



X520

快速入门手册 Instruction Manual



www.xk-innovations.com

Product introduction 产品简介

Thank you for your purchasing XK Plane"Vertical take-off and landing plane". The plane with 1307 3000KV dual brushless motor and 4.3g high precision digital steering gear. Using 6axis gyroscope (compatible with 3 axis gyroscope). The product use layout of delta wings, that reduce the air resistance left a long time.

The plane solve the problem of lack space, it can take-off vertically. With different kind of function mode:

1. Vertical flight mode, fly like as a master who fly F3P indoor or outdoor windy weather. With air pressure high altitude hold system, one key take-off, one key landing.
2. level flight with 6-axis self-stability and level set mode, mining Stabilized with a 6-axis gyroscope, ideal for beginners to practice flying, no matter what the state of the aircraft, release the rocker, the aircraft will enter the level set high flight.
3. level 3-axis locked flight mode, you can make a variety of special effects to the master action, release the remote control, the aircraft will be very good to maintain the current flight attitude.

Before your first flight, be sure to read the instructions carefully so that you can successfully experience the flying pleasure of this classic VTOL aircraft.

感谢您购买Vertical flight 垂直起降飞行器，该飞机采用1307 3000KV双无刷电机及4.3g高精度数字舵机，并使用6轴陀螺仪（兼容3轴陀螺仪），具有3D/6G转换功能。该机采用三角翼布局，空气阻力小 留空时间长，3D特技干脆利落。

Vertical flight解决飞行场地不足的问题，在没有滑行起飞的场地可以垂直起飞，让人称赞的是他的多功能模式。

1. 垂直模式 室内或者室外小风天气下，他可以像高手飞F3P一样吊机一样飞行，并且增加气压计定高模式，而且还有一键起飞和一键降落。
2. 水平飞行具有6轴自稳及水平定高模式，采用6轴陀螺仪增稳，非常适合初学者练习飞行，无论飞机在什么状态，松开摇杆，飞机都会进入水平定高飞行。
3. 水平3轴锁定飞行模式，你可以向高手一样做出各种特技动作，松开遥控器，飞机会很好的保持当前飞行姿态。

首次飞行前 请务必仔细阅读说明书，以便于您能够成功体验这款经典的垂直起降飞行器给您带来的飞行乐趣。

Features 产品特点

1. Vertical flight, altitude control, one key take off/ landing, easy for beginner to play indoor.
- 1.垂直起降飞行器有垂直模式有定高功能 一键起飞/降落功能，操作简单，适合初学者在室内飞行。
2. One key switch to parallel flight mode, with 6G stabilization & 3D aerobatic mode.
- 2.室外一键转换水平飞行模式。且有6G定高自稳模式及3D特技模式。
3. EPP material make it more durable.
- 3.飞机采用EPP工程材质，非常耐撞击。
4. 1307 3000KV double brushless motor make it powerful.
- 4.采用1307 3000KV 双无刷电机，动力强劲。
5. High capacity Li-Po battery and 10 mins for flight time
- 5.高倍率锂聚合物电池，飞行时间十分钟以上
6. 4.3g high precision digital servo, making it react and lock-in quickly
- 6.4.3g高精度数字舵机，反应迅速，快速锁定。
7. Quick installation and removal frame, easy to carry.
- 7.机架采用快速安装与拆卸，便于携带。
8. As optionally, this plane can mount-in 5G wifi 720P camera, and controlled by APP.
- 8.可加载5G WIFI 720P高清图传，并可下载APP手机控制飞行。

Packing list 包装清单

No. 序号	Name 名称	Quantity 数量	No. 序号	Name 名称	Quantity 数量
1	Color box 彩盒	1	6	Left and right vertical tail 左右垂直尾翼	1
2	Styrofoam packing box 保利龙包装盒	1	7	Vertical tail 垂直尾翼	1
3	Instruction 说明书	1	8	landing gear 起落架	1
4	Body 5.7.4V 950mah battery 机体 5.7.4V 950mah 电池	1	9	remote control 遥控器	1
5	Charger + adapter 充电器+适配器	1	10	Forward / reverse paddle 正/反转桨叶	1

Product parameters 产品参数

Product Item: X520	产品货号: X520
Material: EPP	材质: EPP
Product Description: Vertical takeoff and landing aircraft	产品描述: 垂直起降飞行器
Product Size: 520 * 418 * 149	产品尺寸: 520*418*149
Flight weight: 185g	飞行重量: 185g
Motor: 1307 3000KV	马达: 1307 3000KV
Servo: 4.3g metal steering gear	舵机: 4.3g 金属舵机
Flight time: 10-12 minutes	飞行时间: 10-12分钟

Remote control function indication 遥控器功能指示

Switch Up- Vertical flight mode.
Switch middle-6G parallel flight, altitude control and automatic stabilization mode.
Switch down-3D parallel aerobatic flight.

