

## **IAG STREET SERIES AOS FOR 2015-20 STI**



### **IAG-ENG-7181 Street Series Air / Oil Separator (AOS) For 2015-20 STI**

**Part#** IAG-ENG-7181

**Tools Required:** Ratchet, extensions, needle nose pliers, hose cutter, snips/scissors, flat head screwdriver, hose clamping pliers

**Sockets:** 10mm, 12mm, 1/4" allen, 5mm allen

**Wrenches:** 7/8", 10mm, 12mm, 3mm allen, 5mm allen

**Other:** Electrical Tape

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 modification 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. PLEASE ENSURE THE VEHICLE IS COMPLETELY COOL BEFORE STARTING THE INSTALLATION.

Step 1/135

### Step 2/135



Numbered annotations (13)

- 1 AOS Body Assembly
- 2 Heat Sleeve 16" x 2
- 3 Heat Sleeve 12"
- 4 AOS Drain Hose - 1/2" x 26"
- 5 AOS Vent Hose - 5/8" x 25"
- 6 Breather Hose Assembly 1/2" x 44"
- 7 Valve Cover Breather Hose - 1/2" x 74"
- 8 PCV Hose Assembly 1/2" x 28"
- 9 Coolant Hose 1 - 20"
- 10 Coolant Hose 2 - 20"
- 11 PCV Vent Hose Extension
- 12 Block Breather Hose to Y fitting - 3/4" x 2"
- 13 AOS Mounting Bracket

### Step 3/135



Numbered annotations (13)

- 1 Wiring Harness Relocation Bracket
- 2 Inlet fitting for PCV sensor
- 3 Y Fitting for Block Breather
- 4 1/2" Hose Clamp x 16
- 5 1/2" 90 Degree Elbow x 2
- 6 5/8" Hose Clamp x 8
- 7 5/8" 90 Degree Elbow
- 8 1/2" Nylon Union
- 9 3/4" Spring Clamp x 2
- 10 Coolant Hose Clamps x 2
- 11 AOS Mounting Hardware (M6x12mm x 2, M6x10mm x 3)
- 12 5/8" Vacuum Cap
- 13 Zip Ties

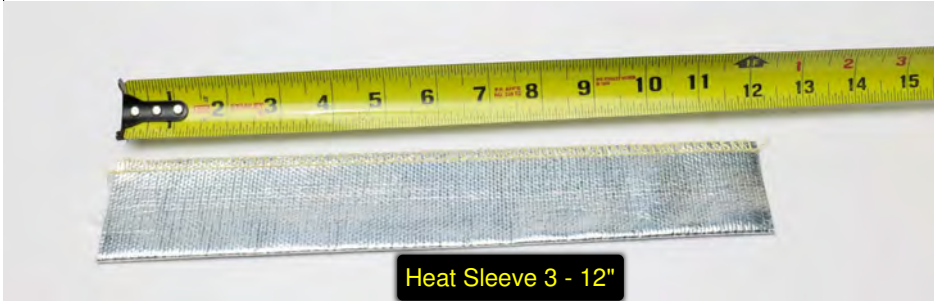
**Step 4/135**



**Step 5/135**



**Step 6/135**



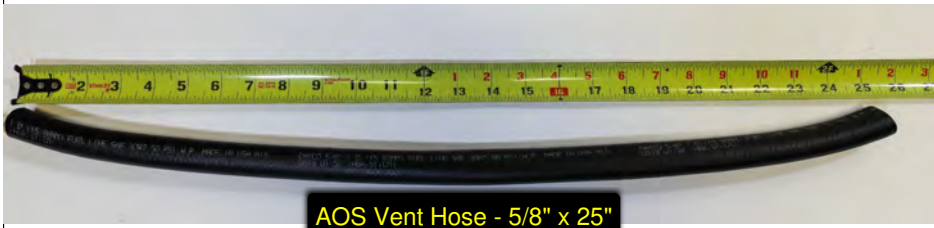
**Heat Sleeve 3 - 12"**

**Step 7/135**



**AOS Drain Hose - 1/2" x 26"**

**Step 8/135**



**AOS Vent Hose - 5/8" x 25"**

**Step 9/135**



**Breather Hose Assembly 1/2" x 44"**

**Step 10/135**



**Valve Cover Breather Hose - 1/2" x 74"**

**Step 11/135**



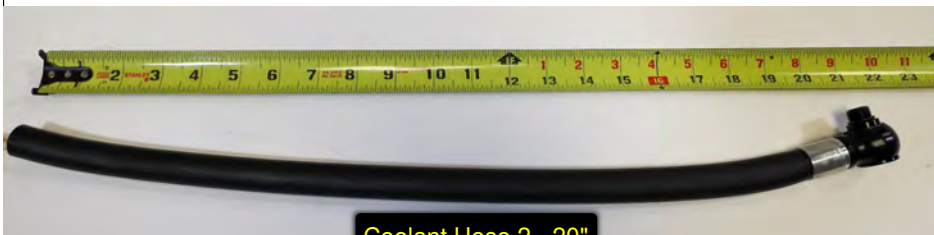
**PCV Hose Assembly 1/2" x 28"**

**Step 12/135**



**Coolant Hose 1 - 20"**

**Step 13/135**



**Coolant Hose 2 - 20"**

### Step 14/135



Numbered annotations (8)

- 1 AOS Vent Hose to turbo inlet (Both must be connected individually.)
- 2 AOS Vent Hose to turbo inlet (Both must be connected individually.)
- 3 Valve Cover Vent Hose (Driver Side)
- 4 Valve Cover Vent Hose (Passenger Side)
- 5 5/8" Block Vent Hose from Y fitting.
- 6 1/2" Drain hose to Y Fitting at top of block
- 7 Coolant Hose 1
- 8 Coolant Hose 2

### Step 15/135





### Step 16/135



Numbered annotations (1)

- 1 Disconnect the negative battery cable.

