

VERUS ENGINEERING

Swan Neck UCW Rear Wing Kit – Mk5 Toyota Supra Install Manual



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Swan Neck UCW Rear Wing Kit, Mk5 Toyota Supra – 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 Mk5 Toyota Supra.

1.2. Difficulty: Moderate

1.3. Time Required: 1.5 – 2.5 hour

1.4. Tools Needed:

- 1.4.1. Drill
- 1.4.2. Starter Drill Bit
- 1.4.3. Center Punch
- 1.4.4. Step drill bit or various drills, ¼" is necessary
- 1.4.5. Hammer
- 1.4.6. 10mm Socket or Wrench
- 1.4.7. Ratchet
- 1.4.8. 5mm Allen Wrench
- 1.4.9. 4mm Allen Wrench
- 1.4.10. 3mm Allen Wrench
- 1.4.11. 2.5mm Allen Wrench
- 1.4.12. Scissors
- 1.4.13. Painter's Tape
- 1.4.14. Bubble Level
- 1.4.15. 50/50 Mix of Isopropyl Alcohol and Water
- 1.4.16. Microfiber Towel



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1.5. UCW Rear Wing Kit Components

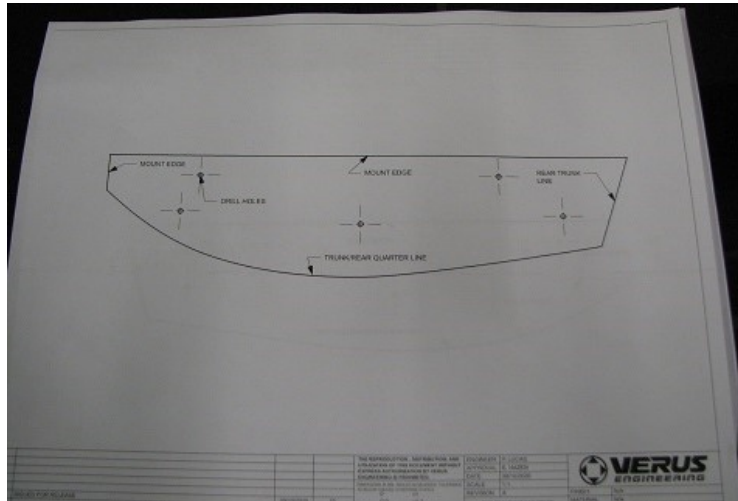
- 1.5.1. (1) Assembled Swan Neck UCW Rear Wing Assembly
- 1.5.2. (2) Upright
- 1.5.3. (1) Left Trunk Mount
- 1.5.4. (1) Right Trunk Mount
- 1.5.5. (1) Left Hatch Support Plate
- 1.5.6. (1) Right Hatch Support Plate
- 1.5.7. (2) Carbon Endplate
- 1.5.8. Hardware Bag
 - 1.5.8.1. (10) M6 x 1.0 x 35mm Long Stud
 - 1.5.8.2. (4) M6 x 1.0 BHCS (Button Head Cap Screw) x 16mm Long, Stainless
 - 1.5.8.3. (22) M6 x 12mm OD Standard Washer, Stainless
 - 1.5.8.4. (14) M6 x 1.0 Nyloc Nut, Stainless
 - 1.5.8.5. (4) Machined Aluminum Endplate Washer
 - 1.5.8.6. (4) Buna-N O-Ring, #013
 - 1.5.8.7. (4) M4 x 0.7 FHCS (Flat Head Cap Screw) x 16mm Long, Stainless
 - 1.5.8.8. (4) M6 x 1.0 SHCS (Socket Head Cap Screw) x 22mm Long, Stainless
 - 1.5.8.9. (2) Delrin Trunk Stop
 - 1.5.8.10. (1) Left Pre-Cut VHB Double Sided Tape
 - 1.5.8.11. (1) Right Pre-Cut VHB Double Sided Tape
 - 1.5.8.12. (1) Roll of VHB Double Sided Tape
 - 1.5.8.13. (2) Drill Template, Paper



