

IAG COMPETITION SERIES AOS FOR 08-14 WRX / 05-09 LGT



Step 1/108

IAG-ENG-7281 Competition Series Air / Oil Separator (AOS) For 2008-14 WRX & 2005- 09 Legacy GT

Part# IAG-ENG-7281

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 2/108

IAG-ENG-7281 Competition Series Air / Oil Separator (AOS) For 2008-14 WRX & 2005-09 Legacy GT

WARNING

THE IAG COMPETITION SERIES AOS IS ONLY TO BE INSTALLED ON OFF-ROAD COMPETITION VEHICLES NOT SUBJECT TO VEHICLE EMISSIONS CONTROLS. PLEASE CONTACT IAG PERFORMANCE OR YOUR LOCAL IAG DEALER TO EXCHANGE THIS PRODUCT IF THE VEHICLE WILL BE USED ON PUBLIC ROADS.

Step 3/108



Numbered annotations (13)

- 1 AOS Body Assembly
- 2 Heat Sleeve 1 - 16"
- 3 Heat Sleeve 2 - 16"
- 4 Heat Sleeve 3 - 12"
- 5 AOS Drain Hose - 1/2" x 26"
- 6 Block Breather Hose - 5/8" x 25"
- 7 Comp Breather Hose 1" x 59"
- 8 Valve Cover Breather Hose 1/2" x 74"
- 9 Coolant Hose 1 - 20" (Preinstalled to AOS)
- 10 Coolant Hose 2 - 20" (Preinstalled to AOS)
- 11 Block Breather Hose 3/4" x 2"
- 12 Wiring Harness Relocation Bracket



Step 4/108

Numbered annotations (11)

- 1 1/2" Vacuum Cap
- 2 5/8" Vacuum Cap x 2
- 3 5/8" Band Clamp x 4
- 4 1/2" Band Clamp x 8
- 5 3/4" Spring Clamp x 2
- 6 1/4" NPT Plug for Intake Manifold
- 7 AOS Mounting Hardware (M6x12mm x 2, M6x10mm x 3)
- 8 5/8" 90 Degree Elbow
- 9 Bock Breather Y Fitting
- 10 Zip ties
- 11 3/8" Clamp x 2



Step 5/108

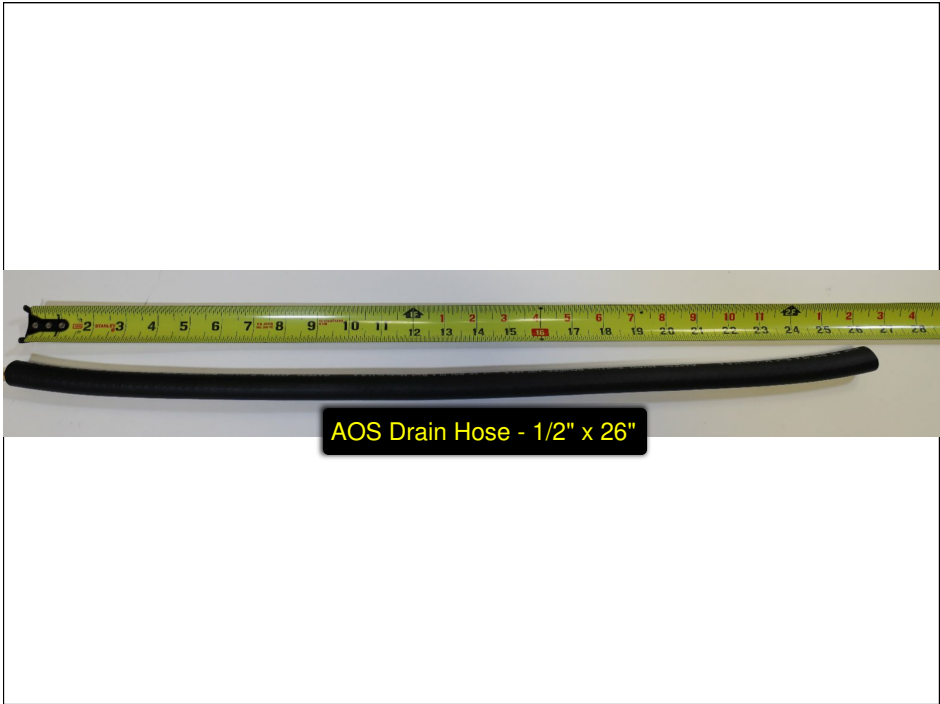
Step 6/108



Step 7/108



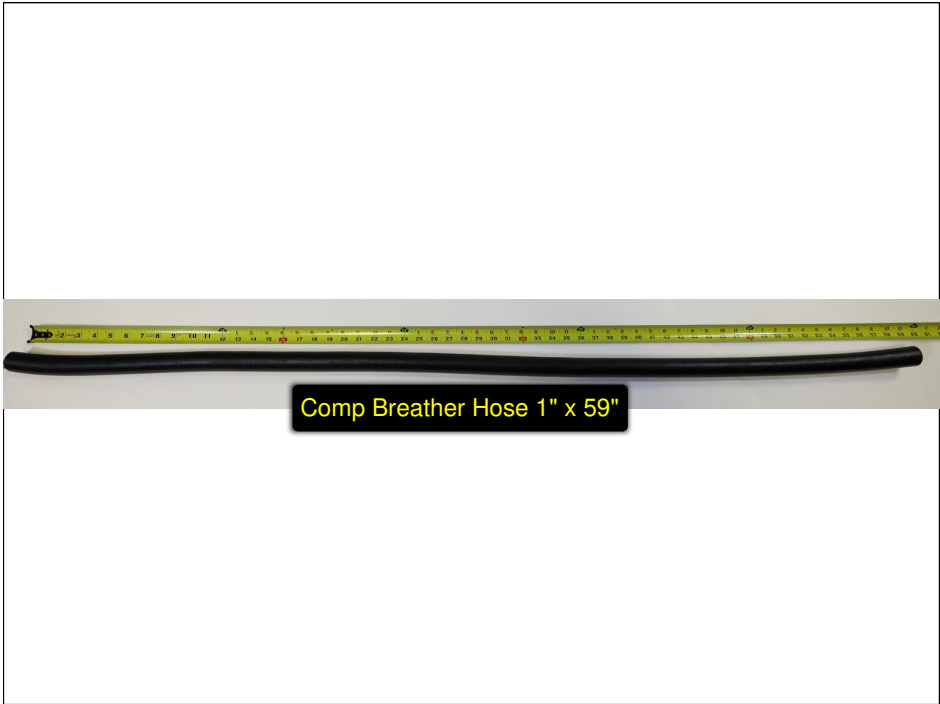
Step 8/108



Step 9/108

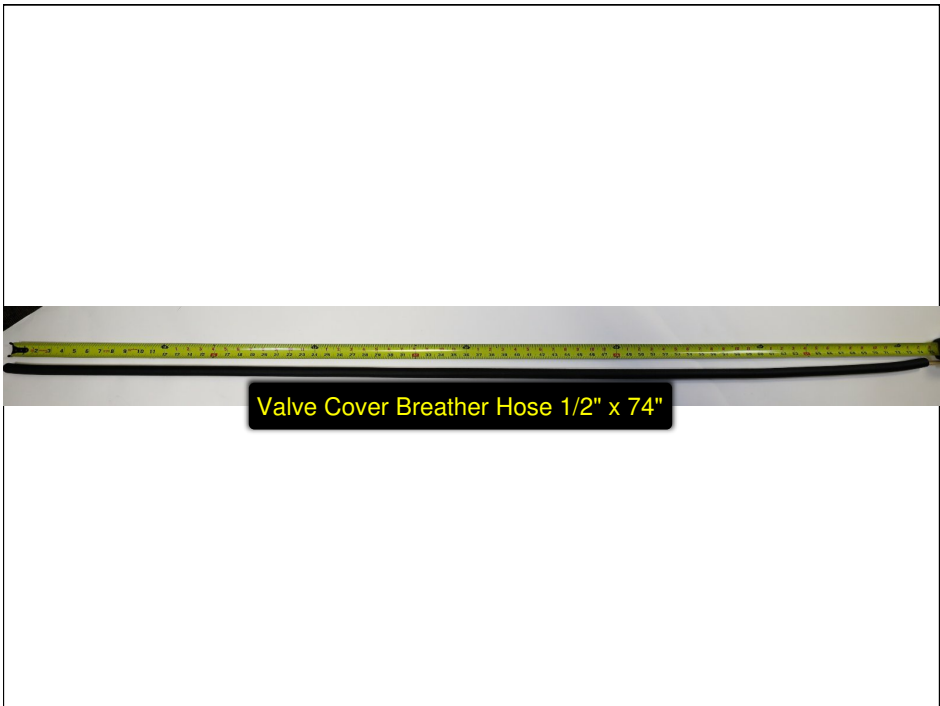


Step 10/108



Comp Breather Hose 1" x 59"

Step 11/108



Valve Cover Breather Hose 1/2" x 74"

Step 12/108



Step 13/108



Step 14/108

Numbered annotations (7)

- 1 Atmospheric Vent Hose (Routed under vehicle)
- 2 1/2" Valve Cover Vent Hose - Driver side
- 3 1/2" Valve Cover Vent Hose - Passenger Side
- 4 5/8" Block Breather Vent- Top of Y fitting on Block Breather
- 5 1/2" Drain Hose
- 6 Coolant Hose 1
- 7 Coolant Hose 2

**Step 15/108**

Numbered annotations (1)

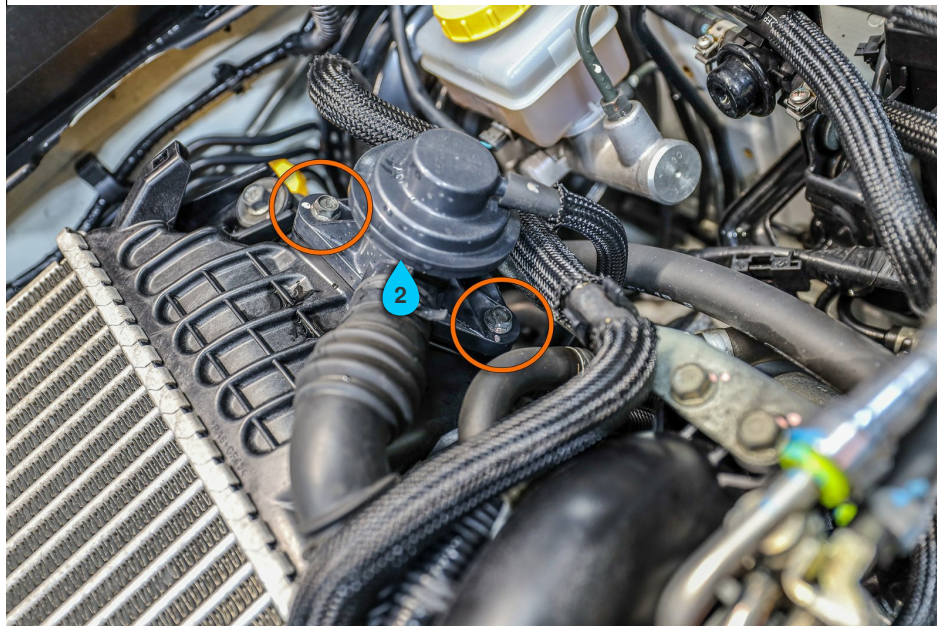
- 1 Disconnect the negative battery terminal using a 10mm wrench.



Step 16/108

Numbered annotations (1)

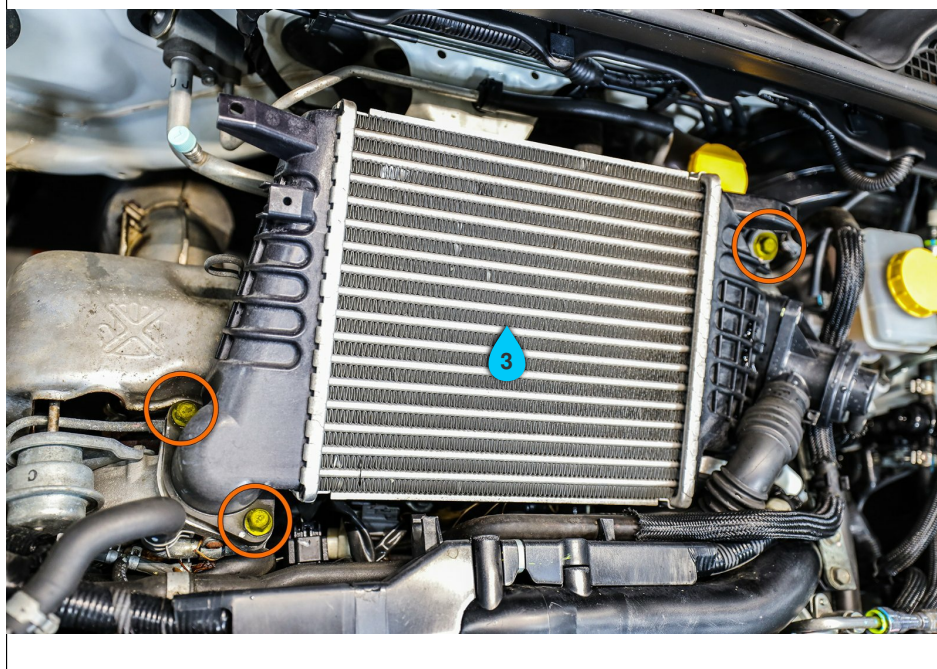
- 2 Remove the bolts from the bypass valve.



Step 17/108

Numbered annotations (1)

- 3 Remove the 12mm bolts that secure the intercooler.



