

VERUS ENGINEERING

G87 BMW M2 Front Splitter and Air Dam Kit Install Manual



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G87 BMW M2 Front Splitter and Air Dam – Install Manual

CONTENTS

1. Introduction	<3>
1.1. Overview.....	<3>
1.2. Difficulty	<3>
1.3. Time Required.....	<3>
1.4. Tools Needed	<3>
1.5. Splitter and Air Dam Components.....	<4-5>
2. Front Splitter and Air Dam Install	<5-15>

G87 BMW M2 Front Splitter and Air Dam – Install Manual

1. Introduction

1.1. Overview: Detailed instructions on installing the Verus Engineering Front Splitter and Air Dam on the G87 BMW M2.

1.2. Difficulty: Moderate

1.3. Time Required: 3-3.5 hours

1.4. Tools Needed:

1.4.1. Splitter and Air Dam

- 1.4.1.1. Jack and Jack Stands or a Lift
- 1.4.1.2. Drill
- 1.4.1.3. Impact Gun
- 1.4.1.4. Ratchet
- 1.4.1.5. Rubber Mallet
- 1.4.1.6. 3/16" or 5mm Drill Bit
- 1.4.1.7. 1/8" Drill Bit
- 1.4.1.8. 3/8" Drill Bit
- 1.4.1.9. Flathead Screwdriver and/or Panel Popping Tool
- 1.4.1.10. Phillips Screwdriver
- 1.4.1.11. 10mm Socket
- 1.4.1.12. Painter's Tape
- 1.4.1.13. Center Punch
- 1.4.1.14. 2.5mm Allen Wrench or Socket
- 1.4.1.15. 4mm Allen Wrench or Socket
- 1.4.1.16. 5mm Allen Wrench or Socket
- 1.4.1.17. 9/16" Wrench
- 1.4.1.18. Utility Knife



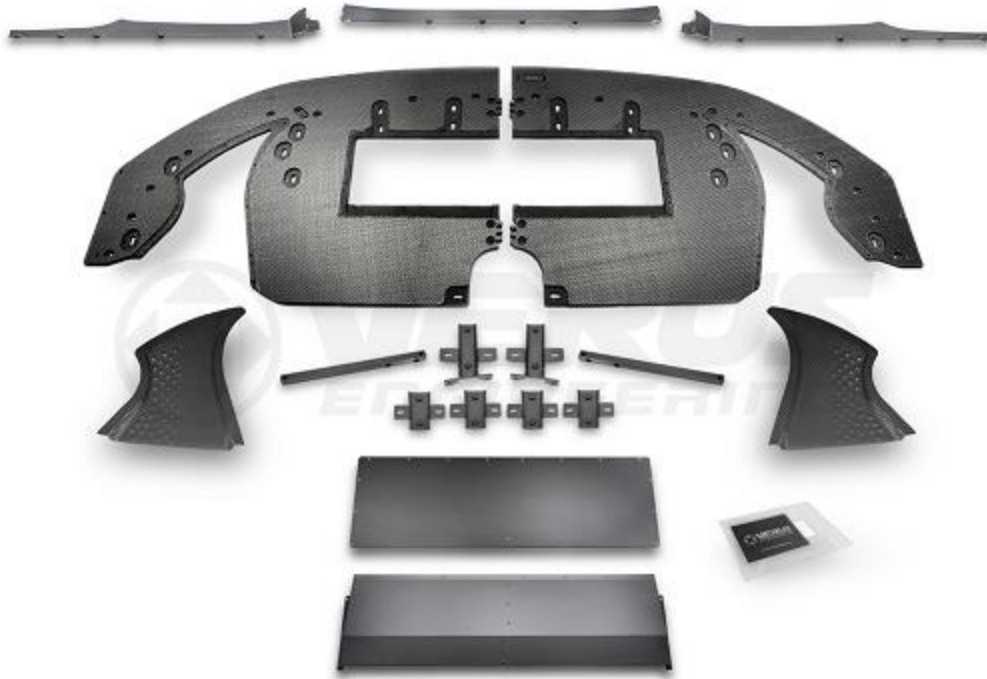
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G87 BMW M2 Front Splitter and Air Dam – Install Manual

