



## HYPERION General Brushless Motor Installation Guidelines

### Instructions

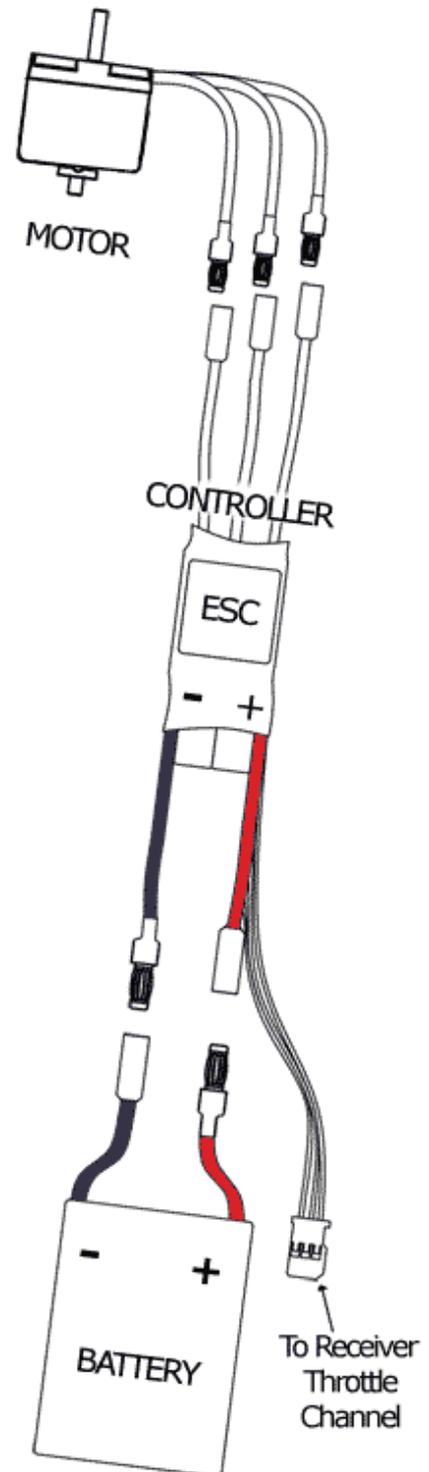
- Wires between Electronic Speed Controller (ESC) and Battery must have combined **maximum** length of 20cm (8")!
- Use only quality Gold connectors of appropriate ampere rating
- Insure proper solder joints
- Do NOT shorten Motor Wires! (shorten ESC side if needed)
- NEVER connect Battery to ESC with reverse polarity (see + / - symbols below)
- Firmly mount the motor in model before running
- You MUST provide for cooling airflow to ESC and Motor. Do NOT place these parts inside a completely closed fuselage!
- Test system first without propeller attached
- SEQUENCE
  - \*Connect Motor to Controller
  - \*Connect ESC 3-pin connector to Receiver's correct channel (see below)
  - \*Turn on Transmitter - Set Throttle Stick to "ZERO".
  - \*Connect Battery to ESC
  - \*After a few seconds, you should hear an arming tone from the motor
  - \*Advance throttle to start motor. Check motor rotation direction.

Viewed from front of the **MODEL**, motor shaft should turn counter-clockwise and printing on propeller always faces you (true when motor is front or rear mounted).

- To reverse motor direction, switch connection of any two wires **between Motor and Controller**. Never change connection between battery and ESC! (TITAN ESC also have programming choice for motor rotation direction)
- Do NOT exceed max suggested prop size, unless you confirm current is within spec with accurate ammeter. Always keep all body parts **BEHIND** the disk of spinning prop. Do not wear loose clothing, jewelry, or long hair (tie it up!) when near a spinning prop. Even a small motor and prop will cut you severely. **BE CAREFUL!!!**

### Transmitter Notes

- Futaba transmitters must have Throttle Channel **REVERSED**. Other brands should be set to **NORMAL** direction.
- Most aftermarket receivers today are PPM (aka FM) type. Transmitters may be PPM only, or they may have options both PCM or PPM modulation. You must be sure that your transmitter is set properly for the type of receiver you have, PPM (FM) or PCM.
- The connector from ESC to Receiver must be connected to the proper channel on the Receiver, with correct polarity. See Receiver/Connector notes below about connector types and polarity.
- Transmitter Throttle Channel Assignments:
  - \* **FUTABA / HITEC / SANWA / AIRTRONICS** >> RECEIVER CHANNEL 3
  - \* **JR** >> RECEIVER CHANNEL 1  
(note: older Sanwa / Airtronics systems use channel 1)



