

## Installing Zerks in your KLR's Rear Suspension

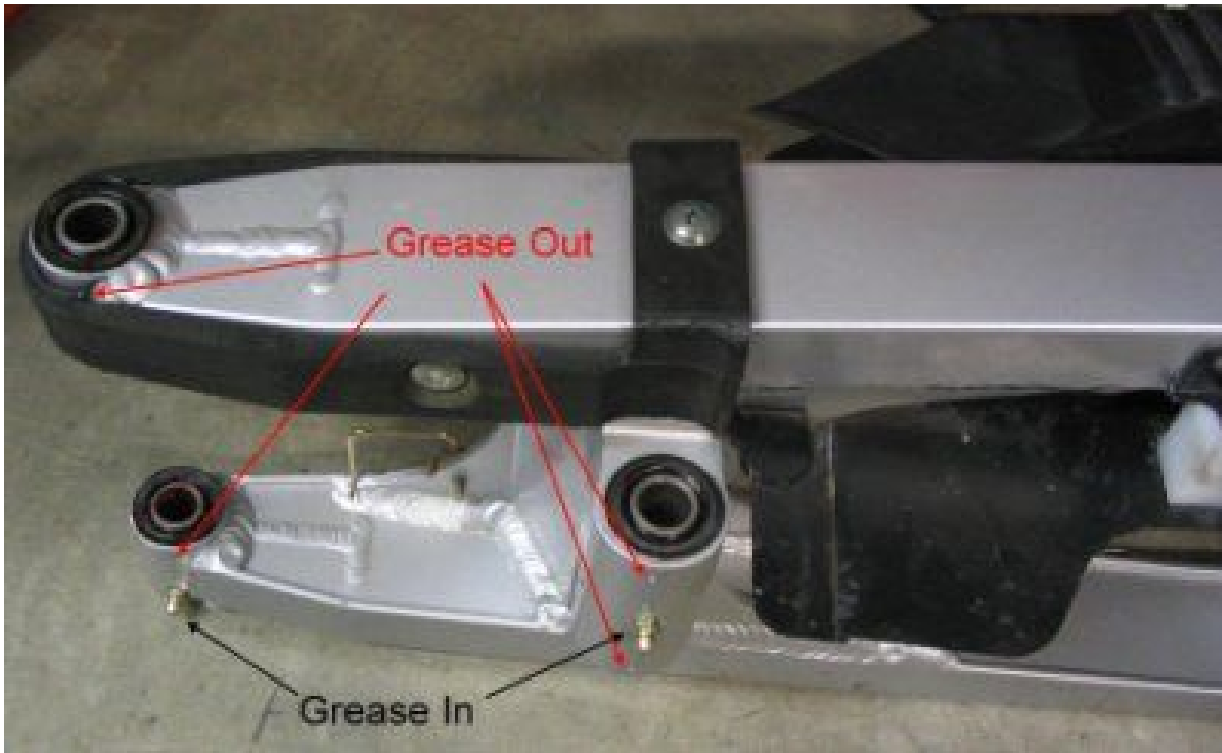
(Photos shown are for 1987-2007 models. 2008 and up are similar, but not shown.)

By Bill at Watt-man.com

If you are going to hang on to your KLR650 for a while, you might want to consider doing this modification. The factory recommends that you disassemble the rear suspension every 6,000 miles to lubricate the bearings, and it takes a number of hours to do this each time. However, if you add these zerk fittings while the bike is apart that first time, it will only take you 3 minutes to lubricate the rear suspension in the future. If you're only going to keep your KLR another 6 or 12,000 miles, this mod is not for you. But the longer you keep the bike, the happier you'll be if you do this.

To lubricate all rear suspension bearings, you'll have to add 6 zerk fittings. The photos below will give you an idea of what I'm talking about. This modification does require a little machining skill so after reading this through you might decide to take the parts to a machine shop for proper bearing removal or the drilling operations, just to be sure they are done in the right locations.

OVERVIEW:



There are two basic areas that need lubrication. The swingarm has three pivots with four bearings - you'll need three zerk fittings for the swingarm. If you look carefully, you can see that the grease goes IN at the zerk fittings, but won't go anywhere unless it can get OUT, so I've drilled some vent holes on the other side of the bearings. In the figure above you can see all of the swingarm's vent holes in one picture. Some people have pointed out that you don't have to put in the vent holes as these same seals are used on the Kawasaki Concours that has zerk fittings, and the seals work one-way. They won't let things in but they will let grease out. The choice is up to you... if you put in the vent holes, you will find that the grease will exit at the holes. If you don't, grease will come out the seals, but you don't have the guarantee that it will CROSS the bearing to get out - it might come out the side you put the grease in. Your choice!

