

# ***SRAM***®

## **Hub Service Manual**



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## **SRAM LLC WARRANTY**

### **Extent of Limited 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.

### **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.

### **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.

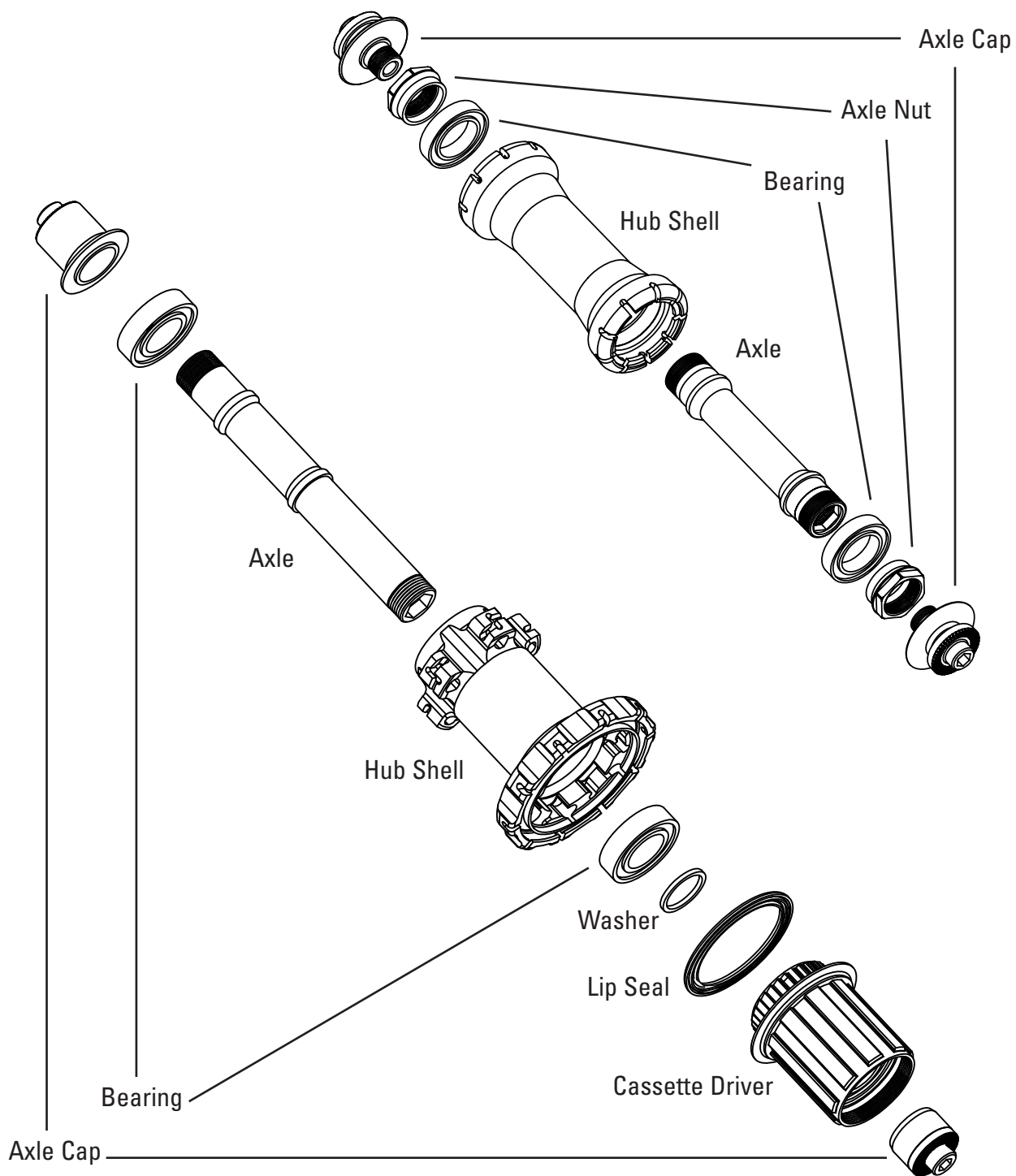
### **Limitations of Warranty**

- This warranty does not apply to products that have been incorrectly installed and/or adjusted according to the respective SRAM technical installation manual. The SRAM user manuals can be found online at [www.sram.com](http://www.sram.com), [www.rockshox.com](http://www.rockshox.com) or [www.avidbike.com](http://www.avidbike.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.

