



SRAM®

2017 Guide RS & R



service
manual



SRAM® LLC WARRANTY

EXTENT OF LIMITED WARRANTY

Except as otherwise set forth herein, 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. **Except as described herein, SRAM makes no other warranties, guaranties, or representations of any type (express or implied), and all warranties (including any implied warranties of reasonable care, merchantability, or fitness for a particular purpose) are hereby disclaimed.**

LOCAL LAW

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.

For Australian customers:

This SRAM limited warranty is provided in Australia by SRAM LLC, 1000 W. Fulton Market, 4th Floor, Chicago, IL, 60607, USA. To make a warranty claim please contact the retailer from whom you purchased this SRAM product. Alternatively, you may make a claim by contacting SRAM Australia, 6 Marco Court, Rowville 3178, Australia. For valid claims SRAM will, at its option, either repair or replace your SRAM product. Any expenses incurred in making the warranty claim are your responsibility. The benefits given by this warranty are additional to other rights and remedies that you may have under laws relating to our products. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

LIMITATIONS OF LIABILITY

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.

LIMITATIONS OF WARRANTY

This warranty does not apply to products that have been incorrectly installed and/or adjusted according to the respective SRAM user manual. The SRAM user manuals can be found online at sram.com, rockshox.com, avidbike.com, truvativ.com, or zipp.com.

This warranty does not apply to damage to the product caused by a crash, impact, abuse of the product, non-compliance with manufacturers 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 when the product has been modified, including, but not limited to any attempt to open or repair any electronic and electronic related components, including the motor, controller, battery packs, wiring harnesses, switches, and chargers.

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

Notwithstanding anything else set forth herein, the battery pack and charger warranty does not include damage from power surges, use of improper charger, improper maintenance, or such other misuse.

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 authorised by SRAM for use with SRAM components.

This warranty shall not cover damages resulting from commercial (rental) use.

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SAFETY FIRST!

We care about YOU. Please, always wear your safety glasses and protective gloves when servicing SRAM® products.

Protect yourself! Wear your safety gear!

Brake Service Overview

SRAM® brake systems need to be serviced periodically to optimize braking function. If brake fluid is leaking from any area of the brake there may be damage or wear and tear to the internal moving parts. If the system has been contaminated with the wrong fluid there may be damage to all rubber and plastic internal parts. If your brake was damaged in a crash there may be damage to the lever blade, pushrod, and housing assemblies. Inspect and replace these parts to restore proper brake function.

Your product's appearance may differ from the pictures contained in this publication.

SAFETY INSTRUCTIONS

- Servicing your brakes removes all of the brake fluid from the system. You must bleed your brakes after you service the brake caliper.
- Always wear safety glasses and nitrile gloves when working with DOT fluid.
- Place an oil pan on the floor where you will be working on the brake.
- Used DOT fluid should be recycled or disposed of in accordance to local and federal regulations.
- Never pour DOT fluid down a sewage or drainage system or into the ground or a body of water.
- DOT fluids will damage painted surfaces. If any fluid comes in contact with a painted surface (e.g. your frame) or printing on the brakes, wipe it off immediately and clean it with isopropyl alcohol or water. Damage to painted and/or printed surfaces by DOT fluid is not covered under warranty.
- Do not allow any brake fluid to come in contact with the brake pads. If this occurs, the pads are contaminated and must be replaced.
- For best results, use only SRAM High-Performance DOT 5.1 brake fluid. If SRAM brake fluid is not available, only use DOT 5.1 or 4 brake fluid.
- Do not use mineral oil or DOT 5 fluid.

NOTICE

SRAM Guide Brakes are a unique product. The Guide caliper must be serviced before the lever. The lever must be connected to the caliper and the brakes must still have fluid in them in order to advance the pistons and service the caliper. Once the lever has been disconnected and the fluid drained it is not possible to advance the pistons.

Troubleshooting

If your levers have excessive brake lever throw, it may be a result of the pistons sticking in the caliper. Before bleeding the system, you can try to loosen the sticky piston by performing the following steps:

1. Clamp the bicycle into a bicycle work stand.
2. Remove the wheel from the affected caliper.
3. Squeeze the brake lever several times until the brake pads nearly contact one another.
4. Insert the Guide pad spreader between the brake pads to spread the pads to the full width of the clip.
5. Remove the Guide pad spreader.
6. Repeat steps 3-5.
7. Reinstall the wheel.
8. Squeeze the brake lever several times to position the brake pads to the proper distance from the rotor.
9. Center the caliper on the rotor if necessary.
10. Spin the wheel and check the brake function. The pistons should move freely and there should not be excessive brake lever throw.

If there is no improvement in the brake function, proceed with caliper service.

Caliper Service

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

For exploded diagram and part number information, please refer to the Spare Parts Catalog available on our website at sram.com/service. For order information, please contact your local SRAM distributor or dealer.

