

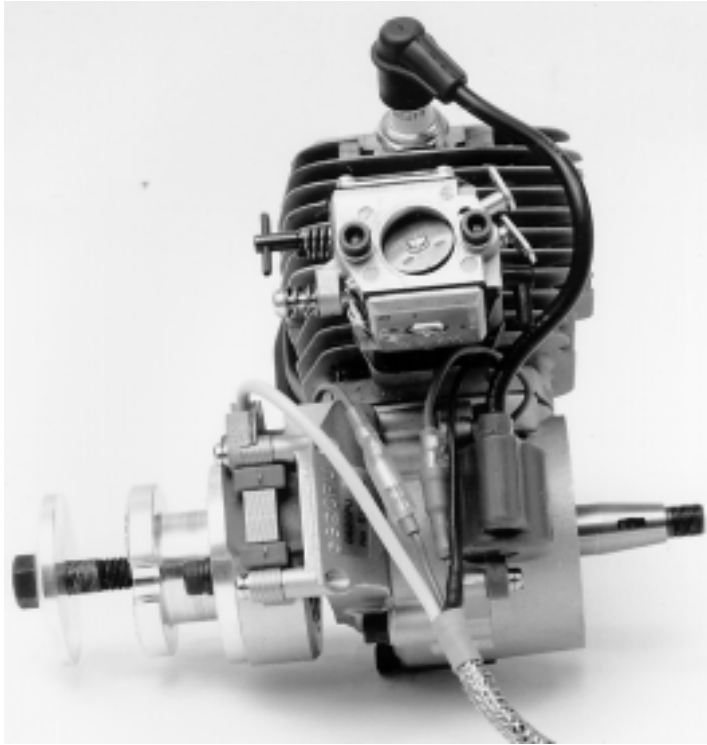
EASY START SYSTEM



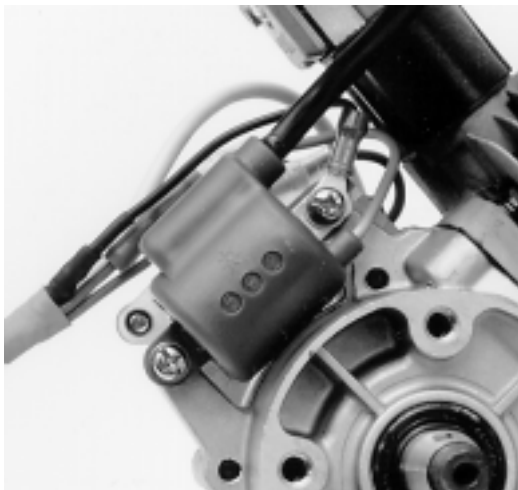
Toni Clark practical scale GmbH

INSTALLATION:

Unplug the connector in the **red** lead from power coil to spark coil. Push the round plug of the Easy Start into the power coil's **red** lead connector. The black lead on the power coil is not used and can be cut off flush to the power coil's casing.



Push the transparent insulating sleeve on the red lead of the Spark coil further onto the cable, thereby exposing the socket, this enables you to push the plug securely into the socket of the Easy Start. Now pull the long transparent insulating sleeve back over the connector and then push the short transparent sleeve over metal connector and under the long sleeve so the both sleeves are telescoped together.



Remove the top fixing screw of the spark coil (the coil with spark plug cable), place the eyelet tag of the black Easy Start cable onto the screw and replace the screw with the eyelet tag and tighten this screw securely, refer to top photo. You will see that the spark coil has a brass earthing strip under this screw. **This earthing connection serves not only the screening cable but the ignition also, therefore it must not be removed or left off.**

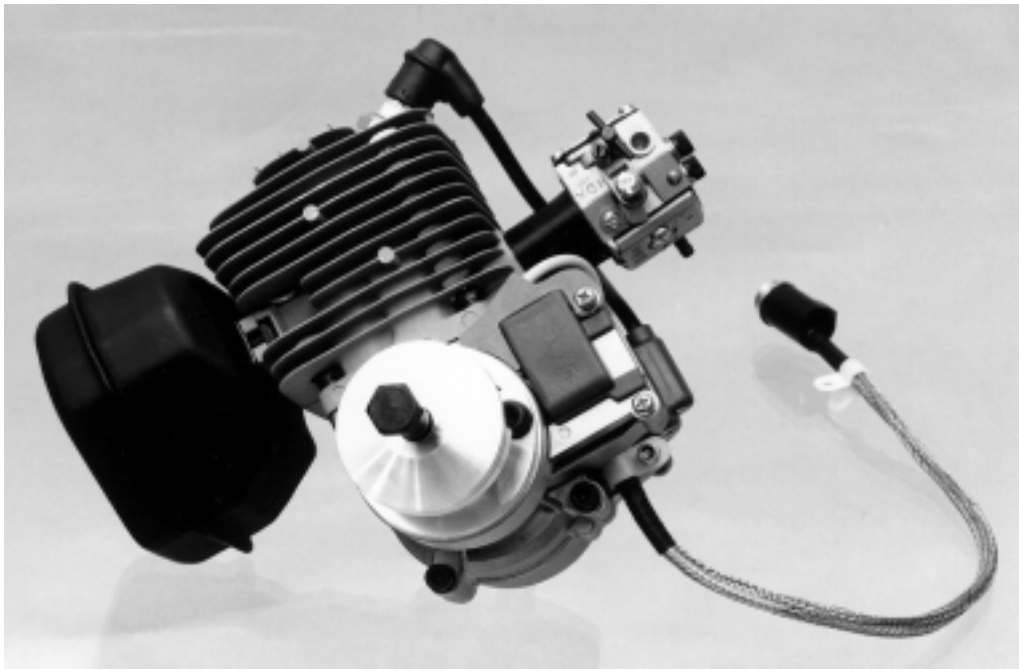
Next, remove the power coil's left hand fixing screw, use this screw to fix the Hall sensor carrier (this is the milled out Tufnol piece). This carrier must lie flat onto the coil core. The bottom hook shaped end of the carrier must be fixed with a small amount of 5 minute epoxy to the the power coil. Should it be necessary this 5 minute epoxy can easily be loosened. Firmly resist any idea you might have about drilling holes in the coil core to fix the Hall sensor carrier. A hole in the core will radically reduce the efficiency of the power coil.



