

2004 Kawasaki KLR 650



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KLR650 FAQ

Last update posted 8 August 2005.
Thanks again to all who have contributed!

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The information contained herein has been developed by many riders over the years. Thanks specifically to Marc Clarke for supplying his archives.

This is intended to be a FAQ, *not* a service manual or encyclopedia. The service manual is a good thing to have (either the factory manuals or the new Clymer book.) The main repository for maintenance procedures is [Mark St. Hilaire's site](#). Links to manufacturers *et. al.* are at the end for easier maintenance.

Please do *not* contact me asking for help with repairs, bike advice, info on different models, etc. I don't know it all, I just collect it. I also have a day job, and might not be able to get back to you for a few days or weeks. If you have a question, join the [DSN KLR650](#) group, and ask there. With thousands of members, you will probably have ten replies within 15 minutes. They're also a great bunch of people; you should get to know them. If you prefer a forum-type group, you can try [Glenn's KLR forum](#).

Unfortunately, the archive search on Yahoo! Groups is rather patience-trying. Gavin MacFarlane has developed a [searchable archive](#). There is also a [portal](#) at Fred Hink's page (Arrowhead Motorsports), but the search engine there is not as versatile.

The FAQ is based on the A-model. Many aspects are similar to the C model, but there is a list of differences [here](#). If you're looking for information on the KLR250, try [here](#).

If there is something you would like to see or correct in the FAQ, please contact me at bigcee@bigcee.com, and include the material if possible. For an offline copy of the FAQ, right-click [here](#) to download a zipped copy with associated image files.

Disclaimer: This material is provided for reference only. All information is accurate to the best of my knowledge, but you are ultimately responsible for all maintenance of and modifications to your motorcycle. Big Cee and/or myself is not responsible for any damage that occurs as a result of use or misuse of this information. Also note that any product or vendor opinions contained herein are culled from the general KLR owner population, and are not the opinion of Big Cee / Chris Krok. In addition, the listing of a company as a supplier does not imply endorsement. People have had both good and bad experiences with nearly all of the vendors listed, so you will basically have to try them and form your own opinion. Caveat emptor!

Chris Krok

General Information

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Is a KLR right for me?

The KLR650 is a great all-around bike. It's relatively cheap, is getting an increasing amount of aftermarket respect, and easy to work on. An experienced rider (and some not-so-experienced ones) can work it over black-diamond single-track, it can carve through the twisties, and roll out on the highway. However, because it *can* do all of these things, it doesn't do any of them particularly well. It can be a lot of work to ride offroad, especially in sand or deep gravel. It doesn't have the best wind protection, and the light weight and upright riding position lets it get blown around by wind on the highway. If you want something more dirt-oriented, you might want an XR, DR or KLX; if you want something for the highway, you may want a standard or sport-tourer. But, if you want to ride a thousand or more miles, go offroading, and ride home, the KLR is a great choice. The KLR's capabilities can be tilted towards dirt or street through changes in tires, gear ratio, suspension, and other areas.

How do the models differ?

The A-model is the basis for the FAQ, and is further described herein. It is primarily available in the United States and Canada. The B-model was only available in the US for the 1990 model year, but was available in the rest of the world for a number of years thereafter. The C-model is sold outside of the US and Canada, although the latter country has seen limited numbers of them. All three versions share the same engine. The B model is almost identical to the A model, except for the obvious difference in bodywork, the front brakes are better (dammit), and the suspension is an inch or so lower. The C-model has major differences, outlined [here](#).

How does it compare to the KLX?

The KLX650 is much more dirt-oriented, with inverted forks, lighter weight, a smaller gas tank and different engine. Better than the KLR on the dirt, but not as capable on the highway. For more info on the KLX, visit their mailing list (in the [links](#) section).

How has the KLR650 changed over the years?

No one will ever accuse Kawasaki of applying [kaizen](#) to the KLR production line. Aside from the paint job, not much has changed since it was introduced in 1987. The key mechanical differences are (per Eldon Carl):

- 1987: Crankshaft is unique to this year.
- 1988: Beefed up the engine cases with extra bolts between the crank and countershaft; crank has a different part number, and may be lighter.
- 1990: Countershaft improved with longer splines for increased engagement with sprocket.
- 1992: Changes to front brake master cylinder.
- Mid-1996: Changed valve cover, added bracket to hold cam chain bumper; changed crank to heavier unit; improved clutch basket with more clutch plates; changed countershaft sprocket retainer from slotted plate to large nut. Kickstarter no longer fits with new clutch basket.
- (?) Service manual indicates higher charging system output; only part number change is the rotor. The new power rating is 17A/14V (238 W) @ 7000 rpm; the earlier one was 14A/14V (196 W) @ 8000 rpm (yes, above redline).
- 2001(?) Assembly shifts from Japan to Thailand. Hard to say if there are any quality issues, as the parts still seem to be manufactured in Japan.

There must have been more changes. If I e-mail you, you'll give me the secret list of other changes, right?

Dream on. Although, in 2005 they offered it in two color schemes for the first time...

What year is my KLR?

The frame sticker shows the date of manufacture. The model year for all cars and bikes sold in the US is indicated by the tenth digit of the VIN (this is an ISO standard, and is becoming more widely used).

M=1991; N=1992; P=1993; R=1994; S=1995; T=1996; V=1997; W=1998; X=1999; Y=2000; 1=2001; 2=2002...A=2010...

What is this "An" people keep mentioning?

This is a letter code that indicates the submodel and year of the bike. "A" bikes are for the US market, B is the Tengai, and C is the Canadian/European model. The number *n* represents the year of manufacture, with 1 as the first year. An "L" at the end of an A designation means that it is a California bike (with a smog cannister). The first year of the A model was 1987, so an A5L is a 1991 California-spec US bike.

How do I contact Kawasaki?

Consumer Relations, Kawasaki Motors Corp., USA, P.O. Box 25252, Santa Ana, CA 92799-5252; (949) 460-5688. In Canada, it's Canadian Kawasaki Motors, 25 Lesmill Rd, Toronto, Ontario M3B 2T3.

What do I do about the vibration?

Despite the engine counterbalancer, a thumper still produces noticeable vibration. The amount of felt vibration depends on the individual bike, accessories added, and even the subjectivity of the rider. Some pointers courtesy Tom Bowman (these apply to bikes in general, not the KLR specifically):

- Mirror vibration can be improved by switching to XR650L mirrors (order the *whole* mirror assembly, which includes a vibration dampener, see [controls](#) section), and Bikemaster "GP" mirrors have also given decent results. Ideally, the rubber dampers should be tuned to move the mirror's natural frequency out of the KLR's vibration range. You can also try Ken Sean folding mirrors.
- Installing aftermarket bar-end weights can help. Some have epoxied steel weights inside the ends, or used RTV to seal in lead shot. Aluminum handlebars may also help; see the [controls](#) section.
- Tire variables that can affect vibration include air pressure, tread style, balance and out-of-roundness.
- Carb jetting affects combustion and thereby vibration. Lean mixtures burn faster and cause more vibration; backing the idle screw out a half turn can make a difference.
- Loose motor mount bolts are a common cause of excess vibrations. Check the motor bolts on a regular basis, and retorque per the service chart in the manual. If the engine is run with loose mounts, the vibration can damage the engine cases and mount surfaces. In some cases, it is possible to overtorque the bolts to the point that they stretch, and the nut bottoms on the end of the threads rather than the engine mount. The bolt will feel tight, but the motor will just be floating. The upper mount is the most important.
- Accessories like skid plates or exhausts can change vibration by changing resonant frequencies, or redirecting vibration that would normally be absorbed by the frame. Aluminum handguards can particularly increase handlebar vibration. Check for interference points and correct as needed.
- I have seen mis-manufactured frames. What happens is that the inside dimension between the frame bosses and engine cases is too large; this results in the engine bolts reaching their normal torque spec *before* the engine case is clamped properly. If you've looked everywhere else to no avail, try loosening the engine bolts up completely and examining the gaps between the frame bosses and cases: if there is more than about 0.5mm (0.020"), clearance with the bolt loosened, there may be a problem. This is fairly common on mass-produced mild steel frames due to all the welding-induced heating/shrinkage.

What kind of gas mileage should I be getting?

Gas mileage will vary greatly depending on how your bike is set up. For a rejetted bike running dirt-oriented knobbies, it can be as low as

30-35 mpg. On a stock bike with street tires, 50 mpg is more typical, and some bikes have been seen up to 65 mpg. (This can also depend on where you are, as gasoline formulations vary in different parts of the country.)

How long will my KLR last?

Many people have the misconception that the KLR (or thumpers in general?) will suddenly explode once it hits 30,000 miles. I refer you to one member of the DSN list who reported the beginnings of piston slap... At 80,000 miles. Many owners have reached 60,000 miles without major maintenance, and some bikes have broken 90,000 miles.

How much power does this thing put out?

Depending on the source, values up to 48 hp have been quoted. However, this is crank horsepower measured on an engine dyno, and doesn't account for losses in the transmission or final drive. At the rear wheel, power is around 38 hp. Devon Jarvis supplied a [dyno chart](#) for his bike, that shows a peak of 36 hp (DynoJet dyno run, hot, humid day). His bike was fully stock, except the pilot screw was backed out to 1.25 turns. If you're looking for a lot more power, you are probably better off with a different bike. The KLR does not lend itself well to hop-ups, and many owners have spent much time and aggravation chasing what amounted to a couple of extra hp and crappy gas mileage. You're better off spending the money on suspension upgrades; that way, you'll be able to maintain speed, rather than have to slow down and speed up all of the time...

Why does my bike lurch/stall the first time I put it in gear?

This problem is common to all wet-clutch bikes. In a multi-plate clutch, the clutch release can only remove pressure from the end of the disc stack; it can't actually drive all of the discs apart. When the bike sits for a while, the oil squeezes out from between the clutch plates, making them stick together. Squeezing the clutch lever takes the spring pressure off of them, but they still stick; so, when you put the bike in gear for the first time after starting it, the engine has to break the discs apart. This makes the bike lurch, or can stall it. To prevent this, you can 1) before starting the engine, put the bike in gear, pull in the clutch, and rock the bike back and forth until the clutch breaks free; 2), with the engine running, in neutral with the clutch in, blip the throttle a few times; 3) start the bike rolling with your feet before putting the transmission in gear to minimize the lurch.

What's this diesel KLR I've heard about?

Hayes Diversified Research of Hesperia, CA, converts KLR650 engines to diesel for the USMC. With additional modifications, the bike becomes the M1030M1 motorcycle. These are not available to the public, although the company is looking for investors so they can bring out a civilian model. They basically replace the head, cylinder and piston with heavier units to withstand high compression, with a resulting decrease in displacement to about 600 cc. Go to the [links](#) section for information about the USMC KLR.

Read any good books lately?

- Bob Sanford, *Riding the Dirt*. Written in 1972, this classic covers the basics of dirt riding. While the equipment may have changed, the basics have not. In fact, it's amazing how little some things have changed.
- Of course, there's *Dual Sport News* ([links](#) section), probably the only magazine dedicated to adventure touring. Especially good is "The Gino Years" on CD-ROM, which contains all of the articles from the days when it was a KLR-specific magazine.
- *Dirt Rider Magazine*: "But Chris, isn't that all just play bikes and fashionable gear?" Well yes, there's that. But *Dirt Rider* also has a regular feature called "Pro Riding Secrets," which offers tips on handling different offroad situations. They also have reviews of adventure/off-road tour companies, and interesting articles on the past, present and future of off-roading. They have even answered questions about KLR 600s and 650s in the "Ask Dr. Dirt" section (one was mine). Last time I renewed, it was a buck an issue. At that price, how can you stay away? **Update:** The September 2005 issue includes the KLR in a dual-sport test ride, and they even gave some love to the FAQ! Thanks!
- Whitehorse Press is a catalog dedicated to motorcycle books and gear ([links](#)).

Can I put a sidecar on the KLR?

This has been done! See the [links](#) section for info.

Will AAA tow my bike?

For AAA bike towing, you need to add RV coverage, *not* the "plus" coverage. There is also a question of whether or not they will do this in all states. Other options are AMA MoTow service, and MTS Towing ([links](#)).

How do I respond when accosted by anti-accessers?

