

IAG AIR / OIL SEPARATOR (AOS) FOR 08-14 STI



Step 1/123

IAG-ENG-7181 IAG Air / Oil Separator (AOS) For 08-14 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 2/123

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" (Preinstalled to AOS)
- 10 Coolant Hose 2 - 20" (Preinstalled to AOS)
- 11 PCV Vent Hose Extension
- 12 Block Breather Hose to Y fitting - 3/4" x 2"
- 13 AOS Mounting Bracket

Step 3/123

Numbered annotations (12)

- 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
- 11 AOS Mounting Hardware (M6x12mm x 2, M6x10mm x 3)
- 12 5/8" Vacuum Cap
- 13 Zip Ties

IMPORTANT UPDATE!

**AOS UNITS PURCHASED AFTER
12/23/2020 HAVE AN UPDATED
BREATHER ASSEMBLY AND PCV
HOSE**

**PLEASE FOLLOW THE
INSTRUCTIONS IN THE NEXT 3
STEPS FOR PROPER
INSTALLATION**

Step 4/123

Step 5/123

Numbered annotations (7)

- 1 Updated Street Breather Assembly
- 2 Connections to turbocharger inlet
- 3 Connection to PCV breather hose from intake manifold
- 4 11.5" Section of Hose
- 5 15" Section of Hose
- 6 Connects to Port 3 on Street Breather
- 7 Connects to Intake Manifold Nipple

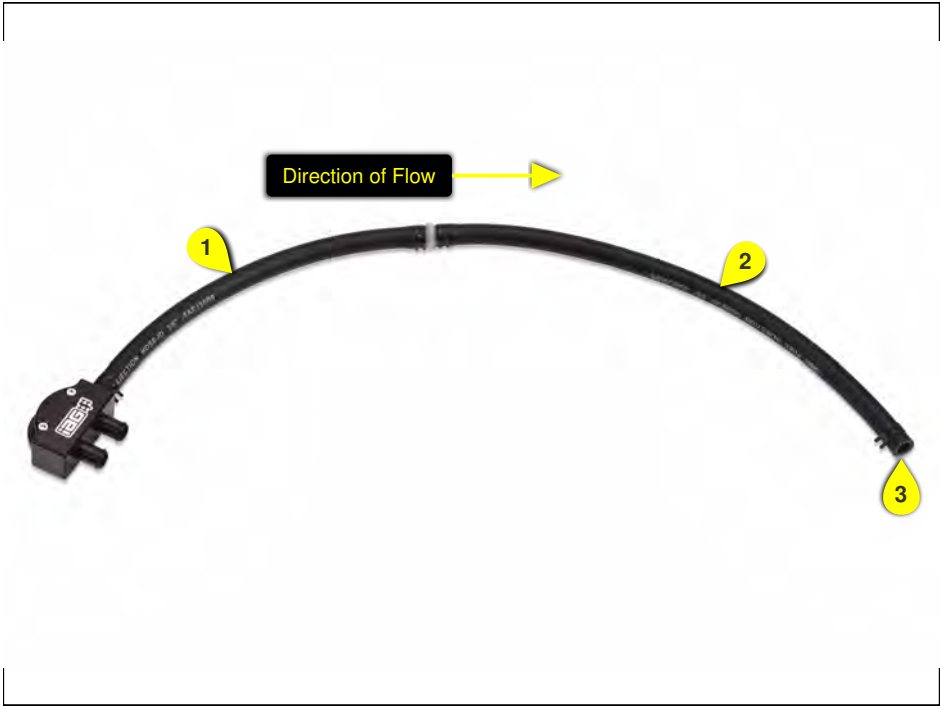




Step 6/123

Numbered annotations (1)

- 1 Ensure that this arrow on the one-way valve is pointed toward the intake manifold. The shorter piece of hose is on the AOS side of the check valve. The longer piece of hose is on the intake manifold side.



Step 7/123

Numbered annotations (3)

- 1 11.5" Section of Hose
- 2 15" Section of Hose
- 3 Connect to Intake Manifold Nipple