Step 18/108

Numbered annotations (1)

- 4 Loosen the clamp from the throttle body coupler and remove the intercooler assembly from the vehicle



Step 19/108

Numbered annotations (1)

- 5 Locate the PCV breather hose near the turbocharger



Step 20/108

Numbered annotations (1)

- 6 Remove the clamps holding this breather hose in place



Step 21/108

Numbered annotations (1)

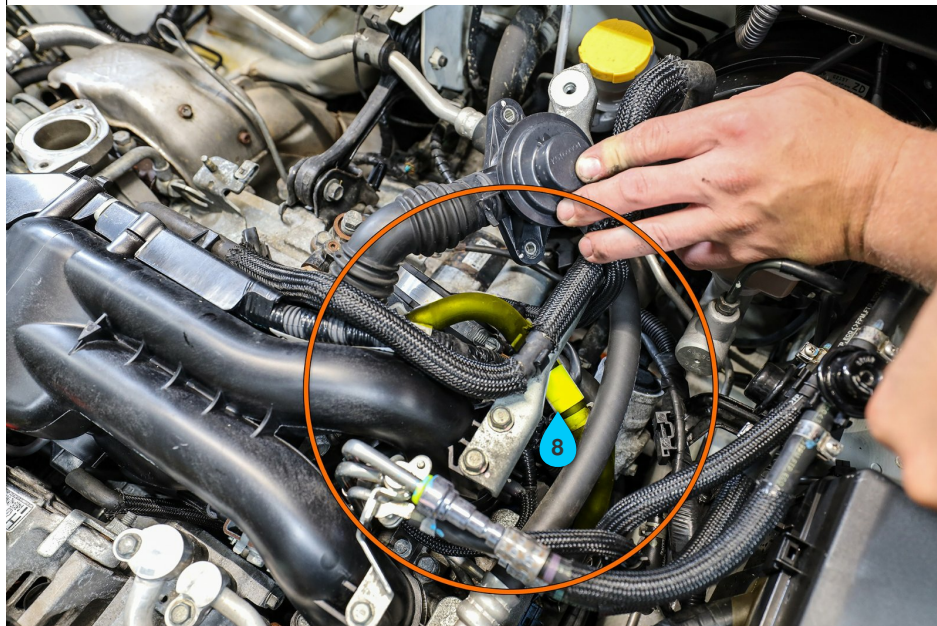
- 7 Remove the hose from the vehicle.



Step 22/108

Numbered annotations (1)

- 8 Locate the passenger side valve cover breather hose.



Step 23/108


Numbered annotations (1)

- 9 Remove the clamps and remove this hose.



Step 24/108


Numbered annotations (1)

-  Remove this hose from the vehicle.



Step 25/108

Numbered annotations (1)

-  Locate the PVC breather hose near the turbocharger



Step 26/108

Numbered annotations (1)

- 12 Use a pick tool to remove the spring clamp.



Step 27/108

Numbered annotations (1)

- 13 Pull the PCV sensor out of the hose.



Step 28/108

Numbered annotations (1)

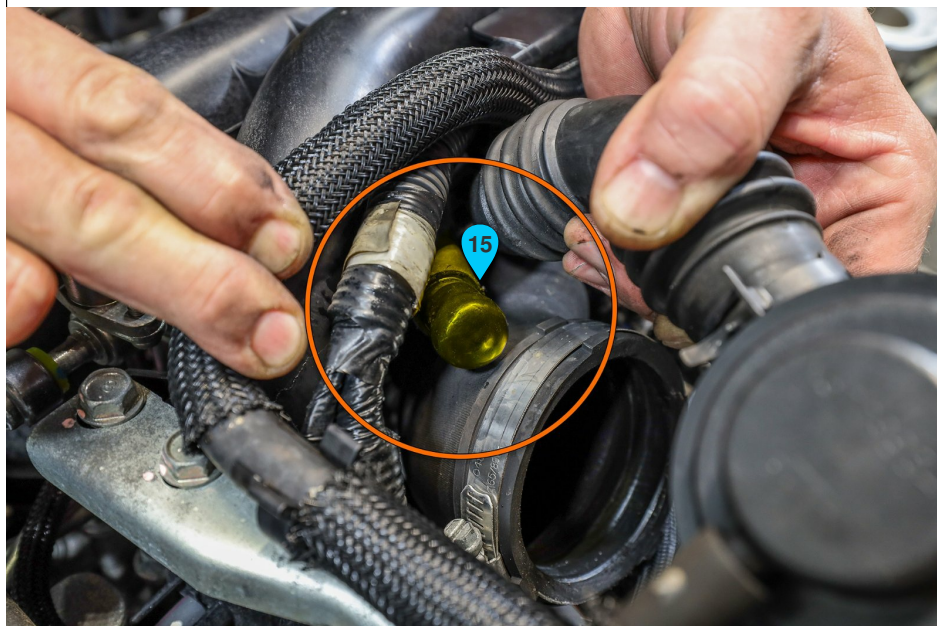
- 14 On the driver's side, above the throttle body, locate the PCV hard pipe that you removed the hose from earlier.



Step 29/108

Numbered annotations (1)

- 15 Install the supplied 5/8" vacuum cap on the hard pipe.



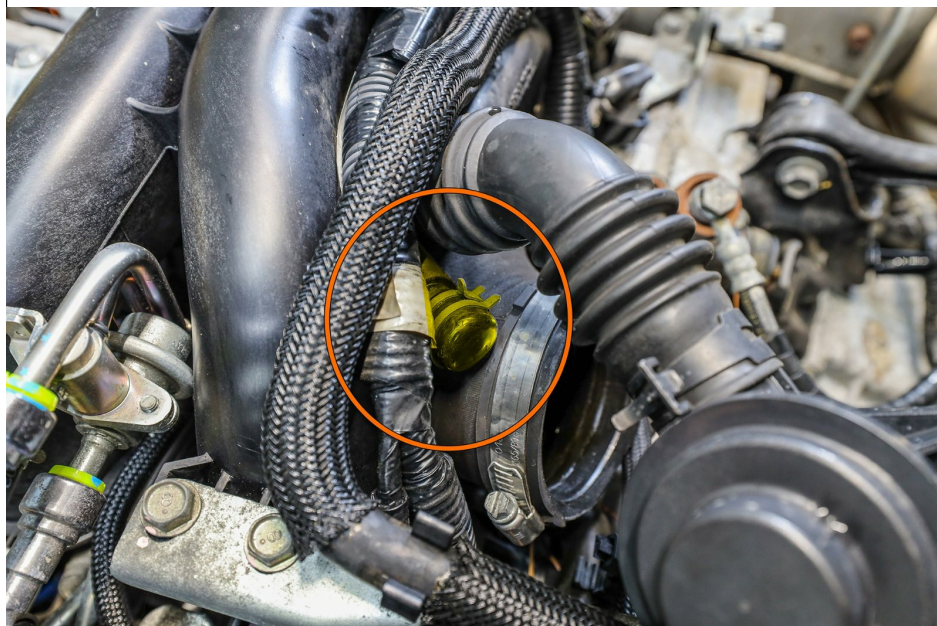
Step 30/108

Numbered annotations (1)

- 16 Clamp the cap in place with the supplied clamp.



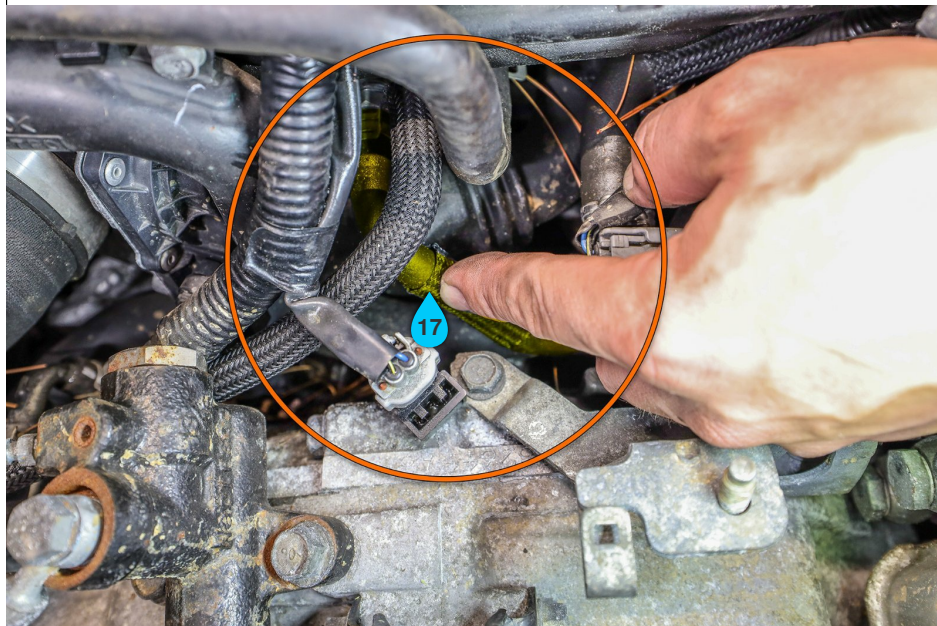
Step 31/108



Step 32/108

Numbered annotations (1)

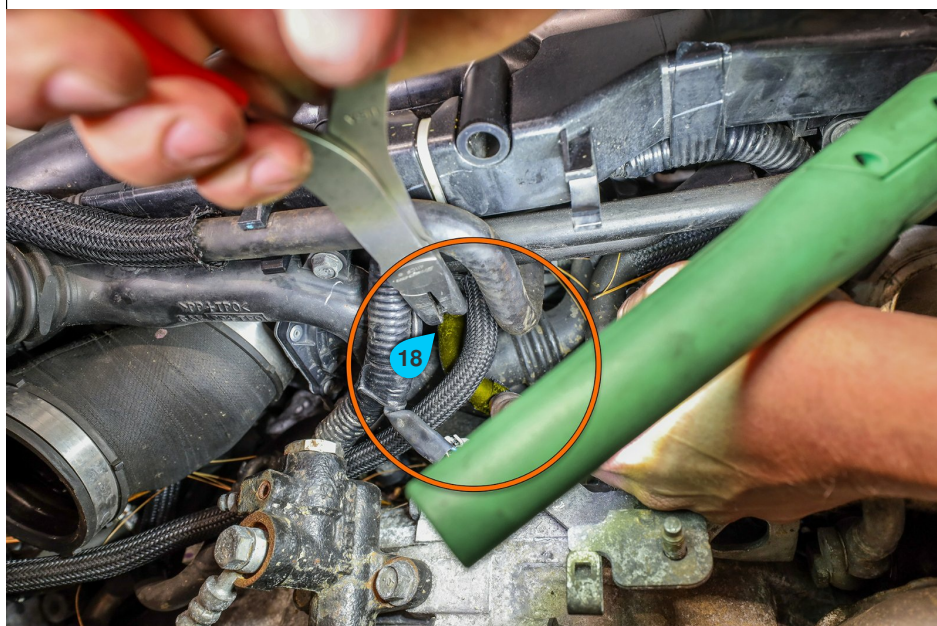
- 17 Locate the PCV vacuum line on the back of the intake manifold.



Step 33/108

Numbered annotations (1)

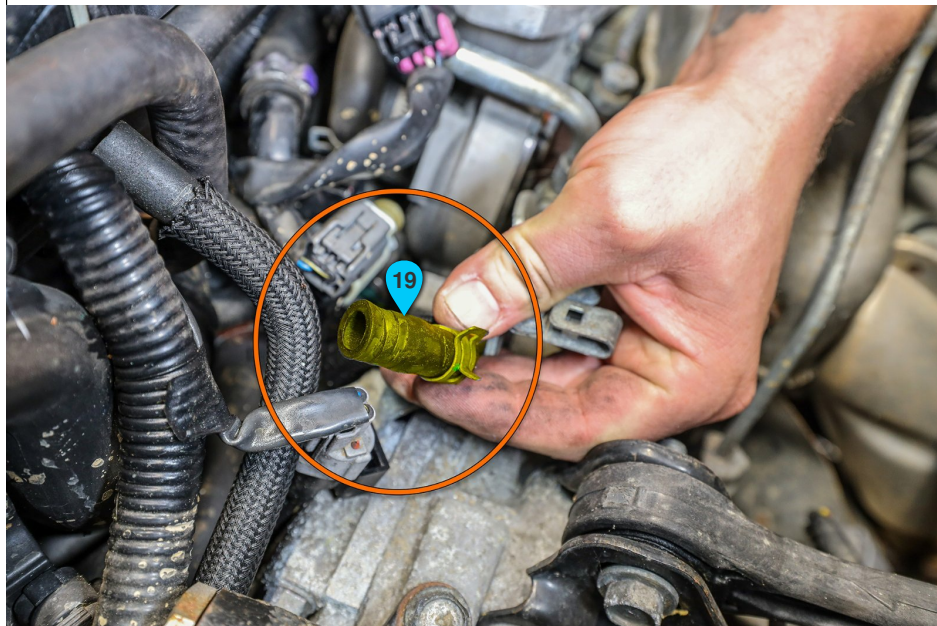
- 18 Loosen the OEM clamp from the PCV vacuum line



Step 34/108

Numbered annotations (1)

- 19 Remove the PCV vacuum line from the back of the intake manifold.



Step 35/108

Numbered annotations (1)

- 20 Locate the OEM PCV hose assembly near the turbocharger.



Step 36/108

Numbered annotations (1)

- 21 Use a pick tool to loosen the spring clamp and remove the hose assembly.



Step 37/108

Numbered annotations (1)

- 22 PCV assembly. Some model years make look different.



Step 38/108

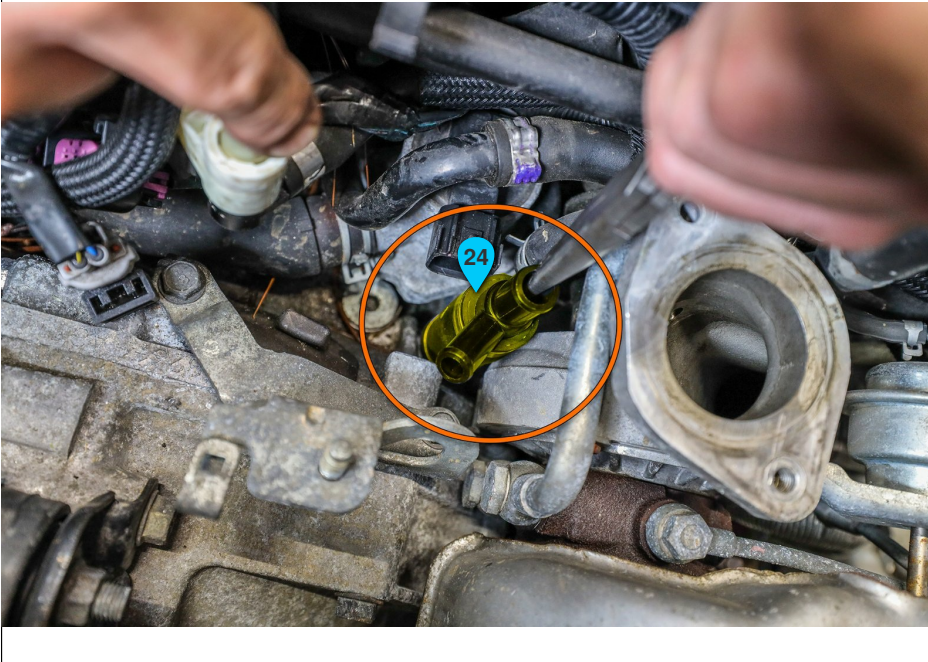
Numbered annotations (1)

- 23** From your AOS parts, install the PCV Y connector into the supplied hose and secure with the spring clamp. Install and tighten the lower spring clamp as well.

