

VERUS ENGINEERING

AOS Kit – Mk5 Toyota Supra Install Manual



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Document Revisions

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| 01 | 2020/09/05 | E. Hazen | Initial release of install manual |
| 02 | 2021/05/05 | C. Warner | Drain/CCV Line Kit |
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1. Introduction

1.1. Overview: Detailed instructions on installing the Verus Engineering AOS for the Mk5 Toyota Supra.

1.2. Difficulty: Easy

1.3. Time Required: 0.5-1 hour

1.4. Tools Needed: (* signifies tools needed for Drain/CCV Line Kit)

- 1.4.1. Ratchet
- 1.4.2. 13mm Socket
- 1.4.3. T20 Torx
- 1.4.4. 4mm Allen Wrench or Socket
- 1.4.5. Side Cuts*
- 1.4.6. Utility Knife*
- 1.4.7. Heat Gun*
- 1.4.8. Flathead Screwdriver*
- 1.4.9. T30 Torx*
- 1.4.10. Swivel *
- 1.4.11. Extension*



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Drain/CCV Line Kit Install Tools

**1.5. AOS Kit Components**

- 1.5.1. (1) Pre-Assembled AOS Unit
- 1.5.2. (2) Pre-formed Silicone Hose
- 1.5.3. (1) AOS Bracket
- 1.5.4. (1) CNC PCV Hose Adapter
- 1.5.5. Hardware Bag
 - 1.5.5.1. (7) M6 x 1.0 (Button Head Cap Screw) x 16mm Long, Stainless
 - 1.5.5.2. (7) M6 x 12mm OD Washer, Stainless

**1.6. AOS Drain/CCV Line Kit Components**

- 1.6.1. (1) Pre-Cut 5/16" Hose, 20"
- 1.6.2. (1) AOS Drain Fitting
- 1.6.3. (1) -6AN ORB to 5/16" Hose Barb
- 1.6.4. (1) #014 Buna O-Ring

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- 1.6.5. (1) 5/16" Rubber Plug
- 1.6.6. (3) Hose Clamp, 9-16mm
- 1.6.7. (2) Zip Tie



2. Mk5 Toyota Supra AOS Install

- 2.1. Verus Engineering is not responsible for damage to you or your vehicle by following this manual and/or installing Verus Engineering products.
- 2.2. We begin by gaining access to underneath the hood. Pop the hood and open it.
- 2.3. Pull the engine cover off by pulling up around the unit.



- 2.4. We will need to remove the OE hose from the valve cover, this hose is pointed out with a red arrow below.

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- 2.5. To remove this hose from the valve cover, push the two “ears” on each side of the hose and then pull up. See below.

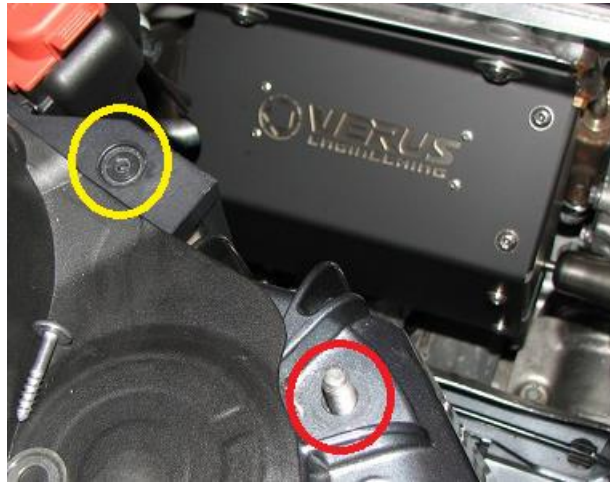


- 2.6. With the hose off the valve cover, we can install the PCV hose adapter as shown below. Simply press it on and it will click into place.



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2.7. Remove the 13mm bolt (circled in red) and the T20 bolt (circled in yellow).



2.8. The AOS is now ready to be installed. First we have to assemble the AOS to the bracket with the supplied hardware, as shown below. Tighten the bolts to around 6 ft-lbs.



2.9. Install the AOS onto the car as shown below.

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2.10. Tighten the T20 bolt to snug, and the 13mm bolt to factory spec, 21 ft-lbs + 90 degree turn.

2.11. We can now install the silicone hoses. We recommend installing the longer of the two hoses first, as shown below.



2.12. Install the other hose as shown below.

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- 2.13. Reinstall the OEM engine cover.
- 2.14. Congratulations on installing the Verus Engineering AOS kit on the Mk5 Toyota Supra.
- 2.15. Please send any questions, comments, concerns, or photos to Verus Engineering via e-mail; sales@verus-engineering.com.

