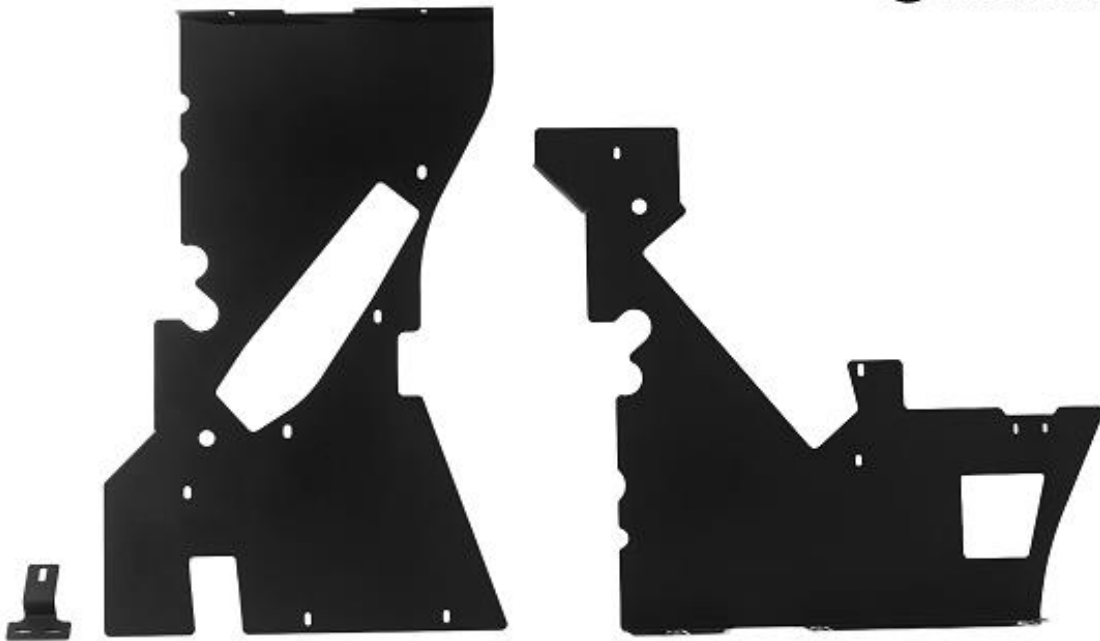


# **VERUS**

## **ENGINEERING**

## ND Miata Rear Suspension Cover

### Install Manual



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Release Date: 2017/01/17

Approvals: E. Hazen, P. Lucas

### Document Revisions

Rev	Date	Author	Description
01	2017/01/17	E.Hazen	Initial release of install manual

## ND Miata Rear Suspension Cover – Install Manual

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ND Miata Rear Suspension Cover – Install Manual

## 1. Introduction

**1.1. Overview:** Detailed instructions on installing the ND Miata rear suspension cover.

**1.2. Difficulty:** Beginner-Moderate

**1.3. Time Required:** 1.5-2 hours

**1.4. Tools Needed:**

- 1.4.1. Jack
- 1.4.2. Jack Stands
- 1.4.3. Ratchet
- 1.4.4. 10mm socket
- 1.4.5. 12mm socket
- 1.4.6. 4mm Allen wrench
- 1.4.7. 5mm Allen wrench
- 1.4.8. 9/16 wrench
- 1.4.9. Drill
- 1.4.10. Center Punch
- 1.4.11. Assorted Drill Bits

