

CorkSport Mazdaspeed 6 Catted Downpipe

2006-2007 Mazdaspeed 6



Thank you for purchasing the CorkSport Mazdaspeed 6 Catted Downpipe. Designed to replace the restrictive catalyst in the stock downpipe and deliver improved exhaust flow for significant power gains, noticeable improvements in turbo response time, and reduced backpressure. During initial testing, the CorkSport Mazdaspeed 6 Downpipe showed power gains of 26 horsepower and 32 ft. lbs. of torque at the wheels. Please let us know your feedback by submitting a review at <http://www.corksport.com/corksport-power-series-mazdaspeed-6-downpipe.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 US 2006 Mazdaspeed 6. Other year Mazdaspeed 6 models will be similar.

Materials and Time:



General Info.

Part #: Ate-6-114
Time Est: 4-5 hours
Wrench Rating: 4/5



Tooling List

8mm Socket
10mm Socket
12mm Socket
14mm Socket
17mm Socket
19mm Socket
14mm Wrench
17mm Wrench
3/8" Drive Ratchet
1/2" Drive Ratchet
Swivel Socket
12" Extension
Floor Jack
Philips Screw Driver
O2 Sensor Socket
Penetrating Fluid
Anti-Seize
Breaker Bar



Parts List

One (1) CorkSport Catted Downpipe
One (1) O2 Wire Extension
Two (2) O2 Bung Plugs
One (1) Hardware Set
One (1) 80mm Gasket

Need Help With Your Installation?

Call (360) 260-CORK

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. Getting to the Factory Downpipe



These instructions were made using a US market 2006 Mazdaspeed6.

- a) Remove the two (2) 10mm Bolts holding the intercooler cover to the intake manifold as shown in **Figure 1a**.
- b) Loosen the hose clamps on the inlet and outlet of the top mount intercooler as shown by the **red** arrows in **Figure 1b**. Use pliers to loosen the hose clamps on the recirculation valve (shown by the **green** circles **Figure 1b**) and pull the recirculation hoses free of the valve.
- c) Remove the intercooler by removing the three (3) 12mm intercooler mounting bolts circled in **Figure 1c**.
- d) Remove rear intercooler mount bracket by removing the two (2) nuts circled in **Figure 1d** using a 12mm socket.
- e) Remove the heat shield by applying penetrating oil, allowing to soak for a few minutes and remove all five (5) 8mm hex head bolts from the upper heat shield on the exhaust manifold, marked with **red** arrows on **Figure 1e**. Remove the heat shield from the vehicle.
- f) Remove the upper O2 sensor.
- g) Remove the three (3) 8mm headed bolts securing the downpipe heat shield.

2. Remove the Factory Downpipe and Catalyst

- a) Remove the five (5) nuts securing the downpipe by spraying penetrating oil on them (4 nuts shown w/ **red** arrows in **Figure 2a**, the fifth nut is underneath the downpipe).
- b) Remove 10mm hex head bolt and O2 sensor wiring harness loom from downpipe (shown with a **yellow** arrow in **Figure 2a**).
- c) Using a floor jack and jack stands, bring the front of the car up in the air enough to access the underside of the chassis.



Always refer to the floor jack and jackstand manufacturers instructions as well as the factory owners manual for your vehicle to determine jacking points and support points. Alternately, use an automotive lift to gain access to the underside of the vehicle. Redundant support mechanisms are recommended.

- d) Remove the front chassis brace by removing the four (4) 17mm bolts shown in **Figure 2b** and **Figure 2c**.
- e) Remove the 14mm locking nuts on the bottom of the car pipe (shown by the **red** arrows in **Figure 2d**).
- f) Remove the two (2) 14mm bolts (one shown by the **blue** arrow in **Figure 2e**) from the front flange connecting the factory cat pipe to the factory downpipe by spraying them with penetrating spray and using a 14mm socket to remove them.

