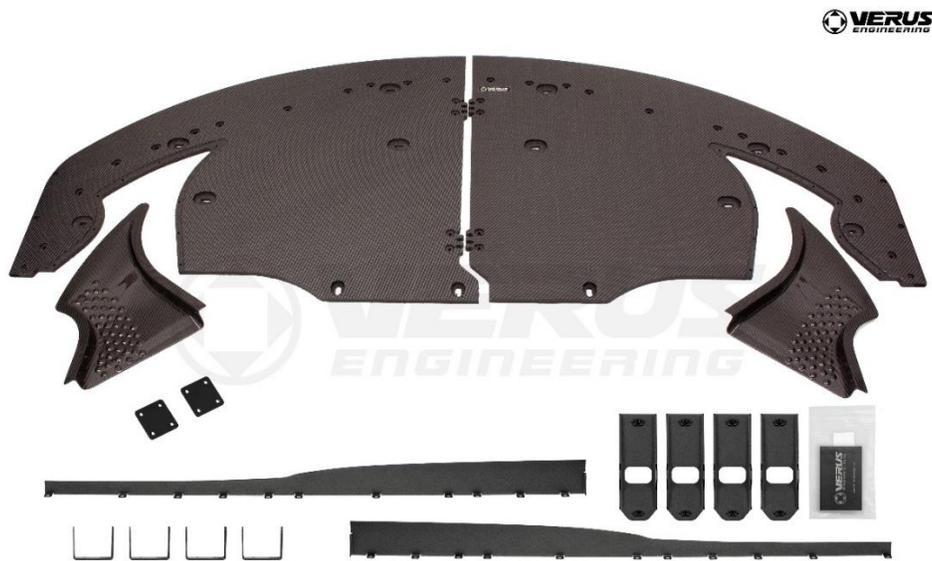


VERUS ENGINEERING

High Downforce Front Splitter – Toyota Supra Install Manual



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Approvals: E. Hazen

Document Revisions

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01	2022/11/14	T.Lang	Initial release of install manual

High Downforce Front Splitter – Toyota Supra

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 Components	<4-5>
2. Disassembly	<5-6>
3. Splitter Bracket Install	<6-11>
4. High Downforce Front Splitter Assembly	<11-15>
5. High Downforce Front Splitter Install	<16-21>

High Downforce Front Splitter – Toyota Supra

1. Introduction

1.1. Overview: Detailed instructions on installing our High Downforce Splitter and Air Dam Kit for the Toyota Supra

1.2. Difficulty: Moderate

1.3. Time Required: 2-4 hours

1.4. Tools Needed:

- 1.4.1. Jack and Jack Stands or a Lift
- 1.4.2. Cut-Off Wheel, Dremel, or Jig Saw
- 1.4.3. Drill
- 1.4.4. Impact or Ratchet (Both are a good idea)
- 1.4.5. 8mm Socket
- 1.4.6. 16mm Socket
- 1.4.7. 3/8" Drill Bit or Step Drill Bit
- 1.4.8. 3/16" Drill Bit or Step Drill Bit
- 1.4.9. 10mm Wrench
- 1.4.10. 10mm Allen Wrench
- 1.4.11. 5mm Allen Wrench
- 1.4.12. 4mm Allen Wrench
- 1.4.13. 3mm Allen Wrench
- 1.4.14. 2.5mm Allen Wrench
- 1.4.15. 7mm Wrench
- 1.4.16. 9/16" Wrench
- 1.4.17. Small Pick or Scribe
- 1.4.18. Painters Tape
- 1.4.19. Paint Marker
- 1.4.20. Punch



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1.5. Splitter Components**1.5.1. Splitter Assembly**

- 1.5.1.1.** (1) Splitter Blade, Carbon Polyweave, Left Hand Side
- 1.5.1.2.** (1) Splitter Blade, Carbon Polyweave, Right Hand Side

