

AEE
DRONES»



CONDOR[®]
A22
USER MANUAL

V1.2

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User Manual

Please read and follow this user manual in its entirety before operating the UAV for the first time.

Legend

CAUTION: Pay attention to the instructions to minimise the risk of injury or damage to persons or property

WARNING: NOT FOLLOWING THE INSTRUCTIONS COULD LEAD TO PERSONAL OR PROPERTY DAMAGE AND MAY VOID ALL WARRANTIES

Video Tutorials

Please watch the tutorial videos that demonstrate the operation and set-up of your aircraft.

Scan the QR code to watch the videos.

<https://www.condordrones.com.au/pages/resources>



CASA Safety APPS and Regulations

Approved APPS

<https://www.casa.gov.au/knowyourdrone/drone-safety-apps>



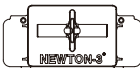

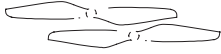


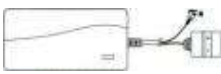
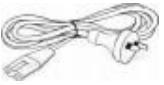




CASA Rules

<https://www.casa.gov.au/knowyourdrone/drone-rules>



What's In The Box

No.	Name	Sketch	Quantity	Description
1	UAV		1	Condor A22 UAV
2	UAV Battery		2	LiPO Battery
3	Newton3 Release		1	A22 Mechanical Release
4	Release Wire		10	Release wires for Newton 3 release
5	Propeller		2 sets	4 x CW and 4 x CCW Rotating propellers
6	Remote Control		1	Drone remote controller
7	Tools		1 set	One spanner and one screwdriver for propeller removal
8	Charger		1	Charger for remote and battery
9	Power Cable		1	Power cable for charger
10	User Manual		1	
11	Bag		1	

Pictures for reference only

Introduction

The Condor A22 is a purpose-built fishing drone with an onboard NEWTON 3 release mechanism. This drone is fitted with the latest flight control platform and software to ensure the safety and performance of the drone.

Features

CONDOR A22: This is a hi-tech electronic product equipped with an advanced intelligent flight control system with multiple fail-safes built in.

Newton 3 release: The Patented Newton 3 release can carry loads of up to 450 grams and either use mechanical release or tension release to drop your baited hooks.

Smart UAV Battery: The Condor battery is an 11.1V, 6,800mAh smart battery with charging and discharging management functions.

Preparation for Flight

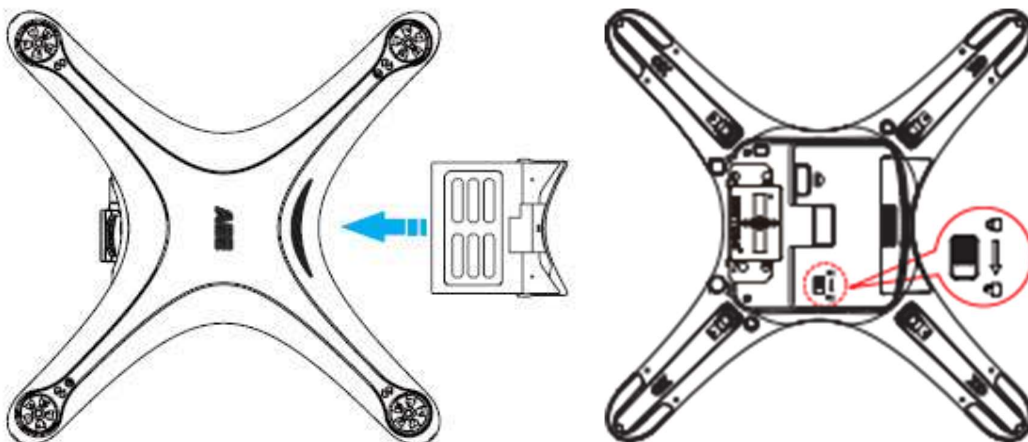
Charge both the Remote controller and the UAV battery before the first flight. Always take off with sufficient charge in both batteries.

Battery Installation

Slide the battery into the slot until the highlighted latch blocks the battery.

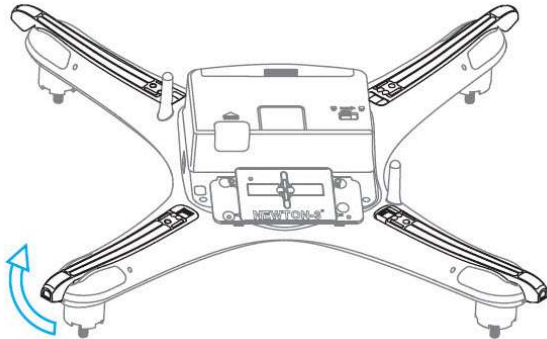
Pull the latch to the unlocked position and push the battery in until it is firmly seated.

Check latch is seated by audibly clicking into the locked position.

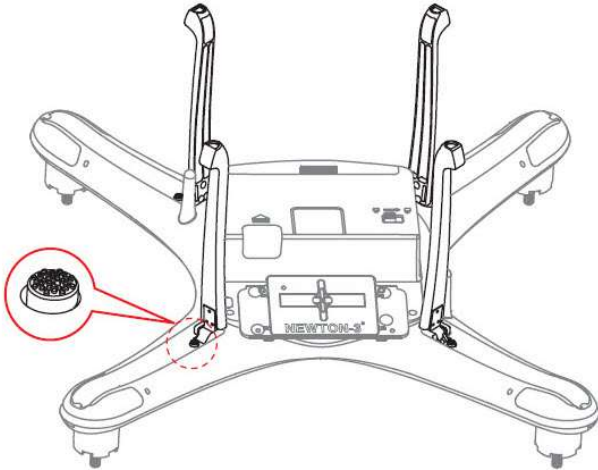


Landing Gear

To extend the landing gear: Gently pull the landing gear up until you hear it click into place.



