

Performance Installs

AXO-6-100/-101-XX Cat Back & Axle Back Exhaust

Installation Instructions for the CorkSport Performance Cat Back and Axle Back Exhaust for the 2019+ Mazda 3 and 2020+ CX-30.

Written By: Cody Dunton



INTRODUCTION

In this installation guide we have provided step by step instructions to install the CorkSport Performance Cat Back and Axle Back Exhaust.

Advisory:

- Working under the vehicle requires a safe and sturdy location for the vehicle to sit on jackstands.
- Exhaust will be hot after vehicle operation let the vehicle and/or direct a fan on the rear section of the exhaust to cool before attempting to work on the vehicle.

TOOLS:

- Hydraulic Jack (1)
- Jack Stand (2)
- 3/8" Drive Ratchet (1)
- 3/8" Torque Wrench (1)
- 14mm Socket - Deep (1)
- 14mm Wrench (1)
- 15mm or 9/16" socket (1)
- 15mm or 9/16" wrench (1)
- 17mm Socket - Deep (1)
- 17mm Wrench (1)
- Exhaust Hanger Pliers (1)
- Silicone Lubricant Spray (1)
- 8mm Wrench (1)
- T30 Torx Bit (1)
- 1/4" Drill Bit (1)
- Cordless Power Drill (1)
- Channel Lock Pliers (1)
- Blue Painters Tape (1)
- Bungee Cord (1)

PARTS:

- AXO-6-101-21 CorkSport Axle Back Exhaust (1)
Not included if Midpipes purchased alone.
- AXO-6-101-3X CorkSport Exhaust Tips (2)
Not included if Midpipes purchased alone.
- GEN-4-100-63.5 Exhaust Clamp (2)
Not included if Midpipes purchased alone.
- AXO-6-100-2X Front Midpipe Section (1)
Not included if Axle Back purchased alone.
- AXO-6-100-2X Rear Midpipe Section (1)
Not included if Axle Back purchased alone.
- AXO-6-10X Hardware Kit (1)

Step 1 — Getting Started



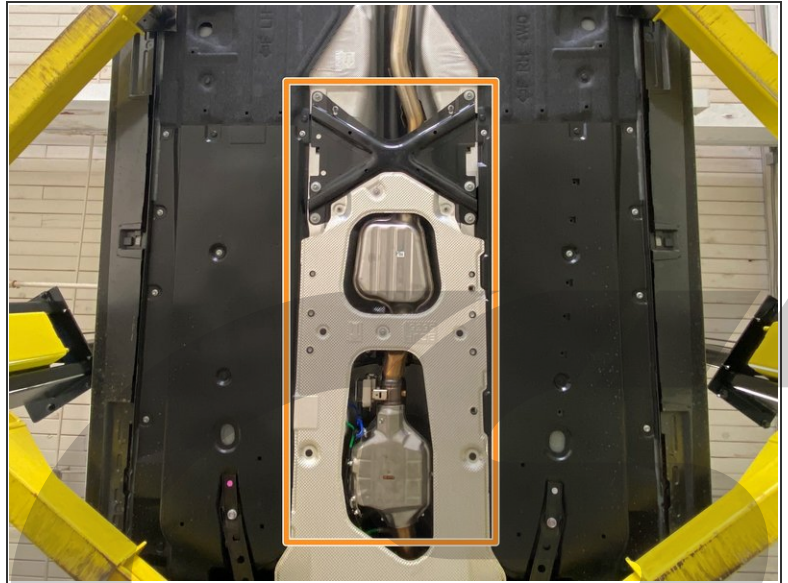
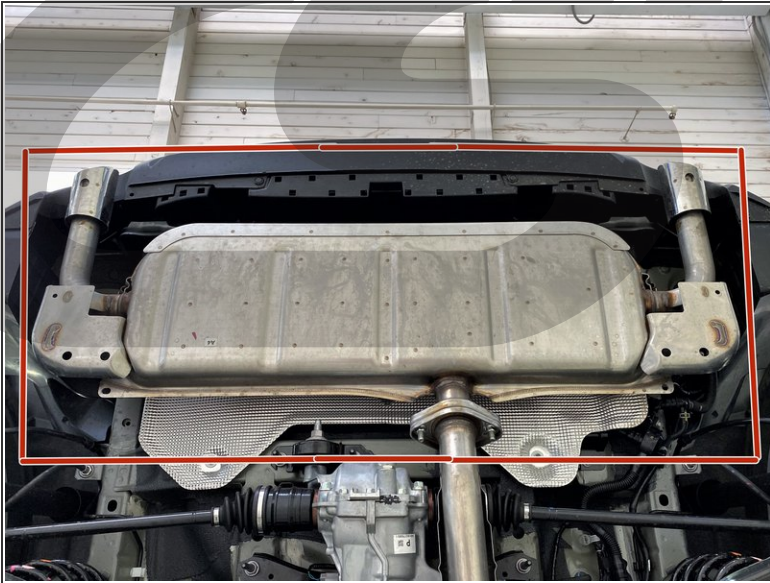
- First and foremost; **THANK YOU** for becoming a part of the CorkSport Family. We hope to bring you the highest level of Parts, Customer Service, & Support
- ⓘ How To Use These Instructions
 - The instruction format will relate colored marking in the image to the color dot in the text to the right of the image
 - ⓘ Assistance from another person is recommended for some portions of the install.

Step 2 — What Exhaust are You Installing?



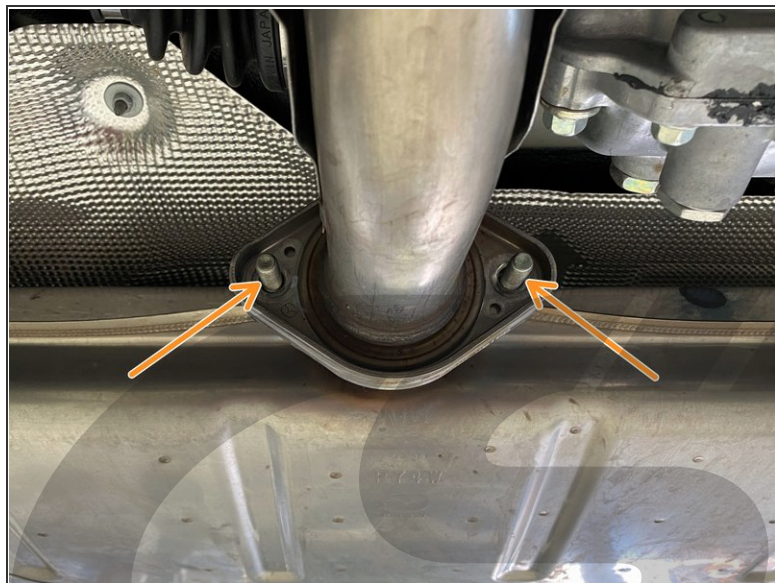
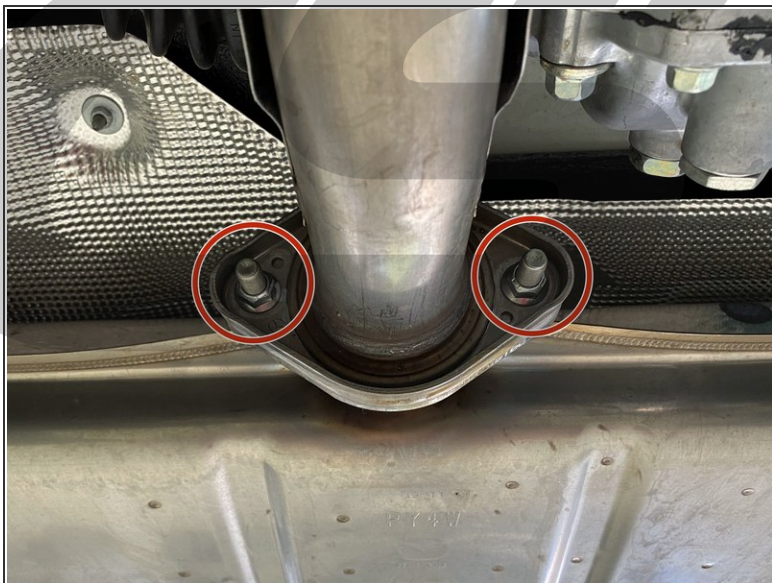
- If you are installing the CS Axle back or Cat back continue onto the next step.
- If you are installing the CS Midpipes only skip to **Step 7**

Step 3 — Lifting the Car



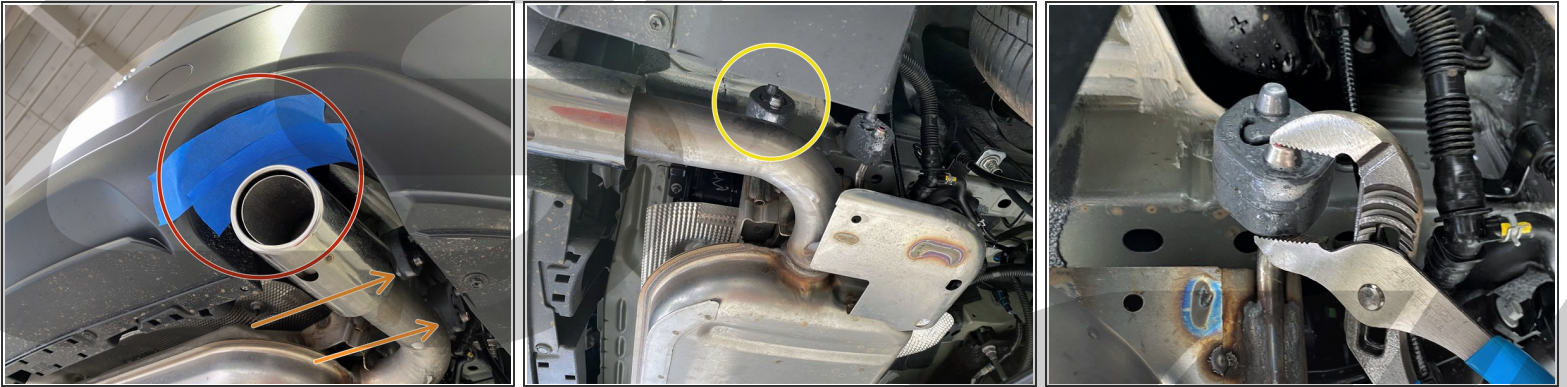
- ⚠ Ensure the vehicle is parked on a level surface before proceeding.
- ⚠ Be sure to reference your owner's manual for jack points and the jack manufacturer's instructions for proper practices.
- Start by lifting up the rear of the car using the hydraulic jack and jack stands.
- If installing the CorkSport Axle Back you will need to access the OEM axle back section as shown.
- If installing the CorkSport Cat Back, lift up the front of the vehicle to access the OEM midpipe section.

