



GR/GV Subaru WRX/STI Hood Louver Kit

Install Manual



Author: Eric Hazen

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Approvals: E. Hazen, P. Lucas

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GR/GV Subaru WRX/STI Hood Louver Kit – Install Manual

CONTENTS

1. Introduction	<3>
1.1. Overview	<3>
1.2. Difficult	<3>
1.3. Time Required	<3>
1.4. Tools Needed	<3>
1.5. Hood Louver Kit Components.....	<4>
2. Hood Louver Kit Install	<4-15>

GR/GV Subaru WRX/STI Hood Louver Kit – Install Manual

1. Introduction

1.1. Overview: Detailed instructions on installing the hood louver kit for the GR/GV Chassis Subaru WRX/STI.

1.2. Difficulty: Moderate to Hard

1.3. Time Required: 3-4 hours

1.4. Tools Needed:

- 1.4.1. Drill
- 1.4.2. Painter's Tape
- 1.4.3. 1/8" drill bit
- 1.4.4. 3/16" drill bit
- 1.4.5. Step Drill Bit
- 1.4.6. Electric or pneumatic die grinder
- 1.4.7. Cut-off wheel
- 1.4.8. Sanding discs
- 1.4.9. Center Punch
- 1.4.10. Hammer
- 1.4.11. Blow Gun
- 1.4.12. Ratchet/Impact
- 1.4.13. 10mm Socket
- 1.4.14. 12mm Socket
- 1.4.15. 11/32 socket
- 1.4.16. Tape measure
- 1.4.17. Marker
- 1.4.18. Touch-Up Paint
- 1.4.19. Scissors
- 1.4.20. Needle Nose Pliers
- 1.4.21. Countersink



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GR/GV Subaru WRX/STI Hood Louver Kit – Install Manual

1.5. Hood Louver Components

- 1.5.1.** Left-hand louver
- 1.5.2.** Right-hand louver
- 1.5.3.** Left-hand wicker
- 1.5.4.** Right-hand wicker
- 1.5.5.** Template
- 1.5.6.** Hardware Bag
 - 1.5.6.1.** (34) 8-32 Serrated Stainless Nuts
 - 1.5.6.2.** (1) Warning for over torquing of nuts
 - 1.5.6.3.** Verus Logo Sticker

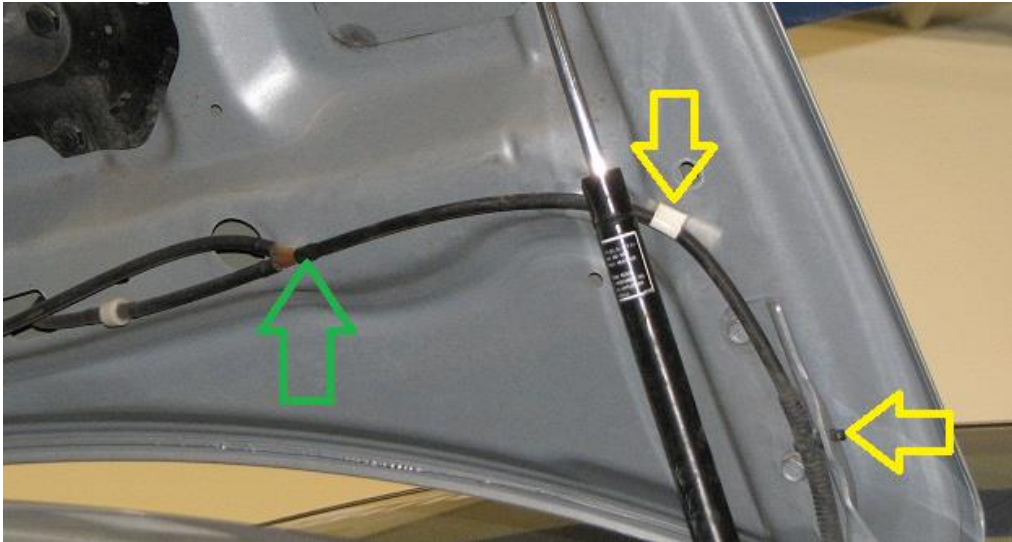
**2. Hood Louver Kit Install**

2.1. Verus Engineering is not responsible for damage to you or your vehicle by following this manual and/or installing Verus Engineering products.

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GR/GV Subaru WRX/STI Hood Louver Kit – Install Manual

- 2.2. We begin by popping the hood so that we can remove the hood from the car.
- 2.3. Before removing the hood, we will remove the washer fluid nozzle hose from the hood (green arrow) and then the remainder of this hose from the hood completely by removing (2) clips (yellow arrows).



