ADVANCED Controller

Index:

1 General features

-Embedded microcontroller.
-Acceleration and brake control by PWM signals and MOSFET transistors.
-Magnetic trigger that eliminates friction and is maintenance-free.
-Built-in protective fuse of 2 A. (+1 Spare).
-Green LED indicating operation.
-Extra flexible 59" (1,5 meters) power cord.
-Red, white and black 4mm banana connectors.
-Brake knob.
-General sensitivity knob.
-Acceleration sensitivity knob.
-Traction control knob.
-Adjustable trigger travel from minimum (brake) to maximum (acceleration).
-Rubber cable protection.
-Reduced weight.
-Low power consumption.
-Ten different adjustable power curves
-USB PC connection cable
-User updatable firmware.

2 Connections and electrical specifications

-It is very important NOT to connect the PRO Sloting Plus controller to a voltage exceeding 22V. Doing so may cause the controller to be severely damaged.

     -2 Amp fuse to protect from power surges

     -It is VERY important to respect the connexions' polarities

Banana connector colors

Banana Color	Connection Type	Cable Color
Red	Negative source	Brown
White	Positive source	Blue
Black	Track	Yellow/Green
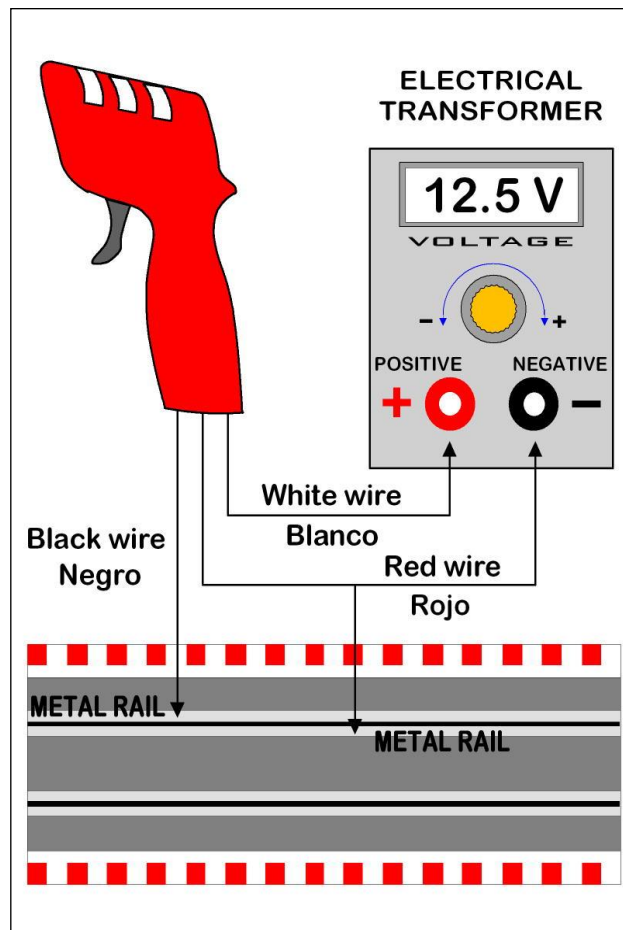
The correct way to connect to the transformer and the track.

REMEMBER

To change the direction of circulation of the cars, **ONLY** have to invest the

position of the electrical cables which are connected to the metal rails of the track