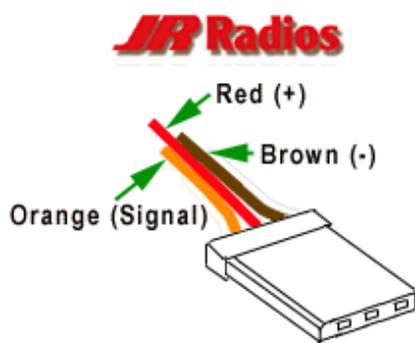
- Initial setting for throttle channel should all be DEFAULT.
  - \* **Travel** set to -100 at throttle OFF, +100 at throttle FULL
  - \* **Trim** set to 0% at at throttle OFF, 0% at throttle FULL
  - \* **Sub-Trim** set to 0%
- If all connections for motor, ESC, and battery are correct as shown in the diagram above - and you have set the transmitter properly - but you get no arming tone when main battery is connected to ESC:
  - \* Disconnect Battery
  - \* Check throttle stick is at "0"
  - \* Set Throttle TRIM to MINUS 20%
  - \* Re-connect battery to see if you hear arming tone from motor

### More Trouble Shooting (in order of frequency)

- Many problems are due to improper transmitter or receiver setup. Be SURE to read this document carefully, and double check everything. If all fails, borrow a different transmitter and receiver from a friend if necessary, and try again.
- **Motor starts but cuts out as throttle is advanced**
  - \* **Speed Controller not set properly:** To protect your battery, your speed controller has settings for "Auto Cut" battery voltage. Be SURE that the settings in the Speed Controller match your battery type (Lithium, NiCd/NIMH) and cell count (2S, 3S, 4S... for lithium)
  - \* **MANY users choose the wrong battery and prop combination**, causing current (amps) to rise much too high. This causes the battery to drop voltage, and auto-cut occurs (as it should). If you don't know the prop size to use, ask your vendor. Tell him what battery type and cell count you have, and motor type including "Kv". **For testing this condition, reduce prop size 2 inches in diameter and try again. Try another battery, as yours may be weak or defective.**
  - \* **Connector soldering:** It is EXTREMELY common to have a cold solder joint in a connector, which causes poor starts, no starts, or rough running and cut outs. Even if you are sure they are fine, RESOLDER all connectors with a HOT iron.

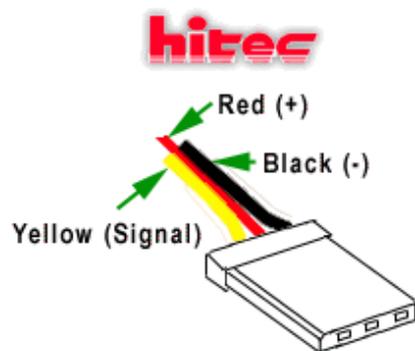
### Receiver / Connector Notes

The Receiver connector on almost all Brushless Speed Controllers is "JR" standard type MALE (has female pins). This connector can be attach without modifications to all models of receivers, except pre-2001 Airtronics/Sanwa types. However, you MUST be careful to observe correct polarity of Positive-Negative-Signal wires. Your receiver will have indicators showing the proper way to connect.



JR, Hitec, and newer Airtronics/Sanwa connectors all look like the ones at left. They are essentially universal now.

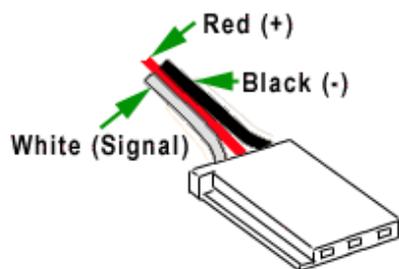
This is the kind of connector that comes on most Brushless ESC.



**NOTE: HYPERION ESC use the JR convention of:**  
**SIGNAL = ORANGE**  
**POSITIVE = RED**  
**NEGATIVE = BROWN**

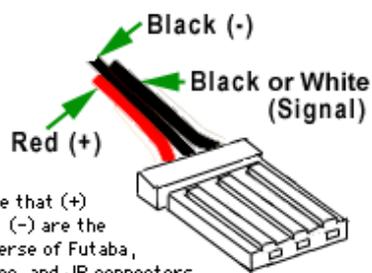
## Futaba

"J" Connector



Futaba connectors are also the same as above, but have a locating tab. We're showing the connector so you can see the color assignments for positive, negative, and signal.

## AIRTRONICS



Note that (+) and (-) are the reverse of Futaba, Hitec, and JR connectors

This is the older Airtronics/Sanwa connector. You only need to worry about this if you have existing receiver that use this kind of connector. To use an ESC (with JR-Hitec type connector) in an older Sanwa receiver, you would need to swap the positive and negative wire positions in the JR connector on the ESC to match the Airtronics wiring, or use an adapter made for the purpose.