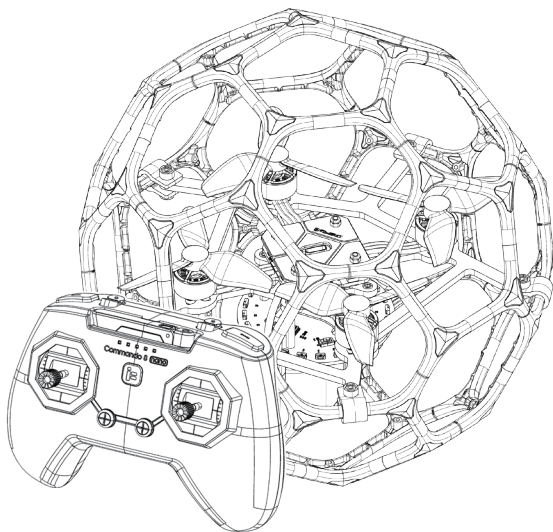




Drone Soccer 200/220 BLDC 球机

快速上手基础指南
Quick Start Guide



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1. 本产品为教育型足球形无人机，专用于教学、训练及竞技等场景。尽管产品设计有全包围保护罩以降低接触风险，但仍配备动力电机与螺旋桨，在高速旋转或意外撞击时可能造成人身伤害或财产损失。操作时需始终保持谨慎，严格遵守安全指引。
2. 本产品非玩具，使用者需具备相应的操作知识与技能。建议循序渐进地进行学习与练习，并在首次使用前仔细阅读本声明中的所有注意事项与警告。惠州市翼飞智能科技有限公司（iFlight）保留随时更新本《免责声明与概要》的权利，恕不另行通知。
3. 自首次使用本产品起，即视为您已充分理解、认可并接受本声明全部条款与内容。使用者承诺对其操作行为及由此引发的一切后果承担全部责任，并承诺仅将本产品用于合法及正当目的，同时同意遵守本声明及 iFlight 可能制定的任何相关政策或准则。

一、简介

DS200/220 BLDC 球机是一款专为竞技足球无人机赛事打造的高性能飞行平台，采用高转速无刷电机与强化机身结构，动力强劲、响应迅捷。整机集成高分子电容、防打火模块、蜂鸣器及 ELRS 接收机，并采用全拔插式快拆设计，方便青少年快速组装与维护，提升动手实践能力。支持自稳模式、反乌龟、参数调节等竞赛专属功能，全面适配从日常高强度训练到正式比赛的全周期需求。产品专为中小学球机赛事乃至国际级球机赛事打造，是青少年飞手追求精准操控与卓越赛场表现的进阶之选。

二、动力电池充电

1. 新出厂的电池在使用前必须先充满电。常规电池充满后，单片电芯为 4.2V（存在误差）；高压电池充满后，单片电芯为 4.35V（存在误差）。
2. 充电时请务必确认充电器与电池的正负极连接正确，禁止反接，否则可能烧毁充电器。
3. 充电过程中请确保电池平衡头插接稳固；充满后请及时拨下电池，否则可能造成电池损坏，严重时引发火灾。
4. 严禁在无人看管的情况下对电池进行充电。

安全提示

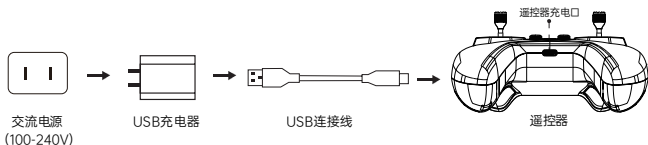
请务必严格遵守以下操作要求，否则可能导致充电器、电池损坏，甚至引发火灾等严重的安全事故。

