

# Starter One-Way Clutch Replacement

by Joe Conway

**YOU NEED THE RIGHT TOOLS TO DO THIS JOB!! IF YOU HAVE ANY HESITATIONS TAKE IT TO A SHOP. I CLAIM NO RESPONSIBILITY FOR DAMAGE DUE TO MISTAKES MADE DURING THIS PROCEDURE. WORK ALONG WITH YOUR REPAIR MANUAL. READ EVERYTHING THROUGH FIRST**

You will also need the following parts:

## New parts list:

5EL-15517-11-00 GEAR, IDLER 2 (updated part number)  
93310-5720G-00 bearing  
5EL-15590-00-00 one way clutch  
5EL-81890-01-00 new updated starter (only if needed)  
90201-72008-00 washer plate  
93440-68180-00 cir-clip  
5EL-15451-00-00 gasket  
93102-12321-00 OIL SEAL, SD-TYPE (added)

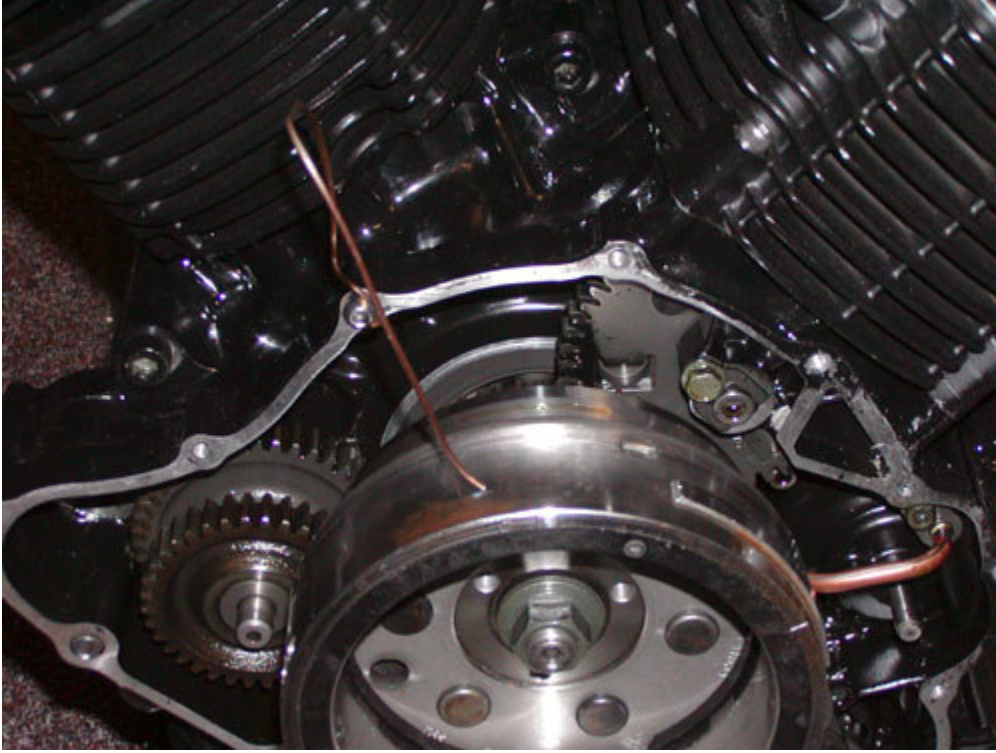
## Old Parts list – Reference only:

5EL-Y155B-30 This is the flywheel/idler gear  
93310-5720G-00 bearing  
5EL-15590-00-00 one way clutch  
5EL-81890-01-00 new updated starter  
90201-72008-00 washer plate  
93440-68180-00 cir-clip  
5EL-15451-00-00 gasket