To retract the landing gear: Push the release button and then gently fold the gear down.



CAUTION: Make sure all four landing gear legs are clicked into place before standing the UAV up, as it could collapse and cause damage to the unit if they are not.

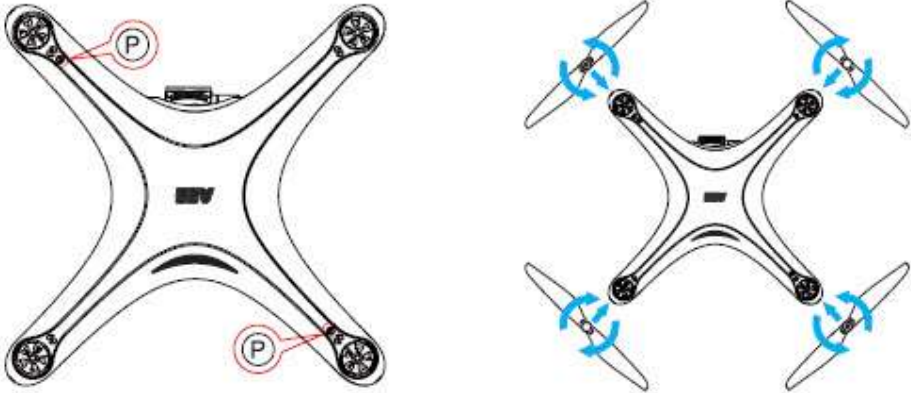
Attaching the Propellers

Make sure to install the propellers on the correct motors. There are two Clockwise (CW) and two Counter Clockwise (CCW) rotating propellers

The propellers with a “P” on the hub screw onto the motor with a “P” on the motor arm, and the other two connect onto the other motors without any markings.

CAUTION: Do not over-tighten the propellers, you could strip the thread.

After a propeller is carefully wound onto the motor, hold the motor while turning the propeller to lightly finger tighten.



Observe the arrow with the lock and unlock symbol to help with attaching and removing the propellers in the correct direction.

CAUTION: Be careful to not cut your hand as the blades can be sharp. The motors will be hot to the touch after flight, this is normal. Let them cool before removing the propellers.

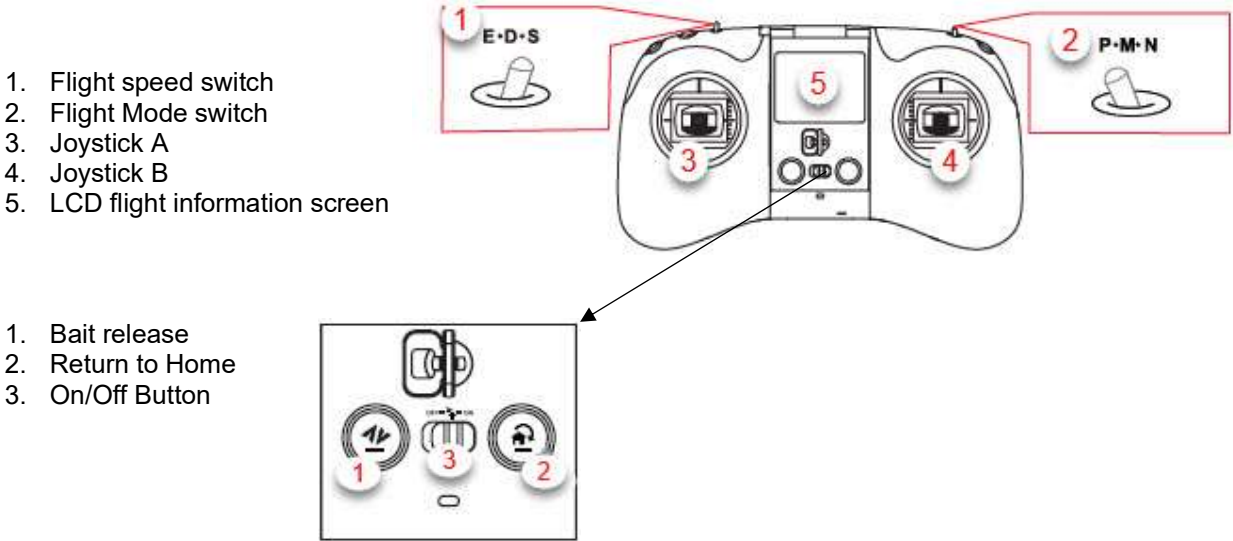
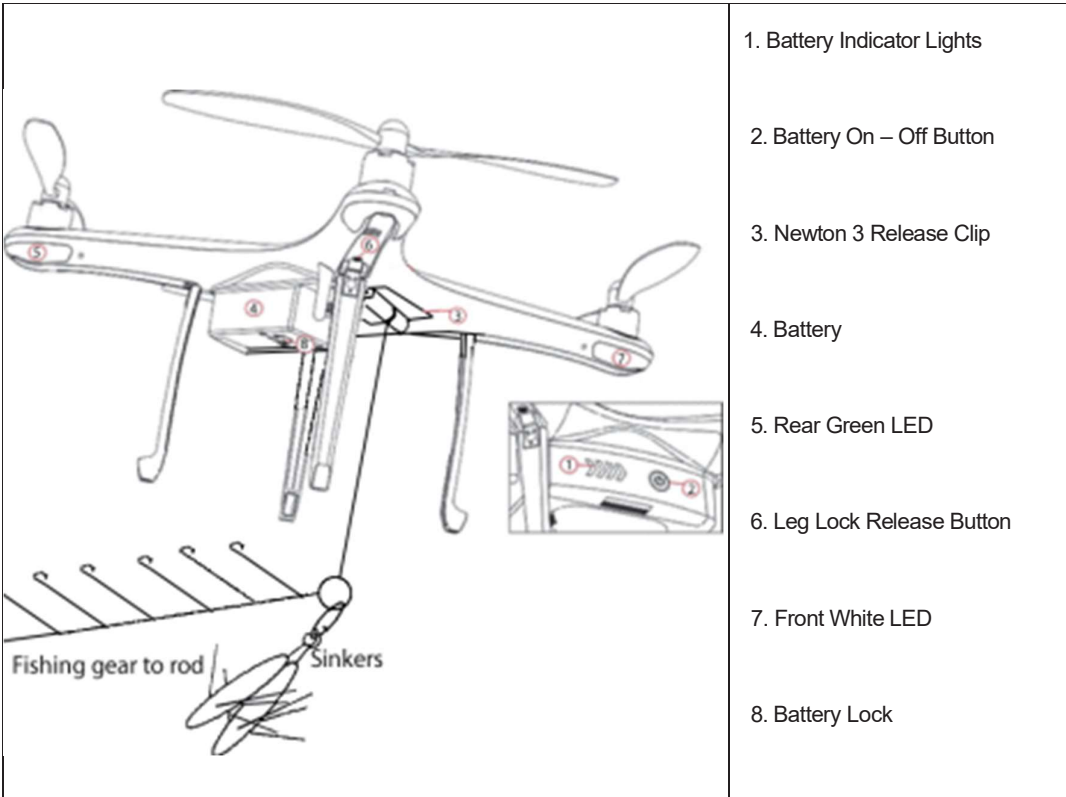
Check that all propellers are secure before each flight.