**Step 39/108**

Numbered annotations (1)

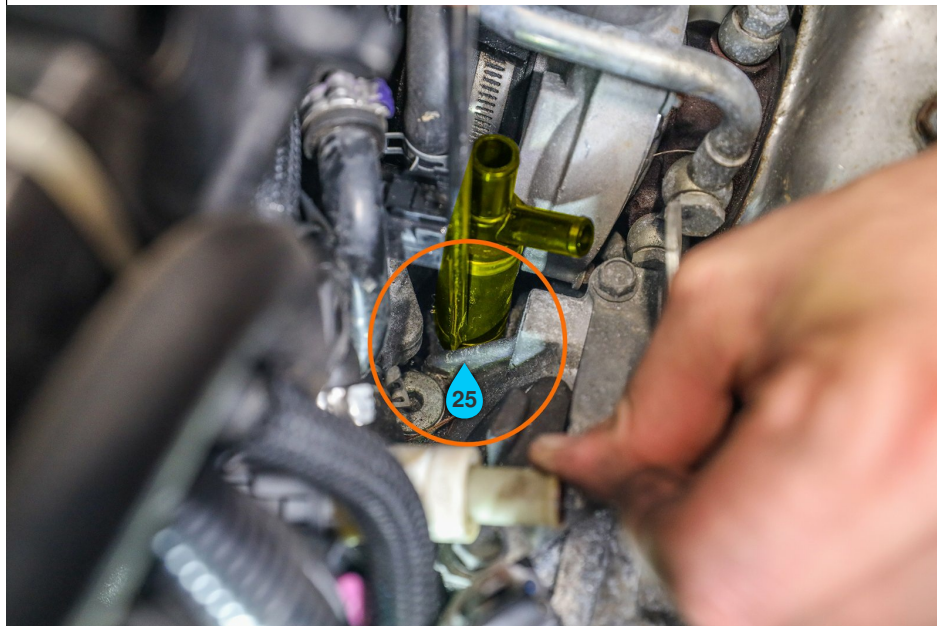
- 24** Apply silicone lubricant or petroleum jelly inside the lower portion of the 3/4" x 2" hose. Install the hose assembly onto the block breather port. You may need to use pliers to help push the hose over the barb on the block breather.



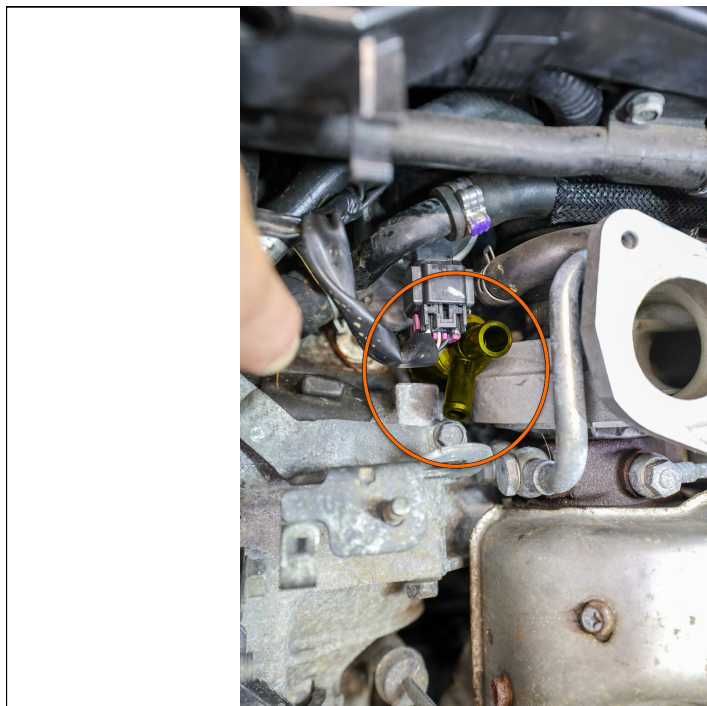
Step 40/108

Numbered annotations (1)

- 25 Use a tool to help push the hose over the barb, if necessary.



Step 41/108



Step 42/108

Numbered annotations (1)

- 26 Locate the main wiring harness connector on the passenger side.



Step 43/108

Numbered annotations (1)

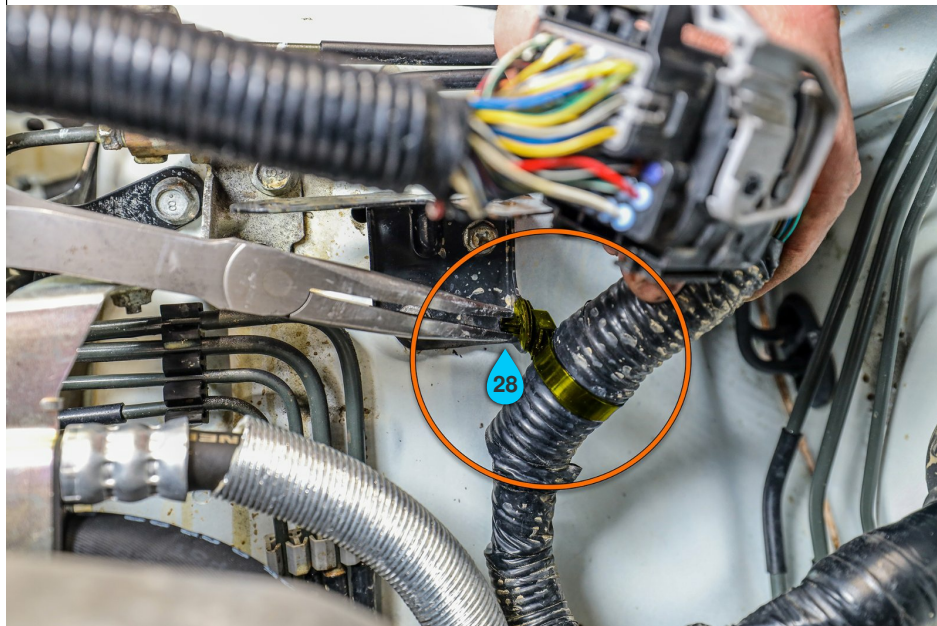
- 27 Slide the connector off the clip securing the connector to the bracket.



Step 44/108

Numbered annotations (1)

- 28** Use pliers to squeeze the end of this zip tie and push it through the hole.



Step 45/108

Numbered annotations (1)

- 29** Remove the wiring harness bracket.



Step 46/108

Numbered annotations (1)

- 30 Attach the drain hose using the supplied clamp.



Step 47/108

Numbered annotations (1)

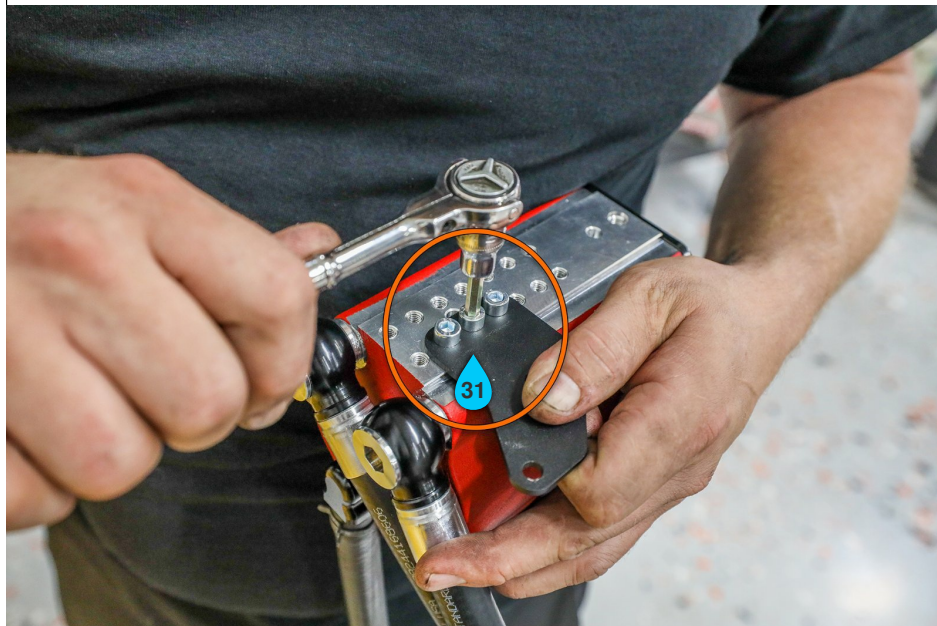
- 1 These fittings are preinstalled and torqued. The fitting is designed to swivel around the bolt. Do not remove or tighten further.



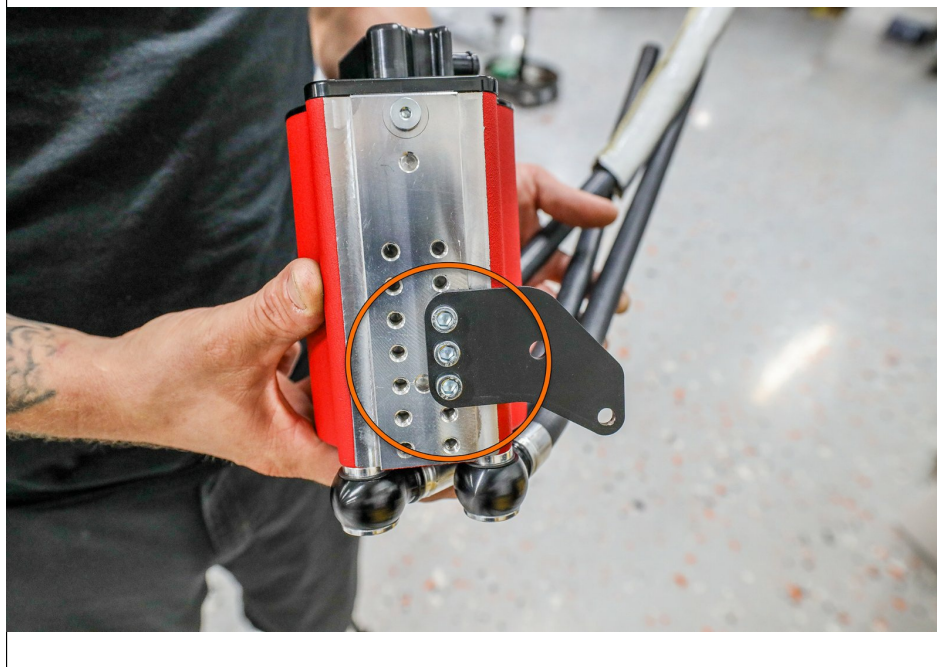
Step 48/108

Numbered annotations (1)

- 31 Locate the bracket and supplied hardware and install the bracket as shown. Tighten to 7 Ft lbs.



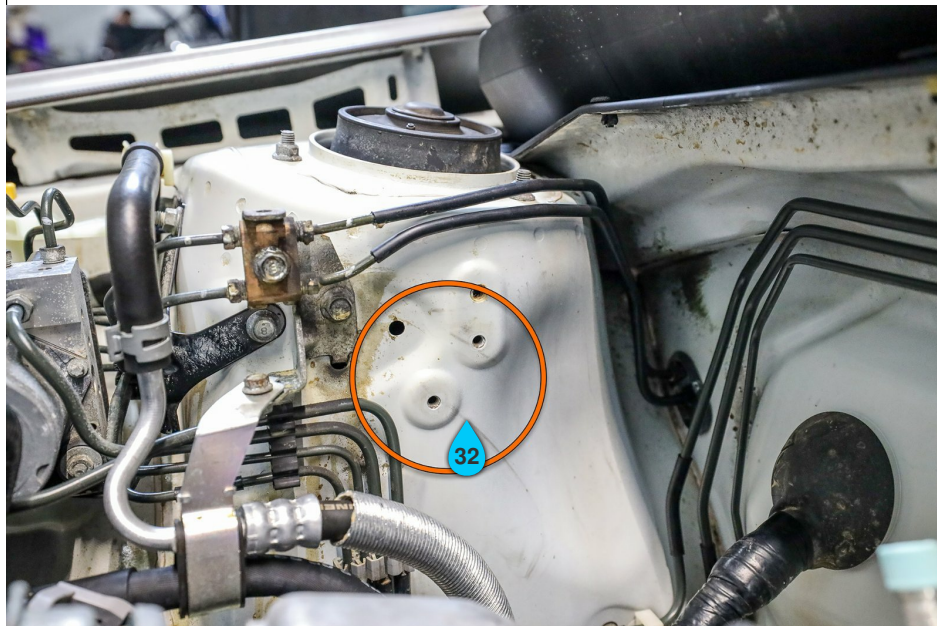
Step 49/108



Step 50/108

Numbered annotations (1)

- 32** The bracket will be installed here, where the OEM wiring harness bracket was previously installed. If the bolts don't thread in smoothly there may be rust in the holes. Clean the threads with a thread chaser.



Step 51/108

Numbered annotations (1)

- 33** Install the bracket using the supplied M6x12mm bolts.