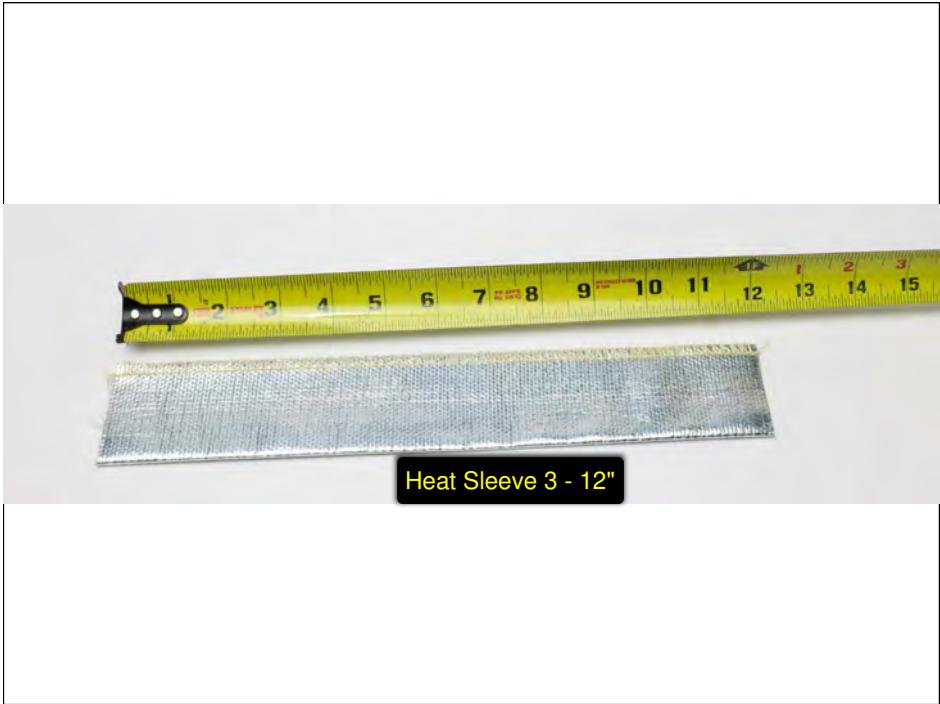
Step 8/123



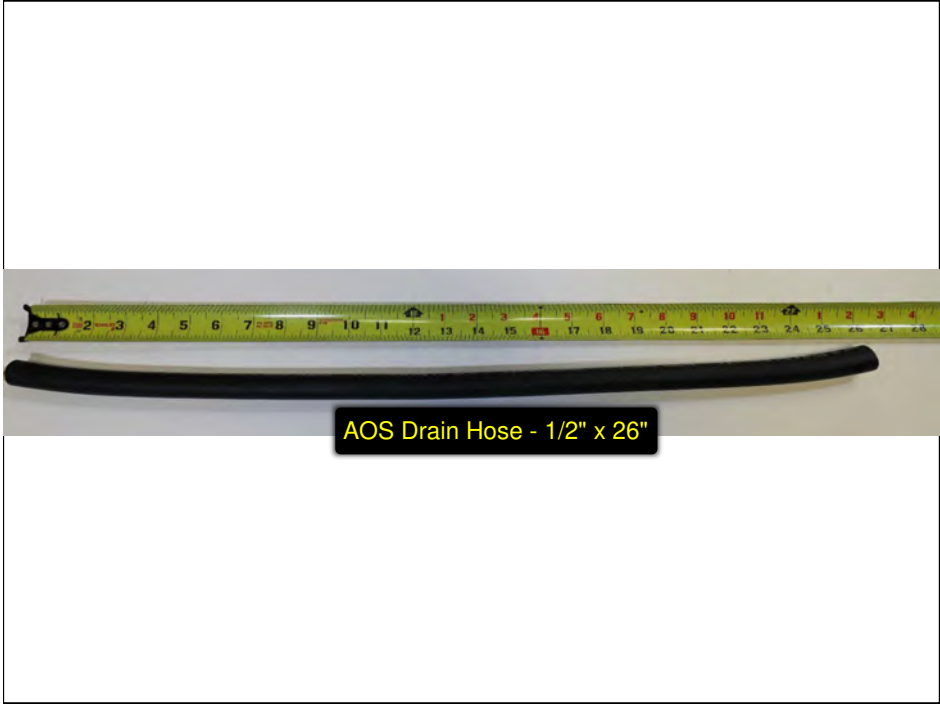
Step 9/123



Step 10/123



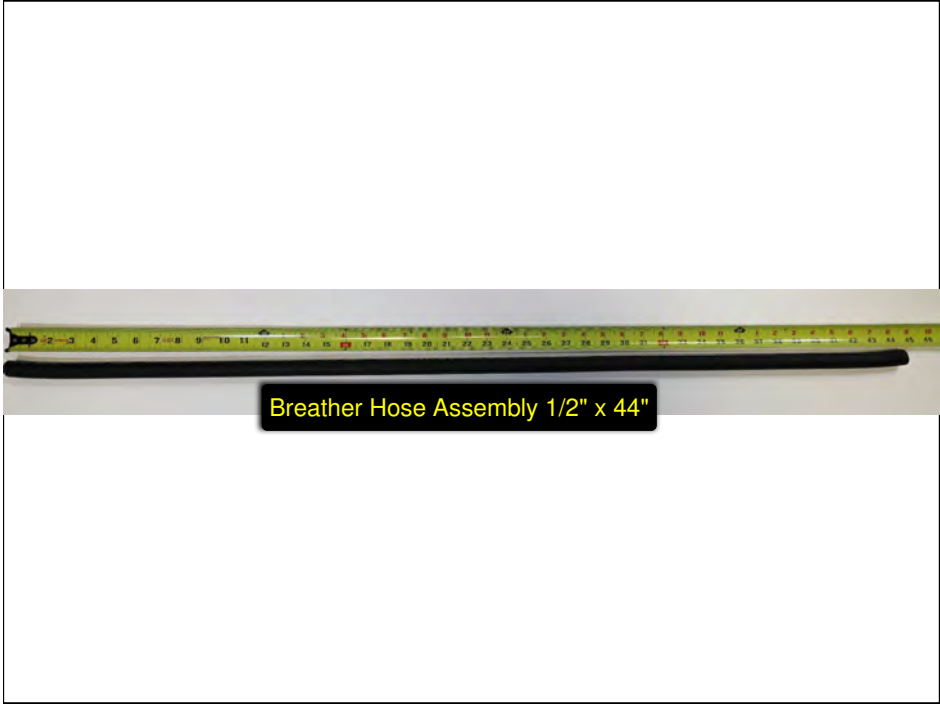
Step 11/123



Step 12/123



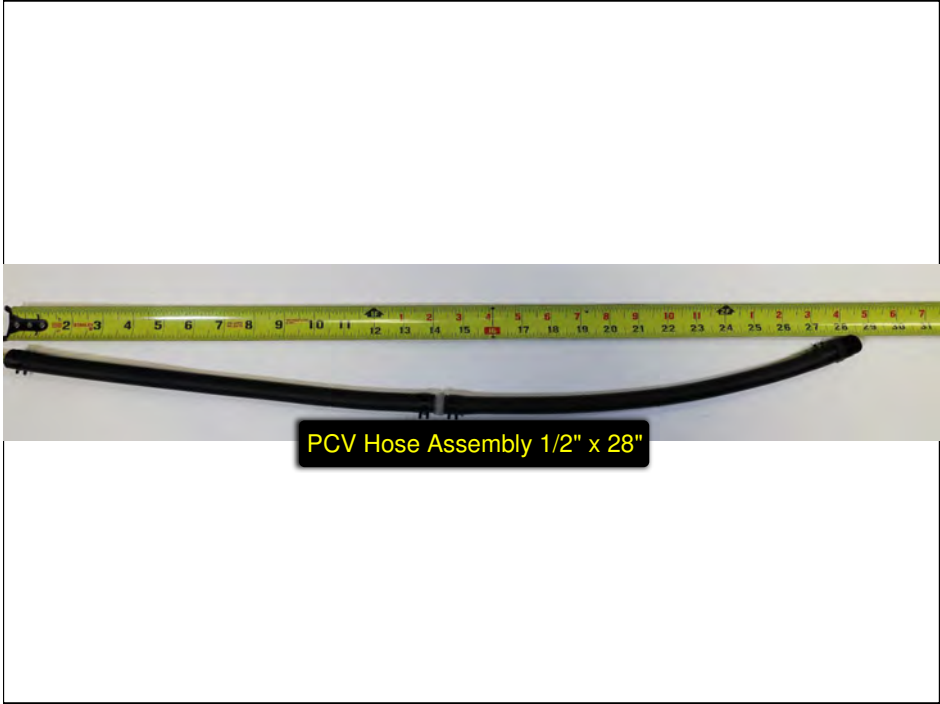
Step 13/123

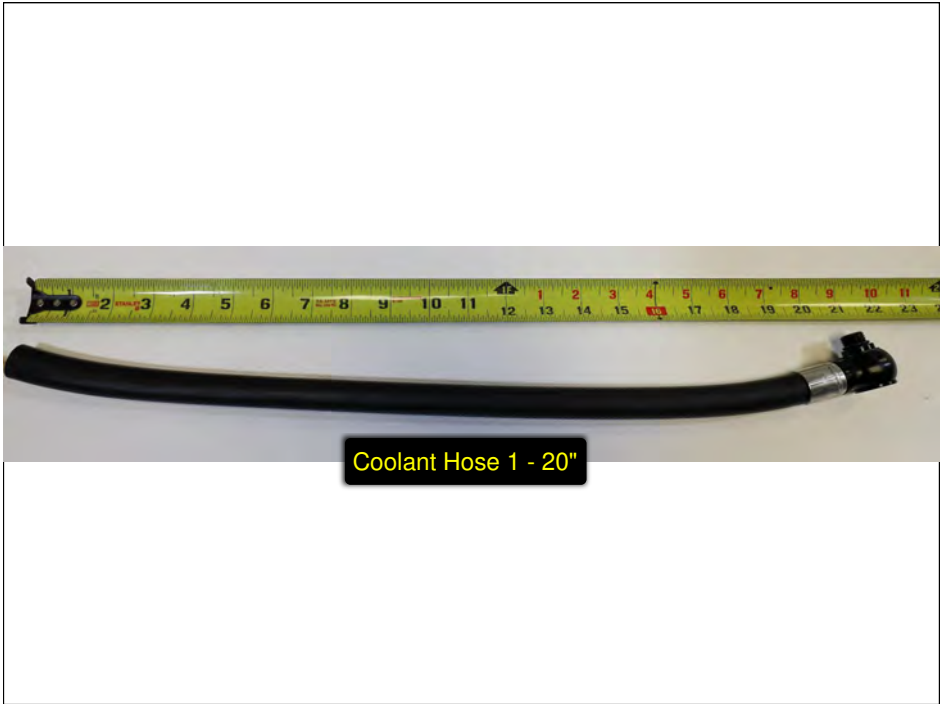


Step 14/123



Step 15/123





Step 16/123



Step 17/123

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 18/123

Numbered annotations (1)

- 1 Disconnect the negative battery terminal



Step 19/123

Numbered annotations (2)

- 2 Loosen the clamps on these hoses
- 3 Remove this intercooler mounting bolt.



Step 20/123

Numbered annotations (1)

- 4 Disconnect this hose.



Step 21/123

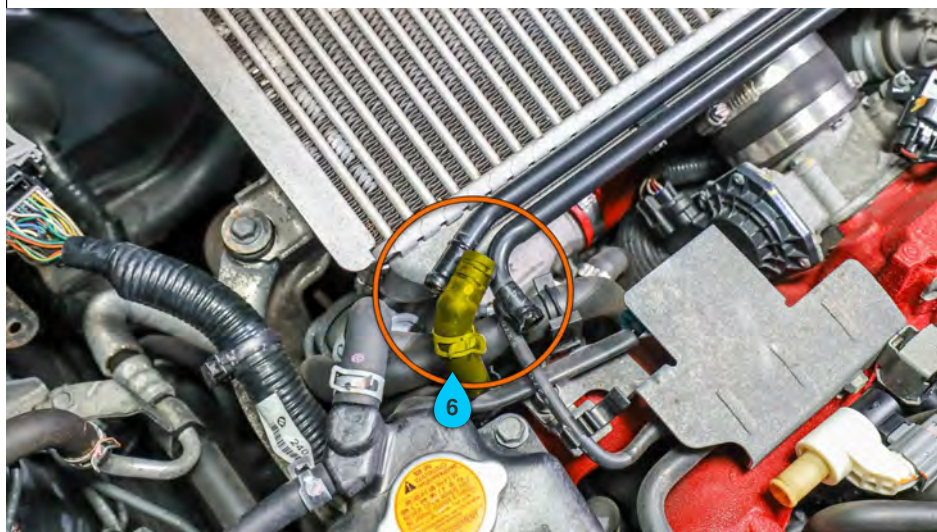
Numbered annotations (1)

- 5 Remove this hose.

Step 22/123

Numbered annotations (1)

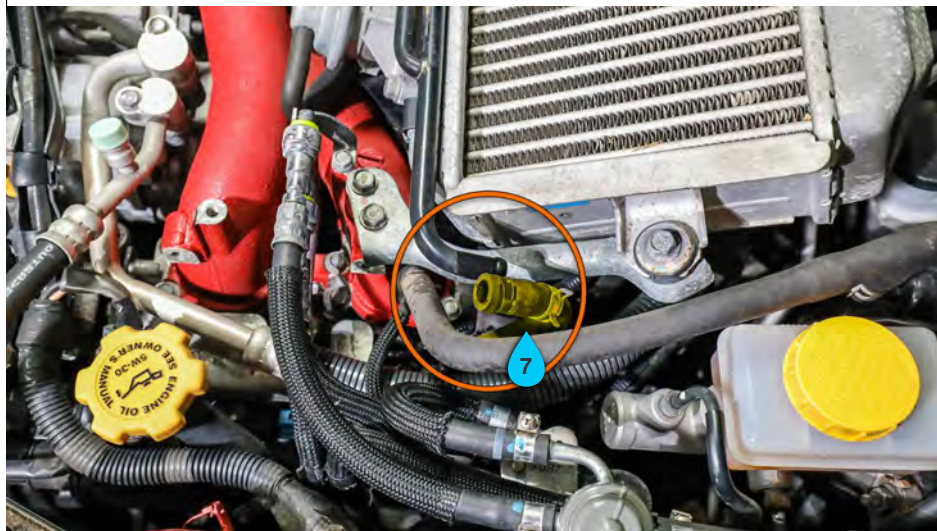
- 6 Disconnect this hose.



Step 23/123

Numbered annotations (1)

- 7 Loosen the clamp and disconnect this hose.



Step 24/123

Numbered annotations (1)

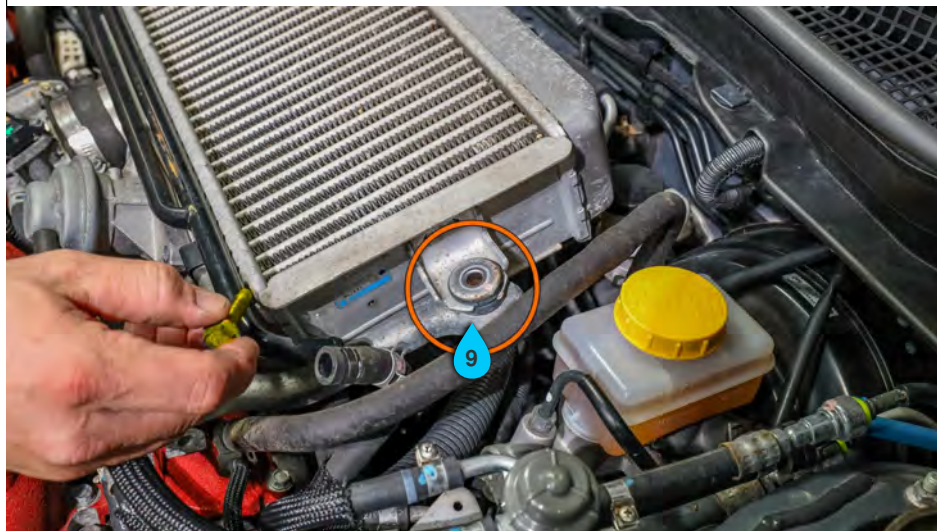
8 Remove these bolts.



