

VERUS ENGINEERING

Windshield Washer Fluid Reservoir – ZN8/ZD8 Toyota GR86/Subaru BRZ Install Manual



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Approvals: E.Hazen

Document Revisions

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Windshield Washer Fluid Reservoir – ZN8/ZD8 Toyota GR86/Subaru BRZ – Install Manual

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1. Introduction

1.1. Overview: Detailed instructions on installing the Verus Engineering Windshield Washer Fluid Reservoir for the ZN8/ZD8 Toyota GR86/Subaru BRZ. **Note: The install for the ZN6/ZD6 FRS/BRZ/GT86 is very similar, but there will be small differences due to the fluid pump differences.**

1.2. Difficulty: Novice

1.3. Time Required: 1.5-2.5 hours

1.4. Tools Needed:

- 1.4.1. Drill
- 1.4.2. Step Drill Bit w/ 3/8" Step
- 1.4.3. Sealant (Black RTV) or Touch-Up Paint
- 1.4.4. Blue or Red Loctite
- 1.4.5. 3mm Allen Wrench
- 1.4.6. 5mm Allen Socket and/or Wrench
- 1.4.7. 6" Extension
- 1.4.8. 9/16" Wrench
- 1.4.9. Ratchet
- 1.4.10. 10mm Socket
- 1.4.11. Impact
- 1.4.12. Flathead Screwdriver
- 1.4.13. Panel Popping Tool
- 1.4.14. Utility Knife

**1.5. Windshield Washer Fluid Reservoir Components**

- 1.5.1. (1) Anodized Washer Fluid Reservoir Base
- 1.5.2. (1) Powder Coated Washer Fluid Reservoir Lid
- 1.5.3. (1) 3D Printed Carbon Nylon Bracket (2nd Gen Only)
- 1.5.4. (1) Hardware Kit
 - 1.5.4.1. (10) Button Head Cap Screw - M5x0.8, 12mm Long – Stainless

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- 1.5.4.2. (10) Washer - M5 Flat – Stainless
- 1.5.4.3. (2) Socket Head Cap Screw - M6x1.0, 16mm Long – Stainless
- 1.5.4.4. (1) Washer - M6 x 12mm - Stainless
- 1.5.4.5. (1) Washer - M6 - 18mm - Fender – Stainless
- 1.5.4.6. (1) Tool - M6x1.0 Installer, Rivet Nut
- 1.5.4.7. (1) Rivet Nut - M6x1.0, Heavy Duty, 0.7mm-4.2mm Thickness, Zinc Coated Steel
- 1.5.4.8. (1) O-Ring



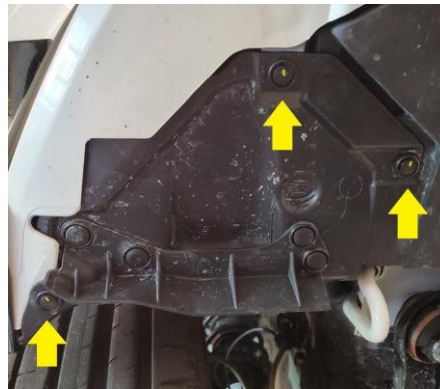
2. Windshield Washer Fluid Reservoir Install

- 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. Begin with disconnecting the battery, negative first, if this makes you feel more comfortable working on the car. It is always a good idea to disconnect the battery anytime when working on the car.
- 2.3. Jack the car up, and support it safely.
- 2.4. With the front of the car off the ground, we will want to start by removing the splash guard. We need to create an opening so that we can install the splitter rods on the crash bar. This requires three parts to be removed. These parts all connect to each other we will simply start by removing all of the push clips (circled in red) and 10mm head bolts (circled in yellow) in the image below.

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2.5. Next, we will remove the push clips that attach the fender liner to the bumper splash guard. Do this on both sides.



2.6. We are now able to remove the last push clip holding the bumper splash guard on. Pull the fender liner down and remove the clip shown on both sides.



2.7. With the splash guard removed, we can now remove the lower radiator support splash shield. Most of the hardware holding this part in should have been removed in 2.4. All that should be left are three 10mm head bolts. Remove the bolts, and the radiator support splash shield.