Step 52/108

Numbered annotations (1)

- 34 Locate the OEM harness bracket



Step 53/108

Numbered annotations (1)

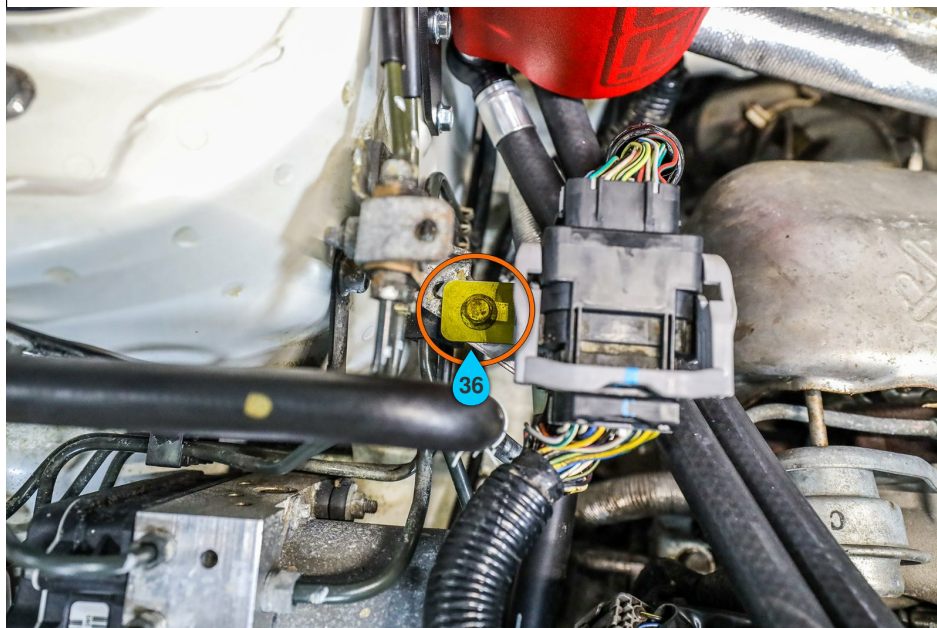
- 35 Remove the OEM harness bracket and install the supplied harness relocation bracket.



Step 54/108

Numbered annotations (1)

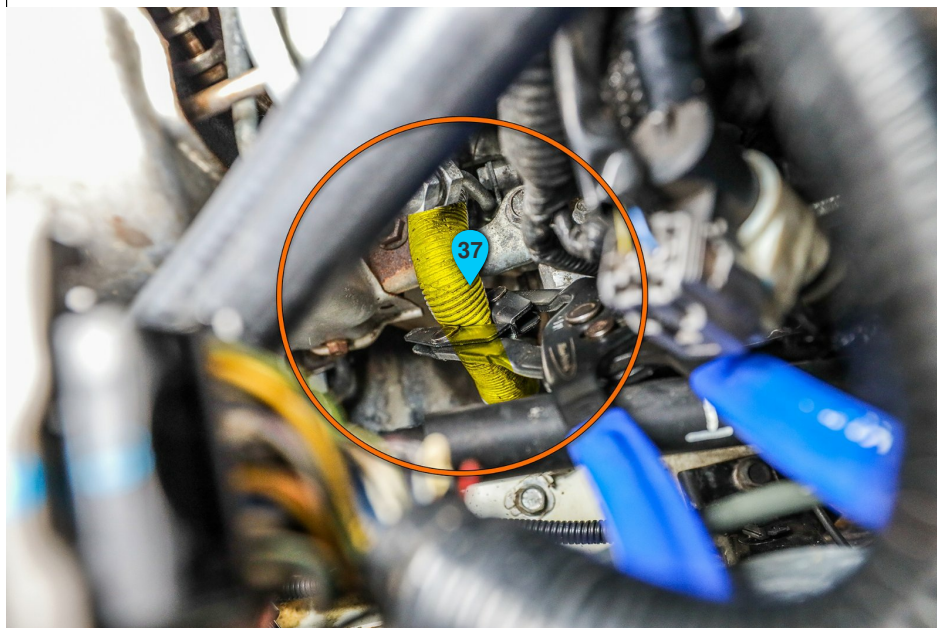
- 36 Reinstall the harness using the new bracket.



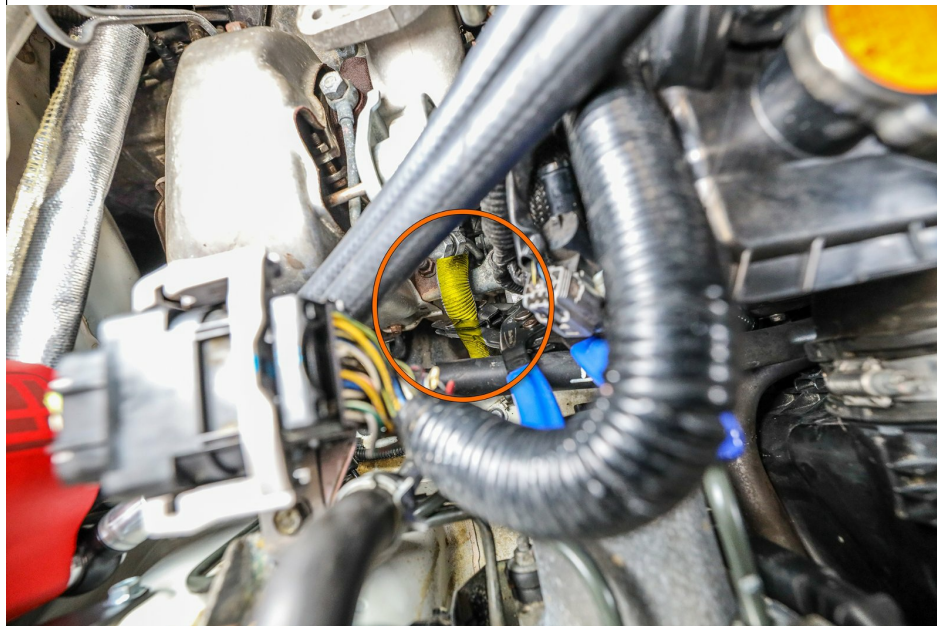
Step 55/108

Numbered annotations (1)

- 37 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.



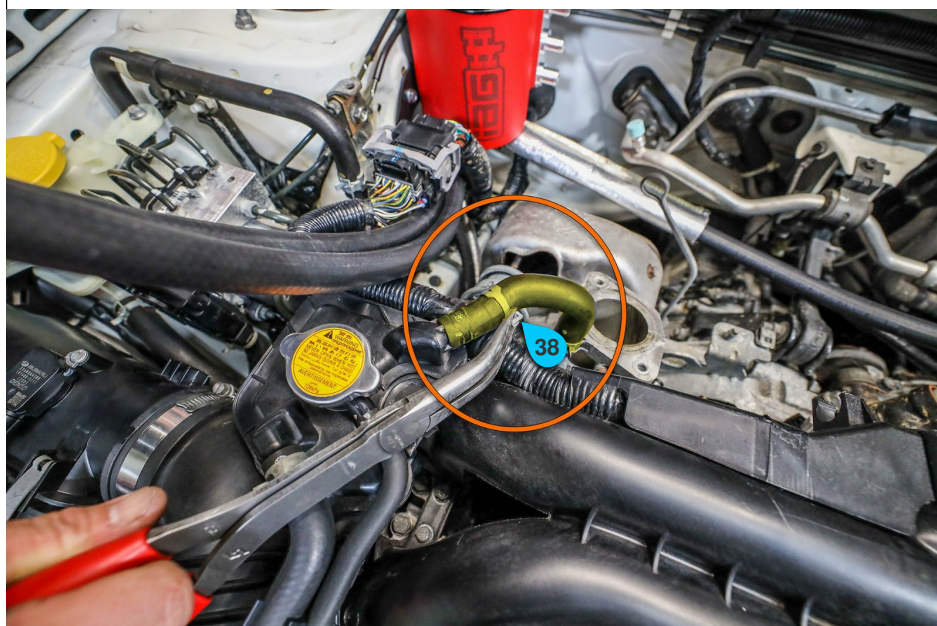
Step 56/108



Step 57/108

Numbered annotations (1)

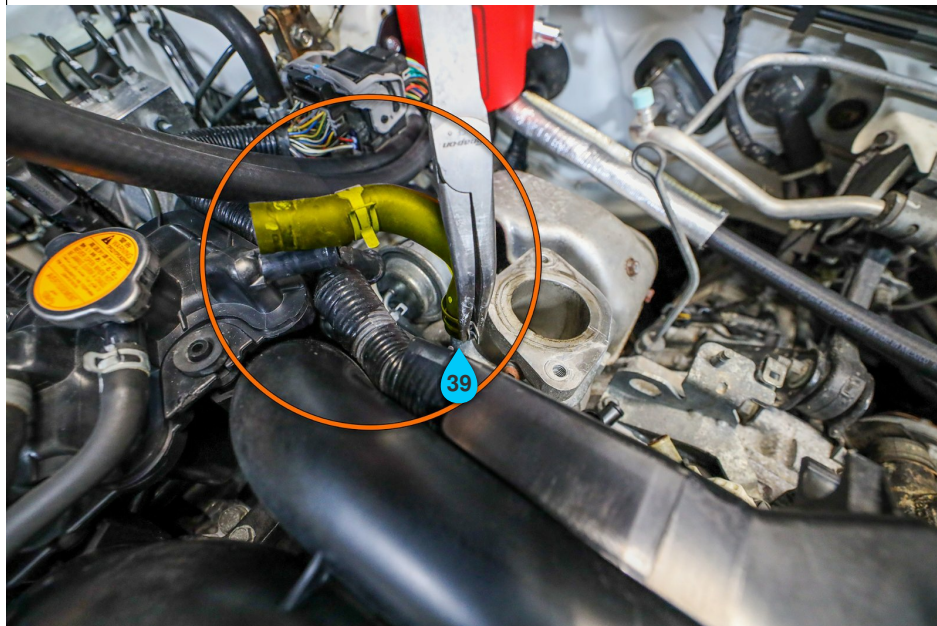
- 38 Remove the clamp securing the OEM upper turbo coolant hose.



Step 58/108

Numbered annotations (1)

- 39** Remove the second clamp securing the upper OEM turbo coolant hose and remove the hose assembly.



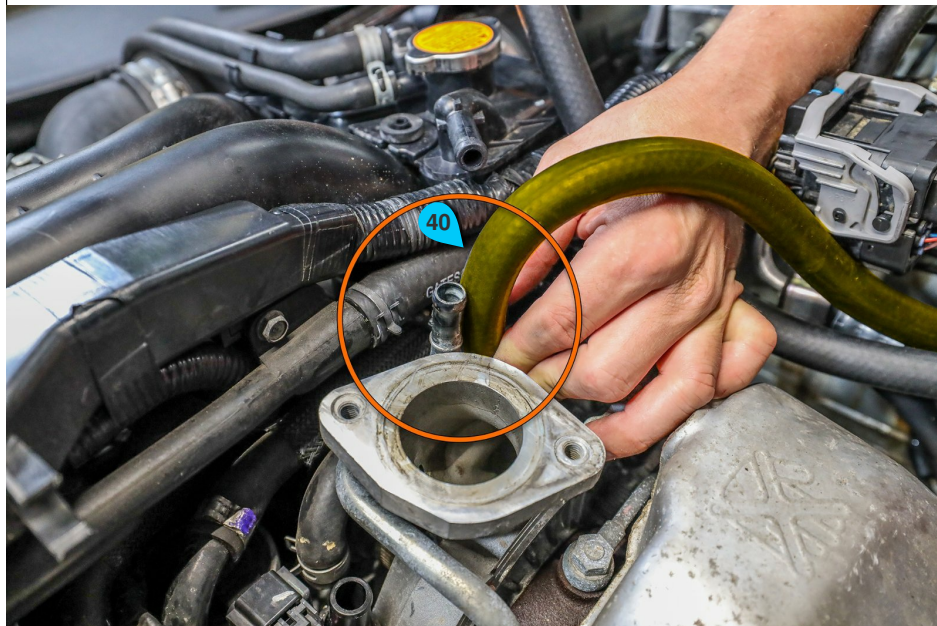
Step 59/108



Step 60/108

Numbered annotations (1)

- 40 Route one of the AOS coolant hoses to this port and measure the length, leaving enough room to secure the hose with the supplied clamp.

**Step 61/108**

Numbered annotations (1)

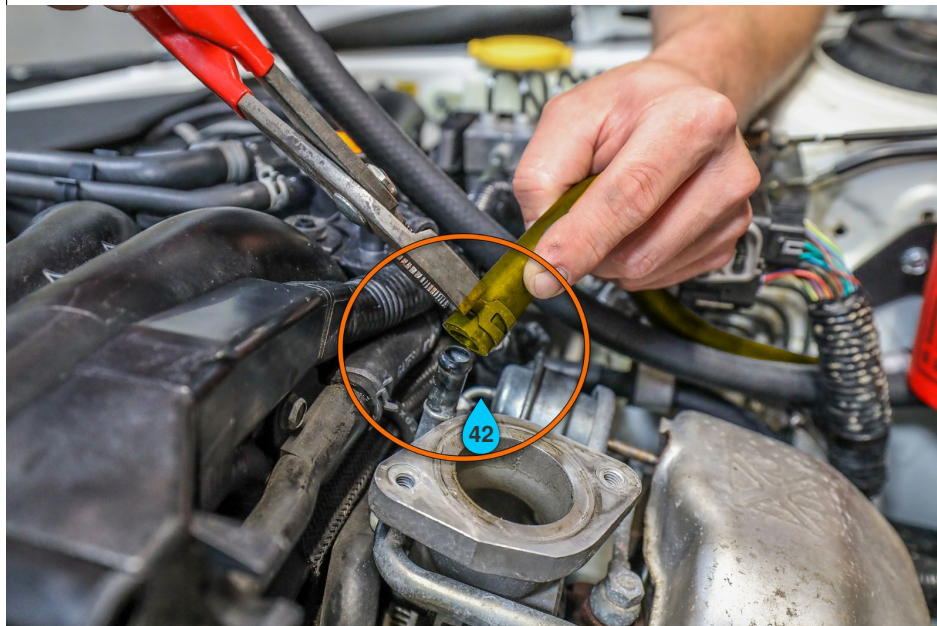
- 41 Cut the AOS coolant hose to length.



