

KLR650

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SWINGARM MAINTENANCE

I was doing other maintenance, and already had the wheel off. Up until the time when the wheel is actually removed and out of the way in this procedure, some of the text will be saying one thing, while the picture kind of shows another. The pictures are relevant, so have been included.

If you're going to remove the front countershaft sprocket to replace it, or for whatever other reason, it would be best to loosen the countershaft nut before proceeding any further. This will make life easier later on.

It is not necessary to remove the countershaft sprocket if all you plan to do is lube the swing arm.

Lift the bike so the rear wheel is off the ground. You'll have to use a lift, or crate. Something like my [Easy-Lift](#) won't work because you'll be removing the swingarm.



The order in which you do this, wheel or caliper doesn't really much matter, but I prefer to remove the caliper first. As shown above, remove the brake line holder.



Next, remove the caliper itself by taking out the mounting bolts, shown in the picture above, marked by red dots. I suggest removing the bottom bolt first, and then holding the caliper as the top bolt is removed.

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Hang the caliper out of the way, or place it on something like a 5 gallon pail - don't allow it to just hang by the brake line.

The picture above is from another procedure, but shows the place where you should be now, if you're following along with my text.



Next, remove the engine sprocket cover. The position of the three bolts to be removed are marked by the red dots.



NOTE: It is NOT necessary to remove the countershaft sprocket if you have no other reason for doing so.

Remove the countershaft nut. Once the nut is off, you'll be able to easily remove the sprocket and chain from the shaft because the rear wheel is off. Put the nut, lock washer and sprocket aside. The chain will eventually be removed along with the swingarm.



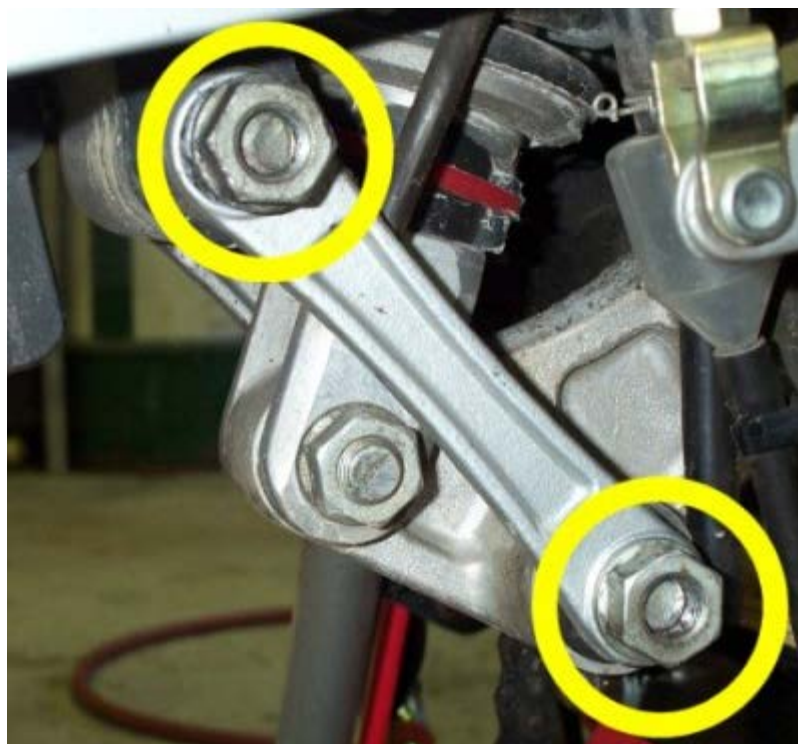
To avoid re-adjusting your chain, loosen the axle nut, and remove the axle. Slide the wheel forward until you can take the chain off the rear sprocket. Then, remove the wheel.

Once you have the axle bolt removed, I would suggest a light coat of grease to protect it, and make subsequent installation and removal

easier.



Shown in the picture above is a hose holder fastened to the upper right corner of the swingarm. You can just loosen this and take the hoses out, slip the hoses out without loosening at all, or remove the bolt and holder all together. It's easiest to just take the hoses out.



