Item No.:F4301 / F4302

www.freewing-model.com

Pandora

User Manual

Wingspan : 1400mm(55-1/8")
Fuselage length : 1180mm (46-7/16")
Flying weight : 1500g (52.91oz.)

4-VERSION

- This manual covers all color schemes
- Although it only shows one color scheme, the aircraft are the same
- This manual is for reference to the actual product at the time it was written. We can't speak for any future upgrades or improvements

- 此说明书适合本公司"潘朵拉"所有涂装安装指导.
- 此说明书仅选用其中一款涂装作为范本进行安装指导。
- 说明书仅作参考,一切以实物为准。为产品改进而进行的版本升级，不另行通知！

Version No.:F4301-V01
说明书版本号:F4301-V01

MADE IN CHINA

Thank you for purchasing the Freewing Pandora 4 in 1 training aircraft! We're extremely pleased to be able to provide you with this extremely popular multi-functional aircraft, just listen to what you have purchased! First, the Pandora is a super stable and well thought out airplane, but the thing that sets it apart is that you can fly it in high wing/ low wing tail dragger, or in high wing/low wing tricycle landing gear configuration. Four planes in one! Changing over from high to low wing and tricycle gear to tail dragger is quick and can easily be done right at the field! The Pandora is completely capable of taking off from grass runways and even beaches!

Freewing has utilized EPO foam and carbon fiber reinforcement to take the punishment a new pilot can inflict.

Although she is classified as a trainer, this is an airplane that you'll be flying long after your skill set has let you move on to higher performance airplanes, just for the fun of it!
So, all set to assemble your new airplane? Let's get you in the air!

Basic specifications of the Freewing Pandora

Specification	
Material	EPO
Wingspan	1400mm (55-1/8")
Fuselage Length	1180mm (46-7/16")
Flying Weight	1500g (52.91 oz.)
Motor Size	3536-800KV
Prop Size	3-Bladed 11*6
Recommended Battery	3S 11.1V 2200mAh 25C
ESC	30A ESC (1pcs)
Servos	4pcs 9g servo
Landing Gear	YES
Retractable landing gear	No
Aileron	YES
Elevator	YES
Rudder	YES
Throttle	YES
Flaps	YES

All the parts and pieces needed to fly in all four configurations are provided with this RTF,PNP aircraft kit. Ensure that all the parts shown in the picture below have been provided with your kit.

Accessory Bag Content List

RTF \ ARF Version

Parts bag 1

No.	Name	Specification	Qty.
1	Screw	PA 2.3*8mm	2
2	Screw	PA 2.6*10mm	3
3	Screw	PA 3*10mm	2
4	Screw	PA 3*18mm	4
5	Screw	PWM 3*6mm	4
6	Screw	PT 1.7*14mm	6
7	Grub Screws	M4*4mm	1

Parts bag 2

No.	Name	Specification	Qty.
1	Propeller	3-Bladed 11*6	1

Parts bag 3

No.	Name	Specification	Qty.
1	Cowl	/	1
2	Spinner	/	1
3	Landing Gear Fixing Part (Left)	/	1
4	Landing Gear Fixing Part (Right)	/	1
5	Rear Wheel Decorated Part	/	1
6	Servo Surface Arm	/	2
7	Servo Surface Arm Spacer	/	2
8	Chuck	∅1.2mm	2
9	Servo extension cable	∅1.2mm L=64mm	2
10	'Y' cord	L=100mm	1
11	Rear Wheel	/	1
12	Hex Key	/	1
13	Screw Driver	/	1
14	Parts Bag	Parts Bag 1	1

Airframe Version

Parts bag 1

No.	Name	Specification	Qty.
1	Screw	PA 2.3*8mm	4
2	Screw	PA 2.6*10mm	6
3	Screw	PA 3*10mm	3
4	Screw	PA 3*18mm	2
5	Screw	PWM 3*6mm	4
6	Screw	PT 1.7*14mm	6
7	Grub Screws	M4*4mm	1
8	Spacer	∅3.2mm	2

Parts bag 2

No.	Name	Specification	Qty.
1	Propeller	3-Bladed 11*6	1
2	Propeller back plate	∅6mm ∅5mm ∅4mm ∅3mm	4

Parts bag 3

No.	Name	Specification	Qty.
1	Cowl	/	1
2	Spinner	/	1
3	Landing Gear Fixing Part (Left)	/	1
4	Landing Gear Fixing Part (Right)	/	1
5	Rear Wheel Decorated Part	/	1
6	Servo Surface Arm	/	2
7	Servo Surface Arm Spacer	/	2
8	Chuck	∅1.2mm	2
9	Servo Extension cable	∅1.2mm L=64mm	4
10	'Y' cord	L=100mm	1
11	Rear Wheel	/	1
12	Hex Key	/	1
13	Screw Driver	/	1
14	Parts Bag	Parts Bag 1	1

非常感谢您购买我们的“潘朵拉”飞机。我们很高兴能为您提供这样一架多功能的初级练习机.

“潘朵拉”是一款非常有创意的练习飞机.首先，它可以在前三点起落架布置与后三起落架布置之间自由变换；特别是后三点起落架的超大EPO机轮，可以适应草地、沙滩、砂石路面等复杂的起飞跑道；其次，“潘朵拉”飞机可以在上单翼与下单翼这二种机翼布置之间自由变换。可以满足您二个阶段的飞行训练。一架飞机，可以演变成四种不一样的飞机。

“潘朵拉”采用EPO材料制作，并大量运用碳纤维材料进行加固；完全达到了练习机所需要结构强度要求；“潘朵拉”优秀的结构设计，让所有的操作变得非常简单。无论是上、下主翼的切换、前三点、后三点起落架的切换和飞机的组装，都可以迅速完成。

关于产品的一些基本参数,请查看以下表格.

