



Gannet II+ / Max +
Full User Manual.

GANNET 2+ / MAX +

DRONE



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At Gannet, we design, develop and distribute fishing drones and release systems. Made by fishermen for fishermen, we only sell products that we have thoroughly tested in the most extreme conditions.

We believe that you should never have to compromise on the safety of your drone. We also understand that people have different budgets. That's why we offer a broad selection of carefully curated, peer-reviewed release systems and drones to suit everyone's needs, all available online and delivered right to your door.

With more than 20,000 release systems sold to 147 different countries around the world. Gannet is the leader of drone fishing drones and release systems. We deliver a quick, convenient, and hassle-free shopping experience.

Introduction

Fully waterproof drones that can fly even in heavy rain

- Powerful with payloads up to 2.5kg (Max lift test (NOT recommended) 5kgs)
- High-efficiency rate with aerodynamics designed to be able to fly in high winds for longer
- Reliable with a trusted Pixhawk flight controller
- Weather resistant and sand proof remote so that it can be used on the beach without worrying that sand will jam the remote sticks
- LCD display for drone telemetry, battery, and GPS status, use with or without a smartphone, SD live video from the gimbaled camera so that it can be used as an effective search and rescue drone with clear live SD video
- Multiple auxiliary attachment points for the addition of 4k action/360 cameras and spotlights
- Fully sealed electronics, preventing corrosion of electronics.
- Failsafe electro-mechanical payload release that can be mechanically or electrically activated
- Bright onboard lights for easy night navigation
- Polycarbonate Semi-opaque shell to detect any leaks early on
- Motors OEM made by T- Motor
- Quick Release prop mounts
- Safety features. Release bait and return to home on low battery
- New Zealand Assembled, service and supported

Setup your device

- Unscrew the 2 screws on the battery door at the back of the Gannet Drone
- Insert Battery (The main black and Red Power cables) to the bottom of the drone
- Plug in the battery and screw the battery door shut (making sure it is sealed)
- Insert the 3 landing gear (2 underneath the 2 rear motors and 1 positioned in front of the payload release)
- Turn on the controller
- Turn on the drone (Light with flash a light green colour)
- Open up Skydroid app on homescreen (on the controller)
- Push the connect button to connect controller to drone
- Compass Calibrate drone.
- Restart the drone after calibration
- Connect propellers
- Wait for indicator light on drone to turn a darker green
- Time to start flying



Ready to Fly

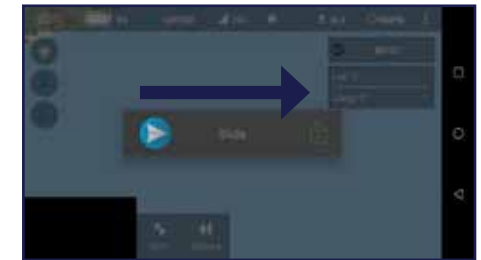
Once the drone has found its home point and has conducted its pre-flight checks. The indicator light on the drone will flash a dark green – ***NOW YOU ARE READY TO TAKE TO THE SKY***

Starting up your drone

- Press the arm Button on the controller screen



- Slide the bar to the right to engage the propellers



Searching for Keyword: Search for keywords such as “bait release” and “Compass Calibration” to find a topic. If you are using Adobe Acrobat Reader to read this document, press Ctrl+F on Windows or Command+F on Mac to search.

Printing this document This document supports high resolution printing.:

Using this manual

Legends



WARNING

These operating instructions are designed to ensure that you quickly become familiar with its functions. It is therefore important that you read right through the Operating instructions, Warning and Safety Notes before you attempt to use your new charger for the first time.

Read before first flight

Read these instructions before using the Gannet II +/ MAX+.

Read the ENTIRE instruction manual. Watch the instructional videos. Become familiar with the features of the drone before operating. Failure to operate the drone correctly can result in damage to the drone, personal property and cause serious injury.

- If the drone will not hover in one place it is likely the compass calibration process will need to be redone. **See instruction later in the manual.**
- DO NOT pull the throttle all the way down when flying. This will make the motors idle and the drone will fall out the sky.
- If the drone suddenly starts flying erratically in GPS mode, it is recommended to switch to “Position Hold” mode (switch E to the middle position) to take full manual control over the flight of the drone.
- DO NOT use a charger higher rated than 5.5v for the remote controller.