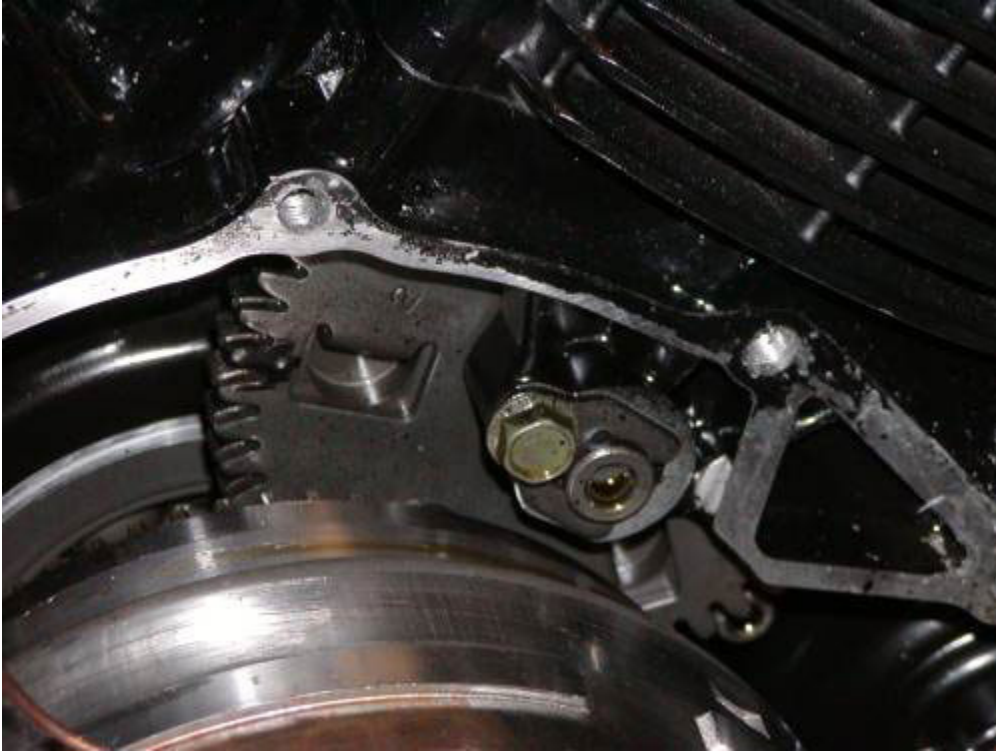
First, get your bike in a good working position. You will be removing the left side crankcase cover, small clutch arm housing cover, kick stand, and the transmission cover. Put the bike up on a lift or support it with 2x4's.

1. Drain the oil, and remove the starter motor
2. Remove the rear cylinder head cover to open up to the cam gear area.
3. Remove the kick stand and then the transmission cover.
4. Now remove the little cover where the clutch cable goes into and unhook the clutch cable. Do not remove the clutch arm.
5. You will see a wire bundle. Unplug all the leads, cut any zip ties.
6. Remove the left side crankcase cover. Note which bolts go where.

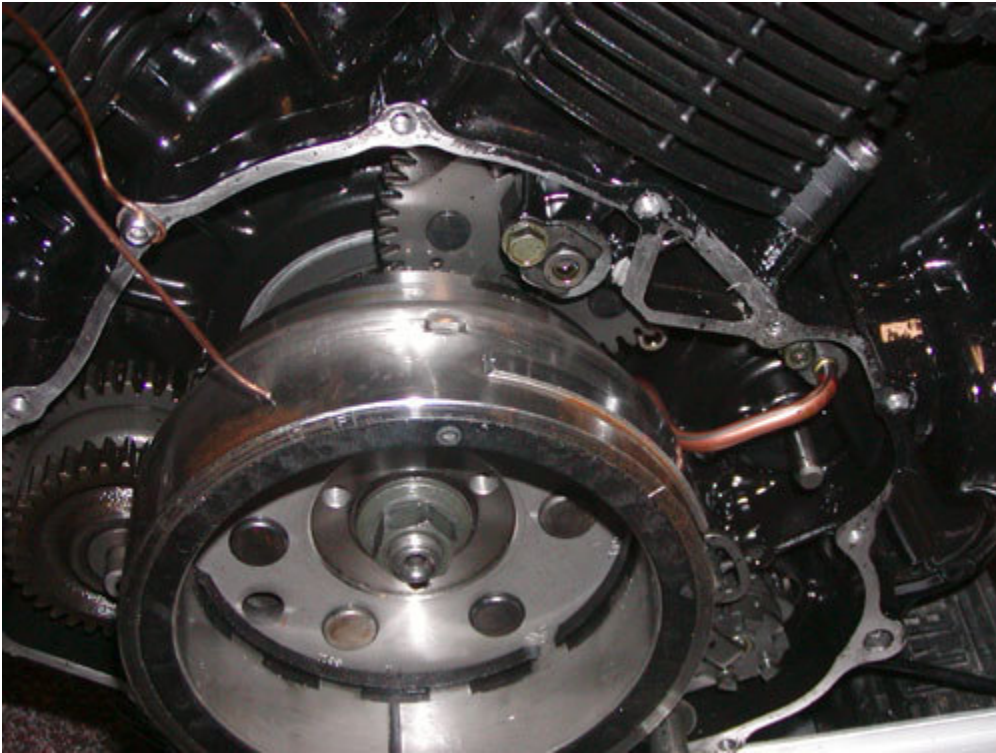
I will now try to explain the most important part of the procedure: Put the cover back on temporarily and set the 'T' mark up in the timing hole. Remove the cover and setup a pointer on the timing mark. Use a piece of coat hanger. Use one of the bolt holes from the crankcase cover to secure it. You can see in the picture this pointer is on the rear cylinder "I T" timing mark. Use one of the shorter bolts and some washers if necessary to secure it. Line the pointer you just made up on the 'T' mark. This will be your reference point for the rest of this procedure.



