

How to change the oil and filter on a KTM LC4

Revised on 10-26

This guide pertains to the following models: Adventure, SMC, Duke II & LC4E and is intended for the beginner.

Some of the "tricks" described may be advantageous to the more seasoned owner. By no means is this guide to be construed as the "best" or only way to do this job. It is simply the way that works for me. Read it at your own peril.

If you have read the previously posted valve inspect/adjust guide, you already know I'm a big fan of a clean and tranquil work space. No pets, wife, kids, gerbils... whatever.

Drifty likes to play his laid back blues music, 🎸 ... but if Godsmack relaxes and

focuses your mind... Crank it! 🎸🥁🎧



Successful wrenching is good mental therapy...

Tool list

This list is for the '03 and later 640 Adventure. There appear to be a number of fastener and plug variations for prior years.

The most notable differences are the switch from "outside" to "inside" frame drain locations; the size of frame filler plug and the change from a cartridge filter cover o-ring to a gasket.

Revision 10-26-04

After input from Rad, rapiti, Markjenn and dirtrider... we have come to the conclusion that KTM is fond of making running changes in production without updating reference material. 🤖

As far as I can tell, in mid '01 KTM switched from the o-ring cartridge filter cover to a gasketed cover. The lower right frame section, unless someone has more accurate data, remained an oval tube until, as far as we can tell... mid '02, at which time the section was replaced with a "low profile" casting, making filter cover access considerably easier. So, if you have an early '02 or earlier it will have an oval tube... a late '02 or later will have the flat casting.

With input from valued members, we will attempt to cover variations as they arise, if someone runs into something important, let me know and I will continue to revise the guide.

1. 19mm socket. (Front lower crankcase drain plug)
2. 17mm socket. (Frame fill plug for '03 and later & K&N filter "nut")
3. 13mm socket. (Rear lower crankcase transmission drain plug)

4. 8mm socket. (Cartridge filter cover, sprocket cover, engine guard and fairing bolts)
5. Philips #2 screwdriver (neutral switch screw)
6. 4mm Allen wrench (frame drain screw for '03 and later)
7. ?" low value torque wrench (if you don't have a "calibrated" wrist) 🤖
8. Funnels in assorted sizes

Other "tools" you'll need... I promise to explain why later... really. 😊

1. A short (6" or so) length of 2"X4"
2. 12" of ? " surgical tubing ('03 and later)
3. 12" of smaller surgical or other flexible tubing ('02 and earlier)
4. Tapered rubber stopper (size can vary, dependant on year)
5. 2" of 3/16" O.D. copper tubing
6. 20" of 3/16" I.D. clear hose
7. Spray or rub-on light waterproof lubricant

Parts

1. 2 quarts of oil... As we don't want this to turn into an oil thread, whatever brand you and your "oil expert" buddies like to use.
2. 1 spin-on filter... see "oil"
3. 1 cartridge filter...
4. 1 cartridge filter cover gasket (mid '01 and later) or o-ring (early '01 and earlier)
5. Drain plug crush washers. (This is optional, as they can be used several times they're not real critical)



Out with the old...

1. The engine should be warm to the touch. 10-15 minutes of riding is more than enough. The idea here is to get the oil warm and sufficiently circulated to pick up and suspend any condensation or particulates in the engine.
2. The bike should be level. Centerstand or lift... whatever works for you.
3. If you're doing this on an Adventure, for the first time...go ahead and remove the fairing. Once you have done the oil change, then you can decide if you need to remove the fairing the next time. If you're not doing this on an Adventure... You lucky bastard you. 🤖

It takes 3 minutes to pull 6 bolts, 2 electrical connectors and 4 rubber grommets.

It's easier to see and get to the frame filler plug with the fairing removed.



4. Remove the engine guard.

5. Remove the oil filter. If you're using a K&N filter, as shown in the photo, a 17mm socket fits the "nut" on the end of the filter. Don't forget the drain pan! 🛠️

6. Remove the frame drain plug; dependant on the year, inside under the filter, or outside and slightly above and to the right, and allow the frame to drain completely.



7. Remove the front and rear lower crankcase drain plugs, and allow the engine to drain completely.

Do not touch the Allen plug! 🙅🏻



8. Remove the 2 bolts that retain the plastic transmission sprocket cover. Loosen the Philips screw holding the neutral switch wire (green) and disconnect the wire.