1. 禁止在易燃易爆或潮湿环境中使用。
2. 使用过程中请勿离开现场，需保持全程监看。
3. 严禁用湿手触碰充电器或电源插头。
4. 使用时应避免用力拉扯或擅自更换充电器及线缆。
5. 若电池出现鼓包、漏液、变形或任何可见损伤，请勿充电。
6. 儿童必须在成人监护下方可使用本设备。
7. 非充电状态下，务必断开充电器与电池之间的连接。
8. 请先接通充电器电源，再将充电器输出端与电池连接。
9. 因未遵守安全规范或滥用本产品所导致的一切不良后果，均由使用者自行承担。

三、遥控器充电

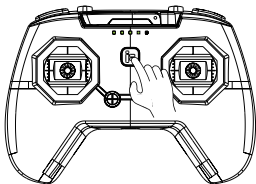
推荐使用功率为 10W 及以上、支持 5V/2A 输出的标准 USB 充电器。

Commando8 Nano 内置了 3.7V Li-ion 电池，具备 Type-C 充电功能。标称电池电压为 3.7V，最大充电电压为 4.2V。使用者应定期检查电池的电压和状况，切勿在无人看管的情况下充电。请务必始终在远离易燃物的安全区域内充电。因未遵守安全规范或滥用本产品所导致的一切不良后果，均由使用者自行承担。



四、遥控器开机 / 关机

1、短按遥控器中间的 LOGO 按钮一次，可进行电量检查。



电量为 100%-80%，亮 4 颗灯。

电量为 80%-60%，亮 3 颗灯。

电量为 60%-40%，亮 2 颗灯。

电量为 40%-20%，亮 1 颗灯。

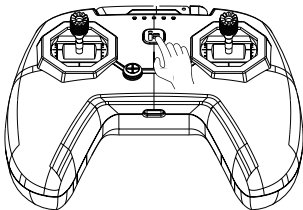
电量为 20%-5%，亮 1 颗灯，处于快速闪烁状态

电量低于 5%，亮 1 颗灯，处于快速闪烁状态并有持续的蜂鸣器提醒。

欠电状态下，无电源灯亮起，有持续的蜂鸣器提醒，

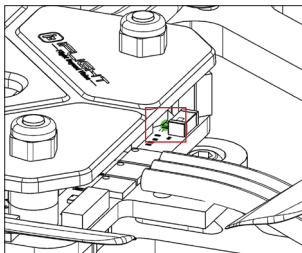
2 分钟后或低于 2.8V 后将强制自动关机。

2、短按 LOGO 按钮一次，再长按 3 秒开启或关闭遥控器。



五、球机上电 / 断电

1. 用电池扎带将电池固定在球机的圆形 LED 灯盘下方，注意电池接头的位置要与球机的电源线方向保持一致，然后将电池接头与球机电源线接头连接，同时接收机状态灯为绿色常亮，表示球机初始化完成，并且与遥控器连接完成。

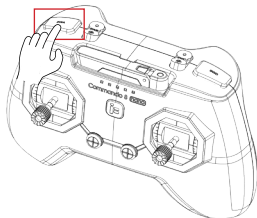


2. 插拔电池与球机的电源头即可进行通电 / 断电操作。（注意请勿接反电源正负极）

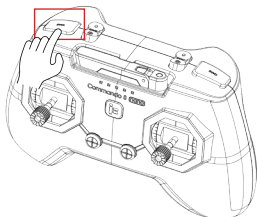


六、球机解锁 / 上锁

1. 给球机电通后放平，待球机的绿色指示灯由闪烁变为常亮时表示已对频并校准完成。若无法解锁请进行摇杆校准或对频操作，此时按下 SWA 按键解锁，球机的电机便会转动。

