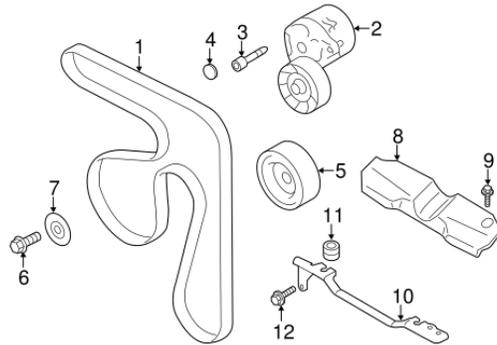
1. Open hood and remove the engine cover. At the top there are two clips to remove and at the bottom of the cover you have must push two bottom-facing studs upward as you gently pull the cover up with your hands.



2. Using compressed air, blow air all around your engine and under the intake manifold to move the bugs and debris away from your work area.
3. Loosen both 12mm headed bolts from the left and right side of the intercooler.
4. Loosen both worm clamps securing the intercooler to the charge-pipe and throttle body coupler. Remove intercooler. Set aside.



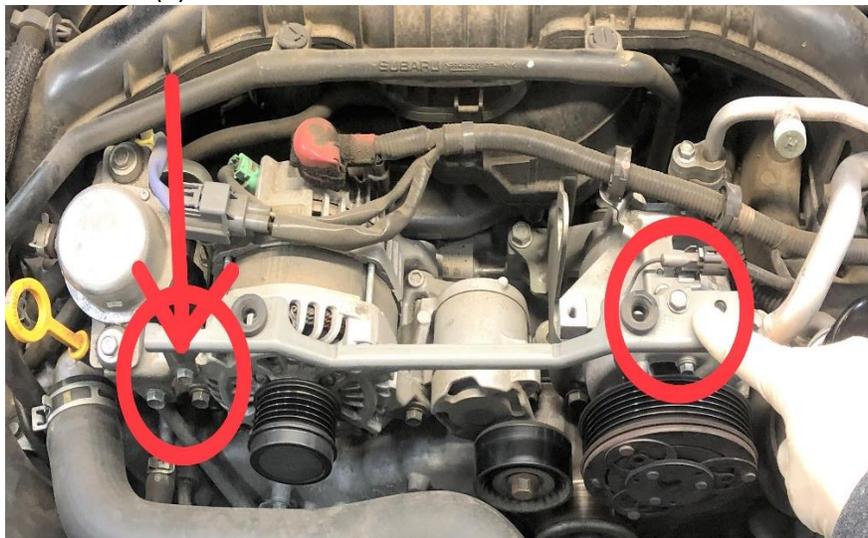
- Using a pen and paper, draw a diagram of how the accessory drive belt is routed around each pulley.
For example:



- Place a 14mm wrench over the bolt on the front of the accessory drive belt tensioner. Rotate the wrench clockwise to decompress the tensioner, remove the belt. Set aside.



- Loosen and remove the (2) 10mm headed bolts that secure the drivebelt cover bracket, set aside.



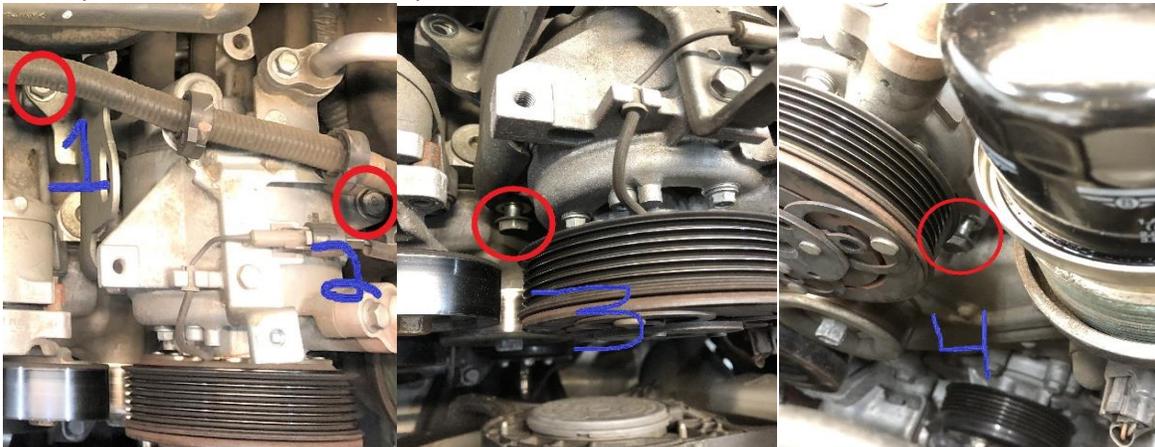
- Remove the (2) push clips securing the airbox inlet duct to the upper radiator support. The airbox inlet duct can be set aside at this time.



