

# JJR/C H20 Hexacopter User Manual



This User Manual is provided by The Drone Warehouse for its customers as an easy to understand English language User Manual for you to get the most enjoyment from your drone. It does not replace or void any of the warnings in the original manufacturer's manual.




[www.thedronewarehouse.co.nz](http://www.thedronewarehouse.co.nz)

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## 1. Warnings

### WARNING LABEL LEGEND:

	<p>WARNING: Mishandling due to failure to follow these instructions may result in damage or injury.</p>
	<p>CAUTION: Mishandling due to failure to follow these instructions may result in danger.</p>
	<p>FORBIDDEN: Do not attempt under any circumstances.</p>

### IMPORTANT NOTES:

Drones are officially known as RPAS - Remotely Piloted Aircraft Systems, this is the official International Civil Aviation Organization (ICAO) term used by most countries. They may also be known as:-

- sUAS – small Unmanned Aerial Systems, a term that generally describes battery-powered aircraft (quadcopter) with very low weight that can be picked up by one person.
- UAS - Unmanned Aerial Systems
- UAV – Unmanned Aerial Vehicle (aerial or underwater vehicle), with no pilot on board. UAVs can be remote controlled aircraft or can fly autonomously based on pre-programmed flight plans guided by the onboard GPS system. These days, many are equipped with video cameras and FPV systems.

The drone is not a toy, but is a miniature remote control four-axis aircraft. Follow the instructions correctly. The dismantling, modification or improper use of the product may be dangerous.

The manufacturer and dealer assume no liability for accidental damages by abnormal wear of parts, improper assembly or operation in unsafe areas. This product is intended for use by age 15 years or older. Please ensure the product is operated under a safe environment. We recommend that you seek the assistance of an experienced pilot before attempting to fly our products for the first time. A local expert is the best way to properly assemble, setup and fly your model for the first time. This product requires a certain degree of skill to operate and is an item subject to normal wear and tear. Any damage or dissatisfaction as a result of accidents or modifications are not covered by any warranty and cannot be returned for repair or replacement.

### SAFETY NOTES:

#### CAUTION:

Check national and local regulations. Fly only in safe areas away from other people. Do not operate R/C aircraft within the vicinity of crowds or people. Pilots are responsible for their actions and any damage or injury occurring during the operation or as a result of the operation of R/C aircraft models including drones.

#### FORBIDDEN:

This product is suitable for indoor and outdoor (the wind speed should be no more than 28kmh). Please choose a place without obstacles and keep a safe distance from crowd and pets, don't play with it in an unsafe area for instance, heat source, wire or electrical power source, in order not to be damaged by collision or entanglement and lead to a fire, electric shock and cause injury to people or property.

#### BATTERY SAFETY:

- To avoid a potential fire hazard from batteries, please do not short, crush, disassemble, burn, reverse polarity or puncture batteries.



- Avoid metallic materials coming into contact with the battery's connections and causing it to short.
- Make sure the batteries are installed based on polarity indicated in the case and do not mix batteries of different chemistry/spec.
- Please take out the batteries if you are not going to use for a long time to avoid potential leakage which may damage the Controller.
- Please dispose of depleted batteries according to local laws and ordinances. Do not dispose of improperly.

#### RECHARGEABLE BATTERY SAFETY:

To avoid fire hazards battery charging must be done under supervision at all times, and in a location out of reach of children.

Controller batteries are not supplied and therefore may or may not be rechargeable, please ensure the controller batteries are definitely rechargeable batteries before attempting to charge and ensure the correct type of charger is used to suit the type of battery e.g. Ni-Cd, Ni-MH, Li-Po. The manufacturer of this product will not be liable for accidental damages incurred by charging non-rechargeable batteries.

#### SAFETY NOTE ON LI POLYMER BATTERIES:

Li-Polymer Batteries pose higher operational risks compared to other battery chemistry, thus it is imperative to follow the usage instructions. Manufacturer and dealer assume no responsibility for damage caused by improper usage.

Use the Charger from the factory supplied to avoid potential fire or explosion.

Please stop the use or the charge of the battery should there be an unusual increase in battery temperature. Continued use of this battery may cause it to expand, deform or explode resulting in fire hazards.

#### DISCONNECT BATTERY AFTER USE:

Disconnect the flight vehicle battery safely at the end of the flight. This should be made into a post flight habit to avoid unforeseeable problems.

**WARNING:** If left connected in the flight vehicle for a long duration, the battery may be damaged due to over discharge or even become a fire hazard.

#### TURN OFF CONTROLLER AFTER USE:

Turn off the controller after use. If the controller is not to be used for more than a few days, please remove the batteries for storage.