3. Switches and indicators.

In this image position we see the knobs, buttons, the display, the fuse, etc.
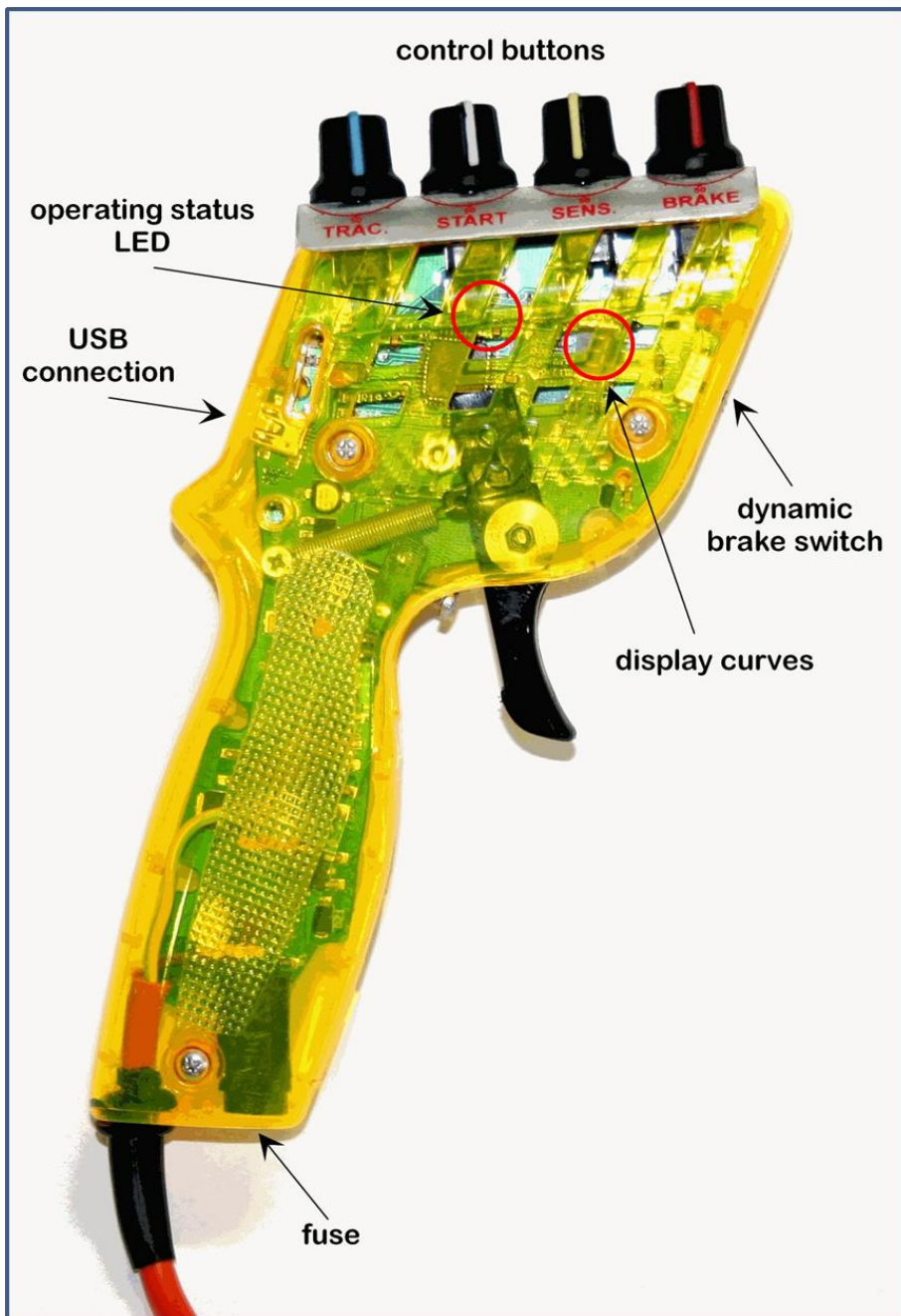

Fig. - 1 -

4.- Instructions:

4.1 The brake knob

Red knob. With this knob you can adjust the braking force from 0% to 100%. The brake is controlled by a PWM signal so that the adjustment is extremely accurate.

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4.2 The general sensitivity knob.

Yellow knob. This knob adjusts the control voltage of the track and the type of engine that we are using. Its "curve point" is 50 and corresponds to the selected curve. Turning the knob to the left (0) decreases the power (the whole curve lowers approx. 15%) and turning it to the right (100) increases it (lifting the whole curve approx. 15%).