Step 4 — Unbolting the OEM Axle Back Exhaust



- Using a 14mm socket and ratchet, remove the two nuts that connect the OEM axle back section to the OEM midpipe section.
- Keep the OEM axle back section's studs inside the holes of the midpipe section. This helps support the axle back during removal.

Step 5 — Removing the OEM Axle Back Rear Mounts



- **OPTIONAL:** Now is a good time to use painters tape in the exhaust cutouts in your bumper as shown to prevent damage. This is optional but will prevent any scratches during removal & installation.
 - Spray the four rubber exhaust hangers with your spray lubricant. (WD40, silicone spray, or even glass cleaner works well). The hangers are located on the sides of the exhaust as shown.
 - Using channel lock pliers or exhaust hanger pliers, disconnect the OEM axle back exhaust from the rearmost rubber exhaust hanger. There is one on each side of the exhaust.
- i** The third image shows how to use channel lock pliers to remove the rubber hangers for reference. Exhaust hanger pliers are easier to use if available.

Step 6 — Removing the OEM Axle Back Front Mounts



- Your exhaust should be pivoted downward as shown.

⚠ For the next step support the axleback as you remove it from the final rubber hangers to keep it from falling to the ground or onto you. The easiest way is to get a friend to help or use a floor jack for support.

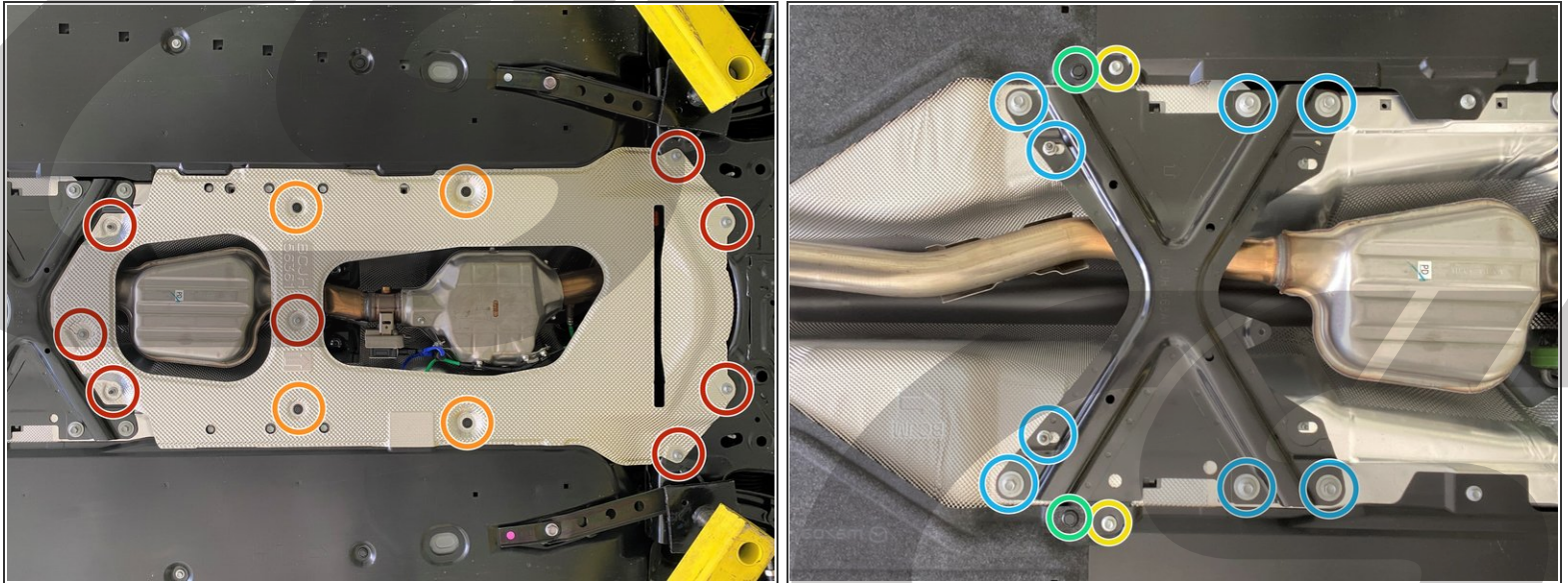
- Using channel lock pliers or exhaust hanger pliers, disconnect the OEM axle back exhaust from the two remaining rubber exhaust hangers, then remove the axle back from your vehicle.
- Upon removal, your vehicle will look like the third image.

Step 7 — What Exhaust are You Installing?



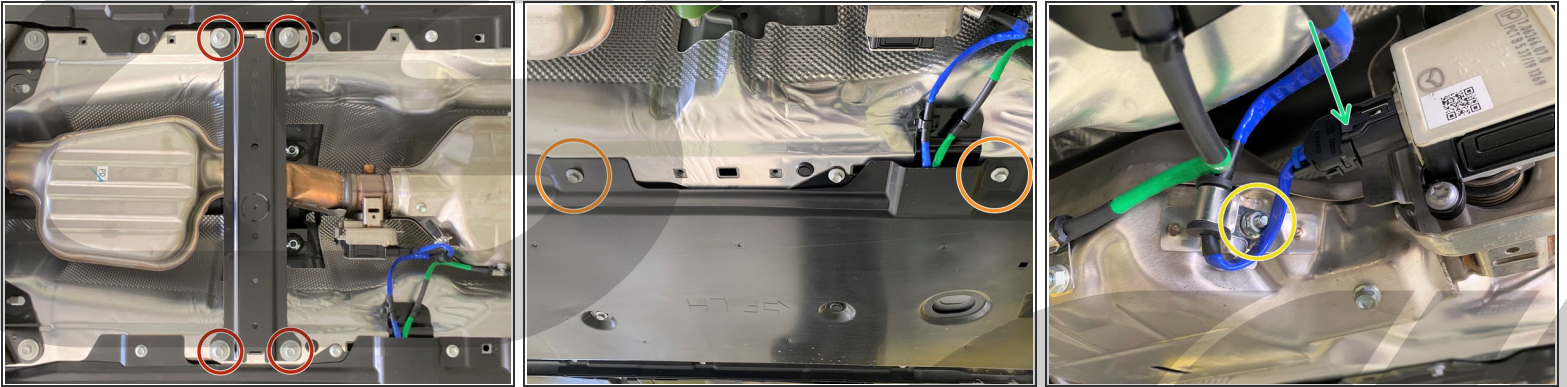
- ⓘ Steps 8-20 are for midpipe installations on **AWD** Mazda 3's.
- ⓘ Skip to **Step 22** if you are installing midpipes on a **FWD** Mazda 3
- ⓘ Skip to **Step 35** if you are installing the **Axleback** only.

Step 8 — Uninstalling the Midpipe Shield and Rear Brace



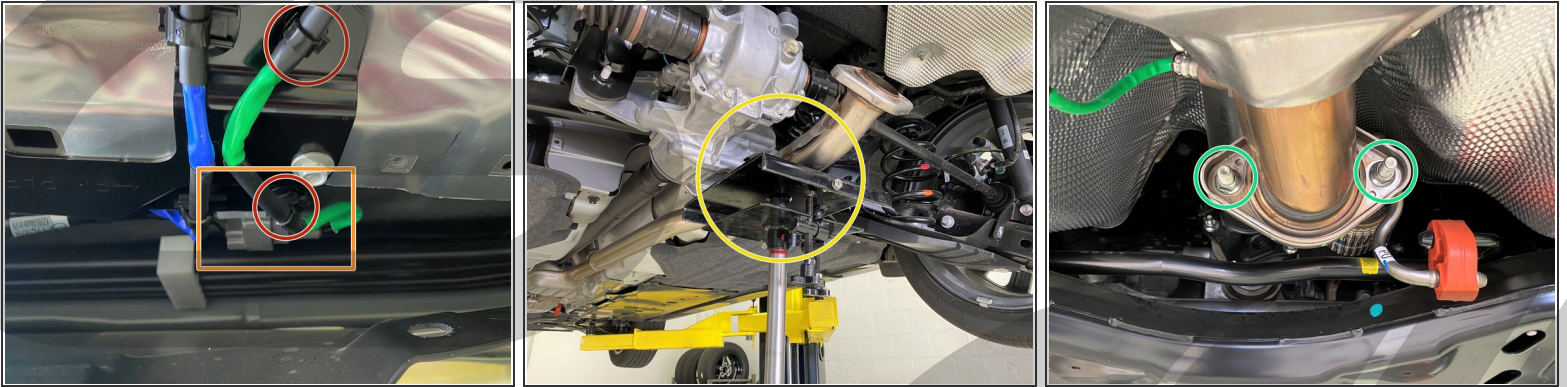
- Using the 10mm socket and ratchet, remove the 8 bolts circled.
 - ⓘ Some models have a shorter exhaust shield and only have 5 bolts
- Remove the 4 plastic push clips using a flathead screw driver to pry the center of the clip.
 - ⓘ When removing the final clips, hold the front of the shield to make sure it does not bend.
- Start to remove the rear brace by using the 10mm socket and ratchet again to remove the 2 bolts circled.
- Using the flathead screw driver pop out the 2 clips circled.
- Now use the 12mm socket and ratchet to remove the 8 bolts circled.
 - ⓘ Once all the hardware is removed, the brace will need to be slid to the rear of the car and then it can be removed.

