

# VERUS ENGINEERING

## Nissan Z33 350Z Hood Louver Kit

### Install Manual



Author: Eric Hazen

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Approvals: E. Hazen, P. Lucas

#### Document Revisions

Rev	Date	Author	Description
01	2017/03/25	E. Hazen	Initial release of install manual
02	2017/08/09	P. Lucas	Company name change from Velox to Verus

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Z33 350Z 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 .....	<4-14>

## Z33 350Z Hood Louver Kit – Install Manual

## 1. Introduction

**1.1. Overview:** Detailed instructions on installing the hood louver kit for the Z33 350Z.

**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. 1/4" drill bit

1.4.6. Electric or pneumatic die grinder

1.4.6.1. <http://www.harborfreight.com/power-tools/grinders-buffers/4-12-in-5-amp-heavy-duty-angle-grinder-60372.html>

1.4.7. Cut-off wheel (not harbor freight, they are junk)

1.4.8. Sanding discs

1.4.9. Center Punch

1.4.10. Hammer

1.4.11. Blow Gun

1.4.12. Ratchet

1.4.13. 12mm Socket

1.4.14. 11/32 socket

1.4.15. Tape measure



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## Z33 350Z 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. Left-hand cutout template
- 1.5.6. Right-hand cutout template
- 1.5.7. Hardware Bag
  - 1.5.7.1. (40) 8-32 Serrated Stainless Nuts
  - 1.5.7.2. (1) Warning for over torquing of nuts

**2. Hood Louver Kit Install**

- 2.1. Verus 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 popping the hood so that we can remove the hood from the car.
- 2.3. Using the 12mm socket and the ratchet, remove the hood from the car. These bolts are circled in yellow in the below photo.



- 2.4. 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.
- 2.5. Ultimately, louver location is up to you. However, we have outlined in this manual the \*optimal\* placement for least amount of structural metal removal. See below picture for clarification on where louvers will be located.

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## Z33 350Z Hood Louver Kit – Install Manual



- 2.6. We will start by laying down a piece of painter's tape on the left and right sides. From the corner of the hood, we measure up 7.5" as shown below and lay a piece of tape down.



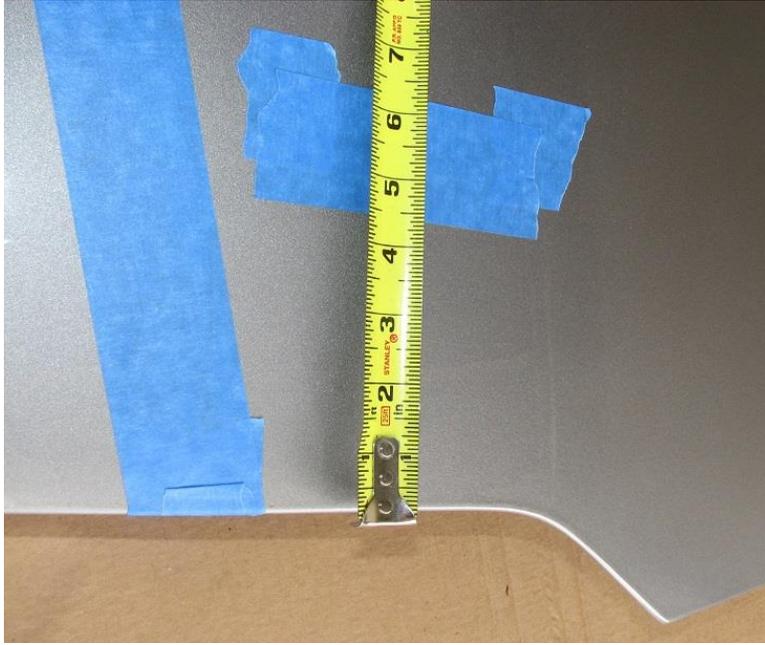
- 2.7. Do this to both sides and lay a piece of painter's tape across the whole hood keeping it as lateral as possible.



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## Z33 350Z Hood Louver Kit – Install Manual

- 2.8. Parallel to the side of the hood, measure between 4.5" and 5". On our install, we did 4.5", but anywhere between 4.5 and 5 should work for minimal structural sheet metal removal. The louver will follow this line, so ensure this tape line is parallel to the side of the hood.



- 2.9. Perform the same steps on the other side off the hood.