开关上 垂直模式
开关中 水平飞行6G模式
开关下 水平飞行3D模式

Control joystick (throttle steering)
控制摇杆 (油门转向)

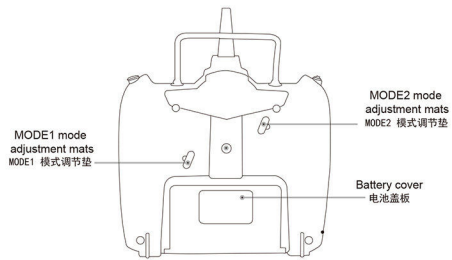
Button to switch MODE1 / MODE2 conversion After switching the rudder volume
按键开机MODE1/MODE2 转换开机后舵量转换

Long press: one key take-off/one key landing
长按一键起飞/一键降落

Press STUCK MODE and PHOTO at the same time motor emergency stop
同时按STUCK MODE与PHOTO键马达急停

Direction rocker (front and rear left and right side fly)
方向摇杆 (前后左右侧飞)

Short press: Photo;
Long press: Camera
短按拍照/长按摄像



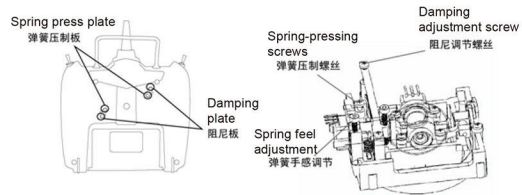
Remote control MODE1 and MODE2 conversion 遥控器MODE1与MODE2转换

Open the remote control directly for the current mode (MODE1 or MODE2)

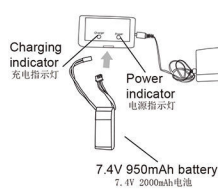
- 1) First press STICK MODE to turn on the remote control at the same time to change the mode
- 2) Open the rubber which be located in the back cover of remote control.
- 3) Using a Phillips screwdriver, loosen the current throttle plate and relax the current damping plate to make the feel lighter and reduce the damping. And then to be used as a throttle rocker pressing plate locking, rocker lever separated from the spring, and adjust the damping plate according to personal feel.
- 4) After completing the above actions, turn off the remote control, turn on the remote control again, and bind with the plane.

直接打开遥控器为当前模式 (MODE1 或者MODE2)。

- 1) 首先按STICK MODE同时打开遥控器, 进行模式转换
- 2) 打开遥控器后盖上面的橡胶盖
- 3) 使用十字螺丝刀放开当前油门压制板, 同时放松当前阻尼板使手感变轻, 减小阻尼。再把要作为油门摇杆的压制板锁紧, 隔开弹簧放松摇杆, 并根据个人手感调整阻尼板。
- 4) 完成以上动作后关闭遥控器, 再次打开遥控器和飞行器进行对频。



Charging 电池充电



1. Connect power adapter with lipo charger.
2. Insert the connected charger into the AC outlet, then power indicator lights always on (green)
3. Insert the battery into the charger, the charge indicator (red) lights always on. Red lights extinguish when charging completed.