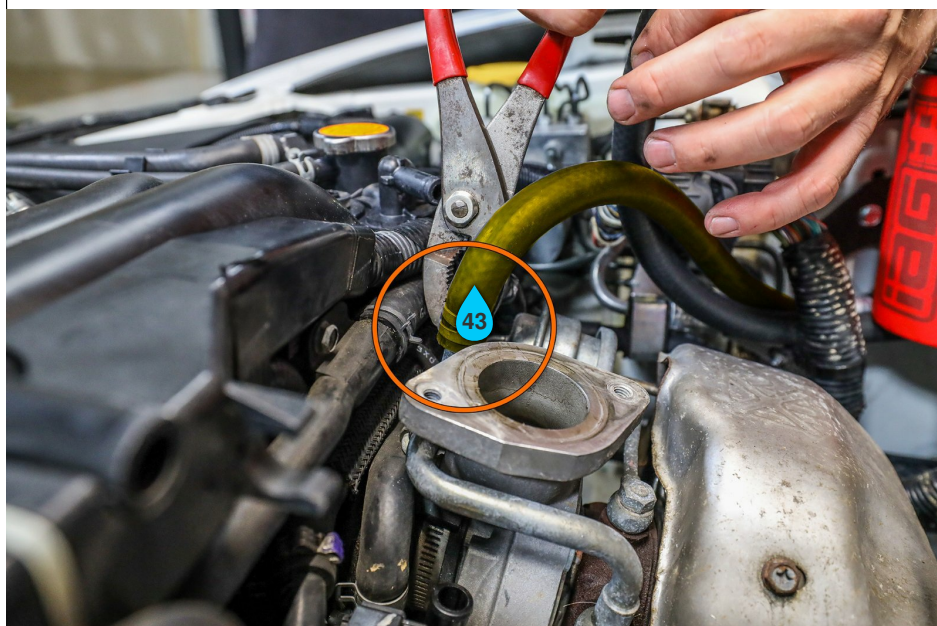
Step 62/108

Numbered annotations (1)

- 42 Install the AOS coolant hose to this pipe using the supplied clamp.



Step 63/108



Step 64/108

Numbered annotations (1)

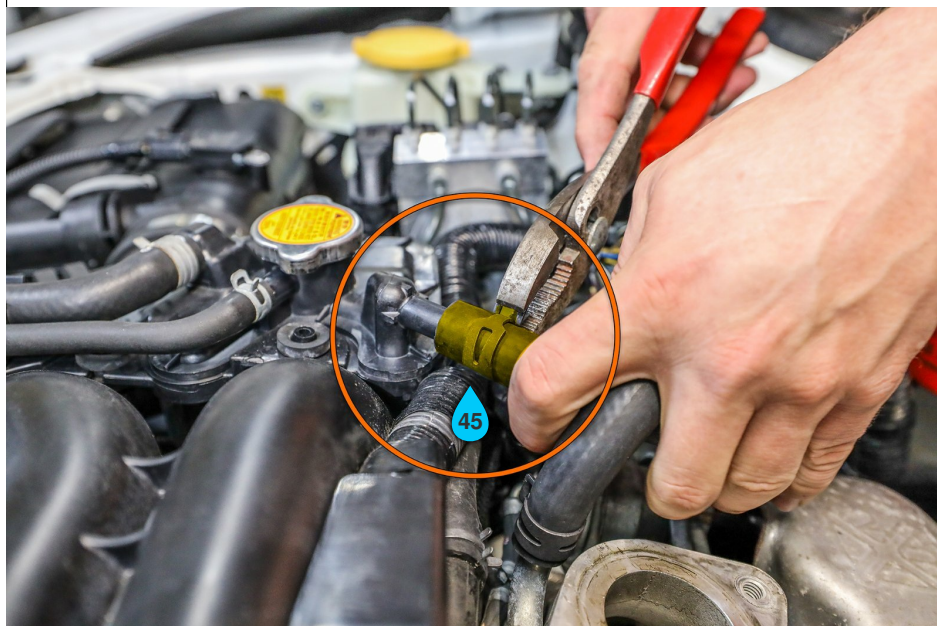
- 44 Locate the other AOS coolant hose, measure, and cut to length.



Step 65/108

Numbered annotations (1)

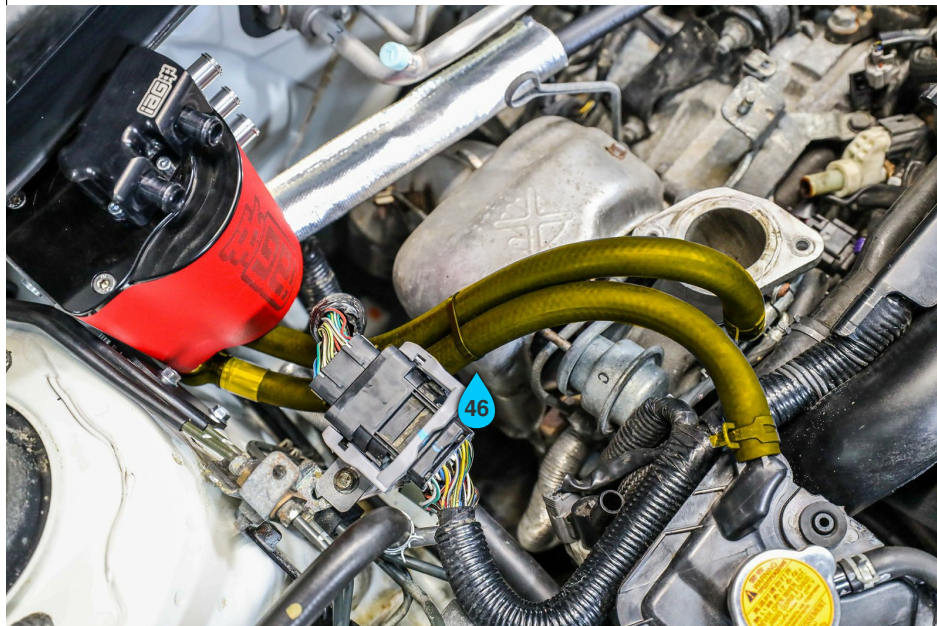
- 45 Attach the AOS coolant hose to the coolant tank using the supplied clamp.



Step 66/108

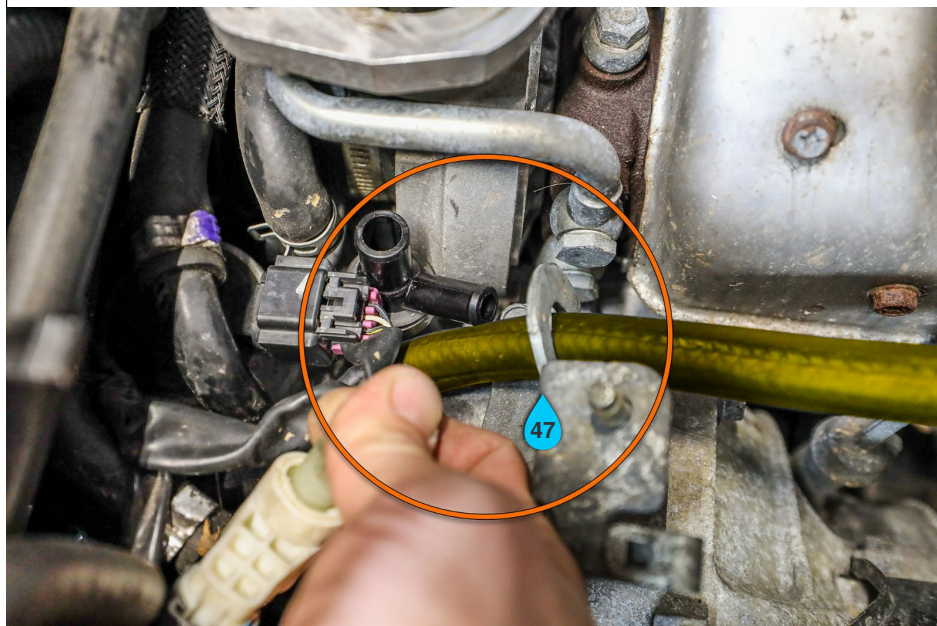
Numbered annotations (1)

- 46 Route the hoses as shown and secure with a zip tie. Ensure that the hoses are not rubbing on anything. Remove the hose clamping pliers.

**Step 67/108**

Numbered annotations (1)

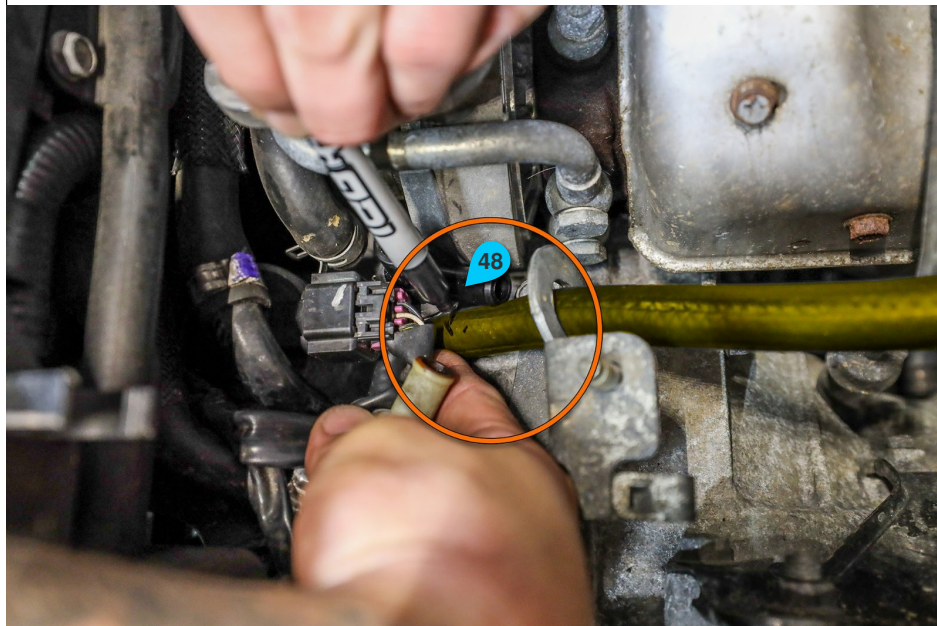
- 47 Slide a 16" piece of heat sleeve over the AOS drain hose. Temporarily route the AOS drain hose as shown



Step 68/108

Numbered annotations (1)

- 48 Mark the hose for length to attach to the Y fitting.



Step 69/108

Numbered annotations (1)

- 49 Trim the excess drain hose.



Step 70/108

Numbered annotations (1)

- 50 Push the drain hose through the hole in the bracket.



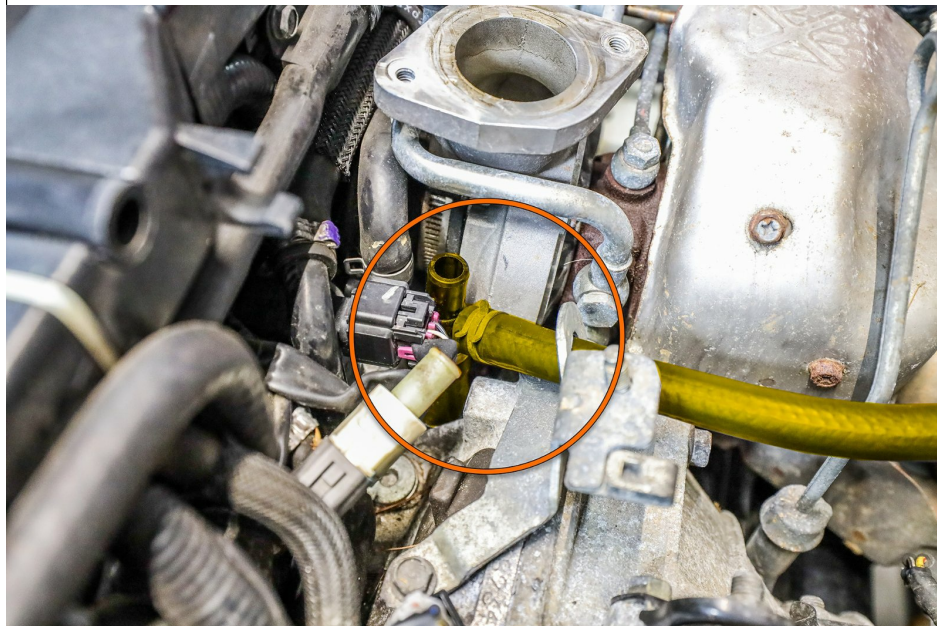
Step 71/108

Numbered annotations (1)

- 51 Install the supplied clamp and attach the hose to the Y fitting.



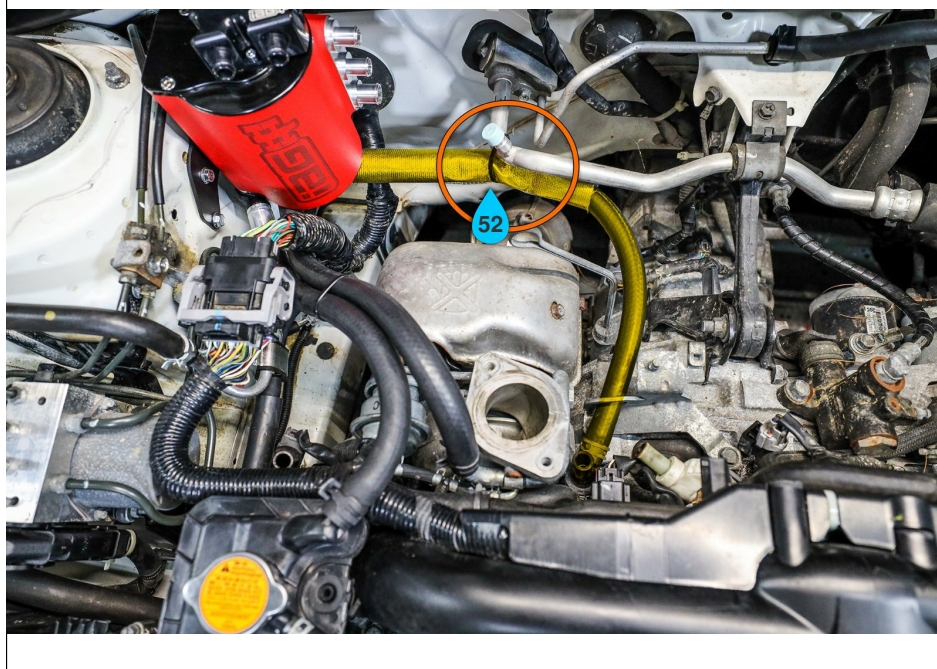
Step 72/108



Step 73/108

Numbered annotations (1)

- 52 Secure the drain hose to the A/C line with a zip tie. Ensure that the drain hose is routed downhill the whole length for proper drainage.