Preparing the Remote Controller

Lift the antennas up vertically.



Diagrams



NOTE: All other switches and buttons have been disabled.

Aircraft

Flight Controller

The Condor A22 Has a high-tech flight controller on board, containing different flight modes and safety modes which include Fail safes and Return-To-Home. Making the flight of your UAV safer if any of the safety parameters are exceeded.

The flight controller also stores critical flight data from each flight for diagnosis of any issues.

Flight Modes

There are two flight modes available, selectable by way of the 3-position flight mode switch.

P-Mode(positioning): The UAV utilises the GPS and all of the other onboard sensors to maintain its position, Heading and Height.

M-Mode(manual): In this mode, the GPS is turned off and the UAV will not hold its position automatically, it will drift with the wind. It will hold Heading and height.

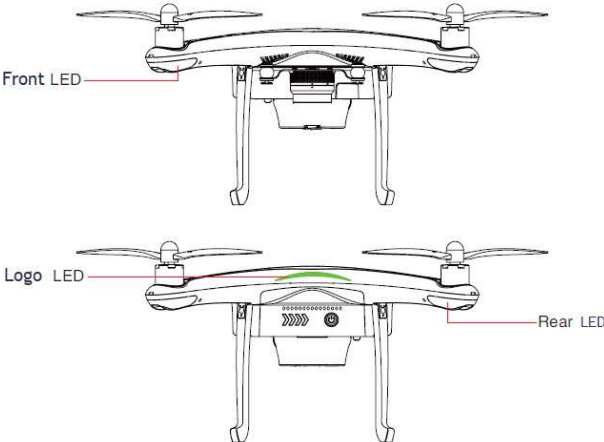
N-Mode(normal): This is reserved for future use. The UAV will however behave the same as in M-mode.

Use the Flight Mode switch to select the flight mode. Always make sure to be in P-mode before taking off. See page 14

LED Status Indicators

The Condor A22 has LED indicator status lights under each motor, these are used to indicate the status of the aircraft. And a logo LED indicator that pulses when the UAV is powered on.

The two front LEDs show the orientation of the UAV and are a solid white, to show you where the nose or front of the aircraft is pointing, the two rear LEDs will flash different colours to indicate the status of the UAV.



Status Indicator Description

System Status: Normal	LED	Colours
Powering On	Only Front LEDs are on	White
Warming Up	Flashing Rear LED's	Alternating Blue, Green and Red
GPS Mode	Solid	Green(ready to fly)
Manual Mode	Solid	Yellow
Calibrating	Slow Flash	Flashes yellow, then Green and then solid Green indicates success
Successful Calibration	Solid	Relevant flight mode colour

System Status: Warning	LED	Colours
Compass Calibration required	Flashing	Alternating Red and Yellow
Link Loss	Flashing	Yellow
Low Battery(38% remaining)	Slow Flash	All four LEDs flash red, Remote Controller beeps continuously (UAV will auto RTH in 30 seconds)
Critical Low Battery(33%)	Fast Flashing	All Four LEDs flash rapidly, Remote Controller Beeps faster(the UAV will auto RTH in 5seconds)
System or Battery Error	Flash	Front and Rear LEDs flash alternating red

In low power warnings, the remote controller will beep.

During all warnings, the system status will be indicated with text or an icon on the remote-control screen.

Return to Home

The return-to-home function on the UAV will make the aircraft fly back to the recorded home point. Three scenarios would cause the aircraft to do so:

1. Manual RTH
2. Low Battery
3. Fail-safe RTH

CAUTION: The recorded home point is the point where the aircraft took off from.

1: Manual RTH

You can make the UAV return home by manually pressing the RTH button on the remote controller. The UAV will automatically return to the last recorded home point, land and shut down.

You can cancel this operation at any time by pressing the RTH button again, giving you full control of the UAV.

The UAV must be in P-Mode for this to work.

2: Low Battery

Once the low battery warning has started, the aircraft will auto return to home to land after 30 seconds. It is recommended to return the aircraft and land as soon as the 1st warning level starts.

If the second critical low level is activated, the UAV will auto RTH after 5 seconds.