Step 9 — Uninstalling the Midpipe Front Brace and Wiring



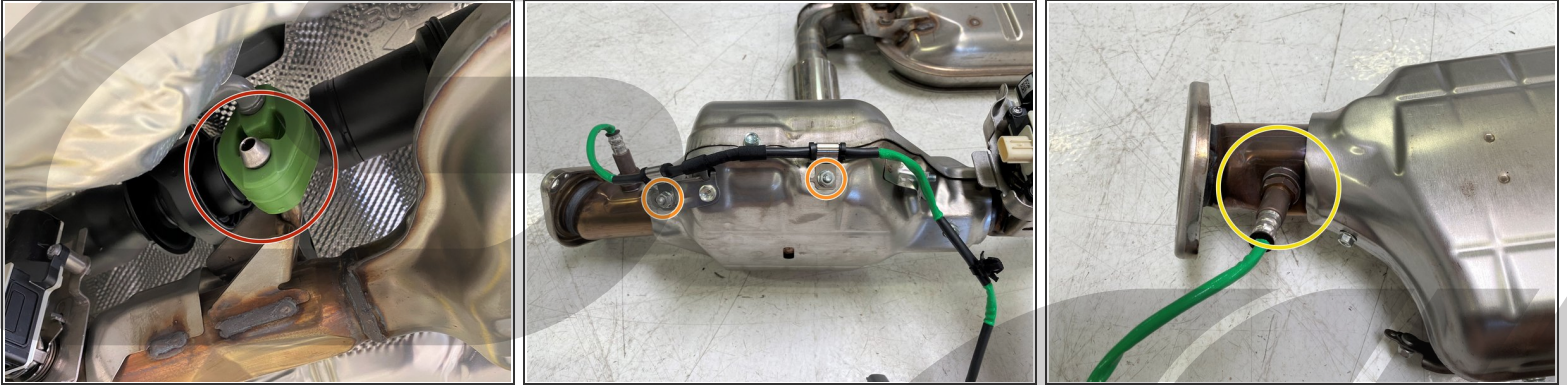
- Continuing to use the 12mm socket and ratchet, remove the 4 bolts circled.
- ⓘ Similar to the rear brace, slide the front brace to the rear of the car to remove.
- Unscrew the 2 bolts circled using a 10mm socket and ratchet.
- ⓘ The next two steps are only necessary if your car is equipped with cylinder deactivation.
- Unbolt the single 10mm nut securing the wiring for the cylinder deactivation valve motor.
- Unplug the connector by depressing the tab and pulling.

Step 10 — Uninstalling the O2 Wiring and Midpipe



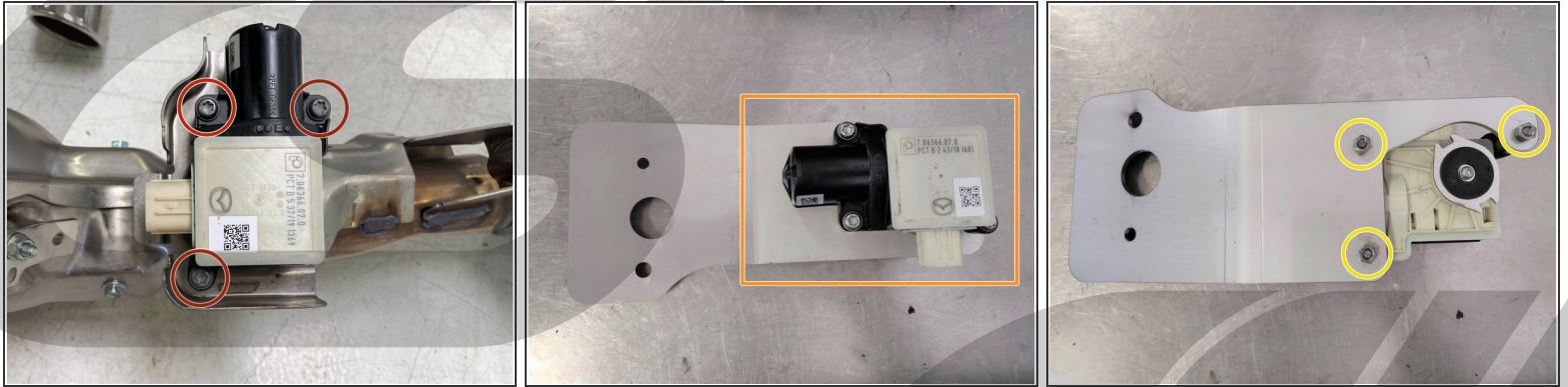
- Pull down the plastic cover and remove the 2 clips that hold the O2 wiring to the bracket by squeezing the tabs on the backside of the bracket towards the center using a flat head screw driver.
- Unplug the O2 sensor connector by pulling down the plastic cover and depressing the tab on the back side of the connector and pulling.
- Place a jack stand under the rear section of the midpipe to support it to make sure it does not fall when removing the midpipe.
- Using the 14mm socket and ratchet, remove the 2 nuts holding the midpipe to the downpipe.
 - ⓘ The studs in the downpipe may come out when undoing the nuts. This is common. When reinstalling you can either use the 2 extra exhaust bolts and washers included or the OEM hardware.

Step 11 — Uninstalling the Midpipe and O2 Sensor



- Spray the rubber exhaust hanger with your spray lubricant. (WD40, silicone spray, or even glass cleaner works well).
- Using channel lock or exhaust hanger pliers, remove the midpipe hanger.
- ⓘ Make sure to support the front of the midpipe by holding it up or by using another jack stand.
- Once the midpipe is removed, use the 10mm socket and ratchet to remove the 2 nuts that hold the O2 wiring to the midpipe.
- Remove the O2 sensor from the midpipe by using a 22mm wrench.

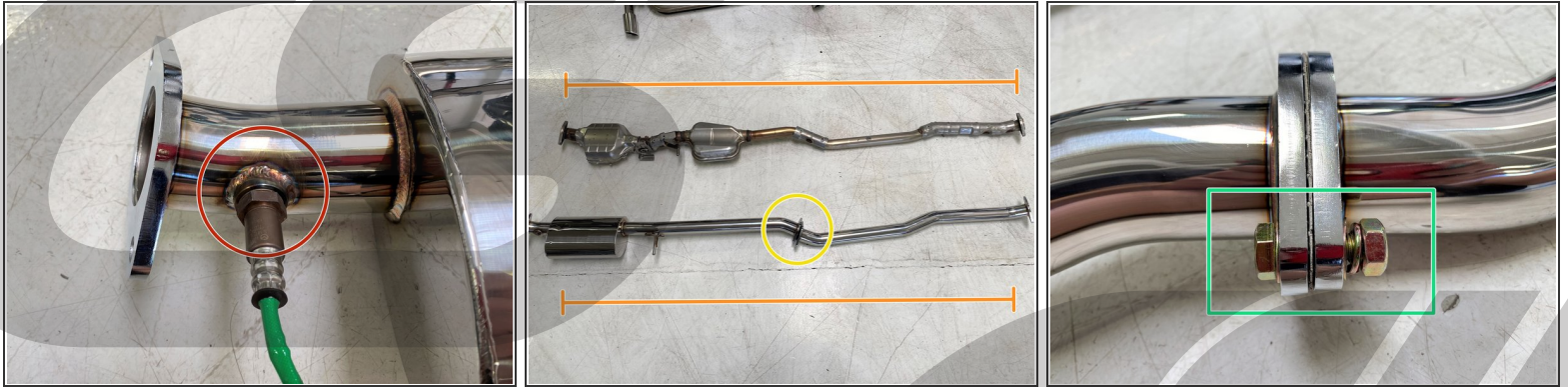
Step 12 — Removing and Installing the Cylinder Deactivation Valve Motor



i This step is only necessary if your car is equipped with cylinder deactivation.

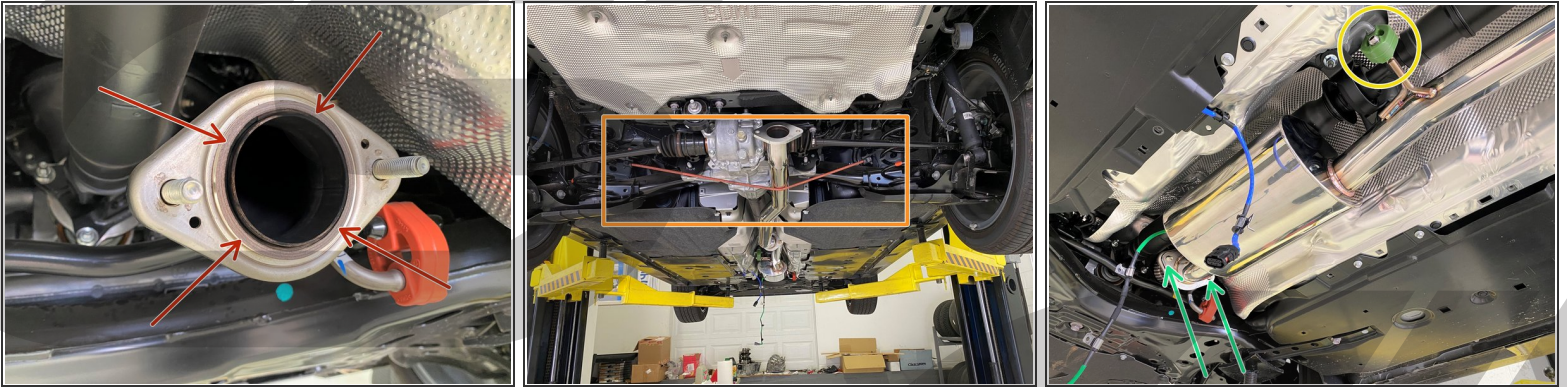
- Remove the three bolts holding the cylinder deactivation valve motor to the OEM midpipe by using a T30 Torx bit and an 8mm wrench.
- Take the included cylinder deactivation motor bracket and reinstall the motor using the OEM hardware as shown.
- Using the same T30 Torx bit and 8mm wrench tighten the 3 bolts until they are all hand tight.

