



# VERUS ENGINEERING

## UCW Rear Wing Kit – Toyota GR86

### Install Manual



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Release Date: 2023/01/09

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### Document Revisions

Rev	Date	Author	Description
01	2023/01/09	Tom Lang	Initial release of install manual

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## 1. Introduction

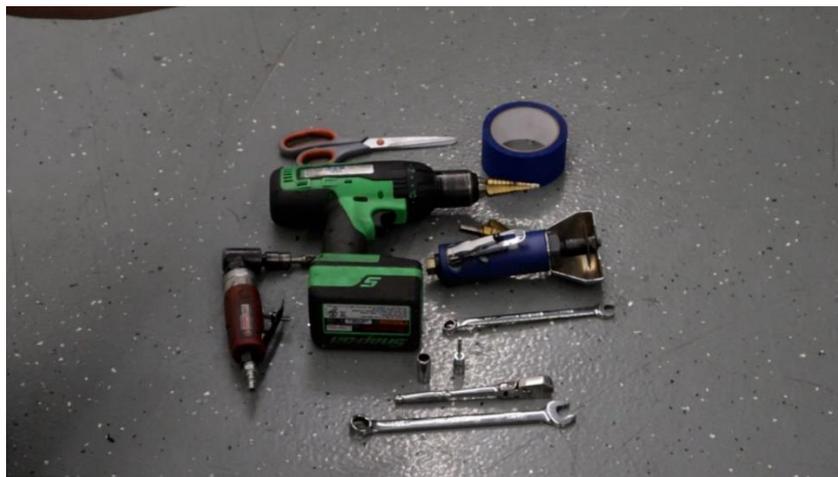
**1.1. Overview:** Detailed instructions on installing the Verus Engineering UCW Rear Wing Kit for the Toyota GR86 and Subaru BRZ (ZN8/ZD8).

**1.2. Difficulty:** Moderate to Difficult

**1.3. Time Required:** 3-6 hours

**1.4. Tools Needed:**

- 1.4.1. Drill
- 1.4.2. Starter Drill Bit or 1/8" Drill Bit
- 1.4.3. Center Punch
- 1.4.4. Step drill bit or various drills \*needs to have 3/8"\*
- 1.4.5. Hammer
- 1.4.6. Die Grinder
- 1.4.7. Cut-off Tool
- 1.4.8. 9/16" Wrench
- 1.4.9. 10mm Wrench
- 1.4.10. Ratchet
- 1.4.11. 5mm Allen Wrench
- 1.4.12. 4mm Allen Wrench
- 1.4.13. 2.5mm Allen Wrench
- 1.4.14. Scissors
- 1.4.15. Painter's Tape
- 1.4.16. Screwdriver
- 1.4.17. Small Tube of Black or Clear Silicone Sealant/RTV
- 1.4.18. Touch Up Paint
- 1.4.19. 50/50 Mix of Isopropyl Alcohol and Water
- 1.4.20. Microfiber Towel



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**1.5. UCW Rear Wing Kit Components**

- 1.5.1. (1) UCW Rear Wing Assembly
- 1.5.2. (1) Left Upright
- 1.5.3. (1) Right Upright
- 1.5.4. (1) Left Beauty Plate
- 1.5.5. (1) Right Beauty Plate
- 1.5.6. (1) Left Trunk Mount
- 1.5.7. (1) Right Trunk Mount
- 1.5.8. (2) Aluminum Endplate
- 1.5.9. (1) **Hardware Bag**
  - 1.5.9.1. (6) M6 x 1.0 BHCS (Button Head Cap Screw) x 25mm Long, Stainless
  - 1.5.9.2. (4) M6 x 1.0 Nyloc Nut, Stainless
  - 1.5.9.3. (4) M6 x 1.0 HHCS (Hex Head Cap Screw) x 12mm Long, Stainless
  - 1.5.9.4. (6) M6 x 1.0 BHCS x 12mm Long, Stainless
  - 1.5.9.5. (8) M6 x 12mm OD Standard Washer, Stainless
  - 1.5.9.6. (1) M6 x 1.0 Rivet Nut Install Tool
  - 1.5.9.7. (6) M6 x 1.0 Aluminum Swage Style Rivet Nut
  - 1.5.9.8. (4) Machined Aluminum Endplate Washer
  - 1.5.9.9. (4) Buna-N O-Ring, #013
  - 1.5.9.10. (4) M4 x 0.7 FHCS (Flat Head Cap Screw) x 16mm Long, Stainless
  - 1.5.9.11. (1) Left Pre-cut VHB Double Sided Tape
  - 1.5.9.12. (1) Right Pre-cut VHB Double Sided Tape
  - 1.5.9.13. (1) Left Cut Template, Paper
  - 1.5.9.14. (1) Right Cut Template, Paper
  - 1.5.9.15. (1) Left Drill Template, Paper
  - 1.5.9.16. (1) Right Drill Template, Paper

