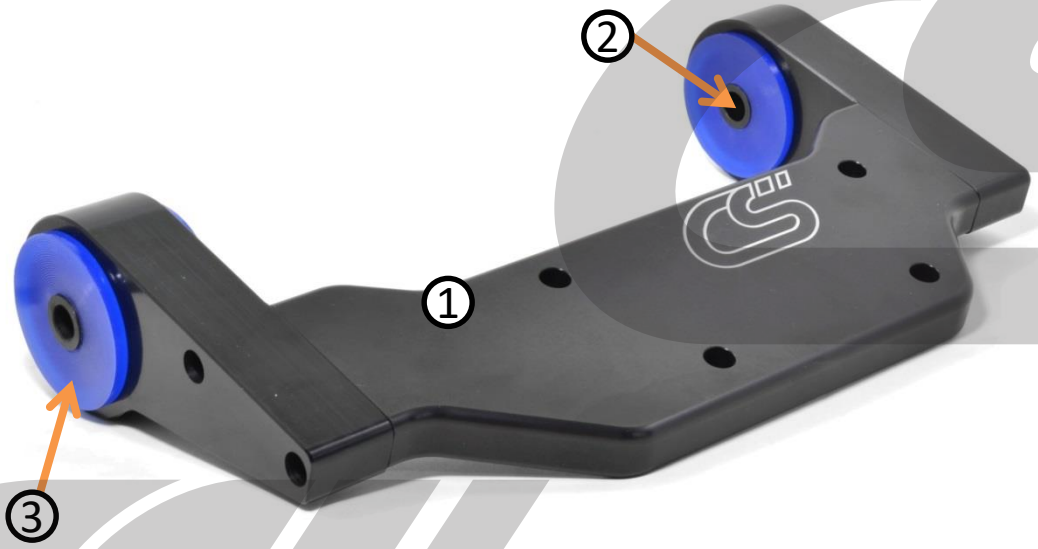
CorkSport Mazdaspeed 6 Rear Diff Brace

2006-2007 Mazdaspeed 6

This Package contains:



- ❑ 1. One (1) CorkSport Mazdaspeed6 Rear Diff Brace Assembly
- ❑ 2. Four (4) CorkSport 95a Durometer Bushings (installed)
- ❑ 3. Two (2) Zinc coated sleeves (installed)
- ❑ 3. Four (4) Hardened steel shear pins (not visible)

Kit Assembly By: _____ Date: _____

CorkSport Mazdaspeed 6 Rear Diff Brace

2006-2007 Mazdaspeed 6

The CorkSport Rear Differential Mount is a great addition to improve the reliability and performance of your Mazdaspeed 6. Replacing the stock rear differential mount allows you to remove one of the "weak links" in the Mazdaspeed 6 that can really hold you back from getting all those horses to the ground.
Please let us know your feedback by submitting a review at: http://www.corksport.com/corksport-mazdaspeed-6-2006-2007-rear-differential-mount.html

Pre-Installation Notes:

Please Note: This part comes fully assembled and we do NOT recommend disassembly.

Make sure your vehicle is completely cooled down prior to starting installation. You will have to remove part of your exhaust to give better access during the installation.

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 are for use with a 2006-2007 MS6. The torque values for this installation range from 30-85ft-lbs.

Materials and Time:

General Info.
Part #: Ate-6-128
Time Est: 2-3 Hours
Wrench Rating: 4/5

Tooling List
3/8" Drive Ratchet
24" Extension
3/8" Swivel
14mm Socket
17mm Socket
17mm Open End Wrench
Screwdriver
Mallet
Jack
Jack Stands (preferably a lift)
Torque Wrench

Parts List
CorkSport MS6 Rear Diff Brace

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 Rear Diff Brace

- ☐ **a) Remove the exhaust center section** between the mufflers and the downpipe.
- ☐ **b) Unbolt the drive shaft by removing the four (4) 14mm nuts** from the end of the driveshaft (3 of them circled in red in Figure 1b, the fourth bolt is behind the driveshaft).
- ☐ **c) Unbolt the front differential mount** by supporting the front of the rear differential with a jack. Remove the two (2) bolts (red circles in Figure 1c) using a 17mm open ended wrench. Lower the differential. (see Figure 1d)
- ☐ **d) Undo the two electrical connections** going to the rear differential (the connections are circled in green in Figure 1c). Unclip them from the sub frame.
- ☐ **e) Unbolt the end links from the control arm** using a 14mm socket (red circle in Figure 1g). Repeat for the other side.
- ☐ **f) Unbolt the rear sway bar brackets** by removing the four (4) nuts using a 14mm socket. The two (2) bolts holding on one (1) bracket shown in Figure 1h. Remove the brackets from the bar.
- ☐ **g) Remove the rear differential mount** by supporting the back of the rear differential with the jack. Using a 24" extension, swivel, and 17mm socket, unbolt the driver side rear differential mount (bolt circled in red in Figure 1e, and tool access shown in Figure 1f). Repeat for passenger side. Lower the differential and remove the jack.
- ☐ **h) Lower the diff until you can access and unbolt the Four (4) 17mm bolts that hold the rear diff in.** Remove the rear diff mount. CorkSport Rear diff mount shown in Figure 1i.

