

KLX 300 Maintenance Guides from www.klxzone.co.uk

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Guide 12 : Idler Gear Replacement

Important: Please read carefully

This guide is not intended to replace the User's Manual – rather it is a pictorial guide to carrying out maintenance on the KLX300 and does not necessarily represent the Kawasaki approved methods. You should therefore realise that you use this guide at your own risk and neither www.klxzone.co.uk or the author will accept any responsibility for damage or injury caused as a direct or indirect result of using this guide.

You use it at your own risk.

There being no Haynes or equivalent manual available for the KLX300 and the official workshop manual costing around £60 I thought it may be useful for others to use if they have not carried out such tasks on their bike before.

This may seem a bit like a "dummys guide" as I have taken pictures at almost every point. If you find it too tedious then simply skip past the easy or obvious bits. I wanted to make it as foolproof as possible and a picture is worth a thousand words.

Tony Saunders

Bike Information:

Kawasaki KLX300R 2002 Model.

Tools Required:

- 7/8" Socket
- T-Bar
- 10mm Socket
- 8mm Socket
- Appropriate Ratchet and bar extensions
- Circlip Pliers
- Rubber Mallet
- Molybdenum Disulfide Grease / Copper Grease
- Clutch Removal Tool*
- Replacement Clutch Gasket**
- Old Watering can or similar receptacle to catch old oil.
- Replacement Idler Gear***
- An old paint roller tray or similar to keep all the bits in.

* This is a special tool [Flywheel Holder – 57001-1313]. I didn't use one because I haven't got one.

** I replaced mine as advised in manual.
Part number : 11060-1325

*** I purchased one from a guy in the USA after the supplier (Stroker Speed Equipment) stopped operating. The new company is www.fourstrokeworks.com however the owner is no longer selling Idler Gears as he claims they do not need to be changed if the kickstart procedure is properly followed. I suggest searching on www.ebay.co.uk or www.ebay.com for a second-hand one. When new they were \$88.00 approx plus postage.

Objective

The Kawasaki KLX 250 and 300 models (upto and including the 2002 models) can suffer from the teeth of the kickstart idler gear shearing off and causing severe crankcase damage.

Kawasaki UK claim to have had no instances of it happening – however I personally know several people who have suffered breakage of the gear.

Until their demise, Stroker Speed Equipment of the USA sold a specially manufactured gear made from “rockwell” – a softer metal that would pinch instead of breaking – thus causing less damage to the engine casing. Stroker no longer exist unfortunately, and the later 2003 models of the KLX300R “apparently don’t suffer from the same problem” – that I will leave open for now as it is maybe too early to say and if Kawasaki claim it isn’t a problem – why would they have fixed it.

It is interesting to note that the part numbers of the Idler Gear and some associated bits have changed in the Kawasaki Online Fiches at www.buykawasaki.com - leading to speculation that the new one is better and less prone to breakage.

If you have a KLX you may not be able to get a replacement Idler Gear anymore – but try searching on the KLXZONE forum or EBAY.

If you do get one – here is a guide to help you to fit it.

I recommend doing it at the same time as an oil change as you will need to drain the engine oil to carry out the work.

