

## CorkSport 4-Brace Set

2007+ Mazdaspeed3 and 2004+ Mazda3



**Thank you for purchasing the CorkSport Mazdaspeed 3 and Mazda 3 underbody 4-bar brace set.** An often overlooked suspension enhancement, especially on vehicles with a lot of modifications, reinforcing the chassis with an underbrace set will provide increased rigidity by linking the frame to the sub-frame, locking the front sub-frame in place and prevent unwanted twisting of the chassis. Please let us know your feedback by submitting a review at

<http://www.corksport.com/corksport-underbody-4-brace-set-for-mazdaspeed-3-mazda-3.html>

### Pre-Installation Notes:



**Make sure your vehicle is completely cooled down** prior to starting installation. If you are going to work on your car within an hour or two of having driven it, use a fan to cool off the car.



**These instructions were written for reference only** and the use of a factory service manual is recommended. Please read these instructions thoroughly prior to starting installation



**How our instructions work:** To best cover all of our customers experience levels, we have included an overview checklist for the more technically advanced users along with step-by-step instructions for customers that require additional detail.



**These installation instructions were written using a 2010 Mazdaspeed 3.** Other year Mazdaspeed3 and Mazda3 models will be similar.

### Materials and Time:



#### General Info.

Part #: Ax1-3-027  
Time Est: 2 hours  
Wrench Rating: 2/5



#### Tooling List

8mm Allen Wrench  
10mm Allen Wrench  
14mm Socket  
10mm Socket  
19mm End Wrench  
3/8" Drive Ratchet



#### Parts List

Four (4) CorkSport Braces with installed Hardware  
Three (3) RIV nuts  
Two (2) RIV nut collars  
One (1) RIV nut installation tool  
Two (2) 25mm long M8 bolts w/ washers  
Two (2) 20mm long M10 bolts w/ washers

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## Checklist

This is an overview of each step in the build. You can use this as a reference and a checklist as you button up the work on your car

### 1. Remove the factory cross brace

- a) **Jack up and support the vehicle** using factory jacking and jack stand points. Refer to the owner's manual for correct positions of jack and jack stands.
- b) **Remove the factory cross brace** located right behind the engine subframe (shown in [Figure 1a](#)).

### 2. Installation of the CorkSport 4-Brace Set

- a) **Locate and install the brace bar #1.** It has the shortest square tubing and attachment points on each side. Align it as shown in ([Figure 2a](#)). Start the supplied 10mm Allen bolts but do not tighten them. You will want to tighten down all the pieces at the end.
- b) **Install RIV nut into the frame.** **Detailed instructions for RIV nuts are located in section 3.** ([Figure 2b](#) shows the passenger side frame where you install the RIV nut. [Figure 2c](#) shows the completed RIV nut).
- c) **Install brace bar #2** using the supplied 25mm long 8mm bolt and washer. Leave the hardware loose (shown in [Figure 2d](#)).
- d) **Install a RIV nut in the frame** for brace bar #3 (shown in [Figure 2e](#)) and then install brace bar #3 on the drivers side using the other supplied 25mm long 8mm bolt.
- e) **Install brace bar #4** using the supplied 60mm long 8mm hardware (shown with an arrow in [Figure 2f](#)).
- f) **Tighten the 10mm and 8mm Allen bolts** that secure the brace to the car. Then tighten the 8mm Allen bolts at each collar. Lastly tighten the 14mm nuts on the ends of each 8mm Allen bolt.



**This completes the installation of your CorkSport 4-Brace Set. Double check that all of the hardware is tight. Test drive your car and pay attention to any added noise or vibration. If something seems strange, you should check that the hardware is tight and that all parts are installed flat to the body of the vehicle. *Caution: This parts are made of aluminum and can be damaged by road debris and other driving hazards.***

### 3. Detailed Installation of RIV Nuts.



Video support on how to install a Rivnut available at <http://youtu.be/d0fk-1LiUxM>

- a) **First, place the RIV nut on the RIV nut installation tool.**
- b) **Place the entire assembly** with socket wrench and end wrench into the desired hole ([Figure 3b](#) shows the end that will be going into the body of the vehicle).
- c) **Hold the end wrench while** you start to tighten the socket wrench. Some of the larger RIV nuts may require a breaker bar or larger socket wrench. Tighten the RIV nut until it is secure to the body.
- d) **Reverse the socket wrench** and undo the bolt. Make sure to hold the end wrench while pulling loosening the installation tool as well.

