

P1B-1 Class rubber power model plane

Specifications Of Model Plane “Sky Voyager Model B” :

A. Sky Voyager Model B accords with the Chinese competition regulation of P1B-1 Class rubber power model plane:

1. Weights while taking off: no less than 40 grams;
2. Wingspan: 648mm;
3. Power rubber: no more than 4 grams.

B. The characteristic of “Sky Voyager Model B” :

1)The design of the wing adopts wy-4560 aerofoil shape of international F1B rubber power model plane. The fixed strike on the wings can be acted as vortex generator to delay the flow separation, so that the model plane presents excellent glide performance, little distortion and good interchangeability.

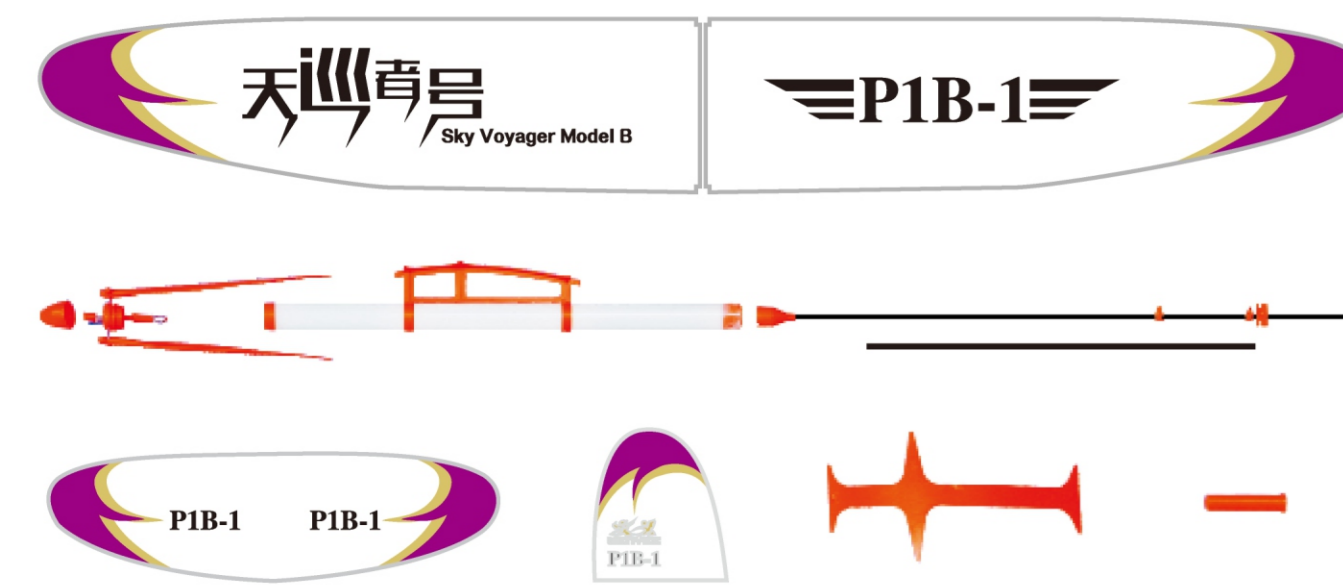
2)The design of the propeller adopts the structure of torsion brake. When the propeller stops in the air, it can pack up automatically with the help of aerodynamic force. The propeller automatically retracts when there is no power, which can minimize the air resistance under gliding condition and enhance competition performance.

3)The rear-body is mainly made of carbon fiber tube with light weight and small rotation inertia, so that dynamic stability of the model is greatly improved.

4)The assembly of most parts adopts the design of positioning installation, suitable for beginners and easy to assemble, disassemble and put.

C.The assembly

Parts of the product: Before assembly, all parts need to be burred, and rotating and sliding parts need to be lubricated.



Tools and accessories (not included in the kit): ruler, scissors, paper cutter, super glue 502, 10 mm scotch tape (not available).

