

CorkSport Performance

CX50-3-413-1X 13" Big Brake Kit

Installation Instructions for the CorkSport Performance 13" Big Brake Kit for the 2023+ Mazda CX-50

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INTRODUCTION

In this installation guide we have provided step by step instructions to remove the OEM front brakes and install the CorkSport Performance Big Brake Kit.

Advisory:

- Working under the vehicle requires a safe and sturdy location for the vehicle to sit on jackstands.
- Brake bleeding & pad bedding must be done properly to prevent braking issues. Follow the instructions carefully to prevent vehicle damage or personal injury.
- Proper inspection of the wheel clearance to the brake caliper must be performed to prevent damage to the caliper and/or wheel

The following brake pads series may operate with the CorkSport 13" BBK. Other brake pad manufacturers may have pad designs for this configuration that is not listed here:

Hawk – HB110 (HB110F.654 HPS, HB110B.654 HPS 5.0, HB110N.654 HP+, HB110W.654 DTC-30, HB110U.654 DTC-70)

G-Loc – GPX6

Brembo – B52

AP Racing – AP5200 & CP3215

Carbotech – CTCP3215

TOOLS:

- Hydraulic Jack (1)
- Jack Stand (2)
- 3/8" Drive Ratchet (1)
- 1/2" Drive Breaker Bar (1)
- 1/2" Torque Wrench (1)
- 14mm Socket - Deep (1)
- 17mm Socket - Deep (1)
- 21mm Socket - Deep (1)
- 10mm Allen Key Socket (1)
- 12mm Allen Key Socket (1)
- Wrench, 10mm (1)
- Wrench, 14mm (1)
- Wrench, 17mm (1)
- Wrench, 19mm (1)
- 10mm Line Wrench (1)
- Small Needle Nose Pliers (1)
- Flathead Screwdriver (1)
- Shop Towels/Rags (1)
- Drip Pan (1)
- Gloves (1)
- Blue Threadlocker (1)
- Plastic Bottle (1)
- 5/32" Hose (1)
- Brake Fluid - DOT3 (1)
- Friend (1)
- Angle Grinder with Cutting Wheel (1)
- Level (1)
- Paint Pen (1)
- Black Spray Paint (1)

PARTS:

- CorkSport CX-50 Left Side 330mm Brake Rotor (1)
- CorkSport CX-50 Right Side 330mm Brake Rotor (1)
- CorkSport Left Side Brake Caliper (1)
- CorkSport Right Side Brake Caliper (1)
- CorkSport CX-50 Caliper Mounting Bracket (2)
- CorkSport CX-50 Stainless Steel Brake Lines (2)
- M10 Banjo Bolt (2)
- M10 Crush Washer (4)
- M14x35mm Socket Head Cap Screw (4)
- M12x60mm Socket Head Cap Screw (4)
- M12 Washers (4)
- M14 Washers (4)
- Touch Up Paint (1)
- Package of Shims (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
 - ⓘ The vehicle used in these instructions was a 2023 Mazda CX-50 Turbo. Other models and years will be similar.

Step 2 — Lifting the Car & Removing the Front Wheel



⚠ Ensure the vehicle is parked on a level surface before proceeding.

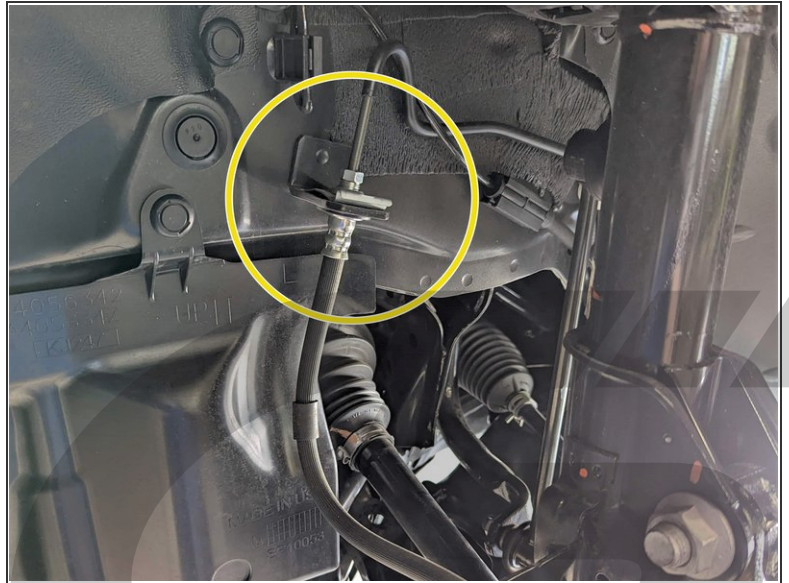
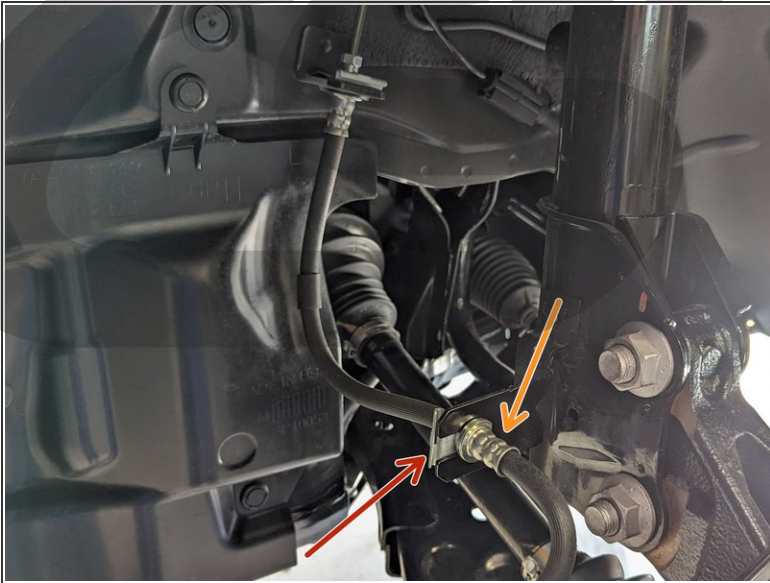
- Start by lifting up the front of the car using the hydraulic jack and jack stands.


