



DIY KITS 2206 and 2213 Assembly Instructions

Congratulations and thanks for purchasing this Do-it-yourself brushless motor kit. It will not only provide you with fun and education, but also give you the flexibility of customizing your for particular model power requirements.

Tools required: soldering gun, solder, thin CA glue, nosed pliers, wire cutters.

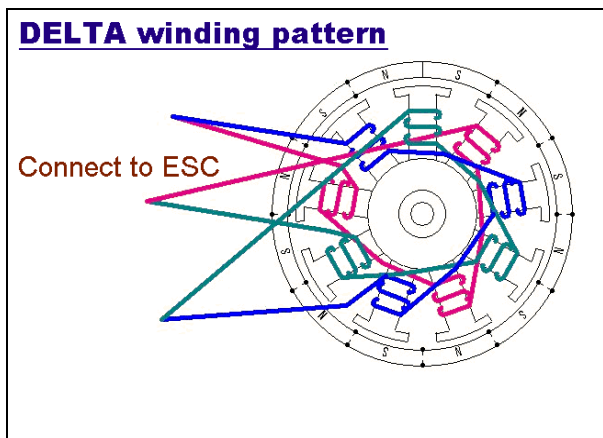
Step 1. – Bell assembly

Locate 12 magnets and identify North and South ends. One set of six(6) magnets, is usually marked with a pen. If not marked, note difference in color. Mark one set as N or S. Note that one side of each magnet is curved and the other is flat. The curved side goes to the inside of the bell.

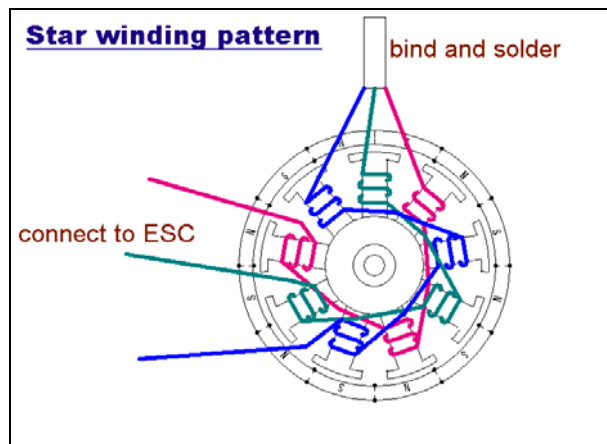
Cut the paper circle magnet alignment guide and place inside bell. Tack glue so it doesn't rotate. Place one magnet and align one edge to a line on the paper guide, then. Place and align second magnet to the next line, and repeat process until you have placed and glued all 12 magnets. **IMPORTANT:** Make sure magnets are placed alternately N S N S N S N S N S N S.

Step 2. – Stator assembly

There are two methods of winding the armature or stator, and a variety of ways to vary the windings to customize power requirements to match voltage requirements, propeller size, and performance to match your model's characteristics.



DELTA winding will give higher KV but lower torque (smaller propellers/high RPM)



STAR winding will give lower KV but higher torque (larger propellers/slow RPM)

Step 3. Wiring For 2206:

PROP SIZE	Wire Diam.	No.of wires	No. of Turns	Pat-tern	Power	AMP S	RPM	thrust
8040	0.3mm	3	12	Star	2S LiPo	6.4A	6800	290g
8040	0.3mm	2	14	Star	3S LiPo	No data	7400	No data

For 2213:

PROP SIZE	Wire Diam.	No.of wires	No. of Turns	Pat-tern	AMPS	RPM	thrust
9050	0.3mm	4	9	Star	6A	6800	430g
9060	0.3mm	3	19	Delta	10A	7400	
9060	0.35mm	3	10	Star	11A	7400	
9060	0.3mm	6	7	Star	22A	N/A	
9060	0.3mm	5	10	Star	12A	8000	
9060	0.3mm	5	9	Star	14A	8200	
9060	0.3mm	3	15	Star	16A	8700	
9060	0.3mm	4	8	Star	16A	8300	
9060	0.3mm	5	8	Star	19A	8700	

Power options chart:

This chart is a recommended starting point for wiring the stator, and what the expected results might be. Of course, the number of options is infinite, and experimentation is encouraged. For more specific questions regarding your power requirements, please email Mr. Pan Lau of www.aero-nuts.com EMAIL: pan@aero-nuts.com

Step 4. Assembly

To complete the motor, slip the C-retainer on the main shaft groove. Then insert the shaft through the Bell/Stator assembly and apply a little CA glue or **Loctite** around the front bearing (gluing is optional). Be careful not to get glue inside bearing.

There are two mounting configurations you may use, front (bell is in front of firewall) or rear (bell is behind firewall) mounted.

Caution:

Magnets are very powerful but very brittle as they are made of sintered metal. Excessive smashing against each other, as in sudden magnetic attraction may cause cracking or shattering like bricks. Either keep them together or well separated.

Hope you enjoy building your own brushless motor and learn some new techniques in the process. Sharing your experiences will be very welcome.

Happy Flying!