

DRONIUM TWO AP™ DRONE WITH CAMERA

INSTRUCTION MANUAL

PROTOCOL®

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PROTOCOL®
AIR *FLY FIRST*™

THANK YOU.

Thank you for your purchase of Protocol's **Dronium Two AP With Camera**. You are about to experience the best of what remote control flight has to offer. We strongly recommend that you take the time to read this manual thoroughly. It contains many tips and instructions on how to get the most out of this aircraft and maintain it for a long life.

As with any aircraft, this is a precision flying machine. Treat it well and enjoy all the fun it has to offer, flight after flight.

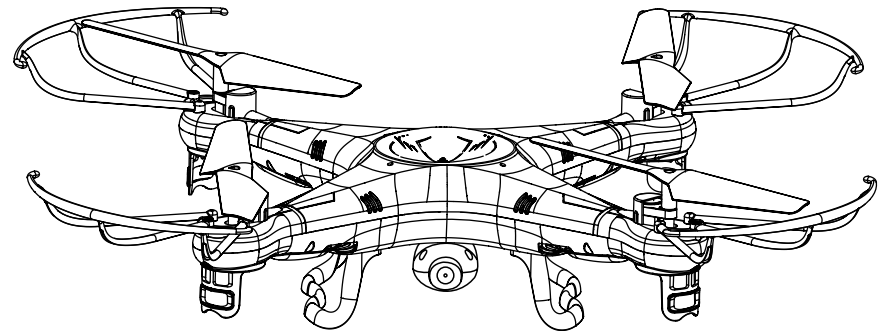


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HAVE FUN, BUT SAFETY FIRST!

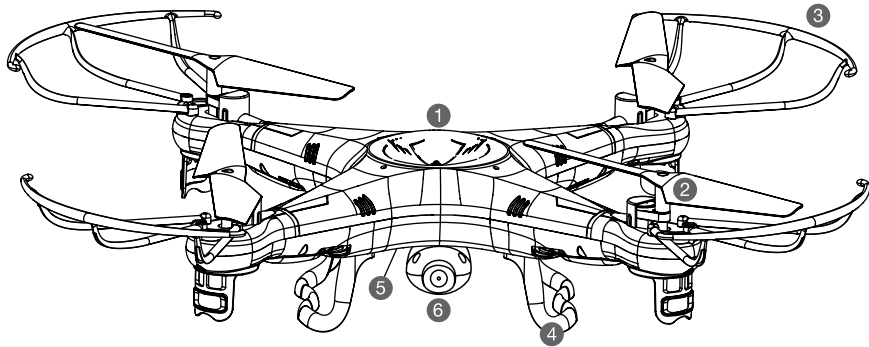
PRECAUTIONARY SAFETY WARNINGS:

- Read and follow instructions on how to synchronize electronics before each flight.
- To prevent damage to people or property, always avoid contact with other objects while in flight.
- Inspect aircraft prior to each flight and do not fly if damaged.
- Never expose product or any of its electronic parts to moisture, water or heat sources.
- Charge device in a cool, dry place and under adult supervision.
- Never leave the device unattended while charging.
- To prevent overheating, allow battery a cool-down period before recharging.
- To prolong engine life, allow a cool-down period between flights.
- Use only the charger and/or charging cable that is supplied with this item.
- Do not strike, cut or pierce the internal battery or subject it to hard impacts.
- Do not mix old and new batteries or mix different types of batteries.
- Never attempt to modify function of vehicle or controller or attempt repairs using parts other than those supplied by Protocol. Spare parts are available at www.protocolny.com

THIS DEVICE USES COMPONENTS THAT OPERATE AT HIGH SPEEDS. AS WITH ANY SUCH DEVICE, USE CAUTION TO OPERATE SAFELY.

FAILURE TO FOLLOW ANY OF THESE GUIDELINES MAY RESULT IN BODILY INJURY OR DAMAGE TO PERSONAL OR PUBLIC PROPERTY.