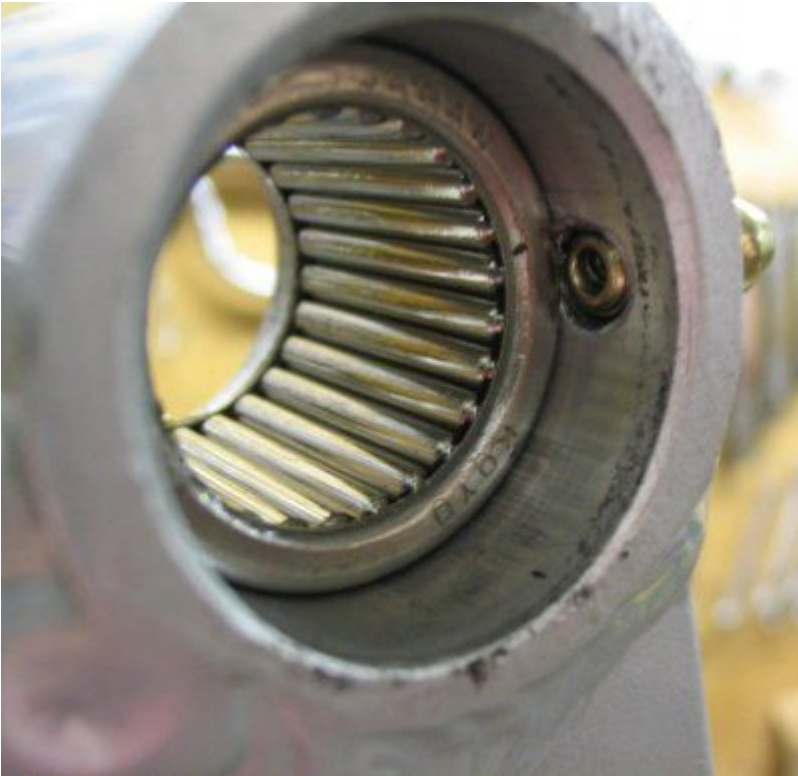


The figure above allows you to see the third swingarm zerk fitting, which is on the top of the left pivot.

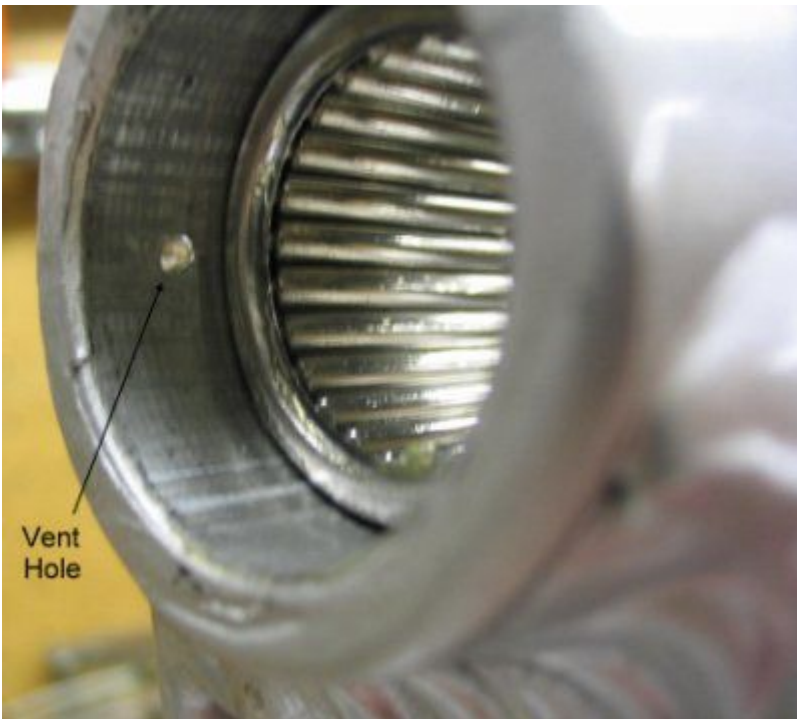


The figure above shows that you'll need another 3 zerk fittings in what I'll call the "lever". Vent holes, if you decide to install them, are shown in the "Details" section. Now that these parts are re-installed on my bike, I now just grab the grease gun every 4,000 miles or so and squirt each of the six locations with grease until I see it exiting the vent holes. Takes about 3 minutes.