基本参数	
制作材料	EPO
翼展长度	1400mm (55-1/8")
机体长度	1180mm (46-7/16")
飞行重量	1500g (52.91 oz.)
电机规格	3536-800KV
螺旋桨规格	3叶 11*6
标准配备电池规格	3S 11.1V 2200mAh 25C
电子调速器	30安培无刷电调
舵机	9克舵机 4只
起落架	前三点起落架;后三点起落架
起落架舱门控制	无此功能
副翼控制	标准控制
升降控制	标准控制
方向控制	标准控制
油门控制	标准控制
襟翼控制	预留襟翼改装位置

同时,我们准备了三种出厂配置给大家选择,以适应不同的使用需求.这三种基本配置分别是:整机、空机附加动力套件、空机；根据您购买的配置，请对照下图及第二页附件包清单来核对您的产品。’

注：核对过程中，如果产生任何疑问，可以与销售商联系或者致电我公司垂询!(联系方式请参考说明书尾页)

附件包内容列表

整机、空机附动力

附件包 **1**

序号	配件名称	规格参数	数量
1	螺丝	PA 2.3*8mm	2
2	螺丝	PA 2.6*10mm	3
3	螺丝	PA 3*10mm	2
4	螺丝	PA 3*18mm	4
5	螺丝	PWM 3*6mm	4
6	螺丝	PT 1.7*14mm	6
7	机米螺丝	M4*4mm	1

附件包 **2**

序号	配件名称	规格参数	数量
1	螺旋桨	3叶 11*6	1

附件包 **3**

序号	配件名称	规格参数	数量
1	整流罩	/	1
2	螺旋桨固定盘	/	1
3	起落架固定塑料件（左）	/	1
4	起落架固定塑料件（右）	/	1
5	尾轮塑料件	/	1
6	舵面遥臂	/	2
7	舵面遥臂固定片	/	2
8	夹头	∅1.2mm	2
9	主翼舵机钢丝	∅1.2mm L=64mm	2
10	Y 线	L=100mm	1
11	EVA尾轮	/	1
12	内六角扳手	/	1
13	螺丝刀	/	1
14	零件包	零件包1	1

空机

附件包 **1**

序号	配件名称	规格参数	数量
1	螺丝	PA 2.3*8mm	4
2	螺丝	PA 2.6*10mm	6
3	螺丝	PA 3*10mm	3
4	螺丝	PA 3*18mm	2
5	螺丝	PWM 3*6mm	4
6	螺丝	PT 1.7*14mm	6
7	机米螺丝	M4*4mm	1
8	垫片	∅3.2mm	2

附件包 **2**

序号	配件名称	规格参数	数量
1	螺旋桨	3叶 11*6	1
2	螺旋桨定位圈	∅6mm ∅5mm ∅4mm ∅3mm	4

附件包 **3**

序号	配件名称	规格参数	数量
1	整流罩	/	1
2	螺旋桨固定盘	/	1
3	起落架固定塑料件（左）	/	1
4	起落架固定塑料件（右）	/	1
5	尾轮塑料件	/	1
6	舵面遥臂	/	2
7	舵面遥臂固定片	/	2
8	夹头	∅1.2mm	2
9	主翼舵机钢丝	∅1.2mm L=64mm	4
10	线	L=100mm	1
11	EVA尾轮	/	1
12	内六角扳手	/	1
13	螺丝刀	/	1
14	零件包	零件包1	1

Assembly

Note:

1. Read the manual carefully before beginning assembly and make sure you understand each step in the process. If you have any questions, contact your distributor, or contact us at www.freewing-model.com .
2. As a reference, this manual will assemble the airplane in the high wing tricycle landing gear configuration as well as explain how to reconfigure the airplane afterwards.
3. Before assembly, please refer to P 18 for proper screw assignments.

组装部份

提示：

1．组装过程中，请仔细对照说明书，如有任何疑问，可以联系您购买产品的经销商，或者联系我们。

2．本说明书以“前三点起落架、上单翼机翼布局”为参考制作；同时包含起落架、机翼切换的介绍内容。

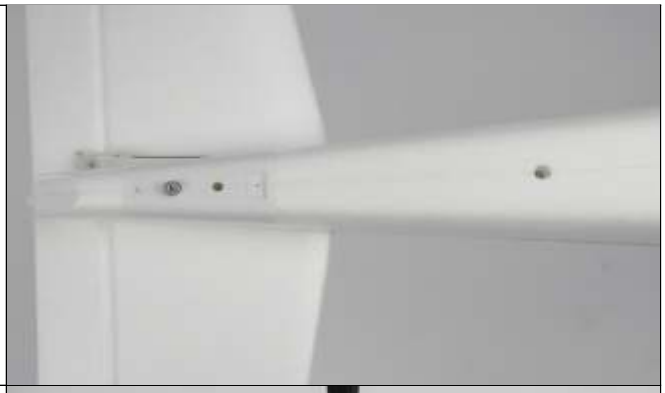
3．组装过程中,请参考P18页面,查看螺丝正确的应用位置。

Find the parts (see the photo) needed to install the wing onto the fuselage. -如右图所示，准备安装主翼；	
Feed the servo wire through the hole in the center section, then slip the carbon fiber rod into the round hole in front of the wire hole and slide the rod up so that the attachment points are visible through the points on the wing. Make sure that the servo wires are not pinched between the wing and the center section. -将其中一端主翼插入到机身；	
Anchor the wing to the center section with the two provided screws. Do not over tighten the screws! -用二颗螺丝固定主翼；	
Repeat these steps for the other wing. -最后，重复前二个步骤，安装另一侧主翼；	