3: Fail Safe RTH

If any of the Fail Safes are triggered, the UAV will also initiate the RTH sequence, these events are:

1. Link loss: If the signal is lost for more than 3 seconds the sequence will be initiated, once the link is regained the RTH button can be pressed to cancel it and full control is regained.
2. Max Height is reached. If the UAV is flown up to 100m height, this will then trigger the RTH, once it has descended below that, the RTH button can be pressed to cancel the RTH, giving you full control again.
3. Geo Fence is reached: The Geo fence is set at 1000m if this is reached the UAV will also RTH.

In all Return To Home sequences, once initiated the drone will first climb to its safe RTH height of 30m if it is below that, if it is higher than that it will fly directly overhead to the home point, and land automatically, shutting down once it is on the ground.

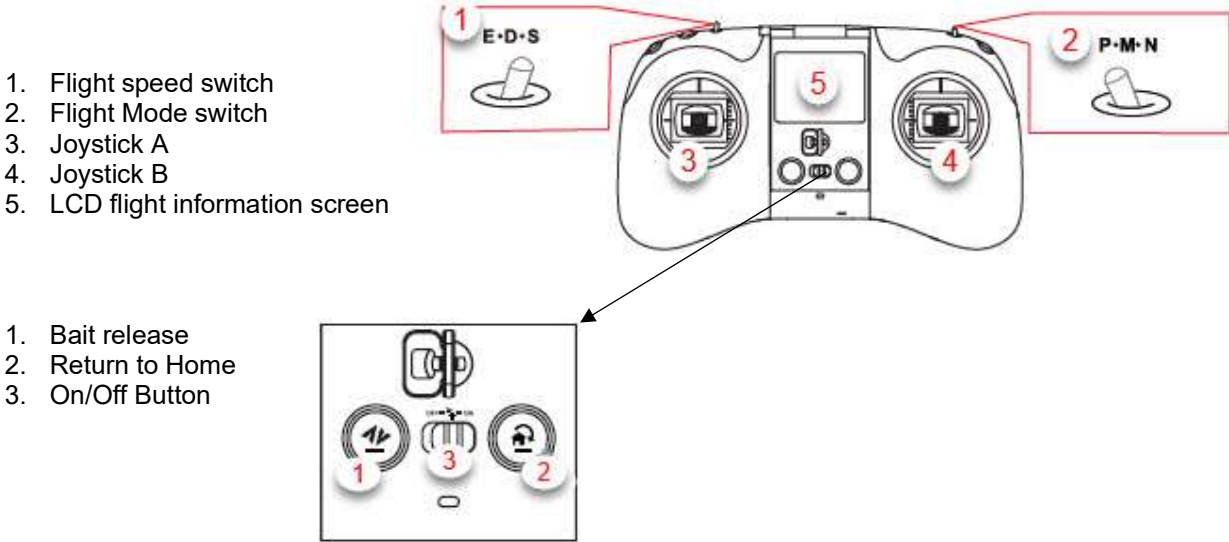
WARNING: IF THERE ARE ANY OBSTACLES IN THE UAV'S PATH IT COULD FLY INTO THEM, ALWAYS MAKE SURE TO FLY IN AREAS WITH NO OBSTACLES OR REMAIN ABOVE OBSTACLES AT ALL TIMES.

Remote Controller

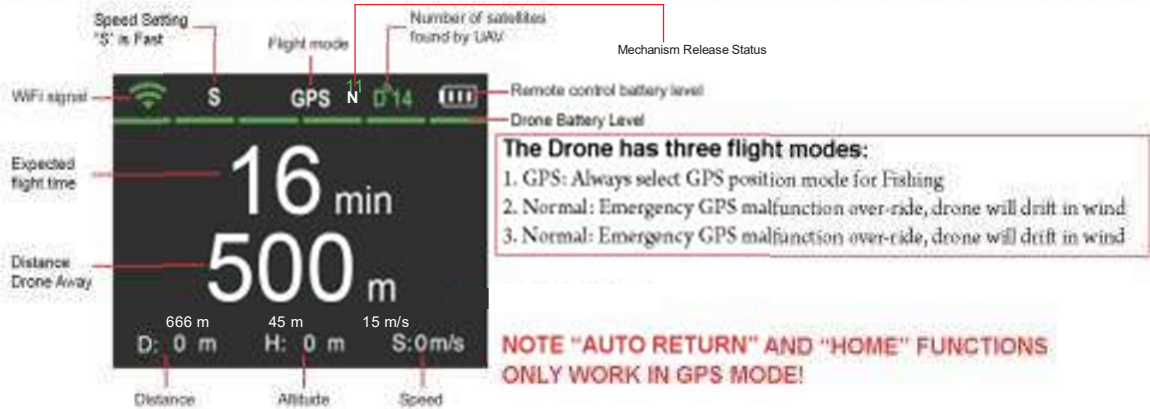
The remote controller that comes with the aircraft is already bound. By default, it is in Mode Two (left-hand stick-up and down is power)

The Controller operates in the 2.4GHz spectrum. It is used for controlling the UAV as well as the Newton 3 release system. The battery level is indicated on the LCD screen.

The onboard LCD screen gives all the critical information of the drone as well as the controller.



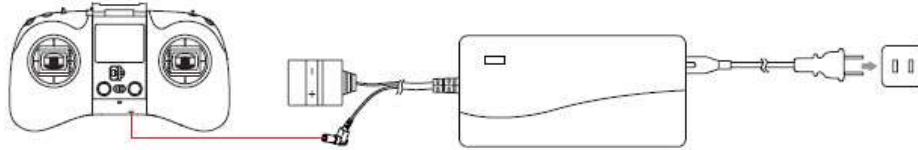
Note: All other switches have been disabled



Charging the Remote

Plug the dedicated charger into the charging port of the remote.

Make sure the Remote controller is fully charged before each day of flying.