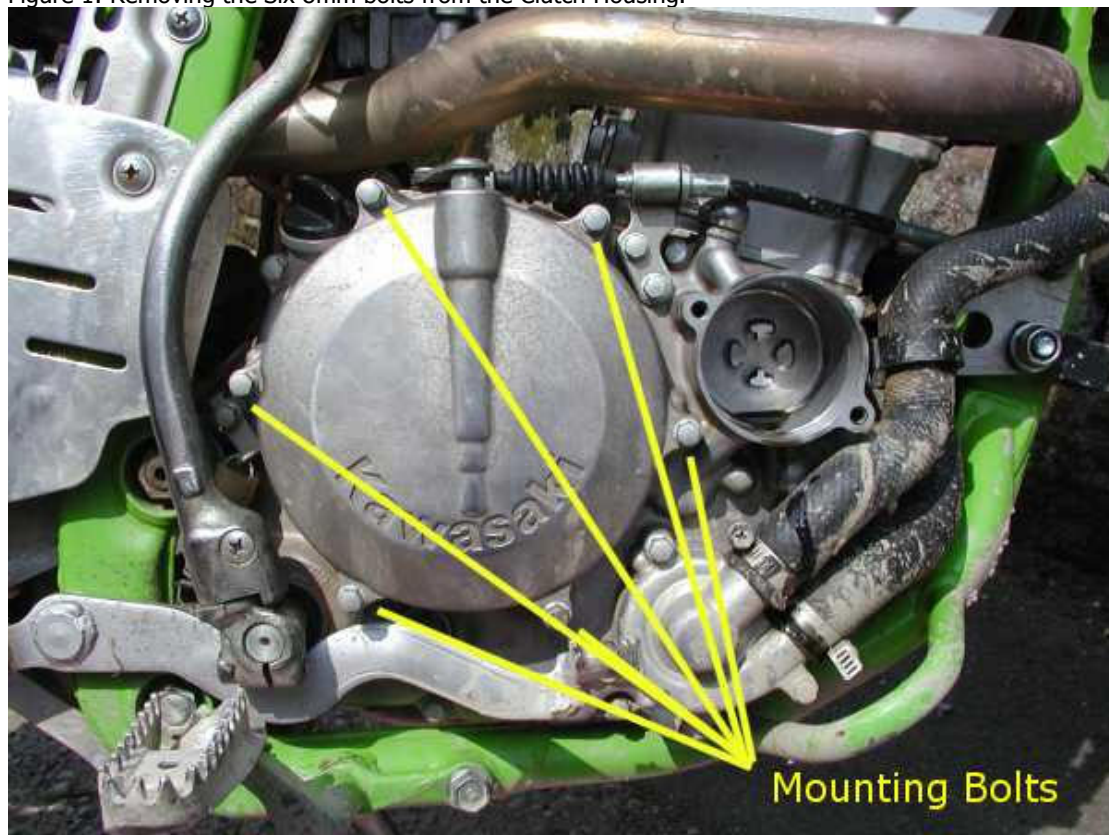
Procedure

This is best performed with the bike on its side stand I think.

First – you need to drain the engine oil using the drain plug under the engine.

Refer to Maintenance Guide 1 (Changing oil and Filter) on www.klxzone.co.uk to see how to do this. Once the oil is drained you can start the procedure to remove the Idler – as follows:

Figure 1: Removing the Six 8mm bolts from the Clutch Housing.



Use your ratchet and 8mm socket to remove the clutch cover. It simply pulls off once undone. Carefully remove the old gasket (especially if you plan to try to re-use it – not advised!)

Note the oil filter is still out following the removal of the engine oil. You now need to unclip the clutch cable – no need to undo the bolts on the cable mount – simply unclip the cable end from the actuator as shown in Figure 2. Don't pull the actuator bar from the clutch cover or you'll need to replace its gasket too!.

Figure 2: Unclipping the Clutch Cable.



Now you can see the clutch basket and clutch mechanism.

Figure 3: The Clutch.