⚠ Be sure to reference your owners manual for jack points and the jack manufacturer's instructions for proper practices.

- Remove the driver's side (left hand side) front wheel from the vehicle using the 1/2" drive breaker bar or impact gun and 21mm socket.

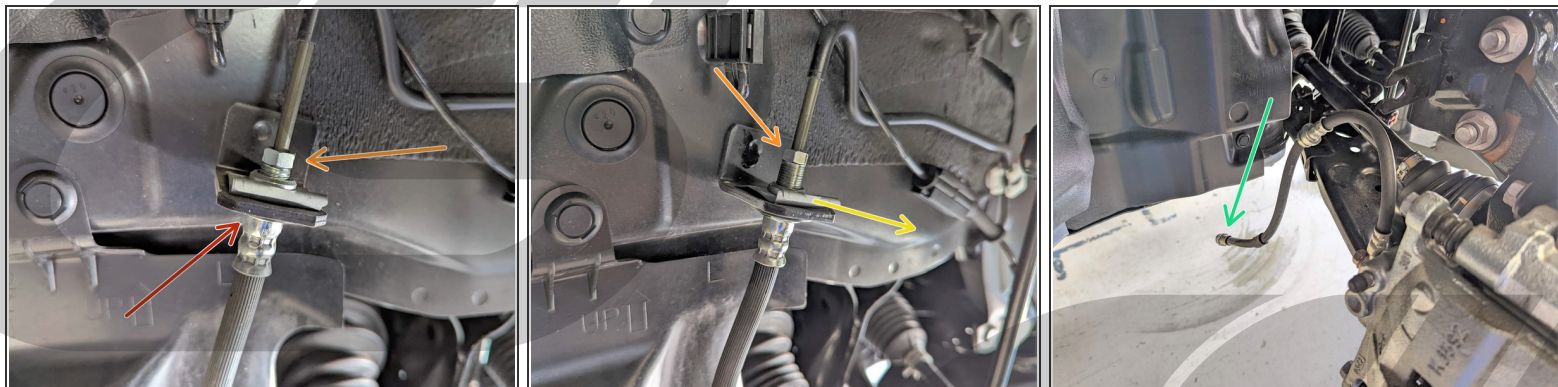
i A different socket may be required if you have aftermarket or locking lug nuts.

Step 3 — Freeing the Brake Line - Part 1



- Locate the front brake line.
- Using needle nose pliers or a flathead screwdriver, remove the silver brake line retainer clip
- Then free the front brake line from the mounting bracket by pulling it towards yourself
- Trace the brake line to the inner fender and locate where it connects to the hard line
-  This location will be referenced in the next step.

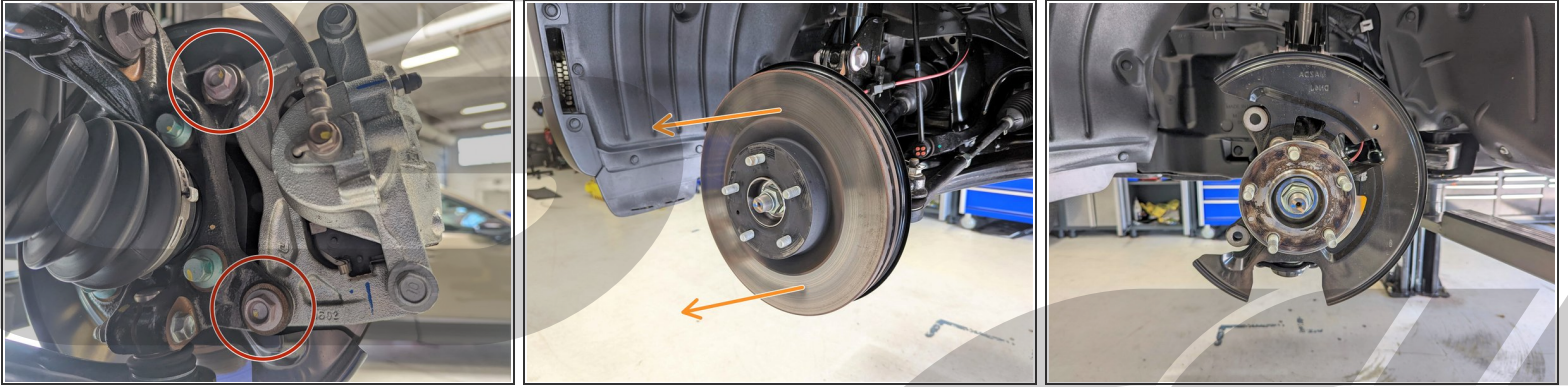
Step 4 — Freeing the Brake Line - Part 2