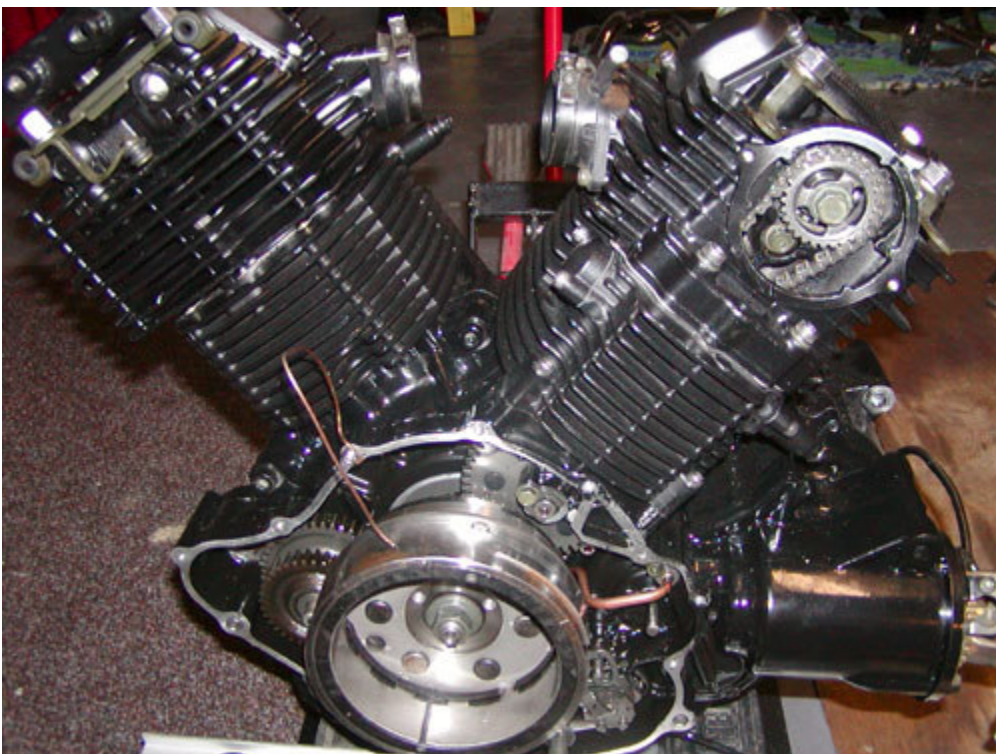
You need to have your repair manual page 4-47 to follow along. On page 4-51 at the bottom of the page there is a picture that shows the lower gear timing mark. You can also use the next picture. Once every 8 turns of the motor the dot on the lower cam gear next to the square-like slot with the number 2 by it will line up with the key hole in the crankshaft. When this happens the "T" timing mark will be on its mark (the pointer you made) and the cam gear dot will be on the head pointer. Now you really have to look for the square slot to go behind the flywheel and try to follow it as it will go in line with the crankshaft and at the same time look for the other two timing marks to align. It will be obvious when it happens. Remember it happens once every 8 turns from being lined up. If you don't do this you will have to remove the cam gear and realign it as it will be off. This saves you a lot of time!



This is real easy, as you are turning the motor just watch for the cam gear dot to line up, the "T" mark to be coming up on the pointer you made and watch for that lower gear dot under the square slot with the #2 to go behind the flywheel and imagine it lining up with the crankshaft. You have to watch for that dot with the black magic marker on it go behind the fly wheel and line up with the crankshaft. You simply need to watch the cam gear dot coming up on its pointer and the T timing mark coming around to line up on the pointer. Be patient you will know when you have it. If you skip this step then the cam gear will have to be removed and re-aligned at the end of the project. Here is what it looks like lined up:



The next picture shows everything lined up correctly:



7. Ok now everything is lined up and it's time to remove the fly wheel. Once you loosen the nut leave it on about a 1/4 inch loose of the flywheel.

8. Setup your puller on the flywheel. Get a good amount of pressure on the puller and take a hammer and TAP on the main puller bolt. The flywheel should pop. If it does not, put a little more pressure on and tap the center puller bolt again. It may take a harder tap. Parts 7, 8, 9, and 1 come off together (refer to the repair manual).

9. Holding the flywheel in place remove the nut. Then reach behind the flywheel and hold the little gear in place on the back of the flywheel. There are little springs etc. (refer to the manual) that will fall out if you do not hold this gear while sliding the flywheel off.

10. You should have a new flywheel, one way clutch, idler gear, bearing, cir-clip, and circ-lip plate. Assemble these units according to the repair manual. The little gear that came off the back of the old unit goes on the new unit. Again refer to the manual on setting up the little springs etc.

11. Mark the gears with magic marker to help with the install line up. Take your time and follow the pics in the repair manual for lining up the keyhole etc. Put the flywheel on loosely and run the nut in. You will need to use a screw driver to line up the lower cam chain split gear. You will see what I'm talking about. As you get the lower split gear inline push the flywheel on looking for your magic marker spots on the gears. Get it right. One tooth off is no good. Tighten the nut to 127 ft-lbs torque.

12. Make sure the cam gear is still lined up. It should be. If the procedure was not followed on lining the timing marks up then you will need to re-align the cam gear. Put it back together.

Revised by Silverback – updated parts list