

PROTOCOL®

DRONIUM ZERO™

DRONE WITH CAMERA

INSTRUCTION MANUAL



THANK YOU.

Thank you for your purchase of Protocol's **Dronium Zero 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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SAFETY WARNINGS

HAVE FUN, BUT SAFETY FIRST!

- Read and follow instructions on how to synchronize and calibrate 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.
- 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 Guard
3. Blade
4. Battery Compartment
5. Camera

PARTS



REMOTE

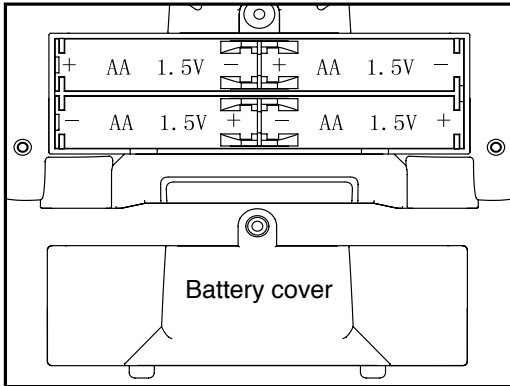
1. 2.4G Antenna
2. Power Switch
3. Trim Forward/Backward
4. Flip 360°
5. Forward/Backward
6. Bank Left/Right
7. Trim Bank Left/Right
8. Indicator Light
9. Throttle
10. Turn Left/Right
11. Speed Mode Selector
12. Take Off/Landing

13. Calibration
14. Video
15. Photo

SPARE PARTS INCLUDED

- Replacement Blades
- Blade Guards
- Screwdriver

REMOTE BATTERY AND BLADE GUARD 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

If not already installed, install the included blade guards to every corner by snapping them in and tightening the screws at the base. Make sure the blade guards are secure and snug.

NOTE:

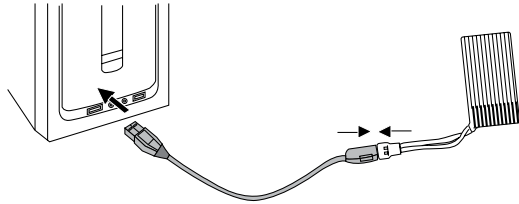
Loose blade guards may interfere with propeller movement and cause a crash. If the drone crashes, double check to make sure the blade guard is not loose. If it is, re-tighten before flying.



CHARGING THE DRONE BATTERY

1. Make sure the drone is turned off.
2. Open the battery cover and remove the battery.
3. Connect the USB charging cable to the battery.
4. Plug the charger into a USB port. The USB light will turn off while charging and will turn on once fully charged.
5. Plug the battery back into the drone and close the battery cover.
Charging time: 60 minutes --- Flying time: approximately 7 minutes

- * Low Battery Signal:
The lights on the drone will begin to flash in flight to indicate low battery.



DO NOT CHARGE OVERNIGHT OR BEYOND THE CHARGING TIME STATED.
DO NOT LEAVE BATTERY UNATTENDED.

*Battery: Li-Po, 3.7V, 380mAh

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

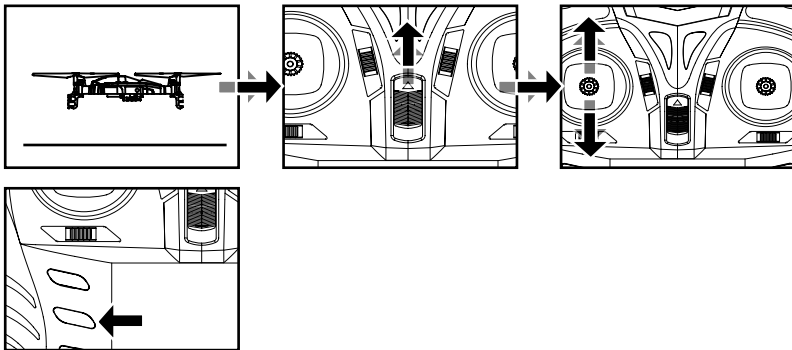
CAUTION WHEN CHARGING

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.

START-UP PROCEDURE

Before flying, the drone and transmitter must be turned on in sequence and synchronized. Once synchronized, you must press the calibration button so the Altitude Sensor can set properly.

1. Turn on the drone and place it on an even surface. The white lights on the drone are at the front and the red are at the back.
2. Turn on the remote control.
3. Both indicators on the drone and the remote will flash while they are syncing.
4. Push the throttle up and then down to sync. You will hear two beeps and the lights will go steady.
5. Next, you must calibrate the Altitude Sensor. Press the calibration button once. Lights will flash quickly and will go steady when finished. Your drone is now synchronized, calibrated, and in stand-by mode awaiting Engine Idle command.