1.5.2. Diffuser Assembly

- 1.5.2.1.** (1) Splitter Diffuser, 2x2 Twill Carbon, Left Hand Side
- 1.5.2.2.** (1) Splitter Diffuser, 2x2 Twill Carbon, Right Hand Side

1.5.3. Splitter Air Dam Assembly

- 1.5.3.1.** (2) Front Splitter Air Dam, Aluminum, Left and Right Hand Side
- 1.5.3.2.** (1) Air Dam Rubber Seal

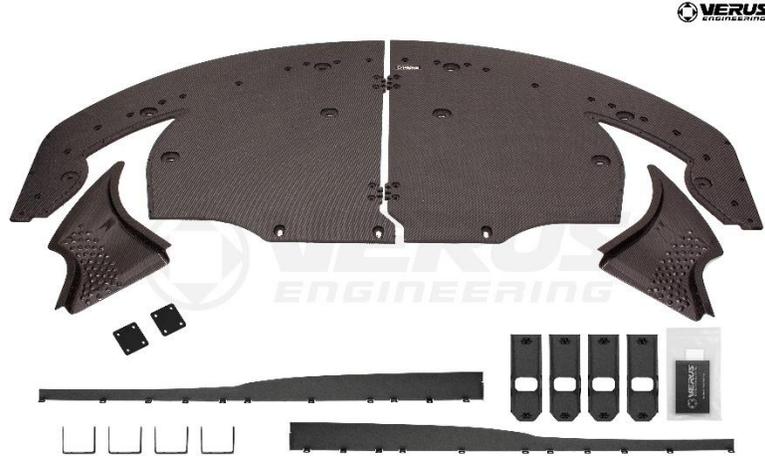
1.5.4. Bracket Assembly

- 1.5.4.1.** (2) Splitter Joining Bracket, Aluminum
- 1.5.4.2.** (2) Inner Crash Beam Bracket, Steel
- 1.5.4.3.** (2) Outer Crash Beam Bracket, Steel
- 1.5.4.4.** (4) Splitter Mounting Bracket with Floating Nut Plates, Aluminum