⚠ Ensure to catch the brake fluid with a drip pan once the line is loosened. Brake fluid can take off paint and coatings so be cautious if the fluid is spilled. Using a small vacuum cap to block the hardline will prevent any unnecessary fluid leakage

- Hold the brake line using a 17mm wrench
 - ⓘ This hex portion of the brake line is hard to see in the first image but it is near where the red arrow is pointing
- Using a 10mm line wrench, loosen the brake line nut. Shown completed in the second image
- Remove the silver brake line retaining clip like in the previous step
- Free the brake line and point it downward to drain out any remaining brake fluid into your drip pan

Step 5 — Removing the OEM Brake Caliper & Rotor



⚠ When performing the next step, the caliper will be free to fall after the bolts are removed. Use caution to prevent the caliper from falling

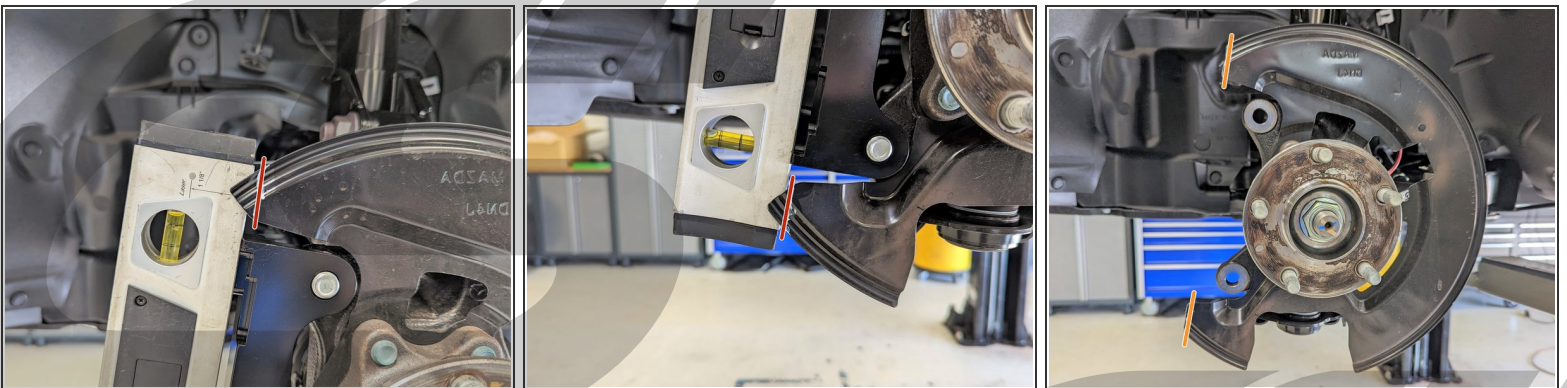
- Using a 17mm socket and breaker bar, remove the two mounting bolts from the backside of the OEM brake caliper
- ⓘ Make sure to hold the caliper when removing the bolts
- Remove the OEM caliper from the vehicle. The brake line will come with it
- Pull the OEM brake rotor straight outward to remove it from the vehicle
- You will be left with a bare hub like shown in the third image

Step 6 — Trimming the Backing Plate - Part 1



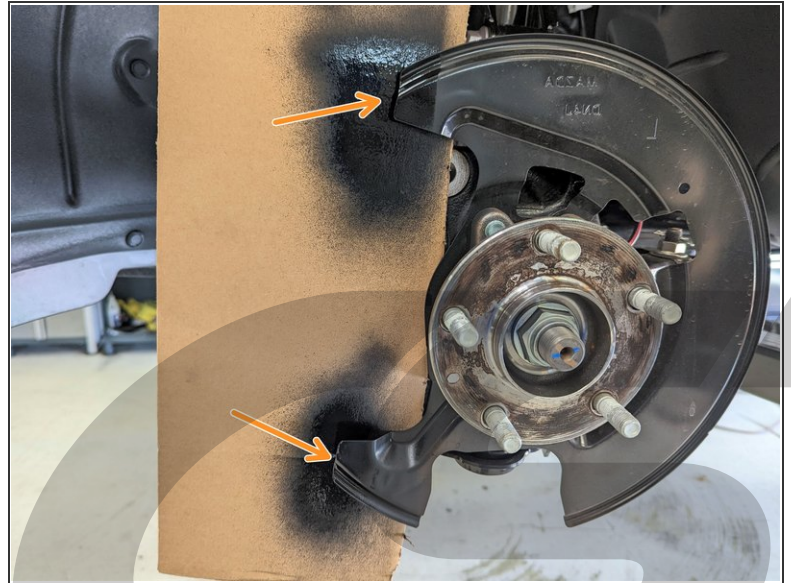
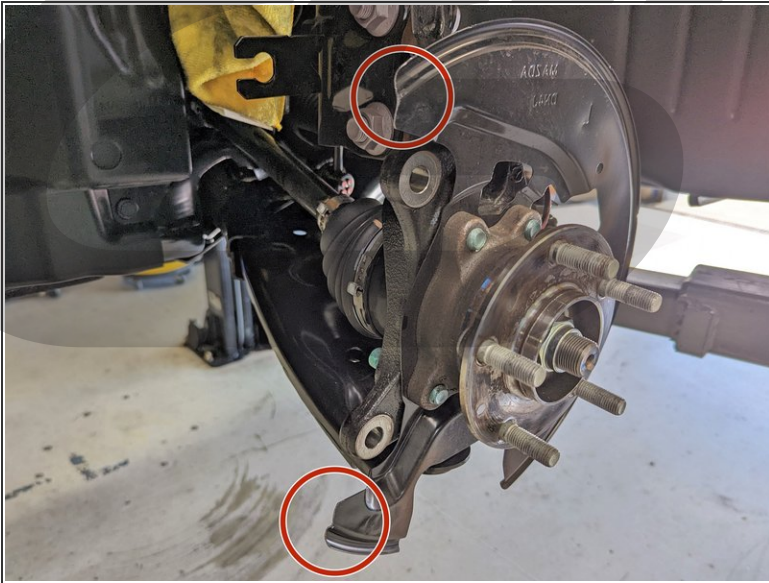
- Locate one of the caliper brackets and two M14 bolts as shown
- Temporarily install the bracket on the hub and tighten the bolts using a 12mm Allen until they are snug
- Place a level or straight edge on the face of the bracket to help with marking the cut lines