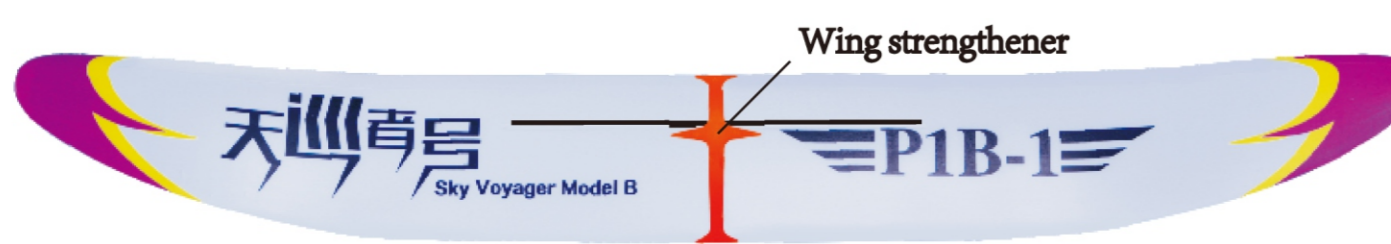


1)The assembly of the wings

First, remove the burrs from the wing with paper cutter.

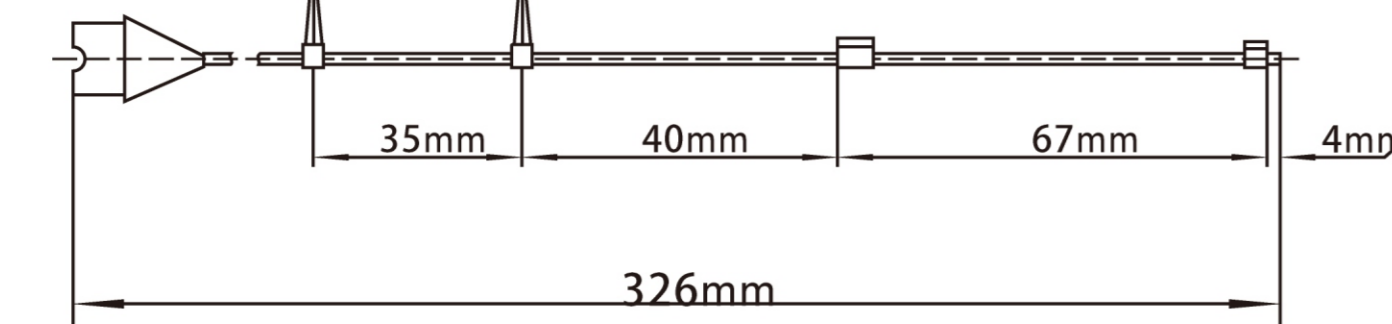
Then, assemble the carbon fibre reinforced beam on wings with scotch tape and glue the surface under the wing along the center line with scotch tape.

Finally, stick the wing strengthener with double-side tape.

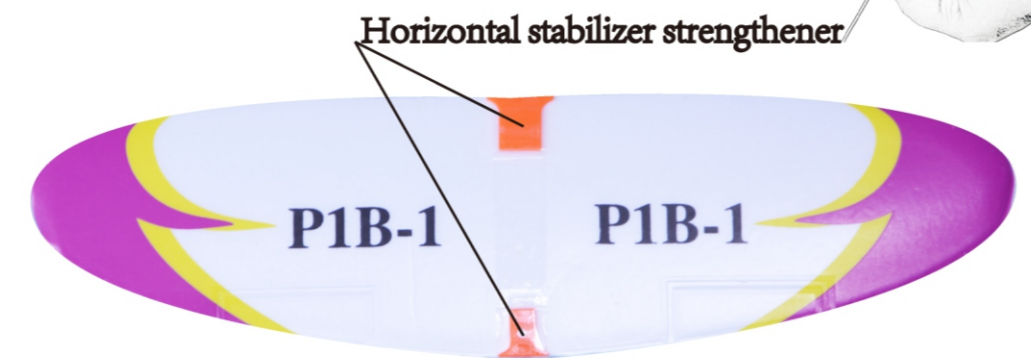


2)The assembly of the rear-body

Assemble and adjust the parts in place according to the design size below (loose parts can be glued with super glue 502); Finally, assemble vertical stabilizer according to the following drawing and assemble it with scotch tape.

