



Ultra New Hub & Axle Kit Installation Instructions

Hi there. Thanks for spending your hard-earned cash on this Surly product. Surly stuff is designed to be useful and durable. We're confident it will serve you well for years to come.

Surly Ultra New Axle Kits are upgrades for the internals of your existing Surly New hubs or replacing the internals on your Surly Ultra New hubs.

⚠ 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.

Additional Product and Safety Information can be found at the website: www.surlybikes.com/safety

FOR FIXED GEAR HUBS

⚠ WARNING: THE LOCKRING IS CRITICAL TO BRAKING FOR FIXED GEAR USE AND NEEDS TO BE FREQUENTLY INSPECTED AND TIGHTENED AS NECESSARY.

⚠ WARNING: A fixed-gear hub is designed to be used with a track cog and lockring. Neglecting to use a reverse-thread lockring with the track cog can result in loss of control or damage to the bicycle and/or serious injury or death to the rider, and voids the warranty.

⚠ WARNING: Your bicycle must be equipped with hand brakes when using a singlespeed freewheel. Do not install a freewheel on the "fixed" side of a "fixed/free" hub.

Disc Rotor Spacing

Hub	Standard	Measurement
Front 100	Front Spacing	10.5mm
Front 135	Rear Spacing	15.25mm
Rear 135	Rear Spacing	15.25mm

NOTE—Surly 135mm front hubs use "rear rotor spacing" for brake rotor placement and are not compatible with all fat bike forks. Check with the fork's manufacturer for compatibility

Compatibility

Driver details:

FIXED/FIXED

This means that both sides of the hub are designed for fixed-gear cycling. Both sides are stepped, with two different threading patterns. The inside threads (1.37" x 24 tpi) require a track cog. The outside threads are reverse threaded (1.29" x 24 tpi) and require a reverse threaded lockring.

FIXED/FREE

One side of the hub is fixed as in the description above. The other side is threaded (1.37" x 24 tpi) and designed for use with a singlespeed freewheel. Use only English standard threaded freewheels, cogs and lockrings.

FREE/FREE

Both sides are threaded (1.37" x 24 tpi) and designed for use with a singlespeed freewheel. Use only English standard threaded freewheels, cogs and lockrings.

Tools Required

The following tools are required for proper hub installation and installation of the cog or freewheel and installation on your bike:

- 5mm Allen wrench
- Chain whip
- Lockring spanner
- Torque wrench with 5mm Allen head
- Grease

For Axle Kit installation:

- Dead blow hammer
- 19mm deep socket mallet
- 15 and 17mm cone wrenches

Track Cog & Lockring Installation

See diagram below for proper orientation of hub components.

COG AND LOCKRING INSTALLATION

1. Apply a liberal amount of grease to the cog's threads.
2. Thread the cog clockwise onto the larger set of hub threads. The cog should go on fairly smooth. Don't cross thread it. If in doubt back it off and start again.
3. Once cog is snugly threaded onto the hub use a chain whip to tighten it completely.
4. Our lockrings use English threads (1.29" x 24 tpi LH). Be sure the lockring threads are compatible with your hub before installation.
5. Apply grease to the lockring threads.
6. Thread the lockring onto the hub counterclockwise. Use a lockring spanner to tighten the lockring firmly against the cog.

NOTE—Make sure the lockring and hub threads are completely engaged prior to use.

NOTE—After the first ride check the tightness of the lockring. By riding you will likely have tightened the cog further onto the hub, and the lockring will need to be retightened against it.

NOTE—Periodically check the tightness of both the cog and the lockring.

FREEWHEEL INSTALLATION

1. Apply grease to the threads of the freewheel. Thread the freewheel onto the hub by hand.

NOTE—If the freewheel is difficult to thread on, STOP! Back it off and try again. Make sure it is aligned properly and is not cross threading on the hub. Threads that have been destroyed by cross threading will not be covered under warranty.