## Detailed Instructions

### 1. Remove the factory cross brace

- Jack up and support the vehicle** using factory jacking and jack stand points. You are going to need enough room to work almost halfway back from the front of the car. Refer to the owners manual for correct positions of jack and jack stands.
- Find the factory cross brace located** right behind the engine subframe (shown in **Figure 1a**). You are going to remove the four (4) 14mm bolts (**circled in green**) and the two (2) 14mm nuts (**circled in red**). There is also one (1) 10mm bolt (**circled in blue**) that needs to be removed. Once the hardware is removed you can place the cross brace to the side. This piece will be completely replaced. After you are finished, the underside will look like (**Figure 1b**).

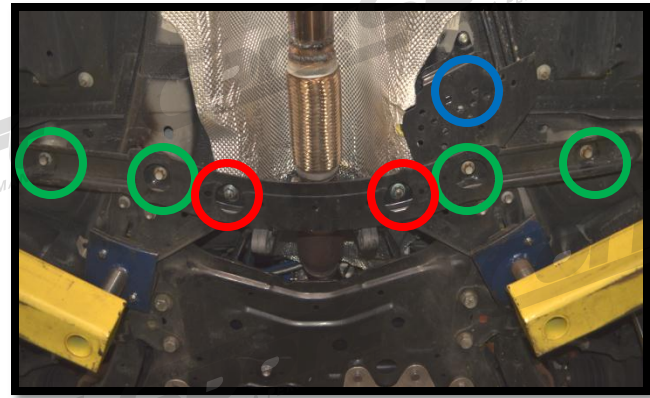


Figure 1a

### 2. Installation of the CorkSport 4-Brace Set

- Locate and install the brace bar #1.** It has the shortest square tubing and attachment points on each side. Align it as shown in (**Figure 2a**). This brace is the most forward part of the set. Start the supplied 10mm Allen bolts but do not tighten them. Once you have finished with the installation of all the braces you will tighten all of the hardware.

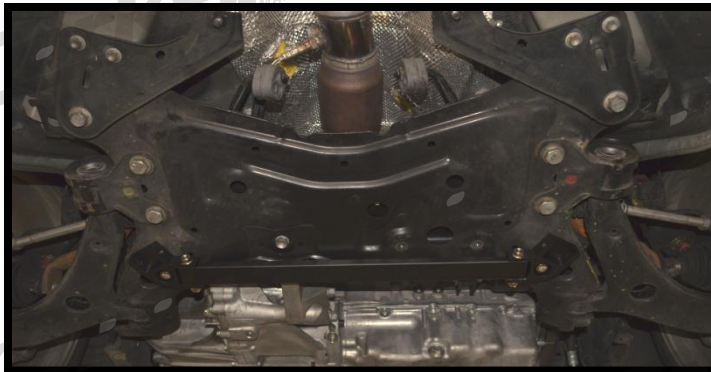


Figure 2a



Figure 1b

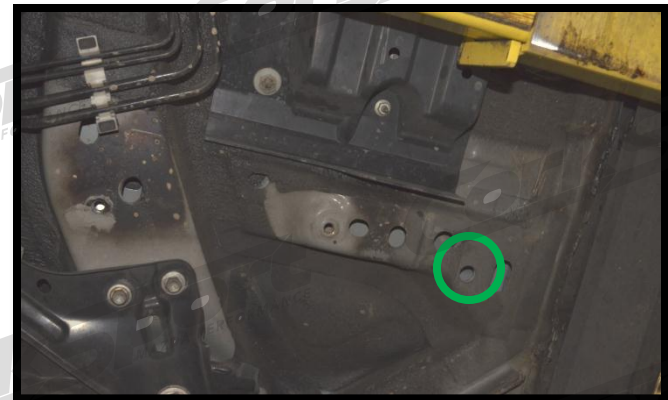


Figure 2b

- In order to install brace bar #2 and brace bar #3 (the two side pieces) you will need to install two RIV nuts.** **Detailed instructions for RIV nuts are located in section 3.** Locate the frame section that the factory cross brace was bolted to (**Figure 2b** shows the passenger side frame). *Tip: Before installing the RIV nut, place the second brace by hand to make sure you have the correct hole.* Place the supplied RIV nut and installation tool into the empty hole (**circled in green in Figure 2b**). Make sure to use the additional collar for the RIV nut. Install the RIV nut. (**Figure 2c** shows the installed RIV nut).