Using The Remote Controller

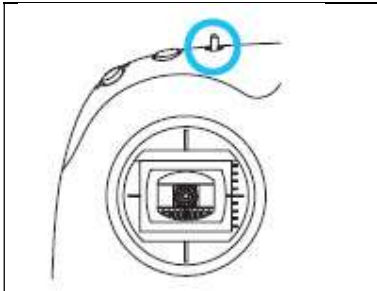
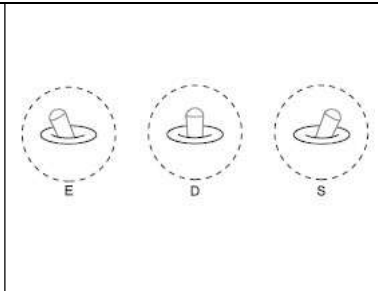
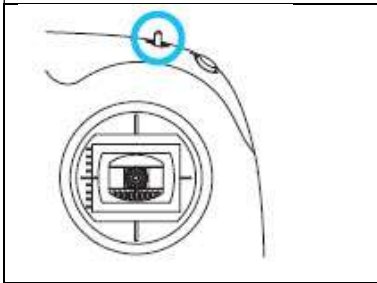
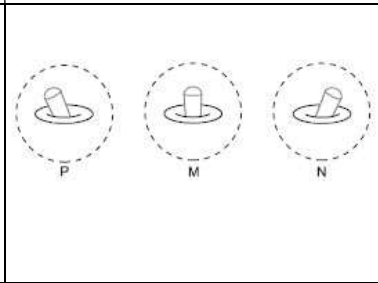
Slide the ON/OFF button on the front of the controller to the ON position, and the status LED will turn on as well as the LCD screen with the current status of the controller.

If there are no user inputs for 5 minutes, the controller will emit a beep to remind you that it is still on. The controller will auto-power off after 15 minutes if there have been no user inputs.

Controlling your UAV

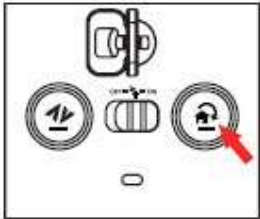
Remote Control	UAV	Operation
		<p>Moving this stick up and down controls the height of the aircraft. Push up to ascend and pull down to descend. When centred the UAV will hover. The more the stick is moved away from the centre, the faster the UAV will climb or descend. Always use small smooth inputs.</p>
		<p>Moving this stick left or right controls the yaw/rotation of the aircraft. Push left to rotate left and right to rotate right. When centred the aircraft will maintain its heading. The more it is pushed away from the centre, the faster the aircraft will rotate.</p>
		<p>Moving this stick up or down will change the pitch of the aircraft, moving it forward or backwards. Push up to move forward and pull back to move backward. The further it is moved from the centre, the faster the aircraft will fly in the desired direction</p>
		<p>Moving this stick left or right, will cause the aircraft to roll/pitch left or right. The further it is moved from the centre, the faster the aircraft will fly in the desired direction</p>

Flight Mode and Speed Switch

		Three Flight speed settings: Position S: High speed Position D: Medium speed Position E: Low speed
		Three flight mode positions: P-mode: Position mode, GPS is used to control the UAV M-mode: Manual mode(No GPS, will drift downwind) N-mode: Normal mode(same as manual mode)

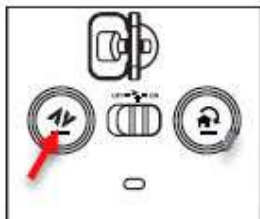
Return To Home Button

Pressing this button will manually enter the RTH Sequence, pressing it again will cancel the sequence giving you full control again.



Bait Release Button

Pressing this button will manually release your baited hooks.

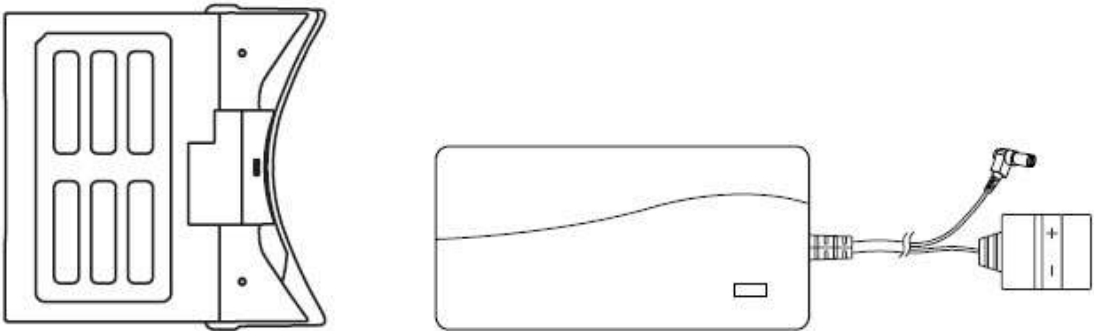


Compliance

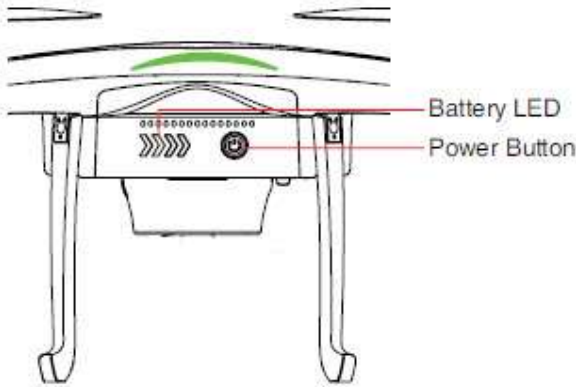
This Remote controller and UAV are compliant with both CE and FCC requirements.

Condor A22 Battery

The specially designed UAV battery is an 11.1V, 6,800mAh smart battery with charging and discharging management functions. Only use the supplied AEE charger to charge the UAV battery.