2. Fully tighten the freewheel onto the hub using the chain whip.

AXLE BOLT TORQUE

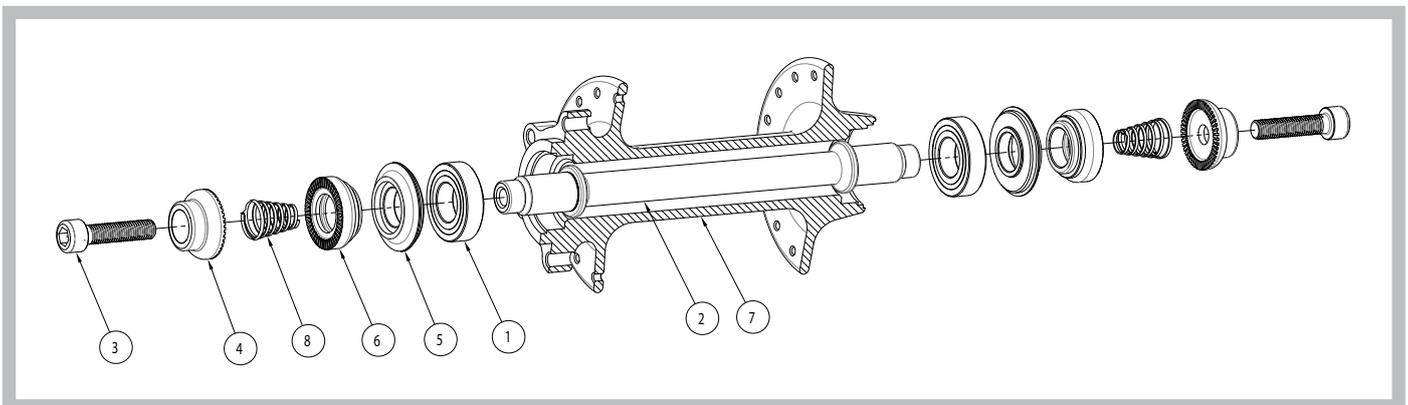
Install wheel and tighten axle bolts using 5mm torque wrench.

⚠ **WARNING:** Do not exceed 12Nm of torque on your axle bolts. Over tightening may lead to thread failure.

NOTE—Surly Ultra New axle kits are compatible with most available quick releases. Please refer to the quick release manufacturer for proper torque spec.

Axle Parts List

Part#	Description	Quantity
1	6901 Sealed Bearing	2
2	Axle	1
3	Axle Bolt (M6x1.0mm)	2
4	Bolt Cap	2
5	Dust Shield	2*
6	Axle End Cap	2
7	Hub Shell	1
8	Axle Bolt Spring	2



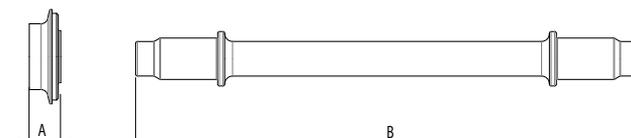
* Two unique dust shields (marked FX and FW) are included with the following hub setups:

- 130 Fixed/Freewheel
- 120 Fixed/Freewheel

TABLE 1

AXLE AND DUST SHIELD SIZE TABLE

	Hub Configuration	A (mm) Dust Shield Thickness	B (mm) Axle Length
Front	100 (Rim)	5.1	109
	100 (Disc)	5.1	109
	135 (Disc)	6	144
Rear	120 (Fixed/Freewheel)	8 (Fx) / 9 (Fw)	129
	120 (Fixed/Fixed)	8	129
	120 (Freewheel/Freewheel)	9	129
	130 (Fixed/Freewheel)	8 (Fx) / 10.5 (Fw)	139
	135 (Fixed/Fixed)	6	144
	135 (Fixed/Freewheel)	6	144
	135 (Freewheel/Freewheel)	6	144
	135 (Disc/Fixed)	6	144
	135 (Disc/Freewheel)	6	144



To Install the Ultra New Axle Kit

1. Place the wheel horizontally on your bench top.
2. Apply a small amount of grease to the inside surface of the hub where the bearing will sit, (figure 2). Place and position the bearing in the hub as evenly and straight as you can to get it started for installation.
3. Place the 19mm socket (Not all 19mm sockets are created equal!) on top of the bearing race (make sure the socket sits on the OUTER edge of the bearing race and not on the seal). Pound directly over the socket to get the bearing into the hub as straight and evenly as possible, as far in as it will go (figure 3). It should sit counter sunk in the hub with about 1mm of the hub's inner edge exposed. Apply a small amount of grease to the axle where the bearings will contact it. Insert the axle from the back of the hub and through the bearing. Place the dust shield and axle end cap onto axle. Make sure it's firmly seated.
4. Take the wheel to your vise. Open the jaws of the vise just enough to make room for the thickness of the axle. Place the wheel horizontally on the vise, INSTALLED bearing side down, with the axle between the jaws. DO NOT clamp down the vise to prevent damaging the axle (figure 4).