Information contained in this publication is subject to change at any time without prior notice. For the latest technical information, please visit our website at sram.com/service.

Your product's appearance may differ from the pictures contained in this publication

Parts and Tools Needed for Service

Parts

- SRAM Guide Brake Pad Kit
- Caliper Piston Kit

Safety and Protection Supplies

- Safety glasses
- Nitrile gloves
- Oil pan
- Clean, lint-free rag

SRAM Tools

- SRAM Brake Bleed Kit (includes: Guide Bleed Block and Bleeding Edge™ Fitting)
- Pad Spreader Tool (1.8 mm)- Guide/Trail Caliper

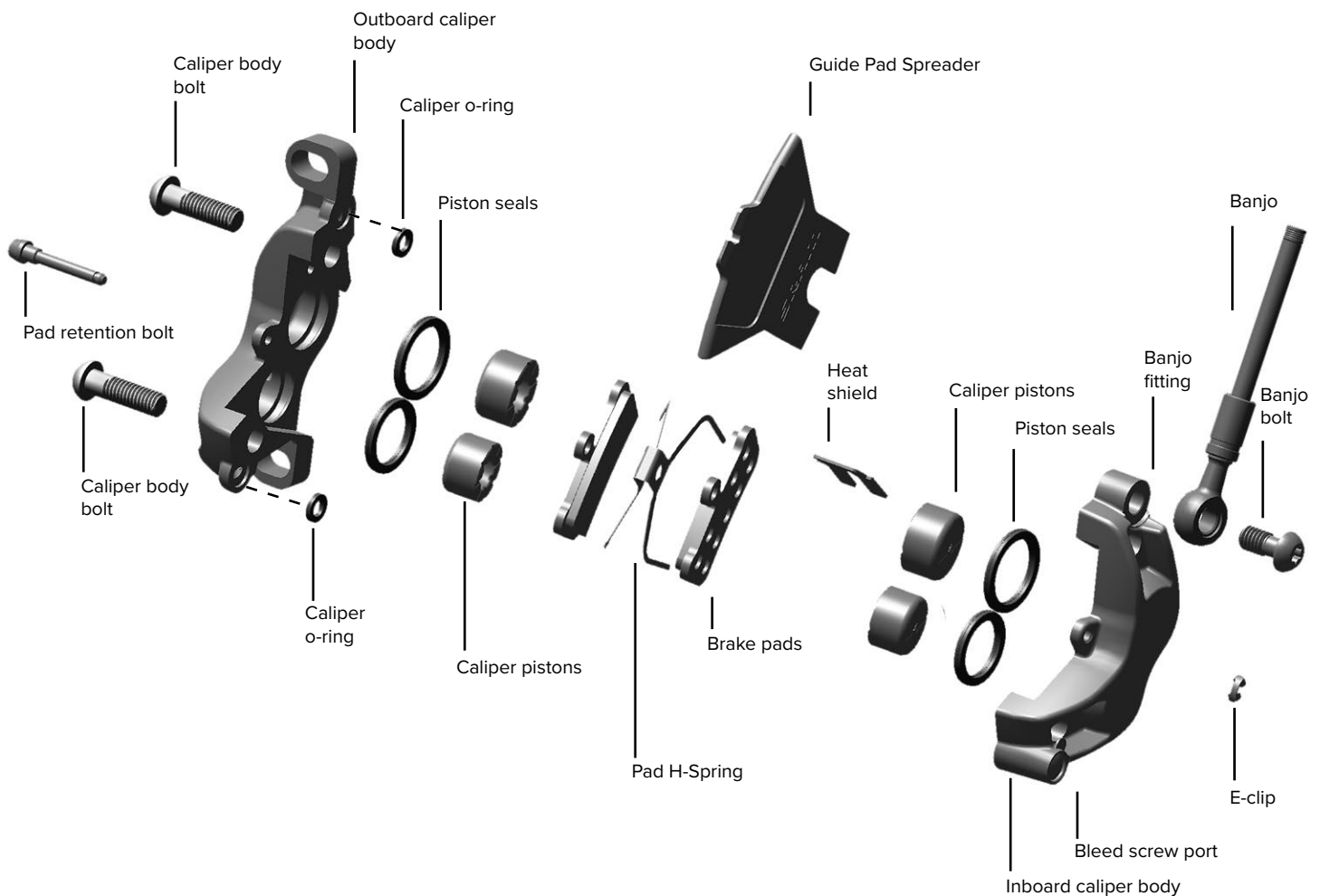
Common Tools

- 2.5 mm hex wrench
- Needle nose pliers
- Pick with a 90 degree bent tip
- T25 TORX® wrench
- T25 TORX bit socket
- Torque wrench
- Digital caliper

Lubricants and Fluids

- Isopropyl alcohol
- SRAM High-Performance DOT 5.1 fluid. If SRAM fluid is not available, only use DOT 5.1 or 4 fluid.
- SRAM or AVID DOT grease. If SRAM or AVID DOT grease is not available only use a DOT compatible grease.