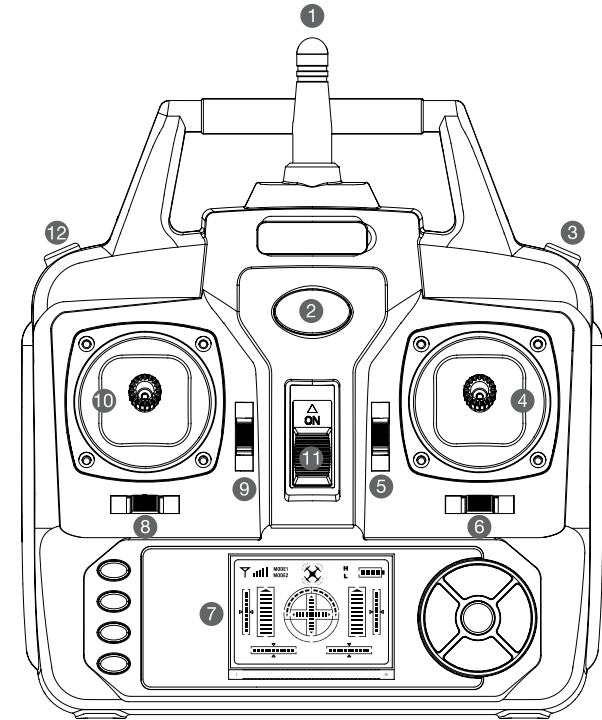
PARTS



DRONE

1. Canopy
2. Blade
3. Blade Guard
4. Landing Gear
5. Battery Compartment
6. Camera

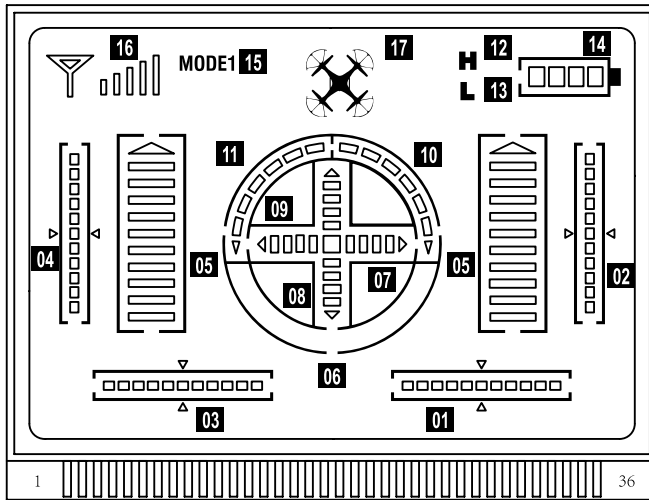
PARTS



REMOTE

1. Antenna
2. Indicator Light
3. 3D Stunt
4. Right Direction Lever (4-way directional)
5. Trim Forward/Backward
6. Mode Switch/ Trim Bank Left/Right (Mode 1)
 - a. Trim Turn Left/Right (Mode 2)
7. LCD Display
8. Trim Turn Left/Right (Mode 1)
 - a. Trim Bank Left/Right (Mode 2)
9. Photo/Video
10. Throttle/Turn Left/Right
11. Power Switch
12. Speed Mode Selector