1.5. Splitter Kit Components

- 1.5.1. (1) Front Splitter Left Half
- 1.5.2. (1) Front Splitter Right Half
- 1.5.3. (1) Left Side Air Dam
- 1.5.4. (1) Center Air Dam
- 1.5.5. (1) Right Side Air Dam
- 1.5.6. (1) Left Side Splitter Diffuser
- 1.5.7. (1) Right Side Splitter Diffuser
- 1.5.8. (1) Oil Cooler Duct
- 1.5.9. (1) Oil Cooler Block Off Plate
- 1.5.10. (4) Center Mounting Bracket
- 1.5.11. (2) Side Mounting Bracket
- 1.5.12. (1) Left Mounting Tube
- 1.5.13. (1) Right Mounting Tube
- 1.5.14. (1) 3D Printed Left Splitter Diffuser Extension
- 1.5.15. (1) 3D Printed Right Splitter Diffuser Extension
- 1.5.16. (1) Drill Template
- 1.5.17. (1) **Hardware Bag**
 - 1.5.17.1. (2) Square Splitter Bracket
 - 1.5.17.2. (20) ¼"x1.50" Fender Washer, Stainless
 - 1.5.17.3. (35) M4, 12mm OD Fender Washer, Stainless
 - 1.5.17.4. (35) M4x0.7, 20mm Long BHCS, Stainless
 - 1.5.17.5. (35) M4x0.7 Nyloc Nut, Stainless
 - 1.5.17.6. (38) M6x18mm OD Washer, Stainless
 - 1.5.17.7. (2) M6x1.0 Plastic Rivet Nut, Steel
 - 1.5.17.8. (12) M6x1.0 Heavy Duty Rivet Nut, Steel
 - 1.5.17.9. (4) M6x12mm OD Washer, Stainless
 - 1.5.17.10. (32) M6x1.0, 16mm Long Button Head Cap Screw (BHCS), Stainless
 - 1.5.17.11. (12) M6x1.0, 20mm Long Socket Head Cap Screw (SHCS), Stainless
 - 1.5.17.12. (18) M6x1.0, 25mm Long SHCS, Stainless
 - 1.5.17.13. (32) M6x1.0 Flanged Serrated Nut, Stainless
 - 1.5.17.14. (2) No. 10, 1" Long Torx Head Cap Screw (THCS), Stainless
 - 1.5.17.15. (1) M6 Rivet Nut Install Tool, w/ 2 Install Bolts
 - 1.5.17.16. (1) Strip of 3M VHB
 - 1.5.17.17. (1) Rubber Air Dam Edge Guard

G87 BMW M2 Front Splitter and Air Dam – Install Manual



2. Front Splitter Install

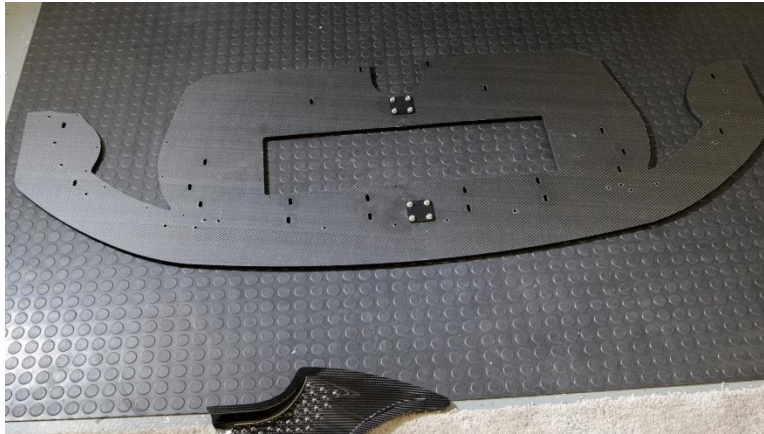
- 2.1. Verus Engineering is not responsible for damage to you or your vehicle by following this manual and/or installing Verus Engineering products.
- 2.2. We begin by jacking the car up. You will want to chock the rear wheels and use the e-brake if you are doing this install on the ground with jack stands.
- 2.3. Place a jack stand on both sides of the car. You can use the frame rails or the pinch welds. You may also use a lift if you have access to one.
- 2.4. First, we need to put the two splitter halves together. On a flat surface, place the puzzle pieces together and use a rubber mallet to tap the halves together as shown below



