



SRAM®

S-900 Aero HRD

Lever / Caliper /
Hose Replacement



service
manual



SRAM®

GEN.000000005452 Rev B
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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		Shifter grips	Spokes
Air sealing o-rings	Brake sleeves	Jockey wheels	Free hubs
Glide rings	Brake pads	Disc brake rotors	Aero bar pads
Rubber moving parts	Chains	Wheel braking surfaces	Corrosion
Foam rings	Sprockets	Bottomout pads	Tools
Rear shock mounting hardware and main seals	Cassettes	Bearings	Motors
Upper tubes (stanchions)	Shifter and brake cables (inner and outer)	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.



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!

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SRAM® S-900 Aero HRD Brake Systems

We recommend that you have your SRAM S-900 Aero HRD components serviced by a qualified bicycle mechanic. Servicing SRAM components requires knowledge of bicycle mechanics as well as the special tools and lubricants/fluids used for service.

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.

Visit www.sram.com/service for the latest SRAM Spare Parts catalog and technical information. For order information, please contact your local SRAM® distributor or dealer.

 For recycling and environmental compliance information, please visit www.sram.com.

Information contained in this publication is subject to change at any time without prior notice. Your product's appearance may differ from the pictures contained in this publication.

Service Procedures

The following procedures should be performed throughout service, unless otherwise specified.

Clean the part with isopropyl alcohol and a clean, lint-free shop towel.

Clean the sealing surface on the part and inspect it for scratches.



Replace the o-ring or seal with a new one from the service kit.

Use your fingers, a ziptie, or a pick to pierce and remove the old seal or o-ring.

Apply DOT grease to the new seal or o-ring when instructed.

NOTICE

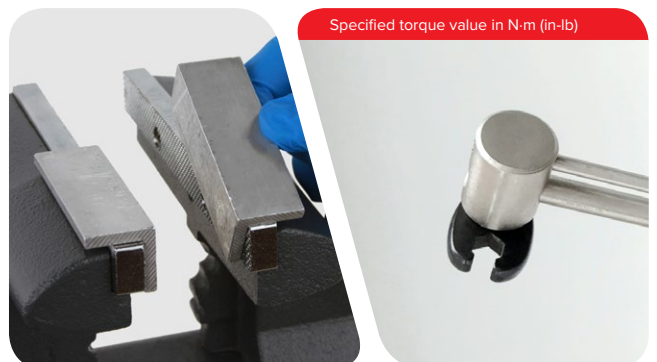
Do not scratch any sealing surfaces when servicing the product. Scratches can cause leaks. Consult the spare parts catalog to replace the damaged part.



Use aluminum soft jaws when placing a part in a bench vise.

Tighten the part with a torque wrench to the torque value listed in the red bar.

When using a crowfoot socket and torque wrench, install the crowfoot socket at 90 degrees to the torque wrench.



SAFETY INSTRUCTIONS

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. If the brake system has been contaminated with mineral oil or DOT 5 fluid, the braking system (e.g. the brake lever, caliper, and hose) will need to be replaced.

Use only DOT compatible grease.

Always wear safety glasses and nitrile gloves when working with DOT brake fluid.

Used DOT brake fluid should be recycled or disposed of in accordance to local and federal regulations.

Never pour DOT brake fluid down a sewage or drainage system or into the ground or a body of water.

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.

Place an oil pan on the floor underneath the area where you will be working on the brake.

Servicing your brakes removes all of the brake fluid from the system. You must bleed your brakes after you service the brake caliper. Consult the *S-900 Aero HRD User Manual* at www.sram.com/service.

NOTICE

Before beginning service, thoroughly clean the exterior of the product to avoid contamination of internal sealing part surfaces.

DOT brake 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 brake fluid is not covered under warranty.

Troubleshooting

Parts, Tools, and Supplies

Safety and Protection Supplies

- Apron
- Clean, lint-free shop towels
- Nitrile gloves
- Safety glasses

Bicycle Tools

- Bicycle work stand
- Tire lever

SRAM Tools

- Pad spreader tool

Disc Brake Pad Advancement Procedure

NOTICE

Do not apply DOT brake fluid or grease to caliper pistons when performing troubleshooting procedures. Use of DOT brake fluid or grease can diminish braking performance and cause rotor rubbing.