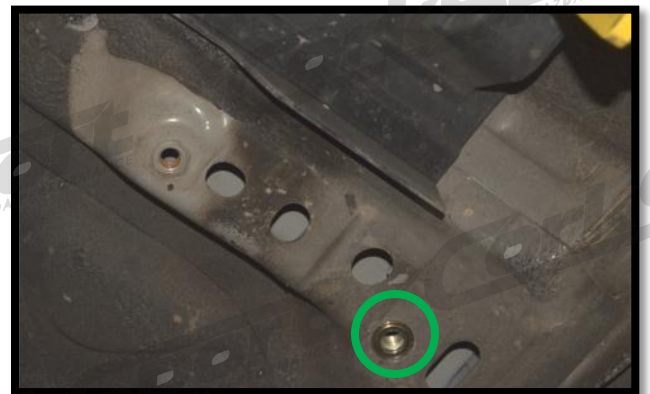


Figure 2c

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**2. Installation of the CorkSport 4-Brace Set Continued...**

- c) After the RIV nut is installed you can install the brace bar #2 (shown in **Figure 2d**). Start the supplied 25mm long 8mm bolt and washer in the RIV nut and leave the hardware loose.
- d) For the brace bar #3 you will need to also install a RIV nut in the frame (**green circle** in **Figure 2e**) and then install the brace on the drivers side. Remember to only start the hardware again.

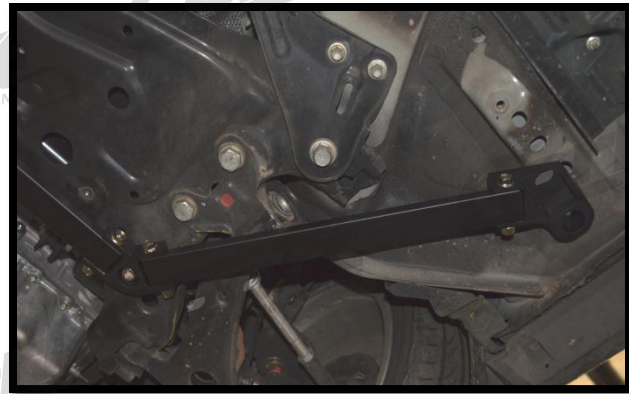


Figure 2d

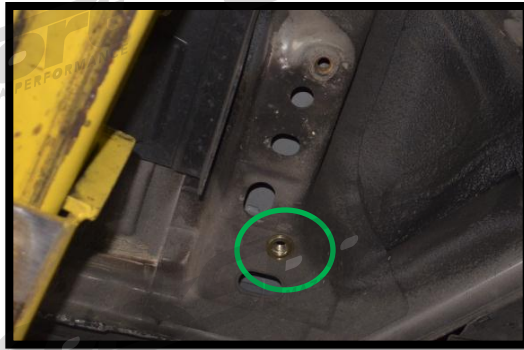


Figure 2e

- e) Install brace bar #4 (shown with an arrow in **Figure 2f**). Remember to just start the supplied 60mm long 8mm hardware.

