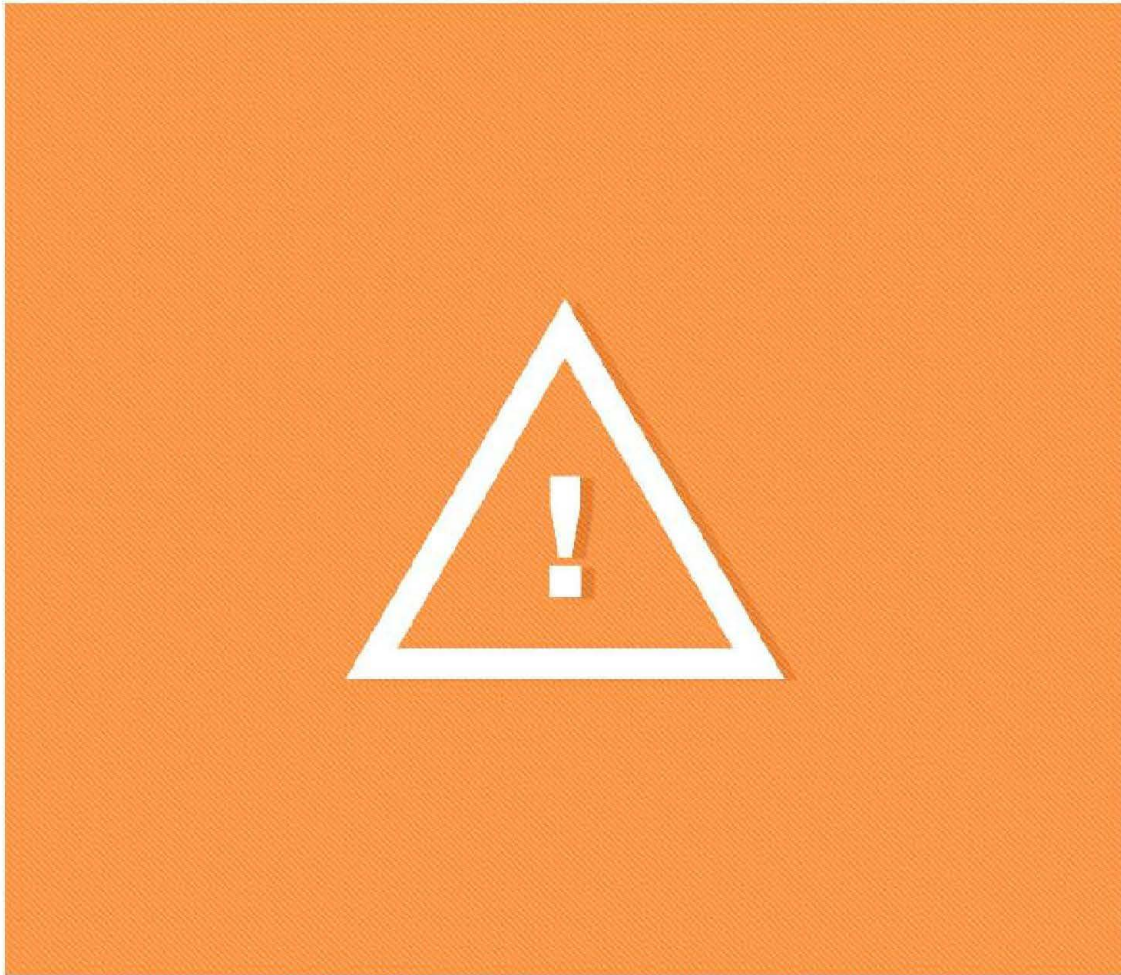




# BIG BRAKE KIT INSTALLATION GUIDE

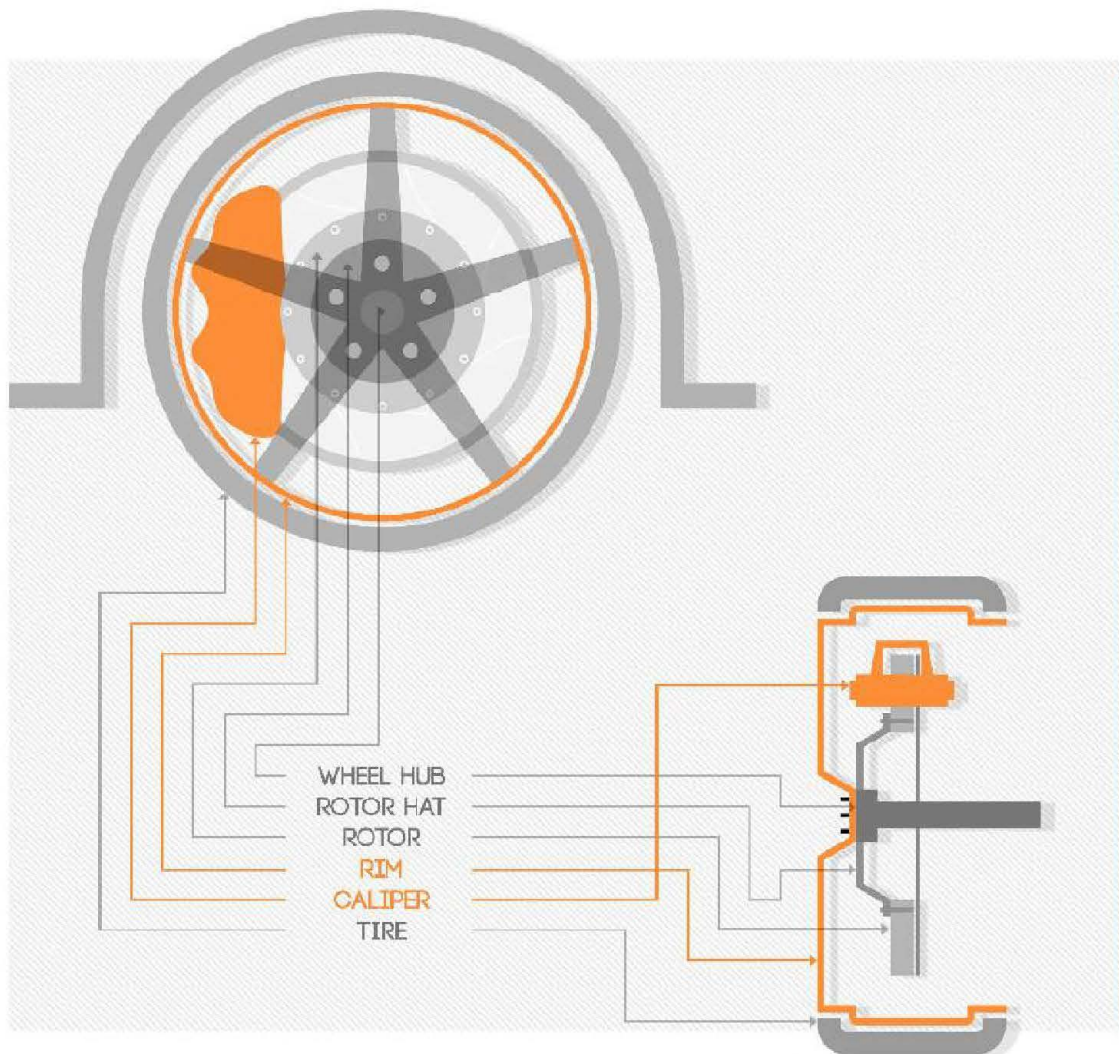
155 Wings Rd #4, Woodbridge, ON L4L 6C6 (905) 856-0035 <https://www.neo-motorsport.com/>



## SAFETY AND LIABILITY INFORMATION

### WARNING:

Installation of NEO Motorsport Big Brake Kit should only be performed by persons experienced in the installation and proper operation of brake systems. The brake system will not function as intended if misused or if not installed properly to the correct specifications. It is the responsibility of the individual installing the brake components or system to determine the suitability of the components or system for any application. Personnel performing any replacement or maintenance operations must be competent and certified.