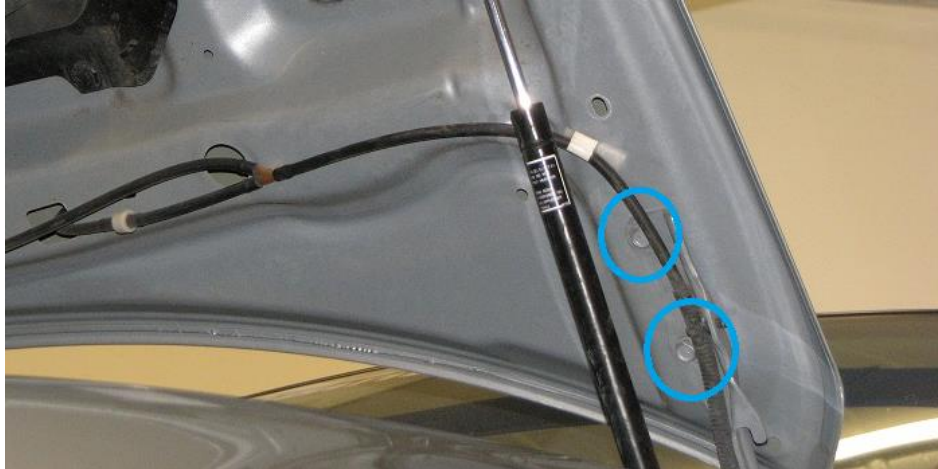
- 2.4. Remove the black fabric piece held on with plastic clips as well and discard as necessary, we will not be using this after installing the louvers.
- 2.5. Using the 10mm socket and the ratchet, remove the hood struts from the car. These bolts are circled in red in the below photo.



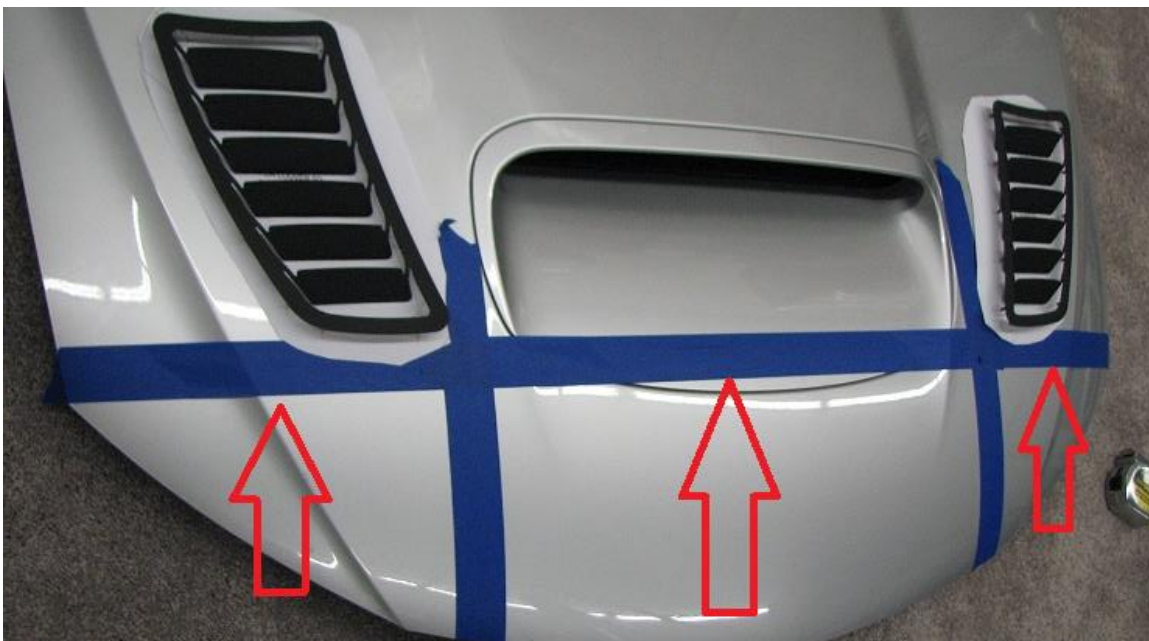
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GR/GV Subaru WRX/STI Hood Louver Kit – Install Manual

- 2.6. To fully remove the hood, it is recommended to get a second pair of hands. We will remove the (4) 12mm bolts that hold the hood to the hood hinges.