Step 13 — Reinstalling the O2 Sensor and Laying Out the Midpipes



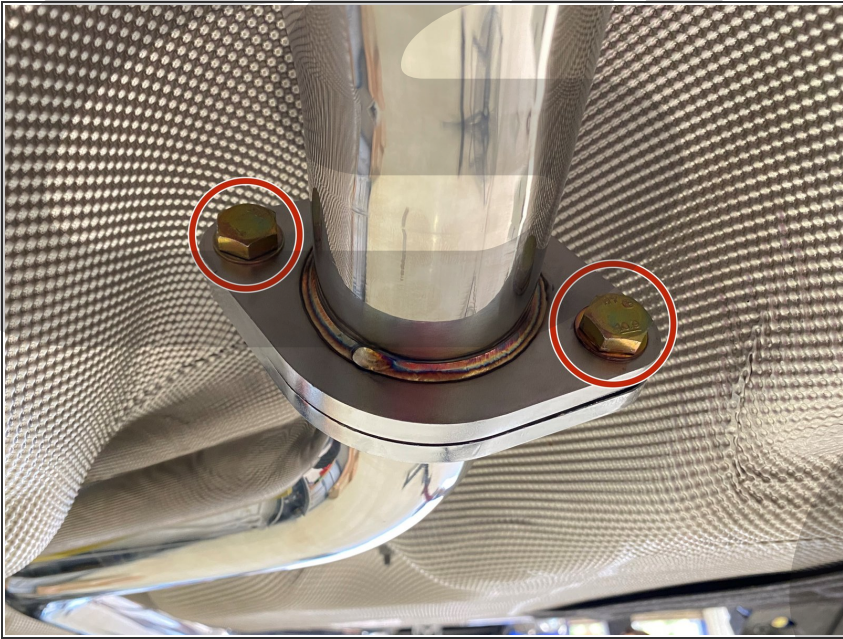
- Install the O2 sensor into the Corksport front midpipe section and tighten it with a 22mm wrench.
 - ⓘ We recommend applying some Anti-Seize to the treads of the O2 sensor for easy removal in the future.
- This step shows how to layout the **AWD** CorkSport front and rear midpipe sections compared to the OEM midpipe.
- Locate the flanges that connect the front and rear midpipes.
- Install the included hardware and tighten finger tight so the flanges can be adjusted later.
 - ⓘ The hardware is assembled going from left to right in the order of bolt, washer, flange, gasket, flange, washer, lock washer, then nut.

Step 14 — Installing the Front and Rear Midpipes



- Check the downpipe and make sure the OEM gasket is still in place.
- Spray the rubber exhaust hanger again with your spray lubricant.
- To hold up the back of the midpipe, a jack stand can be used again with a towel on top so that it does not scratch the finish or a bungee cord can be attached to both springs as shown.
- Now install the midpipe into the hanger.
- Line up the downpipe flange and studs with the midpipe flange and install the nuts and tighten to **35 ft-lb** with a 14mm socket and ratchet making sure the flanges are evenly aligned.
- ⓘ The studs in the downpipe may have come out when undoing the nuts in a prior step. This is common. When reinstalling you can either use the 2 extra exhaust bolts and washers included or the OEM hardware.

Step 15 — Align and Torque the Front and Rear Midpipes



- Align the midpipe flanges so they are even and tighten the bolts that connect the front and rear midpipe sections to **45 ft-lb** using a **17mm** socket and wrench.

Step 16 — Routing the O2 Wiring Option 1



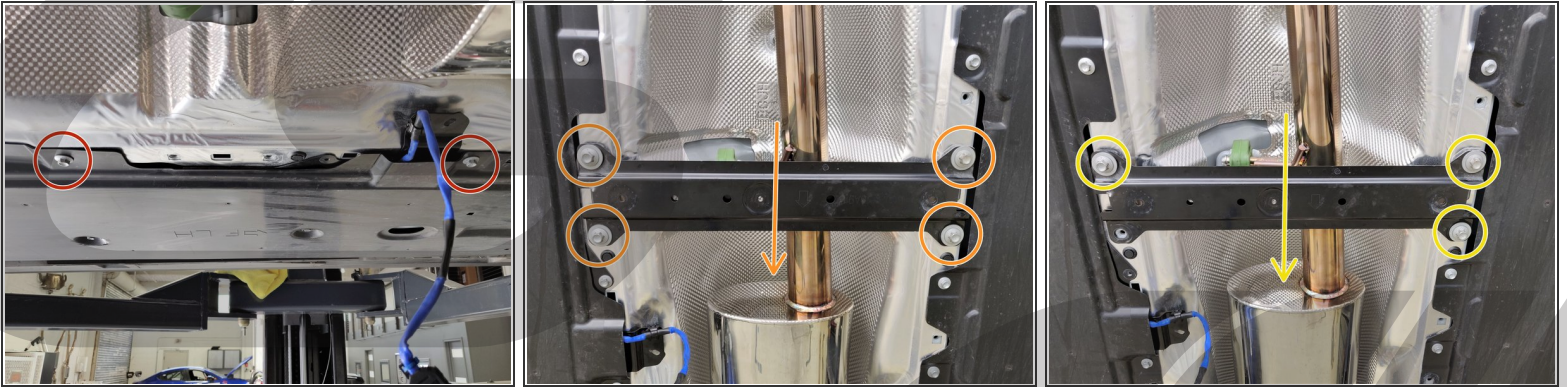
- There are two options that we recommend when reinstalling the O2 sensor wiring and **Option 1** is shown below.
- Remove both of the metal and rubber mounts that are on the O2 wiring .
- Pull down the plastic cover and reconnect the O2 wiring and route it as shown.
- ⓘ The O2 wiring should end up towards the back of the plastic cover

Step 17 — Routing the O2 Wiring Option 2



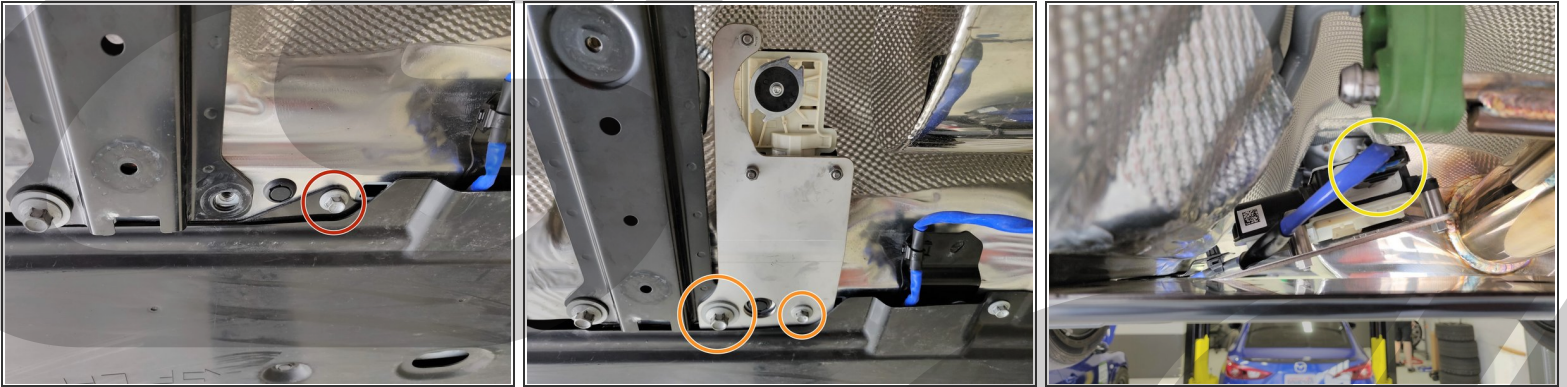
- **Option 2** for routing the O2 wiring is shown below and requires the included M6 hardware, a drill and a drill bit.
- Remove the metal and rubber mount that is closest to the connector end of the wiring and leave the mount that is circled.
- Pull down the plastic cover and reconnect the O2 wiring and route it as shown.
- ⓘ The O2 wiring should end up towards the back of the plastic cover
- Select a spot in the location circled on the heat shield that can be drilled through, making sure there is enough room behind it to fit a nut and nothing behind it that could get damaged when drilling.
- Drill a hole in the selected location using a 1/4" drill bit. Secure the O2 wiring by using the included hardware and the bracket on the O2 wiring and tightening it to the heat shield.
- ⓘ The metal tab on the bracket might need to be bent straight to fit flush against the heat shield

