

## Biland Clutch Removal, Rebuilding and Refitting

**Do not attempt any of the repair works below unless you are fully confident of your ability with the tools required.**

**Wear safety goggles at all times.**

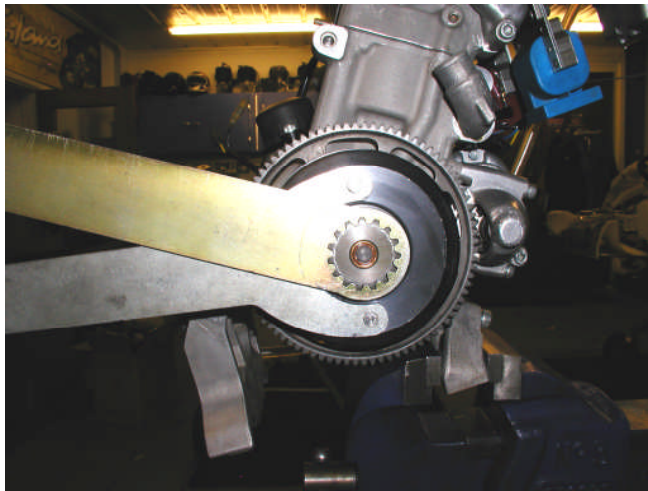


Fig.1

Use the Saxon C spanner to hold the clutch drum and the sprocket spanner to loosen the drive sprocket (conventional right hand thread) and remove. (Fig. 1)

Use a punch or other suitable tool to locate through the ring gear and into the spare hole in the crank cases to lock the flywheel. Use a 24mm deep socket to remove the crank bolt (conventional right hand thread). (Figs. 2 & 2a) Take punch out when bolt is undone.

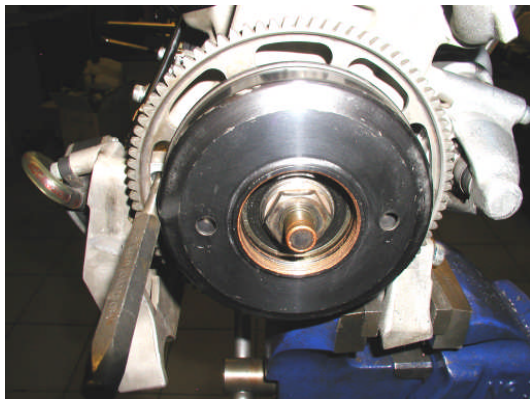


Fig. 2

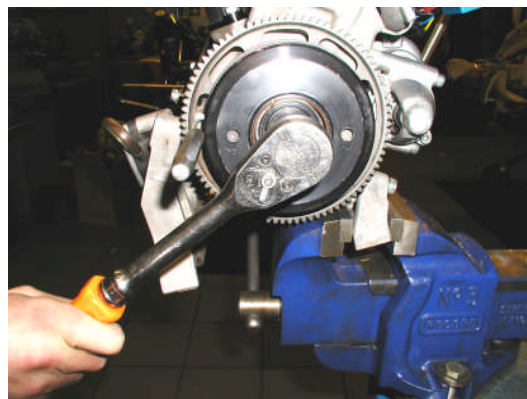


Fig. 2a

The clutch drum will now prise off gently with a screw driver. **Take care not to damage clutch shoes.** Note there is a spacer washer between the clutch and drum. Using the clutch puller shown in Fig.12 thread it into the hub of the clutch and tighten (19mm spanner), then holding the puller with the 19mm spanner tighten the central bolt (17mm spanner) until the clutch comes off the taper on the crank shaft. Note: The clutch is a very good fit on the taper and will come off with a bang – be careful it doesn't hurt your hands or fall on your feet!

Remove the three Torx screws from the central hub (T25 Torx spanner)  
Fig. 3

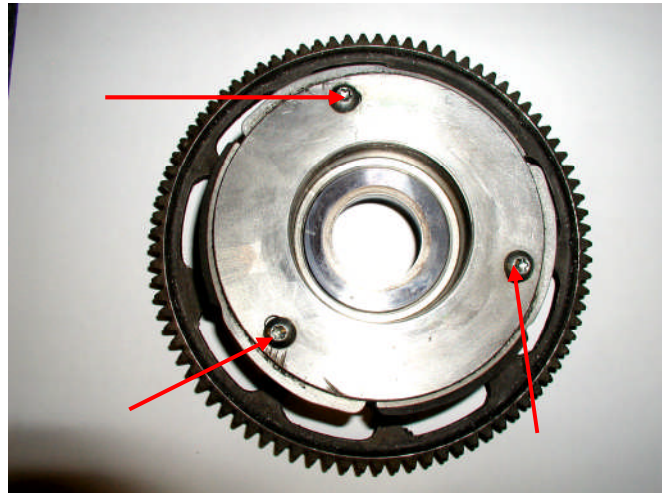


Fig. 3

Using a C spanner locate in the holes in the central hub that the Torx bolts went through and unscrew the hub (conventional right hand thread). Note: 3 or 4 rotations will reach the end of the thread. After which the hub can be pulled out with your fingers or gently prised off with a screw driver. (Fig. 4)