By pressing the Power button once, the battery level will be indicated by the amount of lit LEDs



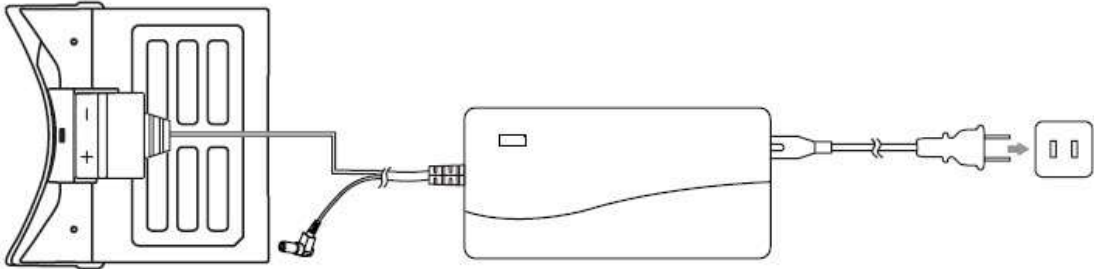
Each LED represents a charge of 25%.

CAUTION: Always make sure the battery is fully charged before each flight. Always return the UAV for landing once the first low battery warning is issued.

Battery Charging

1. Plug the battery charger into a power source(100-240V) and then into the battery, confirm polarity before plugging the charger into the battery.
2. The Battery status LEDs will flash, indicating charging.
3. All four LEDs will remain on when charging has been completed.

Charging Temperature	5°C-40°C
Discharging Temperature	-10°C-40°C



1. Battery Use

2. Do Not expose the batteries to any form of liquid.
3. Only use the correct batteries, no aftermarket batteries.
4. Never use or charge, swollen, leaking or damaged batteries, this could cause a fire.
5. Never remove or install the battery in the aircraft if it has been turned on.
6. Do not use a damaged battery to go flying.
7. Do not use batteries in temperatures below -10°C or above 40°C.
8. Never disassemble or pierce the battery with a sharp object.
9. The contents of the battery are highly corrosive, If you come into contact with it, wash the affected area with fresh running water for at least 15 minutes, and then see a doctor immediately.
10. Do not use the battery if it has been involved in a crash.
11. After a crash or crash into water, immediately remove the battery and place it in a safe area, away from all combustible material as a fire could result, monitor it closely, and dispose of it safely once confirmed the battery is safe, never use a battery after an incident like this.
12. Do not place the battery in a bag where it may short circuit against any conductive items.
13. Do not drop or strike the batteries.
14. Keep the terminals clean with a dry cloth.

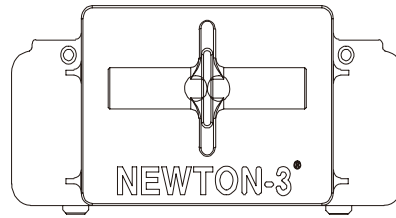
15. Battery Storage

16. Store the Batteries in a cool, dry location, out of reach of children and pets.
17. Do not store them near any source of heat, and DO not store them in a hot vehicle, Ideal storage temperature is 22°C-28°C.
18. Never transport a damaged battery without first having monitored it to confirm it is safe to do so.
19. If the batteries are going to be stored for more than 10 days, it is advised to do so in a dedicated LiPo Safe storage bag.
20. The Battery will automatically discharge to below 65% if it has been idle for 10 days.
21. The battery will enter hibernation mode if idle for a long period. The battery will not power on in hibernation mode, the power button LED will be the only LED and solid red. Charging the battery will bring it out of hibernation mode.
22. Do not store any batteries in the aircraft for extended periods.

Disposal of Batteries

Batteries that are no longer usable should not be disposed of with household waste but in an environmentally friendly way. Please recycle where facilities exist in your area. Check with your local council authority for recycling guidance.

NEWTON 3 Release



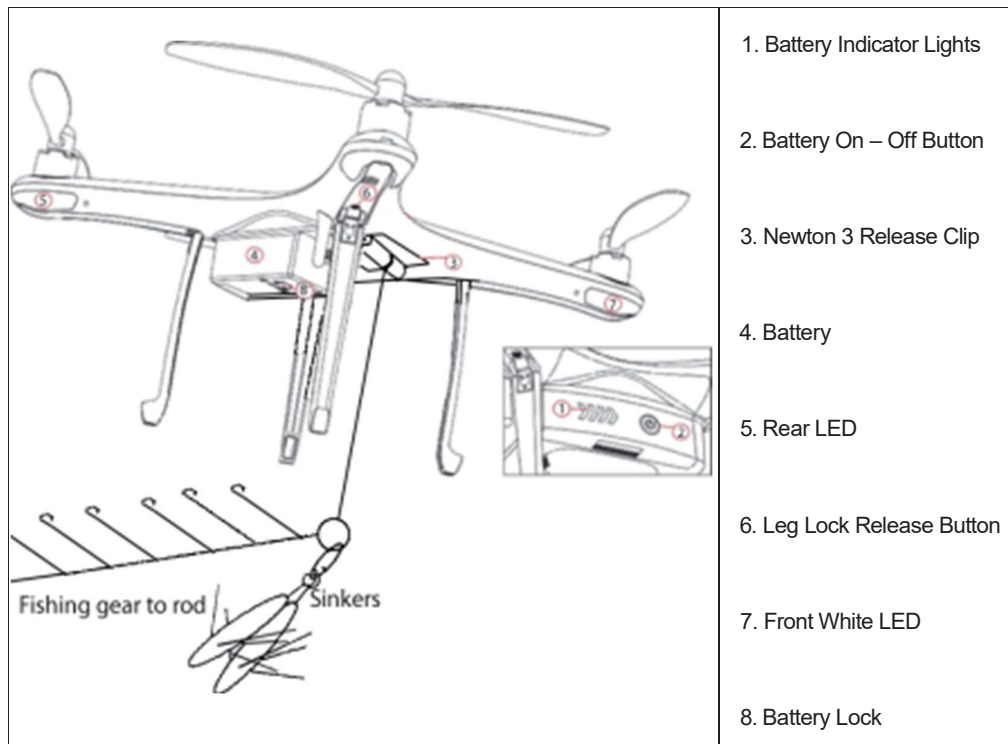
The Newton 3 release is a patented release system, enabling smooth, repeatable results. It uses both tension as well as a mechanical release to drop the load.