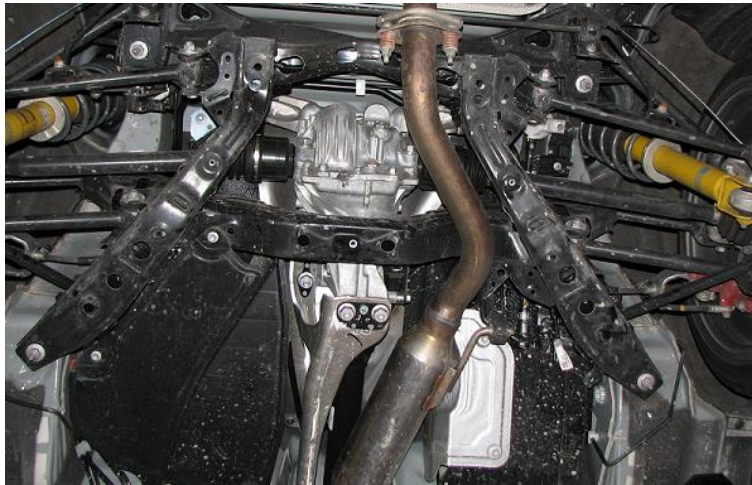
**1.5. Rear Diffuser Components**

- 1.5.1. (1) Passenger side suspension cover
- 1.5.2. (1) Driver side suspension cover
- 1.5.3. (1) Subframe bracket
- 1.5.4. (1) Hardware Bag
  - 1.5.4.1. (10) M6 x 1.0 SS BHCS, 16mm Length
  - 1.5.4.2. (10) M6 x 1.0 SS BHCS, 30mm Length
  - 1.5.4.3. (7) M6 x 1.0 SS BHCS, 45mm Length
  - 1.5.4.4. (1) M8 x 1.25 SS BHCS, 20mm Length
  - 1.5.4.5. (12) M6 SS Fender Washer
  - 1.5.4.6. (1) M8 SS Fender Washer
  - 1.5.4.7. (8) M6 x 1.0 Flanged SS Serrated Nut
  - 1.5.4.8. (5) M6 Rivet Nut
  - 1.5.4.9. (1) M6 Rivet Nut Install Tool
  - 1.5.4.10. (1) M8 Rivet Nut Install Tool
  - 1.5.4.11. (1) M8 Rivet Nut
  - 1.5.4.12. (8) 5mm Long Nylon Spacer
  - 1.5.4.13. (7) 10mm Long Nylon Spacer
  - 1.5.4.14. (11) 15mm Long Nylon Spacer

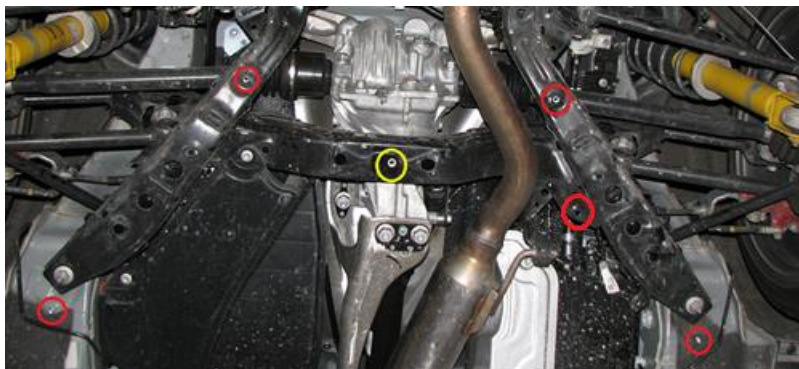
## ND Miata Rear Suspension Cover – Install Manual

**2. Rear Suspension Cover Installation**

- 2.1.** Verus is not responsible for damage to you or your vehicle by following this manual and/or installing Verus Engineering products. ***\*Please note, this install was performed on a prototype which was uncoated. The final product is powdercoated.\****
- 2.2.** We begin by jacking the car up. You will want to choke the front wheels and do this on a flat surface to ensure the car does not want to roll away. Using a lift is also perfectly fine for this install.
- 2.3.** Place a jack stand on either side of the car, you can use the frame rails or the pinch welds.
- 2.4.** With the rear of the car off the ground, we can get a better idea of what we're working with.



- 2.5.** Below are some holes circled which we will be installing rivet nuts. Red circles denotes M6 and the yellow circle denotes an m8.



- 2.6.** Starting with the M8 hole, we need to open this hole up to 1/2" in size to accept the rivet nut. Using a drill and drill bit, open the passenger side hole up.

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- 2.7. Using a wrench to hold the rivet nut install tool nut, and a socket and socket wrench on the bolt, install the rivet nut. The rivet nut should be on the serrated side of the nut.



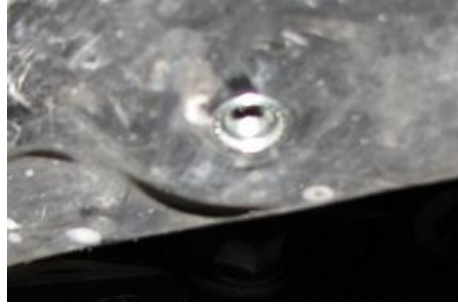
- 2.8. The rivet nut will have some initial resistance and, then the rivet nut will begin to pull tighter on the material. Using silicone on the rivet nut to reduce rusting is a good idea as well.