Step 18 — Reinstalling the Plastic Cover and Front Brace



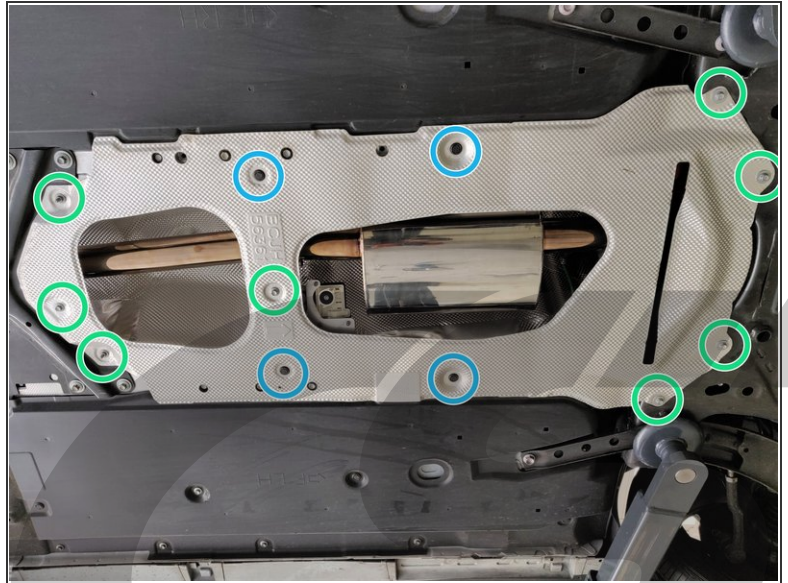
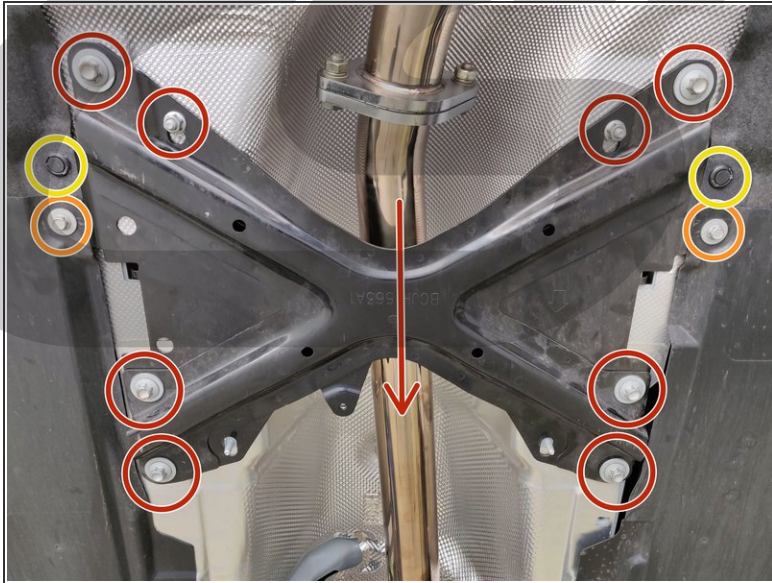
- Reinstall the two bolts circled into the plastic cover using a 10mm socket and wrench until hand tight.
- ⓘ The orange step below is for cars with out Cylinder Deactivation and the yellow step is for cars with Cylinder Deactivation.
- Place the front brace back into the slots and slide it forward to line up the holes and then reinstall the four bolts using a 12mm socket and tighten down to **15-17** ft-lb.
- Place the front brace back into the slots and slide it forward to line up the holes and then reinstall only the three bolts circled using a 12mm socket and torque to **15-17** ft-lb.

Step 19 — Installing the Cylinder Deactivation Bracket



- ⓘ This step is for cars equipped with Cylinder Deactivation
 - Remove the bolt circled using a 10mm socket and wrench.
 - Install the Cylinder Deactivation bracket as shown using the 10mm bolt that was just removed and the remaining 12mm bolt from the front brace.
 - ⓘ Torque the 12mm bolt to **15-17** ft-lb and the 10mm to **5-7** ft-lb
 - Remove the metal and rubber mount from the wiring and route it as shown and reconnect it to the motor.

Step 20 — Reinstalling the Rear Brace and Midpipe Shield



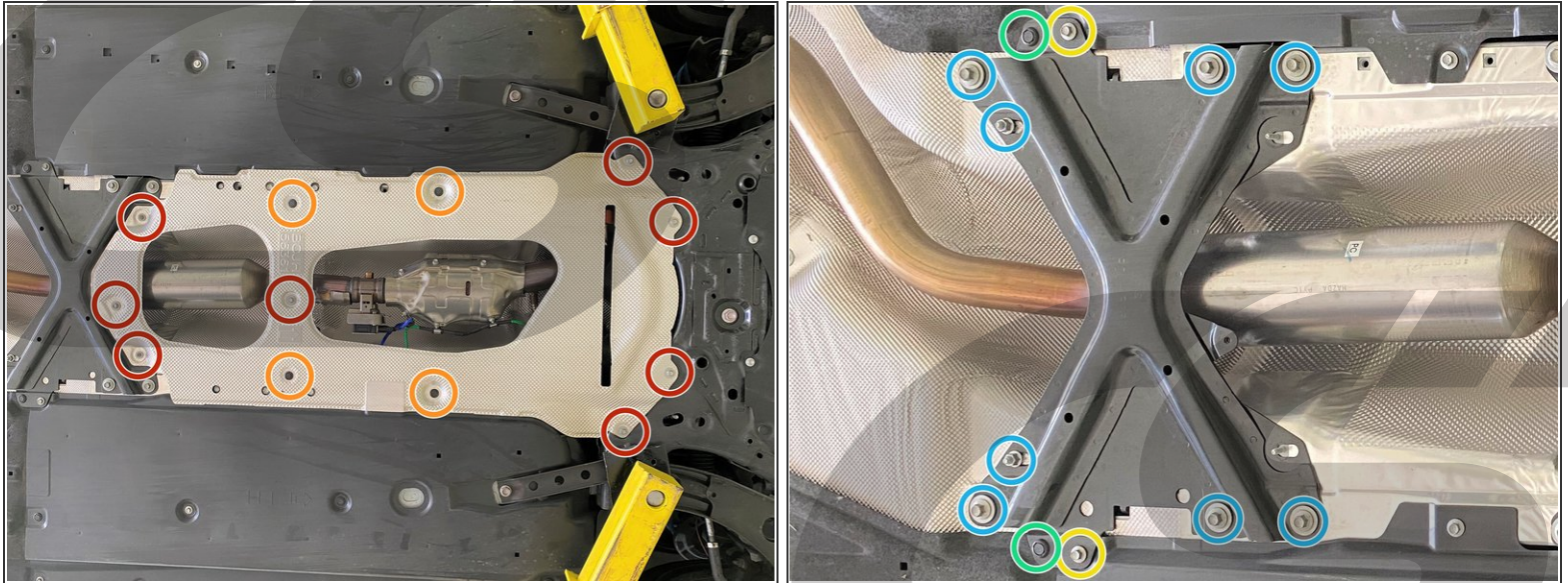
- Reinstall the rear brace by lining up the slots and sliding it forward and use the 12mm socket and ratchet to tighten the 8 bolts circled and torque to **15-17** ft-lb.
- Using a 10mm socket and ratchet tighten the 2 bolts circled until hand tight.
- Place the 2 plastic push clips back into the locations circled.
- Reinstall the 8 10mm bolts in the circled locations and tighten to **5-7** ft-lb.
- Take the 4 plastic clips and reinstall them in the circled locations.

Step 21 — What Exhaust are You Installing?



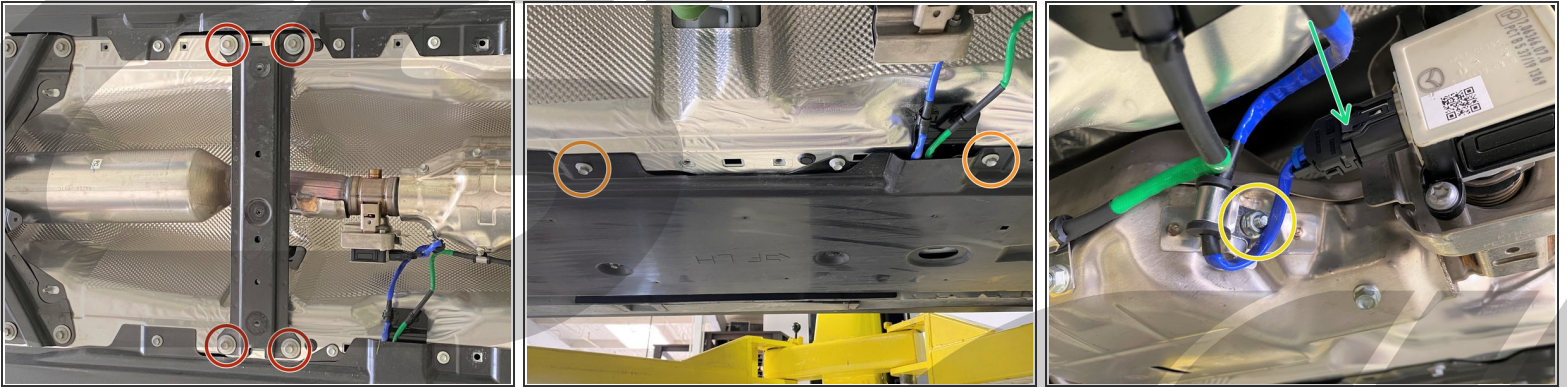
- ⓘ Steps 22-34 are for midpipe installations on **FWD** Mazda 3's.
- ⓘ Skip to **Step 35** if you have already installed the **AWD** midpipes or are installing the **Axleback** only.