Checklist

2. Remove the Factory Downpipe and Catalyst Continued...

- g) Follow the O2 Sensor Harnesses and unplug both O2 sensor connectors (shown in [Figures 2f](#) and [2g](#)) from the main harness.
- h) Remove the passenger side wheel/tire from the vehicle.
- i) Remove the four (4) 8mm Phillips headed bolts from the lower part of the inner fender liner from the bottom of the bumper ([Figure 2h](#) shows two of them circled).
- j) Remove the six (6) Phillips headed screw type fasteners from the plastic engine shield (four are pictured in [Figures 2i, 2j, 2k](#)). Two (2) of the clips are located behind the inner fender liner. (shown in [Figure 2l](#))
 Note how the accessory belt is routed on the engine before removal to aid in re-installation.
- k) Take the 14mm wrench and turn the belt tensioner clockwise to release tension on the belt and remove the belt (shown in [Figure 2m](#)).
- l) Remove the two 10mm headed nuts from the plastic alternator cooling duct. (Shown [Figure 2n](#)) Once the nuts are loose it comes out the bottom easiest.
- m) Remove the 12mm headed nut from the main wire on the alternator.
- n) Disconnect the alternator plug. At this point there should be nothing attached to the alternator.
- o) Remove the three 14mm headed studs that hold the alternator to the engine. Allow the alternator to sit down on the frame rail. Two (2) bolts are shown from the bottom in [Figure 2o](#) and one is done from the top.
- p) Remove the two 14mm headed bolts which hold the downpipe bracket to the engine and the two 14mm headed bolts that bolt the bracket to the motor (shown in [Figure 2p](#)).
- q) Remove the 17mm headed bolt and 19mm headed bolt of the lower engine torque mount and remove it (shown [Figure 2q](#)).
- r) Place the floor jack under the passenger side of the oil pan and remove the 17mm headed bolt from the top engine mount (shown in [Figure 2r](#)).
- s) Use the jack to raise the engine some and remove the downpipe from the top of the engine bay between the engine and the firewall. This may require you to rock the engine towards the front of the vehicle to get the downpipe out.
- t) Once the stock downpipe is removed let the engine down with the jack and re-install the 17mm headed bolt into the mount and torque to 55-76 ft-lbs (shown in [Figure 2r](#)).

Checklist

2. Remove the Factory Downpipe and Catalyst

- u) Re-install the 17mm and 19mm headed bolt into the lower torque mount and tighten to 49-68 ft-lbs (shown in [Figure 2q](#)).

3. CorkSport Catted Downpipe Installation

- a) From the bottom of the car install the new CorkSport downpipe onto the studs of the turbo with the original or new gasket (shown in [Figure 3a](#)).
- b) Install the remaining four (4) 14mm headed nuts and tighten all of the nuts in a crisscross pattern to 39-46 ft/lbs.
- c) Install the provided M10 bolts and washers into the rear flange of the catted down pipe (see [Figure 3b](#) for an illustration of the hardware stack up) using a 17mm socket and wrench. Be sure to use the supplied 80mm gasket between the flanges.
- d) Install the O2 sensor extension into the lower O2 plug on the factory wiring harness.
- e) Install the lower O2 sensor by putting a small amount of anti-seize on the threads and slowly threading it into the bung.
- f) Reinstall the front chassis brace by reinstalling the four (4) 17mm Head Hex Nuts (see [Figure 2b](#) and [Figure 2c](#) for bolt location reference) and torque to 55-79 Lb Ft.
- g) Re-install the alternator with the three (3) 14mm bolt and tighten them to 16-22 ft-lbs (see [Figure 2o](#)).
- h) Re-connect the electrical plug into the alternator and 12mm nut on the alternator.
- i) Re-install the accessory drive belt on its original path.
- j) Re-install the engine cover in the passenger side wheel well.
- k) Re-install the passenger side wheel. Torque the wheel to 65-80 ft-lbs.
- l) Reinstall the upper O2 sensor by putting a small amount of anti-seize on the threads and slowly threading it into the downpipe (see [Figure 3c](#)).
- m) Reinstall the exhaust manifold heat shield to keep the heat from the downpipe and turbo away from your top mount intercooler. Torque them hand tight (10 foot pounds).
- n) Re-install the Alternator shield (see [Figure 2n](#)).

