

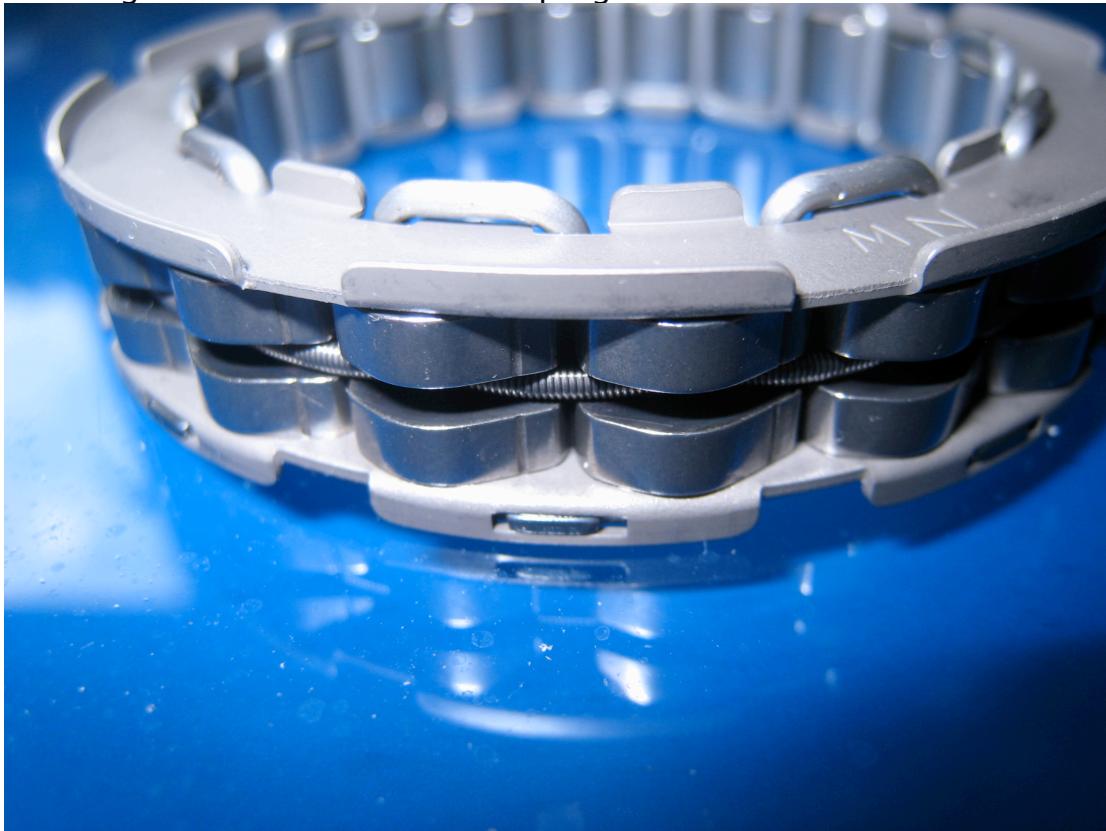
The Problem:

The sprag clutch fitted to the Rotax 500, 604 etc. is well known to be a bit susceptible to failing in various ways, most likely the clutch spins but does not engage the engine. This is usually caused by damage to the pear shaped lobes which are the main component of the sprag. It can also be caused by the spring that holds together the lobes stretching and not binding the lobes tightly to the cage. In the UK the cost of a genuine replacement sprag is £154.78 delivered which is a high cost.

Remedy:

However there is a way of refurbishing an existing clutch without spending all that money.

Firstly: it is possible to replace just the sprag spring, see picture below for the makeup of the sprag. You can see that all the lobes are held in place by the spring, if the spring is baggy it will not hold them tight as in this brand new sprag.



Secondly: it is possible to purchase a cheaper complete sprag for another motorcycle such as a KTM (OEM58440026000) £59 or BMW(12 11 2 343 296 or EN43296) £74, then break it down and re-use the lobes in the faulty Rotax sprag. (you will not be able to use the spring as it is bigger than the Rotax item)

TIP1: Before you disassemble both the existing Rotax sprag or the KTM/BMW part please ensure that you take pictures or draw a sketch of each part. The critical issue here is the direction of rotation that is marked with an arrow on the side of the sprag. The important fact to note is that the Rotax rotates opposite to the KTM and BMW parts and the lobes point in different directions of rotation.

Rotax sprag



KTM sprag



This is obviously very important when you re-assemble the Rotax sprag with the KTM/BMW parts, if you are not careful the sprag will engage in the wrong direction...not a good idea!!

TIP2: When you come to install the sprag, it may not appear to seat properly so that the snapring that retains it will fit snugly in its groove. I got this tip from one of the Rotax workshops here in UK, the reason it does not sit down is because the outer big circlip on the sprag catches in the snap ring groove preventing it seating down properly. The secret is to use a pair of circlip pliers as shown below to slightly contract the circlip to free it from the groove. Be careful not to do what I did and contract the circlip so much that the sprag disassembled itself and I had to completely rebuild it ☺.



Best of luck with your sprag installing.