9. Unplug the passenger's side radiator fan and then loosen/remove the (2) 10mm headed bolts securing the fan to the radiator. Remove the fan from the vehicle. Set aside.



10. Locate the (4) 14mm headed bolts that secure the AC compressor to the engine block. Two will be vertical and the remaining two will be facing the front of the vehicle. Loosen and remove these (4) bolts and set aside. Also, set bracket aside for reinstallation. **DO NOT LOOSEN/DISCONNECT ANY REFRIGERANT LINES.** Pick up the compressor and set it on top of the tensioner so you can access the factory coolant/ breather assembly.



11. Take a pair of pliers and decompress the $\frac{1}{2}$ " hose clamp of the crankcase/coolant breather fitting, (the smaller fitting on the right side) Slide the clamp up so that you can take another set of pliers and loosen/remove the hose from the fitting.
*****Newer models (apprx 2018+) have a new coupler on to the OEM fitting, just cut the hose clamp above that coupler and proceed to the next step.**



12. Locate the PCV valve and hose on the top of the engine. It is behind the intake manifold, on the passenger's side. Use pliers to loosen the hose clamp, slide it up the hose about an inch, lift the hose from the PCV valve. Remove the clamp. Grab the supplied hose plug and install it in the vacuum hose. Install the supplied SMALL zip tie to secure the plug in place. Tuck the plugged hose away so that it does not interfere with the remainder of this install.



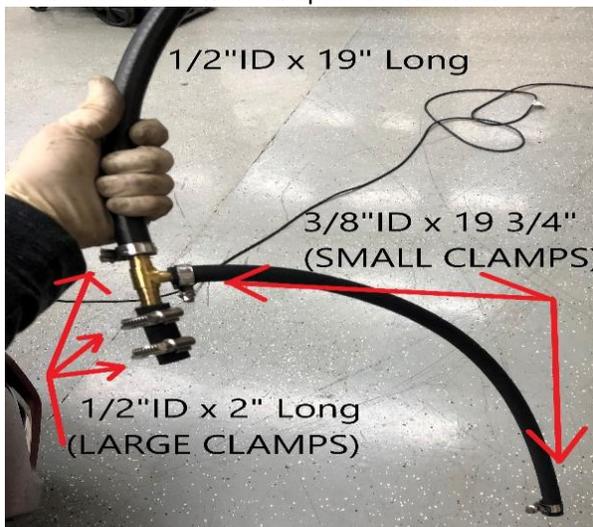
13. Using a 19mm deep well socket, swivel adaptor, extension, socket wrench- loosen and remove the PCV valve.
14. Install the supplied barbed BSPT fitting in place of the PCV valve, tighten using a deep well 17mm socket, swivel adaptor, extension and socket wrench. Expect to see 3-4 threads remaining once installed.

