

VERUS

ENGINEERING

S550 Mustang Rear Diffuser

Install Manual



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Document Revisions

Rev	Date	Author	Description
01	2016/11/11	E. Hazen	Initial release of install manual.
02	2017/08/08	P. Lucas	Company name change from Velox to Verus

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1. Introduction

1.1. Overview: Detailed instructions on installing the Verus Engineering functional rear diffuser on the S550 Ford Mustang

1.2. Difficulty: Beginner

1.3. Time Required: 1-1.5 hours

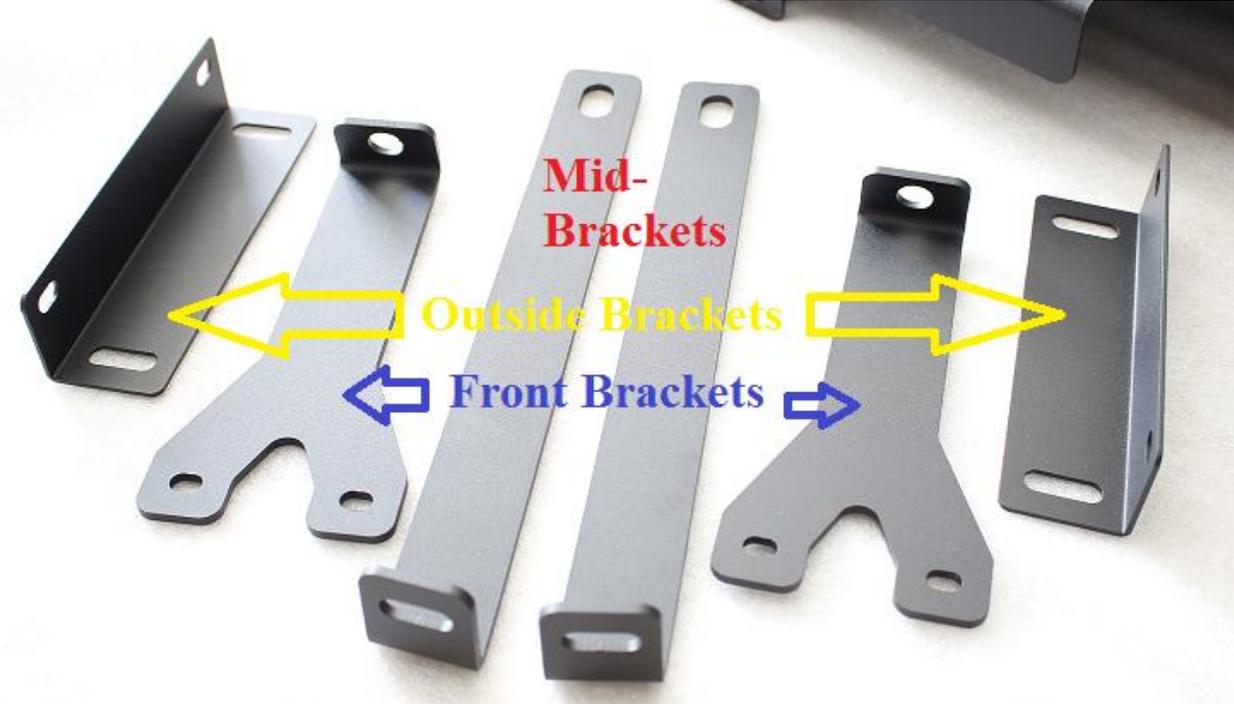
1.4. Tools Needed:

- 1.4.1. Jack and Jack Stands (or a lift)
- 1.4.2. 13mm Socket
- 1.4.3. 8mm Socket
- 1.4.4. Ratchet
- 1.4.5. Extension(s)
- 1.4.6. 4mm Allen wrench or socket
- 1.4.7. Phillips screwdriver
- 1.4.8. Flat head screwdriver
- 1.4.9. 10mm wrench
- 1.4.10. Level