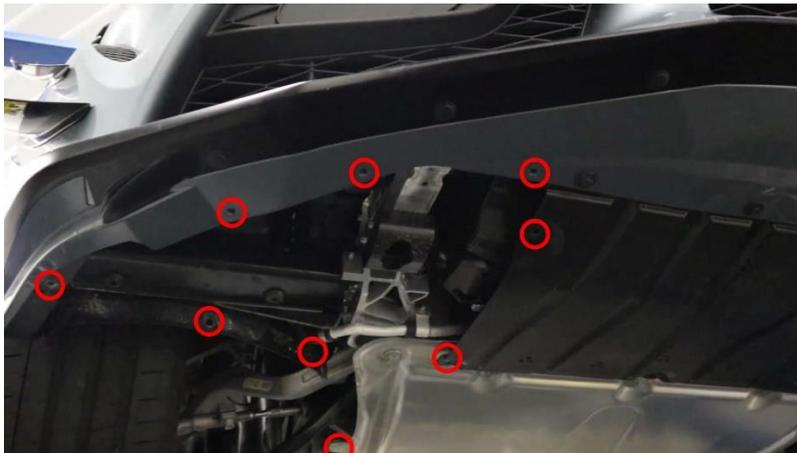
1.5.5. Hardware Bag

- 1.5.5.1.** (8) M6x1.0, 16 mm Long Button Head Cap Screw (BHCS)
- 1.5.5.2.** (8) M6 x 18mm Fender Washer
- 1.5.5.3.** (8) M6x1.0 Nyloc Nut
- 1.5.5.4.** (24) M6x1.0, 20mm Long BHCS
- 1.5.5.5.** (24) M6 x 18mm Fender Washer
- 1.5.5.6.** (24) M6x1.0 Flanged Serrated Nut
- 1.5.5.7.** (2) M6x1.0, 12mm Long BHCS
- 1.5.5.8.** (4) M6 x 12mm Washer
- 1.5.5.9.** (2) M6x1.0 Nyloc Nut
- 1.5.5.10.** (10) M6x1.0, 25mm Long Socket Head Cap Screw (SHCS)
- 1.5.5.11.** (10) 1/4"x1.50" Fender Washer
- 1.5.5.12.** (18) M6x1.0, 16 mm Long BHCS
- 1.5.5.13.** (34) M6 x 12mm Washer
- 1.5.5.14.** (18) M6x1.0 Nyloc Nut
- 1.5.5.15.** (1) M6x1.0 Rivet Nut Install Tool
- 1.5.5.16.** (2) Paper Template
- 1.5.5.17.** (9) M6x1.0, 20mm Long SHCS
- 1.5.5.18.** (9) M6 x 18mm Fender Washer
- 1.5.5.19.** (9) M6x1.0 Heavy Duty Steel Rivet Nut
- 1.5.5.20.** (2) M6x1.0 Steel Rivet Nut for Plastic Application
- 1.5.5.21.** (3) M10x1.5, 35mm Long SHCS
- 1.5.5.22.** (3) M10 Fender Washer
- 1.5.5.23.** (3) M10 Aluminum Spacer, 15mm Long
- 1.5.5.24.** (20) M4 x .7 Fender Washer
- 1.5.5.25.** (20) M4 x .7 Nyloc Nut
- 1.5.5.26.** (20) M4 x .7 20mm Long BHCS

High Downforce Front Splitter – Toyota Supra

**2. Disassembly**

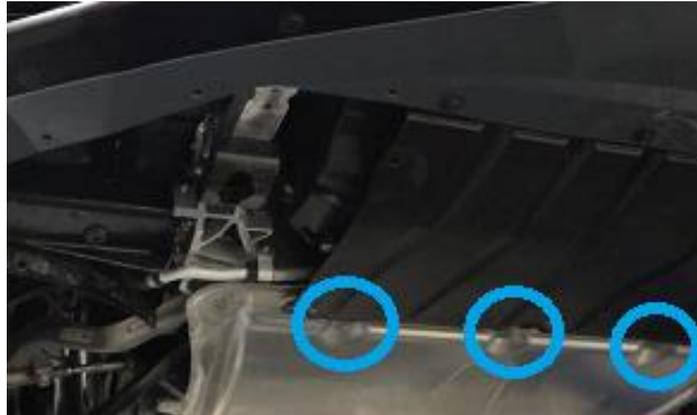
- 2.1. Verus Engineering is not responsible for damage to you or your vehicle by following this manual and/or installing Verus Engineering products.
- 2.2. We begin by jacking the car up. You will want to chock the rear wheels and use the e-brake. A lift is also acceptable.
- 2.3. Place a jack stand on either side of the car, you can use the frame rails or the pinch welds.
- 2.4. We need to remove the plastic underbody panels from the bottom side of the vehicle.
- 2.5. Remove these by utilizing an 8mm socket. There are a total of 9 bolts that need to be removed. This will need to be done on both sides.



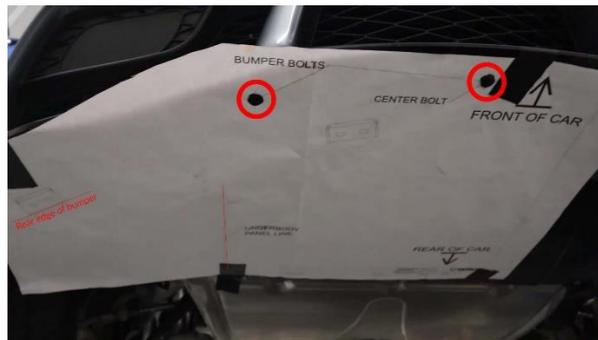
- 2.6. We also need to remove the (3) 16mm bolts circled in blue below.