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- 2.5. Once the puzzle pieces are put together nicely, we need to install the two square splitter brackets to hold the halves together. The brackets need to be installed on the top side of the splitter as shown below. For reference, the top side is the side without the logo plate. Use a total of eight M6 x 20mm long BHCS, eight M6 x 18mm OD washers, and eight M6 flanged serrated nuts. (**M6 x 20mm long BHCS > M6 x 18mm OD washer > splitter blade > square bracket > M6 flanged serrated nut**).



- 2.6. Now we need to mark the holes for drilling the carbon splitter diffusers. Do so by placing the diffuser in the recessed area on the bottom side of the splitter as shown below. Mark the locations through the splitter that need to be drilled with a center punch or use the splitter as a drill template and drill through the splitter diffuser. Do so for both sides and utilize a 3/16" or 5mm drill bit.



- 2.7. With the holes drilled in the splitter diffuser, we can now install the diffuser and 3D printed extension piece as shown below. Use M4 x 20mm long BHCS, M4 x 12mm OD fender washers, and M4 nyloc nuts to secure each location of the diffuser to the splitter. (**M4 x 20mm long BHCS > splitter diffuser > splitter blade > M4 x 12mm OD fender washer > M4 nyloc nut**) In the rear mounting locations where the 3D printed extension piece goes, ensure

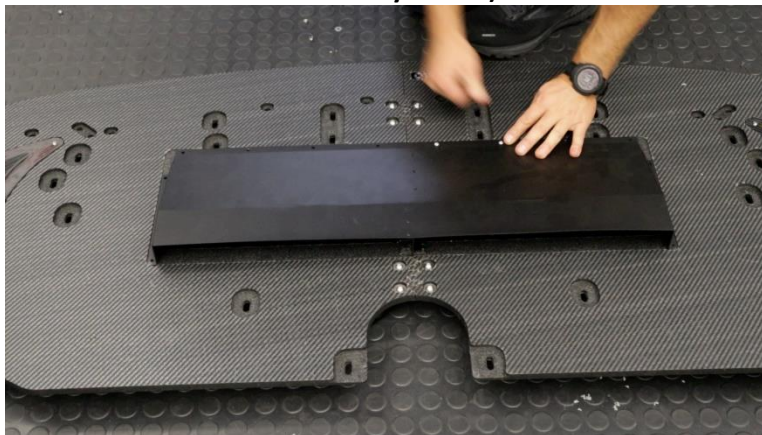
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the extension piece is sandwiched between the splitter diffuser and splitter blade. (**M4 x 20mm long BHCS > splitter diffuser > 3D printed diffuser extension > splitter blade > M4 x 12mm OD fender washer > M4 nyloc nut**).