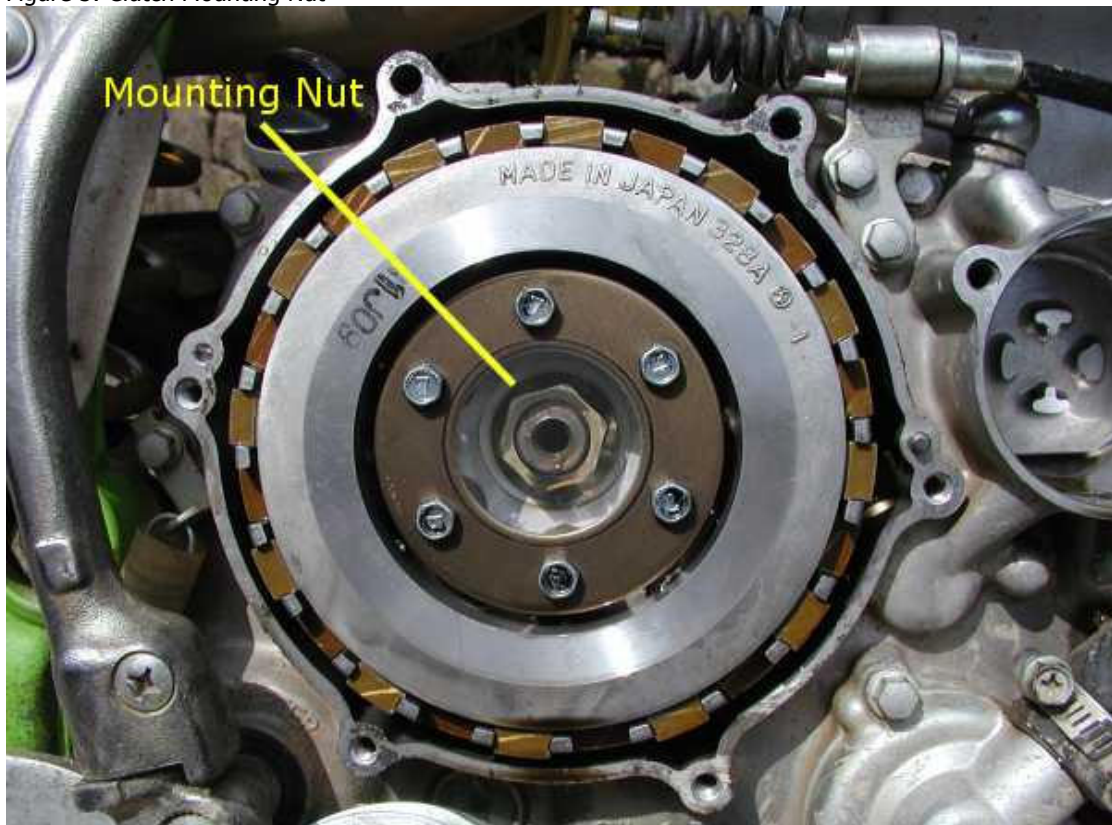
Now pull out the clutch pusher in the centre and place it in your bits tray.

Figure 4: Removing the clutch pusher from the centre of the clutch.



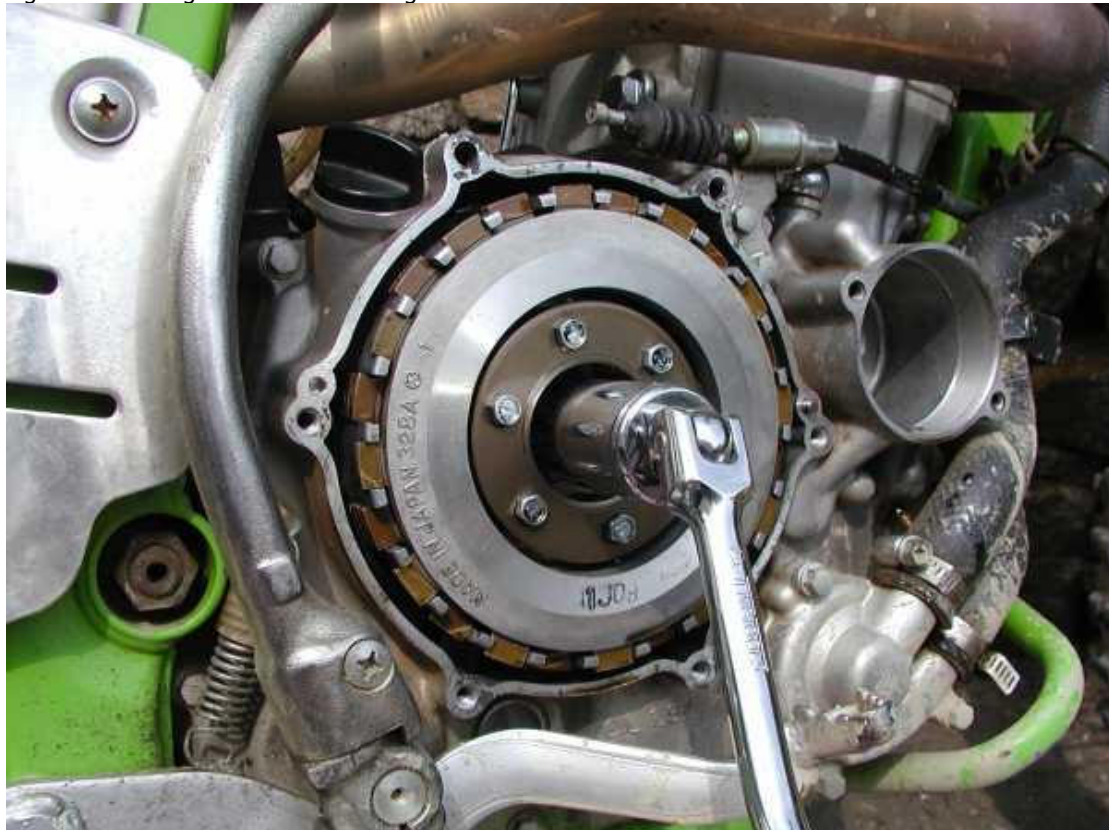
Now you should be able to see the Clutch Mounting Nut...

