



# BRUSHLESS OUTRUNNER MOTORS

## 370

## 400

## .10

Thank you for purchasing a SuperTigre brushless outrunner motor!

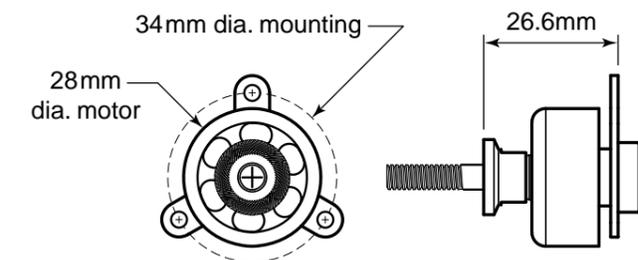
This instruction manual will help you install and run your new SuperTigre motor and power system.

Before you begin installing your new motor, please take the time to review the specs of the motor. These will help you select a propeller size, ESC, and battery for your motor.

The propeller sizes listed in the specs for each motor are for electric propellers. "SF" designates a Slow Flyer type of electric prop, while "E" designates an Electric prop. Slow flyer propellers are mainly used on smaller electric motors that turn at slower speeds.

### SuperTigre 370 (SUPG8030)

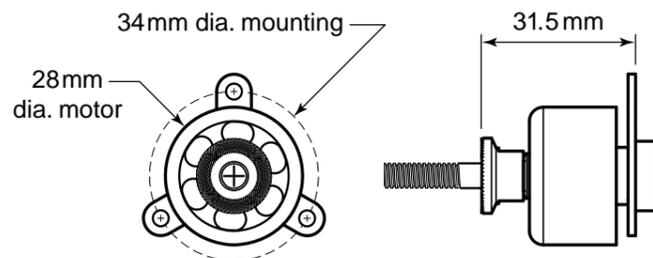
- Mounting Space: 26.6mm
- Diameter: 28mm
- Length: 26mm
- RPM/V (kV Rating): 1000
- Weight: 1.4oz (39g)
- Input Voltage: 7.4-11.1V
- Max. Constant Current: 11.5A
- Max Surge Current: 13A
- Max Constant Watts: 125W
- No Load Current: .7A
- Suggested Prop Sizes: 9x3.5SF - 11x4.7SF
- Connectors: 3.5mm Male Bullet
- Prop Adapter: 3mm (not included)



Sample Power System 370: SuperTigre 370 motor, SuperTigre ST-20A ESC, SuperTigre 910mAh, 11.1V LiPo, 9x3.8SF prop

### SuperTigre 400 (SUPG8040)

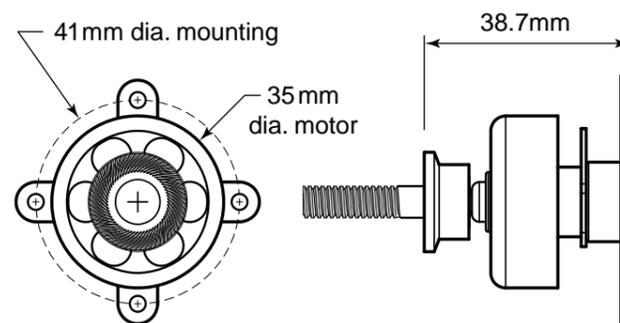
- Mounting Space: 31.5mm
- Diameter: 28mm
- Length: 30mm
- kV Rating: 950 rpm/V
- Weight: 1.8oz (50g)
- Input Voltage: 7.4-11.1V
- Max. Constant Current: 13A
- Max Surge Current: 18A
- Max Constant Watts: 145W
- No Load Current: .6A
- Suggested Prop Sizes: 9x3.5SF - 11x7SF
- Connectors: 3.5mm Male Bullet
- Prop Adapter: 3mm (not included)



Sample Power System 400: SuperTigre 400 motor, SuperTigre ST-20A ESC, SuperTigre 1250mAh, 11.1V LiPo, 10x3.8SF prop

### SuperTigre .10 (SUPG8050)

- Mounting Space: 38.7mm
- Diameter: 35mm
- Length: 30mm
- RPM/V (kV Rating): 1250
- Weight: 2.4oz (69g)
- Input Voltage: 7.4-11.1V
- Max. Constant Current: 29A
- Max. Surge Current: 33A
- Max. Constant Watts: 320W
- Max. Surge Watts: 370W
- No Load Current: 1.2A
- Suggested Propeller Size: 10x7E-11x7E
- Connectors: 3.5mm Male Bullet
- Prop Adapter: 4mm (not included)



Sample Power System .10: SuperTigre .10 motor, SuperTigre ST-30A ESC, SuperTigre 2100mAh, 11.1V LiPo, 10x5E prop

### Electronic Speed Control (ESC)

The following speed controls are suggested for these motors. You may use another brand of speed control, but make sure that you use a brushless ESC that can handle the current draw of your motor.