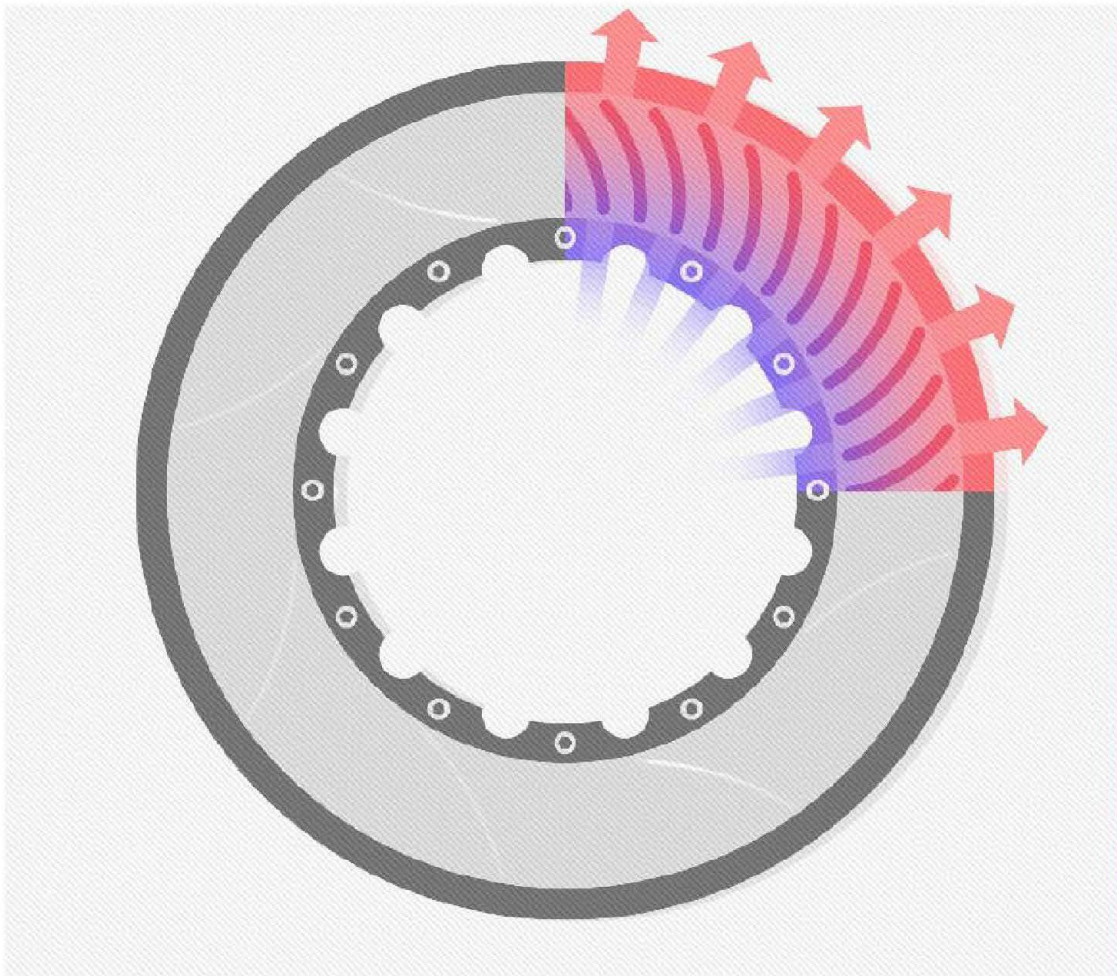
## WHEEL FITMENT

NEO recommends:

Check wheel dimensions and make sure the wheel spoke and barrel clears the brake system components before installing the NEO Big Brake kit. Different wheels or wheel spacers may be required. For NEO Big Brake Kit profile outline template, please email [support@neo-motorsport.com](mailto:support@neo-motorsport.com)

Make sure the tire outer diameters are equal to the manufacturer suggested spec. Oversized/Undersized tire will result in incorrect reading of the vehicle speed, or in worst case, can seriously damage the vehicle and affect vehicle safety.

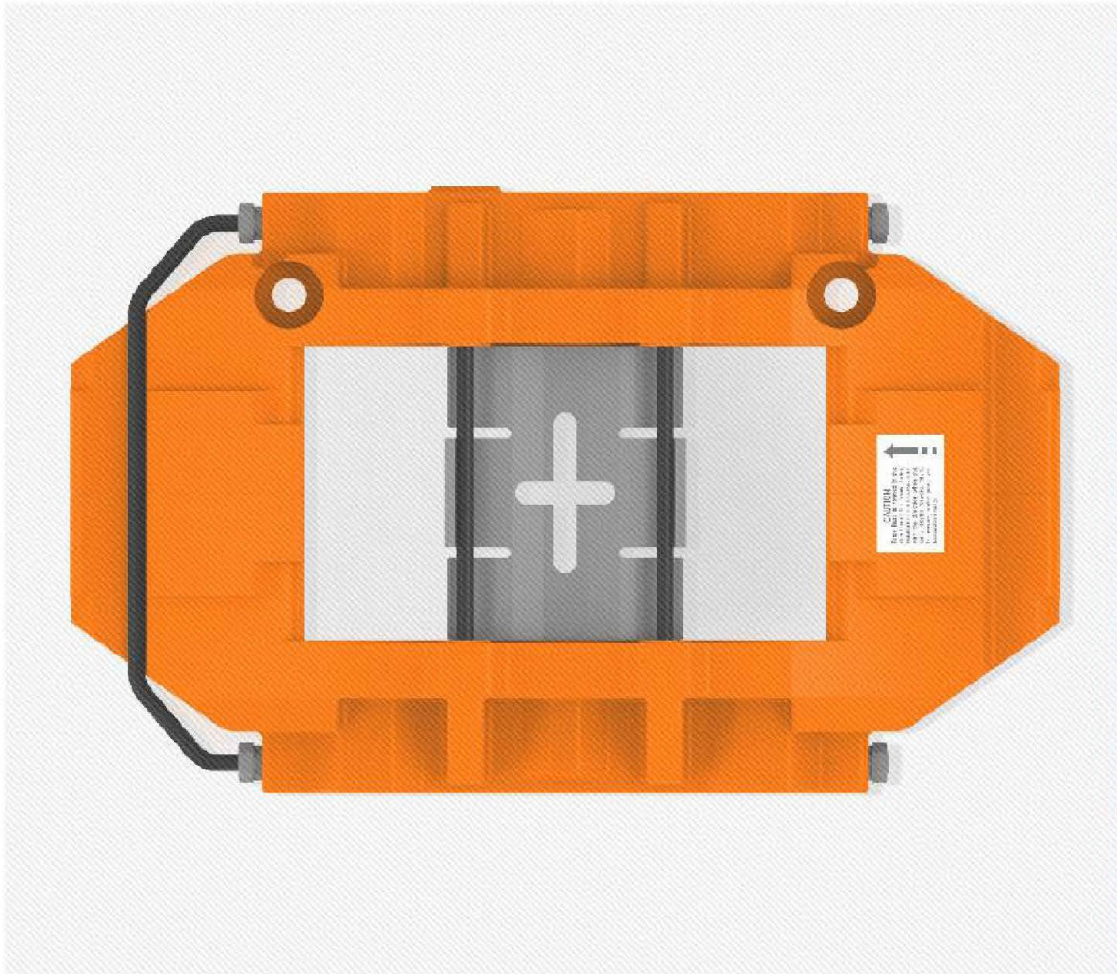
Final fitment of the wheel to the caliper is the responsibility of the customer.