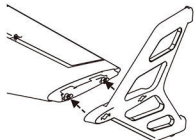
1. 将电源适配器与Lipo充电器进行连接。
2. 再将连接好的充电器插入AC插座，此时Lipo充电器的电源指示灯（绿灯）长亮。
3. 将电池插头插入充电器内，充电指示灯（红）长亮，电池饱和后红灯灭。

Warning:

警告：

1. To ensure safety, please charge under guardianship.
 2. Children can not charge alone, should charge in adult assistance.
 3. Use the product original standard charger, if using charger of unknown origin that may occur burning or explosion.
1. 为了确保安全，请在有人监护下进行充电。
 2. 儿童不可独自进行充电，要在成人协助下进行充电。
 3. 请使用本产品原标配充电器进行充电，使用来历不明的充电器可能发生燃烧爆炸事故。

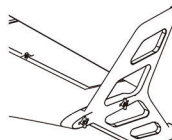
Install left and right vertical tail 安装左右垂直尾翼



As shown in the picture:

1. Keeping the snapping horizontally.
2. Vertical tail card slot alignment snap ring into the vertical tail

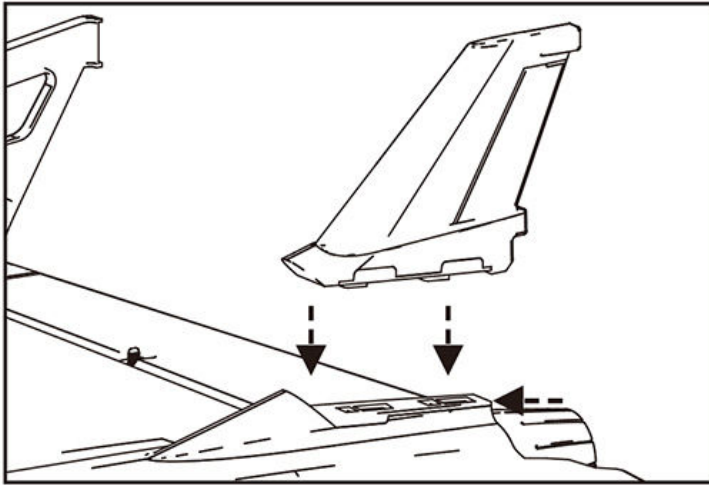
如图所示：1. 将卡环选择水平
2. 垂尾卡槽对准卡环装入垂尾



After loading the tail, the ring will be rotated 90 degrees to limit

装入垂尾后，将卡环旋转90度进行限位

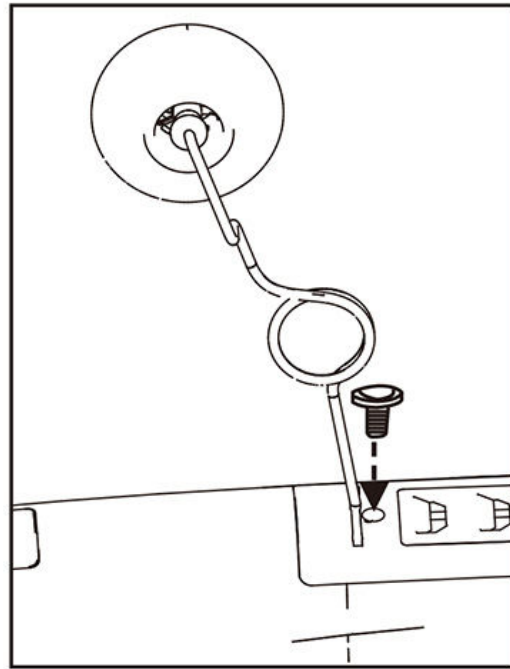
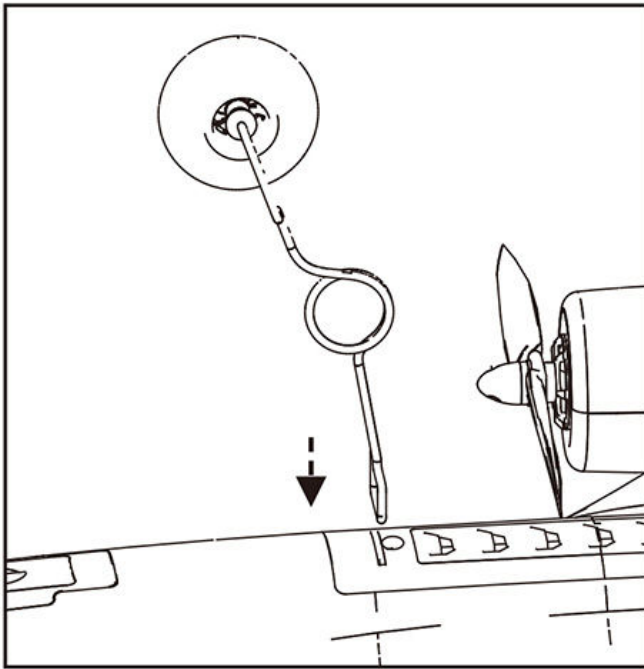
Installation of vertical tail 安装中垂直尾翼



Put the vertical tail down into the card slot, push hard it forward, until it sounds "clikced" installed in place.

