



Obtain correct RPM on Rotax Evo engines

- 1) Get back the good impulses
- 2) Correct the effect of the contact breaker (electronics stabilizer of maximum RPM on Rotax)

1) Get back the good impulses

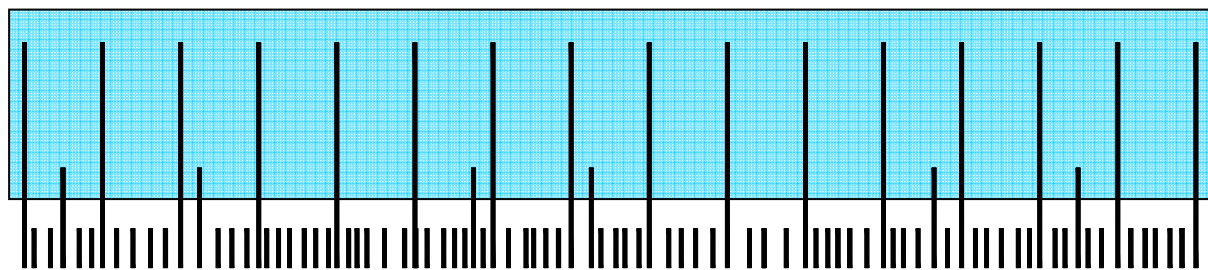
This ignition produces at the same time 2 types of impulses :

- * Good impulses which the ALFANO needs
- * Bad impulses - PARASITES - that can be added to the good impulses.

THE ALFANO has to get back only the good impulses for a correct reading of the RPM. The advantage is that these good impulses are more powerful than the parasites impulses, the goal thus being to decrease the power of the signal coming from the high-voltage reel to avoid that the ALFANO also gets back the parasites impulses.

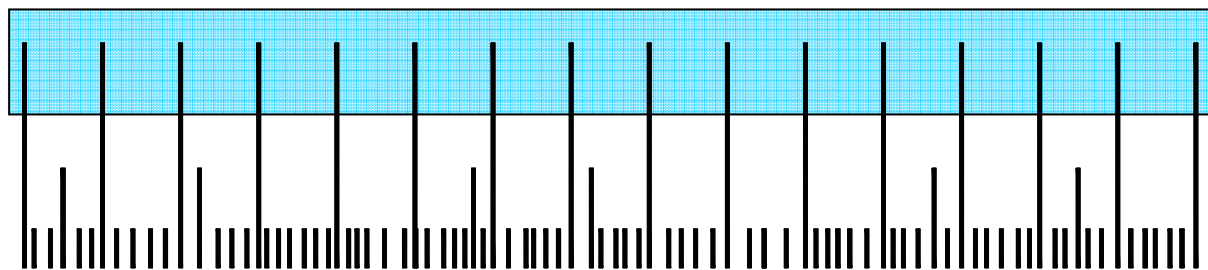
Explanations :

In the figure below : the ALFANO shows an RPM higher than the normal because it gets back the good impulses + the bad ones.



The blue zone represents the recovery of the impulses by the ALFANO

In the figure below : the ALFANO only gets back the good impulses, in this case, it shows the good RPM.



The blue zone represents the recovery of the impulses by the ALFANO

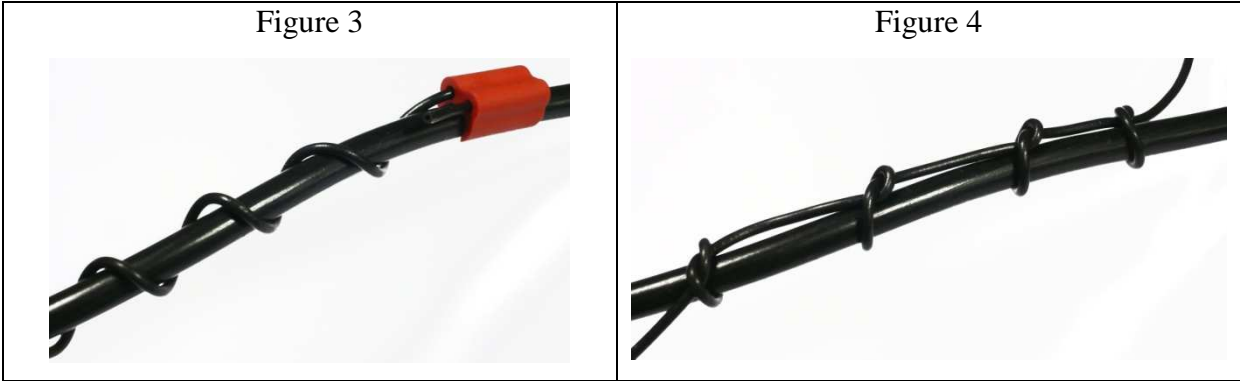
To solve this problem, we have to mount correctly the RPM cable and, when it is necessary, to modify this cable to further reduce the signal.