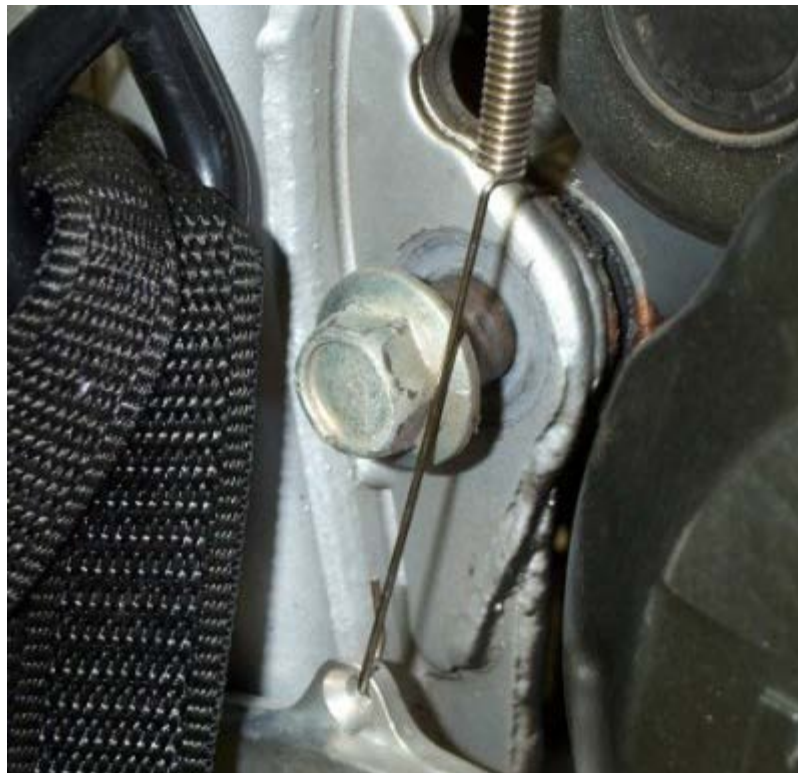
The picture above shows the two links that will have to be removed. (These are the pieces you'd replace if you wanted to lower your bike.)

Order doesn't really matter, but I remove the top bolt, and then the bottom. Both are removed to gain access to the swingarm and bearings (upper) and bearings (lower).



Next is to remove the main mounting bolt. This one can be troublesome if you've neglected to perform this service. There are a multitude of options; some people just whack the bolt end with a mallet, or, as I suggest trying, with the nut removed, put an impact socket on the bolt head and let it hammer away until the bolt breaks free of the corrosion.

Additionally, some people feel that the upper engine mounting bracket should be removed to facilitate removal and/or installation of this bolt. I've never done that, and have never had any trouble whatsoever with the bolt. I believe this is very unlikely, but if you simply can't get the bolt back in, try loosening that upper engine bracket.



WARNING! Be careful as you remove this swingarm mounting bolt. As you can see in the picture above, as the bolt is removed it can push against the brake pedal spring. It's possible that no damage would occur, and that the spring would just slide off the bolt head, but why take the chance!? Just move it to the side, and out of the way.

This mounting bolt is the final thing holding the swingarm in place. I sit behind the bike, with the swingarm on my knees. I reach over and pull out the mounting bolt, enabling me to "catch" the swingarm as it comes away from the bike. It isn't at all heavy.

With the swingarm free of the bike, you can now remove the swingarm and chain together. Now is a good time to drop the chain into a bucket of WD40, kerosene or whatever you want to use to clean it. Doing it now gives it time to soak while you're taking care of the bearings.



There are four areas where the bearings are to be found, as shown in the two pictures above. They are the two ends of the swingarm, and in the middle underneath where the top of the links connected. The fourth is part of the shock mount, and where the bottom of the links connected.



The rubber seals are not difficult to remove, but care should be taken to not damage them.

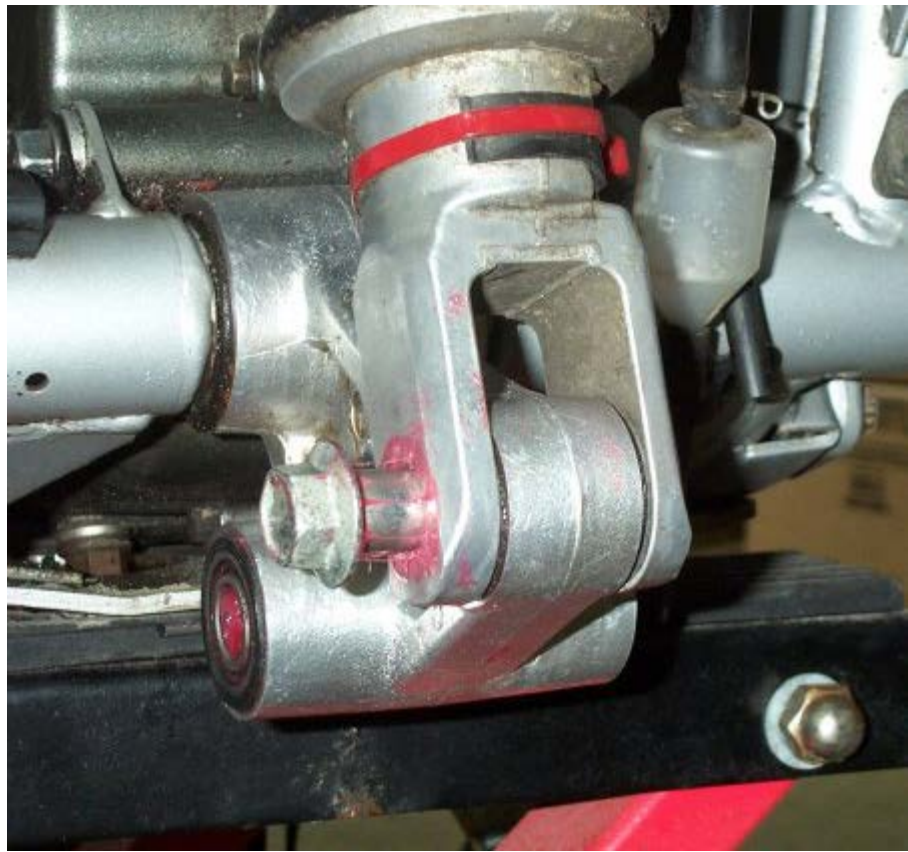
NOTE: The shaft can be removed before the seals, this makes getting the seals out easier. You can slip a thin blade between the seal and the housing and rock it back and forth slightly to loosen the seal. Alternatively, you can put a screwdriver up into the seal from the outside, and gently pop it out that way.