将垂直尾翼向下装入卡槽，用力向前推，听到咔的一声，安装到位。

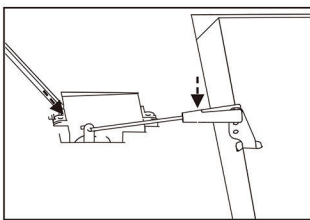
Installation of landing gear 安装起落架



As above picture show, install the landing gear and fix 1.4*5PBW5 screw on it.

如图示 装入起落架，并用1.4x5PBW5螺丝进行固定

Rudder adjustment on the plane 飞行器舵面调节



1. Battery connect with the plane the vertical rudder of the aileron elevator surface should be back in. If the rudder surface is not in the middle position, adjust the rudder surface to the middle position by manually rotating the articulation joint.
 2. The adjusted aircraft motor can not be activated, the gyro should be turned off. Gyro in the repair state can not accurately adjust the rudder to the middle position.
 3. Rotating right the steeling can shorten the length of pushing, rotating left, the steel wire can lengthen the length of pushing.
1. 给飞机上电，副翼升降舵面垂直舵面应该回中，如果舵面不在中间位置，通过手动旋转活络接头将舵面调整到中间位置。
 2. 调整的飞机马达不能被启动过，陀螺仪要处于关闭状态。陀螺仪在修复状态下不能准确的将舵面调整到中间位置。
 3. 钢丝向右旋转可减短推拉钢丝长度，向左旋可加长推拉钢丝长度。

Binding 遥控器与飞行器对频

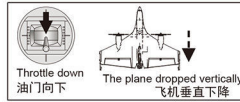
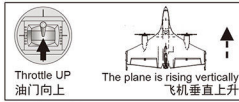
- 1 Make sure the throttle stick is in the lowest position again, turn on the remote control, the remote control will make a long beeping sound prompt to turn on the power, and the power indicator of the remote control will flash, prompting not to receive the frequency
 - 2 to the aircraft power, the receiver indicator light flashing, dial the throttle stick to the top, and then pulled to the bottom, the remote control sounded a sound, the power light is always on, the receiver lights always on, suggesting that Frequency complete.
 - 3 If the frequency is not successful, you need to disconnect the aircraft power and turn off the remote control, repeat the above frequency steps again.
- 1 确保油门摇杆再最下位置，打开遥控器，遥控器发出一声长滴滴音提示开机，此时遥控器电源指示灯闪动，提示未与接收对频
 - 2 给飞行器上电，接收机指示灯闪动，拨动油门摇杆到最上，然后拉到最下，遥控器发出一声滴音，电源指示灯常亮，接收机灯也恢复常亮，提示对频完成。
 - 3 如对频不成功，需断开飞行器电源及关闭遥控器，再次重复上述对频步骤。

First flight command 首次飞行指挥

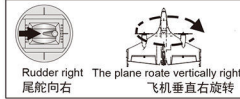
1. Vertical mode of operation

1. 垂直模式操作方法

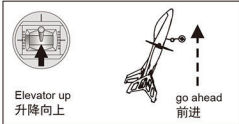
Throttle 油门



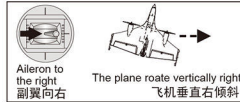
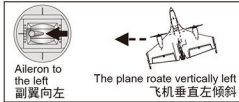
Rudder 方向



Elevator 升降



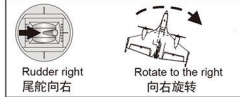
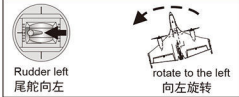
Aileron 副翼



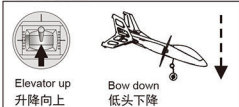
2. Horizontal mode of operation

2. 水平模式操作方法

Rudder 方向



Elevator 升降



Aileron 副翼



Special Note: 1 Before you understand the various modes of operation of the aircraft, please be sure to read the instructions carefully, be familiar with the over-control in all directions and repeat the practice.