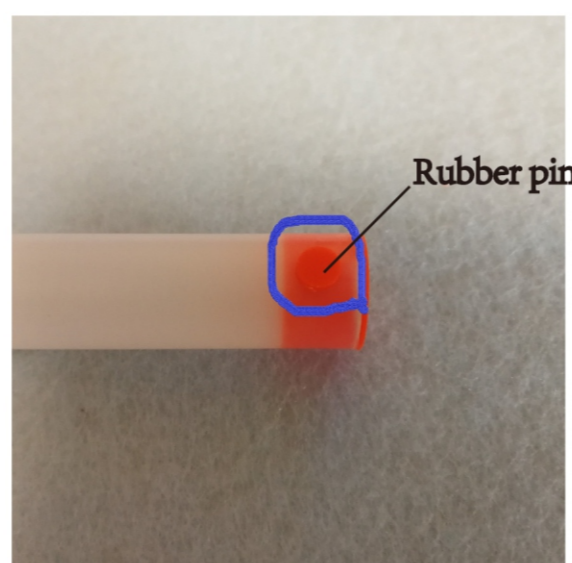
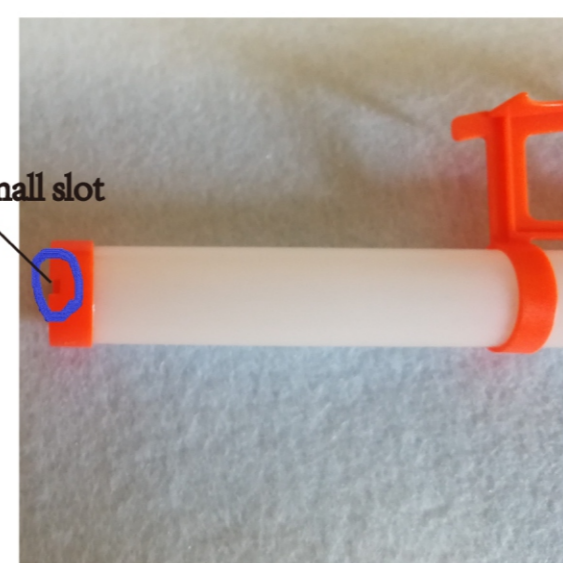
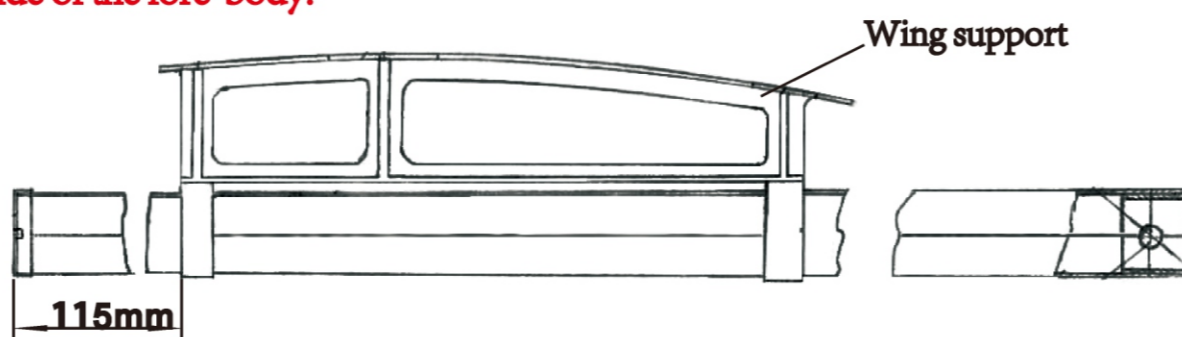


The assembly of horizontal stabilizer can refer to the assembly of the wings. The difference is that there is only one horizontal stabilizer and no carbon fiber reinforced beam is needed.