**WARNING:** If the AA batteries are left in the Controller, potential leakage could occur and damage the Controller and create a fire hazard.

#### KEEP AWAY FROM HEAT:

R/C models are made from various forms or plastic. Plastic is very susceptible to damage or due to extreme heat and cold climates. Make sure not to store the model near any heat such as an oven or heater. It is best to store the model indoors, in a climate-controlled room temperature environment.

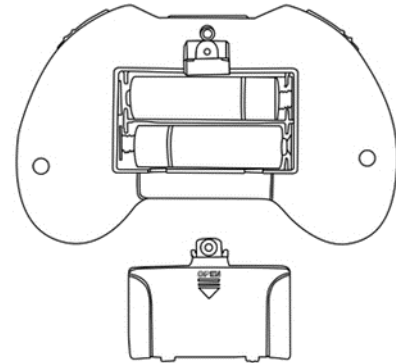
#### PREVENT MOISTURE:

R/C models are composed of many precision electrical components. It is critical to keep the model and associated equipment away from moisture and other contaminants. The introduction or exposure to water or moisture in any form can cause the product to malfunction or crash. Do not operate or expose to rain or moisture.

## 2. Assembly

### Installing Controller Batteries

- Slide the battery lid to open by following the arrow
- Install 2x AA size batteries. Ensure polarity is correct as marked on case. Do not mix batteries of different type.



### Installing Drone Battery



Insert the battery into the battery compartment under the drone with the wire at the open end. Plug in the battery to the socket making sure the ridge on the battery plug aligns with the groove in the socket on the drone.

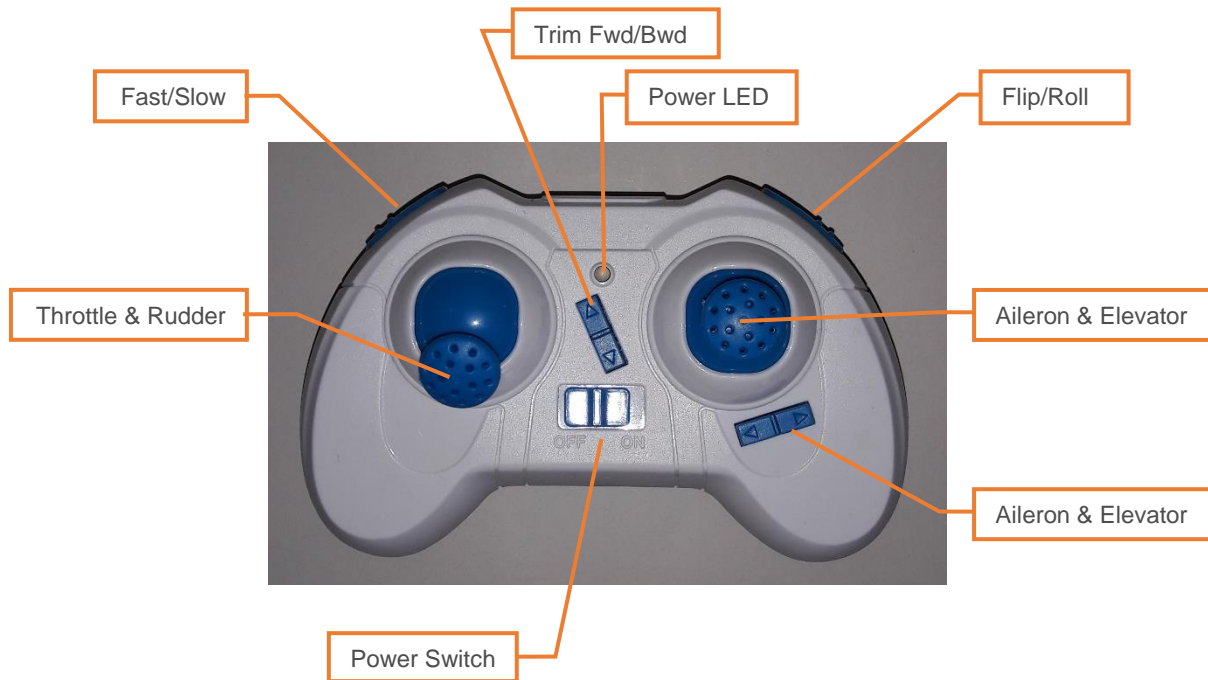
## 3. Charging

The drone is supplied with a USB Charging cable. This can be plugged into any USB socket on a computer, USB phone charger or car USB charger