Step 74/108

Numbered annotations (1)

- 53** Locate the supplied 5/8 breather hose, measure 2" and cut the hose.

**Step 75/108**

Numbered annotations (1)

- 54** Assemble the vent hose as shown using the supplied 5/8" 90 degree elbow between the two hose pieces. Secure with the supplied clamps. Slide the other 16" piece of heat sleeve over the hose.



Step 76/108

Numbered annotations (1)

- 55 Attach the hose assembly to the bottom port of the AOS body.



Step 77/108

Numbered annotations (1)

- 56 Measure the hose for length to attach here.



Step 78/108

Numbered annotations (1)

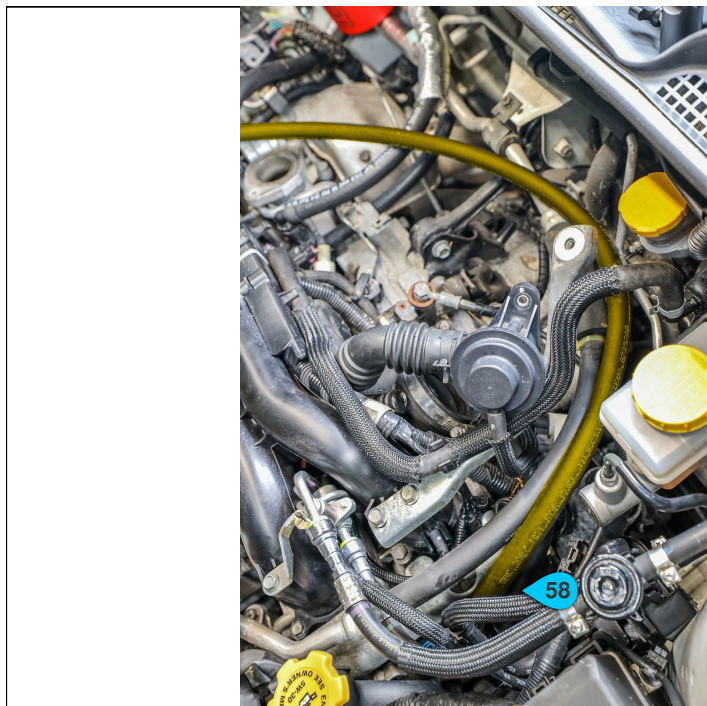
- 57 Trim excess hose and reinstall to the top of the Y fitting using the supplied clamp.



Step 79/108

Numbered annotations (1)

- 58 Route the supplied 74" long 1/2" valve cover breather hose as shown.



Step 80/108

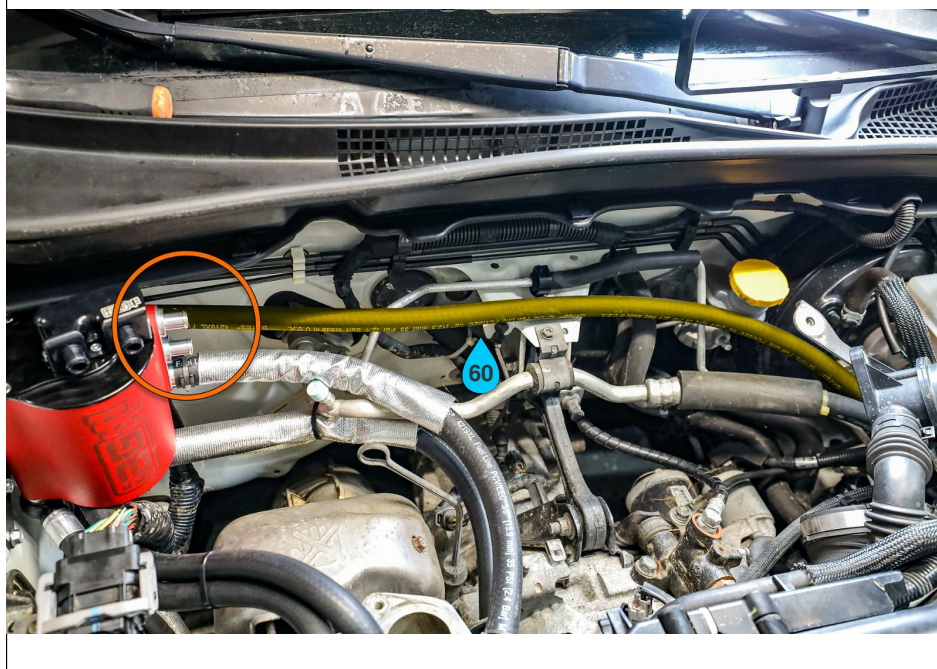
Numbered annotations (1)

- 59** Attach the driver side breather hose to the OEM PCV sensor as shown, using the supplied clamp. If your vehicle does not have this sensor, connect this hose to the front port of the driver side valve cover.

**Step 81/108**

Numbered annotations (1)

- 60** Route the line as shown and measure for length.



Step 82/108

Numbered annotations (1)

- 61 Trim the hose to length. Reserve the excess hose.



Step 83/108

Numbered annotations (1)

- 62 Attach the driver side 1/2" valve cover vent hose here using the supplied clamp.



Step 84/108

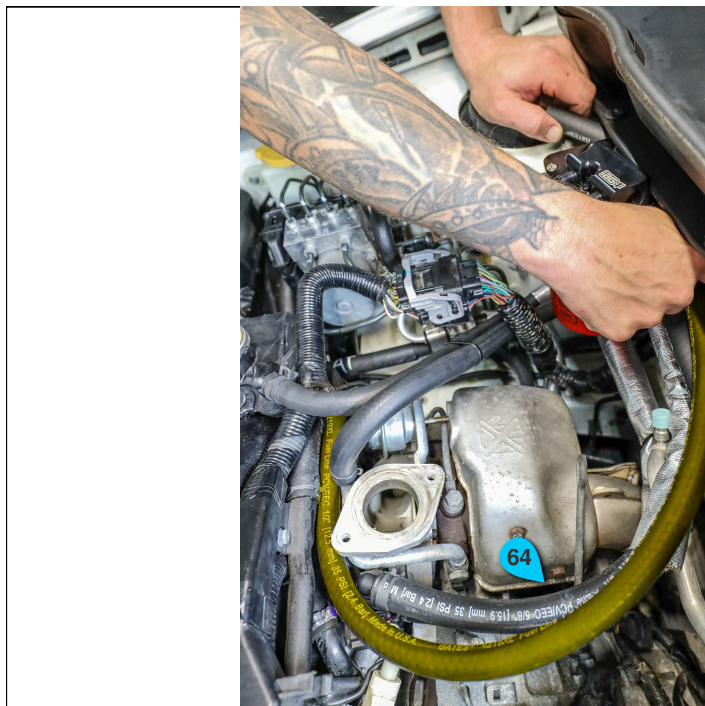
Numbered annotations (1)

- 63** Install the reserved piece of the 1/2" breather hose to the OEM PCV connector. on the passenger side. If your vehicle does not have this connector, the hose will be attached directly to the front passenger valve cover port.

**Step 85/108**

Numbered annotations (1)

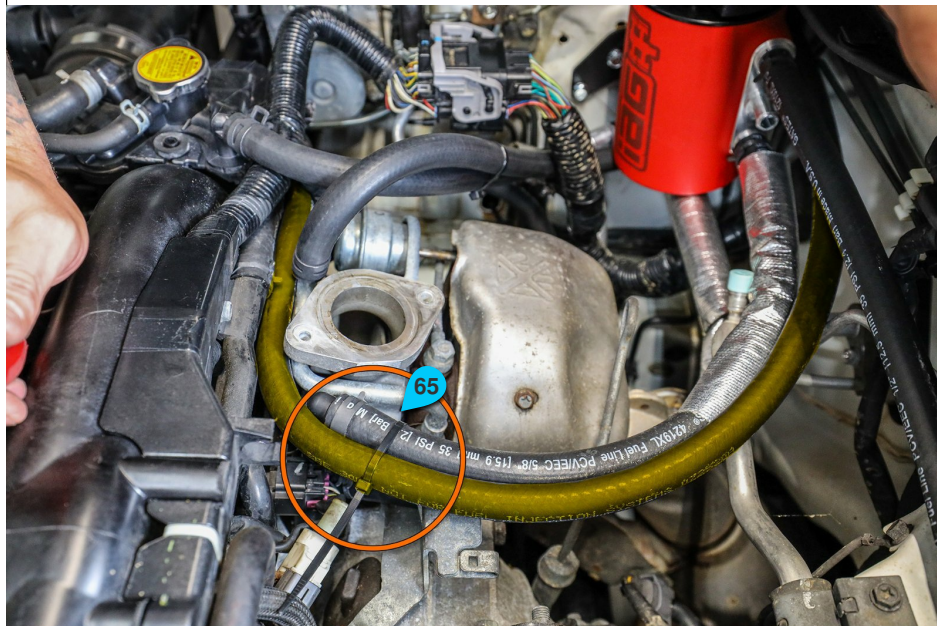
- 64** Route the passenger side 1/2" valve cover breather hose as shown. The 12" piece of heat sleeve can be optionally installed on this hose.



Step 86/108

Numbered annotations (1)

- 65 Secure the hose to the block breather hose with a zip tie.



Step 87/108

Numbered annotations (1)

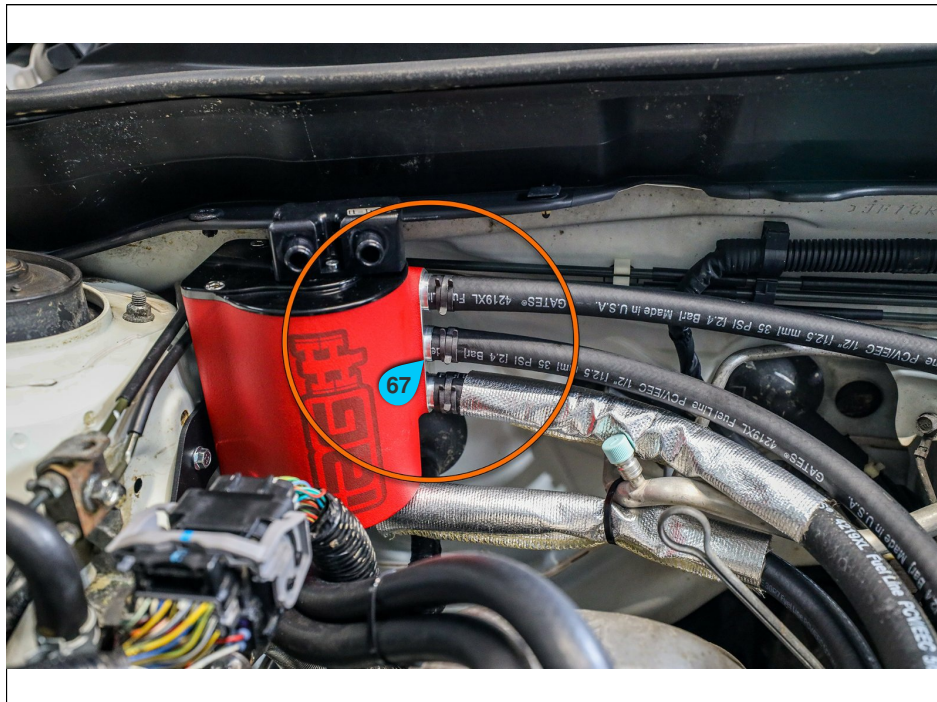
- 66 Measure and trim the hose to length.



Step 88/108

Numbered annotations (1)

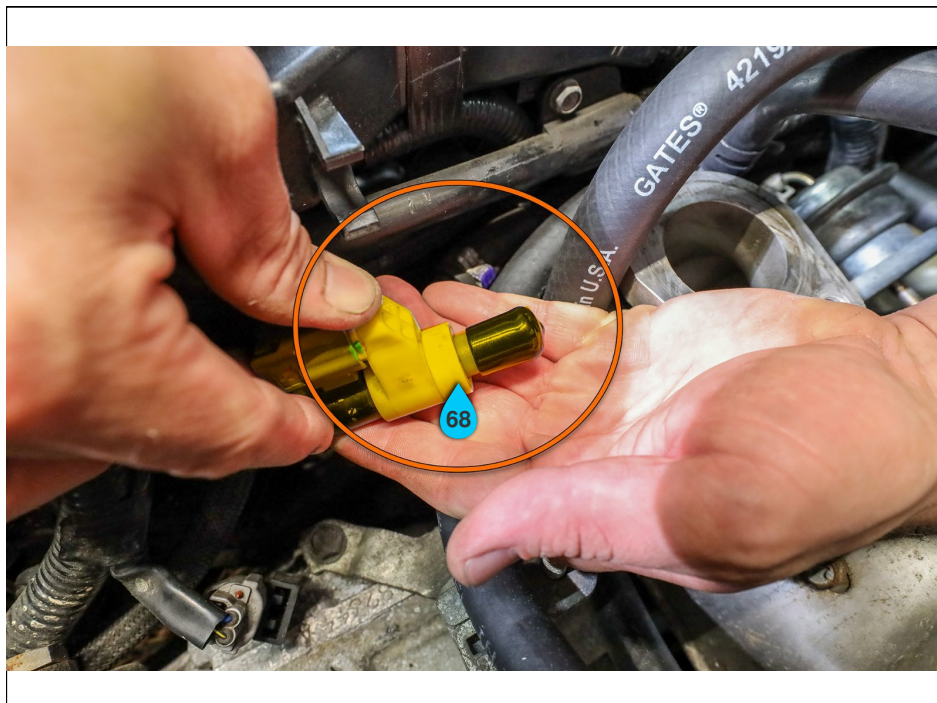
- 67 Attach the passenger side 1/2" valve cover breather hose here using the supplied clamp.