If your brakes exhibit excessive lever throw or spongy feel, perform the following steps before bleeding the system:

1. Clamp the bicycle into a bicycle work stand.
2. Remove the wheel from the affected caliper.
3. Remove the brake pads.
4. Install the pad spacer.
5. Squeeze the brake lever several times until the pistons have advanced and contact the pad spacer. One piston may move faster than the other; continue to squeeze the lever until the pistons touch the spacer.
6. Remove the pad spacer.
7. Use a plastic tire lever to push the pistons back into the caliper bores.
8. Repeat steps 4-7 until the pistons move freely.
9. Install the brake pads and the wheel.
10. Loosen the caliper bolts.
11. Lightly squeeze (approx. 4 lbs) the brake lever several times to position the brake pads to the proper distance from the rotor.
12. Center the caliper on the rotor, and tighten the caliper bolts.
13. 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.

Parts, Tools and Supplies

Parts

- SRAM® S-900 Aero HRD Pushrod Kit

Safety and Protection Supplies

- Apron
- Clean, lint-free shop towels
- Nitrile gloves
- Oil pan
- Safety glasses

Lubricants and Fluids

- Isopropyl alcohol
- SRAM DOT 5.1 Fluid
If SRAM fluid is not available, only use DOT 5.1 or 4 fluid
- SRAM DOT assembly grease

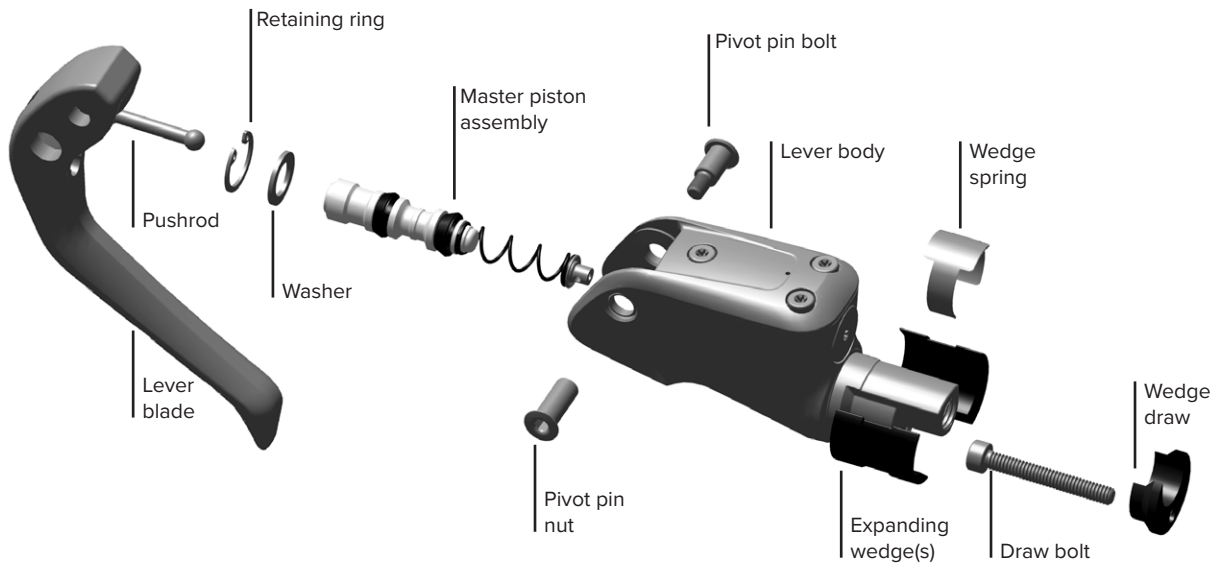
SRAM Tools

- Monoblock bleed block

Common Tools

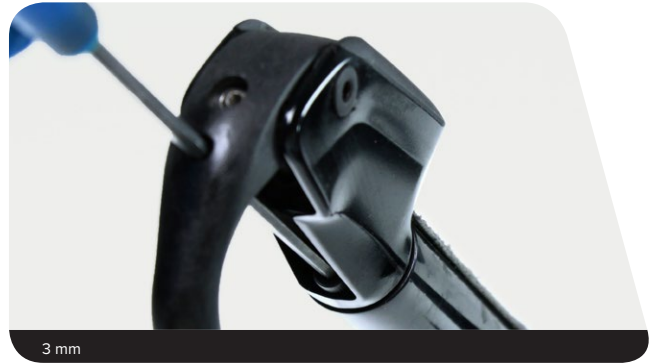
- Flat blade screwdriver
- Hex bit sockets: 2.5 mm, 3 mm
- Hex wrenches: 2 mm, 2.5 mm, 3 mm (x2)
- Hydraulic hose cutter
- Needle nose pliers
- Retaining ring pliers
- Torque wrench

S-900 Aero Lever Exploded View



Lever Blade Removal

- 1 Loosen the draw bolt and remove the brake lever from the aerobar.