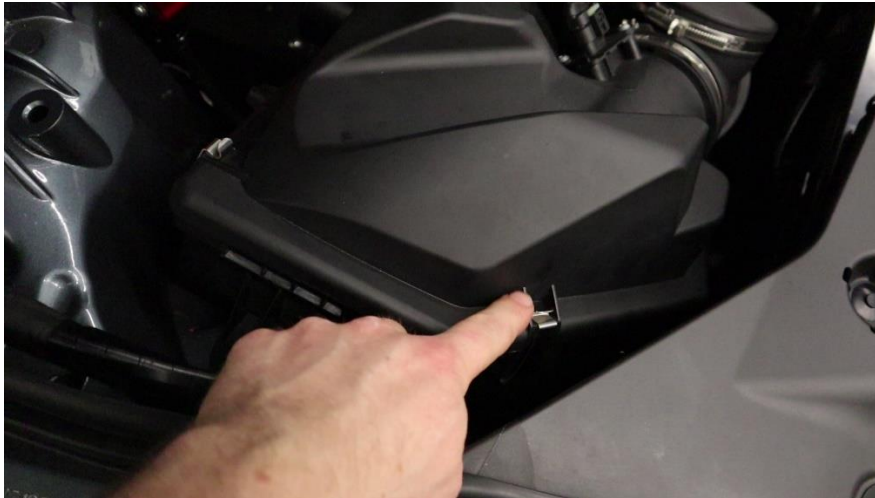


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3. AOS Drain/CCV Line Kit Install

3.1. The first step in this process is going to be to remove the air filter lid. Do so by unclipping the 4 metal clips. Eric is pointing to 1 of the 4 clips in the photo below.



3.2. Now we need to remove the intake clamp with a flathead screwdriver. This is shown below.



3.3. Once the filter lid is unclipped and the clamp is loosened, we can now flip the lid over and let it rest in the radiator area or on top of the engine cover. We also chose to remove the air filter, but this is not necessary.

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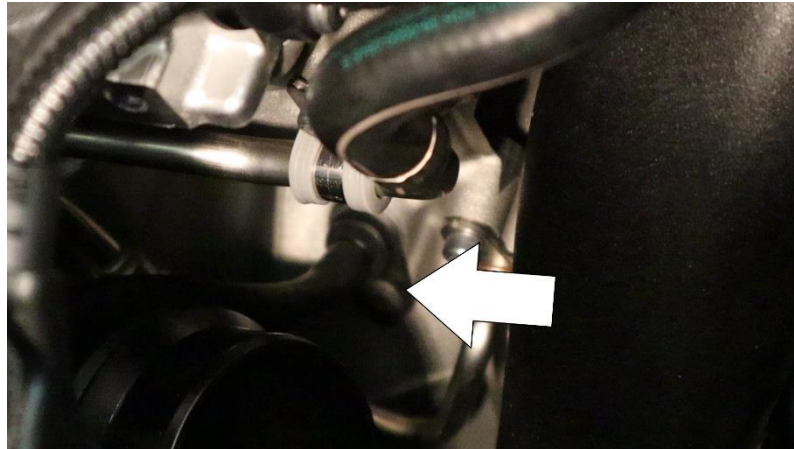
- 3.4.** Now is probably the most difficult part of the install, removing the intake tube. In order to do this, you have to snake your hand to the bottom of the intake tube, and remove the metal retaining clip. This clip is shown below.



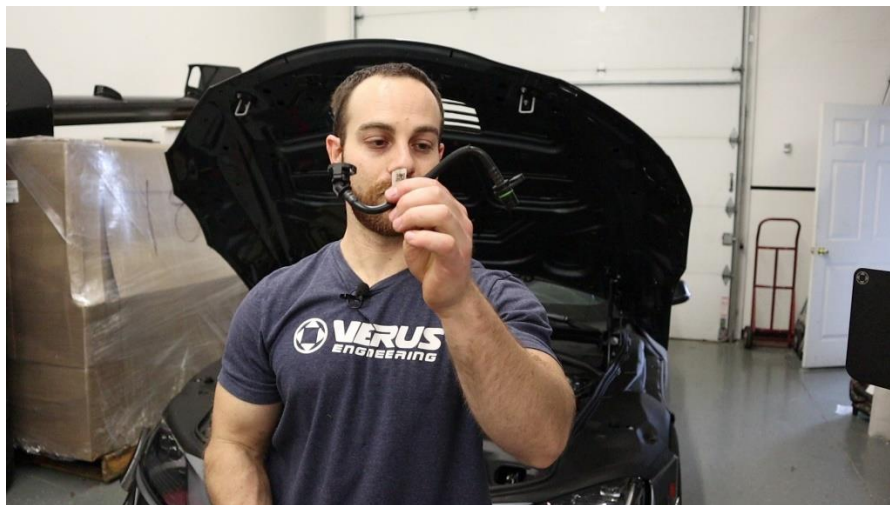
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- 3.5. Before fully removing the intake tube, we also need to remove the intake side of the crank case vent (CCV) tube from the intake. Do so by squeezing the clip together and pulling it away from the intake. Once this last clip is removed, you can pull the intake tube out and set it aside.
- 3.6. To remove the engine block side of the CCV tube, we suggest using the T30 Torx, swivel, extension, and a ratchet. The arrow is pointing to this location below.