## ROTOR ROTATION DIRECTION

NEO Motorsport Rotors are directional.

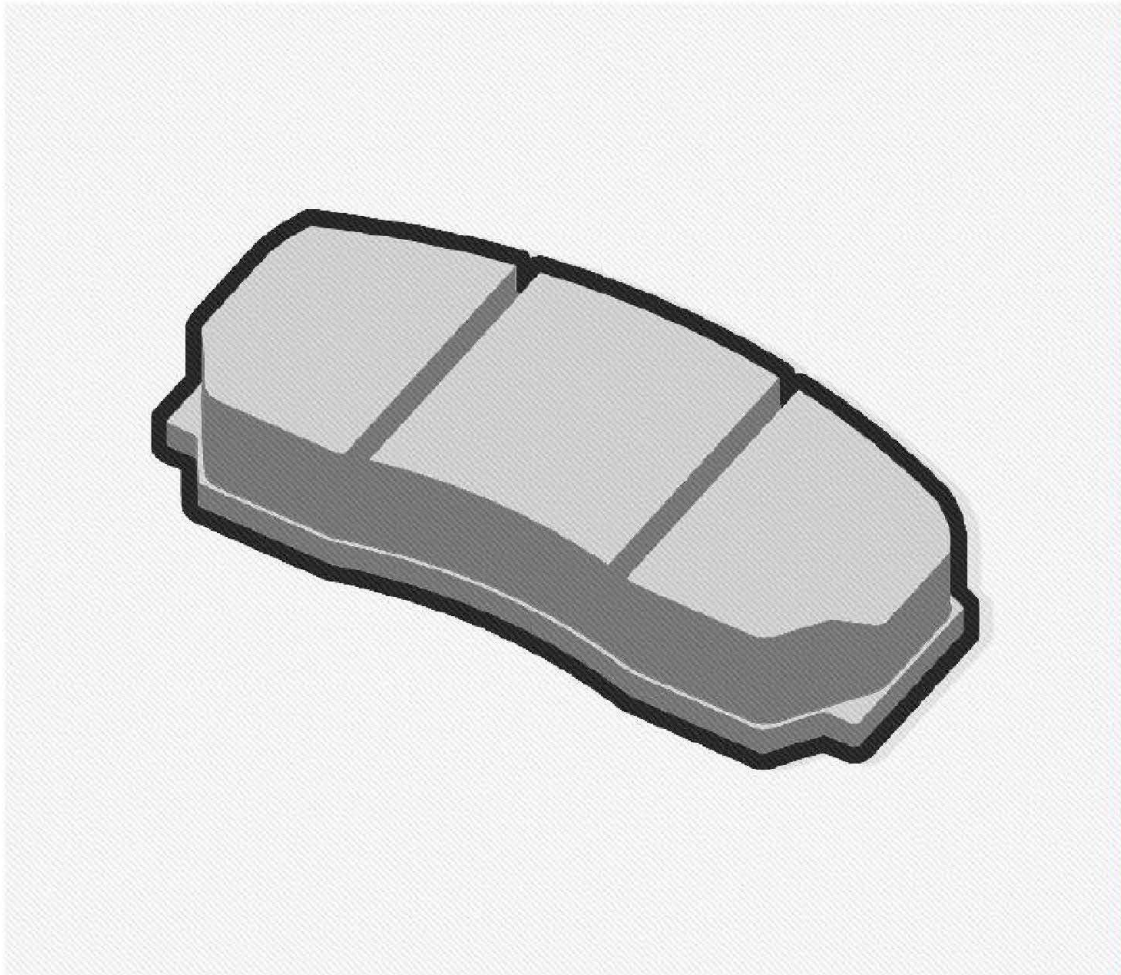
The rotation of the rotor will pump air from the center of the rotor toward the outer. This design guarantees the cooling performance of the rotor, and enhances the durability of the rotors under heavy usage.



## CALIPER ORIENTATION

NEO Motorsport Brake Calipers are directional. Leading and Trailing brake caliper have different designs and cannot be interchanged. Please check the direction sticker on the caliper before installation. Additionally, when mounted on the vehicle, make sure the bleed screws are at the top of the caliper.

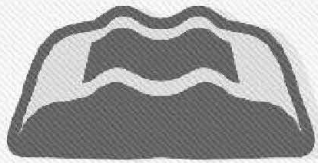
Pictured is a NEO MOTORSPORT Caliper in the Leading Orientation



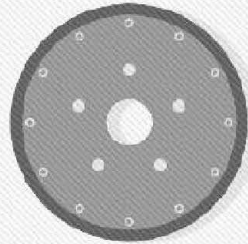
## BRAKE PADS

The brake pads provided with NEO Motorsport Big Brake Kits are developed by NEO Motorsport. Different pad compounds are available for street or race track. Please contact NEO Motorsport, or visit [www.neo-motorsport.com](http://www.neo-motorsport.com) for more information about NEO brake pads.

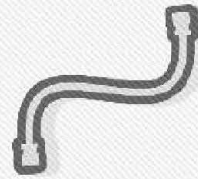
**X2** Brake Caliper Assembly



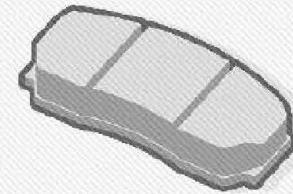
**X2** Rotor Hat



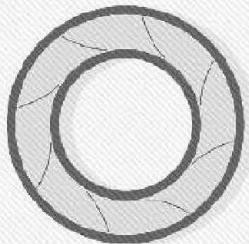
**X2** Stainless Steel Braided Brake line