- 2.10. It is now time to lay down the templates using the blue tape as guidelines. Below is how the template was laid on the driver's side of the hood. **Try your best to not crinkle or warp the template.**



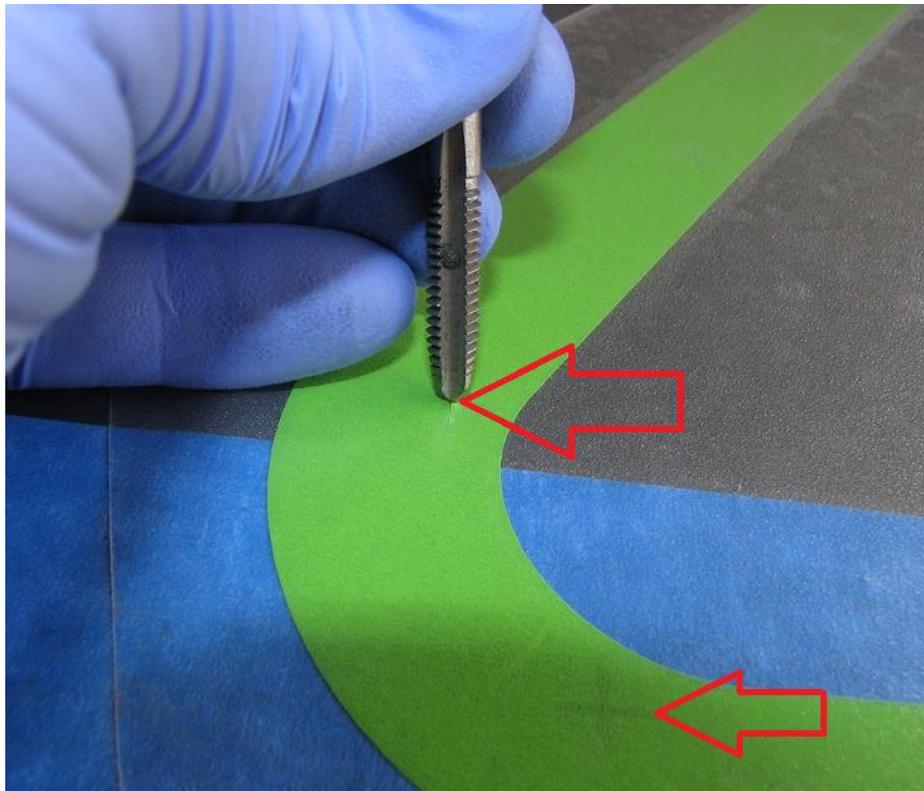
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## Z33 350Z Hood Louver Kit – Install Manual

- 2.11. With both louver templates on the hood, this is what your hood should look like roughly.



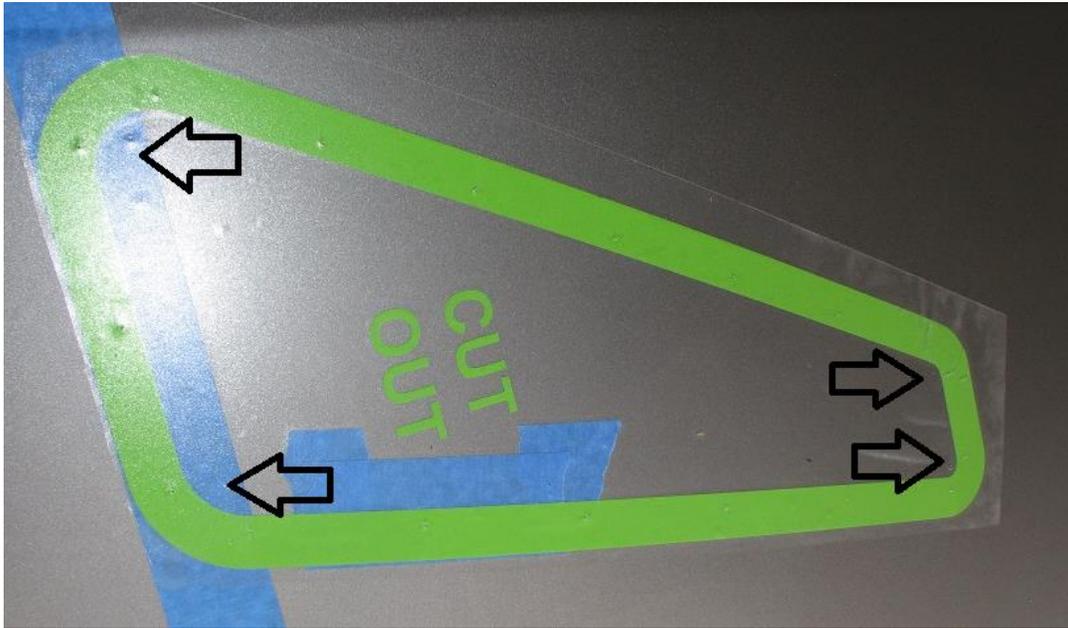
- 2.12. Using the center punch (or a sharp un-used tap) and hammer, gently center punch all 16 the holes. The holes are located with crosshatch markings. Center punch the intersection of each.