Caliper Exploded View



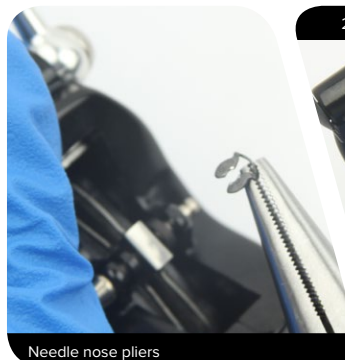
NOTICE

Brake pads must be replaced if the total thickness of the backing plate and pad friction material is less than 3 mm.

- 1 Use a T25 TORX® wrench to remove the brake caliper from the fork or frame.

Remove the caliper mounting bracket and hardware from the caliper then set them aside in the order that they were removed.

- 2 Remove the E-clip from the pad retention bolt.
Remove the pad retention bolt from the caliper.



- 3 Remove the brake pads and pad H-spring from the caliper.



NOTICE

DOT fluid will damage painted surfaces. If any fluid comes in contact with a painted surface (e.g your frame) or printing on the brakes, wipe it off immediately and clean it with isopropyl alcohol or water. Damage to painted and/or printed surfaces by DOT fluid is not covered under warranty.

1 Install the pad retention bolt.

Insert the Guide™ pad spreader so that it snaps onto the pad retention bolt.



2 Squeeze the brake lever to advance the pistons until they contact the pad spreader.



3 Remove the banjo bolt.



- 4** Remove the Guide™ pad spreader.
Remove the pad retention bolt.



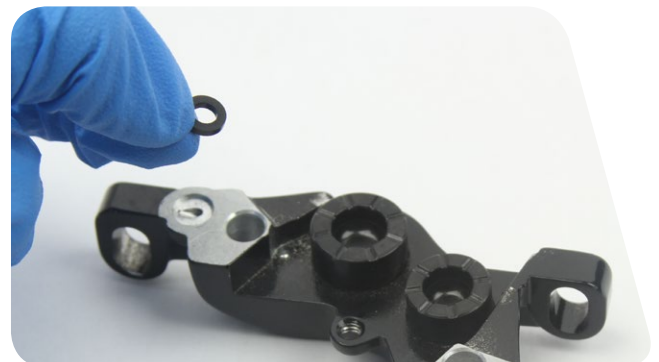
- 5** Remove each caliper body bolt.



- 6** Separate the caliper body halves.
Set the heat shield aside.



- 7** Remove the caliper o-ring from the outboard side of the caliper.



- 8 Remove the pistons from each caliper body half.



- 9 Remove the piston seals from each caliper body half. Install new seals inside each caliper body half.

⚠ WARNING

Do not scratch the seal gland with the pick. Scratches could cause fluid to leak when the brake is applied, which will contaminate the brake pads and could lead to a brake failure.



NOTICE

DOT fluid will damage painted surfaces. If any fluid comes in contact with a painted surface (e.g. your frame) or printing on the brakes, wipe it off immediately and clean it with isopropyl alcohol or water. Damage to painted and/or printed surfaces by DOT fluid is not covered under warranty.

- 1 Inspect the caliper pistons for damage and replace the pistons if necessary.

Apply a small amount of SRAM High-Performance DOT 5.1 fluid to the circumference of each piston. Install the pistons into the caliper bores.

NOTICE

For the best braking performance, use only SRAM High-Performance DOT 5.1 fluid. If SRAM fluid is not available, use only DOT 5.1 or 4 fluid. Do not use grease. Grease will prevent the pistons from fully retracting into the caliper bores which will reduce braking performance.



- 2 Spray isopropyl alcohol on the caliper halves and both of your gloves and clean them with a rag.



- 3 Add a small amount of DOT compatible grease onto a new o-ring, then install onto the caliper.



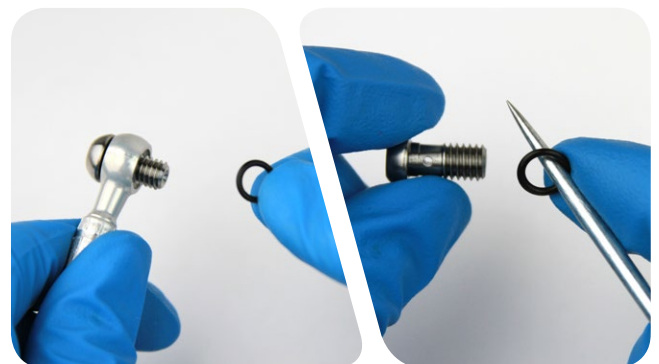
- 4** Align the caliper body halves then use a T25 TORX® wrench to thread each body bolt into the caliper two full turns.
Install the heat shield.



- 5** Tighten each bolt to 9.8-11.8 N·m (87-104 in-lb).



