Dear customer,

The Jeti Advance range of speed controllers are a new type of sensorless speed controller especially designed for Jeti 'Phasor', ModelMotors Axi out runners and other 'brushless' motors. 'Brushless' motor systems offer high power and high efficiency combined with low weight and compact dimensions. If you want to use this type of power unit successfully it is wise to follow some simple rules.

- **Please, pay careful attention to the following instructions before you start to use your new motor and speed controller**.

Connecting-up:

We strongly recommend the use of G3.5 or G4 (Gold) connectors, which should be soldered carefully to the cables. Always use new connectors. We do not recommend using any other type of connector. It is possible to extend the cables to the main power pack up to a maximum of 20 cm.
The speed controller is connected to the motor with G3.5 connectors. The opposing connector halves are supplied with the speed controller and must be soldered to the motor cables.
G 3,5 Connectors are recommended for connecting the power pack(s). It is recommended to solder the cables directly to the power pack terminals if at all possible.
Plug the JR connector into the receiver throttle channel.

The basic technical details of these speed controllers are:

Model	Size (mm)	Weight (g)	Current (A)	Cells/servos NiCd/NiMh	Cells/servos Li-xx
ADVANCE 04 Plus	25 x 17 x 4	2 / 6	4	6/4, 8/3	2/4 3/3
ADVANCE 08 Plus	32 x 23 x 6	5 / 9	8	6/4, 8/3, 10/2	2/4 3/3
ADVANCE 12 Plus	32 x 23 x 6	6 / 10	12	6/4, 8/4, 10/2	2/4 3/3
ADVANCE 18 Plus	32 x 23 x 7	11 / 21	18	6/4, 8/4, 10/2	2/4 3/3
ADVANCE 30 Plus	42 x 23 x 7	15 / 28	30	6/4, 8/4, 10/3	2/4 3/3
ADVANCE 40 Plus	52 x 25 x 10	18 / 35	40	6/5,8/5,10/4,12/3	2/5 3/4
ADVANCE 40 optoPlus	52 x 25 x 8	18 / 35	40	6-16 / -	2 – 6/-
ADVANCE 45 optoPlus	52 x 25 x 10	20 / 38	45	8 - 24	3 – 8/-
ADVANCE 70 Plus	52 x 25 x 12	20 / 38	70	6/5,8/5,10/4,12/3	2/5 3/4
ADVANCE 70 optoPlus	52 x 25 x 10	20 / 38	70	6 - 16/ -	2-6 / -
ADVANCE 75 optoPlus	52 x 25 x 12	22 / 40	75	8 -24	3 – 8/-

Note: When using economy class micro servos, it is necessary to reduce the number of servos by one.
When using fast servos or digital servos, it is necessary to reduce the number of servos by two.

Installing into the model:

- Attach the motor to the motor mount using the screws provided. Adjust the effective screw length (place washers under the head) so that the threads do not protrude protruding inside the motor casing. The windings of your motor can be damaged if the screws protrude inside the motor case. See motor instructions.
- Mount the speed controller in the model so that it is isolated from vibration and shock. Allow space around the speed controller for cooling. Make sure that there is sufficient cooling of the motor and speed controller by the directing adequate cooling air from the outside airflow.
- The main power pack should be connected in one smooth and definite operation. Avoid multiple touches of the connectors.
- Switch on the transmitter and check the throttle channel settings are +/- 100% (for computer radios).
- For speed controllers without BEC, switch on the power to the receiver.
- Switch on the speed controller.
- You should hear a 'beep'**. Between switching on the switch and the 'beep' the throttle stick must not be moved**. If you do not hear a 'beep', switch off the speed controller, disconnect the power connectors, wait for 5 seconds and repeat the procedure of connecting and switching on. If you do not hear 'beep' again, check the following:
  - Is the JR connector plugged into the throttle channel?
  - Is the throttle stick in the throttle low position (OFF)?
  - Is the throttle channel in 'normal' position & not reversed? Futaba transmitters should have channel 3 reversed for correct operation of the speed controller.