Step 22 — Uninstalling the Midpipe Shield and Rear Brace



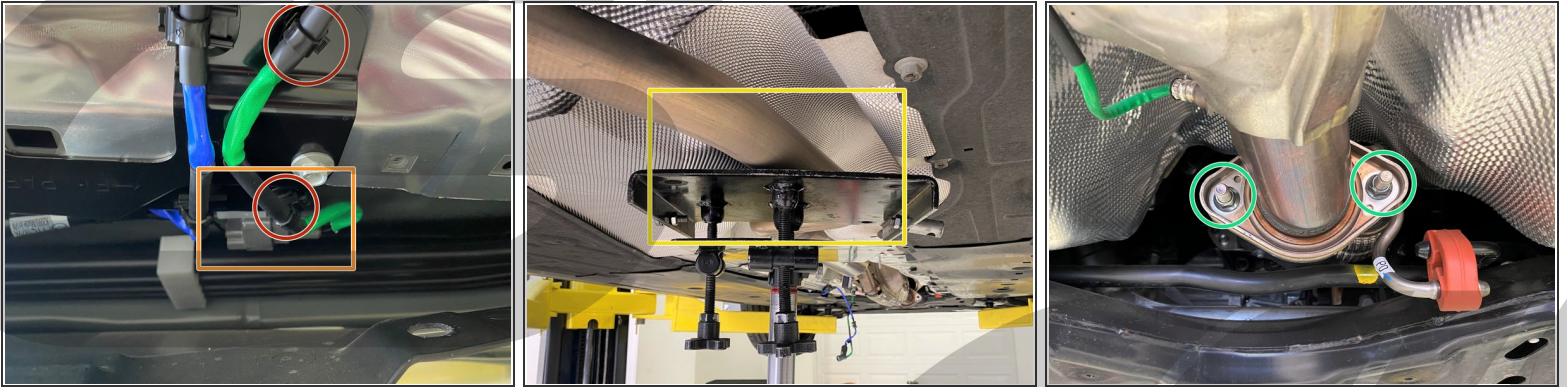
- Using the 10mm socket and ratchet, remove the 8 bolts circled.
 - ⓘ Some models have a shorter exhaust shield and only have 5 bolts
- Remove the 4 plastic push clips using a flathead screw driver to pry the center of the clip.
 - ⓘ When removing the final clips, hold the front of the shield to make sure it does not bend.
- Start to remove the rear brace by using the 10mm socket and ratchet again to remove the 2 bolts circled.
- Using the flathead screw driver, pop out the 2 clips circled.
- Now use the 12mm socket and ratchet to remove the 8 bolts circled.
 - ⓘ Once all the hardware is removed, the brace will need to be slid to the rear of the car and then it can be removed.

Step 23 — Uninstalling the Midpipe Front Brace and Wiring



- Continuing to use the 12mm socket and ratchet, remove the 4 bolts circled.
- ⓘ Similar to the rear brace, slide the front brace to the rear of the car to remove.
- Unscrew the 2 bolts circled using a 10mm socket and ratchet.
- ⓘ The next two steps are only necessary if your car is equipped with cylinder deactivation.
- Unbolt the single 10mm nut securing the wiring for the cylinder deactivation valve motor.
- Unplug the connector by depressing the tab and pulling.

Step 24 — Uninstalling the O2 Wiring and Midpipe



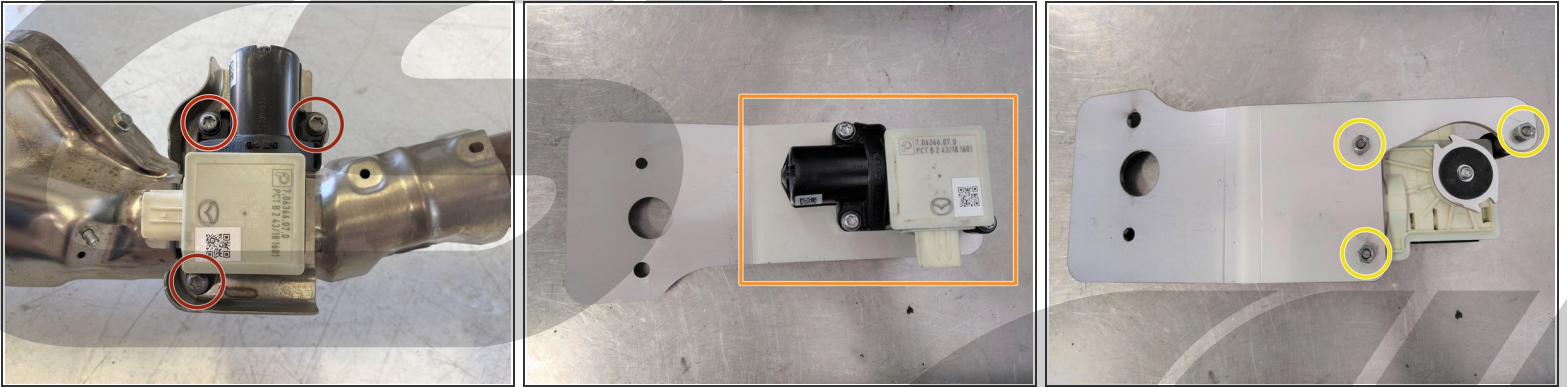
- Pull down the plastic cover and remove the 2 clips that hold the O2 wiring to the bracket by squeezing the tabs on the backside of the bracket towards the center using a flat head screw driver.
- Unplug the O2 sensor connector by pulling down the plastic cover and depressing the tab on the back side of the connector and pulling.
- Place a jack stand under the rear section of the midpipe to support it to make sure it does not fall when removing the midpipe.
- Using the 14mm socket and ratchet, remove the 2 nuts holding the midpipe to the downpipe.
 - ⓘ The studs in the downpipe may come out when undoing the nuts. This is common. When reinstalling you can either use the 2 extra exhaust bolts and washers included or the OEM hardware.

Step 25 — Uninstalling the Midpipe and O2 Sensor



- Spray the rubber exhaust hanger with your spray lubricant. (WD40, silicone spray, or even glass cleaner works well).
- Using channel lock or exhaust hanger pliers, remove the midpipe hanger.
- ⓘ Make sure to support the front of the midpipe by holding it up or by using another jack stand.
- Once the midpipe is removed, use the 10mm socket and ratchet to remove the 2 nuts that hold the O2 wiring to the midpipe.
- Remove the O2 sensor from the midpipe by using a 22mm wrench.

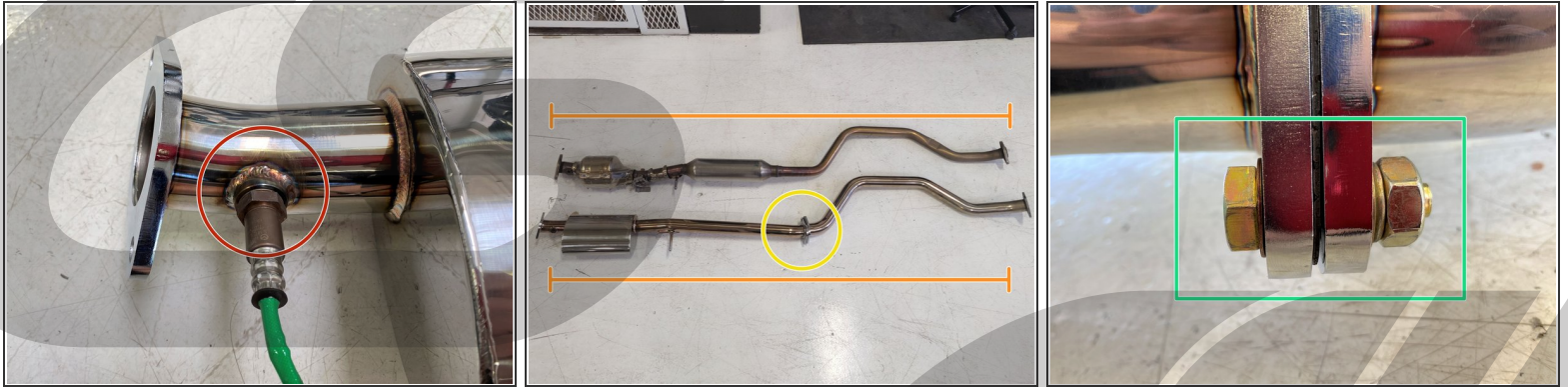
Step 26 — Removing and Installing the Cylinder Deactivation Valve Motor



i This step is only necessary if your car is equipped with cylinder deactivation.

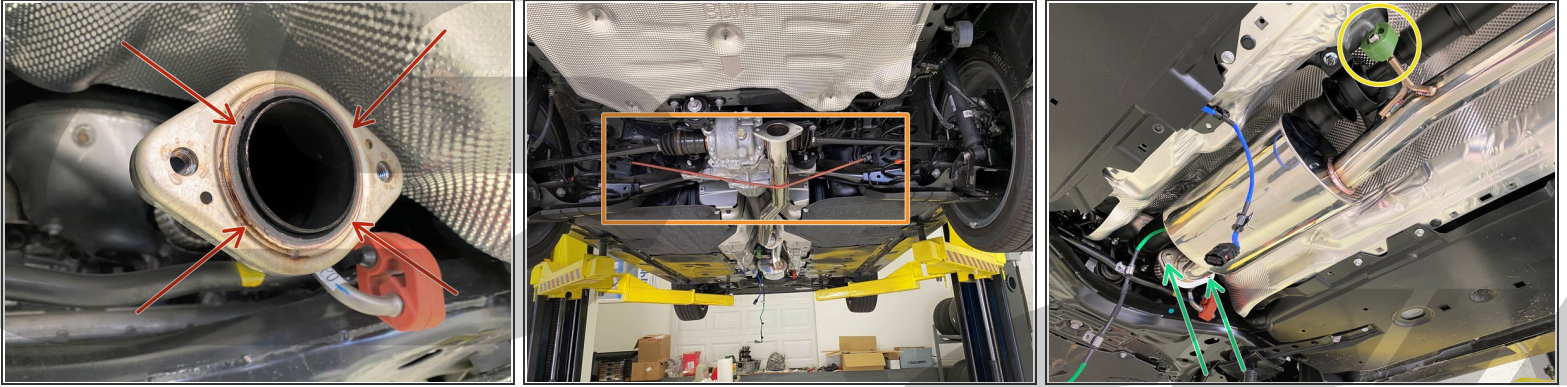
- Remove the three bolts holding the cylinder deactivation valve motor to the OEM midpipe by using a T30 Torx bit and an 8mm wrench.
- Take the included cylinder deactivation valve motor bracket and reinstall the motor as shown using the OEM hardware.
- Using the same T30 Torx bit and 8mm wrench tighten the 3 bolts until they are all hand tight.