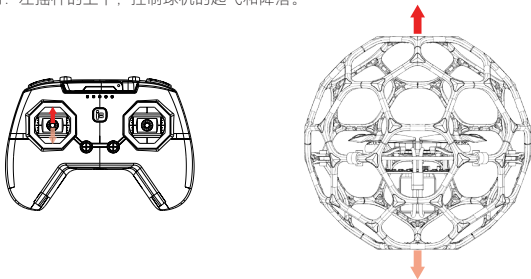


2. 按下 SWA 按键弹起，球机的电机便会停止转动，此时球机为上锁状态，打杆无任何反应。

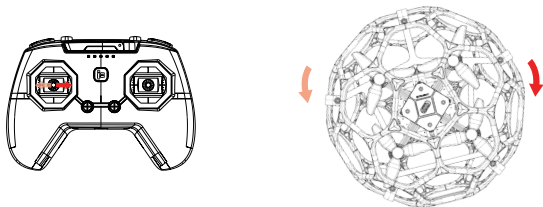


七、飞行操作

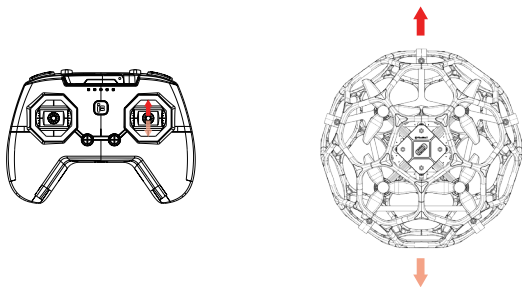
1. 油门：左摇杆的上下，控制球机的起飞和降落。



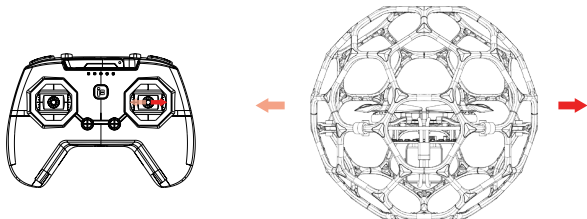
2. 偏航：左摇杆的左右，控制球机的左转向和右转向。



3. 前后：右摇杆的上下，控制球机的前进和后退。



4. 左右：右摇杆的左右，控制球机的左侧飞和右侧飞。



八、自稳模式

飞行器默认出货为自稳模式，用户也可自行设置其他模式等。

ARM: 解锁 / 上锁通道开关，用于飞行器的解锁与上锁，默认出厂设置为 AUX1，低位为上锁，高位为解锁。图标亮起表示解锁，图标呈现灰色表示上锁。

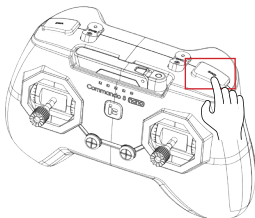


ANGLE: 自稳通道开关，用于飞行器开启自稳飞行模式，默认出厂设置为 AUX2 该模式全程保持开启状态。图标亮起表示开启自稳模式，图标呈现灰色表示非自稳模式。

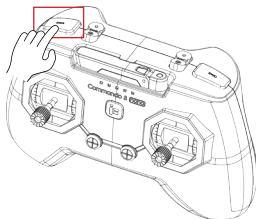


九、反乌龟模式

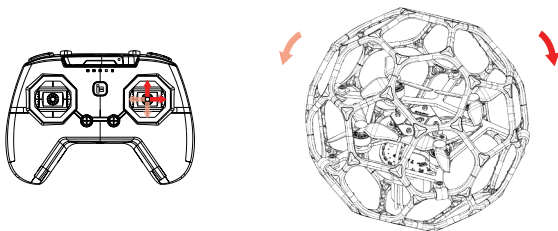
1. 当球机因碰撞导致侧翻而无法正常飞行时，可按下 SWD 按键进入反乌龟模式。