The gap between the flywheel and the coil core must be 0,3mm, neither more or less. In the absence of a suitable feeler gauge you can use two layers of 80 grams copying paper (the paper from these instruction for example). Place the two layers of paper between the flywheel and the coil cores, turn the flywheel until the magnets are under the coil, the magnets you will have noticed have now pulled the power coil firmly onto the flywheel with the paper clamped between. It remains for you to tighten the fixing screws. The gap between the Hall sensor and flywheel is uncritical due to the very powerful flywheel magnets.

The cable is fixed to the lower fixing screw on the spark coil with the bigger of the two cable clamps supplied. On the ZG62 you remove the screw and use the M4x25 socket screw and the M4 stop nut supplied with the Easy Start, as shown in the photo on the right.





ZG 62SL



For the ZG45 shown here, you use the original screw on the engine to fix the cable clamp against the spark coil.

It now remains for you to fix the four pole switch socket onto the model with the two Tufnol eye rings onto the right side of the model, as viewed from the rear, using the four 2,9x13 PK screws. **Turn the socket so that the polarizing groove is uppermost**, this way you will find it easier to fit the plug. Now apply Cyano, to permanently fix the socket to the rings. Use the remaining smaller cable clamp, to fix the cable to the firewall.

In the Easy Start box is the ignition unit and a four Mignon cell battery which is more than adequate for at least 800 starts, when each start requires two minutes and you leave the Easy Start plugged in for 10 seconds after the motor is running. But in the normal turn of events there is considerably more than 800 starts possible. There will be few of us who can or will achieve 16 starts per week right throughout the year and with two weeks holiday without a model. This performance makes it totally unnecessary to fit Nicads that would require regular charging.

IN CASE YOU HAVE SCREENED THE HT-CABLE OR YOU WISH TO DO SO:

The original rubber plug cap must not be screened. The screening cable must be kept at least 1cm from the plug cap, this end must be well fixed so that it cannot come closer to the plug cap. The other end of the screening must not reach onto the HT coil but must also be kept back at least 1cm from the coil body.

If you do not adhere to these gaps of 1 cm of the screening cable, the very high voltage of the Easy Start System will short onto the screening. The result will be that in spite of the Easy Start, starting will be very difficult with backfiring and kicking back.

If you fit the Bosch metal screening plug cap, you can then leave off the screening in most cases, so avoiding the problem of the HT shorting.

A range test will show whether you have been successful with your screening. Always make a range test after any alteration to the ignition system such as screening.

STARTING:

Fill the tank (this always pays).

Close the choke.

Open the throttle a little more than you would for a normal tickover.

First push the Easy Start plug fully into the socket,

then switch on the Easy Start.

Flick the engine over **without** the usual priming flicks.

There is really no need for any hefty flicking, it is not necessary to over exert yourself, just flick the propeller lightly **over the compression**, you will soon notice you can turn the engine over with your little finger on the tips of the propeller. Safe method is feet astride the fuselage, and restrain the model with your right hand, same as is shown with the photograph on the front page, you are then clear of the danger area. Flick the propeller with the left hand. Do not omit to have your transmitter in easy reach!

The engine will fire and run after it has sucked in enough fuel and due to the choke being closed will stop. This is how it should be. Now open the choke flick the propeller over a couple of times and the engine will start and run, remove the Easy Start plug and then switch off at the box. You will notice that as soon as the plug is removed the revs increase, this is due to the advanced timing of the magneto, you can now throttle the engine a little and you have your normal tickover.



Please DO NOT reinsert the Easy Start plug while the engine is running; although there are safety circuits built in; Murphy's Law being what it is can prevail.

The red light diode only shows that the Easy Start is switched on and nothing else, and burns with the Easy Start plugged in or out. The idle current is a mere 20-30 milliamperes. But if you forget and leave your Easy Start switched on for a week, the batteries will be drained. It is a good idea to have a set of fresh Alkaline Mignon Batteries ready in your flight box, it can save a flying weekend. Do not leave the Easy Start plugged in unnecessarily. For your safety, the opto coupler in the socket switching device uses some 20 milliamperes to disconnect the power coil from the spark coil, even when the Easy Start is switched off!

MAINTENANCE:

Should the plug become loose after a while, then slightly bend the split socket pins apart with a knife. Should the engine not start although you have a spark at the plug in the open air, maybe the battery is not up to producing a spark in the higher pressure of the combustion chamber. -> Change the batteries.

Should you wish to use NC batteries in spite of our assurances, then you must use 4 cells. The Easy Start is designed to work with a power supply between 4 and 6 volts.

Gerhard Reinsch