NOTE:

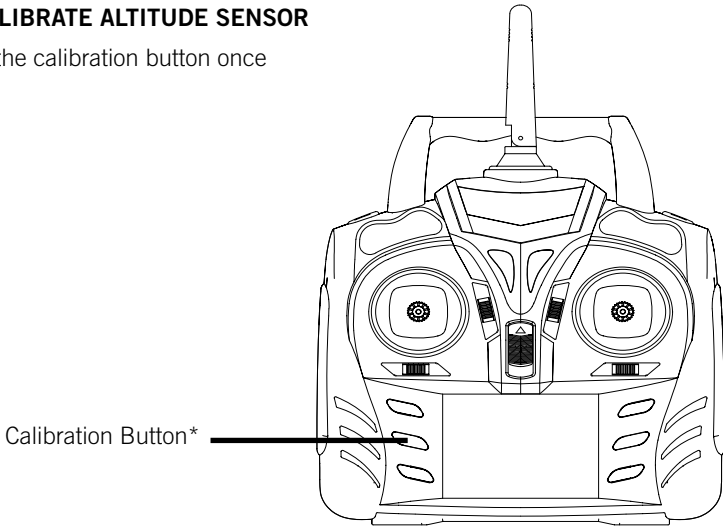
1. While the drone is in process of synchronizing or calibrating, the lights will flash quickly. When the process is completed, the lights will go steady. This is your indication that the process is completed.
2. If after 30 seconds, it has not recognized the drone, turn off the controller and repeat Start-Up procedure.
3. If the Dronium Zero is unsteady in flight, it may not have been able to calibrate properly. Power down both drone and remote and restart pre-flight procedure, including re-calibration of the altitude sensor.
4. For the Altitude Sensor to calibrate properly, the drone must be synchronized already, but the engines not spinning yet. You cannot calibrate while the propellers are turning. You have to calibrate before you start the engines.

START-UP PROCEDURE

**BEFORE STARTING THE ENGINES,
CALIBRATE THE ALTITUDE SENSOR.
DO THIS BEFORE EACH FLIGHT –
EVERY TIME!**

TO CALIBRATE ALTITUDE SENSOR

Press the calibration button once



* Press once to calibrate. Lights will flash quickly during calibration and then go steady when completed. Don't worry if you press it again as it will simply recalibrate again.

NOTE:

The Altitude Sensor assists pilots by stabilizing altitude fluctuations. This stabilizing technology reduces, but does not eliminate all fluctuations. The drone may drift upwards or downwards somewhat during flight. This is normal. Manual adjustments to altitude are part of the normal piloting process.

STARTING THE ENGINE:

After synchronizing and calibrating the drone, move the throttle and direction sticks to the lower left and lower right corners (green lines) and release to go into Idle mode. The blades will rotate but the drone will not lift.

OPERATION: FLYING THE DRONE

TAKE-OFF:

1. Press the take off button. The remote will beep and the drone will hover a few feet off the ground. Then gently advance the throttle to a desired height and release. The drone will hover at that height.*

OR

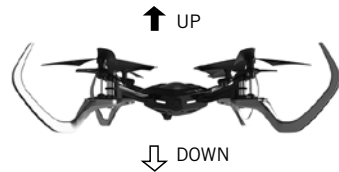
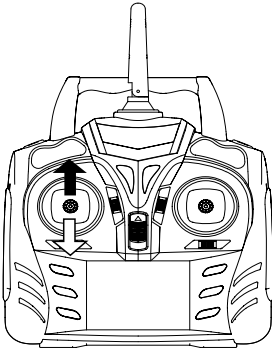
2. From Idle mode, gently advance the throttle up to a desired height and release. The drone will hover at that height.*

LANDING:

1. Press the landing button to lower the drone to the ground.

OR

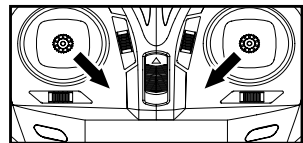
2. Push down on the throttle until the drone is on the ground.



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 (red lines) and the drone will shut off.**

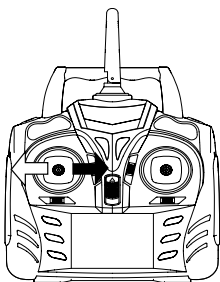


- * The drone may drift a bit, especially in the first 30 seconds until the altitude sensor gets a good fix on the position. Some drift is normal.