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2.8. Finally, remove the bumper cover support brace by removing the two clips holding it in from the top.



2.9. Going to the top side of the bumper (inside engine bay), remove various 10mm bolts (circled in yellow) and small push clips (circled in blue). Once these are removed, fully remove the black weather strip and set aside for reassembly.



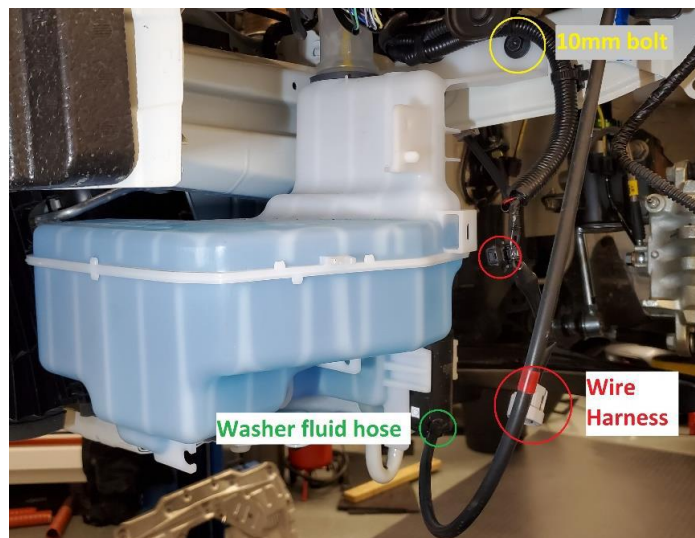
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- 2.10. Moving to the wheel wells, remove all push clips holding fender liners to the bumper.



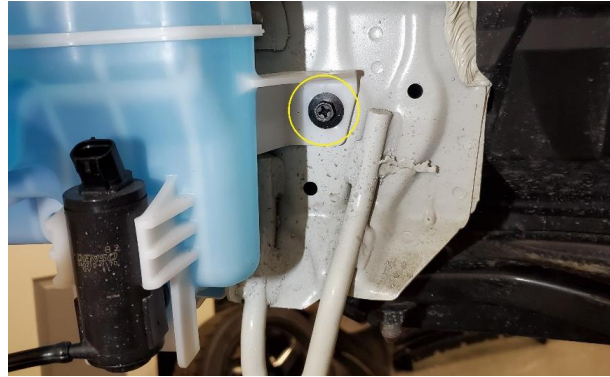
- 2.11. With all push clips removed that hold the bumper to the car, firmly pull the bumper away from the car. Do not forget to unplug any fog light or side marker light connectors when doing this.

- 2.12. To remove the OEM fluid reservoir, remove the 10mm head bolts, disconnect the electrical connector and hose, then remove the washer fluid reservoir. Be careful not to spill the fluid. Feel free to reuse the fluid, but it is recommended to empty the OEM reservoir for removing the components that need to transfer over. **Note: The OEM filler neck will be reused, but it will need to be trimmed.** There will be a single push clip holding the filler neck inside the engine bay.

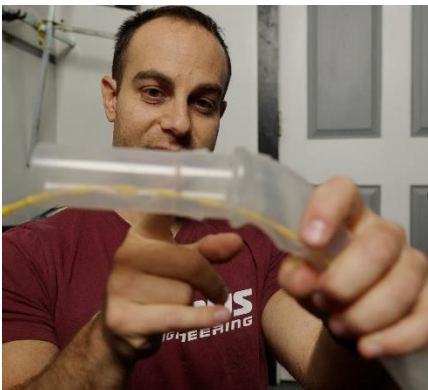


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2.13. With the OEM reservoir removed, we need to trim the filler neck. Using a utility knife, trim the filler neck at the first raised section from the bottom.



2.14. Now we need to assemble the Verus Engineering Windshield Washer Fluid Reservoir. First, we need to install the o-ring in the o-ring groove on the topside of the reservoir base. A photo of the o-ring installed is shown below.