- SuperTigre ST-20A ESC (SUPM1020)
- SuperTigre ST-30A ESC (SUPM1030)

### Lithium Polymer (LiPo) Battery

The following LiPo batteries are suggested for these motors. Of course, other batteries may be used but they must deliver the current that your particular motor & prop combination will draw.

To determine the current delivering capability of a battery, multiply the capacity (mAh rating) by the "C" rating by 0.001.

For example: 640mAh x 15C x 0.001 = 9.6 amps

This is the maximum current that the battery can deliver continuously. This is listed for these batteries in the column on the right side.

- (SUPP1010) SuperTigre 640mAh, 11.1V (3S), 15C LiPo 9.6A max
- (SUPP1020) SuperTigre 910mAh, 11.1V (3S), 15C LiPo 13.6A max
- (SUPP1030) SuperTigre 1250mAh, 11.1V (3S), 15C LiPo 18.7A max
- (SUPP1040) SuperTigre 1500mAh, 11.1V (3S), 15C LiPo 22.5A max
- (SUPP1050) SuperTigre 1800mAh, 11.1V (3S), 15C LiPo 27A max
- (SUPP1060) SuperTigre 2100mAh, 11.1V (3S), 15C LiPo 31.5A max

### Propeller Adapters

In order to fit a propeller, you'll need to use one of the following propeller adapters. You may choose either the collet style or the set-screw style prop adapter depending on your preference or particular needs. These are listed by the motor(s) that they fit.

### SuperTigre 370 & SuperTigre 400 (3mm shaft)

- (GPMQ4959) Great Planes® ElectriFly™ 3mm to 5mm Collet Prop Adapter
- (GPMQ4930) Great Planes ElectriFly 3mm to 5mm Set Screw Prop Adapter
- (GPMQ4988) Great Planes ElectriFly 3mm to 5mm Set Screw Adapter (cone nut)
- (GPMQ4620) Great Planes ElectriFly Prop Saver style Prop Adapter

### SuperTigre .10 (4mm shaft)

- (GPMQ4965) Great Planes ElectriFly 4mm to 1/4-28 collet prop adapter
- (GPMQ4936) Great Planes ElectriFly 4mm to 1/4-28 set screw prop adapter
- (GPMQ4992) Great Planes ElectriFly 4mm to 1/4-28 set screw adapter (cone nut)

### Adapters

The following adapters are available for use with the SuperTigre line of motors, ESCs, and batteries. These will help you adapt other brands of batteries and ESCs.

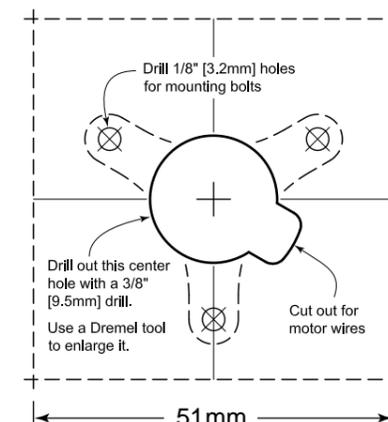
- (SUPM0010) SuperTigre LiPo to Deans® Ultra® Female Plug
- (SUPM0020) SuperTigre LiPo to Deans Micro Plug
- (SUPM0030) SuperTigre LiPo to Standard Male Plug
- (SUPM0040) Deans Ultra Male to SuperTigre ESC
- (SUPM0050) Deans Micro to SuperTigre ESC
- (SUPM0060) Standard Female to SuperTigre ESC

### Battery Chargers & Cell Balancers

To charge your batteries, you'll need to have a battery charger and a cell balancer or a specially equipped balancing charger. The following equipment is suggested:

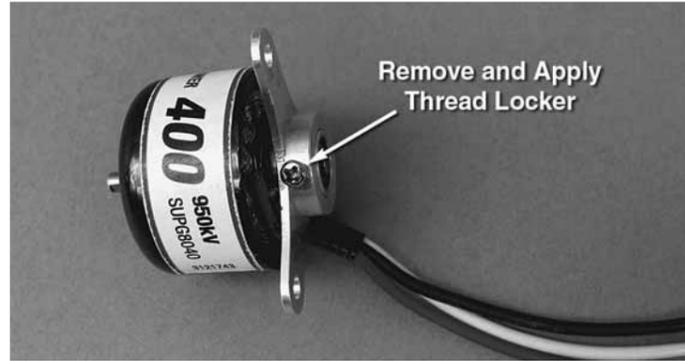
- (GPMM3153) Great Planes ElectriFly Triton 2™ Charger/Discharger/Cycler
- (GPMM3015) Great Planes ElectriFly PolyCharge 4™ LiPo Charger
- (GPMM3160) Great Planes ElectriFly Equinox™ LiPo Balancer/Charge Interface
- (GPMM3156) Great Planes ElectriFly Triton2 EQ Balance Charger
- (HCAP0250) Hobbico® 12V DC Power Supply (for Triton 2 GPMM3153)

### ST 370 & 400 Brushless Motor Mounting Template



## Assemble Your Power System

If your kit or ARF already has instructions for mounting an electric motor, please rely on that instruction manual for the basic installation of your power system and use this one as a supplement. If you will be mounting this motor independently of any other instruction manual, please use the following instructions to help guide your installation.