- 2 Unthread and remove the compression nut and hose from the brake lever.



- 3 Hold the pivot pin nut in place with a hex wrench while you use another hex wrench to unthread and remove the pivot pin bolt.



- 4 Pull up on the lever blade to release the pushrod from the master piston bore and remove the lever.



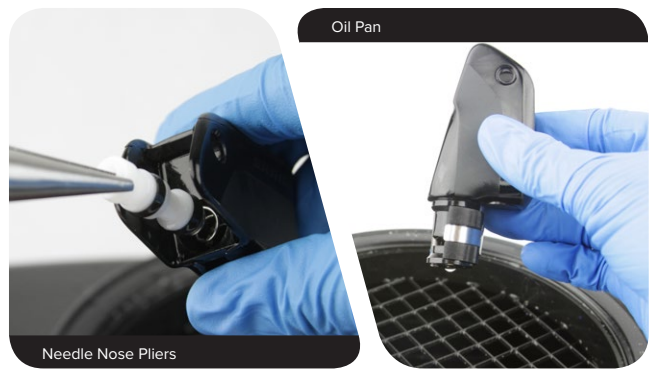
NOTICE

DOT brake 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 brake fluid is not covered under warranty.

- 1 Remove the retaining ring and washer.



- 2 Place an oil pan underneath the brake to catch the fluid. Remove the master piston. Pour the remaining fluid into the pan.

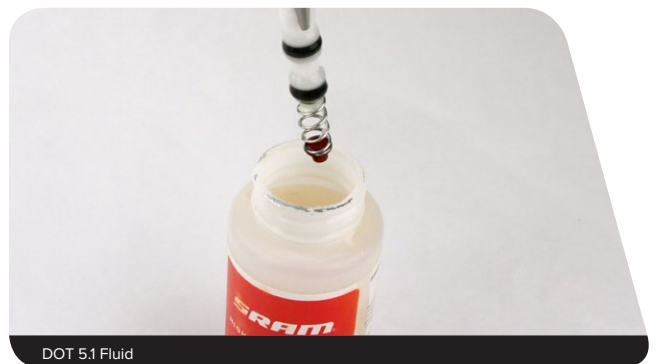


- 3 Clean and dry the master piston bore.

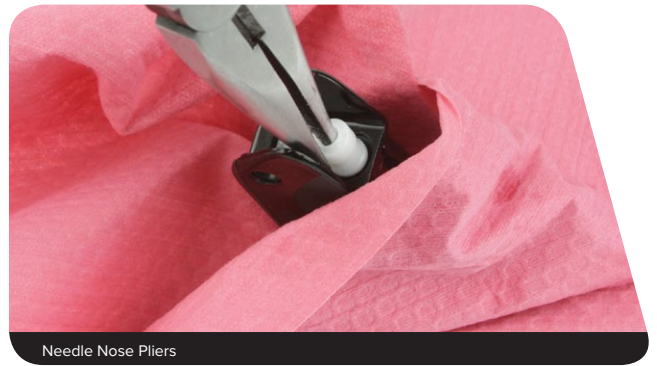


- 4 Submerge a new master piston in SRAM® High-Performance DOT 5.1 fluid.

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



6 Install the master piston into the lever body.



7 Install the piston into the lever body. Place a new washer on top of the piston, and install the new retaining ring on top of the washer.



8 Clean the lever body.



Lever Blade Installation

1 Align the pivot pin holes on the lever body and lever blade.



2 Install the pivot pin nut into either side of the lever body. Hold the pivot pin nut in place with a wrench, and install the pivot pin bolt into the other side.



