

# VERUS ENGINEERING

## Ford Focus ST&RS Hood Louver Kit

### Install Manual



Author: Eric Hazen

Release Date: 2016/12/07

Approvals: E. Hazen, P. Lucas

### Document Revisions

Rev	Date	Author	Description
01	2016/12/07	E. Hazen	Initial release of install manual
02	2017/08/09	P. Lucas	Company name changed from Velox to Verus

Confidential: Property of Verus Engineering. Not for Distribution outside intended recipient list.

# 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 .....	<4-18>

## Focus ST&amp;RS Louver Kit – Install Manual

## 1. Introduction

**1.1. Overview:** Detailed instructions on installing the hood louver kit for the Ford Focus ST (MY 2011 and newer) and Ford Focus RS.

**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. 3/8" drill bit
- 1.4.7. Electric or pneumatic die grinder
- 1.4.8. Cut-off wheel
- 1.4.9. Sanding discs
- 1.4.10. Center Punch
- 1.4.11. Hammer
- 1.4.12. Blow Gun
- 1.4.13. Ratchet
- 1.4.14. 10mm Socket
- 1.4.15. 11/32 socket
- 1.4.16. Tape measure
- 1.4.17. Marker
- 1.4.18. Touch-Up Paint



Confidential: Property of Verus Engineering. Not for Distribution outside intended recipient list.

## Focus ST&amp;RS 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. (34) 8-32 Serrated Stainless Nuts
  - 1.5.7.2. (1) Warning for over torquing of nuts
  - 1.5.7.3. Velox Logo Sticker

**2. Hood Louver Kit Install**

Confidential: Property of Verus Engineering. Not for Distribution outside intended recipient list.

## Focus ST&amp;RS Louver Kit – Install Manual

- 2.1. Velox 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. Before removing the hood, we'll remove the washer fluid nozzle hoses from the nozzles and the hood completely.
- 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 from the car. These nuts are circled in yellow in the below photo. \*You may use some form of marking where the hood sits currently on the hinges as the hinges have A LOT of play. We used the paint markings from factory to aid in reinstall.\*

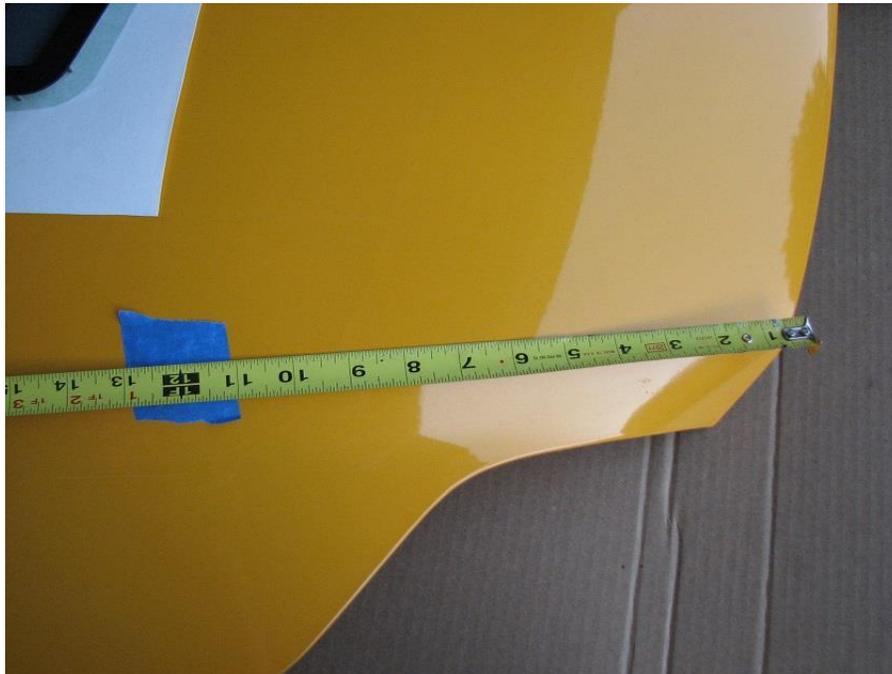


- 2.6. Place the hood top side up on something with a bit of cushion. A large cardboard box, a piece of carpet, saw horse or another stand will work well.