### Step 17/135



Numbered annotations (1)

- 2 Remove all hardware securing the intercooler and BPV to the vehicle.

### Step 18/135

Numbered annotations (1)

- 3 Unplug the electrical connector.



### Step 19/135

Numbered annotations (1)

- 4 Unplug the PCV sensor electrical connector.



**Step 20/135**



**Step 21/135**

Numbered annotations (1)

- 5 Unplug the PCV sensor electrical connector



**Step 22/135**



**Step 23/135**

Numbered annotations (1)

- 6 Unplug the PCV Sensor electrical connector.



**Step 24/135**



**Step 25/135**

Numbered annotations (1)

- 7 Remove the hardware holding the PCV crossover pipe to the intercooler.



### Step 26/135

Numbered annotations (1)

- 8 Remove the PCV crossover pipe.



### Step 27/135

Numbered annotations (1)

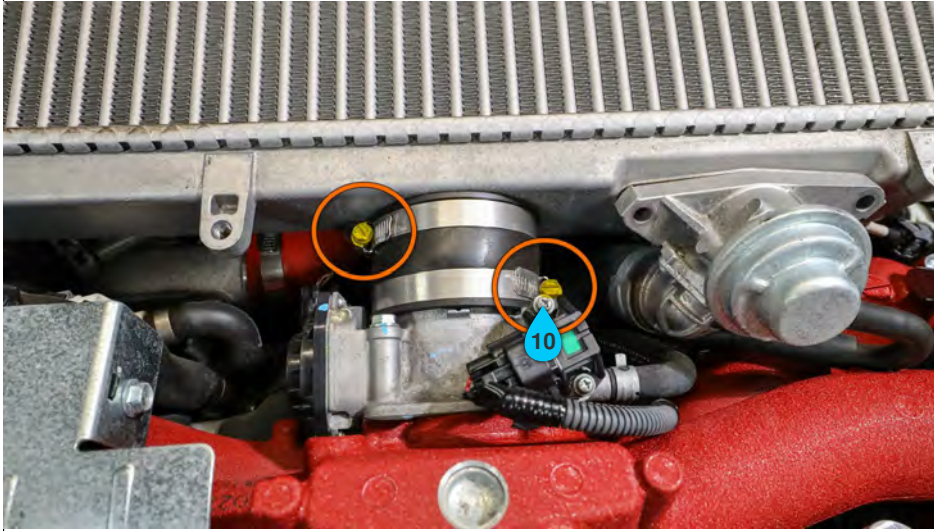
- 9 Remove the intercooler bracket hardware.



### Step 28/135

Numbered annotations (1)

- 10 Loosen the throttle body to intercooler clamp



### Step 29/135

Numbered annotations (1)

- 11 Remove the intercooler.



### Step 30/135

Numbered annotations (1)

- 12 Use a small flathead to depress the clip and remove the electrical connector. from the end of the PCV crossover pipe.



### Step 31/135





### Step 32/135

Numbered annotations (1)

- 13 Remove the PCV connector from the end of the PCV crossover pipe.



### Step 33/135



**Step 34/135**

Numbered annotations (1)

- 14 Locate the PCV connector and lay it down as shown in the next photo.



**Step 35/135**



### Step 36/135

Numbered annotations (1)

- 15 Locate the PCV crossover pipe that was removed. Remove the PCV sensor from the straight hose that went to the valve cover.



### Step 37/135



### Step 38/135

Numbered annotations (1)

- 16 Reinstall the sensor as shown.



### Step 39/135

Numbered annotations (1)

- 17 Locate the remaining sensor that is attached to the crossover pipe and was connected in front of the intake manifold, over the turbo inlet hose.



### Step 40/135

Numbered annotations (1)

- 18 Remove the sensor from the hose.



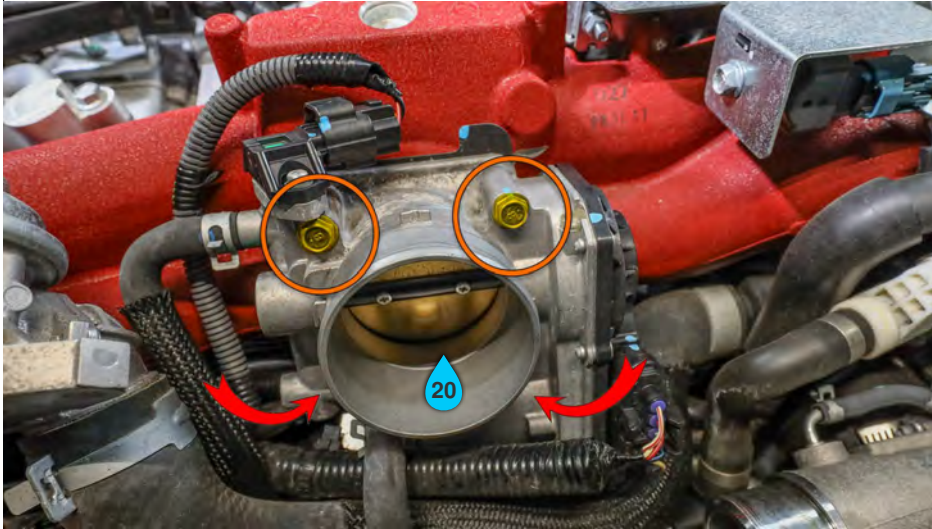
### Step 41/135

Numbered annotations (1)

