

REQUIREMENTS & INSTALLATION

Thanks for purchasing the Revl Carbon Road Brake! Established by the Hive, Revl brings progressive, ground-breaking bicycle components to the road cycling world. Revl products will set the bar for performance while providing quantifiable benefits for your ride – all in a modern, stylish package.

The Hive is a collective of friends and cyclists contributing their individual talents and perspectives to bringing fully developed products and ideas to the two wheeled world. We work with friends, competitors... people from around the world... that share in our philosophy that there is another level possible beyond what is available today. The Revl Carbon Road Brake is another step along our path. As always, more to come.

Frame requirements & required tools

- The Revl Carbon Road Brake is compatible frames and forks designed for short-reach brake calipers, with a reach measurement between 40-50mm.
- Revl Carbon Road Brakes are supplied with pads designed for Aluminum rims. If you plan to use your Carbon Road brakes with carbon fiber rims, please consult your rim manufacturer for suggested compatible brake pads. Revl brake pad holders are compatible with Shimano™ style aftermarket road pads.
- Revl Carbon Road brakes are fitted with 27mm (front) and 12.5mm(rear) threaded mounting posts, and 15.5mm (front) and 10.5mm (rear) Aluminum t-nuts. We have done our best to supply stud lengths and t-nuts that fit as many frames and forks as possible, but as there is no industry standard, your results may vary. It may be necessary to use a manufacturer supplied t-nut, or a longer or shorter aftermarket t-nut to fit your brakes to any specific frame and fork.

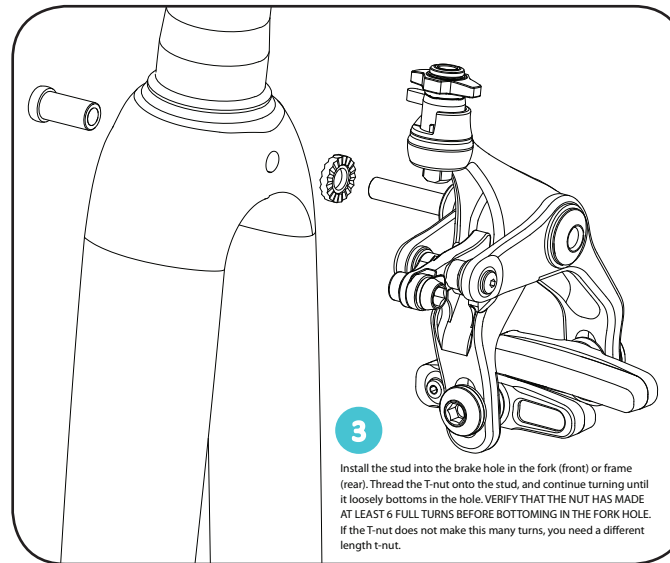
Required Tools

- 5mm hex key and 5mm hex key torque wrench attachment
- Torque wrench (We recommend the Syntace "Torque Tool 1-20")
- Small crescent wrench
- Cable Housing Cutters or Heavy Diagonal Pliers
- File or Bench Grinder
- Sharp Probe (dental pick or the like)
- Ti-prep
- 2mm hex key and 2mm torque wrench attachment (for caliper service only)
- Loctite™ 242 or equivalent (for caliper service only)

Brake Caliper Installation

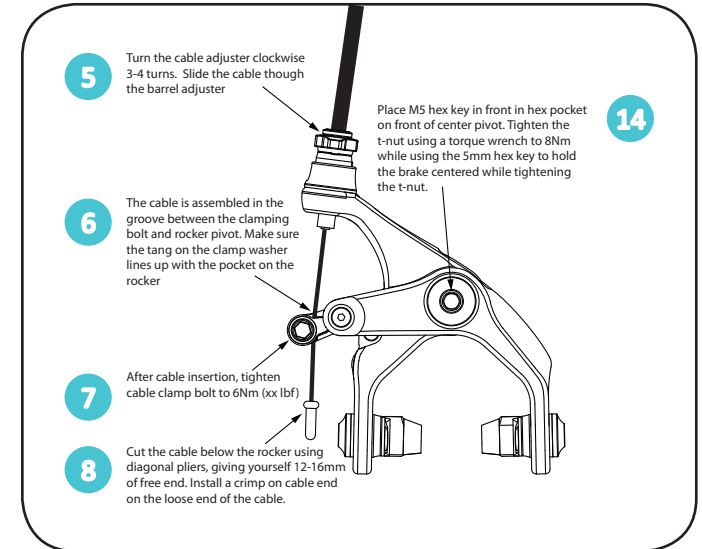
1. Verify that you do indeed have a torque wrench handy.. We're serious. Titanium and Aluminum are fine materials, but they are not ham-fist tolerant.
2. Remove T-nut from the brake, leave the serrated washer in place on the brake threaded stud. Apply a dab of ti-prep on the threaded stud.
3. Install the stud into the brake hole in the fork (front) or frame (rear). Thread the T-nut onto the stud, and continue turning until it loosely bottoms in the hole. VERIFY THAT THE NUT HAS MADE AT LEAST 6 FULL TURNS BEFORE BOTTOMING IN THE FORK HOLE. If the T-nut does not make this many turns, you need a different length t-nut.
4. Place the 5mm hex key in front in hex pocket on front of center pivot. Tighten the t-nut using the torque wrench and 5mm hex key attachment to 8Nm using the hex key to hold the brake centered while tightening the t-nut.