### **Examples of Wear and Tear:**

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/Bottomout pads/Bearings/Pawls/Transmission gears/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.



# SRAM HUB SERVICE MANUAL

## INTRODUCTION

This service guide covers SRAM hub maintenance and spoke replacement. Spoke tensioning is NOT included in this manual. To service your hubs you will need the following tools and replacement parts:

### TOOLS

Safety glasses	Torque wrench
(2) 5 mm hex wrenches	Drift tool
10 hex wrench	Rubber or plastic mallet
17 mm socket wrench	Grease
6 mm socket driver	SRAM hub tools (see diagram)

### REPLACEMENT PARTS

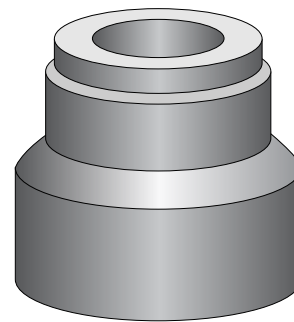
Front and rear hub bearings  
Leaf springs  
Pawls



Bearing Service Tool  
**Base**



Bearing Service Tool  
**Insert**



Bearing Service Tool  
**Cap**

# SRAM HUB SERVICE MANUAL

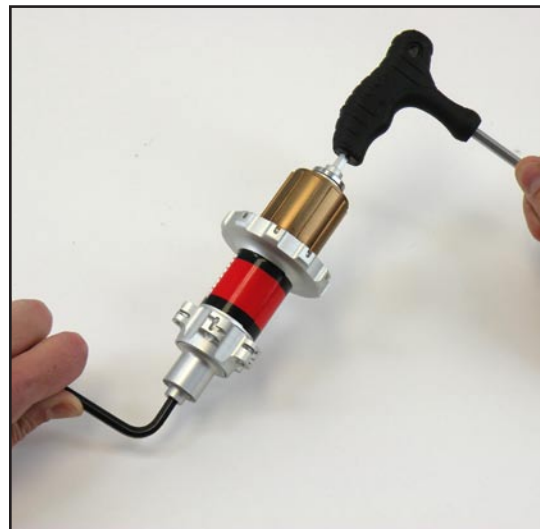
## REAR HUB SERVICE

If your spokes or rim are damaged you can remove the hub from the wheel to make servicing your hub easier. Using a sharp pair of metal snips, cut the spokes, remove the hub from the wheel, then remove the spoke ends from the hub (not pictured). If your rim is damaged, send it back to SRAM from warranty review.

### DISASSEMBLY

**1** Insert a 5 mm hex wrench into both axle caps, and turn the wrenches counter-clockwise (as viewed from the axle end) to break loose one axle cap and fully remove.