- 2.7. Place the hood top side up on something with a bit of cushion. A large cardboard box, a piece of carpet, saw horse or another stand will work well.
- 2.8. Ultimately, louver location is up to you. However, we have outlined in this manual placement for good evacuation based on our CFD analysis.
- 2.9. We will start by laying down a piece of painter's tape across the whole hood. Do your best to keep the painters tape as straight across as possible.



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- 2.10.** We then added (2) pieces of painters tape tangent to the hood scoop and went longitudinally on the hood, as shown below.

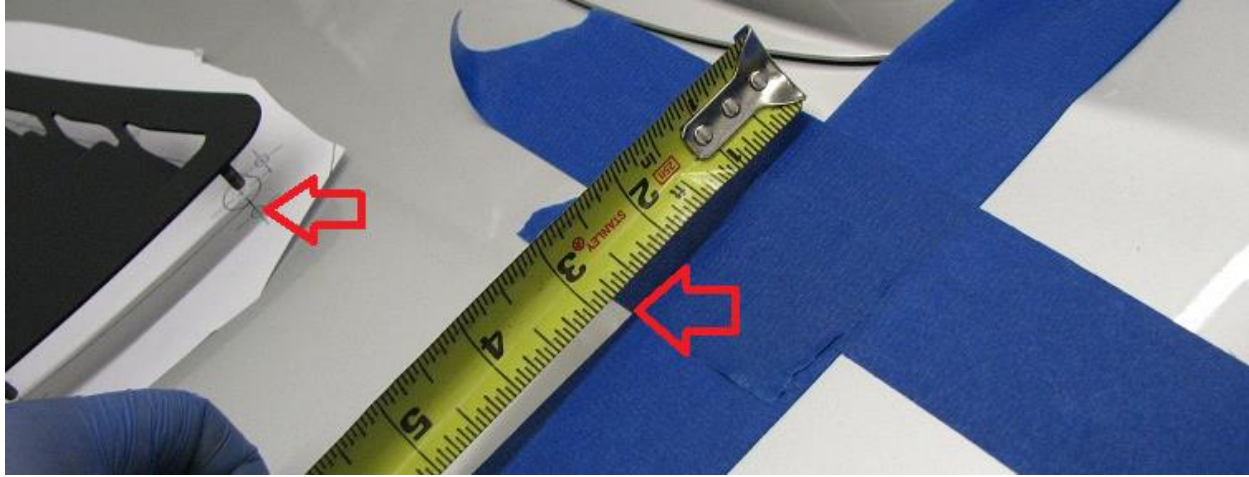


- 2.11.** We then add another piece of tape, that has an edge dimension of 2.75" from the inside edge of the tape added in 2.10. This is shown below.



- 2.12.** We have now found the location of the front, inside most hole location. This is positioned in the corner of the painters tape, shown below.

GR/GV Subaru WRX/STI Hood Louver Kit – Install Manual



- 2.13. The louvers can still rotate since they are only placed in one spot right now. Ideally the louver outside curve lines up with the outside crease in the hood. We also measured towards the rear of the louver and got 5.5". **Ultimately, the big thing is that the sides are even and look the same.**



- 2.14. At this point, the louver placement is figured out and we can tape the templates to the hood. The biggest thing to ensure is that the templates stay flat to the hood to reduce discrepancies during drilling.

