



VERUS ENGINEERING

Swan Neck UCW Rear Wing Kit – VB Subaru WRX Install Manual



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1. Introduction

1.1. Overview: Detailed instructions on installing the Verus Engineering Swan Neck UCW Rear Wing Kit for the VB Subaru WRX.

1.2. Difficulty: Moderate

1.3. Time Required: 1.5 – 2.5 hour

1.4. Tools Needed:

- 1.4.1. Drill
- 1.4.2. 5/16" Drill Bit
- 1.4.3. Step Drill Bit, Hole Saw, or Various Drill Bits (5/8" is Necessary)
- 1.4.4. Flathead Screwdriver or Plastic Panel Popping Tool
- 1.4.5. 10mm Socket
- 1.4.6. Ratchet
- 1.4.7. 10mm Wrench
- 1.4.8. 12mm Wrench
- 1.4.9. 9/16" Wrench
- 1.4.10. 5mm Allen Wrench
- 1.4.11. 4mm Allen Wrench
- 1.4.12. 2.5mm Allen Wrench
- 1.4.13. Bubble Level
- 1.4.14. 50/50 Mix of Isopropyl Alcohol and Water
- 1.4.15. Microfiber Towel

**1.5. UCW Rear Wing Kit Components**

- 1.5.1. (1) Assembled Swan Neck UCW Rear Wing Assembly
- 1.5.2. (2) Upright
- 1.5.3. (1) Left Trunk Mount
- 1.5.4. (1) Right Trunk Mount

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1.5.5. (2) Aluminum Endplate**1.5.6. Hardware Bag**

- 1.5.6.1.** (4) M6 x 1.0 BHCS (Button Head Cap Screw) x 16mm Long, Stainless
- 1.5.6.2.** (12) M6 x 12mm OD Standard Washer, Stainless
- 1.5.6.3.** (4) M6 x 1.0 Nyloc Nut, Stainless
- 1.5.6.4.** (4) Machined Aluminum Endplate Washer
- 1.5.6.5.** (4) Buna-N O-Ring, #013
- 1.5.6.6.** (4) M4 x 0.7 FHCS (Flat Head Cap Screw) x 16mm Long, Stainless
- 1.5.6.7.** (4) M6 x 1.0 SHCS (Socket Head Cap Screw) x 22mm Long, Stainless
- 1.5.6.8.** (4) M8 x 1.25 x 45mm Long BHCS, Stainless
- 1.5.6.9.** (4) M8 x 24mm OD Washer, Stainless
- 1.5.6.10.** (4) M6 x 1.0 Heavy Duty Rivet Nut, Steel
- 1.5.6.11.** (1) M6 Rivet Nut Install Tool
- 1.5.6.12.** (4) M6 x 1.0, 30mm Long Low-Profile SHCS, Stainless
- 1.5.6.13.** (4) M6 x 1.0 Jam Nut, Stainless
- 1.5.6.14.** (4) Trunk Mount Spacer, Machined Stainless
- 1.5.6.15.** (1) Left Side Pre-Cut 3M VHB Double Sided Tape
- 1.5.6.16.** (1) Right Side Pre-Cut 3M VHB Double Sided Tape

**2. Swan Neck 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. **Note: Some photos in this manual may be deceiving as the wing is already installed on the trunk in some photos.**

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- 2.3. Remove the trunk insulator using your flathead screwdriver or panel popping tool.



- 2.4. With the trunk insulator removed, we need to remove the wiring loom from the trunk so that it can be fully removed. **This can stay attached to the trunk hinge!** Below is a photo showing what the wiring loom looks like attached to the trunk, followed by a photo of the wiring loom removed. Use a flathead screwdriver or plastic panel popping tool to remove the loom from the trunk. Be careful not to pull on the wiring loom itself to avoid any damage. Disconnect all the connectors and pull the loom down into the trunk.