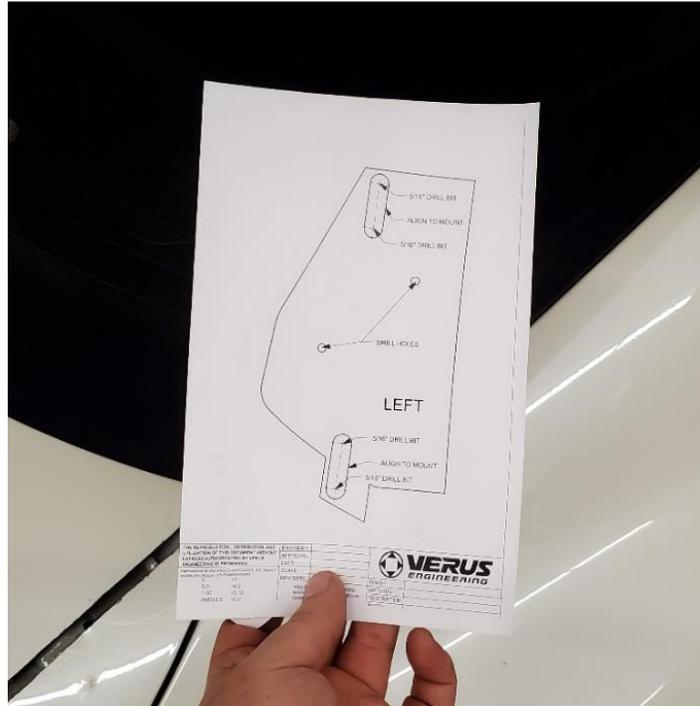
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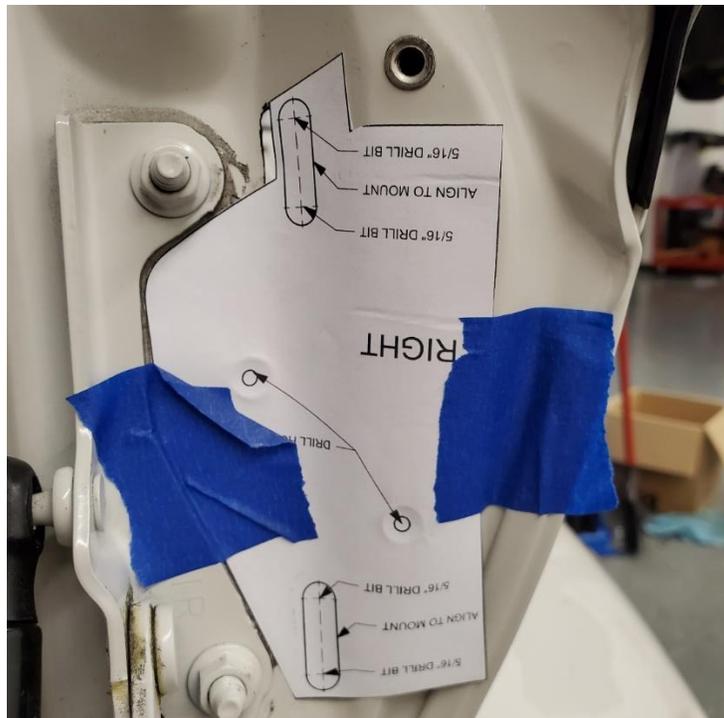
## 2. UCW Rear Wing Install

- 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 the trunk.
- 2.3. Locate, and cut out the trunk mount templates for both sides