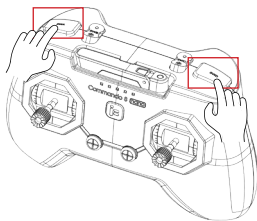
2. 再按下 SWA 按键进行解锁。



3. 球机会发出连续鸣叫声，此时控制遥控器右摇杆的前后左右即可将球机翻正。



4. 待球机翻正后，复位 SWA、SWD 按键，再按下 SWA 按键即可复飞。

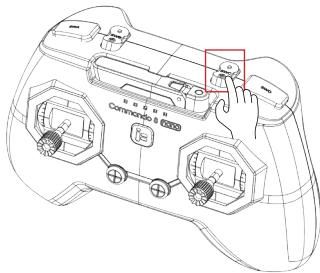


注意事项

若球机无法正常翻正或电机堵转卡住时，禁止继续使用反乌龟功能，避免烧坏电机。

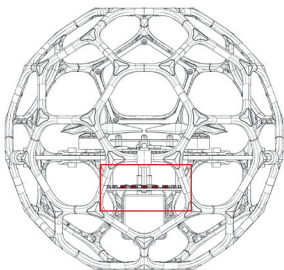
十、LED 灯颜色切换与关闭

球机通电后，可通过遥控器拨动 SWC 按键的档位一和档位二，实现切换 / 关闭球机 LED 灯颜色的功能；拨动至档位三则关闭所有 LED 灯。

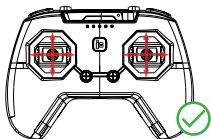


十一、低电压报警

在飞行过程中，若发现飞机的尾部 LED 灯持续闪烁红灯，并伴随蜂鸣器发出“哔哔”的响声时，则代表电池进入低电压状态，需要及时降落并更换满电状态的电池。

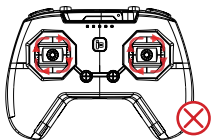


十二、摇杆校准



开机状态长按右侧的五维按键两秒，第一颗 LED 灯将开始闪烁，这表明已经进入了摇杆校准过程。

短按右侧的五维按键，第二颗 LED 灯将开始闪烁同时将摇杆放至物理中位。

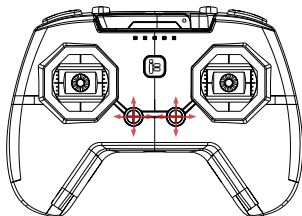


校准摇杆时请勿打圈

再次短按右侧的五维按键，第三颗 LED 灯将开始闪烁，此时开始移动摇杆，并确保两个摇杆都达到最大与最小行程。

再次短按右侧的五维按键，第四颗 LED 灯将开始闪烁，遥控器已记录摇杆行程大小，长按两秒退出摇杆校准。

十三、摇杆微调



拨动左下方五维按键的前后，可微调球机的起飞和降落摇杆行程。

拨动左下方五维按键的左右，可微调球机的左转向和右转向摇杆行程。

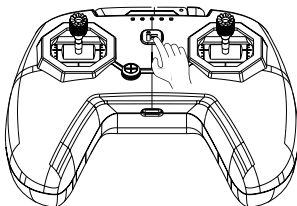
拨动右下方五维按键的前后，可微调球机的前进和后退摇杆行程。

拨动右下方五维按键的左右，可微调球机的左侧飞和右侧飞摇杆行程。

快速短按两次可自动回中。

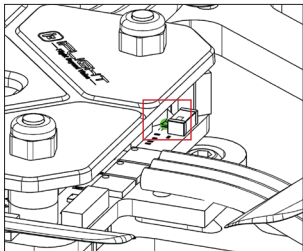
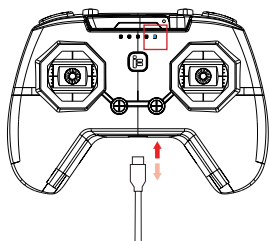
十四、对频操作

1. 遥控器在开机状态下，长按电源按键 2 秒，此时遥控器蜂鸣器发出“滴滴滴”连续三声，代表进入对频模式。



长按电源按键2秒

2. 在遥控器指示灯为蓝色闪烁的期间内，给球机反复通电三次，球机飞控上的接收机指示灯（绿）将双闪，代表进入对频模式。对频成功后，飞控上的接收机指示灯（绿）和遥控器指示灯（蓝）均为常亮状态。

