

Hacker Master Car Speed Controller programming instructions.

Using the controller

- Switch "On" the Pistol Transmitter and set all throttle end points and travel adjustments to 100% for computer radios. (Use 50/50% for Traxxs radio)
- Set the throttle trim to center.
- Make sure the speed controller switch is off.
- Check polarity of battery and speed controller wires. Connect motor battery to speed controller.
- Switch "On" the speed controller. For speed controller without a BEC, switch "On" the power to receiver.
- You must hear a "beep". Between switching on the switch and the "beep" the throttle stick must not be moved for 5 seconds. If you do not hear a "beep" turn off the switch, disconnect the power connectors, wait for 5 seconds and repeat the procedure of connecting and switching on.
- If you still hear no beep, please check the following :
 - Polarity of wires and connectors.
 - Position of the throttle stick on the transmitter. (must be neutral)
 - Is motor battery fully charged?
 - Is receiver battery fully charged on non-BEC speed controls?
- Beep is heard only once while switching on speed controller. This beep gives confirmation that your speed controller has calibrated to your transmitter.
- If you switch off the speed controller and switch back on without disconnecting the batter, you will not hear another calibration beep.

Setting Forward/Brake or Forward/Brake/Reverse mode:

The speed controller is supplied in Forward/Brake mode. If you wish to change to Forward/Brake/Reverse mode, use the following procedure.

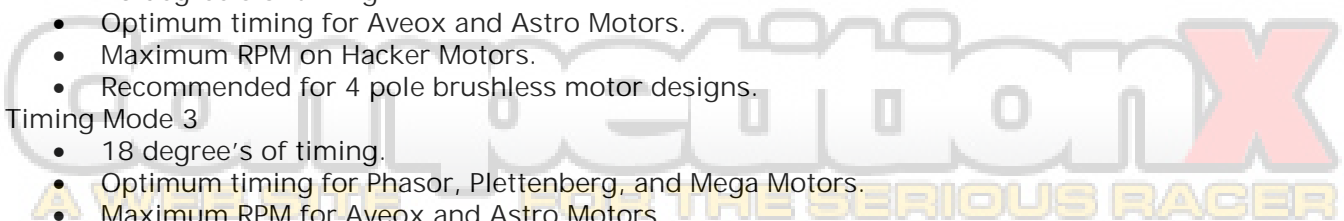
- Switch on transmitter.
- Connect battery.
- Hold throttle at 100%.
- Switch on speed controller and receiver.
- Wait 5 seconds and you will hear a sequence of 4 tones.
- Immediately move the throttle into the neutral position and you will hear 2 tones.
- Forward/Brake/Reverse mode is now activated.
- This mode is stored in the speed controller and is not changed by disconnecting the battery.

- When reconnecting battery and switching on speed controller, you will hear 1 confirmation beep for Forward/Brake mode and 2 beeps for Forward/Brake/Reverse mode.
- To switch between modes repeat above procedure again.

Choosing the Timing Mode:

The Hacker Master Speed controller can be optimized for different types of brushless motors.

- Timing Mode 1
 - Factory setting
 - 2-5 degree's of timing.
- Optimum timing for the Hacker Brushless Motors.
 - Also recommended for other 2 pole motor designs.
- Timing Mode 2
 - 10 degree's of timing.
 - Optimum timing for Aveox and Astro Motors.
 - Maximum RPM on Hacker Motors.
 - Recommended for 4 pole brushless motor designs.
- Timing Mode 3
 - 18 degree's of timing.
 - Optimum timing for Phasor, Plettenberg, and Mega Motors.
 - Maximum RPM for Aveox and Astro Motors.
 - Recommended for 6 pole motor designs.



- Timing Mode 4
 - 30 degree's of timing.
 - Optimum timing for AXI, Kohler or Astro Brushless Motors.
 - Maximum Rpm for Phasor, Plettenberg, and Mega Motors.

Recommended for high multi-pole motors.