Find the parts shown in the photo to assemble the landing gear. -如右图所示，取出配件准备安装主起落架；	
Insert the main landing gear assembly into the attachment point on the underside of the fuselage. -主起落架插入到固定塑料件内；	
Insert the two plastic landing gear retainers and use the provided screws to anchor them to the landing gear attachment point as shown in the photos. -扣入左、右钢丝固定件；	
The completed assembly. -用螺丝固定。	
Place the horizontal stabilizer onto the fuselage and the slide the vertical stabilizer over it and into it's position on the fuselage as shown in the photo. -将平尾安放在机身尾部；然后插入垂直尾翼；	

Using the two screws, anchor the assembly to the fuselage. Notice one screw hole is located about half way up the length of the horizontal stabilizer and the other is beyond the leading edge of the stab. See the photo.

-在右图所示位置，用螺丝固定尾翼套件；



The propeller backing plate slides over the motor shaft then the propeller, followed by a washer, then the retaining bolt snugs the prop and backing plate to the aircraft. Ensure that the retaining nut is tight so that the propeller is secure, but do not over tighten it. Then slip the spinner over the prop and secure it with the three provided screws. There is an exploded diagram on P18 to use as a reference as to how to assemble the propeller.

-最后，参考P18爆炸图，安装好螺旋桨；

Note: It is advised that you install the propeller after binding the aircraft and setting the control surfaces. Propellers are very DANGEROUS!

Loosen the four screws holding the wings to the fuselage and remove the assembly.

-在右图所示机身位置，拧松螺丝，从机身上取下主翼。

Turn the wing assembly over and join the two aileron servo wires with a 'y' cable as shown in the photo.

翻转主翼，用Y线连接好左、右舵机线；

Remove the battery hatch cover by pulling up on the plastic tape

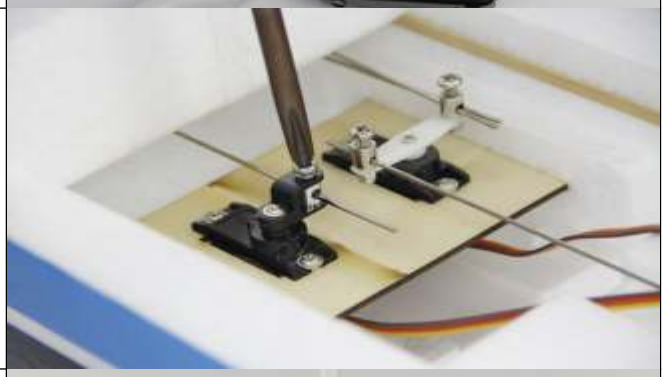
-在右图所示位置，取下电池舱盖；

Attach all the servo leads to the receiver (sold separately) as shown in the photo. Afterwards, power up the radio and plug a fully charged battery into the ESC. Ensure that your throttle control is at it's lowest position! If the ESC is not bound to the radio, bind it now using the instructions provided with your radio. Once bound you should hear three 'beeps'.

-打开发射机、将各通道连接到接收机，然后用一块已充电饱合的电池，连接飞机电源。

Center all the control sticks and trim tabs (Except the throttle, leave it in the lowest position) on the radio. Loosen the screws on the servo control horns, then center to control surfaces of the airplane. Once they are centered, tighten the screws on the control horns back down. If needed, the clevises can also be rotated to add extra length to the control rods.

-在各通道舵机居中的情况，通过调节钢丝长短，居中方向舵、前轮及升降舵面；



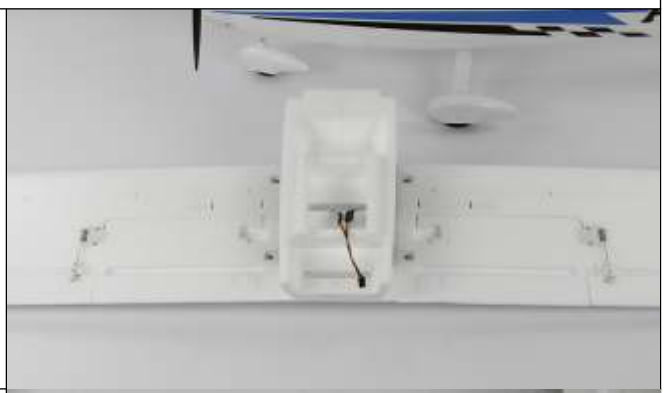
When all the surfaces are centered, reinstall the wing assembly to the fuselage using the four screws, tighten them securely but do not over tighten them.

-最后，用螺丝固定好主翼,完成组装。

Optional Flap Assembly
加装襟翼

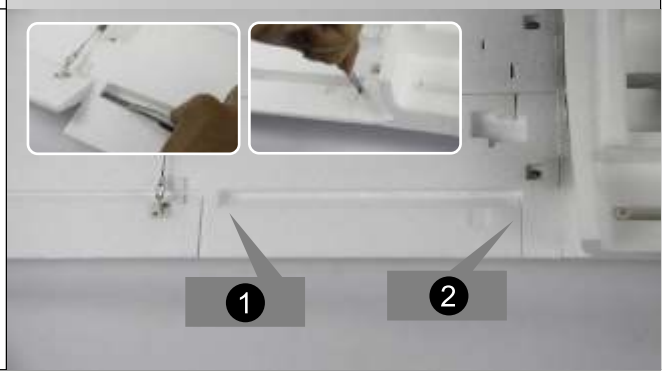
If you choose, you can add flaps to your Pandora. You will need one standard and one reversed servo and a Y harness (not included with the kit, see your distributor).

