

# Ultrafly C/13/xx Series

## Brushless, Sensorless Motor



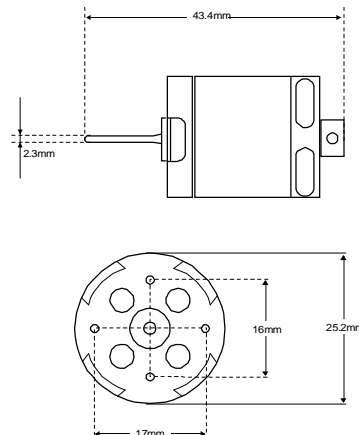
### The lightest 200W Motor

Designed for **Helicopters** and maximum power to weight ratio applications, Ultrafly's C/13/XXH brushless, sensorless "outrunner" motor is a unique self cooled motor. It **can** transfer 200 **watts** of power **from** only 45g in weight. The fan design keeps the core **at** a cool 90 **C** degree temperature **with** 180 watt constant power application. It can survive in a low air circulation environment in a Helicopter or a boat. The 4 different KV configurations (2050, 2350, 2750,3350) provide a very wide range of **applications**. Its high-quality construction and precise CNC tooling enable this motor to operate at higher RPM without serious vibration. The C series motor **will** fit in many 300/400 size gearboxes with **its** shaft diameter and **mounting** screw holes **being** comparable to a 400 size motor.

Used with the appropriate gear ratio, the C series motor can turn propellers ranging from 4 inch to 12 inch diameter. You can power it with NiCd or NiMH batteries having 7-12 cells, or with a 2-6 cell Li-Po battery. See the motor application reference table below for more details.

### Specifications

Shaft Diameter: 2.3mm  
 Shaft Length: 12mm  
 Motor Diameter: 25.2mm  
 Motor Length: 43.4mm  
 Motor Weigh: 45.5g (1.60oz)  
 Distance of Mounting Holes: 16mm & 17mm  
 Mounting Screw: M3x3mm  
 Maximum Input Power: 200watt  
 Maximum RPM: 50,000  
 Maximum Operating Core Temperature: 120°C



### C/13/XXH Brushless Motor Application Reference Table

| Motor    | Application Type                                      | Battery                 | Gear Ratio | Propeller                              |
|----------|---|-------------------------|------------|--|
| C/13/20H | Pylon models or boat                                  | 7-8cells                | Direct     | 4.75x4.75, 5x5                         |
| C/13/24H | 250-340g 3D models                                    | 3S Lipo                 | 3 to 1     | APC 9x4.7 or 10x4.7SF                  |
| C/13/24H | 400-600g Sports/speedy model<br>600g Hi-wing model    | 3S Lipo,<br>8-10 cells  | 2.38 to 1  | APC 7x5E or 8x6E                       |
| C/13/24H | 340-500g Sports park flyer<br>-750g Hi-wing model     | 3S Lipo,<br>8-10 cells  | 3 to 1     | APC 8x8E, 9x4.7SF<br>9x6SF or 10x4.7SF |
| C/13/28H | 250-450g 3D models                                    | 3S Lipo                 | 3 to 1     | APC 10x4.7SF                           |
| C/13/28H | 400-700g Sports Models<br>-900g Hi-wing Model, Glider | 8-10 cells              | 3 to 1     | APC 8x8E 9x6SF or<br>10x4.7SF          |
| C/13/28H | 400-550g 3D Models<br>1kg Hi-wing, Glider model       | 8-10 cells,<br>3S Lipo  | 3.89 to 1  | APC 11.4.7SF                           |
| C/13/28H | -600g Heli<br>-450g 3D Heli                           | 8-12 cell,<br>3-4S Lipo | Direct     | Heli                                   |
| C/13/33H | 500-800g Sports models                                | 8 cells or<br>3S Lipo   | 3 to 1     | APC 9x6E or 9x7.5E                     |
| C/13/33H | 1kg Hi-Wing/Glider                                    | 8-10cells,<br>3S Lipo   | 3.89 to 1  | APC 10x 5E or 10x6<br>folding prop     |
| C/13/33H | 700g Heli or<br>550g 3D Heli                          | 8-12cells,<br>3-4S Lipo | Direct     | APC 9x6SF or 10x4.7SF                  |

