

VERUS

ENGINEERING

Rear Wing Kit – G82 BMW M4

Install Manual



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Introduction

Overview: Detailed instructions on installing the Verus Engineering Rear Wing Kit for the G82 BMW M4.

Difficulty: Moderate

Time Required: 2 hours

Tools Needed:

- Ratchet or Impact
- 10mm Socket or Wrench
- 12mm Socket
- 13mm Socket
- 5/16" 12-point socket (V1X only)
- 12mm Wrench
- 5/16" Wrench (V1X only)
- 2.5mm Allen Wrench
- 4mm Allen Wrench
- 5mm Allen Wrench
- Panel Popping Tool
- Flathead Screwdriver
- Needle Nose Pliers
- Drill
- 5/16" Drill Bit
- Step drill bit or various drills *needs to have 5/8" or slightly larger*
- Touch Up Paint
- 50/50 Mix of Isopropyl Alcohol and Water
- Microfiber Towel
- Sawhorse with Towels
- Carpeting (Optional)



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UCW Rear Wing Kit Components

- (1) Rear Wing Assembly
- (1) Left Upright
- (1) Right Upright
- (1) Left Trunk Mount
- (1) Right Trunk Mount
- (2) Carbon Endplate
- **(1) Hardware Bag**
 - (4) M8 x 1.25 FHHCS (Flanged Hex Head Cap Screw), Stainless
 - (4) M6 x 1.0 x 16mm Long BHCS (Button Head Cap Screw), Stainless
 - (4) M6 x 1.0 x 22mm Long SHCS (Socket Head Cap Screw), Stainless
 - (4) M4 x 0.7 x 16mm Long FHCS (Flat Head Cap Screw), Stainless
 - (4) M6 x 1.0 Nyloc Nut, Stainless
 - (4) M8 Fender Washer, Stainless
 - (12) M6 x 12mm OD Washer, Stainless
 - (8) M6 x 0.5mm Washer Shim
 - (4) Machined Aluminum Endplate Washer
 - (4) Trunk Mount Extension, Machined Stainless
 - (4) Buna-N O-Ring, #013
 - (1) Left Pre-Cut VHB Double Sided Tape
 - (1) Right Pre-Cut VHB Double Sided Tape



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V1X Rear Wing Components

- (1) Rear Wing Assembly
- (1) Left Upright
- (1) Right Upright
- (1) Left Trunk Mount
- (1) Right Trunk Mount
- (2) Carbon Endplate
- (1) Gurney Flap
- **(1) Hardware Bag**
 - (4) M8 x 1.25 FHHCS (Flanged Hex Head Cap Screw), Stainless
 - (4) NAS 1/4"-28, 0.887" long, 12 – Point Bolt
 - (4) M6 x 1.0 x 16mm Long BHCS (Button Head Cap Screw), Stainless
 - (4) M4 x 0.7 x 16mm Long FHCS (Flat Head Cap Screw), Stainless
 - (4) M8 Fender Washer, Stainless
 - (4) 1/4" Thin Washer
 - (4) M6 x 12mm OD Washer, Stainless
 - (8) M6 x 0.5mm Washer Shim
 - (4) Machined Aluminum Endplate Washer
 - (4) 1/4"-28 Self Locking Hex Nut
 - (4) Trunk Mount Extension, Machined Stainless
 - (4) Buna-N O-Ring, #013
 - (1) Roll – VHB Double Sided Tape
 - (1) Left Pre-Cut VHB Double Sided Tape
 - (1) Right Pre-Cut VHB Double Sided Tape