Step 25/123

Numbered annotations (1)

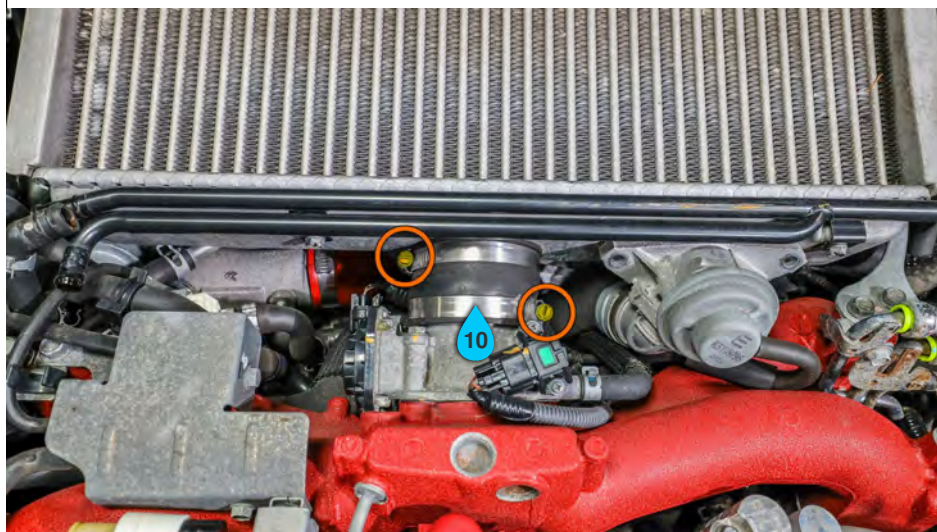
9 Remove this intercooler mounting bolt.



Step 26/123

Numbered annotations (1)

10 Loosen these clamps.

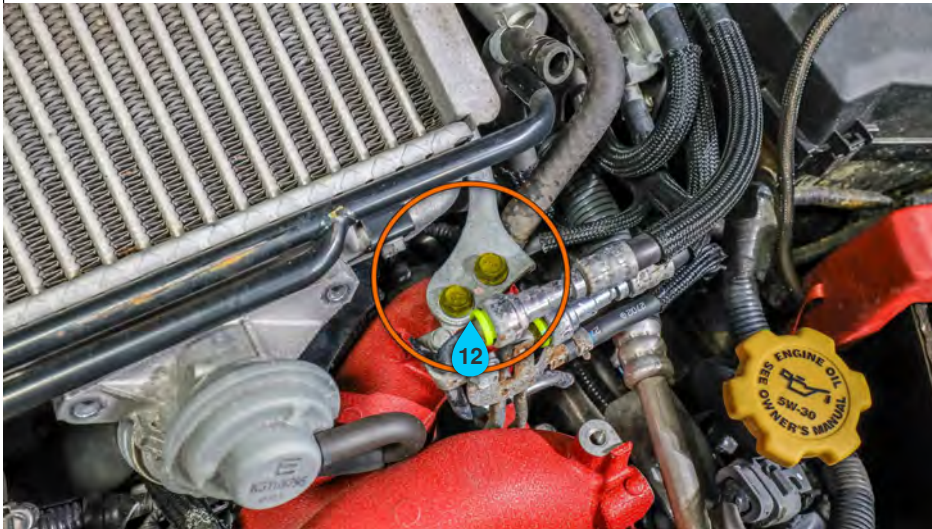


Step 27/123

Numbered annotations (1)

11 Loosen this clamp.





Step 28/123

Numbered annotations (1)

- 12 Remove these bolts.



Step 29/123

Numbered annotations (1)

- 13 Remove this bracket.

Step 30/123

Numbered annotations (1)

- 14 Remove the intercooler.



Step 31/123

Numbered annotations (1)

- 15 Remove these bolts.

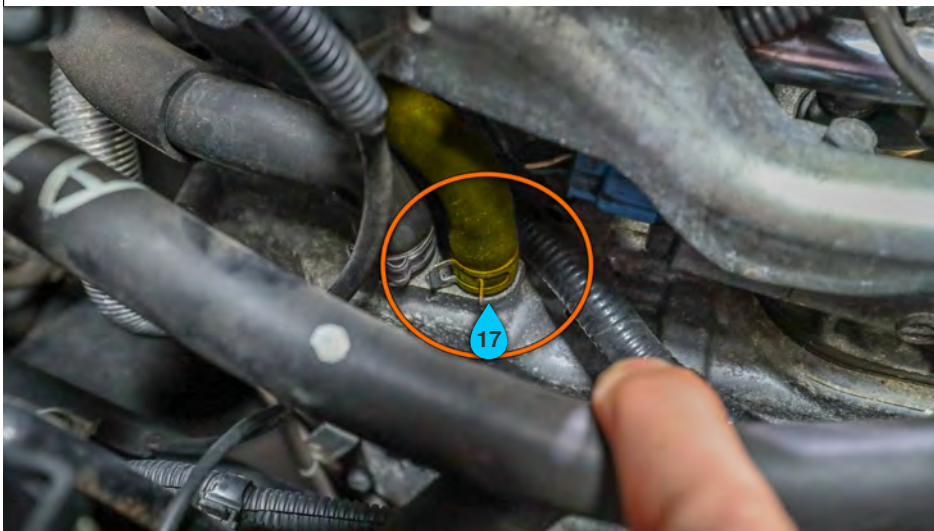




Step 32/123

Numbered annotations (1)

- 16 Remove the PCV crossover tube from the intercooler.



Step 33/123

Numbered annotations (1)

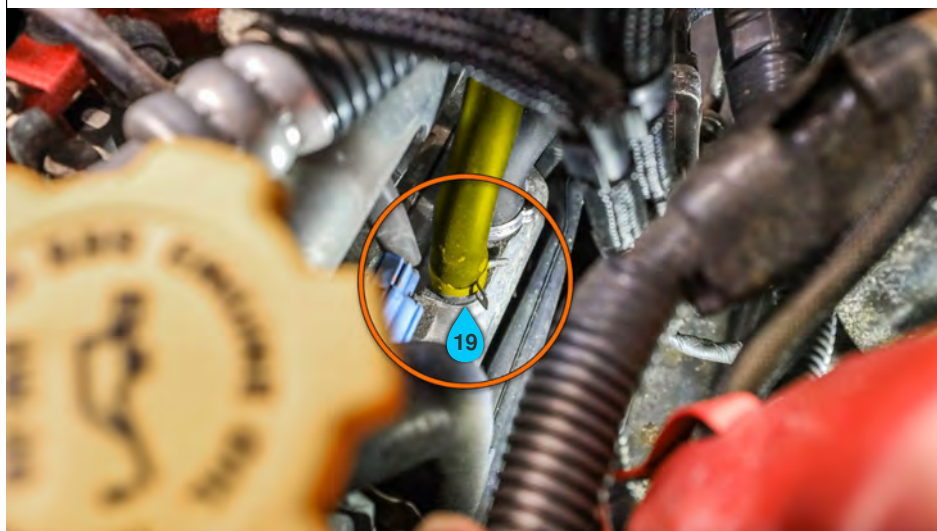
- 17 Loosen the clamp and remove this hose from the passenger side valve cover.



Step 34/123

Numbered annotations (1)

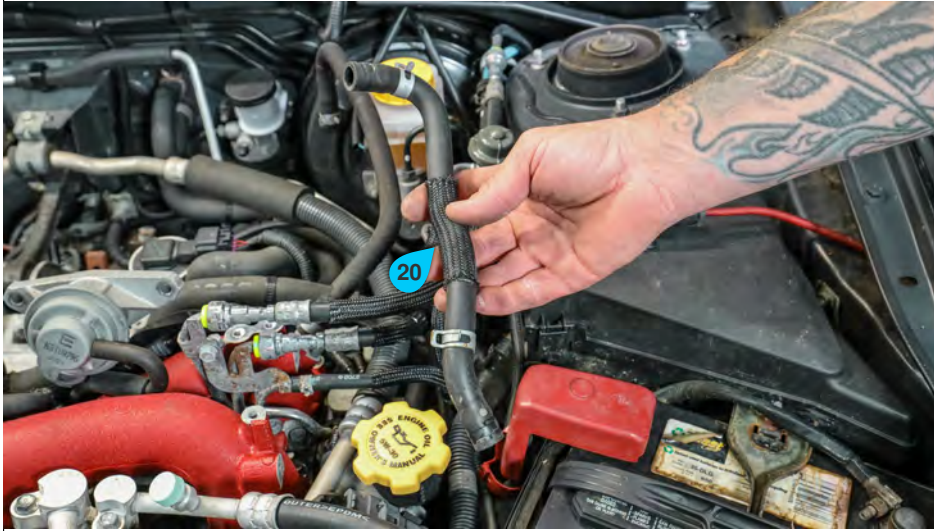
- 18 Remove the breather hose.



Step 35/123

Numbered annotations (1)

- 19 Loosen the clamp and disconnect this hose on the driver side valve cover.



Step 36/123

Numbered annotations (1)

- 20 Remove the breather hose.



Step 37/123

Numbered annotations (1)

- 21 Use a pick tool to release this spring clamp.



Step 38/123

Numbered annotations (1)

- 22 Disconnect the hose.



Step 39/123

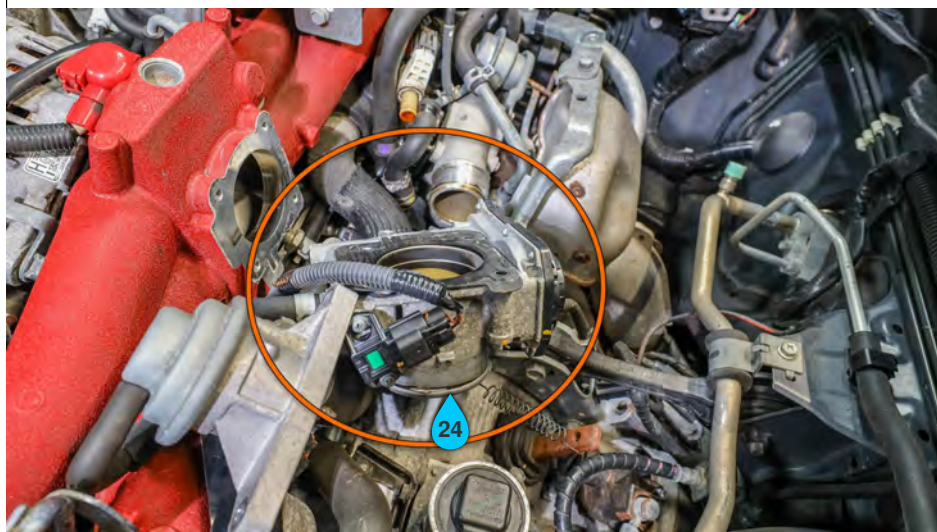
Numbered annotations (1)

- 23 Remove the throttle body.

Step 40/123

Numbered annotations (1)

- 24 Move the throttle body out of the way.