A) Installation of the cable RPM on the high-voltage spark plug thread : it is imperative to strictly follow this method because a bad installation, as described below, increases from 300 to 500 % the signal.

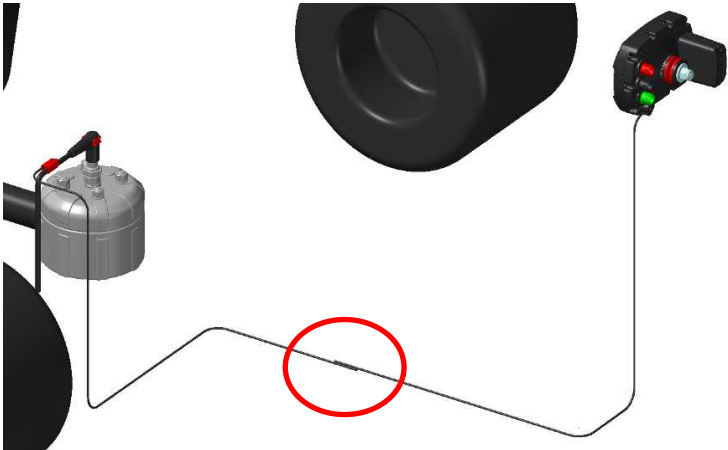
Correct installation



Bad installation, the ALFANO receives too much signal, 300 in 500 %



B) If we still meet abnormal increases of the RPM having executed the point A, we then have to modify the RPM cable to further decrease the strength of the signal.



Cut the cable on the point indicated above (figure 5), then stack 2 pieces of cable and assemble them with tie rap as on (figure 6) below, it is very important that both cables are well against each other, do not hesitate to place a tie rap each every 2 centimeters.



Figure 6

It is then necessary to make tests because the distance of overlapping of both threads must be individually adjusted.

- if too much signal comes through, the RPM is too high, then decrease the distance of overlapping
- if not enough signal comes through, the RPM is too low, then increase the distance of overlapping

It is likely that the distance of the overlapping is different from a kart to another as it depends on the manufacturing tolerance of Rotax' ignition and on the sensibility of the ALFANO which can vary from one system to another.

On the PRO III EVO, if the RPM cable is well installed as described above (Figure 1 or 2), generally, it does not need other intervention there, thus use the RPM cable as it stands. In the case the problem persists, then begin with an overlapping of 15 cm. On M4GPS / M10 (more sensitive models) begin with an overlapping on +/-3 cm.

2) Correct the effect of the contact breaker

The ignition of the Rotax Junior Evo is electrically piloted and it divides by two the impulses when the engine reaches the maximum regime (15000 rpm), this to stabilize the speed of the engine (the contact breaker is in action). When the contact breaker is in function, the ALFANO at high speed thus measures half of the RPM. Indeed, the ALFANO detects impulse on two. Example : the engine turns in 15010 rpm, the ALFANO shows 7505 rpm.

To counter this problem, we improved our firmware so that the ALFANO is able to detect when the impulses quickly decrease in half, and, in this case, to make the ALFANO multiply by two the received impulses and show from then on the correct rotation speed of the engine. In the new RPM menu, there will be an additional option to activate this function.

Download latest firmware on our website :

www.alfano.com

Version 2.3.8 for "M4/M4GPS/M10"

Version 4.2.8 for "PRO3EVO"