

**Instruction Text and Photos by: Pat (Reddog99, socalsvriders.com)****Originally posted****<http://www.socalsvriders.com/forums/showthread.php?s=&threadid=2305>****First, a disclaimer and a caution:**

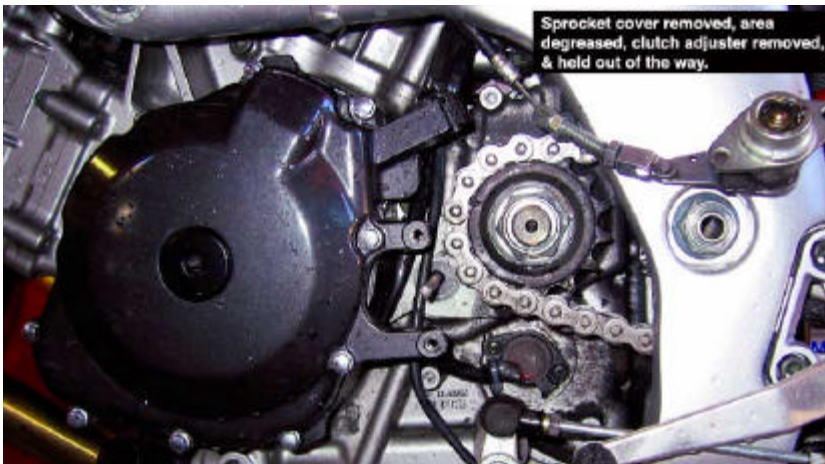
These photos should be considered to be only an additional helpful guide, and should be used in conjunction with an SV650 shop manual. Normal safety precautions should be observed and torque wrenches used to prevent stripping threads. I've documented how I performed the work, and hopefully I haven't made any mistakes.

There have been reports of the threads on the rotor puller tool stripping, causing the tool to get stuck in the rotor. This could be an expensive mishap. So use common sense, and don't "press-on regardless" if something doesn't seem right.

Handle the rotor carefully. This item spins on the crankshaft at up to 10,500 rpm and any damage at all would upset the balance and be undesirable.

Supplies and tools you'll need:

- 1) Gunk engine cleaner
- 2) Electrical contact cleaner, or some other quick evaporating degreaser
- 3) 8 mm socket
- 4) 10 mm socket
- 5) 12 mm open end wrench
- 6) 17 mm socket
- 7) 21 mm socket
- 8) inch-pound torque wrench (to 84 in/lbs)
- 9) foot-pound torque wrench (to 87 ft/lbs)
- 10) Rotor puller; Suzuki p/n 09930-304450 (thread 20 mm x 1.5)
- 11) Rotor cover gasket

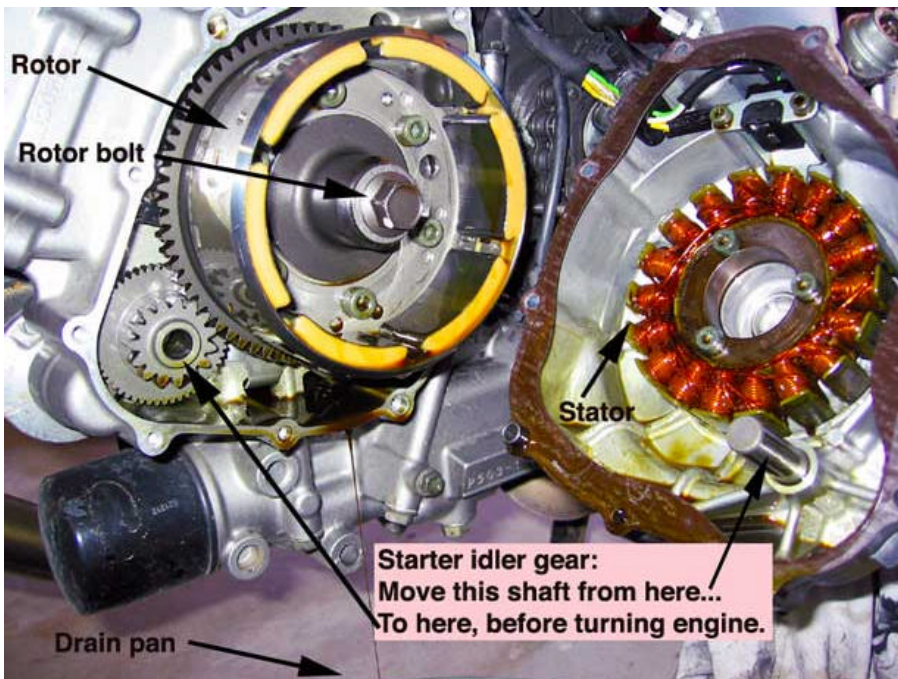
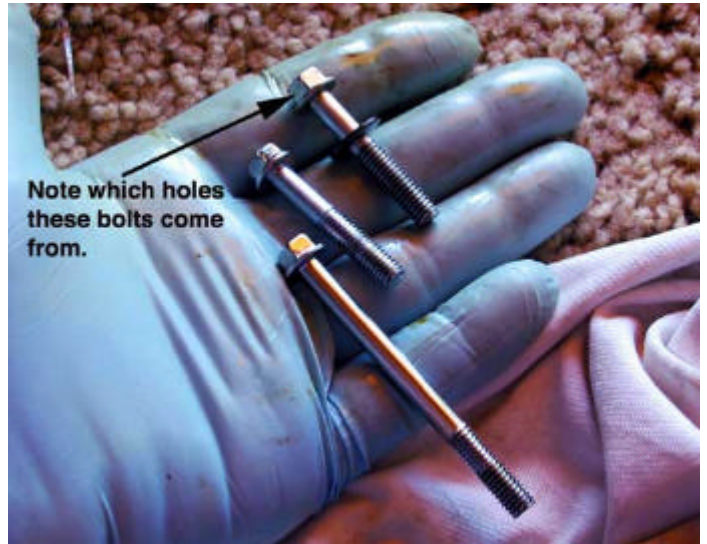