*****NOTE: Do not tighten the barbed fitting all the way into the engine block!**



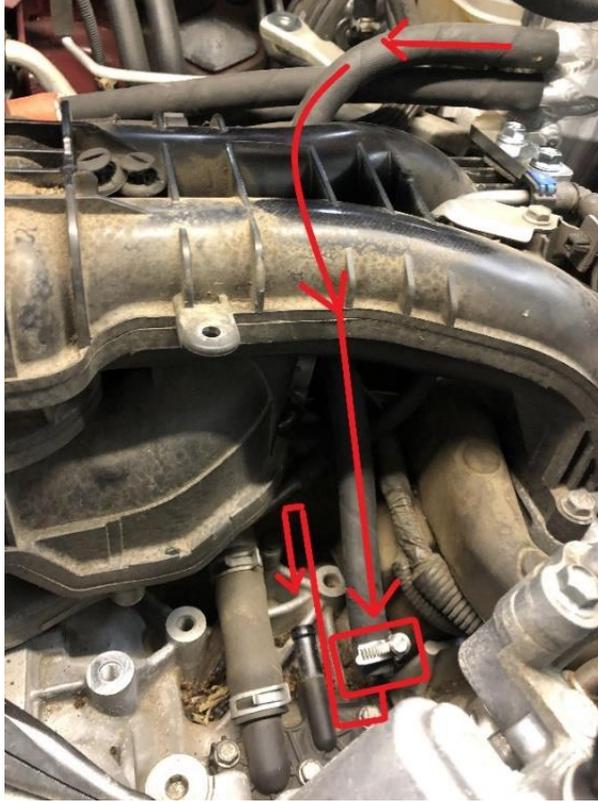
ASSEMBLE THE TEE FITTING: Double check clamp torque as you assemble each component.

15. Install the 2" long piece of hose on one end of the supplied tee fitting, install and tighten a large hose clamp.
16. Install one end of the 3/8" diameter drain hose on the intersecting fitting of the tee, install small hose clamp and tighten.
17. Place the open end of the 2" long hose on the supplied BSPT barbed fitting that replaced the PCV valve (on the engine block). AIM THE 3/8" DRAIN HOSE TOWARD THE BACK OF THE DRIVER'S SIDE TGV MOTOR. Secure the hose to the fitting on the block with a supplied large hose clamp.
18. Locate the 1/2" ID x 16 1/2" long hose and install one end on the top of the TEE with a large hose clamp. Tighten the clamp. Leave open end of hose routed toward the throttle body coupler. This hose routes to the lower side port of the AOS.