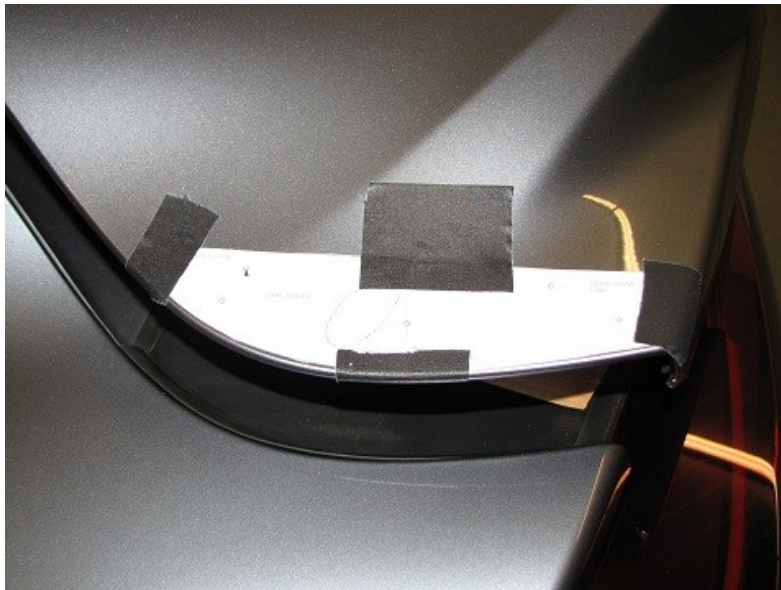
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2. Swan Neck UCW Rear Wing Install

- 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. You can leave the trunk on car during the install but removing the trunk can make it easier. We left the trunk on car for our install.
- 2.3. The next part of the install, we have to cut the install trunk template out of the piece of paper.



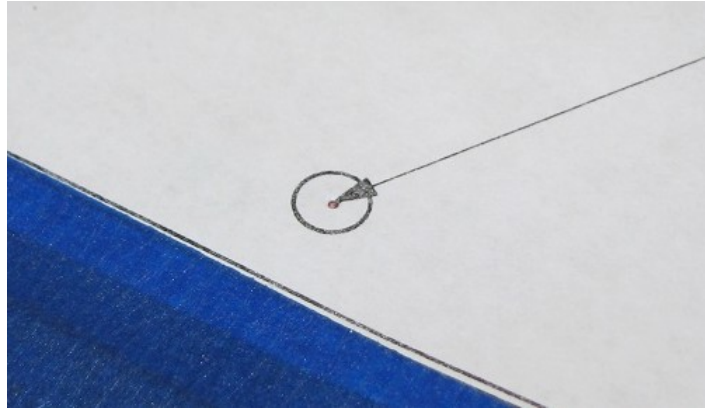
- 2.4. Install the paper template as shown below.



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- 2.5.** With the template taped in place, place the trunk mount on the trunk with the holes located where the paper template holes are. Ensure that the trunk mount appears to sit on the trunk well and that the holes line up. Ensure that the trunk mount sits cleanly on the outside edge of the trunk. This is a sanity check before drilling holes in your trunk.
- 2.6.** Using a center punch, mark the center of the holes.

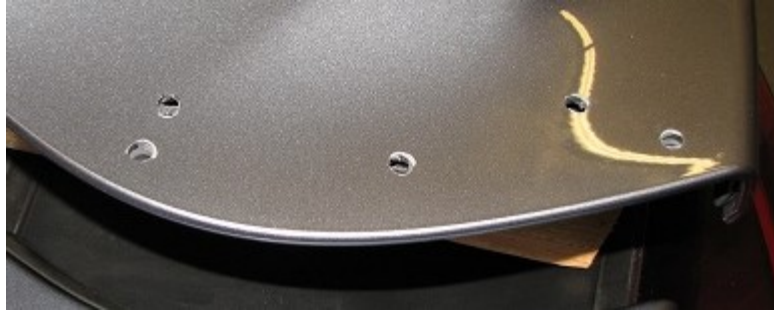


- 2.7.** Using a 1/8" drill bit to start, create a starter hole for all of the holes. Drill as perpendicular (90 degrees) to the surface as possible. Keep in mind, the trunk is plastic.



- 2.8.** We need to open this hole to 1/4" for the studs to slip through. Depending on how accurately the holes are drilled, the holes may need to be slightly enlarged to slide the stud through the trunk.

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- 2.9.** With the all the holes drilled, we can test fit the trunk mount. To do this, install the two studs as shown with a 3mm allen wrench. **NOTE:** Not all the studs can be installed and pass through the trunk at the same time, we found these two to work well.