**X4** Brake Pad



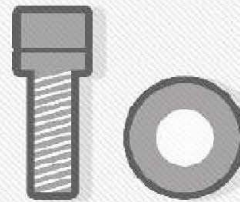
**X2** Rotor Ring



**X2** Caliper Bracket

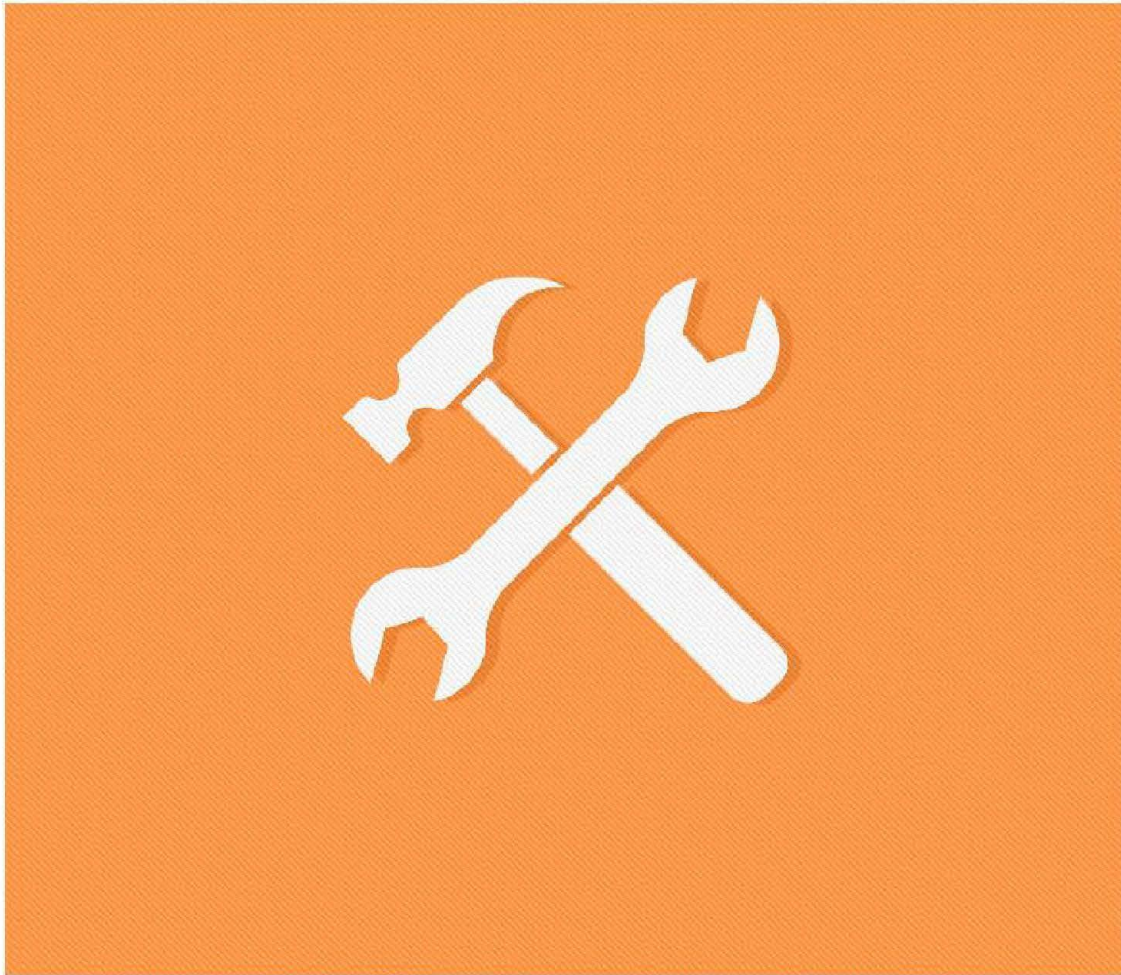


**X4** Mounting Bolt, Nut & Washer Set



\*Please make sure ALL parts are included before begin installation. If any part is missing, or any extra parts are needed, contact your retailer or email [support@neo-motorsport.com](mailto:support@neo-motorsport.com).

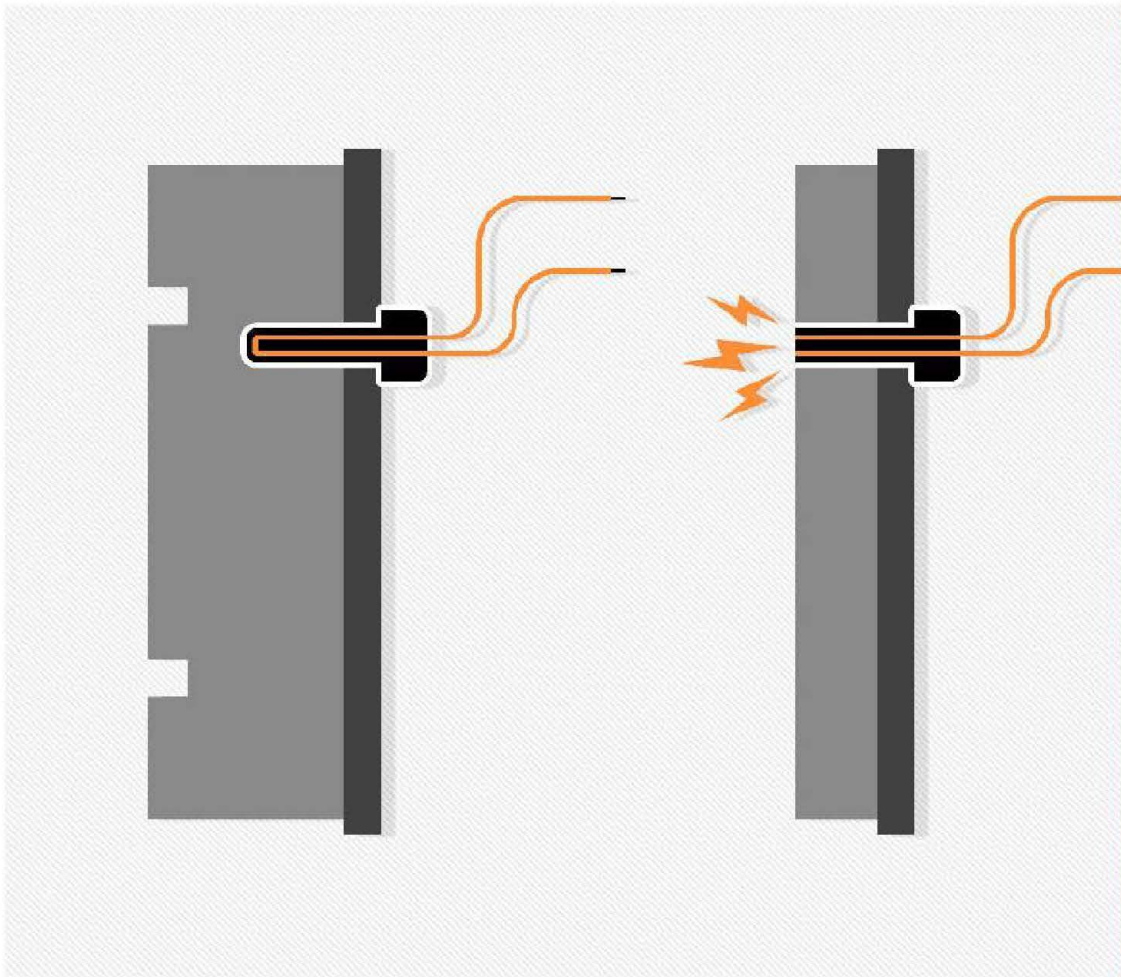
## BIG BRAKE KIT COMPONENTS LIST



## **REMOVAL OF** ORIGINAL COMPONENTS

Please consult the service manual written by original manufacture of the components.