3 Use a 3 mm hex wrench to hold the pivot pin nut in place; tighten the pivot pin bolt.



4 Squeeze the lever blade until the tip of the pushrod is seated on the master piston.



1 Remove the draw bolt.



2 Remove the wedge spring, expanding wedges, and wedge draw.



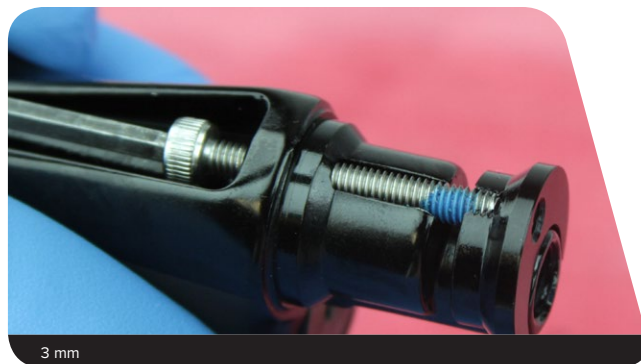
3 Clean the wedge spring, expanding wedges, wedge draw, and bolt.



4 Clean the brake lever.



- 5 Hold the wedge draw in place, then install and tighten the draw bolt until it engages the wedge draw.



- 6 Hold the two expanding wedges in place and install the wedge spring.



- 7 Clean the brake lever.



This concludes the Lever Service.

NOTICE

You must install a new hose barb and compression fitting before reconnecting the brake lever to the hose. Consult [Hose Replacement](#) for instruction on installing a new hose barb, compression fitting, and installing the brake lever to the hose.

CAUTION

Servicing your brakes removes all of the DOT brake fluid from the system. You must bleed your brakes after you service the brake lever. Consult the *S-900 Aero HRD User Manual* at www.sram.com/service.

Caliper Service

Parts, Tools, and Supplies

Parts

- eTap/S-900 HRD Caliper Piston Service Kit - 21 mm

Safety and Protection Supplies

- Apron
- Clean, lint-free shop towels
- Nitrile gloves
- Oil pan
- Safety glasses

Lubricants and Fluids

- Isopropyl alcohol
- SRAM DOT 5.1 Fluid
If SRAM fluid is not available, only use DOT 5.1 or 4 fluid
- SRAM DOT assembly grease

SRAM Tools

- Monoblock caliper 21 mm piston removal tool
- Piston plug
- Monoblock bleed block