PARTS

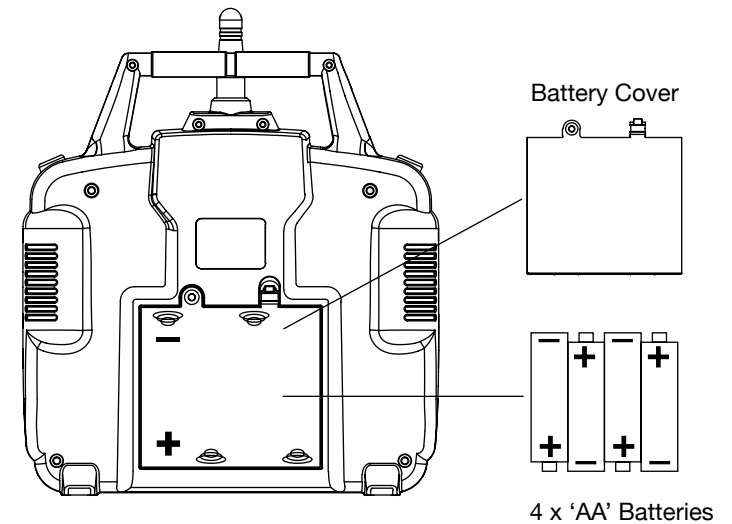


LCD SCREEN

01. Trim: Side-to-side Banking (defaults to center on start-up)
02. Trim: Forward/Backward (defaults to center on start-up)
03. Trim: Turn Left/Right (defaults to center on start-up)
04. Throttle (remains at center)
05. Throttle (defaults to zero on start-up)
06. Directional Display (defaults to center on start-up)
07. Banking Movement to Right
08. Backward Movement
09. Banking Movement to Left
10. Right Turn Movement (defaults to zero on start-up)
11. Left Turn Movement (defaults to zero on start-up)
12. High Speed Mode Active
13. Low Speed Mode Active
14. Controller battery Level Indicator
15. Flight Mode 1 Active (Default); To change to Mode 2, press and hold Mode Switch to the right while turning on the transmitter.
16. Remote control signal strength
17. Indicates positive communication lock with the Dronium Two AP

REMOTE BATTERY INSTALLATION

Unscrew and remove battery cover from controller. Insert 4 x 'AA' batteries according to indicated polarities. Replace and screw back in battery cover.

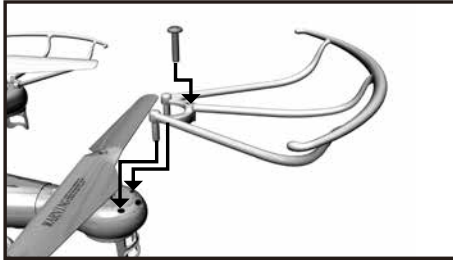


1. Install batteries carefully.
2. Do not mix old and new batteries.
3. Do not mix different types of batteries.

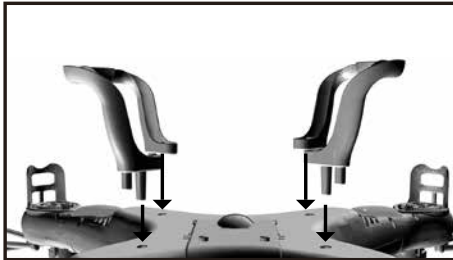
INSTALLING THE BLADE GUARD & LANDING GEAR

If not already installed, install the included blade guards to every corner and tighten the screws. Make sure the blade guards are secure and snug.

NOTE: Loose blade guards may interfere with propeller movement and cause a crash. If the drone crashes, double check to make sure the blade guard is not loose. If it is, re-tighten before flying.



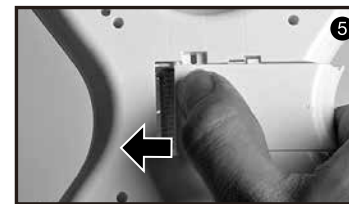
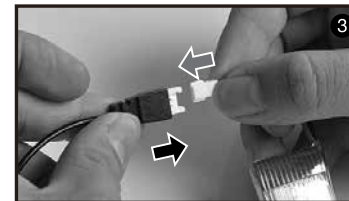
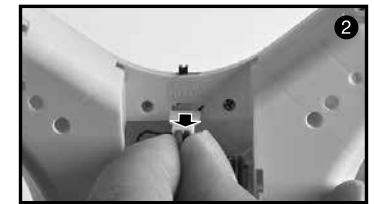
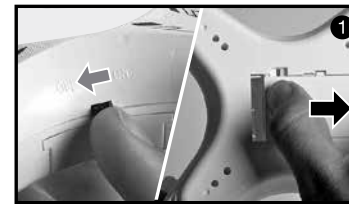
If not already installed, install the included landing gear.