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6

5. Apply a small amount of grease to the inside surface of the hub where the bearing will sit. Place the other bearing on the other end of the axle that is now pointing skyward. Get the bearing started as straight as possible. Place the 19mm socket over the bearing (make sure the socket sits on the OUTER edge of the bearing and not on the seal) and axle (make sure the socket is deep enough that it does not come in to contact with the axle, this is why we have a deep socket) and pound directly over the socket to get the bearing into the hub as straight as possible, as far in as it will go. It should sit counter sunk in the hub with about 1mm of the hubs edge exposed.

NOTE—Flip the wheel over and make sure that when you pounded in the second bearing the axle did not unseat the first bearing you installed. The countersinking on both sides should look the same.

6. Apply a thin layer of grease to the ends of the axle. Slide the dust shield over the axle on both sides to cover the bearings (figure 5). They should sit flush inside the countersunk lip over the bearings.
7. Slide the axle end caps over the axle on both sides with the serrated part away from the hub (figure 6).
8. Put your axle bolts and bolt caps together. The serrations of the outer bolt cap should sit against the frame. Apply grease to the threads of the axle bolts.
9. When placing the wheel back into your bike, the axle nuts require 12Nm or 106 in-lb of torque for proper tightness.

Surly Ultra New axle kits are compatible with most available quick releases. Please refer to the quick release manufacturer for proper torque spec.

⚠ WARNING: Failure to properly adjust the quick release and secure the wheel can result in serious injury or death.

NOTE—The Ultra New Axle Kit in the 120mm spacing is not compatible with quick releases as there really aren't any made in that width and we DO NOT recommend modifying and shortening a longer one.

Ongoing Maintenance

⚠ **WARNING:** Do not modify the hub. Modifying the hub could cause component failure resulting in serious injury or death. Periodically remove, clean and inspect your hubs for cracks or any other damage. Any questions about marks or cracks on the hub should be directed to your Surly dealer immediately.

Always inspect your components before a ride. If you have doubts about the integrity and condition of any part, replace it. Consult your dealer if you are unsure about the condition of your Surly Ultra New Axle or any part of your bicycle.

Wheel Building with Surly Hubs

Surly recommends using a 3-cross lacing pattern. Many builders push down on the rim with the axle against a hard surface to stress-relieve the spokes. If you use this method, the axle bolts must be completely removed. Failure to do so may lead to the hub bearings becoming dislodged from hub shell.

⚠ **WARNING:** SURLY HUBS ARE NOT DESIGNED TO BE LACED RADially. HUBS THAT ARE BUILT WITH RADIAL LACING WILL NOT BE COVERED BY WARRANTY.

Limited Warranty

This SURLY product is warranted against defects in materials and workmanship for one year from the date of retail purchase of the product, subject to the limitations detailed below. Save your dated receipt for proof of purchase.

This warranty does NOT cover the following:

- Damage due to improper assembly or follow-up maintenance or lack of skill, competence or experience of the user or assembler
- Products that have 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 or compatible with bicycle as sold
- Damage or deterioration to the paint, surface finish, aesthetics or appearance of the product
- Normal wear and tear
- Labor required to remove and/or refit and re-adjust the product within the bicycle assembly

This limited warranty is expressly limited to the repair or replacement of a defective product, at the option of SURLY, and is the sole remedy of the warranty. This limited warranty applies only to the original purchaser of the SURLY product and is not transferable. This warranty applies only to products purchased through an authorized dealer or distributor. In no event shall SURLY 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 limited warranty gives the consumer specific legal rights, and those rights and other rights may vary from place to place. This limited warranty does not affect your statutory rights.

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.

OTHER PRODUCTS:

Give us a call for a free catalog or visit our website to check out all our stuff—you won't be disappointed.

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