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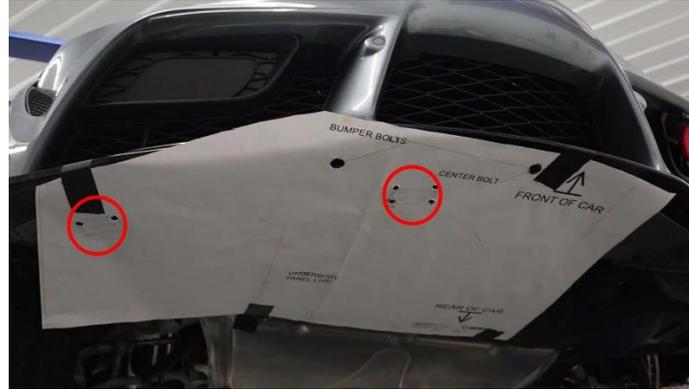
**3. Front Splitter Bracket Install**

- 3.1.** Attach the templates to the underside of the vehicle using painter's tape. Use the suggested points for placement. The outer crash beam rear flange should be close in proximity to the rear of the bumper.



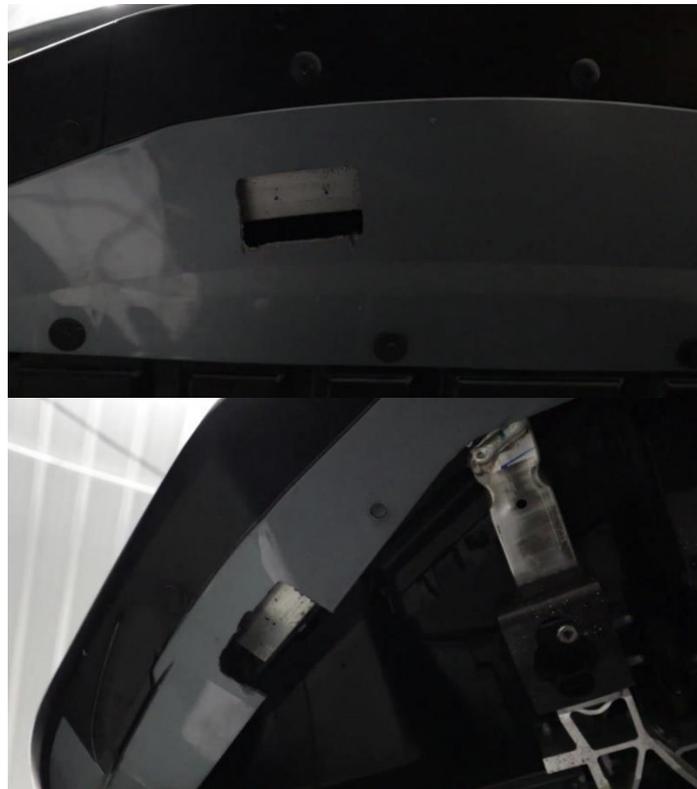
- 3.2.** Once the templates are correctly placed, use a 3/8" drill bit to drill starter holes for bumper trimming.

High Downforce Front Splitter – Toyota Supra



3.3. Once the holes are drilled, you may now remove the templates.

3.4. Using a dremel, cut-off wheel, or small jigsaw, remove the sections of the bumper where the crash beam brackets will be mounted.

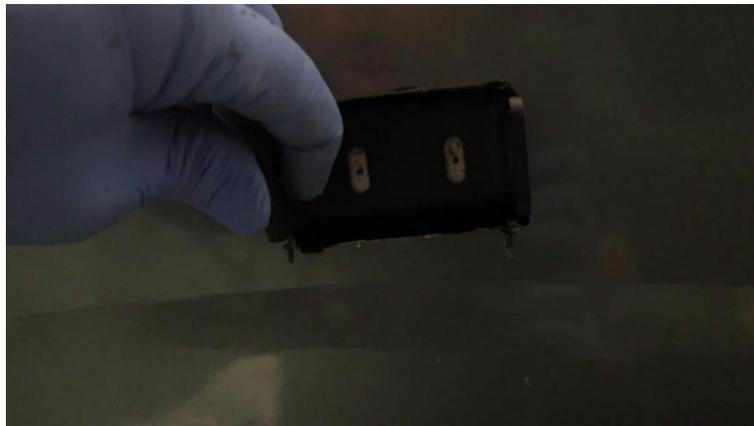


3.5. Starting with the two centermost locations, we need to grab the correct small brackets to mark our holes for drilling. These brackets only have two slots, whereas the outside brackets will have an additional square cut-out in the center.