Step 27 — Reinstalling the O2 Sensor and Laying Out the Midpipes



- Install the O2 sensor into the Corksport front midpipe section and tighten it with a 22mm wrench.
- ⓘ We recommend applying some Anti-Seize to the treads of the O2 sensor for easy removal in the future.
- This step shows how to layout the **FWD** CorkSport front and rear midpipe sections compared to the OEM midpipe.
- Locate the flanges that connect the front and rear midpipes.
- Install the included hardware and tighten finger tight so the flanges can be adjusted later.
- ⓘ The hardware is assembled going from left to right in the order of bolt, washer, flange, gasket, flange, washer, lock washer, then nut.

Step 28 — Installing the Front and Rear Midpipes



- Check the downpipe and make sure the OEM gasket is still in place.
- Spray the rubber exhaust hanger again with your spray lubricant.
- To hold up the back of the midpipe, a jack stand can be used again with a towel on top so that it does not scratch the finish or a bungee cord can be attached to both springs as shown.
- Now install the midpipe into the hanger.
- Line up the downpipe flange and studs with the midpipe flange and install the nuts and tighten to **35 ft-lb** with a 14mm socket and ratchet making sure the flanges are evenly aligned.
- ⓘ The studs in the downpipe may have come out when undoing the nuts in a prior step. This is common. When reinstalling you can either use the 2 extra exhaust bolts and washers included or the OEM hardware.

Step 29 — Align and Torque the Front and Rear Midpipes



- Align the midpipe flanges so they are even and tighten the bolts that connect the front and rear midpipe sections to **45 ft-lb** using a **17mm** socket and wrench.

Step 30 — Routing the O2 Wiring Option 1



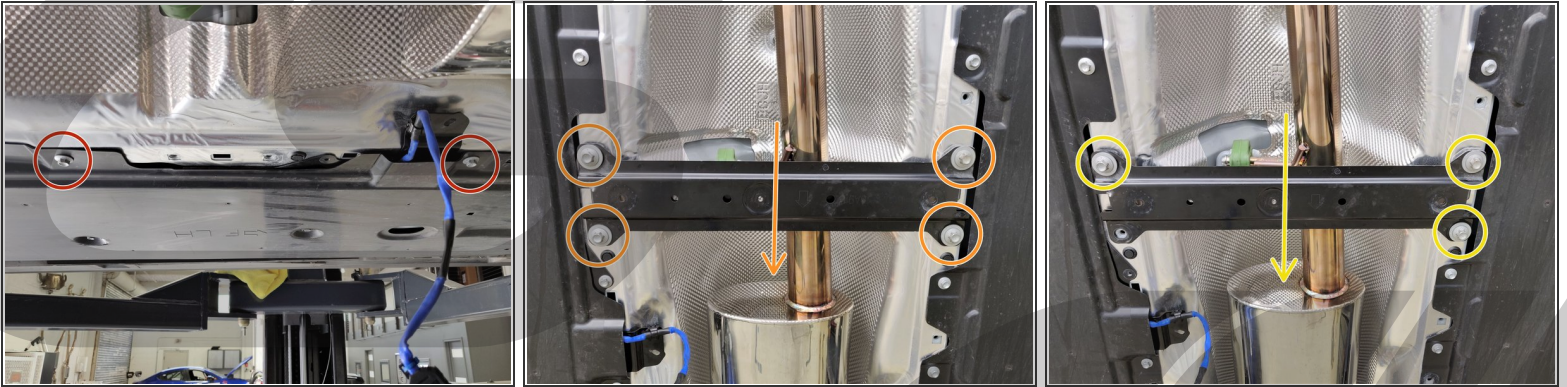
- There are two options that we recommend when reinstalling the O2 sensor wiring and **Option 1** is shown below.
- Remove both of the metal and rubber mounts that are on the O2 wiring .
- Pull down the plastic cover and reconnect the O2 wiring and route it as shown.
- ⓘ The O2 wiring should end up towards the back of the plastic cover

Step 31 — Routing the O2 Wiring Option 2



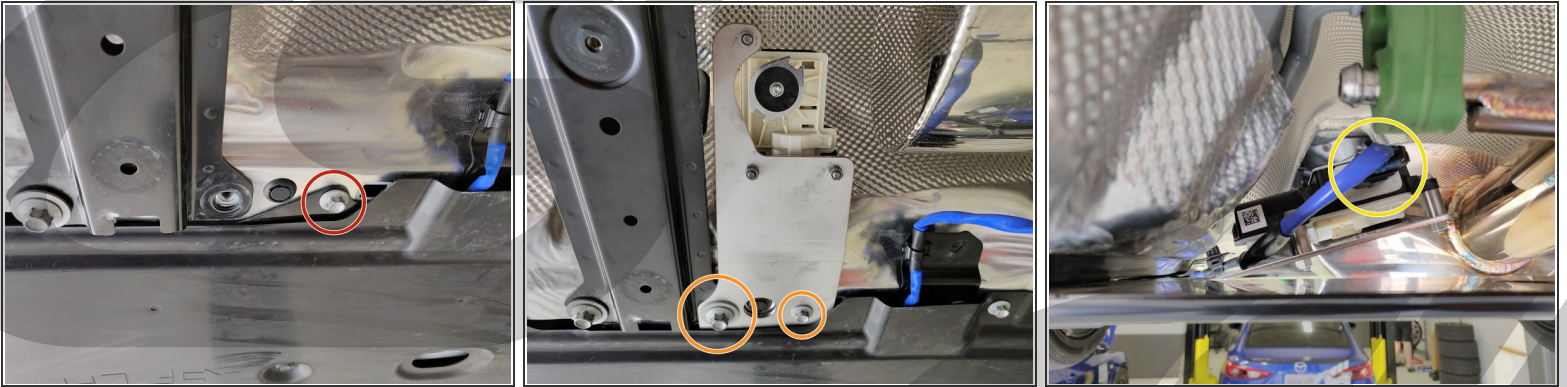
- **Option 2** for routing the O2 wiring is shown below and requires the included M6 hardware, a drill and a drill bit.
- Remove the metal and rubber mount that is closest to the connector end of the wiring and leave the mount that is circled.
- Pull down the plastic cover and reconnect the O2 wiring and route it as shown.
- ⓘ The O2 wiring should end up towards the back of the plastic cover
- Select a spot in the location circled on the heat shield that can be drilled through, making sure there is enough room behind it to fit a nut and nothing behind it that could get damaged when drilling.
- Drill a hole in the selected location using a 1/4" drill bit. Secure the O2 wiring by using the included hardware and the bracket on the O2 wiring and tightening it to the heat shield.
- ⓘ The metal tab on the bracket might need to be bent straight to fit flush against the heat shield

Step 32 — Reinstalling the Plastic Cover and Front Brace



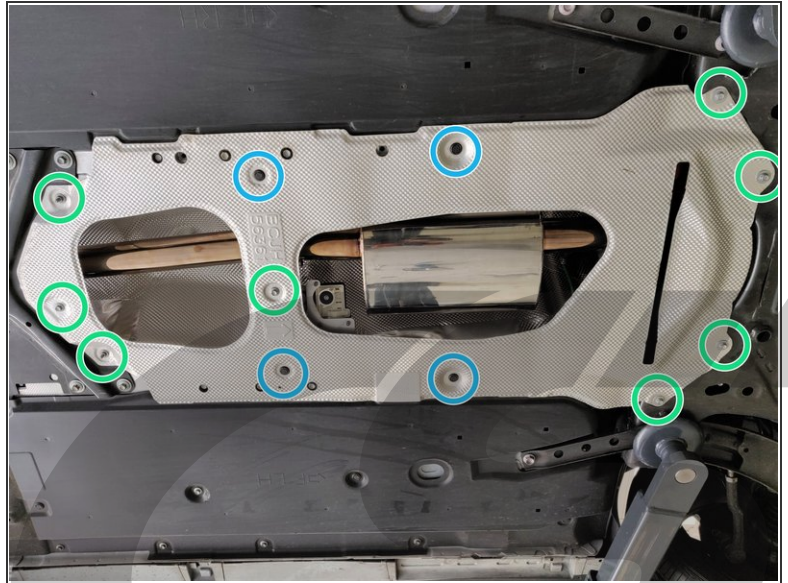
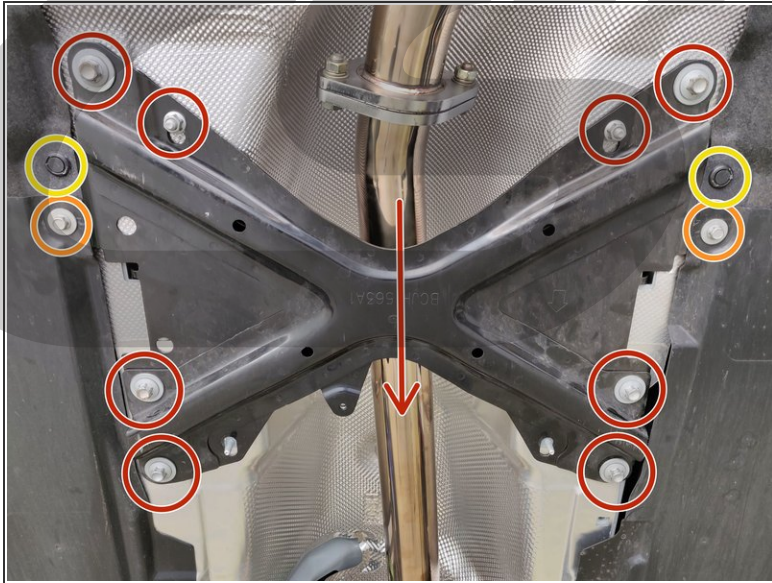
- Reinstall the two bolts circled into the plastic cover using a 10mm socket and wrench until hand tight.
- ⓘ The orange step below is for cars with out Cylinder Deactivation and the yellow step is for cars with Cylinder Deactivation.
- Place the front brace back into the slots and slide it forward to line up the holes and then reinstall the four bolts using a 12mm socket and tighten down to **15-17** ft-lb.
- Place the front brace back into the slots and slide it forward to line up the holes and then reinstall only the three bolts circled using a 12mm socket and torque to **15-17** ft-lb.