1.5. Rear Diffuser Components:

- 1.5.1. Rear Diffuser
- 1.5.2. (2) Front Brackets
- 1.5.3. (2) Mid-Brackets
- 1.5.4. (2) Outside Brackets
- 1.5.5. (1) Hardware Bag
 - 1.5.5.1. (14) M6x1.0 Button Head Cap Screw (BHCS) x 16mm Long, SS
 - 1.5.5.2. (20) M6 Fender Washers, SS
 - 1.5.5.3. (14) M6x1.0 Serrated Flanged Nuts, SS
 - 1.5.5.4. (2) M6x1.0 BHCS x 45mm Long, SS
 - 1.5.5.5. (4) M6 5mm Long Nylon Spacer
 - 1.5.5.6. (4) M6 10mm Long Nylon Spacer
 - 1.5.5.7. (4) M6 15mm Long Nylon Spacer
 - 1.5.5.8. (2) #14 x 0.50" Long Coarse Thread Bolt, SS
 - 1.5.5.9. (2) #14 x 1.00" Long Coarse Thread Bolt, SS
 - 1.5.5.10. (2) #14 x 1.50" Long Coarse Thread Bolt, SS

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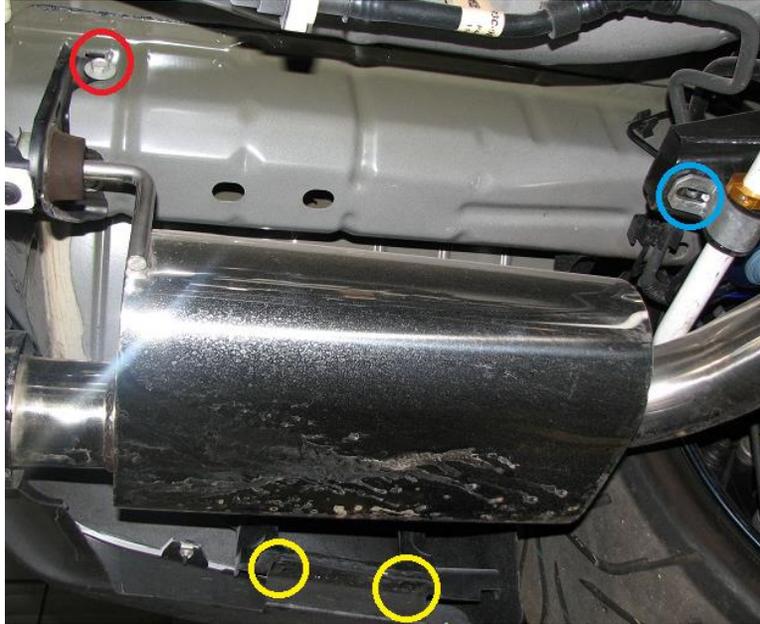
2. Rear Diffuser Install

- 2.1.** Velox is not responsible for damage to you or your vehicle by following this manual and/or installing Verus Engineering products on your vehicle.
- 2.2.** We begin by jacking the car up on a level surface. Use of wheel chocks is suggested to keep the front wheels from rolling. Using a lift is also a possibility.
- 2.3.** Secure the car with two jack stands with enough room to access all the area under the rear bumper. The pinch welds are good choices, as are frame rails.
- 2.4.** With the car up in the air, we can have a good look at what we're working with!