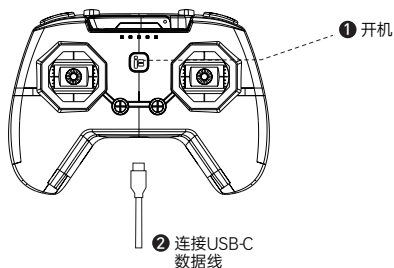


注意事项：

- （1）对频需要注意附近有无其他正在对频的设备，避免串频。
- （2）若发现串频行为，应立即上锁并切断电源，重新对频。

十五、有线模拟器

遥控器开机后，使用数据线连接电脑，将自动进入模拟器模式。



Disclaimer

1. This product is an educational soccer-style drone designed for use in teaching, training, and competitive scenarios. Although it features a fully enclosed protective guard to reduce contact risks, it is still equipped with powered motors and propellers. High-speed rotation or accidental collisions may result in personal injury or property damage. Users must exercise caution at all times and strictly follow all safety guidelines during operation.
2. This product is not a toy and requires basic knowledge to control. Therefore, it is important to proceed gradually. Before using the aircraft, thoroughly read this manual and the Disclaimer and Safety Guidelines for important notes and warnings. iFlight reserves the right to update this Disclaimer.
3. Before using this aircraft, be sure to read this document carefully to fully understand your legal rights, responsibilities, and safety precautions. The user agrees to assume full responsibility for their operation and any consequences arising therefrom, and undertakes to use this product only for lawful and proper purposes. The user also agrees to comply with this statement and any relevant policies or guidelines that iFlight may establish.

I. Introduction

The Drone Soccer 200/220 BLDC is a high-performance platform designed for competitive drone soccer. It features high-speed brushless motors and a reinforced frame for strong power and fast response. Equipped with a polymer capacitor, anti-spark filter, buzzer, and ELRS receiver, it adopts a fully plug-and-play quick-release design for easy assembly and maintenance, helping young users develop hands-on skills. With features like Angle Mode, Turtle Mode, and parameter tuning, it supports both intensive training and official competitions. Ideal for school and international events, it is a great choice for pilots seeking precise control and top performance.

II. Battery Charging

1. New batteries must be fully charged before use. After a standard battery is fully charged, each cell reaches approximately 4.2V (with slight variation); for high-voltage batteries, each cell reaches approximately 4.35V (with slight variation).
2. Ensure correct polarity when connecting the charger to the battery. Reverse connection is strictly prohibited, as it may damage the charger.
3. During charging, make sure the balance connector is securely connected. Disconnect the battery promptly after it is fully charged; otherwise, it may cause battery damage or even fire hazards in severe cases.
4. Never charge the battery unattended.

Safety Instructions

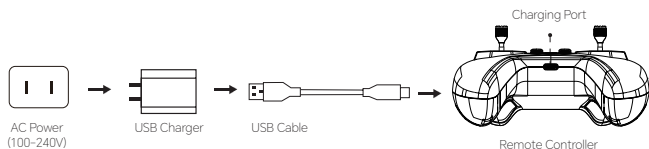
Please strictly follow the safety requirements below. Failure to do so may result in damage to the charger or battery, or even serious accidents such as fire.

1. Do not use in flammable, explosive, or humid environments.
2. Do not leave the charging process unattended; continuous supervision is required.
3. Do not touch the charger or power plug with wet hands.
4. Avoid pulling cables forcefully or replacing the charger and cables without authorization.
5. Do not charge the battery if it shows swelling, leakage, deformation, or any visible damage.
6. Children must use this device under adult supervision.
7. When not charging, disconnect the charger from the battery.
8. Always power on the charger first, then connect the battery to the charger output.
9. Any consequences resulting from failure to follow safety instructions or misuse of the product shall be borne solely by the user.