Harry from SC relates this story: "...A few years ago I was riding a trail around Colorado Springs. I pulled over and stopped as I came upon two young lady hikers. One screamed, "You should be on the road!" and I said, "You should be in the kitchen!" I've still got the helmet with the big dent in it where the rock bounced off."

What is a DPO?

Dipshit Previous Owner; i.e., the idiot responsible for all of the damaged threads, missing parts and hacked electrical connections on the used KLR you just bought. You don't notice these problems immediately, of course...

What is the airspeed velocity of an unladen swallow?

European or African?

Known Issues

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Bike stalls in the rain/deep water crossings

This is generally caused by submersion of the carburetor vent line. This is a clear/transparent pink hose running from the side of the carb down to the bottom of the bike. If this gets clogged, the carb will fail to operate properly and the engine will quit. The best solution is known as the "T-mod:" install a tee in this line near the carb. Route the original line the way it was, and route a second line up under the seat or behind the fairing. Arrowhead Motorsports now sells a kit for this.

Balancer chain tensioner ("Doohickey") prone to failure

The counterbalancer tensioner arm (clamped down by the small bolt on the bottom left engine cover) has a tendency to get brittle and break. This has happened on bikes of all years and mileages, while many other bikes (of all years and mileages) are fine. If anything, later bikes seem to be more prone to failure, perhaps because of the change to solid balancer sprockets. If this system fails and the balancer chain jumps, it can seize the engine. Sagebrush Machine Shop and Eagle Machine (available from Arrowhead) both make a machined adjuster arm that should be much more reliable than the stock unit. (Both units are of equal quality, although they offer different spring lengths.) In addition, the adjuster bolt and spring were upgraded in 1996; earlier models can be upgraded by replacing the bolt and spring, and adding the washer. The required parts are: Idler spring, 92144-1860; 7mm O-ring, 670B1507; washer, 92200-1263; idler adjuster bolt, 92150-1923. See the [links](#) section for a way to report balancer failures.

Starter circuit fails to work, or only works with in neutral with clutch out.

Engine runs in neutral, but dies when I put it in gear.

There are two known causes for this. First, the side stand switch can corrode and seize up or get bad contacts. It is best to bypass this switch before it goes bad and leaves you stranded in the wild. To do so, simply disconnect the connector at the switch (under the small, black plastic cover), and short the harness wires together (brown and green/white) with a jumper. The second part is the clutch safety switch at the clutch lever, which tends to fall out of adjustment. To bypass, disconnect the plug from the clutch switch underneath the cover on the instrument panel. Short the black/yellow and blue/red wires on the main harness with a jumper. In both cases, the switches can be reactivated by removing the jumpers and plugging the connectors back in.

It is also possible to bypass both at once by bypassing the starter safety relay: This is not the main starter relay, but an adjacent, secondary relay that is used to manage the safety circuits. Remove the relay, and connect either of the yellow/red wires to the black wire, or use the yellow/red wire from the small relay to replace the black wire on the starter relay. The starter safety relay has the same part number as the fan relay, so hang on to it; they're not cheap. There are reports that one of the safety circuit diodes still needs to be grounded for the neutral light to work properly; you can do this by bypassing the sidestand switch.

One other option is to connect the red/black CDI wire directly to ground.

It also appears that the "running safety" circuits can be bypassed by grounding the red/black wire coming from the CDI unit, but this has not been confirmed.

Weak front brakes

The front brake on the KLR is pretty weak, particularly for heavier riders and loads. This is actually somewhat useful in the dirt, but can be bad news on the street. See the [Brakes](#) section for upgrades.

Lean Jetting

The KLR is jetted very lean from the factory. This can manifest itself as surging when cruising at medium throttle or 3-4,000 rpm. A quick cure is to back out the idle mixture screw a bit, and shim the stock needle up 0.020" with a washer. See the [Fuel/Intake](#) section for more info.

Rear brake pedal bracket prone to fracture

The bracket that mounts the rear brake pedal to the frame is an aluminum casting; a number of people have seen them break if the bike is dropped and the bracket hits a rock, or even if a large rock is thrown up against the brake pedal. Dual Star ([links](#)) makes a machined bracket that should be much stronger than the stock unit.

Headlight fuse tends to blow

If the headlight switch pauses between "hi" and "lo," it is possible for both filaments to be on at the same time. This will overload the 10A fuse. This can be fixed by upgrading the fuse to 15A.

What happened to my license plate?

If the rear suspension is bottomed out the tire can grab the bottom edge of the license plate. At the least, this will fold over a little lip at the bottom of the plate; at worst, it will tear off the rear inner fender and leave it on the trail somewhere. This is most likely when using a taller knobby; or when using a smaller countershaft sprocket or an older chain, as the rear axle will be moved further back when the chain is adjusted. One solution is to bend the bottom of the license plate back, away from the tire. Better is to move the bracket up. Remove the reflector located above the license plate, and install the bracket on that part of the fender (the reflector pad is just wide enough for the bolts). For the ultimate solution, remove the bracket completely, and bolt the plate directly to the outer fender, below the taillight. Note that (legally) you will probably have to supply lighting for the license plate; it is possible to cut a rectangular section out of the bottom of the taillight lens, and glue a piece of clear plexiglass in place to seal the lens. It may also be illegal to move the plate, or remove the aforementioned reflector.

Dealer screwups

If you buy the bike new, the dealers often leave the forks in the shipping position, with the fork tubes extending about 3" beyond the top of the triple clamp. The tops of the fork tubes should be flush with the top of the triple clamp.

Shift lever breakage

Many riders have seen the stock shift lever break at the base weld. This doesn't always happen, but you should at least remove your stock unit and inspect the quality of the weld. If the weld looks complete and full, you will probably be OK. If not, you can either have the weld redone, or better yet, replace the shifter with a Moose or IMS unit. These units, though, can show wear in the splines. Examine the shifter for play occasionally, and tighten the clamp bolt as needed. Note that the IMS unit is about 3/4" longer than the stock unit (I think the Moose is about the same as stock). The extra length can be handy for fitting MX boots under the tip.

Gas in the right side of the tank

Because of the gas tank design, even if you run dry on reserve, there will still be gas in the right side of the tank. To get at this gas in an emergency, tilt the bike over to the left as far as possible, and start riding again. You may be able to repeat this process a few times.

This can be avoided by installing [Skip Faulkner's fuel tank mod](#).

Weak subframe mounting

The subframe supports the seat and rear rack, and is mounted by four, 10.9 M8 bolts (two socket heads on top, two hex heads on bottom). Under heavy loading or harsh riding, the upper bolts can break, pulling off the exhaust, wiring harness, etc. One option is to replace the upper bolts with grade 12.9 bolts. The strongest fix is to drill through the upper frame and subframe mounts, and install an M10 bolt all the way through. Kits for this are available from Big Cee and Dual Star.

Swingarm lubrication

The swingarm bearings are installed with only a minimal amount of grease. It is best to relube the swingarm at your earliest convenience, especially if you will be riding in a lot of water. See the [maintenance](#) section for more details.

Rear hub bearing spacer

When doing rear wheel maintenance, people often lose the middle bearing spacer. It generally stays in place due to grease, and you may pull the hub off several times without ever noticing it. If it happens to fall out, though, you will soon wreck the hub. Click [here](#) for a diagram of the rear hub; # 42036 is the one you need to watch out for. It goes in the inside of the sprocket carrier. Pay careful attention to how many threads on the axle are showing above the axle nut, before you loosen it. When you reinstall the wheel, if you see noticeably more threads, something's wrong. (Or, if you bottom the nut and the wheel still isn't tight.)

Poor speedometer accuracy

The KLR speedo generally reads about 10% higher than true speed. This depends on what front tire you are running, and how worn it is.

Engine

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What type of oil should I use?

How much oil should I put in?

How often should I change my oil?

On any motorcycle list, any of these questions will provoke a response greater than that to the assassination of Archduke Ferdinand. The answers are basically, "motor oil," "enough," and "when you need to." Many use automotive oils, particularly Castrol GTX for conventional oil, and Mobil 1 for synthetic. Others swear by motorcycle-specific oils. Delvac 1300 and Rotella T are popular oils that are available in bulk quantities. One point of note is that if you use a "bargain" oil, it is possible to stain the sight glass, making it difficult to see the oil level. Also, you generally want to avoid 5W oils and *some* manufacturers' 10W-30 oils. As long as it doesn't say "Energy Conserving II" around the rim of the API seal on the bottle, it's fine.

Which brings us to the next question: How much oil to put in? The rated capacity is 2.5 liters, which should put the oil at the top of the sight glass. However, this usually puts the level over the top, possibly due to residual oil in the passageways. Some owners insist that the sight glass is mounted too low in the engine case, and add 10 oz beyond the upper fill mark. Others insist that the sight glass is correct, one even going so far as to contact KHI for the straight dope. KHI engineers insist that the sight glass is in the correct location. Running with too little oil can cause problems, but so can running with too much. In practice, owners running their bike either way don't seem to have any problems. Paying attention to your oil level and keeping it at the top of the glass is probably the best compromise.

As for oil change frequency, most people change their oil at 1,000 to 2,000 mile intervals, depending on riding conditions. The only way to truly develop an oil change schedule is to have an oil analysis done at different intervals while riding in your typical fashion/conditions.

When can I start running synthetic oil?

Common lore is that you should run regular oil for the first 3-6,000 miles on a new engine (or after rebuild), and synthetic is fine after that.

Which is the best oil filter?

Several brands of paper filters are available, and are cheaper than Kawi filters: Fram #CH6070; EMGO #10-30000; K&N #KN-123; Wix #24951; NAPA #4951 (I believe that both the Wix and Napa filters are made by Wix). The Wix, Napa and Fram filters come with new O-rings, and the others do not. (If you are ordering from Dennis Kirk, the replacement O-ring is p/n 30-143.) There is also a lifetime stainless steel filter available, which you clean at each oil change. It's a bit pricey, and there is still some debate over which type of filter is better. The SS filter has a consistent filtration level; the paper filters vary from better to worse than the SS. Some people believe that paper filters shed fibers, that wind up clogging the oil strainer screen. However, it is more likely that this is clutch or gasket material. After 25k mi on my bike, there was no fibrous material in the strainer.

Strainer screen? What strainer screen?

The oil strainer screen prevents large chunks of "stuff" from getting into the oil pump. It is a fingertip-shaped screen, about 3/4" in diameter, with a black rubber gasket at its base. To get to the screen, you must remove the right side cover (clutch cover). The screen is at the bottom, pointing into the engine. People usually find a few chunks of gasket sealer material stuck to the screen.

Can I install an oil pressure gage or warning light?

Because the crank rides on roller bearings rather than hydraulic ones, the KLR has a low pressure spec: 11-21 psi at 90F and 4000 rpm. The ultimate info on adding an oil pressure sensor can be found in post # 61914 of the DSN_KLR archives. In short, the best way to add a pressure port is probably by stacking a second banjo fitting on one of the camshaft feeds. Beware that adding a tap may add a failure point.

What size is the oil plug?

The oil plug thread is M12 x 1.50. Moose makes a magnetic drain plug, and Dual Star makes a low-profile one. (You can also knock some of the hex off of the Moose plug with a lathe or grinder.) Cutting down the drain plug is a good idea for off-roading, as it can stick out past the skid plate.

Can I get a high-compression piston?

So far, we haven't found any way to get a higher-compression piston other than manual manufacture. Some have used sealant in lieu of the base gasket after cylinder overhauls, which will give a minor compression increase. The small change in cam timing doesn't seem to be a problem.

Didn't someone make an oversize engine?

Steve Kesselring at Quality Engine developed both 727 and 770cc engines as one-off projects, and I don't think he was happy with the results vs. the cost/time involved.

Are there any alternatives to Kawi valve shims?

The KLR's valve shims are 29mm in diameter. There are other sizes that are close, but make sure they give you the right ones. If your Kawi dealer doesn't have the right ones in stock, shims from an '87 BMW K75S and '82 Yamaha Seca 750 are the same diameter. (Beware, there are also 29.5mm shims, which will not work.)

I fried my head! What do I do?

If your cam journals are scored or chewed up for whatever reason, Engine Dynamics of Petaluma CA might be able to repair the head. They will resurface the cam and rebuild and finish the journals to match the new cam diameter. See the [links](#) section for their info.

What if I break the cooling fan?

