

MT350 Sprag Replacement / Repair

MOTOR CYCLE, GENERAL PURPOSE, HARLEY - DAVIDSON MT350 TECHNICAL DESCRIPTION

Rotax 348 Sprag Replacement / Repair



This is intended as a walk through & Guide
only to the Sprag
Replacement / repair on a
Rotax 348 engine.

**This is a guide only please refer to the relevant manuals
for full details or ask professional advice if in doubt.**

**This is the writer(s) interpretation of the required steps only and
does not take any liability for the accuracy of the information
supplied in this publication and it is supplied as is.**

MT350 Sprag Replacement / Repair

Amendment Record

Amendment No.	Amendment	By	Date
DRAFT	N/A	Joth	11 Feb 2017
A	Torque Settings Updated Plate 34+35	Minter	12 Feb 2017

Before carrying out the Procedure ensure you have the current amendment.

MT350 Sprag Replacement / Repair

General Tools

13 MM Spanners X 2
4,5,5.5, & 6 mm Allen Keys
13mm socket
24mm socket
10mm spanner
27mm Socket
Torque Wrench 5 to 120Nm
Circlip Pliers

Fluids

Lithium Grease (Lubricate Seals / O Rings)
Loctite (Medium & Strong)
Copper Slip (Apply where required)

Specialist Tools

TDC Locking Bolt M8 (P/N 241.965)
M30x1.5 Extractor Lower Pulley (P/N 276.445)
Top Pulley Puller

Required Parts

Sprag / Lobes / Spring (as required)*
1x Clutch Cover Gasket (P/N 250-381) (as required)

The parts marked * are the parts that you will need for this procedure.

MT350 Sprag Replacement / Repair

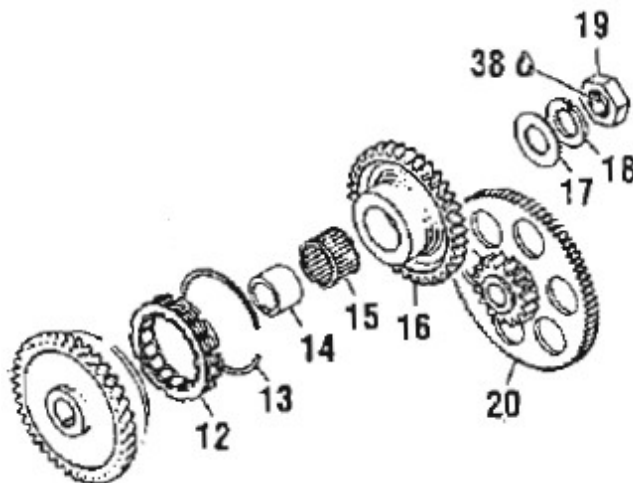
General Torque Values

Where Torque settings are not detailed the following are a guide.

M5	7-8 Nm
M6	11-14 Nm
M8	24-27 Nm
M10	51-54 Nm

Minimum Procedure

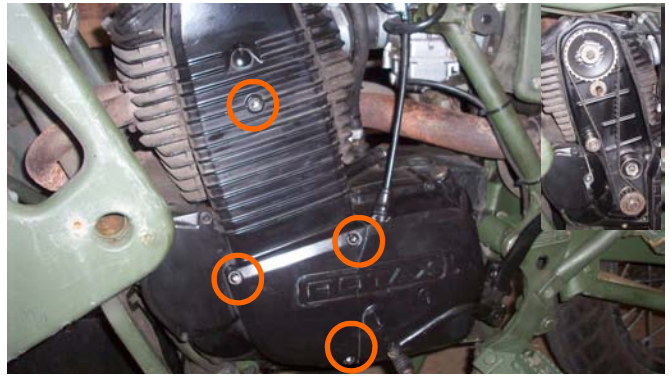
This is the minimum procedure for changing or repair of the sprag clutch.