- 19 Reinstall the sensor as shown.



### Step 42/135



Numbered annotations (1)

- 20 Remove the four bolts securing the throttle body to the manifold.

### Step 43/135



Numbered annotations (1)

- 21 Lay the throttle body out of the way.

### Step 44/135

Numbered annotations (1)

- 22 Locate the OEM PCV nipple under the throttle body.



### Step 45/135

Numbered annotations (1)

- 23 Loosen the clamp and remove the vacuum hose from the PCV valve.



**Step 46/135**

Numbered annotations (1)

- 24 Locate the block breather PCV assembly.



**Step 47/135**





### Step 48/135



Numbered annotations (1)

- 25 Using a pick, remove the lower spring clamp holding the breather assembly to the block vent. Remove the hose assembly.

### Step 49/135



**Step 50/135**

Numbered annotations (1)

- 26 Remove the PCV sensor from the hose.



**Step 51/135**



### Step 52/135

Numbered annotations (1)

- 27 Install the PCV connector you removed in the last step here.



### Step 53/135



### Step 54/135

Numbered annotations (1)

- 28 Locate the supplied 3/4" x 2" breather hose, Y fitting, and spring clamps.



### Step 55/135

Numbered annotations (1)

- 29 Install the spring clamps as shown.



### Step 56/135

Numbered annotations (1)

- 30 Lubricate the inside of the lower portion of the breather hose with silicone lubricant or petroleum jelly.



### Step 57/135

Numbered annotations (1)

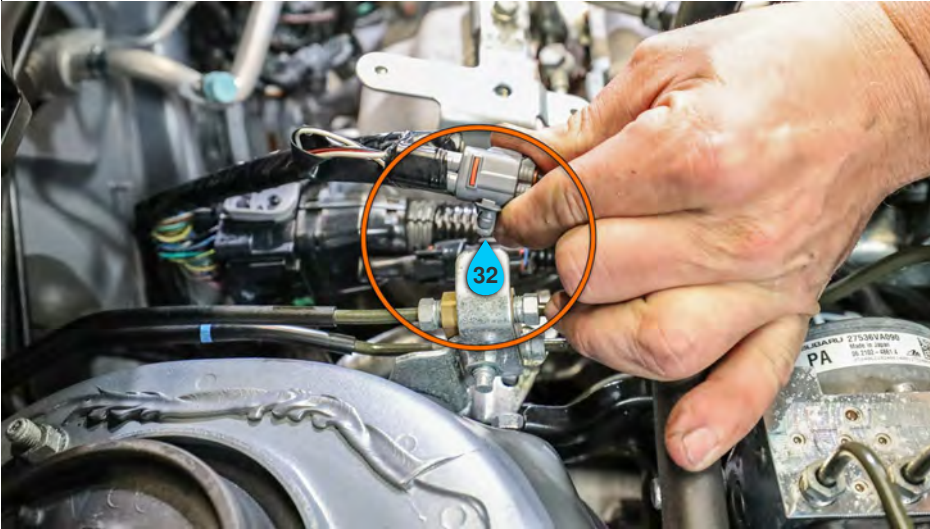
- 31 Push the hose assembly over the breather port. You may want to grasp the Y fitting with pliers and use a second tool to help push the hose over the barb of the nipple on the block.



### Step 58/135

Numbered annotations (1)

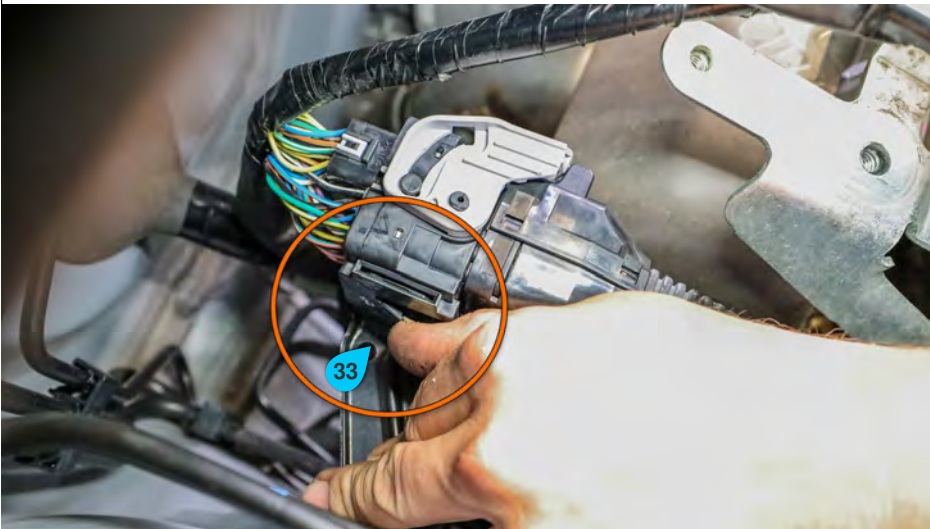
- 32 Use pliers to release the clip holding this wiring connector on the passenger side strut tower.



