

# VERUS ENGINEERING

## FRS BRZ Modular Hood Louver Install

### Installation Manual



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#### Document Revisions

Rev	Date	Author	Description
01	02/29/2016	E. Hazen	Issued for Release
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1.1. **Overview:** Detailed instructions on installing the hood louver kit for the FRS BRZ.

1.2. **Difficulty:** Moderate

1.3. **Time Required:** 3-4 hours

1.4. **Tools Needed:**

- Ratchet or electric powered ratchet
- 12mm socket
- 9/32 socket
- Scissors
- Hammer
- 1/16" drill bit (any small drill)
- 1/2" stepped drill
- Center punch (or un-used tap with a sharp point)
- 11/64" drill bit
- Countersink
- 90 degree air grinder
- Abrasive roll-lock wheels
- Drill
- Painter's tape
- Straight Air Grinder
- Cut-off Wheel
- Goggles or safety glasses
- Large piece of carpet
- Vacuum



### 1.5. Hood Louver Components

- (4) Powdercoated black or raw aluminum louvers with installed studs
- (4) Powdercoated black or raw aluminum wickers
- Hardware Bag
  - (4) Cut Templates
  - (32) 8-32 Flanged Serrated Nuts
- (4) \*Optional\* powdercoated black rain guards

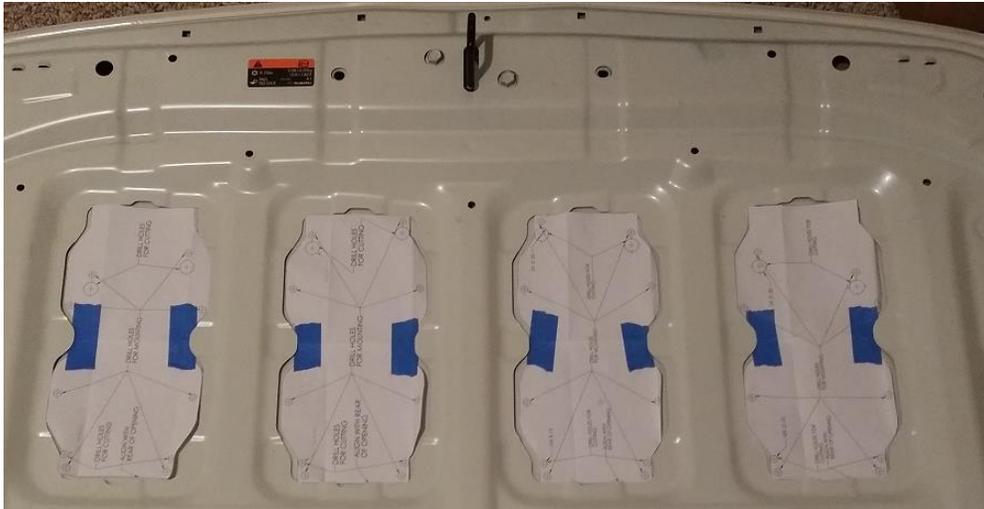


## 2. Hood Louver Kit Install

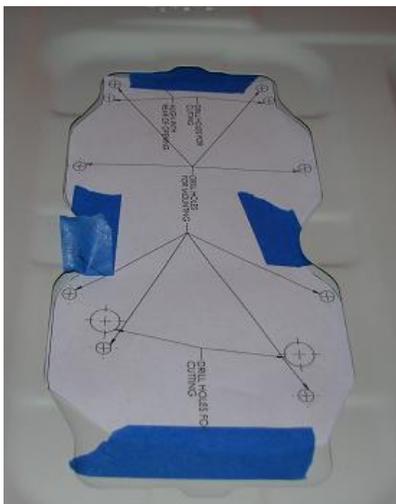
- 2.1. We are not responsible for damage to your vehicle by following this manual.
- 2.2. Begin with disconnecting the battery, negative first, if this makes you feel more comfortable working on the car. It is always a good idea to disconnect the battery anytime when working on the vehicle. We were nowhere near the battery or electrical system so we left it connected for this install, but again, never a bad idea.
- 2.3. Open the hood to gain access to the hinge bolts holding the hood on.
- 2.4. Using the 12mm socket and ratchet, loosen and remove the (4) bolts from the hood latches and remove the hood from the car, below is a picture of the driver's side bolts.



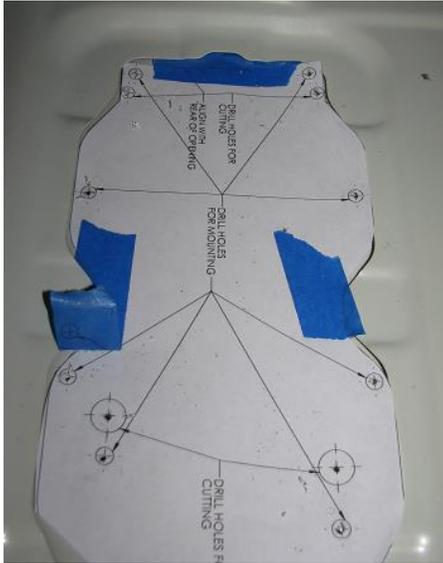
- 2.5. Place the hood upside down on a large piece of carpet to prevent scratches from forming. We had good luck with this; however if you feel safer doing another technique, by all means protect the paint in whatever fashion you see best.
- 2.6. You will need scissors to prepare the paper template. Cut along the outer lines of the paper template. Do not cut the holes out!
- 2.7. Shown below is all 4 templates taped on the hood as designed; however, they can ultimately be installed in whatever fashion you wish.



- 2.8. The templates should fit nicely in-between the structural sheet metal on the bottom. We started with the smaller side vent first, shown below.