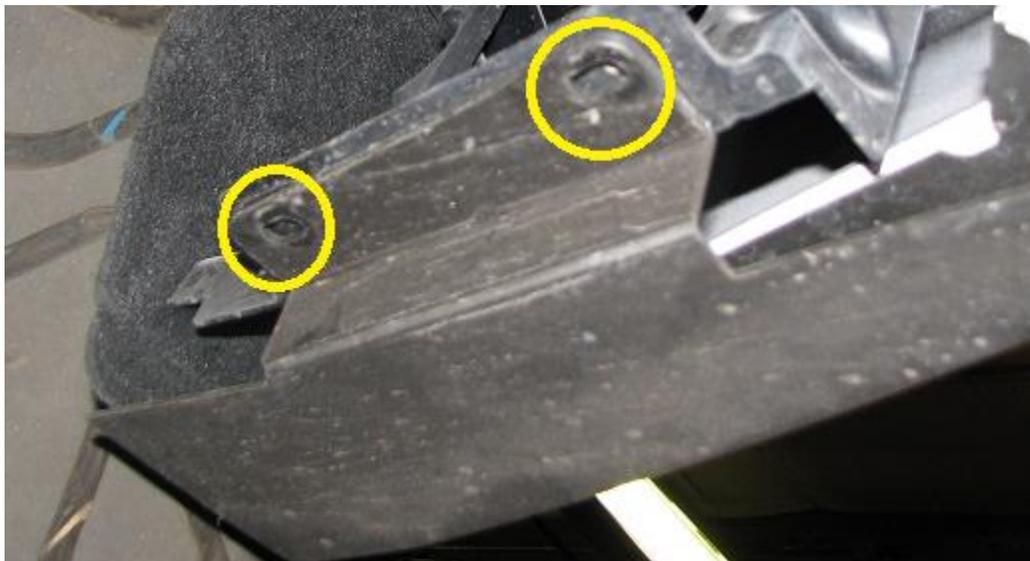


- 2.5.** Below is a closer picture of where the three mounting brackets will go. The bolt circled in red will be the mid-bracket, the bolt circled in blue will receive the front bracket, and the holes circled in yellow will receive the outer bracket.

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- 2.6. Starting with the outside mounting points, remove the two plastic rivet nuts. These are circled in yellow below. Use a screwdriver to remove these.



- 2.7. Remove the 13mm bolts on the sway bar mounting locations and the exhaust hanger locations, circled in red and blue below.

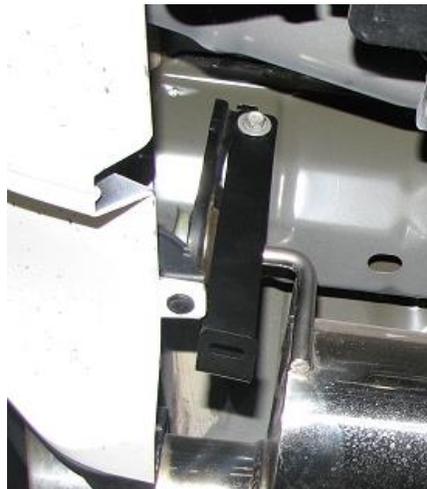
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- 2.8.** Install the front brackets as shown below. You can fully tighten the bolt back into the sway bar mounting location at this time.



- 2.9.** Install the mid-brackets as shown below. Note that there are a left-hand and a right-hand mid-bracket. The bottom of the bracket should angle upward in the rear.



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- 2.10. Install the outside brackets by using (2) of the M6 x 1.0 x 16mm long BHCS, (2) fender washers, and (2) nuts on the top side. The long slotted holes should be the holes being bolted here. This should look like below after **loosely** installing the brackets. They do not need to be tightened yet.



- 2.11. Install the other side, same as 2.10.
- 2.12. Remove the two coarse threaded bolts that hold the bumper onto a support structure circled in purple below. These are 8mm bolts.



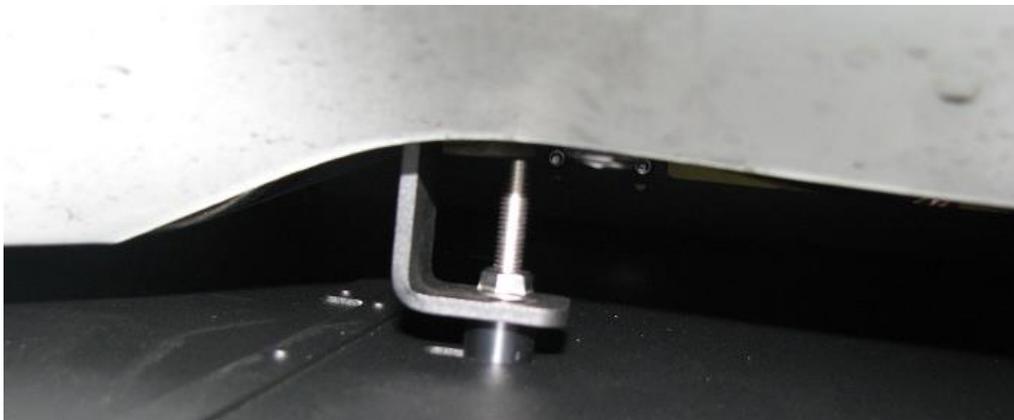
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- 2.13.** We are ready to install the diffuser at this point. It helps to have a helping hand as the diffuser is quite large. **Do not tighten any bolts/nuts down completely at this time.**
- 2.14.** Installing the diffuser on the outside brackets first is a good way to do it yourself. Use the M6x1.0 BHCS in 16mm length and fender washers on one side with the serrated nut on the back side.