2 level flight There are two modes, beginners first practice 6-axis mode, able to master the take-off and landing before the 3D mode.

3 3D mode Before flying simulator exercises, or ask professionals to guide the flight.

特别提示：1 您还没了解飞机各个动作操控方式前，请务必仔细阅读说明书，熟悉各个方向的起控并不断重复练习。

2 水平飞行有两种模式，初学者先练习6轴模式，能够熟练的掌握起飞和降落后再进行3D模式。

3 3D模式飞行前请先进行模拟器练习，或请专业人士进行指导飞行。

Start your first flight 开始你的首次飞行

1. The binding of success of the flight level is placed on the ground, to ensure that the aircraft tail to you, nose in front.
 2. As shown in the left below picture, at the same time, separate the rocker in the lower left corner and the lower right corner respectively. The motor will start up. As shown in the left below picture, the rocker will break off and the motor will be shut down urgently.
1. 将对频成功的飞行水平放置在地面上，确保飞机机尾对你，机头在前。
 2. 如图示，同时将摇杆分别掰动在左下角和右下角，马达启动，再次如图示意掰摇杆则紧急关闭马达。



Note: After the aircraft landed on the ground, keep the throttle rocker in the lowest position for 2-3 seconds, then release the rocker after the airplane motor stops completely.

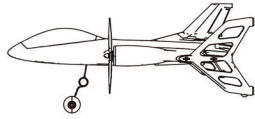
注意：飞行器降落地面后，需保持油门摇杆在最下位置2-3秒，飞机马达彻底停止转动后在松开摇杆。

One key take-off/one key landing 一键起飞/一键降落

- 1 One-touch take-off / One-touch landed required in vertical mode.
- 2 aircraft and remote control to complete the frequency, the aircraft placed vertically on the ground.
- 3 remote control throttle rocker in the middle position, press the TAKE OFF button for 2-3 seconds, after hearing the sound of a drop, press the button, the aircraft motor starts automatically, after 1-2 seconds the aircraft automatically take off about 1.5 meters high and Hover.
- 3 During the flight press TAKE OFF key for 2-3 seconds, the aircraft automatically landed vertically.

- 1 一键起飞/一键降落需在垂直模式下进行。
- 2 飞行器与遥控器对频完成，将飞行器垂直摆放到地面上。
- 3 遥控器油门摇杆放在中间位置，按TAKE OFF键2-3秒，听到一声滴音后松开按键，此时飞行器马达自动启动，1-2秒后飞行器自动起飞1.5米左右高度并悬停。
- 3 飞行过程中长按TAKE OFF键2-3秒，飞行器垂直自动降落。

Ground take off
地面起飞



1. Prior to the aircraft on the ground, confirm again whether there is back in the surface of each rudder.
2. Turn the remote control mode switch to 6G or 3D position.
3. After confirming that there is no problem with the above steps, add the throttle rocker coasting speed to 100%, and control the up / down rocker so that the plane leaves the ground.
1. 将飞机前在地面，再次确认各个舵面有无回中。
2. 将遥控器飞行模式开关拨动在6G或3D位置。
3. 确认上述步骤无问题后，油门摇杆滑行速度加到100%，并操控升/降摇杆，使飞机离开地面。

Aircraft level calibration 飞行器水平校准

- 1) When the aircraft is obviously yawed, the flight attitude can be corrected by horizontal calibration.
- 2) As shown in the picture: Move the left and right joysticks to the lower left corner at the same time for 1-2 seconds. At this moment, the four corners indicator of the airplane lights flash, the airplane enters the level calibration, and the airplane's four corners light will be constantly and the horizontal calibration is successful.
- 1) 当飞行器出现明显偏航，可通过水平校准校正飞行姿态。
- 2) 如图所示，将左右摇杆同时扳动到左下角位置1-2秒，此时飞机四角指示灯出现快闪，飞机进入水平校准，待飞机四角指示灯常亮，水平校准成功。