In this guide:

Gannet II+ / MAX+ User Manual

Gannet II+/ II MAX+ Quick Start Guide

Gannet II+ / II MAX+ Safety and Disclaimer Guidelines

Gannet II+ / II MAX+ Battery Safety Guidelines

It is strongly recommended that you watch our tutorial videos on our Official Gannet Tutorials YouTube page and read the quick-start guide before you take your first flight. All the information you need for your first flight can also be found in this manual.

Legal Notice and Disclaimer

1. REGULATORY NOTICE

As the purchaser of this remotely piloted aircraft system (“drone”), your attention is drawn to the following in respect of the operation of this drone:

- 1.1. Operation of this drone in New Zealand is subject to compliance with the requirements prescribed by the New Zealand Civil Aviation Regulations (“the Regulations”).
- 1.2. You should familiarise yourself with these Regulations and ensure that your operation of this drone is compliant with these regulations.
- 1.3. Amongst other requirements, the Regulations prescribe that for private use –
 - 1.3.1. The drone can only be operated over property which you, as the operator or pilot of the drone, own or where you have the owner of the pro
 - 1.3.2. The drone can only be used in Restricted Visual Line of Sight which means within your visual eyesight at all times while operating the drone, and not exceeding a maximum height of 120 Meters above the ground from where the drone is while operating the drone, and during which you can maintain direct unaided visual contact with the drone to manage its flight and collision avoidance;
- 1.4. If you are using this drone outside of New Zealand, you should familiarise yourself with, and ensure that you comply with, any laws and regulations that are applicable to the operation of remotely piloted aircraft systems in your country.
- 1.5. While operating the drone you must observe all statutory requirements relating to liability, privacy and any other laws.

2. OPERATION OF THE DRONE

- 2.1. The operation of the drone is subject to you complying with our operating instructions included with the drone, particularly to you complying with the technical parameters and operation of the drone.

3. WARRANTIES

- 3.1. The operation of the drone is subject to you warranting, and you hereby do warrant, that the drone will not be operated, in New Zealand, in contravention of the New Zealand Civil Aviation Regulations or, in any country outside of New Zealand, in contravention of any regulations applicable to the operation of the drone in the relevant country outside of South Africa.

4. LIABILITY

- 4.1. We, Gannet, the manufacturer and distributor of this drone, disclaim all liability from the operation of the drone resulting in – Collision with other aircraft.
- 4.2. Injury to or death of any person; and
- 4.3. Damage to any property.
- 4.4. We disclaim all liability resulting from you breaking any applicable laws (in any relevant jurisdiction while or by operating the drone, including but not limited to privacy laws, laws against terrorist and related activities and aviation laws.
- 4.5. The limitations of liability apply to the fullest extent that they are permissible by law.

GENERAL

5. By using the drone, you acknowledge, accept, and agree to this Legal Notice and Disclaimer completely.
 - 5.1. Any subsequent onward resale of the drone is subject to you making the new owner or operator of the drone aware of this Legal Notice and Disclaimer, and the terms of this Legal Notice and Disclaimer will endure any changes in ownership or legal possession of the drone.
These warnings and safety precautions are very important; please read the following carefully and follow the instructions in this operating manual to ensure safety.

Propeller safety

The Gannet II's propeller is very hard and very sharp. The material of their composition is carbon fibre.

This material makes the propeller have a high strength and improves the flight of the quad copter.

- 5.2. When updating the firmware of your flight controller or the aircraft's current problems, make sure the propeller is removed from the aircraft to prevent the propeller from injuring you and others.
- 5.3. When one of the propellers is damaged, do not fly, as the damaged propeller can cause the aircraft's manipulator to deteriorate or even be unmanageable, which can be very dangerous.
- 5.4. Make sure the propellers are installed in the correct order and that the propeller retaining clips and screws are in place.