2. Install the CorkSport Rear Diff Mount

If you have not replaced the rear swaybar in the car with an upgraded bar, now would be a good time to do that since the sway bar can be slid out the rear of the diff.

- ☐ **a) Install the CorkSport Rear Differential brace** and tighten the four bolts shown in Figure 1i. Torque to 32-45ft.lbs
- ☐ **b) Reattach the rear differential mount by jacking up the back of differential** and reinstalling the bolts using 24" extension, a swivel, and a 17mm socket. Shown Figure 1f. Torque the bolts to 64-86ft-lbs.
- ☐ **c) Reattach the front differential mount** by jacking up the front of the differential while also lining up the driveshaft. Reinstall the two (2) bolts using 17mm open ended wrench. Shown Figure 1c. Torque the bolts to 55-77ft-lbs.
- ☐ **d) Reattach the driveshaft by inserting the bolts** from the back. The heads of the bolts rest against the differential output to resist spinning. See Figure 2a to see how the bolts should sit when installed correctly. Tighten down nuts with 14mm socket and torque to 35-43ft-lbs.

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

2. Install the CorkSport Rear Diff Mount

- ☐ **e) Reattach the electrical connections** to the sub frame and reconnect connections**.** Shown Figure 1c.
- ☐ **f) Position the end links and reattach to the control arms using a 14mm socket.** A small screw driver can come in handy to help realign the holes. Torque to 30-45ft-lbs.
- ☐ **g) Reinstall the exhaust center section** between the mufflers (two (2) nuts per muffler. Refer to Figure 1a.

This completes the installation of the CorkSport Rear Differential Mount. Lower the car off jack stands and start your car and go for a brisk drive. Try to put some loading on the car in the corners to ensure all suspension components are functioning properly. If you hear any noises or creaks, double check all hardware and make sure the sway bar bushings are properly tightened.

Detailed Instructions

These instructions are made for the 06-07 Mazdaspeed 6.

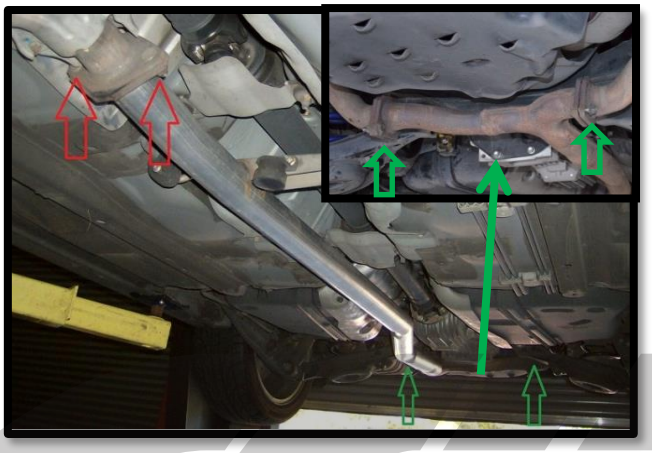


Figure 1a

1. Remove the Factory Rear Diff Brace

a) **Remove the exhaust center section** between the mufflers and the downpipe. There will be two (2) 14mm bolts and nuts per muffler, green arrows in Figure 1a and two (2) 17mm bolts and nuts, red arrows in Figure 1a. Some pictures will show it still installed but it is best to remove it.

b) **Unbolt the drive shaft by removing the four (4) 14mm nuts** from the end of the driveshaft (3 of them circled in red in Figure 1b, the fourth bolt is behind the driveshaft). Push the bolts out through the back. The driveshaft will stay in place until the differential is lowered.

Figure 1b

c) **Unbolt the front differential mount** by supporting the front of the rear differential with a jack. Remove the two (2) bolts (red circles in Figure 1c) using a 17mm open ended wrench. Lower the differential slowly while holding the driveshaft to ensure it doesn't fall out. Remove the jack and let the differential and driveshaft hang free (see Figure 1d, the exhaust has not been removed in this figure).

d) **Undo the two electrical connections** going to the rear differential (the connections are circled in green in Figure 1c). Unclip them from the sub frame. Each wire loom is held to the subframe by two clips.

