

**Thanks for Ordering
The Kawasaki KLR Adjustable Lowering Kit
from**



READ THIS BEFORE UNPACKING YOUR KIT!

This instruction booklet contains detailed steps for installing the rear suspension lowering kit on your Kawasaki KLR Dual Purpose motorcycle. Please pay careful attention to the instructions regarding the disassembly and re-assembly of your motorcycle. If you have any questions concerning installation of your new Scootworks KLR Adjustable Lowering kit, please contact us via e-mail at support@scootworks.com. This will ensure you receive the most prompt and accurate reply.

Rev 1.5; 9/28/05

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Instructions for Installing the Scootworks Adjustable Lowering Kit on Kawasaki KLR Dual Purpose Motorcycles

Tools Needed:

- Large torque wrench calibrated in foot-pounds
- 17mm & 22mm socket/ratchet
- 17mm & 22mm wrench

The installation of the **Scootworks KLR Adjustable Lowering Kit** consists primarily of replacing the rear suspension tie rods and adjusting the front suspension. However, Scootworks wanted to assist you as much as possible with the installation process, and developed this instruction package. If there are any steps you feel need improvement in instructions, please email support@scootworks.com and specify the area you are having trouble with.

UNPACKING

The shipping container and contents must be inspected by the purchaser for damage to goods immediately upon receipt of goods, and a claim must be filed with the carrier if damage is discovered. The purchaser must contact Scootworks within 24 hours from receipt of damaged goods to file a claim, and for further instructions.

Your Scootworks KLR Lowering Kit will come packed with two tie rods with multiple holes in one end, a pair of white plastic snubber spacers, a pair of washers, and these printed instructions. Unpack the new tie rod assembly, and insure that there are two tie rods and two semi-circular plastic snubber spacers shipped to you. Both tie rods will have the letter "L" embossed into one the side of the part.

PREFACE

The KLR Series of motorcycles by Kawasaki are very versatile machines, capable of on and off road use. For off road use, they have a tremendous amount of ground clearance. Few riders actually need this much clearance for occasional off road operation, and rather prefer the bike to be a little lower to accommodate shorter riders by improving manageability in slow speed maneuvers and while starting and stopping the motorcycle. Hence the design of the KLR lowering kits by Scootworks. Below is a picture of an unmodified KLR 650, with a shorter rider. Notice the feet dangling, and inability to reach the ground, even with very tall



heels!

BEGIN INSTALLATION

1. Begin this modification by raising the frame of the motorcycle enough so the rear wheel is above the floor, and the tire rotates freely. We use our Scootworks SuperLift or SuperLift II. The Superlift is my favorite, and we manufacture and sell these at ScootWorks.com . Many users have reported using a hydraulic floor jack to lift the bike while having the bike stabilized by another person. Once lifted, jack stands can be placed under the engine cradle (not in contact with the swing arm!) to support the bike securely. Place the transmission in 1st gear, to prevent tire rotation in the following steps. It is recommended to use a small floor jack placed below the rear tire, to take a slight amount of weight from the rear suspension and make removal of fasteners easier. This can also be done by using two people, where one person is responsible to managing the weight of the rear suspension, once unbolted in the following steps. Below is a picture of a Kawasaki KLR 650 on lifts, awaiting the installation of the lowering kit. Notice the automotive screw jack below the rear wheel.



2. Next, locate the OEM tie rods (circled in yellow, in the picture below), and the rear shock absorber snubber (circled in red, in the picture below). Notice that there is a tie rod on each side of the motorcycle. These tie rods are secured by two long bolts that pass first through the LH tie rod, then through the suspension, and finally held in place by two 17mm or 22mm nuts on the RH side. Loosen these two bolts, and prepare them for removal. It helps to raise the rear tire just slightly with a jack or by a helper, to take the load off of these bolts.



Below is another picture, better exposing the orange rubber snubber on the lower shock absorber rod... This is where the snubber spacers are installed, but don't do it just yet...there's more info on this later in the instructions.



3. Remove the nuts from the tie rods, keep the weight off of the rear wheel, and remove the upper and lower bolts from the tie rods. The rods are easily removed at this point. Remove (or shorten) the thin black plastic shield from the LH side of the swingarm, located near the upper tie rod mounting point. The reason for this will become apparent when you begin installation. Our field test bikes have been running in this mode for many years, with no negative side effects.



Before we move onward through the process, let's become familiar with the new tie rods, and what the various holes are for. Both tie rods have the letter "L" stamped into one side. This side should always face LEFT (toward the kickstand side of the bike) when installed. When looking at the tie rods, you'll see three holes, located different distances from the opposite end. The Hole farthest away from the opposite end is for lowering of 3", while the hole located nearest to the opposite end is for 1" lowering. When using this kit in the 1" and 3" modes, install it with the holes facing upward (with the 2" hole being towards the rear of the bike, and the 3-hole end being closest to the swingarm). When using them for 2" of lowering, install them with the holes

facing downward (with the 1" hole being towards the rear of the bike and the 1-hole end being closest to the swingarm.

