Adding electric start to Kohler k340/290 2ax engines

Also adding a tach

Electric start was standard on SL models

An electric start add on kit was available but I have never seen one.

This is a REALLY basic explanation of getting this to work. Auto wiring experience is not required but highly recommended!

Parts needed:

Ring gear (2 styles available):

Taper-lock - 38-097-02

Press on – 38-097-01

Starter mount bracket: Kohler #38-126-01

Starter: Kohler# 38-098-01 or

Bosch# 0 001 160 003 (must be 003, 002 spins opposite direction but will work on CCW290 engine)

Solenoid: most any from auto or lawn mowers should work

Switch: Most any momentary style can work

Several different sized wires (explained later). Heavier cable can be found in your local auto parts lawn mower section or mower parts supply house.

A matching rectifier for charging. (If desired, not absolutely necessary)

Ok, I’m not the best at explaining this stuff, so ask if you don’t understand what I am saying. Also this will require some understanding of auto wiring and crimping/soldering. Also the mechanical understanding/knowledge to install the parts.

Installing parts:

Mount: The mount simply bolts to the engine up under the exhaust on the clutch side.

Starter: The starter goes through the mount and bolts to the back side of it.

Ring gear: This is a bit tougher. First the clutch has to be removed. Remove the center bolt. Using a remover/puller, thread it into the hole that the bolt came out of. Once it is tight, give the puller a sharp smack with a hammer. You shouldn’t have to beat on it, just a smack to shock it loose. Some lube on the tip of the puller and threads will help. There are other ways to remove a clutch and you may need to research this if you don’t have access to the proper puller. DON’T use a 3 jaw style puller as it WILL break the outer flange of the clutch. Now to install. I have the press on style. I used a piece of all thread that fits the crank, a short piece of pipe, a flat plate with a hole to fit the all thread and a nut for the all thread. Using all of these pieces, slowly tighten the nut until the gear is in position. Over pressing will result in the gear hitting the block or the starter pinion hitting the ring gear. Go slowly and keep checking by moving the starter shaft out to engage the ring and to see if it will hit. If you do over-press, a steering wheel type of puller can be used to pull it back some. For the taper-lock type. This is like installing a large sheave on a shaft. The ring gear goes on then the split-collar and bolts tighten into place. I haven’t done one of these, so you will need to experiment to get the position correct.

Wiring

This is where automotive wiring knowledge will help lots. I’m going to lay out the basic wiring connections.

First: You need a heavy cable from the battery to the solenoid.

Second: Another heavy cable from the solenoid to the starter lug

Third: A smaller wire (I used #10 since my solenoid required 25 amps, #10 can handle 30 amps) from the battery side of the solenoid to one side of your momentary switch.

Fourth: Another of the smaller wires from the other side of the switch to the coil terminal of the solenoid.

Fifth: Another heavy cable from the negative side of the battery to a good frame and/or engine ground.

That’s about it. Pressing your switch will apply power to the solenoid coil sending power to the starter, which will spin and extend the Bendix/pinion gear to engage the ring gear. Sounds simple and it really is but this is a very basic system without the extras that are on many cars today.

Charging

This can definitely get tricky. There are 2 different charge coil types along with their companion full wave rectifiers. There are center and end tapped. The rectifiers that work with one will not work with the other. There are also 75 and 100watt charge coils available. I currently do not know how to determine which are and work with what. If I can find this info, I’ll add it to this. In the SL wiring diagram available in the files section, it shows a green and yellow wires that come from the engine blower housing. These are your alternator output wires. There are 4 connections on the rectifiers and the alternator wires will attach to the 2 top connections. The 2 lower connections will run to the battery to charge. This connection can be made at the battery positive terminal or at the battery side of the solenoid. The other 2 wires coming from the housing are the wires from the points and if connected together will kill the engine. Simply grounding 1 wire will only kill that cylinder and the engine can still run on the remaining cylinder. The key switch on a SL merely connects these when in the off position so that it will not start. The kill switch on a SL only grounds 1 set of points.

Adding a tach

If you can find an old alternator triggered snowmobile tach, the green and yellow wires from the alternator are the signal wires used to make it work. I have a tach from a John Deere Spitfire Tach kit connected this way.