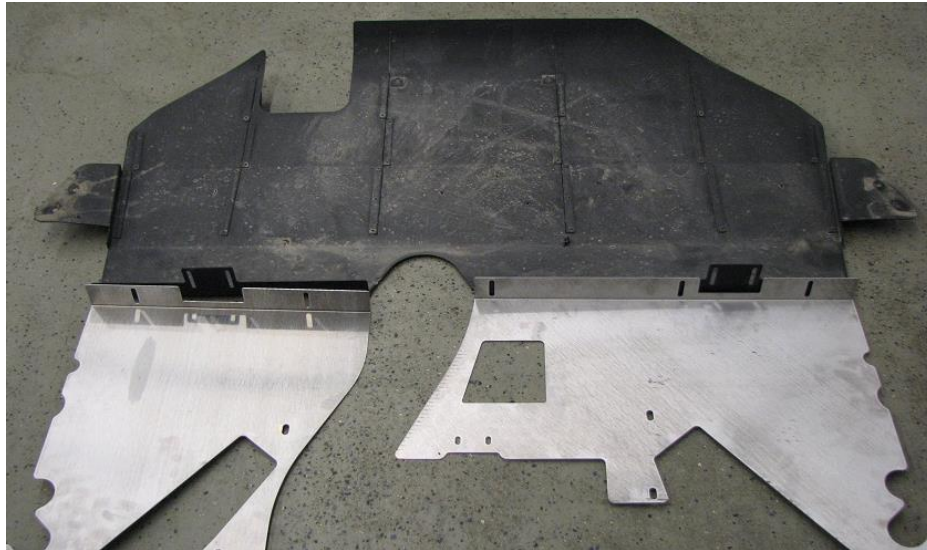
- 2.9. Moving to the M6 holes, grab a 3/8" drill bit. The front two circled holes in pictures 2.5 are oval and will be a bit of a challenge, but can be drilled round. Use light pressure, high speed, and try to open up the rear most portion of the oval to a circle. **Note: You may have to bend the brake lines slightly to get them out of the way.**
- 2.10. Continue drilling the remaining two holes in the steel sub-frame. These are much easier.
- 2.11. Using the same process in 2.7-2.8, install the m6 rivet nuts into the chassis and subframe of the vehicle.



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- 2.12.** If you have a rear diffuser installed, remove the rear diffuser at this point.
- 2.13.** Place the rear diffuser and suspension covers on the ground.



- 2.14.** We can see above, there are (5) locations for bolts to be installed from the suspension covers to the rear diffuser. Mark these locations with a paint pen while on a flat surface.
- 2.15.** Utilizing a center punch or a sharp tap and hammer, center punch these (5) locations.
- 2.16.** Drill these holes to a final size of 1/4". You can go a bit larger if necessary, but 1/4" is large enough to pass an m6 through.



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- 2.17.** Ensure the holes in the diffuser line up with the slots in the rear suspension covers.
- 2.18.** Once you are happy with the holes you have just drilled in the rear diffuser, re-install the rear diffuser. If you have not installed the rear diffuser before, refer to our rear diffuser installation manual located online.



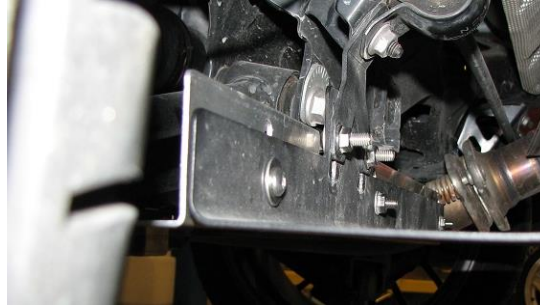
- 2.19.** We can begin installing the rear suspension covers at this time!
- 2.20.** Begin by installing the thick bracket as shown below. Loosely install the M8 BHCS and washer for now, do not fully tighten it until we have installed the covers and M6s.