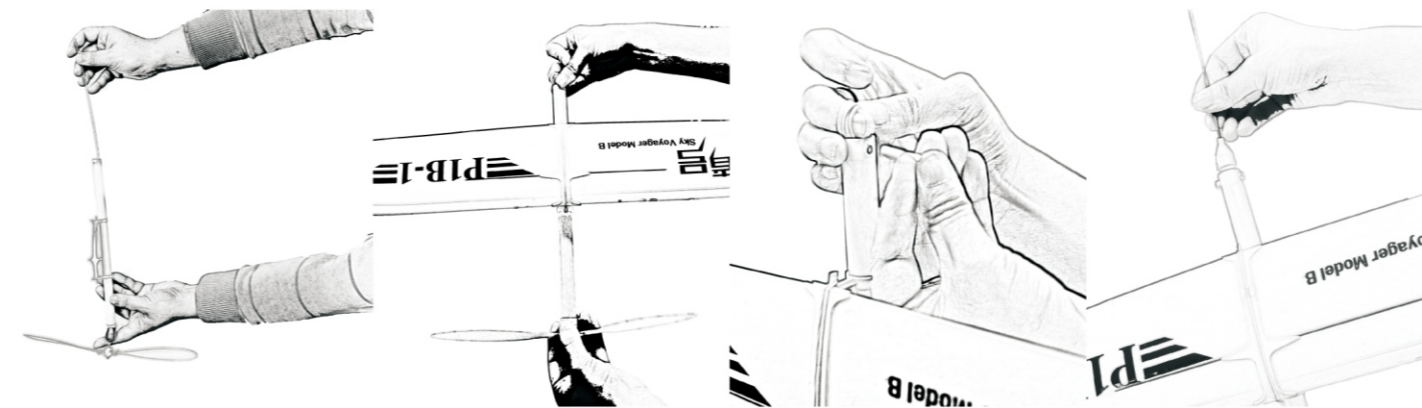


3)The adjustment of the fore-body: Turn and move the wing support to the right position according to reference size in the following drawing.

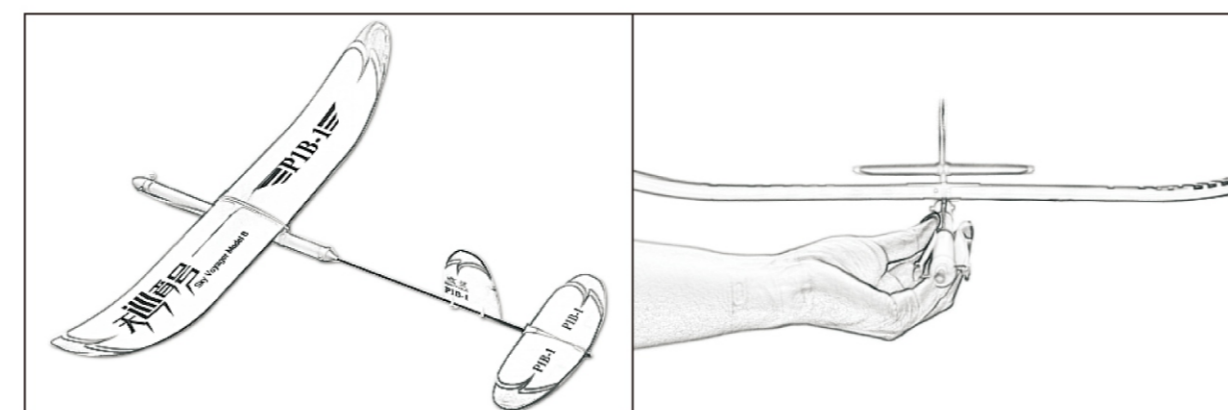
Attention: The small slot in the front of fore-body and rubber pin must be in line with the left side of the fore-body.



