

INSTALLATION INSTRUCTIONS



CORKSPORT 3.5" **Downpipe** *2007-2013 Mazdaspeed 3*

PART #: AXL-6-114-1X

Need Help With Your Installation? Call (360)260-CORK



*We absolutely, positively,
deliver - every time.*

CORKSPORT.COM




CORKSPORT 3.5" **Downpipe** 2007-2013 Mazdaspeed 3

PRODUCT DESCRIPTION:


Thank you for purchasing a CorkSport 3.5" Downpipe for your Mazdaspeed3. The modular design is both efficient and easy to install. The larger 3.5" diameter performs great works with all standard OEM fit Cat Back Exhaust using a donut gasket.


Please let us know your feedback of the by submitting a review at: <https://corksport.com/mazdaspeed-3-3.5-to-3.0-downpipe-only-catted-and-catless.html>

PRE-INSTALLATION NOTES:

 **Verify that the car is on a level surface before proceeding. Use appropriate load rated jack stands to support the vehicle.**

 **These instructions were written for reference only and the use of a factory service manual is recommended.**

 **High Pressure Fuel Pump (HPFP) Internals are required to safely operate the CS 3.5" Downpipe. A re-tune is also strongly recommended to safely operate the CorkSport 3.5" Downpipe. We recommend contacting a professional tuner.**

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

 **These instructions were written using a 2013 Mazdaspeed 3. GEN1 MS3 will be similar.**

MATERIALS & TIME:

GENERAL INFO:



Time Est:
5hr



Difficulty:
4/5



CEL:
Yes



Warranty:
2-Year



PARTS LIST:

- One (1) CorkSport 3.5" Downpipe Bellmouth
- One(1) CorkSport 3.5" Catted Downpipe to 3" Exhaust
- OR
- One(1) CorkSport 3.5" Catless Downpipe to 3" Exhaust
- One(1) CorkSport 3.5" Downpipe Turbocharger Gasket
- One(1) CorkSport 4" V-band Clamp
- One(1) CorkSport 3.5" Exhaust Donut Gasket
- Five (5) CorkSport Downpipe Mounting Studs
- Five (5) CorkSport Downpipe Lock Nuts
- Two (2) M10x1.25x70mm Bolts
- Two (2) M10x1.25 Nuts
- Two (2) M10, 31mm OD Washers
- One(1) CorkSport Lower O2 Harness Extension

TOOLING LIST:




- Channel Lock Pliers
- Needle Nose Pliers
- 8mm Socket & Wrench
- 10mm Socket & Wrench
- 12mm Socket & Wrench
- 13mm Socket & Wrench
- 14mm Socket & Wrench
- 17mm Socket & Wrench
- Ratchet Wrench (3/8" & 1/2")
- 4" Extension (3/8" & 1/2")
- 12" Extension (3/8" & 1/2")
- Oxygen Sensor Socket
- Torque Wrench
- High Temperature Anti-Seize
- Hydraulic Jack
- Jack Stands

ORDER OF OPERATIONS & TABLE OF CONTENTS:

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PRE-INSTALLATION NOTES:

-  Use of a non-catted 3.5" downpipe with a K04 or internally wastegated CST4 may result in boost spiking and/or boost creeping. The highly efficiency nature of a larger 3.5" downpipe increases the efficiency of the turbocharger beyond the ability of the internal wastegate to control.
-  BNR and ATP stock flange turbos have not been tested, use at your own risk.
-  If you are using a CST turbo with the EWG turbine housing, you will need a different EWG dumptube which can be purchased at CorkSport.com or call in and ask for the GEN-6-575-17 dumptube kit. With this kit you get a new dumptube and the EWG itself will connect directly to the EWG housing.

DETAILED INSTRUCTIONS:

1. Removing the TMIC



These instructions show a vehicle with a top mount intercooler. Your setup will likely be slightly different and you can skip this section if you have a FMIC installed.



We strongly recommend a sharpie and plastic bags to label all hardware throughout install.

- a) Remove the top mount intercooler (TMIC) cover by removing the two 10mm bolts (red circles in Figure 1a).
- b) Remove the clamps for the throttle body and turbo boost tubes from the intercooler. Use a 10mm socket to loosen the clamps (red circles in Figure 1b).
- c) Detach the bypass valve (BPV) signal hose from the BPV. Release the spring clamp and then remove the signal hose from the BPV (blue arrow in Figure 1b). Leave the bypass valve attached to the intercooler pipe.