Checklist

3. CorkSport Catted Downpipe Installation

- p) **Reinstall the rear intercooler mount bracket** by reinstalling the two (2) 12mm headed nuts (see [Figure 1d](#)).
- q) **Reinstall the intercooler into the hot and cold charge couplers and over the mounting studs.** Tighten the coupler hose clamps and pull on intercooler to test tightness of fit. Install the 12mm nuts over the studs and tighten to ~20 ft-lb of torque. ([Figure 1c](#))
- r) **Install the recirculation valve hose and reinstall the hose clamp.** Install recirculation vacuum line and reinstall hose clamp.
- s) **Install the intercooler cover**, ensuring that the clasp in the back is firmly latched over the feature on the intercooler and reinstall the two (2) 10mm Hex Head bolts. Tighten to hand tight. ([Figure 1a](#))



This completes the installation of your Downpipe. Bring the car down off the jack stands and start the car. Use a flashlight to check under the car to ensure that no visible exhaust is leaking and listen for leaks (usually a whispering tick sound at the flange). Look at the connection that you made under the vehicle and also at the turbocharger. If there are leaks, 99% of the time a flange has been over tightened or is misaligned. There may be a burning off smell as the downpipe is heated for the first time. This smell will go away after some driving. The Catted Downpipe should not trigger a Check Engine Light (CEL). If a CEL occurs, verify that the O2 sensors are installed properly. Check out our [knowledgebase](#) for additional install information

Detailed Instructions

These instructions are made for all 2006-2007 Mazdaspeed 6. Please contact us if you have questions about the fitment for your specific application.

1. Getting to the Factory Downpipe

- a) Remove the two (2) 10mm Hex Bolts holding the intercooler cover to the intake manifold (shown in **Figure 1a**). Slide the intercooler cover off the back of the intercooler and out of the engine compartment.
- b) Loosen the hose clamps on the inlet and outlet of the top mount intercooler (shown with the red arrows in **Figure 1b**). Use pliers to loosen the hose clamps on the recirculation valve (shown by the green circles **Figure 1b**) and pull the recirculation hoses free of the valve.
- c) Remove the intercooler by removing the three (3) 12mm intercooler mounting bolts (circled in **Figure 1c**). Pull the intercooler up off of the stud at the rear of the engine compartment, then rotate it off of the hot-charge hose at the back of the engine compartment. Pull the intercooler off the two front studs and out of the cold-charge hose in the front of the engine compartment. Place the intercooler in a safe place where the fins will not be damaged.
- d) Remove rear intercooler mount bracket by removing the two (2) nuts circled in **Figure 1d** using a 12mm socket. You will also need to release a clip (**Red Arrow**) that holds the wiring harness in place.
- e) Remove the heat shield by applying penetrating oil, allowing to soak for a few minutes and remove all five (5) 8mm hex head bolts from the upper heat shield on the exhaust manifold (marked with red arrows in **Figure 1e**). Remove the heat shield from the vehicle.