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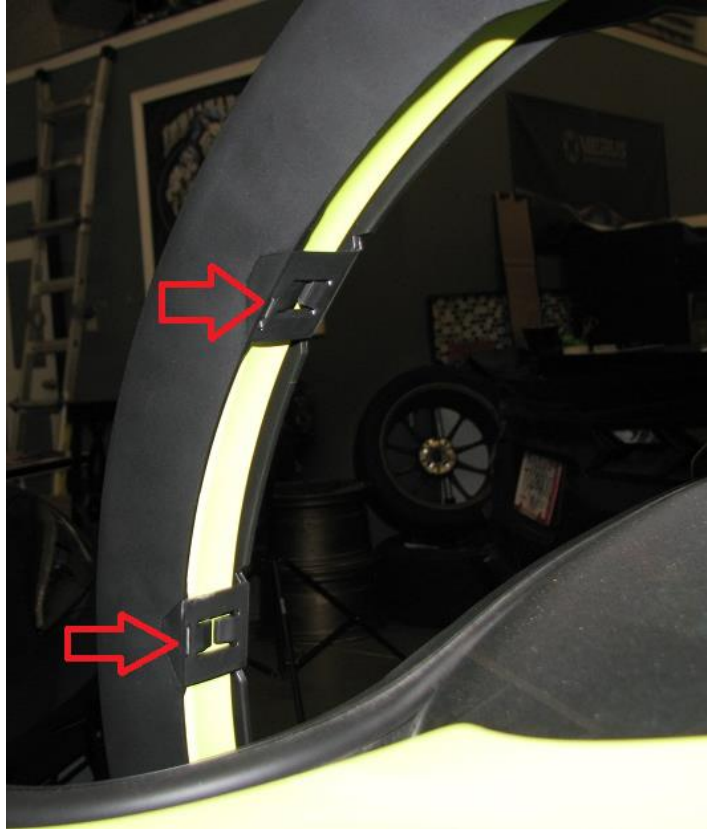
Rear Wing Install

1. Verus Engineering is not responsible for damage to you or your vehicle by following this manual and/or installing Verus Engineering products. Please seek professional service/guidance if you are uncomfortable/incapable of installing this in a safe manner. Contact us at support@verus-engineering.com if you have any questions/concerns.
2. We begin by gaining access to the trunk.
3. First, we must remove the covers on the trunk hinges. To do this, remove the push clip circled in red below. Remove this with a flat head screwdriver or plastic push clip tool.



4. To fully remove the cover, we look at the front side and with a small screw driver, pop off the “coupler” holding the cover on the hinge.

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5. Second, we need to remove the trunk insulator by removing various pop clips and a plastic retainer piece (blue arrow, missing in the photo). Use a push clip puller or flathead screwdriver to do so. Some of these locations are circled in yellow below.



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6. Pull on the rear/bottom most part of the insulation, away from the trunk to get the insulation to come off the trunk. These plastic push in clips are shown below and this is the final part to remove the insulation.



7. Disconnect the trunk opening connector as shown below.



8. With the insulation removed, we have a bare trunk, as shown below.



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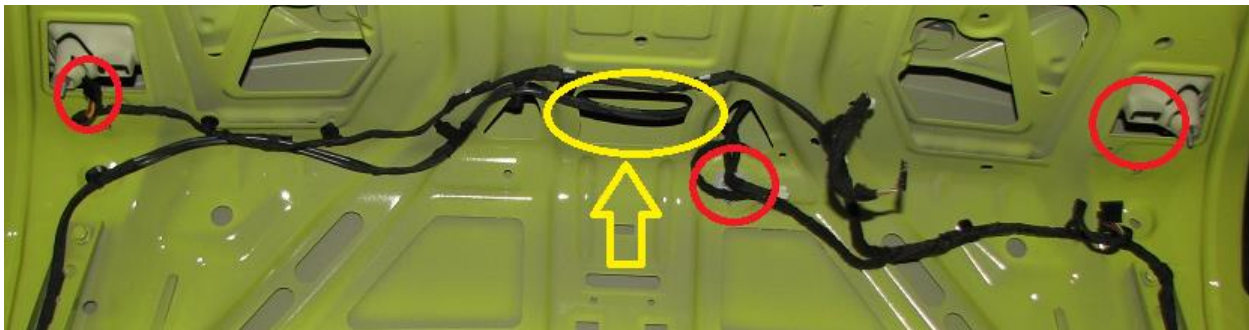
9. The next step in the process is to remove the wire harness in the trunk so we can fully remove the trunk from the car.