Pressing the Bait release button or RTH button on the remote causes the bait to drop, entering any of the Fail safes also will cause the bait to drop, before returning home.

The Newton 3 inertia release clip, releases at a fixed load, it is an incredibly safe release system. If anything causes the line to stop free spooling, the bait will be released as a safety measure.

The Newton clips are set to release at 1.1kg tension. This ensures the Condor drone carrying capacity and flight stability are kept well within safe limits. **Do Not Exceed 450 grams combined weight of the baited hooks and sinkers.**

WARNING: DO NOT ADJUST THE CLIP FOR HIGHER RELEASE PRESSURES. DOING SO WILL VOID ANY WARRANTY.



The release wire connects with one wire loop into the Newton 3 release clip and the other loop connects to the sinkers and the end of your trace with hooks.

WARNING: ONLY USE THE SUPPLIED RELEASE WIRES.

Flight

Make sure you are familiar with the content of this manual before your first flight.

Make sure to conduct your preflight checks and compass calibration at the start of each day's flying.

Flight Environment and Location

1. Do not use the aircraft in adverse weather conditions. This includes wind stronger than 20 knots, rain, snow, or fog.
2. Check that you are legally allowed to fly in your current location by using one of CASA's approved preflight apps*.
3. Always fly in an open area without obstacles, trees, powerlines, or crowds.
4. Always follow your country's rules and regulations set out by your regulator as well as any state or territory regulations.
5. Do not fly in areas with high levels of electromagnetism i.e., near mobile phone and radio towers.

*Scan the QR code to find an approved APP:

<https://www.casa.gov.au/knowyourdrone/drone-safety-apps>



Preflight Checklist

1. Check if the UAV and remote control are fully charged.
2. Check the condition of the propellers and that they are installed properly.
3. Power on the remote then UAV and wait for the system warm-up phase to be completed.
4. Check that the motors can be started once the UAV is powered on.
5. Calibrate the compass if the first flight of the day.
6. Make sure the UAV is placed in a suitable location for take-off with the release wire laid out in front of the UAV.

Compass Calibration

WARNING: ALWAYS CALIBRATE THE COMPASS BEFORE THE FIRST FLIGHT OF THE DAY OR IF YOU HAVE MOVED TO A NEW LOCATION. THE COMPASS IS VERY SENSITIVE TO ANY ELECTROMAGNETIC INTERFERENCE. REGULAR CALIBRATION IS REQUIRED FOR OPTIMAL PERFORMANCE.

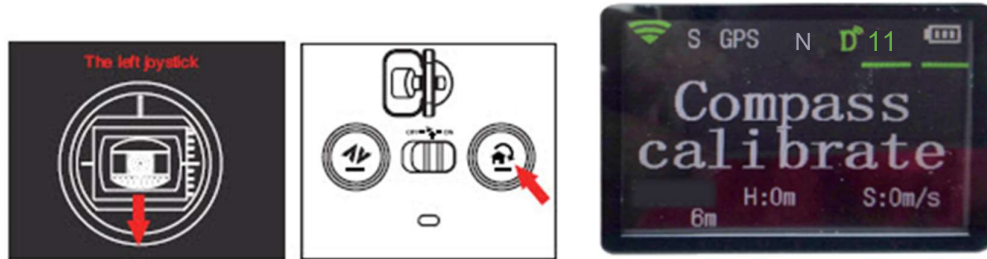
WARNING:

- Do not calibrate indoors.
- Do not calibrate near items that could cause interference, like large metal objects.
- Do not carry any ferrous objects near the drone while calibrating the compass, car keys, mobile phones etc.
- Do not calibrate in areas of strong magnetic interference, underground cables, parking lots etc.

Calibration Procedure:

Confirm the mode switch in P-Mode and ensure you are in an open area.

1. Pull down and hold the left joystick (A) and press the Auto-Return-Home button (B) 10 times or more until the remote screen displays “Compass Calibrate”, as shown below. The two LED taillights on the UAV will flash a steady yellow in calibration mode.



2. Lift the drone horizontally with the battery facing you and rotate yourself counterclockwise, rotate continuously for just over 360 degrees until the two flashing taillights of the drone change from flashing yellow to a steady flashing green.



3. Change the drone to a vertical position with the battery pointing up. Rotate yourself just over 360 degrees counterclockwise until the bottom taillights of the drone change from flashing green to solid green.



4. After successful calibration the screen of the remote will display the battery time and distance from the remote to the UAV. You are ready to fly. The height “H” and speed “S” in meters per second are displayed at the bottom of the remote screen.



WARNING: IF THE STATUS INDICATORS DO NOT GO SOLID GREEN BUT FLASH ALTERNATING RED AND YELLOW, MOVE TO A DIFFERENT LOCATION AS THE CALIBRATION FAILED AND TRY AGAIN.

Recalibration Conditions

1. Compass data error: the rear status LEDs alternate flashing red and yellow.
2. You have moved to a new location.
3. The UAV has sustained mechanical or structural damage.
4. The UAV drifts severely in the flight, i.e., does not fly in a straight line.

Starting and Stopping the Motors

Starting

To start the drone after calibration, pull both levers down into the outer bottom corners of the remote.

As soon as the motors start, gently release the levers and the drone motors will idle with the drone on the ground.