Brake Caliper Installation (continued)



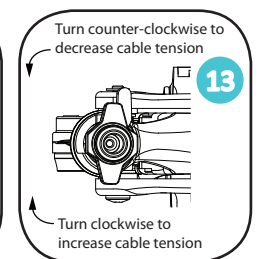
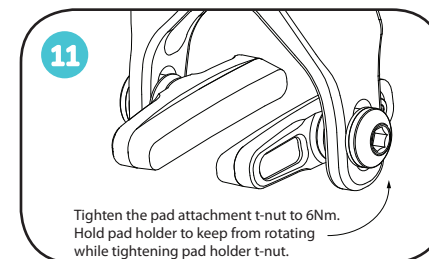
Brake Caliper Installation (continued)

5. Install brake cable housing on the bicycle frame per your brake lever manufacturer instructions. Note that center pivot brakes are especially sensitive to cable housing length. Cable housing should reach the brake with a gradual arc to minimize the housing pulling or pushing on the cable barrel adjuster. Cut the brake end of the housing using diagonal pliers or Cable Housing Cutters, then grind the end of the cable square using the grinder or file. Open the inner plastic sheath of the cable using the probe. Install the housing end in the Cable barrel adjuster.
6. Remove the cable clamp screw and verify that the screw has ti-prep applied to the threads. Reinstall the screw through the cable clamp washer, and turn three or four turns. Now turn the barrel adjuster through the lever, housing, barrel adjuster and into the pocket on the rocker under the cable clamp washer. Verify that the tang on the washer is captured in the pocket on the rocker. Before tightening the cable clamp bolt, be sure the cable quick release is in the closed position.
7. Pull on the cable while pushing up on the underside of the rocker, to tighten the cable and close the brake. Tighten the cable clamp screw using the 5mm hex key until the cable no longer slips. Now tighten the cable clamp screw to 6Nm using the torque wrench. If necessary, use the small crescent wrench to hold the back part of the rocker and keep it from turning while using the torque wrench.
8. Cut the cable below the rocker using the diagonal pliers, giving yourself 12-16mm of free end. Install a crimp on cable end on the loose end of the cable.



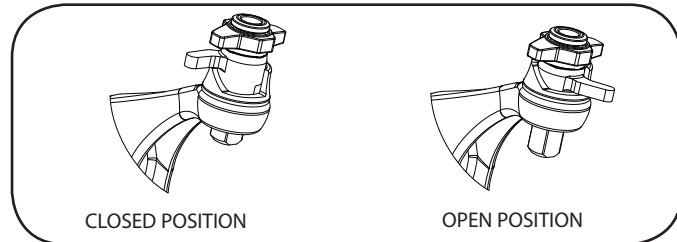
Adjusting the Brake Pads & Fine Tuning

9. Loosen one of the brake pad t-nuts.
10. Align the brake pad and squeeze the brake lever, or squeeze the caliper closed to hold the pad in place. Pads should be centered in the brake track of the rim. A small amount of toe in may be used if necessary during break in of new pads.
11. Using the torque wrench, tighten the pad attachment t-nut to 6Nm. Hold pad holder to keep from rotating while tightening pad holder t-nut.
12. Repeat sequence 9-11 for second pad.
13. Adjust cable adjuster so that pads have 1.5-2mm of clearance to the rim per side. This may require adjusting the cable clamp as in Steps 6 & 7 of Brake Caliper Installation so that you are not operating the barrel adjuster at one extreme or another. Turn the cable adjuster clockwise to increase cable tension and decrease pad clearance to the rim. To decrease cable tension, turn the cable adjuster counter-clockwise.
14. Insert a 5mm allen key into the front of the center pivot and turn in either direction until, when actuating the brake lever, the arms move the equal distances on either side. It only takes a slight adjustment of the spring to properly center the caliper. **Achtung:** Do not rotate the center pivot more than 10 degrees to center brake! Doing so may damage the spring. If your brake will not center with this amount of adjustment, you probably need to modify the length or path of your brake housing. If you're lucky, you need to make it shorter.