III. Remote Controller Charging

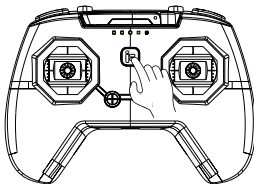
It is recommended to use a standard USB charger with a power output of 10W or above, supporting 5V/2A output.

The Commando8 Nano features a built-in 3.7V Li-ion battery with Type-C charging (max 4.2V). Regularly check battery condition and never charge unattended. Always charge in a safe area away from flammable materials. The user assumes full responsibility for any consequences caused by improper use or failure to follow safety guidelines.



IV. Remote Controller Power On / Off

1. Short press the center LOGO button to check the battery level:



100%-80%: 4 LEDs on

80%-60%: 3 LEDs on

60%-40%: 2 LEDs on

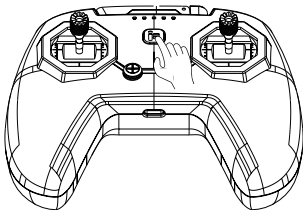
40%-20%: 1 LED on

20%-5%: 1 LED flashing rapidly

Below 5%: 1 LED flashing rapidly with continuous buzzer alert

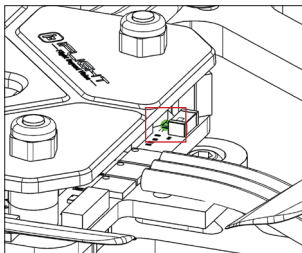
In low-voltage condition, no power LED will light up and a continuous buzzer will sound. The controller will automatically shut down after 2 minutes or when voltage drops below 2.8V.

2. Short press the LOGO button, then long press for 3 seconds to power the controller on or off.



V. Drone Soccer Power On / Off

1. Secure the battery under the circular LED board using a battery strap. Ensure the battery connector is aligned with the drone soccer's power cable, then connect them. When the receiver status LED turns solid green, initialization and binding are complete.

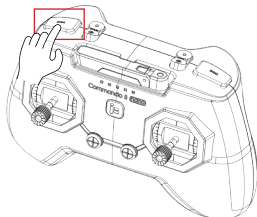


2. Connect or disconnect the battery to power the drone soccer on or off. (Ensure correct polarity; do not reverse the connection.)

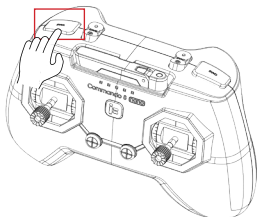


VI. Drone Soccer Arm / Disarm

1. Power on the drone soccer and place it on a flat surface. When the green LED changes from flashing to solid, binding and calibration are complete. If arming fails, perform stick calibration or binding. Press the SWA switch to arm the drone soccer, and the motors will start spinning.

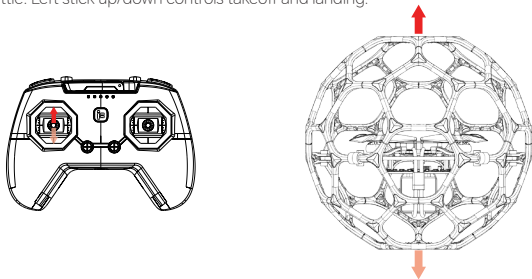


2. Toggle the SWA switch back to disarm the drone soccer. The motors will stop, and the drone soccer will not respond to stick input.

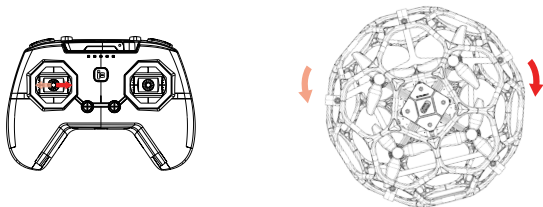


VII. Flight Operation

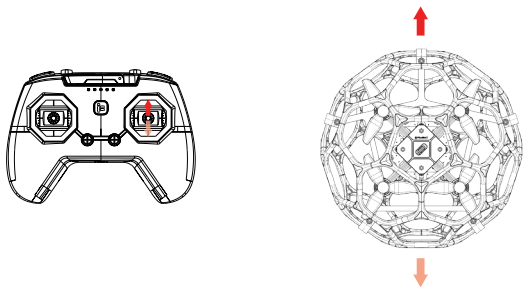
1. Throttle: Left stick up/down controls takeoff and landing.