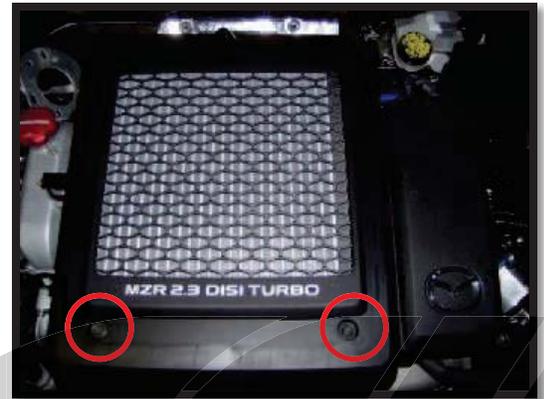


Figure 1a

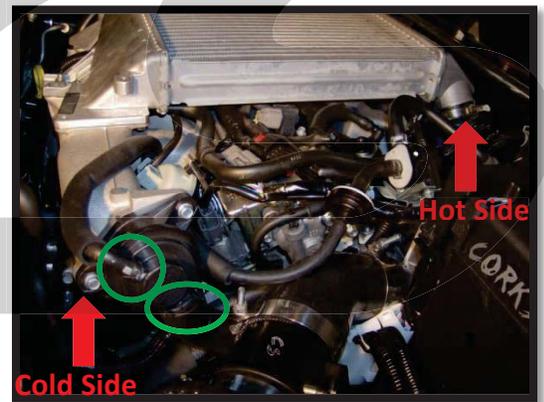


Figure 1b



Figure 1c

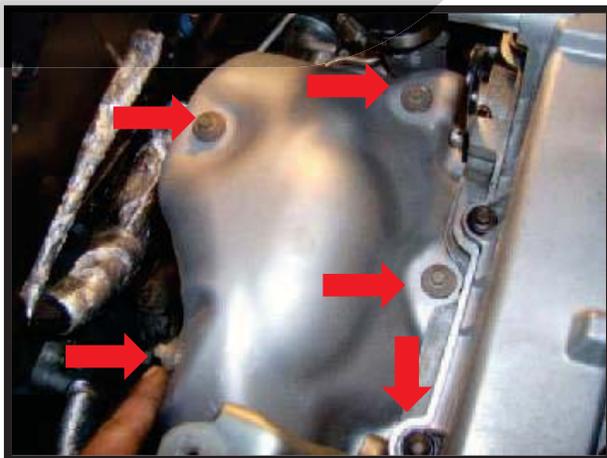


Figure 1e

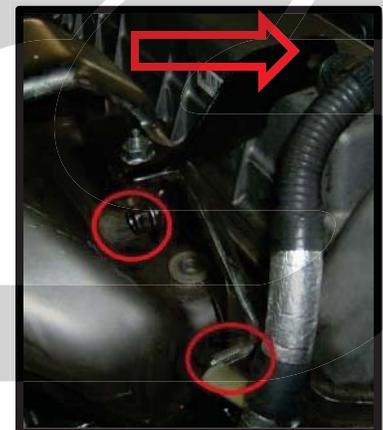


Figure 1d

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1. Getting to the Factory Downpipe Continued

- f) **Remove the upper O2 sensor** by applying penetrating oil and allowing to soak for a few minutes. Remove the sensor using an O2 sensor wrench. Once it breaks free, re-spray it and turn it back in, then back out to allow penetrating spray to infiltrate all of the threads. (Shown with **Green Arrow** in **Figure 2a**)



Make sure not to twist the wiring harness up when removing the sensor. You can disconnect it at the plug if necessary.

- g) **Remove the three (3) 8mm headed bolts securing the downpipe heat shield.** (**Yellow Arrows** in **Figure 2a**)

2. Remove the Factory Downpipe and Catalyst

- a) **Remove the five (5) nuts securing the downpipe** by spraying penetrating oil on them (four nuts shown w/ **red** arrows in **Figure 2a**. The fifth nut is underneath the downpipe). Let them soak for several minutes then remove the nuts. They are a factory locking style nut so they may be difficult to remove. A medium length 14mm socket, breaker bar, universal joint, and 12" extension are the best tools for removing the nuts.