CHARGING THE DRONE

1. Push the on/off switch of the drone to OFF and open the battery cover.
2. Pull out the battery wire from the power port.
3. Connect the USB charging cable to the battery wire.
4. Plug the charger into a USB port. The USB will light up while charging and will turn off once fully charged.
5. Reconnect the battery wire to the power port and close the battery cover.

Charging time: approximately 75 minutes --- Flying time: approximately 7 minutes



*Battery: Li-Po, 7.4V, 350mAh

If you purchased extra batteries, allow the engines to cool between flights in order to prolong engine life.

CHARGING THE DRONE BATTERY

CAUTION WHEN CHARGING

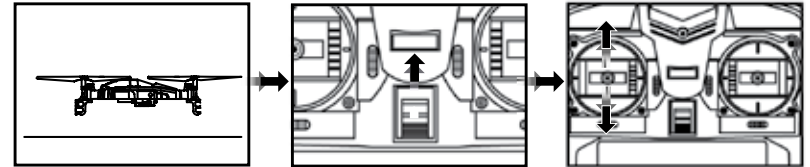
1. When charging, place product on a dry, well-ventilated surface and keep away from heat sources.
2. Always use adult supervision while charging.
3. In order to increase battery longevity, avoid repeat charging and excessive discharging.
4. As battery temperature is high immediately after flight, charge after cooling down for higher efficiency.
5. Do not strike or subject battery to hard impacts or sharp surfaces.
6. Do not use any other charger than that which is supplied with this item.
7. Do not use or leave battery near a heat source such as fire or space heater; exposure to heat may result in reduced performance or in some cases dangerous conditions.
8. If battery is left in charging state for an extended period of time after being fully charged, the battery may automatically discharge.
9. Never leave the battery unattended during charging.
10. Do not disassemble battery.
11. Do not submerge battery in water.

POWER-ON PROCEDURE

Before flying, the drone and transmitter must be turned on in sequence and synchronized.

1. Turn on the drone and place it on an even surface.
2. Turn on the remote control.
3. Both indicators on the drone and the remote will flash.
4. Push the throttle up and then down to sync. You will hear two beeps and the lights will go steady.

Tip: When syncing your drone keep it in a horizontal position for stable flight.



NOTE

1. While the drone is in process of synchronizing, the lights will flash. When the process is completed, the lights will remain steady. This is your indication that the process is completed.
2. If after 30 seconds, it has not recognized the drone, turn off the controller and repeat Power-On procedure.

OPERATION (MODE 1)

STARTING THE ENGINE; ENGINE IDLE

1. After synchronizing the drone, gently push the throttle up and release to go into idle mode.

OR

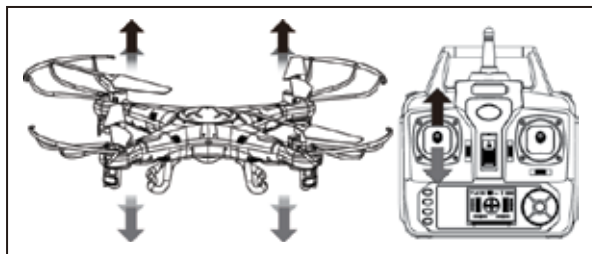
2. Pull the throttle and direction sticks to the center at the same time and release to go into idle mode. The blades will rotate but the drone will not lift.

TAKE-OFF

1. Gently advance the throttle up to a desired height and release. The drone will hover at that height.*

LANDING

1. Push down on the throttle until the drone is on the ground.



NOTE:

- The engine will shut off if you choose to hold the throttle down for 3 seconds.

