

**T-280GD w/ESC System and  
T-280GD System**

**Assembly and Operation Instructions**

**Before you begin, examine the components included with this kit. 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.**

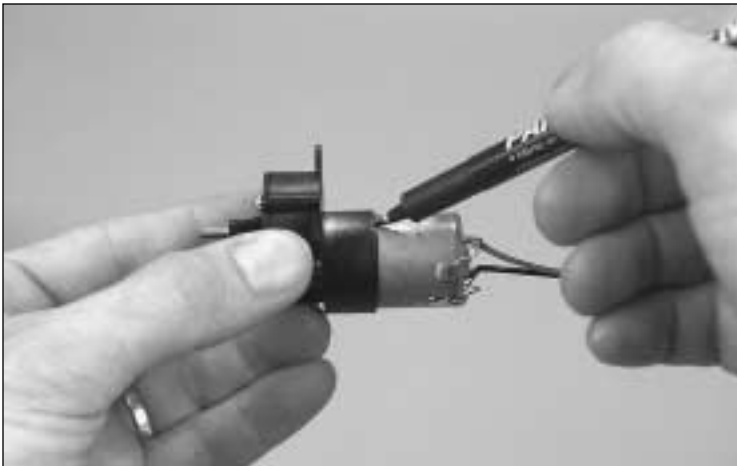
**PARTS LIST** - These are the parts included with this kit. Each part is also available separately.

GPMG0202 .....Great Planes ElectriFly 4.1:1 Gear Reduction Unit w/Prop Adapter  
GPMG0300 .....Great Planes ElectriFly T-280 Motor w/ connector  
APCQ5015 .....APC 10 x 4.7 Slow-Flyer Propeller  
GPM2010 .....Great Planes ElectriFly C-10 Micro High Frequency ESC w/BEC (speed control included only with ElectriFly T-280GD w/ESC system)

(3) #2 x 1/4" screws  
Small tube of gear-locking cement

**Caution.** The small tube of liquid included with this kit is not lubricant. It is a special **cement** intended for locking the pinion gear to the motor shaft. **Do not** apply the cement to the motor, except where instructed, during installation of the pinion gear.

**ASSEMBLY**



1. Without using tools, use your fingers to press the motor all the way into the gearbox. Spin the shaft on the gearbox. If there is resistance and the shaft does not spin freely, back the motor out of the gearbox **just enough** to allow the shaft to spin freely. Use a fine-point felt-tip pen to mark the end of the gearbox onto the motor. This is how far the motor is to be installed after the pinion gear is mounted.

2. Remove the motor from the gearbox.

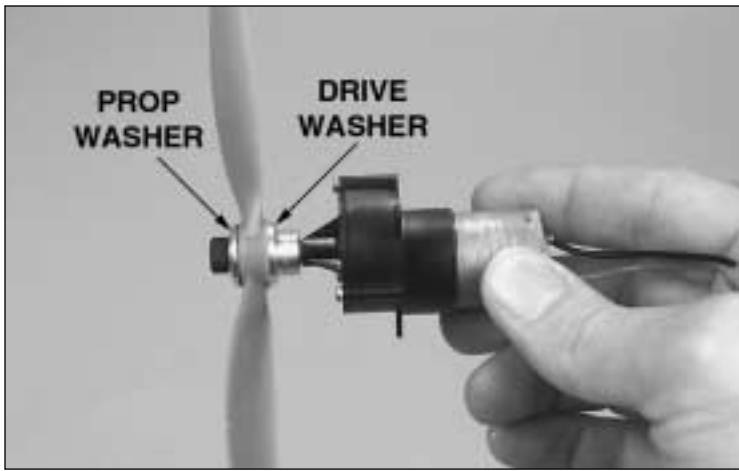
3. The pinion gear fits onto the motor shaft easier one way than it does the other. Using only your fingers (no tools), determine which way is the easiest by test-fitting the gear onto the shaft.

The "easy way" is the way the gear goes on and is to be permanently installed.



4. Remove the pinion gear from the motor. Add a small drop of the cement included with this kit to the hole in the end of the gear that fits onto the shaft. Install the gear onto the shaft. The top of the gear should be even with the end of the motor shaft.

5. Use a toothpick to apply a **small** dab of lubricating oil to both ends of the motor shaft where it exits the motor. **Do not** apply oil directly from the container because you will apply too much.



6. Reinstall the motor into the gearbox up to the line you marked. Fit the prop adapter to the gearbox. Insert the appropriate nylon spacer ring into the prop, then test fit the prop to the gearbox (be certain to use the prop washer). If necessary, use a hobby knife to enlarge the hole in the nylon spacer ring so it will fit onto the prop adapter.

7. Tighten the prop nut with an 8mm wrench. If necessary, use a pliers to hold the drive washer while tightening the prop. Wrap the drive washer with a cloth to keep the pliers from marring it.

8. Spin the propeller by hand. It should spin somewhat freely, but due to the resistance of the motor, the propeller should not "coast" or freewheel indefinitely. If there is much resistance, back the motor out of the gearbox the same as you did before until the propeller spins as it should.

9. Remove the propeller from the gearbox. Fit the gearbox to the firewall on your model. Use the holes in the motor mount tabs as a guide to drill 1/16" holes into the firewall for mounting the gearbox. Add a drop of CA to the holes and allow to fully harden. Mount the gearbox to the firewall using the three wood screws included with this kit.

10. Connect the motor to the speed control in your model.

## PRECAUTIONS

Unless specifically testing the operation of the motor, gearbox or propeller, remove the propeller from the model while performing setup or maintenance to the model in your shop.

Keep all body parts and loose clothing away from the gear drive while the battery is connected to the speed control.

Connect the battery to the speed control only when ready to fly. Never leave the battery connected to the speed control between flights.

When the battery is connected to the speed control, never place your body within the arc of the propeller. The motor may accidentally start without warning. Even though the plane is powered by an electric motor, the rotating propeller can cause serious injury.

After each flight, allow the motor and speed control to cool for at least 10 minutes.

If the rotating propeller should strike the ground, disconnect the battery and check the propeller for nicks and cracks. Plug the battery into the speed control and slowly start the motor, checking that the propeller shaft is not bent and the gears on the gear drive are not stripped.

## PROPELLER SAFETY INSTRUCTIONS

Before installing the propeller, remove any flash along the edges of the propeller by scraping with a sharp knife.

With the propeller airfoil side forward, use the correct nut and washer to secure the propeller to the gear drive. Recheck after each flight.

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.

Paint the tips of the propeller white to increase its visibility while turning.

## OPERATION

**Before mounting the propeller to the gearbox, test-run the system.**

1. Follow the instructions included with the speed control to run the motor. Listen to the motor and gearbox for free operation. If necessary, remove the gearbox from the plane and slightly back the motor out of the gearbox until the propeller shaft turns freely. If the motor is too far into the gearbox, the pinion gear and the front of the motor shaft can contact the back of the spur gear.

2. Make certain the propeller shaft on the gearbox turns counter-clockwise when the throttle is advanced. If not, follow the instructions included with the speed control to reverse the direction of the motor.

3. Once you have finalized the exact position of the motor in the gearbox, add a small drop of medium CA to both sides of the motor where it fits into the gearbox. This will assure that the motor stays in position.

4. Due to a short break-in period, the motor and gearbox will not produce full power until after the first few flights.