10. To do this, we start removing all the wire holders that hold the wire to the trunk with a panel popper tool as shown below.



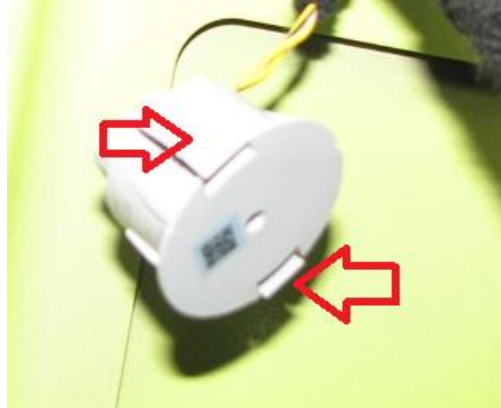
11. The worst part of removing the harness is removing the electrical connectors. There are some that are visible (circled in red) and others, like the license plate light and backup camera, which are in the trunk (circled in yellow).



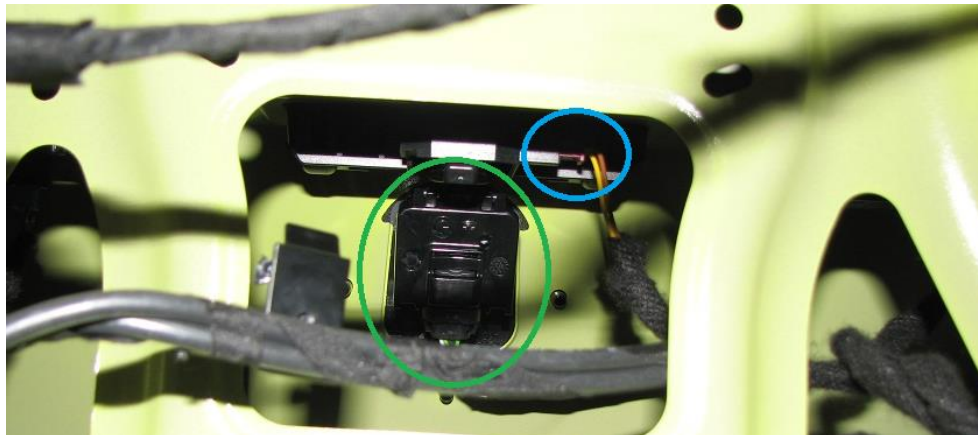
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12. The light gray connector can come out of the trunk as shown below. Use a flat head screw driver to remove.