### Application on Actual Model

|  |          |                          |          |  |
|--|----------|--------------------------|----------|--|
| GWS Warbirds 400-500g                    | C/13/28H | 9.6-12VNiMh              | 3 to 1   | APC 9x6SF or 8x8E                      |
| GWS <b>E-Starter</b> , Beaver, Big stick | C/13/24H | 8.4-9.6V NiMh or 2S Lipo | 3 to 1   | GWS 9x6, 10x4.7 or APC 9x6SF, 10x4.7SF |
| Ultrafly PC-9, Cessna 182                | C/13/28H | 9.6V-12VNiMh             | 3 to 1   | APC 9x6SF or 8x8E                      |
| Ultrafly Bae Hawk, F-16, SU-27           | C/13/28H | 3S Lipo or 12V NiMh      | 1.9 to 1 | APC 6x5.5E, [2.38 to 1 APC 7x5E]       |
| Ultrafly Extra 300S                      | C/13/28H | 12VNiMh or 3S Lipo       | 3 to 1   | APC 9x6SF                              |
| 300/400 size Heli                        | C/13/28H | 3S Lipo                  | Direct   |  |
| VIP, Switch blade, Sokol                 | C/13/20H | 8.4-9.6V NiMh            | Direct   | 4.75x4.75, 5x5                         |

### Cautions:

**Speed Control:** You must use a brushless, sensorless speed control.

**Cooling:** You must provide proper cooling to avoid exceeding the 100°C limit.

Overheating will damage the magnets and windings, and is not covered under warranty.

**Over current:** Please use a current meter to control the battery cell count and the propeller size. When changing propeller size or battery type, you must measure the current. You must limit current to the specifications above, or less, to avoid damage to the motor. Reduce prop size or battery cell count to reduce current.

**Max input watt:** The structural design of every motor will limit its heat dissipation. Watt input is proportional to heat generated. The maximum watt input for D series is 160 watts. Do not exceed this limit or you may burn out the motor.

**Rotation:** Switch any two of the three wires between the speed controller and motor to reverse motor direction. NEVER reverse polarity from battery to speed controller.

### Limited Warranty:

Ultrafly brushless motors have a one-year, limited warranty from the date of purchase. All motors are guaranteed to be free from manufacturing defects for one year. The warranty does not cover over-current, over-temperature, or crash damage. You must properly cool the motor and keep the current and input wattage within specifications. Improper use of the motor can be determined in service and will not be covered in the warranty.

All warranty issues **should** be handled by your dealer first. If necessary, you may also contact us for warranty issues. Send mail to [service@ultraflymodel.com](mailto:service@ultraflymodel.com) or contact the **Distributor** in your country.

Distributor List in all countries:

North and South America Area: Great Planes Model Distributors TEL: (217) 398-6300

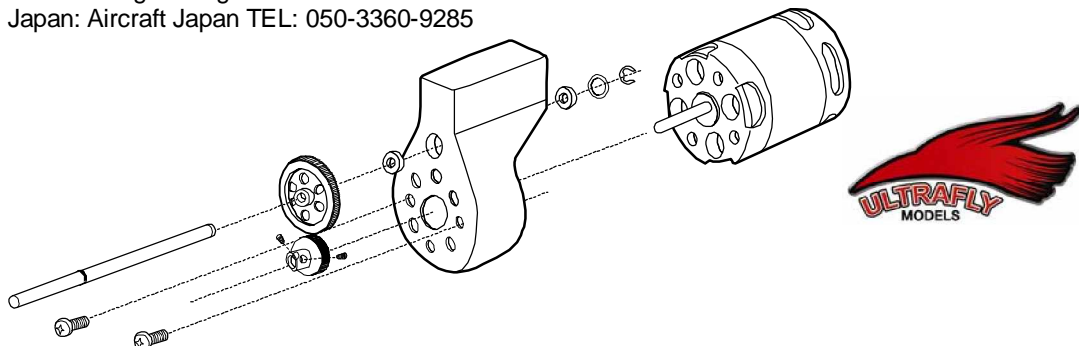
United Kingdom: CML Distribution. TEL: 1527-575349

Northern Europe: Minicars Distribution AB. TEL: 18 60 65 72

Australia & New Zealand: O'Reilly Model Products. TEL: 08-8351-0544

Korea: Sung Kwang RC. TEL: 31-719-6371

Japan: Aircraft Japan TEL: 050-3360-9285



Available from [www.modelflight.com.au](http://www.modelflight.com.au)