It should be noted that this adjustment affects the entire trigger travel and the selected curve.

4.3 The start knob.

White knob. This knob sets the sensitivity in the first part of the trigger travel. The knob has a central position (50), turning the knob to the right (+100) a more aggressive start is achieved. Turning the knob counterclockwise (0) makes the acceleration softer.

It should be noted that this adjustment affects only the first part of the trigger travel (approx. 30%).

4.4 The traction control knob (Anti-spin)

Blue knob. This knob adjusts the power delivery time, in other words it acts as a traction control. It has a position (0%) with no traction control and a position (100%) where the traction control is maximum. Operation is simple, to prevent loss of traction in situations where the trigger goes suddenly to another position of higher power ("hit the switch"), the command does not deliver power to the motor instantly and instead generates a process in which the power jump is progressive.
Power delivery to the engine is via a PWM signal, this facilitates the implementation of this setting with great precision.

Fig. - 2 -

4.5 Power curves, curve selector

The ADVANCED controller gives you the option to set the power sent to the motor at each position of the trigger travel. For this purpose the controller is capable of storing 10 different power curves. These curves are fully editable from software installed in a PC (see point 5 of the manual).

By slightly pressing the button on the back of the remote (fig.3) you can choose in any time the power curve you want to use.

Fig. - 3 -

This allows you to set the remote control for different uses, either different scales (1/32, 1/24, etc.) or different types of competitions, rally, speed, etc.

As you will see later, the power curves have a direct connection with the yellow knob (sensitivity) of the controller.

4.6 Dynamic brake.

One of the special features of the ADVANCED controller is the final stretch dynamic brake that is activated by the switch marked in Fig -. 4. This function is intended to provide additional braking force at the end of long stretches.
The red LED permanently lit indicates the function is activated and a flash of the blue LED indicates the moment it enters operation.

We must clarify that, obviously, the maximum braking force is achieved by placing the brake potentiometer in the position of 100%, and in this situation this function doesn't provide a greater braking force than the selected maximum.

The operation is simple, the controller controls how long the trigger remains pressed back, after some time in that condition, the moment the trigger is released the braking force is increased by 15% above that which we have set using the brake knob.

In this way, having set the load to a value of for example 75%, we can get all the braking in the entire circuit to be with that value except at the end of stretches where the brake intensity will be 75% + 15 % = 90%.
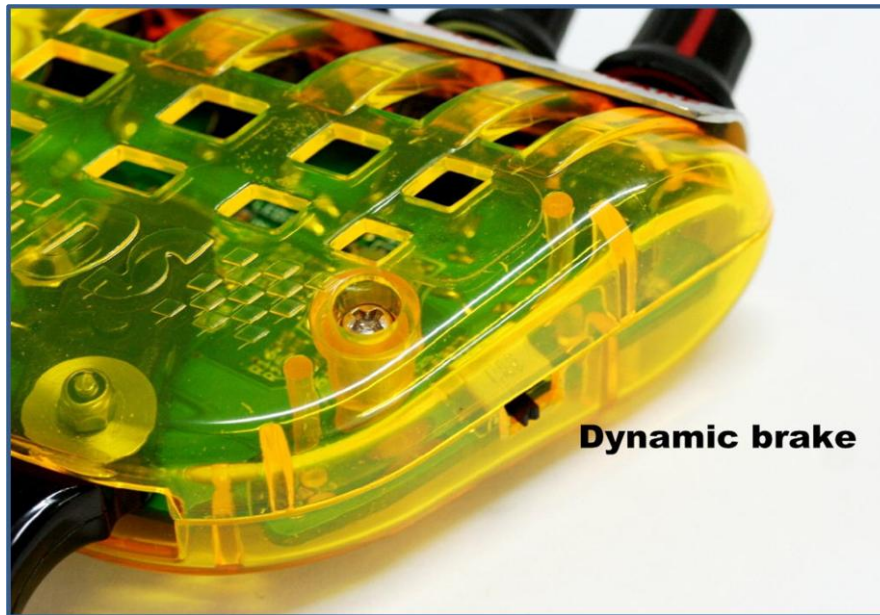

Fig. - 4 -

4.7 Setting the trigger travel.

You have 2 options to adjust the travel of the trigger to your liking. The minimum position (brake ceiling), sliding the hexagonal stopper from left to right. The maximum position (max. acceleration), loosening or tightening the screw (Fig. 5).