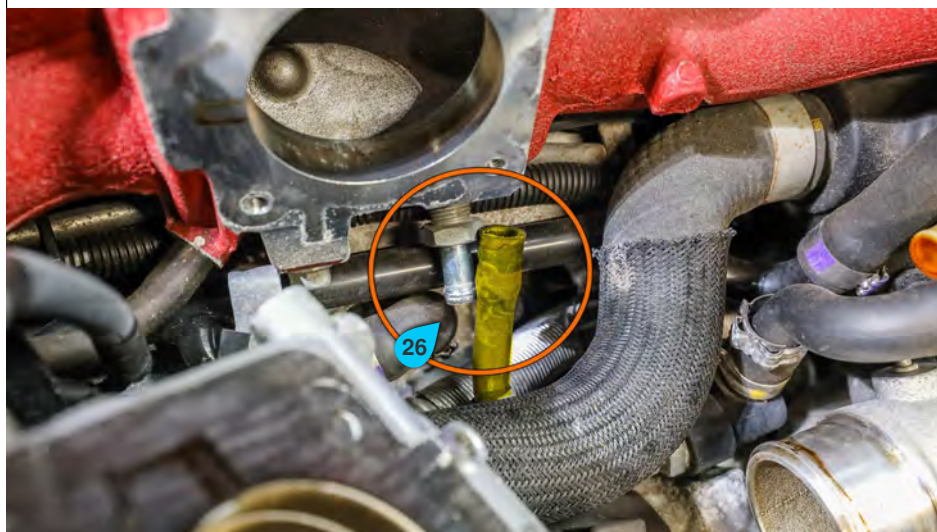


Step 41/123

Numbered annotations (1)

- 25 Loosen this clamp on the PCV vacuum hose nipple.

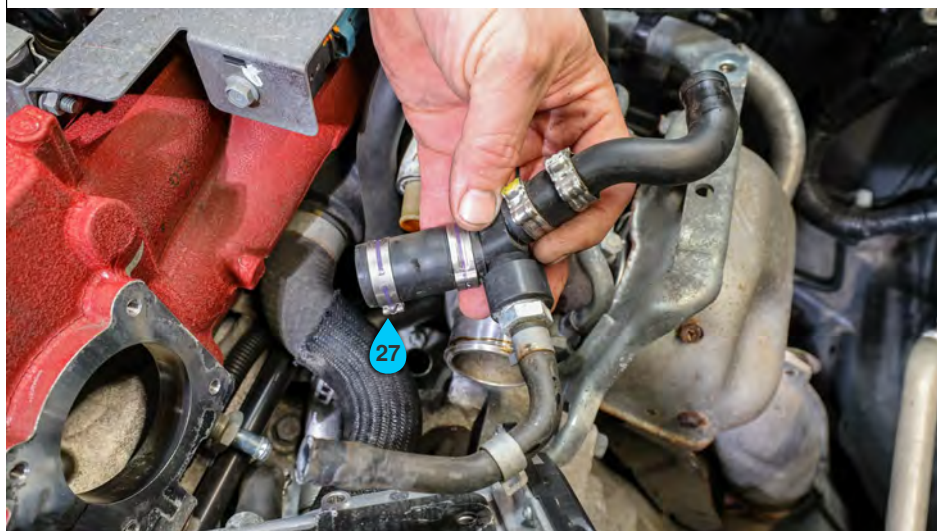




Step 42/123

Numbered annotations (1)

- 26 Remove the hose.



Step 43/123

Numbered annotations (1)

- 27 Use a pick tool to remove the lower spring clamp and remove the PCV hose assembly from the block vent.

Step 44/123



Step 45/123

Numbered annotations (1)

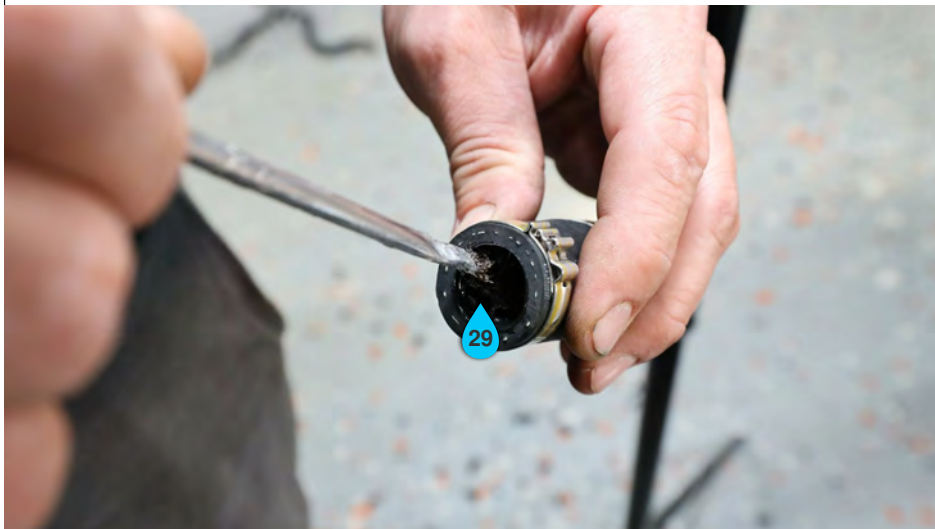
- 28 Attach the block breather hose to the supplied Y fitting and tighten both clamps.



Step 46/123

Numbered annotations (1)

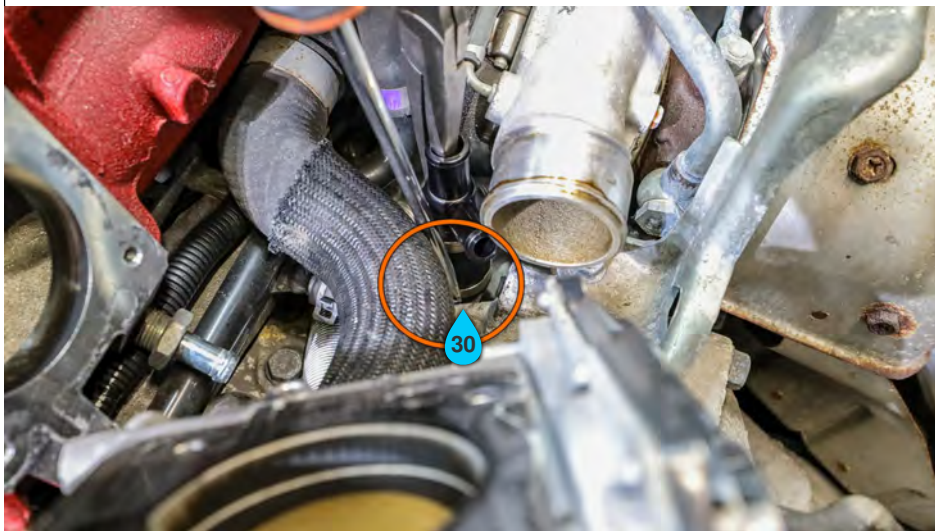
- 29 Lubricate the inside of this hose with petroleum jelly or silicone lube.



Step 47/123

Numbered annotations (1)

- 30 Push the assembly over the barb on the block vent. It's useful to use pliers and a screwdriver to help push the assembly over the barb.



Step 48/123



Step 49/123

Numbered annotations (1)

- 31 Release the wiring harness retaining tab.





Step 50/123

Numbered annotations (1)


- 32 Use pliers to remove this zip tie from the bracket.

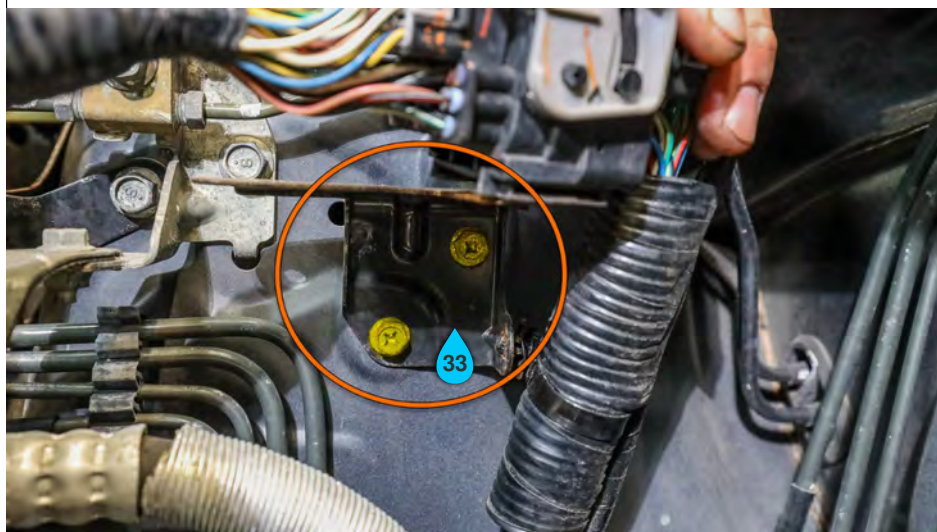


Step 51/123

Step 52/123

Numbered annotations (1)

-  Remove these bolts.



Step 53/123

Numbered annotations (1)

-  Remove the wiring harness bracket.



Step 54/123

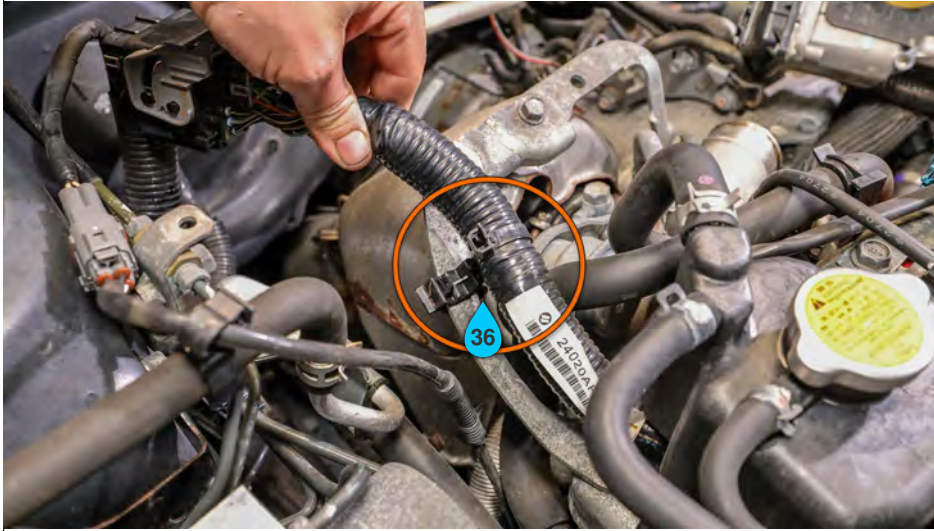
Numbered annotations (1)

- 35 Use pliers to release the clip for the oxygen sensor connector.



Step 55/123





Step 56/123

Numbered annotations (1)

- 36 Disconnect this zip tie.



Step 57/123



Step 58/123

Numbered annotations (1)

- 37 Remove the harness retaining zip tie.