MT350 Sprag Replacement / Repair



1. Remove Panniers Support Bar.



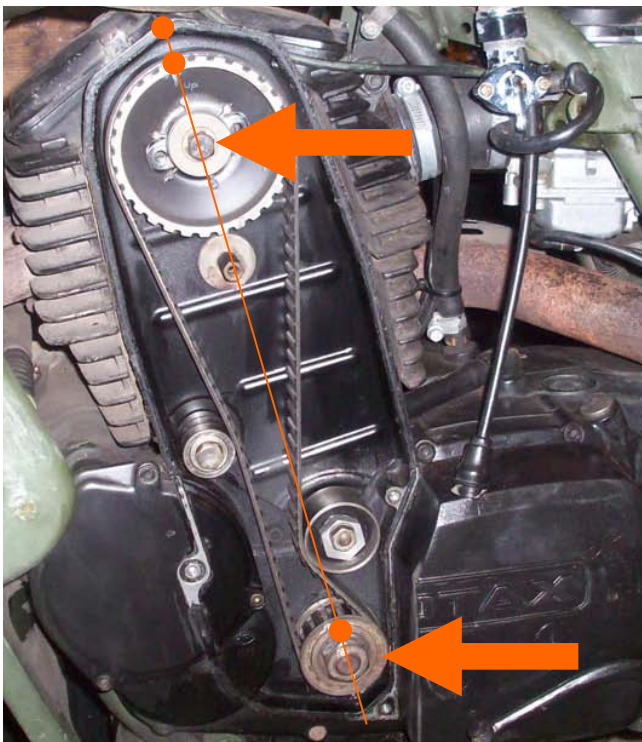
2. Remove the 4 timing cover bolts with a 5mm Allen Key. (**Note:** Screws are Different Lengths)



3. Remove the 4 bolts holding on the starter gear cover and remove the Cog & 2 washers.



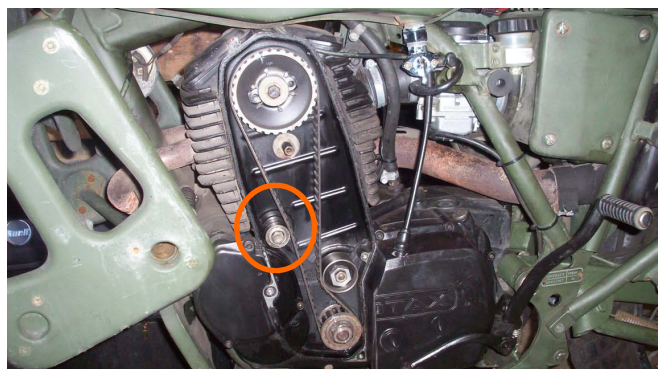
4. Remove the bolt circled above using a 6mm Allen Key. Locate the V in the fly wheel through the hole using a torch and screw in the crank locking bolt (the crank locking bolt is a M8 bolt with the end of the thread tapered.)



5. Check the alignment and markings on the Pulleys and ensure they are all visible and Marked. Loosen the bolts marked with arrows. Also mark the belt direction so that it can be put back on in the same direction.