You will hear the 'beep' when first switching on the controller only. When you switch off the speed controller without disconnecting the power pack, you will not hear the beep after next switching on.

The speed controller will adjust the full throttle position automatically.

- **Warning: Once the main power pack is connected, handle the model with extreme care** – Ensure that everyone is well clear of the propeller at all times. Rotating propellers are extremely dangerous!
- Connect the main power pack just before flight and disconnect it immediately after landing.
- **Warning: The speed controller switch does not isolate the main power pack!**
- The speed controller is supplied with the 'brake' activated. If you want to turn off the brake, do the following:
  - Switch on the transmitter and move the stick to full throttle.
  - Connect the main power pack and turn on the receiver switch (if used).
  - Wait 5 seconds.
  - After 5 seconds you will hear 4 tones.
  - Swiftly move the throttle stick to the closed position; you will hear two 'beeps'.
  - The brake is now turned off.
- The brake setting will not change after disconnecting the main power pack. When turning on the speed controller with the brake active, you will always hear one 'beep'. When the brake is turned off you will hear two 'beeps'. If you want to activate the brake again, repeat the procedure.

It is possible to set two timing modes with these speed controllers.
-Soft timing- for 2,4,6, pole motors (Mini AC, Kontronik, Hacker) Soft timing gives maximum efficiency.
-Hard timing- **only for 6 and more pole motors** (Jeti Phasor, Mega, Plettenberg).

Hard timing increases both the motor revolutions and the current (up to 20%) with the same prop and battery pack when compared to soft timing. This is more suitable for faster flying models.

Always use soft timing for the first flights. If the temperature of the batteries, speed controller and motor are below 50°C degrees following the first flights it is possible to test the system using the hard timing mode. **Do not use hard timing with 2 pole motors** (Mini AC, Kontronik, Hacker).

Hard Timing is recommended for use with ModelMotors Axi outrunner motors – even for the first flights.

The Speed controllers are supplied with soft timing - to change the timing:

Switch on the transmitter and move the stick to full throttle.

- Connect the main power pack and turn on the receiver switch (OPTO controllers) and wait 5 seconds
- After 5 seconds you will hear 4 "beeps"
  After a further 5 seconds you will hear 5 "beeps" for soft timing
- OR 5 double "beeps" for hard timing
- The required timing is set by moving the throttle stick to the closed throttle position.
- The new timing is confirmed by a single bleep (brake on) or a double "beep" (brake off)

The timing setting will not change after disconnecting the main power pack.

Timing monitor (if you want to know what timing do you have).
After the first "beep"(s) wait 5seconds (keep the throttle in the closed position).
The controller (motor) gives 5 single beeps for soft timing or 5 double beeps for hard timing
It is possible to interrupt this beeping at any time by moving the throttle stick forward.

Reverse the motor direction by the exchanging the position of any two connections to the motor.

These controllers have automatic cut off with auto detection for the number and type of cells. This circuit provides the correct cut off for all types and number of cells. If the brake is on, the low voltage motor cut-off is sudden (controllers with BEC) leaving the remaining capacity for a safe landing (soarer mode). If the brake is not active (aerobatic mode or "opto" controllers) the ESC automatically provides a gradual low voltage motor cut-off. A gradual low voltage motor cut cut-off is preferable with an aerobatic model to avoid a sudden loss of power which would inevitably happen down wind and at low altitude.
Temperature overload protection is built into the speed controller which turns off the motor when the temperature reaches 110° centigrade. These speed controllers are equipped with protection functions that take care of the correct start and operation of the motor across the whole range of revolutions and current.
Do Not connect the speed controller to just '<u>any</u>' kind of power source. Take care to ensure the correct polarity of NiCd, NiMH or Li-XX power packs. Your speed controller will be severely damaged if it is connected to a battery using the wrong polarity.
It is possible to connect Advance Plus speed controllers with Advance Plus Prog Card. Using of this card enables to extend the possibilities of controller settings. All this system is very friendly to you.

JETI Model, wishes you many safe flights and happy landings.