If you drop the bike on the left side, the radiator fan shroud can get bent and stop the fan. The motor shaft then spins in the fan, and melts the hub. Apparently, the hub can also melt if the fan isn't jammed. The fan can only be purchased as an assembly, which is expensive. Muzzys makes an aluminum replacement cooling fan with a steel hub that is immune to this damage.

What kind of coolant can I use?

Any silicate-free antifreeze mixed with distilled water should be fine. If you want something pre-mixed, Rotella 50/50 will work, and Honda (and others) has a mix available at motorcycle shops. Note that, if you live in a warm climate, you might be better off with 30% antifreeze; water is a better conductor of heat, and you'll still have adequate high-temp protection.

Is an aftermarket radiator cap available?

Kawi	Prestone	Stant
49085-1066	RR-27	10227
Motrad	TVS	Gates
T-13R	1-227B	31333
CST		Balkamp
7513		703-4773

What is the KACR?

Kawasaki Automatic Compression Release. This is a spring-loaded weight on the end of the exhaust camshaft that partially opens one of the exhaust valves at low (<600) rpm. These are a known weak point on KLR bikes, but there don't seem to be any/many recorded failures of the KLR KACR. Someone estimated that the pin on the unit gets beat 8x/second in the operating RPM range, which could be pretty hard on it. People have totally removed the mechanism with no ill effects. It may be a residual from the kickstarter option, and not really needed with electric start.

Where can I get a kickstarter?

While the engine case still has a kickstarter hole, '96 and later models can not use a kickstarter because of the redesigned clutch basket. Earlier models can be fitted, but factory kits have long since been discontinued. Buying the parts individually is ludicrously expensive. Best to keep an eye out for a kit on Ebay or such. It looks like the parts from the 600 engine are the same.

Fuel / Intake

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Why does the bike pop on deceleration?

The bike is jetted very lean from the factory. You can enrich the idle mixture by removing the pilot screw cap and backing the screw out 1/2 to 3/4 turn from its factory setting. (The pilot screw is located on the engine side of the carb, in front of the bowl, on the bottom. It is underneath a plug, which must be drilled through to remove.) Note that it may be illegal to tamper with carb settings in your state. Note that this symptom can also indicate an exhaust leak, so check all of the exhaust connections first.

How do I keep the \$#%@ carb diaphragm seated while I replace the cap?

Put a thin film of grease in the groove; this will hold the diaphragm in place. If you manage to pinch a hole in it, see the next item.

Is there a cheaper slide/diaphragm assembly available?

Harley dealers carry a slide/diaphragm assembly, part number 27585-88, for Kehin CVK40 carbs. List price is usually around \$40.

Is there a less-vulnerable choke lever available?

With the choke out on the handlebar, it's possible to break it when you dump the bike. Lister Zach found a short choke cable for the CVK40 from Harley Davidson: Part# 29229-88C, Cable, Carburetor Enrichment. You need to come up with a mounting bracket, but you can check out an installation in the [links](#) section.

Why does my gas tank whistle?

This is the tank venting system. It doesn't happen on all bikes, and may relate to how well the vent in the cap seals to the bung in the cap socket.

Should I use hi-octane fuel?

Only if your engine pings under load. High-octane gasoline does not contain any more energy than low-octane, and is intended to reduce the possibility of pre-ignition and detonation, which can be a problem with high-compression engines. An engine can gain nothing from

Higher octane gasoline if it is not designed to take advantage of it. That being said, any change that increases the peak compression pressure (i.e., increasing the charge of air) can cause pinging, requiring higher octane gasoline. These changes include opening up the intake path, increasing valve size, intake cam duration, etc. However, these changes are usually small, and can also be cured with jetting. Excessive carbon deposits in older engines can also increase the effective compression ratio, or provide hot spots for pre-ignition, requiring higher octane gasoline.

Can I Install a Fuel Filter?

Many people have experienced problems with fuel filters. There is not enough height of gas in the tank to get sufficient flow in many filters after the tank is more than half empty. This causes the engine to stall unexpectedly, often while on the highway due to the increased fuel flow required while traveling at higher speed. Paper-type automotive filters are very prone to this problem since they are designed to be installed in an application with a fuel pump. Some people have had success with the smaller brass or plastic screen filters, but since there already is a screen-type filter in the tank, installing an additional fuel filter is not recommended. (Thanks, Bryan K.) [I run a brass filter, and it doesn't seem to cause any problems. However, you should make sure the fuel lines are tight enough so they always slope downward.]

Why does my bike run for a few minutes, then stall?

- Your gas tank vent may be clogged. When the bike stalls, try opening the gas cap. If air rushes in, and the bike runs fine again, your tank vent is clogged. Clean the vent passage in the cap, and make sure one of the tubes at the rear of the tank is open. Preferably, the red nipple should be capped off, and the blue one should have a hose running to the bottom of the bike.
- The vacuum hose running from the carb to the petcock (which ensures that fuel only flows when the engine is running) is weak; if it has the slightest kink, it may close when it softens from the heat of the engine. To fix, either reroute the hose so it is as smooth as possible, or preferably, replace with a length of heavy-wall fuel line.

What aftermarket air filters are best?

Several air filters are available. Foam filters include the Moose, Uni and Twin Air. (I've seen one Twin Air filter that was too small for the filter basket, and didn't have a hole for the screw. Don't know if this was an isolated case or the wrong part number.) In addition, K&N makes a gauze filter for the KLR. Some people feel that the K&N lets dirt through; however, inspection of bikes running K&N filters show no dust on the inlet screen. The downside of K&N filters is that, in very dusty conditions, they can clog up solidly enough to stop the engine. To avoid this, a prefilter/filter skin can be used. These are stretchy covers that are oiled and placed over the filter. When it's dirty, pull it off and put a new one on, or just run with the filter alone. The skins are reuseable with washing, and can also be used with foam filters. See the [\[links\]](#) section for a comparative filter flow test.

Do I need that screen behind the air filter?

The purpose of this screen is unknown. It could be a backfire arrestor, or used to smooth airflow coming from the filter. Some people remove this to increase airflow, but no flowbench tests have been made to see if this restriction is significant compared to the filter. Several people said the screen kept clumps of dirt from falling into the clean side of the airbox when they removed the air filter. For that reason, it seems like a good thing to keep.

How can I open up the airbox?

For maximum flow, an L-shaped opening can be cut into the top of the airbox, underneath the seat. If you prefer prefiltered air, 1" diameter vents with foam inserts are available. Mount them with the vent screen *inside* the box. You can also cut the raised sections of the airbox door, and place foam in them. You will need to install a grate on the inside of the door to retain the foam.

Can I rejet the carb?

Rejetting is essential if you increase flow in the intake or exhaust. Dynojet makes a kit with an adjustable needle and several main jets. It also includes a drill bit for removing the pilot screw cover. A less expensive alternative is to use a KLX650R needle (N1TB #16009-1794), spacer (92143-1667) and clip (92037-1401), which will give you an adjustable needle. You can then buy individual Keihin main jets to adjust the carb. A point of note: To remove the pilot screw cap, you must drill a hole in it. Drill very slowly, and pull back on the drill as soon as (or even before) you break through, so you don't drive into the screw and damage it. You can also use a left-hand drill which will prevent you from accidentally driving the screw into its seat.

How do the Dynojet jets compare to the stock ones?

Dynojet jet numbers are not the same as Keihin numbers. The DJ136 is roughly comparable to the KH148, although may be a bit richer. The DJ140 is richer than the KH148.

Can I get a different carb?

If you wish to switch to a slide carb, the Mikuni 38mm RS carb will fit, as will the Keihin 39mm FCR (the 41mm will not fit). This will give better throttle response, but will make throttle modulation more important in low-traction situations. Also, some have had problems with the slide carb; someone tried the Mikuni kit and generally found that you can mimic stock fuel economy but have the engine fall flat on its face when you open the throttle wide. Or you can go way rich, make it run great, and eat gas fast. He dyno tested the bike and actually found a LOSS in HP. He ended up going back to the CV carb. (Like I said, spend your money on suspension!) For a milder stock replacement, you can try a Mikuni VM36 carb; you may need to trim down the intake side, and if the carb was equipped for snowmobiles, you will need to replace the float needle and seat with a set for gravity feed.

Exhaust

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Why does my bike sound like an old VW?

This is affectionately known as "tweety," and can happen to bikes anytime after a few thousand miles. It seems to appear earlier on bikes that are ridden on a lot of short trips, thereby allowing condensation to remain in the muffler. It also seems to be traced to clogging of the spark arrestor system. The noise is merely an annoyance; it will not damage your engine. Aside from replacing the exhaust system, you

can try to fix it:

- Take a huge straightblade screwdriver (like 12" shaft), and sharpen the end with a file. Look in the end of the exhaust, there is a small perforated pipe running from the opening to about 8" inside. It has a seam on the bottom (6:00 position) that may already be split open. Using the screwdriver and a hammer, drive the screwdriver into and along the seam, opening it up to within 1" of the end. Start the motor and listen for tweety. If it's still there, make another lengthwise slit at the 12:00 position, start the motor and check. Some people have had to make four slits (at 90 degree intervals) to fix the tweet.

Do I really need to clean the spark arrestor on the stock muffler?

No one has ever gotten any carbon out of the muffler via the cleaning plugs. In fact, the more likely result is that the plugs will shear off. If you're really intent on doing the procedure, you will need to remove the drain plugs when the bike is brand new, and apply anti-seize to them.

What aftermarket exhausts are available?

There are several: Supertrapp, Big Gun, and Laser Pro Duro are the most popular (others include the Two Brothers). The first two are aluminum, USFS approved, and require repacking at some interval. The Big Gun provides lots of power (with rejetting), but seems to need repacking most often, and is quite loud when the packing disintegrates. The Supertrapp comes in two flavors: the exposed disc (race series) and enclosed disc (ISDE series). These are generally durable, and not as bad when the packing disintegrates. The Laser is stainless steel, requires no packing, and gives higher flow without much noise. The downsides are the price and weight, and at this time it does not have a USFS approved spark arrestor (this may change as of Feb 2005).

Is there a better packing material?

Stainless steel wool can be used instead of fiberglass. Make sure it's stainless, so it won't burn. Use the finest grade you can find. It isn't as fine (and therefore not as quiet) as fiberglass, but it should last indefinitely.

How do I repack a Supertrapp?

In brief: If there are any dents in the case, it will be tough. Remove the midpipe clamp, and the rivet that pins the core to the midpipe underneath it. DO NOT use a punch and hammer on the inside forward edges of the core to remove it. Very easy to wreck the thing. Sometimes a "quiet" core can be punched out using a hammer and a broomstick into the baffling. If you can't tap out the core using a piece of wood, get an automotive dent puller, remove the discs, grind/punch a small hole in the perforated tube in the core, and use the dent puller to remove the core. When you reassemble the muffler, use anti-seize EVERYWHERE that metal meets metal.

Controls/Instruments

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What can I do about handlebar vibration?

Various methods used to minimize handlebar vibration include filling the bars with steel shot and/or latex caulk, using end weights, and installing soft grips. Using a handlebar with no crossbrace can help too, but will be more susceptible to bending if the bike is dropped.

Can I get the stock grips off in one piece?

Probably not. The original grips are the one factory-installed part that I can guarantee will not fall off due to vibration. Many people resort to cutting and scraping them off. See the next question for replacements.

What replacement grips are available?

Progrip 714s are popular for vibration reduction (grips won't cure it all, but they can help). To remove old (aftermarket) grips, you may just be able to squirt compressed air under them and "float" them off. To install the new grips, you can use grip glue, or just shoot some hairspray into them and slide them on. Many grips also have circumferential slots for tying down with safety wire.

Are vibration-resistant mirrors available?

Mirrors from the Honda XR650L have vibration dampeners. You need to order two each of: 88210-KAE-871, mirror; 90301-KBA-900, mirror locking nut; 88255-KAE-871, rubber mount; 90303-428-900, rubber mount nut. There are also less expensive substitutes available from Ken Sean (folding mirrors) and Four Strokes Only ([links](#)).

Can I use a different key blank for the ignition?

If you don't want to shell out the big bucks for a Kawasaki factory key blank, here are some alternatives that should work. Of the keys listed below, the Silca KW14 and KW14R are the only truly correct ones. It would probably be best to take the whole list to your key shop, and let them pick the one that will work the best. NOTE: The KLR comes with both right- and left-hand keys (the direction of the offset in the cross-section). So, not every blank will work.