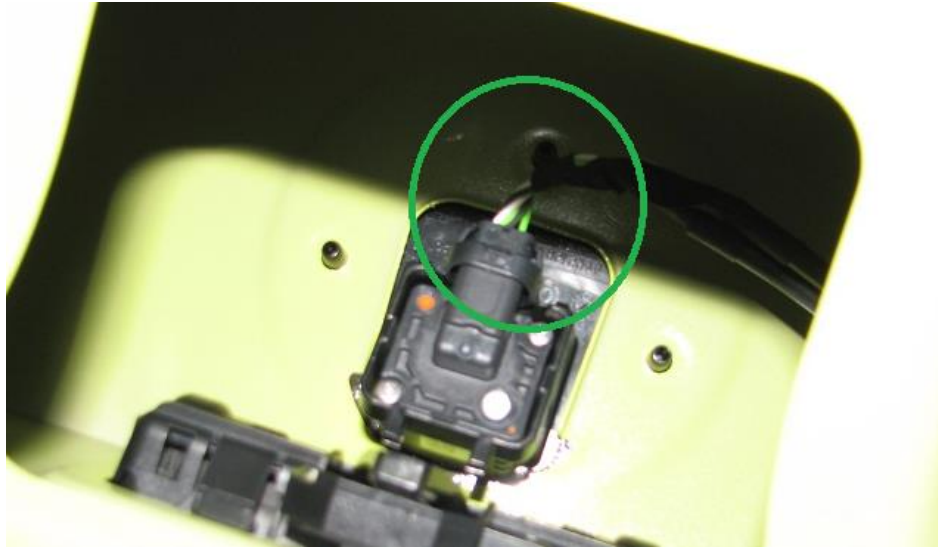


13. The hardest connectors to get to, and take a photo of, were the ones inside the trunk. The backup camera and two connectors in there are shown below. Remove these connectors (circled in blue) and the backup camera (circled in green).



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14. At this point, the harness should be off the trunk and we can now remove the trunk from the car as nothing else needs to be removed.
15. Remove the bottom (2) 12mm bolts from the trunk and loosen the top (2) bolts. By doing this, the trunk can come off by removing it straight up.



16. Carefully remove the trunk. Set the trunk on a soft surface to ensure the trunk surface does not get scratched. We used a sawhorse with some towels. Carpeting on the ground can also work.
17. Grab your drill and a 5/16" drill bit. Using the threaded mounting holes as a guide, drill through the top skin of trunk as shown below for all four trunk holes. **Note: Do your best to drill in the centermost of the threads and just remove the threads of the nut in the trunk.**

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18. Once you puncture the top skin, this is what the top of the trunk should look like.



19. Flip the trunk over and grab your step bit. Open the holes on the top of the trunk to 5/8". **We used a step drill bit but other options are possible as well.**

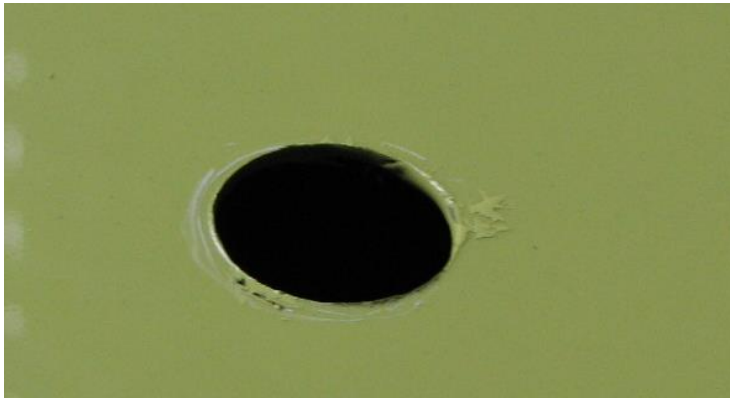


20. Now we need to install the standoffs/threaded spacers as shown below. Install by hand first, and then use a 12mm wrench and torque them to 6 ft-lbs. **Note: You may also use some red Loctite here if you wish.**

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21. Next, we need to prep the trunk surface and trunk mount surface for the 3M VHB installation. First, we advise touching up the raw surfaces created from drilling on the trunk with some touch up paint.



22. Next, clean both the trunk surface and the bottom side of the trunk mounts with a microfiber towel and 50/50 mix of isopropyl and water.
23. After both surfaces are clean and dry, you may now install the pre-cut 3M VHB on the bottom side of the trunk mount. **Note: There are a left and a right piece of pre-cut 3M VHB just like the trunk mounts.**

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24. Before installing the trunk mount onto the trunk, we will test fit these pieces to see if we need to add any shims so the distance from the trunk mount to the inner trunk hinge nut is correct. **Note: On our shop car, we found that the left- and right-hand sides differed.**
25. To see this, bolt the trunk mounts onto the trunk and gauge if the double-sided tape is squishing or if the trunk mount is pulling into the skin.
26. If the mount is pushing into the top skin, add supplied shims between the standoff and the trunk mount to increase the standoff height. Repeat **step 25** until the double-sided tape just slightly squishes when fully tightened down.
27. Once the desired mount height is figured out, we can remove the double-sided tape backing and install the trunk mounts for the final time.
28. Install the trunk mount on the trunk and massage the double-sided tape gently into the trunk surface to ensure proper adhesion. We recommend putting both bolts in when bonding the mount to the trunk then removing the bottom bolt as shown below. Use the supplied M8 hardware.