Setting the Timing Mode:

- Switch on transmitter.
- Connect motor battery and hold trigger at "full throttle".
- Switch on speed controller and wait 5 seconds.
- You will hear 4 tones, wait for another 5 seconds.
- You will hear 5 single beeps - Timing Mode 1 (beep...beep...beep...beep).
- 5 two beeps - Mode 2 (beep,beep...beep,beep...beep,beep...etc)
- 5 three beeps - Mode 3 (beep,beep,beep...beep,beep,beep...beep,beep,beep...etc)
- 5 four beeps - Mode 4 (beep,beep,beep,beep...beep,beep,beep,beep...beep,beep,beep,beep...etc)
- Set the Timing Mode by releasing the throttle to neutral, while between the 1st and 5th "beeps" of the desired Timing Mode.
- Following the release of the throttle, you will hear a final "single beep" or a "double beep" depending on the forward/brake or forward/brake/reverse setting.
- The timing mode is now memorized, that means it will not change after disconnecting the motor battery pack.
- If you want to change the Timing Mode again, disconnect the motor battery pack and repeat the procedure.

Choosing the Switching Frequency of the Controller

- It is possible to change the switching frequency on this generation of speed controllers. All controllers are supplied with 8 kHz Switching Frequency (Optimized for Hacker Brushless Motors). If you are using a different brand of motor, set the right frequency for optimal efficiency for your type of brushless motor.
- Frequency Mode 1 - (8kHz) optimum for Hacker Brushless Motors.
- Frequency Mode 2 - (16 kHz) for Aveox, Astro, Plettenburg, Phaser, Mega motors.
- Frequency Mode 3 - (32 kHz) for AXI, Kohler, Astro, Tango, Samba motors.

Setting the Switching Frequency of the Controller

- Switch on transmitter
- Connect motor battery and hold trigger at "full throttle"
- Switch on speed controller and wait 5 seconds
- You will hear 4 tones, wait for another 5 seconds
- You will hear the "Timing beeps", Wait...after Timing Mode 4
- Continue to hold "full throttle"
- You will hear a 5 time "Long tone" - Frequency 1 (tone...tone...tone...tone...tone)
- 5 time "tone + beep" - Frequency 2 (tone,beep..tone,beep...tone,beep...etc.)
- 5 time two "beeps" - Frequency 3 (beep,beep...beep,beep...beep,beep,...etc.)
- Set the Frequency Mode by releasing the Throttle to Neutral, while between the 1st and 5th "Tones/Beeps" of the desired Frequency Mode
- Following the release of the Throttle, you will hear final "single beep" or "double beep" depending on forward/brake or forward/brake/reverse setting.
- The Timing Mode is now memorized, that means it will not change after disconnecting the motor battery pack.
- If you want to change the Frequency Mode again, disconnect the motor battery pack. Repeat the procedure.

Setting the Current Limit of the Controller

- Switch on transmitter
- Connect motor battery and hold trigger at "Full Brake"
- Switch on speed controller and wait 5 seconds
- You will hear 4 tones, wait for another 5 seconds
- You will hear 5 time single "tone" - 30amp Current Limit (tone...tone...tone...tone...tone...)
- 5 time two "tones" -45amp Current Limit (tone,tone...tone,tone...tone,tone...etc.)
- 5 time three "tones" -60amp Current Limit (tone,tone,tone...tone,tone,tone...etc.)
- 5 time four "tones" - No Current Limit (tone,tone,tone,tone...tone,tone,tone,tone...etc.)
- Set the Current Limit by releasing the Brake to Neutral, while between the 1st and 5th "Tones" of the desired Current Limit.

- Following the release of the Brake, you will hear final “single beep” or “double beep” depending forward/brake or forward/brake/reverse setting.
- The Current Limit is now memorized. That means it will not change after disconnecting the motor battery pack.
- If you want to change the Current Limit again, disconnect the motor battery pack. Repeat the procedure.

Notes about Operation and Warranty:

- Reversing the motor direction is achieved by the exchanging the position of any two wires connected to the motor.
- DO NOT exceed the 10 cells or 4-5 servos when using the BEC.
- The speed controller will turn-off the motor when the main power pack voltage falls less than 5.3 V or reaches 0.7/cell. It depends on which occurs first.
- Temperature overload protection is built into the speed controller. It turns off the motor when the temperature reaches 230 degrees F/110 degrees C.
- These speed controllers are equipped with protection functions that take care of correct start and operation of the motor across the whole range of RPM, Current and Voltage.
- DO NOT connect the speed controller to just “any” kind of power source. Take care to ensure the right polarity of NiCd or NiMH power packs only.
- DO NOT connect the motor battery to the wrong polarity, the speed controller will be severely damaged.
- Controllers connected to the wrong battery polarity WILL NOT be covered under the warranty.

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