4. Select the amount of lowering you desire, and replace the tie rods with the new Scootworks tie rods in your kit. Install the tie rods with letter "L" facing LEFT as described above. Re-install the bolts from the LH side, through the LH tie rod, through the suspension, and through the RH tie rod. Secure them with the new washers and original nuts, and torque to 65 ft/lbs.

5. Do not install the plastic snubber spacers at this time. Lower the rear of the bike and remove the frame from the lift or jack stands. The rear lowering is completed. Sit on the motorcycle and determine if you've lowered it to a satisfactory level. Read the section on "Bottoming Out" in the FAQ's below, to determine if you need the snubber spacers installed in your shock.

6. Check your chain tension before riding! Lowering the bike will change the chain tension, so be sure to check and adjust this as necessary, per your normal procedure.

Congratulations!!!!

Your Scootworks KLR Lowering Kit is now installed. The following information is supplied as a supplement, to allow you to complete the job of lowering your bike that you've begun by using this Quality Scootworks product.

Tips for setup and use of your lowering kit

BE SURE to read the FAQ at the end of this document, for tips, warnings, and adjustments for your new lowering kit!

Lowering the Front of your KLR-series Motorcycle

Why lower the front?? Don't mistake this to suggest that you must lower the front when you lower the rear, because you don't! The look of a bike with a lowered rear has intrigued riders ever since there have been motorcycles. However, there are other reasons for lowering the front end, and I'll attempt to explain them...

Maintaining the OEM (stock) geometry... The manufacturer designed your bike a certain amount of "rake" (the measurement of the angle of your front end with respect to the rest of the bike). Varying the rake changes the handling characteristics of your motorcycle. If you like the way it handled in it's stock condition, you may want to maintain the original geometry, and lowering the front will allow you to do so.

Additionally reducing the overall height of the bike... Lowering only the rear of the rear of the bike will provide you with about 1/2 the reduction in rider height that lowering both front and rear can yield. If you have a problem with "flat-footing" your bike at stops, lowering the front will allow you to better reach the ground. Those who are "vertically challenged" benefit from this mod.

Reducing "trail" to reduce strength needed for slow maneuvers... "Trail" is a illusive term, that often gets tossed around incorrectly. If you draw an imaginary line straight down through the steering head pivot to the ground, then measure backwards to the point where the tire contacts the ground, you'll have a measurement of

"trail". The smaller the trail, the lesser the amount of upper body strength that is required to handle the bike at low speeds and when stopped. Smaller riders absolutely benefit from a reduction in trail. The Vulcans come from the manufacturer set up a bit "nose high", that is, the front of the bike is actually a bit higher than the rear. While this looks great, it may not be the best thing for a smaller rider.

Lowering the center of gravity... This is another advantage welcomed by smaller riders, as well as riders with less upper body strength. The lower the center of gravity, the "lighter" the bike will feel to the rider at slow speeds and when stopped.

Having said all of this, it's now obvious why all of the items mentioned above are desirable to smaller riders. It allows for the "taming" of a larger and heavier bike than might be normally ridden by the smaller and/or vertically challenged rider.

Ok...ready to start? On the KLR's, this is an easy task!

Lowering the front!

Examine the upper and lower triple clamps that secure the front forks. Just behind the front fairing, you'll notice the pinch bolts that hold the fork tubes in position in the triple clamps. Loosen these bolts, and slide the forks up through the triple clamps 1", tighten, and test the bike height again. Continue with this adjustment until a satisfactory height for the rider has been obtained, but **DO NOT** exceed the amount of the rear lowering kit. Example: If you installed the 2" KLR lowering kit in the rear, do not lower the front by more than 2". If you installed the 3" KLR lowering kit in the rear, do not lower the front by more than 3". Wow, that was easy!

We're almost finished...

The only thing left to do, after a radical lowering job, is to correct the kickstand angle and or length. Most often, lowering the entire bike 2", or the rear down to 3", doesn't require modification to the kickstand. However, there are many variables, and you must test this on your individual application. Don't worry, this is an easy task and can be handled by many individuals at home, or at most small machine and/or sheet metal shops.

Below, you'll see a KLR 650 that has been lowered 3" in the rear, and 3" in the front. The kickstand was shortened by 1", and was a simple task.



A simple method to alter the length of the stand is to remove it, take it to a local welding shop, cut 1" off of the bottom, and replace the foot. This takes about 15 minutes, and I've altered many kickstands with this method successfully, and never had a failure.

Again, there are many variables associated with kickstand length, and you should test your specific installation and determine if it needs *any* modifications, first!

FAQ's for your new Lowering Kit!

Question- Will this lowering kit work on any KLR?

Answer- The Scootworks KLR Lowering kit was originally designed for the 600/650 KL/KLR's from 1988 to present. It has not been tested on the '84-'87 models, though the drawings we've researched indicate that the design is the same. If you own a 1984-1987 model KLR and are interested in this part, contact Scootworks and we'll be happy to work with you and determine the feasibility of this modification.