Using the Quick Release

The Revl brake quick release resides under the cable tension adjuster assembly. It is a binary system, meaning there are only open and closed positions, with 4mm of travel. That means, depending on rim width and pad clearance, you might have to whack your 28c tire to get it out. Check the diagram below to see what the closed and open positions look like. Verify that your quick release is locked in the closed position before riding.



General Maintenance

From time to time, your Revl Brake may require minor maintenance to keep it working at peak performance. We recommend the following service schedule:

Every Ride:

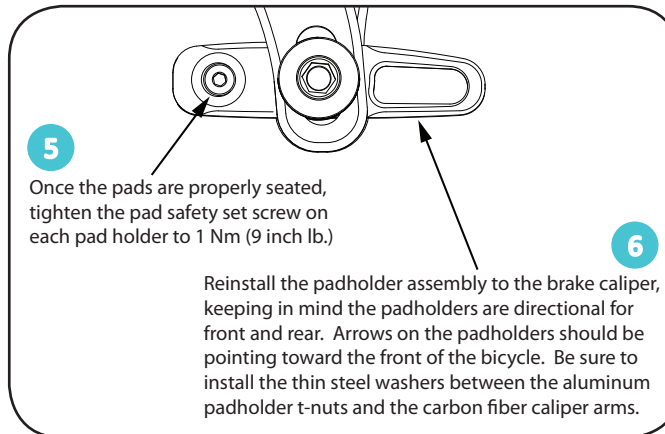
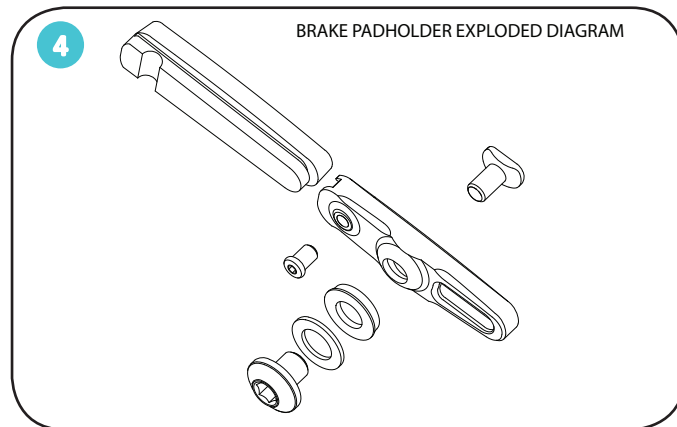
- Inspect brake pads for wear - replace as necessary
- Inspect pad clearance to rim – adjust barrel adjuster or reset cable as necessary

Semi-annually:

- Remove t-nut and cable clamping screw and re-apply ti-prep. This may be necessary more or less frequently depending on your local climate. High heat and humidity = more frequent application. I'm talking to you, Formosa.
- Drop a few drops of dry lube on the top of the spring where it sits in the retainer. This helps prevent noise during brake actuation.
- Replace your cable and housing assembly. Depending on riding conditions, frequency of cable and housing replacement may need to be adjusted.

Cleaning/As necessary:

- Wipe arms and alloy parts with a damp cloth to remove brake dust and road debris. Do not clean arms with hard solvents – you will strip the clear coat!
- Use warm water and soap to remove brake dust and road debris from the rim brake track and brake pads.