4)The assembly of the power rubber: It is suggested that 1mm × 1mm rubber be coiled 9 times and 1/32 inch rubber be coiled 6 times. Rubber lubricants: neutral shampoo, glycerin, castor oil, silicone oil etc.



5)Overall assembly: Assemble the wing and the horizontal stabilizer in the correct position with a rubber band according to the drawing below. Make sure that the rubber band is not too tight or too loose and the fore-body and rear-body are firmly butted and plugged together. Check whether the wing and horizontal stabilizer are parallel, whether the vertical stabilizer is vertical and whether nose positioning is correct.



6)Ways to wind power rubber of torsion brake propeller by hand:

First, pull the head off the base to separate the pin from the base completely, then wind the propeller in a clockwise direction. When elastic potential energy is accumulated, friction force produced by elastic force of the power rubber is greater than the tension on the axis of power rubber. The pin will not go back to the groove of the base.

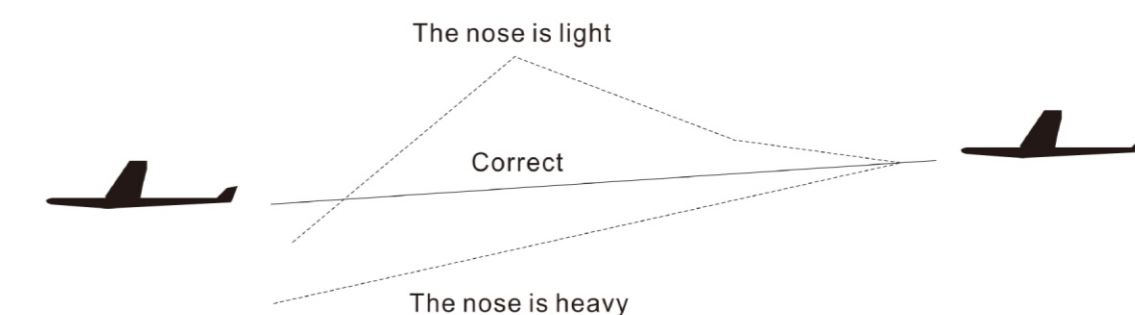
When elastic potential energy of power rubber is released, friction force produced by elastic force of the power rubber is less than the tension on the axis of the power rubber, and the pin goes back to the groove of the base and locks the propeller inside the base to stop the rotation of the propeller.



D.Test flight: The model is adjusted as right spiral climb and glide in general.

1)Test flight of hand throwing:

In gliding state, move the wing support along the forebody backward when the nose is light, and move the wing along the forebody forward when the nose is heavy.



2)Test flight of small power: Model adjustment can start from small power (70-80 rotations). If it works normally, the power can be increased.

The main purpose of small power adjustment: Adjust sliding slightly to enable the model minimum sinking speed.

The spiraling radius (rudder to right 1-2mm) is suggested to make it turn a lap within 20-30 seconds (this can be changed according to the size of the stadium).

Attention: Hand winding power rubber can only get the twisting force after propeller holder is pulled out and rewinded.

3)Test flight of large power: The main purpose is to enable the model maximum climbing height. After gliding state is ideally adjusted, there is no need to adjust the rudder repeatedly.

Adjustment of the the thrust vector angle must be meticulously precise .

When the model bumps down without climbing, the thrust vector angle should be increased to the right. When the right roll angle of the model is too large, the thrust vector angle should be reduced to the left.

Attention: Each adjustment of the thrust vector angel should be slight.

B.The balance weight of Sky Voyager Model B should be about 6 grams to meet the requirement of P1B competition.

The designer leaves the weight to model airplane enthusiasts to improve it. For example, it is highly necessary to add the forced landing device, which can be assembled according to the position in the following picture. The design of horizontal stabilizer has already reserved the function of refitting. It can be referred to the forced landing device of F1B to refit.