### Step 59/135

Numbered annotations (1)

- 33 Release the harness retaining clip.



### Step 60/135

Numbered annotations (1)

- 34 Remove harness from bracket.



### Step 61/135

Numbered annotations (1)

- 35 Use machete to trim wiring harness insulation.



### Step 62/135

Numbered annotations (1)

**36** Just kidding, use a razor blade.



### Step 63/135

Numbered annotations (1)

**37** Unbolt and remove the wiring harness bracket.





### Step 64/135

Numbered annotations (1)

- 38 Locate this harness connector and remove the retaining clip with pliers.



### Step 65/135



### Step 66/135

Numbered annotations (1)

- 39 Carefully trim electrical tape to release the branch of the harness.



### Step 67/135

Numbered annotations (1)

- 40 Retape this side of the harness



### Step 68/135



Numbered annotations (1)

- 41 Lubricate the coolant line fitting o-rings with petroleum jelly or silicone lube.

### Step 69/135



Numbered annotations (1)

- 42 Attach coolant hoses to AOS can. Torque fittings to 7 ft lbs. DO NOT OVERTIGHTEN.

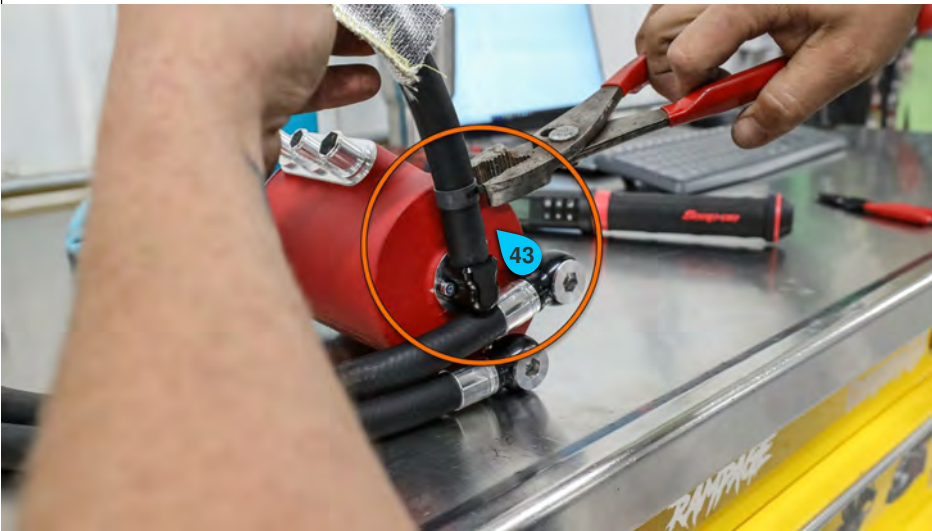
**Step 70/135**



**Step 71/135**

Numbered annotations (1)

- 43 Install drain hose with supplied retaining clamp.



### Step 72/135



### Step 73/135



#### Numbered annotations (1)

- 44 The AOS bracket will mount here. Make sure the threads are clean and free of any rust or debris.

### Step 74/135



Numbered annotations (1)

- 45 Attach the AOS bracket using the supplied hardware. Torque the bolts to 7 ft/lbs.

### Step 75/135



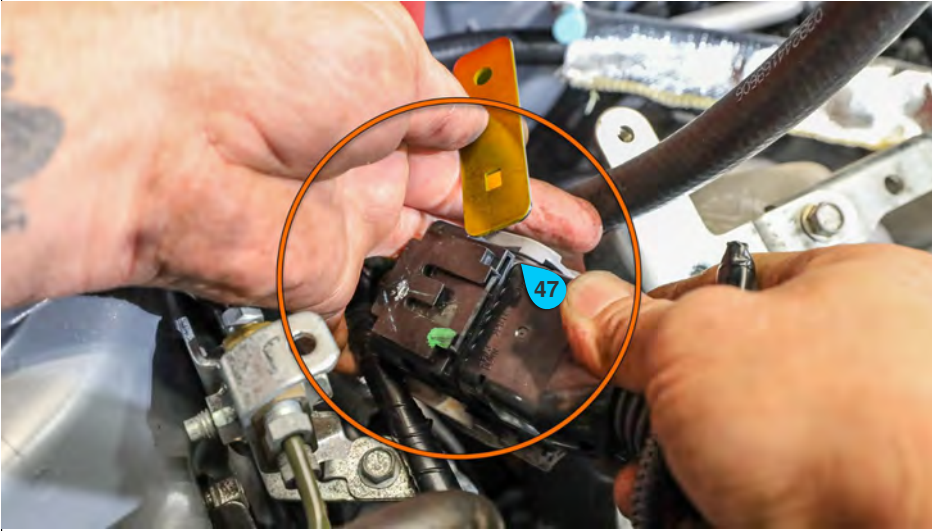
Numbered annotations (1)

- 46 Attach the AOS here using the bracket and supplied hardware.