Curtis SU-9 (Suzuki)	Curtis YM-58 (Yamaha?)	Ford 5-cut primary blank
ILCO KA15 X106	ILCO YH38 X77	ILCO X120 YH46
Taylor X90	Taylor X91	SILCA KW14, KW14R

Why is there shimmy in my front wheel?

Steering shimmy can come from a variety of sources. Try different tire pressures, and check your tire balance. Make sure there is no twist in the forks: Support the bike on a stand, loosen the top and bottom triple clamp bolts (don't let the fork drop out), wiggle the handlebars to make sure the forks are free, and retighten. Make sure your headset is tight, too. Also, the height relationship between the front and rear suspension can affect steering stability. If the rear is made higher (new shock, increasing preload, etc.), it may make the steering unstable. This can be corrected by increasing preload in the fork by adding spacer washers. Or, try to lower the fork in the triple clamps. For extra stability, Eldon Carl has designed fork tube extensions that allow you to lower the fork further. Note that increasing stability reduces maneuverability, so you must arrive at a balance of the two.

What are the dimensions of the stock handlebar?

For comparison to other bars, here are approximate dimensions of the KLR handlebar (thanks, Matt!).

Width	End Rise	Center Rise	Center Width	Pull Back
810 mm	75mm	75mm	205mm	100mm

What aftermarket bars are available for the KLR?

Aftermarket bars are a much better option than factory replacements. Steel bars are available for around \$20-40, and \$85 will get you quality aluminum bars. Many people like the Renthal 666 desert bend, which is comparable to the stock bar but wider, as is the CR-Hi. If you need something taller, ATV bars are a good way to go (i.e., Renthal Suzuki Quadracer or Yamaha Raptor, MSR Dominator, etc.). Note that you can also get some adjustment by simply rotating the stock handlebars. You can also move the bar up and back with risers [\[links\]](#). Note that the stock bars have a hole drilled on the clutch side, to position the control cluster via a pin. When switching to aftermarket bars, it is best to just grind the pin off of the cluster, so it can rotate if the mirror is whacked.

Why has my tachometer gone all wonky?

The tachometer is electrical, and is driven off of the ignition control box. If it starts behaving erratically, check all electrical connections related to the ignition. If problems persist, your ignition box is probably going bad. Cheap, it isn't. Sorry!

Why doesn't this replacement temperature gage work?

If you happen to replace your temperature gage with a unit from a KLR 600, the gage may pin at hot shortly after starting the bike. You can fix this by installing a 3.4 ohm resistor (Kawi p/n 28018-1052) in line with the gage. Be sure that your bike isn't actually overheating, of course!

Why doesn't my speedometer work?

There is a washer in the front wheel hub that connects the hub to the speedo drive gears; it has tangs on the outside and inside. It is possible for these to break off, rendering the drive nonfunctional. In particular, make sure you get these lined up right with the hub when installing the front wheel. If you tighten the axle nut and the front wheel no longer spins freely, you may have compressed the drive tangs against the hub.

Do any bicycle speedometers work with the KLR?

The Sigma Sport BC800, Planet Bike 9.0 and the Panoram (bicycle model) have all been successfully used. Get one with a rear-wheel pickup; these have longer wires that should reach the front wheel without splicing. Wireless models won't work with interference from the ignition.

Electrical System

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How much power does the charging system put out?

Older models: 14V, 14A @ 8000 rpm (above redline!), newer models 14V, 17A @ 7000 rpm. We are unsure as to when this change took place, but the only part change seems to be the rotor (new p/n 21007-1283). You may be able to upgrade your charging system by switching to the newer rotor, but this is unconfirmed. The normal electrical load is around 9 amps for the headlight, tail and license lights, instrument lights. (The ignition system has its own supply coil, and does not drain the main charging circuit.) Then are the occasional loads, like the cooling fan, turn signals, brake light, etc. Generally, the KLR can handle at least one "high-power" accessory, like a high-wattage headlight, heated grips, heated vest, etc. The best way to tell for sure is to connect a voltmeter and keep an eye on the voltage while you are riding, under different load conditions.

Can I upgrade the charging system?

Electrex makes a higher output stator (#G45, make sure you're getting the newer, thinner one) and rectifier/regulator (#RR26). (If you upgrade the stator, you should also upgrade the R/R.) Installation requires cutting the wires on the stock stator, and threading the new ones through the grommet. The output of this combo is claimed to be 280 watts, but this hasn't been confirmed.

What voltage should I see at the battery?

The no-load voltage is around 12.9 V, so anything less than that while the engine is running means that the battery is discharging.

Why won't my bike start?

Many things can prevent your starting system from working. But, nine times out of ten, it's just a bad battery connection. Check the wires, make sure they are securely attached to the battery (and the screw isn't bottoming out in the slot before it reaches full tension), and make sure the faces of the ring terminals and battery terminals are clean. With a loose connection, it's possible for your lights to come on when you turn on the ignition, and dim out with no starter cranking when you hit the start button. Basically, bad connections limit the amount of current that the battery can supply; the starter has such a low resistance that it will draw all of the current at the expense of other loads.

The second culprit is a bad battery. Even a relatively new battery can be bad if it was not properly charged before use or has sat for a while without charging. Auto parts stores may be able to load test your battery, and see if it will hold a charge.

Where can I find a wiring diagram?

There is a wiring diagram in the factory shop manual, and probably in the Clymer manual. However, Professor Jim Hyman took the time to develop a comprehensive, full-color wiring diagram. Mark B. highlighted the fan circuit. [Left-click to view](#), [right click to download](#).

[.gif .jpg](#)

[Fan circuit](#)

[printing instructions](#)

Where are the fuses?

The main and headlight fuses are in a black plastic box under the seat and over the battery. The fan fuse is next to the coolant overflow tank, behind the shroud on the right side.

Why is my battery running out of water?

Vented batteries typically lose water over time, via electrolysis during recharging. In hot weather, the water level will go down faster. However, rapid water loss in a battery can also be a sign of overcharging. Check the voltage going to the battery to make sure your system is OK.

What replacement batteries are available?

The original battery is a Yuasa YB14L-A2, and there is a Die Hard equivalent at Sears. WalMart also has inexpensive batteries. Yuasa also makes a fully sealed battery that is an exact replacement, the YTX14AHL-BS. WestCo also makes a sealed battery, the 12V14L-B. For extra current and reserve capacity, there is the Odyssey PC 545 gell cell (non-MJ version). This battery must be mounted on its side to fit in the KLR battery box, and you will have to extend one of the power cables. The Big Crank AGM (absorbed glass mat) battery is another possibility.

Why does my headlight seem dim?

Some people feel that the wires connected to the headlight are too small, and have replaced the wires with heavier ones, or connected a relay to run the light. Also, keep an eye on corrosion in the connectors. Check the condition of the reflector, too. On some bikes, the reflective material has started flaking off, so no amount of fiddling with wires or bulbs will help. The only cure for that is a new headlight assy.

Can I use a brighter headlight bulb?

KLR owners often run a higher-power bulb like an 80/100W, 55/100, etc (stock is 55/60, type H4). Your local NAPA should have the Wagner BP1210-H4 80/100 bulb for around \$13. Some people have had problems with the headlight socket melting; the NAPA LS6235 socket (or one from an '84 Honda Accord) is a close replacement, and is made of heat-resistant Bakelite. Others, however, have ran these bulbs with the stock socket and wiring with no problems. The one thing you definitely want to do is replace the 10A headlight fuse with a 15A one.

What size are the instrument bulbs?

Turn signal and neutral lights are #24; the hi-beam and three gage illumination bulbs are #194. To change these, you don't have to remove the instrument cluster; you just pull out the rubber "socket," and the bulb will be in it.

What are the two loose wires behind the fairing?

The Brown/white (+) and black/yellow (gnd) wire pair are for the "city light" circuit on European models. These wires come on with the ignition, and can be used for an accessory. The city light only draws 4 W, but people have used these wires for heated grips with no problems, and those draw nearly 48 W.

Why aren't my aftermarket turn signals flashing?

The stock flasher needs a certain load to activate. The bulbs on some aftermarket turn signals don't draw enough power to trip the flasher. You can correct this by going to a variable-wattage flasher, such as the Tridon EL12.

Are there brighter taillight bulbs?

The 1157 bulb in the taillight socket can be replaced with a 2357. The tail light is the same, but the brake light is 25% brighter with only a 2W power increase. The downside is that the brake light filament of the 2357 has a life rating of only 400 hours, while that of the 1157 is 1,200 hours. Both bulbs have a tail light rating of 5,000 hours. There is also a halogen version, the H1157, but this can melt the taillight housing if the brakes are on for a long time (i.e., stop/go traffic).

Can I replace the glass fuses with modern, ATO blade-types?

There are three options:

- Cut the wires to the fuse box under the seat, and run extensions to the side stand switch area. Splice in weatherproof ATO fuse holders, and install the appropriate fuses. Also do this for the fan fuse, near the coolant tank.
- Dualsportrider [\[links\]](#) makes a plug-and-play kit that relocates the under-seat fuses per above and converts them to ATO.
- An alternative is to put ATO sockets under the seat, but instead of fuses, use auto-resetting circuit breakers. These are available in auto parts stores.
- Cut the wires to the fuse box, and extend them to the fairing or another location, and install a fuse block. A kit for this is available from Big Cee. It's *not* plug-and-play, but does put all of the fuses in one place and gives you two extras.

Body

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Is there a paint that matches the silver on the frame?

Dupli-Color #WP101 Silver high-performance wheel paint (formerly known as Steel) is a good match, although it may be a bit more glittery than the stock paint. KRYLON #1402 Hi-Temp Aluminum also matches, if you want to paint your exhaust or heat shield.

How can I paint my plastic?

Krylon Fusion sticks directly to plastic, but it is very sensitive to solvents (and gasoline) even after drying for a month or more. The best bet may still be plasticizer additives to regular paint. One such product is Bulldog Adhesion Promoter # ETPO-123. This has proven to give good results. For black, bumper/trim paint may also work.

How do I restore faded plastic?

There are several options. You can heat it (carefully!) with a heat gun. This is especially good for removing white spots from bends or kinks. A hair dryer can also work, and is good on older plastics that need more heating, as the hair dryer is less likely to overheat the plastic. For chemicals, you can try NU-KOTE by Chemsearch, acrylic floor wax, lemon Pledge, DOT 5 (not 5.1!) silicon brake fluid, or S100 Engine Brite. For a mechanical solution, you can rub it down with 000 or 0000 steel wool, and follow with a wool buffing wheel

(dry), or use rubbing compounds. Rubbing can be followed with 3M's Imperial Handglaze.

Can I get aftermarket plastics?

Companies don't make aftermarket parts for the KLR like they do for dirt bikes. Some have said that Acerbis front fenders for KTM and Husaberg will fit if you enlarge the holes a bit. There are also aftermarket mini-fairings with built-in headlights that can be swapped for the stock fairing.

Can I convert my A-model to a Tengai?

You can make it "Tengai-ish." Replico [\[links\]](#) makes aftermarket fairings for about \$450 US shipped from Australia; you will need to weld two mounting tabs to the top of the fuel tank and repaint it.

How do I get the seat off?

Remove the two side covers, and you will see the two bolts that hold the seat down. After removing the bolts, pull the rear of the seat up, and then pull the seat to the rear to unhook it from the tank. If you don't want to have to pull the side covers off every time, you can cut holes in the side covers over the bolts to get at them directly.

Where can I get another fuel tank?

IMS makes a couple of different plastic replacement tanks for the KLR: the 5.5 gallon, and the 6.6 gallon "military tank" (part #113121, used on the USMC diesel KLR) which has the shrouds molded in. Some people refer to this as a 7-gallon tank, but the volume range is due to production variances. IMS may not list this tank on their web site, but they will make it on special order. You can specify any color they use. Black (B1) is supposedly best for sweat resistance (the fuel's, not yours); there is also green (G2), translucent green (G3), white (W1) and natural (N1). They also may have a coating that prevents fuel sweating. Here's the kicker (thanks to Walt Lesnowich): When you get a military tank, you are actually getting the commercial version of the military tank. The bonafide military tank has a different gas cap with a check valve in the vent to prevent leaks. The commercial version has a rubber baffle. The cap sizes are different, and not interchangeable between the two tanks. It appears that Dual Star is the only dealer that can provide the true military fuel tank.