- **Emergency Shut Off: When in flight, pull the throttle and direction stick to the center at the same time and the drone will shut off.**

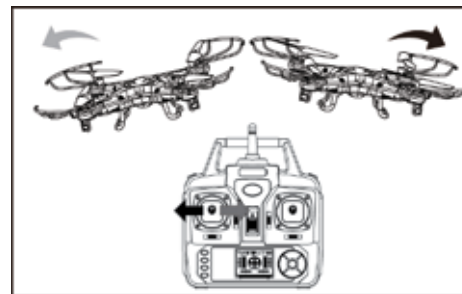


* The drone may drift a bit, especially in the first 30 seconds until the altitude sensor gets a good fix on the position. Some drift is normal.

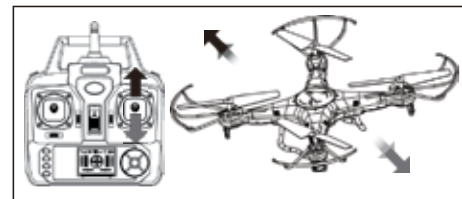
OPERATION (MODE 1)

FIRST TIME FLYERS!!! TAKE YOUR TIME! GO SLOW!

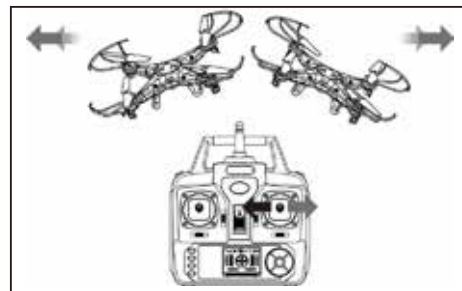
Practice hovering until you are comfortable with flight before attempting any other maneuvers. Make small movements letting the stick return to the center. If you start to lose control, don't panic. Just press land.



Pull the throttle left or right, the drone turns to the left or right.



Push the direction lever up or down, the drone flies forward or backward.



Pull the direction lever to the left or right, the drone banks to the left or right.

OPERATION (MODE 2)

STARTING THE ENGINE; ENGINE IDLE

1. After synchronizing the drone, gently push the throttle up and release to go into idle mode.

OR

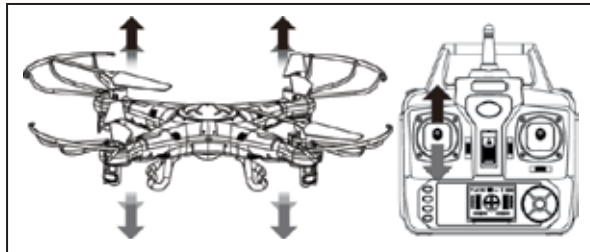
2. Pull the throttle and direction sticks to the center at the same time and release to go into idle mode. The blades will rotate but the drone will not lift.

TAKE-OFF

1. Gently advance the throttle up to a desired height and release. The drone will hover at that height.*

LANDING

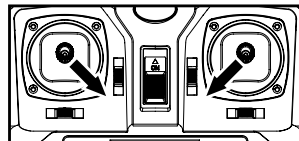
1. Push down on the throttle until the drone is on the ground.



NOTE:

- The engine will shut off if you choose to hold the throttle down for 3 seconds.

- **Emergency Shut Off: When in flight, pull the throttle and direction stick to the center at the same time and the drone will shut off.**

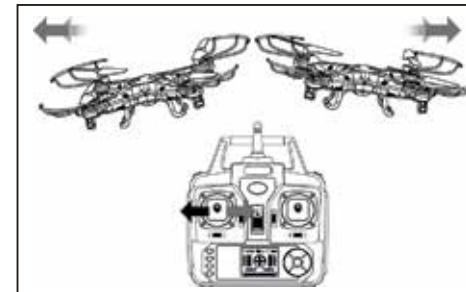


- * The drone may drift a bit, especially in the first 30 seconds until the altitude sensor gets a good fix on the position. Some drift is normal.