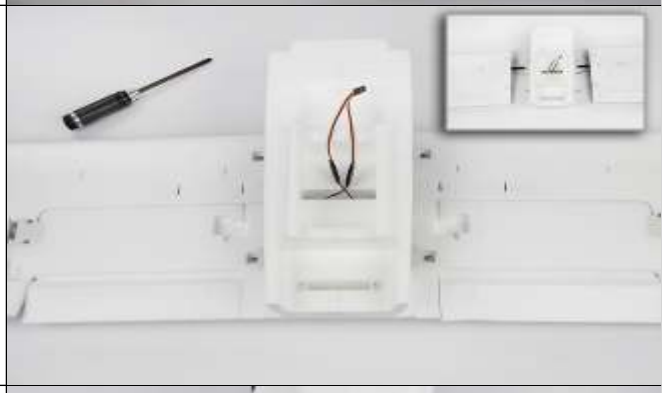
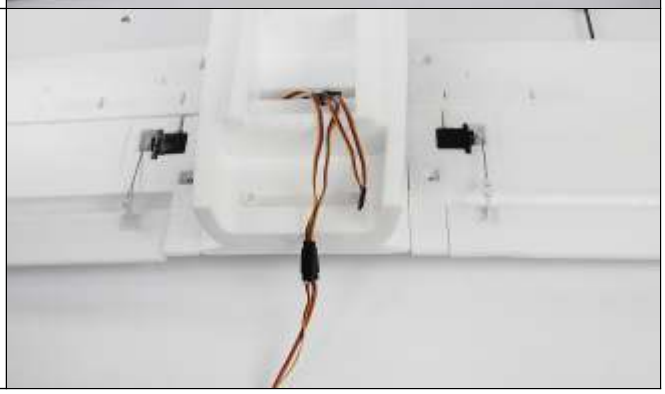
-松开座舱上表面二颗固定螺丝，取下主翼；



Cut the two slots in the wing. DO NOT cut length wise as this will remove the flap. Cut as indicated in the photo.

-用刀片切开右图所示1、2位置；



Once cut, carefully bend the flap down and back to neutral several times to loosen it up. -切开后，上下反复转动几次，减小翼面转动阻力；	
Remove the wings from the center section by removing the four screws and sliding the wings out. -松开左、右主翼固定螺丝，拆分左、右主翼；	
After installing the flap servos, feed the servo wires through the wire channels and into the center section. -用胶水粘上舵机及舵面遥臂，并装舵机线卡入线槽内；	
After the glue holding the flap servos in place has dried, attach the control rods to the servo control horns. -待胶水固化后，安装控制钢丝；	
Join the two flap servo cables with a 'Y' harness and plug the end of the 'Y' harness into an available channel on the receiver. Don't forget to plug the aileron cable back into the receiver as well! -拼合好左、右主翼，用Y线连接左、右襟翼舵机；	

Reattach the wings to the fuselage and test the flaps.

-将改装好襟翼的主翼锁在机身上，完成后效果如右图所示；

Changing from High Wing To Low Wing Configuration

机翼上单翼布局更换为下单翼布局

Locate the parts as shown in the photo.

-如右图所示，从包装盒内取出下单翼安装泡沫组件；

Remove the wing assembly from the fuselage, ensuring that the flap and aileron 'Y' cables are unplugged from the receiver.

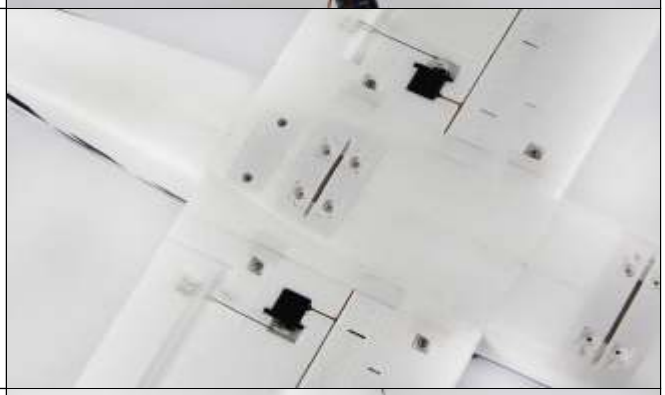
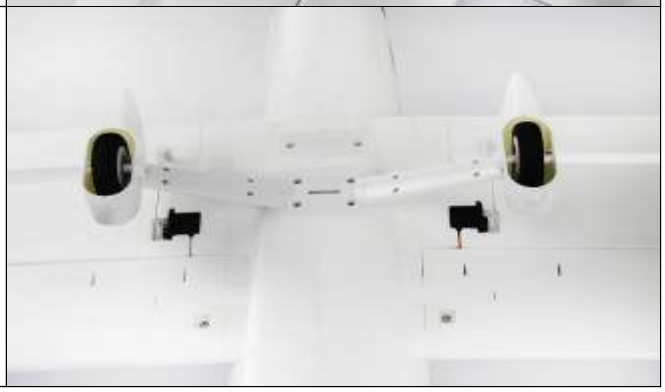
-松开螺丝；取下主翼；

Remove the four screws holding the wings to the center section and slide the wings back. Disconnect the 'Y' harness(es) from the servo wires and completely remove the wing from the center section

-再次松开左、右主翼固定螺丝，拆分左、右主翼；取下Y线；

Take the low wing center section and slide the wires through the holes, then slide the carbon fiber rods into their holes.
Anchor the wings to the center section with the four screws.
Join the two aileron (and flap, if installed)cables with the 'Y' harness, just like in the high wing configuration.