### Step 76/135

Numbered annotations (1)

- 47 Install the supplied harness relocation bracket.



### Step 77/135



### Step 78/135

Numbered annotations (1)

- 48 Bolt the open end of the harness relocation bracket here using the OEM hardware.



### Step 79/135

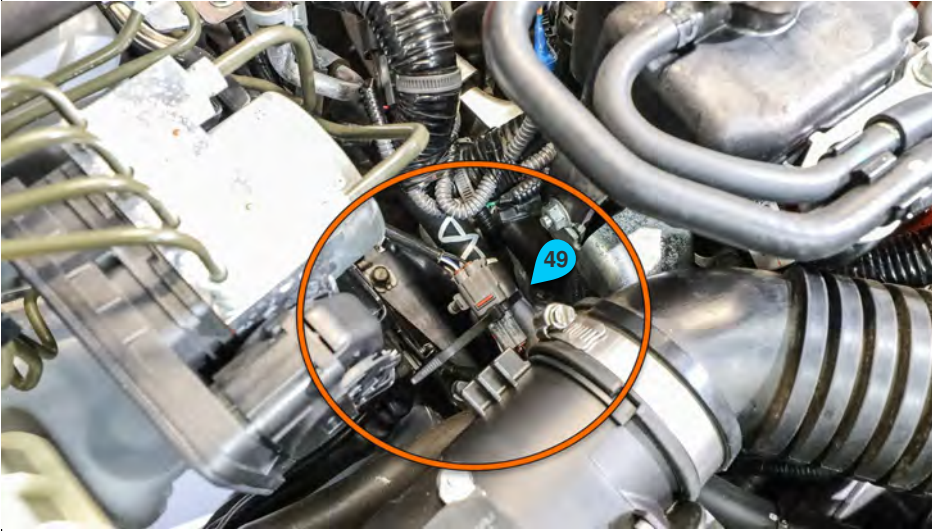




### Step 80/135

Numbered annotations (1)

- 49 Zip tie the harnesses together here.



### Step 81/135

Numbered annotations (1)

- 50 Locate the lower turbo coolant hose and pinch it off using hose clamping pliers. This helps to prevent coolant loss during removal of the hoses.





### Step 82/135



### Step 83/135

Numbered annotations (1)

- 51 Remove the retaining clamp and hose from the upper coolant line.

### Step 84/135

Numbered annotations (1)

- 52 Measure one of the AOS coolant hoses for length to connect here.



### Step 85/135

Numbered annotations (1)

- 53 Trim excess coolant hose.



### Step 86/135

Numbered annotations (1)

- 54 Attach AOS coolant hose here with the supplied clamp.



### Step 87/135

Numbered annotations (1)

- 55 Remove coolant hose retaining clip and remove hose.



**Step 88/135**



**Step 89/135**


Numbered annotations (1)

- 56 Measure and cut the other AOS coolant hose to length.



**Step 90/135**

Numbered annotations (1)

 Cut and remove this retaining clip.



**Step 91/135**



### Step 92/135

Numbered annotations (1)

58 Routing of AOS coolant hoses.



### Step 93/135

Numbered annotations (1)

59 Locate the PCV hose.



### Step 94/135



Numbered annotations (1)

- 60 Locate the supplied PCV valve hose. Install the NPT fitting end of the hose here. Be careful not to over tighten the NPT fitting.

### Step 95/135



Numbered annotations (1)

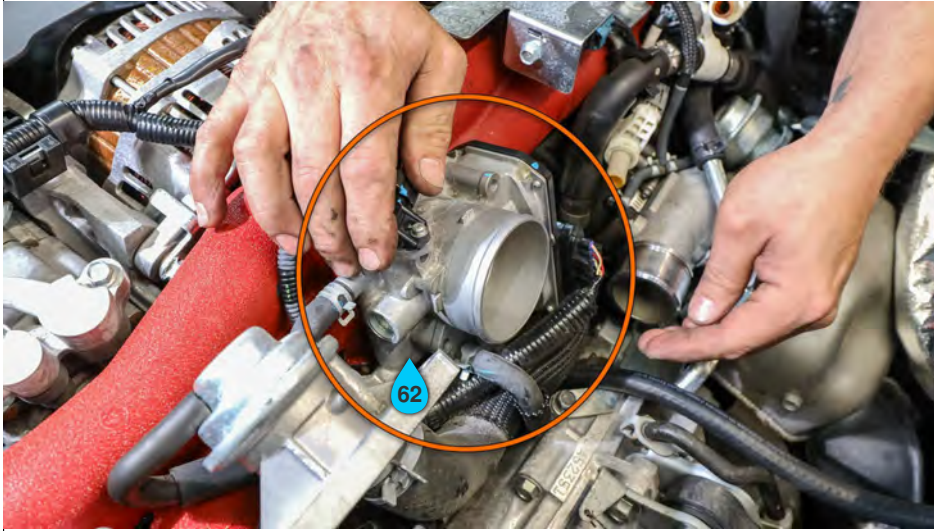
- 61 Routing of the PCV hose. Connect the open end to this nipple on the intake manifold.