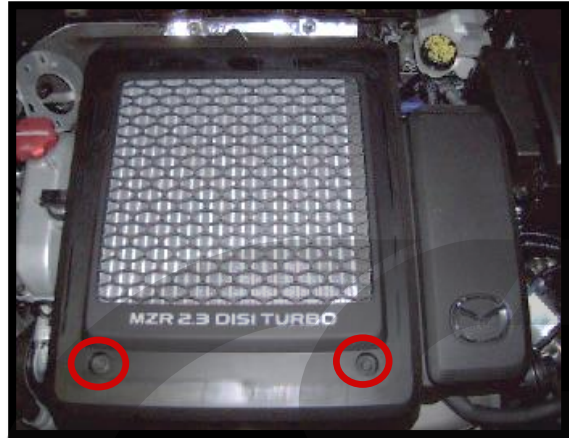


Figure 1a

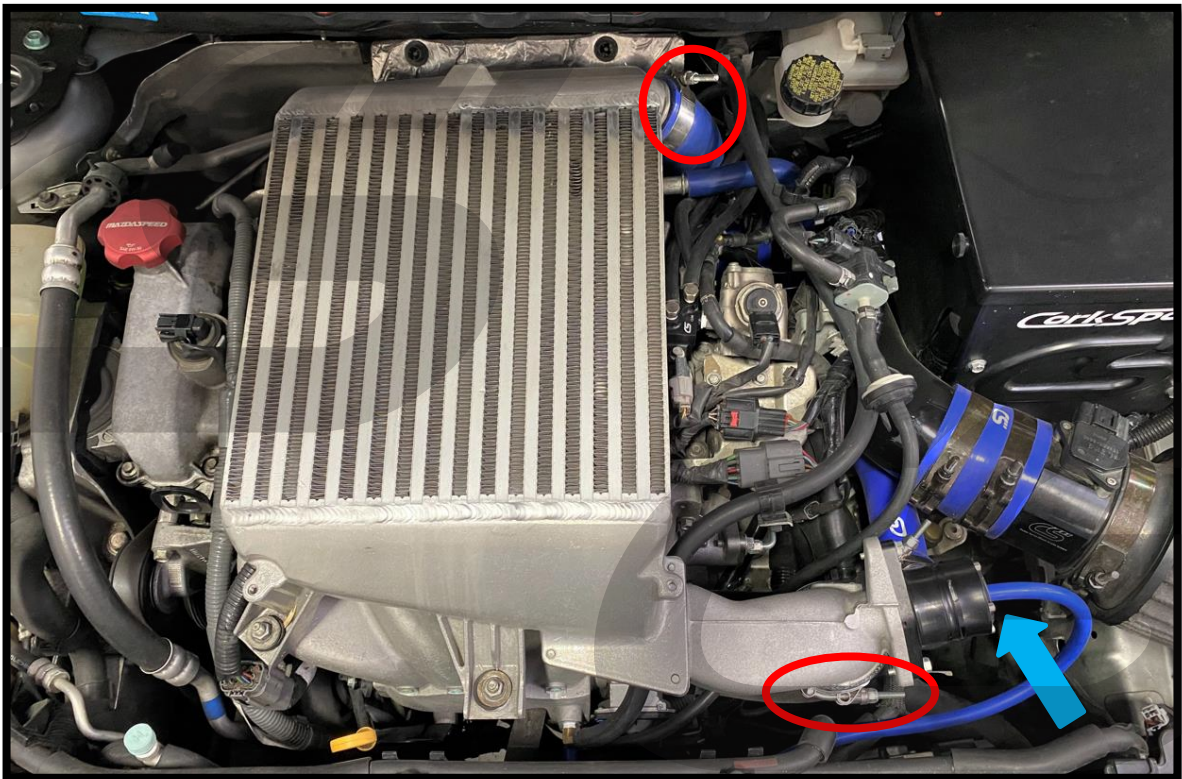


Figure 1b

DETAILED INSTRUCTIONS:

1. Removing the TMIC (cont.)

- d) Remove the three (3) 12mm nuts fastening the intercooler to the top of the engine (red circles in Figure 1c).
- e) Remove the OEM intercooler from the vehicle by pulling upwards to release it from the boost tubes & mounting studs.



Figure 4b

2. Removing the OEM Heatshields

- a) Remove thin silver firewall heat shield shown with the green arrow in Figure 2a. There are three plastic clips that unscrew.
- b) Remove the six 8mm bolts circled in red in Figure 5a, then remove the heat shield.