What is this rubber "hockey puck" I just found on the ground?

The front of the fuel tank is supported by two rubber bushings that sit on posts on the frame. It is possible for these to fall off while you are sliding the tank in place. Attaching them with a drop of E6000 or Shoe Goo will keep them from falling off next time.

Does anyone make a cover for the KLR?

Any larger cover should work. Tour King makes a cover for the KLR, but I'm not sure if it's specifically for the KLR or just a model that fits.

What if I want to install smaller turn signals?

The minimum legal distance between turn signals is 16 inches in the front, and 9 inches in the rear. Minimum edge to edge separation from centerline of headlight and taillight is 4 inches. The federal regulation is listed in 49 CFR 571.108.

Brakes

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What kind of brake pads should I use?

One of the Galfer staff is a KLR owner, and recommends the following Galfer pads: 50/50 on/offroad: Galfer green front, part FD091G1532; FD075 sintered rear. More street: Galfer blue front, FD091G1434; rear blue FD0751434 or black FD0751052. EBC sintered pads may work a little better than stock, but can develop an occasional squeal. If you're looking for something cheaper, I've had very good luck with Parts Unlimited TufStop pads (TSRP-786, rear;). They're an organic pad that is very kind to rotors, and grab much better than sintered pads. They only last about 4-5,000 miles, but at \$23/pair, that's a pretty good deal. Dunlopad HH pads are available, on the pricey end; SDP313MX for the front and SDP310MX for the rear.

How can I get more braking power?

If you find the stock brakes aren't enough for you, there are a few options. First, try some different pads, as listed above. Second, replace the stock front brake line with a braided stainless steel unit. Galfer and Russel make lines for the KLR (Galfer front is p/n FK003D102). (You can also get a braided line for the rear, but the stock system is adequate.) This will give you noticeably better lever feel. Finally, both CycleBrakes and MAP make a larger front rotor with a relocating bracket for the caliper. This is the most expensive but most effective option. The CycleBrakes kit has a 320 mm rotor, whereas the stock diameter is 260 mm. An oversize Wave rotor is also available. EBC is also coming out with an oversize rotor that should be reasonably priced, but according to MSM, there are fitment problems with the caliper carrier. (I've also heard that these are being resolved.)

Do I have to pay \$200 for a Kawi brake rotor?

EBC and Braking make aftermarket brake rotors for \$90-120 (Although I couldn't find the EBC rotor last time I looked).

Final Drive

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How can I change the sprocket ratio?

The easiest way to change the final drive ratio is by replacing the countershaft (front) sprocket. A 14T is great for tight off-roading, and a 16T for a lot of highway riding. You can even make it through some hairy stuff with the 16T, if you're good with the clutch. For general use, though, the 15T is a good compromise. There is also a 13T available, although chain wear tends to increase as you decrease the sprocket size. 16T is the largest that will fit. If you have the engine open and can get the parts, 1st and 2nd gear from a KLR600 can be installed, giving you taller gearing there, but keeping the upper gears intact.

How do I mount the countershaft sprocket?

On '96+ bikes, the flat side of the OEM sprocket goes in, towards the engine. On earlier bikes, the side with the flat surface for the

retainer goes out. With sprockets and chains are usually mounted outside, but people have done it the other way.

Are countershaft sprockets interchangeable?

Here's the skinny:

- '88-'89 uses OEM P/N 13144-1103. Not interchangeable with other years. Retainer holes are ~42mm center to center. Post-'90 is ~37 center to center.
- '90-'95 uses OEM P/N 13144-1163. Can be used on '90-'04, splines are the same.
- '96-'04 uses OEM P/N 13144-1253. Not sure if ok for '90-'95 (diagram shows 6 holes, don't know if they are threaded for retainer). Most aftermarket ok for '90-'04.

Why is oil dripping from the countershaft sprocket cover?

This can go two ways: If you're lucky, it's just chain lube that got flung off onto the cover and is dripping out. If you're not lucky, you got an overtightened chain, and the countershaft seal is shot. This seal is under pressure, so you can lose oil quickly if it goes. It's not too hard to replace, if you want to do it yourself. You can either drive a sheet metal screw into either side of the seal and pull it out, or remove the sprocket, start the engine and put it in gear. The oil pressure will drive out the seal, so be ready! There is an O-ring behind the seal, but don't pull it off unless you have a new one. When driving on the new seal, be aware that the case does NOT have a shoulder. Don't overdrive the seal; stop when it becomes flush with the case.

What kind of chain can I use?

Any quality, O-ring or X-ring chain should be fine, for example the DID 520 VM gold. The manual states that the chain must be an endless type; however, most people run a clip-type master with no problems. The size is 520 x 106 links. Incidentally, the BMW F650 FAQ [chain page](#) is an excellent resource.

How do I install the master link?

For a riveted master, you will need a rivet tool, which runs around \$100. For a clip-on link, you should use a side plate press (around \$30) to seat the side plate. The side plate on a clip-on master link is designed to be a press-fit, and should only be used once. It should only be pressed far enough to get the clip on, and then should be backed out against the clip. An alternative to the press is to alternate pins with a small C-clamp and washers to allow the pin to come through.

How long will my chain last?

With regular maintenance, you can get as much as 20,000 miles out of a chain.

What should I use to lube my chain?

Many people use fancy aftermarket lubes; if you do, make sure it's safe for O-ring chains. WD-40 has also been used to great success, and it cleans the chain while it lubes it. Finally, the manual recommends 90W gear oil, which is cheap and also works well, although it will fling a lot of dirt on the bike.

What is the proper chain slack?

There should be 2" of play (pushing up and down) center-to-center, midway between the sprockets. The ultimate test is to compress the rear suspension as much as possible (ideally, engine output shaft, swingarm pivot and rear axle in a straight line), and see if the chain gets too tight. You can use tiedown straps to pull down the rear, or use your weight. This can be done by folding yourself over the seat from the right side, placing a wrench on the rear axle nut, and then pulling up on the wrench with your left hand (like you're trying to tighten the nut). This should give you good compression. Check the chain for slack with your right hand.

Is there a better chain guide available?

Fredette part no 01-013 (88-93 KX's 91 93 KDX 250's 89-93 RM's & RMX's) can be fitted, although you will get a stronger mount if you can make an adapter block and put a second hole in the swingarm. It also seems to benefit from a 1/16" spacer alongside the upper nylon block. The chain guide also goes under White Bros part # 45-013.

Where did my chain adjuster/swingarm cap go?

If you don't thoroughly counter-tighten the nuts on the swingarm caps, they can work themselves off, and you will lose the cap. If the axle is tight, this is not an immediate problem, and can be temporarily fixed with fender washers. To avoid this problem, repack both nuts with a single M8 nylon insert locknut. Note that these are generally 13mm hex, which is not included in the stock tool kit; you'll have to pack something.

How do I replace the countershaft sprocket?

- On '95 and earlier models, two hex head screws hold a slotted retaining plate. Remove the screws, rotate the plate, and pull it off. Note that the retaining plate can get chewed up. Sagebrush Machine Shop makes a stronger replacement part, that gives full engagement of the splines rather than half.
- 1996 and later bikes have a nut (27 mm hex, or a 1-1/16" socket can be used) with retaining washer. First, flatten the folded parts of the washer. Then, remove the nut. An impact wrench is superior for removal. If you have to remove it manually, use a 1/2" drive with breaker bar, and step on the rear brake to lock the sprocket (i.e., while the chain is still on).

Is there a better nut for the countershaft sprocket on 1996+ bikes?

This is a fairly standard thread size for countershafts. The nut from a 1983 Suzuki GS1100E will work, and the nut from a Kawi ZRX might work as well. These nuts have a full-height hex, rather than the stepped design of the KLR nut. This may give you a better grip with the socket. Sagebrush Machine also offers a replacement nut.

What tires should I use?

The table below lists popular tires for the KLR. The street/dirt split is only approximated. By popular request, I am including a few street-only tires. I do so reluctantly, because using a KLR as a street-only bike is sacrilegious unless you supermotard it. The standard KLR sizes are 90/90-21 front and 130/80-17 rear. Use of other sizes may cause interference, so be careful. Price ratings: \$, <\$50; \$\$, \$50-100; \$\$\$, \$100+.

Street-only	Kenda	Challenger K657 F	90/100H-21	\$
		Challenger K657 R	130/90H-17	\$
Street-oriented	Avon	Distanzia AM43 F (MB)	90/90T-21	\$\$
		Distanzia AM44 R	130/80T-17	\$\$\$
	Avon	Gripster		
	Kenda	K761		
	Dunlop	D607 F	90/90-21	\$\$
		D607 R	130/80R-17	\$\$
	Metzler	Tourance F	90/90H-21	\$\$\$
		Tourance R	130/80S-17	\$\$\$
	Michelin	T66 F	90/90H-21	\$\$\$
		T66 R	130/80-R-17	\$\$\$
	Michelin	Anakee F		
		Anakee R		
	Pirelli	Scorpion MT90 F	90/90-21	\$\$
		Scorpion MT 90 R	130/80HR-17	\$\$\$
	Kings	KT-966 F		\$
		KT-966 R		\$
50/50	Kenda	K270 F	3.25x21	\$
		K270 R	5.10x17	\$
	Maxxis	C-6006 F	90/90-21	\$\$
		C-6006 R	130/80-17	\$\$
	Continental	TKC80 F	90/90-21	\$\$
		TKC80 R	130/80-17	\$\$
	Bridgestone	Trailwing 41 F	90/90S-21	\$\$
		Trailwing 42 R	120/90S-17	\$\$
	Bridgestone	Trailwing 21 F	90/90S-21	\$\$
		Trailwing 22 R	130/80S-17	\$\$
	IRC	GP110 F (MB)	3.00Sx21	\$
		GP110 R	5.10Sx17	\$\$
	Metzler	Sahara 3 F	90/90T-21	\$\$\$
		Sahara # R	130/80T-17	\$\$\$
Dirt-oriented	Metzler	MCE Karoo F	90/90R-21	\$\$
		MCE Karoo R	130/80R-17	\$\$
	Dunlop	D606 F	90/90-21	\$\$
		D606 R	130/90-17	\$\$
	Pirelli	MT21 F	90/90R-21	\$\$
		MT21 R	130/90R-17	\$\$
Non-DOT	Bridgestone			
		M22 R	5.10x17	\$\$

NOTES: MB=Mount Backwards

Tire comments:

For a comprehensive website on tire choices, see Mike Silverstein's [web page](#). I also have a [tire file](#) with comments I've collected on some tires, but it's not terribly inclusive.

Do people use the Harbor Freight tire changer?

The HF tire changer does work, although some people have trouble with the included tire iron. One option is to purchase the tire iron for a Coates 220 tire changer. Costs more than the whole HF changer, but has plastic-tipped ends, and works much better. Also note that the rim grips on the HF unit are too narrow for modern sportbike rims, if you're planning on using it for other bikes.

Do I need rim locks?

For serious offroading, rim locks can be used to keep the tire from rotating on the rim (and thus removing the valve stem). This is

generally only required at tire pressures under 20 psi, and some have ridden pressures as low as 14 psi without locks. Also, the rear is more susceptible to tire rotation than the front.

What are the correct tube sizes?

The standard tube sizes are 2.75/3.00-21 in the front, and 4.00/5.10-17 in the rear. Ultra-heavy-duty tubes are available for both the front and rear. (The Dual Star rear tube is an 18", but this works fine.) Arrowhead Motorsports carries a true 17", 4mm tube for the rear.

Do I need to carry two spare tubes?

For lightweight packing, a front tube will work in the rear tire for limited distances. You should inflate it to the maximum tire pressure, and change it once you get out of the boonies. You should be able to get 100 miles out of it. If you're going on a longer trip/adventure tour, you may want to carry both sizes to save yourself the trouble of changing the tube twice.

How do aftermarket rims compare?

Rims by makers like Sun and Excel are much stronger than the stock rims. You can order them and lace them yourself, or have a place like Buchanan [\[links\]](#) build one with your hub. According to the folks there, Excel rims are harder to bend or ding, but are more likely to crack; Sun rims are easier to bend but also easier to repair.

What size are the axle nut cotter pins?

The stock size is 4.0x35 mm, but you should be able to use 1/8 or 5/32x2" pins. If you want something reuseable, you can go with an R-pin (a.k.a. hairclip cotter).