### Step 96/135

Numbered annotations (1)

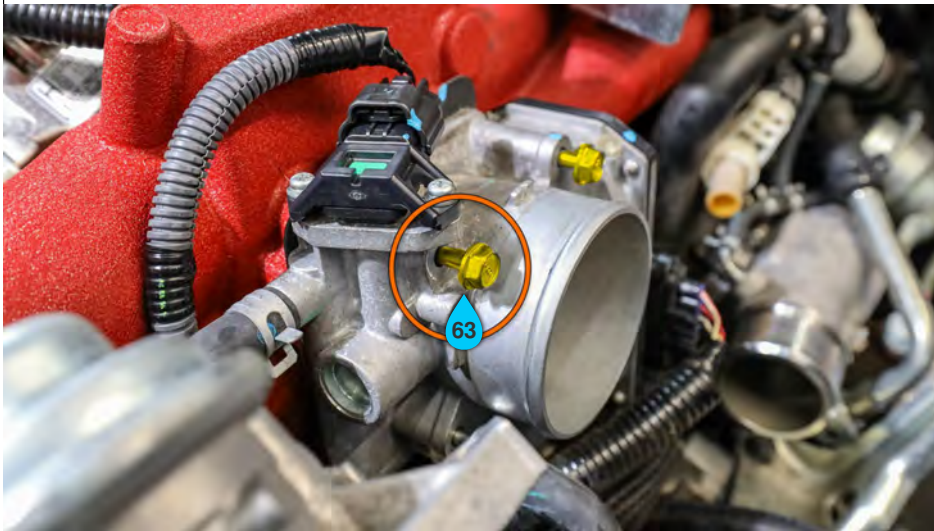
- 62 Reposition throttle body.



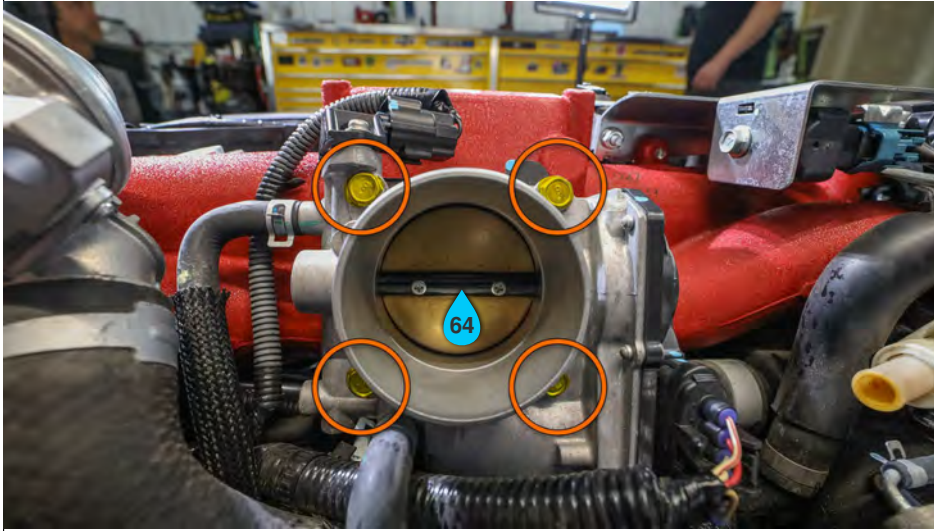
### Step 97/135

Numbered annotations (1)

- 63 Install the bolts for the throttle body.



### Step 98/135



Numbered annotations (1)

- 64 Tighten all throttle body bolts to OEM specs.

### Step 99/135



Numbered annotations (1)

- 65 Slide the 12" piece of heat sleeve over the hose and route AOS drain hose through this bracket.

### Step 100/135

Numbered annotations (1)

- 66 Measure AOS drain hose for length



### Step 101/135

Numbered annotations (1)

- 67 Trim excess AOS drain hose.



### Step 102/135

Numbered annotations (1)

- 68 Attach AOS drain hose here using the supplied clamp.