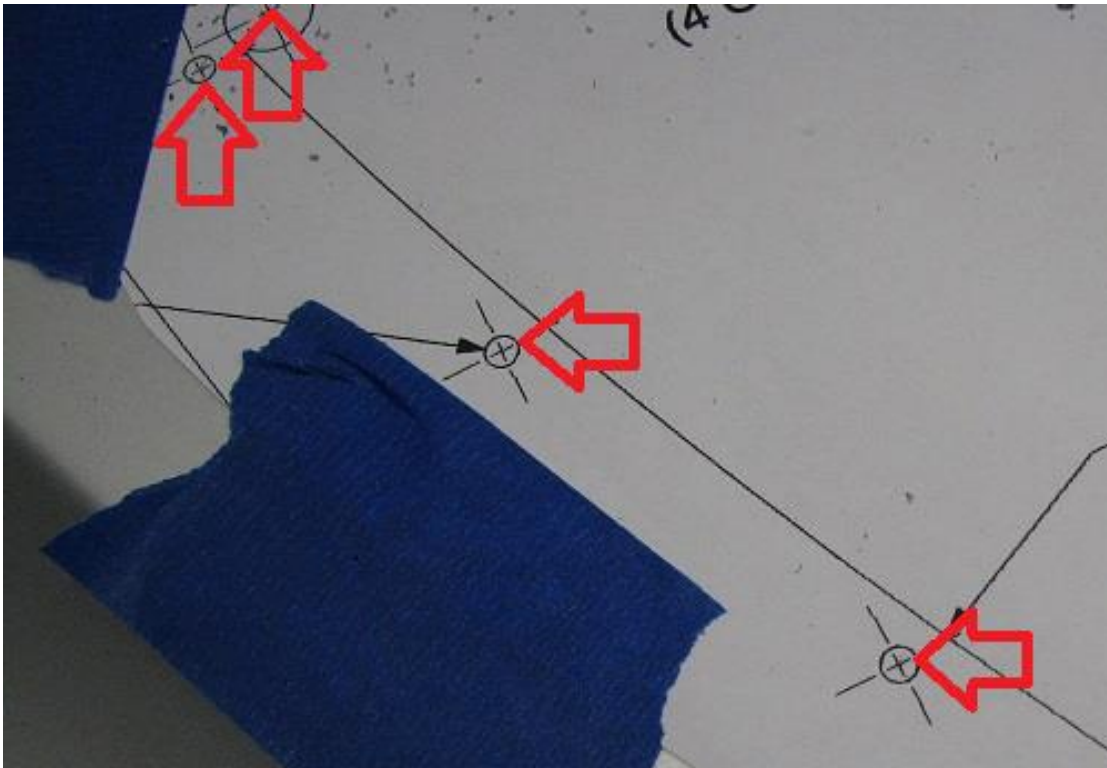
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- 2.15.** Take a second with the louvers taped down to ensure everything looks correct and even.



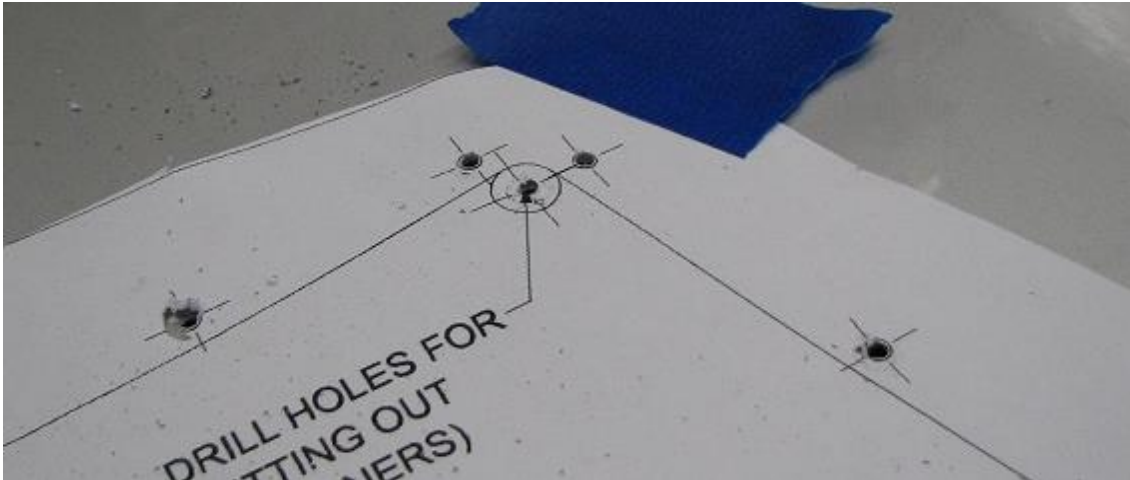
- 2.16.** Center punch the center of each of the holes, as well as the holes on the inside of the template.