Step 59/123

Numbered annotations (1)

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



Step 60/123

Numbered annotations (3)

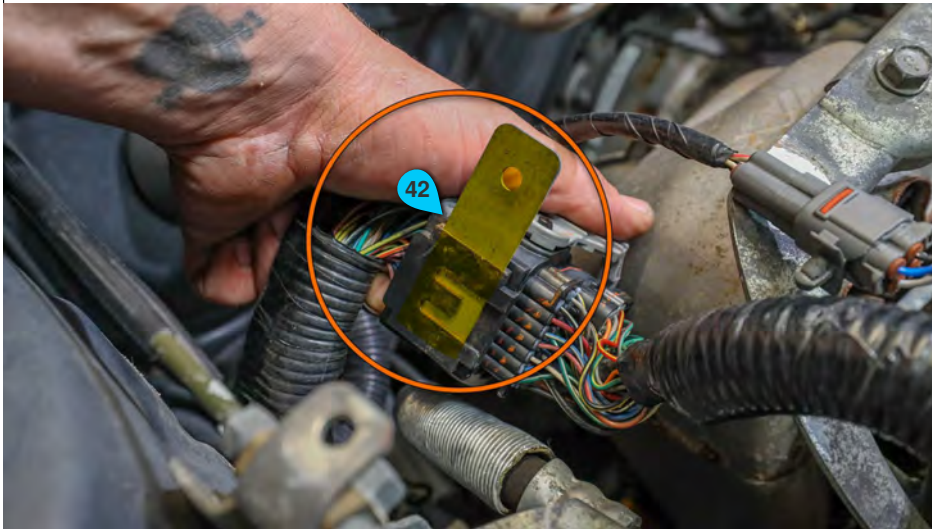
- 39 Attach the AOS drain hose using the supplied clamp.
- 40 Slide a 16" section of heat sleeve over the drain hose.
- 1 These fittings are preinstalled and torqued. The fitting is designed to swivel around the bolt. Do not remove or tighten further.



Step 61/123

Numbered annotations (1)

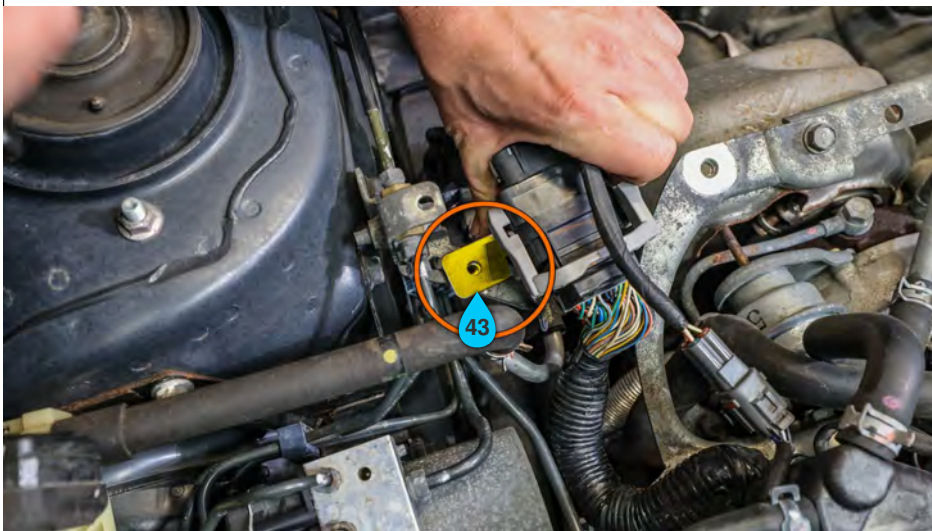
- 41 Remove this bolt.



Step 62/123

Numbered annotations (1)

- 42 Insert the supplied harness relocation bracket as shown.



Step 63/123

Numbered annotations (1)


- 43 Attach the harness using the OEM bolt.

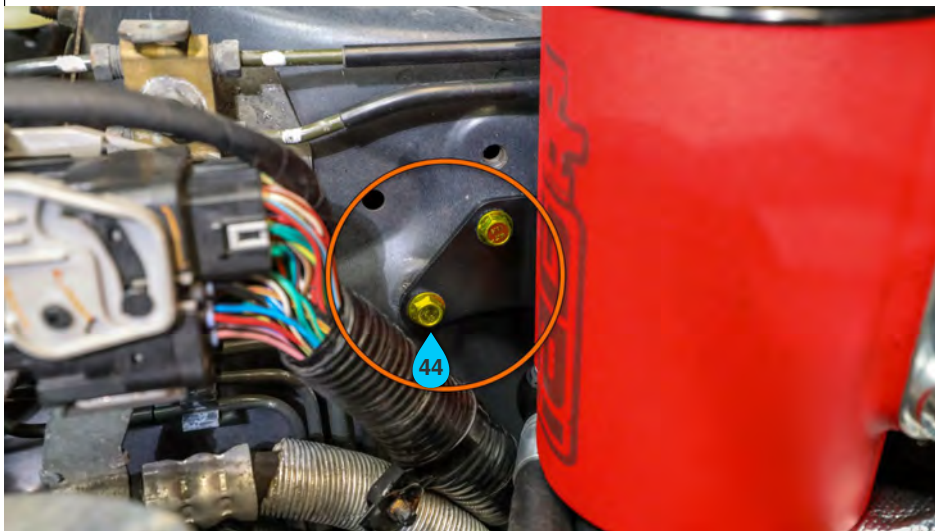
Step 64/123



Step 65/123

Numbered annotations (1)

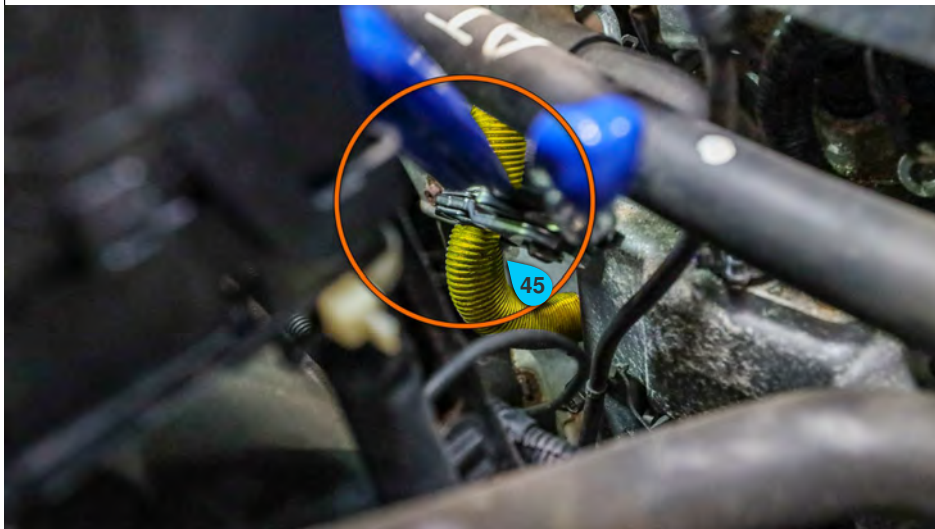
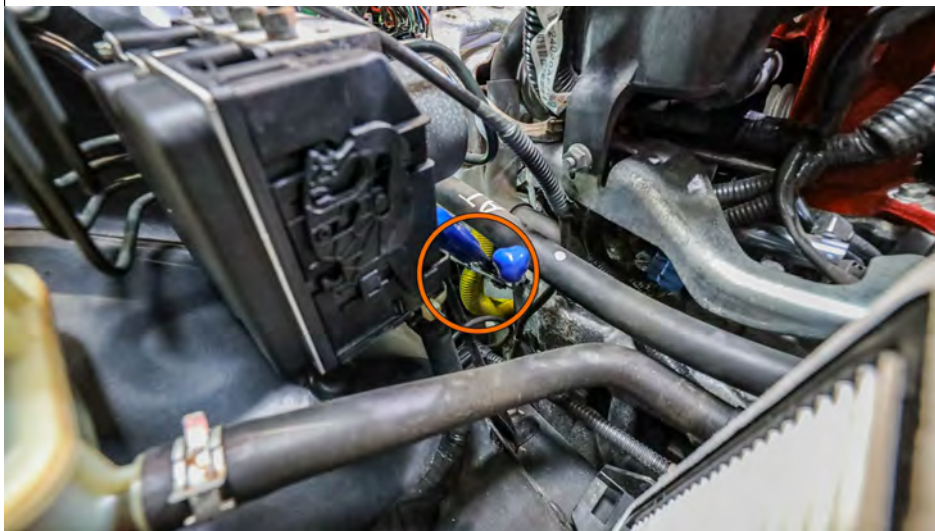
-  Bolt the AOS bracket here using the supplied hardware.



Step 66/123

Numbered annotations (1)

- 45 Locate the lower turbocharger coolant hose and pinch it off with hose clamping pliers to prevent coolant loss.

**Step 67/123**

Step 68/123

Numbered annotations (1)

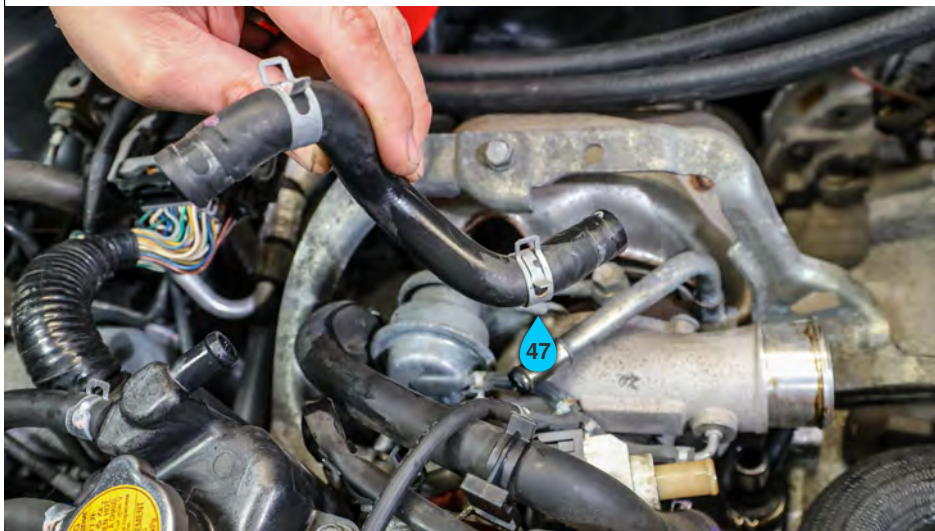
- 46 Loosen this clamp.



Step 69/123

Numbered annotations (1)

- 47 Loosen this clamp and remove the hose.