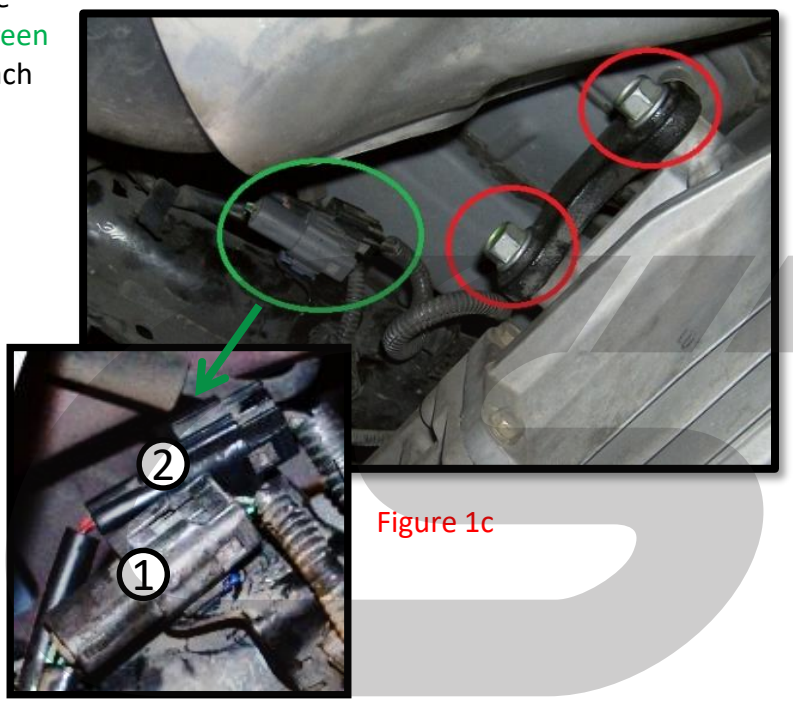


Figure 1c

Figure 1d

1. Remove the Factory Rear Diff Brace Continued…

e) Unbolt the end links from the control arm using a 14mm socket (red circle in Figure 1g). Repeat for the other side.

f) Unbolt the rear sway bar brackets by removing the four (4) nuts using a 14mm socket. The two (2) bolts holding on one (1) bracket shown in Figure 1h. Remove the brackets from the bar.

g) Remove the rear differential mount by supporting the back of the rear differential with the jack. Using a 24" extension, swivel, and 17mm socket, unbolt the driver side rear differential mount. It is most easily accessed from between the differential and the sub frame (bolt circled in red in Figure 1e, and tool access shown in Figure 1f). Repeat for passenger side. Lower the differential and remove the jack.

Figure 1g

h) Lower the diff until you can access and unbolt the Four (4) 17mm bolts that hold the rear diff in. Remove the rear diff mount. CorkSport Rear diff mount shown in Figure 1i.

Figure 1i

Figure 1e

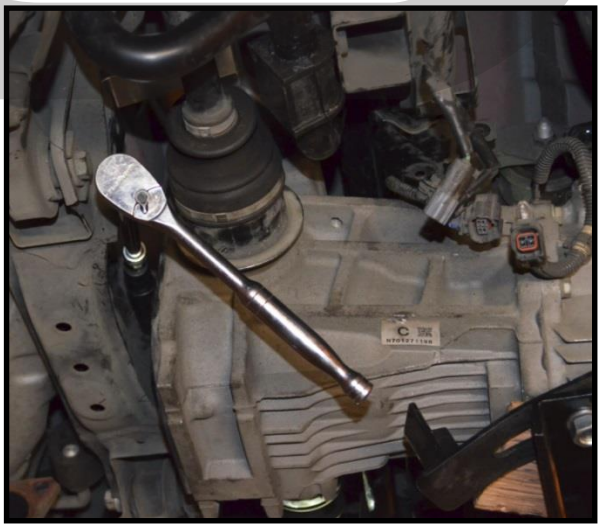


Figure 1f

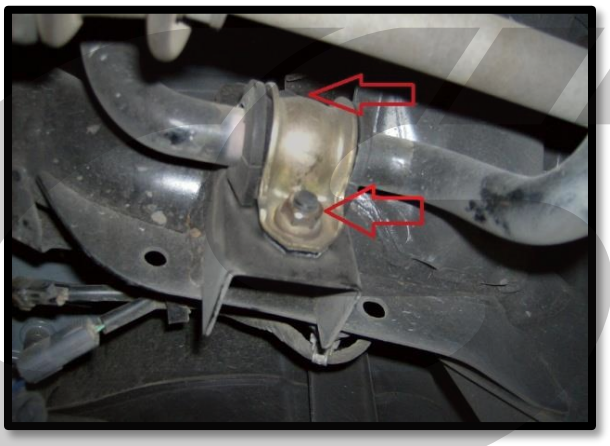


Figure 1h

2. Install the CorkSport Rear Diff Mount

If you have not replaced the rear swaybar in the car with an upgraded bar, now would be a good time to do that since the sway bar can be slid out the rear of the diff.