Fig. 4

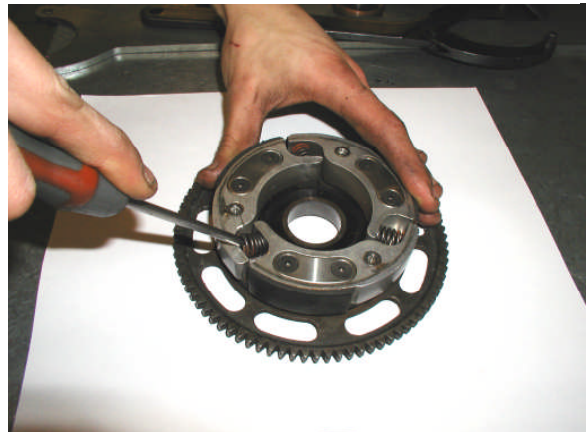


Fig. 4a



Fig. 5

Remove the springs from between the shoes using a screwdriver. Ease the end of the spring out of its location hole and then position the screwdriver down the centre of the spring so that as it flies out it goes up the blade of the screwdriver. (Fig. 4a & Fig. 5)

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When all 3 springs are removed the shoes can be removed from the backplate. Note: the shoes interlock and must all be removed together. You may need to prize them up a little at a time with a screwdriver. Thoroughly clean the components and inspect for damage, in particular look for cracks in the welds on the rear of the clutch. (Fig. 6)

Check also that the three rubbers are in position and in good condition. (Fig 7)

Fit new shoes and rubbers as necessary.

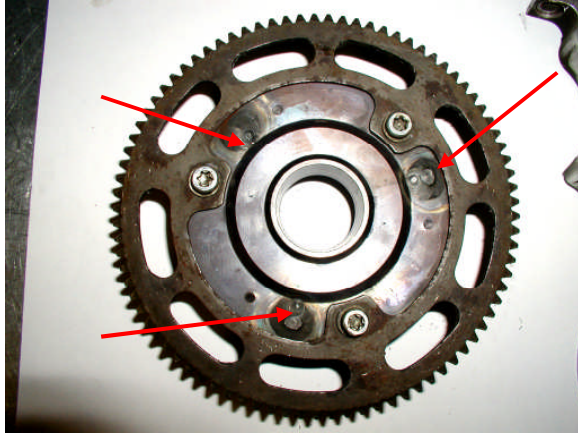


Fig. 6

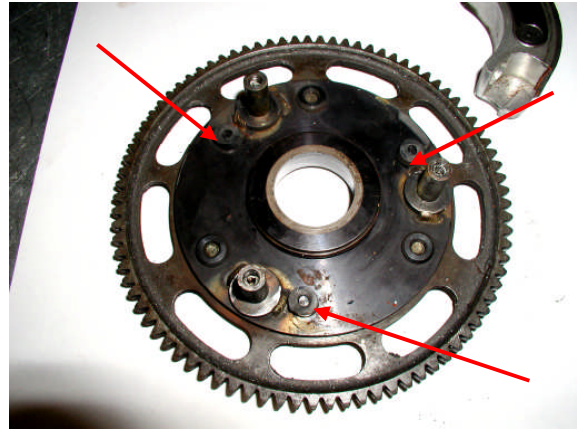


Fig. 7



Fig.8

Before reassembly coat the 3 pivot pins and their base flanges with a little Coppaslip grease. (Fig. 8). Slide the 3 shoes on together as they interlock.

You now need to refit the springs (ensure the springs are not damaged before refitting). Compress the springs with a large pair of pliers and using the Saxon insertion tool (Fig 9) push the spring firmly home. This is probably the trickiest part of the operation and you must be firm to ensure the springs go in.

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Fig. 9



Fig. 10

Once the spring is home prise it with a screwdriver to ensure that it is sitting comfortably in its location holes. (Fig. 10)

Refit the central hub and retighten with the C spanner. (Note: each clutch and hub are a matched pair and cannot be interchanged). The hub does not have to be fully tight but the holes must align to allow you to refit the 3 Torx bolts. Use Loctite 243 on the Torx bolts.

Ensure that the taper on the crank is clean. (Note: there is a groove on some crankshafts for a Woodruff key but this is NOT used). Ensure also that the taper on the inside of the clutch is clean and put the clutch onto the crank. Next put the spacer washer, (Fig 11) then the clutch



Fig. 11

drum (clean the clutch drum with brake cleaner and check that the bearing is in good condition or replace). Then secure with the crank bolt degreasing the threads first and using Loctite 243 on the threads. This bolt **must** have Loctite 243 on the threads and **must** be tightened to 150NM.

Refit punch to secure crank.

Refit your chain sprocket, using a small amount of Coppaslip on the threads, making sure the teeth are in good condition. (If in doubt change the sprocket as a worn sprocket will seriously reduce your chain life). Lubricate the brass bush in the centre of the sprocket with some chain lube. Do not overtighten the sprocket as it will tighten during use.

Fig. 12 from the top:-

- Large pliers for compressing springs
- C spanner to remove hub
- Clutch puller
- Saxon spring insertion tool

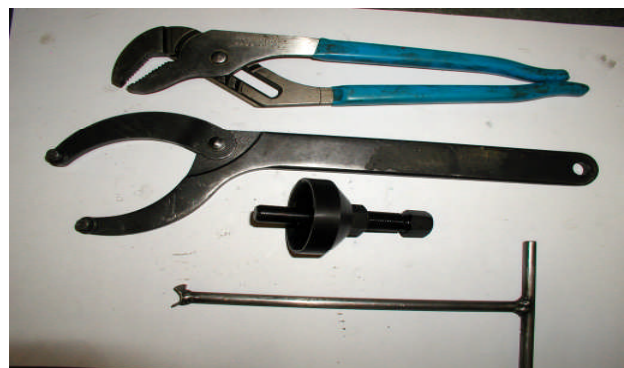


Fig. 12