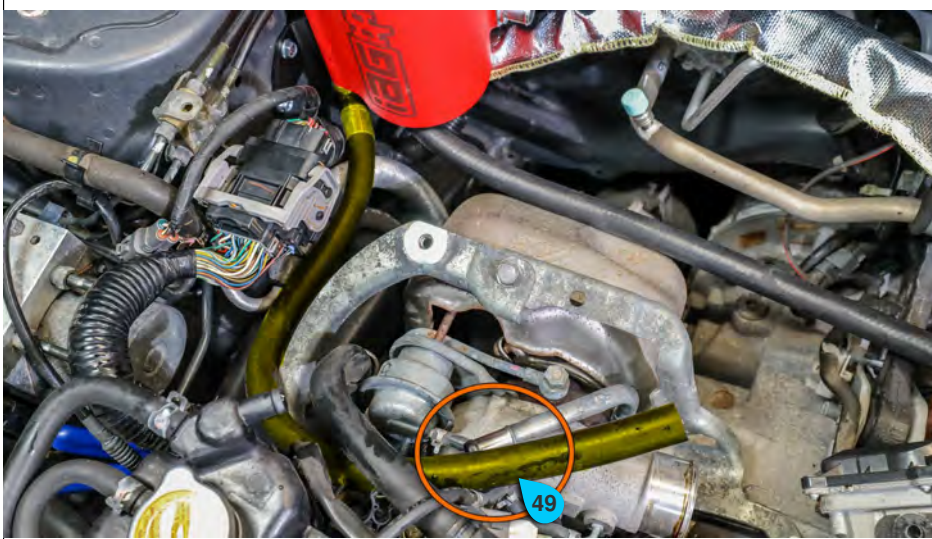




Step 70/123

Numbered annotations (1)

- 48 Zip tie the harness here.



Step 71/123

Numbered annotations (1)

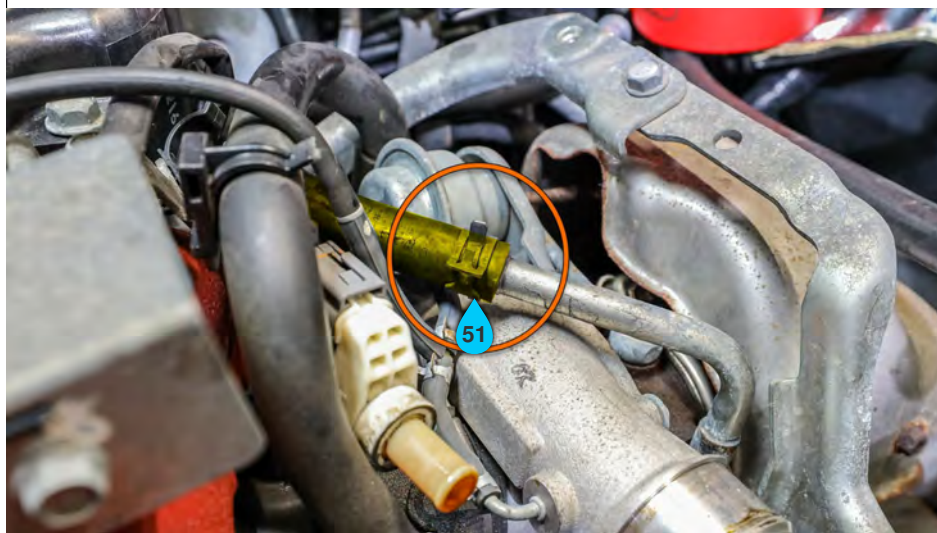
- 49 Route the AOS coolant hose as shown and measure to length.



Step 72/123

Numbered annotations (1)

- 50 Trim excess coolant hose.



Step 73/123

Numbered annotations (1)

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

Step 74/123

Numbered annotations (1)

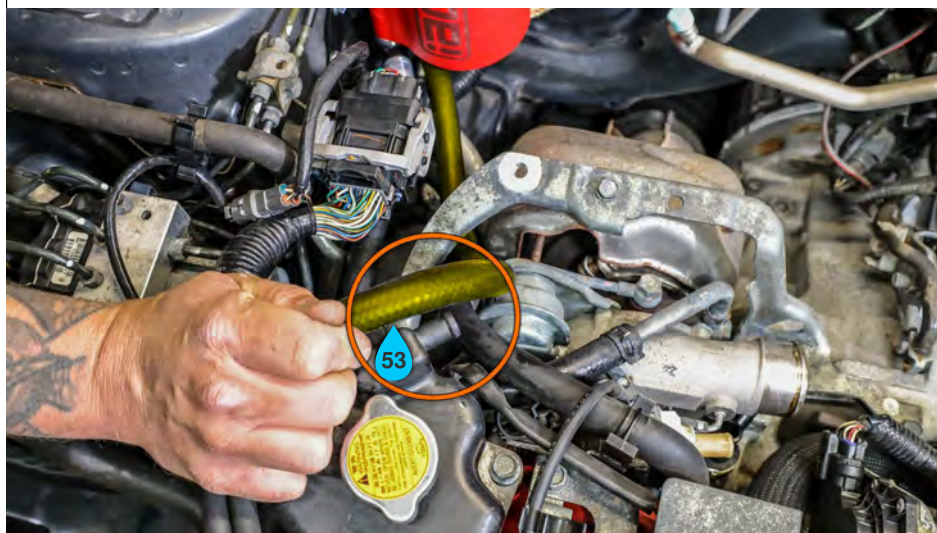
- 52 Secure the coolant hose here with a zip tie.



Step 75/123

Numbered annotations (1)

- 53 Route the other AOS coolant hose as shown and measure to length.





Step 76/123

Numbered annotations (1)

- 54 Trim the excess AOS coolant hose.

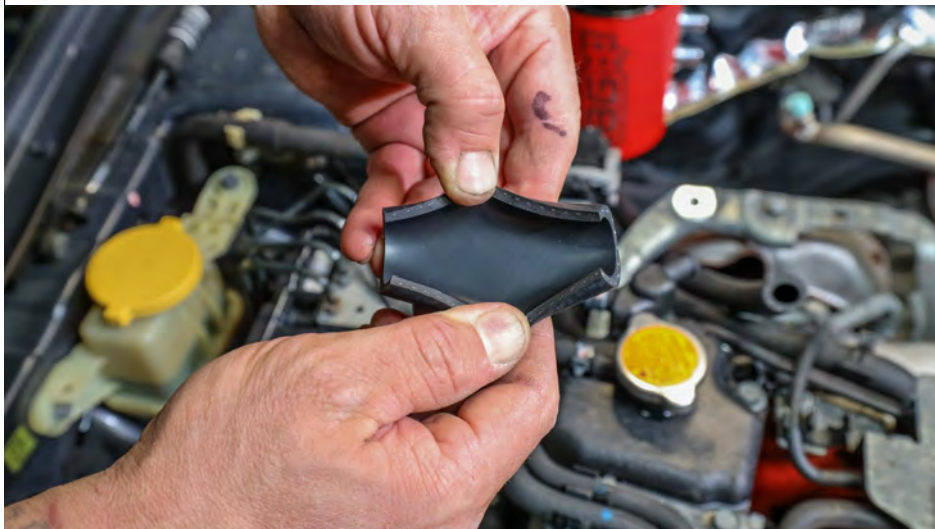


Step 77/123

Numbered annotations (1)

- 55 Using a razor blade, split the trimmed section of hose lengthwise.

Step 78/123



Step 79/123

Numbered annotations (1)

- 56 Zip tie the cut section of hose here to prevent rubbing.



Step 80/123



Step 81/123

Numbered annotations (1)

- 57 Route the AOS coolant hose as shown, secured with zip ties.

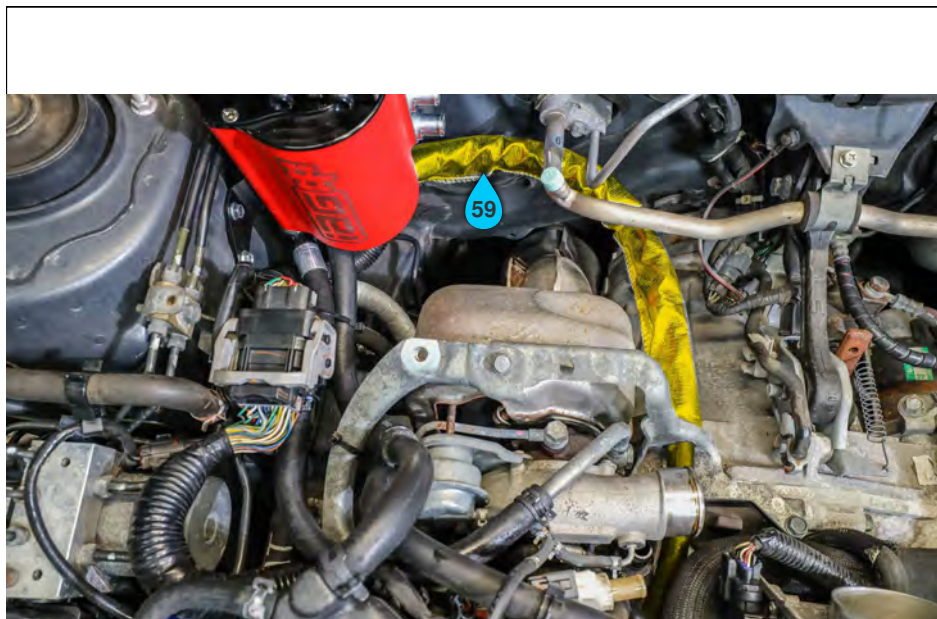




Step 82/123

Numbered annotations (1)

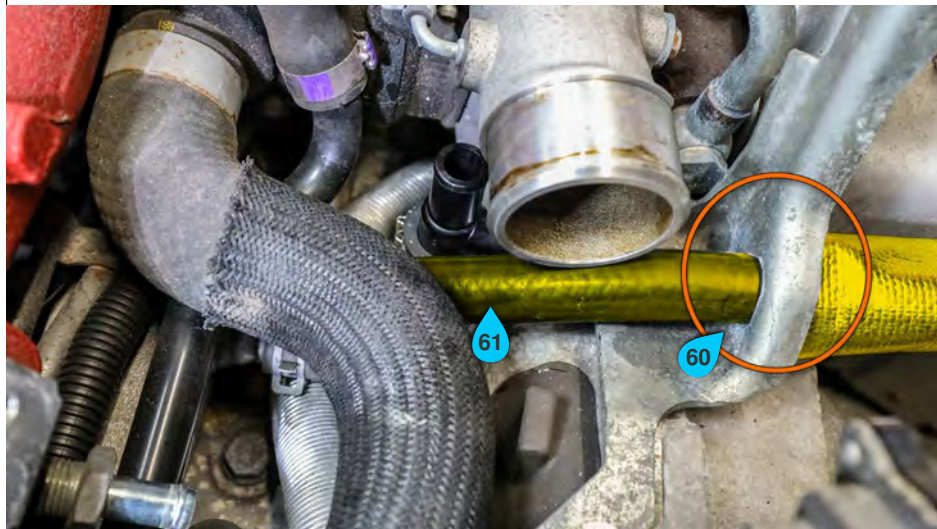
- 58 Attach the AOS coolant hose here using the supplied clamp.



