

KLR650
Homepage
Contact Me
You must remove the "REMOVE-THIS" in my email address for it to work.
Links
Miscellaneous Info
D.I.Y. Tips
Grease 101
Technical Articles
A1 Brochure
Conversions
KLR650 FAQ
Painting Plastic
Forms
Maintenance Log
Shim Record Chart
Pictures
Corbin Saddle
Procedures in PDF
12v Waterproof Outlet

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## TIME-SERT : FIXING STRIPPED OIL DRAIN THREADS

### Time-Sert Website

I've long said that Kawasaki "metal" is actually compressed oatmeal. I pretty much proved that theory when, with only a little more than 24,000 miles on my KLR650, the engine oil drain threads stripped out.

I am very pleased with the entire Time-Sert experience. Support was readily available when I had questions, order handling was great, the installation process was straight-forward and easily accomplished with tools on hand and the repair is a thing of lasting beauty! *Updated 6-30-2015, MANY oil changes after the Time-Sert was first installed...*

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I did a fair amount of research and decided on Time-Sert. My two main concerns with coil-style inserts are that you have to break off a nub of metal once the insert is in place. That makes no sense at all when you're doing the oil drain threads in an engine, unless you have nothing better to do than pull the cases and search for it. So, no thanks!

My other problem was that the coil-type inserts can sometimes thread themselves back out. **In fact**, TimeSert makes a Big-Sert kit, specifically designed to repair the problem caused by a failed coil insert. So again, no thanks!

I found installation to be surprisingly simple, especially since the kit comes with everything that you need to get the job done. And one of the best parts is that YOU can do the work, and don't need to remove the engine!

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I bought a metric pitch gauge and digital calipers from Snap-On. (Picture

Acerbis Disk Installation

Balancer Adjustment

Brake Pads

Cam Chain Timing

Carb Air Mixture

Carb Rain T-Mod

Decalifornication

Doohickey Upgrade

Easy Lift

Fork Oil Change

Horn Upgrade

Hydraulic Clutch

JC Whitney Trunk

Maier Woods Pro

Mirror Mount Repair

Oil Screen Cleaning

TIME-SERT

Radiator Cooling Mod

Ramp Loading

Safety Switch Bypass

Shark Fin Installation

Shim Storage Box

below) The pitch gauge is great, but I think that I would recommend a dial-type caliper over this one. The reading on this one jumps around a fair amount. If you needed an absolutely precise measurement, I'd be afraid of this particular tool. It IS good enough for basic functions such as checking bolt sizes.

The **2001** KLR650 drain bolt is an **M12 x 1.5** : I assume that's the correct size for earlier and later models, but it would be best to verify before you order.



I ordered the Time-Sert 1215C kit. It came well-packed in a divided, hard plastic case - shown below.



This is the label on the kit box.

Shim Value  
Table

SuperBrace

Swingarm Maint

Torque Values

Tube Valve  
Tools

Valve  
Adjustment

Vista-Cruise  
Lock

Water Pump  
Seals

Wheel  
Alignment



Below is a picture of the contents of the kit.



I had the tank and other stuff off to do a valve adjustment. This does NOT have to be done if all you have to do is repair your drain threads. I threw a tarp over an old tire and laid the bike over onto it.

I did NOT drain the oil. My thinking is that, although there is a trick for catching the drilling and tapping debris, the oil would help "catch" the chips. When the insert was completed, I put down a drain pan and just



the bike up over it.

I thought about putting a strong magnet close under the drain hole to also catch the shavings. In the end I didn't bother; between the grease trick, leaving the oil in to carry out the shavings and my magnetic drain bolt, I didn't see the need.



**Step 1:** Drilling. Please note that the Tap Guide is not needed or required for drilling. I was concerned that I might drill at a bad angle, but the folks at Time-Sert emailed to say that the bit does a good job of following the threads without assistance.

A Tap Guide is included in the kit to help make sure that your work is straight. I also used that guide for drilling to make sure that I STARTED straight. It worked out quite well. You just have to make sure that the bit is evenly centered in the guide as you drill.

I used my drill. You can also use a tap handle or a 7/16" 12 point socket.

The grease trick that I mentioned is shown, and worked exceptionally well. Grease the end of the drill bit and drill slowly. It works like glue; you'd be amazed at how the chips stick to it - instead of falling into the engine.



Push the guide firmly flush against the engine. Make sure that the drill is evenly centered in the guide, that there is even space all the way around. Drill very slowly to avoid having the drill hang up or grab the metal. I found that by starting the bit's rotation with barely any pressure on the drill and then easing it forward ever so slightly, it drilled through without any problems.