- 2.8.** Install half of the 3M VHB strip between the splitter diffuser and the extension piece where they contact to assist in keeping it in place. Use the other half of the strip for the opposite side. The red strip in the photo above shows where to apply the 3M tape.
- 2.9.** With the splitter diffusers installed, it is now time to install either the oil cooler duct or block off plate. We opted for the duct in this case. Ensure the opening of the duct is facing rearward, as shown below, and utilize the same hardware that was used for installing the splitter diffusers. (**M4 x 20mm long BHCS > oil cooler duct or block of plate > splitter blade > M4 x 12mm OD fender washer > M4 nyloc nut**)



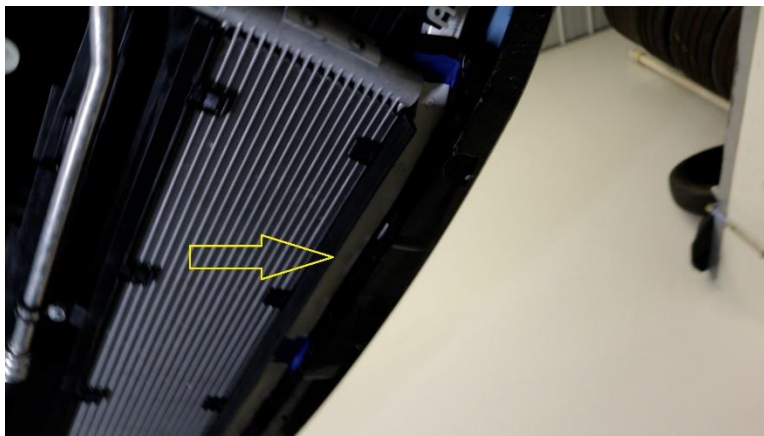
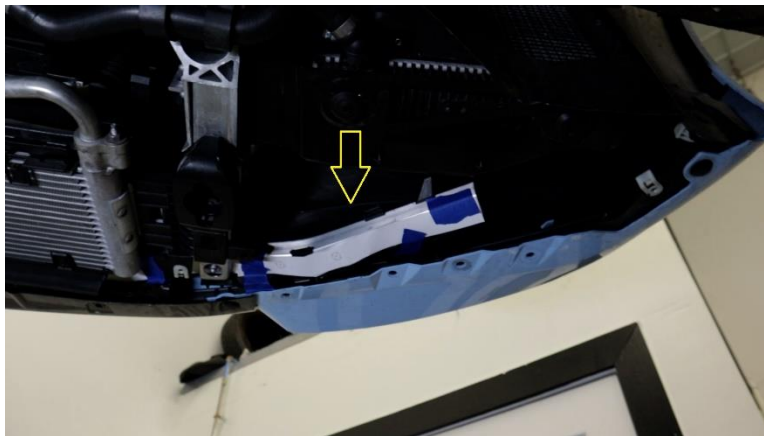
- 2.10.** Once the splitter is all put together, we need to start removing some of the factory underbody paneling. The photo below shows the three pieces that need to be removed. Using a flathead screwdriver or a panel popping tool and a 10mm socket and driver, remove these three panels. You may also remove the front weather stripping on the oil cooler at this point as well.

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G87 BMW M2 Front Splitter and Air Dam – Install Manual



- 2.11.** Cut out the drill template pieces and tape them to the factory pedestrian bars as shown below. There are three total templates. (Left bar, center bar, and right bar) The left and right sides are mirror images of each other.



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G87 BMW M2 Front Splitter and Air Dam – Install Manual

- 2.12.** Once the templates are placed correctly, use a center punch to mark each drilling location and then using an 1/8" drill bit, drill starter holes in each location. Once the starter holes are drilled, you can remove the templates and use a 3/8" drill bit to open up the holes for rivet nut installation. **Note: There are a total of twelve holes that need to be drilled between the three locations.**