**1**



**2** Insert a 10 mm hex into the exposed end of the axle, and use a 5 mm hex to remove the remaining axle cap.

**2**



**3** Pull cassette body off by hand.

**3**



## SRAM HUB SERVICE MANUAL

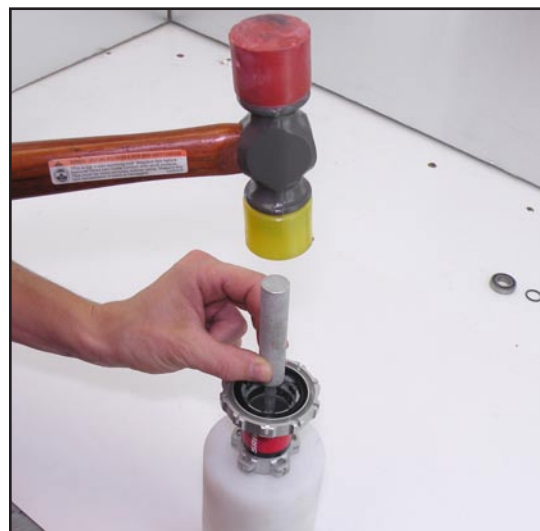
- 4** Place the drive-side face of the hub shell into the large inset in the Bearing Service Tool Base. Use a rubber mallet to firmly tap out the axle/bearing assembly. Set aside the axle/bearing assembly.
- Important:** A small washer is installed on the drive side of the axle near the bearing. If this washer falls off during axle removal set it aside for re-installation.

**4**



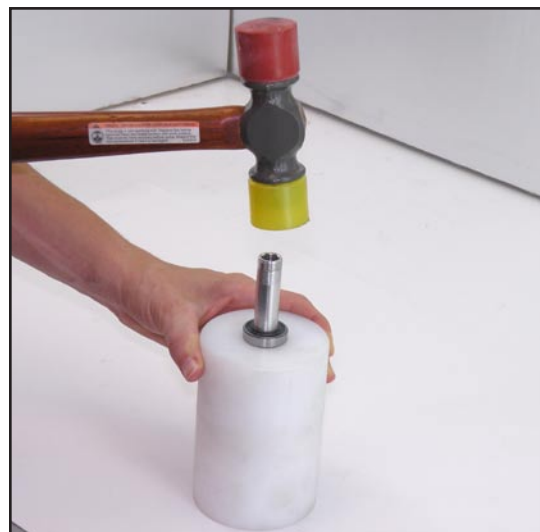
- 5** Turn hub over and insert the non-drive side end of the hub into the large hole in the Bearing Service Tool Base. Use a drift type tool to tap out other bearing.

**5**



- 6** Turn the Bearing Service Tool Base over, insert the non-drive side end of the axle/bearing assembly through the small hole. Use a mallet to gently tap the bearing and washer off of the axle. Set the washer aside for re-installation.

**6**



## SRAM HUB SERVICE MANUAL

- 7** Use a pick to carefully remove the lip seal from the drive-side end of the hub.

**7**



- 8** Use your fingers or a pick to carefully remove the pawls and leaf springs. Inspect the pawls and leaf springs for signs of damage or wear. If any of the pawls or leaf springs exhibit signs of wear or damage, replace **all** of them. Otherwise, clean any grease on the pawls and leaf springs with a clean rag.

**8**



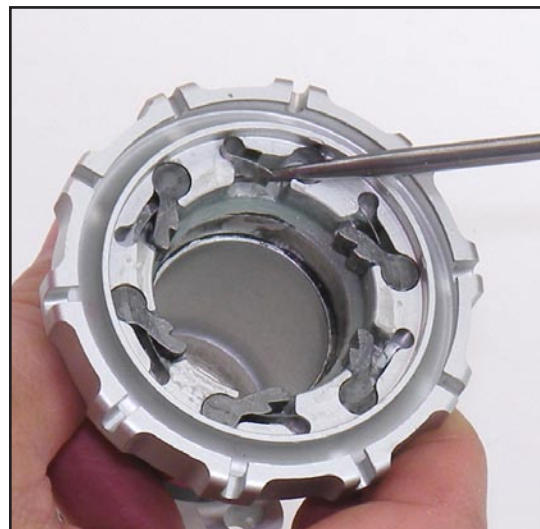


# SRAM HUB SERVICE MANUAL

## ASSEMBLY

**1** Install leaf springs into the pawl slots. Use a pick to compress each leaf spring as you insert the pawl into the pawl slot.