- 6** Remove the o-rings from the banjo bolt and banjo fitting.
Apply a small amount of SRAM High-Performance DOT 5.1 fluid to the new o-rings and install them.



- 7** Hold the banjo at the desired angle.
Tighten the banjo bolt to 4.4-5.4 N·m (39-48 in-lb).



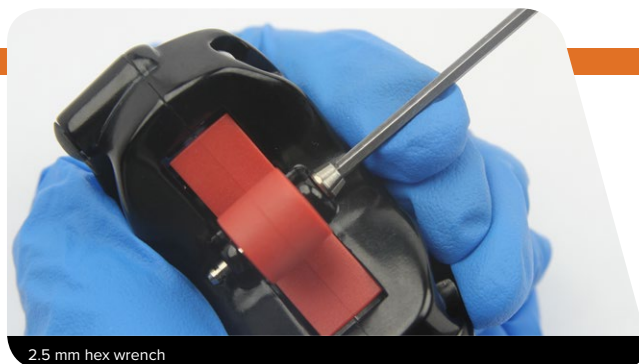
- 8** Insert the Guide™ bleed block into the caliper.



Install the pad retention bolt.

⚠ WARNING

You must bleed your brakes before reinstalling the brake pads. Installing the brake pads prior to bleeding the brakes could contaminate the brake pads and lead to a brake failure.



- 9** Spray isopropyl alcohol on the caliper and clean it with a rag.



Visually check your work. If any of the o-rings protrude from the banjo fitting or banjo bolt, remove and replace the o-rings, then repeat the installation process.

