

2012

BB7™ & BB5™

Mountain and Road
Service Manual



SRAM LLC WARRANTY

SRAM warrants its products to be free from defects in materials or workmanship for a period of two years after original purchase. This warranty only applies to the original owner and is not transferable. Claims under this warranty must be made through the retailer where the bicycle or the SRAM component was purchased. Original proof of purchase is required.

This warranty statement gives the customer specific legal rights. The customer may also have other rights which vary from state to state (USA), from province to province (Canada), and from country to country elsewhere in the world.

To the extent that this warranty statement is inconsistent with the local law, this warranty shall be deemed modified to be consistent with such law, under such local law, certain disclaimers and limitations of this warranty statement may apply to the customer. For example, some states in the United States of America, as well as some governments outside of the United States (including provinces in Canada) may:

- a. Preclude the disclaimers and limitations of this warranty statement from limiting the statutory rights of the consumer (e.g. United Kingdom).
- b. Otherwise restrict the ability of a manufacturer to enforce such disclaimers or limitations.

To the extent allowed by local law, except for the obligations specifically set forth in this warranty statement, in no event shall SRAM or its third-party suppliers be liable for direct, indirect, special, incidental, or consequential damages.

- This warranty does not apply to products that have been incorrectly installed and/or adjusted according to the respective SRAM technical installation manual. The SRAM installation manuals can be found online at www.sram.com, www.rockshox.com, www.avidbike.com, www.truativ.com, or www.zipp.com.
- This warranty does not apply when the product has been modified.
- This warranty does not apply when the serial number or production code has been deliberately altered, defaced or removed.
- This warranty does not apply to damage to the product caused by a crash, impact, abuse of the product, non-compliance with manufacturer's specifications of usage or any other circumstances in which the product has been subjected to forces or loads beyond its design.
- This warranty does not apply to normal wear and tear. Wear and tear parts are subject to damage as a result of normal use, failure to service according to SRAM recommendations and/or riding or installation in conditions or applications other than recommended.

Wear and tear parts are identified as:

Dust seals/Bushings/Air sealing o-rings/Glide rings/Rubber moving parts/Foam rings/Rear shock mounting hardware and main seals/Stripped threads and bolts (aluminum,titanium, magnesium or steel)/Upper tubes (stanchions)/Brake sleeves/Brake pads/Chains/Sprockets/Cassettes/Shifter and brake cables (inner and outer)/Handlebar grips/Shifter grips/Jockey wheels/Disc brake rotors/Wheel braking surfaces/Bottom out pads/Bearings/Bearing Races/Pawls/Transmission gears/Spokes/Free hubs/Aero bar pads/Corrosion/Tools

- This warranty shall not cover damages caused by the use of parts of different manufacturers.
- This warranty shall not cover damages caused by the use of parts that are not compatible, suitable and/or authorized by SRAM for use with SRAM components.
- This warranty shall not cover damages resulting from commercial (rental) use.

AVID BRAKE SERVICE

We recommend that you have your Avid brakes serviced by a qualified bicycle mechanic. Servicing Avid brakes requires knowledge of brakes components as well as the special tools and fluids used for service.

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For exploded diagram and part number information, please refer to the Spare Parts Catalog available on our website at www.sram.com.
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TABLE OF CONTENTS

BB7 & BB5 MOUNTAIN & ROAD DISC BRAKE CALIPER OVERHAUL.....	5
CALIPER OVERHAUL DISASSEMBLY SERVICE INSTRUCTIONS.....	5
CALIPER OVERHAUL CLEANING & INSPECTION INSTRUCTIONS.....	7
CALIPER OVERHAUL ASSEMBLY SERVICE INSTRUCTIONS.....	7
BB7 & BB5 MOUNTAIN & ROAD DISC BRAKE PAD INSTALLATION INSTRUCTIONS.....	10
DISC BRAKE PAD AND ROTOR BED-IN PROCEDURE	12



SAFETY FIRST!

At SRAM, we care about YOU. Please, always wear your safety glasses and protective gloves when servicing your Avid brakes. Protect yourself! Wear your safety gear!