If you change the trigger travel, you then must ALWAYS calibrate it in order to suit the new position.

How to calibrate the trigger:

1. Press the rear button (curve selector) and without releasing it connect the controller to the track (the track must be powered).
2. Once the controller is connected to track, the blue indicator will light up (the rear button can then be released). This indicates that the controller is calibrating the rest position of the trigger.
3. After a few seconds the blue light will turn off, then press the trigger to the ceiling and keep it a few seconds until the blue indicator flashes twice.
4. Finally, disconnect the controller from the track and then reconnect again.

When the controller is connected again to the track it should have the new parameters of the travel set and its operation should be normal.
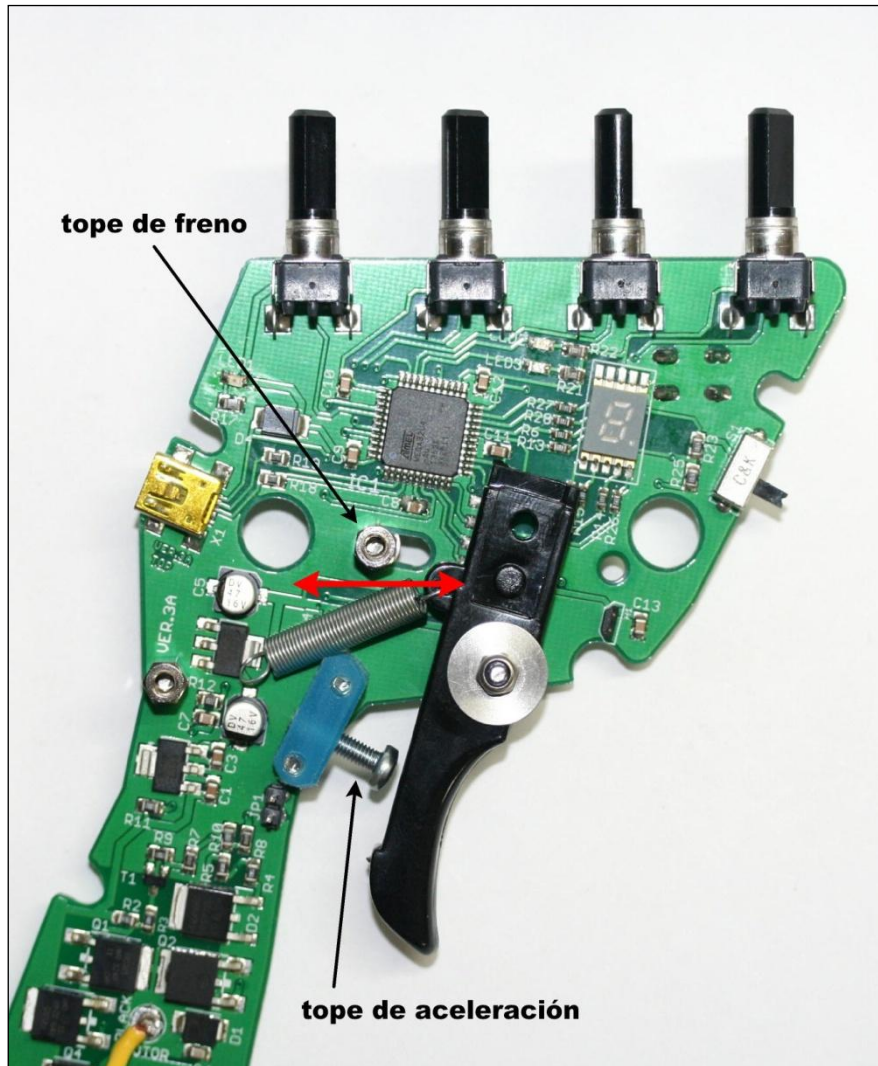
tope de freno