Precautions

6. This quadcopter can be extremely dangerous and cause personal injury. Be careful when flying and operating it. Please follow the content of this manual and comply with relevant laws and regulations when flying.
 - 6.1. Before each flight please ensure that all parts of the aircraft are properly installed and that the order of rotation of the four motors is in accordance with the rotation sequence in this manual. If the wrong installation or the wrong direction of motor rotation will cause the aircraft to be unable to fly, and it may cause damage to the aircraft.
 - 6.2. We strongly recommend that you use the simulator for the first flight. It is recommended to use the simulator to practice flying (<https://www.realdronesimulator.com/downloads>). When flying, please fly in open areas and in allowed areas, and understand the meaning of different flight modes.
 - 6.3. The lithium batteries should be taken out of the aircraft after each flight. When not in use for a long time, the lithium batteries be put into storage mode and should be placed in a fireproof container to avoid accidents. When flying in GPS mode, if you find that the aircraft is flying unstable or uncontrolled. Switch the flight mode to attitude mode in time, then you can get full control of the aircraft to avoid accidents.
 - 6.4. When you need to fly in GPS mode (Green), please make sure that the drone has GPS lock (GPS lock is green LED status fast flashing 6 times), and that you have sufficient satellites to fly (slowflashing) dark green light). When you have GPS lock, and sufficient satellite lock the quad copter records the current position as the home point, when the return mode is executed, the aircraft will automatically return to the current take-off point and perform an automatic landing.

Warranty

Gannet provides product warranty covering parts and labour for any equipment malfunction resulting from normal use. We reserve the right to inspect the equipment for external damage or tampering. Should external damage or tampering be evident, or if the instrument has in any way been opened for inspection, reverse engineering (strictly prohibited), etc, without authorization, then the warranty will be void. If the system has been used in environments beyond that identified in the specifications or stored improperly then the warranty will be void.

We try very hard to ensure that you receive your order in pristine condition. If you do not receive the products ordered, please contact us. In the unlikely event that the product arrives damaged or faulty, please contact us immediately.

*** In flight warranty will NOT be entertained without flight logs for II+ / MAX+.**

Gannet in-flight warranty conditions

- Calibration must show normal and satellites connected.
- Drone must be flown in GPS mode.
- (Gannet II and above only) All flights must be recorded by Smartphone or Video camera and show that compass calibration has been completed and that the drone has home lock and GPS lock.
- Drones are not to be flown in winds that exceed 30km/h.
- Payloads are not to exceed maximum recommended weight.
- In flight warranty will NOT be entertained without flight logs for II+ / MAX+.
- Release tensions are to be correctly set.

Warranty Periods

- | | |
|----------------------|-----------------------------|
| 1. Airframe | 12 Months |
| 2. Flight Controller | 12 Months |
| 3. Drone Motors | 6 Months |
| 4. Remote Controller | 12 Months |
| 5. Batteries | 3 Months (<300ChargeCycles) |
| 6. Battery Charger | 6 Months |
| 7. Propellers | No Warranty |
| 8. Landing Gears | No Warranty |

WARRANTY LIMITATIONS SUBJECT TO CONSUMER LAW

To the extent permitted by law in the jurisdiction of sale, this warranty and the remedies set forth are exclusive and in lieu of all other statutory, express

or implied warranties. Gannet disclaims all statutory and implied warranties, including without limitation, warranties of merchantability and fitness for a particular use or purpose as well as warranties against hidden or latent defects to the extent permitted by law. In cases where such warranties cannot be disclaimed, Gannet limits the duration and extent of remedy of its warranties to the duration of this express warranty and, at Gannet's exclusive option to the repair or replacement of products for which warranty is claimed.

THIS WARRANTY DOES NOT APPLY TO

- Parts such as propellers, membranes, landing gears or protective or decorative coatings that will diminish over time or through normal wear and tear unless such failure has occurred due to a defect in materials or workmanship.
- Damage caused by unauthorised modifications or accessories to the product.
- Cosmetic damage, including but not limited to scratches, dents or blemishes unless such failure has occurred due to a defect in materials or workmanship.
- damage caused by accident, abuse, misuse, sunlight, fire, penetrative water or other external causes unless such failure has occurred due to a defect in materials or workmanship.
- Damage caused by operating any Gannet product contrary to Gannet's published guidelines, local laws or regulations.
- Damage caused by unauthorised service performed by anyone who is not an authorised Gannet repair provider.
- defects caused by normal wear and tear or otherwise due to the normal aging of the materials.
- Damage caused by unauthorized modification of circuits and misused or mismatched battery and charger.
- Loss or damage to your data by the product.
- Any product where any serial number has been removed or is illegible.
- Any product where you cannot provide proof of purchase as the original purchaser.
- Damage caused by using a product with a defective or flat battery.
- Crashes or product damage caused by pilot error or by factors unrelated to a manufacturing defect.
- damage caused by operating the product in an environment with electromagnetic interference such as close to radio transmission towers, high-voltage wires, substations, radio masts or by interference from other wireless devices.
- Damage caused by operating the product at greater than the specified safe take-off weight.
- Damage caused by using the product in an impaired or damaged state.

