

R1CONCEPTS

PERFORMANCE BRAKE PARTS

# BRAKE PAD INSTALLATION GUIDE

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# BEFORE INSTALLING

**THE INSTALLATION GUIDE IS FOR REFERENCE ONLY. PLEASE REFER TO THE VEHICLE'S SERVICE MANUAL OR A PROFESSIONAL INSTALLER FOR COMPLETE INSTRUCTIONS AND GUIDANCE.**

## Why Choose R1 Concepts Brake Pads and Rotors?

R1 Concepts is renowned for producing high-quality brake pads and rotors designed to enhance braking performance across various driving styles, including daily commuting, towing, off-roading, and racing.

## Here's why R1 Concepts is a top choice

**Superior Stopping Power:** R1 Concepts' drilled and slotted rotors improve brake cooling and deliver consistent stopping power by dissipating heat and gases more efficiently.

**Durability and Longevity:** The GEO-Carbon and eLINE Series rotors are coated for corrosion protection, extending their life, even in harsh conditions. Regular vehicle upkeep, including replacing brake rotors when signs of wear appear, is crucial for maintaining optimal braking performance.

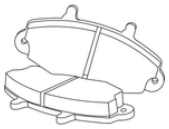
**Quiet and Smooth Operation:** R1 Concepts brake pads, particularly the ceramic series, are engineered for quiet, low-dust performance, keeping your wheels cleaner and providing a smooth braking experience.

**Easy Installation:** R1 Concepts brake products are designed for plug-and-play installation, meaning no major modifications are necessary.

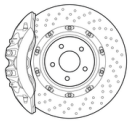
## Why Worry About Replacing Your Brakes?

Brakes are one of the most critical components of your vehicle. Ensuring your brake pads and rotors are in good condition, and replacing them when necessary, can significantly improve stopping power, safety, and overall vehicle performance. It's essential to check for uneven wear and corrosion on the brake rotor to maintain optimal brake performance. R1 Concepts offers high-quality brake pads and rotors designed for everything from daily driving to high-performance applications. In this comprehensive guide, we'll walk you through how to install new R1 Concepts brake pads and rotors on your vehicle, providing all the necessary steps, tips, and safety precautions.

## STEP 1 HAVE THE FOLLOWING PARTS AVAILABLE BEFORE YOU BEGIN:



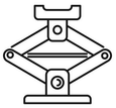
R1 Concepts Brake Pads



R1 Concepts Brake Rotors



DOT 3 or 4 Brake Fluid
*(as recommended by your owner's manual)*



C-Clamp, Car Jack & Jack Stands

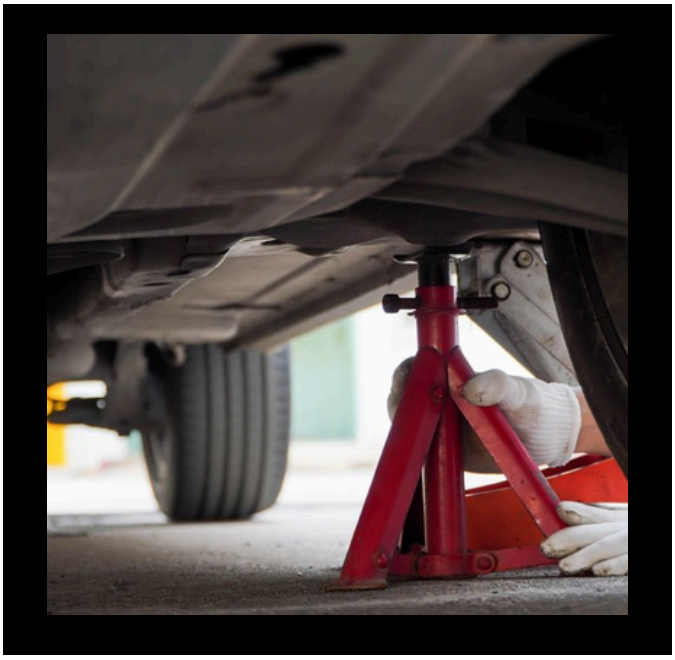
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**STEP 2** Block the rear wheels so the car won't roll once you jack it up. Put the set the parking brake firmly.

**STEP 3** Before jacking the car up off the ground, set the parking brake and loosen the lug nuts on the wheels just enough to break them free. Work them off just enough until loosen their resistance and become to turn with the tire iron. Be sure to jack the vehicle on level ground, and use jack stands designed to support the weight of the vehicle. Raise the car and support with jack stands placed at the manufacturers recommended lift points. Usually the frame support area is immediately to the rear of the front wheels.