BB7 & BB5 MOUNTAIN & ROAD

INTRODUCTION

Avid caliper assemblies need to be serviced in order to optimize braking function. If caliper brake piston motion is 'sticky' or lacks a positive and smooth return, the caliper body/brake piston o-ring may be out of place or damaged. Inspection and/or replacement of these parts, due to any of the above situations, will be necessary to restore proper brake function.

CALIPER OVERHAUL DISASSEMBLY SERVICE INSTRUCTIONS

TROUBLESHOOTING (NOT PICTURED)

The most common issue with the BB7 is that the outboard pressure foot can become dislodged if the outboard adjustment knob is turned too far clockwise without the rotor in the caliper (wheel off or caliper removed). The brake is not broken, nor does it require disassembly to replace the pressure foot. To replace the pressure foot, turn the outboard adjuster knob counter-clockwise until it stops. If the knob doesn't stop, then the foot screw (the end of which can be seen in the center of the knob) has become disengaged from the center of the knob and possibly from the threads inside the drive cam. In this case, remove the knob, then using a pair of small needle-nose pliers or a SCHRADER valve tool, turn the foot screw all the way back out until it stops. Now the pressure foot can be replaced. Relocate the pressure foot into the bore, then give it a firm push in the center. It will click back into place. If you removed the knob, replace it and you're done!

GETTING STARTED

1. Remove the cable anchor bolt and plate, then pull the cable housing and inner wire free of the caliper. Remove the rubber cable boots.

REMOVE THE BRAKE PADS

2. Turn both adjuster knobs all the way out (counter-clockwise), then squeeze the pad tabs together and pull both pads and pad spring clip straight out of the caliper.



CALIPER OVERHAUL DISASSEMBLY SERVICE INSTRUCTIONS (CONTINUED)

REMOVE THE OUTBOARD KNOB

- Remove the outboard pad knob with a small flat-head screwdriver. Be careful not to mar the surface of the torque arm.
- Turn the foot screw which is now exposed counter-clockwise until it stops.

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REMOVE TORQUE ARM

- Hold the spring loaded torque arm securely in place.
- Remove the torque arm fixing nut using an 11 mm wrench. Remove the lockwasher.
- Remove the torque arm, outer body seal, and spring. Then remove the hex-hole washer.

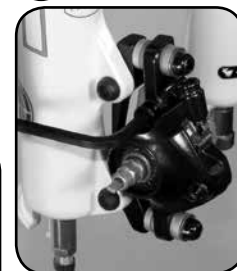
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REMOVE DRIVE CAM/OUTBOARD PRESSURE FOOT ASSEMBLY

- Using a 5 mm hex, remove the 2 caliper body bolts.
- NOTE: THE BOLTS ARE DIFFERENT LENGTHS.**
- Carefully remove the inboard caliper body half and set aside.
- Remove the pad retaining clip and set aside.
- Pull out the drive cam/outboard pressure foot assembly. Be careful not to lose any of the three ball bearings.
- Use a 5 mm hex to remove the outboard caliper body half from the bike and set aside.

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DRIVE CAM DISASSEMBLY

- Use small needle-nose pliers or a schrader valve core tool to turn the foot screw clockwise until it is completely unthreaded from the drive cam. This will separate the outer pressure foot from the cam assembly. Remove the foot screw from the drive cam.

12



13



REMOVE PRESSURE FOOT

- Using a T25 TORX®, turn the inboard pressure foot clockwise until it is free from the inboard caliper body half.

14



CALIPER OVERHAUL CLEANING & INSPECTION INSTRUCTIONS

CLEANING

- Clean all metal parts in alcohol, including the cable anchor bolt and plate. Clean the cable seal boots and outer caliper body seal in mild soap and water. Rinse and dry all parts completely (not pictured).

CALIPER BODY INSPECTION

- Inspect both caliper body halves for any damage; pay close attention to all threaded surfaces.

SMALL PART INSPECTION

- Check ball bearing and cam ramps for excessive wear.