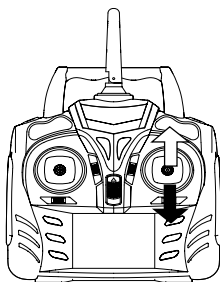
OPERATION: FLYING THE DRONE

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

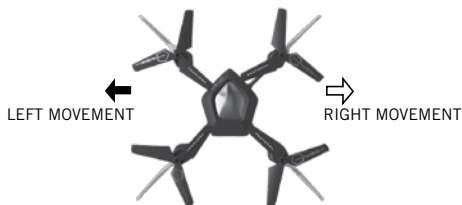
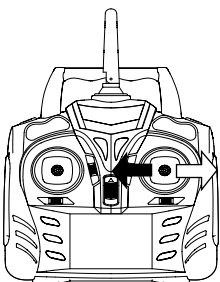
Practice hovering until you are comfortable with flight before attempting any other maneuvers. Make small movements letting the stick return to the center. If you start to lose control, don't panic. Just press land.



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



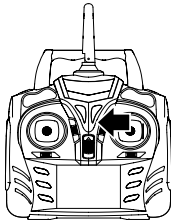
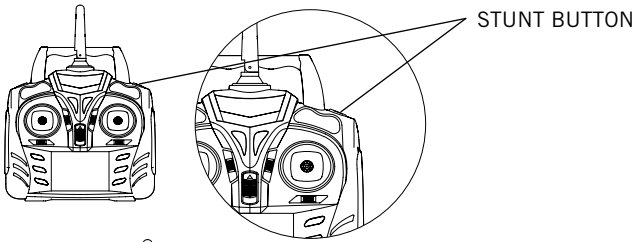
Push the direction lever up or down,
the drone flies forward or backward.



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

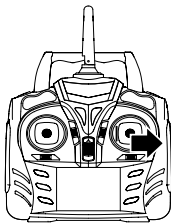
TIPS ON 360° FLIPS

Once you have become skilled with the basics of drone flight, you can try some advanced maneuvers. At a height of at least 10 feet, press the Flip Mode button and move the direction lever in any desired direction to execute the flip. The remote will beep quickly when you are in stunt mode and will stop beeping once you have executed the flip.



LEFT 360° FLIP

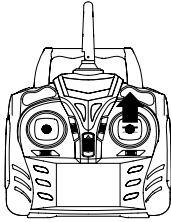
Push the direction stick to the left and the drone will perform a 360° flip in that direction.



RIGHT 360° FLIP

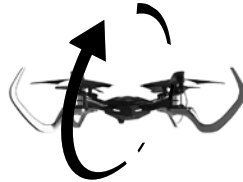
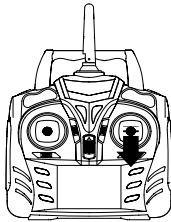
Push the direction stick to the right and the drone will perform a 360° flip in that direction.

OPERATION: FLYING THE DRONE



FORWARD 360° FLIP

Push the direction stick forward and the drone will perform a 360° flip in that direction.

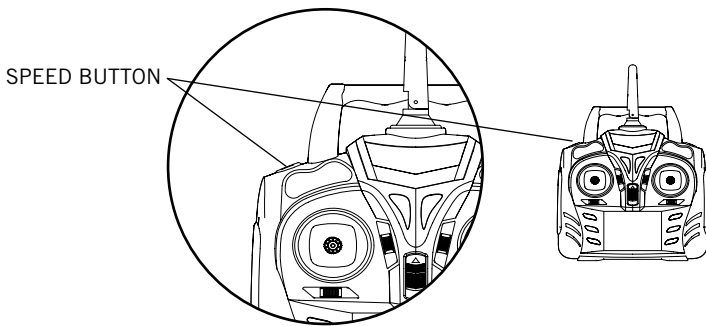


BACKWARD 360° FLIP

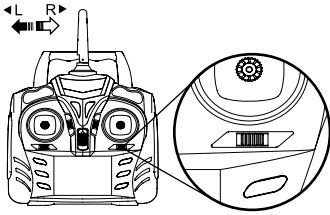
Push the direction stick backward and the drone will perform a 360° flip in that direction.

SPEED MODES

The Dronium Zero 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. Dronium Zero 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 +/- 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.

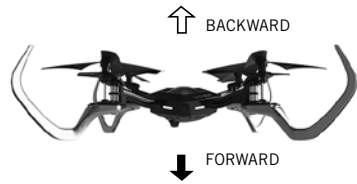
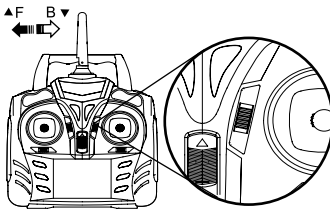


TRIM ADJUSTMENT



SIDWAYS 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.

*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 Zero does not respond	<ol style="list-style-type: none"> 1. Communication between controller and aircraft was not synchronized during set up 2. 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 Zero 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. Recalibrate the Altitude Sensor. 3. Reset the trim buttons on the controller and re-trim flight controls.