Step 7 — Trimming the Backing Plate - Part 2



- Using a paint pen mark the top and bottom section of the backing plate that is covering the level as shown, as these section will need to be removed
- The caliper bracket can now be removed and set aside for later
- Ensure that the exposed brake line is covered so it is protected from any debris while cutting
- Now using an angle grinder or a Dremel with a cutting wheel, cut along the marked lines

Step 8 — Trimming the Backing Plate - Part 3



- Once the backing plate has been trimmed, use a file or sandpaper to remove any sharp edges
- Now paint the exposed metal to prevent the backing plate from rusting. Cardboard should be used to block any overspray from getting onto other components.
 - ⓘ Spray paint or a paint pen can be used
 - ⓘ Make sure to paint both the front and the back of the backing plate

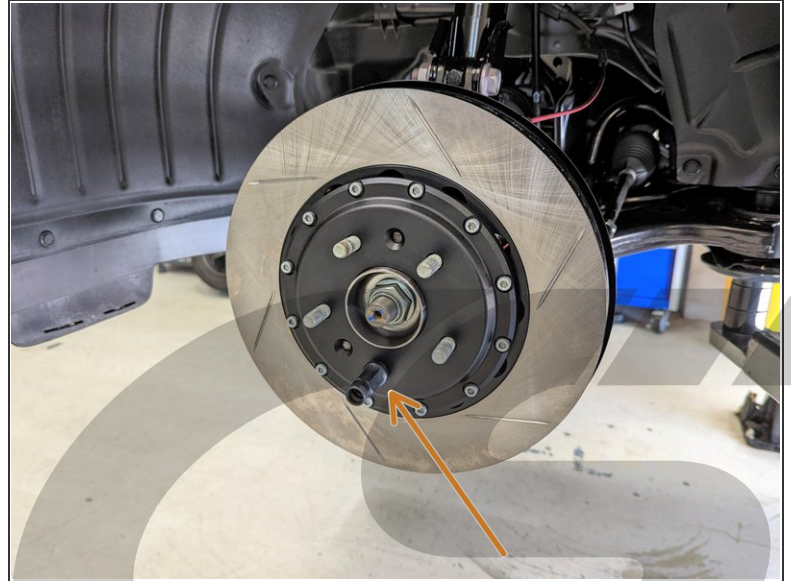
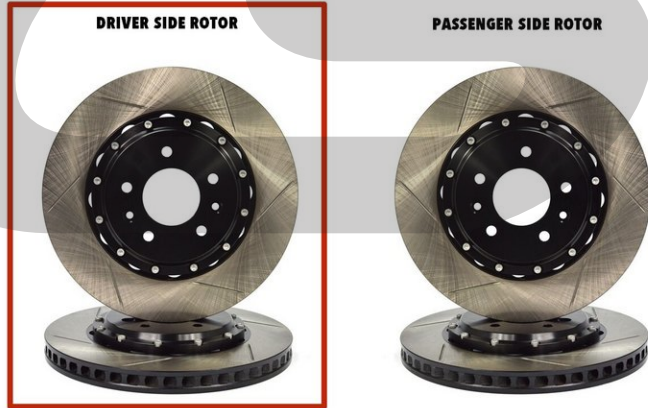
Step 9 — CorkSport Caliper Bracket Installation



- Locate two of the M14 bolts again and ensure they each have an M14 washer
- Apply blue threadlocker to the two M14 bolts
- Line up one of the CorkSport caliper brackets with the OEM caliper mounting locations
- ⓘ Double check that the caliper bracket is in the orientation shown
- Secure the caliper bracket from the backside with the M14 bolts and using a 12mm Allen socket torque to **64-71ft-lbs**

Step 10 — CorkSport Brake Rotor Installation

ROTOR ROTATION IDENTIFICATION:



- Locate the driver's side (left side) brake rotor
 - ⚠ The orientation of the slots in the brake rotor changes for driver and passenger side. Ensure you get the correct rotor.
- Install the CorkSport brake rotor onto the vehicle
 - ⓘ If needed to help keep the brake rotor in position for the next step, you can loosely tighten a lug nut against the brake rotor
 - ⚠ If the brake rotor is hitting the caliper bracket installed earlier, the caliper bracket was installed in the incorrect orientation

