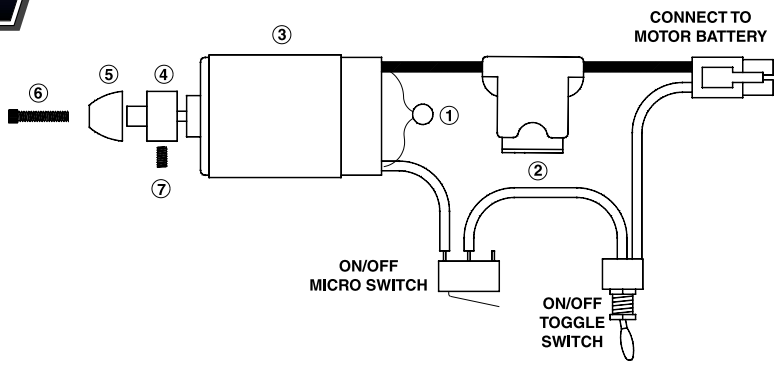
GREAT PLANES® MODEL MANUFACTURING COMPANY

ElectriFly™

T-600 Motor System

Assembly and Operation Instructions



Parts List

1. Capacitor (CAPACIT1)
2. Switch Harness (HARNESS1)
3. T-600 Motor (GPMG0700)
4. Prop Adaptor Hub (ADAPTH01)
5. Prop Adaptor Spinner (ADAPTS01)
6. 6-32 x 5/8" Socket Head Cap Screw (SCRW057)
7. 6-32 x 1/4" Setscrew (SCRW038)

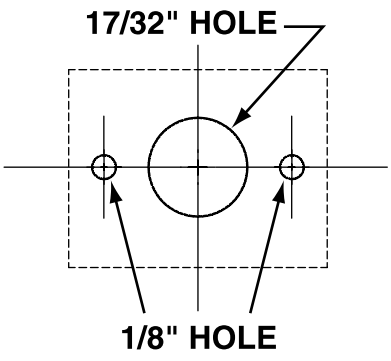
(Not Shown)
8. 1/16" Hex Wrench (WRENCH01)
9. 3/32" Hex Wrench (WRENCH02)
10. 8 x 4 Propeller (PROP001)

If any parts are missing, broken or defective, or if you have any questions about the gear drive, please call us at (217) 398-8970 and we'll be glad to help. If you are calling for replacement parts, please look up the part numbers and have them ready when calling.

The T-600 Motor System is a low cost, high performance propulsion system designed primarily for electric powered R/C airplanes having a flying weight of approximately 48 oz. and a wing loading of approximately 15 oz/sq.ft.

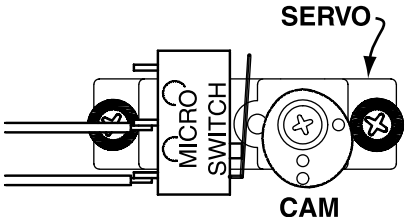
MOUNTING THE MOTOR SYSTEM TO THE PLANE

If you are new to electrics, Harry Higley prints a book called ***Entering Electrics*** that can answer many of the questions you may have about electric airplanes. One of the questions is how to mount the motor in the airplane. There are many methods that can be used. There are motor mounts available that hold the motor and attach directly to the firewall of the airplane. If the front of the plane is constructed of plywood, the motor can be attached to the back of the plywood using two 3mm x 8mm cap head machine screws. Use the template shown below to locate the mounting holes in the plywood firewall.



MOUNTING THE MICRO SWITCH

The following instructions describe how to mount the "micro switch" for servo-activated motor operation. However, if you are only using two servos, you will have to sacrifice this feature. If that is the case, merely wrap tape around the micro switch, holding the switch lever down. You will then be able to switch the motor on and off using only the toggle switch mounted through the side of the fuselage. This will, however, not allow you to turn the motor off during flight. You will only be able to fly the plane at full power until the motor battery runs down.



To operate the motor using the micro switch, cut and sand one of the servo control wheels to a "cam" shape as shown. Attach the micro switch to the top of the throttle servo case with double-sided servo tape in such a way that when the throttle stick is advanced to full throttle, the servo wheel will activate the micro switch.

POWER SOURCE

The T-600 motor was designed to use a 7.2V, 8.4V or 9.6V 1700mAh to 3000mAh battery pack. Higher voltage battery packs will shorten the life of the motor and should not be used.

OPERATION

Before installing the propeller, test the operation of the motor/battery/switch setup.

1. Make sure the toggle switch is in the "off" position.

2. Before switching on your radio system, make sure no one in the area is on your radio frequency. Switch on your transmitter, then your receiver. Pull the throttle stick back to the off position and check that the micro switch is in the "off" position.

3. Insert the charged motor battery into the airplane, and plug the battery into the switch harness.

4. Without the propeller installed, switch the toggle switch to the "on" position. The motor should **not** run at this time, unless you have taped the micro switch in the on position.

5. Advance the throttle stick forward to the "on" or full throttle position. This should cause the motor to start.

6. Continue running the motor until the motor slows down considerably. This may take 10 to 20 minutes depending on the capacity of the battery. This will allow the motor and motor brushes to "break-in," extending the overall life of the motor.

