

Luftkappe

INSTALLATION MANUAL

LUFTKAPPE AIR PISTON UPGRADE

ROCKSHOX LK-O
ROCKSHOX LK-O-A2



The Luftkappe can be installed by anyone who already possesses the tools and the know-how to service their own fork - or by anybody who has the tools and can follow instructions closely.

Key things to note before you start:

1. You need a **torque wrench**. Don't try it without one. Beg, borrow, rent, buy or steal one from a friend.
2. You will need **10mm shaft clamps** to hold the air spring shaft. Please don't try grabbing the shaft in a vice or in V-blocks, you **WILL** damage it.
3. We refer to the Rockshox service manuals for all aspects of the servicing **OTHER** than the specific installation of the Luftkappe to the Solo Air shaft.
4. This variant of the Luftkappe is not compatible with DPA forks at all. **It is ONLY compatible with Solo Air shafts**, which can be retrofitted into Debonair forks. Once installed on the appropriate Solo Air shaft, the air spring shaft can be installed in any Solo Air or Debonair Pike, Lyrik or Yari from 2014-2022. Please refer to the compatibility chart on our website for details.
5. Record your air pressure and rebound settings before you start doing anything else.
6. Don't do it drunk. Even if you're Australian.
7. The Luftkappe only replaces the piston - not the entire air shaft. We will be removing the existing piston from the air shaft, and replacing it with the Luftkappe.

8. Purchased Solo Air shafts generally do not come with a Sealhead. You may use the **B1 Sealhead** from the Debonair Airshaft if you have it. We don't recommend using the C1 (MY2021) Sealhead as it may top out noticeably loudly. We strongly recommend replacing the C1 sealhead with a B1 sealhead. **The replacement B1/B2 sealhead is available on our website.**



TOOLS REQUIRED:

NOTE: Do not proceed unless you have the following tools and supplies on hand.

- Plastic mallet
 - Torque wrench
 - 24mm chamferless socket or cassette tool, depending on your top cap generation
 - Allen keys
 - Small pick
 - Small flat head screwdriver
 - Circlip pliers
 - 10mm shaft clamps
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- Slickoleum (Slick Honey) grease
 - 20wt WPL ShockBoost oil or Rockshox 0W30 oil
 - Red Loctite
 - Isopropyl alcohol
 - Clean, lint-free shop towels.

INSTALLATION

- 1 See manufacturer's service instructions for disassembling the stock air spring and removing it completely from your fork.

Refer to the relevant factory service instructions up until you have removed the air spring from the stanchion.

ROCKSHOX: <https://www.sram.com/globalassets/document-hierarchy/service-manuals/rockshox/front-suspension/2016-2017-lyrik-service-manual.pdf>

Refer to the Factory service instructions for torque specifications, lubrication specifications and general disassembly/reassembly.

- 2 **SOLO AIR SHAFT:**

Remove seal head assembly, circular washer, wave washer and top out bumper from shaft.

Take note of the orientation of the wave washer & flat washer (flat washer sits towards the top of the fork).

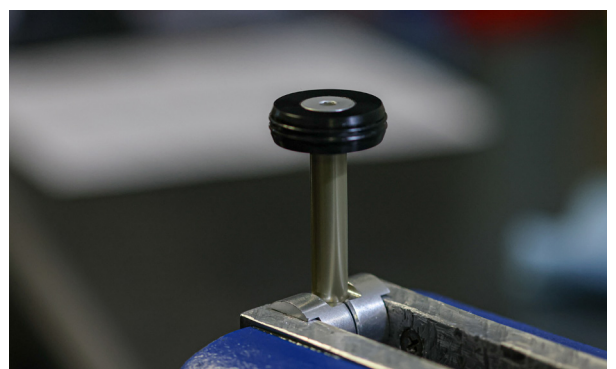


- 3 Clean shaft with isopropyl alcohol.



- 4 Clamp shaft in 10mm shaft clamps with 30-50mm of shaft sticking out above the clamp (so you are not clamping onto the threads).

Make sure to clamp it nice and firmly. You don't need to go nuts, but don't pussyfoot around either, we don't want it to slip.



- 5** Use a 4mm allen key to undo the silver piston bolt and remove the piston from the shaft.

It is loctited into place - if it is difficult to remove, apply heat with a heat gun.



- 6** Remove the o-ring from behind the threads of the piston bolt and discard.

Separate piston bolt from piston. We will be reusing the bolt.



- 8** Separate Luftkappe dome from its piston (unthread by hand).