tope de aceleración

Fig. - 5 –

4.8 Fuse

The ADVANCED controller also features a standard 2 amp fuse to protect from power surges (Fig. 6). To replace it you must first remove it by turning the cap counter-clockwise while slightly pressing it down.

VERY IMPORTANT

ALWAYS use a FAST acting fuse of 2A or a maximum of 5A .

Always of equal value to that offered the transformer or below these value.

If after replacing the fuse it blows again, please check the connections of the controller to the track following the polarity outlined in these instructions, examine the car to detect any anomaly or a crossing of the braid and finally, check the status of the track to detect any possible crossover between the rails.

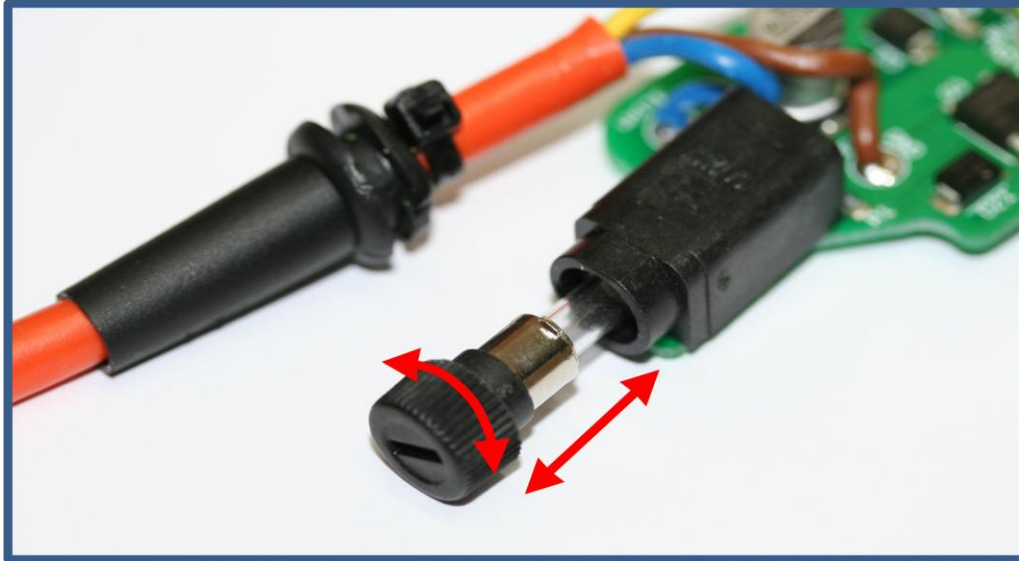If the fault persists contact Sloting Plus at info@sloting.com

Fig. - 6 –

5.- USB connection. SlotingPlusAdvanced Software

SlotingPlusAdvanced is a PC software that lets you create, edit and save power curves for the controller. It also lets you update your controller to new versions of firmware which will always be free.

With SlotingPlusAdvanced you can work with the curves that you have stored in the controller or with curves stored in files in your PC.

Create a new file of curves (each file contains 10 curves), modify the curves to your liking, save the file to your computer and/or send it to the controller. In the controller you can store a file with 10 curves and an unlimited number of files can be stored on the PC.