Step 11 — CorkSport Brake Caliper Installation



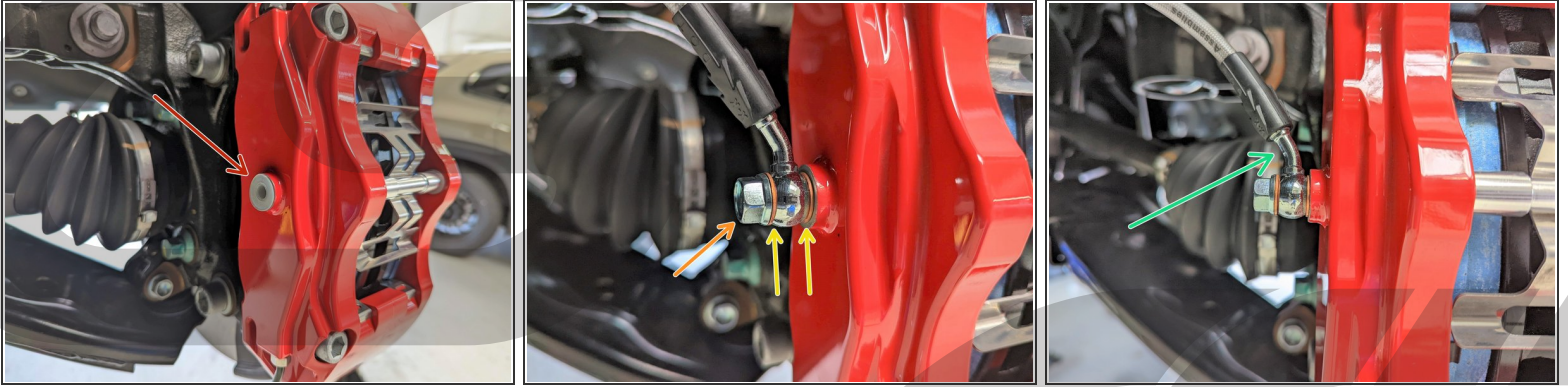
- Locate the driver's side (left side) CorkSport brake caliper
- When held up to the vehicle with the CorkSport logo facing outward, the driver's side caliper will have a "direction of rotation" sticker at the top, pointing downwards as shown
- Locate two of the M12 bolts. If not already present, install one M12 washer on each bolt
- Apply blue threadlocker to the two M12 bolts
- Lift the driver's side caliper into position and secure with the two M12 bolts and torque them using a 10mm Allen socket to **64-71ft-lbs**

Step 12 — Brake Caliper Alignment



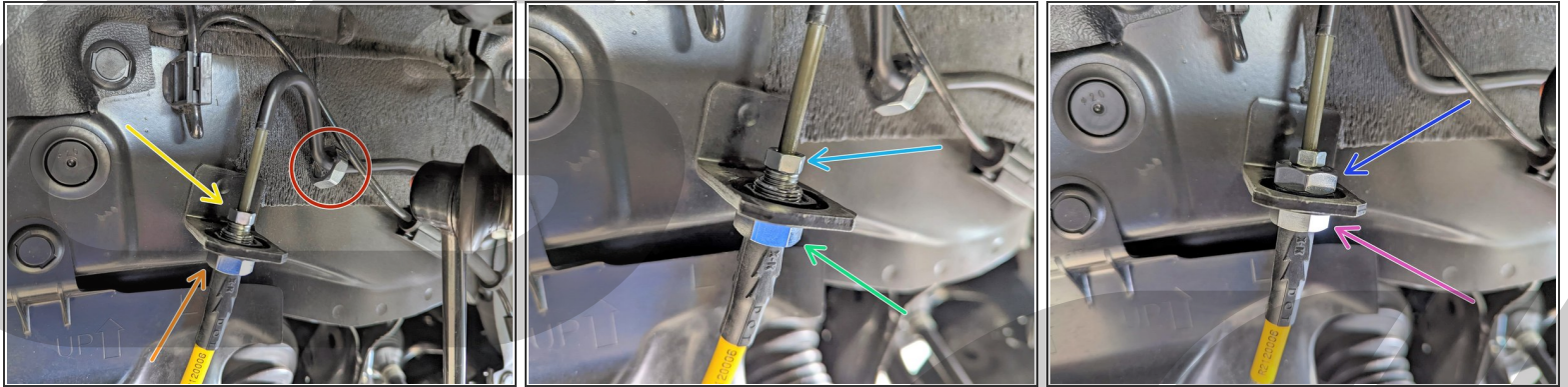
- ① Your kit is specifically designed to center the brake rotor exactly in the middle of the caliper
- ① The kit also is designed to position the brake pad very slightly inboard from the edge of the brake rotor
- ① Shims are supplied in your kit if needed for repositioning the brake caliper to fit correctly, however, we have never needed to use shims when installing this kit. Do not use **any** unless 100% necessary