- 2.5. With the wiring loom removed from the trunk, grab your 12mm socket and ratchet, then remove the four bolts holding the trunk to the hinge arms. Having a second set of hands for this step is extremely helpful. Once removed, set the trunk down on a soft and flat surface with the bottom side facing upward.



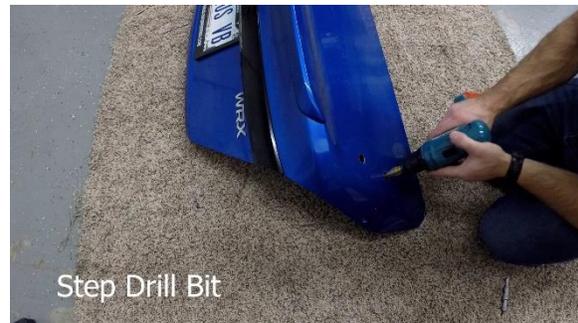
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- 2.6. Next, we need to use the trunk mounting holes as guides for drilling the holes for the trunk mounts. Using a 5/16" drill bit, drill straight through the trunk mounting hole to get rid of the threads as shown below. Once you get through the threaded portion, keep drilling through the top skin on the trunk.



- 2.7. Once the holes are drilled from the bottom side, flip the trunk over and open up the holes using your 5/8" hole saw and/or step bit. Once the holes are drilled, you can use some touch-up paint on the raw edges if you would like.



- 2.8. Before reinstalling the trunk to the car, we need to prep our trunk mounts for installation. Do so by wiping down the trunk surface and trunk mount surfaces with your 50/50 mix of isopropyl alcohol and water and apply the 3M VHB as shown below.



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- 2.9. After the 3M VHB has been applied, install the trunk mount spacers as shown above with a 12mm wrench. You may use a small dab of Loctite here if you wish. Torque to 6 ft-lbs.
- 2.10. With a second set of hands, place the trunk back onto the hinge arms and start the supplied M8 x 45mm BHCS and M8 x 24mm OD washers to assist in holding the trunk in place as shown below. **Note: The trunk will not be securely bolted down yet, so having a second set of hands here is very beneficial in holding the trunk still.** The trunk will rest on the bolts but it is not extremely safe to do so.



- 2.11. Next, we need to figure out which mount we need using the photo below. The bump that is circled in orange will be towards the rear of the car, as well as to the inside of the car. So, the mount that is circled below is the left-side mount (USDN driver side).



- 2.12. Once we have the mounts differentiated, pull off the 3M VHB red backing and hold it as close to the trunk as possible without letting the 3M VHB touch the trunk. Using a 5mm Allen wrench or socket, start the bolts into the trunk mount pedestals. After you get the bolt started, continue tightening the bolts until the trunk mount is flush with the trunk skin and then torque to 10-12 ft-lbs. **Note: While tightening the bolts, ensure the trunk is aligned properly with the hinge arms using the non-painted sections of the trunk as a locating feature.**

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- 2.13.** Once the four bolts are torqued to spec and the trunk is aligned properly, you should have something that looks like the photo below.



- 2.14.** You can now close the trunk for the upright installation. Grab two M6 x 16mm BHCS and two 12mm OD washers and install the upright as shown below and torque to 6 ft-lbs. A 4mm Allen wrench or socket will be used here.

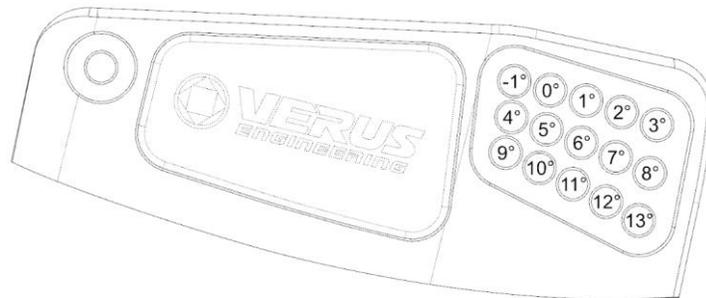


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- 2.15. The rear wing is now ready to be installed. Use the M6 x 22mm long SHCS, 12mm OD washers, and nyloc nuts to install the rear wing onto the uprights. **Note: Use a washer on both sides of the wing mount and upright. (M6 x 22mm long SHCS > 12mm OD washer > wing mount > upright > 12mm OD washer > nyloc nut)**