Why can't I tighten my rear axle completely?

See "Rear hub bearing spacer" in the [Known Issues](#) section.

Can I use aftermarket wheel bearings?

The stock bearings are unsealed; when they need to be replaced, it is best to do so with fully sealed bearings. These can usually be found at local bearing shops, and are less expensive than the factory bearings. Chinese bearings are generally of lower quality. Ask them for the quality bearings, such as Fafnir, Torrington or Ingersoll-Rand. SKF bearings are less expensive, and are reportedly strong as well. For SKF bearings, the suffix -2RS indicates double rubber shields (the ones you want) and -ZZ are metal shielded. The bearings are pressed, so freezing them will make them easier to install. Also remember to remove the retaining rings before taking the old ones out.

- Rear wheel, sprocket carrier: #6004
- Rear wheel, sprocket side: #6003
- Rear wheel, disc side: #6204
- Front wheel, left side: #6202
- Front wheel, right side: #6203

What tire pressure should I run?

On the highway, it's best to run the tires at full recommended pressure (check chart) or even higher, as long as you don't exceed the rating stamped on the tire. 32/32 is a decent level. Offroad, lower pressures assist in traction, float on soft surfaces, and also act as a suspension component in smoothing out the ride. 18/20 is a good starting point, and if you go lower (see the section on rim locks) you get an even nicer ride. At lower pressures, consider using heavier tubes to avoid pinch flats, which occur when the tire hits a rock and deforms so much that the tube gets pinched between the bead and rim.

Do I need to replace the cotter pin when I remove an axle?

Cotter pins should only be used once. As an alternative, you can use a hairpin cotter (also known as an R-pin), which clips in and out, and can be reused. Dual Star also carries self-locking, Fuji-Lock™ reusable flange-nuts for both axles. If using these, however, you will need to carry two axle wrenches, as you need to wrench the nut off the entire way. With the standard nut, you only need one wrench to loosen it, and you can spin it off the rest of the way by hand.

What size are the axle nuts?

Front: Nut, 22 mm; axle head, 17 mm. *Rear:* Nut, 24 mm; axle head, 19 mm.

What size are the spoke nipples?

6mm.

Suspension

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How do I reduce brake dive?

How do I keep the front end from bottoming?

Replacing the fork springs with Progressive Suspension Larry Roessler series units (part number 11-1151) gives a much nicer front end. The springs are longer than stock, so the initial travel is more plush. They are progressively wound, so they get stiffer as they are compressed. Note that Progressive also makes a standard (non-LR, p/n -1128) replacement; while these are still an improvement over stock, the LR units are much better. Also, consider changing the fork oil. The standard oil is 20W-10, but most aftermarket oil is single weight only. 20W is too stiff for most people, but 15W and 10W are good. The next step up are Race Tech Cartridge Emulators, which give you adjustable damping (requires pulling the fork springs to change it). The emulators can be installed without separating the forks by unbolting the damper rod bolt and sliding the damper out of the tubes. Hard-anodizing the fork lowers will also improve performance.

How do I adjust the rebound damping on the rear shock?

There is a little crescent-shaped black plastic cover over the rebound adjuster at the bottom right side of the rear shock. You have to pull that off to see the adjust thumbwheel. It's p/n 11012 CAP, SHOCK ABSORBER in the Kawasaki parts diagrams. It's not really obvious when you first look for it. Note that it only should be turned in one direction.

How much air pressure should I use in the forks?

The forks will allow some amount of preload air pressure, but are designed for atmospheric, and this is best because it minimizes loads on the seals. In fact, you might get a plusher ride if you sit on the bike, and then vent the forks through the valves. If you need preload in the front, it is best to put additional spacers over the springs.

Can I get inverted forks?

Sagebrush Machine makes adapters that will allow you to fit the inverted forks from a KLX 650 onto the KLR. Also see the maintenance procedures in the [links](#) section for websites detailing fork swaps. You can also use DRZ and KLX250 or KLX300 forks (for the KLX, you want the 43mm inverts).

Are cheaper fork boots available?

Daystar model 58 boots are made of a more resilient rubber material, and cost about one fourth what the stock units do.

Are fork braces useful?

On the street, riders have found a great improvement in handling by adding a fork brace. The bike tracks much better through turns. Off road, feelings are mixed. While it does seem to keep the front end from wallowing so much in sand, and prevent it from picking up other lines, it also causes every bump to be transmitted to the handlebars, rather than be absorbed by fork flex. Fork braces are available from Happy Trails, Arrowhead, Dual Star, Kytech, Scott Summers and others.

How can I beef up the rear suspension?

If you weigh over 150 lbs, you could benefit from a rear suspension upgrade. For reference, the stock spring is 10" long and 300 lbs/inch. Replacement manufacturers are:

- Progressive suspension makes a replacement spring, which can make a big difference. The 500/560 spring is p/n 1159-20GT, and may have to be special ordered. It is technically a replacement for their 420 shock, but works with the KLR shock. It doesn't match the spring perches exactly, but that doesn't seem to hurt anything. Note that the stock shock doesn't really have enough rebound damping for a heavier spring, but people get away with it.
- Eshocks sells springs, and makes a 9" spring that will fit the KLR shock. If you're lighter, you might like this spring as you can get a better preload adjustment.
- Progressive also makes the Larry Roessler 420 series shock. Note that this shock can not be revalved, and can only be rebuilt by Progressive.
- Works Performance offers a variety of services. All of their shocks are made to order, and tuned to match the bike and the rider's weight, riding style and skill level. If it doesn't feel right, they will retune it for free if you return it within 30 days. At the low end, they do a "heart transplant," wherein they take your shock and put Works Performance guts in. They also make full shocks, with the Ultracross at the top end, offering an external reservoir, and adjustable preload and rebound damping.
- Ohlins makes a quality shock, but at last check they were no longer imported to the US. You must make arrangements to have one brought into the US as of this writing. They will pick a spring rate to match your weight, but most people have the shim stack redone after they receive the shock.
- Gary at GPS Suspension [\[links\]](#) can rebuild/revalve the stock shock, and can build a works shock for you.
- WP (owned by KTM) also makes a shock, which has been well-received.

To remove the shock, do I really need to remove the battery, subframe, etc.?

No. Jack up the bike so the rear wheel is off the ground, and slip a board under the tire to support it. Disconnect the links from the bottom of the shock, and remove the bolt at the top (the nut is welded on the other side). The shock can be dropped out through the underside of the bike.

What are the stats on the stock spring?

The stock spring is about 56mm/2.2" ID, 254mm/10" long, and the spring rate has been measured at 5.3 kg/300 lb. NOTE: Although the stock spring is 10" long, the shock appears to be built for a 9" spring. That is, installing the stock 10" spring puts an inch of preload on it, which is quite a bit. The consensus is that you are better off with a stiffer, shorter spring. A rate of 450 lbs/inch seems to be ballpark for riders of 180-200 lbs, and 500 or 550 for heavier riders. However, you might want to consult a suspension specialist (or the list) for suggestions on your specific weight and riding style. The proper diameter is 2.25".

Where can I get a shortened shock to lower the rear?

The Hagons will custom-make seat lowering monoshocks for around \$400. Their US importer is Dave Quinn Motorcycles of Bethany, CT; 203.393.2651. See the [links](#) section for their link. Also, Progressive makes an off-the-shelf shock that will lower seat height about 1.5".

How can I keep dirt off of the rear shock?

Moose Utility Division makes "shock sock" type of cover for ATV shocks; part number MUD-S38 fits the KLR. There is also a product called Shockwears available from Arrowhead Motor Sports.

How much preload should I set on the rear?

The rear suspension should compress about 3" from the combined weight of you and the bike. First, tilt the bike onto the side stand to top out the rear suspension, and have someone measure the distance from the rear axle to some point directly above it. Then, get on the bike, balance it upright, and only put one foot lightly on the floor to keep it balanced. Have your friend measure the distance again, and the difference between the two measurements is the sag. Adjust the preload as required to get 3" of sag. Note: When riding on your typical terrain, if you don't bottom the suspension out once and a while, you probably have it set too stiff.

Does the rear shock need any maintenance?

The preload adjuster gears are small and fairly fragile. If you're frequently adjusting your preload, you should clean and lubricate the gears. Insert the spray tube from a can of WD-40 into the small holes around the top of the shock to flush and lube the gear mechanism.

If I do my own maintenance, will I violate the warranty?

Thanks to the Magnuson-Moss Act, you will not violate your warranty if you do your own maintenance. However, you should maintain solid documentation. See the [links](#) section for info on the act.

What tools should I take for roadside repairs?

See the [tools file](#).

What kind of motorcycle stand will work with the KLR?

The Larin lift available from Costco and Sam's Club works fine with the KLR.

Is a service manual available for the KLR?

There is a factory service manual available from dealers. You need the "base manual," for the KLR600, and the KLR650 supplement for your bike's year. Clymer now has a manual as well, and it's reported to be very good. (Item ID: M474; ISBN: 0-89287-852-5.)

Do I need to keep this tube in the oil filter?

The metal tube in the center of the oil filter is a high-pressure bypass for cold oil. If you remove it, your oil will not get filtered. Occasionally, mechanics accidentally discard this tube with the filter. Make sure you have one. If you're changing your own oil, the tube only fits in the engine case one way.

What if I break/strip out my footpeg bolts?

Some of the more aggressive riders have managed to break or pull out their footpeg bolts. The simplest solution seems to be to convert the footpegs to M10 bolts; drill out the footpeg bracket, and drill and tap the mount. (The tap drill for M10x1.5 is 8.4mm or Q.)

Do I need to have the valves checked at 500 miles?

Yes, although many dealers say otherwise. Some bikes, in fact, don't need adjusting after 500 miles. But some do, so the clearances must be checked. Checking the clearances is much simpler than actually adjusting them, so you may be able to check them, and then have the dealer change the shims. At the least, insist that the dealer give you a written record of the measured clearances. After the first few valve checks (i.e., around 9,000 miles), you can probably set the valves at the maximum clearance and not check them for another 10,000 miles. This will make the engine noisy, but is acceptable ("Slappy valves are happy valves," according to RM). Dealers often adjust to the middle of the range to minimize engine noise.

How do I lubricate the swingarm linkage?

Jack up the bike so it is fully supported, and the rear wheel is just touching the ground. Remove all of the linkage bolts. Note that, to remove the main swingarm pivot, you must also remove the engine mount bolt above the pivot. You will need a big breaker bar, liquid wrench, and possibly a propane torch to loosen the bolts. The bolts may also be stuck in the pivots due to corrosion. You may have to tap them out with a hammer and drift pin. Pack the bearings with grease, and reassemble. Before reinstalling the bolts, coat them with grease to prevent corrosion.

What replacement spark plugs can I use?

Standard spark plug replacements are either the NGK DPR8EA-9 or ND (NipponDenso) X24EPR-U9. For Iridium, there is the NGK DPR8EIX-9. You can also use a Champion 809(RA6HC), which is available with a 5/8" hex so you can use commonly available spark plug sockets. The Autolite 4163 and MP4163 (premium) are also choices. Gap is 0.032-0.036" (0.8-0.9 mm), torque to 10 ft-lbs (14 N-m).

How do I adjust the valves?

Valves are shim-over-bucket type, meaning you have to use different thickness shims to obtain the desired clearance. Proper clearances are 0.10-0.20 mm intake, 0.15-0.25 mm exhaust. A video describing the valve adjustment process is available from Arrowhead Motorsports. See also the [links](#) section for on-line tutorials and shim calculation software.

What is the fastening torque for the XXXX bolt?

Here are the most popular torque values. All numbers are ft-lbs unless indicated. Note that torque values should be hit while the bolt is turning, to avoid static friction discrepancies.

Engine mount bolts, 8mm	18.0	Front axle	58
Engine mount bolts, 10mm	33	Rear axle	69
All swingarm linkage, lower shock	72	Engine sprocket, old style	87 in-lb
Rear shock, upper	43	Engine sprocket, new style	70
Triple clamp bolts	18	Rear sprocket nuts	24
Handlebar clamp	17.5	Rear subframe	18.0
Spark plug	10.0	Magneto	130

Why do I get such a low reading when I try to do a compression test?

The KLR has the Kawasaki Automatic Compression Release (KACR). At low rpms (<600), this device keeps one of the exhaust valves cracked open for easier starting. This will prevent you from reading the full compression in the cylinder.