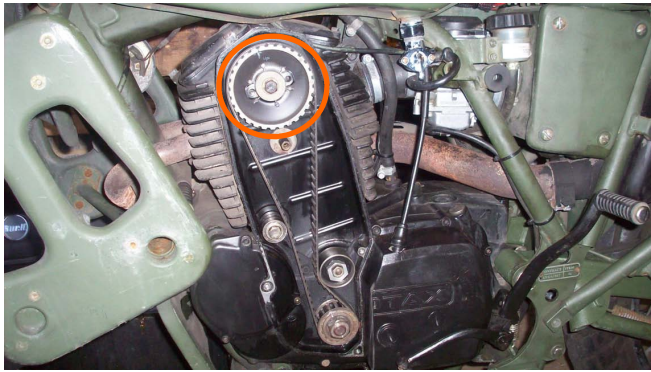


6. Remove the Timing Belt Tension bearing.



7. Remove the Timing Belt Runner Bearing.

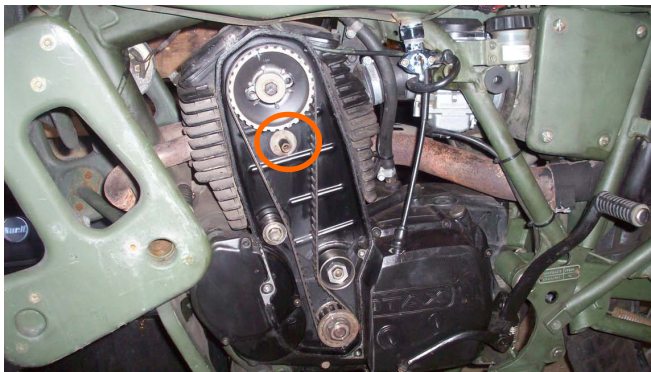
MT350 Sprag Replacement / Repair



8. Remove the Bolt and washers on the top pulley, Remove the Belt then remove the pulley using the pulley removal tool.



9. Remove the lower pulley nut and remove the pulley using the special removal tool.



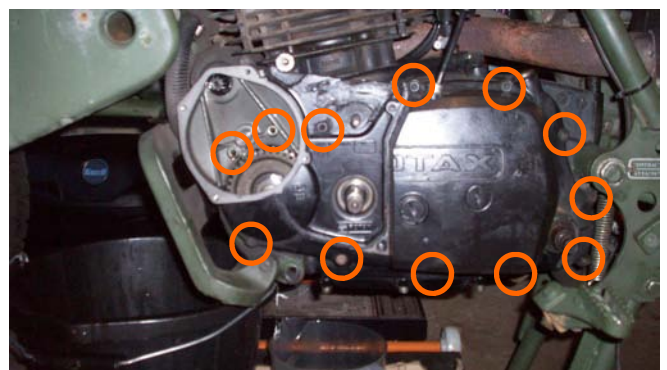
10. Remove timing belt cover stud.



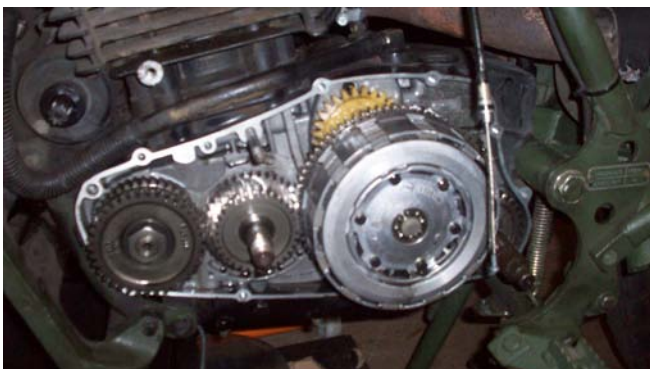
11. Remove the Timing belt back plate.



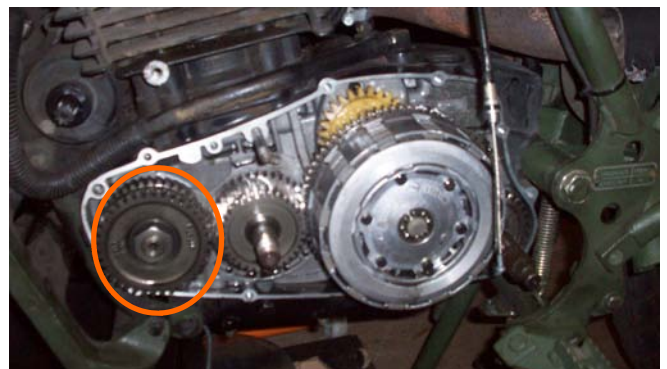
12. Remove the Gear Lever and Kick Start Lever by removing the 2 Allen Bolts. Then remove the circlip. (also see slide 25)