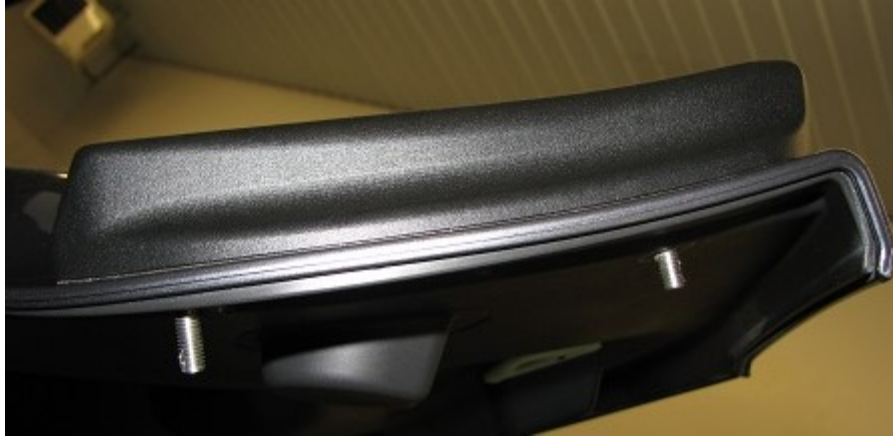
- 2.10.** With the trunk mount installed, we can visually check to ensure the remaining three studs will fit through the trunk. Do this now.
- 2.11.** If any holes need to be enlarged, drill them larger.
- 2.12.** The trunk mount is ready to be installed.
- 2.13.** First we need to install the double-sided tape.
- 2.14.** To do this, clean the bottom of the trunk mount with 50/50 isopropyl alcohol and water then apply the double-sided tape.



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- 2.15.** Pull the red side of the double side tape off, and install the trunk mount onto the trunk.



- 2.16.** Install the bottom support piece with only these (2) studs installed.

- 2.17.** Install the remaining (3) studs with a 3mm Allen wrench.



- 2.18.** Using stainless washers and the stainless nyloc nuts, tighten the trunk mount and support brace to the trunk to about 6 ft-lbs. The nyloc nuts will resist backing off, so do not go over tighten these.



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- 2.19. Install the uprights onto the trunk mount by using the M6 x 1.0 x 16mm long button head cap screws and 12mm OD washers as shown below.



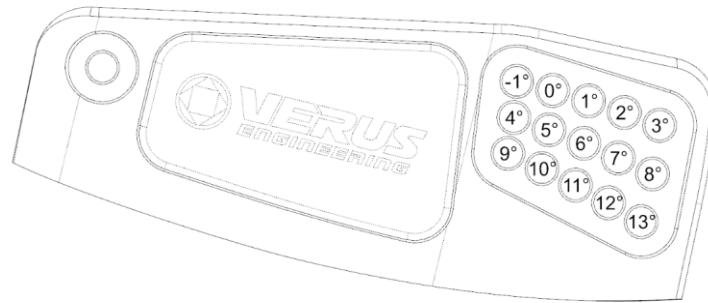
- 2.20. The rear wing is now ready to be installed. Use the M6 x 22mm long SHCS, 12mm OD washers, and nyloc nuts to install the rear wing onto the uprights. **Note: Use a washer on both sides of the wing mount and upright. (M6 x 22mm long SHCS > 12mm OD washer > wing mount > upright > 12mm OD washer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



- 2.21. Tighten the bolts and nuts to roughly 6 ft-lbs.
- 2.22. 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 front to rear of the wing and check the degree measurement ***in relation to the ground plane***.

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- 2.23.** To finish installing the rear wing, we have 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, and install into the endplate and rear wing as shown below. Snug the bolts, they are M4 and do not need much torque.



- 2.24.** 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.
- 2.25.** The final part of the install involves installing the upgraded trunk stop.
- 2.26.** Remove the factory trunk stop.
- 2.27.** Install the supplied Delrin trunk stop as shown below.

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- 2.28.** While slowly closing the trunk, watch the stop and see how close it comes to touching the trunk plastic. You will want the stop to hit this location when fully closed to reduce the amount of movement on the trunk at speed. This will take a bit of trial and error.
- 2.29.** Congratulations on installing the Swan Neck UCW Rear Wing for the Mk5 Toyota Supra! For more information on performance, please visit our website and take a look at the Ventus packets available.
- 2.30.** Please send any questions, comments, concerns, or photos to Verus Engineering via e-mail; sales@verus-engineering.com.