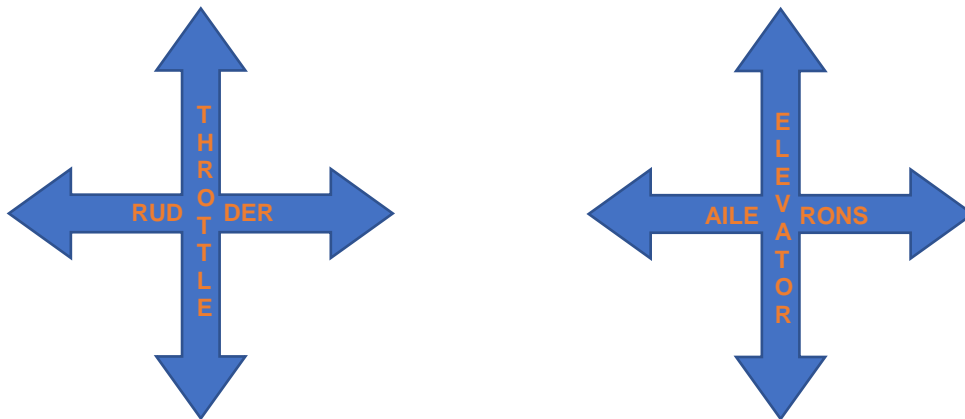
### USB Charger Indicator Light

Red LED	Status
Off	Charging
On	Charged

## 4. Controls



### Joysticks – Mode 2



## 5. Before Use

- Check screws are firmly tightened but do not overtighten they are small screws into plastic.
- Check if the Controller and Drone batteries are fully charged.
- Make sure there are no people or obstructions in the vicinity.
- Practice hovering for safety and control, this is the most basic action. This means keeping the drone at a fixed height and position.



## 6. Pairing

- Switch on the drone and the LED's flash waiting for pairing. Place on flat ground about 2m in front of you, pointing away from you.
- Set the Controller throttle to minimum and then switch on the Controller. Drone LED's will flash rapidly and then stay on, the Controller will beep and the Controller LED will flash alternately Red and Green.
- Push the throttle smoothly to maximum and then back to minimum. The drone LED will flash off and back on, the Controller will stop beeping and the LED will turn green.
- WARNING: The next use of the throttle will start the motors.

## 7. First time users

- Before you are familiar with the drone, please don't fly it. Read the instructions carefully. Get familiar with all kinds of direction control and keep repeating until you can do it easily.
- Practice operating the control of each rocker (each mode of operation as shown) and repeat practice throttle high/low, left/right., front/rear and left/right operation.
- The simulation flight practice is very important. Please keep practicing until the fingers move naturally.

## 8. Flight Adjustment and Trimming

- Ensure you trim the drone for stable flight. This will make flying much easier and more fun. See our video [How to Trim your Drone for easy flying](#)
- Place the drone in a clear open space with the tail of the drone pointing towards yourself.
- Increase the throttle until the drone lifts off. If the drone lifts off vertically without moving in any other direction you are good to go. Often with a new drone or after maintenance e.g. propeller change, the drone will not lift off straight up but will drift in one direction or another, sometimes more than drifting, in which case you need to correct for this.
- You will find the trim controls on the Controller drawing above. Each press of the control will reduce the tendency for the drone to move in the opposite direction. If the drone is moving forward then click the Trim Back button a couple of times and then try and lift off again.
- You may have to repeat the above step a few times to cancel out the movement of the drone so it just lifts off vertically.
- Often the drone doesn't just drift forward or back or left or right but a combination making it drift diagonally. In this case correct either forward/backward first or left/right and then do the other.
- Sometimes the drone will lift up and immediately skim along the ground in one direction or the other. Users sometimes think there is a problem because the natural reaction is to cut the throttle making the user believe it will not actually lift off. You may find you have to apply quite a number of clicks to counteract this.

To re-calibrate the on-board gyroscope, move both sticks to the lower left position. Hold them there, the controller will beep and the drone LED's will flash rapidly. When the LED's stop flashing calibration is complete



## 9. Learning to fly

### Throttle Control Practice

Slowly increase the throttle. When the drone begins to lift off the ground, slowly reduce the throttle to bring the drone back down. Keep practicing this action until you can control the throttle smoothly and can stop the drone at any height. NOTE: when within 2-300mm off the ground this can be more difficult due to the "Ground Effect".

### Rudder Control Practice

Slowly increase the throttle to bring the drone into a hover about 1-2m off the ground. Use the rudder to rotate the drone left and right. The drone will keep rotating while you apply rudder. To return to the same heading as before push the rudder in the opposite direction and release when at the required heading.