HOW TO CHANGE THE BLADES AND BLADE GUARDS

BLADES

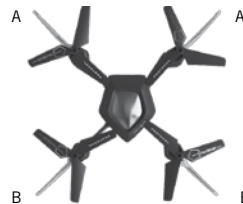
- All drones have two rotors that spin clockwise and two rotors that spin counter-clockwise.
- Make sure to place the blades on the correct axis or they will not spin correctly and the drone will not lift.
- Each blade is marked on its underside with A or B. There may be a number after the letter but you can ignore the number.
- Make sure to follow the graphic below to see where to place the blades.

BLADE GUARDS

- Make sure to place the blade guards in the correct position or the drone will have trouble flying and landing.
- Each blade guard is marked underneath its cap with A or B.
- Make sure to follow the graphic below to see where to place the blades.



BLADES: CAMERA/FRONT



BLADE GUARDS: CAMERA/FRONT

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 turn off the engines if the radio signal is lost. It is important to know and test the range of your drone before flying. 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.

SHOOTING PHOTOS AND VIDEO:

1. Turn on the drone and sync.
2. Photo: Push the Photo button and the camera will take a photo. The lights on the drone will flash once as it's taking the picture.
3. Video: Push the Video and the camera will begin to record. The lights on the camera will flash continuously while recording. Push the Video button again and the camera will stop recording.
4. Connect the USB transfer cable to the drone and plug it 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 then open the Video or Photo 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 Zero 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.

DRONIUM ZERO™

DRONE WITH LIVE STREAMING CAMERA

Age
14+



*Please check our website ProtocolNY.com for updates and instructions to our Apps.

Phone Mount

1. Install phone mount onto the remote control's antenna.
2. Pull the clamp and insert the smartphone.

Install the App

1. The App is available in both Apple and Android App stores. Search "Protocol Dronium Zero" and download the App to your smartphone.

Shooting Video/Photo

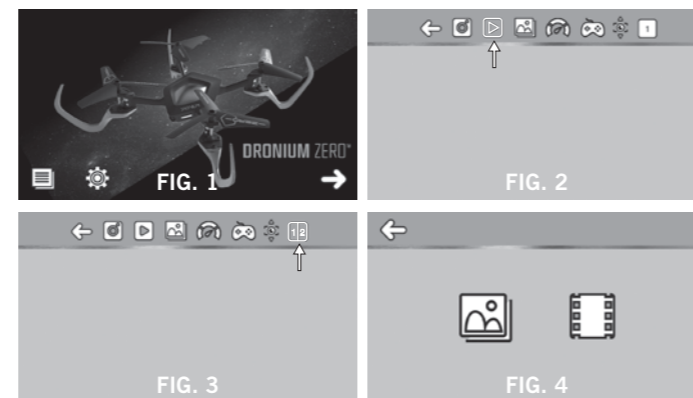
1. Turn on the Dronium Zero and the remote control.
2. Once it is turned on, the Dronium Zero will blast a Wi-Fi signal, "Dronium Zero". Make sure your smartphone is connected to that signal.
3. Open the app and press "↔" (Fig. 1).
4. The screen will livestream the camera view.
5. To film video, hit the video icon once. To stop filming, hit the icon again (Fig. 2)
6. To snap pictures, press the photo icon once.

Shooting in VR

1. Insert the phone in a VR viewer (not included).
2. Press the VR icon (Fig. 3). The phone will shoot and livestream in VR mode.
3. Press the VR icon again to leave VR mode.

Viewing and Saving Recorded Video/Photo

To see recorded video and images, press the picture icon. There are two subfolders, one for video and one for photos. (Fig. 4).



Apple/Android

1. Photos and video will automatically save to the phone's photo album.
2. All videos can be viewed in VR mode through the App. Press the VR button in the lower left corner when viewing the video. You cannot view VR video through the phone's photo album.

Deleting Content from the App

Apple

Press the "Delete" button. Then select the images or video you want to delete.

Android

Open the image or video and then select the trashcan icon to delete.

Flying the Drone through the App (optional)

*This is for advanced users. Make sure you are comfortable flying the drone through the remote control before using the App.

1. The screen on the App is set up to work like the remote control interface (Fig. 5). Press the remote icon to turn on the remote functions.
2. Slide the throttle and the direction stick to the lower left and lower right corners respectively to go into idle mode.
3. Press the up arrow to launch the drone.
4. Slide the throttle and direction sticks to control the drone as you would with the remote.
5. To trim the drone, slide the indicated trimmers.
6. To change the speed, tap the speed icon to change between low, medium, and high speeds (Fig. 6).
7. Press the down arrow to land the drone.

Troubleshooting

If the drone doesn't respond to the App while connected to the Wi-Fi, then you need to re-sync the drone and App. Turn everything off and reconnect to the App.