## Focus ST&amp;RS Louver Kit – Install Manual



- 2.7. Ultimately, louver location is up to you. However, we have outlined in this manual the \*optimal\* placement for best evacuation based on our CFD analysis and keeping the structural sheet metal beneath at the forefront of our mind during the design phase.
- 2.8. We will start by laying down a piece of painter's tape across the whole hood. From the corner of the hood with the crease on it, we measure up 13" as shown below. **NOTE: Yellow car is 2011-2014 MY install, Red car is 2015+ install.**

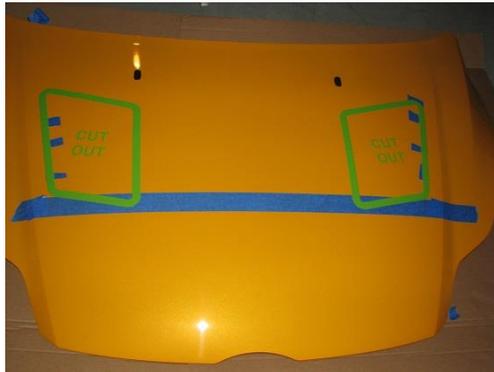


Confidential: Property of Verus Engineering. Not for Distribution outside intended recipient list.

Focus ST&RS Louver Kit – Install Manual



- 2.9. Do this to both sides and lay a piece of painter's tape across the whole hood keeping it as lateral as possible. **NOTE: Yellow car is 2011-2014 MY install, Red car is 2015+ install. Disregard template placement at this time.**



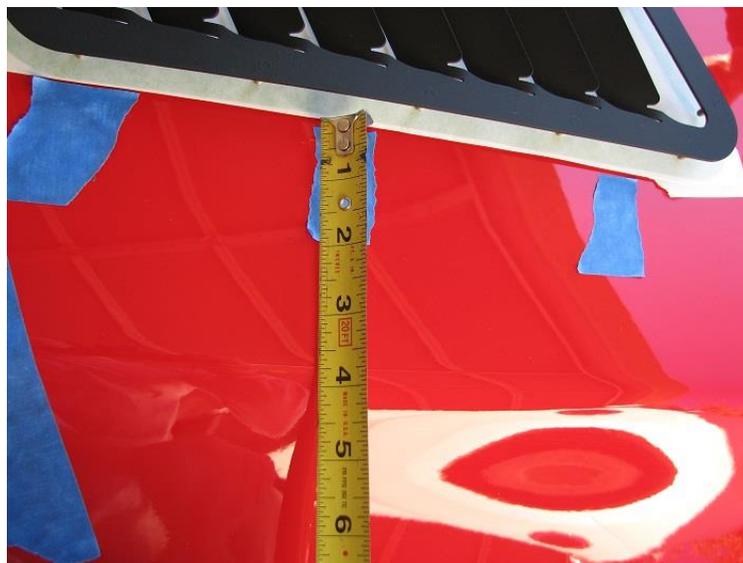
Confidential: Property of Verus Engineering. Not for Distribution outside intended recipient list.

## Focus ST&amp;RS Louver Kit – Install Manual

- 2.10.** Now, we figure out how to line the louver up with the outside crease. This increases the aesthetic appeal of the louver as it appears to follow the body lines of the hood. Follow step 2.11 for 2011-2014 Focus ST, and follow step 2.12 for 2015+ ST and RS users.
- 2.11.** Using 4 or more pieces of small painters tape, mark locations from the crease about 1.75" – 2.00" inward of the outside crease as shown below. The crease is difficult to capture in pictures.



- 2.12.** Using 4 or more pieces of small painters tape, mark locations from the crease about 3.75" from inward of the outside crease as shown below. This crease is difficult to capture in pictures.