The picture above shows the shaft and seals. All bearing locations have this arrangement, but the shafts are shorter on the two swingarm ends.



Above is a closeup of what you'll find. This is the middle, underside of the swingarm, and there is a pair of needle bearings in the housing. The bottom link / shock mount housing has the same setup. The end of the swingarm has just one bearing each.



Remove the bolt at the bottom of the shock. You can do this without fear; the preload / spring tension is kept within the confines of the upper and lower keeper plates, and won't cause trouble now, or when it's time to reinstall.



Remove the gray caps on either side of the bike, (circled), and then remove the bolt. I had to use a very long screwdriver to tap the bolt all the way through.



This is what I found when the bolt was removed. It came out alright now, but in another couple years I bet it would have caused some real trouble. I cleaned it up, and greased it before reinstalling.



I pumped the ends full of grease, and then reinstalled the bolt - catching the grease at the other end as it was pushed through.

I generally don't attempt to flush out the bearings in any way. I use a lint-free rag to wipe out as much grease as possible, and then just re-grease with a grease gun. I fill the "hole" with grease, and work it around as much as I can with my fingers. When I insert the sleeve or bolt, I catch the grease as it's pushed through.

Any good quality grease would be fine; check out [Grease 101](#) if you need some info on choosing a grease. I use Mobil synthetic grease.

I take a gob of fresh grease on my finger, and work the grease into the bearings as thoroughly as possible. You can't really put in too much, the shaft will push out any excess. The one area that should be relatively free of grease is where the seal is seated. Much grease here will prevent the seal from settling flush and completely .

That's pretty much it for the swingarm service.

Clean and lube the chain, and prepare it for reinstallation.

With the chain over the left corner of the swingarm, put the swingarm into place and insert the mounting bolt. I do this the same way as I remove it; seated behind the bike with the swingarm on my knees to help hold it in place while I insert the bolt from the side.

The swingarm mounting bolt nut takes **98 N-m, 10 Kg-m, 72 Ft-lb** of torque.

Install the two links. The nuts require **98 N-m, 10 Kg-m, 72 Ft-lb**

However you chose to deal with it, make sure the hoses are secured back into the holder at the upper right corner of the swingarm.

Loop the chain around the (front) engine sprocket, and reinstall the nut, and lock washer if used. (The Sagebrush prevailing nut doesn't require the lock washer.)

The engine sprocket nut takes **98 N-m, 10 Kg-m, 72 Ft-lb** of torque.

Lift the wheel up into place, and insert the axle bolt. The axle nut requires **93 N-m, 9.5 Kg-m, 69 Ft-lb** of torque. Be sure to install the cotter pin. I use a hairpin, with a ziptie around the two legs to be sure it doesn't come out.

Install the brake caliper, and line holder. The brake caliper mount requires **25 N-m, 2.5 Kg-m, 18 ft-lb** of torque. The brake line holder should just be snug. Both the caliper mounting bolts, and the line holder should have a little blue Loctite applied to them.

Lower the bike down to the ground, and adjust the chain, if necessary. Remember to check the chain "loaded." You can have someone sit on the saddle while you adjust the tension, which is the easiest. It's a little more hassle because you have to go back and forth, but you can also lay across the saddle, or sit on the saddle to see where you are. Make sure to do this though, there is a big difference between loaded and unloaded chain tension. And, unless you and your gear don't weigh anything, loaded tension is the only one that matters.