**1**



**2** Apply a light coat of grease to the pawls.

**2**



**3** Press the lip seal, with the notched side of the lip seal facing the hub, into the drive-side of the hub.

**3**





## SRAM HUB SERVICE MANUAL

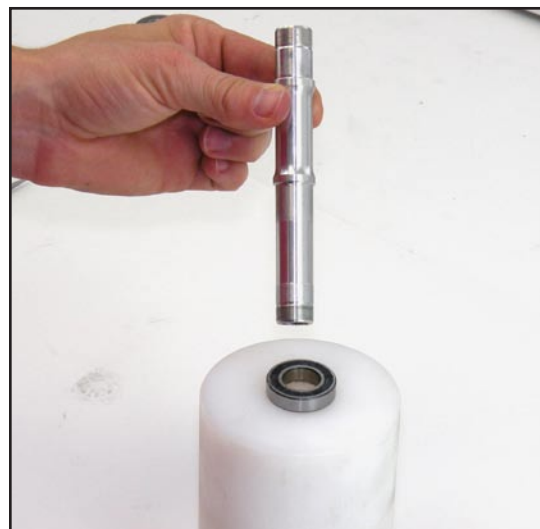
- 4** Apply a light coat of grease to the hub lip seal and cassette driver ratchet ring.

**4**



- 5** Orient the Bearing Service Tool Base with the small hole facing up. Place the new bearing over the hole in the Bearing Service Tool Base, and insert the long end of the axle through the bearing. Use a mallet to gently tap the axle through the bearing until it seats in place.

**5**



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- 6** Install the Bearing Service Tool Insert, with the hole facing up, into the Bearing Service Tool Base.

**6**



- 7** Place the axle bearing assembly into the Bearing Service Tool Insert so that the bearing rests on the Insert.

**7**



- 8** Slide the hub, drive side down, over the axle/bearing assembly. Insert the second Bearing Service Tool Insert into the hub. Use a rubber or plastic mallet to gently but firmly tap bearing into place until it is seated against shoulder inside the hub.

**8**



## SRAM HUB SERVICE MANUAL

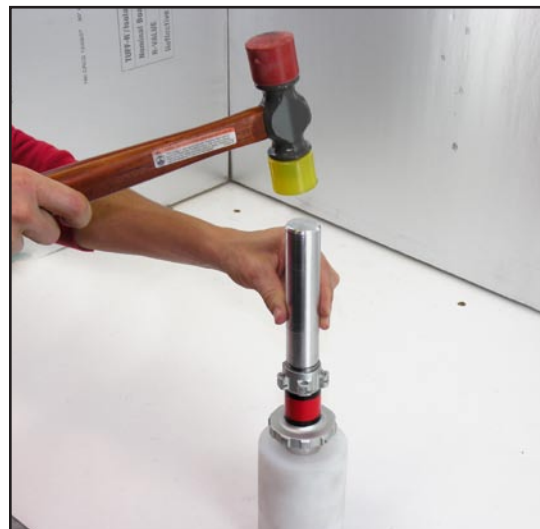
- 9** Remove the Bearing Service Tool Insert from the hub. Insert a new bearing into the non-drive side of the hub.

**9**



- 10** Hold the Bearing Service Tool Insert against the bearing. Use a rubber or plastic mallet to gently but firmly tap the bearing into place until it is seated against the shoulder inside the hub.

**10**



- 11** Grease and re-install the washer onto the drive side of the axle.  
**Important:** The washer is critical to hub performance. The hub will not operate properly without the washer installed.

**11**



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- 12** Slide the driver body onto the axle until it is fully seated.  
**Note:** The driver body has a floating sleeve that can become off-set during hub disassembly. If this occurs, use your finger to re-align and center the sleeve.

**12**



- 13** Hand tighten the flared axle (end) cap and the standard (?) axle (end) cap onto the non-drive side and drive side of the hub respectively. Use a 5 mm hex wrench on one axle cap and a 5 mm torque wrench on the other and simultaneously torque both axle caps to 9 N·m (80 in-lbs).