High Downforce Front Splitter – Toyota Supra



- 3.6.** Mark the locations for drilling by holding the brackets up to the crash beam. Note that the brackets are the same width as the crash beam.



- 3.7.** Repeat step **3.6** for the outside brackets keeping in mind that the outer brackets have a square cut out in the center to differentiate the two.
- 3.8.** Using a punch, tap each marked location to assist with starting the drill bit.
- 3.9.** Drill each of these locations to $3/8"$. You may start the holes using a smaller size drill bit, but they will need to be opened up using the $3/8"$ bit. A step drill bit works as well.

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- 3.10.** 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.**



- 3.11.** Using the 9/16" wrench and the 5mm allen wrench, hold the rivet nut install tool steady and tighten the allen bolt. You will have some initial resistance, then the rivet nut will begin to pull tighter on the material.
- 3.12.** Install the 8 heavy-duty rivet nuts in the locations you just drilled as shown below.



- 3.13.** Moving towards the outside of the bumper, we will install one more rivet nut on each side. This is a factory mounting point for the plastic underbody panel that was removed earlier. Open this hole up using your 3/8" drill bit.
- 3.14.** Install the rivet nut as shown below. These are the larger rivet nuts, which are specifically designed for use in plastic.

High Downforce Front Splitter – Toyota Supra



3.15. Below is a photo of a properly installed rivet nut.



3.16. Now it is time to prep the brackets for install as shown below. Use the 16mm BHCS, 12mm washers, and nyloc nuts to attach the upper brackets with the lower brackets.

High Downforce Front Splitter – Toyota Supra



- 3.17.** Once the brackets are assembled, it is now time to loosely install these on car. Do so by feeding the 20mm long SHCS and 18mm fender washers through the cutout in the bottom bracket and loosely installing them into the rivet nuts we installed earlier. Note that you want a little play both forward/rearward and side to side initially. Also note the “shorter” side is towards the front of the car.



4. High Downforce Splitter Assembly

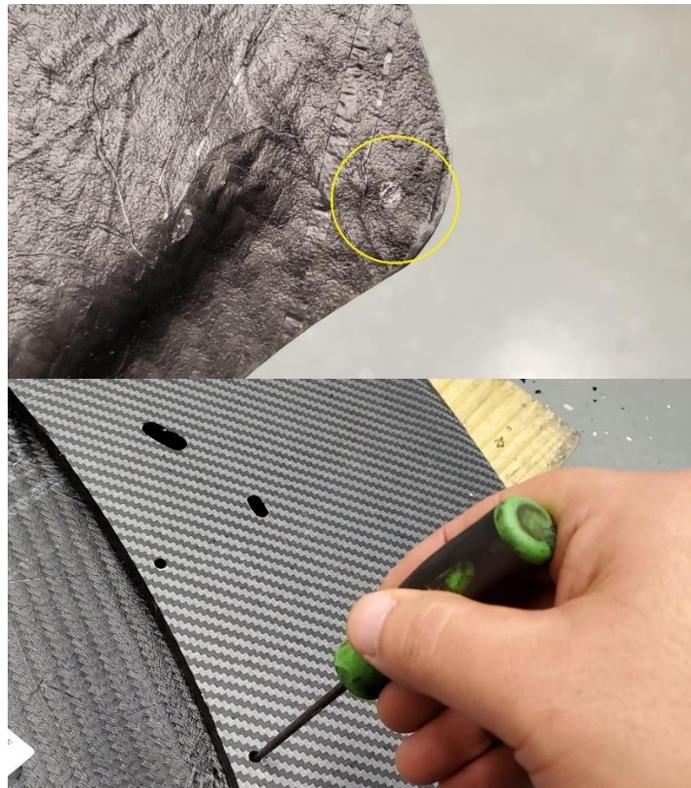
- 4.1.** The high downforce front splitter needs assembled as it is a two-piece design and incorporates an air dam, and two front diffusers.
- 4.2.** First, we need to install the front diffusers. To do this we will need to drill them to accept the M4 mounting bolts.