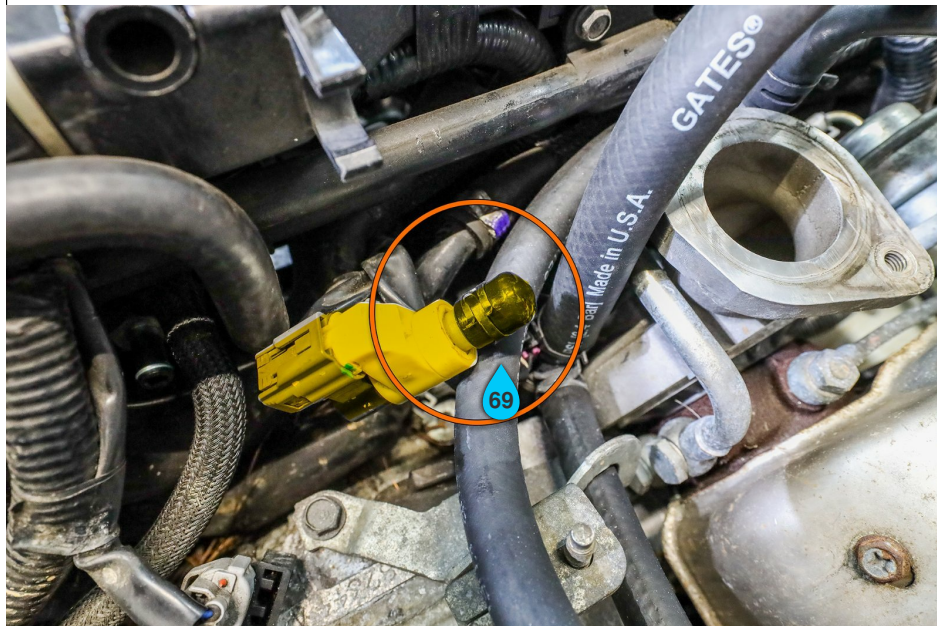


Step 89/108

Numbered annotations (1)

- 68 Locate the OEM PCV connector near the turbo inlet. Install the supplied vacuum cap. If your vehicle does not have this sensor use the cap to cover the nipple on the turbo inlet.

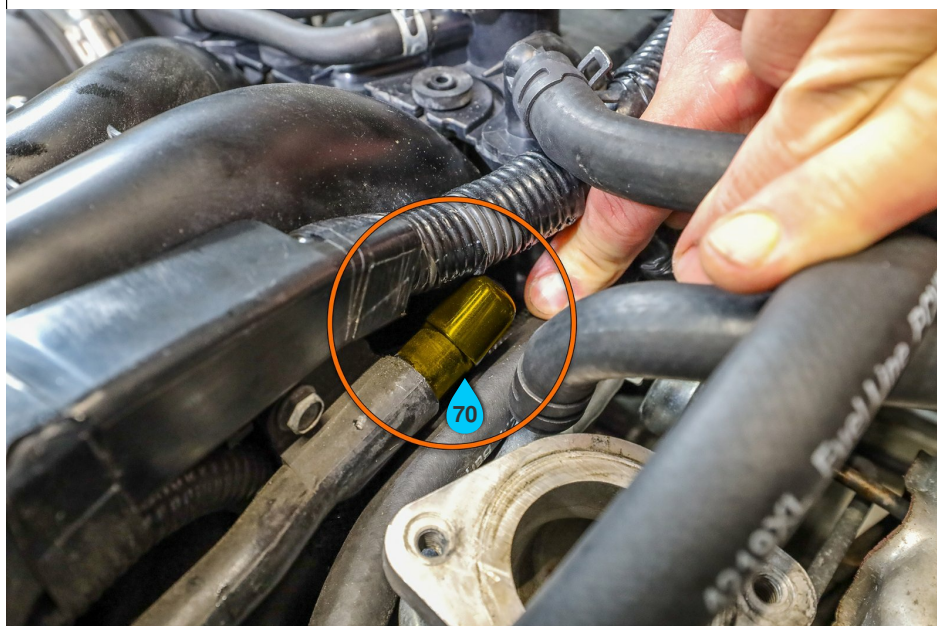




Step 90/108

Numbered annotations (1)

- 69 Secure the supplied vacuum cap with the supplied clamp.



Step 91/108

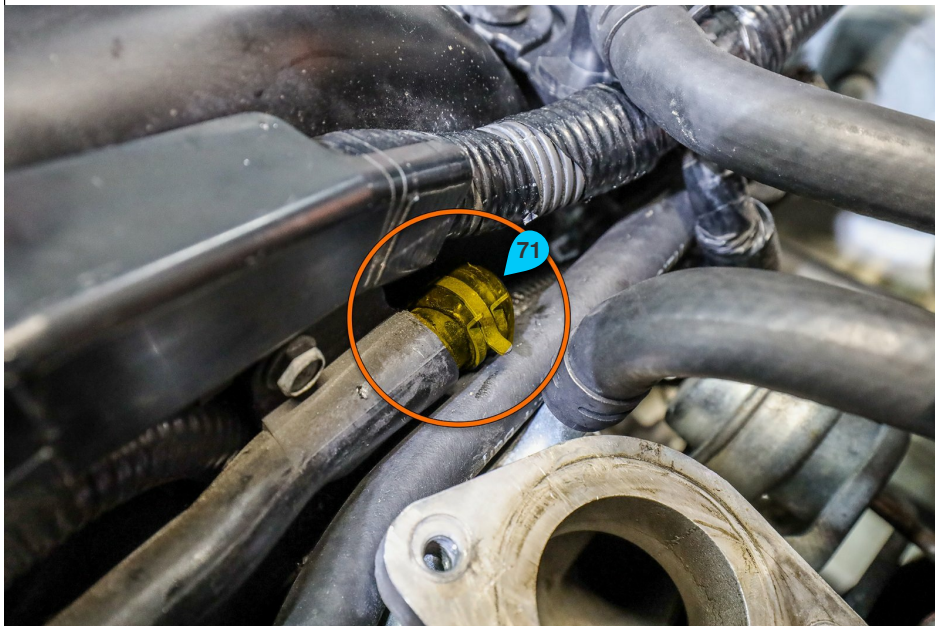
Numbered annotations (1)

- 70 Locate the PCV hard line port and install the supplied vacuum cap.

Step 92/108

Numbered annotations (1)

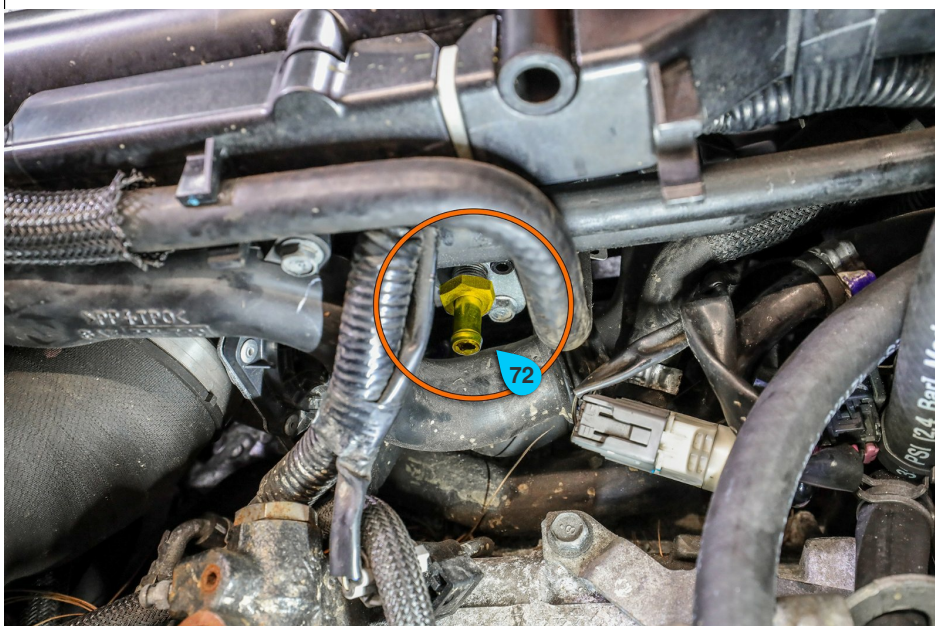
- 71 Secure the supplied vacuum cap with the supplied clamp.

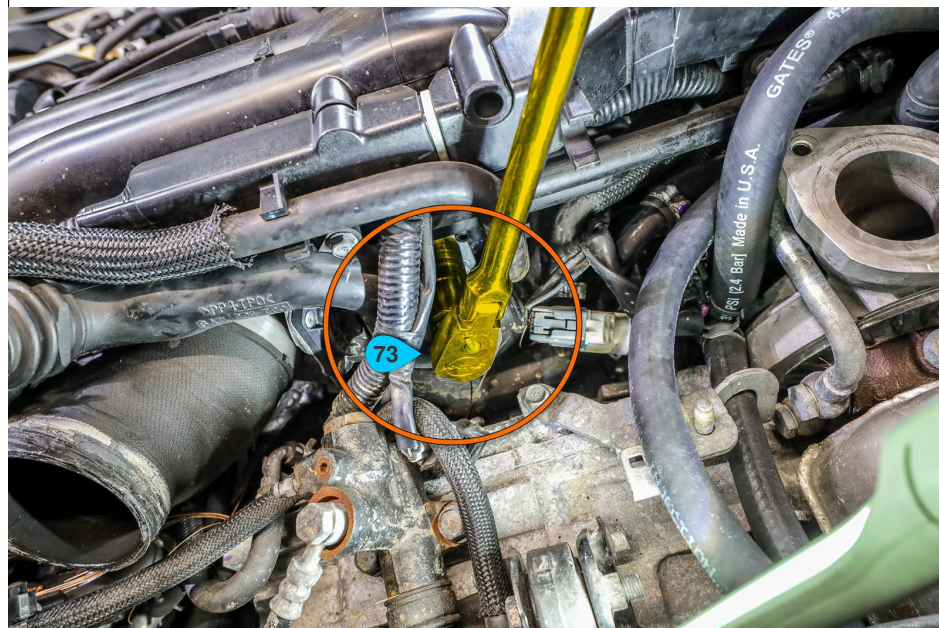


Step 93/108

Numbered annotations (1)

- 72 Locate the vacuum port on the back of the intake manifold.





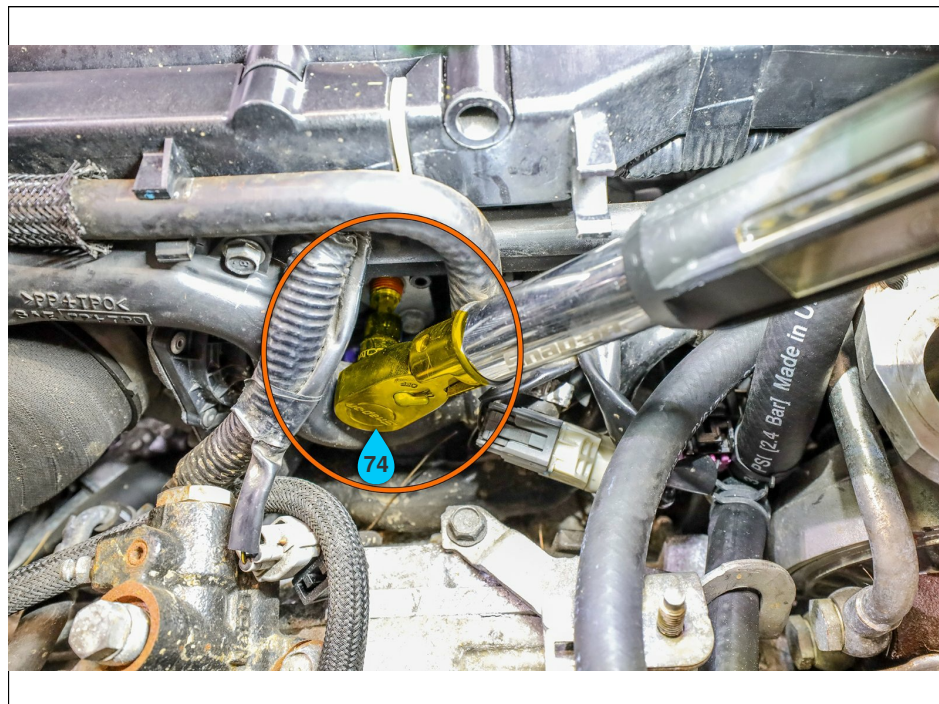
Step 94/108

Numbered annotations (1)

- 73 Remove the OEM vacuum nipple.



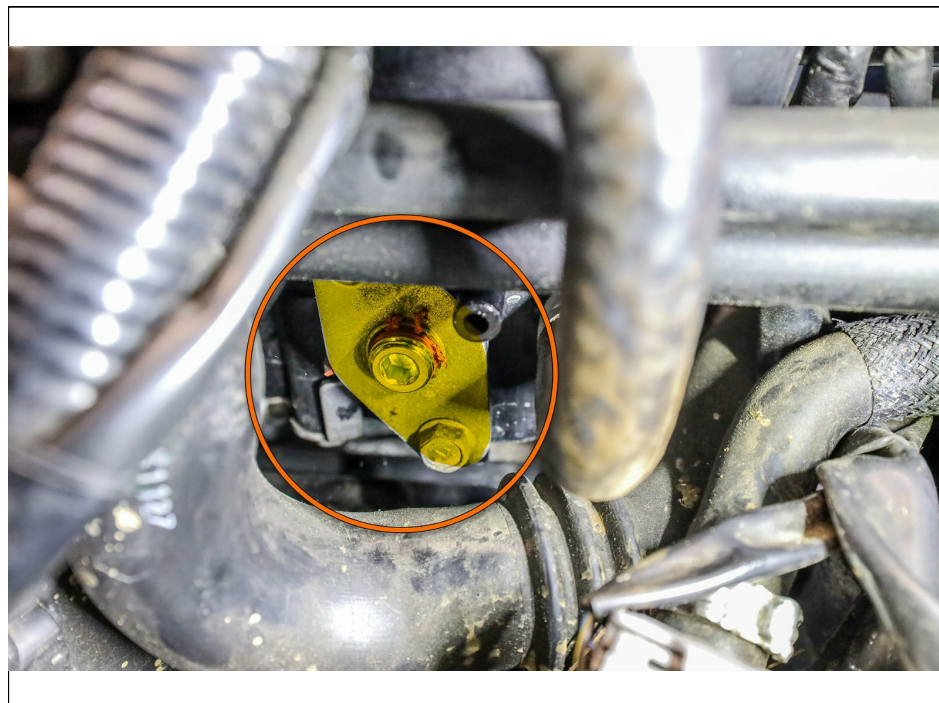
Step 95/108



Step 96/108

Numbered annotations (1)

- 74 Install the supplied 1/4" NPT plug and torque to 15 ft lbs.