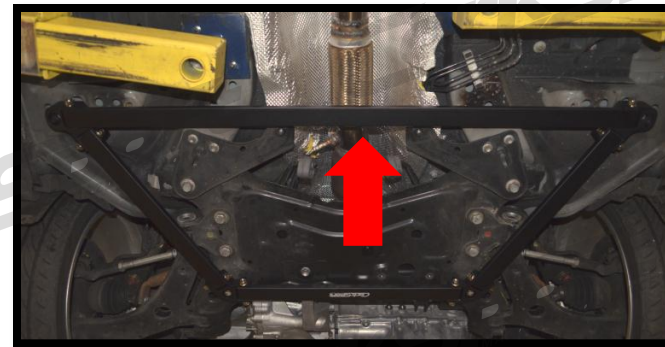


Figure 2f

- f) Now that all of the pieces are installed, you can start **tightening them**. Start by tightening the 10mm and 8mm Allen bolts that secure the brace to the car (shown with **Red Arrows** in **Figure 2g**). Then tighten the 8mm Allen bolts at each machined bracket (shown with **Green Arrows** in **Figure 2g**). Lastly tighten the 14mm nuts on the ends of each 8mm Allen bolt.

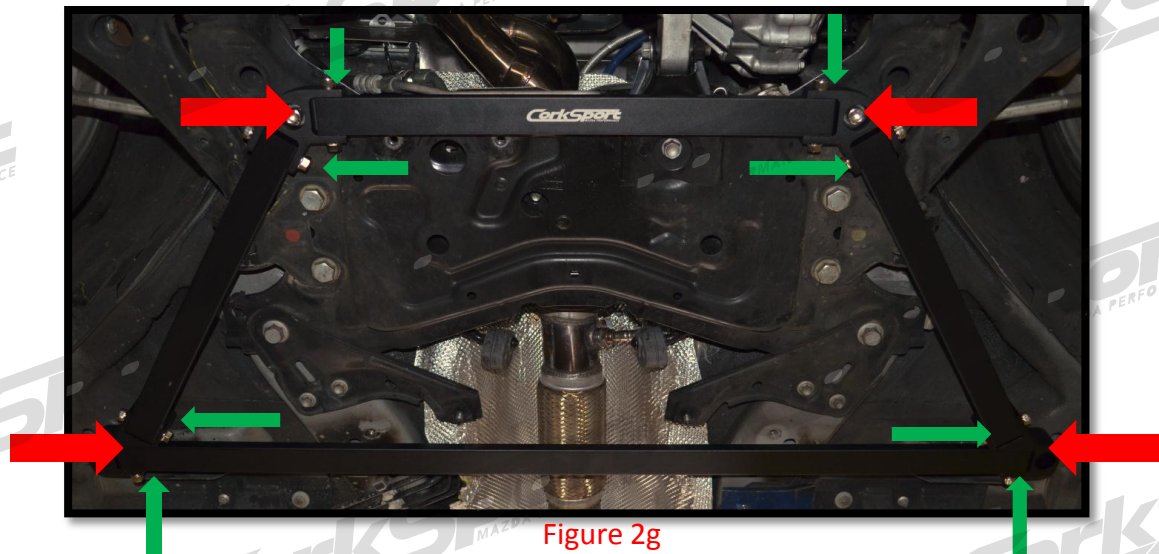



Figure 2g

**This completes the installation of your CorkSport 4-Brace Set. Double check that all of the hardware is tight. Test drive your car and pay attention to any added noise or vibration. If something seems weird, you should check the hardware is tight and that all parts are installed flat to the body of the vehicle. *Caution: This parts are made of aluminum and can be damaged by road debris and other driving hazards.***

### 3. Detailed Installation of RIV Nuts.

 Video support on how to install a Rivnut available at <http://youtu.be/d0fk-1LiUxM>

- a) **(Figure 3a)** shows a cross section of the RIV nut and RIV nut installation tool. First, place the RIV nut on the RIV nut installation tool. Then, place the entire assembly with socket wrench and end wrench into the desired hole. **(Figure 3b)** shows the end that will be going into the body of the vehicle. RIV nuts are needed for areas that are not accessible with traditional nuts.



Figure 3b

- b) **Hold the end wrench while you start to tighten the socket wrench.** Some of the larger RIV nuts may require a breaker bar or larger socket wrench. There is also an included collar for the RIV nut that can be used to strengthen the RIV nut, shown below. Tighten the RIV nut until it is secure to the body.



- c) **Once the RIV nut is secure, you can pull out the RIV nut installation tool.** Reverse the socket wrench and undo the bolt. Make sure to hold the end wrench while pulling loosening the installation tool as well.
- d) **(Figure 3c and Figure 3d)** show how each end will look once you are finished. The end shown on **(Figure 3c)** generally will not be visible.