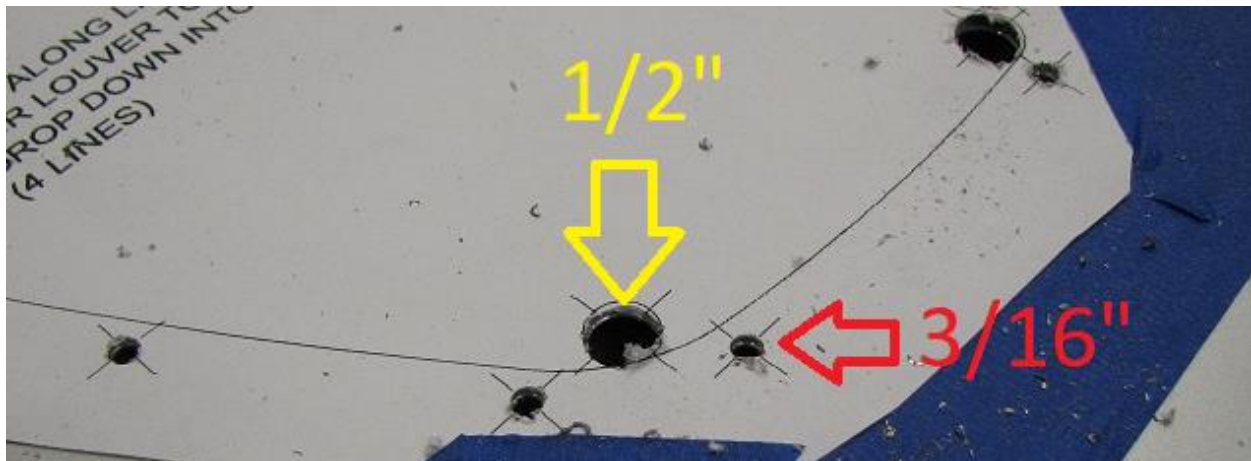
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- 2.17.** Using the smallest drill bit, 1/8", drill through the hood as shown below. Use high speed and light pressure to not break the bit or go plummeting through the hood and scratching it.



- 2.18.** Enlarge the inside holes to ~1/2". Enlarge the mounting holes to 3/16" initially.

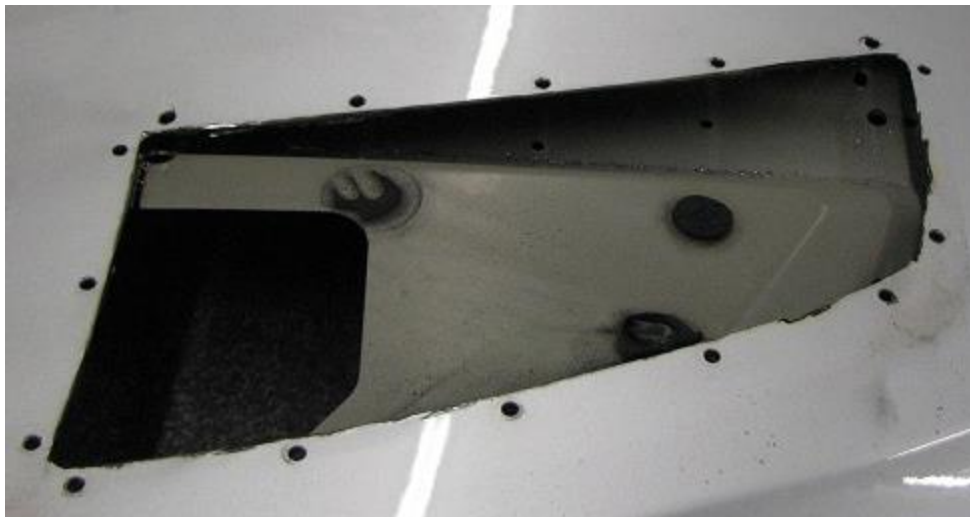


- 2.19.** Using the template as a guide, cut out the section marked "cut out". The hood is steel and the paint is very easily burnt! This is normal and will be covered up with the flange of our hood louver.

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- 2.20.** Remove the hood skin from the hood with needle nose pliers if necessary. The below image is what you will be left with.



- 2.21.** Perform the same operations on the other side of the hood from the top side.
- 2.22.** The hood needs to be flipped over now. Protect the paint in whichever way you see fit. Some customers will use tape on the high spots of the hood, others use towels, and others

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use a combination of both. It is a good idea to blow off all of the debris from cutting before flipping it over as well.

- 2.23.** On the bottom side of the hood, you will see the mounting holes through the structural metal. We will use these holes as guides for cutting of the structural sheet metal.