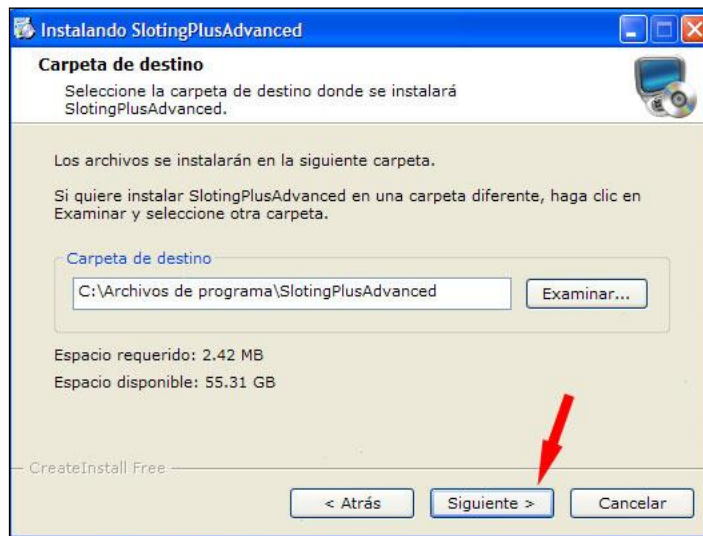#### 5.1- Software installation and connection to your PC

You'll find the latest software on our web page www.sloting.com in the in area designated for the ADVANCED model.

Running it opens the first installer window and you must click on "Next".
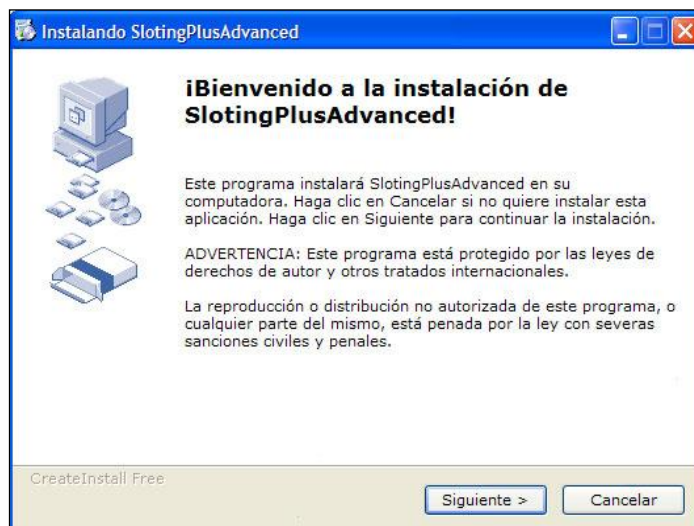
The second window is the one that displays the path where the application is installed, click again on "Next"

Finally the process ends by clicking on the button "Finish"

On the desktop you will find a shortcut to open the program installed every time you want to use it.
The first time you connect your remote to your computer with the USB cable, it will start installing the driver, if it asks for confirmation you must accept it.

5.2- Running the program

Once the program is open, in the main window, by clicking on "File" in the upper left part of the menu you have three options that allow you to work with the power curve files stored on your PC.

The option "New" lets you create a new file of curves. This option will delete all 10 curves presently loaded into the program and leave them all at zero.

From this point you can draw new curves. The second option "Open" allows you to upload to the program any file of curves stored on your computer. Once the file is loaded you can edit any of the 10 curves it contains.

The third option, "Save" allows you to save and/or modify the loaded file.You just have to give it a name and choose which place you want to save the file in your computer.

Under the previous menu there is a box called "Remote Connection". With four buttons in it you can connect and disconnect the controller (of course the controller must be connected with the USB cable).

Clicking the "Connect" button with your controller the connection is established.
With the "Read" and "Send" buttons you read your controller settings (Read) and send the new configuration to the controller (Send).
After making the desired changes you must press the "Disconnect" button before unplugging the USB cable.