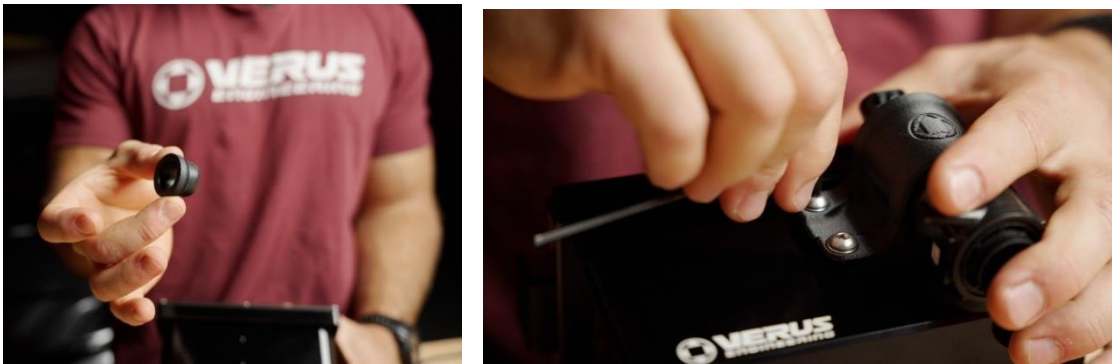


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2.15. Next, we need to install the lid in the correct orientation as shown below. Bolt the lid to the base using the supplied M5 bolts and washers. Use a small dab of blue or red Loctite on these bolts. You do not need to go crazy tight with these bolts. Maybe 3-4 ft-lbs.



2.16. Now, we need to transfer over the pump with o-ring as well as the filler neck o-ring. To install the pump, slide the 3D printed bracket over the pump, as shown below, and install it into the Verus reservoir using the supplied M5 hardware.



2.17. Once the Verus reservoir is fully assembled, we need to install a rivet nut onto the chassis. Below is a photo of where the rivet nut will be installed. Open this hole up to 3/8" with a step drill bit. If you would like to touch up the bare metal, this is the time to do it.



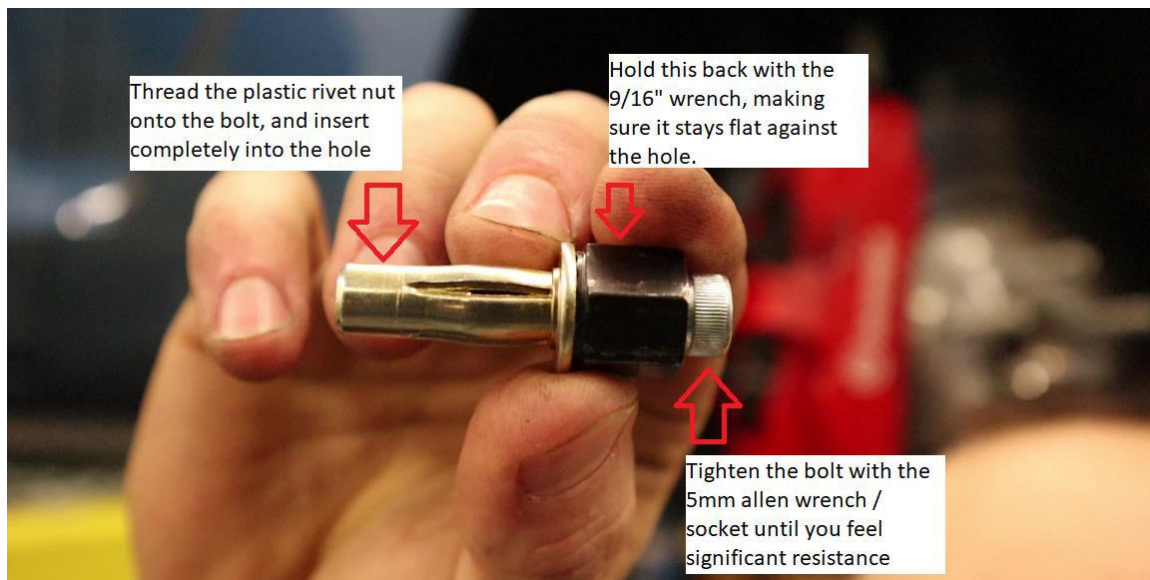
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2.18. Once the hole is opened up and your touch up paint has dried, install the rivet nut into the hole as shown below. If you do not want to wait for touch up paint to dry, you can install the rivet nut with a dab of RTV or some kind of sealant like we chose to do. This is for rust prevention.