Step 13 — Brake Line Installation - Part 1



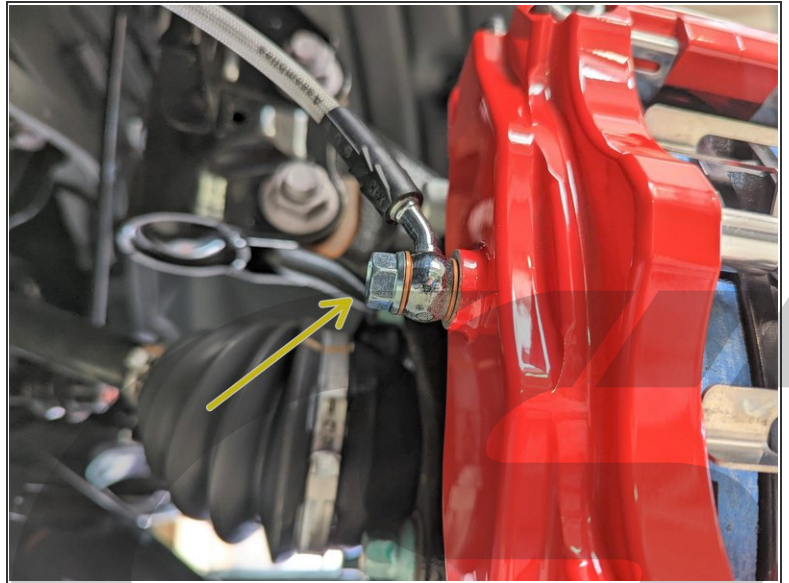
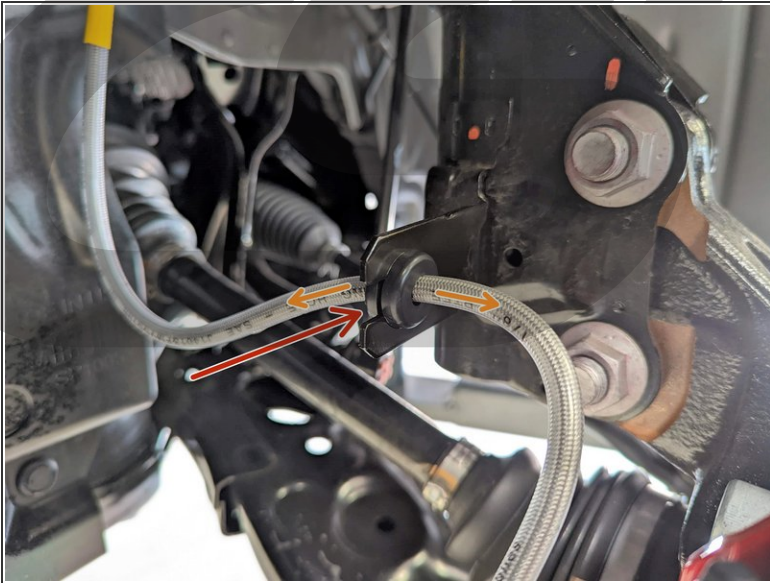
- Remove the dust cover from the backside of the CorkSport Brake caliper
 - Install a CorkSport brake line onto the CorkSport caliper as shown
 - Secure the brake line with one of the supplied M10 banjo bolts
 - Ensure there is one copper washer on either side of the brake line fitting
 - Ensure the CorkSport brake line points upwards and bends away from the caliper as shown in the third image
- i** Only hand tighten the banjo bolt for now

Step 14 — Brake Line Installation - Part 2



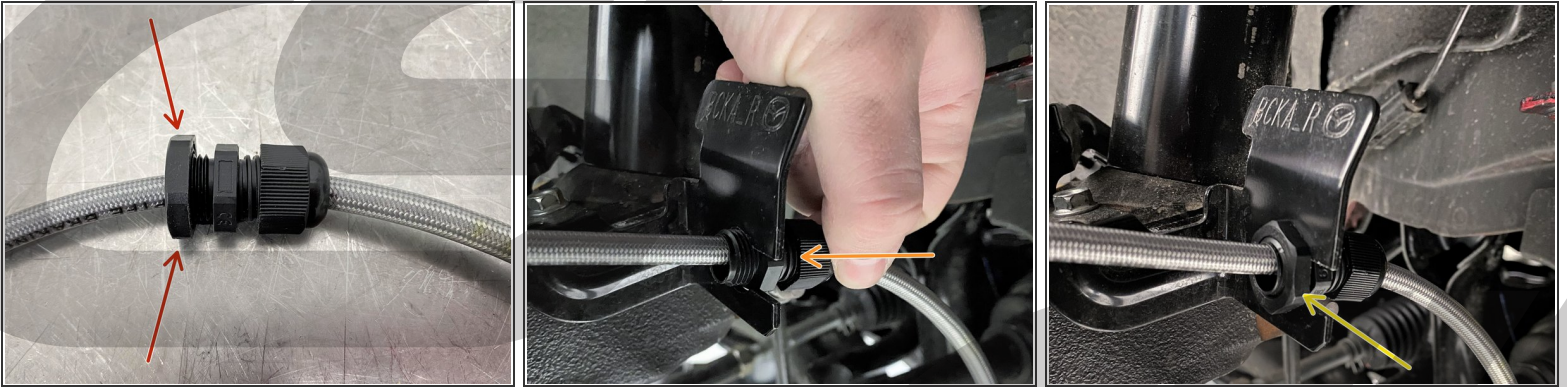
- Remove the 19mm nut from the end of the CorkSport brake line and slide it over the OEM hardline on the inner fender. Slide it down along the hardline to keep it out of the way
- Slide the end of the CS brake line through the bottom of the brake line bracket on inner fender
- Position the OEM hardline into the CS brake line. Thread in the nut until hand tight
- Hold the CS brake line with a 17mm wrench
- Using a 10mm line wrench, tighten the OEM hardline to the CS brake line until snug
- Bring the 19mm nut down the hardline and hand tighten it to the CS brake line.
- Again hold the CS brake line with a 17mm wrench
- Using a 19mm wrench tighten the 19mm nut to secure the CS brake line to the inner fender bracket.