1. Remove the front sprocket cover. Degrease the whole area. When the rotor is off, the inside of the engine will be exposed, and you don't want any dirt, sand or anything else to get inside. Besides that, you don't want to get all that filth on your hands. Hint: go to your local auto parts store and buy a box of the non-latex (nitrile) 4 mil gloves.

Loosen the clutch free play at the handlebar lever and under the front sprocket cover using only the nuts on the cable. Remove the adjuster mechanism and

suspend it out of the way with a bungee cord. Avoid taking it apart and out, so you won't have to puzzle on how to put it back together.

2. Place an oil drain pan under the bike. The engine will lose about a half quart of oil if the bike is upright, more if it's on the sidestand. Loosen and remove the ten bolts. There are three (at least, three on my bike) bolts that have composite rubber sealing washers. These bolts may not come out easily. Be very careful not to force them, as the washers will be damaged easily and could be the source of an oil leak. Also, NOTE WHERE THEY COME FROM. The Suzuki manual only shows the location of one.



3. With all the bolts out, wiggle the cover free. The two hollow alignment dowels and the magnetic pull of the rotor & stator will still hold it. Be firm, but gentle, when pulling/wiggling the cover off. The cover will still be held by the wires, so just move it aside.

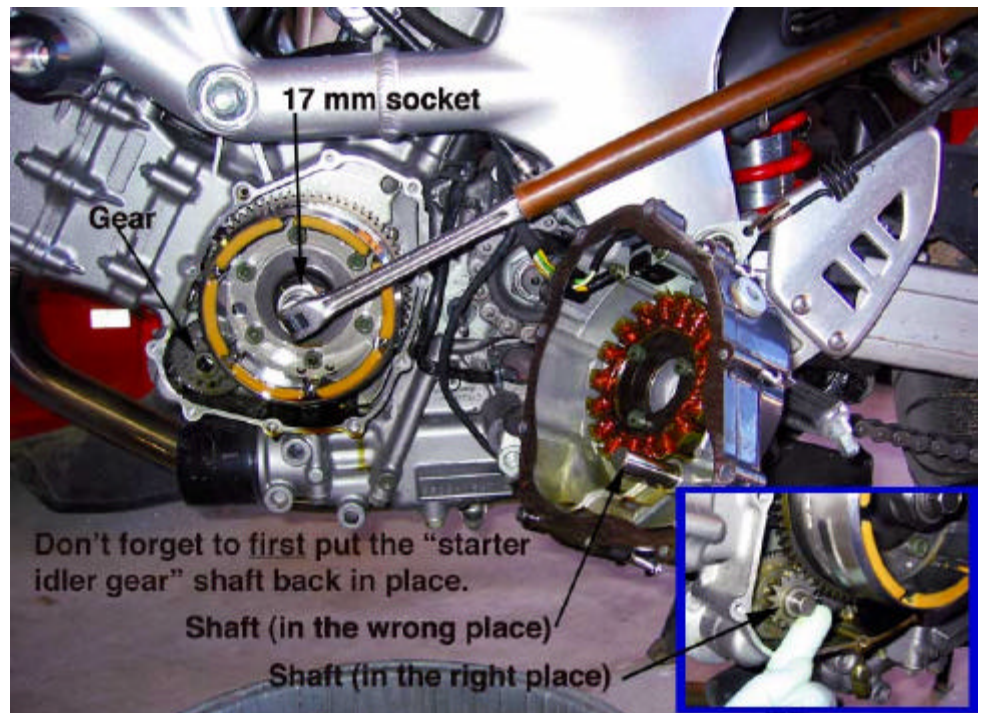
Place the starter idler gear shaft back into the starter idler gear if it comes out. Do this BEFORE rotating the engine or trying to loosen the rotor bolt.