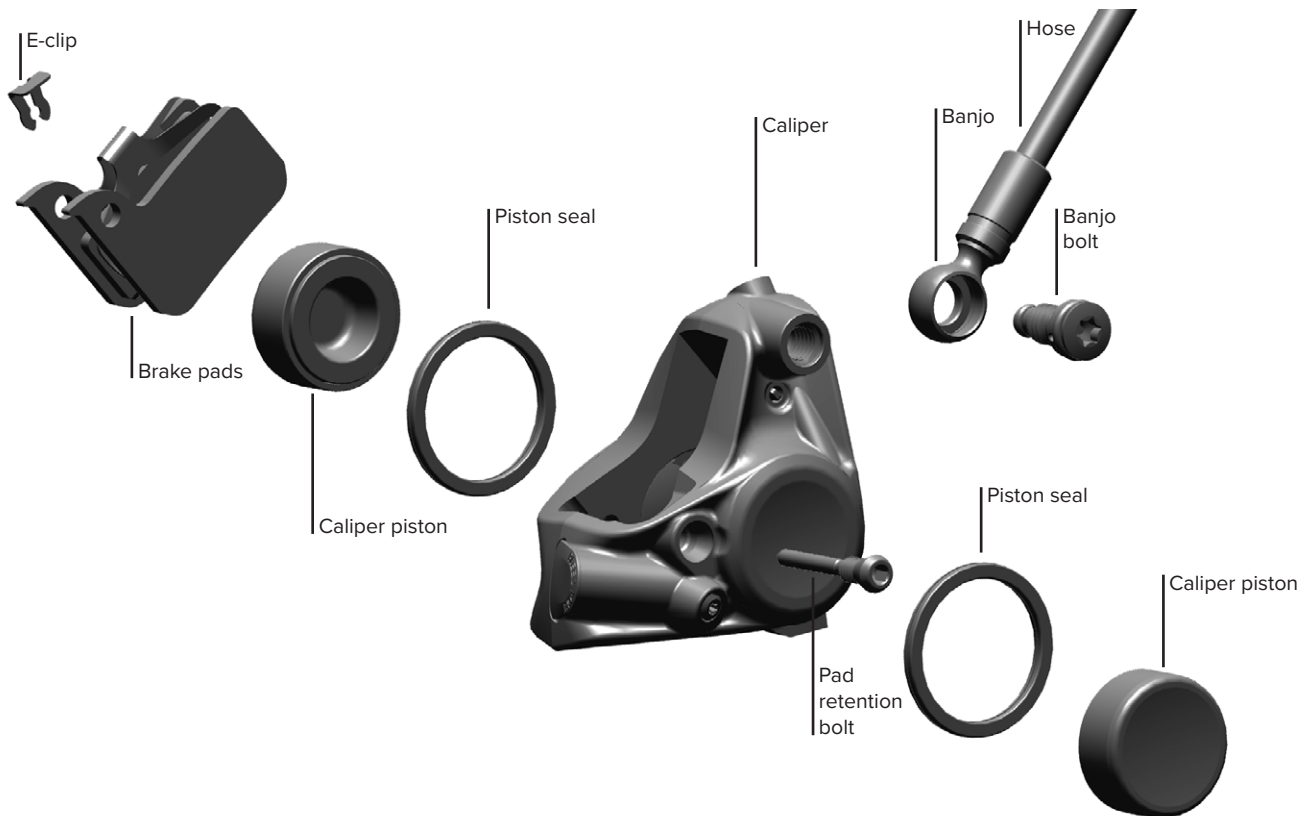
Bicycle Tools

- Bicycle work stand

Common Tools

- Air compressor with rubber-tipped air chuck nozzle
- Digital caliper
- Hex bit socket: 2.5 mm
- Hex wrench: 2.5 mm
- Needle nose pliers
- Pick
- Soft rubber or piece of inner tube
- Torque wrench
- TORX® bit socket: T25
- TORX wrench: T25

Caliper Exploded View



Caliper Brake Pad Removal

1 Remove the caliper from the frame, then remove the mounting bracket and the hardware from the caliper. Set them aside in the order that they were removed.

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



3 Remove the brake pads from the caliper.

NOTICE

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



Digital Caliper

NOTICE

DOT brake 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 brake fluid is not covered under warranty.

- 1 Remove the banjo bolt and hose.

NOTICE

Fluid will drip. Place an oil pan and/or shop towel under the hose.



- 2 Insert the piston removal tool, then install the pad retention bolt into the caliper.

CAUTION

The pad retention bolt must be installed. If the pad retention bolt is not installed, the piston removal tool may dislodge rapidly from the caliper, which can lead to bodily injury or damage to the parts.



- 3 Firmly press a rubber-tipped air chuck nozzle into the banjo port. Hold the caliper securely against a rubber surface and force air into the banjo port to dislodge the piston from the caliper.

CAUTION - EYE HAZARD

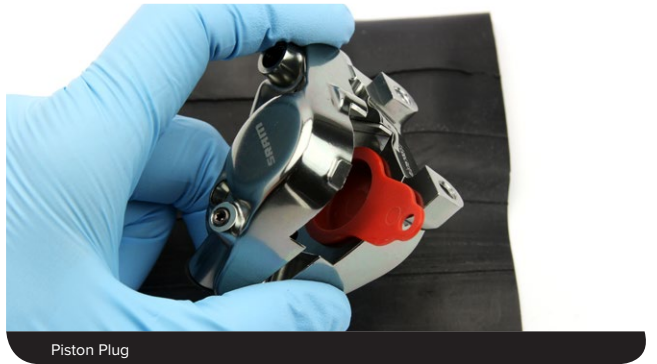
Wear safety glasses. The caliper piston may dislodge rapidly from the caliper, which can lead to bodily injury or damage to the parts. Point the caliper piston toward a rubber surface to prevent the piston from becoming a projectile.



- 4 Remove the pad retainer bolt, then remove the piston and the piston removal tool from the caliper.



- 5 Insert the piston plug so that it fits snugly into the empty piston bore and is flush with the inside of the caliper.



- 6 Insert the piston removal tool so that it will capture the still-installed piston. Make sure the horseshoe opening is aligned with the tab on the piston plug.

Install the pad retention bolt to hold the piston removal tool in place.