Figure 5: Clutch Mounting Nut



Removing the clutch mounting nut is a pain in the ar*e without a proper clutch flywheel holding tool. I used the following method. Ensure the bike's front wheel is facing (and touching) the wall, and put it into about 3rd or 4th gear. Using your T-Bar with the 7/8" socket on the nut and tap it sharply with the rubber mallet to turn it. Ideally have someone sat on the bike while you do it. With luck it will crack the nut loose enough to remove it with the socket.

Figure 6: Undoing the Clutch Mounting Bolt



If you cannot undo this nut you will not be able to continue. If you have no other option but to re-assemble the bike – ensure you read on to see about the fitting of the new gasket AFTER cleaning any bits of old gasket off the clutch housing and cover mating surfaces.

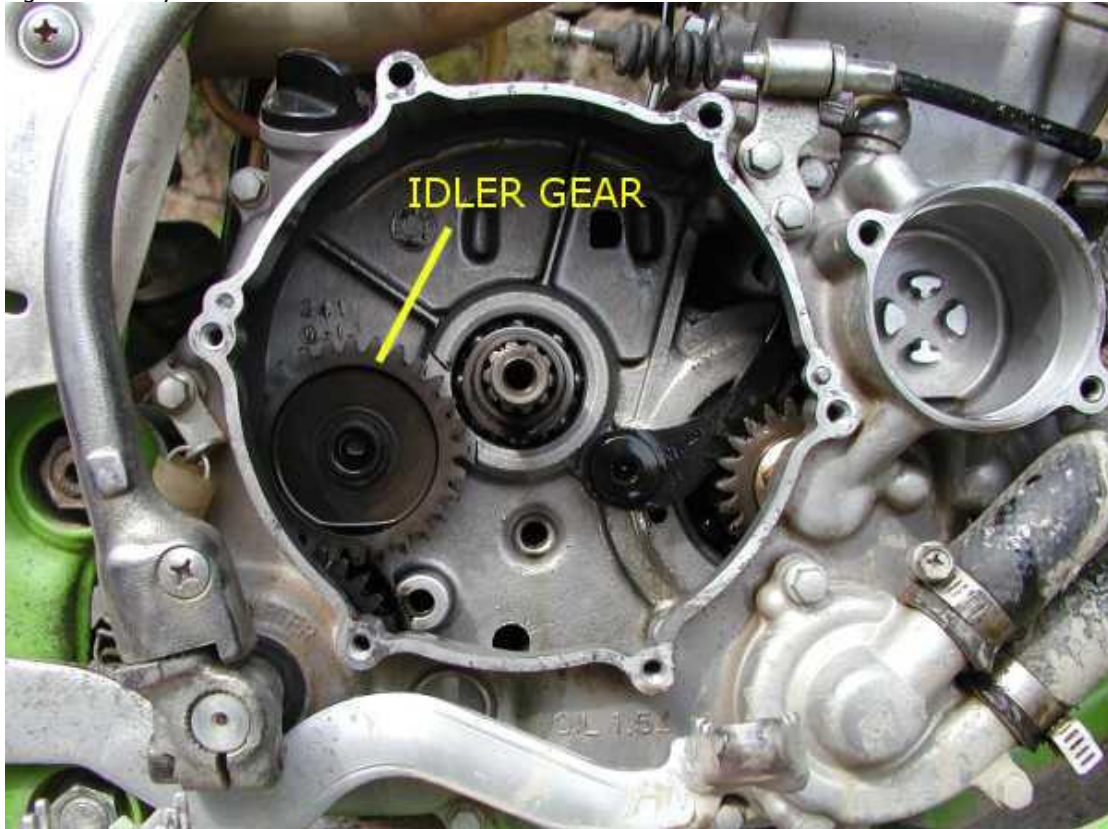
If you are successful however, you will need to jiggle the clutch basket out which can be a bit fiddly. Once out – place it somewhere safe so it can't get dirty – see figure 7.