- 2.9. Using the center punch (or tap) and the hammer, we can center punch each of these holes. Ensure that the template does NOT move between each hit. Below is the picture after each hole has been center punched from the underside.

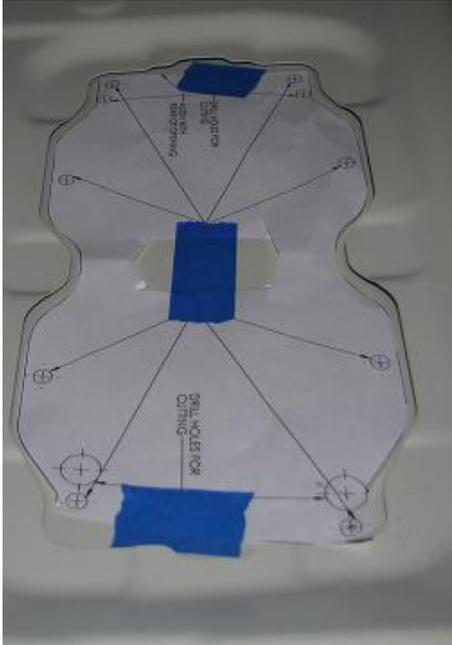


- 2.10. Using the small drill bit (1/16" or 1/8") and the vacuum, drill a hole from the rear through each of these points. If the drill bit begins to walk much, you need to center punch the aluminum harder. Drill this from the underside and use the vacuum to try and get as many of the shavings as you can.
- 2.11. Stepping up to the 11/64" hole, drill the (10) 11/64" holes out from the underside again using the vacuum to suck up the shavings. The 11/64" hole allows a bit of misalignment for install; however you can start smaller if you would like (stud dia. is 0.164").
- 2.12. Then using the 1/2" stepped drill bit, go all the way through the (2) holes that need to be 1/2". The hood should look like the below picture once you flip it over.

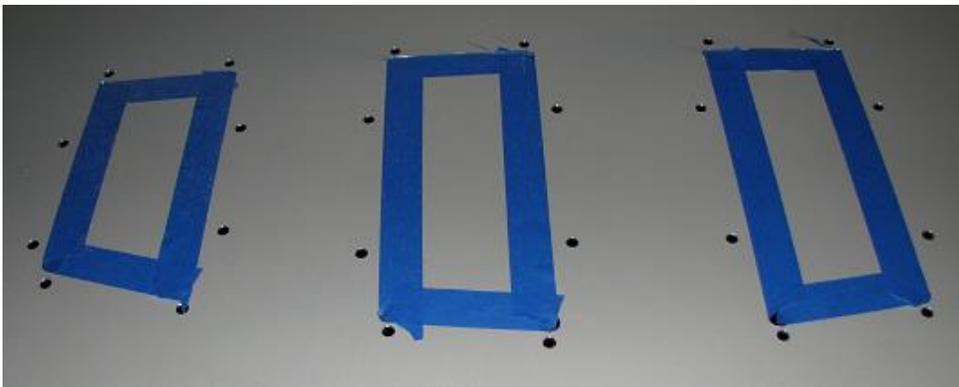


- 2.13. Clean each of these holes up from burrs with the countersink tool. Hit the top and bottom just briefly to break the edge.

- 2.14. Moving onto the larger vent in the middle, tape the template out similar to the small vent, shown below.



- 2.15. Using the same steps as before, fully drill the holes necessary while cleaning up the shavings and holes with the countersinks. Repeat these steps for all four louvers.
- 2.16. Once all the holes are drilled, flip the hood back over so the paint side is up. We now use the painters tape to “draw” a straight line between the outside of the holes that are the inside corners of the cutout we will need to remove. The picture below depicts this step well.



- 2.17. Using the cut-off wheel and the straight grinder, carefully follow the edge of the blue tape to help you keep the cut straight. There is no rush. This is the hardest part of the install, so take your time and don't get hasty with cutting through the aluminum. **Note: It is much wiser to place the blue tape on the outside, not the inside as shown.**

- 2.18. Once you have all four of these cut out, you'll want to test fit the louvers and find out where you need to shave off more to ensure un-obstructed. To shave off small amounts, we recommend using an abrasive wheel (shown below) on a 90 degree grinder.



- 2.19. When you are happy with fitment, we recommend finishing off the edges with a less abrasive wheel on the 90 degree angle grinder (shown below). This leaves the edges smooth and rounded, without burrs and lessens the chances of being cut.



- 2.20. Decide what configuration you want to run your louvers in and prepare for final install. We recommend installing the wickers for the greatest evacuation of the engine bay air. Each wicker has its specific spot, do not force the units on. ***The units with the longer slot are the smaller louver's wickers, while the slightly smaller slotted wickers are for the larger louvers. Below illustrates this point.***



- 2.21. Using the 8-32 flanged serrated nuts, install them on each of the studs. The studs are firmly pressed into the aluminum louver but do not be overly rough with them or the clinch stud could work loose. Depending on configuration ran, you can install the wickers and/or rain guards. These units are installed on the bottom side.
- 2.22. ***The nuts only need to be snug, due to the serrated feature they should not back off.*** Keep this in mind, as there is no need to be rough with them. We found snug then a 1/8 turn works well.
- 2.23. *The aluminum louvers can be molded slightly to conform to the hood better, don't be satisfied with poor fitment, we went with thin aluminum so that it can fully conform to the hood!*
- 2.24. Reinstall the hood with the OEM 12mm bolts and enjoy a cooler engine bay, a bump in front end downforce, and an aggressive new look. If you have any comments, concerns, or issues, please contact [sales@verus-engineering.com](mailto:sales@verus-engineering.com).