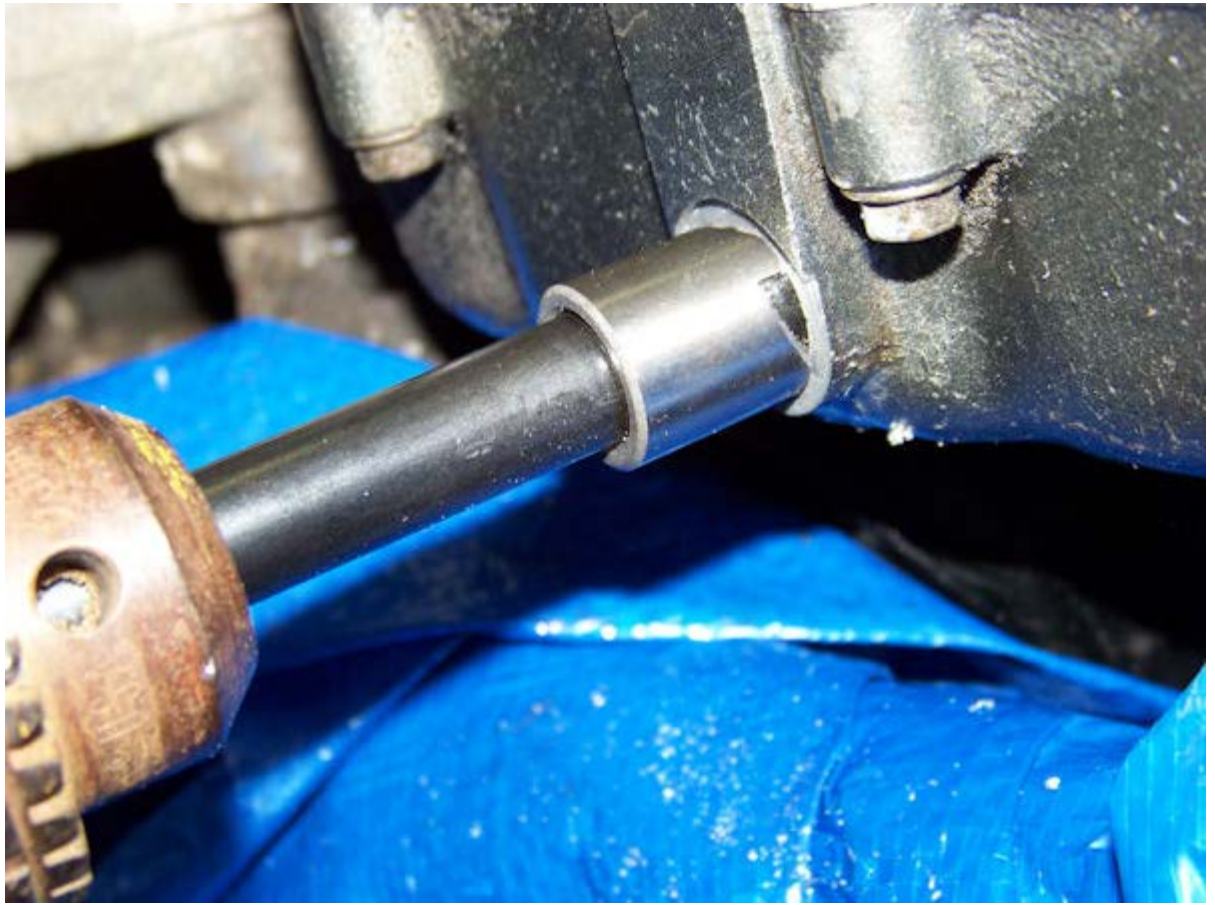
**Step 2** : Counterbore. The end of the counterbore goes into the hole a little ahead of the cutting bit, so that keeps things in alignment.

I used a drill again for this step, but you can also use a tap handle or a 7/16" 12 point socket.





The picture below is showing the counterbore in action. By design, it only goes so far; go ahead and counterbore until it is no longer cutting. You can easily feel when it begins to just spin without doing anything more.



**Step 3** : Tap. I also greased the tap, and it carried out the chips in the same way that the drill bit did.

I used a tap handle for this step, but a 3/8" 12 point socket would also work.

Make sure that the guide is firmly flush against the engine and carefully, slowly turn in the tap to create the new threads.

Thoroughly clean out the drain hole when you're done. You'll be using thread locker in the next step and it works best with clean metal.





You will want thread locker for the insert; Red is the best choice for this application. I happened to have a couple different kinds, but as long as you get a quality brand, you'll be all set.



**Step 4** : Installing the Insert. Apply the red thread locker to the outside threads of the insert. Screw in an insert a couple turns by hand, then oil the threads of the insert driver and turn clockwise to install.

I used a 9mm 12 point socket on a 1/4" ratchet for this step, but you could also use a tap handle.

Turn the insert driver until the flange of the insert snugs up against the engine. At that point, you know that you're getting close...





Continue to turn in the insert driver and you'll feel it loosen up again.  
That process expands the bottom threads and locks the insert into  
place.





I really need to read the camera manual, but you get the idea - You now have real metal instead of crap for your drain threads!

