At Salsa, we believe that a sense of adventure makes life better. The bicycle can be so much more than just a bike; it’s a path to new places, new people, and amazing experiences.

Thank you for your purchase. We hope it makes a good riding experience even better!

Salsa. Adventure by bike®.

**WARNING:** CYCLING CAN BE DANGEROUS. BICYCLE PRODUCTS SHOULD BE INSTALLED AND SERVICED BY A PROFESSIONAL MECHANIC. NEVER MODIFY YOUR BICYCLE OR ACCESSORIES. READ AND FOLLOW ALL PRODUCT INSTRUCTIONS AND WARNINGS INCLUDING INFORMATION ON THE MANUFACTURER’S WEBSITE. INSPECT YOUR BICYCLE BEFORE EVERY RIDE. ALWAYS WEAR A HELMET.

**NOTE:** TA = Thru-Axle, QR = Quick-Release

## Hub Compatibility & Intended Use

**WARNING:** Salsa hubs are not designed for radial lacing. Radial lacing can result in total wheel failure, resulting in serious injury or death.

- We strongly recommend that you have your wheels built by a professional wheel builder. Proper wheel building is the best way to ensure that your wheels and Salsa hubs will last and be problem-free
- Before every ride, check the function of your rear wheel hub. Make sure that the freewheel and engagement connection function properly. Should there be any malfunction, the rear wheel hub must be repaired before use. If you are not in a position to repair the hub, contact your dealer
- New hubs have a higher rolling resistance than used hubs because the grease in the freewheel has not yet been evenly distributed and the seals have not yet been bedded in

### Salsa Cycles hubs are sold in the following configurations:

- Salsa Enabler Front Hub: 135 x 10mm QR, offset 6-bolt disc brake, 32-hole
- Salsa Mukluk 2 Rear Hub: 170 x 10mm QR / 177 x 12mm TA, 6-bolt disc brake, 32-hole, std freehub body
- Salsa Mukluk 3 Rear Hub: 170 x 10mm QR, 6-bolt disc brake, 32-hole, std freehub body
- Salsa Fat Conversion Front Hub: 135 x 9mm QR / 142 x 15mm TA, 6-bolt disc brake, 32-hole
- Salsa Fat Conversion Front Hub: 150 x 9mm QR / 150 x 15mm TA, 6-bolt disc brake, 32-hole
- Salsa Fat Conversion Rear Hub: 170 x 10mm QR / 177 x 12mm TA, 6-bolt disc brake, 32-hole, std freehub body
- Salsa Fat Conversion Rear Hub: 170 x 10mm QR / 177 x 12mm TA, 6-bolt disc brake, 32-hole, XD freehub body
- Salsa Fat Conversion Rear Hub: 190 x 10mm QR / 197 x 12mm TA, 6-bolt disc brake, 32-hole, std freehub body
- Salsa Fat Conversion Rear Hub: 190 x 10mm QR / 197 x 12mm TA, 6-bolt disc brake, 32-hole, XD freehub body

### Salsa Cycles sells the following service or upgrade parts for the hubs:

- Salsa Axle Kit for Enabler hub (2011–2013)
- Salsa Axle Kit for Mukluk 2 & Fat Conversion 170/177 rear hubs
- Salsa Axle Kit for Mukluk 3 Hub
- Salsa 9mm QR End Caps for Fat Conversion 135 & Fat Conversion 150 front hubs
- Salsa 15mm TA End Caps for Fat Conversion 142 front hub
- Salsa 15mm TA End Caps for Fat Conversion 150 front hub
- Salsa 12mm TA End Caps for Mukluk 2, Fat Conversion 177, & Fat Conversion 197 rear hubs
- Formula XD freehub body with 10mm QR & 12mm TA driveside end caps
- Formula Shimano spline freehub body for Mukluk 2, Fat Conversion 170/177, & Fat Conversion 190/197 rear hubs
- Formula Shimano spline freehub body for Mukluk 3 rear hub

If you are upgrading any part of your hub, please make sure to use all included parts in the kit. Sometimes a kit may include a part that is visually similar to an existing part, but may be different in a subtle, but important way. Re-using old parts, or failure to install a required part, could result in damage or failure.