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- 29.** Install the trunk onto the car again, as shown below. Place the trunk back onto the hinges using the top bolts as a guide to slide it into.



- 30.** Use the previous unpainted edges to try to get the trunk to line up where it was previously. This should align the trunk properly to the chassis.

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31. Tighten these bolts to 12 ft-lbs once the trunk is aligned properly.
32. You may now close the trunk and grab the M6x16mm long BHCS and M6x12mm OD washers to install the uprights to the trunk mounts. Start the bolts by hand and using a 4mm Allen wrench, torque to 6 ft-lbs.

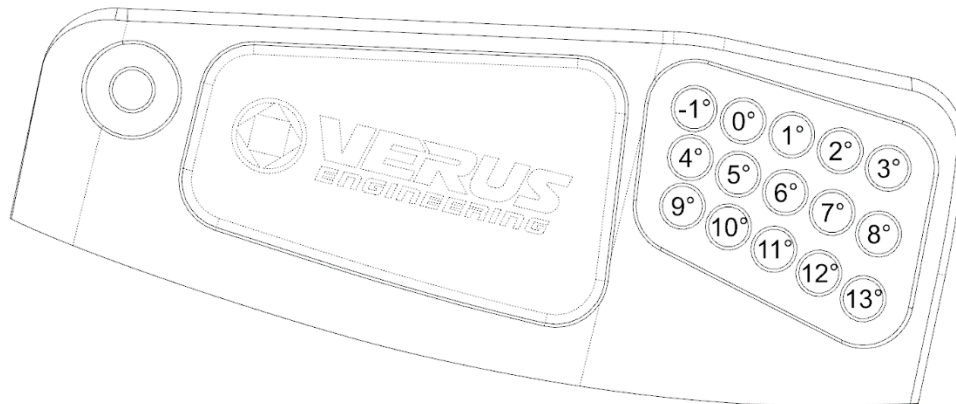


33. Now it is time to fit the wing to the car. The UCW uses a M6x22mm long SHCS, two M6x12mm OD washers, and a M6 nyloc nut. The V1X uses a 1/4"-28 12-point bolt, two 1/4" thin washers, and two 1/4"-28 self-locking hex nuts. Start the bolts in the front on both sides. Keep both of these bolts loose for now. **Note: The UCW is shown in the image below.**

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34. For AOA (Angle of Attack), 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*.



35. After your desired AOA is selected, you can now install the remaining M6x22mm long SHCS, M6x12mm OD washers, and M6 nyloc nuts (UCW) or 1/4" 12-point bolts, 1/4" thin washers, and 1/4"-28 self-locking hex nuts (V1X) in the rearmost locations. Torque to 6 ft-lbs and ensure you are using a washer on both the bolt head and nut side. **Note: The UCW wing and hardware is shown in the image below.**

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36. To finish installing the rear wing, we have to install the endplates. We include aluminum washers for M4 FHCS, and o-rings to reduce marring of the carbon fiber. Install the o-ring in the washer groove, and install into the endplate and rear wing as shown below. Finger tight for now. **Note: The endplate shown below is for the UCW wing.**



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37. The top edge of endplate should be parallel to the ground. Utilize a level before fully tightening the endplates down. Using a 2.5mm Allen wrench, tighten 1/8 turn past finger tight. Not much torque is needed here. **Note: The image below shows the V1X endplate.**



38. Congratulations on installing the UCW or V1X Rear Wing for the G82 BMW M4! For more information on performance, please visit our website and take a look at our informative packet.
39. Please send any questions, comments, concerns, or photos to Verus Engineering via e-mail; support@verus-engineering.com.