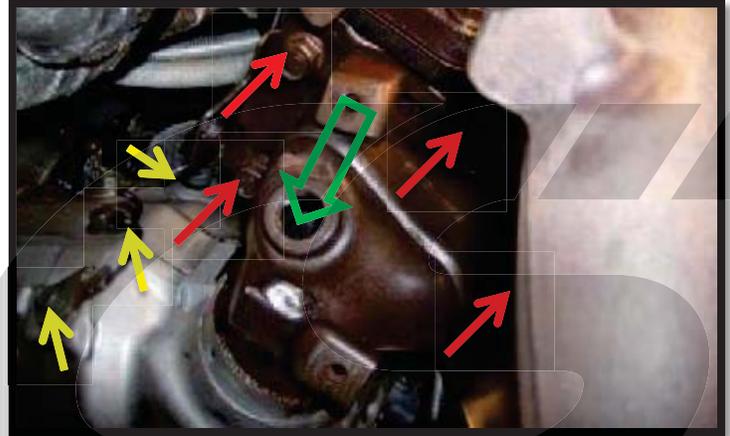


Figure 2a

- b) **Remove 10mm hex head bolt and O2 sensor wiring harness loom from downpipe** (shown with a **yellow** arrow in **Figure 2a**). It will be reused to secure the Factory O2 sensor wiring harness.

- c) **Using a floor jack and jack stands, bring the front of the car up in the air enough to access the underside of the chassis.**



Always refer to the floor jack and jackstand manufacturers instructions as well as the factory owners manual for your vehicle to determine jacking points and support points. Alternately, use an automotive lift to gain access to the underside of the vehicle. Redundant support mechanisms are recommended.

- d) **Remove the front chassis brace by removing the four (4) 17mm bolts.** Two nuts are shown in **Figure 2b** and the other two are on the other side of the brace.



Figure 2b

2. Remove the Factory Downpipe and Catalyst

- e) Remove the 14mm locking nuts (shown with the red arrows in Figure 2d) from the spring loaded studs on the rear flange of the catalyst pipe by spraying them with penetrating fluid and removing them with a 14mm socket and 3/8" drive ratchet. These are extremely tight. Realistically, you'll probably end up unthreading the studs out of the weld nuts on the factory cat pipe.
- f) Remove two (2) 14mm hex bolts (one shown by the blue arrow in Figure 2e) from the front flange connecting the factory cat pipe to the factory downpipe by spraying them with penetrating spray and using a 14mm socket. The side not pictured is blocked by the rear drive shaft so take your time.
- g) Follow the O2 Sensor Harnesses and unplug both O2 sensor connectors (shown in Figures 2f and 2g) from the main harness. The upper O2 sensor is a two plug style with one black and one grey connector. The lower O2 sensor is a single grey plug. Once the lower O2 sensor is unplugged remove it from the factory downpipe. Make sure the O2 wires are completely free before removing them from the vehicle.