Lever Service

Parts and Tools Needed for Service

Parts

- Lever Internals Guide™ RS or
Lever Internals Guide R/RE/DB5

Safety and Protection Supplies

- Safety glasses
- Nitrile gloves
- Oil pan
- Clean, lint-free rag

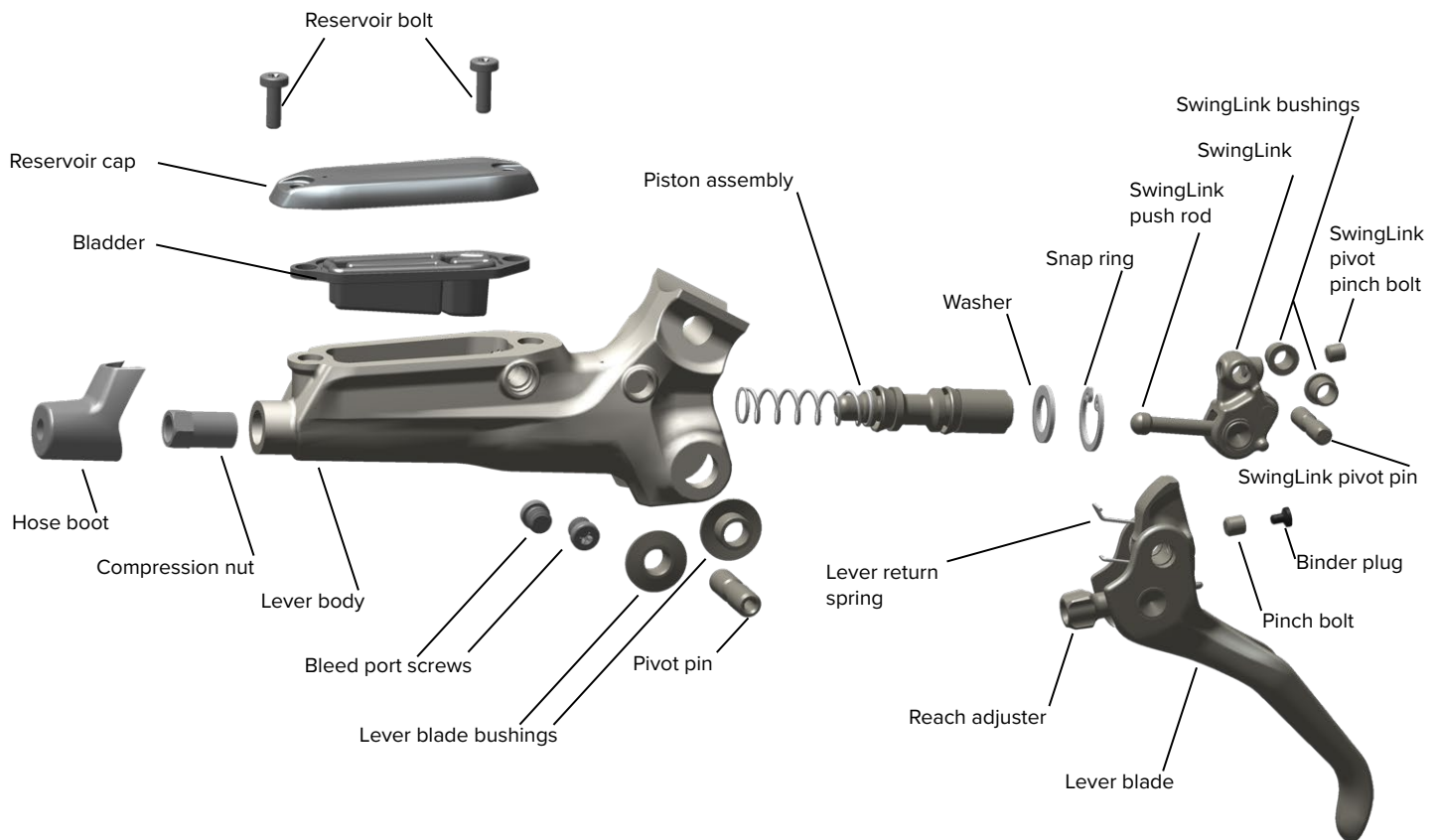
Common Tools

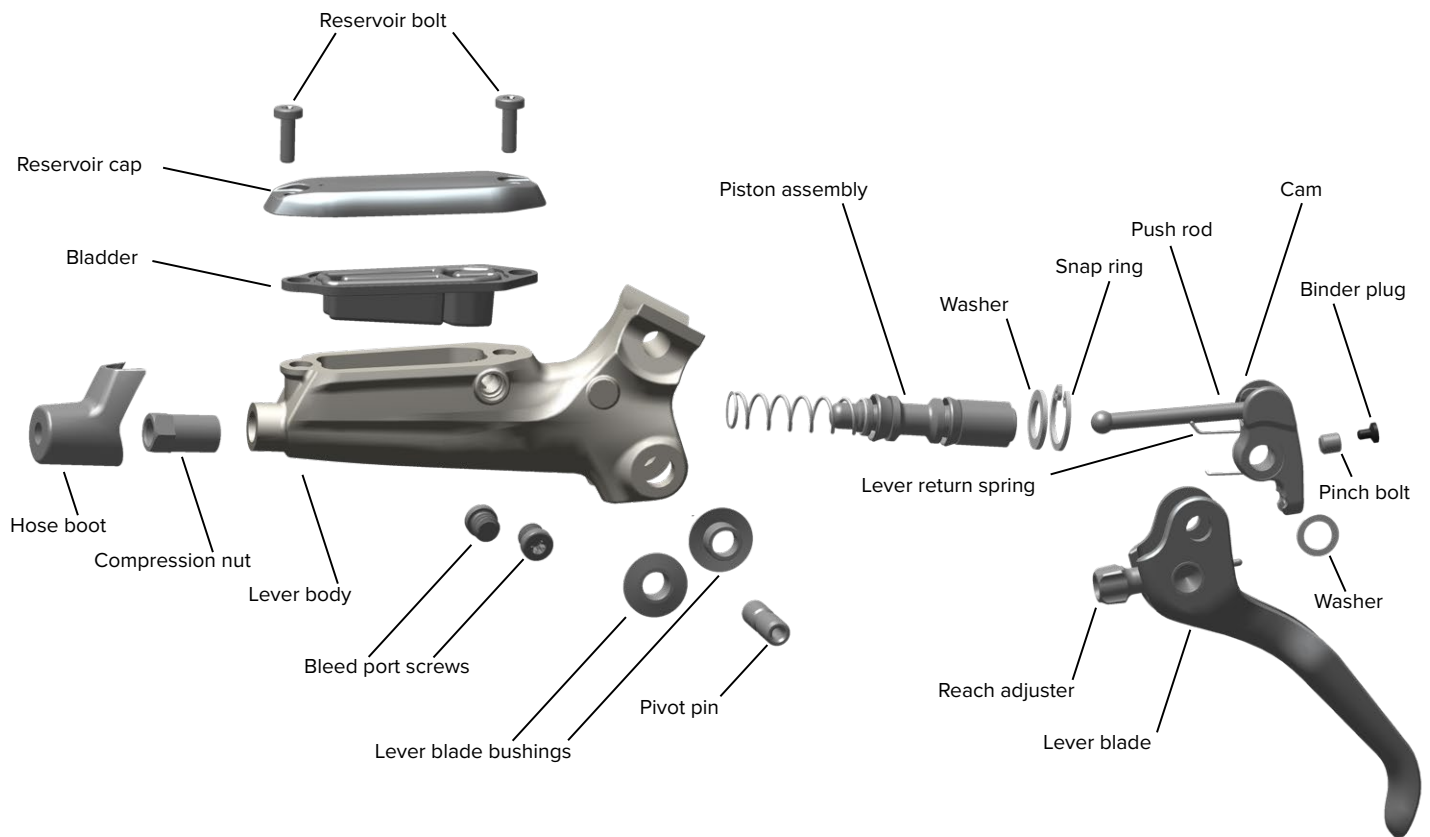
- Pick with a 90 degree bent tip
- T8, T10, & T25 TORX® wrench
- T8 & T10 TORX bit socket
- 8 mm flare nut wrench
- 8 mm flare nut crowfoot wrench
- 2 mm & 4 mm hex wrench
- Needle nose pliers
- Torque wrench

Lubricants and Fluids

- Isopropyl alcohol
- Loctite® Threadlocker Blue 242®
- SRAM® High-Performance DOT 5.1 fluid. If SRAM fluid is not available, only use DOT 5.1 or 4 fluid.
- SRAM or AVID DOT grease. If SRAM or AVID DOT grease is not available only use a DOT compatible grease.