High Downforce Front Splitter – Toyota Supra

- 4.3. Start by placing the diffuser into the pocketed area on the bottom side of the splitter which should ultimately create a flush surface across the bottom of the splitter. The glossy side should be facing the ground when installed. The below image is the bottom of the splitter.



- 4.4. With the diffuser lined up correctly, scribe the holes that need to be drilled by using a small pick through the pre-drilled holes in the splitter.



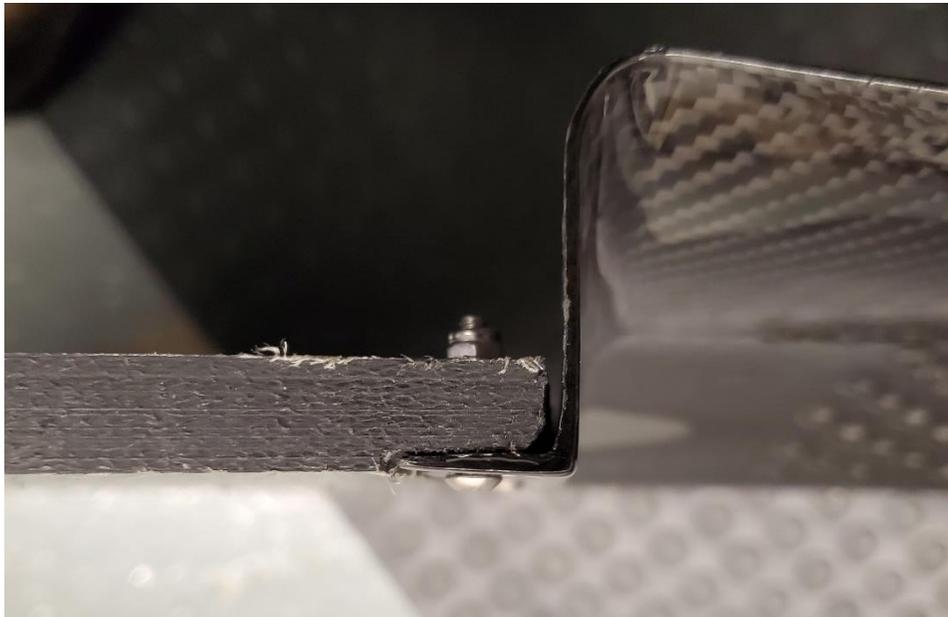
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- 4.5. Drill the scribed holes with a 3/16" drill bit.



- 4.6. Install the front diffusers using the 20mm long M4 x .7 BHCS, M4 fender washer, and nyloc nuts. The washer and nyloc nut should be on the top surface. Tighten just a quarter to half turn past bottom.