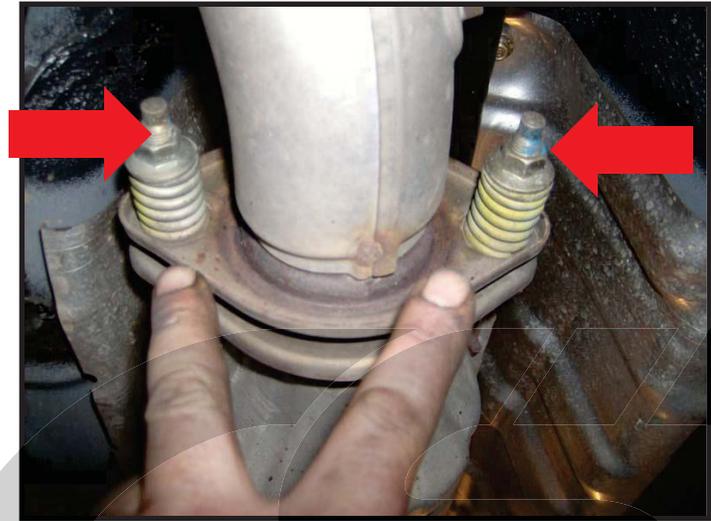


Figure 2d

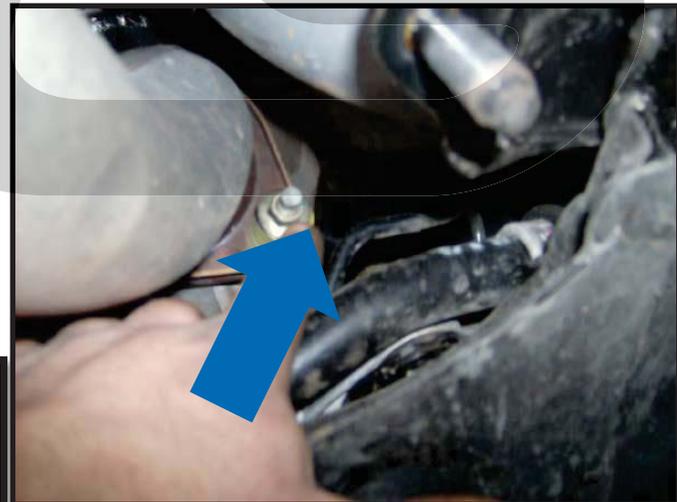


Figure 2e

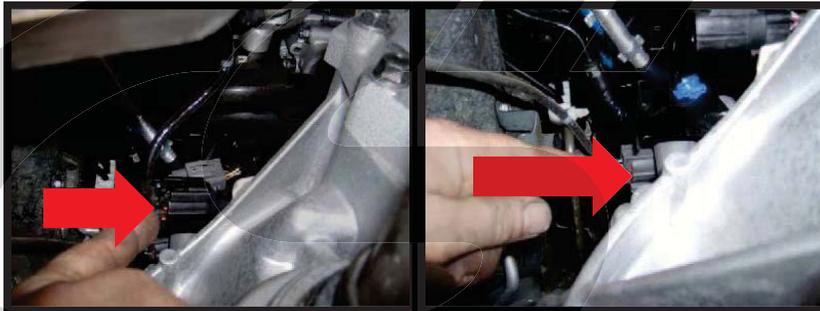


Figure 2f

Figure 2g

- h) Remove the passenger side wheel/tire from the vehicle.
- i) Remove the four (4) 8mm/Phillips headed bolts from the lower part of the inner fender liner from the bottom of the bumper (Figure 2h shows two of them circled).



Figure 2h

2. Remove the Factory Downpipe and Catalyst Continued

j) Remove the six (6) Phillips headed screw type fasteners from the plastic engine shield (four are pictured in Figures 2i, 2j, 2k). Two (2) of the clips are located behind the inner fender liner (shown in Figure 2l). To access them pull the lower part of the inner fender liner back towards the axle. Once they are out remove the engine shield.



Figure 2i



Figure 2j



Note how the accessory belt is routed on the engine before removal to aid in re-installation.

k) Take the 14mm wrench and turn the belt tensioner clockwise to release tension on the belt. Then remove the belt (shown in Figure 2m).



Figure 2k

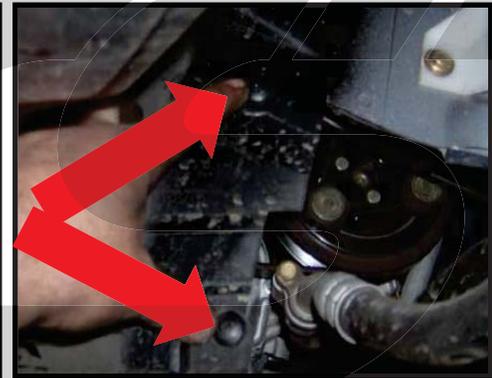


Figure 2l

l) Remove the two 10mm headed nuts from the plastic alternator cooling duct (shown Figure 2n). Once the nuts are loose it comes out through the bottom easiest.

m) Remove the 12mm headed nut from the main wire on the alternator. (Red Arrow in Figure 2n)

n) Disconnect the alternator plug. At this point there should be nothing attached to the alternator.

o) Remove the three 14mm headed studs that hold the alternator to the engine. Allow the alternator to sit down on the frame rail. Two bolts are shown from the bottom in Figure 2o and one is done from the top.



Figure 2m



Figure 2o



Figure 2n

2. Remove the Factory Downpipe and Catalyst Continued

- p) Remove the two 14mm headed bolts which hold the downpipe bracket to the engine and the two 14mm headed bolts that bolt the bracket to the motor (shown in [Figure 2p](#)).
- q) Remove the 17mm headed bolt and 19mm headed bolt of the lower engine torque mount and remove it (shown [Figure 2q](#)).
- r) Place the floor jack under the passenger side of the oil pan and remove the 17mm headed bolt from the top engine mount (shown in [Figure 2r](#)).