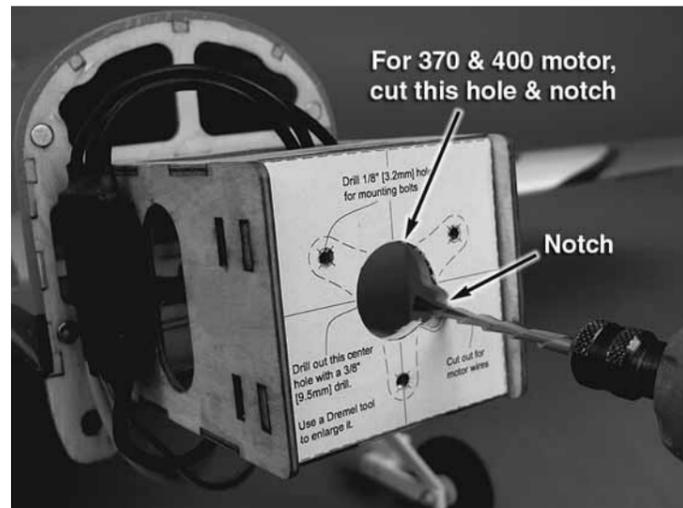
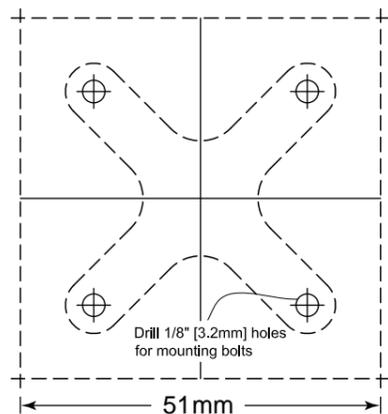


1. Remove the mount screw(s) and apply a drop of thread-locking compound (GPMR6060) onto the screw threads. Reinstall the mounting screw(s). **Note:** The SuperTigre 370 & 400 motors have one mount screw. The SuperTigre .10 has two mounting screws.

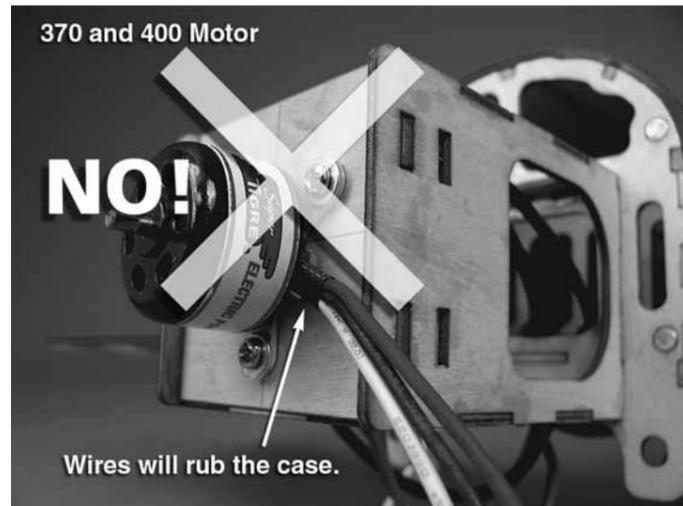
2. Cut out the template that fits your motor and use tape or spray adhesive to attach it to your model's firewall. Match the crosshairs of the template with those engraved on your model's firewall.



### ST .10 Brushless Motor Mounting Template



3. Use a 1/8" [3.2mm] drill bit to drill the motor mounting holes in the firewall. If you are mounting the SuperTigre 370 or 400 motor, you will need to drill a hole in the center of your firewall to clear the motor mount, mount screw, and motor wires. Start with a 3/8" [9.5mm] drill and enlarge the hole using a Dremel® rotary tool.



4. Mount your motor to the firewall using the screws, washers, and blind nuts supplied with your model kit. 4-40 sized hardware or 3mm hardware is adequate for these SuperTigre motors. If you are using the SuperTigre 370 or 400 motor, route the motor

wires through the notched cutout you made in the firewall. Apply a drop of thread-locking compound on the screw threads of each mounting screw. **Note:** The motor wires must be routed properly so they do not rub on the spinning motor case.