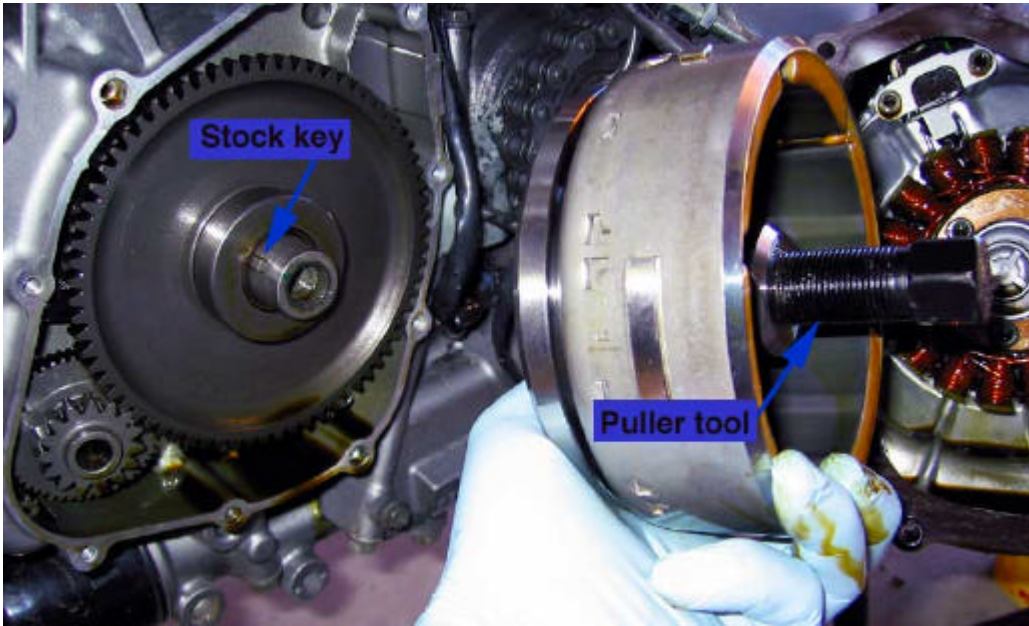




4. Put the bike in fifth or sixth gear and have a friend step on the rear brake, or put a piece of wood over the swingarm and thru the wheel to keep it from turning while you loosen the rotor bolt.

5. Using a 17mm socket, loosen and remove the rotor bolt. The rotor will stay in place until you use the puller tool to remove it.





6. Put a generous amount of oil on the puller tool threads. Screw the rotor puller tool into the center of the rotor until it stops.

**THIS IS IMPORTANT:** There have been reports of the threads on the rotor puller tool stripping, causing the tool to get stuck in the rotor.

If there is any resistance to freely screwing in the tool, then the tool threads are damaged and must be repaired before proceeding any further. The tool I bought from Suzuki had damaged threads, and I had to use a jeweler's file to repair the smashed threads. It might be best to examine the tool when you buy it, and refuse to accept delivery of a damaged tool. Examine the threads carefully.

Move the wood piece to the underside of the swingarm, or have your friend step on the brake again. Using a 21mm socket, slowly screw the puller tool in until it frees the rotor from the shaft.

7. Extract the stock key and insert the modified key with the step to the left. Test fit the key in both the rotor hub and the shaft. If the new key won't slide in, then use a fine cut file to remove some of the thickness. I had to remove .002" from mine to get it to fit into the keyway of the shaft.





