Thank You, for purchasing a new generation of sensorless speed controllers especially for **'Hacker Brushless Motors'** and has special Programming options for other Brushless Motor Designs 'Brushless' systems offer high power efficiency combined with low weight and compact dimensions. For best performance and reliabilty from your Controller use only High quality connectors, motors and batteries.

●Please, pay careful attention to the following instructions before you start to work with your new motor and speed controller.

Connections:

The speed controller can be connected to the motor by direct soldering or with high quality connectors. Always use new connectors, which should be soldered carefully to the cables. It is possible to extend the cables to the motor battery pack up to a maximum of 8". Deans Ultra or other high quality connectors are recommended for connecting the motor battery pack to the controller.

Note: The MAS18-3P and MAS06-3P speed controllers are supplied without connectors.and can be soldered directly to the motor wires

- **Solder appropriate connectors to the Motor wires.**
- **Solder appropriate connectors to the Battery wires**
- **Plug the JR connector into the receiver throttle channel.**

Installing the Controller:

Install the speed controller in the model so that it is isolated from vibration and shock, using Velcro or double sided foam tape. Allow space around it for cooling. Make sure that there is sufficient cooling of the motor and speed controller by the ducting air through adequate cooling holes from the outside airflow. Main power packs should be connected at one attempt.

- **Locate the controller to Avoid multiple touches of the connectors when installing a fresh motor battery pack.**

Model	Size	Weight	Amps	Cells	Bec/Servos
MAS06-3P	1.5"x.9"x.66"	.42 oz.	6	6-10	Yes/4
MAS18-3P	1.5"x.9"x.35"	.52 oz.	18	6-10	Yes/4
MAS30-3P	1.9"x.9"x.35"	.72 oz	30	6-10	Yes/4
MAS40-3P	2.5"x1"x.4"	1.1 oz	40	6-12	Yes/4-5
MAS40-3P Opto	2.5"x1"x.4"	1.1 oz.	40	6-16	No
MAS70-3P	2.7"x1"x.5"	1.45 oz.	70	6-12	Yes/4-5
MAS70-3P Opto	2.7"x1"x.5"	1.45 oz.	70	6-16	No
MAS77-3P Opto	3"x1.1"x.6"	1.5 oz	77	8-30	No
MAS99-3P Opto	3"x1.1"x.6"	1.7oz	99	8-24	No

Using the Controller:

- Switch on the transmitter and check the throttle channel settings are +/-100% (for computer radios). For Futaba Radios program the "Servo Reverse" function on the throttle channel. **Set the throttle to "closed" or brake position**
- Switch on the speed controller. For speed controllers without BEC, switch on the power to receiver (just connect the power pack for the Jes 06-3P speed controller).
- You must 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 switch, 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 JR connector plugged in throttle channel?
  - Is the throttle stick in "closed" position (OFF)?
  - Is the throttle channel in 'normal' position? (for Futaba, in the Reverse position?)
- You will hear the 'beep' during the first switch-on of the controller only. When you switch-off the speed controller without disconnecting the motor battery pack, you will not hear the beep after next switch-on.
- The position of 'full throttle' will be adjusted automatically
- **Warning: Once the Motor Battery Pack is connected, handle the model with extreme care!** Ensure that you are well clear of the propeller at all times. Rotating propellers are extremely dangerous!
- Always Connect the motor battery pack just before flight and disconnect it immediately after landing the model.

Setting the Propellor Brake On or Off

- **Warning: Even when the switch is 'off' remember the Motor Battery pack may be connected, handle the model with extreme care and stay well clear of the Propellor!**
- The speed controller is supplied with the 'brake' **ON**. If you want to turn off the brake, do the following:
  - Switch on the transmitter and move the stick to 'full throttle'.
  - Connect the motor battery pack and turn on the receiver switch (if used).
  - Wait 5 seconds, your will hear a single (brake on) or a double tone (Brake Off), Move the throttle stick immediately to the 'closed' position.
  - The brake setting is now memorized, that means it will not change after disconnecting the motor battery 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 a double 'beep'.
  - **If you want to change the brake function again, disconnecting the motor battery pack. Repeat the procedure.**

Setting the Timing Mode

- It is possible to change the timing on this generation of speed controllers.
- **All controllers are supplied in Timing Mode 1 (Optimized for Hacker Brushless Motors).** If you are using a different brand of motor, set the right timing for optimal efficiency for your type of brushless motor.

Timing Mode 1 – (2-5 degrees) optimum timing for Hacker Brushless Motors
Timing Mode 2 – (10 degrees) optimum for Avoex or Astro motors and for Maximum RPM on Hacker Brushless Motors
Timing Mode 3 – (18 degrees) optimum timing for Phaser, Mega, Plettenberg and for Maximum RPM on Avoex, Astro motors
Timing Mode 4 – (30 degrees) optimum timing for AXI, Köhler or Actro motors and for Maximum RPM on Phasor, Mega, Plettenberg motors

- How to change the Timing Mode:
  - 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, you will hear 1 or 2 "beeps" (Brake Mode)
  - Wait next 5 seconds
  - You will hear 5 time single "beep"- Mode 1 (beep...beep...beep...beep...beep)
  - 5 time two "beeps" – Mode 2 (beep,beep...beep...beep,beep...etc.)
  - 5 time three "beeps" – Mode 3 (beep,beep,beep...beep,beep,beep...etc.)
  - 5 time four "beeps" – Mode 4 (beep,beep,beep,beep...beep,beep,beep,beep...etc.)
  - Set the Timing Mode by moving the throttle stick to position "close", while between the 1st and 5th "Beeps" of the desired Timing Mode.
  - Confirmation of New timing mode, single "beep" (brake on); double "beep" (brake off)
  - The Timing Mode is now memorized , that means it

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- AeroModel Inc. must authorize all returns within 7 days from receipt of order
- All returns must have a copy of the original invoice with MRA number
- All returning packages must have the MRA number clearly marked on the outside of the packaging
- All packages shall be inspected upon delivery. All claims for damaged products must be made with carrier within 3 days of the receipt of the package.
- All defective items must be processed through the Manufacturer or the Distributor of the product
- Sender must prepay all transportation and insurance charges
- All returning items must be in new , saleable condition. They must have original packing material, manuals and accessories

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