Figure 2p



Figure 2r

- s) Use the jack to raise the engine some and remove the downpipe from the top of the engine bay between the engine and the firewall. This may require you to rock the engine towards the front of the vehicle to get the downpipe out.
- t) Once the stock downpipe is removed let the engine down with the jack and re-install the 17mm headed bolt into the mount and torque to 55-76 ft-lbs (shown in [Figure 2r](#)).
- u) Re-install the 17mm and 19mm headed bolt into the lower torque mount and tighten to 49-68 ft-lbs (shown in [Figure 2q](#)).

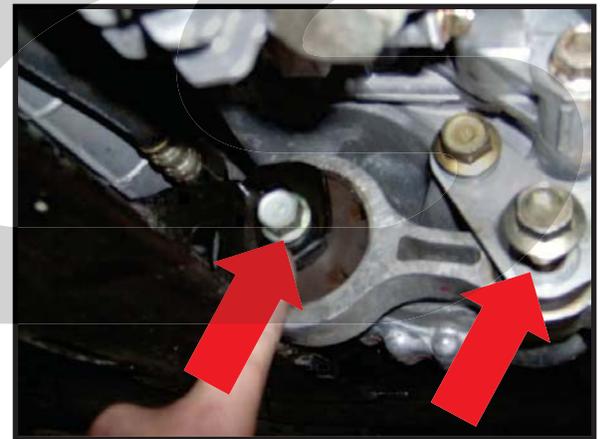


Figure 2q

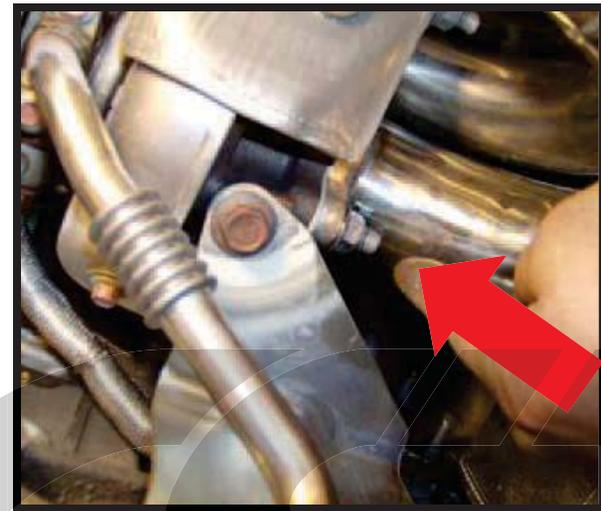


Figure 3a

3. CorkSport Catted Downpipe Installation

- a) From the bottom of the car install the new CorkSport downpipe onto the studs of the turbo with the original or new gasket. Put some anti seize on the studs to make installation of the nuts easier. Once the downpipe is on the studs, install one nut on the lower-forward stud (shown in [Figure 3a](#)).



YOU MUST install this nut before tightening the rest or there will not be enough clearance between the downpipe and stud to insert the nut. Leave the nut a little loose to give you some room to continue installing the downpipe.

3. CorkSport Catted Downpipe Installation Continued...

- b) Install the remaining four (4) 14mm headed nuts and tighten all of the nuts in a crisscross pattern to 39-46 ft/lbs.
- c) Install the provided M10 bolts and washers into the rear flange of the catted down pipe, using a 17mm socket and wrench. Be sure to use the supplied 80mm gasket between the flanges (see Figure 3b for an illustration of the hardware stack up). Tighten to 35-40 ft-lbs.

- d) Install the O2 sensor extension into the lower O2 plug on the factory wiring harness. (Figure 2g)
- e) Install the lower O2 sensor by putting a small amount of anti-seize on the threads and slowly threading it into the bung. Install the O2 sensor into the bung that is located after the catalytic converter. Connect the lower O2 sensor plug into the O2 sensor extension.



