



Bling Heli's - 7A Brushless Motor Kit (with/without M5 Motor and Pinion)

Below is a guide on how to successfully install this 7A Brushless Motor Kit. Please note this is a guide only and is based on Bling Heli's experience of performing a successful installation.

Disclaimer

Bling Heli's cannot be held responsible for any damaged caused during the installation whether following this guide or not and hence will not exchange or refund any parts damaged during the installation or thereafter.

Installation Steps

Preparation

- Read the guide completely before starting.
- Make sure you have sufficient time to carry out the upgrade – mistakes happen when you rush.
- Ensure you have a clear working space
- Place all screws in a separate container when you disassemble. Be very careful not to lose a screw in the motor – it will jam the motor and more than likely damage it.

Step 1 – Preparing the Motor

Attach the pinion to the motor. Please note the supplied 9T pinion is held in place by friction. So, you have two methods for attaching the pinion:

- Heat the pinion with a torch until it expands and slips on the motor shaft. Once the pinion cools it will be locked into place.
- Push the pinion on by force – be very careful not to bend the shaft or damage the pinion. You may need some Loctite to hold the pinion in place. It should be absolutely fixed solid to the shaft. A useful tip, is to drill a small hole into a piece of wood and push the motor down on this – the shaft will fit through the hole – but the pinion will be held flush to the wood – do not apply too much force – its easy to bend the shaft! You have been warned ;-)

Step 2a – Using the Stock Frame

- Remove all parts to gain access to the frame. Everything a part from the rear servo board should be removed.
- You will need to trim away as much of the frame as need be so the brushless motor fits inside the motor housing. You should exercise caution, it is very easy to trim too much and compromise the strength of the frame, or even slice off the canopy mount. The motor should be able to rotate without making any contact to the frame sides.
- Considering the location of the motor cable - attached the motor to the frame using the two supplied screws. A suggestion is to have the cable at the 7 o'clock position when looking down on the heli (nose pointing to 6 o'clock).

Step 2b – Using an upgraded Frame

- Considering the location of the motor cable - attached the motor to the frame using the two supplied screws. A suggestion is to have the cable at the 7 o'clock position when looking down on the heli (nose pointing to 6 o'clock).

Step 3 – Ensure correct positioning of the motor

- Attach the main shaft and main gear and test the positioning of the motor/pinion. There should be no binding – if there is, loosen the motor screws and push the motor a little forward and re-tighten the motor screws.
- Once you are satisfied with the position of the motor - remove the main gear and shaft again.

Step 4 – Attaching the ESC/Converter.

- Attached the 2 pin signal wire from the ESC/Converter to the main PCB. The cable fits into the left pin socket.
- Attach the ESC/Converter to PCB using a double sided sticky pad to the main pcb. Consider the following when positioning: Away from servos and gears; centre of gravity; plugging in the motor cable. Attaching the unit lengthways to the front of the main PCB just below the mount screws seems to work well.
- It's important the ESC doesn't overheat – so, consider airflow around the components – especially the ICs.
- Connect the main PCB power cable to the ESC/Converter power cable.



Step 5 – Putting it all back again!

- Refit the PCB, servo's, shaft, links, canopy, tail etc.
- Attached the motor cable to the socket on the ESC/Converter

Step 6 – Starting it up

- Turn on your transmitter
- Attached the LIPO to the 'new' cable – now comes from the ESC/Converter unit.
- Ensure it initializes correctly, you should see the usual blue light startup followed by centralization of the swash.
- Ensure the ESC/Convertor initializes correctly. You should see some red flashing lights and hear some tones – wait until they finish.
- Test the cyclic
- Apply a little throttle – it's a smooth startup - so you can check the rotation of the main blades – they should turn clockwise – if not, unplug the motor connector and re-insert the opposite way around.

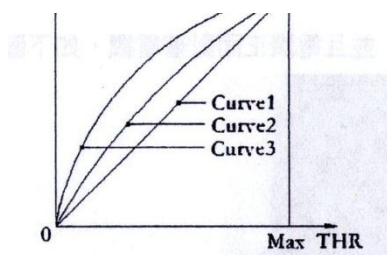
Good luck and happy flying!

ESC Programming

Configurable parameters:

There are 8 types of items can be programmed:

1. Brake Type: Off / Soft / Hard, default is Off.
Soft brake, less forceful and brake time is longer.
Hard brake, more forceful and brake time is shorter.
2. Advance Timing: Low / Middle / High, default is Middle.
Low advance, is for high inductance and low KV value motors.
High advance, is for low inductance and high KV value motors.
For some high Kv motors, if it shakes while rotating in high speed, then "High" mode is recommended.
3. Start Mode: Fast / Soft / Very Soft, default is Fast.
Fast is preferred for fixed wing aircrafts.
Soft and Very Soft is suitable for helicopters
4. Cut Off type: Reduce power / Shut down, default is Reduce power.
5. Throttle Curve: Curve 1 / Curve 2 / Curve 3, default is Curve 1.



6. Numbers of Lipo Cells: Auto detect / 2 cells / 3 cells / N cells, default is Auto detect.
7. Cut off threshold: Low (2.8v) / Mid (3.0v) / High (3.2v), default is Mid
8. Motor Rotation: Forward / Reverse, default is Forward.



1. Entering Program Mode:

First of all, please un-plug the tail motor and remove the main blade before entering program mode for safety reason.

Steps:

- A. Move throttle stick to bottom,
- B. Switch on the transmitter,
- C. Connect battery pack to ESC,
- D. Move the throttle stick to top when the LED of ESC turns on.
- E. Waiting for about 4 seconds, a special tone like “♪i3i3” should be emitted from main motor, which means program mode is entered.

2. Select Programmable Items:

After entering program mode, you will hear 9 tones in loop in the following sequence.

If you move the throttle stick to bottom within 2 seconds after one kind of tone, this item will be selected.

Item	Tone		Mode
1	Be-	1 short tone	Brake
2	Be-be-	2 short tone	Timing
3	Be-be-be	3 short tone	Startup mode
4	Be-be-be-be	4 short tone	Cutoff mode
5	Be-----	1 long tone	Throttle curve
6	Be-----be-	1 long 1 short	No. of lipo cells
7	Be-----be-be	1 long 2 short	Cutoff threshold
8	Be-----be-be-be	1 long 3 short	Motor Rotation reverse
9	Be-----be-----be-----	3 long tone	Exit program mode

3. Set Item Value

After entering the item, you will hear several tones in loop, set the value matching to a tone by moving the throttle stick to top within 2 seconds when you hear the tone, then you will hear special tone like “♪5656”. It means the value is set and saved.

Wait for 3 seconds, you will go back to step 2 (select programmable items).

Value \ Tone	Be- 1 tone	Be-be 2 tone	Be-be-be 3 tone	Be-be--be--be N tone
1. Brake	Off	Soft	Hard	
2. Timing	Low	Mid	High	
3. Start Mode	Fast	Soft	Very Soft	
4. Cutoff Mode	Reduce power	Shut down		
5. Throttle Curve	Curve 1	Curve 2	Curve 3	
6. No. of Cells	Auto detect	2 cells	3 cells	N cells
7. Cutoff Threshold	Low (2.8v)	Mid (3.0V)	High (3.2v)	
8. Motor Rotation	Forward	Reverse		

4. Exit Program

There are 2 ways to exit program mode:

1. In Step 2, after 3 long tone (the item #9), please move throttle stick to the bottom position within 2 seconds.
2. In Step 3, after special tone “♪5656”, please move throttle stick to the bottom position within 2 seconds.