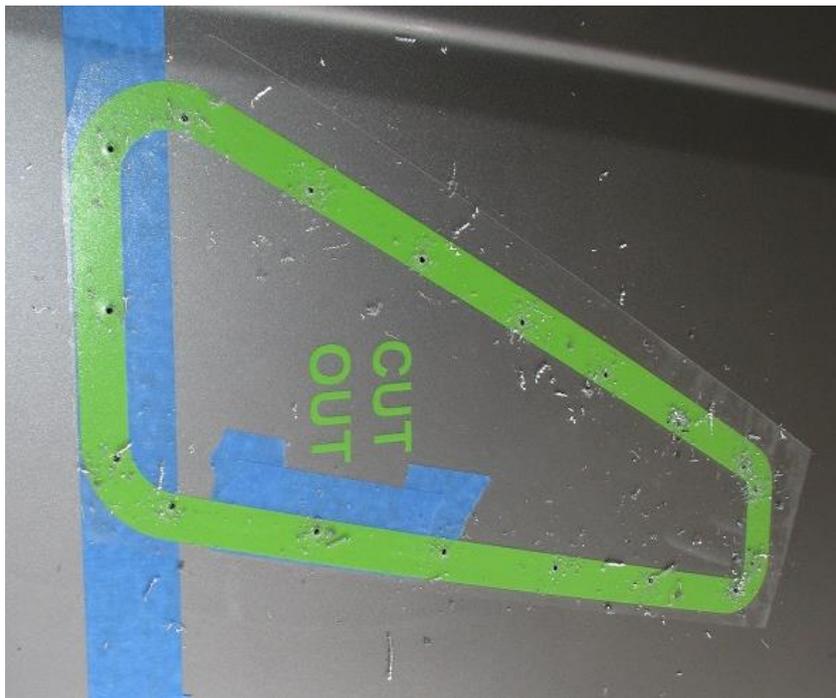
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## Z33 350Z Hood Louver Kit – Install Manual

- 2.13. We will also center punch the inside (4) corners of the template.



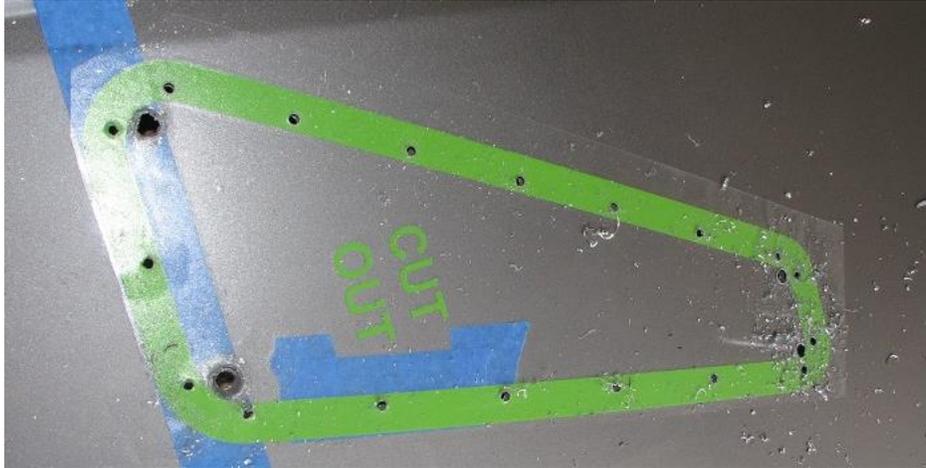
- 2.14. Using the smallest drill bit, 1/8", drill through the multiple layers of the hood as shown below. Use high speed and light pressure to not break the bit or go plummeting through the hood and scratching it.