Step 15 — Brake Line Installation - Part 3 Option 1



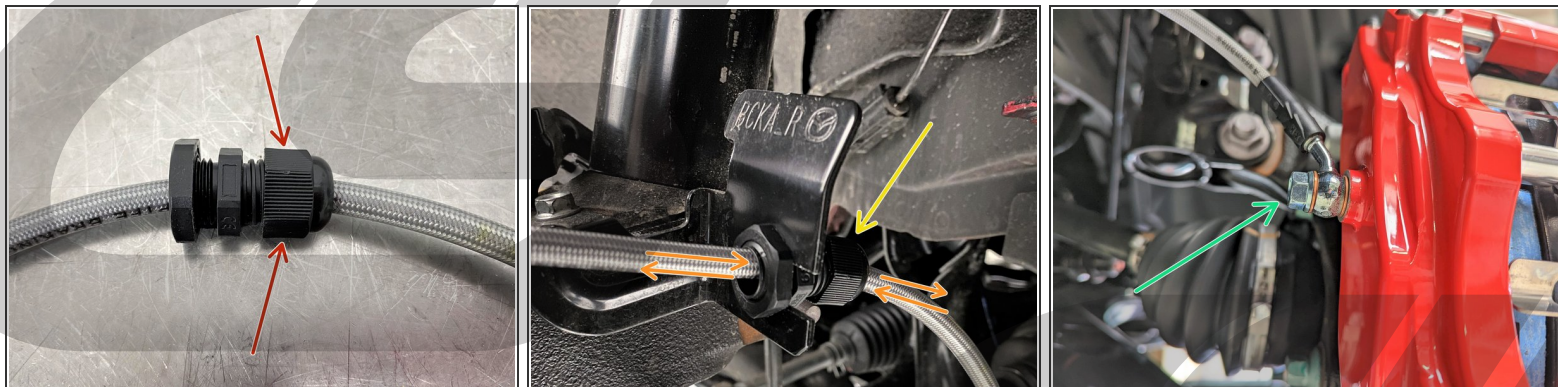
- There are two different brake line mounting options. **Option 1** is shown below. Continue to the next step if your brake lines are different
 - Install the rubber grommet into the bracket as shown. Using the back of a screw driver may help when pushing the grommet into place.
 - ⓘ Use of a lubricant such as glass cleaner is highly recommended for installation.
 - The brake line can be slid in and out of the grommet as needed until it has good slack everywhere and is not touching any components on the vehicle.
 - Finally, tighten the banjo bolt at the brake caliper using a 12mm socket and ratchet. Tighten to **15-19ft-lbs**.
- ⚠ **Do not overtighten the banjo bolt**
- ⓘ While tightening, ensure the brake line retains good clearances to all suspension components

Step 16 — Brake Line Installation - Part 3 Option 2



- There are two different brake line mounting options. **Option 2** is shown below.
- Locate the plastic fitting in the center of the CorkSport brake line
- Remove the plastic 22mm locknut from the fitting
- Slide the plastic fitting into the brake line retaining bracket as shown
- Secure the brake line to this bracket using the plastic 22mm lock nut removed earlier
 - Tighten the 22mm lock nut hand tight

Step 17 — Brake Line Installation - Part 4 Option 2



- Loosen the 19mm retaining nut to allow the brake line to move within the plastic fitting.
- Slide the brake line in and out of the plastic fitting as needed until it has good slack everywhere and is not touching any components on the vehicle.
- Once happy with fitment, tighten the 19mm retaining nut hand tight.
- Finally, tighten the banjo bolt at the brake caliper using a 12mm socket and ratchet. Tighten to **15-19ft-lbs**.

⚠ Do not overtighten the banjo bolt

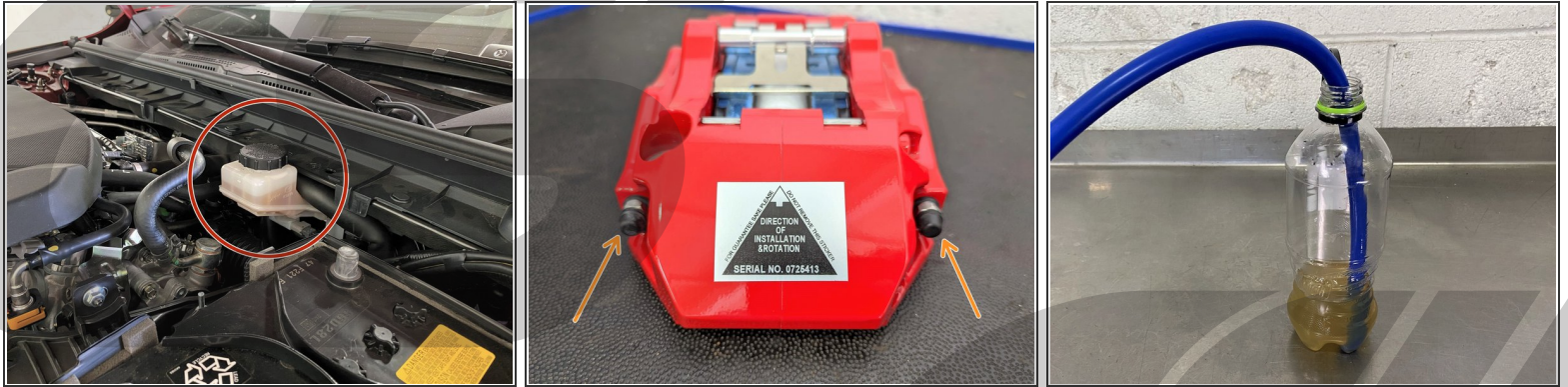
ⓘ While tightening, ensure the brake line retains good clearances to all suspension components