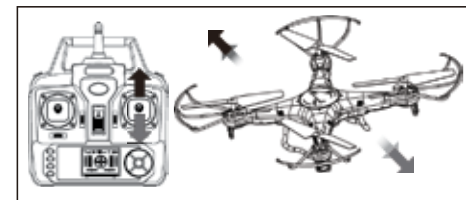
OPERATION (MODE 2)

FIRST TIME FLYERS!!! TAKE YOUR TIME! GO SLOW!

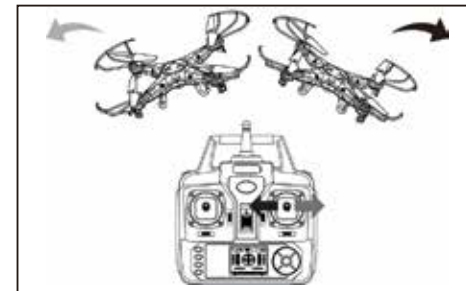
Practice hovering until you are comfortable with flight before attempting any other maneuvers. Make small movements letting the stick return to the center. If you start to lose control, don't panic. Just press land.



Pull the throttle left or right, the drone banks to the left or right.



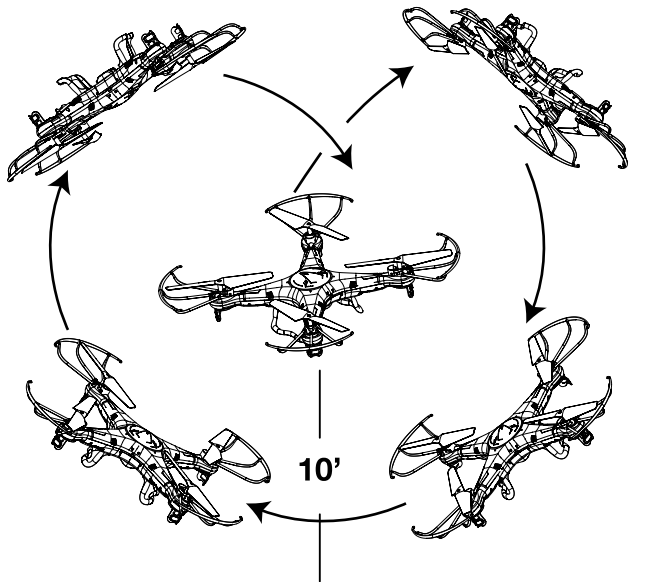
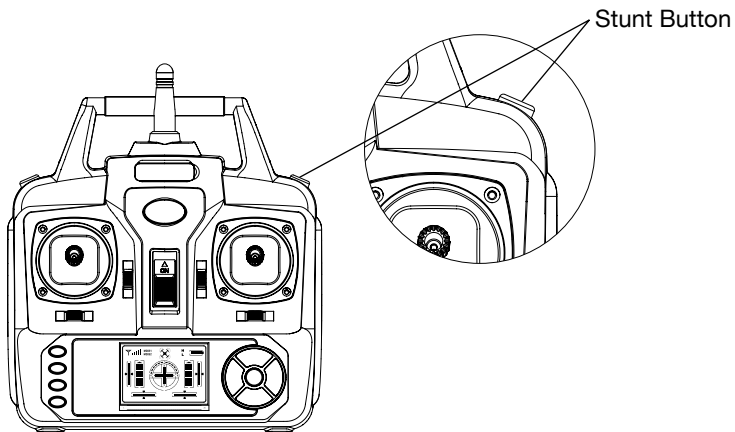
Push the direction lever up or down, the drone flies forward or backward.



Pull the direction lever to the left or right, the drone turns to the left or right.