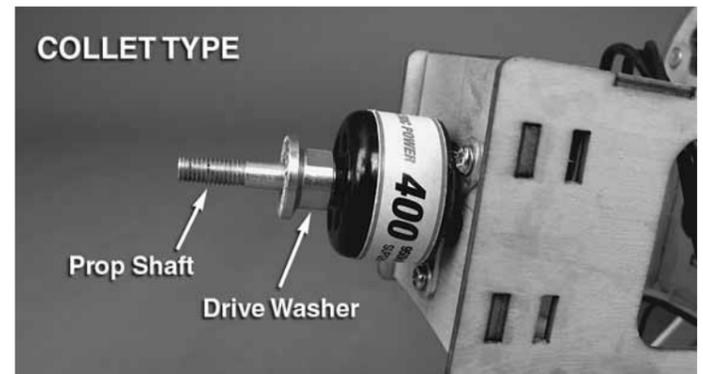
5. Connect the motor wires to the ESC. Plug your ESC's signal lead into your receiver. Turn on your transmitter and set the throttle to off position. Connect your LiPo battery to the ESC. Arm the motor using the procedure detailed in your ESC's instruction manual. Check the direction of motor rotation. The motor should rotate counter-clockwise as viewed from the front of the airplane. If the motor rotates clockwise, unplug any two motor leads and swap their positions. Test the rotation direction once again. **Note:** If you have a Futaba radio system, please reverse the throttle channel (channel 3) before you plug in the LiPo battery. **Warning: Do not attempt to do this with the propeller attached!**

## Install the Propeller

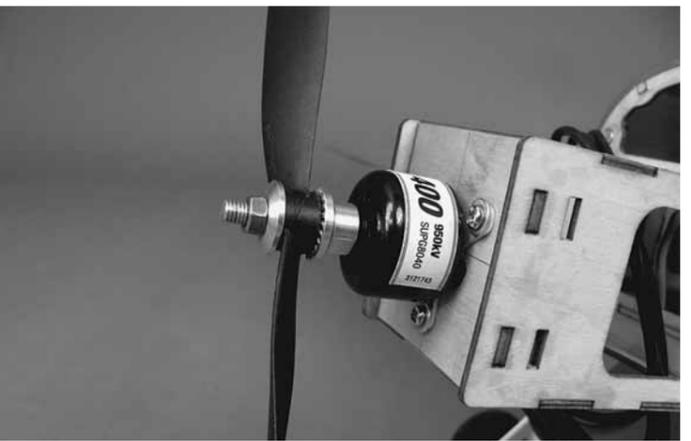
Two different types of prop adapters are available that are compatible with these motors. Please refer to the list of prop adapters earlier in this manual for the ones that fit your motor.



1. If you are installing the set-screw type of prop adapter, remove the set screw(s) from the base of the prop adapter and apply a drop of thread-locking compound to each set screw's threads. Fit the prop adapter to the motor shaft so that at least one set screw is aligned directly over the flat spot on the motor shaft. Slide the prop adapter all the way onto the motor shaft and tighten the set screw(s). The flat spot and set screw(s) will keep the prop adapter keyed to the motor shaft.



2. If you are installing a collet type prop adapter, simply slide it onto the motor shaft as far as it goes.



3. If your airplane has a cowl, install it now. Fit a balanced propeller to the prop shaft and install the prop washer and prop nut. Tighten the prop nut securely.

4. Trim your cowl and make air vents for cooling air to flow over the motor, ESC, and battery(s). As a general rule, the area of the cooling air vent should be 3x the area of the cooling air inlet. This ensures positive airflow and will prevent the motor from overheating.

## SuperTigre Motor Maintenance

SuperTigre brushless motors require virtually no maintenance. There are no brushes to wear out and replace. The precision bearings have a very long service life and should last a long time. The internal parts of the motor should not require any cleaning. The only thing that needs to be checked is to make sure all the screws and set screws remain tight.

## Important Precautions

- Once the battery is connected to the ESC, stay clear of the motor and prop.
- DO NOT apply an input voltage that exceeds the maximum specification of each motor.
- DO NOT apply current to the motor that exceeds the maximum specifications of each motor.
- DO NOT allow the input connectors to accidentally touch each other while power is applied to the motor. Make sure all input connections are insulated electrically.
- DO NOT allow water or moisture to enter the motor, as it can cause permanent damage to the motor and possibly short-circuit the ESC.
- DO NOT cut the coated wires from the motor. If you must remove the bullet connectors, de-solder them.
- ALWAYS use caution around an energized electric motor. The motor may start at any time, so always keep clear of the propeller and keep the model properly secured so it cannot move.
- Ensure proper airflow through the cowl and battery compartment of your model by trimming open air inlets and vents in the cowl and/or fuselage.
- Allow the motor to cool after each flight.
- The motor shaft of the motor will rotate at a very high rate. DO NOT perform setup operations on the bench with the propeller attached!