-如右图所示，将左、右主翼固定在下单翼泡沫组件上；

When the assembly is complete, it should look like it does in the photo. -锁紧螺丝，然后连接好Y线；	
Turn the fuselage over and remove the detachable lower piece that holds the tricycle main gear to the fuselage. Remove the main landing gear from this piece as well. See the photo. -拆下机腹装饰件及主起落架；	
The low wing center section will be installed into the slot where the detachable lower piece used to be. -安装主翼；	
Using the same four screws that held the detachable lower fuselage piece in place, anchor the lower center section to the fuselage. -用螺丝固定主翼；	
Reassemble the main tricycle landing gear to the slot on the lower center section and anchor it down using the same hardware and screws that held it to the removable power fuselage piece. -最后，将起落架安装到下单翼泡沫组件起落架固定座内；	

Feed the aileron and flap cables (if installed) through the fuselage to the receiver and plug them in. When securing the center section to the fuselage, take care not to pinch the wires in between the two parts.

-整理好机身连接线；

Install the canopy. It will snap into place as its held on with magnets. Note the plastic strap on the trailing edge of the canopy. Pull up on it to remove the canopy to get access to the hatch.

-盖上座舱，完成改装；

Tail Dragger Landing Gear Assembly

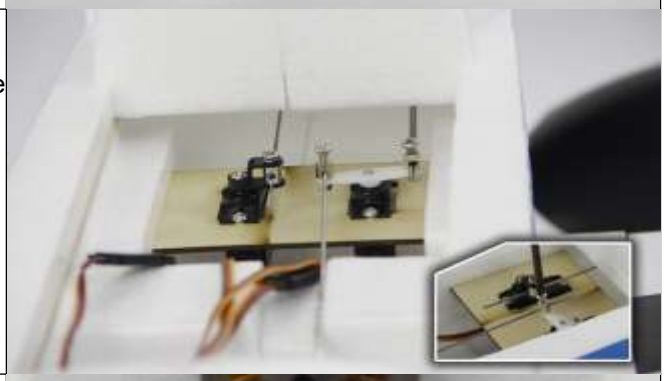
后三点大脚轮的安装

Remove the spinner, propeller, backing plate and the plastic cowling.

-用螺丝刀取下螺旋桨及机头罩；

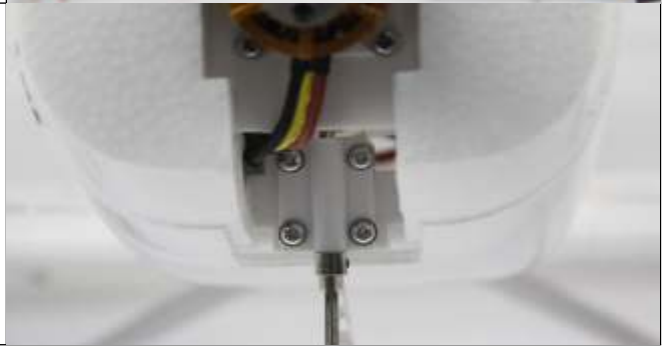
Remove the canopy and loosen the screw holding the nose gear control rod inside the servo control arm's anchor point. See the photo.

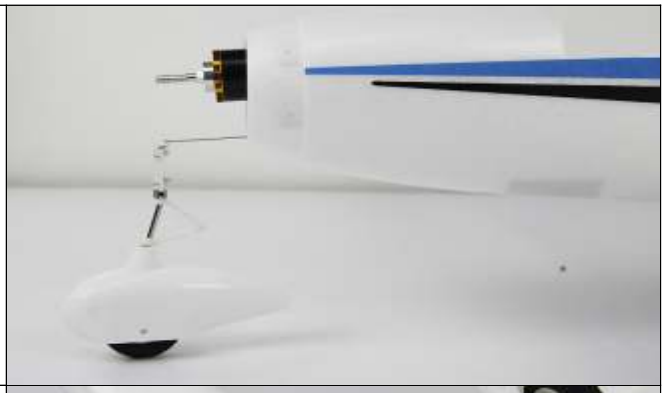
-松开前轮转向钢丝固定栓；



There are four screws that hold the nose gear onto the fuselage, loosen these and remove the plate.

-用螺丝刀松开固定前轮的螺丝；



Remove the nose wheel. -将整个前轮组件向前拉出； Remove the main landing gear as well. -取下主起落架；	 
Get the tail dragger landing gear out -如右图所示，从包装盒内取出后三点起落架组件；	
The main landing gear fits into the receiving slot on the fuselage. just in front of the wing's leading edge. You will have to pinch the piece a bit to slide it in securely , Then screw the two tabs down over the receiving slot as shown in the photo. -将主起落架安装靠近机头部份的起落架固定座内，并用螺丝固定；	
Slide the tail wheel wire into the plastic mount as shown in the photo. Then this unit attaches to the fuselage using two screws. -尾轮钢丝穿入塑料件内；	

The tail wheel wire slides into the grub screw in the fuselage. Line up the flat spot on the wire with the screw and tighten it down.

-分别用螺丝固定塑料件及尾轮钢丝；

Reinstall the cowling, back plate, propeller, washer, anchor screw and spinner. Now your airplane should look like the photo.