Guide RS Lever Exploded View





NOTICE

DOT fluid will damage painted surfaces. If any fluid comes in contact with a painted surface (e.g. your frame) or printing on the brakes, wipe it off immediately and clean it with isopropyl alcohol or water. Damage to painted and/or printed surfaces by DOT fluid is not covered under warranty.

1 Remove the brake clamp bolt and remove the brake lever from the handlebar.

2 Pull the hose boot away from the brake body to expose the compression nut, then slide the boot down the brake hose.



3 Unthread the hose compression nut, then pull the brake hose and compression fitting from the brake lever body.



4 Pour the brake fluid into an oil pan. Squeeze the lever blade to force any remaining brake fluid out of the lever body.

NOTICE

If the system has been contaminated with mineral oil or DOT 5 fluid, flush all the parts with soapy water, rinse, and allow all parts to dry prior to rebuilding. Install all new seals and a new hose.

For best braking performance, use only SRAM® High-Performance DOT 5.1 fluid. If SRAM fluid is not available, use only High-Performance DOT 5.1 fluid or 4 fluid.



- 5 Remove the reservoir cap bolts from the reservoir cap.



- 6 Remove the reservoir cover and bladder from the lever body.



- 7 Pour the fluid from the brake lever body into a pan.



- 8 Separate the bladder from the reservoir cover.
Spray isopropyl alcohol on the bladder and the reservoir cover, then clean them with a rag.

NOTICE

All components must be completely dry before reinstalling them. Moisture residue from cleaning the bladder can leak out of the bladder as it dries, which can be misinterpreted as a system leak.



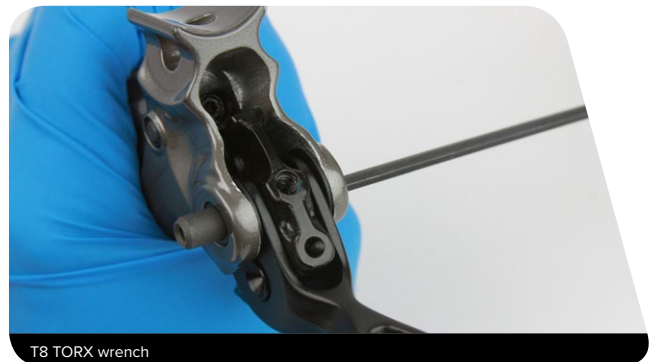
- 9** Remove the binder plug.



- 10** Remove the pinch bolt.



- 11** Use the T8 TORX wrench to push out the pivot pin.



- 12** Remove the lever blade from the lever body.

The lever blade has four pieces, the lever blade, the cam/push rod assembly, a washer, and the lever return spring. To hold all pieces together you may reinstall the lever pivot pin and gently set aside.



Piston Assembly Removal

- 1 Use a pick to remove the lever blade bushings from both sides of the lever.



- 2 **RS only:** Use a T8 TORX® wrench to remove the SwingLink™ pivot pinch bolt.



- 3 **RS only:** Use a T8 TORX® wrench to push out the SwingLink pivot pin. The SwingLink will fall out easily.



- 4 Remove the SwingLink bushings from both sides of the lever.



- 5** Use long-tipped internal snap ring pliers to apply downward pressure to the lever body and remove the snap ring.

Turn the lever body upside down to allow the washer to fall out of the body.

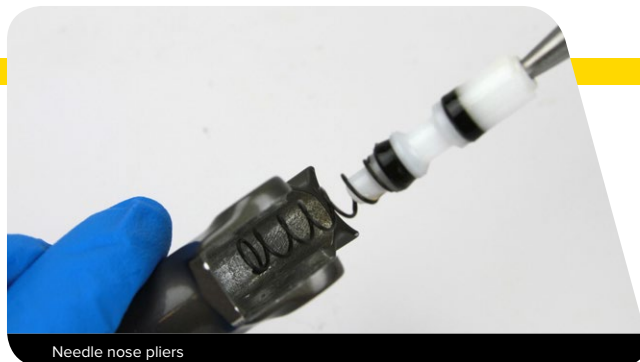


- 6** Use needle nose pliers to remove the piston assembly.

⚠ CAUTION - EYE HAZARD

Wear safety glasses.

Do not look directly into the lever body while performing this step. The internal piston/spring assembly is preloaded and will come out of the lever body quickly, which can result in injury.