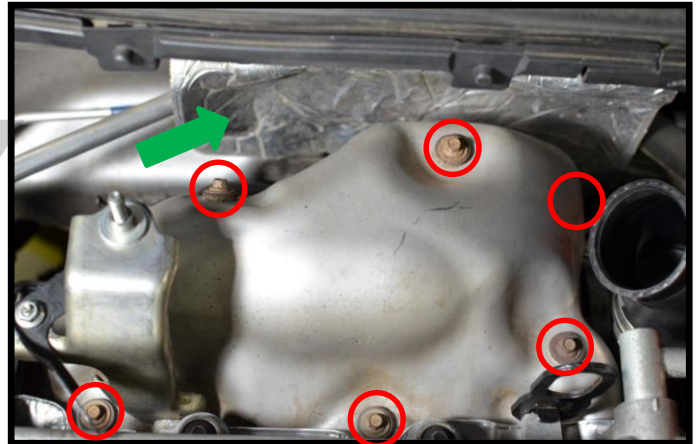


Figure 2a

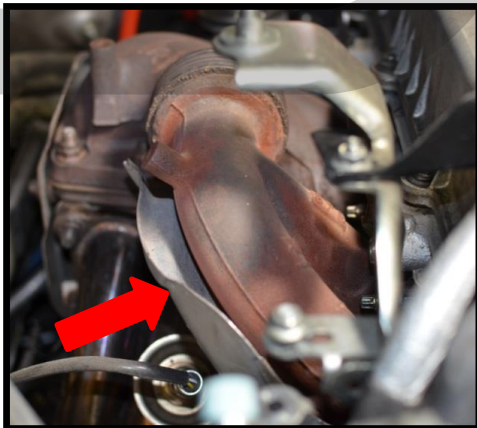


Figure 2b

NOTE Step 2c is optional for downpipe install/removal. However, we strongly recommend doing so for ease of access to downpipe bolts.

- c) Remove the three 8mm bolts holding the lower heat shield shown with the red arrow in Figure 2b and the red circles in Figure 2c on the next page. Then remove the heatshield.

DETAILED INSTRUCTIONS:

3. Removing the Downpipe



Vehicle shown had a CorkSport downpipe installed. Disassembly of OEM or other downpipe will be similar.

- Using a 13mm wrench or socket and ratchet, remove the rear TMIC mounting bracket. Remove the two bolts shown with **red arrows** in **Figure 3a**. Remove the two wiring clips attached to the bracket, then remove the bracket.
- Remove the upper oxygen sensor using an oxygen sensor socket and 1/2" drive ratchet. **Circled in red** in **Figure 3b**.
- Remove the three 14mm nuts **circled in red** and shown with the **red arrow** in **Figure 3c**.