-最后安装好机头罩及螺旋桨，盖上座舱罩；
-安装完成后如右图所示。

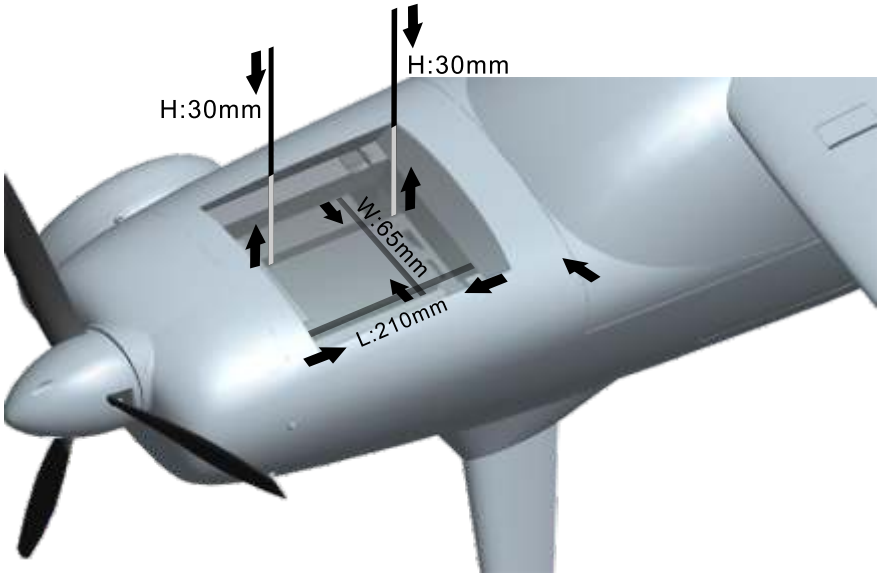
Battery Sizes

The recommended battery size is a 2200 mah 3s which will give you a 4 to 5 minute flight duration using a mixed throttle. If you tend to use more throttle, the flight times will be reduced. In that case you can go to a 2200mah 3s battery or higher as long as its 3s. Just make sure to reestablish your CG as battery sizes will be different weights.

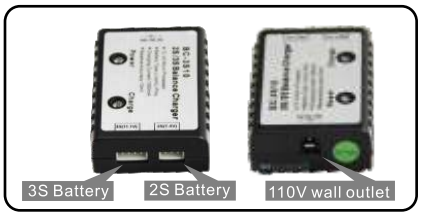
电池的使用

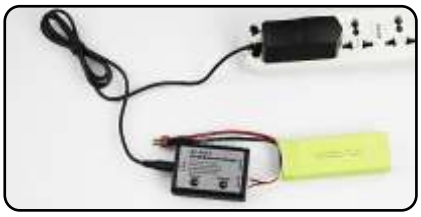
我们在测试飞行时使用的是3S 2200mAh 25C电池。可以全油门飞行4-5分钟。所以，我们建议您使用3S 2200mAh 25C以上容量的电池来飞行。当选用不同规格的电池时，重心可能会改变。您可以通过向前、向后移动电池，达到配平重心的目的。

Battery Hatch Dimensions



Battery Charging and Care





You must first charge your flight battery before flying. Plug the charger into a 110Vwall outlet . This charger can be used with 2 and 3 cell lipo batteries. The Pandora uses a 3 cell Li-po battery. The battery comes with two sets of wires and connectors. The set with the white plug and 4 wires is the charging lead. Connect the battery charge lead into the matching connector on the charger. 2 of the lights on the charger will turn red to indicate charging. It will take approximately 2.5 hours for the battery to fully charge. Once fully charged, the red lights on the charger will turn green to indicate that it is done. Flight times are approximately 4 to 5 minutes per charge.

Safety Instructions for charging and using Lipo batteries

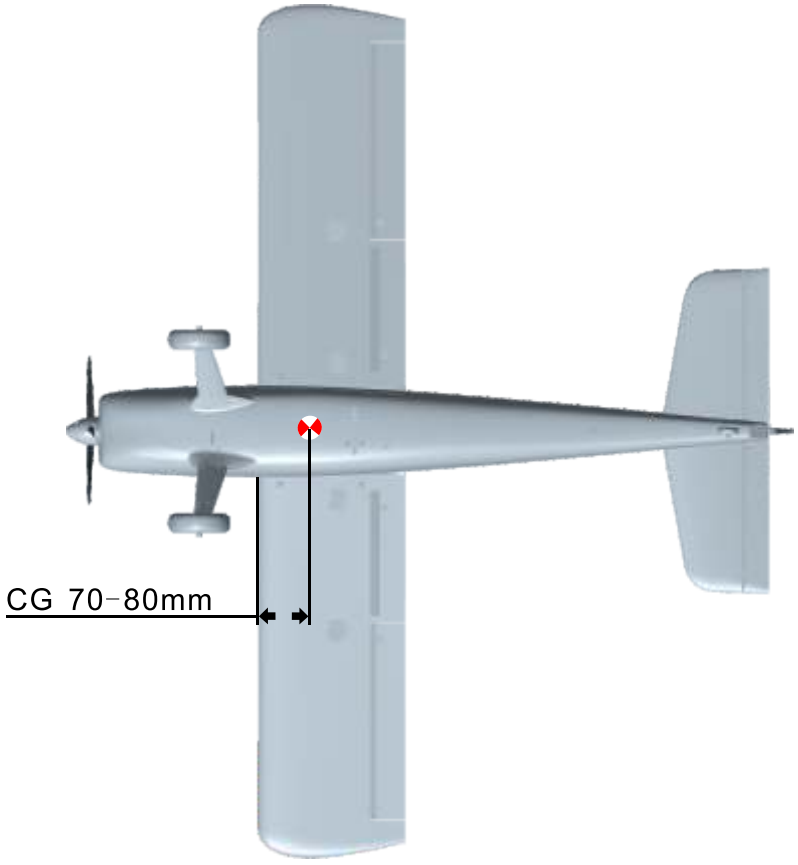
- Do not put the battery on, or near anything, that can catch fire.
- Charge the battery on a non-flammable base, i.e. a metal tray.
- Do not disassemble the battery.
- Do not short-circuit the battery.
- Do not use, or leave, the battery near a fire, stove or heated place.
- Do not immerse the battery in water or seawater.
- Do not charge the battery near a fire or under the blazing sunlight.
- Do not impact or throw the battery.