- 7** Spray isopropyl alcohol on the lever body and the lever blade and clean them with a rag.



NOTICE

DOT fluid will damage painted surfaces. If any fluid comes in contact with a painted surface (i.e. your frame) or printing on the brakes, wipe it off immediately and clean it with isopropyl alcohol or water. Damage to painted and/or printed surfaces by DOT fluid is not covered under warranty.

- 1 Submerge a new piston assembly in SRAM® High-Performance DOT 5.1 fluid.

You can also use SRAM DOT Assembly Grease, or DOT 5.1 or 4 compatible grease, as a lubricant.



- 2 Install the new piston assembly into the lever body.

Spray isopropyl alcohol on the lever body and both of your gloves and clean them with a rag.



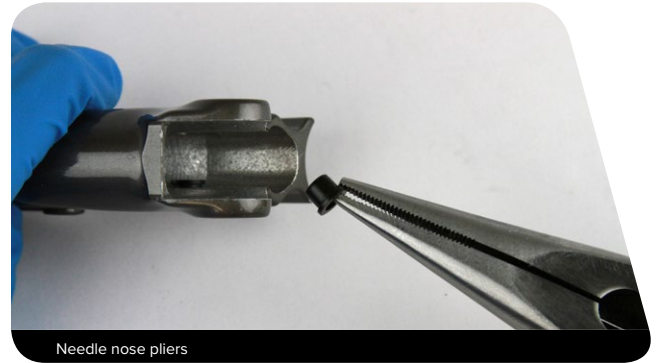
- 3 Install the washer on the piston assembly.

Use long-tipped internal snap ring pliers to push the piston assembly into the lever body, and secure the snap ring in its groove. Orient the snap ring eyelets opposite the opening in the lever body.

You can also use a 10 mm deep socket against the snap ring to push the piston/washer/snap ring assembly into the lever body.



- 1** Use needle nose pliers to install the SwingLink™ bushings.
If the SwingLink bushings fall out easily, apply a small amount of DOT grease to the bushings to help hold them in place.



- 2** Insert the lever blade bushings into both sides of the lever.



- 3** Place the pushrod into the piston.



- 4** Line up the hole in the SwingLink with the hole in the bushings, then push the pivot pin into the hole until it stops.



- 5** Apply a small amount of Loctite® Threadlocker Blue 242® onto the threads of the SwingLink™ pivot pinch bolt.

Use a T8 TORX® wrench to thread the SwingLink pivot pinch bolt into the SwingLink. Tighten the SwingLink pivot pinch bolt to 1.1-1.3 N·m (9-12 in-lbs).



- 6** Insert the lever blade assembly into the lever body, place the lever return spring on the lever body.



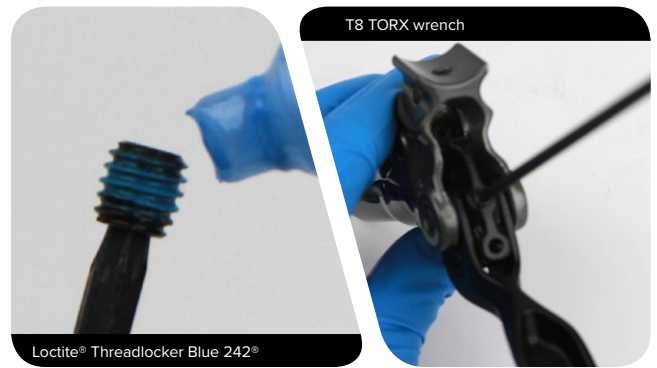
Make sure the lever return spring is seated properly in the lever. The outboard end of the spring must press against the lever blade, while the inboard end of the spring must press against the lever body. If the return spring is not seated properly, you will not be able to adjust the reach of the lever blade. The reach adjuster must be seated in the cam hole, if it is not set properly you will be unable to adjust your reach.



- 7** Line up the cam and lever blade with the holes in the lever body, then press the pivot pin through the holes.



- 8** Apply a small amount of Loctite® Threadlocker Blue 242® onto the pinch bolt.



- 9** Use a T8 TORX® wrench to thread the pinch bolt into the lever body. Use a torque wrench and a T8 TORX bit socket to tighten the bolt to 1.1-1.3 N·m (9-12 in-lb).



- 10** Use a T8 TORX wrench to install a new binder bolt plug.



- 11** Press the bladder into the reservoir cap so that the bladder is properly seated and flush with the reservoir cap.



- 12** Insert the reservoir cap and bladder assembly onto the lever body.



- 13** Use a torque wrench with a T10 TORX® bit socket to tighten each reservoir cap bolt to 1.1-1.3 N·m (9-12 in-lb).



- 14** Cut the hose to install a new barb and compression fitting.

NOTICE

You must install a new hose barb and compression fitting before reconnecting the brake lever to the hose.



- 15** Apply DOT grease to the hose barb threads. Thread the hose barb into the hose until it is flush with the end of the hose.