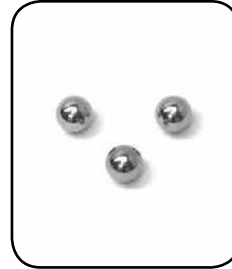
NOTE: IT IS NORMAL TO SEE BALL TRACKS IN THE CAM RAMPS.

- Check the threads of the drive cam, foot screw, inner pressure foot, cable anchor bolt, and torque arm fixing nut for damage.
- Check the spring for any signs of damage.
- Check the cable seal boots for nicks, tears, or cracking.

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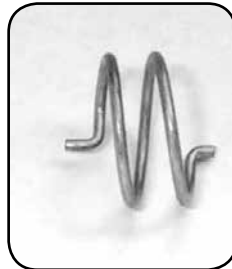
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CALIPER OVERHAUL ASSEMBLY SERVICE INSTRUCTIONS

ASSEMBLE CALIPER

- Very lightly grease the inner pressure foot threads.
- Using a T25 TORX®, thread the inner pressure foot into the outboard caliper body half until the pressure foot is flush with the inner face of the caliper body.
- Very lightly grease the foot screw threads, tip of stem-end on outer pressure foot, and the ramps of the drive cam.
- Using small needle-nose pliers or a Schrader valve tool, thread the foot screw into the drive cam completely, but do not tighten.

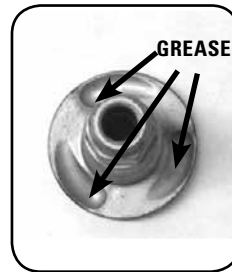
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CALIPER OVERHAUL ASSEMBLY SERVICE INSTRUCTIONS

ASSEMBLE CALIPER (CONT)

25. Insert the stem-end of the outer pressure foot into the hole in the end of the drive cam and install by firmly pressing it straight in.
26. Lightly grease the ramps of the fixed cam in the outboard caliper body.
27. Place the ball bearings into the ramps of the fixed cam.
28. Insert the Drive Cam/Outer Pressure Foot assembly through the hole in the outboard caliper body. Rotate the cams against each other to ensure the ball bearings are seated properly in both sets of ramps.

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29. Apply a high-strength thread-lock such as Loctite 272 to the drive cam threads.

IMPORTANT: BE CAREFUL NOT TO ALLOW ANY THREAD-LOCK TO ENTER THE AREA AROUND THE FOOT SCREW.

30. Hold the Drive Cam in place and re-install the return spring, outer seal, and washer with hex-shaped hole.

NOTE: THE SPRING LEG THAT EXTENDS AWAY FROM THE SPRING SHOULD POINT AWAY FROM THE CALIPER BODY. THE NOTCH IN THE OUTER SEAL SHOULD FACE AWAY FROM THE CALIPER BODY AND BE LOCATED UNDERNEATH THE SPRING LEG.

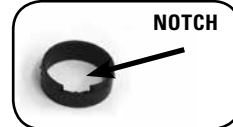
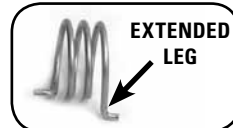
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31. Install the torque arm, aligning the spring leg with the spring tension notch on the back of the torque arm. When engaged correctly, the spring adjuster screw will be driven against the spring leg on the back of the torque arm. Press the torque arm onto the flats of the drive cam shaft. Make sure the arm is fully seated and hold firmly with your thumb.

32. Place the lockwasher on the drive cam with the rounded side toward the caliper body. Thread on the torque arm fixing nut by hand, then torque to 6.3-6.7 N•m.

IMPORTANT: DO NOT OVER TIGHTEN THE TORQUE ARM FIXING NUT.

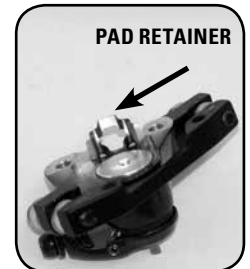
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33. Install the outboard adjuster knob by aligning the rectangle tab of the foot screw with the rectangular hole in the the knob, then press it on firmly.