Step 83/123

Numbered annotations (1)

- 59 Route the AOS drain hose as shown.



Step 84/123

Numbered annotations (2)

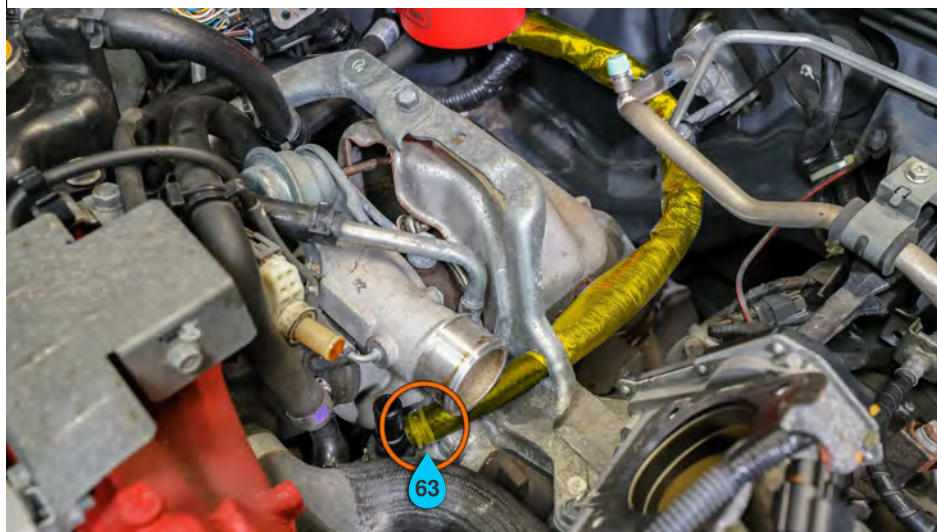
- 60 Pass the AOS drain hose through the hole in this bracket.
- 61 Measure and mark the length of the drain hose to the Y fitting.



Step 85/123

Numbered annotations (1)

- 62 Trim the excess drain hose.



Step 86/123

Numbered annotations (1)

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



Step 87/123

Numbered annotations (1)

- 64 Secure the drain hose here with a zip tie.



Step 88/123

Numbered annotations (1)

- 65 Measure and cut 3" from the end of the 5/8" AOS vent tube.



Step 89/123

Numbered annotations (1)

- 66 Assemble the hose as shown with the supplied 5/8" 90 degree elbow and the supplied clamps.

Step 90/123

Numbered annotations (1)

- 67 Slide the 16" section of heat sleeve over the 5/8" vent hose and attach the AOS vent hose to the top of the Y fitting with the supplied clamps.

**Step 91/123**

Numbered annotations (1)

- 68 Measure and trim the AOS vent hose to length.



Step 92/123

Numbered annotations (1)

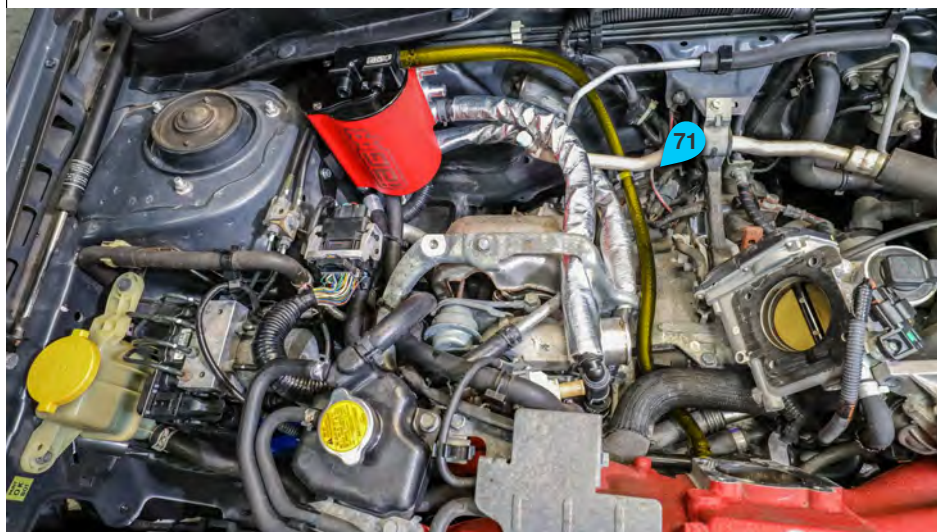
- 69 Attach the AOS vent hose here using the supplied clamp.

**Step 93/123**

Numbered annotations (1)

- 70 Locate the AOS PCV hose (This hose has a white PCV valve in the middle and an NPT fitting on one end.) Screw the NPT fitting into the AOS here. NPT threads are tapered. Do not over tighten.





Step 94/123

Numbered annotations (1)

- 71 Routing of the AOS PCV hose.



Step 95/123

Numbered annotations (1)

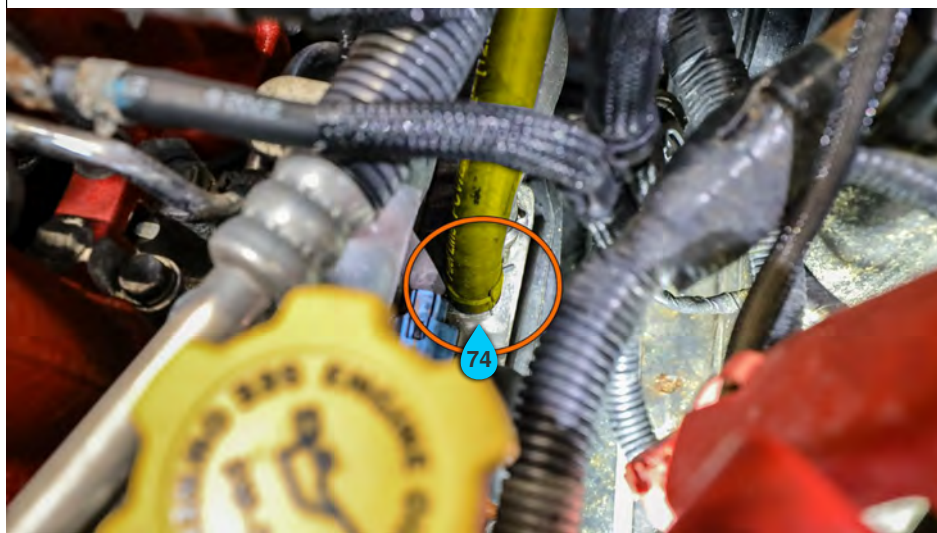
- 72 Attach the other end of the AOS PCV hose here using the supplied clamp.



Step 96/123

Numbered annotations (1)

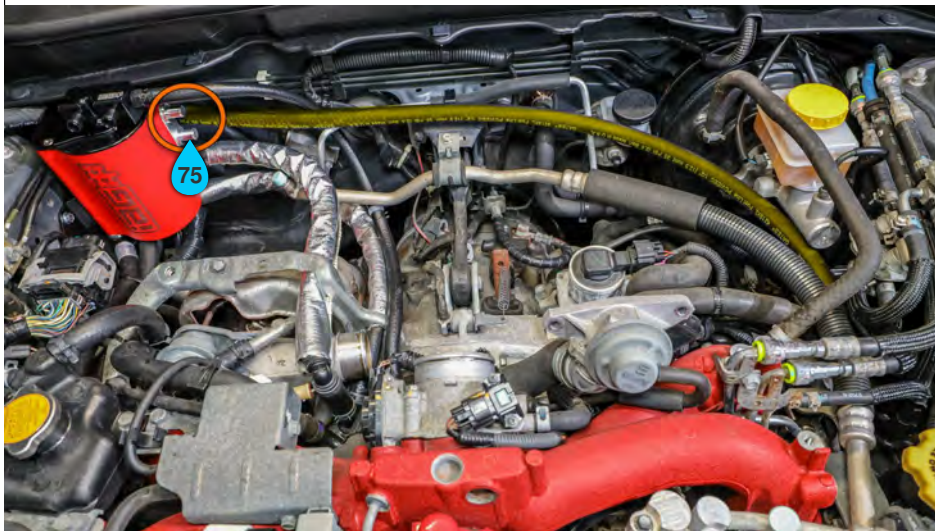
- 73 Reinstall the throttle body.



Step 97/123

Numbered annotations (1)

- 74 Attach the 74" long 1/2" AOS valve cover vent hose to the driver side valve cover using the supplied clamp.

**Step 98/123**

Numbered annotations (1)

- 75 Route the AOS valve cover vent hose as shown, measure to length.

**Step 99/123**

Numbered annotations (1)

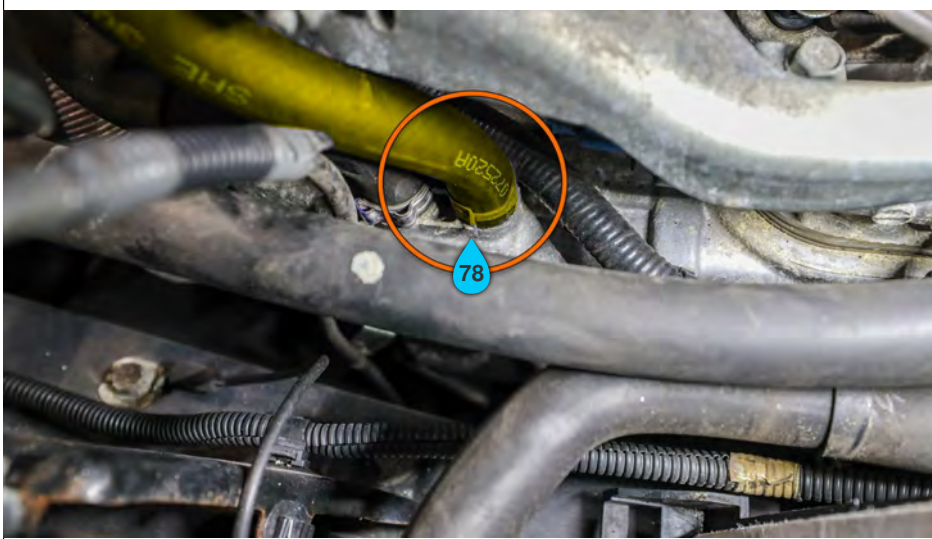
- 76 Trim excess valve cover vent hose.
Reserve the excess hose.