TIPS ON 360° FLIPS

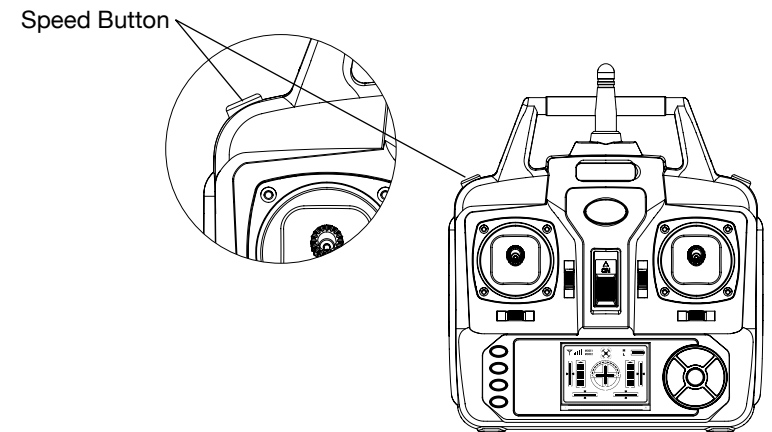
Once you are familiar with the basics of drone flight, you can try some advanced maneuvers! At a height of at least 10 feet, press and hold the Flip Mode button and move the direction lever in any desired direction to execute the flip.



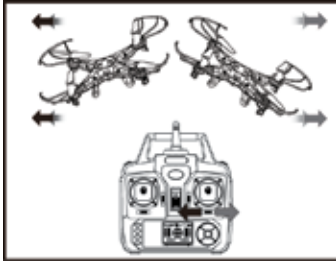
* The drone will gain altitude as it goes into the flip.

SPEED MODES

The Dronium Two AP features multiple speed modes. Choose the speed based on flight experience and level of comfort. At higher speeds, the drone will pitch more than at lower speeds. The Dronium Two AP is quite fast at its highest speed and requires more piloting skills to fly competently. For safety take time to develop advanced skills by practicing at lower speeds first. Press the Speed Selector button to change the speed mode. The remote control indicator will beep once at slowest speed mode and multiple times as speed mode is increased.

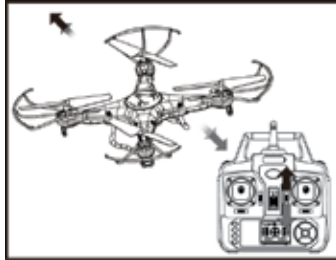


TRIM ADJUSTMENT (MODE 1)



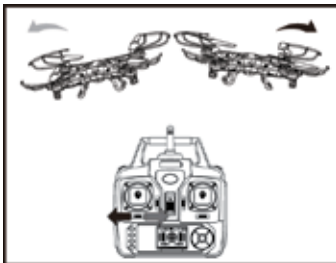
SIDEWAYS TRIM

When the drone drifts to the left or right side unintentionally, you can correct it by pressing the trim button in the opposite direction until it evens out.



FORWARD/BACKWARD TRIM

When the drone drifts forward/backward unintentionally, you can correct it by pressing the trim button in the opposite direction until it evens out.

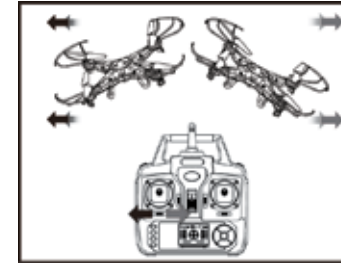


LEFT/RIGHT TRIM

When the drone spins left/right unintentionally, you can correct it by pressing the trim button in the opposite direction until it evens out.

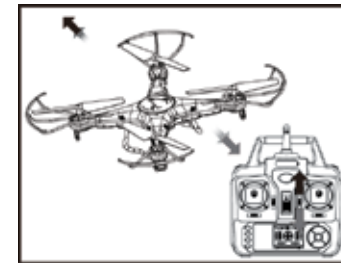
*NOTE: Trim adjustments are designed to counter drifts not caused by wind.

TRIM ADJUSTMENT (MODE 2)



SIDEWAYS TRIM

When the drone drifts to the left or right side unintentionally, you can correct it by pressing the trim button in the opposite direction until it evens out.



FORWARD/BACKWARD TRIM

When the drone drifts forward/backward unintentionally, you can correct it by pressing the trim button in the opposite direction until it evens out.