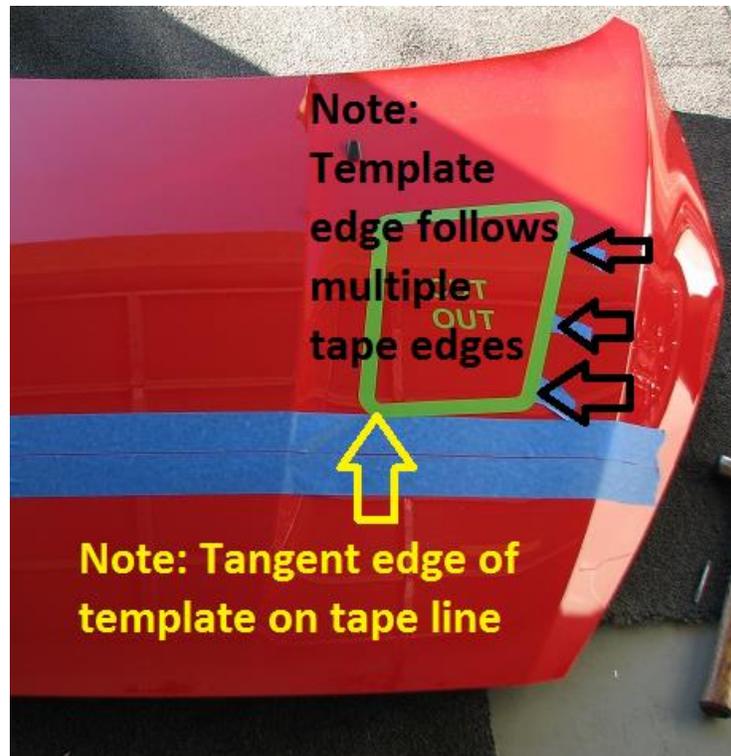
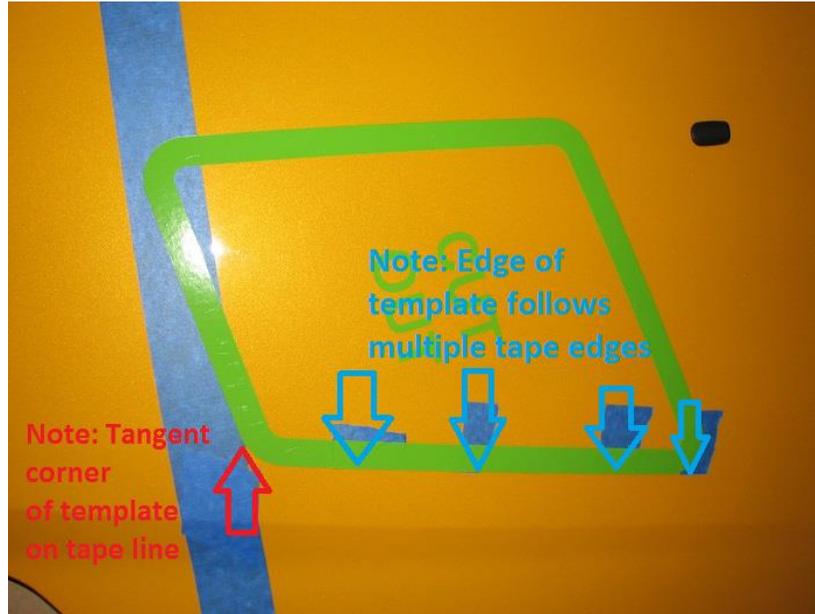


- 2.13.** Ensure that all tape edges laid are equal side to side.

Confidential: Property of Verus Engineering. Not for Distribution outside intended recipient list.