## DETAILS:



1) As referenced earlier, each of the six pivots have needle bearing(s) inside. With the grease seals out as shown above, the idea is therefore to put grease in on one side of the bearing...



...and to place vent holes on the other side of the bearing(s) so that clean grease goes across the bearing surfaces to get out of the vent holes. Sometimes there is not a lot of room so holes have to be placed precisely; you must not place them where the grease seals will block flow to the inlet hole or vent holes.



I used a 0.104" drill for the vent holes. There is no science in that number, it just seemed about right. Now that it's all done and I've used it for a while, I wouldn't go any larger as these work great. If you want to use a 0.080" hole, I see no problem with that either. And as stated at the beginning, you can skip drilling vent holes entirely if you don't mind having the grease come out the seal with the least resistance. But my concern is it will come out on a side where grease didn't cross the bearing all the way, so the vent holes make for low resistance, I *always* get flow where I want it, and in two-vent-hole locations, get flow out of each vent hole when greasing!

2) There is no Figure for this second detail. You'll have to look at the motion extremes of the installed suspension first to evaluate zerk orientation, plus to evaluate if a straight, 45° or 90° zerk fitting would be your best choice. The orientation and location in all photos shown have worked fine for me, with the exception of one zerk fitting that I've changed from a straight to a 45° for better access - and you'll find this out in the final pictures.



3) Zerks are available at most auto part stores. These have a convenient 1/4"-28 male thread on the ends as shown above. I was able to purchase a set of 8 for \$3. The other tools needed (other than drill bits) was a 1/4 - 28 tap, and a vise or press with a large selection of sockets. I didn't feel comfortable doing all the machining with the bearings installed, so with the method shown below I pushed the bearings out of the housings before doing any drilling.



In this photo you can see how socket size choice is the key - as you tighten the vice, the left (small) socket pushes the internal bearing to the right, into the right (large) socket.

Bearing removed.  
lever is now ready  
for drilling/tapping.



... and here you will see what you have after pressing them out.



4) These four figures show details of the pivot on the left side of the swingarm. I've placed the zerk on the top right

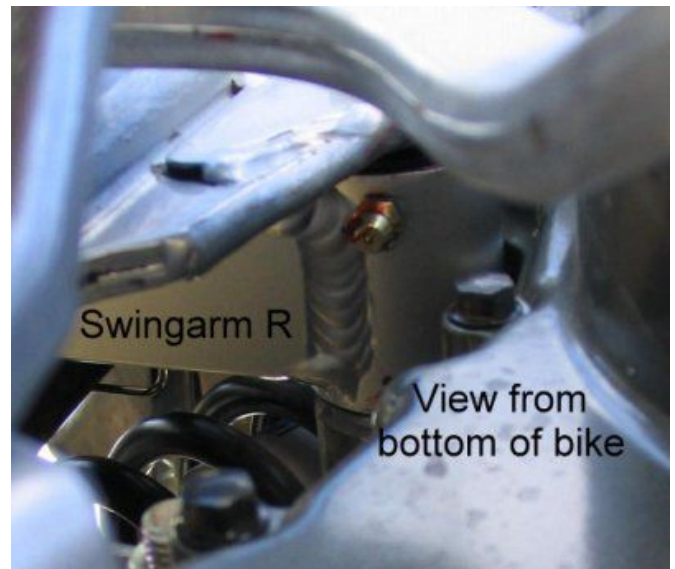


of the pivot, and the vent hole on the bottom left. This one is tricky because the drive chain is operating in this same area. After 77,000 miles of riding I haven't seen any evidence of chain interference.