Features

Long battery life

The GANNET II+ has a built-in high-capacity, high-performance LiHV 4s 8000 MaH high voltage lithium polymer battery that has an estimated unloaded hover time of 29 minutes.

The GANNET II MAX+ has a built-in high-capacity, high-performance LiHV 6s 6600 MaH high voltage lithium polymer battery that has an estimated unloaded hover time of 25 minutes.

Powerful power system

Gannet II+ & II MAX+ use extremely powerful built-in high performance waterproof brushless motors, with self-locking propellers, high end ESCs, designed to give you a stable flight experience with a powerful load capacity.

High performance flight controller

Gannet II+ & II MAX+ built-in high-performance Pixhawk4 Mini multi-rotor flight controller provides you with a comfortable handling and a stable flight experience. A variety of flight modes are built in to meet your diverse flight needs. (Admission software system requirements: Windows 7 / Windows 8/ Windows 10).

Stable and reliable waterproof kit

GANNET II+ & II MAX+ are equipped with a high-stability waterproof seals throughout the quad copters frame to prevent rain, dust, water and the like from entering the interior of the aircraft, effectively solving the problem that conventional quads will be damaged if it is in contact with water.

Product Profile

The Gannet II+ & II MAX+ is an extremely robust fishing and search & rescue drone, fully Waterproof design with high lift capacity.

Fishing Drones combine the technology of avionics, electronics and robotics to create a flying machine.

When flying a drone, you are a pilot with all the responsibilities that go with that.

This includes ensuring everything is in good working order, operating and responding correctly before flying.

Camera and Gimbal: The Gannet II+ / II MAX+ shoots at 1080p

Flight Controller: Pixhawk4 Mini provides a safe, reliable flight experience. When connected to your cell phone (T10 RC) or directly to H12 RC, a flight recorder stores critical information from each flight

Remote Controller: The Gannet II+ / II MAX+ Pros remote controller includes a 5 inch high luminance display fully integrated to indicate all telemetries.

What's in the box

- Gannet II+ or II MAX+ drone x 1
- Gannet remote controller x 1
- 150W smart balance charger with car battery charger x 1
- 13" or 15" quick release self-locking propeller x 4
- 8000mAh or 6600 MaH lithium polymer power battery x1
- EVA carry case x 1
- Gannet lanyard x 1
- Battery tester x 1

Battery Safety

- NEVER store the battery fully charged or flat.
- If used then bring the voltage up with your charger to the storage level of 15,1V- 15,4V.
- If charged fully and not used you will have to discharge the battery to 15,1V- 15,4V either by flying the drone or by using the discharge function on the charger, flying even just hovering can achieve this the fastest.
- At this Voltage, the battery will stay healthy for long periods (15.1 - 15.4V II / 22.6 - 23.1V II MAX)
- **NEVER leave a charging battery unattended, keep watch on the charging process & react to any potential problems that may occur.**
- NEVER charge a hot battery, always let it cool down first,
- Always use the supplied charger by Gannet
- NEVER exceed a 1C charge Amperage best to charge the battery at 5-5.5A, It is slower but safer
- NEVER store LiPo batteries in any location that exceeds 25°C (80° F) (e.g. in a car, garage, or in the sun)
- NEVER let the battery or chargers positive and negative leads touch. This can cause the battery to short and lead to a FIRE.
- NEVER charge a swollen or ballooned battery (even if swollen upon purchase). Continuing to charge a battery that has begun to swell will result in a fire.
- If the battery reaches high temperatures during charging follow these steps:
- STOP the charging process and disconnect battery immediately • Disconnect battery from the charger immediately.
- Place it in an open non-flammable area.
- Watch it for approx. 30 minutes from a safe distance.
- Follow proper procedure to dispose of battery

- ALWAYS inspect the battery to make sure there are no signs of damage, deformity, or swelling before charging. If there are, STOP charging the battery and follow the proper procedure to dispose of the battery.
- ALWAYS charge batteries in a fireproof container and away from combustible material. Do NOT charge on surfaces that can catch fire – this includes wood, cloth, carpet, or in the application's device.
- ALWAYS store LiPo batteries in cool, dry places between 5-25°C (40-80° F)

If the battery reaches high temperatures after a crash follow these steps:

- Disconnect battery immediately from the drone
- Place it in an open non-flammable area.
- Watch it for approx. 30 minutes from a safe distance.
- If the battery appears to be stable (no signs of damage or swelling) proceed to put it back into use with caution.
- Keep LIPO batteries out of reach of children or pets.
- Avoid discharge the battery to below 14,6V rested (14,2V in flight) doing so can cause permanent battery damage,
- NEVER discharge below 14.2V II+ / 23V II MAX+ is sure to cause permanent damage,

Handle the battery with care, dropping it may cause permanent total damage

Quick Start Guide

DRONE:

Installing the propellers

- Always ensure that the correct propellers is installed on the correct motors, they are match marked with either no markings as for Front Right and Back Left or with circles as for the Front Left and Back Right motors.
- Make sure the propellers are slightly nipped tight so that they cannot unscrew themselves.

Installing the Battery

- Slide it in with the terminal downwards and securely plug in the connector, it can only go in one way with the black negative wire to the left.
- Close the battery door and loosely tighten the retaining screws evenly at the same time to ensure a good seal, do not over tighten them, as they can strip.
- Always ensure that the screws and brass nut thread are lubricated with Vaseline to prevent corrosion and seizing of the threads.

Setting the Bait Release:

- The release must be set to release when approximately 400g of pressure is added to the load (bait plus sinkers) that will be flown. Over setting the release tension can result in a failed release. Ensure release is set when the release is in a closed / locked position.



DO NOT use the easy loader arm for baits under 800g. For baits under 800g connect the drop-loop directly onto the ball-bearings (ensure that the release is correctly set to the release tension according to the thickness of the drop-loop line).

Ensure that your lines are out of the way of the propellers for take-off, if a line gets into the props the drone will crash. (See Drop-loop section)

If signal from the remote is lost while the drone is armed. It could take off from the ground and climb to 'Return To Home' altitude before descending again. If signal is lost due to powering off the Remote Controller. Switch the controller back on and toggle the flight mode switch to Atti, then back to GPS to regain control of your drone

On start-up:

- ALWAYS switch on the remote first, failure to do so can result in a fly away, on power up of the drone a rapidly flashing orange indicator light on the drone will indicate that the remote is not on. In this instance power the drone off, power the remote on and after waiting at least 3 seconds power the drone on again.
- Always ensure the two right hand toggle switches are flipped to the top for GPS and Normal flight modes, • NEVER move the drone during initial warm-up, if you did please power down for at least 3 seconds and restart, the second time round it will already be warm and will boot up much faster,
- NEVER power down and restart in rapid succession as this will trigger the water-flip function and one motor will not start up. The drone takes a few seconds to power down fully.
- On initial power up the indicator LED will flash orange at a rate of about one flash per second, this indicates warming up.
- After warm-up, the indicator LED may flash orange and red in succession this means the drone requires a compass calibration, follow the calibration steps.
- If no calibration is needed the LED will change to flash Light Green which indicates drone is going through all its pre-flight checks.
- If the LED changes to rapid orange flashes it is in RTH mode,
- Once good GPS lock is obtained in GPS mode the flashes will change to a steady Dark Greenflash, and it is safe to start flying.

Take off and flight

- Always stand well clear of the drone, carbon fibre propellers can be very dangerous and must be avoided, never try to stop spinning propellers by hand!
- Arm the drone by touching the arm button on the bottom left of the Skydroid screen which will turn blue and a slide control will appear in the centre of the screen to start the motors.
- When safe, give gradual power by increasing the throttle/elevation/Left control stick gradually, DO NOT give rapid full throttle, the drone will take off dangerously fast,
- If the drone starts to move in slow circular movements it can indicate that the compass calibration is not optimal for this position, you can land and recalibrate it a short distance away to reduce possible interference. Also note that Smartphones and smart watches can cause interference and should be kept away from the drone during calibration,
- If the circular movement is minor, momentarily switch the drone to Atti and back to GPS, this cancels the “hunting” of the GPS and steadies the drone, Home point remains in the original position,
- Avoid sudden rapid or full control stick movements, gentle controlled movements will result in a more enjoyable flight experience,
- First low battery warning is given at 15,2V pay close attention to this. If unloaded the drone can still fly for several minutes but best be on your way back to land.
- Never attempt to fly just one more bait on a low battery.
- At 14,2V the drone will not have any more power to fly and will land/descend where it is.
- NEVER overload the drone, higher loads drain the battery faster, too high loads can also damage the battery
- When loaded keep the flight time as short as possible, fly at a steady speed and do not waist time hovering in place unnecessarily as it will drain the battery rapidly.
- Do not fly in strong gusting winds unless you are an experienced pilot and even then take care and fly with caution
- RTH (return to home) should only be used when absolutely necessary, it is safer to fly the drone back yourself, if it is hard to judge the orientation, switch to home lock in which event pulling back on the right-hand control will bring the drone closer to you regardless of the drones orientation. When you do use RTH keep an eye on the drone to ensure that the drone is performing the command and should it deviate, return to GPS mode so that the drone can be flown back manually.