- 2.16. Tighten the bolts and nuts to 6 ft-lbs using a 5mm Allen wrench or socket and a 10mm wrench.
- 2.17. For AOA, below is a guideline of what we have designed and tested internally. Every install and car can vary from this slightly. To ensure proper AOA, you should lay a straight edge from front to rear of the wing and check the degree measurement ***in relation to the ground plane***.



- 2.18. Next, we need to install the endplates. We include aluminum washers for M4 flat head cap screws, and O-rings to reduce marring of the carbon fiber. Install the O-ring on the washer in the groove, and install into the endplate and rear wing as shown below. Snug the bolts, they are M4 and do not need much torque.

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2.19. The endplate top or bottom edge should be parallel to the ground. Utilize a level. If installing the FFV style endplates, use your best guess to install the endplate.

2.20. The final part of the install involves installing some trunk stops to remove play in the trunk. Remove the factory rubber trunk stops. There are two. This is being grabbed in the first photo below. This will take some pulling force, but these can be removed by hand. The second photo shows the holes after the rubber trunk stop has been removed. This is where the rivet nuts will get installed.



2.21. Now we need to install the heavy-duty rivet nuts into these holes. Use the following diagram to install the rivet nuts. **Note: The rivet nuts shown in the diagram are incorrect for this segment, but the install process is the same. The second image shows the correct rivet nuts to use here.**

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- 2.22.** 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. **Use 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.

- 2.23.** Below is an example of fully installed rivet nut.

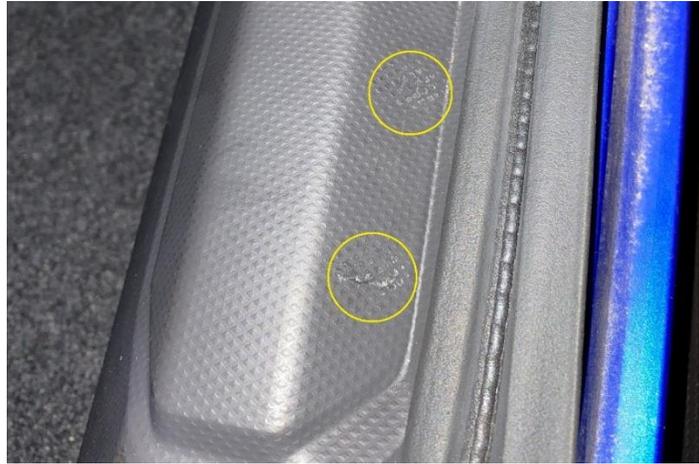


- 2.24.** Once the rivet nuts are installed, thread the M6 jam nuts onto the M6 x 30mm long low-profile SHCS, and then thread the SCHS into the rivet nuts as shown below.



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- 2.25.** To find the right height needed for the trunk stops, you will have to open and close the trunk multiple times and adjust as necessary. You want these socket heads to butt up against the black plastic trim and create small indentions. If you have the trunk stops too long, the trunk will not close. If the trunk stops are too short, then they do not serve any purpose. Below is a photo showing the small indentions in the black plastic. Once the trunk stops are at the desired height, tighten the jam nuts to lock them into place.



- 2.26.** Congratulations on installing the Swan Neck UCW Rear Wing for the VB Subaru WRX! For more information on performance, please visit our website and take a look at the Ventus packets available.
- 2.27.** Please send any questions, comments, concerns, or photos to Verus Engineering via e-mail; sales@verus-engineering.com.



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