Focus ST&RS Louver Kit – Install Manual

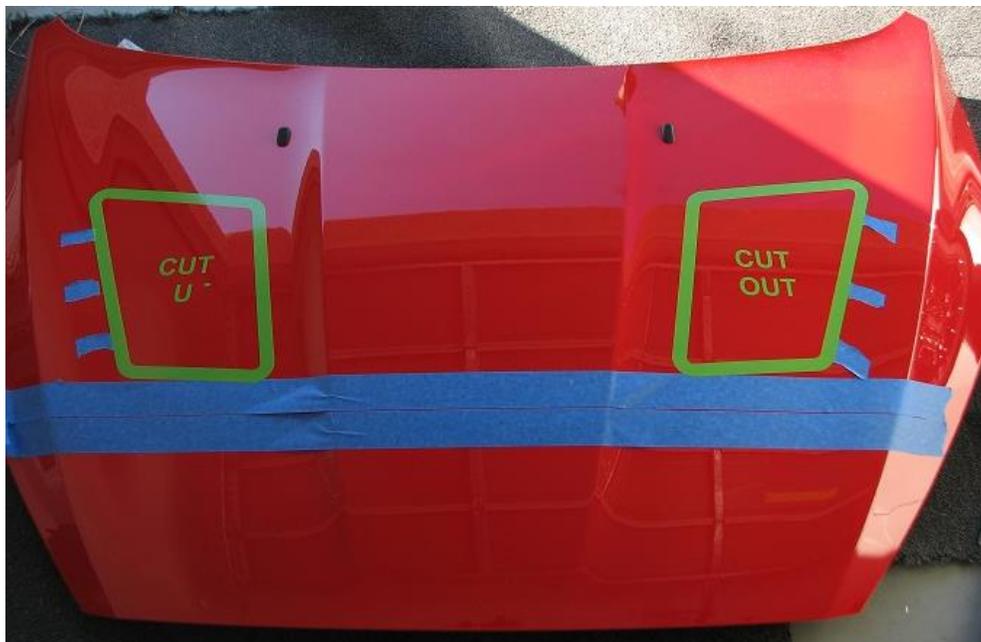
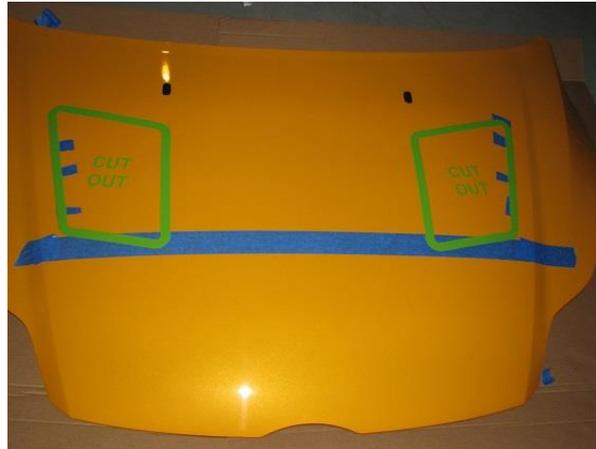
- 2.14. We are now ready to place the cut templates as we have our guides accurately marked on the hood via painters tape. Using the tape as guidelines for placement of the templates, we'll end up with the below two images (based on model year). **NOTE: Yellow car is 2011-2014 MY install, Red car is 2015+ install. Disregard template placement at this time.**



Confidential: Property of Verus Engineering. Not for Distribution outside intended recipient list.