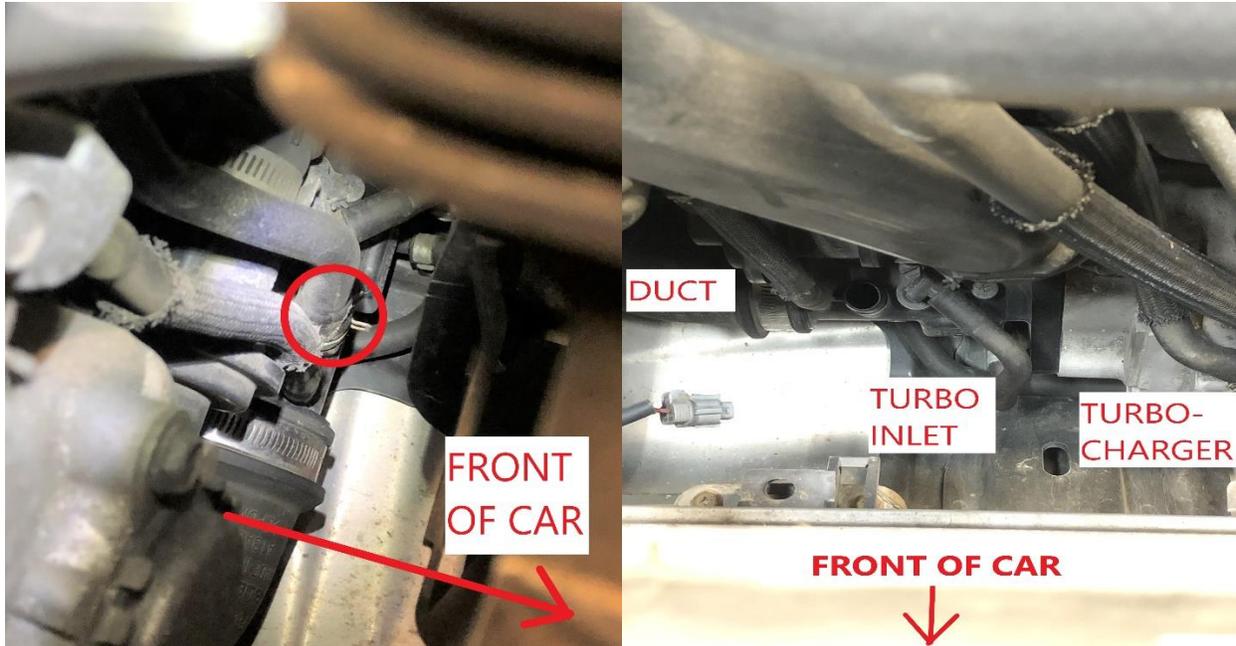


HOSE ROUTING AND AOS MOUNTING:

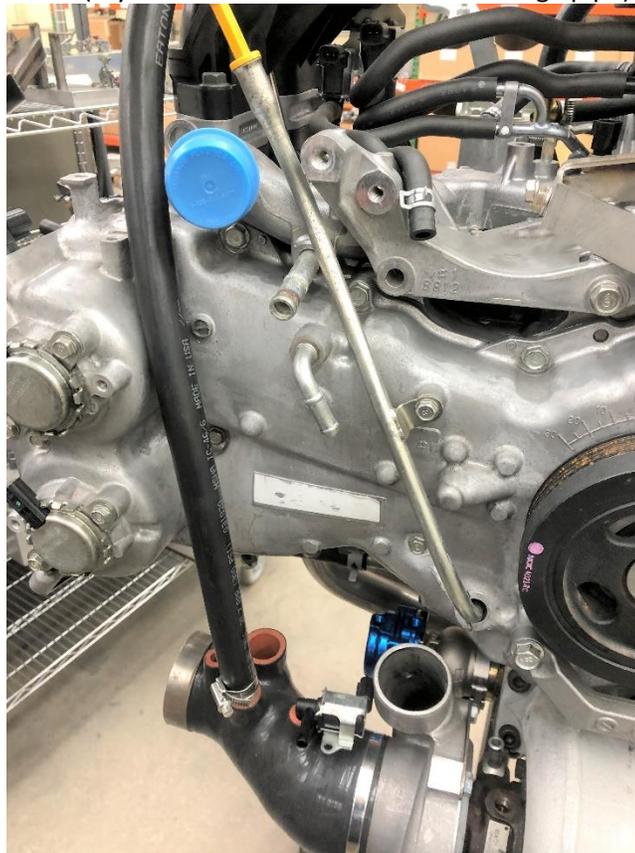
19. Locate the ½" ID x 19¼" long hose and install one end on the factory crankcase/coolant breather with a large hose clamp. Tighten the clamp. This hose should be routed under the intake manifold, but over the top of the throttle body coupler.



20. Make sure the hose on top of the tee is routed toward the throttle body and is not caught or jammed between components, the intercooler will be installed before the second end of this hose is connected to the AOS.
 21. Reinstall the intercooler, tighten the left and right hose clamps. Reinstall and tighten the (2) 12mm headed bolts on the sides of the intercooler. Be sure to place the brake booster hose back in the clip that holds it to the intercooler stay bracket.
 22. Locate the OEM suction hose that routes from the turbo inlet to the crankcase/coolant breather. Remove the (2) plastic push clips that secure the plastic tube to the intake manifold.
- ***Depending on your exact model, you will run into 1 of 3 clamp styles. The early style has a squeeze clamp that can be removed with regular pliers. The second style of clamp must be removed by use of a flathead screw driver, this clamp can be reused if it is not ruined upon removal. The third style of clamp is non serviceable band that must be cut in order to be removed. From the turbo inlet, find the hose clamp circled below, slide the clamp up and disconnect the hose from the turbo inlet. With a set of hose pliers (or regular pliers) grab and gently twist the hose and slide it off the fitting. Remove the tube and set aside for storage.