**13**



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## FRONT HUB SERVICE

If your spokes or rim are damaged you can remove the hub from the wheel to make servicing your hub easier. Using a sharp pair of metal snips, cut the spokes, remove the hub from the wheel, then remove the spoke ends from the hub (not pictured). If your rim is damaged, send it back to SRAM from warranty review.

### DISASSEMBLY

**1** Using two 5 mm hex wrenches on the axle caps, turn the wrenches counter-clockwise (as viewed from the axle end) to break loose one of the axle caps and fully remove.

**1**



**2** Insert a 10 mm hex wrench into one end of the axle, and use a 5 mm hex to remove the other axle cap.

**2**



**3** Position a 17 mm socket onto one end of the axle, and use a 10 mm hex to remove one of the axle nuts. Repeat this process to remove the other axle nut.

**3**



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- 4** Place one end of the hub over the large hole in the Bearing Service Tool Base. Insert a 6 mm socket driver into the hub so that the driver rests on the axle.

**4**



- 5** Use a rubber or plastic mallet to gently but firmly tap the axle/bearing assembly out of the hub.

**5**



- 6** Turn the Bearing Service Tool Base over and insert the short end of the axle into the small hole so that the bearing is sitting on top of the tool. Use a rubber or plastic mallet to gently tap bearing off of the axle.

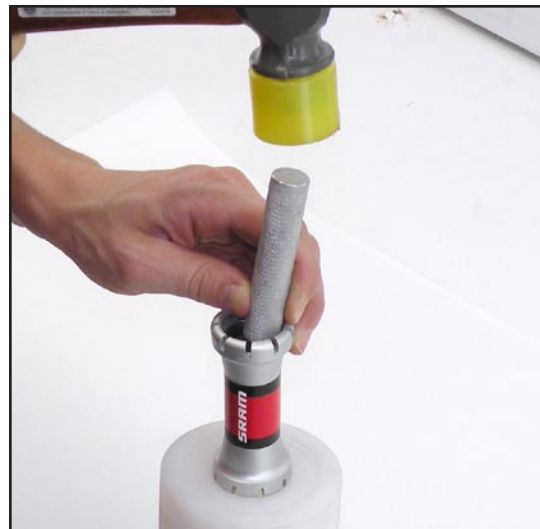
**6**



## SRAM HUB SERVICE MANUAL

- 7 Turn the hub over and insert the other end of the hub into the Bearing Service Tool Base. Use a drift type tool to tap out other bearing.

7



### REPLACE BEARINGS

- 1 Insert a new bearing into one end of the hub.

1



- 2 Place the narrow end of the Bearing Service Tool Cap into the hub so that it contacts the bearing.

2





## SRAM HUB SERVICE MANUAL

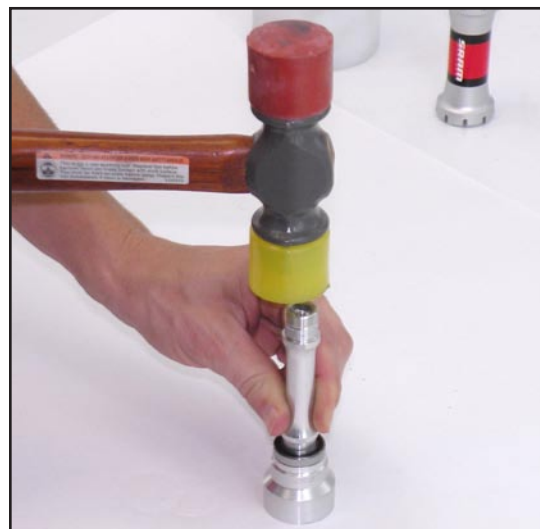
- 3** Place the Bearing Service Tool Insert into the open end of the Bearing Service Tool Cap. Use a rubber or plastic mallet to gently but firmly tap bearing into place until it is seated against shoulder inside the hub.