34. Re-install the pad retainer in the outboard caliper body.

35. Apply a high-strength thread-lock such as Loctite 272 to the 2 caliper bolts.

36. Align both caliper halves together and insert the caliper body bolts. The short bolt goes in the hole near the cable anchor, and the long bolt goes in the hole near the housing stop. Torque both bolts to 8.5-10.1 N•m.

NOTE: BE CAREFUL TO KEEP THE PAD RETAINER IN PLACE WHILE JOINING THE HALVES TOGETHER.

35



36



CALIPER OVERHAUL ASSEMBLY SERVICE INSTRUCTIONS

INSTALL THE NEW PADS AND SPRING.

37. Assemble the spring between the new left and right pads. Align the spring to the pad as shown. Squeeze the brake pad and spring clip assembly together then press firmly into the caliper until it “clicks” into place. The pad marked “R” goes on the spoke side of the brake.
38. Push the upper and lower boots onto the integrated cable stop.
39. Place the cable anchor plate on the cable anchor bolt, grease the bolt lightly and install into the torque arm. (not pictured)
40. Re-mount the caliper onto the bike.
41. Set up the brake by following the procedures in the Avid Ball Bearing Disc Brake Installation Guidelines. Be sure to torque to the proper value.

37



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40



COMPLETING BALL BEARING DISC BRAKE CALIPER OVERHAUL

You are almost ready to ride, but first it's a good idea to test your brakes by pulling on the lever extremely hard (as hard as you can imagine yourself pulling the lever while you're riding) several times. Check that the caliper closes and returns properly. Make one last check of all the bolts and fittings.

If everything checks out, **YOU ARE READY TO RIDE!**

BB7 & BB5 MOUNTAIN & ROAD

INTRODUCTION

Avid brake pads should be replaced when the total thickness of the backing plate and pad friction material is less than 3mm. Replacing worn brake pads will improve braking performance. New brake pads are subject to a “bed-in” period. It may take anywhere from 20 to 40 complete stops to break in Avid pads. You may begin to notice an increase in braking power after the first ride. Brake noise can occur during the break-in period, as well as off and on throughout the life of the brake pads. This is normal and should not affect braking performance. Noise is dependent upon factors such as brake setup, rider weight, riding style, braking style, and riding conditions (i.e. dust, soil, and contamination of friction surfaces).

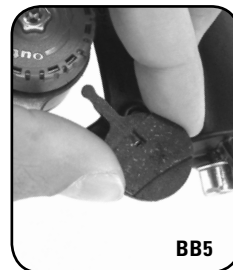
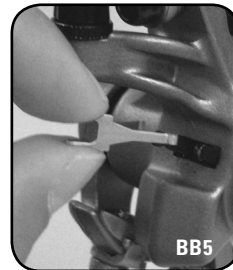
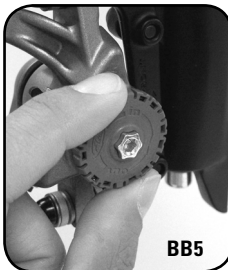
BRAKE PAD INSTALLATION INSTRUCTIONS

REMOVE THE OLD PADS

- 1. BB7 only:** Turn both adjuster knobs all the way out (counter-clockwise), then squeeze the pad tabs together and pull both pads and pad spring clip straight out of the caliper.
BB5 only: Turn the inboard adjuster knob all the way out (counter-clockwise). Pull the pad spreader clip from between the pads, then remove the pads out of the caliper one at a time.
2. Inspect and measure the total thickness of each brake pad with a ruler. If the total thickness is less than 3 mm, you need to replace both brake pads (not pictured).

NOTE: IF THE BACKING PLATE AND PAD MATERIAL IS THICKER THAN 3 MM, YOU CAN SIMPLY RE-INSTALL YOUR BRAKE PADS AS OUTLINED IN STEP 3 AND FOLLOW THE PROCEDURES FOR PAD WEAR ADJUSTMENT.