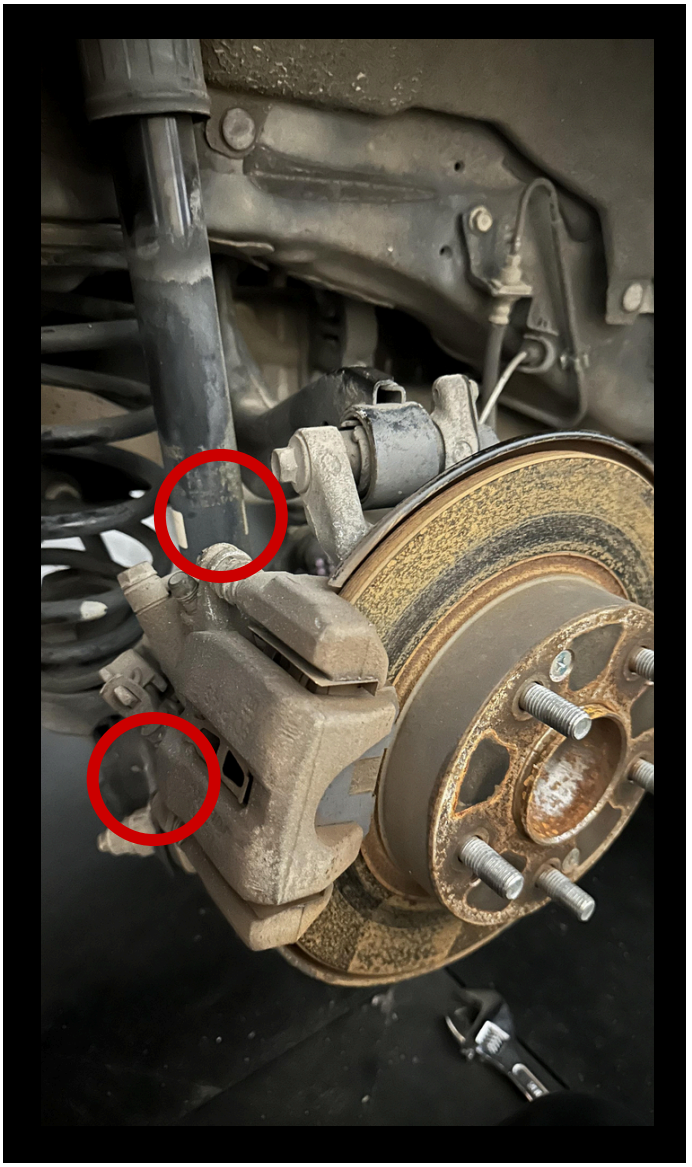
**ALWAYS USE JACK STANDS. NEVER ATTEMPT TO WORK ON A VEHICLE SUPPORTED ONLY BY A HYDRAULIC JACK.**

**STEP 4** Remove the lug nuts and the wheel. It is best to work on one wheel at a time, leaving the other side intact as a point of reference. As a safety precaution, roll the wheel/tire assembly under the front-center of the car, between the stands, and set it down beneath the engine's K-member, in the event of a faulty jack stand.



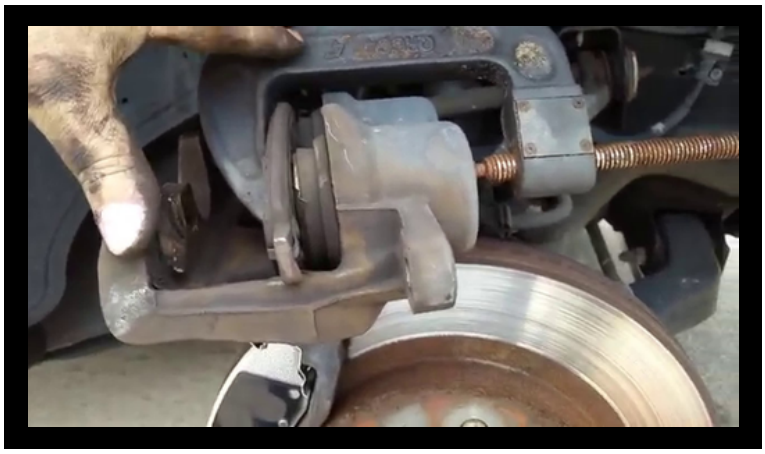
**STEP 5** Review the brake components. A disc brake assembly is composed of a caliper, two brake pads, and a rotor. The caliper works on pressurized brake fluid through a piston in the caliper. The caliper mounting bracket is bolted to the spindle, and holds the brake pads in position relative to the brake rotor. The caliper fits over the pads and is fastened to the brackets with special sliding bolts. These bolts usually have dust boots. When the brakes are applied, the caliper piston squeezes the pads against the rotor creating friction.