- 3.7. A photo of this tube fully removed is below.



- 3.8. With the CCV tube fully removed, we now need to remove the fittings on both ends, as we will reuse these in order to complete the install. Do so by using a heat gun to heat the hose around the fitting and a razor blade to remove the fittings. **Note: Toyota also sells these, so if you make a mistake, a replacement part is available for purchase.**
- 3.9. Now unscrew the knurled petcock fitting on the AOS. This is shown below circled in yellow.

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- 3.10.** Remove the o-ring from the top side of this petcock, as we will reuse it in the following step.
- 3.11.** Grab the supplied knurled petcock with the through hole from the Drain/CCV Line Kit and install the o-ring that was just removed in 3.10. A photo of the petcock with the through hole is shown below.



- 3.12.** Without the use of any tools, install the knurled fitting with the through hole and o-ring into the AOS. Make sure this is tight.
- 3.13.** Now we need to install the o-ring onto the supplied -6AN ORB to 5/16" Hose Barb. A photo of this is below.

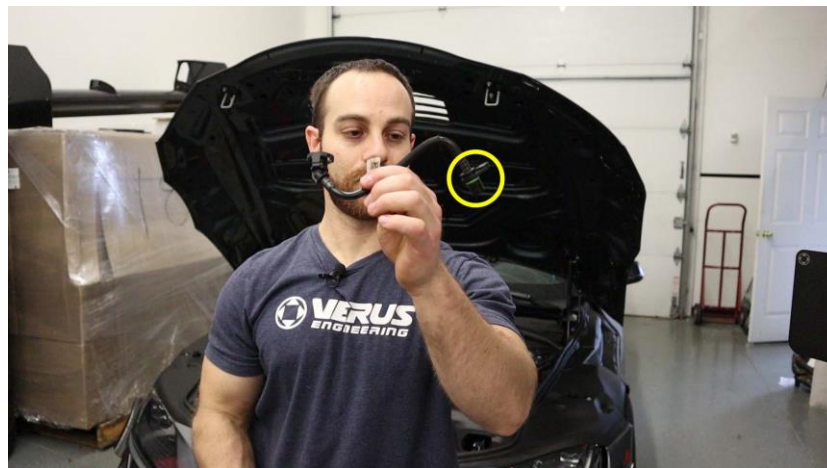
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- 3.14.** Once the o-ring is installed, install this hose barb into the knurled fitting we just installed into the AOS.



- 3.15.** Now we need to assemble and install the new hose line from the CCV port on the engine block to the barb we just installed on the AOS. Do so by grabbing the correct fitting from the OEM CCV tube that we removed earlier. This is circled in yellow below.



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- 3.16.** To assemble this hose, use your heat gun to heat up the end of the hose and slide the CCV valve into the hose as far as possible. Use a supplied hose clamp in this location as well for added security.
- 3.17.** Reinstall the CCV valve back into the engine block where it was removed in section 3.6
- 3.18.** Route the hose in the best manner possible towards the bottom of the AOS. A drawing of how we routed ours is below.



- 3.19.** Once you have the hose routed in a manner of your liking, slide a hose clamp on the open end of the hose and attach it to the barb on the bottom side of the AOS. Secure this hose by tightening the hose clamp. A photo of this is shown below. **Ignore the brass fitting and the fact that we did not use a hose clamp in the photo. This install was done pre-production.**



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- 3.20.** Once the CCV line is fully installed, use the supplied zip ties to secure the hose as you see fit.
- 3.21.** Before reinstalling the intake tube, we need to reinstall the intake fitting we removed in section 3.5.
- 3.22.** Slide the rubber plug onto the open side of this fitting and use the last supplied hose clamp to secure the plug. Once this is complete, it should look like the image below circled in yellow.



- 3.23.** Reinstall the intake and the installation is complete!
- 3.24.** Congratulations on installing the Verus Engineering Drain/CCV Line Kit on the Mk5 Toyota Supra.
- 3.25.** Please send any questions, comments, concerns, or photos to Verus Engineering via e-mail; sales@verus-engineering.com.