Warning!

If signal from the remote is lost while the drone is armed. It could take off from the ground and climb to 'Return To Home' altitude before descending again. If signal is lost due to powering off the Remote Controller. Switch the controller back on and toggle the flight mode switch to Atti, then back to GPS to regain control of your drone.

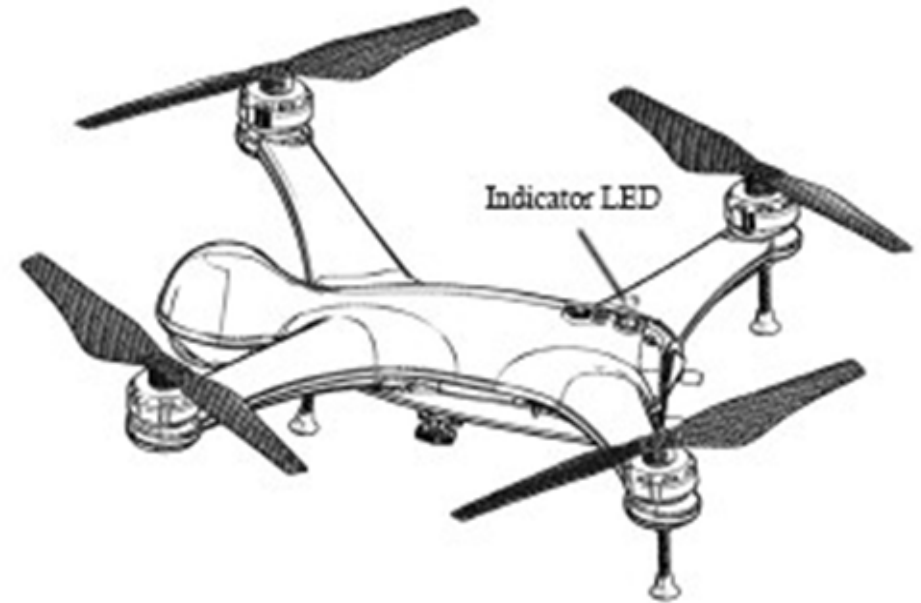
General warnings and care

- Familiarize yourself with your local drone laws and abide by them at all times.
- Do not fly near known sources of high interference, this includes Cell phone towers, railroad lines and power lines, never calibrate the drones compass near such a source of interference, this includes cell phones and smart watches
- Do not unnecessarily expose the drone to water, especially salt water, although every precaution has been made to prevent corrosion by using corrosion resistant materials and corrosion protective coatings on the exposed parts both internal and external, it should be noted that salt water is highly corrosive and can in a matter of hours cause damage if not thoroughly removed and cleaned.
- Do not leave the drone in direct sunlight for prolonged periods, it can heat the battery up and cause failures, it can also cause hull over pressure weakening the seals.
- NEVER intentionally land the drone at a distance away for you on the water, whilst the radio communication in flight is well over 1,6km (1 Nm) it cannot be assured that radio communication will always be maintained whilst the drone is floating on the surface far away from you as water blocks all radio waves.
- Motor bearings need to be lubricated regularly with a good machine oil that is solvent free.
- NEVER fly with cracked, chipped or damaged propellers, they can easily fail mid-flight under load and cause a crash, if a damaged propeller is found discard it immediately keeping only the propeller quick release,
- If the drone has been exposed to salt water, rinse it directly after the flight with running fresh water to wash away all salt. Dry with a cloth and lubricate the motor bearings, both upper and lower,
- Always disconnect the battery when packing away the drone this is to avoid accidentally powering the drone on and discharging the battery completely,
- If the drone stops responding to any command and just hovers in place, switch the remote off completely, this will activate RTH and the drone should return home unless there is severe interference preventing this,