Question- Will this lowering kit work on my bike? I've heard some say they had great results, while others mentioned various problems.

Answer- There lots of these lowering kits in the field, in successful operation. I've installed many such kits in my immediate area, as well as worked with a lot of people over the phone or via email to assist them with "dialing in" their setup. An example of how the variables outlined below can stack up in your favor (or against), is where I've helped several folks additionally shorten their shock clevis and/or swap to a different shock for even more lowering.

There are many variables at play when lowering a motorcycle, including variations in locations of welds/pivots on the swing arm and lower suspension. Considering such, a single solution won't work for everyone. Other variables such as combined bike and rider weight, variations in damping rate of the rear shock affecting shock performance, variations in the preload spring's compression value, etc. Many people lower their KLR's waayyy down with no problems (some at 4+"), while a few have problems when lowered below 2". When lowering a bike, one must deal with these variables on a case by case basis. This isn't a difficult task, but sometimes it does require a bit of patience to find the maximum lowering your bike can be operated at successfully.

Question- Will weight of the bike or rider impact the performance of the lowering kit??

Answer- Weight: If your total rider weights are 375 lbs. or more, or have a heavily loaded bike, set your shock preload to the highest setting. This is the setting that compresses the spring the most. If you weigh more, or ride 2-up a lot, you may want to run with less lowering or modify the shock preload by installing a Scootworks Shock Preload Kit. Measured compression values of the shocks used in Kawasaki KLR's vary measurably, making the inclusion of a Scootworks Preload Kit a viable "fix", and not necessarily an indicator of some other suspension problem. A new "Shock Preload Kit" is available from Scootworks very inexpensively, and can be used to greatly improve the load handling capacity of the KLR's rear shock absorber.

Question- I seem to be "bottoming out" on hard bumps.

Answer- Be sure to read this FAQ for the lowering kit completely, and make adjustments to your particular setup accordingly. "Snubber Spacers" are provided in the kit, and should be installed if bottoming out with heavily loaded KLR's is an issue. This will provide an enhanced mechanical stop.

Installing the Snubber Spacer is an easy task, but should only be performed if a heavily the KLR is experiencing "bottoming out", and setting the rear shock to it's highest preload setting didn't provide an adequate remedy.

Place the snubber spacer under the OEM rubber snubber currently used in your rear shock. This is easy to do, without removing or disassembling the shock, by following these steps (the following pictures are of installation in a similar shock, removed for this demonstration) :

- Using a small screwdriver or other sharp object, slide the OEM rubber bumper upwards on the shock rod. The picture below shows the OEM snubber pushed up, exposing the cavity for the Snubber Spacer to be placed in.



- The Snubber spacers are shipped in two halves. Locate the sides of the spacer with the counterbore, apply a small amount of silicone adhesive to both sides (RTV), and install the halves with this counterbore towards the bottom of the shock. The picture below shows ½ of the spacer in place, to better illustrate the installation with the counterbore down.



- Lastly, slide the OEM bumper back down the shock rod, and press it firmly onto the top of the new snubber spacer. The photo below illustrates the completed installation of the snubber spacer.



Question- When I lowered the bike 3" in front and rear, I have problems with my kickstand being too long.

Answer- This is a situation that must be dealt with on a case-by-case basis, as some riders report no problems, while others find the need to modify their kickstands. This is common in all motorcycles that have been lowered, and is easy to correct. A simple method to alter the length of the stand is to remove it, take it to a local welding shop, cut 1" off of the bottom, and replace the foot. This takes about 15 minutes, and I've altered many kickstands with this method successfully, and never had a failure.

Question- Will lowering my motorcycle make it ride "hard" or "stiff"?

Answer- Specifically, lowering the bike doesn't change the ride. Altering the shock preload (stiffness) will change the ride quality a bit, but not necessarily in a negative manner. Many riders discover, while lowering their motorcycle, their rear shock was still set at the factory setting (position #1, for a 140 lb. rider!). Setting the shock too soft can have a negative effect on the ride, and many customers report their ride quality improving after installing the lowering kit as a result. A new "Shock Preload Kit" is available from Scootworks very inexpensively, and can be used to greatly improve the load handling capacity of the KLR's rear shock absorber.

Question- My motorcycle's ride has always been too "soft" or "spongy", when riding with a passenger. Lowering the bike has made this more obvious. Is there a "fix" for this?

Answer- Yes! Many customers have reported their bike's ride being less than desirable, especially after adding many accessories and when riding with a passenger. Scootworks has developed a shock preload improvement kit to remedy this. It is very inexpensive, and is available from us via our website at <http://www.scootworks.com> , or via our telephone sales line.

You're finished!

Now that you're finished, enjoy the lowered look and feel of your bike. While the kickstand and/or front lowering procedures may not be required in your application, Scootworks wanted to provide you with the best tools and information possible, to help insure the success of your project. In the event of any questions, feel free to email us at support@scootworks.com . I check this address daily, and will try to answer all questions as promptly as possible. - D. H.