Note how the wiring is routed so that it will not come in contact with the downpipe or any other hot exhaust parts.

- f) Reinstall the front chassis brace by reinstalling the four (4) 17mm Head Hex Nuts (see Figure 2b and Figure 2c for bolt location reference). Torque the 17mm Nuts to 55-79 ft lbs.

- g) Re-install the alternator with the three (3) 14mm bolt and tighten them to 16-22 ft-lbs (see in Figure 2o).

- h) Re-connect the electrical plug into the alternator and 12mm nut on the alternator. (Figure 2n)

- i) Re-install the accessory drive belt on its original path. (Figure 2m)

- j) Re-install the engine cover in the passenger side wheel well. (Figures 2i-2l)

- k) Re-install the passenger side wheel. Torque the wheel to 65-80 ft-lbs.

- l) Reinstall the upper O2 sensor by putting a small amount of anti-seize on the threads and slowly threading it into the downpipe. Re-route the wire harness (shown in Figure 3c) by connecting the wiring coil which was earlier removed from the factory downpipe into the available hole on the firewall (shown with the red arrow in Figure 3c). Reconnect the O2 sensor plug to the wiring harness.

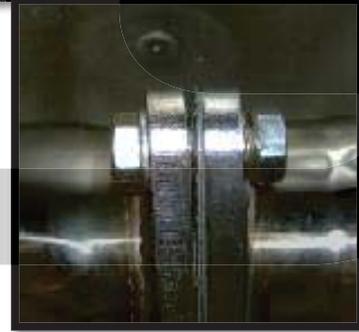
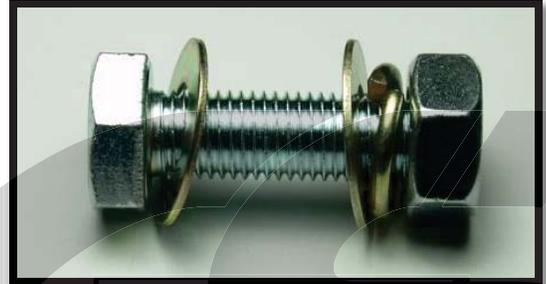


Figure 3b



Figure 3c

3. CorkSport Catted Downpipe Installation Continued

- n) Reinstall the exhaust manifold heat shield to keep the heat from the downpipe and turbo away from your top mount intercooler. Torque them hand tight (10 foot pounds). (Figure 1e)
- o) Install the Alternator shield (see Figure 2n).
- p) Reinstall the rear intercooler mount bracket by reinstalling the two (2) 12mm headed nuts (see Figure 1d).
- q) Reinstall the intercooler into the hot and cold charge couplers and over the mounting studs. Tighten the coupler hose clamps and pull on intercooler to test tightness of fit. If the intercooler can pull out or move, it's not tight enough. Install the 12mm nuts over the studs and tighten to ~20 ft-lb of torque. (see Figure 1c). (Figure 1b shows the hot and cold side pipes)
- r) Install the recirculation valve hose and reinstall the hose clamp. Install recirculation vacuum line and reinstall hose clamp. (Figure 1b)
- s) Install the intercooler cover, ensuring that the clasp in the back is firmly latched over the feature on the intercooler and reinstall the two (2) 10mm Hex Head bolts. Tighten to hand tight. (Figure 1a)



This completes the installation of your Downpipe. Bring the car down off the jack stands and start the car. Use a flashlight to check under the car to ensure that no visible exhaust is leaking and listen for leaks (usually a whispering tick sound at the flange). Look at the connection that you made under the vehicle and also at the turbocharger. If there are leaks, 99% of the time a flange has been over tightened or is misaligned. There may be a burning off smell as the downpipe is heated for the first time. This smell will go away after some driving. The Catted Downpipe should not trigger a Check Engine Light (CEL). If a CEL occurs, verify that the O2 sensors are installed properly. Check out our [knowledgebase](#) for additional install information

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 gain through the RPM band.

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.