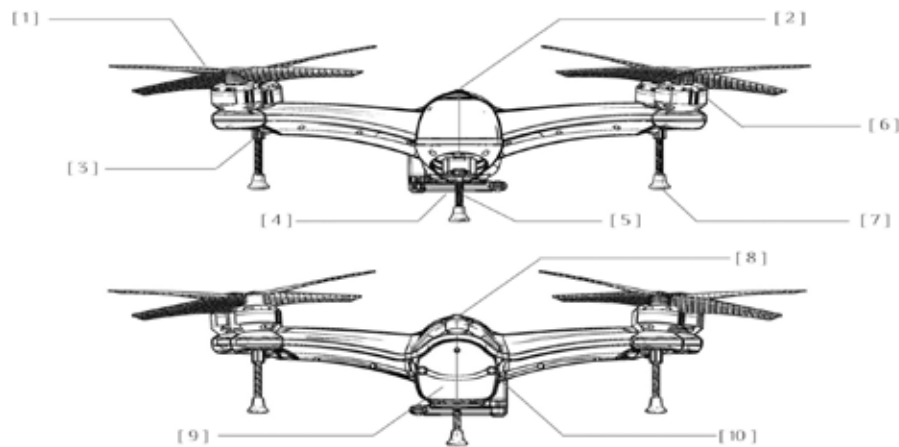
- When removing the battery, pull gently on the connector whilst wiggling it, **do not jerk or pull on the wires only**,
- Add a bit of lubricant to the landing gear retaining rubbers from time to time, it helps them slide in easier locking them in place.
- If landed in water where there is a temperature variation the drone may draw water into the flight bladder, when this happens altitude control may be temporarily affected whilst the water runs out of the bladder, if this happens take some care with manual altitude control till it is restored, the drone can be stood nose up to aid the draining process of the bladder.
- **NEVER attempt hand catching the drone as a novice pilot**, the large carbon propellers are extremely dangerous and can inflict serious injury.
- Always stand well clear of the drone when taking off and landing
- NEVER fly the drone over people especially not whilst carrying any load

If water landing does occur

Place drone nose up in a horizontal position on a level surface with battery hatch and battery removed, this will aid in draining water from the flight bladder.







Drone Components & Light Status



- | | |
|--------------------------------|----------------------------------|
| [1] Carbon Fibre propeller | [6] Waterproof Brushless Motor |
| [2] On/Off Button | [7] Rubber Foot |
| [3] Flight Indication Lights | [8] LED Status Indicator |
| [4] Payload Release | [9] Rear Hatch |
| [5] Landing Gear | [10] Rear Hatch Thumb Screw |

Light Status Modes

	Medium Yellow flash	No RC Connected / No GPS
	Slow Light Green flash	Drone in Start-Up Self Check Mode.
	Slow Dark Green Flash	GPS Mode Ready to Fly
	Blue Red Flash	Compass Calibration Mode

Remote Controls

Skydroid H12/H12 PRO Controller

Attention

This product uses the following terms to classify the potential hazards that may be caused by improper operation.

Note: If not follow the instructions, it may cause property damage and minor injuries.

Note: If not follow the instructions, it may cause property damage, major accidents and serious injuries.

Warning: Misuse of this product may result in injury, damage or loss of property. Read the manual carefully before using this product. This item is not a toy. This item is intended for use by professional UAV operators and installers only. Do not use this product if you lack the knowledge and expertise to install and maintain UAV radio equipment. Do not use unapproved or unofficial components with this system. Operators must strictly follow the operation guides set forth in this manual. Skydroid does not accept any liability for the use or misuse of this product.