Controller connection

5.3- Editing the power curves

When opening a file of curves from your PC or when reading the configuration of your controller, you are shown the picture of each of the 10 curves.
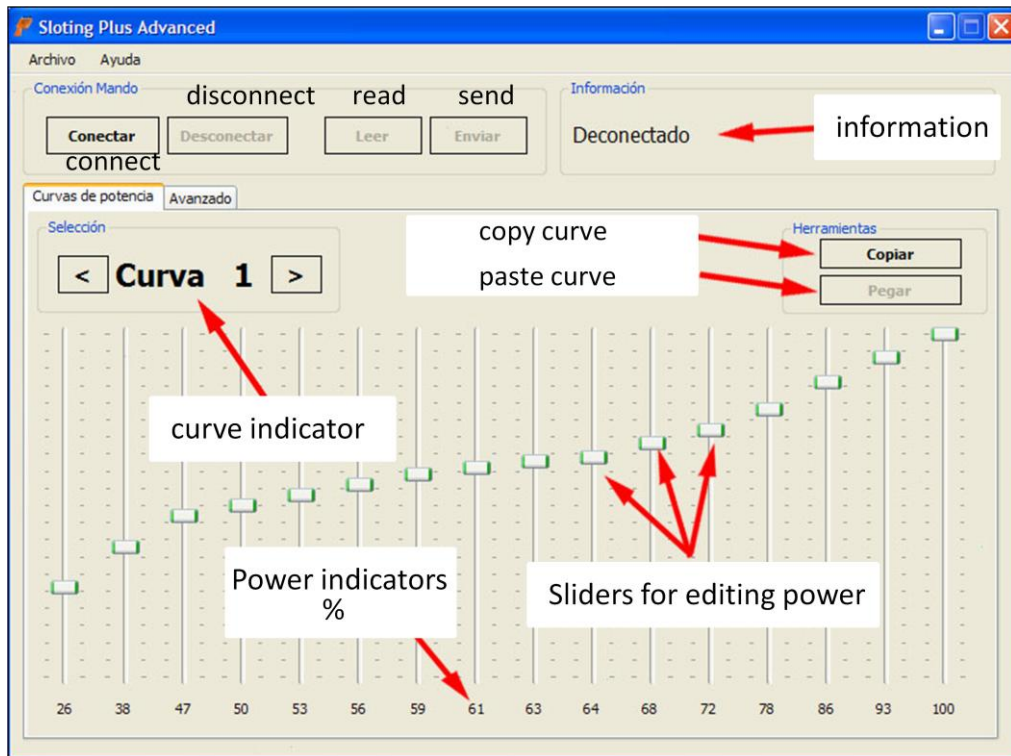
With the left and right arrow buttons you can go back and forth over each of the curves. Each curve has a number that identifies it, this number ranges from "1" to "10". These numbers correspond with the numbers indicated by the curve selector installed on the controller .

With the "Copy" and "Paste" buttons you can copy the drawing of any curve and paste it onto another number.

The slider's position indicates the travel of the trigger and the power sent to the motor in each position.
Considering that in the rest position of the trigger the power sent to the engine is always zero, the first slider to the left corresponds to the power to be sent to the engine as we press the trigger withdrawing it from the rest position. The last slider on the right corresponds to the trigger fully depressed.

Below each slider is a number that indicates the percentage of total power according to the position of the slider (0-100%).

At this point we need to know the direct relationship between the drawing of each curve and the sensitivity knob (yellow knob). As we saw earlier, the sensitivity knob has a central position marked "0" and two side positions corresponding to the maximum (+100) and minimum (-100).

If the yellow button is on "0" (central), the power transmitted to the engine is exactly that indicated by curve in each position of the trigger. However, if we move the yellow button to "+100" or "-100", the power in all positions of the trigger increases or decreases at most 15%.

In other words, if for example, the first slider on the left is at position 30%, with yellow button we can make this trigger position deliver a power of between 15% and 45%. This will affect all positions of the trigger, the power delivered to the motor throughout the travel of the trigger will decrease or increase up to 15%.

To all this we must add a few clarifications. The first is obvious, even if we bring the yellow button to the maximum (+100) the power will not exceed 100% in any position of the trigger.