13. Remove the bolts around the casing. **Make a note of which ones come from which hole as they are different lengths.**

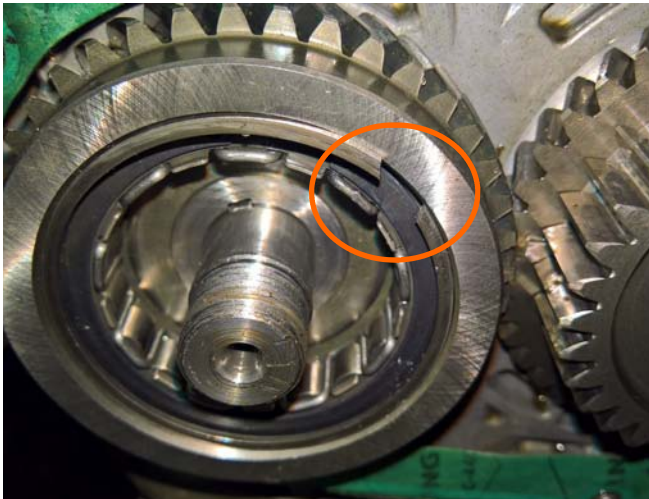


14. Remove the casing & disconnect clutch cable.



15. Remove the sprag gear nut, spring, plain washer and top cog.

MT350 Sprag Replacement / Repair



16. Remove the retaining clip with a screw Driver. (Remove the cog if required for ease)



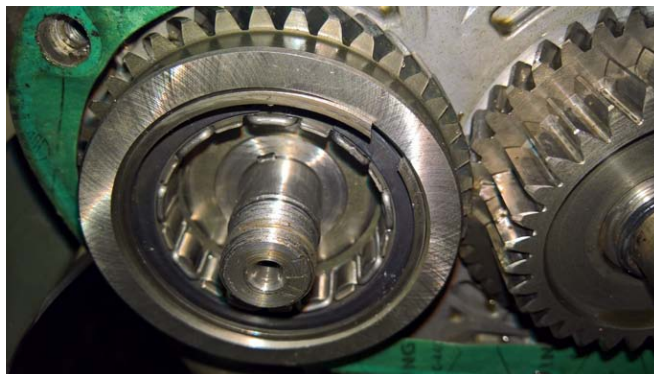
17. Using a pair of circlip pliers squeeze in the retaining circlip and pull the sprag out.



18. Replace the whole sprag unit, lobes or spring as required.



19. Reinstall the gear and align the marks if it was removed.



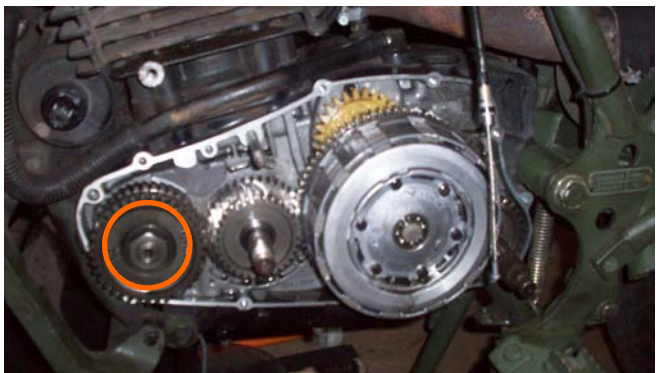
20. Reinstall the sprag and circlip.



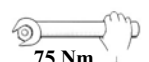
21. Top cog installation Order.