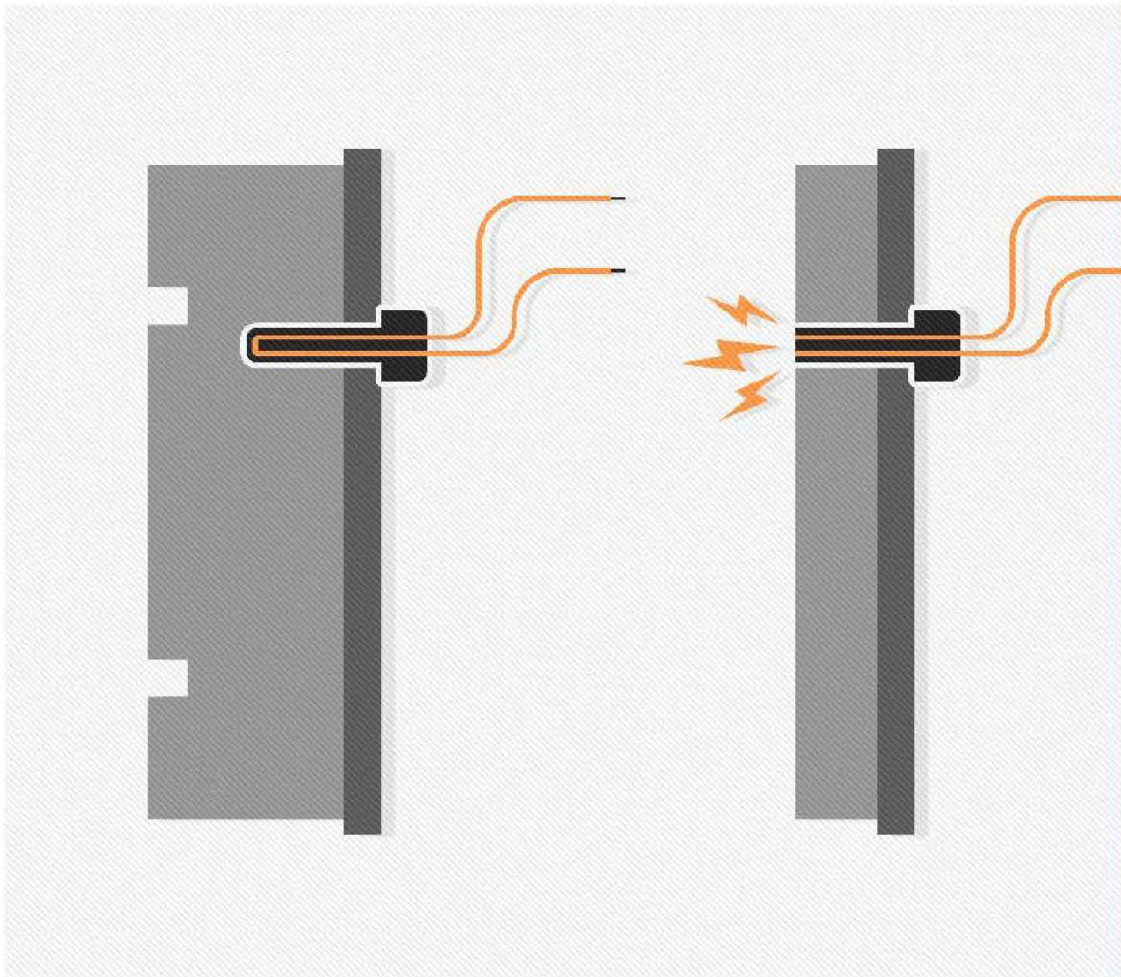




## **BYPASSING BRAKE PAD WEAR SENSOR**

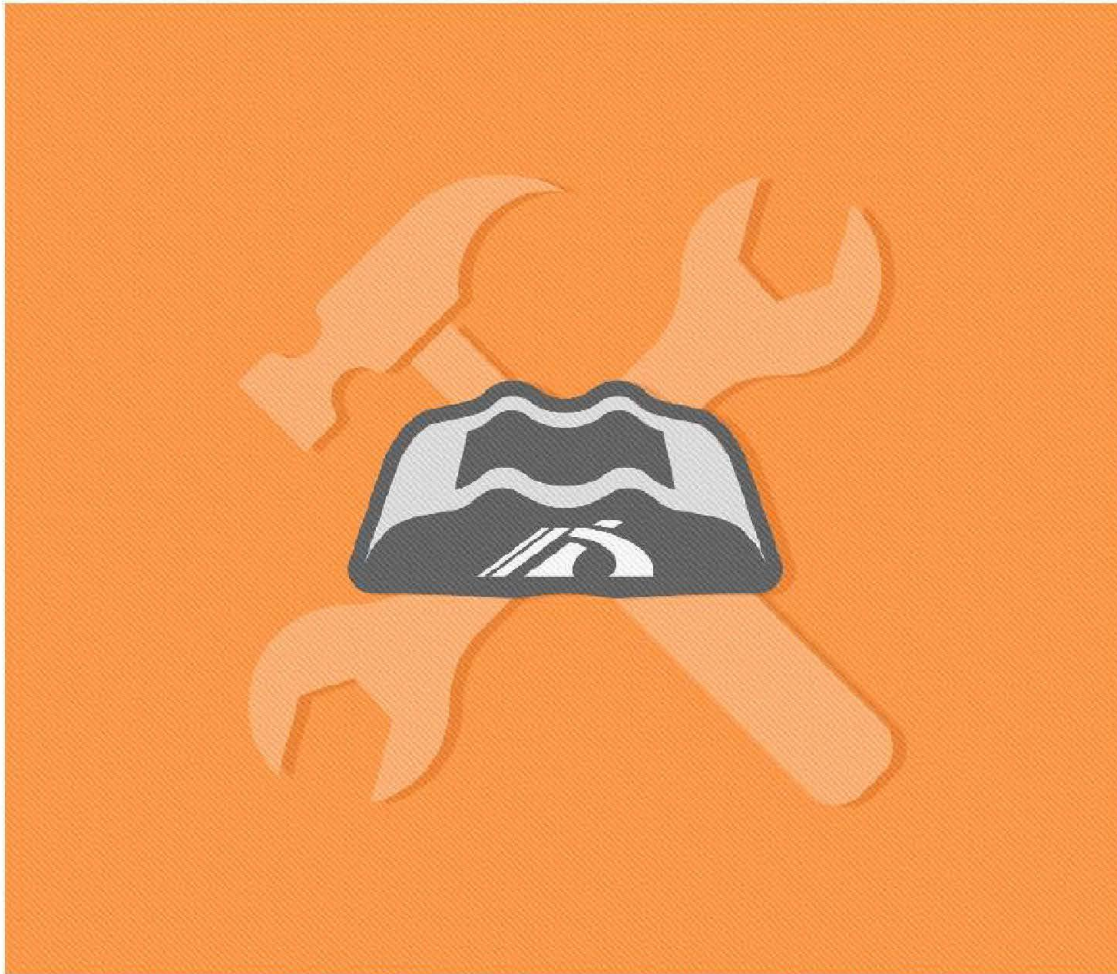
This procedure is only applicable to the vehicles equipped with electronic pad wear indicator sensor. Skip this section if the vehicle is not equipped with pad wear sensor.

1. Disconnect the brake pad wear indicator sensor cable from the vehicle harness.
2. Insert the vehicle key into the ignition and turn to the ON position without starting the engine.
  - a. If the pad wear indicator light on the instrument cluster is illuminated, proceed to Step 3.
  - b. If the pad wear indicator light on the instrument cluster is NOT illuminated, turn the ignition key to OFF position. Cover the connector on the vehicle harness with electrical tape or other protective material, and then secure the vehicle harness so that it will not become stretched or entangled during suspension and steering movement. Skip to the INSTALLATION section.
3. Cut the wires on the pad wear indicator sensor approximately 3~5 cm from the connector.