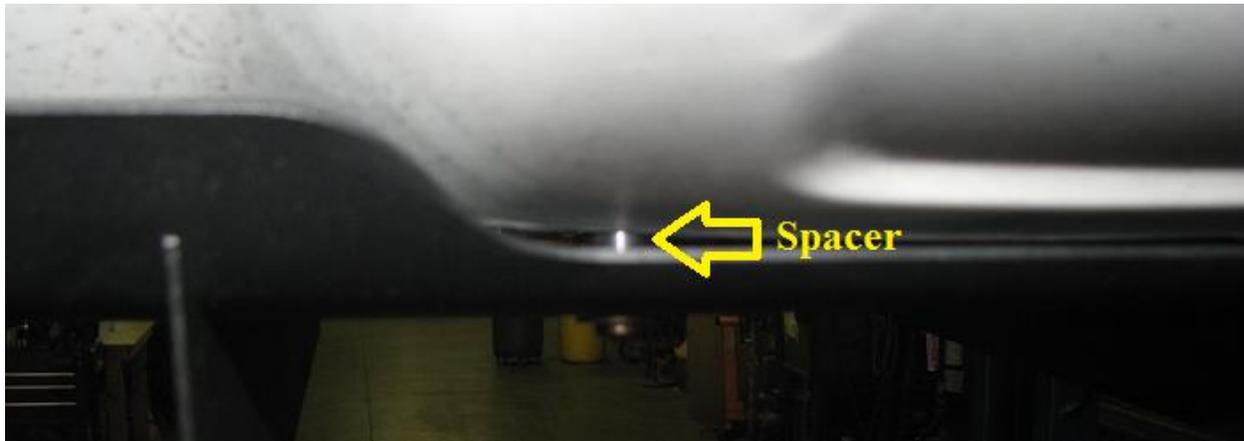
- 2.15.** On the front two brackets, the bolt heads and washers go on the front side of the diffuser with the nuts on the back side. Do this for all (4) locations.
- 2.16.** At this point, we need to figure out how far up the diffuser can sit. This is determined by the rear bumper's faux diffuser and the exhaust used on the car. We recommend installing the diffuser as far upward on the car as possible.
- 2.17.** When you figure out how high up the diffuser can sit, we can install the mid-bracket bolts. Using washers and/or nylon spacers to achieve the correct height. On our specific install, we found a 5mm nylon spacer worked well, as shown below. If no spacers are needed, you can use a 16mm long BHCS, with spacers you need to use the 45mm long BHCS.



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- 2.18.** The mid-bracket may need to be slightly persuaded to line up with the diffuser hole due to the exhaust hanger mount. This is okay and will still result in a strong diffuser mounting.
- 2.19.** The middle two rear points that have the coarse thread receive similar treatment. Figure out which spacer fits best, and then using the coarse Philips head screws, screw this into the factory plastic holes. ****Do not overtighten these bolts, they do not carry much load.****



- 2.20.** All the bolts should be installed at this point, but loose. It's now time to tighten all the loose bolts up.

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- 2.21.** With the car on the ground and no rake, the diffuser strakes should be level. If the car does have some rake, you need to match the underbody's angle with the level of the bottom of the strake. Shown below is a car with no rake.



- 2.22.** You should also ensure that the diffuser is level laterally (left to right) with a level and while tightening the bolts.
- 2.23.** After ensuring that all bolts are tightened, you're finished!
- 2.24.** Congratulations, you've successfully installed the Verus Engineering S550 rear diffuser! You can now benefit from an increase in rear end downforce and a reduction in vehicle drag among other benefits.
- 2.25.** Please contact Verus with any feedback, concerns, and questions via e-mails, sales@verus-engineering.com.



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