How do I get the fork seals out?

You can remove the fork seals without disassembling the forks by removing the retaining clip, and then pressurizing the fork tube with

compressed air. Drain the oil first. It may take a bit of pressure (especially with OEM-type seals), but it should work.

How do I get the forks apart?

The socket head screw in the bottom of the forks must be removed to get the forks apart. If you have an impact wrench, that will usually take it out. If you are using a hex key, the inner assembly will usually rotate and prevent you from getting the screw out. There is a special tool to hold the inner assembly, but you can make your own: Cut a piece of 5/8" threaded rod 17.5" long. Affix nuts flush on both ends, either by welding or by putting two nuts on and jamming them together. Insert this into the fork tube, and it will engage the inner assembly. Use a wrench to hold the upper end. Or, instead of putting a nut on the upper end, weld a T-handle on.

Which tool to I use to remove the magneto?

The magneto puller listed by Motion Pro is **NOT** the correct one for the KLR (although they are beginning to rectify this). The proper unit is M22x1.5. K&N also makes an M22x1.5 magneto puller (p/n 82-0170), but does not list it for the KLR. When using the magneto puller, put anti-seize compound on the threads and nose, and tap it with a mallet as you tighten it.

Off-Road Gear

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Where can I get better footpegs?

The stock KLR pegs are good for the road, but get very slippery offroad when wet or muddy. There are a few options for replacements:

- KLR250 pegs, a cheap option if you can find them from a salvage yard
- DR650 steel pegs (1995 or equiv), which fit right on the KLR brackets. You need 1RH front footrest, 43550-44B10-019; 1 LH front footrest, 43560-44B10-019; and 2 springs, 09448-15008. The Kawi pins will work fine, although they are a little smaller in diameter than the DR pins. If you want to use the DR pins (p/n 09200-10008, 2 req'd), you will have to drill out the KLR peg brackets.
- IMS Super Stock and Pro Series pegs, probably the priciest but most aggressive.

Ok, so where do I get better *passenger* footpegs?

Passenger pegs from a DR350 will fit.

Where do I get a better skid plate?

Utah Sport Motorcycle makes the most popular skidplate for the KLR. In addition to selling direct, their skidplates are sold by Moose, MSR and Happy Trails. (White Brothers has theirs made elsewhere.) The problem is that USM now trims their plates for use with centerstands; this leaves the rear of the engine case unprotected. Happy Trails can weld an extension back on, as well as add a second plate to the bottom for real abuse.

Can I protect the oil drain plug?

The drain plug sticks out past many skid plates. Dual Star makes a low-profile version, and you can buy a Moose magnetic plug and trim off some of the hex.

How can I protect the radiator?

If you drop the bike on the left side, the only thing supporting the tank shroud is the radiator. This can damage the radiator, as well as the cooling fan. Guards are available that mount under the tank shroud and protect the radiator. Two different units are made by Happy Trails and Dual Star, respectively.

Can I replace the stock handguards with something better?

Aluminum handguards are a great improvement. Maier Woods Pro Deluxe (p/n 59525; if you have "fat" bars, you will need p/n 595340 as well) will fit without cutting down the ends of the clutch/brake levers. The plastic wind deflectors must be ordered separately (black: p/n 595340; other colors available). Another option is the Acerbis Rally Pro, although they are a bit lighter and may need to be bent back after a crash. (Avoid the Rally guards with integral turn signals; they don't have a metal reinforcement, and can bend enough to break levers.) Other options are Moose, Enduro Engineering and Tusk guards. Tusks are very inexpensive, and available from Rocky Mountain ATV [\[links\]](#).

Are there better tools I can carry?

The stock tool kit is OK, but you might be better off putting your own together. Dual Star makes nice, laser-cut wrenches that will work the axles and other bolts. Also, the single 17x24 mm or 22x24mm Fredette wrench (by Moose) will work both axles, if you have non-locking nuts on them. Scotts and Dual Star also carry general tool kits with small ratchets and sockets, screwdriver bits, etc.

Where do I get one of those front disc protectors?

Acerbis used to make front disc and fork lower protectors for the KLR650, but unfortunately, they've been discontinued. You can get protectors for the KLR600 and the DR350 (Acerbis part number 51-98) to fit with some patient trimming.

How can I protect the rear brake disc?

Big Cee Engineering makes a "sharkfin" for the KLR650. Other companies make universal-fit models.

Highway Gear

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Replacement saddles

There are several aftermarket saddles available to comfort your butt on a long ride. The material is often firmer, and the geometry/ergonomics are different. Some seats are wider, making them more comfortable for long days on the road. Note that this may reduce your mobility off-road.

- Corbin: There are three options for shape. Normally, the seat is dipped and dished. If this doesn't leave enough padding, the dip

can be removed by being built up, and the dish can be made flat. (The flat seat now appears to be a standard option.) You can also have the rear sides scalloped to make room for the grab handles. In terms of material, the basketweave is perforated, and will let water through. Best to use the vinyl, and seal the seams with seam sealer or Nik Wax. The contact was Raul Randariz. Anecdotal warning: Corbin will not accept returns. If the seat doesn't fit, or the stitching isn't up to snuff, you may be stuck with it. This has not been confirmed. Note that since the saddles are custom, they don't generally accept returns. See their website for information.

Also: It's a good idea to seal the seams. One good product is McNett's Seam Grip, but you must apply it carefully to avoid a mess.

- Russel Day Long
- Sargent
- Mayer saddles: Continuing on the work of their father, both Bill Mayer Saddles and Rick Mayer Cycle make fully customized saddles to the rider's specifications, with the same materials and workmanship.

How do I reduce buffeting?

People find that the stock windshield is just the right height to dump turbulent airflow on their heads at highway speeds. The quickest fix is to remove the stock windshield altogether, and see how that feels. Taller windshields are also available; a factory unit from Kawasaki, and aftermarket units from Clearview and Rifle. You may have to experiment with windshields depending on your height, so it is best if you can try a friend's before you buy one yourself.

How do I keep from getting blown around on the highway?

People have had good results with removing the stock front fender and mounting a UFO aftermarket fender right over the wheel (as on street bikes). The smaller fender, blending in with the front wheel, reduces the wind's ability to tweak the front end. Also, check to make sure that your steering bearings and fork tubes are properly set. If you have sloppy forks, a fork brace may help.

What kind of saddlebags are available for the KLR?

A wide variety of luggage is available from a number of sources. Soft bags conform to the load, and keep weight close to the bike, assisting stability. Soft bags generally require frames to support them off of the bodywork, especially over the exhaust. Hard bags are lockable. Look at saddlebags and guards from Kawasaki, Happy Trails, Dual Star, and others.

Why did my right saddlebag catch on fire?

Heavy items should be placed in the left saddlebag, especially if using lighter side racks. The right saddlebag sits over the exhaust pipe, and too much weight can push the side cover into the exhaust, making for a messy situation.

What tailbags are available for the KLR?

The Kawasaki factory tailbag and the Rev-Pack are both highly regarded. Wolfman also makes the Alpha Pack, which also features strong construction.

Has anyone tried the J. C. Whitney travel trunk?

Yes, and it reportedly works very well.

What kind of tank bags are available for the KLR?

The Kawi factory tankbag is custom-fit for the fuel tank, and does not cover the gas cap. Unfortunately, the map sits somewhat low, and the bag slouches into the sensitive zone if not packed full. Also, when people tug on the map window to look at the map, the vinyl can tear at the stitches. This can be fixed with Shoe Goo or E6000. Wolfman also makes a tank bag called the Explorer, with a large capacity and a sloping bottom to help it match the KLR's tank. This bag must be moved to access the gas cap, but apparently it is easy with practice, and the bag is quite popular.

What tank panniers are available for the KLR?

Aerostitch makes two sizes of tank panniers. Your legroom will determine which is best. To mount them, the cross-straps must be crisscrossed over the main frame spine (in front of the tank). Wolfman and Dual Star also make tank panniers.

Can the tail rack be improved?

Aluminum plates that mount over the tail rack and increase its surface area are available. These include the Top of the Line Rack, and a rack plate from Dual Star.

Can I get a center stand?

Center stands are made by Mo-Tec, Dual Star and Five Stars. You can also order them from Arrowhead.

Links

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Further Information

- The [MADS KLR650](#) mailing list is an "anything goes" KLR list at Yahoo! Groups.
- The [DSN KLR650](#) mailing list at Yahoo! Groups. If the FAQ doesn't have it, check the archives or ask the list. It is all-knowing.
- KLR guru [Eldon Carl](#) finally has a website
- Mike Silverstein's [KLR tire page](#).
- Importing bikes from Canada [\[Conall\]](#)
- [Diesel KLR](#) information from the manufacturer.
- [Jane's](#) take on the diesel KLR
- The [KLR list archives](#) allow you to check old posts to the list for tech info.
- The [KLR Adventure](#) list at Yahoo! Groups is focused on long-distance adventure touring with the KLR
- [Dual Sport News](#), the magazine sponsoring the list. This has articles on adventure touring and bikes, with occasional highlights on the KLR. Their website also has technical and product information. The print version has reviews, tech info, and trip reports.

- Information on the [Laser Pro Duro exhaust](#) from Arrowhead
- Tammy's dualsportrider.org
- Glenn's [KLR650 forum](#)
- The [Adventure Touring](#) mailing list has information on long-distance touring.
- If you would like more info on the KLX, try the [KLX 650 Group](#) at Yahoo!
- The [DSN DR](#) group has information on the Suzuki DR
- Info on the [XR650L](#) and [XR650R](#)
- The full parts fiche for the KLR can be found at Buykawasaki.com , so you can look up the numbers for parts you need, and take them straight to your dealer.
- Towing services: AAA RV, AMA MoTow, [MTS Towing](#).
- Sidecar info: Doug Bingham, [Side Strider](#) , Van Nuys, CA (818) 780-5542; Mike Braverman, [Dual Sport Sidecars](#) , Sylmar, CA, (818) 364-5867. There is also information [here](#) and [here](#) .
- Spark arrestor info: [\[1\]](#)[\[2\]](#)

Maintenance/Mod Procedures

- [Mark St. Hilaire's](#) webpage has a number of illustrated procedures, including valve adjustment.
- General mechanical and electrical engineering info: [\[Big Cee Engineering\]](#)
- [CVK40 carb](#) pictures and description, very thorough
- Building a tool tube [\[Mark\]](#)
- Converting the turn signals to 1157 dual-filament bulbs: [\[Krokko\]](#)
- Short choke cable installation photo: [\[Zach\]](#)
- Laser Pro Duro writeup [\[John Lyon\]](#)
- Changing a flat tire: [\[Cycoactive\]](#)[\[2\]](#)
- There is a big writeup of engine mods with dyno runs at [Patman racing](#).
- Comparison of air filters: [\[krokko\]](#)
- Making LED turn signals work: [\[Custom Dynamics\]](#)
- Installing inverted forks: [\[Zach\]](#)
- Fork seal replacement: [\[1\]](#)
- Stock shock rebuild: [\[Calgary DS\]](#)
- [Happy Trails PD Nerf bars](#) installation procedure, by James Miller (millerized)
- Carburetor tuning tips [\[Mikuni\]](#)[\[Devon\]](#)
- Interesting graphs of [tire properties](#)
- Troubleshooting electrical systems [\[Electrex\]](#)
- [Handlebar comparison](#)
- Rebuilding the stock shock [\[Devon\]](#)
- How to tune your suspension [\[strappe\]](#)
- Installing Race Tech cartridge emulators: [\[Devon\]](#) ;
- Installing DR-Z forks: [\[Devon\]](#);
- [Finishline West](#) has a number of illustrated procedures and accessory reviews
- [Jay](#) has a video version of the valve adjustment procedure. Proceeds go to a good cause.
- UFO Superbike low front fender installation [\[Lujjo\]](#)
- [Fork replacement information](#)
- [Airbox Mod](#)
- Doohickey/balancer adjuster replacement: [\[Devon\]](#)
- How to [report a balancer failure](#) (courtesy "Professor" Jim Hyman)
- Methods to remove smog equipment are [\[1\]](#) , [\[2\]](#) and [\[3\]](#)
- Electronic circuits to play with: [\[1\]](#), [\[2\]](#)
- [Magnuson-Moss Act](#) (and [here](#))

Owner's Pages

These pages have information on mods, maintenance procedures, adventuring, etc.