NOTICE

Do not overtighten the hose barb. Overtightening may cause damage to the hose liner.



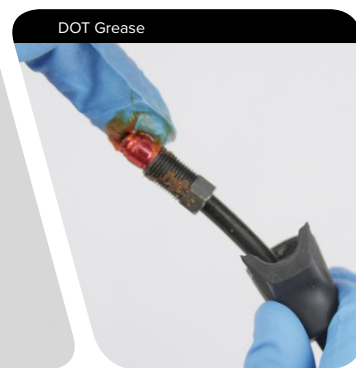
- 16** Install the compression nut onto the hose.



- 17** Thread the compression fitting over the hose barb, counter-clockwise, until it is flush or slightly lower than the hose barb.

The compression fitting is reverse threaded.

Apply DOT grease to the outside of the compression fitting and the threads of the compression nut.



- 14** Apply SRAM® DOT grease onto the compression nut and install the compression fitting and nut into the lever.



- 15** Use a flare nut crowfoot with a torque wrench to tighten the compression nut to 8 N·m (71 in-lb).

Spray isopropyl alcohol on the lever body and clean it with a rag.



⚠ CAUTION

Servicing your brakes removes all of the fluid from the system. You must bleed the brakes after you service the brake caliper and/or lever. For brake bleed, brake hose shortening, and brake pad replacement instructions, [visit www.sram.com/service](http://www.sram.com/service).

- 1 Insert the lever blade bushings into both sides of the lever.



Steps to reassemble the R lever blade assembly:

Place the washer on the cam/push rod assembly. You may add a dab of SRAM® DOT grease to hold the washer in place.



Install the lever return spring onto the cam/push rod assembly.



While holding the cam/push rod/lever return spring/washer in place, install the assembly onto the lever blade and proceed to step 2.



- 2** Insert the lever blade assembly into the lever body, placing the push rod into the piston and lever return spring on the lever body.



Make sure the lever return spring is seated properly in the lever. The outboard end of the spring must press against the lever blade, while the inboard end of the spring must press against the lever body. If the return spring is not seated properly, you will not be able to adjust the reach of the lever blade.

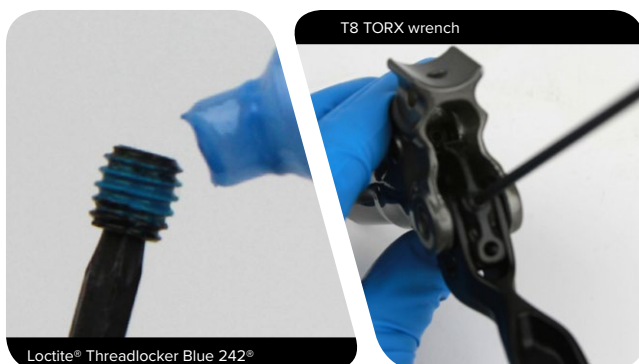


- 3** Line up the cam and lever blade with the holes in the lever body, then press the pivot pin through the holes.



- 4** Apply a small amount of Loctite® Threadlocker Blue 242® onto the pinch bolt.

Use a T8 TORX® wrench to thread the pinch bolt into the lever body.



- 5** Use a torque wrench and a T8 TORX wrench to tighten the bolt to 1.1-1.3 N·m (9-12 in-lb).



- 6** Use a T8 TORX wrench to install a new binder bolt plug.



- 7** Press the bladder into the reservoir cap so that the bladder is properly seated and flush with the reservoir cap.



- 8** Insert the reservoir cap and bladder assembly onto the lever body.



- 9 Use a torque wrench with a T10 TORX® bit socket to tighten each reservoir cap bolt to 1.1-1.3 N·m (9-12 in-lb).



- 10 Cut the hose to install a new barb and compression fitting.

NOTICE

You must install a new hose barb and compression fitting before reconnecting the brake lever to the hose.



- 11 Apply DOT grease to the hose barb threads. Thread the hose barb into the hose until it is flush with the end of the hose.

NOTICE

Do not overtighten the hose barb. Overtightening may cause damage to the hose liner.



- 12 Install the compression nut onto the hose.



- 13** Thread the compression fitting over the hose barb, counter-clockwise, until it is flush or slightly lower than the hose barb.

The compression fitting is reverse threaded.

Apply DOT grease to the outside of the compression fitting and the threads of the compression nut.



- 14** Install the compression fitting and nut into the lever.



- 15** Use a flare nut crowfoot with a torque wrench to tighten the compression nut to 8 N·m (71 in-lb).

Spray isopropyl alcohol on the lever body and clean it with a rag.



⚠ CAUTION

Servicing your brakes removes all of the fluid from the system. You must bleed the brakes after you service the brake caliper and/or lever. For brake bleed, brake hose shortening, and brake pad replacement instructions, [visit www.sram.com/service](http://www.sram.com/service).

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