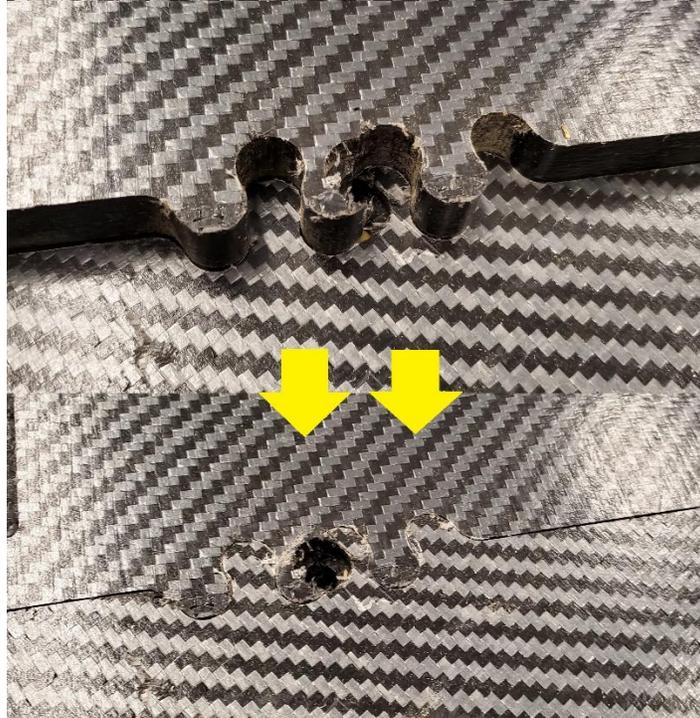


- 4.7. Repeat the same process for the opposite side.

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- 4.8. Next, line up the “puzzle pieces”, and use your soft face hammer to tap them together as shown below.



- 4.9. Then, attach the splitter halves together using the small square splitter brackets, 16mm BHCS and 18mm fender washers on the bottom side, then nyloc nuts on the top side of the bracket to tie it all together. Note the bottom side of the splitter features the recessed areas and the logo plate.



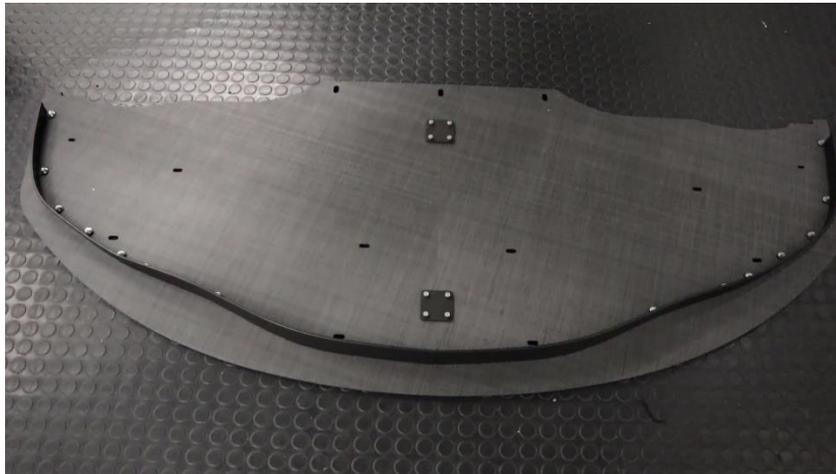
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High Downforce Front Splitter – Toyota Supra

- 4.10.** Once the splitter halves are attached, it is now time to loosely install the air dam. Start by attaching the air dam halves together by using the 12mm long BHCS, 12mm washers, and serrated nuts. You can make sure these two bolts are 100% tight at this point



- 4.11.** Loosely install the air dam onto the splitter using the 20mm long BHCS and 18mm fender washers on the bottom side and then a serrated nut on the top side. Only install the nuts hand tight initially. Once the splitter is on car, we can make final adjustments for the air dam before fully tightening it down. Below is what the splitter should look like before getting installed on car.



- 4.12.** Before installing the splitter on car, install the supplied rubber edge seal on the topside of the air dam to prevent the air dam from digging into the bumper or paint when installing. This rubber seal also helps seal the air dam with the factory front fascia when it is installed.