**3**



- 4** Place the wide end of the Bearing Service Tool Cap on a flat surface. Place the other new bearing on top of the tool and insert one end of the axle into the bearing. Use a rubber or plastic mallet to gently but firmly tap the axle into the bearing until it is fully seated against the axle shoulder.

**4**



- 5** Remove the hub from the Bearing Service Tool Cap, and place the end of the hub with previously installed bearing onto the narrow end of the Bearing Service Tool Cap.

**5**



## SRAM HUB SERVICE MANUAL

- 6** Insert the axle/bearing assembly into the hub until the axle threads clear the installed hub bearing.

**6**



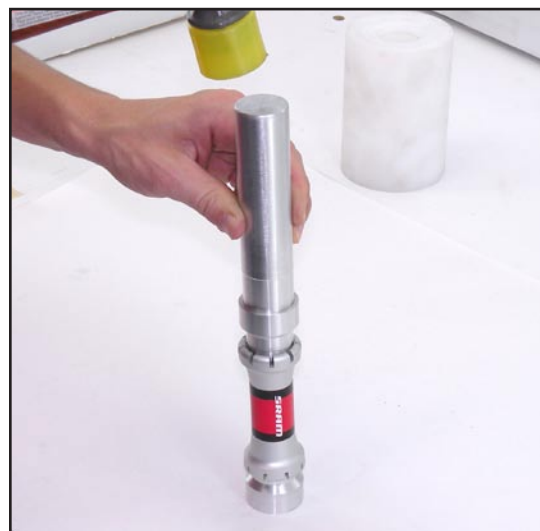
- 7** Place the narrow end of the Bearing Service Tool Cap into the hub so that it contacts the bearing.

**7**



- 8** Place the Bearing Service Tool Insert into the open end of the Bearing Service Tool Cap. Use a rubber or plastic mallet to gently but firmly tap bearing into place until it is fully seated against the shoulder inside the hub.

**8**



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**9** Use a 10 mm hex and 17 mm socket and install the axle nuts, with the stepped side of the nut inward, onto the hub. Simultaneously torque to 9 N·m (80 in-lbs) each side.

**9**



**10** Use a 5 mm hex and 5 mm hex driver to install the axle caps. Simultaneously torque to 9 N·m (80 in-lbs) each side.

**10**



# SRAM HUB SERVICE MANUAL

## SPOKE INSTALLATION

This portion of the SRAM Hub Service Guide covers spoke replacement. Spoke tensioning is NOT included in this manual.

### SRAM S-40

Front Wheel			Rear Wheel		
Spoke Count	Spoke Length	Lacing Pattern	Spoke Count	Spoke Length	Lacing Pattern
18	276 mm	Radial	10	Drive Side: 260 mm	Radial
			10	Non-Drive Side: 288 mm	2 Cross

### SRAM S-60

Front Wheel			Rear Wheel		
Spoke Count	Spoke Length	Lacing Pattern	Spoke Count	Spoke Length	Lacing Pattern
18	260 mm	Radial	10	Drive Side: 246 mm	Radial
			10	Non-Drive Side: 272 mm	2 Cross

### SRAM S-80

Front Wheel			Rear Wheel		
Spoke Count	Spoke Length	Lacing Pattern	Spoke Count	Spoke Length	Lacing Pattern
18	236 mm	Radial	10	Drive Side: 220 mm	Radial
			10	Non-Drive Side: 248 mm	2 Cross

## WHEEL BUILD NOTES

1. Coat the threads of the spokes with a lightweight oil. Dab off excess.
2. Orient the wheel so that the bar code label is down, and the driver of the hub is up.
3. The **non-drive side of the rear wheel** is a 2-cross lacing pattern.
4. During the wheel build process it is important to pre-stress the wheel to ensure proper seating of spokes in both the hub and the rim.
5. Tension **rear wheel drive side spokes** to a measurement of 17 on the Park TM-1 tool. Tension other spokes for proper dish and trueness.
6. Torque axle caps to 9 N·m (80 in-lb).