- 2.13.** 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.**



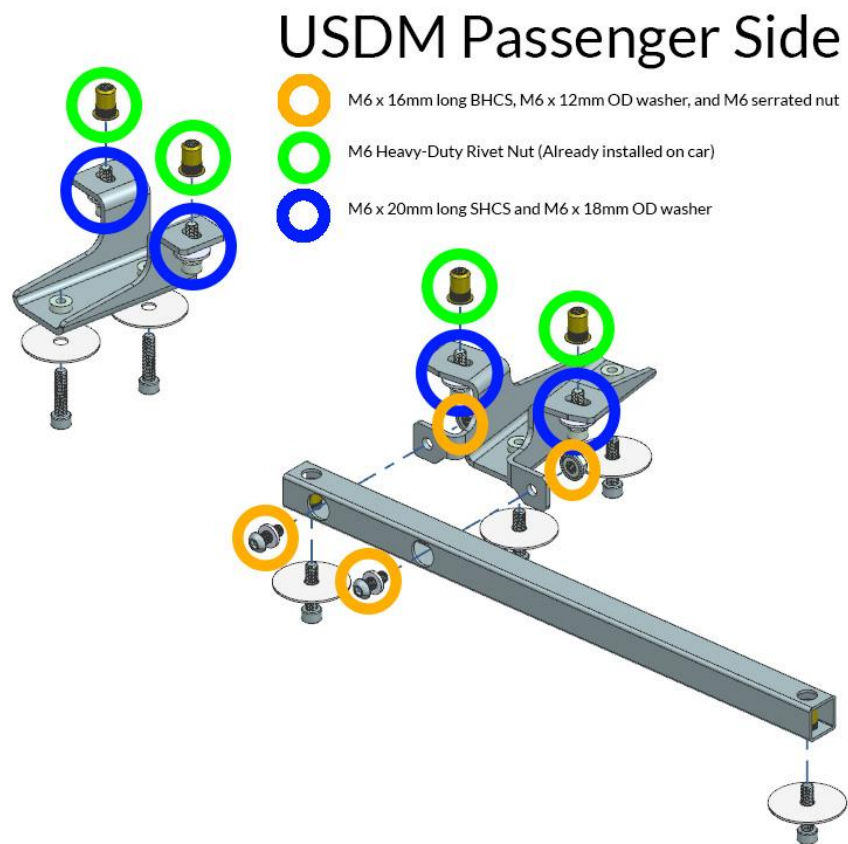
- 2.14.** Using a 9/16" wrench and the 5mm Allen wrench, hold the nut steady and tighten the Allen bolt. You will have some initial resistance, and then the rivet nut will begin to pull tighter on the material. **Use oil on the threads to ensure they do not gall.** Alternatively, you can purchase or rent a rivet nut install tool from your local hardware store or automotive store.
- 2.15.** Below is an example of fully installed rivet nut.

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G87 BMW M2 Front Splitter and Air Dam – Install Manual