Figure 7: The Clutch Basket containing the clutch plate mechanism after removal.



Once you have the clutch out you can see the idler gear.

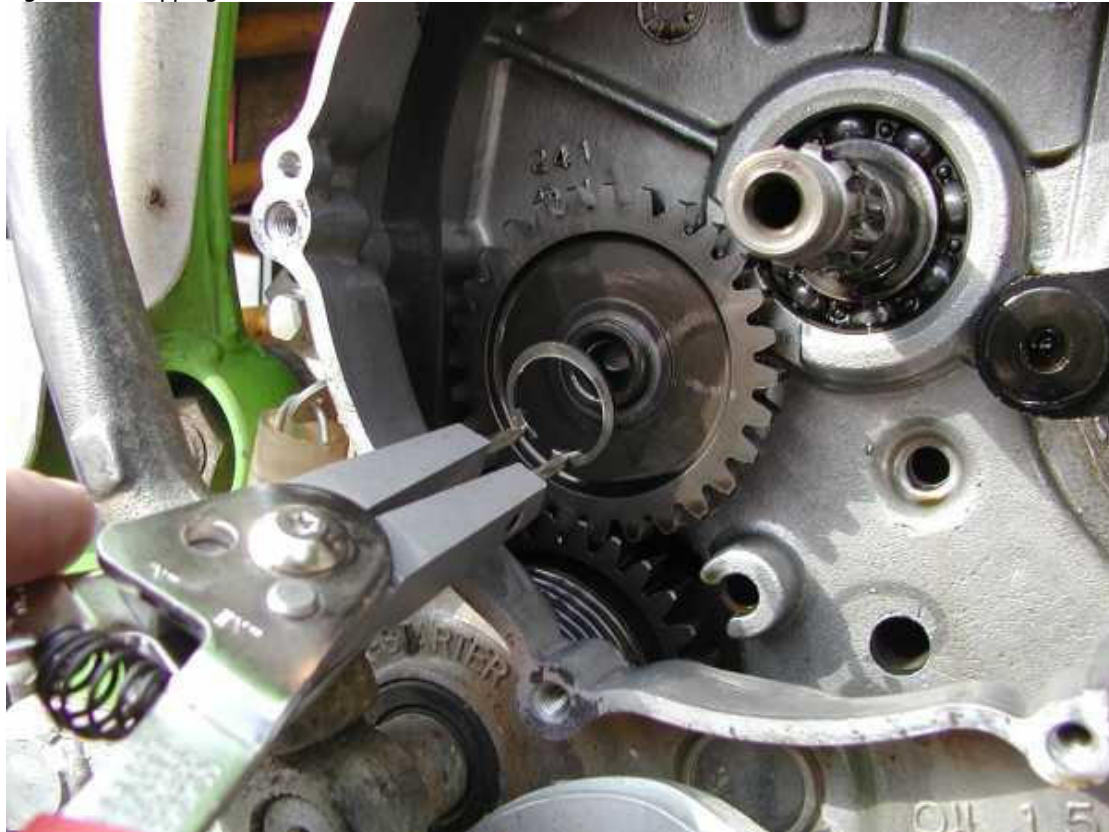
Figure 8: Now you can see the Idler Gear...



To remove the idler gear you need to remove the circlip holding it in. I used special circlip pliers which (like all special tools) make the job easy. Carefully place it in you bits tray and then ease the idler gear off the mounting spigot – careful not to lose the Outer Shim Washer!

Behind the gear is the Inner Shim Washer. Carefully place this somewhere safe too.

Figure 9: Unclipping the Clutch Cable.



The Stroker Kit comes with a replacement INNER SHIM WASHER. If however you get a gear via some other source and it doesn't have one – here's what you need to do.

KLX250

The KLX250 has an extra circlip (the INNER CIRCLIP) – behind the Inner Shim Washer.

You need to remove the Inner Circlip and not put it back with the new Stroker Idler Gear. The other washers can go back exactly as they came out

KLX300

The KLX300R has NO inner circlip. The INNER SHIM WASHER however is too large with the new Stroker Idler Gear. The kit comes with a replacement one for it.

If you don't have it – it's exactly the same size as the OUTER SHIM WASHER. You'll need to take the outer washer to a supplier and get a washer the same size.

Figure 10: Note the Outer Shim Washer as I remove the Idler Gear.



See Figure 12. This shows the sequence of Shim Washers.

