

Front Fork Seal Replacement – except Rebel 450

Once accomplished, fork seals are one of those things that are so stone simple you'll smack yourself in the head for every time you ever paid someone else to do it.

Pay attention to the order in which things go together as you take them apart.

Step 1: Drain that old fork oil. See the little bolt sticking in the side at the bottom of the fork lowers? The one that doesn't actually seem to hold anything, or have any reason to be there? Grab a 10mm wrench or socket and take it off. Make sure when you do that you're ready for the fluid to come out. You can speed things up by hand "pumping" the fork up and down, just as if you were going over bumps.

Step 2: Unscrew the top off the fork tube. These tend to stick over time, so a cheater's way of doing it is to stick it back in the triple trees on the bike and tighten down one of the clamp bolts to hold the tube. You can then take a wrench (17mm, I think) and break the top loose. Normal threads - righty-tighty, lefty-loosie. Don't completely remove the top yet - just loosen it. We need the spring pressure for Step 3.

Step 3: Take a 6mm hex (also called an "Allen" wrench) to the very bottom of the fork. If you hold the bottom of the fork up to your eye like you were going to look through a telescope, you'll see this socket-headed bolt. It's often very tight, and put in with sealant. The passage of 30 years does not help. Be very careful removing this bolt - if you strip it, you'll be drilling it out, and that is absolutely no fun. If you have access to an impact wrench (like those air-powered things the tire store puts wheels on with), then I suggest you get a 6mm hex, cut off the "L" part of the head, take a 6mm socket and put over the remaining straight shank, then use the impact to loosen and remove the bottom bolt. You can also use a "real" 6mm hex with the 3/8" drive part if your local parts store has one that's long enough.

Step 4: Take the top cap off the rest of the way. Keep in mind that there is a modicum of spring pressure, so keep a good handle on the cap as you unscrew it. Unless you have the arm strength of a 4-year-old girl, don't worry too much about the spring pressure overpowering you.

Step 5: Turn the fork upside-down to let the spring and damper fall out. More fluid will likely come with it, so don't do this over your workbench.

Step 6: Remove the dust seal. This is simply pushed in place with very light pressure, so a flat-bladed screwdriver or similar will work to dislodge it. You'll probably want to be careful not to scratch up your fork lowers for aesthetic reasons, but more importantly, BE VERY CAREFUL not to get wild and scratch the fork tube itself. Fork tube scratches and pits will cause leakage and premature seal failure.

Step 7: It's off? Good! Now look just under where the dust seal was. It might be full of crud, so a good blast with some brake cleaner or compressed air might be in order. You should see an internal snap-ring. Take it out with snap-ring pliers.

Step 8: The moment we've been waiting for. The remaining oil seal is held in place simply by friction. Hold the fork lower in one hand, the fork tube in the other, and slide-hammer them outward. Tap, tap, tap, yank, yank, yank. This will pull apart the two major fork parts and bring the oil seal with it.

Congratulations! You have disassembled a fork. Now busy yourself with making everything shipshape clean. Blast brake cleaner or similar down in the fork lower to remove gunk, crud, and glop. It should be shiny aluminum when you get done.

Time for reassembly! Do refer to the exploded-view diagrams of the manual to make sure you're putting things back in in the right order.

Step 9: Put that shiznit back together! Assembly is the reverse order of disassembly. When you stick the fork tube back in the fork lower, then take your oil seal (make sure it's facing the correct way), slide it

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over the fork tube, then down to where it goes inside the fork lower. Now, you'll need a tool for this. I actually have a real 33mm fork seal driver for this part, but a cheater's method is to use appropriately-sized PVC plumbing pipe. You can split it lengthwise and trim to size. Whatever you use, it needs to slide over the fork tube (without damaging it!), and inside the part where the fork seal goes. Now, slide-hammer the fork seal in place. You'll feel a difference after it seats.

Step 10: Reinstall the snap-ring over the flat metal washer, which you'll place over the oil seal. Make sure that the beveled edge goes down, same as all snap-rings. You want the sharper edge facing the direction of force.

Step 11: Install the new dust seal. Just slide it down and push it on with your fingers.

Step 12: Stick all the innards back in the proper order.

Step 13: Get that bottom socket-headed bolt started.

Step 14: Screw the cap back on the fork tube. This will take a bit of muscle, but not ridiculous. The threads are very fine, so don't ham-hand this, or you'll end up with boogered threads on the cap, and buying a new (or used) cap. Don't tighten it all the way - you just need the spring pressure in order to accomplish Step 15.

Step 15: Tighten the lower bolt. Refer to the manual for torque specs.

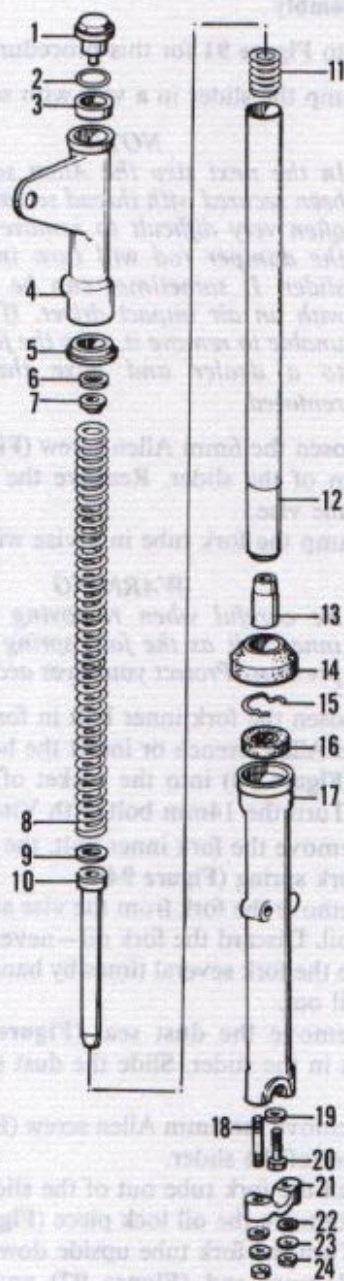
Step 16: Reinstall the drain bolt. It's a small bolt, and threading into aluminum, so don't be ridiculous with over-tightening. It just has to hold fork oil, not a bridge abutment.

Step 17: Unscrew the cap back off, and pour in the correct amount of fork oil. Your manual should have the exact amount. DO NOT simply guess, "Oh, that looks about right" unless you really enjoyed this process and wish to do it again. Too little, the forks won't dampen right and you'll be riding on pogo sticks. Too much, and the oil will blast past the seal like Old Faithful. This has the added benefit of soaking your front brakes in oil. Use real fork oil, and I recommend about 15w or so. Some folks will try to convince you to use automatic transmission fluid or some such. Smile politely, thank them for their input, then go buy fork oil. The shop should also have measuring containers cheap to allow you to measure out precisely the correct amount.

Step 18: Screw the cap back on. Just good and snugly tight - the o-ring on the cap is what seals, not cranking down on the wrench.

Step 19: Put all this stuff back on the bike.

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FRONT FORK (NON-AIR ASSIST EXCEPT REBEL 450)

1. Fork cap bolt
2. O-ring seal
3. Cover upper cushion
4. Fork cover
5. Cover lower cushion
6. Inner bolt
7. Spring seat
8. Fork spring
9. Piston ring
10. Damper rod
11. Rebound spring
12. Fork tube
13. Oil lock piece
14. Dust seal
15. Snap ring
16. Oil seal
17. Slider
18. Threaded stud
19. Washer
20. Allen screw
21. Axle holder
22. Washer
23. Lockwasher
24. Allen screw