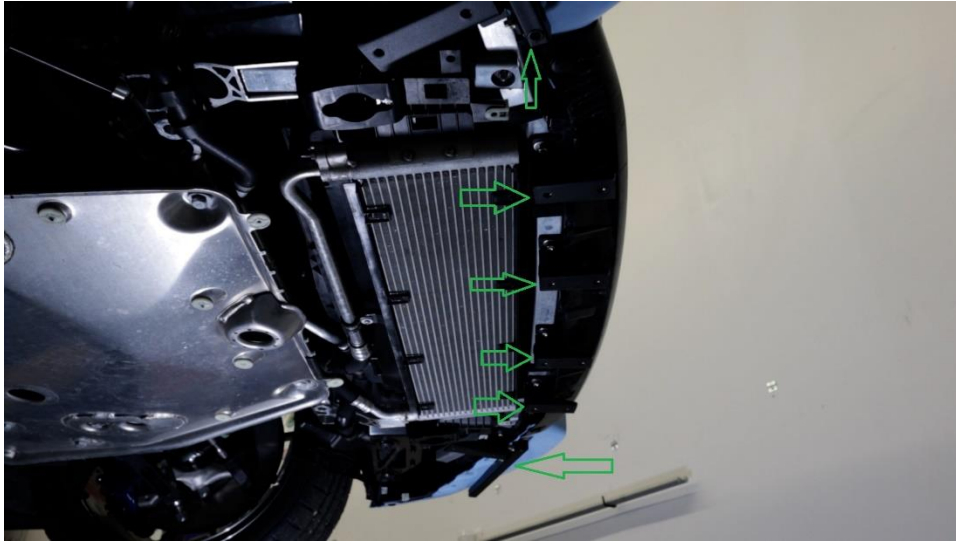


- 2.16.** With the twelve heavy duty rivet nuts installed, we can now loosely install our brackets and tubes as shown below. Use the M6 x 20mm long SHCS and M6 x 18mm OD washers to install the brackets into the rivet nuts. Keep these bolts hand tight for the time being as they will most likely need adjusted to line up with the splitter blade. For the outer brackets, we need to install the mounting tubes using M6 x 16mm long BHCS, M6 x 12mm OD washers, and M6 serrated nuts. Below is an image of how everything goes together and the orientation of the brackets.

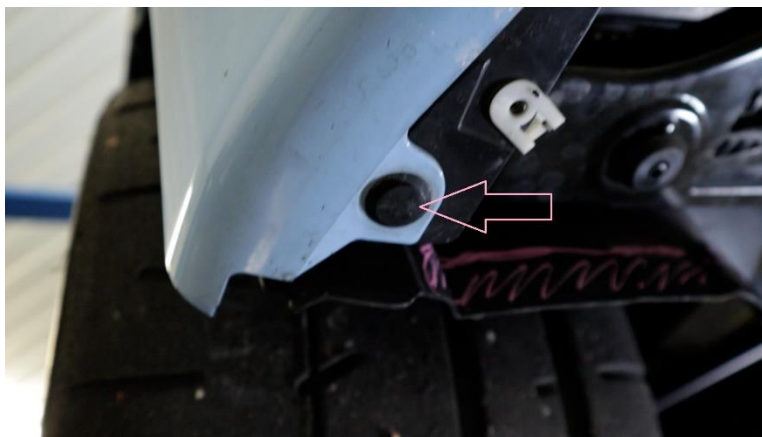


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- 2.17.** With all the brackets and tubes loosely installed, test fit the splitter blade up to the brackets to ensure the holes in the splitter line up with the clinch nuts in the brackets and the rivet nuts in the tubes. This will take some time and patience, but once everything lines up, go ahead and tighten all the mounting hardware for the brackets to 6 ft-lbs. In our experience, it was easier to ensure the center brackets lined up first, then we worried about the side brackets and tubes. Leaving the air dam off also helps.
- 2.18.** Once all the brackets are lined up and torqued down, we need to install one more rivet nut on each side of the bumper. You will need to remove the plastic push clip shown below. You will also want to peel back the bumper tab and install the rivet nuts into the black plastic piece behind it, or you will have to drill out the rivet nuts if you need to remove the bumper. Following the same rivet nut installation instructions as before, install the two longer rivet nuts for plastic application in these two locations. Once the rivet nuts are installed, you can position the bumper tabs back in place.



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G87 BMW M2 Front Splitter and Air Dam – Install Manual

- 2.19.** Next, we need to mark the locations where we will need to trim the fender liner in order to accept the splitter diffusers. To figure out where you need to trim, hold the splitter up to the brackets and mark the area where the splitter diffusers contact the fender liner. Ensure you do not trim too much off. You want the gap between the fender liner and the diffuser to be minimal.