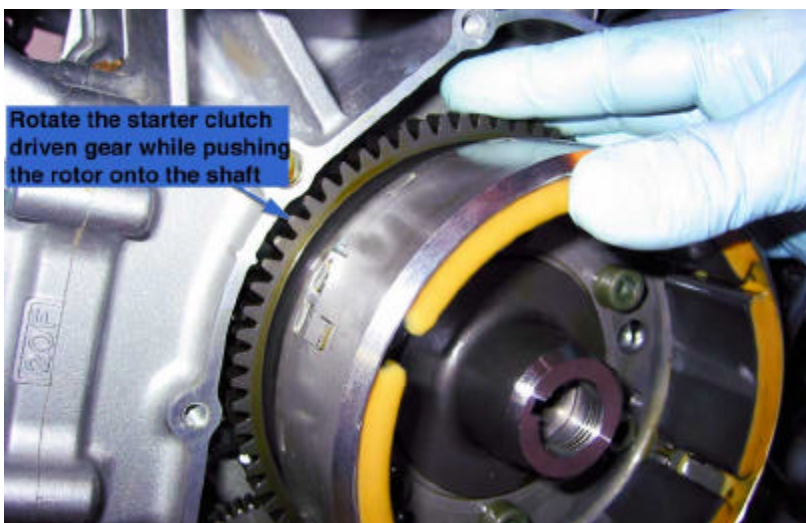
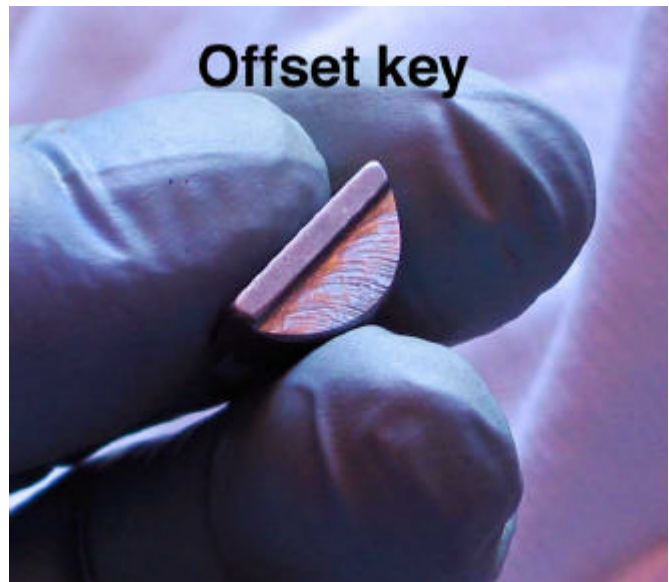
## SV Ignition Key Install

5



8. Use a quick evaporating degreaser to remove all traces of oil from both the shaft and from the inside diameter of the rotor.

9. Image of offset woodruff key.



10. Place the cleaned rotor onto the shaft while aligning the keyway with the key. You will need to rotate the starter driven gear while pressing on the rotor before it will slip on all the way. The reason for this is that the starter clutch on the backside of the rotor needs to slip over the large diameter of the starter driven gear.



11. Oil the rotor bolt, screw it in finger tight and then torque to 87 ft/lbs while your helper holds the rear brake.



12. Carefully remove the old gasket. If you're lucky, it will come off cleanly. Very gently scrape both gasket-sealing surface of any old gasket material. Don't use a sharp knife. The aluminum is soft and will gouge easily.

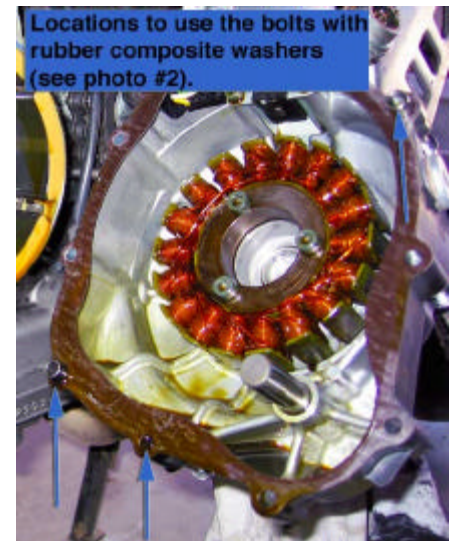
Wipe the surfaces clean, install the new gasket, and make sure that the two alignment dowels are in place.

Place the cover back on the engine, align the dowels, and press the cover into place. You'll have to work against the force of the magnets inside; so don't be surprised if it seems to resist your efforts.

After you get the gasket surfaces to mate together, thread all the bolts into place, being sure to properly locate the three bolts that are using the rubber composite washers.

Snug all the bolts up and then use a torque wrench to torque the bolts in a crisscross pattern to 85 in/lbs.

Re-install the clutch adjuster and adjust your cable free-play. Install the sprocket cover. I don't think this plastic cover will stand 84 in/lbs of torque, so just snug it down.



Locations to use the bolts with rubber composite washers (see photo #2).