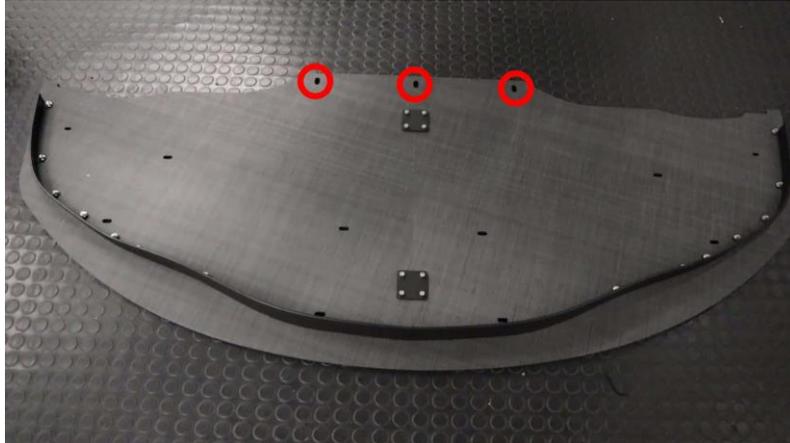
- 4.13.** The front splitter is now assembled and ready to be installed on car. We will now move onto step 5 which is installing the splitter assembly on car.

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High Downforce Front Splitter – Toyota Supra

5. Front Splitter Install

- 5.1. We will start by loosely installing the 3 rearmost bolts, washers, and spacers. These are M10 x 35mm SHCS and M10 washers. The M10 aluminum spacers need to be sandwiched between the splitter and the factory aluminum under tray.



- 5.2. You should now have something that looks like the image below. Do not let it drop to the point the splitter is being damaged.



- 5.3. Now it is time to pivot the splitter up and check how well our brackets line up with the mounting holes in the splitter. Again, the splitter brackets need to be loosely installed so that they can be moved a small amount for test fitting.

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High Downforce Front Splitter – Toyota Supra



- 5.4. Once you find a bracket hole and a hole in the splitter that line up, loosely install one 25mm long SHCS and 1/4" x 1.50" fender washer.
- 5.5. Adjust the remaining brackets until all the holes line up correctly. This may take some patience and a bit of up and down, but once all the brackets are properly placed, uninstalling and reinstalling the splitter is much easier.
- 5.6. Now that all of the mounting holes line up, we need to trim the fender liner to clear the front diffusers.
- 5.7. Temporarily bolt the splitter up loosely, and you will see where you need to trim the fender liner. You should see something similar to what is shown below. Using a cut-off wheel, saw etc., cut out the fender liner to accommodate the front diffusers. You should only cut through plastic.



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- 5.8. Next, you may need to modify the bumper to clear some of the hardware used to install the front diffusers.
- 5.9. To do this, you should be able to push the splitter up against the bumper to the point where the hardware will make contact. Push the splitter against the bumper so that the hardware makes a mark/mark(s) on the bumper. The air dam will cover these locations.



- 5.10. Using the mark(s) as a reference, use a 1/2" drill bit and drill the mark out so the hardware can sit inside of it when the bumper is completely installed.



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High Downforce Front Splitter – Toyota Supra

- 5.11.** If at this point the splitter, and air dam sit flush against the bottom of the bumper appropriately without any interference with other components, we can begin final installation of the splitter.



- 5.12.** Once all the holes on the splitter line up, you may now fully tighten down the brackets to the crash beam. Tighten to 6 ft-lbs.
- 5.13.** Now that the brackets are fully tightened to the crash beam, use the 25mm long SHCS and 1/4" x 1.50" fender washers to fully install the splitter onto the brackets and the rivet nuts in the bumper (circled in red) do not change and is a good place to start when installing the splitter.



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High Downforce Front Splitter – Toyota Supra

- 5.14.** With the splitter fully installed, we can now make final adjustments for the air dam. Do so by pressing the air dam up against the front fascia, as shown below, and tightening the BHCS on the bottom side with an impact. The serrations on the nuts will grab the powdercoat and will tighten if done properly.



- 5.15.** Congratulations on installing the Verus Engineering Mk5 Toyota Supra High Downforce Front Splitter Kit.
- 5.16.** Please contact Verus Engineering with any questions, comments, concerns, and feedback via sales@verus-engineering.com.



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