## **BYPASSING BRAKE PAD WEAR SENSOR**

4. Connect the two wires on the connector end, and insulate using electrical tape and/or heat shrink tube.
5. Reconnect the connector to the vehicle harness
6. Insert the vehicle key into the ignition and turn to the ON position without starting the engine.
7. Check and ensure the pad wear indicator light on the instrument cluster is NOT illuminated. If it is still illuminated, re-check the wire connections from step 4.
8. Cover the connector on the vehicle harness with electrical tape or other protective material, and then secure the vehicle harness so that it will not become stretched or entangled during suspension and steering movement.

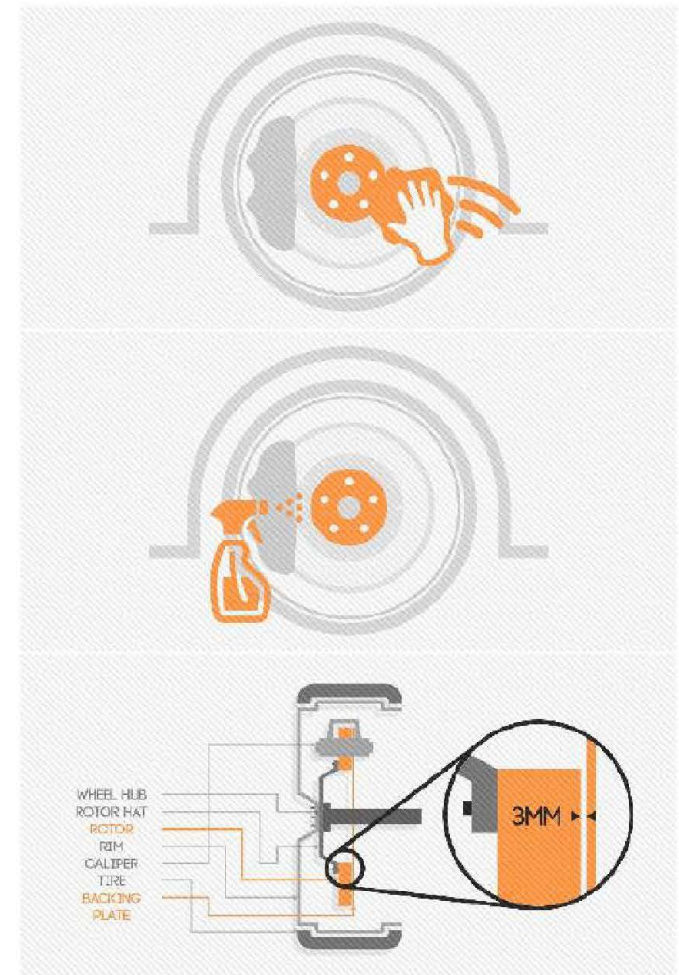


## INSTALLATION

Before installation, always check and ensure the wheel hub, wheel bearing, suspension upright, and all other related components are in perfect working order. NEO Motorsport Big Brake Kit comes in two separate packages. Please make sure the correct components are placed on the correct side of the vehicle. The same procedure applies on both side of the vehicle.

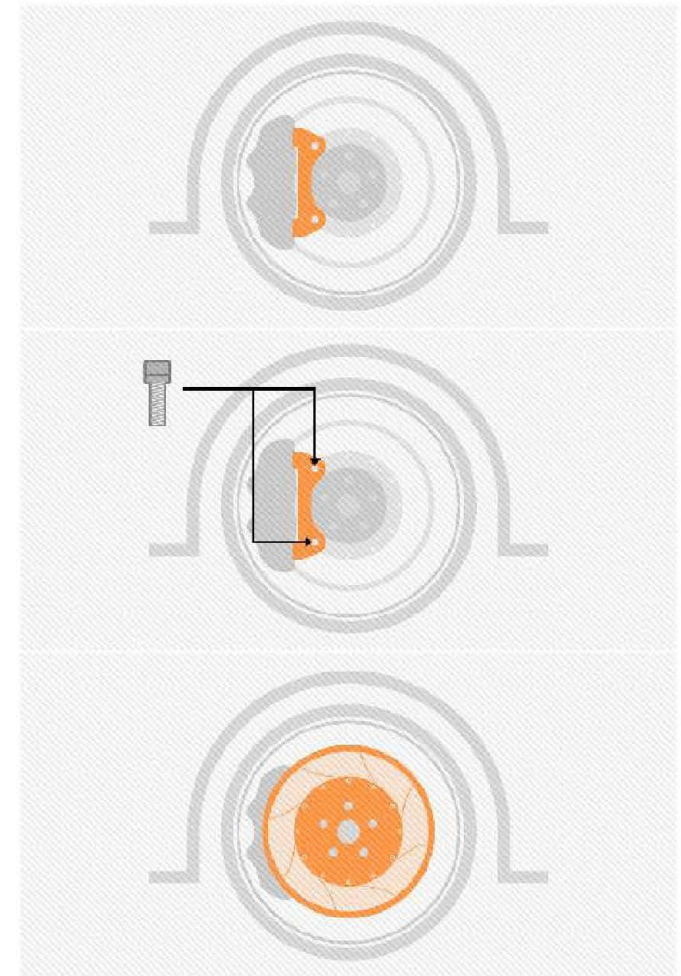
# INSTALLATION

1. Clean the brake rotor mounting surface on the hub and remove any contaminants and corrosion. Use abrasive pad and/or wire brush if necessary.
2. Clean the NEO Motorsport Brake Rotor with brake cleaner. Make sure the rust inhibitor on the rotor surface is completely cleaned off. Failure to do so may cause permanent damage to the brake rotor.
3. Test fit the NEO Motorsport rotor. If the rotor cannot sit flat and rotate freely with a minimum of 3mm of clearance, the factory brake rotor backing plate must be removed. Please refer to the vehicle's manufacturer's service manual for the removal procedures. Make sure the rotor sits completely flat on the mounting surface on the wheel hub to avoid problems like vibrations and centering issues. Remove the rotor from the wheel hub after test fitting is