### Salsa hubs use the following bearings:

- Enabler Front Hub (2011–2013): 15 x 8 x 7mm
- Fat Conversion 135/142 & 150 front hub models: 18 x 30 x 7mm
- Mukluk 2, Fat Conversion 170/177 & 190/197 rear hub models: 17 x 30 x 7mm
- Mukluk 3 Rear Hub: 10 x 26 x 8mm

### Hub Care & Maintenance

Maintenance must be carried out at least once a year. When used under extreme conditions (e.g. heavy rain, mud, transport in the rain or cold environments) the freehub body should be serviced more often. Regular maintenance of the hub helps to ensure a longer life and optimum running performance for years. In the case of exposure to water under excessive pressure (e.g. high-pressure cleaners) water may penetrate into the hub. This may damage the hub. Do not use any solvents or detergents. If you routinely ride in temperatures below 32°F (0°C), it is strongly recommended that you have the entire hub serviced with a proper grease rated to -40°F [-40°C].

**WARNING**

Installing this Salsa hub requires in-depth knowledge of bicycle mechanics and professional-grade tools. If you do not have the proper tools or knowledge to perform this installation, please take your bicycle to your local bicycle dealer. Failure to appropriately maintain this hub or build it into a proper wheel may lead to component failure, resulting in serious injury or death. We recommend that you have this product installed, adjusted and maintained by a professional bicycle mechanic.
Front Hub Service Instructions
(Fat Conversion 135/142, Fat Conversion 150, & Enabler)

Although the Fat Conversion and Enabler hubs are different, both are serviced the same way.

**NOTE:** Enabler is not convertible to TA.

Tools and Supplies needed for hub servicing:
- Dead Blow Hammer
- Bearing Press
- Bearing Extractor
- Punch (~6”/150mm long)
- Grease
- Channel Locks, Pliers, Bench Vise, or Really Strong Fingers

End Cap Removal/Swap/Installation

1. Remove the quick release or thru axle.
2. Get a firm grasp on the hub flange opposite the side of the cap you are trying to remove.
3. Tightly squeeze the end cap with your fingers and slide it off the axle.
4. Repeat step 2 and 3 with the other side.
5. Take the appropriate caps for your wheel attachment system; apply a small amount of light grease to the ends of the axle, and slide the caps on until the make full contact with the bearings.

Bearing Service/Replacement

(6902 bearing for the Enabler, 18307 for the Fat Conversion.)

1. See Steps 1–4 of End Cap Removal/Swap/Installation above prior to beginning bearing service.
2. Open a bench vise to about 1-1/2” wide. Set the disc rotor-side of the hub shell on top of the open bench vise jaws so the bearing and axle is in-between them and the non rotor side end is up. **TIP:** Cover the top of the bench vise jaws with rag, some tape, or some other means to protect the finish of the hub shell.
3. Using a dead blow hammer, unseat the disc rotorside hub shell bearing by hitting the non rotorside end of the axle squarely in a downward direction.
4. Catch/remove the rotorside hub shell bearing and the axle from the hub shell as it becomes unseated and falls out through the bottom of the vise.
5. Using a bearing extractor and punch, remove the non-rotorside bearing.
6. Clean the hub shell completely and then re-grease the bearing pockets.
7. Using a bearing press, install the new or serviced disc rotorside hub shell bearing first.
8. Insert the axle into the non-rotorside end of the hub shell and through the bearing until the shoulder rests against the new bearing.
9. Seat the new driveside bearing into the hub shell. The axle will help guide the bearing and ensure it goes in straight. A sleeve or deep socket measuring 30mm in outer diameter with an inner diameter greater than 18mm may be needed to install this bearing, depending on the bearing press.

See Step 5 of End Cap Removal/Swap/Installation to replace end caps.
**Rear Hub Service Instructions**

**Mukluk 2 & Fat Conversion 170/177 & 190/197 Rear Hubs**

**NOTE:** The Salsa Mukluk 2 rear hub is identical to the Fat Conversion 170/177. These instructions are written for Fat Conversion, but know that they also apply to the Mukluk 2 hub.

Salsa Fat Conversion rear hubs are offered in two nominal widths, and can be configured to either QR or TA as follows:

**For Fatbikes with ~66.5mm drive lines:**
- 170 x 10mm QR
- 177 x 12mm TA

**For Fatbikes with ~75mm drive lines**
- 190 x 10mm QR
- 197 x 12mm TA

All of the above axle/OLD configurations are configurable with the following freehub body options:
- Steel, Shimano Spline Freehub
- Aluminum, Shimano Spline Freehub
- SRAM XX1 Freehub