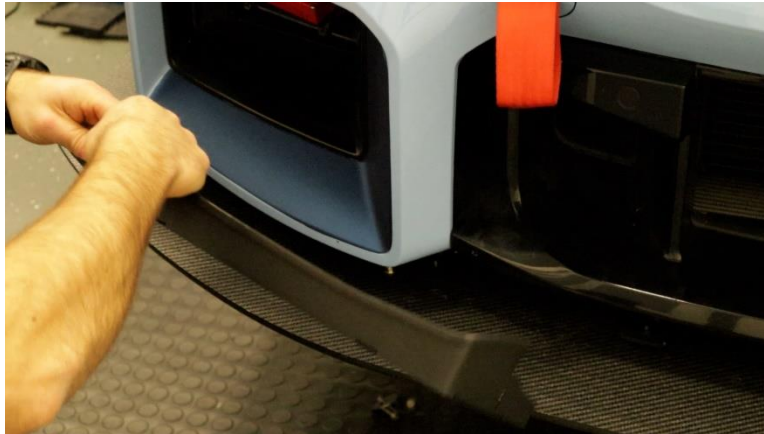


- 2.20.** Using a utility knife, trim the sections of the fender liner that you just marked in the previous step. A dremel or cut off tool can also work well.
- 2.21.** After the fender liners have been trimmed, we need to loosely bolt up the front splitter blade so that we can form the air dam to the bumper. Ultimately, you can really use any bolt and washer combo for this segment, but a diagram for correct bolt, washer, and spacer placement can be found below in section 2.26.
- 2.22.** Once the splitter is bolted up to the car, grab one side of the air dam and start forming it to the bumper as shown below. Do so by holding the centermost section of the air dam in place on the bumper and slowly form the air dam to the bumper. Bend one section at a time to ensure you get all the correct bends. Once you find a section that needs a harder bend, pull the air dam away from the car and use both hands to make the bend as shown in the second photo below. You also want to make sure the holes in the splitter line up with the tabs on the air dam pieces.

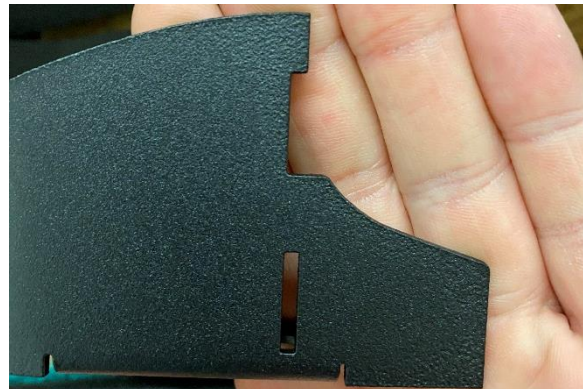
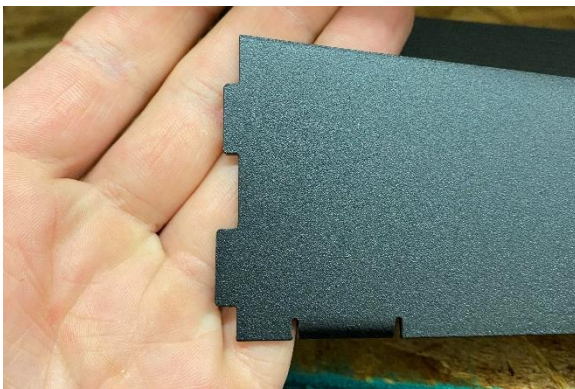
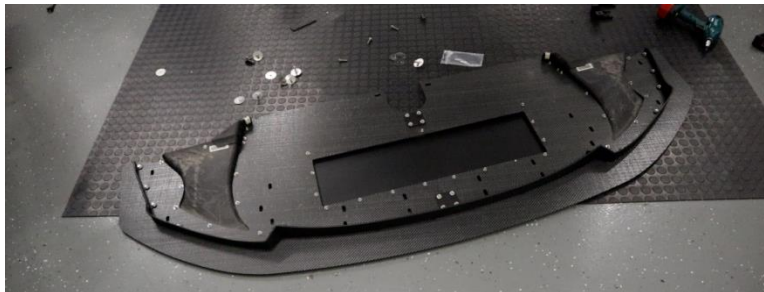