TOP ROW: (Left to Right) – Inner Shim Washer – Gear – Outer Shim Washer – Outer Retaining Circlip.

BOTTOM ROW: (Left to Right) – Inner Shim Washer – Gear

Figure 11: The INNER SHIM WASHER



Figure 12: The Old and the New Gears.



Apply Molybdenum Disulfide grease to the mating surfaces of the Idler Gear with the shims.

Figure 13: The New Stroker Idler Gear in place

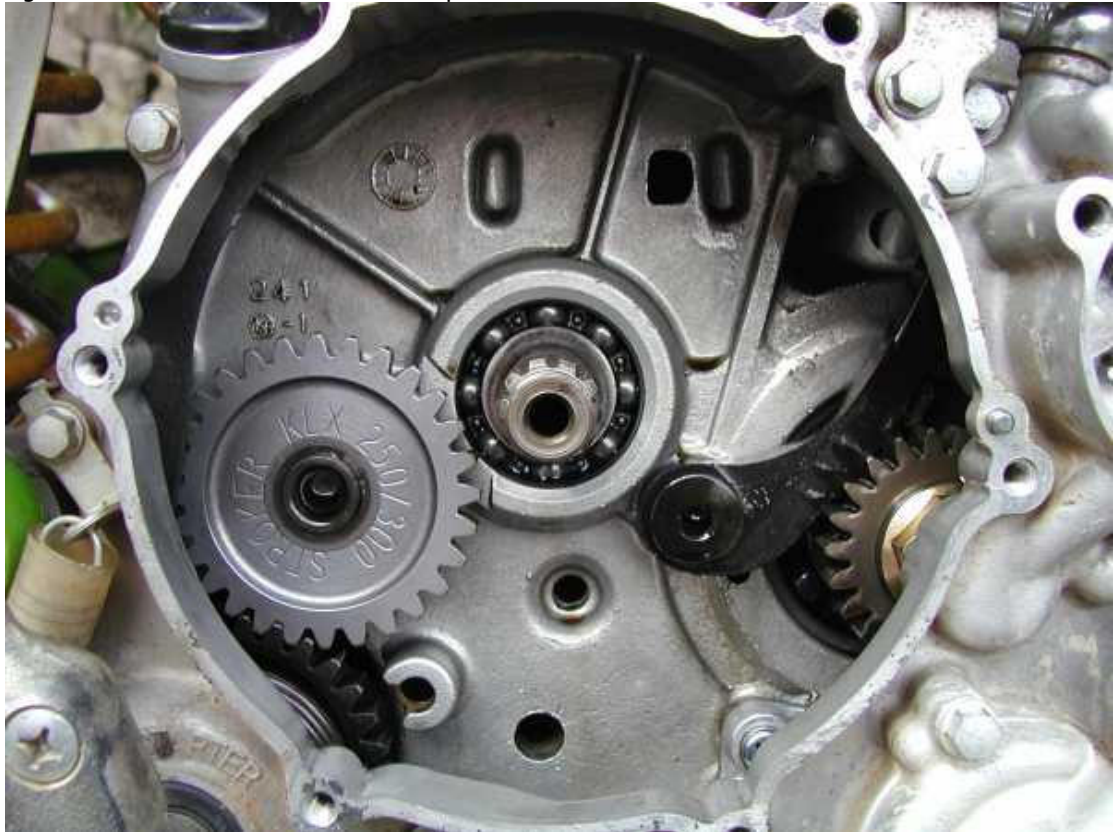
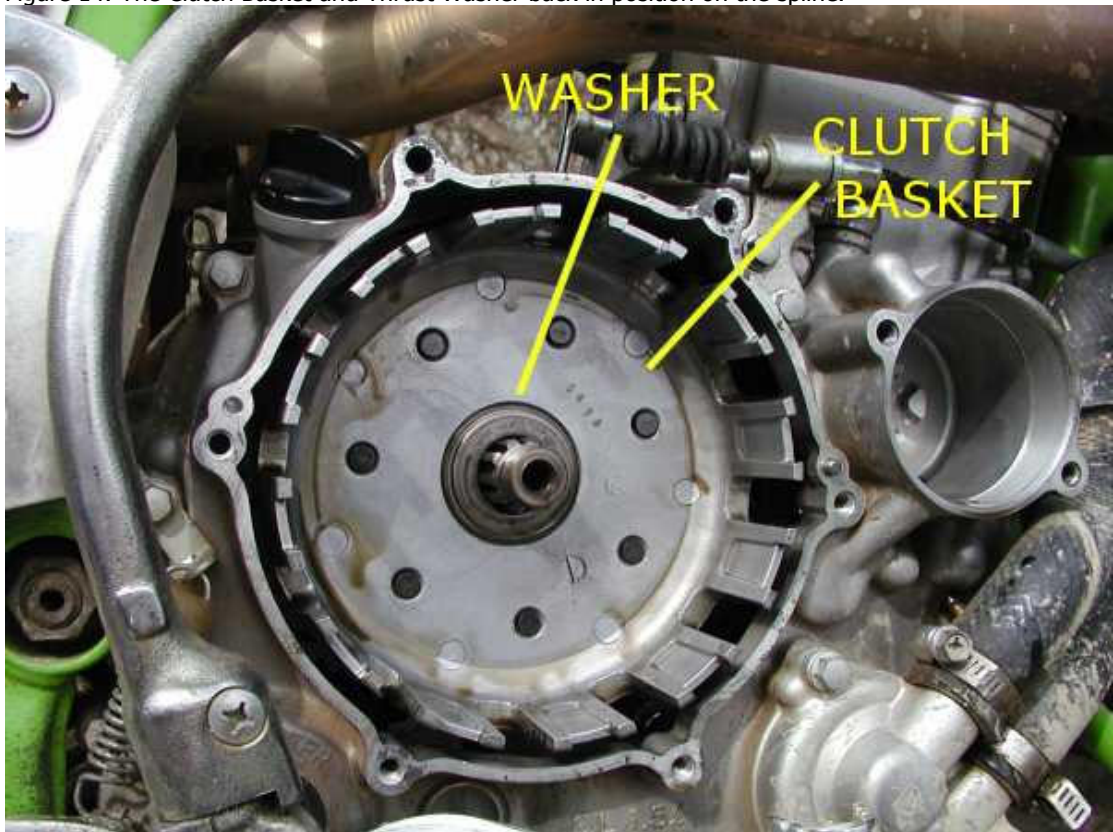