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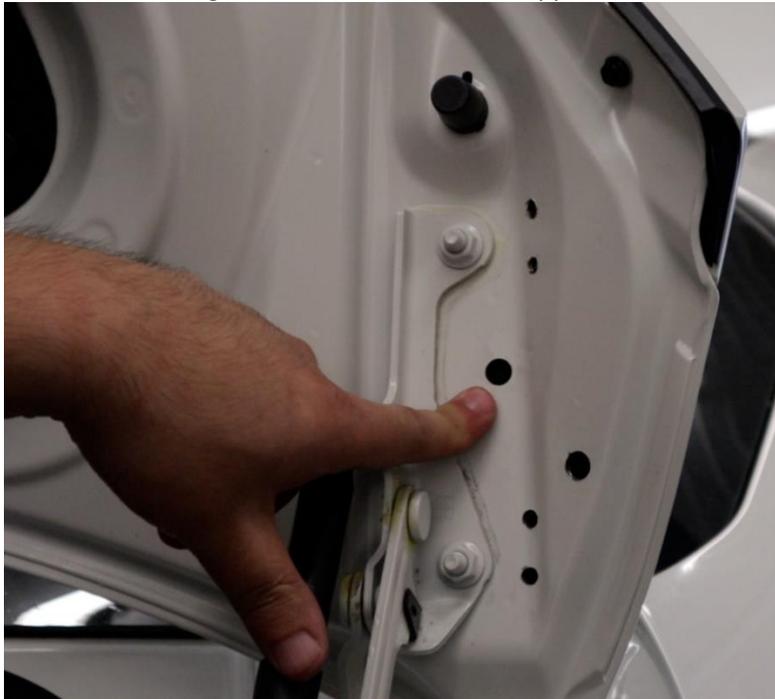
2.4. Attach the template to their respective sides by using a couple pieces of tape.



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- 2.5. Following the directions on the template and drill the two holes that are called out for the rivet nuts, and the 5/16" holes needed for the trunk upright slots. The third and final hole is covered in 2.5.6.
- 2.5.1. First, center punch the areas where the rivet nuts will need to be installed.
- 2.5.2. Next, we will need to drill the holes out to 3/8". **NOTE: The drill depth here is critical. You may end up drilling through the top skin or denting it with a conventional drill bit. That said, we highly recommend using a step bit. You may use a 1/8" drill bit for a pilot hole if you feel it is needed.**
- 2.5.3. The first thing you will notice when you start drilling is that there are multiple layers of steel. The best strategy here is to take your time and drill small amounts at a time until the hole is drilled through all of the inner layers of steel, but NOT the top skin.
- 2.5.4. Once the holes are drilled to the correct size and depth, apply some touch up paint to the bare metal, and begin the installation of the supplied rivet nuts.

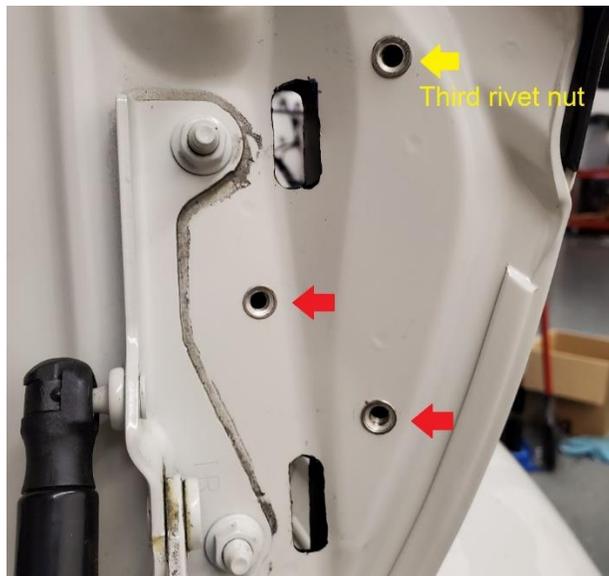


- 2.5.5. To properly install the rivet nut, you will want to thread the rivet nut onto the tool as shown below. Note the rivet nut in the picture below is incorrect for this segment. Use this photo as a visual aide.

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**2.5.6.** Utilize the 9/16<sup>th</sup> wrench to hold the nut and a 10mm socket to tighten the rivet nut into the hole. A fully installed rivet nut is shown below.



**2.5.7.** Once the two rivet nuts are installed, we can now drill and install the final rivet nut.

**2.5.8.** Temporarily install the trunk mount using two bolts and the rivet nuts just installed, and use the mount as a guide to drill the third hole for the third rivet nut.