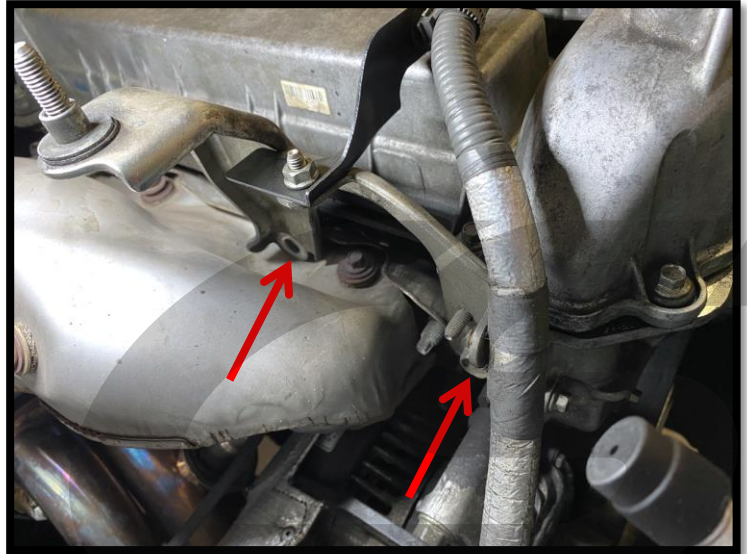


Figure 3a



Figure 3b

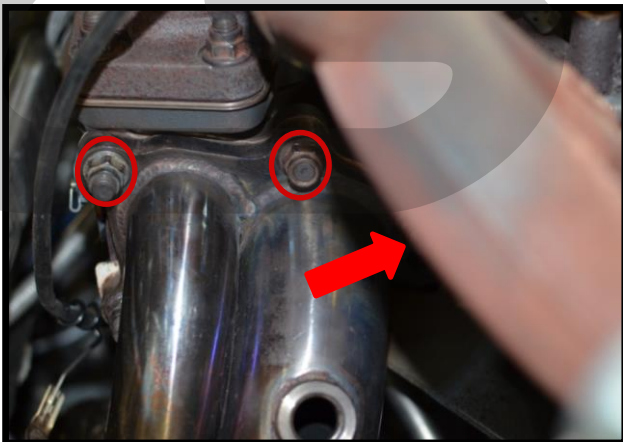
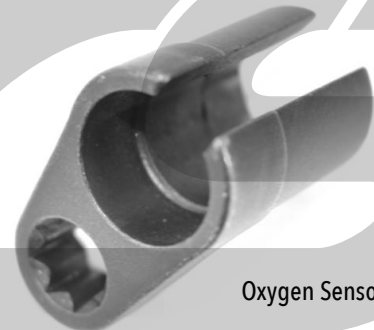


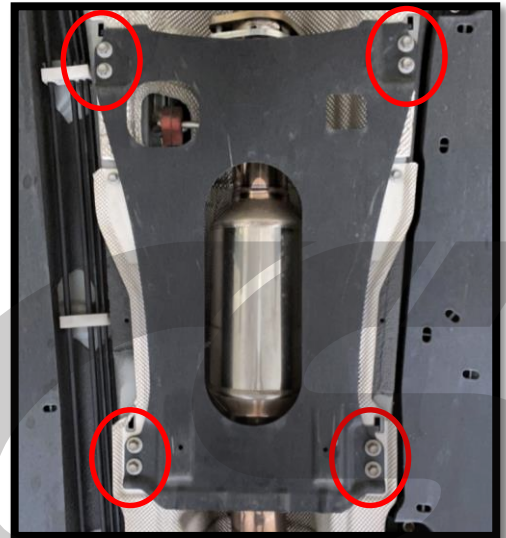
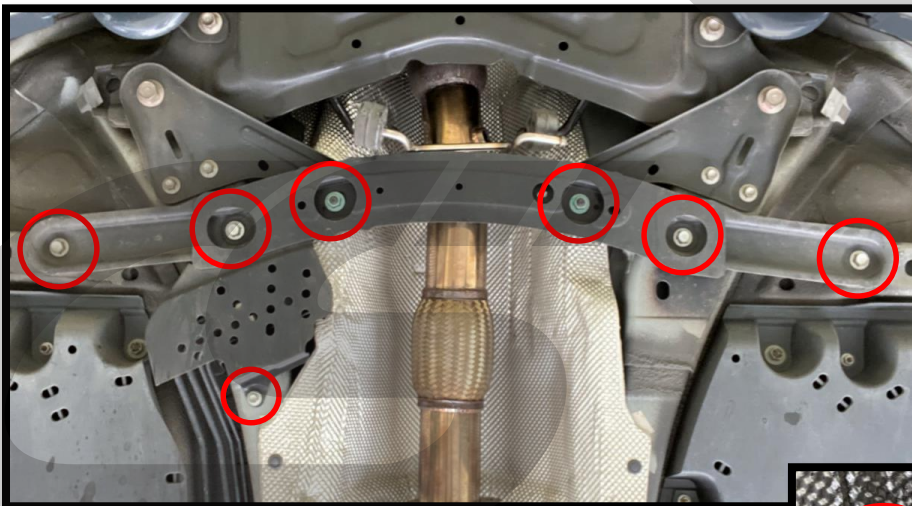
Figure 3c



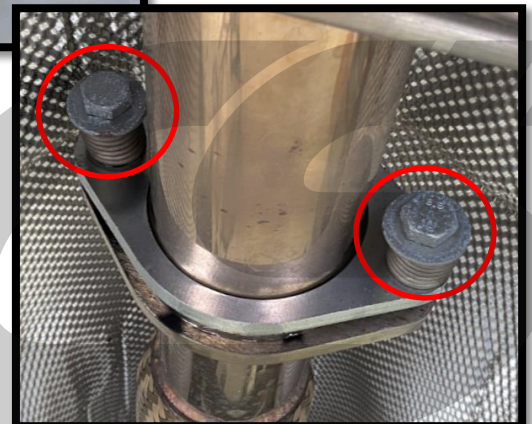
Oxygen Sensor Socket

DETAILED INSTRUCTIONS:**3. Removing the Downpipe (cont.)**

- d) Lift your vehicle using a hydraulic jack & jack stands. Follow lifting recommendations & jack stand locations located in your owners manual.
- e) Remove the center chassis brace by removing the eight 12mm bolts circled in red in Figure 3d.
- f) Remove the forward chassis brace by removing the six 17mm bolts/nuts and one 10mm bolt circled in red in Figure 3e.