[Do It Yourself](#) [Mark St. Hillaire](#) [Tammy](#) [Big Dave](#)
[Tom Grennon](#) [The Larkins](#) [Conall](#) [Ericjazz Memorial](#) [Ericjazz](#)

DualSport Groups/Tours

Kansas Backroads Touring	AR-LA-TX ArkLaTex	Ontario ODSC	PA ReelRider	Puget Sound, WA
New York NY DS				South Africa

KLR Accessory Manufacturers

Most of the parts mentioned in the FAQ are made by major manufacturers, and are available through your dealer, the internet, or mail-order. However, there are some custom parts that are sold only by the manufacturers. These are listed below.

- [Big Cee Engineering](#) Shark fins, headlight guards, enduro jug racks, subframe upgrade, otterbox brackets, more...

- [Totally Wired Cycles](#) carries a variety of electrical doo-dads for the KLR
- [Happy Trails](#) Luggage racks, highway pegs, more...
- [MAC-D](#) luggage racks
- [Formtech Services](#) (formerly Dirty) Polyurethane chain guides
- [buykawasaki.com](#) for factory luggage and accessories
- [Dual Star](#) Guards, luggage, body plastic, subframe upgrade, more...
- KLR rider [Don Beck](#) (Olympia, WA) offers lowering links at good prices
- [Mark Schuette](#) makes carriers for mountain bikes and other unwieldy items
- Mega Cams, 90 Mitchel Blvd, San Rafael, CA. 94903, : 415-472-3195, used to make cams for the KLR

Repair

Engine Dynamics Head repairs	Motorcycle Radiator Radiator repair	GPS Suspension (Gary) Reworks stock shocks	Pro-Tec Performance Shock rebuilds
Precision Concepts Shock rebuilds			

Manufacturers, Suspension

Progressive Suspension Shocks, springs	WP Suspension Shocks	Eshocks Shocks/springs	Kytech Fork braces
Works Performance Suspension	Summers Racing Fork Braces	Suspension Concepts Suspension	

Manufacturers, Tires

Kings Tires	Tire Balls Tire mousse balls		
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Manufacturers, Body

Acerbis Plastics	Maier Plastics	UFO Plastics	Color Rite Paint
Cyclecolor Motorcycle paints	Replico Fairings Tengai fairings	Clearview Windshields	Rifle Windshields
Bill Mayer Saddles Saddles	Rick Mayer Cycle Custom saddles	Corbin Saddles	

Manufacturers, Final Drive, Brakes

Buchanan Spokes and wheels	DID Chain	Diamond Chain Chain	Cycle Brakes Brakes
Galfer USA Brake Pads	EBC Brakes Brake Components	Braking Brake Components	Russell Performance Braided Brake Lines

Manufacturers, General

Baja Designs Dual-sport eqpt	Four Strokes Only Parts	Kisan Modulators Headlight Modulators	Bel Ray Chemicals
Mikuni Carburetors		Formtech Urethane guides	Trailtech Panoram computers
IMS Products Accessories	Moose Offroad Apparel, accessories	ICAT Ignition boosters	WestCo Batteries
Motion Pro Tools, Controls	Scott's Performance		Centech Wire Fuse Blocks
SKF Bearings Bearings	Supertrapp Mufflers	Emgo Filters	
Webcamshafts Cams	Nashbar Bicycle Computers		Eastwood Company Restoration mat'ls
Battery Mart Batteries	Homebody Design LED motorcycle lamps	Custom Dynamics Batt gage, LED lamps	Topografix Mapping software
Reflective Decals Die-cut reflective decals	Sopgear Ti tire iron/axle wrench	RAM Mounts GPS/electronic mounts	

Manufacturers, Luggage/Apparel

Eclipse Luggage	Joe Rocket Apparel	Chase Harper Luggage	Teknic Luggage, apparel
Mags Bags Luggage	Rev Pack Luggage	Wolfman, USA Luggage	RKA Luggage
Tourmaster Luggage, apparel	Nelson Rigg Luggage	First Gear Clothing	Hein Gericke Clothing
	Helen 2Wheels Luggage		

OEM Dealers

- [Arrowhead Motorsports](#) carries OEM parts as well as aftermarket items
- [Ron Ayers Motorsports](#) carries OEM parts, and has online price lookup
- Look up part numbers at [buykawasaki.com](#) or [bikebandit.com](#)

Other suppliers

Reel Rider Film productions	Mark V Motorsports General parts	Southwest Moto Tires Discount tire prices	Superbright LEDs LEDs
TPI Motorcycle Parts General supplies			
Tourmaster Luggage, apparel	Nelson Rigg Luggage	First Gear Clothing	Hein Gericke Clothing
Family Motorcycling Kid-size gear	Helen 2Wheels Luggage	Child Riding Belt Security strap	Trail Tech Compact HID lights

- [BLM-Accessories](#) makes accessory mounting shelves
- [Powerlet Products](#) carries a number of auxiliary power plugs
- [Cyborg Cycles](#) has good chain tools
- [Skullcamz](#) has helmet cameras
- [carbparts.com](#) for, you guessed it, carbuerator parts
- [SKF Bearings](#)
- [AZM USA](#) accessories
- [Motorcycle Keys](#) (the Kawasaki 4L & 4R are the ones for the KLR)
- [Pro-Flo](#) steering stem bearings
- [Dave Quinn Motorcycles](#) for Hagon shortened shocks.
- [Scootworks](#) makes lowering links for the KLR
- [Johnson Bearings](#) (be sure to tell them you want the good stuff!)
- [Hartco](#) lambskin seat covers
- [Cyclebrakes.com](#) brake parts
- [Sunmate Cushions](#) carries seat foam and covers
- [Sporttour](#), touring gear
- [BLM Accessories](#) has skidplates
- [Arizona Tools](#) carries, well, tools.
- [Cycle Stuff USA](#) is a general retailer

General Accessory Dealers

- [Cycoactive](#) Lots of GPS stuff, tools, mapcases and other small carry bags.
- [Rider Warehouse](#) Makers of Aerostitch clothing; also carry a wide variety of adventure touring gear.
- [Dennis Kirk](#)
- [Chaparral Racing](#)
- [Rocky Mountain ATV](#)
- [Motorcycle Accessory Warehouse/Hi-Per Sports](#)
- [Competition Accessories](#) mostly sportbike stuff, but they do have clothing and a 10% discount for AMA members.
- [Whitehorse Press](#) Lots of motorcycling books, and a selection of tools and gear.
- [Motorcycle Closeouts](#) has low prices on gear.
- [Throttlehead](#) for low prices.
- [New Enough Leathers](#) has new and used apparel at good prices.



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Michellin Anakee: They track and corner well, the original Dunlops only lasted 5000km (rear only) and I have already put on 5000km on the Anakees and they still look new so they should last a few years. Cost \$450. Be careful when and where you buy tires, I bought mine from one shop and needed to get them installed somewhere else because the shop was busy and when I called other shops they were all rude when they find out I bought the tires elsewhere. Also ask how much it will cost to install the tires, some shops quoted \$25-45 and I ended up paying \$120 and I got them installed at the same shop I bought the tires from.



Arai XD Helmet: This is an excellent helmet, I had an Icon Mainframe before and it was comfortable and looked good but it doesn't compare with the Arai build quality. The vents on the top of my Icon helmet came loose shortly after buying the helmet and it was sent back to Icon and they reglued it but the vents are coming loose again. I bought the helmet from Parker Bros. in Ontario for \$673 and was \$200 less than anywhere else. I bought it over the phone and as an added bonus when you shop online or over the phone out of Saskatchewan you don't pay TAXES so I saved a bit because I didn't pay PST on the helmet.



There is one problem with the helmet, the visor vibrates at highway speeds and gets transmitted to your forehead. I solved this problem by gluing plastic strips under the visor and it has made a huge difference. There is still some vibration but it is a big difference compared to before. If you buy an Arai XD then I suggest you do something similar to make the visor more rigid because its nice to have the visor block out the sun.



Joe Rocket 4.0: This is a great cold weather jacket which comes with a zip in liner. I bought it in the spring on sale for \$225.



Joe Rocket: This is the meteor jacket which includes a zip in liner vest and vents in the arms, front and back to keep you cool during the summer. I bought it at GW Cycles in Calgary over the winter and got it on sale for \$200. The best time to buy gear is in the spring when shops try to dump all their old stock and most of the newer styles don't change so shop in the spring.



Alpinestar Tech 6: These boots are comfortable, provide a lot of protection but are a bitch to break in. Before they break in it is difficult to shift and use the rear brakes because the boots are bloody stiff. Cost \$225.



Touratech Mount: This is the handlebar mount for a Garmin 60c which in my opinion is one of the best GPS a rider can buy. With the metroguide software the GPS can provide address to address directions so if I want to go to IKEA in Calgary from my home the GPS will plot the route and show it on a map. It will also show attractions, restaurants etc. in the area you are so if you are in a new city and want to eat the GPS will tell you all the places to eat in your area. Cost \$473 for Garmin 60c \$150 for Touratech mount. I bought the GPS from GPS City in Calgary and they have a huge selection of units and the best price I was able to find in Canada.



Voltmeter: This voltmeter has a clock, temperature and voltage.

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Water Pump: Purchased from Dual-Star, I also replaced the motor mounts with locking bolts from Dual-Star. Cost ~\$25 CAN



Aluminum Skid Plate: Purchased from Dual-Star for about \$100, it was easy to install and provides more protection than the stock plastic skid plate.



Gel Grips: Purchased from Dual Star for \$20. This should be one of the first mods you do because it is the cheapest and the grips remove a lot of vibration that can numb the fingers and hands.



Brake Cylinder Guard: This piece of billet aluminum covers the rear brake cylinder which is very exposed on the right side of the brake so it was one of the first mods I did to the bike and is very easy to install. Cost \$15 CAN.



Braided Steel Brake Line: This helps strengthen the front brake and is from Dual-Star. It took about 20 minutes to install with help from a friend and greatly increases the stopping power of the KLR 650 which is weak with the regular brake line. Cost ~\$90-100.



LED Brake Light: The image on the left is the normal brake light and the image on the left is the LED brake light from Dual-Star. When you hit the brakes the LED has a strobe effect for a few seconds before it stays on and will definitely get the attention of the those behind you. Cost \$90 CAN



Rad Guard: This guard protects the radiator on the left side of the bike during a fall. It bolts to the frame and it is a good idea to replace the engine mounts when you install the radiator guard. Cost \$80.



Heavy Duty Shifter: This is a high quality gear shifter from Dual Star.



Mirror Mount: This is a mirror mount that moves the mirror off the control switches which would be costly to replace after a left side drop. The mirror mount is from Dual Star and is easy to install.



I painted the bike with Krylon Fusion paint then covered it with clear coat. The paint is holding up pretty good with only a few minor scratches. The Fusion paint is specially made for plastics because when plastics bend the paint cracks. A can of paint costs about \$10 and can be bought at Canadian Tire.

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Aug. 15 2005 There have been requests to change the website to help decrease load times so rather than have all the photos on one single page the website has now been broken down into pages and I have chosen to use thumbnails in order to speed up load times.

Aug 17 2005 I have made the entire website viewable in pdf format so you can view the website offline.



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Specifications

Manufacturer: Kawasaki

MSR: \$6500 Canadian

Model ID: KLR650

Model Year: 2004

Type: Dual Purpose

Emissions:

Available Colors: Aztec red

Kawasaki KLR650 Engine:

Engine Type: Four-stroke single cylinder with DOHC, four valves

Bore and Stroke: 100.0 x 83

Compression Ratio: 9.5:1

Valve Train:

Carburetion: Keihin CVK40

Ignition: Electronic CDI

Kawasaki KLR650 Drive Train:

Transmission: Five-speed

Final Drive:

Kawasaki KLR650 Suspension:

Front Suspension: 38mm leading axle, air-adjustable fork

Rear Suspension: UNI-TRAK® single shock system

Kawasaki KLR650 Brakes:

Front Brakes: Hydraulic Disc

Rear Brake: Disc

Front Tire: 9.1

Rear Tire: 9.1

Kawasaki KLR650 Dimensions:

Rake: 0 degrees

Trail:

Wheelbase: 58.9 inches

Seat Height: 35 inches

Dry Weight: 337 pounds

Fuel Capacity: 6.1 gallons

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