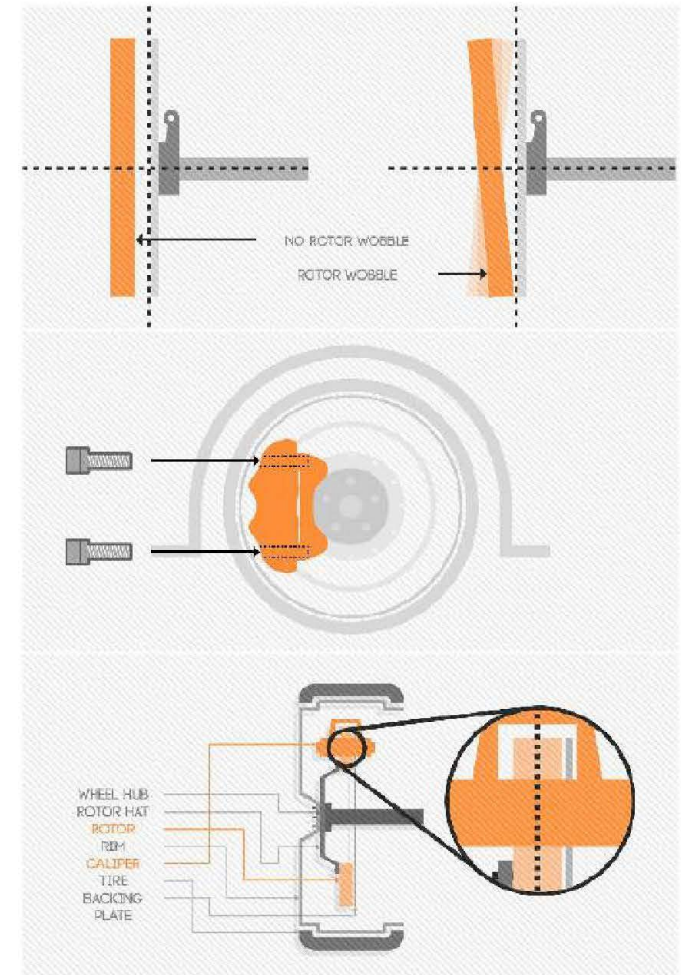
## INSTALLATION

4. Test fit the NEO Motorsport brake caliper bracket. The bracket usually sits on the side of the knuckle where the original brake caliper installed. Make there are no interference between the bracket and the knuckle, and also make sure that the mounting surface of the bracket is clean and free of contaminants and corrosions.
5. Install the caliper bracket onto the knuckle. Use the bolts that mounted the original caliper to mount the brackets. Purchase new bolts from the vehicle manufacturer if the original bolts are damaged in anyway. In some cases, the bolts are supplied with the NEO Motorsport Big Brake Kit. Hand tighten the bolts until the bracket sit flat and tight on the knuckle, but do NOT torque the bolts down as they might need to be removed and reinstalled later during the brake centering procedures.
6. Install the NEO Motorsport brake rotor onto the hub. Temporarily install all of the wheel lug nuts or lug bolts. Use several washer and spacers on each bolt or nut to prevent the bolt from bottoming out before securely clamping the rotor onto the hub. Torque to 14 Nm (10 ft lbs).



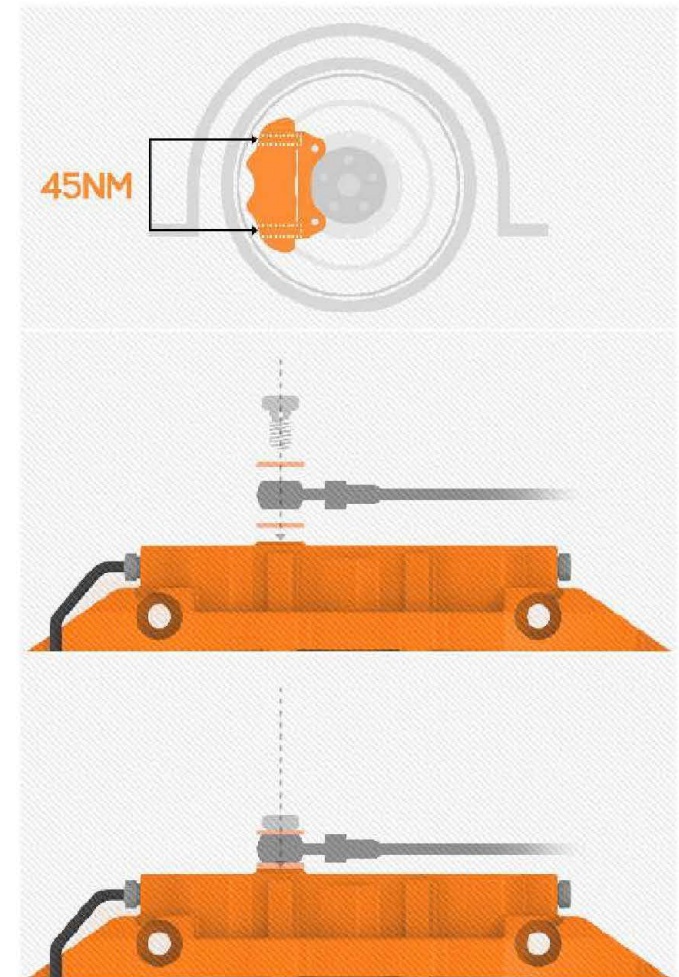
## INSTALLATION

7. Place a magnetic base for the dial indicator solidly on the vehicles knuckle and ensure that it will not move during the measurement. Place the dial indicator needle on the braking surface of the rotor. Turn the rotor a full revolution, the total oscillation of the indicator should not exceed 5-thou. If the oscillation is over 5-thou, re-check to see if the rotor hats is sitting flat on the hub, and re-clean the mounting surface if necessary.
8. Install the NEO Motorsport brake caliper onto the bracket by inserting the two provided bolts through the mounting holes on the brake caliper. Make sure the caliper is installed at the correct side of the vehicle by checking the rotation direction sticker. Hand tighten the bolts until the caliper sits flat and tight on the bracket.
9. Inspect the centering of the brake caliper and rotor by measuring the distance between inner and outer rotor surface to the caliper inner surfaces. Make sure the rotor is NOT rubbing or contacting with the caliper in any location, and the centre line of the rotor are in-line with the centre line of the caliper. If adjustments are needed, go back to step 4, and add (or take out) shims between the bracket and knuckle until the caliper and rotors are perfectly centered. The number of shims needs to be added can be different from vehicle to vehicle, and also left to right. Make sure to check every individual corner. **The dotted centerline of the rotor must be lined up with the center line of the caliper**



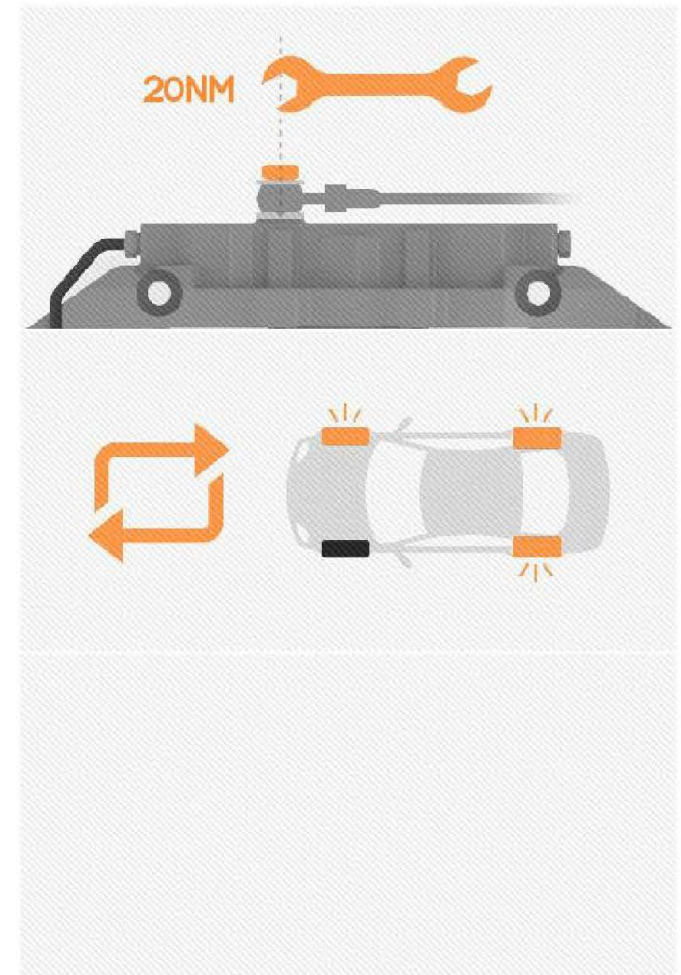
## INSTALLATION

10. After the rotor and caliper are centered, torque the bracket-to-knuckle bolts to the vehicle's original manufacturer's torque spec. Then torque the caliper-to-bracket bolt to 45 Nm (60 ft.lbs).
11. Remove the plastic plug from the brake fluid inlet on the back of the brake caliper. Insert the banjo bolt through a copper washer, the banjo fitting on the NEO Motorsport brake-line, and then another copper washer. Thread the banjo bolt into the fluid inlet of the caliper. Leave the banjo bolt loose so the fitting can rotate during the following steps.
12. Connect the brake-line to any in-line connections and brackets, and reconnect the NEO Motorsport brake-line to the chassis hard-line. Insert any brake-line retaining clips, bolts, and tighten to the vehicle's manufacturer's spec. Make sure to follow the original manufacturer's brake-line routing when installing the NEO Motorsport brake-line and it is not twisted.