23. Grab the 5/8" x 52" long hose and install it where the factory tube was just removed from the turbo inlet, secure hose with a large hose clamp. Route the hose in the same path that the factory tube was. (Try to route the hose behind the charge pipe)

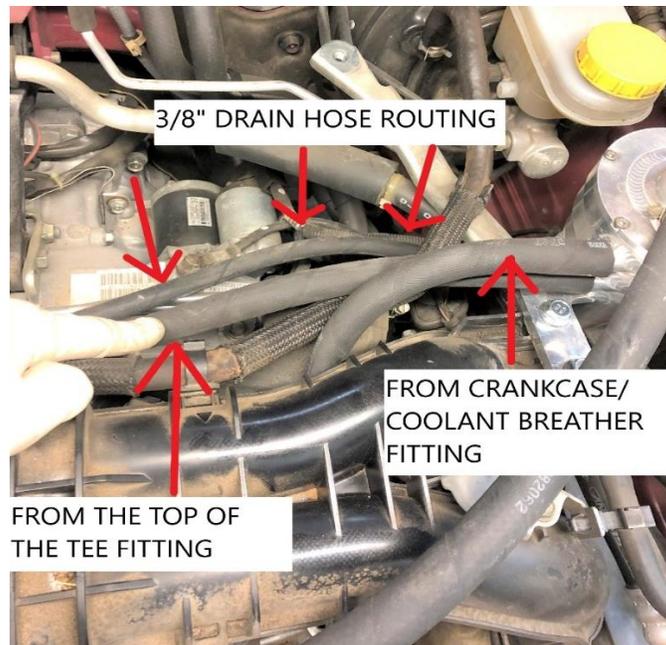


24. Reinstall passenger's side radiator fan, be sure to reconnect the fan's electrical connector to the vehicle's front wiring harness. Install and tighten the (2) 10mm headed bolts to 4.8 ft-lbs, securing the fan to the radiator. Reinstall the airbox inlet duct with it's (2) push clips.

25. Hold the AOS near its mounting location to fit the drain hose.
Tighten the AOS brass drain elbow with a wrench so that it is aimed just behind the driver's side TGV motor.
26. Mount the AOS on top of the driver's side intercooler stay bracket using the (2) supplied 12mm headed bolts. Tighten bolts to 11.8 FT-LBS.



27. Install the free end of the 3/8" drain hose on the drain elbow of the AOS with the last small hose clamp. Tighten the clamp.
28. Take the hose coming from the top of the TEE, route it between the intercooler and intake manifold and install it on the lower side fitting on the AOS.
29. Take the hose coming from the crankcase/coolant breather fitting and install it on the upper side fitting of the AOS.



30. Use an adjustable wrench to tighten the suction fitting on top of the AOS.

*****This is an NPT fitting so do not expect to thread it in all the way.** Anticipate seeing 3-4 threads remaining exposed after proper tightening. (3-4 threads remaining when viewed from above.

31. Route the open end of the 5/8" ID hose across the intake manifold to the top of the AOS.

*****We only supply clamps for the factory engine fittings and for the AOS drain hose. The AOS is manufactured with push lock fittings. Additional clamps can be used but are not mandatory.** Use the remaining (2) zip ties to secure the 5/8" ID suction hose to the front of the intake manifold.



You may need to cut a small slot in the driver's side of your engine cover to allow clearance for the AOS suction hose.

TO DRAIN EFFICIENTLY , THE 3/8" DRAIN HOSE SHOULD FOLLOW A DOWNWARD SLOPE TOWARD THE TEE.

Double check all clamps, bolts and hoses for correct installation and clamping torque. Ensure the (6) AOS lid bolts are secured, AFTER verifying correct installation of the O-ring.

Double check the top and bottom fittings are tightened and showing approx 3-4 threads.

Double check all electrical connections.

If you have a Cobb Accessport, watch the DAM monitor initially after the install to verify there are no mechanical concerns present.

It is good practice to check your AOS monthly.

Also, depending on which engine oil you use, you may need to shorten your oil change intervals since this AOS drains into the engine crankcase.