### Step 103/135



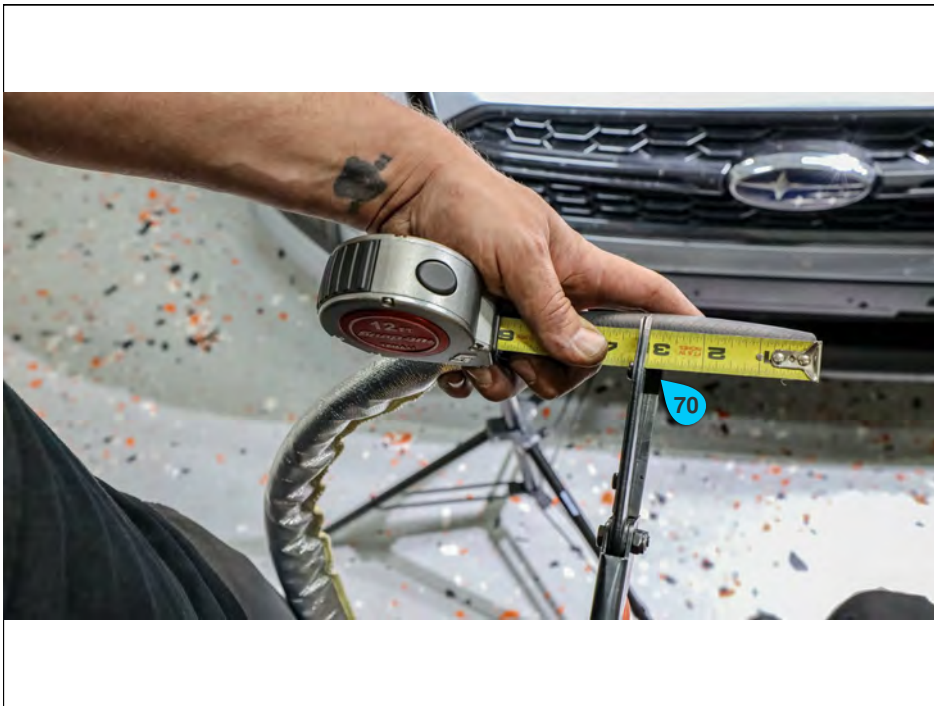
### Step 104/135



Numbered annotations (1)

- 69 Secure the AOS drain hose here with a zip tie. Ensure that this hose is routed downhill the whole way to ensure proper drainage.

### Step 105/135



Numbered annotations (1)

- 70 Locate the 5/8" AOS vent hose, measure 3" and cut the hose.

### Step 106/135



Numbered annotations (1)

- 71 Assemble the hose as shown using 5/8" 90 degree elbow between the two hose pieces. Secure with the supplied camps.

### Step 107/135



Numbered annotations (2)

- 72 Slide a 16" piece of heat sleeve over the hose.
- 73 Attach the short end of the hose here using the supplied clamp.

### Step 108/135

Numbered annotations (1)

- 74 Measure 5/8" vent hose for length.



### Step 109/135

Numbered annotations (1)

- 75 Trim excess vent hose.



### Step 110/135

Numbered annotations (1)

- 76 Routing of vent hose.



### Step 111/135

Numbered annotations (1)

- 77 Attach vent hose here using the supplied clamp.

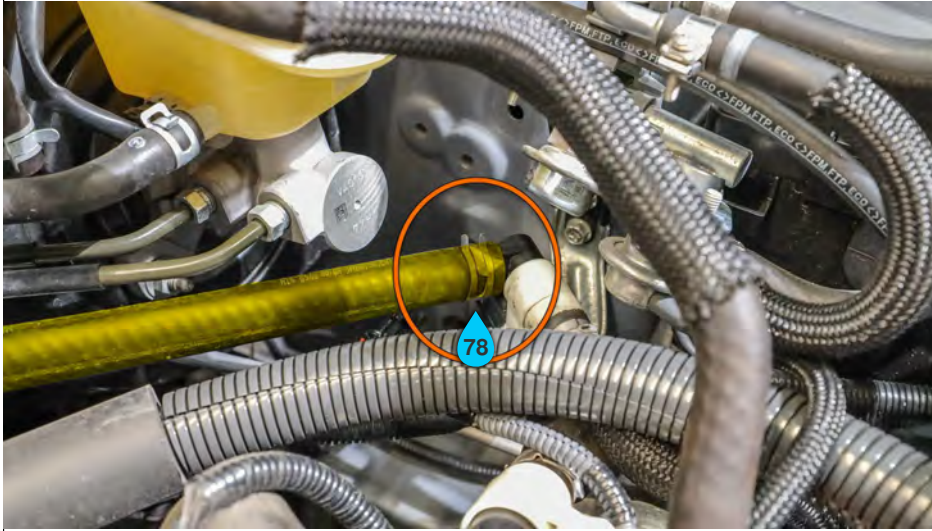




### Step 112/135

Numbered annotations (1)

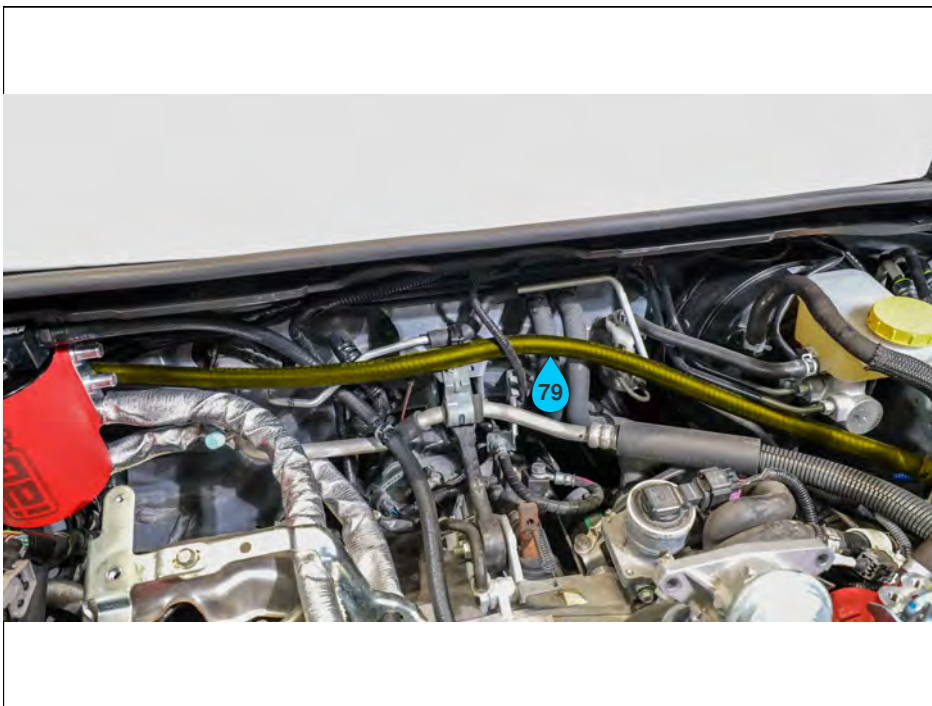
- 78 On the driver side, attach 74" 1/2" AOS valve cover vent hose here using the supplied clamp.