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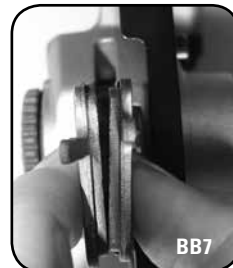
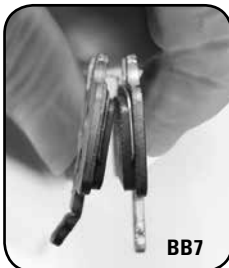


PAD REPLACEMENT (CONTINUED)

INSTALL THE NEW PADS AND SPRING

3. **BB7 only:** Assemble the spring between the new left and right pads. Align the spring to the pad as shown. Squeeze the brake pad and spring clip assembly together then press firmly into the caliper until it “clicks” into place. The pad marked “R” goes on the spoke side of the brake. **BB5 only:** Install the new pads one at a time into the caliper. Slide the spreader clip into position, between the pads.

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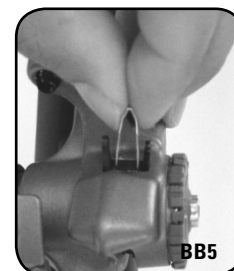
PAD WEAR ADJUSTMENT (NOT PICTURED)

BB7 ONLY: The BB7 has a manual pad wear adjustment feature. You can use this feature to compensate for brake pad wear until the pads need to be replaced with two very simple adjustments: Turn both the inboard and outboard red adjusting knobs clockwise one or two clicks as needed to restore your brake to optimum settings. Do NOT use your barrel adjuster to compensate for pad wear. A pad wear indicator is at the center of each knob. As the knob is turned in, the indicator will retract deeper into the knob giving a visual indication of approximately how much the pads have worn.

BB5 only: The BB5 has a manual pad wear adjustment feature. You can use this feature to compensate for brake pad wear until the pads need to be replaced with two very simple adjustments: Unscrew (counter-clockwise) the barrel adjuster on the caliper. Turn the inboard pad adjustment knob clockwise. Both of these adjustments move the brake pads closer to the rotor. You do need to adjust both pads they wear. Try different settings until the brake feels just the way you like.

IMPORTANT: MAKE SURE YOU TIGHTEN THE LOCKNUT ON THE BARREL ADJUSTER AFTER YOU ADJUST.

NOTE: WHILE YOU CAN PERFORM A SIMILAR ADJUSTMENT ON THE BARREL OF YOUR BRAKE LEVER, WE SUGGEST THAT YOU ADJUST FOR PAD WEAR AT THE CALIPER. THAT WAY YOU LEAVE THE BRAKE LEVER FOR ON-THE-FLY ADJUSTMENTS.



THIS CONCLUDES THE DISC BRAKE PAD REPLACEMENT INSTRUCTIONS. YOU HAVE DONE A GREAT JOB! YOU ARE NOW READY TO RIDE. ENJOY!

DISC BRAKE PAD AND ROTOR BED-IN PROCEDURE

All new brake pads and rotors should be put through a wear-in process called 'bed-in'. The bed-in procedure, which should be performed prior to your first ride, ensures the most consistent and powerful braking feel along with the quietest braking in most riding conditions. The bed-in process heats up the brake pads and rotors which deposits an even layer of brake pad material (transfer layer) to the braking surface of the rotor. It is this transfer layer that optimizes braking performance.



WARNING:

The bed-in process requires you to perform heavy braking. You must be familiar with the power and operation of disc brakes. Braking heavily when not familiar with the power and operation of disc brakes could cause you to lose control of your bicycle, which could lead to a crash and could lead to serious injury and/or death. If you are unfamiliar with the power and operation of disc brakes, you should have the bed-in process performed by a qualified bicycle mechanic.



IMPORTANT:

To safely achieve optimal results, remain seated on the bike during the entire bed-in procedure.



Accelerate the bike to a moderate speed, then firmly apply the brakes until you are at walking speed. Repeat approximately twenty times.



Accelerate the bike to a faster speed. Then very firmly apply the brakes until you are at walking speed. Repeat approximately ten times.



IMPORTANT:

Do not lock up the wheels at any point during the bed-in procedure.



Allow the brakes to cool prior to any additional riding.

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