**Figure 3d****Figure 3e**

- g) Remove the two 17mm (14mm for OEM) bolts between the downpipe and the catback exhaust (CBE), circled in red in Figure 3f. (If applicable) Remove the 17mm (14mm for OEM) bolts between the race pipe and upper downpipe.

**Figure 3f**

DETAILED INSTRUCTIONS:

3. Removing the Downpipe (cont.)

- h) Remove the lower oxygen sensor with an oxygen sensor socket and ½" ratchet, **circled in red** in **Figure 3g**. If installing a **catted** downpipe, trace the O2 sensor wiring to the plug and remove the sensor and wiring completely. You will install an extension harness later.
- i) Remove the exhaust hangers from the downpipe, shown with the **red arrows** in **Figure 3g**.



If removing an OEM downpipe, you will have additional bolts supporting the downpipe & a downpipe support bracket. Remove both of these items before continuing.



Also when removing an OEM downpipe, double check that no O2 sensor wiring is connected to the downpipe before continuing.

- j) Remove the lower remaining two 14mm nuts from the downpipe, **circled in red** in **Figure 3h**.
- k) The downpipe can now be removed from the vehicle.
- l) Finally, remove the downpipe gasket from the turbo.

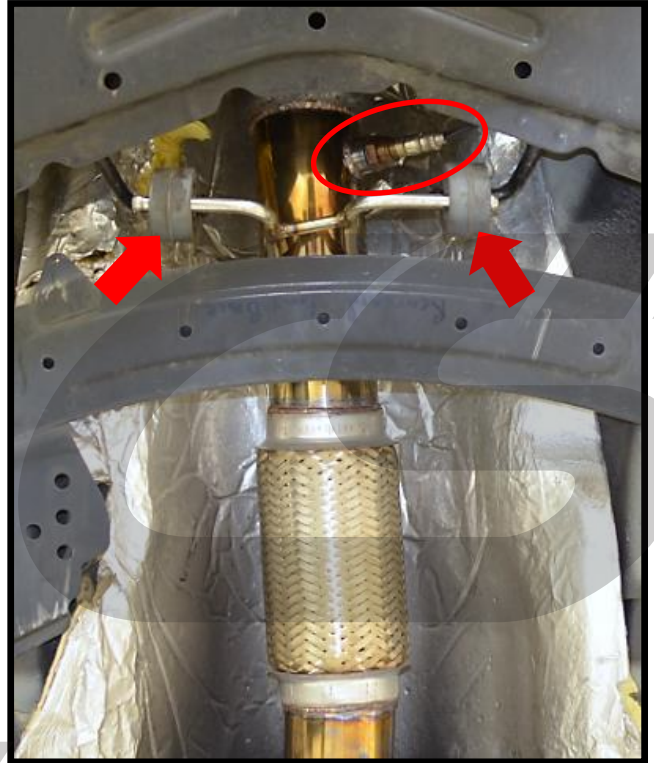


Figure 3g

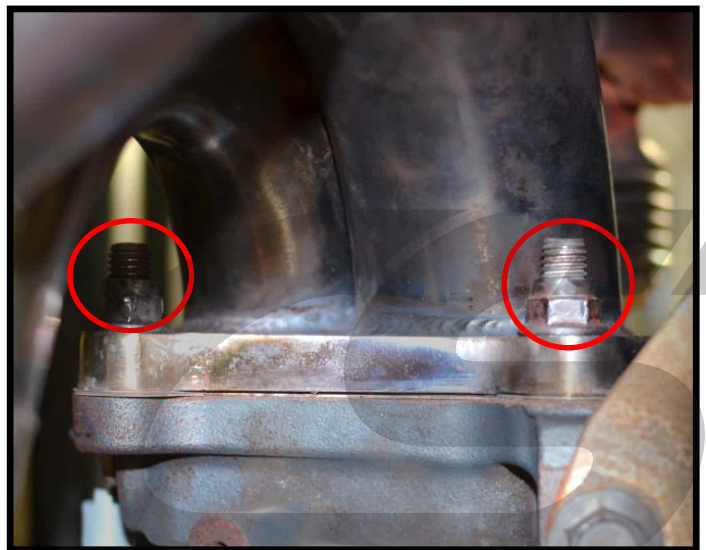


Figure 3h

DETAILED INSTRUCTIONS:

4. Installing the CorkSport 3.5" Downpipe

- NOTE** Included in your downpipe kit are replacement downpipe mounting studs and nuts. We recommend replacing all old studs/nuts with the included ones, however, if in good condition, the old hardware can be reused.
- NOTE** The provided studs and nuts are M10x1.5 threads, verify your turbo matches thread pitch.
- NOTE** If you are using an external wastegate (EWG) on a CorkSport turbo with EWG housing, remove the EWG and the EWG mounting elbow. For proper fitment with the 3.5" downpipe, the EWG should be mounted directly to the CS EWG housing (no mounting elbow). We offer an EWG dump tube for this setup.