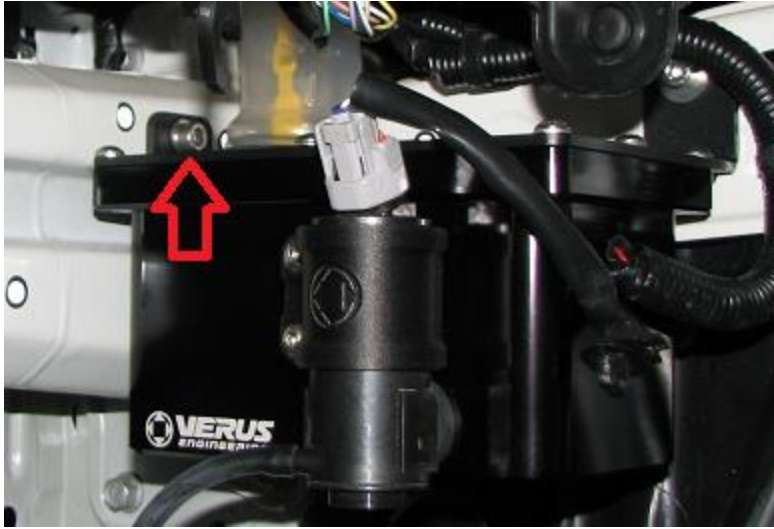
2.19. Use the following diagram to install the rivet nut. **Note: The rivet nut pictured below is different from the rivet nut you should have.**



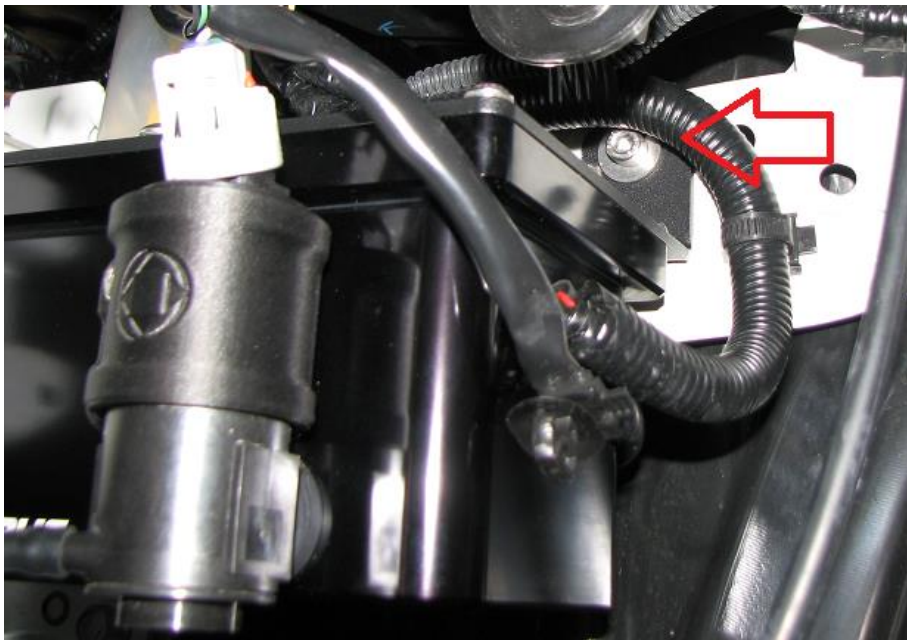
2.20. Using a 9/16" wrench and the 5mm Allen wrench, hold the nut steady and tighten the allen bolt. You will have some initial resistance, and then the rivet nut will begin to pull tighter on the material. You may use a small amount of oil on the threads to ensure they do not gall. Alternatively, you can purchase or rent a rivet nut install tool from your local hardware store or automotive store.