### Aileron and Elevator Control Practice

Slowly increase the throttle to bring the drone into a hover about 1-2m off the ground. Use the aileron, right hand joystick, to move the drone to the left. Stop and move the aileron to the right. Bring the drone back in front of you.

**REMEMBER** to turn off the Controller and switch off the drone and disconnect its battery after use.

If the controller is not going to be used for a day or more, remove the batteries in case they are forgotten and leak which will damage the Controller.

## 10. Flying

### Headless Mode

Headless mode simplifies flying by eliminating the need to know which way the drone is pointing. No matter where the drone points it will follow the forward, left, right and back of the controller relative to the operator.

Push in on the left-hand joystick to change to headless mode. The lights on the drone will change from permanently on to doing a double flash to indicate the drone is in headless mode. Push the left-hand joystick in again to return normal operating mode.

To re-calibrate headless mode. After pairing with the drone pointing away from you move both joysticks to the lower right position and push in the left-hand joystick. The controller will beep twice and the lights on the drone will change from permanently on to doing a double flash to indicate the drone is in headless mode.

Note: when the headless mode is calibrated the drone remembers the direction it was pointing in at that time i.e. the compass heading. That direction will be forward for the drone and all other directions will be relative to that direction i.e. back will be in the opposite direction irrespective of which way the drone is pointing or where the operator and controller are.

### Flips and Rolls

You can enjoy some thrilling action doing flips and rolls. Click the Flip/Roll button on the upper right corner of the controller, the controller will beep to tell you it is in flip/roll mode. Push the right-hand joystick in any direction to make it roll or flip. Click the Flip/Roll button to return to conventional flight mode, the controller stops beeping to indicate no longer in flip/roll mode.

### One Key Return

Push in on the right-hand joystick for one key return. The drone will return in the opposite direction to which it was pointing when it was paired.

## 11. Troubleshooting

Situation	Cause	Solution
Receiver status LED blinks continuously for more than 4 seconds after helicopter battery inserted. No response to control input.	Unable to bind to Controller	Repeat the power up initializing process. Refer to page 6. Pairing of Controller and receiver.
No response after battery is connected to helicopter.	<ol style="list-style-type: none"> <li>1. Battery not charged.</li> <li>2. Poor contact on battery terminals.</li> </ol>	<ol style="list-style-type: none"> <li>1. Turn on Controller and ensure flight vehicle battery is inserted properly.</li> <li>2. Use fully charged batteries.</li> <li>3. Re-seat the battery and ensure good contact between battery contacts.</li> </ol>
Motor does not respond to throttle. Drone LEDs flashing	Drone battery needs charging	Charge drone battery or replace with fully charged battery.
Propellers spin but unable to take off	<ol style="list-style-type: none"> <li>1. Propellers on wrong motors</li> <li>2. Propeller damaged.</li> <li>3. Drone battery needs charging.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check correct propellers are fitted to correct motors</li> <li>2. Replace propeller blades.</li> <li>3. Charge or replace drone battery</li> </ol>
Strong vibration of drone	Damaged propeller blades	Replace Propeller blades.



## Wind speed table for Conversion of Knots, Beaufort, m/s and km/h.

Beaufort Wind Force	Label	km/h	Knots	Effect on sea	Effects on land
0	Calm	1	1	Sea like a mirror	Calm. Smoke rises vertically.
1	Light Air	1-5	1-3	Ripples with the appearance of scales are formed, but without foam crests	Wind motion visible in smoke.
2	Light Breeze	6-11	4-6	Small wavelets, still short, but more pronounced. Crests have a glassy appearance and do not break.	Wind felt on exposed skin. Leaves rustle.
3	Gentle Breeze	12-19	7-10	Large wavelets. Crests begin to break. Foam of glassy appearance. Perhaps scattered white horses.	Leaves and smaller twigs in constant motion.
4	Moderate Breeze	20-28	11-15	Small waves, becoming larger; fairly frequent white horses.	Dust and loose paper raised. Small branches begin to move.
5	Fresh Breeze	29-38	16-21	Moderate waves, taking a more pronounced long form; many white horses are formed. Chance of some spray.	Branches of a moderate size move. Small trees begin to sway.
6	strong Breeze	39-49	22-27	Large waves begin to form; the white foam crests are more extensive everywhere. Probably some spray.	Large branches in motion. Whistling heard in overhead wires. Umbrella use becomes difficult. Empty plastic garbage cans tip over.
7	Near Gale	50-61	28-33	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	Whole trees in motion. Effort needed to walk against the wind. Swaying of skyscrapers may be felt, especially by people on upper floors.