CAUTION

The pad retention bolt must be installed. If the pad retention bolt is not installed the piston removal tool may dislodge rapidly from the caliper, which can lead to bodily injury or damage to the parts.



- 7 Firmly press a rubber-tipped air chuck nozzle into the banjo port. Hold the caliper securely against a rubber surface and force air into the banjo port to dislodge the piston from the caliper.

⚠ CAUTION - EYE HAZARD

Wear safety glasses. The caliper piston may dislodge rapidly from the caliper, which can lead to bodily injury or damage to the parts. Point the caliper piston toward a rubber surface to prevent the piston from becoming a projectile.



- 8 Remove the retention bolt, the piston removal tool, the piston, and the piston plug from the caliper.



- 9 Remove the piston seals from each piston bore.

⚠ CAUTION

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.



- 10 Spray isopropyl alcohol inside each piston bore, the inside and the outside of the caliper, and all of the removed parts and clean them with a shop towel.

NOTICE

Do not use mineral oil or DOT 5 fluid. If the brake system has been contaminated with mineral oil or DOT 5 fluid, the braking system (e.g. the brake-shift lever, caliper, and hose) will need to be replaced.

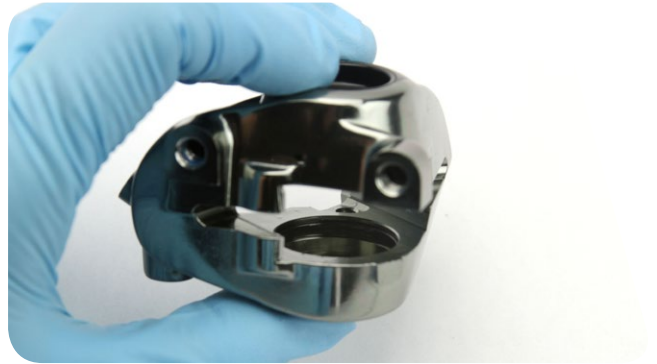
For the best braking performance, use only SRAM® DOT 5.1 fluid. If SRAM fluid is not available, use only DOT 5.1 fluid or 4 fluid.



NOTICE

DOT brake 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 brake fluid is not covered under warranty.

- 1 Apply a small amount of SRAM® 5.1 DOT brake fluid to new piston seals and install the piston seals into each piston bore.



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

Use your gloved finger to apply a small amount of SRAM DOT 5.1 fluid to each piston, then install each piston into each piston bore.

NOTICE

For the best braking performance, use only SRAM 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.



Tip: If a piston is difficult to install into a piston bore, lay the caliper on a flat surface. Slide a thin wrench through the caliper, then gently and evenly press the piston into the bore.



- 3** Remove the o-rings from the banjo bolt.
Install the new o-rings and apply a thin layer of grease.



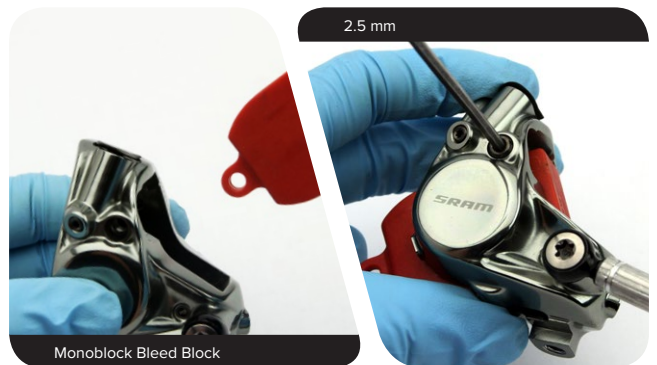
- 4** Tighten the banjo bolt with the banjo boot at the desired angle.



- 5** Insert the Monoblock bleed block into the caliper, then install the pad retention bolt.

CAUTION

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 could lead to a brake failure.



- 6** Spray isopropyl alcohol on the caliper and clean it with a shop towel.



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

This concludes the Caliper Service.

CAUTION

Servicing your brakes removes all of the DOT brake fluid from the system. You must bleed your brakes after you service the brake caliper. Consult the S-900 Aero HRD User Manual at www.sram.com/service.

Hose Replacement

Perform the hose replacement service if the hose needs to be replaced. For hose shortening instructions, consult the *S-900 Aero HRD User Manual* at www.sram.com/service.