Step 33 — Installing the Cylinder Deactivation Bracket



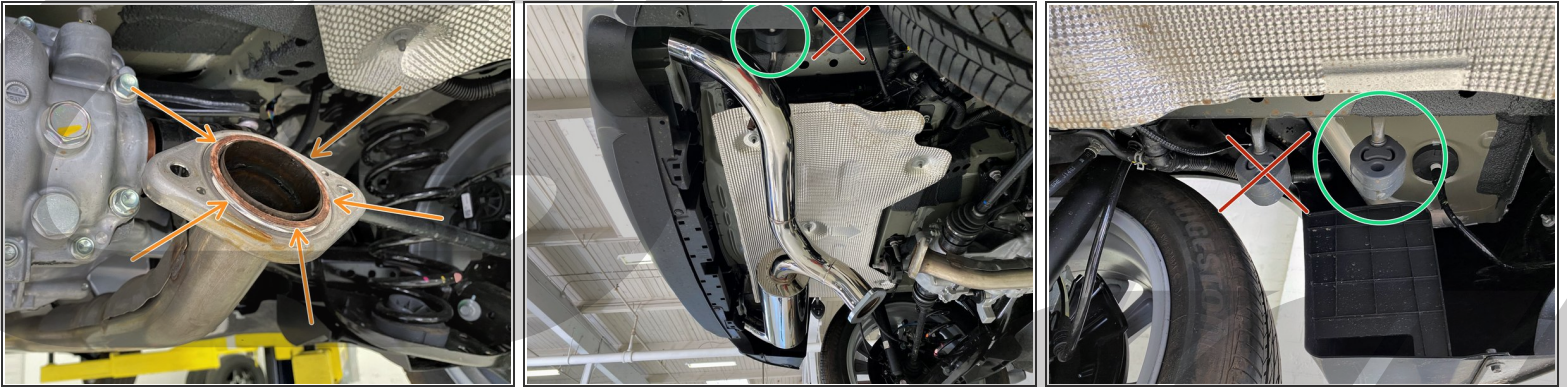
- ⓘ This step is for cars equipped with Cylinder Deactivation
 - Remove the bolt circled using a 10mm socket and wrench.
 - Install the Cylinder Deactivation bracket as shown using the 10mm bolt that was just removed and the remaining 12mm bolt from the front brace.
 - ⓘ Torque the 12mm bolt to **15-17** ft-lb and the 10mm to **5-7** ft-lb
 - Remove the metal and rubber mount from the wiring and route it as shown and reconnect it to the motor.

Step 34 — Reinstalling the Rear Brace and Midpipe Shield



- Reinstall the rear brace by lining up the slots and sliding it forward and use the 12mm socket and ratchet to tighten the 8 bolts circled and torque to **15-17** ft-lb
- Using a 10mm socket and ratchet tighten the 2 bolts circled.
- Place the 2 plastic push clips back into the locations circled.
- Reinstall the 8 10mm bolts in the circled locations and tighten to **5-7** ft-lb
- Take the 4 plastic clips and reinstall them in the circled locations.

Step 35 — Installing the CorkSport Axle Back Exhaust

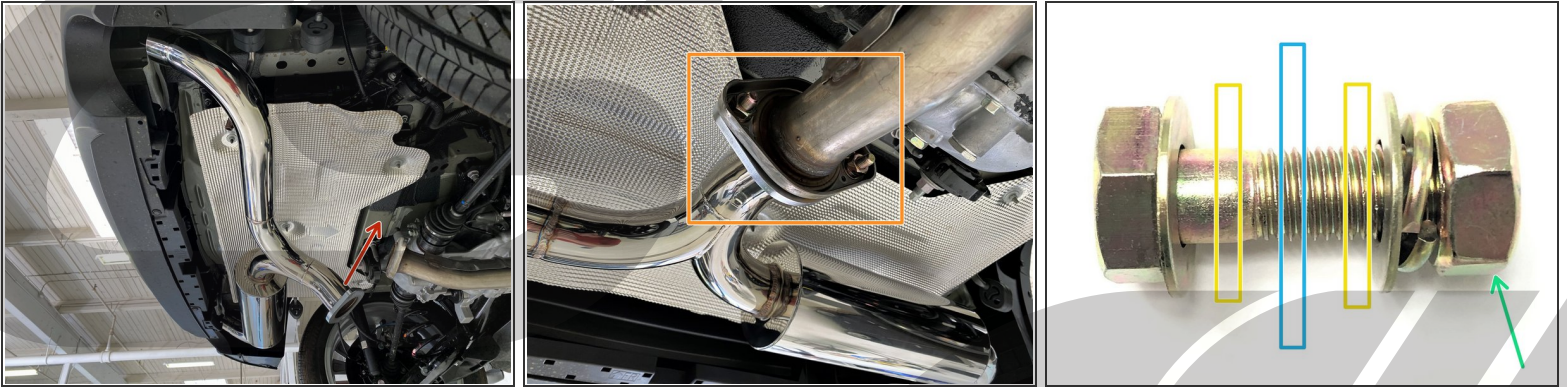


i We recommend leaving as much protective packaging in place as possible to prevent damage to the axle back or vehicle during installation. It is shown removed for clarity.

⚠ We recommend having a friend assist with the CS axle back installation.

- Before lifting the CorkSport ABE into position, double check that the OEM copper exhaust gasket is in position.
- Lift the CorkSport axle back into place and install the metal hangers into the rearmost rubber exhaust hangers. The exhaust will hang in place as shown in the second image.
- The CS axle back exhaust does not use the OEM forward rubber exhaust hanger locations. The rubber hangers can be removed or left in place

Step 36 — Connecting the CorkSport Axle Back to the OEM Midpipe



- Align the CS axle back to the OEM or CS midpipe.
- Connect the CorkSport axle back exhaust to the midpipe using the supplied hardware. Only hand tighten for now.
- Follow the hardware and flange setup in image 3 for proper installation.
 - Flanges are shown with the yellow rectangles.
 - The gasket is shown with the blue rectangle.
 - Nut is shown with the green arrow.

Step 37 — Installing the CorkSport Exhaust Tips Part 1



- ⓘ There are multiple lengths of exhaust tip depending on your vehicle configuration. Installation for all is identical, CX-30 is shown.
- Install one of the supplied exhaust clamps over one end of the CorkSport axle back exhaust
- Slide one of your exhaust tips onto the CorkSport axle back. The exhaust tip will fit inside the clamp, but over the end of the axle back exhaust.
- ⓘ The CorkSport name badge will face toward the outside of your vehicle.
- Rotate the exhaust tip as needed until the CorkSport name badge is sitting level with the side of the vehicle as shown.

Step 38 — Installing the CorkSport Exhaust Tips Part 2



- Once happy with rotation, adjust tip length to your desired look.
 - The first image shows the shortest tip length, with the tip pushed all the way inward.
 - The second image shows the longest tip, with the tip ~1/2" out from fully inward.
- ⚠ **Do not exceed ~1/2" out from the "fully inward" position. Doing so may cause your exhaust to leak and/or the exhaust tip to fall off.**
- Once happy with tip location, rotate the clamp so the screws are at the top and not easily visible. **Verify the clamp is equally overlapping the tip and the exhaust piping.**
 - Then tighten the clamp using a 15mm or 9/16inch socket, ratchet, and 15mm or 9/16inch wrench to **35-40ft-lbs.**
 - ⓘ Tighten the two bolts on the clamp evenly to ensure even clamping force on the clamp.
- Repeat Steps 8 and 9 for the other side exhaust tip.

Step 39 — Aligning the CorkSport Axle Back Exhaust



- Align the exhaust tips and hangers so the exhaust is straight and centered in the exhaust cutouts. There should be a gap all around the exhaust tips.
- Once happy with fitment, tighten the bolts connecting the midpipe flange to the axle back to **35-40ft-lbs** using a 17mm socket, ratchet, and wrench.
- Recheck alignment after tightening the supplied hardware.
- ⓘ After installation and before starting car, wipe down exhaust with cleaner and a clean towel. Grease and fingerprints can become hard to remove after the exhaust heats up.

Step 40 — Installation Complete



- This completes your installation of the CorkSport Performance Cat Back or Axle Back Exhaust System!
- ⓘ Listen for any strange noises upon first drive. If any are present, inspect exhaust hangers & exhaust tip clamps.
- ⓘ A slight "burning off" smell will be present as the exhaust is heated for the first time.
- Contact us with any questions or concerns at sales@corksport.com or (360) 260-2675.
- Please leave a review here: <https://corksport.com/2019-mazda-3-and-c...>
- Share your experience using #CorkSport on Instagram, Facebook, and Twitter.