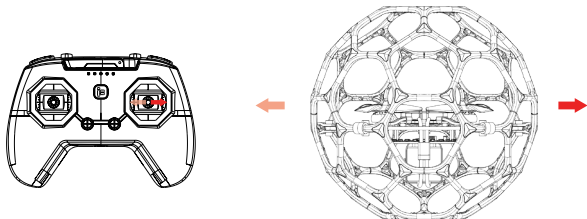
2.Yaw: Left stick left/right controls turning left and right.



3.Pitch: Right stick up/down controls forward and backward movement.



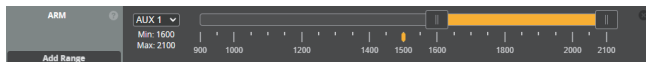
4.Roll: Right stick left/right controls left and right movement.



VIII. Angle mode

The default mode is Angle, and users can also switch to other modes.

ARM: The ARM/DISARM channel switch for arming and disarming the aircraft. Default factory setting is AUX1, low position for disarm, high position for arm. The icon is lit to indicate arm, the icon is gray to indicate disarm.

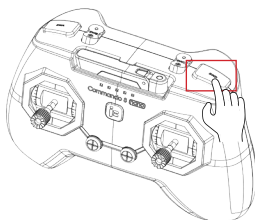


ANGLE: The Angle channel switch is used to enable the aircraft's Angle flight mode, the default factory setting is AUX2, this mode remains on throughout the flight. The icon is lit to indicate Angle mode is on, the icon is gray to indicate Angle mode is off.

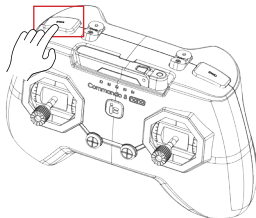


IX. Turtle Mode

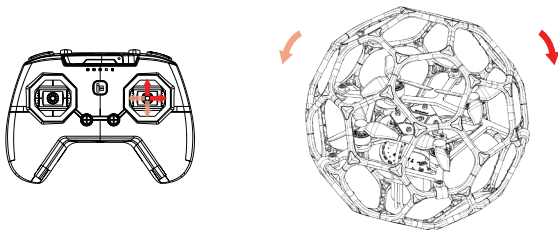
1. If the drone soccer flips onto its side after a collision and cannot take off normally, press the SWD switch to enter Turtle Mode.



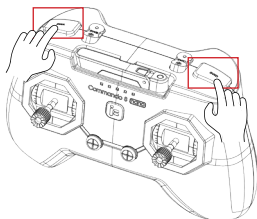
2. Then press the SWA switch to arm the drone soccer.



3. The drone soccer will emit a continuous beeping sound. Use the right stick to roll or pitch the drone soccer upright.



4. Once the drone soccer is upright, return the SWA and SWD switches to their original positions, then press SWA again to resume flight.

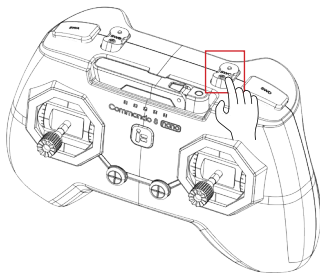


Notice

If the drone soccer cannot be flipped upright normally, or if a motor is stalled or jammed, do not continue using Turtle Mode, as this may damage the motor.

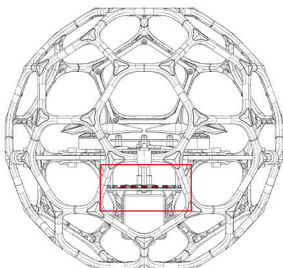
X. LED Color Switching and Power Off

After the drone soccer is powered on, move the SWC switch to Position 1 or Position 2 to change or power off the drone soccer's LED colors. Move the switch to Position 3 to turn off all LEDs.