Brake Pad Replacement

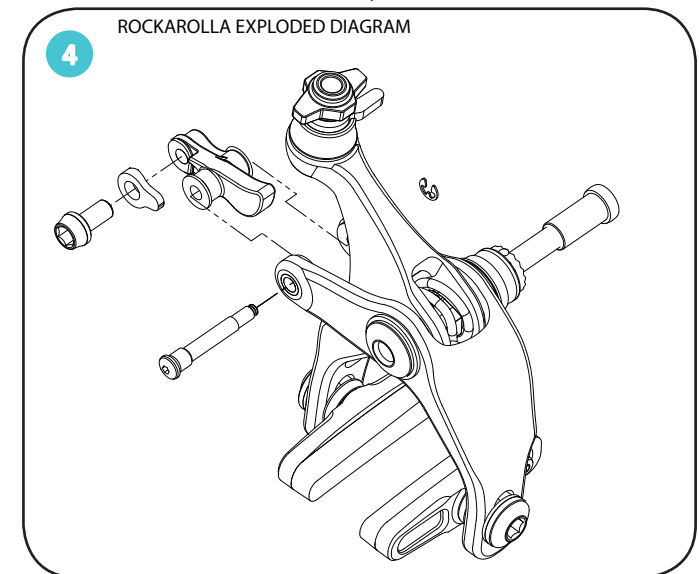
Whether you've upgraded to carbon rims or have worn through your pads, there comes a time when brake pads need replacement. Most pads have a wear line indicating when it is time to install a fresh set.

1. Using a *5mm hex key*, loosen the cable clamp bolt until the rocker can come to rest in its natural position.
2. Using the same *5mm hex key*, remove both pads and pad holders from the Revl brake caliper being careful not to lose the washer that sits under the aluminum pad bolts. Put the padholder hardware in a safe place.
3. With the *2mm hex key*, back out the safety set screw until only two threads are engaged. Or take it out completely, but if it falls on the floor and rolls under the bench, don't say we didn't warn you. Slide the old pad out of the holder. Clean the inside of the pad holder with a swap and rubbing alcohol. Repeat for the second pad holder.
4. Refer to the **Brake Padholder Exploded Diagram** for correct reassembly. First, insert your new pads in the padholders. Keep in mind both the pads and holders are right and left specific. Depending on your brake pad selection, the pads may be extremely difficult to insert. Be sure they pads slide all the way to the front of the padholder.
5. Once the pads are properly seated, using the *2mm hex key* tighten the pad safety set screw on each pad holder to 1 Nm (9 inch lb)
6. Reinstall the padholder assembly to the brake caliper keeping in mind the padholders are directional for front and rear. Arrows on the padholders should be pointing toward the front of the bicycle. Be sure to install the thin steel washers between the aluminum padholder t-nuts and the carbon fiber caliper arms.
7. Usually it is good idea to replace brake cable and housing at the same time as the brake pads. Inspect your housing for damaged ends and the cable for fraying and oxidation. If the cable feels gritty when actuating the lever, try dropping some lube into the housing. If the grittiness persists, it is time to replace your cable and housing. See Step 5 of **Brake Caliper Installation**.
8. Once you've determined the health of your cable housing assembly, it's time to tune the system. Follow the steps in **Adjusting the Brake Pads & Fine Tuning** to finish the brake pad replacement process.

Replacing the Rockarolla

Revl brakes come with interchangeable rocker cams for adjustable system gain. The Hive offers two rocker cam options, labeled with the approximate leverage ratio provided by the rocker. The force gain is either "1.3" or "1.4". The 1.3 leverage ratio is appropriate for Dura-Ace™ 7800 and prior, Campagnolo™, and SRAM™ products. 1.4 is for Dura Ace™ 7900, and UltegraSL™/6700. Note: 1.4 can be run on any lever for more rim crushing force, but it may result in a soft lever feel. The point is, you have options.

1. Disconnect the brake cable from the brake caliper.
2. Using the *sharp probe*, carefully remove the c-clip from the groove on the back of the rocker pin. BE CAREFUL! The probe can easily slip and scratch the paint.
3. While squeezing the brake arms together, insert the *2mm hex key* into the front of the rocker pin and turn counter-clockwise until removal of the pin is complete.
4. Put the new rocker assembly in place, carefully lining up the holes in the left caliper arm with the hole in the rocker. Refer to the **Rockarolla Exploded Diagram** for proper reassembly.
5. Re-insert the rocker pin into the left arm and slide it through the rocker until the threads touch the front of the left caliper arm. Apply *Loctite™ 242 or equivalent* and turn clockwise with the *2mm hex key* until the rocker pin head touches the brake arm surface.
6. Insert your *torque wrench with a 2mm allen wrench attachment* into the rocker pin and tighten clockwise to 1.4 Nm (1 lbf)
7. Re-install the c-clip into the groove on the back of the rocker pin. Do not use the brake without the c-clip installed!



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