- 9** **FOR LK-0 VARIANTS ONLY**

Install piston bolt through Luftkappe piston (from the threaded side of the piston).

Install replacement o-ring (smallest in kit) onto piston bolt where the old one was. Push it right up against the piston.



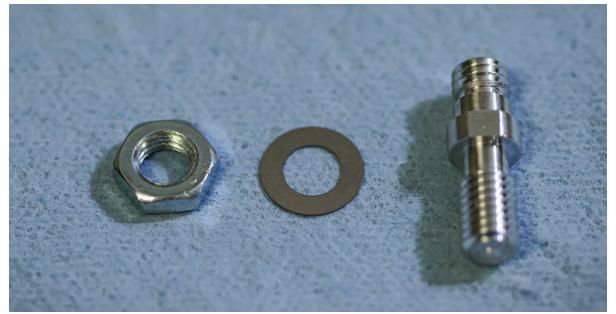
FOR LK-O-A2 VARIANTS ONLY

[Rockshox Pike / Revelation 2018 - Debonair ONLY - all wheel sizes]

Use piston adapter, bolt & washer provided in kit.

Install piston adaptor through washer & Luftkappe piston (from the under-side of the piston), and hand-screw bolt into place.

Install replacement o-ring (smallest in kit) onto piston bolt where the old one was. Push it right up against the piston.



10 Clean threads with isopropol or a pick if there is lots of loctite residue.

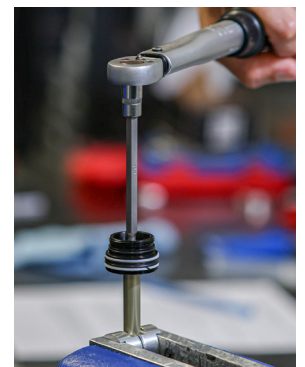
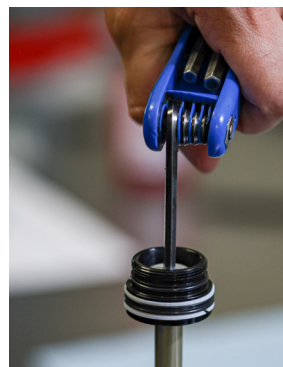
Place a drop of loctite on both of the piston bolt threads.



11 **FOR LK-O VARIANTS ONLY**

Thread into the end of the shaft by hand until snug.

Using a torque wrench with a 4mm hex fitting, tighten piston bolt to 50-55in.lbs (5.6-6.2 Nm).



FOR LK-0-A2 VARIANTS ONLY

Using a torque wrench with a 13mm socket, tighten piston bolt to 50-55in.lbs (5.6-6.2 Nm).



- 12 Tighten Luftkappe dome on firmly (by hand only)

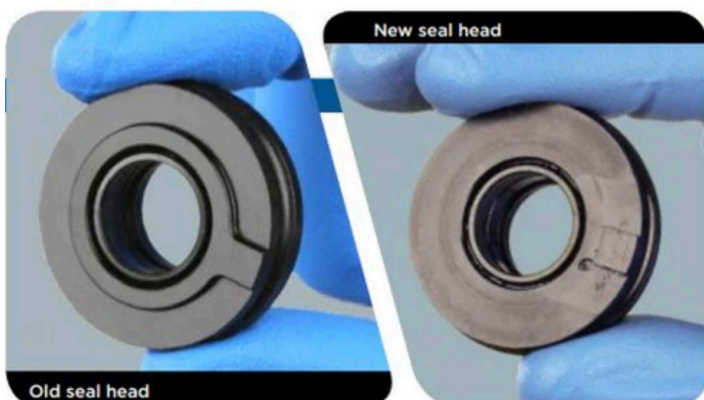


- 13 ORIGINAL SOLO AIR SEALHEAD ONLY

Replace o-rings on outside and inside of seal head if desired.

NOTE: Only do this if you have the NEW seal head as shown below. The shaft seal inside the seal head uses the mid-sized o-ring in the kit, the o-ring on the outside uses the largest one.

Do not remove or replace the wiper that is in the end of the seal head (or damage it!) - the shaft sealing o-ring sits behind that.



14 ORIGINAL SOLO AIR SEALHEAD ONLY

Install the wave washer over the thinner section of the Solo Air sealhead, followed by the flat washer as shown. Make sure the seal head assembly is oriented correctly.

DEBONAIR B1 SEALHEAD ONLY

Install seal head onto shaft.