Center of Gravity

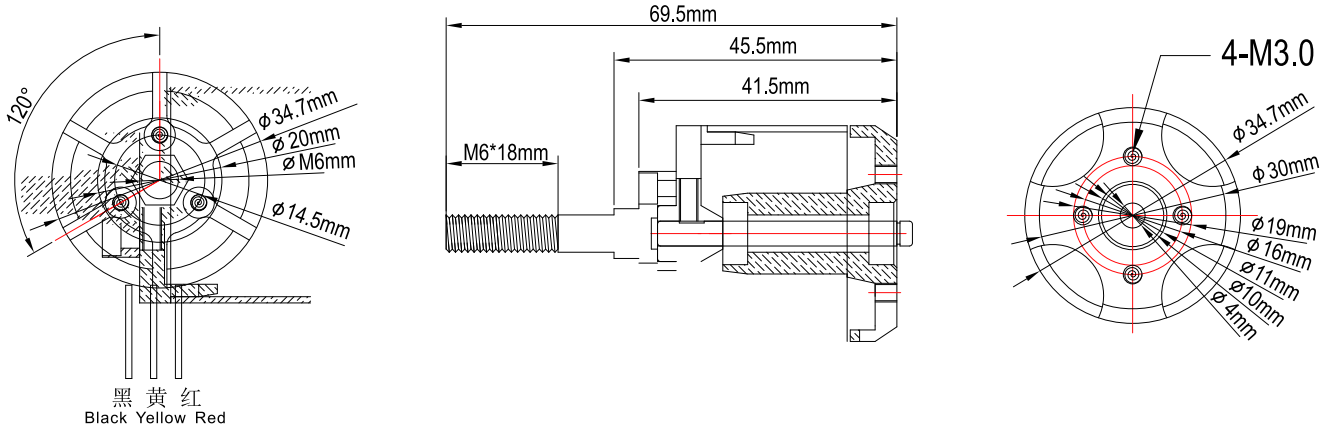
The Center of Gravity is critical to achieve successful flight. The Pandora is very forgiving but she has her limits. The CG should be 70-80 mm back from the leading edge of the wing. Normally, a low winged airplane will be balanced with the plane upside down and right side up for a high winged aircraft

重心

正确的重心，对于我们在首次飞行时非常重要的。请参考下面的重心标示图，来确认您的Pandora的重心位置是否正确。



Motor Parameters
电机参数



Model	KV Value	Voltage (V)	Current (A)	Pull (g)	RPM	Weight (g)	No Load Current	Propeller	ESC
3536-800	788RPM/V	11.1	26-28	1200	7880	110	1.1A	3-Bladed 11*6	28A

Preflight

Before each and every flight, a new pilot must be aware of issues that may arise.
These steps will help to ensure a successful flight.

1. The radio must be turned on first before ever plugging a battery to the ESC.
2. Before flight, check to make sure the ESC is functioning properly. Either hold the airplane by the tail and advance the throttle to ensure the RPM increases smoothly with throttle applicatio Do NOT stand in front of the airplane!
3. Check your CG before flight, especially if you are switching between different types of batteries.
4. Always take off into the wind, whether hand launching or taking off from the ground.
5. Before flight, ensure that the control surfaces are moving in the correct direction.
6. After take off, gain altitude and get 'three mistakes' of height before leveling off. Then, when in level flight at about half throttle, trim the plane to fly straight and level.
7. Set your timer to 4 minutes and land when the timer sounds that you are out of time. Check your battery and see ower you have left. You can adjust the flight times so that you have about 30% left when you land. Use caution the battery will do too low, you will lose power and possibly control of the airplane.
8. Spare parts are available through your local dealer or go to www.freewing-model.com, but many parts are repairable.

飞行注意事项

在完成飞行前的检查之后，对于我们初学者，我们应该在飞行前及飞行中注意下面一些问题。这样，会使我们的飞行更加成功。

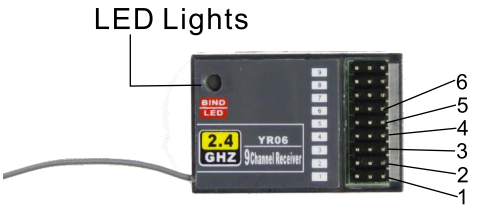
1、在正常使用摇控设备时，必须保证先打开发射机电源，然后再将接收机通电。
2. 在飞行前,通电状态下,应反复上、下推动油门,检验马达与电子调速器的工作状态是否良好。
3.飞行前,必须确认飞机的重心位置.正确的重心位置是获得成功飞行关键因素.请参考P15来确认飞机的重心位置.
4、不管是选择滑跑起飞或者是手掷起飞，我们都应该迎风起飞。
5、飞机起飞后，发现飞行姿态有异常或难以控制时，我们应当尽量拉高飞机，然后根据飞机的实际情况，调整飞机的微调开关。使飞机可以保持平飞。
6、当发射机发出报警音后，应尽快结束飞行,操纵模型飞机着陆，避免低电压造成摇控设备失控。
7、在飞行过程中,如发生损坏,请联系您的模型商购买.

