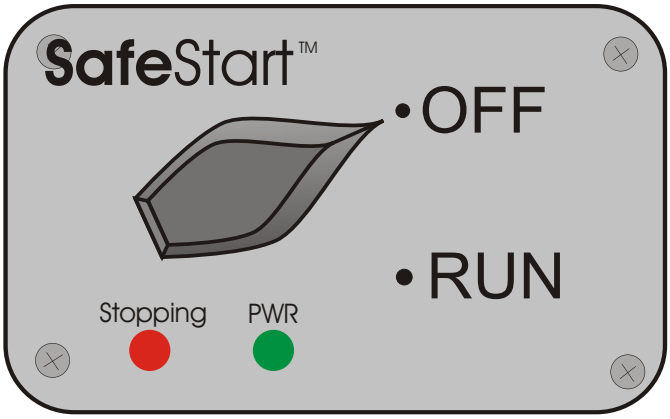
Paramotor **Safe**Start™

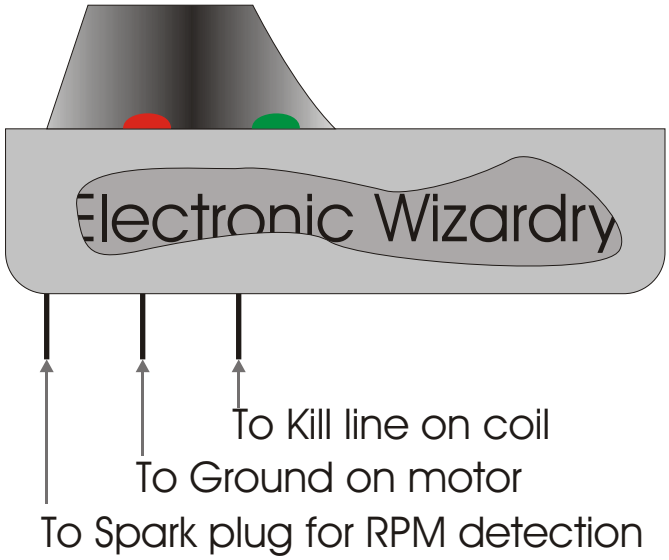
Use of the name **Safe**Start is available, for a nominal fee, with permission. The intent is to encourage its use while maintaining design integrity.

The most common cause of paramotor injuries is the propeller. And the single most common cause of those is when the motor is started and unexpectedly goes above idle power. This system reduces that likelihood.



Stopping: Lights up when the circuit is commanding a motor kill—possible in the RUN position. If the engine RPM exceeds 3000 RPM within 5 seconds of starting, the kill line is shorted for 5 seconds then the light goes out and the system resets.

PWR: Lets the pilot know the auto-shutoff circuit has sufficient battery power. In would normally be lit with the switch in the start or run position.



OFF: The kill line is closed (shorted) mechanically and power is removed from the auto shutoff circuit.

RUN: The kill line is mechanically open so that, even with a dead **Safe**Start battery, the motor can be started and run. It's not "failsafe" in order to avoid stranding a pilot simply because of a dead battery.

With normal system power in the RUN position, the system monitors RPM. If, within 5 seconds of the motor starting, the RPM exceeds 3000, it shorts the kill line for an additional 5 seconds. A light illuminates to let the pilot know why the motor quit.

There is no problem if the battery dies in flight since it merely loses the ability to short the kill line based on RPM.

Consideration could be given to a bypass position to allow pilots to start recalcitrant motors at higher RPM (decidedly unsafe) or maybe set the RPM threshold temporarily to a higher limit.

The system should have a timer that would power itself down 20 minutes after the rpm has dropped below 1000 to prevent running the battery down. The Switch would have to be cycled to off and run to reenergize.

It would be preferable to run on common alkaline batteries that are easily changed without tools.

Licensing: The mark was registered to provide an easily recognizable means for customers to know your paramotor comes equipped with this safety feature. It will be licensed to paramotor makers whose product complies with design specs, in effect at the time of manufacture, for $50 per *company* (not per machine). The fee is designed only to cover trademark application fees ($275). It is an effort to encourage adoption while preventing the trademark from being snatched up by any one company. Design specs may change.

Created 11/20/2006, Jeff Goin