## INSTALLATION

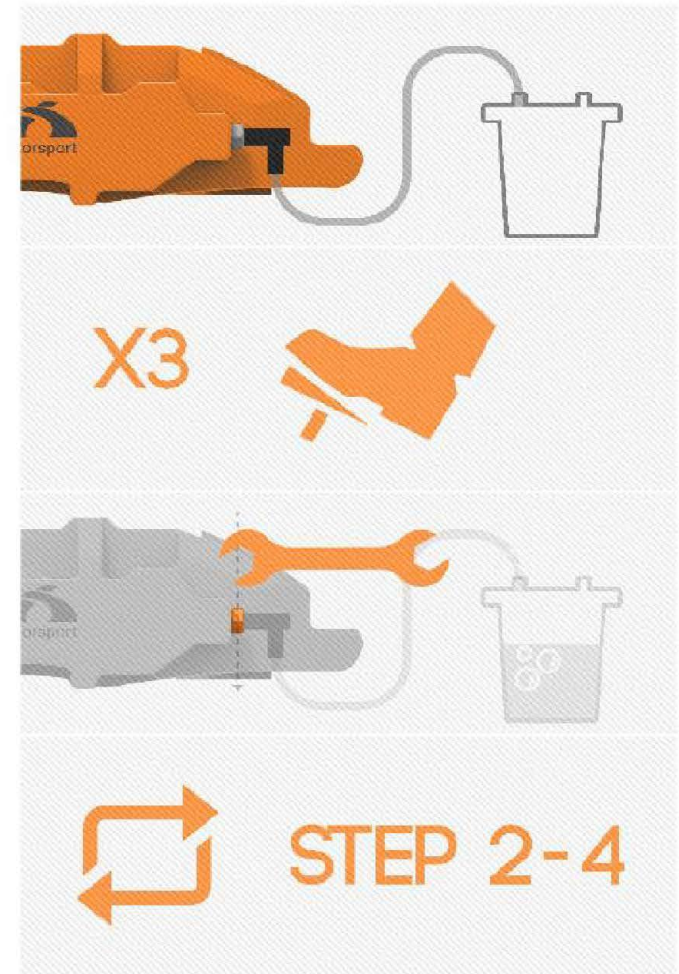
13. Tighten both end of the brake-line and torque to 20 Nm (15 ft lbs). Temporarily install the wheel and perform a complete check. Make sure the wheel clears the brake components, and the brake-line is not stretched or entangled, or contacting any suspension/chassis components during the full range of suspension and steering movement.
14. Repeat the process on other corner of the vehicle.





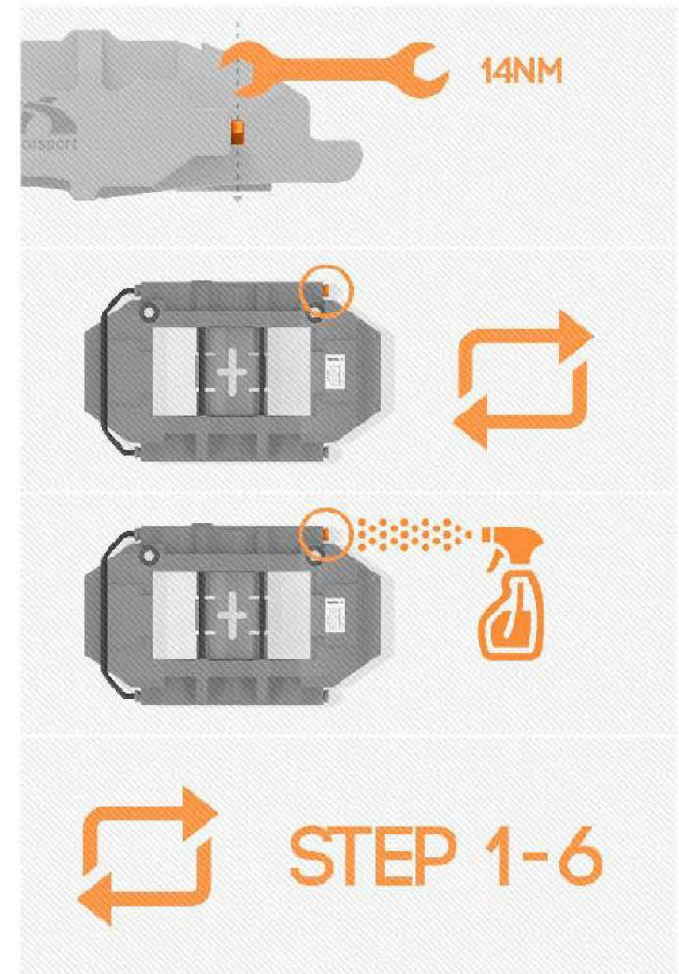
## BLEEDING THE BRAKE SYSTEM

1. Remove the protective cap on the outer bleeder on the NEO Motorsport Brake Caliper. Connect one end of bleeder hose to the bleeder screw. Place the other end of bleeder hose into a collection container.
2. Pump the brake pedal 3 times and hold the brake pedal firm. Loosen the bleed screw for about  $\frac{1}{2}$  turn. Allow air and fluid to escape from the bleeder screw. The pedal at this point will be fully depressed.
3. Tighten the bleeder screw while the pedal is still depressed. Do not over tighten the bleeder screw.
4. Allow the pedal to return to the relaxed position, and make sure the brake fluid level in the brake master cylinder reservoir does not drop below the minimum line. Repeat step 2 to step 4 until clean fluid, free of air bubbles emerges.



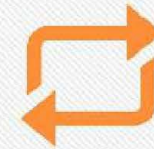
## BLEEDING THE BRAKE SYSTEM

5. Torque the bleeder screw to 14 Nm (10 ft lbs).
6. Now move onto the inner brake nipple and repeat the process.
7. Clean off any brake fluid around the bleeder screw. Reinstall the protective cap onto the bleeder.
8. Repeat step 1 to step 6 on the inner bleeder screw on the same brake caliper.



## BLEEDING THE BRAKE SYSTEM

9. Repeat the entire process by following the OEM factory's bleeding procedure. Consult a factory service manual for such information as every vehicle has a different brake fluid passage routing. If you cannot find the factory brake fluid sequence, please start from the corner that is furthest away from the master cylinder and work your way toward the closest caliper.
10. Check for any fluid leak while system is under pressure.
11. Check the fluid level in the brake master cylinder reservoir, and fill the reservoir to the indicated maximum level.



STEP 1-8



FILL LINE