Step 18 — Passenger's Side Brake Installation



- Repeat steps 2-13 for the passenger's side (right hand side) of the vehicle

Step 19 — Brake Bleeding - Part 1



- i** "Bleeding" the brakes is the final step before you're ready to drive the car. It removes all air bubbles from braking system that were introducing during installation
- i** We strongly recommend getting a friend to help you bleed your brakes. It makes the whole process much faster & easier
- Locate the brake master cylinder under the hood of your vehicle
- i** Throughout the bleeding process we will reference this unit
- Locate the two bleed screws at the top of each of your calipers. They will be covered with black rubber dust boots
- Instead of buying a fancy brake bleeder, we recommend getting a plastic bottle and a short section of 5/32" (4mm) hose. Pour some brake fluid in the bottle and place the hose in the bottle like shown in the third image. Ensure the hose is sticking into the brake fluid
- i** The bottle will catch excess brake fluid during the bleeding process

Step 20 — Brake Bleeding - Part 2



i For proper brake bleeding, always start with the bleed screw furthest from the master cylinder. In this case we start with the outer bleed screw on the passenger side, then passenger inner, driver outer, and finally driver inner.

! Take care when loosening & tightening the bleed screws to not scratch your fresh calipers!

- Lift the rubber dust boot from each bleed screw and then, using a 10mm wrench, tighten each bleed screw until snug
- Place a 10mm wrench onto the hex of the outer passenger bleed screw
- Place the other end of your 5/32" hose onto the outer passenger bleed screw. The setup will look like the second image
- Have your friend pump the brakes hard 3-5 times, then hold the brake pedal down
- While your friend holds the pedal, loosen the outer passenger bleed screw. Fluid and air will come out of the bleed screw and the pedal will travel to the floor
- Once the pedal is on the floor, re-tighten the bleed screw. Once tight, your friend can lift their foot from the pedal

Step 21 — Brake Bleeding - Part 3



- Repeat the pumping & holding procedure from the previous step 3-5 times or until no more air bubbles are coming out of the bleeder hose
- Check fluid level in the master cylinder. Top off with SAE J1703 DOT3 fluid as needed
- Repeat the bleeding procedure on the inner passenger's side bleed screw, then outer driver, and finally inner driver

⚠ Top off brake fluid as needed between each bleed screw

- Once complete with all bleed screws, complete one final pumping & holding procedure on all bleed screws. Use the same order as before
- By this stage, there should be no air coming from the brake bleed screws and the brake pedal should be firm
- Verify there are no brake fluid leaks and top off your fluid one final time before moving on
- Clean your brake rotors with brake parts cleaner

Step 22 — Wheel Clearance Inspection



⚠️ This step must be performed prior to driving the vehicle. Failure to do so can result in severe damage to your CorkSport brakes

ⓘ Throughout this step, pay close attention to the back of the wheel and your brake caliper. We recommend about 1/8" of clearance for safe operation.

⚠️ For use with OEM wheels, you will need a **15mm spacer. We strongly recommend extended wheel studs for this large of a spacer for safety**

- Gently position a wheel onto the wheel studs. Be careful as some wheels can easily hit the brakes
- If your wheel appears to be clearing, tighten 3 lug nuts until snug. Inspect clearance again after lugs are tightened
- Finally, very slowly rotate the wheel. Verify that you can rotate it with no contact to the brake caliper

Step 23 — Final Reassembly



- Once happy with clearance install your wheels onto the vehicle
- Torque your wheels in a star pattern to 80-90ft-lbs using a 21mm socket and torque wrench
- ⓘ If installing aftermarket wheels with your big brake kit, you may need different lug nuts and/or a different socket

Step 24 — Brake Pad Bedding



- ① In order for your brake pads & rotors to wear evenly, you must complete the following procedure to "bed" in the pads & rotors
- ① Carefully drive to an open road with no cars around. You will be performing many accelerations & stops. Do not attempt to stomp on the brakes right after install
- ① You may notice a brake smell and/or some smoke during this operation. This is normal as the brakes will get very hot during bedding
 - Accelerate until ~30MPH. Brake smoothly and evenly until almost stopped and then again accelerate to ~30MPH
 - Repeat the previous step ~10 times
 - Accelerate to ~45MPH. Brake much more aggressively until almost stopped. Then accelerate again until ~45MPH
 - Repeat the previous step ~3 times
 - Drive the car around for 15 minutes to let the brake system cool. The less you use the brakes the better

Step 25 — Installation Complete



- After bedding, you are now able to drive normally! Some brake squeaking is normal with the CorkSport BBK
- This completes your installation of the CorkSport Performance 13" Big Brake Kit!
- Contact us with any questions or concerns at sales@corksport.com or (360) 260-2675.
- Please leave a review here: <https://corksport.com>
- Share your experience using #CorkSport on Instagram, Facebook, and Twitter.