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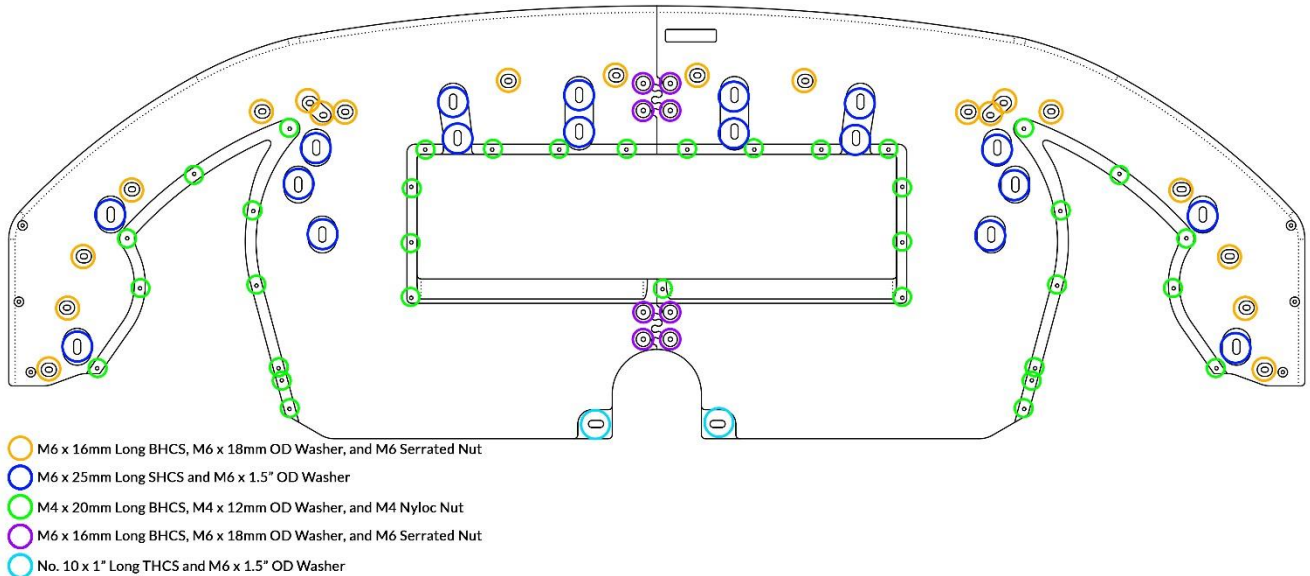
- 2.23.** After the air dam is formed to your liking, remove the front splitter from the car.
- 2.24.** Start installing the air dam as shown below using M6 x 16mm long BHCS, M6 x 18mm OD washers, and M6 serrated nuts. (**M6 x 16mm long BHCS > M6 x 18mm OD washer > splitter blade > air dam tab > M6 serrated nut**) The center section has tabs that sit inside the cutouts in the outer pieces to hold the three pieces together. Install the nuts hand tight so that the nuts are not loose, but you can still wiggle the air dam back and forth a small amount for final fitment. Once the splitter is on the car, we will make final adjustments before fully tightening everything.



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G87 BMW M2 Front Splitter and Air Dam – Install Manual

- 2.25.** Install the supplied air dam seal on the top edge of the air dam. This seal will protect the bumper from getting scratched as you fit the splitter and air dam to the car.
- 2.26.** We can now install the splitter back on the car using the diagram below for bolt, washer, and spacer reference. Start all bolts by hand first, then torque them to 6 ft-lbs once all bolts are started.



- 2.27.** After the splitter is all bolted up correctly, we may now make final adjustments to the air dam. Do so by pushing the air dam against the bumper, closing the gap, and then while holding the air dam in that position, tighten the bolts to secure it in position. **Note: Using an impact and a 4mm Allen socket works best for this as it helps the serrations on the nuts grab easier on the air dam tabs than doing it by hand.**



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- 2.28.** Congratulations! You have just completed installation of the Verus Engineering Front Splitter and Air Dam on your G87 BMW M2!
- 2.29.** Please contact Verus Engineering with any questions, comments, concerns, and feedback via sales@verus-engineering.com



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