## Focus ST&amp;RS Louver Kit – Install Manual

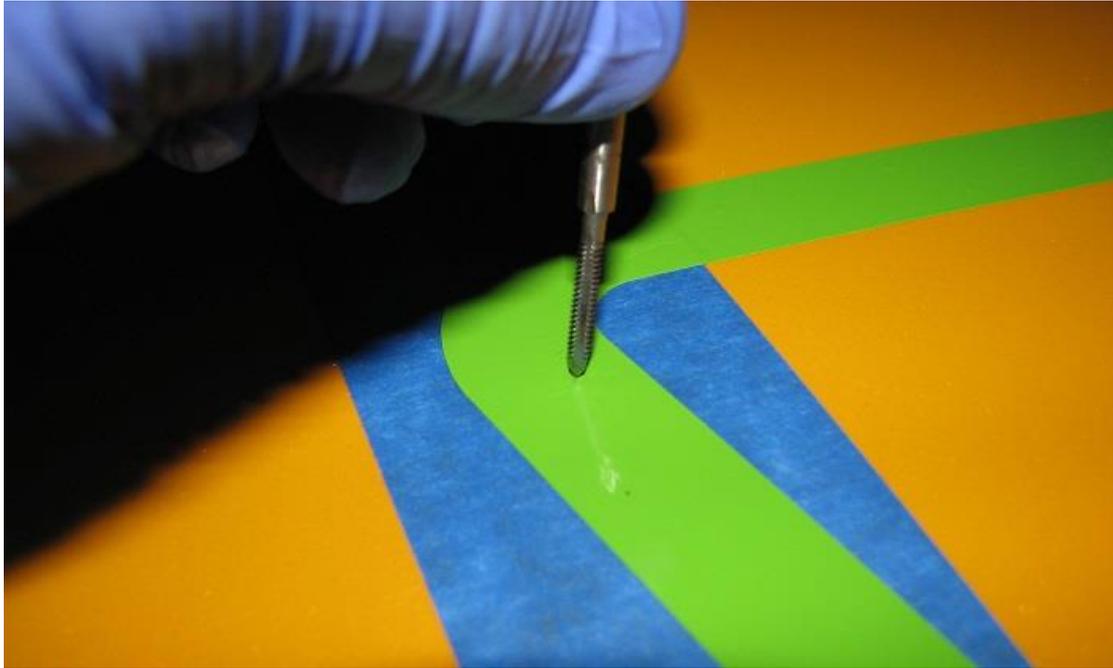
- 2.15.** Below are images of the full hood with the templates properly installed. It's not a bad idea to ensure side to side they are even. **NOTE: Yellow car is 2011-2014 MY install, Red car is 2015+ install. Disregard template placement at this time.**



- 2.16.** For the remainder of the install, the different model years do not deviate so we will be showing pictures of the 2011-2014 MY Focus ST only. Using the center punch (or a sharp unused tap) and hammer, gently center punch all 16 holes per side. The holes are located with crosshatch markings, center punch the intersection of each. Also center punch the inside (4) corners of the template.

Confidential: Property of Verus Engineering. Not for Distribution outside intended recipient list.

## Focus ST&amp;RS Louver Kit – Install Manual



- 2.17.** 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.



- 2.18.** Enlarge the inside holes to 1/4" or 3/8" as shown below. Enlarge the 16 mounting holes to 1/4" initially.

Confidential: Property of Verus Engineering. Not for Distribution outside intended recipient list.

## Focus ST&amp;RS Louver Kit – Install Manual



- 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.



- 2.20.** Perform the same operations on the other side of the hood from the top side.
- 2.21.** 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. It’s a good idea to blow off all of the debris from cutting before flipping it over as well.

Confidential: Property of Verus Engineering. Not for Distribution outside intended recipient list.

## Focus ST&amp;RS Louver Kit – Install Manual



- 2.22. On the bottom side of the hood, you'll see the mounting holes through the structural metal. We'll use these holes as guides for cutting of the structural sheet metal. These few holes are circled in red below.



- 2.23. 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!***

## Focus ST&amp;RS Louver Kit – Install Manual



- 2.24. Using sanding discs/roll-locs, sand the edges of the skin and structural metal to avoid cuts and remove all sharp edges.
- 2.25. 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.
- 2.26. 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!**
- 2.27. 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!**
- 2.28. 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.

## Focus ST&amp;RS Louver Kit – Install Manual



- 2.29.** 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.)

Focus ST&RS Louver Kit – Install Manual



- 2.30.** Reinstall the hood with the (4) 10mm nuts and tighten to approximately 12-18 ft-lbs

## Focus ST&amp;RS Louver Kit – Install Manual



- 2.31.** 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](mailto:sales@verus-engineering.com).



Confidential: Property of Verus Engineering. Not for Distribution outside intended recipient list.

Focus ST&RS Louver Kit – Install Manual



Confidential: Property of Verus Engineering. Not for Distribution outside intended recipient list.

Focus ST&RS Louver Kit – Install Manual



Confidential: Property of Verus Engineering. Not for Distribution outside intended recipient list.