WARNING: THIS LEVER POSITION IS ALSO THE EMERGENCY SHUTDOWN, NEVER PULL BOTH LEVERS DOWN AND OUTWARDS WHILE FLYING AS YOU WILL CRASH YOUR DRONE DUE TO THE MOTORS SHUTTING DOWN.

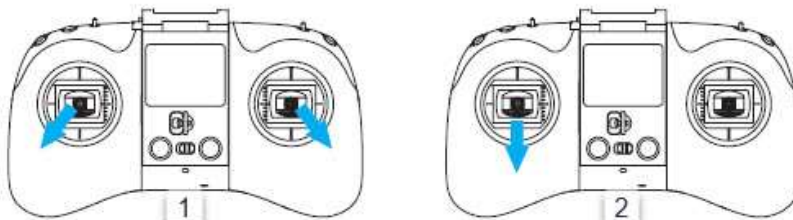
Practice in an open field before going fishing for the 1st time to learn the basic operation of your drone.

Stopping

Use either of the following methods to stop the motors:

Method 1 (Fig. 1): After the UAV lands, pull both joysticks into the bottom outer corners (same as the position for starting) and hold until the motors stop rotating.

Method 2 (Fig. 2): After the UAV lands, pull the left joystick straight down and hold until the motors stop rotating (this method is the recommended method).



Basic Flight Steps

1. Place the Condor in a clear area on smooth ground with the rear LEDs facing you.
(Battery facing you)
2. Power on the remote control and then the UAV, Confirm the mode switch is in P-mode.
3. Wait for the System to warm up to complete, and for status LEDs to flash green.
4. Connect the release wire to your trace and to the Newton 3 release. Lay it out in front of the UAV.
5. Start the motors, and smoothly push up on the left joystick to make the UAV take off.
6. Climb to your desired height and complete your bait drop.
7. To land, hover over your home point, and gently lower the aircraft onto the ground by smoothly pulling down on the left joystick.
8. Once on the ground, pull the left-hand joystick down and hold it to shut down the motors.
9. Power the UAV off first, then power off the remote control.

Maintenance

After every flight confirm that the UAV and Remote controller are:

1. Free from any damage
2. Free from any sand
3. Free from any water

Use a soft cloth or brush to clean and dry the UAV and Controller, removing any sand or water. Not doing so could cause irreparable damage to the UAV or Controller

Specifications

Aircraft

Weight	1.5Kg
Hover Accuracy	Horizontal: $\pm 1.5m$ Vertical: $\pm 0.5m$
Max Pitch angle	20°
Maximum rate of climb/descent	Climb: 5m/s Descend: 2.5m/s
Maximum flight speed	16m/s
Max Distance (Geofence)	1000m
Flight time	+/- 20min
Max Height	100m
Max lifting weight	450 grams
Max Wind Speed*	10m/s, 20knots.
Max Operating Temperature	40°C
Min Operating Temperature	-10°C
Max Operating Altitude	4000m
UAV Dimensions	45CM X 45CM X 18CM

*<15knots recommended

Remote Control

Max Transmission Range	1000m
Battery	3.7v, 1600mAh
Frequency	2.4GHz
Transmitter Power	$\leq 27dBm$
Power	0.5W

Battery

Voltage	11.1v
Capacity	6800mAh
Type	LiPo
Energy	75.48Wh
Operating Temperature	-10°C-40°C

Charger

Voltage Output	12.6V
Power	4A

Newton 3 Release

Tension release	$\geq 1.1kg$
Mechanical Release	Pilot operated release

Compliance

This Product is FCC and CE compliant and has been tested to the ETSI EN 300 328 V2.2.2 Standard.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Make sure the distance between the antenna and all parts of your body is at least 20cm.

Frequency: 2402-2480 MHz

Channels: 79

Antenna Gain: 2dBi

Transmitter Power (EIRP): ≤ 20 dBm

Limitation of Liability

We shall not be held liable for any personal injury, property loss or damage, whether directly or indirectly, caused by but not limited to the following:

1. Operating this UAV Unlawfully.
2. Operating under the influence of drugs and/or alcohol or any mental impairment.
3. Operating this UAV in any way that contravenes this user manual or using it for any other purpose that it was not intended for.
4. Failure to follow the user manual regarding the set-up and operation of the UAV.
5. Trying to lift loads exceeding 450 grams.
6. Any unauthorised Modifications have been made to any of the components.
7. Non-original parts, spares or components have been used.
8. The UAV has been used in adverse weather i.e., Winds > 20knots, rain, snow, or hail.
9. Failure to follow any warnings displayed by the UAV or Controller.
10. Damage due to neglected basic maintenance.
11. Or any other losses or damages caused beyond the scope of our liability.

Warranty

Please contact your Authorised Condor Reseller about any warranty claims.

This Warranty commences on the purchase date and applies to the original purchaser only.

Warranty Periods:

Airframe	12 Months
Motors	12 Months
Newton 3 release	12 Months
Remote Controller	12 Months
Battery	6 Months (<300 cycles)
Battery Charger	12 Months
Propellers	No Warranty
Landing gear	No warranty

This Warranty does not cover:

1. Consumable parts such as propellers or any coatings that could deteriorate over time if maintenance is not done, are considered normal wear and tear.
2. Damage caused by unauthorised accessories, modifications, or repairs.
3. Any minor scratches, dents, or blemishes unless they are caused by defects in the materials used.
4. Damage caused by ingress of any water, whether rain, snow or landing in a body of water accidentally or intentionally.
5. Operating outside of the scope of this user manual
6. If the UAV is being used for any commercial activity.
7. Any products if no proof of purchase can be supplied.
8. Any crashes caused by pilot error or factors unrelated to manufacturer error.
9. Exceeding the max take-off weight stipulated in this user manual.
10. Any damage caused by using the UAV in a compromised state.

This Manual could change at any time without notice. Please scan the QR code for the most up-to-date version.

<https://www.condordrones.com.au/pages/resources>