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## Z33 350Z Hood Louver Kit – Install Manual

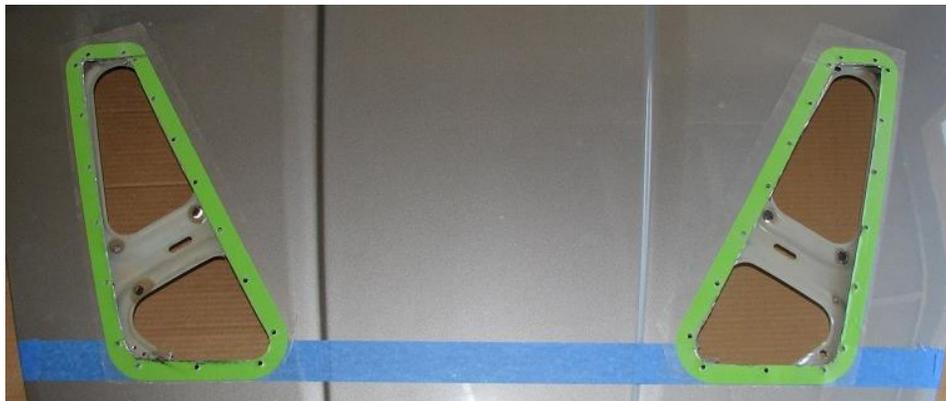
- 2.15. Enlarge the inside holes to 3/8" as shown below. Enlarge the 16 mounting holes to 3/16" initially.



- 2.16. Using the template as a guide, cut out the section marked "cut out".



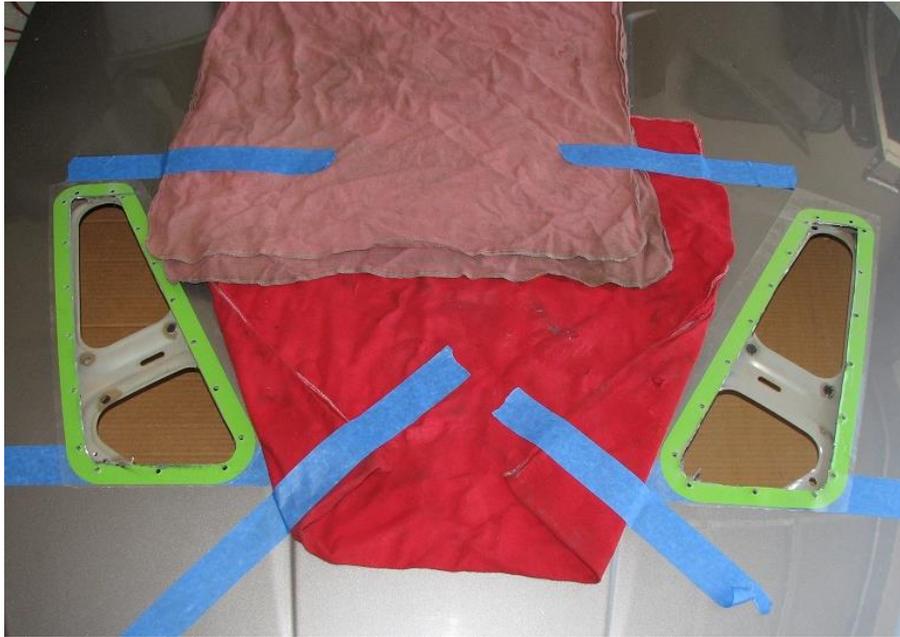
- 2.17. Perform the same operations on the other side of the hood from the top side.



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## Z33 350Z Hood Louver Kit – Install Manual

- 2.18.** 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 use a combination of both. We used towels.



- 2.19.** On the bottom side of the hood, you'll see the mounting holes through the structural metal. Using these holes as guides, place painter's tape roughly 1/2" further outward than these holes, as shown below. This added distance is to allow the nuts to fasten directly to the hood's skin.



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## Z33 350Z Hood Louver Kit – Install Manual

- 2.20. Using the cutoff wheel again, remove all of this material as well. This is shown below.  
***\*Be sure that you do not cut through the hood's skin.\****



- 2.21. Again, repeat the same steps on the other half of the hood. The picture below shows the structural pieces removed from the hood.