LEFT/RIGHT TRIM

When the drone spins left/right unintentionally, you can correct it by pressing the trim button in the opposite direction until it evens out.

*NOTE: Trim adjustments are designed to counter drifts not caused by wind.

TROUBLESHOOTING

* Allow 15 minutes to pass between full flights as this will give the motors a chance to cool down. Failure to do so could wear out and shorten the life of the motors.

SYMPTOM	POSSIBLE CAUSE	POTENTIAL SOLUTION
Dronium Two AP does not respond	<ol style="list-style-type: none">1. Communication between controller and aircraft was not synchronized during set up2. Battery power depleted on aircraft, controller or both.	<ol style="list-style-type: none">1. To synchronize, turn on aircraft first, place it on level ground, and then turn on controller.2. Charge aircraft and/or replace batteries in controller.
Response to control inputs intermittent or erratic	<ol style="list-style-type: none">1. Controller battery power nearly depleted.	<ol style="list-style-type: none">1. Replace batteries in controller.
Dronium Two AP will not hover or strafe correctly	<ol style="list-style-type: none">1. The aircraft was not on level ground during synchronization.2. Trim settings are incorrect.	<ol style="list-style-type: none">1. Re-synchronize aircraft and controller.2. Reset the trim buttons on the controller and re-trim flight controls.

FLYING OUTDOORS

HOW TO PREVENT FLY AWAYS

To prevent “fly-away” situations (where drones seem to fly away out of control) it is important to first test and practice within close range before letting the drone fly too far away.

Each drone is designed to land if the radio signal is lost. It is important to know and test the range of your drone before flying. (But, this should not be considered a landing procedure or normal flight practice.) We recommend turning on and syncing the drone and walking away while testing the engines. Keep walking and testing until it is obvious when you reach the point where the signal is not controlling the drone. This will be the control limit for the conditions in which you are flying. Distance does vary somewhat based on environmental and weather conditions, so testing the limit is advised. Fly in a range that is good for easy visual operation of the drone.

IF YOU CAN'T SEE YOUR DRONE, THEN YOU CAN'T CONTROL YOUR DRONE.

Fly-aways are not covered by warranty as they are overwhelmingly caused by pilot error.

SHOOTING PHOTO/VIDEO

1. The memory card comes pre-inserted into the camera.
2. Make sure the 3-pin plug of the camera is inserted into the drone.

Shooting Photos and Video:

1. Turn on the drone and sync. The red indicator on the camera should be a steady green. If there is a red indicator that is continuously flashing, then the memory card is not inserted properly.
2. Photo: Push the Photo/Video selector up once and the camera will take a photo. The red indicator the camera and the lights on the drone will flash once as it's taking the picture.
3. Video: Push the Photo/Video selector down once and the camera will begin to record. The red indicator and lights on the drone will continuously flash while recording video. Push the Photo/Video selector up and the camera will stop recording.
4. Remove the memory card from the camera by pushing it in once and allowing it to spring out. Insert the memory card into the USB card reader and plug the reader into the USB port of your computer. If you are using Windows, the USB will come up on the removable drive. If you are using OS, then the USB will come up as "Untitled".
5. Open the drive and open the Photo and Vide folders to access the .AVI or JPEG files.
6. .AVI movies can be played in several different formats including Quicktime, Windows Media Player, and RealPlayer.

WARNING: Never remove the card from the video camera while the drone is turned on.

REPLACEMENT PARTS

Thank you for your purchase of Protocol's **Dronium Two AP with Camera**. We know that accidents can sometimes happen and that is why we offer spare parts kits on our website: www.ProtocolNY.com.

LIMITED WARRANTY

At Protocol, we're dedicated to bringing you innovative and well-designed products that make living fun and easy. We stand behind all of our products and warrant this to be free from defects in workmanship and materials for 30 days from the date of purchase. The warranty does not cover transportation damage, misuse, accident, or similar events. Specific legal rights pertaining to this warranty may vary by state.

For service claims or questions please consult our website www.ProtocolNY.com.



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