7. **Do not** allow the motor to run until the battery pack is fully discharged and the motor stops. This could damage the battery. After the motor slows down, move the throttle stick to the "off" position and switch the toggle switch off.

8. Switch off the receiver, then the transmitter.

9. Remove the battery pack from the airplane and allow the battery pack to cool before recharging.

10. Install the prop adaptor hub on the motor shaft. Install the 6-32 x 1/4" setscrew in the hub and tighten it on the flat of the motor shaft.

11. With the propeller airfoil side forward, use the 6-32 x 5/8 socket head cap screw and prop adaptor spinner to secure the propeller to the motor. Re-check after each flight.

13. Recharge the motor battery pack. Your motor and gear drive are ready to fly.

Caution: Allow the motor to cool for at least 10 minutes between flights. Successive flights without a cool down period may cause the motor to become excessively hot.

MAINTENANCE

The bronze bushings in the ends of the motor are self lubricating, but you may extend their life by applying a **very small amount** of light machine oil to the points where the center shaft touches the bushings, after each hour or two of running time. **Note:** A "drop" of oil is far too much, so you should apply the oil with a toothpick. **Never oil the inside of the motor**.

The T-600 motor brushes (which transfer electricity to the commutator inside the motor) are maintenance-free and will last a long time under normal use. Under normal operating conditions the motor brushes wear slightly every time the motor is run. If over time you notice that the motor is running slower and not producing the power that it used to, the brushes may need cleaning or are worn out and the motor needs replacing. To clean the brushes, remove the motor from the airplane. A spray motor cleaner such as DuraTrax® Power Shot™ (DTXC2458) will remove any buildup on the brushes. After cleaning the brushes, run the motor without the prop for 10 to 15 minutes using a motor battery pack to reseat the brushes on the commutator.

PRECAUTIONS

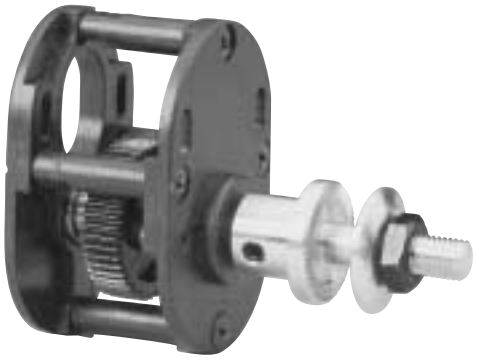
- Keep all body parts and loose clothing away from the propeller while the motor battery is connected to the switch harness.
- Connect the motor battery to the micro switch only when ready to fly. Never leave the battery connected between flights.
- When the motor battery is connected, never place your body within the arc of the propeller. The motor may accidently start without warning. Even though the plane is powered by an electric motor, the rotating propeller can cause serious injury.
- Be sure to provide an air inlet in the front of the plane and an air exit towards the aft end of the plane for motor and battery cooling.
- After each flight, allow the motor to cool for at least 10 minutes.
- Never operate the motor without a safety fuse. If the propeller should touch something and not be able to rotate, the motor will draw a very high current from the motor battery. This high current could easily result in a fire, causing property damage and personal injury.
- If the rotating propeller should strike the ground, unplug the motor battery and check the propeller for nicks and cracks. Plug the motor battery into the switch harness and slowly start the motor, checking that the propeller shaft is not bent.

PROPELLER SAFETY INSTRUCTIONS

- Before installing the propeller, remove any molding flash along the edges of the propeller by scraping with a sharp knife.
- Carefully balance your propellers before flying. An unbalanced prop is the single most significant cause of vibration.
- Keep spectators at least 20 feet away from and out of the path of the rotating propeller.
- Wear safety glasses and hand protection when operating model motors. Do not permit any objects to touch the moving propeller. Remain clear of the propeller arc.
- Inspect the propeller after each flight. Discard any propeller that has nicks, scratches, or any other visible defect. Do not repair, alter, or modify the propeller.
- We strongly suggest that the propeller tips be painted in order to increase their visibility while spinning.

ElectriFly® GD-600 Electric Gear Drive w/2.5:1 Ratio (GPMG0850)

• Dramatically increases power output, efficiency and flight time!



Compact, lightweight and extremely durable, this gear drive system features an open housing for efficient cooling and easy access to pinion gears. The aluminum prop hub and washer supply true rotation, while the dual ball bearing output keeps operation smooth. Prop, spacer and prop nut fit on the output shaft with room to spare. Great Planes supplies a precision-machined 2.5:1 steel pinion gear; optional pinions are available separately. Also includes mounting tools and hardware. Requires Great Planes' T-600R Reverse Rotation 6-8C motor (GPMG0705).

ElectriFly® T-600GD ESC System w/Gear Drive (GPMG0765)

• Includes prop, all mounting hardware and tools!

When you need extra power to move larger planes or fly aerobatics, Great Planes' T-600GD with ESC holds the answer. It features the T-600R 6-8C Reverse Rotation Ferrite Motor, along with a 2.5:1, GD-600 Electric Gear Drive, for converting rotational speed to generate much more power and longer run times. The system also includes an aluminum prop adapter; 10x8 wooden prop; and super-efficient, forward-only C-30 High Power electronic speed control with brake and low battery cut-off.

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