**Tools & Supplies needed for hub servicing**
- 12mm Hex Key Socket
- Torque Wrench
- 5mm Hex Key
- 17mm Cone Wrench
- Dead Blow Hammer
- Bearing Press
- Bearing Extractor
- Punch (~6”/150mm long)
- Blue Thread-Locking Compound
- Grease
- Freehub Grease/Lube
- Channel-Locks, Pliers, Bench Vise or really strong fingers

**End Cap Removal:**

1. Remove the cassette from the freehub assembly per cassette manufacturer’s instructions
2. Using a pliers, channel-locks, bench vise, or your really strong fingers, firmly grasp the non driveside end cap and pull it off the axle [fig. 1]. **TIP:** Wrap the end cap in a few layers of electrical tape to avoid marring the finish.
3. Insert a 12mm hex key into the exposed non driveside end of the axle.
4. While holding the 12mm hex key, remove the driveside end cap by turning in a CLOCKWISE DIRECTION as indicated by the “Loosen” marking on the end cap (fig. 2). For QR end caps use a 5mm hex key (shown); for TA end caps use a 17mm cone wrench.

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**SALSA FAT CONVERSION REAR HUB**

**Exploded View for 170/177 & 190/197 Models**

1. Rear Hub Shell (170/177 or 190/197)
2. Axle (170/177 or 190/197)
3. 2x Bearing 6903 [17 x 30 x 7]
4. Seal - NDS
5. Freehub Bearing Spacer
6. Shimano spline freehub body assembly (alu or steel)
7. Freehub Assembly XD freehub body assembly
8. TA End Cap for XD freehub
9. QR End Cap for XD freehub
10. QR End Cap for spline freehub
11. TA End Cap for spline freehub
12. QR End Cap - NDS
13. TA End Cap - NDS
End Cap Installation/Swap:
1. Locate and separate the old end caps from the new ends caps. **NOTE:** Driveside end caps for XX1 FH assemblies are different than driveside end caps for Shimano spline FH assemblies. They are not cross compatible, DO NOT mix them up!
2. Apply blue thread lock to the threads on the driveside axle end.
3. Thread the new driveside end cap onto the axle in a COUNTER-CLOCKWISE direction. Using a torque wrench, finish tightening the driveside end cap to 12Nm (105in-lb); for QR end cap use a 5mm hex key, for TA end cap, use a 17mm cone wrench. (fig.3)
4. Apply a small amount of light grease to the non-driveside axle end to prevent damage to the end cap o-ring. Firmly press on the non driveside end cap by hand until the o-ring engages in to the axle groove (fig. 4).
5. Check the over-locknut dimension [OLD] for proper width, and ensure both the axle and freehub assembly function properly.
6. Re-install the cassette per manufacturer’s instructions.

Freehub Assembly – Service / Replacement

Removal:
1. Follow the instructions for **End Cap Removal on page 3.**
2. With the end caps removed, firmly hold the hub shell, grasp the freehub assembly, and the pull the freehub assembly away from the hub shell in the axial direction. The freehub assembly should slide off the axle with only a small amount of effort (fig. 5A).
3. Remove the steel freehub bearing spacer by simply sliding it off the axle (fig. 5B).
4. Clean the freehub assembly. Inspect the pawls for wear or damage, check the operation of the pawl spring, and check the operation of the freehub assembly bearings. If any wear/damage is found, the entire freehub assembly should be replaced. Salsa does not service small freehub parts.
5. Clean the hub shell/gear ring and check for worn or damaged teeth. If the gear ring teeth are damaged, the hub will need to be replaced. The gear ring is not a removable/serviceable part.
6. Check the hub shell bearings for smooth operation. If they are rough or indexed, proceed to **Hub Shell Bearing Replacement** instructions.

Installation:
7. Apply a liberal amount of new freehub grease to the clean gear ring in the hub shell and to the pawls on the new/clean freehub assembly. **TIP:** If the Fat Conversion hub will see service in temperatures regularly below 12°F [-12°C], it is recommended that a low-temperature rated grease be used.
8. Locate and install the bearing spacer that was provided with the freehub assembly onto the axle. (The flat end of the spacer butts up against the hub shell bearing, with the chamfered end toward freehub assembly bearing, fig. 6)
9. Slide the new/clean freshly greased freehub assembly on to the exposed driveside axle end (fig. 7). While applying light pressure in the axle direction, turn the freehub assembly in a COUNTER-CLOCKWISE direction until the freehub assembly completely seats into the gear ring/hubshell. **TIP:** Using your fingernail or a small object, push down on 1 or 2 of the pawls as you rotate and push the freehub assembly into the hub shell to aid in seating the pawls into the gear ring.
10. See **End Cap Installation** instructions.