Figure 14: The Clutch Basket and Thrust Washer back in position on the spline.



Figures 13 and 14 show the re-install of the new Idler Gear and the clutch basket. You need to ensure that the new idler gear is mated correctly with the appropriate shim washers in place.

Ensure the outer circlip is correctly inserted into the groove or it may damage the engine if it comes off.

I lifted the clutch mechanism out of the clutch basket (taking care not to lose the thrust washer that sits in between the two). I then slipped the clutch basket (which has a large gear on the reverse) onto the driveshaft and then put the thrust washer on as shown in Figure 14.

You then need to slide the clutch into the basket and ensure it mates with the splines on the shaft. This is a tedious job that I eased with a spline driver just to allow me to wiggle and rotate the shaft so the splines are aligned – see Figure 15

Figure 15: Me wiggling the splines into alignment



It should be down carefully so as to not damage the splines. Don't forget that the clutch needs to be aligned with the slots on the basket too or it will not even start to go in.

You then need to ensure the Clutch hub Nut is fastened back on and tightened to the appropriate torque. [78 N-m (8.0kg-m or 58 ft-lb)]

You now need to clean the mating surfaces of the clutch cover and the crankcase – as shown in Figure 16. I used a flat-bladed screwdriver and cloth. Then you can apply some Molybdenum Disulfide grease to the clutch pusher (where the clutch actuator presses) and slide it back in.

Re-attach the clip to the clutch cable and put the new gasket into place with a little engine oil to ensure it mates well. The cover can now be pushed into position (note the two mounting lugs to ensure you orient it correctly)

The Gasket will ONLY fit one way!

Torque the 6 8mm bolts back into place (the two longer ones go to the top). I applied a little copper grease to the threads before inserting them to ensure they don't lock over time

Torque Settings: 9.8N-m (1.0kg-m or 87 in-lb)

Figure 16: Cleaning the mating surface of the clutch cover and housing.



Bits of gasket stuck

Cleaned off...

You may now replace the oil filter and connect the oil filter cover before filling the engine with approximately 1.4 litres of oil. I used semi-synthetic 10W40 Putoline this time.

That's it – job's a fish!