Great Planes Spectra Glider

20 years ago, a lot of electric sailplanes were powered with 7.2 or 8.4 volt, 6 or 7-cell NiCad packs that were originally used in RC Cars. These batteries were extremely heavy for the amount of energy that they produced. Modern LiPo batteries can produce double the power for half the weight, so that gives you a huge weight savings on the model. Also, the new brushless motors often weigh 1/3 of what their brushed counterparts weighed for even more weight savings!

We have 10x6 folding props in both our APC and GemFan brands, and that is typically a good size for a 2-meter glider like the one you have. The GemFan blades fit into our Aluminum Folding spinners that we sell on our website. The size spinner that you use is normally based on the diameter of the fuselage right behind the spinner. We have these spinners available in sizes ranging from 30mm in diameter up to 50mm in diameter in 5mm increments. Normally, to use this type of spinner, you mount the motor to the back side of the firewall, right at the nose of the plane, with the rear shaft of the motor sticking out forward through a hole in the center of the firewall. The spinner has a built-in compression collet type attachment that clamps down onto the motor shaft. Because of this, you need to get the spinner that has a collet the same size as the shaft in your motor.

In our APC line of folding props, these blades must be used with the 2-piece APC hubs that are available on our website. These do not include a spinner, but you can use any spinner that is made for a 2-blade prop with them. With this type of folding prop, you need to use the threaded prop adapter that comes with the motor, and mount the motor facing forward, ahead of the firewall.

Most people doing the conversions to brushless on gliders of this size use a 3-cell LiPo battery, with a capacity in the 1500 to 2200mah range. Those size batteries typically weigh between 4.5 and 6.5 ounces. A 1500mah pack will typically get you an initial 30-second climb to altitude, plus 5-6 additional 15 second power bursts to get you back up to altitude per charge. A 2200mah pack will get you the initial 30-second climb to altitude plus 8-10 additional 15-second bursts of power to climb back up to altitude. Our Batteries in that size come with a female XT60 power connector on them, so you would need to get a male XT60 connector to put onto the input side of the ESC unless your ESC already has a matching connector like many of our BadAss ESCs. The motor comes with 3.5mm bullet connectors already installed, and includes a set of matching female connectors and heat-shrink tubing to put onto the output side of the ESC'

With a brushless motor and LiPo battery, the flying weight of these planes is typically about 38 to 40 ounces. For a plane of this size, a motor such as our Cobra 2217/16 1180Kv or the Tempest 2217-1120Kv motor with a 10x6 folding prop works very well. For example, the Tempest motor running at full throttle from a 3-cell LiPo with the GemFan 10x6 folding prop will give you the following performance numbers.

Volts – 11.1

Amps – 22.6

Watts – 250

RPM – 9380

Thrust – 1240 grams, 43.7 ounces

Speed – 53 MPH

This would get you nearly vertical climb performance for quickly getting up to gliding altitude. The Tempest motor has a 3mm main shaft, so you would need to get a prop spinner that fit a 3mm shaft. This motor has a maximum current rating of 30 amps, so the Tempest 30-amp ESC would be a good match.

You would most likely need a 35mm diameter spinner for this plane to blend in well with the nose.

Below are links to everything that you would need to power this glider well.

Tempest 2217-1120 Motor: https://innov8tivedesigns.com/tempest-2217-1120kv-brushless-motor.html

Tempest 30-amp ESC: https://innov8tivedesigns.com/tempest-brushless-esc-30a-4s.html

BadAss 3-cell LiPo Batteries: https://innov8tivedesigns.com/products/batteriescharging/badass-lipos/3s-lipo-11-1v.html

GemFan 35mm Folding Prop Spinner for 3mm shaft: https://innov8tivedesigns.com/aluminum-folding-prop-spinner-35mm-diameter-for-3mm-motor-shafts.html

GemFan 10x6 Folding Blades: https://innov8tivedesigns.com/gemfan-folding-cam-style-nylon-blades-10x6.html

XT60 Battery Connectors, 4-male: https://innov8tivedesigns.com/catalog/product/view/id/412/s/xt60-connector-set-4-male/category/2/

That will get you everything you need to power your Spectra well and get great climb performance.