9. Remove the 3 bolts that retain the cartridge oil filter cover. Pull the brake pedal down and pull the cover away. Depending on brake adjustment, I have heard that it may be necessary to remove the brake pedal for improved access to the filter cover. Remove the cartridge filter and allow the cavity to drain.

9.1 Revision 10-26-04

On models prior to '03, clearance between the frame and cartridge filter cover may be limited. It may be necessary to remove the banjo bolt and oil lines from the front of the cover prior to removing the cover itself. The photo immediately below shows the previously mentioned '03 model "low profile" frame casting.



In with the new...

1. Clean the drain plugs thoroughly with a rubber compatible solvent that will not damage the sealing edge on the crankcase drain plug screen. I use a strong magnet to remove steel metal filings, if any, from the drain plugs.

The ones in the photo have not been cleaned... yet. 🤖👉



2. Clean the drain plug, cartridge filter and spin-on filter sealing surfaces.
3. Reinstall the three drain plugs in the crankcase and frame. Do not over-torque these fasteners.
4. Pour a small amount of oil into the new spin-on filter and install it.
I like to put a dab of paint on the frame and spin-on filter as witness marks, this makes it easy to spot a filter coming loose. 🤪



5. After removing the old gasket or o-ring, clean the cartridge filter cover gasket surface and apply a few dabs of Halomar or other non-hardening, non-silicone gasket sealant to hold the new gasket or o-ring in place.

5.1 Revision. See "Out with the old..." item 9.1

6. Install the new cartridge filter with the "hole" facing out, replace the cover. Again, do not over-torque these fasteners.

7. Re-attach the neutral switch wire.

8. Re-install the sprocket cover. The longer of the two screws goes in the bottom.

9. Re-install the engine guard.

And last but not least...

1. Fill the crankcase with the correct amount of fresh oil. 1.3 Liters.

2. Remove the frame filler plug.

3. Using a small outlet funnel, attach the length of surgical hose to the outlet end and insert it into the filler hole.

If you've ever followed the method "recommended" by KTM, you already know it sucks completely and... literally. Apparently, the concept of vacuum eluded the KTM service technical writers when they wrote their version in the owners manual. 😊

3.1 Revision 1-3-05

Models prior to '03 have a much smaller filler plug on the steering head. The tools used and methods described in this guide were designed for and have been used on '03 and later only. Dimensions of tools and variations of method will need to be

"adjusted" to compensate... sorry. 🤖



4. Pour the correct measured amount of oil (this is where the Ratio-Rite comes in handy... 600ML) into the funnel and allow it to drain into the frame. If you have a pressure filling device... even better. 🤖

This is where we get to use the other “tools”.

1. Drill a hole of adequate diameter thru the center of the tapered rubber stopper so that the copper tubing is a snug fit into it. Attach the clear hose to the large diameter end of the copper tubing.

It should look similar to the “burping tool” in the photo when you are finished.





2. Remember the 2"X4"? 🤔

Lever your bike to the right and place the 2"X4" under the left center stand leg. Don't worry, it won't fall over ... probably. This lets the oil in the frame sit at a "temporary" higher level.



3. Insert the rubber stopper into the filler plug and route the clear hose upwards.



4. With your thumb over the kill button, start the engine and watch for oil to come out of the clear hose...

THE SECOND IT DOES... SHUT THE ENGINE OFF. 🙄

5. Now that you have your bike leaning precariously to the right with a hose full of oil hanging out of it... what do you do next?

Get an empty bottle and turn the hose into it, allowing it to drain completely. Remove the wood block from under the stand and level the bike. You can now remove the frame burp tool and no oil should pour out of the frame.

Re-install your frame plug.

If you've done this correctly, this may be first time you've ever changed your oil without making a mess all over the bike and garage floor. If this is your very first time doing this job... you'll never know how much "fun" you've missed. 😏

What was the waterproof lubricant for? 🤖

To lube the rubber grommets in the fairing so they pop back into place a bit easier... and back out later when you do this again.

That's it. Put everything back together, take it for a 10-15 minute ride again, check the oil level and if needed, top it off.... yer' done bubba. 🙌

Chris Hickson

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