- 2.24.** Using the cutoff wheel again, remove all of this material while giving ample room to tighten the nut on. This is shown below. ****Be sure that you do not cut through the hood's skin.* This is likely the most difficult portion of the entire install! On areas close to the hood's skin, use light pressure and go slowly!***



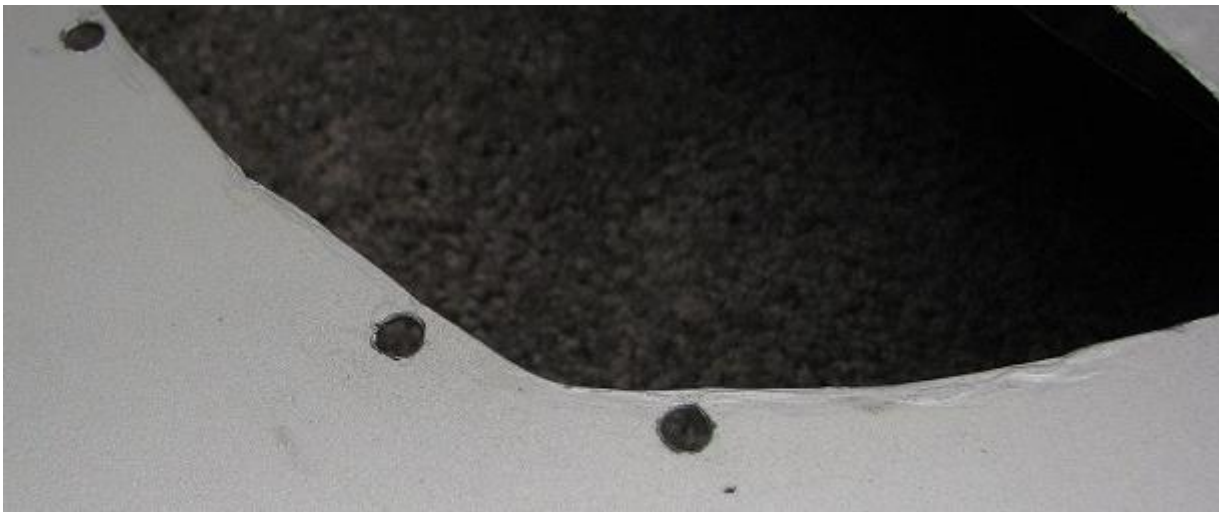
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- 2.25. Using sanding discs/roll-locs, sand the edges of the skin and structural metal to avoid cuts and remove all sharp edges.



- 2.26. The hood's cuts **NEED** to be coated as the hood is some form of steel and it will rust in time. If you have touch up paint and want to coat the exposed edges, do so now and let it dry.

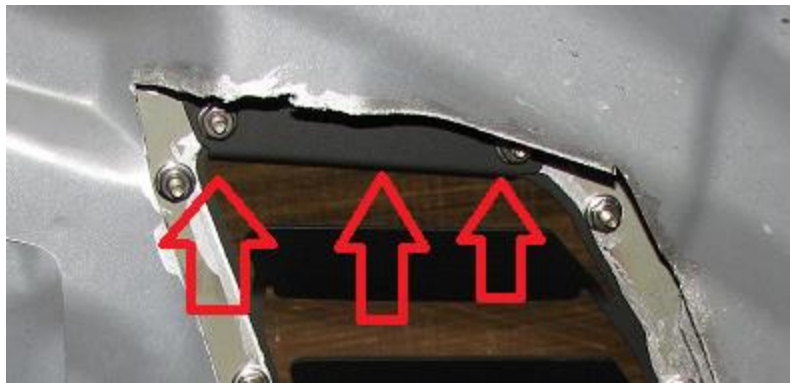


- 2.27. Test fit the louver on the hood. **If the louver does not go into the holes cleanly and without hesitation, pull the louver back off and enlarge the holes that are causing trouble!**
- 2.28. Once the hood louver fits in the holes well, begin to tighten the nuts on the louver from the bottom side. **Only use your fingers to tighten the nuts at this point!**
- 2.29. When all nuts are finger tight, use the 11/32" socket to add approximately 1/8 turn to each of the nuts. Watch the top of the hood louver to ensure you are not pulling the stud down through the material. **MAXIMUM TORQUE IS 17 IN.LBS!** The nuts are serrated and resist backing off, they do not need significant torque.

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- 2.30.** The wickers are installed from the bottom side of the hood louver. These increase evacuation of under hood pressure and temperature. (Note: Below picture is an FRS/BRZ install.)



- 2.31.** Reinstall the hood with the (4) 12mm bolts and tighten to approximately 12-18 ft-lbs.
- 2.32.** Reinstall the hood gas strut pieces to the hood with the (4) 10mm bolts and the washer nozzle hose as well.
- 2.33.** Congratulations, you have successfully installed the Verus Engineering hood louvers. The car now benefits from reduced under hood pressure and reduction in underhood temperature. Please contact Verus Engineering with any questions, comments, concerns, and feedback via sales@verus-engineering.com.

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