NOTE:

- **We do NOT reinstall the topout bumper.**
- Make sure the seal head is close to or touching the piston when installed. If it's pushed a long way into the stanchion before the sealhead is reinstalled, you can trap too much air in the negative chamber, which will result in your fork "sucking down" even when pressurised as it is not able to extend far enough to equalise pressures between positive and negative chambers.

LUFTKAPPE INSTALLATION COMPLETE.



15 Remove two bottomless tokens from beneath the top cap if they are installed.

16 Thoroughly coat piston with generous amount of Slick Honey & install shaft back into fork as per manufacturer instructions.

Continue servicing the fork as per Rockshox's instructions if you are servicing the damper or replacing the wiper seals, or skip to the reassembly instructions.

NOTE:

Ensure footbolts are done up with the fork fully extended. If they're done up with it partly or completely compressed, the fork will suck down into its travel.

SETUP

STEP ONE

Your token configuration should start with two tokens less than you had previously. The maximum number of tokens you can safely run is ONE LESS than what is specified by Rockshox for the configuration of fork you have, when it is in stock guise.

STEP TWO

Your starting air pressure should be approximately 10% higher than your air pressure was before installing the Luftkappe, however we need to get there in two or three steps.

- a) Pressurise the fork to roughly 1/3 of the final pressure you are aiming for. You will notice the fork is now very stiff at the start of the travel, and is topped out very hard.
- b) Compress the fork several times, very slowly, to allow pressure to equalise between the positive and negative chambers. You will feel a soft notch in the motion near the start of the stroke - if you hold the fork at that position you will feel it get softer over the space of a few seconds.
- c) Once the two chambers are equalised fully, the fork will top out pneumatically (not hard contact between two surfaces).
- d) After the two chambers are equalised, pump the fork up to roughly 2/3 the pressure you are aiming for and repeat the equalisation process there.
- e) Repeat equalisation process at full pressure.

STEP THREE

Ride your bike and adjust pressure and volume configurations as you see fit.

TROUBLESHOOTING / FAQ

After installing my Luftkappe, the fork is not extending to full travel, what is happening?

After installation, the fork should extend to within about 2mm of its original travel when the fork is unweighted (lift front wheel off the ground to allow weight of wheel to pull on fork). If it doesn't, this is a sign that one or more of the following things has happened:

1. The foot bolts were not done up with the fork at full extension. This must be done or the fork will have a vacuum in the lowers that sucks it down. Undo the foot bolts and tap them loose, then do them back up at full extension.
2. The piston was inserted too far into the chamber before the seal head was installed, trapping a lot of air in the negative chamber that the air in the positive chamber is not able to overcome in order to reach the equalisation port. You can try forcibly extending the fork to reach the equalisation point, and/or use higher pressure in there to assist you. If it does equalise but still stays sucked down, this is not the cause.
3. You do not have the correct air shaft in there. If you have changed the shaft, this is very likely the cause - there are multiple variants of a "150mm" air shaft for example, depending on your wheel size and which fork you have (Lyrik/Yari or Pike). Replace the shaft with the correct one.
4. There is excessive grease in the negative chamber, or the topout bumper was not removed. Make sure these are removed.
5. There is some fault with the main piston quad ring that is preventing it from sealing properly, such as debris jamming in between it and the stanchion. This will typically cause complete collapse of the fork.
6. You are reading the wrong sag gradients. This happens to the best of us!

I can forcibly extend my fork about 20mm past where it extends to before it hits a hard stop, what's going on?

This is pneumatic topout in action - topout bumpers are not necessary in this fork. Being able to forcibly extend it a considerable distance past its proper topout point is normal and will not occur in use.

My fork sags just under the weight of the bike, why?

It should sag a couple of mm, because the bike has weight. If your suspension does not sag at all under the bike's weight then it is excessively sticky or preloaded. Think about it this way - if you, the rider, weigh 90kg (200lbs) and the sprung mass of your bike weighs 10kg (22lbs), your bike's sprung mass constitutes about 10% of the total sprung mass. If you run approximately 20mm sag in the fork when the rider is on the bike, then it makes sense that you'd see roughly 2mm sag with no rider on the bike.

I have to run more pressure now to get the same sag, why?

Part of the point of the Luftkappe is that it reduces the initial stiffness of the air spring. As a result, yes, you'll run more sag. Besides that, measuring sag on a fork is very inconsistent and unreliable - use pressure as a measurement instead. If the fork feels like it's riding too low in the travel due to the extra sag, it may simply be that your handlebars need to be a few millimetres higher.

Questions?

support@vorsprungssuspension.com