- a) Install the supplied turbocharger gasket onto the studs of your turbocharger. Gasket shown in **Figure 4a**. It will only install in one orientation.
- b) Install the CS 3.5" downpipe bellmouth. Slide it over the turbocharger studs and secure with the five nuts. Shown with red markings in **Figure 4b**.
- c) Tighten all downpipe bellmouth mounting nuts to **39-46ft-lbs.**



Figure 4a

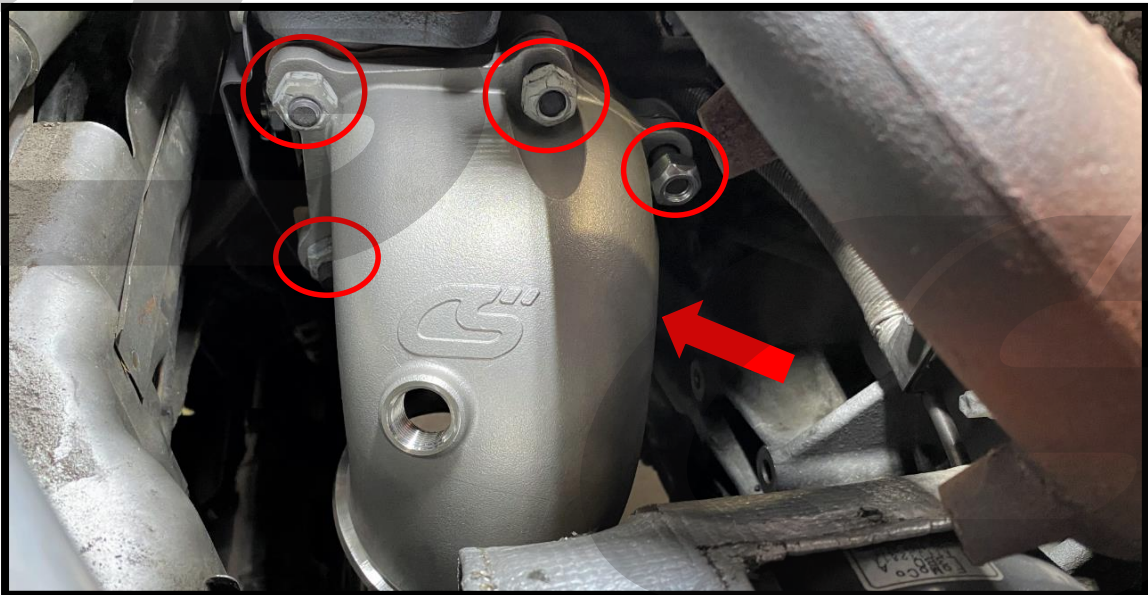


Figure 4b

DETAILED INSTRUCTIONS:

4. Installing the CorkSport 3.5" Downpipe (cont.)

- d) Lift the CS downpipe into position and install it on the exhaust hangers. Shown disconnected and circled in red in Figure 4c.



Typically, it is easier to install the rubber hangers onto the downpipe first and then install the hangers and downpipe on the vehicle at the same time as shown.

- e) Place a supplied V-band clamp over the end of the downpipe, near the bellmouth. Shown with red arrow in Figure 4d. The orientation shown will have the most clearance and will be the easiest to tighten.

- f) Line up the CS downpipe with the bellmouth. Use the clamp installed previously to secure the downpipe. Only tighten enough to keep the downpipe in place, the clamp will be fully tightened later. Shown complete in Figure 4e. The downpipe should still be able to rotate.

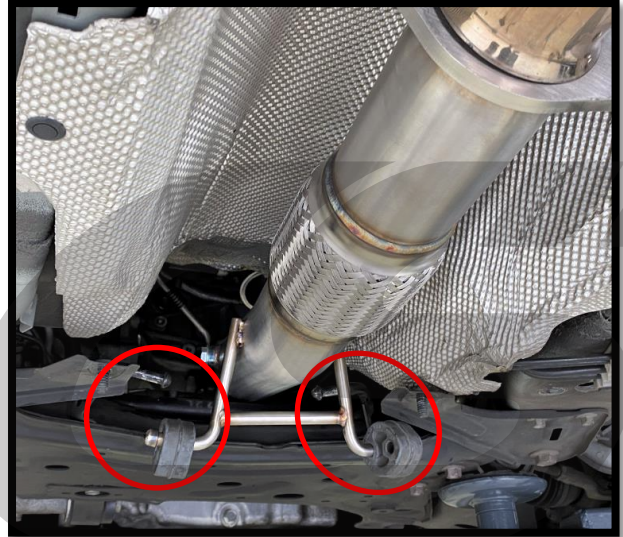


Figure 4c



Failure to properly line up the V-band flanges will result in exhaust leaks.