Step 100/123

Numbered annotations (1)

- 77 Attach the AOS vent hose here using the supplied clamp.

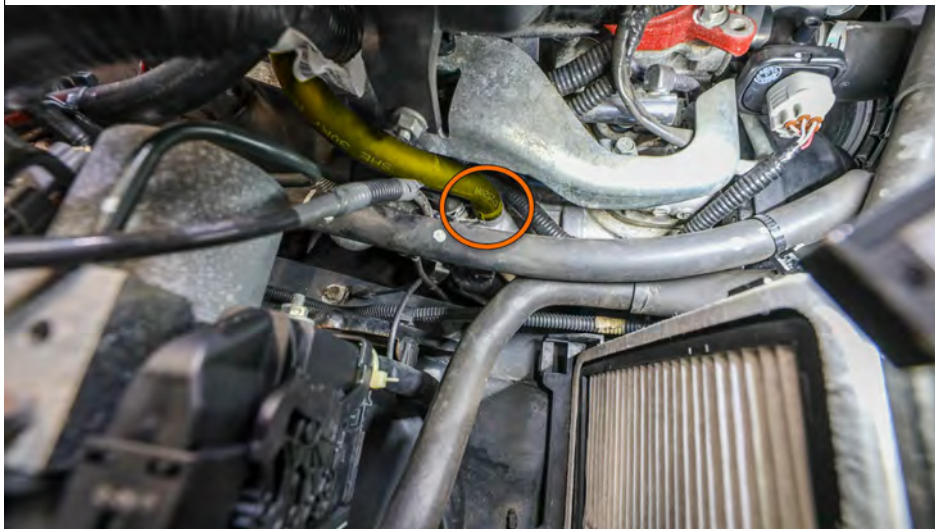


Step 101/123

Numbered annotations (1)

- 78 Attach the reserved 1/2" AOS valve cover vent hose to the passenger side valve cover using the supplied clamp.

Step 102/123



Step 103/123

Numbered annotations (1)

- 79** Slide the 12" section of heat sleeve over the valve cover vent hose. Route the vent hose as shown and measure for length.





Step 104/123

Numbered annotations (1)

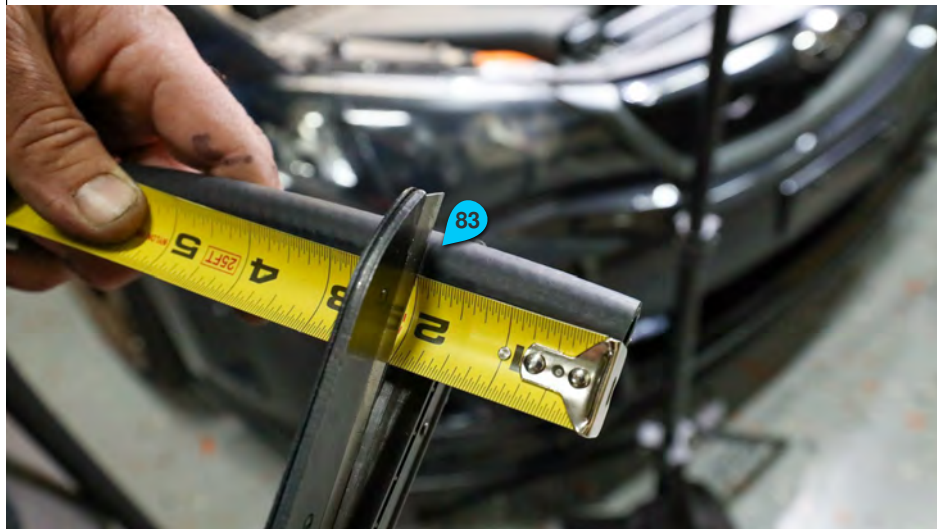
- 80 Trim the excess valve cover vent hose.



Step 105/123

Numbered annotations (2)

- 81 Attach the vent hose here using the supplied clamp.
- 82 Secure the vent hose here using a zip tie.



Step 106/123

Numbered annotations (1)

- 83 Measure and cut 2" from the end of the 44" AOS breather hose.



Step 107/123

Numbered annotations (1)

- 84 Assemble the 1/2" AOS breather hose as shown using the supplied 90 degree elbow and clamps.

Step 108/123

Numbered annotations (1)

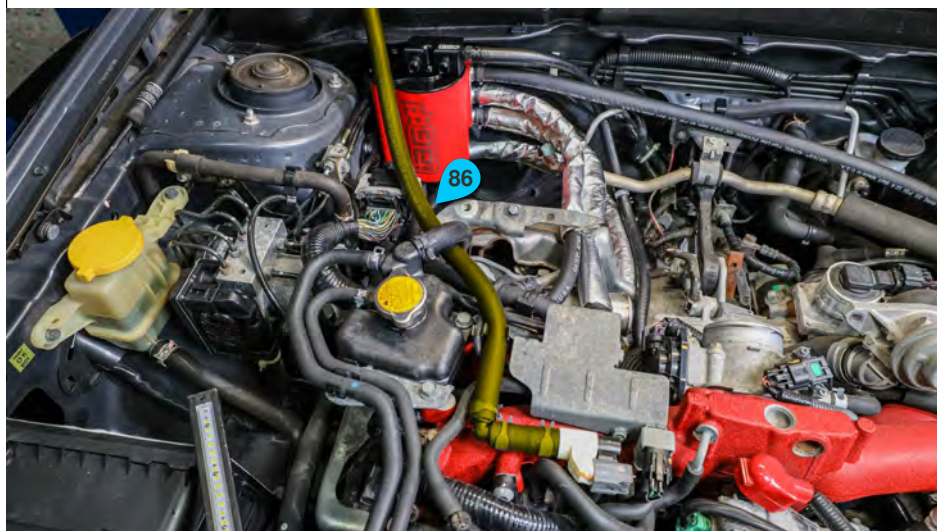
- 85 Attach the breather hose here using the supplied clamp.



Step 109/123

Numbered annotations (1)

- 86 Route the AOS breather hose as shown.





Step 110/123

Numbered annotations (1)

- 87 Measure and trim the excess breather hose. Reserve the excess hose.



Step 111/123

Numbered annotations (1)

- 88 Measure and trim 2" from the reserved AOS breather hose.



Step 112/123

Numbered annotations (1)

- 89 Assemble the breather hose as shown using the supplied 90 degree fitting and clamps.



Step 113/123

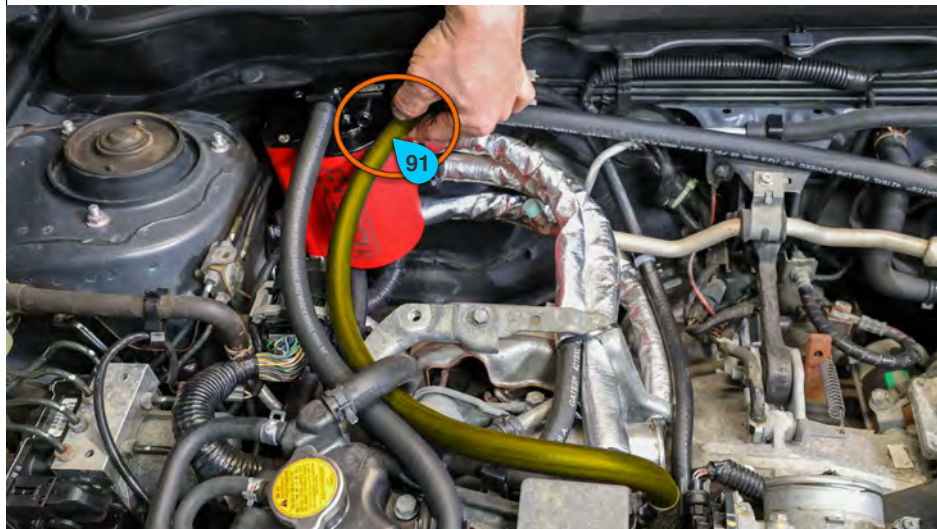
Numbered annotations (1)

- 90 Attach the AOS breather hose here using the supplied clamp.

Step 114/123

Numbered annotations (1)

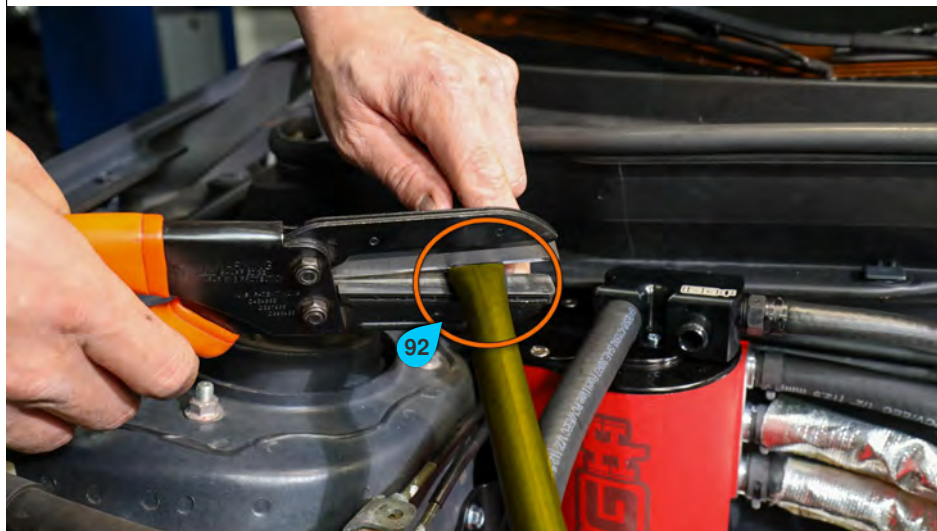
- 91 Measure the AOS breather hose to length.



Step 115/123

Numbered annotations (1)

- 92 Trim excess AOS breather hose.





Step 116/123

Numbered annotations (1)

- 93 Attach both AOS breather hoses here using the supplied clamps.



Step 117/123

Numbered annotations (1)

- 94 Routing of AOS vent hoses.

Step 118/123

Numbered annotations (1)

- 95 Reinstall the intercooler.



Step 119/123

Numbered annotations (1)

- 96 Install this bolt.



Step 120/123

Numbered annotations (1)

97 Reinstall these bolts.



Step 121/123

Numbered annotations (1)

98 Tighten the intercooler clamps.



Step 122/123



Step 123/123

Numbered annotations (1)

- 99 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.