The second is that all sliders that are positioned in 100% (top) are not affected by the sensitivity knob, that is, they never will go below 100. In contrast, when placing them in any position less than 100 they are affected by the regulation of the sensitivity knob. This allows us to establish curves where even pressing the trigger fully 100% of the power is not delivered. This feature gives us the ability to set the controller with a maximum power below 100%, perhaps for use by children or people with little experience.

6.- Updating the controller, firmware

As mentioned above, the controller firmware is upgradeable and free, this way you can have the latest features added to the controller always at your disposal. Visit our website www.sloting.com in the in area designated for the ADVANCED model and you will find the firmware for the controller.

The upgrade process begins with downloading the version corresponding to the file we want to update. Once downloaded and saved on your computer, you must open the "SlotingPlusAdvanced" program and go to the "Advanced" tab.
In the bottom right there is a box called "Firmware Update" which we use to perform the upgrade.
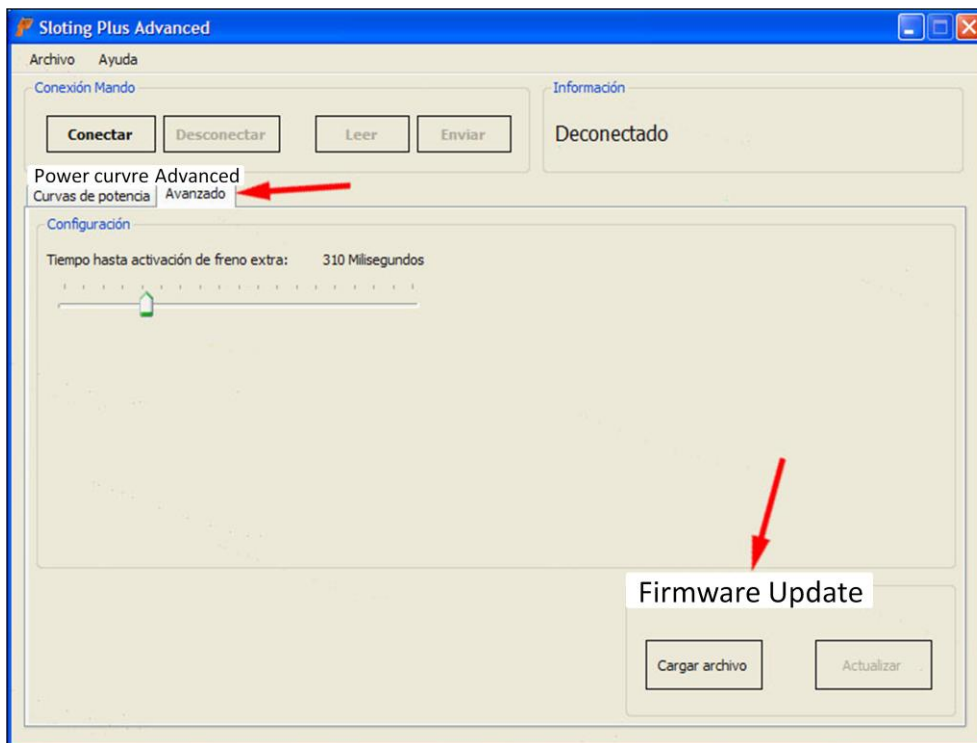
Then connect the controller to your computer using the USB cable. For the update to be completed successfully, you must connect the controller in programming mode. This is achieved by shorting the two pins that are located behind the trigger of your controller by making contact between them with a screwdriver or the like (Fig. 5). While keeping circuit shorted, connect the controller to your computer with the USB cable. Once connected, you can release said short-circuit.

Fig. - 5 –

Once the previous task is properly performed, you must press the "Load File" button in the program. A window opens that enables us as to find and select the update file previously downloaded from our web page.

Uploaded the file, click the "Update" button and wait until the process finishes. Finally, if the received message indicates a successful upgrade, you can disconnect the controller from your computer and consider the controller updated. If a message indicates an error in the update you must repeat the process from the start.

For any question you can send an email to info@sloting.com