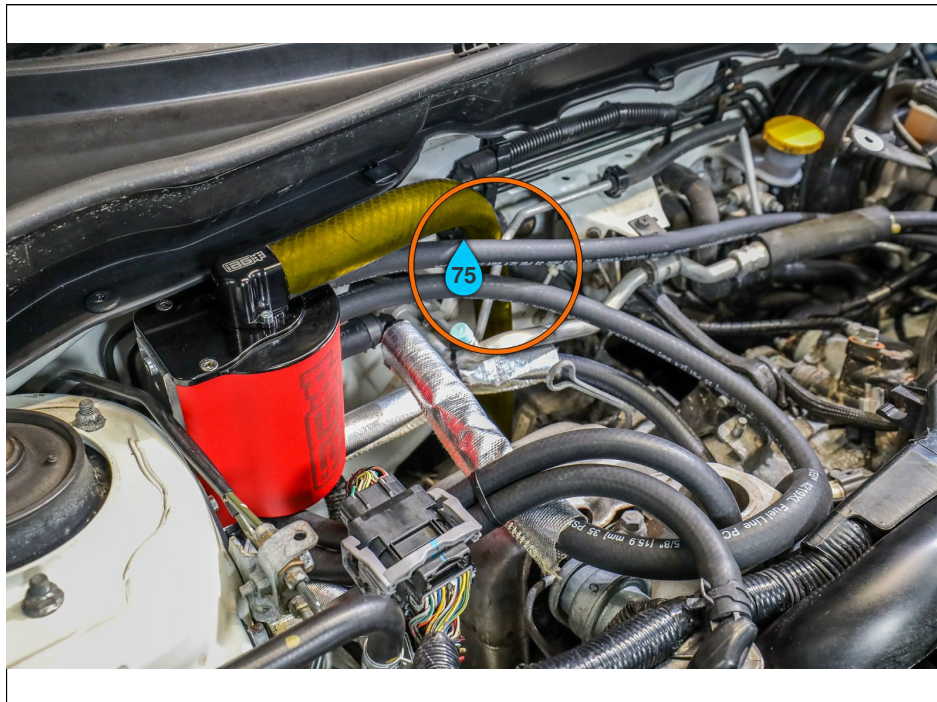


Step 97/108

Step 98/108

Numbered annotations (1)

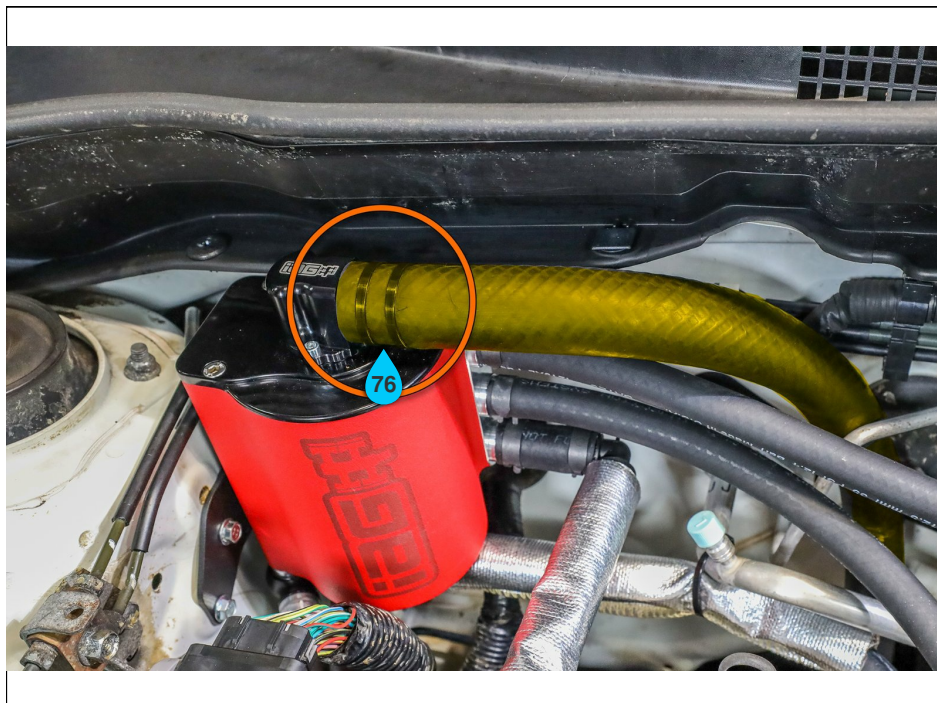
- 75 Install the 1" Breather hose and route as shown.



Step 99/108

Numbered annotations (1)

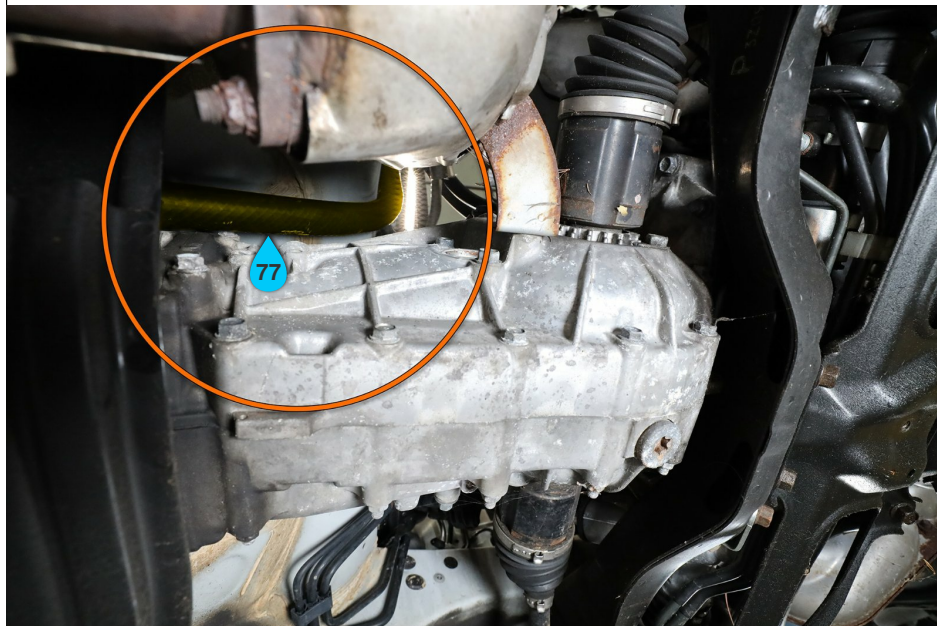
- 76 Secure the breather hose with two zip ties.



Step 100/108

Numbered annotations (1)

 Route the breather hose here



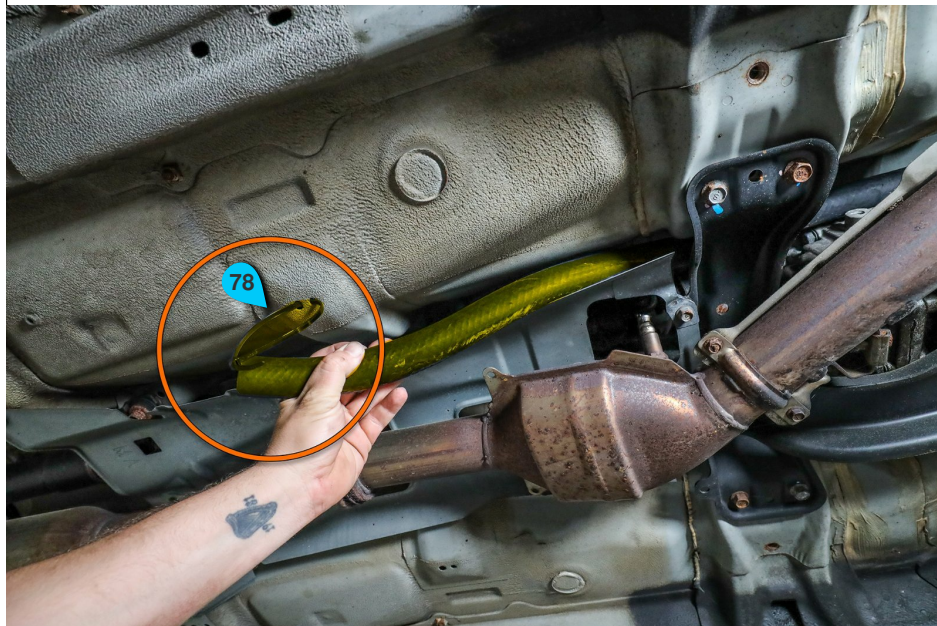
Step 101/108



Step 102/108

Numbered annotations (1)

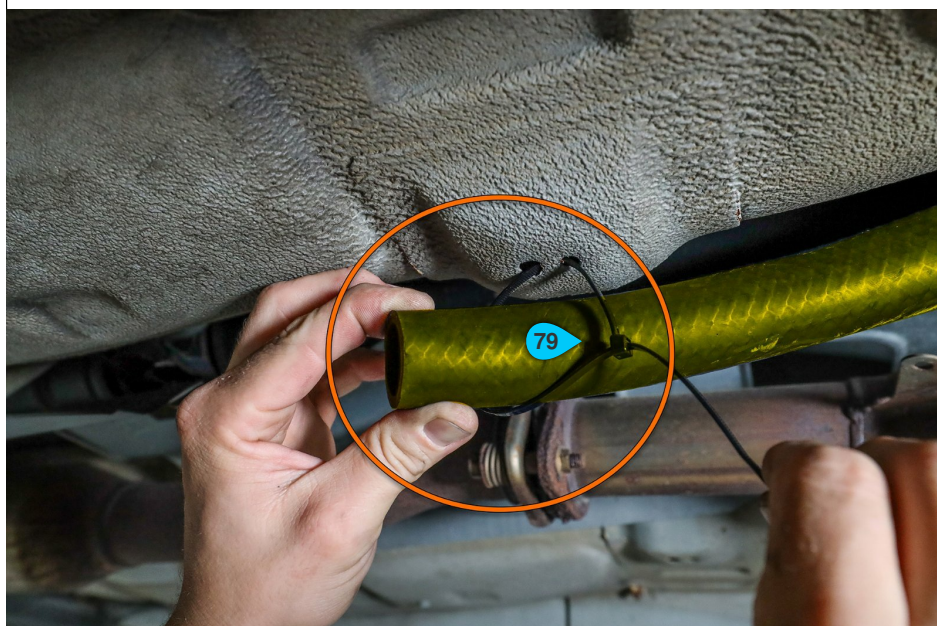
- 78 Make a loop with a zip tie here



Step 103/108

Numbered annotations (1)

- 79 Run the hose through the zip tie to secure it to the bottom of the vehicle.



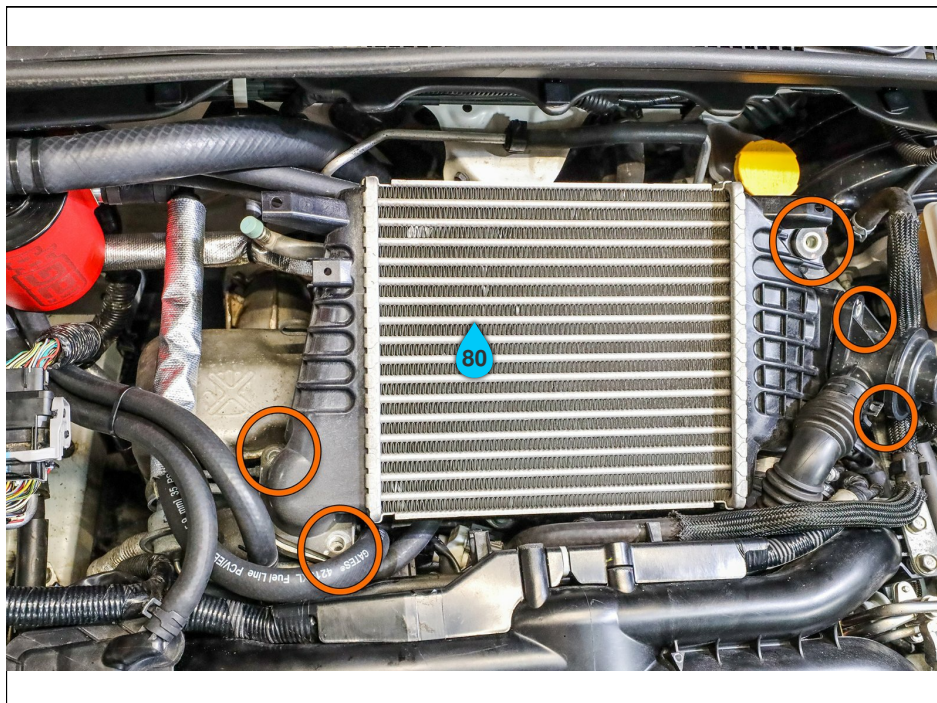
Step 104/108



Step 105/108

Numbered annotations (1)

- 80 Reinstall the intercooler and BPV. Make sure to secure the clamp for the throttle body hose.



Step 106/108



Step 107/108



Step 108/108

Numbered annotations (1)

- 81 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.