- 2.22. Using sanding discs/roll-locs, sand the edges of the skin and structural metal to avoid cuts. You'll do this from both the bottom and top of the hood.
- 2.23. The hood's cuts do not need to be coated as the hood is aluminum and will not rust. If you have touch up paint and want to coat the exposed edges, do so now and let it dry.
- 2.24. 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!**

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## Z33 350Z Hood Louver Kit – Install Manual

- 2.25. 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!**



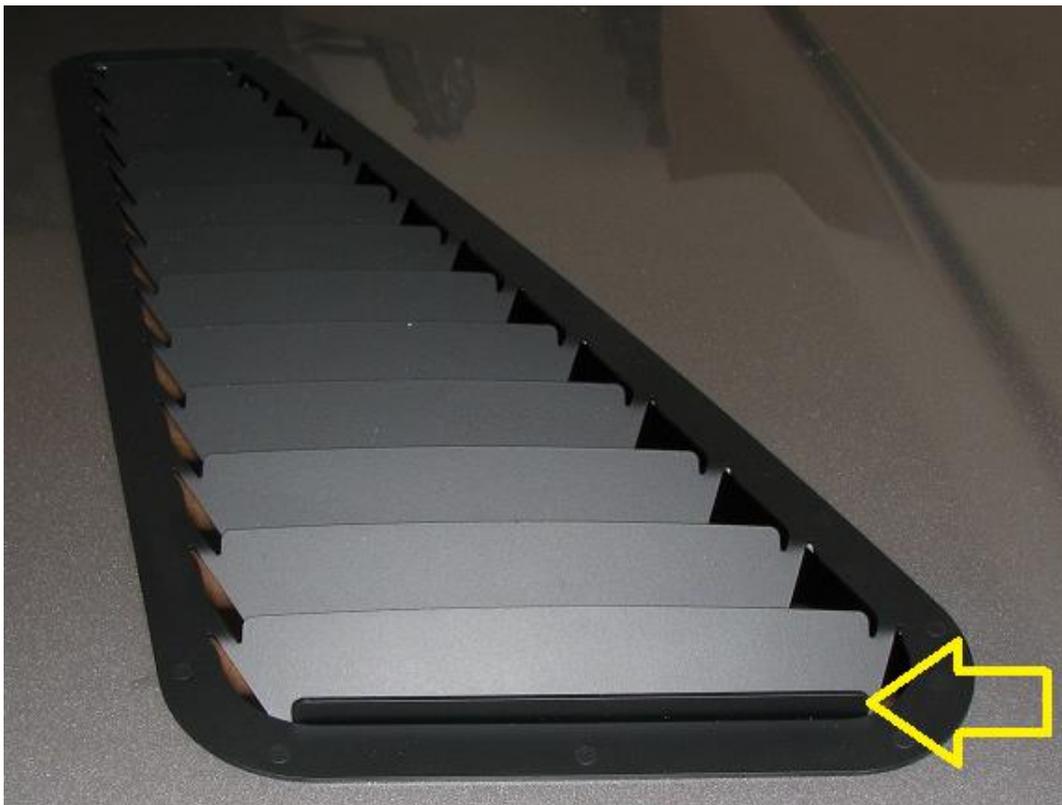
- 2.26. When all nuts are **finger tight**, use the 11/32" socket to add approximately 1/8 turn to each of the nuts. Watch the top of the hood louver to ensure you are not pulling the stud down through the material. **MAXIMUM TORQUE IS 17 IN.LBS!** The nuts are serrated and resist backing off, they do not need significant torque.



- 2.27. The wickers are installed from the bottom side of the hood louver. These increase evacuation of under hood pressure and temperature. However, some do not find them aesthetically pleasing which is why we make them optional.

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## Z33 350Z Hood Louver Kit – Install Manual



**2.28.** Reinstall the hood with the (4) 12mm bolts and tighten to approximately 18-24 ft-lbs.

**2.29.** Congratulations, you have successfully installed the Verus Engineering hood louvers. The car now benefits from reduced under hood pressure, a reduction in underhood temperature, and improved cooling system performance. Please contact Verus Engineering with any questions, comments, concerns, and feedback via [sales@verus-engineering.com](mailto:sales@verus-engineering.com).

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Z33 350Z Hood Louver Kit – Install Manual



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