Figure 4d

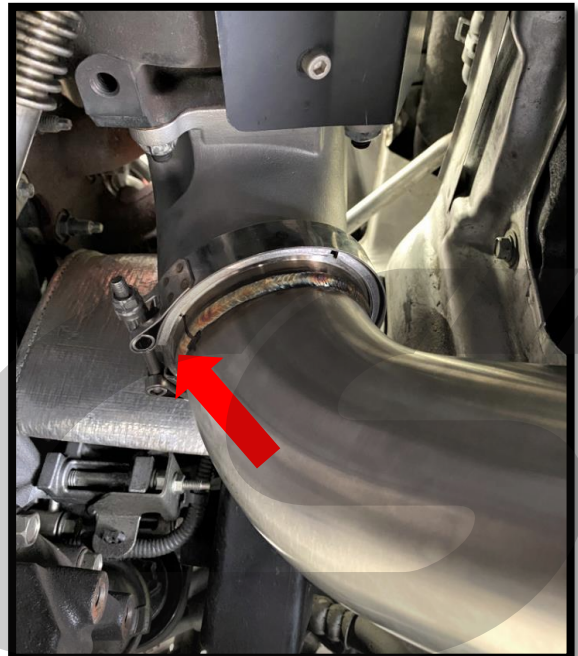


Figure 4e

DETAILED INSTRUCTIONS:

4. Installing the CorkSport 3.5" Downpipe (cont.)

- g) Install the supplied donut gasket onto the end of the CS 3.5" downpipe. Shown completed with **red arrow** in **Figure 4f**.
- h) Using the supplied hardware and OEM springs, attach the CS 3.5" downpipe to the midpipe of your exhaust. Tighten using a 17mm socket and ratchet until there is a ~1mm gap between the coils of the spring. Shown in progress with **blue arrows** in **Figure 4f**.