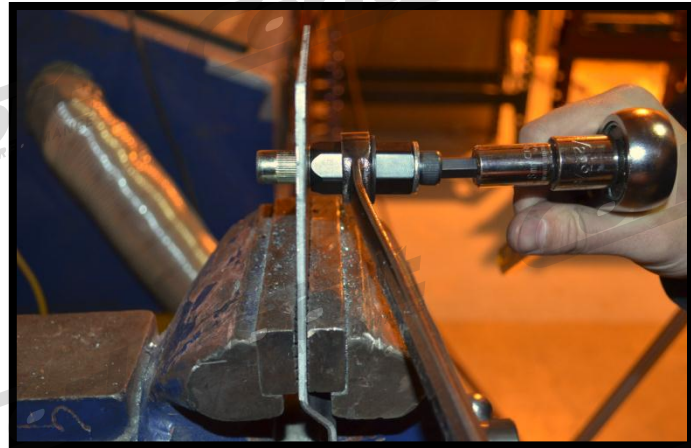


Figure 3a



Figure 3c

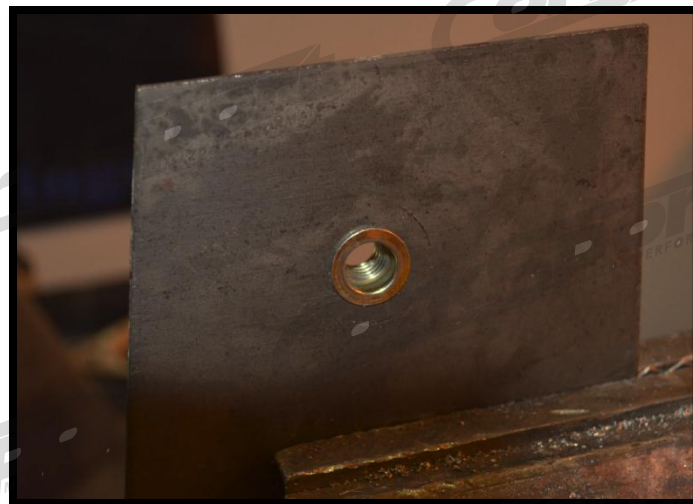


Figure 3d

## What's Next:

### [CORKSPORT Mazda 3/Mazdaspeed 3 Rear Chassis Brace Set](#)



**Reduce chassis flex and get a 12% improvement in rear end deflection** with the CorkSport Rear Chassis Brace Set. This direct bolt-on part for the 2007-2011+ Mazdaspeed 3 & 2004-2011+ Mazda 3, is a four bar kit that will increase stiffness in the rear end by tying load points together and includes quick release pins to allow for easy removal and reinstallation of the bar

### [CORKSPORT Mazda 3/Mazdaspeed 3 Mid-Chassis Brace](#)

One of the most overlooked aspects of vehicle performance comes in the form of handling and precision that is lost as a result of chassis flex. Increase your cornering ability and get more feedback from the suspension of your Mazda 3/Mazdaspeed 3 with the CorkSport Mid-Chassis Brace. Constructed from laser cut ten gauge plate with 1 x ½ inch channel MIG welded reinforcement, the CorkSport chassis brace will strengthen your Mazda or Mazdaspeed by adding rigidity and reducing the flex of your cars suspension, providing sharper handling and improving structural integrity while reducing the weight of the chassis by 20% over the Mazdaspeed 3 stock brace. The 4 point, direct bolt-on to stock, mounting holes makes this brace an easy to install add-on for your car.



### [CORKSPORT Mazda 3/Mazdaspeed 3 Front Adjustable Swaybar End Links](#)



**Eliminate binding and remove the preload on your sway bar** with the CorkSport Mazda 3 and Mazdaspeed 3 Adjustable Front End Links. Made to fit OEM and aftermarket sway bars, the CorkSport End Links have +/- 6mm of adjustability, use a 5/8" hex stock that will reduce end link fatigue, and have sealed end M10x1.5 ball joints for low friction and added durability.