Transmitter and Receiver Operation

1.Radio include the transmitter and receiver.

Note: The radio and transmitter are not included with the kits and must be purchased separately. Check with you local dealer for more information.

2.Radio function introduction (Mode 2)



Aileron → Ch1
Elevator → Ch2
Throttle → Ch3
Rudder → Ch4
Landing Gear → Ch5
Flaps → CH6

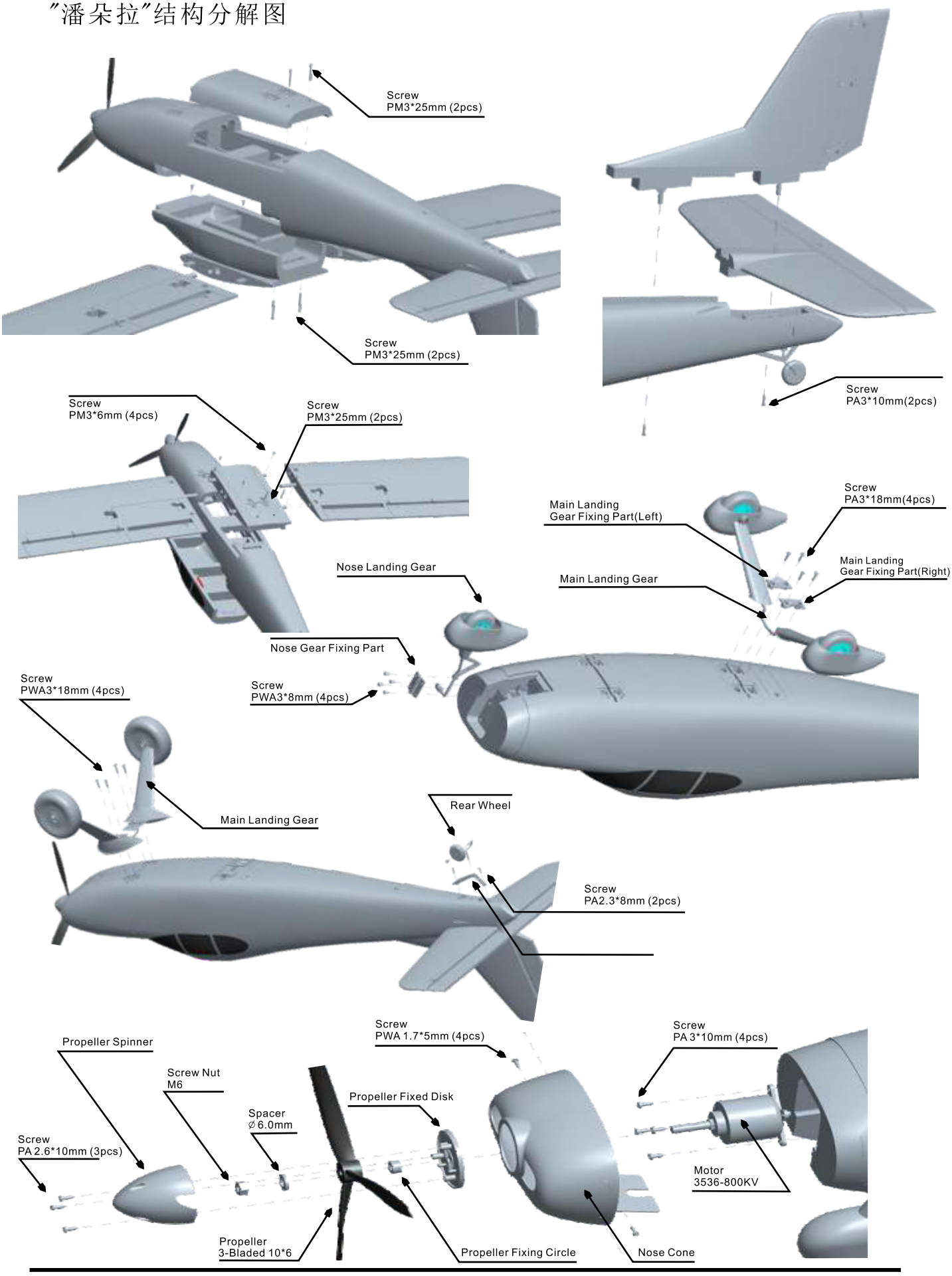
1.Gear Switch (For 6CH)
2.Flap Switch (For 6CH)
3.D/R (For 6CH)
4.Trim
5.Power indicator
6.Delta
7.Reverse
8.Neckstrap Attachment

Note: The factory have bind the aircraft and transmitter, you can use directly. In exceptional circumstances, it need to re-frequency, please set up as following method.

- Press on the receiver Frequency switch.
- While press on the receiver frequency switch, the receiver power on.
  (Now receiver frequency signal light should be continued flashing.)
- Switch on transmitter.(Red/yellow/green,the three LED signal light in transmitter should be continued flashing.)
- Release the receiver frequency switch.
- After the success of frequency, receiver frequency signal light and transmitter signal light are “lights on”, not flashing.

Pandora Structure Diagram

″潘朵拉″结构分解图



Have Fun!
We hope that you have many pleasant
flights with your Pandora !

Shenzhen Freewing Model Co.,Ltd

www.freewing-model.com