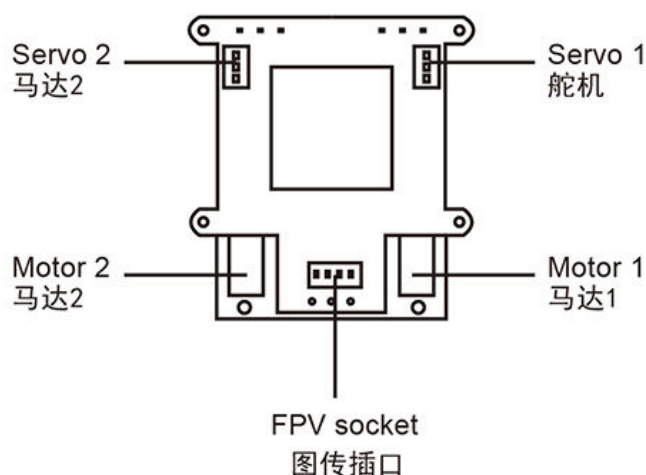
Special Note:

1. Calibration to find a relatively more level of venues, as far as possible to ensure that the aircraft and the ground level.
2. Aircraft into the level of calibration procedures, the need to keep the aircraft stationary, until the calibration was successful.

特别提示:

1. 校准需找相对比较水平的场地，尽可能保证飞机与地面水平。
2. 飞机进入水平校准程序后，需保持飞机静止不动，至到校准成功。

Circuit board schematic 电路板示意图



How to troubleshoot anomalies in flight 排除故障及异常情

Situation 状况	Reason 原因	Countermeasure 对策
The plane no working and the signal indicator lights flash after battery connected. 飞机上电后信号灯闪动，操作无反应	Remote control binding failed 遥控器与飞机对码绑定不成功	Re-binding according page 按第7页内的温馨提醒中的对码绑定步骤重新对码
The gyroscope start working, after the plane was connected with battery and the motor was no activated. 飞机上电后未启动 马达陀螺仪就开始工作	Power on the plane when the throttle stick is not in the lowest position or throttle trim is too high 飞机上电时油门摇杆未在最低位置或油门微调过高	Pull throttle stick in the correct position, power on again after the throttle trim is back to the midpoint 将油门摇杆放到正确位置，将油门微调回到中点后重新上电
The signal indicator and the servo works OK, after power on, the throttle not working when pushing. 飞机上电后推动油门不转，信号灯正常舵机工作正常	Not enough power, ESC enter the power-off protection. 电池电量过低，调速器进入关断保护	Charge the battery or replace the charged battery 将电池充电或更换有电的电池

<p>Push the throttle but motor does not start, motor is reversing 推动油门后马达未正常启动, 马达在不停换向</p>	<p>Poor contact between motor and speed controller, motor break down 马达与调速器接触不良或马达出现故障</p>	<p>Connect motor plug or replace the motor 将马达插头进行连接或更换马达</p>
<p>Individual rudder servo block when manipulating the joystick 摇杆操纵时个别舵机出现卡舵现象</p>	<p>Motor vibrates a lot when it works 舵机齿轮出现少齿</p>	<p>Servo gear teeth lost 更换有问题的舵机</p>
<p>Replace the faulty servo. 马达运转时震动的很厉害</p>	<p>Blade deformation, untight position between hoop and motor, or hoop broken, motor seat loose 桨叶变形, 桨锥与马达定位不牢或桨锥断裂, 马达固定座松动</p>	<p>Replace the faulty blades and hoop, fix hoop firmly, fix the motor fixed seat 更换有问题的桨叶及桨锥, 将桨锥固定牢固, 将马达固定座固定</p>
<p>Model yaw fly, can not fly straight 模型飞起来偏航, 不能直线飞行</p>	<p>Rudder is not in the center position, gyroscope accumulated error is big 舵面没有在居中位置, 陀螺仪累计误差大</p>	<p>1. Turn the rudder back to center 2. Gyroscope be reset to 0 and adjusted according to Page 7 1. 将舵面回中 2. 按第7页中的陀螺仪清零校准</p>
<p>Plane fly but gyroscope has no reaction, can not repair normally 飞机飞起来陀螺仪无动作, 不能正常修复</p>	<p>Gyroscope is out of control 陀螺仪失灵</p>	<p>Replace the receiver 更换接收机</p>
<p>Landing, or roll the throttle at the lowest position, the motor is still running 飞机降落, 或油门摇在最下位置, 马达仍在运转</p>	<p>During flight, mistakenly raised throttle trim 飞行中误将油门微调调高</p>	<p>Turn the throttle trim back to the mid-point 将油门微调调回中点</p>

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