Parts, Tools, and Supplies

Parts

- Disc Brake Hydraulic Line Kit - SRAM® S-900 Aero HRD

Safety and Protection Supplies

- Apron
- Clean, lint-free shop towels
- Nitrile gloves
- Oil pan
- Safety glasses

Lubricants and Fluids

- Isopropyl alcohol
- SRAM DOT assembly grease

SRAM Tools

- Monoblock bleed block

Common Tools

- Crowfoot socket: 8 mm
- Digital caliper
- Flare nut wrench: 8 mm
- Hex wrench: 2 mm, 2.5 mm, 3 mm
- Hex bit socket: 2.5 mm
- Marker
- Needle nose pliers
- Torque wrench
- TORX® bit sockets: T8, T25
- TORX wrenches: T8, T25

Hose Removal

- 1 Remove the wheel from the bicycle according to the manufacturer's instructions.

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



- 3 Remove the brake pads from the caliper.

NOTICE

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



Digital Caliper

- 4 Install the Monoblock bleed block into the caliper, then install the pad retention bolt.



Monoblock Bleed Block

- 5 Loosen the draw bolt. Remove the lever from the aerobar.



3 mm

- 6 Loosen and remove the compression nut and hose from the brake lever. Set the brake lever aside.

NOTICE

Fluid will drip. Place an oil pan and/or shop towel under the brake lever.



- 7 Loosen and remove the banjo bolt and the hose from the caliper.

NOTICE

Fluid will drip. Place an oil pan and/or shop towel under the caliper.



- 8 Remove the hose from the frame according to your frame manufacturer's instructions.

To remove the hose from internally routed frames, first cut the hose near the compression fitting and remove the compression nut from the hose.

Hose Installation

1 Internally routed frames: Insert the hose and route it through the frame or fork.

Externally routed frames: Loosely connect the hose to the frame or fork.

2 Apply a thin layer of grease to the new banjo bolt o-rings, then install the banjo bolt into the banjo.



3 Install the banjo onto the caliper.



4 Make sure the hose length creates a gentle bend in the hose and allows the handlebar to freely turn from side to side. Consider adding additional hose length to allow for stem or bar removal. To determine where to cut the hose, measure 20 mm from the end of the aerobar. Mark your cut location, then cut the hose.

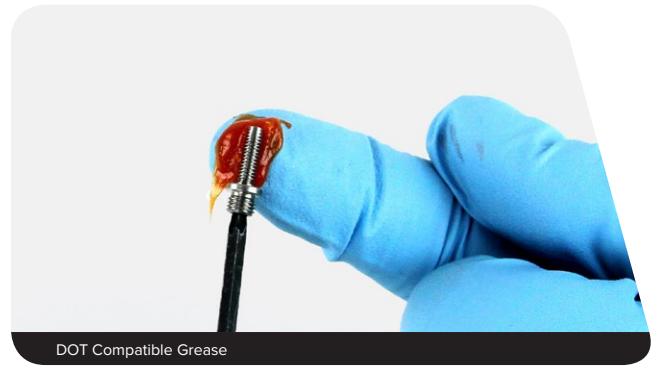
Do not cut the hose at the caliper.

NOTICE

You must cut the hose at the lever. Cutting the hose at the caliper will remove the crimped banjo from the hose, and it will need to be replaced.



5 Apply grease to the hose barb threads.

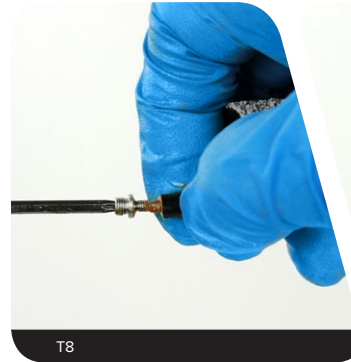


6 Thread the hose barb into the hose until it is flush with the end of the hose.

Install the compression nut onto the hose.

NOTICE

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



7 Thread a new 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.



8 Apply a thin layer of grease to the compression fitting and compression nut.



- 9 Install the hose into the brake lever while threading the compression nut into the valve body by hand. Tighten the compression nut.



This concludes the Hose Replacement Service.

⚠ CAUTION

Hydraulic hose replacement removes all of the DOT brake fluid from the system. You must bleed your brakes after you replace the hose. Consult the *S-900 Aero HRD User Manual* at www.sram.com/service.

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