### Step 113/135

Numbered annotations (1)

- 79 Routing of the driver side valve cover vent hose.



### Step 114/135

Numbered annotations (1)

- 80 Secure the vent hose here with a zip tie.



### Step 115/135

Numbered annotations (1)

- 81 Measure the vent hose and trim to length. Reserve the excess hose.



### Step 116/135

Numbered annotations (1)

- 82 Routing of vent hose.



### Step 117/135

Numbered annotations (1)

- 83 Attach the vent hose here using the supplied clamp.



### Step 118/135



Numbered annotations (1)

- 84 Attach the reserved 1/2" valve cover vent hose here on the passenger side.

### Step 119/135



Numbered annotations (2)

- 85 Routing of passenger side AOS valve cover vent hose.
- 86 Slide the 16" section of heat sleeve onto the hose.

### Step 120/135

Numbered annotations (1)

- 87 Measure and cut hose to length.



### Step 121/135

Numbered annotations (1)

- 88 Attach passenger side AOS valve cover vent hose here using the supplied clamp.



### Step 122/135



Numbered annotations (1)

- 89 Secure these hoses together with zip ties.

### Step 123/135



Numbered annotations (1)

- 90 Locate the 44" AOS breather hose, measure two inches and cut the hose.

### Step 124/135

Numbered annotations (1)

- 91 Attach the vent hose here using a supplied 1/2" 90 degree elbow and supplied clamps.



### Step 125/135

Numbered annotations (1)

- 92 Measure the hose to length.



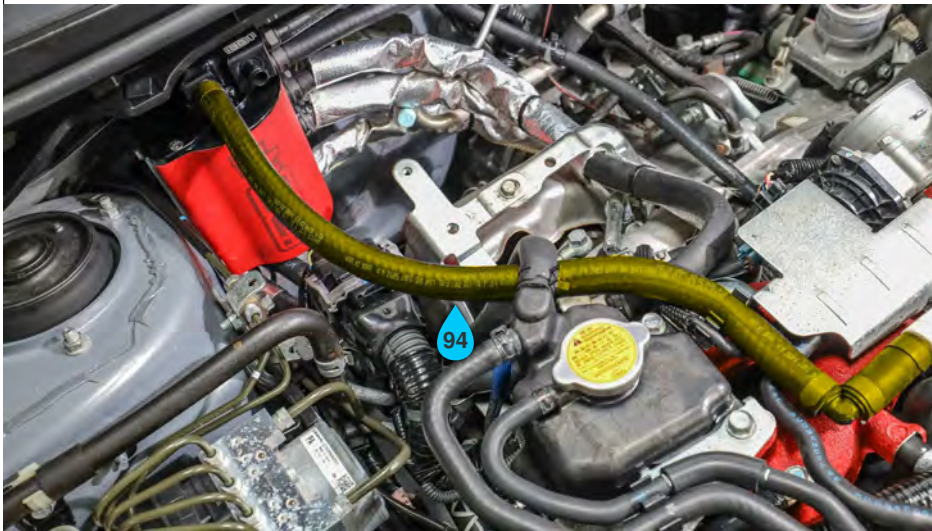
### Step 126/135



Numbered annotations (1)

- 93 Trim excess hose. Reserve the excess hose.

### Step 127/135



Numbered annotations (1)

- 94 Routing of the breather hose.



### Step 128/135

Numbered annotations (1)

- 95 Measure and cut two inches from the reserved AOS breather hose.



### Step 129/135

Numbered annotations (1)

- 96 Assemble the hose as shown with the 90 degree elbow and supplied clamps.



### Step 130/135

Numbered annotations (1)

- 97 Attach the AOS breather hose here with the supplied clamp.



### Step 131/135

Numbered annotations (1)

- 98 Routing of the AOS vent hoses. These hoses must individually connect to the turbo inlet pipe., If your vehicle is equipped with an aftermarket inlet pipe you must re-purpose another port on the inlet to allow each hose to be individually connected.



### Step 132/135

Numbered annotations (1)

- 99 Attach the vent hose here with the supplied clamp.



- . **Reinstall intercooler and BPV**
- . **Reconnect any of the white PCV sensor connectors that were removed**

### Step 133/135

### Step 134/135



Numbered annotations (1)

- 100 Reconnect the negative battery cable.

### Step 135/135



Numbered annotations (1)

- 101 Loosen the AOS coolant breather fitting. Top off any coolant lost during installation. Start the vehicle and let it come to operating temperature. Some coolant will begin to weep from this hole. Once the air has been released, tighten the bleeder fitting.