2.21. Using the small diameter M6 washer and one of the M6 bolts, install the Verus reservoir on in the interior location where the rivet nut was installed.

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2.22. Use the other M6 bolt and the larger diameter M6 washer to install the reservoir to the other mounting point. **Note: Using a 6" extension on your ratchet with an Allen socket makes this part much easier.** Tighten these M6 bolts to 6-8 ft-lbs.

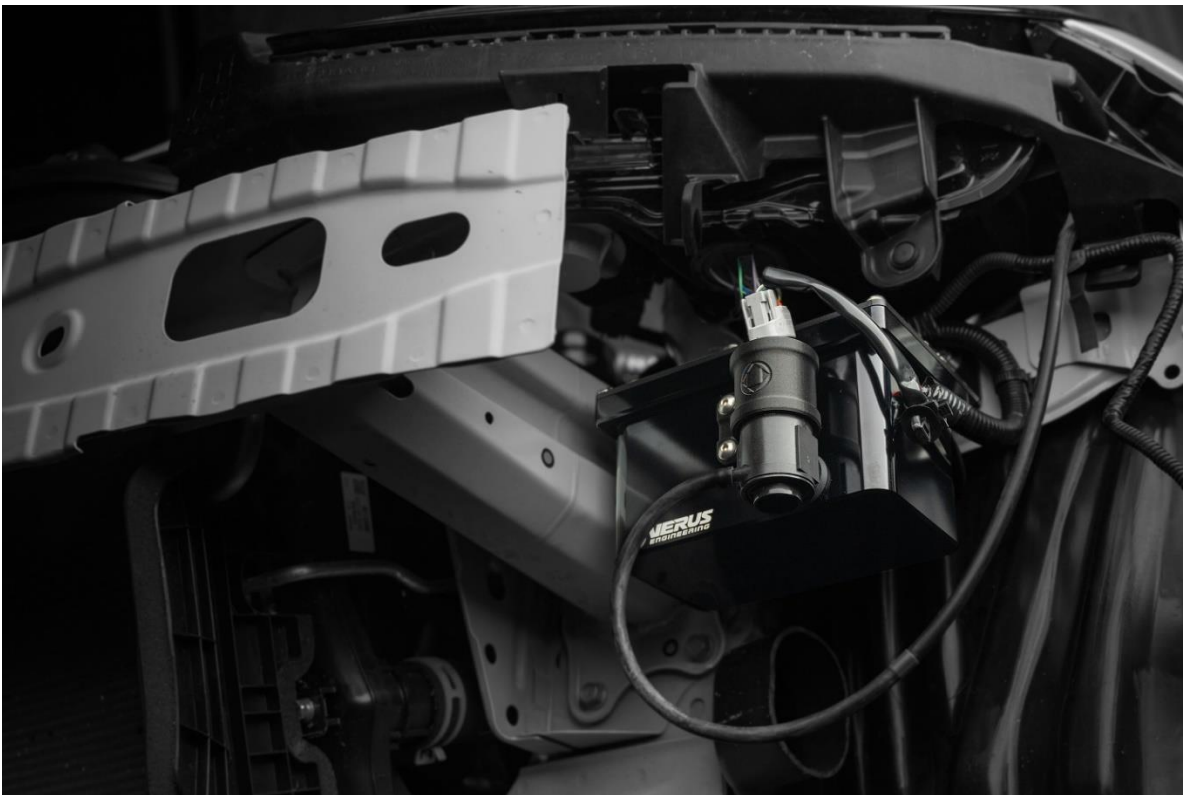


2.23. Once the reservoir is torqued down, reinstall the filler neck as shown below.

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- 2.24.** After the filler neck is reinstalled with the push clip, reconnect both the fluid line and connector to the pump.
- 2.25.** Once this is complete, reinstall the front bumper in reverse order as before.
- 2.26.** Congratulations on installing the Verus Engineering Windshield Washer Fluid Reservoir for the ZN8/ZD8 Toyota GR86/Subaru BRZ.
- 2.27.** Please send any questions, comments, concerns, or photos to Verus Engineering via e-mail; sales@verus-engineering.com.



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