**STEP 6** Remove the bolts fastening the caliper to the caliper mounting bracket. Gently slide it out and away from the rotor. Hang the caliper inside the wheel well using a bungee cord, so that the hose is not stressed. Do not let the caliper dangle from the brake hose line. Inspect the inside of the caliper and remove the brake pads. Remove the two remaining bolts that hold the caliper bracket to the knuckle. Use a wire brush to clean rust from the rails where the pads contact the caliper.



**STEP 7** With the caliper out of the way, remove the rotor. Sometimes the rotor rust will make it bind and you will need to use a mallet to loosen it. Tap both the front and backside alternating left and right, top and bottom of the rotor. The rotor thickness should be measured and compared to the minimum discard thickness that is etched on the rotor. If the thickness is less than this minimum, then the rotor should be replaced.

**STEP 8** The next step is to move the piston back inside the caliper. The piston has extended as the pad material wears. With new thicker pads, you must return the piston back inside the caliper body to give the thicker pads room for installation.



First crack open the bleeder screw on the caliper to allow brake fluid to be relieved. Place a container under the caliper to collect the fluid. Use a large C-clamp, place the used brake pad over the face of the piston to protect the surface from marring, and work it back that way. As you turn the handle on the clamp, it will increase pressure on the piston, until it becomes flush with the surrounding metal. Brake fluid will be released through the bleeder. Then loosen and remove the C-clamp. Close the bleeder screw for now. If you cannot open the bleeder screw, then push the C-clamp in slowly to prevent unsafe back pressure and damage to the ABS modulator, brake valving or master cylinder. It may be necessary to drain some fluid from the master cylinder reservoir.

**STEP 9** Check and replace all hardware as needed. Improper hardware can lead to noise or poor brake pad performance. Clean the caliper rails or hardware slides where the pads make contact. Clean the hub-mating surface with a wire brush. Rust or debris on the hub can cause rotor run out and lead to wheel vibration

**STEP 10** Install the new rotor and remount the caliper bracket (not the piston part) to the spindle knuckle arm.

**STEP 11** With the caliper bracket bolted to the spindle, reinstall the brake pads. Slide the caliper over the pads and rotor and line up the bolt holes. Bolt the caliper to the caliper bracket. Torque caliper and caliper bracket bolts to manufacturer specifications.

**STEP 12** Bleed the brakes to remove air from the brake line. First make sure the brake fluid is full to the top. When you open the bleeder screw, have someone press down slowly on the pedal as you monitor the bleeder screw. Before he releases the pedal, close the bleeder screw. This prevents sucking air back into the brake caliper. Repeat this process until you see a constant stream of fluid with no bubbles, then close the bleeder screw. It usually takes 5 or 6 pumps of the pedal to clear the air and old brake fluid out of the line. You may need to pump quite a few times more if you haven't changed your brake fluid in a long time. Check the master cylinder reservoir and replace brake fluid to the MAX line. Do not overfill the reservoir. Pump the brakes several times to seat the brake pads to the rotor and check the reservoir one more time. Top off as necessary.

**STEP 13** Replace the wheel and lugs. Drop the car to the ground to finish tightening the bolts to the manufacturer's specified bolt torque. Alternate tightening sequence by going to the opposite side of the hub. A torque gun is not recommended.

**STEP 14** **BREAK-IN NEW BRAKE PADS AND ROTORS AS SHOWN BELOW**

# BREAK-IN PROCEDURE

**IMPORTANT | TO BREAK-IN NEW BRAKE PADS & ROTORS USE THE FOLLOWING BREAK-IN PROCEDURE. PROPER PAD BEDDING CAN PREVENT ROTOR WARPING.**

**1**

### WARM-UP BRAKES

Find a safe, open road or empty parking lot to perform the break-in. Drive at 30–35 mph and apply the brakes gently to a stop 3–4 times. The goal is to get the pads and rotors up to temperature gradually.

**2**

### Moderate Stops (Initial Bedding)

Perform 4–6 stops from 40–45 mph to about 10 mph. Use medium brake pressure and do not come to a complete stop. Do not allow the brakes to cool completely between these stops. You may smell the brakes heating up which is normal.

**3**

### Aggressive Stops (Final Bedding)

Perform 4–6 harder stops from 50–60 mph to 10 mph. Brake firmly, but not hard enough to lock up the wheels or trigger ABS. Again, do not come to a full stop, and do not rest your foot on the brake pedal when stopped, it can cause pad imprinting.

**4**

### COOL DOWN

Drive at 40–60 mph for 5–10 minutes without using the brakes. This allows the system to cool evenly and avoids “warping”. Try to avoid coming to a complete stop with hot brakes.

## AFTER PROCESS

Your brakes may feel slightly different for the first 100–200 miles. Avoid hard braking during this break-in period unless necessary. Once fully bedded, you'll notice smoother, stronger braking performance.