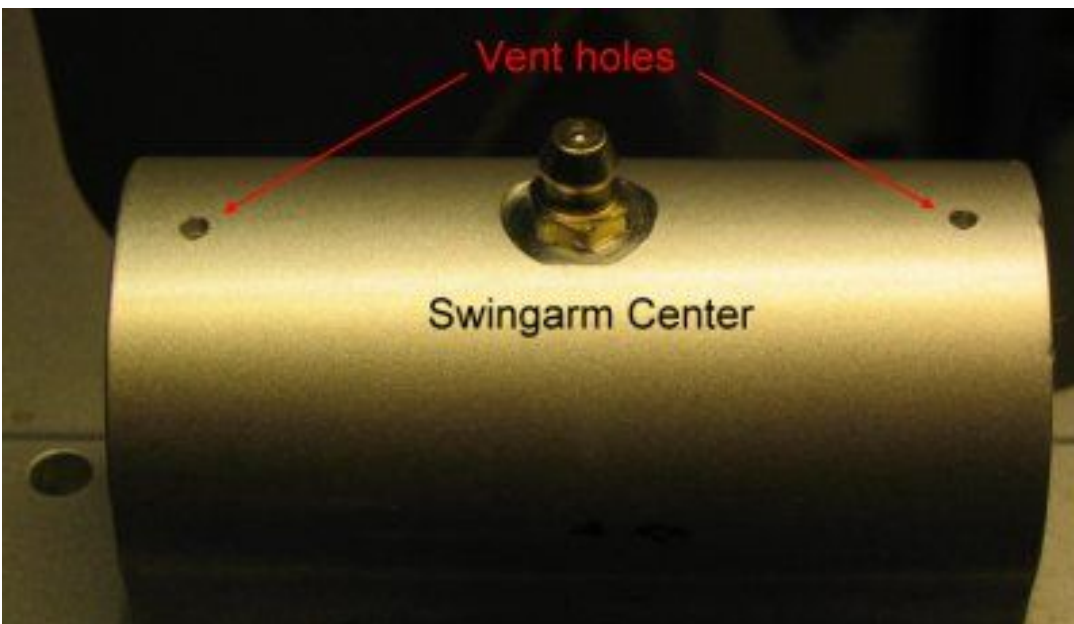


5) These four figures show details of the pivot on the right side of the swingarm. I've placed the zerk on the bottom right of the pivot, and the vent hole on the bottom left.





6) These two figures show details of the final location on the swingarm - actually the easiest to do as there are two bearings, one on each end. Simply place the zerk in the center, and if you want, put two vent holes in - one on the outside of each bearing. I've since installed a 45° zerk instead of the straight (shown) for easier access when installed on the bike.



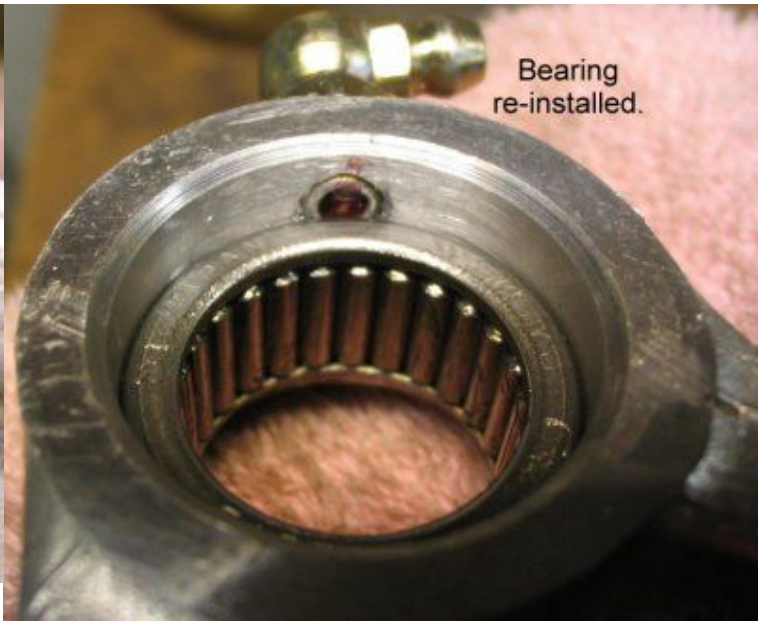




With the bearings and seals re-installed, the figure above shows the completed swingarm, ready for installation onto the bike.



Next is the lever, using the same basic procedures. Two of the pivots are easy as they have double bearings each, so you put the zerk in the center and the two vent holes past the bearings. The third zerk fitting is tight because it's a single bearing - and hole placement must be reasonably precise. The next 5 figures (on the next page) show the details.







Time to re-assemble the suspension, as shown above.



Installation is complete in Figure 27. Note the 45° zerk on the bottom of the swingarm as described in the text. Well, that's it, we're done!