**2.5.9.** Repeat steps **2.5** – **2.5.6** to install the third and final rivet nut.

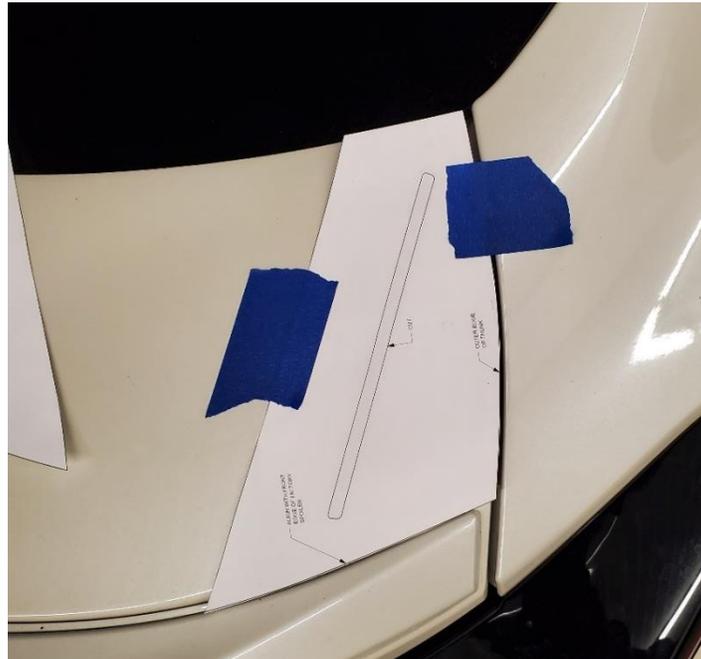
**2.5.10.** From there, repeat steps **2.5** – **2.5.10** for the opposite trunk mount.

**2.6.** Next, using a grinder cut the slots out for the trunk upright. **Do not** go through the top skin.

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- 2.7. Locate the template that will be used to cut out the top skin. Cut it out and attach it to the trunk by following the fitment notes on the template.



- 2.8. Begin cutting the top skin out by following the guidelines on the template. You can use a 1/4" drill bit on both ends, and a cut-off wheel to cut out the slot. This should give the slot a nice clean radius. **NOTE: Be sure to use a vacuum to clean out all the metal chips before moving on.**

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- 2.9. With the slot cut out of the top skin, temporarily install the trunk mount once again, and test fit the uprights by bolting them to the trunk mount. The 12mm long BHCS are for the trunk mount, and 12mm Long HHCS are for the wing upright. Trim the top skin accordingly if needed. The 12mm HHCS should easily fit through the wing upright and thread into the trunk mount. If needed, continue to trim a little at a time until everything fits. **Note: The chamfered side of the upright should be facing outward.**



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- 2.10. Touch up the raw edges of the trunk metal to prevent rust.



- 2.11. Prepare the beauty plate, and trunk surface with a 50/50 isopropyl alcohol/water mix, and apply one side of the pre-cut double-sided tape. We recommend applying the side with the white backing to the beauty plate.



- 2.12. Install the upright to the trunk mount permanently, using the included 12mm long M6 hex-head cap screw. Torque to 6 ft-lbs.

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- 2.13.** Completely fill the gap around the upright with silicone sealant. Be sure not to get sealant on trunk where the double-sided tape will adhere to. This will prevent water from entering the trunk. Less is more for this step. You want to use as little of the sealant as possible for a nice and clean appearance. **Note: Covering the trunk skin and the upright with some painter's tape will make for an easier cleanup.**



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- 2.14.** Once you are happy with the applied sealant, remove the red backing from the double-sided tape on the beauty plate, slide it over the upright, and install it to the trunk skin. **Note: These beauty plates have a left and a right side. Test fit them on the trunk surface first to verify you have the correct side.**



- 2.15.** The rear wing is ready to be installed. Get the M6 x 25mm BHCS ready with a small washer. We will use all (4) units to install the rear wing, this can be done alone but it helps to have a second pair of hands.
- 2.16.** We recommend utilizing the button heads on the outside faces and the nyloc nuts on the inside. The wing mounts should sit on the **\*outside\*** of the uprights.
- 2.17.** For AOA, below is a guideline of what we have designed and tested internally. That being said, every install and car can vary from this slightly. To ensure proper AOA, you should lay a straight edge from the front to the rear of the wing and check **\*in relation to the ground plane\***.

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- 2.18.** To finish installing the rear wing, we have to install the endplates. We offer both carbon (upgrade) and sheet aluminum (standard). Both install the same. We include aluminum washers for M4 FHCS, and o-rings to reduce marring of the aluminum or carbon fiber. Install the o-ring on the washer, and install into the endplate and rear wing as shown below. Finger tight should be plenty.



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- 2.19.** The endplate top and bottom edge, should be parallel to the ground. Utilize a level before fully tightening the endplates down. As mentioned before, not much torque is required here.
- 2.20.** Congratulations on installing the UCW Rear Wing for the GR86 and BRZ! For more information on performance, please visit our website and take a look at our informative packet.
- 2.21.** Please send any questions, comments, concerns, or photos to Verus Engineering via e-mail; [sales@verus-engineering.com](mailto:sales@verus-engineering.com).



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