

Luftkappe

INSTALLATION MANUAL

LUFTKAPPE AIR PISTON UPGRADE

LK-36-EVOL
LK-34-EVOL



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.

Nomenclature explanation:

“NA” air spring

NA stands for Negative Air (previous Floats used a coil negative spring). NA(1) air springs used a long equalisation needle from the topcap to the middle of the air shaft. These were used in 2015-17 36 Floats and the NA air spring update made available for 2013-15 34 Floats. If your 2013-15 34 got an “updated air spring” from Fox, this is what it got - all 34s with NA spring systems are NOT compatible with the Luftkappes. However, Luftkappes ARE compatible with the 36 Float NA (2015-17) forks.

“NA2” air spring

Introduced on 2016 34s (and 40s - no Luftkappe for the 40), the NA2 system got rid of the long needle and uses a transfer port (dimple) on the inside of the stanchion. This was used in the model year 2016-17 34s.

“Evol” air spring

Introduced in model year 2018 for 34 and 36 forks (and 32 - but no Luftkappe for these), this is an updated version of NA2 that has a slightly larger negative air chamber. Fox still refer to this as NA2 in some documentation. If your fork is a model 2018 and your air side fork topcap is black instead of grey (the valve caps are still blue), your fork is an Evol model.

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 need to remove a roll pin from the old piston. We make a tool to make your life much easier here, that is an option to purchase with the Luftkappe. We take no responsibility for anything you damage if you attempt installation without this tool.
3. We refer to the Fox service manuals for all aspects of the servicing OTHER than the specific installation of the Luftkappe to the air shaft.
4. The Luftkappe is ONLY compatible with Float forks. It does not work with Talas (travel adjust) forks.
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. Especially if you're Australian.
7. You will need some supplies as well as tools - Slick Honey grease, 20wt WPL ShockBoost oil or Fox 20wt Gold oil, blue Loctite, isopropyl alcohol and clean, lint-free shop towels.
8. 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.

TOOLS REQUIRED:

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

- Plastic mallet
- Torque wrench
- 24mm chamferless socket
- Allen keys
- Small pick
- Small flat head screwdriver
- Circlip pliers
- 10mm shaft clamps
- Roll Pin Tool

- Slickoleum (Slick Honey) grease
- 20wt WPL ShockBoost oil or Rockshox 0W30 oil
- Blue 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.

Fox 34 Evol (2018+): (not currently available- refer to Fox 36 Evol instructions below, they are similar)

Fox 36 Evol (2018+): <https://www.ridefox.com/fox17/help.php?m=bike&id=845>

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

- 2 Press out roll pin from old piston using roll pin tool.

Remove old piston.

Leave the topout bumper and silver spacer (2019 updated shaft) in place.

NOTE:

If using the first generation 36 Evol air shafts, do not modify the topout collar or remove the topout o-rings, but we strongly recommend updating to the 2019 air spring shaft before installing the Luftkappe to avoid topout issues.

If your 36 Evol tops out noticeably, you will need to replace your air shaft assembly before purchasing the Luftkappe. Fox have updated this part due to the topout issues that many of the 2018 36 Evol forks had. 34 forks do not have this issue.

Relevant Fox part numbers for the new air shaft assemblies, by travel:

180mm: 820-02-534-KIT

170mm: 820-02-535-KIT

160mm: 820-02-536-KIT

150mm: 820-02-537-KIT

140mm: 820-02-538-KIT

100mm (36 831): 820-02-539-KIT

If your fork does not have noticeable top-out issues, you should not need to replace the shaft before installing the Luftkappe.



(Example first generation 36 Evol air shaft)

Evol air shaft after STEP 2

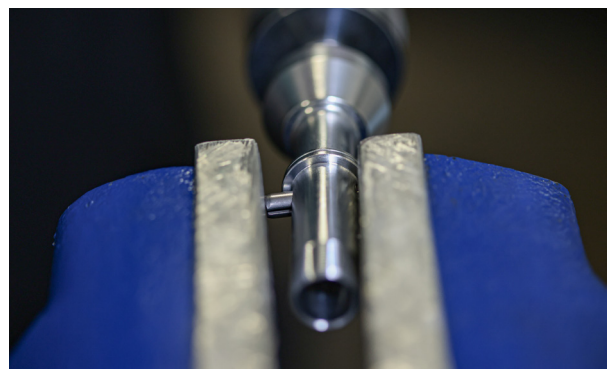
3 Clean shaft with isopropyl alcohol.



4 Slide the Luftkappe stud onto the shaft, lining up the lower hole in the stud (furthest from thread) with the hole near the end of the air shaft



5 Compress the new roll pin (using vise, knipex or multigrips) to get it started in the hole, then press it all the way in the vise. It does not need to be centered, but needs to be through both holes.



- 6** Slide the plastic Luftkappe piston onto the stud, lining up the slots in the piston with the roll pin.



- 7** Lubricate o-ring on piston, and inside of Luftkappe dome where it will contact the o-ring.



- 8** Apply blue Loctite to thread on piston stud.



- 9** Thread dome on to piston by hand, and torque to 50in.lbs (5.5Nm).

Foot stud flats can be held in a vice to torque dome against, but brace the shaft carefully to avoid bending it or slipping.



LUFTKAPPE INSTALLATION COMPLETE.



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

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

NOTE:

- 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.
- 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.



Remove two bottomless tokens if they are installed.

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 TWO LESS than what is specified by Fox 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. This does NOT apply to the 36, which you will only be able to force to extend a few mm by compressing the topout bumper.

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?

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