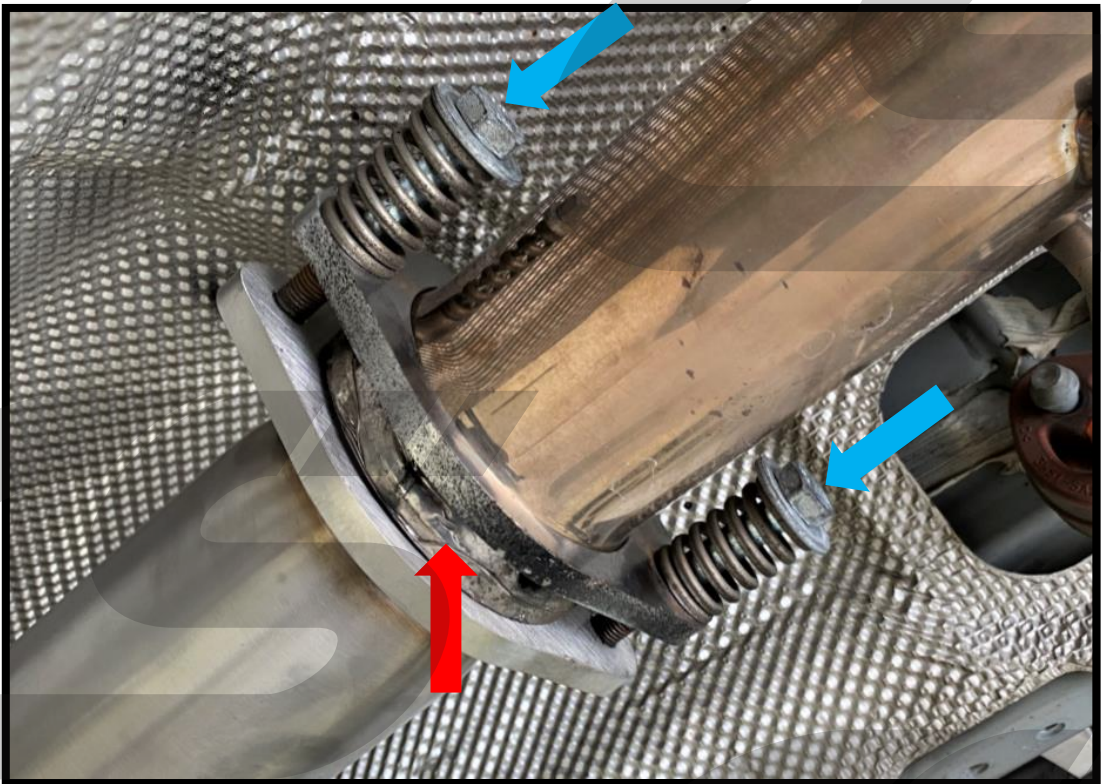


Figure 4f

- i) Attempt to wiggle/rotate the downpipe near the bellmouth to help the v-band connection settle into position.
- j) Once happy with fitment, tighten the v-band clamp to **8-12ft-lbs** with a 10mm deep socket & ratchet.

DETAILED INSTRUCTIONS:

4. Installing the CorkSport 3.5" Downpipe (cont.)

- k) **CATTED DOWNPIPE ONLY:** Install the supplied O2 sensor extension harness into the lower O2 sensor wiring.
- l) **Install the lower O2 sensor into the lower port of the CS 3.5" downpipe.** Use a small amount of anti-seize on the threads and tighten using an O2 sensor socket. Do not over tighten the sensor, approximately ¼-½ turn past hand tight is plenty.
- m) **Plug in the lower O2 sensor into the OEM wiring harness or the CS O2 extension harness (catted DP only).** Ensure the wires are secured away from heat and so they will not drag on the ground.
- n) **Install the upper O2 sensor into the port on the CS 3.5" downpipe bellmouth.** Use a small amount of anti-seize on the threads and tighten using an O2 sensor socket. Do not over tighten the sensor, approximately ¼-½ turn past hand tight is plenty.
- o) **Plug in the upper O2 sensor into the OEM wiring harness (if removed).** Ensure the wires are secured away from heat.

5. Vehicle Reassembly & First Start Up

- a) Follow the instructions in reverse order to complete the vehicle assembly. Refer to torque specs below.
 1. Reinstall the chassis braces & TMIC mount removed in Section 3.
 2. Reinstall the heat shields removed in Section 2.
 3. Reinstall the intercooler & shroud removed in Section 1.
 4. If present, install your EWG on your CS EWG turbine housing and install your new dump tube following the dump tube instructions.

b) Torque Specs:

- 8mm Nut/Bolt 8-10 ft-lbs
- 10mm Nut/Bolt 15-17 ft-lbs
- 12mm Nut/Bolt 19-21 ft-lbs
- 14mm Nut/Bolt 30-32 ft-lbs
- 17mm Nut/Bolt 27-39ft-lbs

- c) **Flash your tune for the new downpipe setup.**
- d) **Start the vehicle. During first startup, check for exhaust leaks at the turbocharger, v-band connection, and midpipe exhaust connection.** Loosen and re-tighten components as necessary. On rare occasions, the bellmouth will need to be loosened from the turbocharger & shifted slightly to ensure a good seal at the v-band connection.



This completes the installation of your CorkSport 3.5" Downpipe. We recommend checking bolt & v-band clamp tightness after a week of driving. Enjoy the upgraded horsepower, added flow, and new sound!

WHAT'S NEXT?

CorkSport Camshafts

The CorkSport Mazdaspeed Performance Camshafts are developed with the latest design, manufacturing, and casting technologies and ground to CNC precision for the best performance for your Mazdaspeed. Near factory idling cams for the daily driver and even the aggressive track driver bringing improvement in throttle response, horsepower, and torque to your Mazdaspeed.



CorkSport 13" Big Brake Kit

The Stage 2 CorkSport 13" Big Brake Kit for Mazdaspeed 3 provides a drastic improvement to braking by offering improvements to each component in the system. Larger rotors, 4-piston calipers, stainless steel brake lines, upgraded pads, and everything you need to install on your Speed 3 is included in this kit. If the CorkSport Big Brake Caliper Kit was not enough for you and your MS3, look no further than the CorkSport 13" BBK.

Also available for Mazdaspeed 6!



CorkSport Front Mount Intercooler Kit

Cool down your boost air temperatures without compromise with the CorkSport Front Mount Intercooler Kit with a small or large intercooler. Featuring all new piping for better fitment and performance, the CorkSport Front Mount Intercooler Kit comes standard with the high flow small core or the optional big core with crash bar. Whether you are sporting a few bolt-ons or a ground breaking big turbo build, this FMIC Kit has the performance to support your goals.