22. Reinstall the collar, bearing, cog, washer, lock ring & apply thread lock.



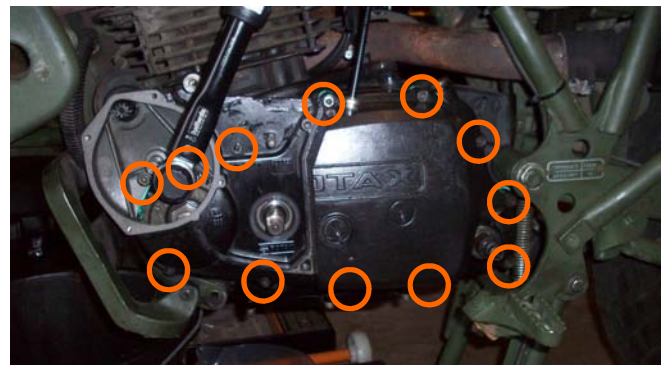
23. Torque up the sprag gear nut to 75Nm



MT350 Sprag Replacement / Repair



24. Re connect the clutch cable.



24. Refit the casing, insert the bolts and tighten each bolt to 8 Nm.



25. Put the Cir clip on the kick start splines after the case has been put on.



26. Adjust the clutch by screwing in the centre screw until it bites and then loosed 1/4 of a turn and tighten the lock nut. Check the clutch operation and then replace the cover.



28. Refit the Starter Cog first by fitting the metal washer then cog then another washer. Fit the cover and tighten up the 4 bolts.



29. Replace the lower pulley, lock washer and nut "**Strong thread lock**" on the thread and torque to 100 Nm.



30. Refit the Timing Back Plate. The back plate requires a bead of sealant between it and the casing.



31. Install the two retaining bolts and replace the timing cover stud & Washer.

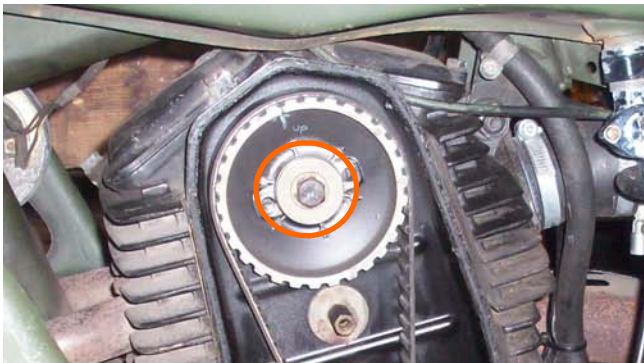
MT350 Sprag Replacement / Repair



32. Install the Timing Belt Runner Bearing "**Medium thread lock**" on the thread and torque to 20 Nm.



33. Refit the top rullely and spacers. ensure the two marks line up.



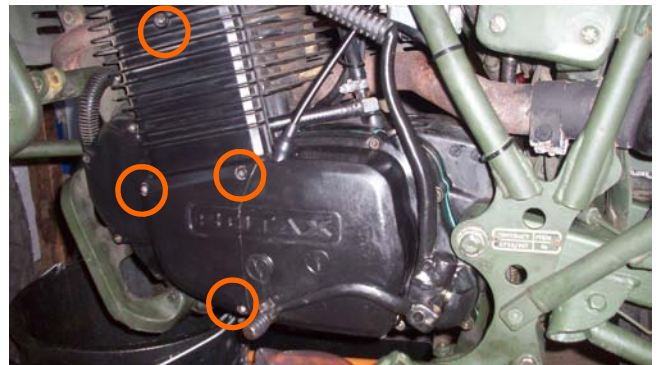
34. Install the Large Washer, Lock Washer and Nut on the Top Pulley. Note : Put the Timing belt on temporarily to assist in torquing the Bolt.
Note: See Slide 5 for realigning the top pulley.



35. Install the Timing Belt Tension Bearing "**Medium thread lock**" on the thread and torque to 18 Nm. Ensure there is a gap of 6mm with 5 LBS (2.2 kg) of pressure on the belt. Alternatively allow the belt to be twisted through 90 deg.



36. Remove the Fly wheel locking bolt and replace with the original bolt & copper washer.



37. Re fit the timing belt cover and tighten the 4 allen bolts.



38. Replace Kick Start circlip & lever. Replace Gear Lever.



39. Replace panniers support bar.

MT350 Sprag Replacement / Repair

END OF PROCEDURE