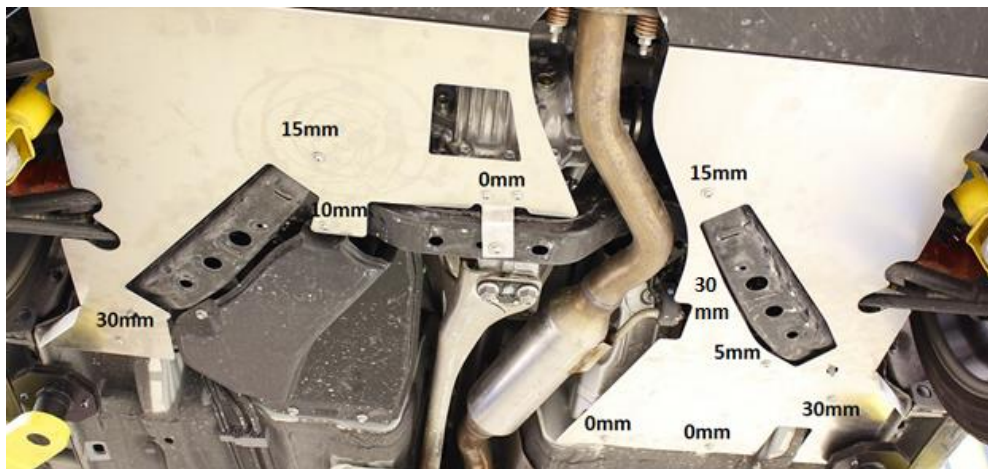
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- 2.21. If you have an extra set of hands to help hold the covers up while installing the bolts, that definitely helps as well. We recommend starting the diffuser bolts being loosely installed. These will use the M6 BHCS, fender washer, and then a serrated nut. It does not matter which side the bolt or nut goes on.



- 2.22. Utilizing the various spacers, BHCS, and fender washers, we can start bolting up the remaining holes.
- 2.23. The goal is to create a nice flat surface to reduce drag. The rear most part of the suspension covers should align with the bottom portion of the rear diffuser.
- 2.24. Below are photos with the listed spacers \*we\* used, your application may differ slightly from this.



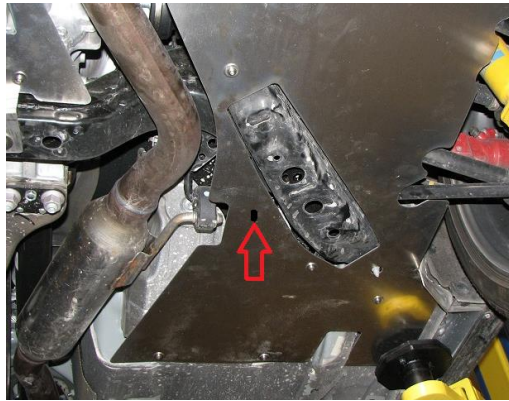
- 2.25. The two tricky bolts are the outside front holes \*drilled in step 2.11\*. Due to how the frame is made, you cannot force a bolt deeply into the hole. **The bolt will bottom out or start to angle.** This bolt location is shown below.



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- 2.26.** Most holes utilize the rivet-nuts installed in 2.5 – 2.11, but there is one hole that is a through hole. This is located below by the red arrow.



- 2.27.** Utilize a 45mm long BHCS, two 15mm spacers, and a nut. This is shown below.



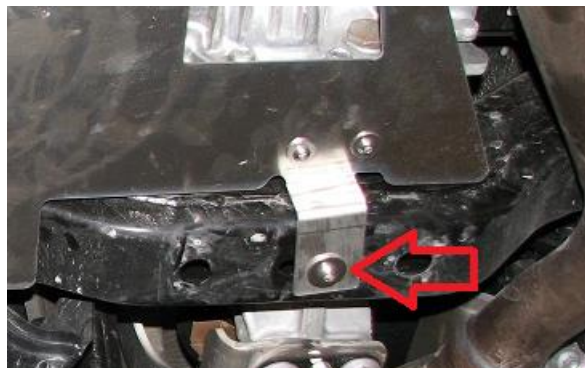
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- 2.28.** With all the bolts, washers, and spacers installed, we can begin fully tightening the bolts. These can be torqued to approximately 8 ft-lbs.



- 2.29.** Ensure all bolts are tightened, including the M8 for the bracket in the sub-frame.



## ND Miata Rear Suspension Cover – Install Manual

- 2.30.** This concludes the ND Miata rear suspension cover install, congratulations! Please send any comments, concerns, questions, and general feedback to Verus Engineering via [sales@verus-engineering.com](mailto:sales@verus-engineering.com).



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