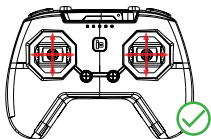


XI. Low Voltage Warning

During flight, if the rear LED continuously flashes red and the buzzer emits a repeated beep sound, the battery has entered a low-voltage state. Land promptly and replace it with a fully charged battery.

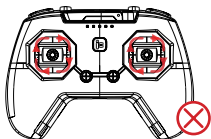


XII. Stick Calibration



After powered on, long press the right-side 5-Axis button for 2 seconds. The first LED will begin flashing, indicating that stick calibration mode has started.

Short press the right-side 5-Axis button. The second LED will begin flashing. At the same time, place both sticks at their physical center positions.

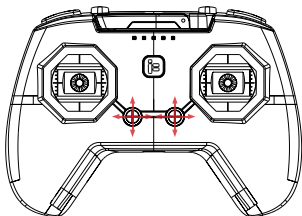


Do not rotate the sticks in circles during calibration.

Short press the right-side 5-Axis button again. The third LED will begin flashing. Move both sticks through their full range of motion, making sure each stick reaches its maximum and minimum travel limits.

Short press the right-side 5-Axis button once more. The fourth LED will begin flashing, indicating that the controller has recorded the stick travel range. Long press for 2 seconds to exit stick calibration mode.

XIII. Stick Trim Adjustment



Move the bottom-left 5-Axis button forward or backward to trim-adjust the throttle travel for takeoff and landing.

Move the bottom-left 5-Axis button left or right to trim-adjust the yaw travel for left and right turning.

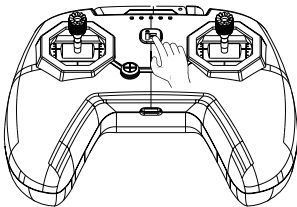
Move the bottom-right 5-Axis button forward or backward to trim-adjust the pitch travel for forward and backward movement.

Move bottom-right 5-Axis button left or right to trim-adjust the roll travel for left and right lateral movement.

Double short press quickly to automatically return to center trim.

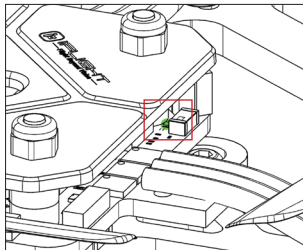
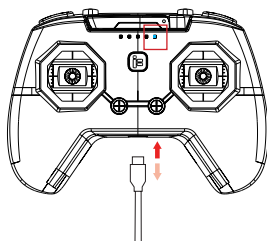
XIV. Binding Procedure

1. With the remote controller powered on, long press the power button for 2 seconds. The buzzer will emit three consecutive beeps, indicating that it has entered binding mode.



Long press the power button for 2 seconds.

2. While the remote controller indicator is flashing blue, power the drone soccer on and off three times consecutively. The receiver indicator on the flight controller (green) will flash twice repeatedly, indicating that it has entered binding mode. Once binding is successful, both the receiver indicator (green) on the flight controller and the remote controller indicator (blue) will remain solid.

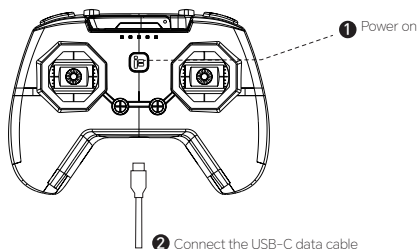


Note:

1. Before binding, make sure there are no other nearby devices currently in binding mode to avoid signal interference or cross-binding.
2. If cross-binding occurs, immediately disarm, disconnect the power, and perform the binding process again.

XV. Wired Simulator

After power on the remote controller, connect it to a computer with a data cable, and it will automatically enter simulator mode.





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