**IMPORTANT NOTE:** The bearings in the freehub bodies should not be replaced. If the bearings need replacement, the entire freehub body mechanism should be replaced.

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**For additional product and safety information go to salsacycles.com/safety**
Hub Shell Bearing Replacement

**NOTE:** Salsa Fat Conversion hubs feature two 6903 (17 x 30 x 7) sealed cartridge bearings in the hub shell.

1. Follow steps **End Cap Removal & Freehub Service/Replacement** to completely remove the end caps, freehub assembly, and freehub bearing spacer from the hub shell.
2. Open a bench vise to about 1” wide. Set the driveside end of the hub shell on top the open bench vise jaws, so the driveside end of the axle is pointing down, between the jaws, and the non driveside end is up. **TIP:** Cover the top of the bench vise jaws with rag, some tape, or some other means to protect the finish of the hub shell.
3. Using a dead blow hammer, unseat the driveside hub shell bearing by hitting the non driveside end of the axle squarely in a downward direction (fig. 8). **TIP:** Unseating the left side bearing first is not recommended, because hitting the driveside end of the axle may damage the threads for the end cap, or bend the exposed length of axle.
4. Catch/remove the driveside hub shell bearing and the axle from the hub shell as it becomes unseated and falls out through the bottom of the vise.
5. Using a bearing extractor and punch, remove the non-driveside bearing and bearing seal together at the same time.
6. Clean the hub shell completely and then re-grease the bearing pockets.
7. Using a bearing press, install the new non driveside hub shell bearing (6903) first (fig. 9A).
8. Re-install the non driveside bearing seal.
9. Insert the axle (12mm broached end first) into the driveside end of the hub shell and through the new bearing until the shoulder rests against the new bearing (fig. 9B).
10. Seat the new driveside bearing into the hub shell. The axle will help guide the bearing and ensure it goes in straight. A sleeve or deep socket measuring 30mm in outer diameter with an inner diameter greater than 17mm may be needed to install this bearing, depending on the bearing press (fig. 9C).
11. Follow steps 7–10 of **Freehub Assembly – Service/Replacement**
12. Follow steps for **End Cap Installation**

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**Salsa Cycles Limited Warranty**

All Salsa products are warranted against manufacturing defects in materials and workmanship from the date of retail purchase of the product, subject to the limitations detailed below. Save your dated receipt for proof of purchase.

**Three-Year Warranty**

All Salsa bicycle forks, parts and components

This warranty applies to 2014 and newer model bicycles and covers only Salsa Cycles branded product. Any other original part or component shall be covered by the stated warranty of the original manufacturer. Any products not specifically included above are hereby omitted.

TO THE EXTENT NOT PROHIBITED BY LAW, THESE WARRANTIES ARE EXCLUSIVE AND THERE ARE NO OTHER EXPRESS OR IMPLIED WARRANTIES OR CONDITIONS INCLUDING WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

This warranty does not cover the following:

- Product that has been modified, neglected, used in competition or for commercial purposes, misused or abused, involved in accidents or anything other than normal use
- Installation of components, parts, or accessories not originally intended for use with or compatible with Salsa product
- Damage or deterioration to the surface finish, aesthetics or appearance of the product including but not limited to paint damage
- Normal wear and tear
- Labor required to remove and/or refit and re-adjust the product within the Salsa product
- Damage to carbon fiber caused by any carbon assembly paste
- Damage due to improper assembly or follow-up maintenance or lack of skill, competence, or experience of the user or assembler

This limited warranty applies only to the original purchaser of the Salsa Cycles product and is not transferable. This warranty applies only to Salsa Cycles products purchased through an authorized dealer or distributor.

In no event shall Salsa Cycles be liable for any loss, inconvenience or damage, whether direct, incidental, consequential, or otherwise resulting from breach of any express or implied warranty or condition, of merchantability, fitness for a particular purpose, or otherwise with respect to our products except as set forth herein. This warranty gives the consumer specific legal rights, and those rights and other rights may vary from place to place. This warranty does not affect your statutory rights.

**Warranty Registration:**

Proof of purchase is required before a warranty claim is processed. Salsa Cycles therefore strongly encourages warranty registration at salsacycles.com. Failure to register will not affect consumer rights under the limited warranty stated above, so long as the consumer can show in a reasonable manner proof of original ownership and the date the Salsa Cycles product was purchased.

If you have any questions contact warranty@salsacycles.com.

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