a) **Install the CorkSport Rear Differential brace** and tighten the four bolts shown in Figure 1i. Torque to 32-45ft.lbs

b) **Reattach the rear differential mount by jacking up the back of differential** and reinstalling the bolts using 24" extension, a swivel, and a 17mm socket. Shown Figure 1f. Torque the bolts to 64-86ft-lbs. It may be necessary to slide the differential towards the back of the car to get it to line up correctly with the mount. This step may be easier with two people, but can be done with one. To get the bolts started you can hand thread them in by reaching from behind the subframe, however it is a tight area.

c) **Reattach the front differential mount** by jacking up the front of the rear differential while also lining up the driveshaft. Reinstall the two (2) bolts using 17mm open ended wrench. Shown Figure 1c. Torque the bolts to 55-78ft-lbs. It is necessary to line up the driveshaft while jacking the differential up in place, otherwise the driveshaft will not slide back into position if the differential is already mounted in place.

d) **Reattach the driveshaft by inserting the bolts** from the back. The heads of the bolts rest against the differential output to resist spinning. See Figure 2a to see how the bolts should sit when installed correctly. Tighten down nuts with 14mm socket and torque to 35-43ft-lbs.

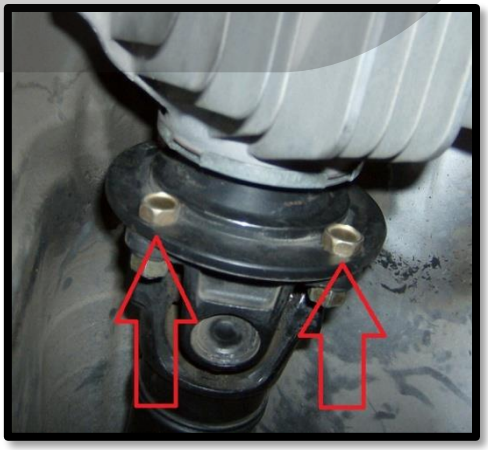


Figure 2a

e) **Reattach the electrical connections** to the sub frame and reconnect connections**.** Shown Figure 1c.

g) **Position the end links and reattach to the control arms using a 14mm socket.** A small screw driver can come in handy to help realign the holes. Torque to 30-45ft-lbs.

h) **Reinstall the exhaust center section** between the mufflers (two (2) nuts per muffler. Refer to Figure 1a.

This completes the installation of the CorkSport Rear Differential Mount. Lower the car off jack stands and start your car and go for a brisk drive. Try to put some loading on the car in the corners to ensure all suspension components are functioning properly. If you hear any noises or creaks, double check all hardware and make sure the sway bar bushings are properly tightened.

What's Next:

CorkSport Power Series Mazdaspeed 6 Exhaust System

A dual muffler design on the CorkSport Mazdaspeed 6 exhaust provides a deep tone and gives a solid power gains through the RPM band. The Mazdaspeed 6 exhaust uses ovaled 80mm tips to fit through the stock rear bumper bezels for a stock look.

The CorkSport Power Series Mazdaspeed 6 exhaust systems are constructed with the quality materials and construction methods. CorkSport uses 80mm polished 304 Stainless Steel piping for all our Mazdaspeed 6 exhaust systems. Mandrel bent piping is used for smooth exhaust flow to increase power. CorkSport Mazdaspeed 6 exhaust also features TIG welds for a strong and good looking connection.

CorkSport Power Series Mazdaspeed 6 Downpipe

Ready for a serious increase in horsepower and torque? Installation of the CorkSport Mazdaspeed 6 Downpipe has shown power gains of 26 horsepower and 32 torque at the wheels. The CorkSport downpipe bolts to the stock second catalyst or aftermarket racepipes.

The CorkSport Mazdaspeed 6 Power Series Downpipe is constructed with the quality materials and construction methods. CorkSport uses polished 3 inch 304 Stainless Steel piping for all our Mazdaspeed 6 Downpipes. Mandrel bent piping is used for smooth exhaust flow to increase power.

CorkSport Front Strut Bar for Mazdaspeed 6

The one piece CorkSport front strut bar helps increase the stiffness of the Mazdaspeed 6 chassis by tying load points together. The reduction in chassis flex during hard cornering results in improved handling and steering response.

CorkSport strut bars are a great value. The quality is comparable to those from Mazdaspeed and Cusco but around 1/2 the cost. This strut bar is built from T6061 aluminum and polished to a high luster. Each bar is TIG welded for strength in construction and very light.