Overview

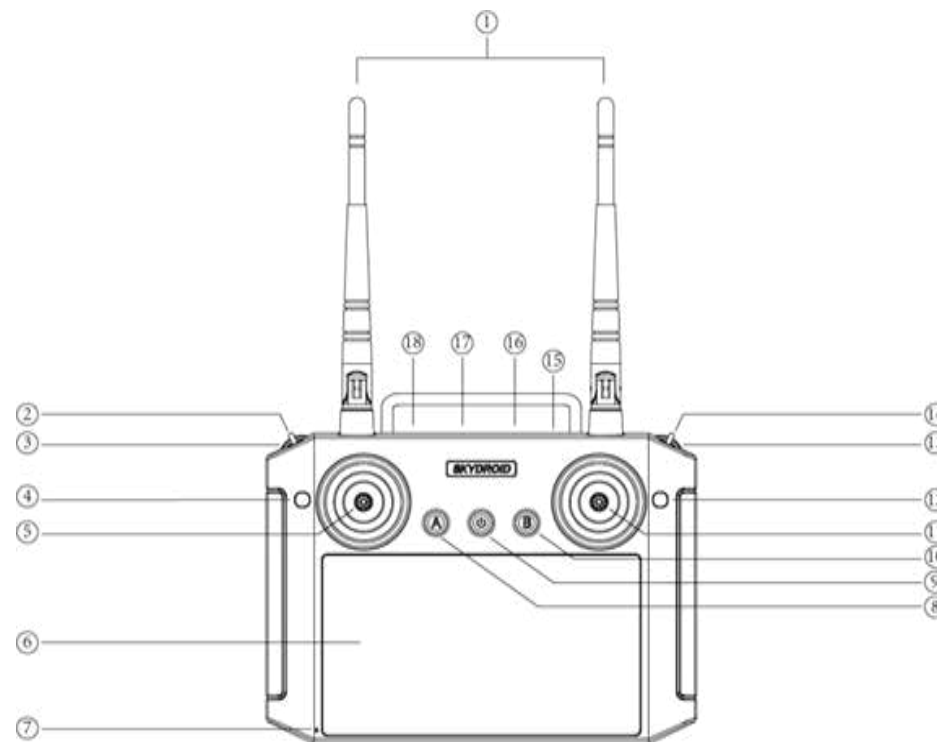
I. Product Features

The H12 series uses newest Qualcomm Snapdragon 625 processor, equipped with an Android embedded system and advanced SDR technology and super protocol stack, making the image clearer, lower the latency, longer distance, stronger anti-interference, whether it is drones, robots, industrial control equipment, etc. can be applied

II. Main applications

It is used to remotely operate helicopters, fixed wings, multi-rotors, vehicles, ships, etc. for video/image transmission (camera optional), data transmission, telemetry, and control drone flight.

III. The composition of the model and its significance



No.	Annotation	No.	Annotation
1	2.4G 3dB antenna	10	Button B /Payload Release
2	Flight Mode Switch Switch E	11	Stick X2/Y2
3	Camera UP/Down Thumbwheel Gannet II/II+	12	Button D
4	Button C	13	Camera UP/DOWN Thumbwheel on Max II+ only
5	Stick X1/Y1	14	Toggle 3 position switch F
6	5.5inch screen	15	Speaker
7	MIC port	16	SIM card slot
8	Button A / RTH	17	Charging port
9	Power switch ON/OFF	18	PPM output

Status Bar



1. Bluetooth
2. Signal
3. SIM card status (without sim card in the picture)
4. Power lever
5. Back ground management
6. Home
7. Return

Q & A

1. **Can the remote control install other apps?**

The permissions of the remote control are all open, and there is no special software or restricted software installation and uninstallation.

2. **Data transmission/telemetry cannot be connected**

Check whether the ground station is connected with UDP type to connect to the TX and whether the listening port is 14551. Check whether the baud rate is normal. Check if RX and TX is connected reversely (connect RX to TX, TX to RX correctly)

3. **The remote control keeps beeping.**

When the remote control is not successfully connected with the receiver, the remote control will always send out a prompt alarm.

4. **The QGC sound is too low to hear**

Vol+/Vol- in setting

5. **How many ways to connect the remote control to the network**

By SIM card or Wi-Fi

6. **How to download maps to use in Skydroid app offline.**

Go to settings in Remote and connect to your home Wi-Fi. Then open Google maps and in map settings download your area maps. Skydroid will then access these maps offline when at the beach.

Maintenance, servicing

Storage after not using for certain period

Put H16/H16 Pro in a dry and ventilated area. No direct sun light to prevent harm to the internal li-ion battery. If storing it for over three months, it is highly recommended to put in room temperature between 22° to 28°. DO NOT put it below 20° or higher than 45°

Transportation and storage

Warning

In order to prevent lost or getting hurt, please strictly follow the rules of operation: Keep small parts or wire away from children can reach. DO NOT let children touch the small parts of H16/H16 Pro

Attention

- 1 DO NOT put H16/H16 Pro into water. If it does, please switch off the power and dry it at once!
- 2 DO NOT crash the H16/H16 Pro or break the battery is prohibited

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

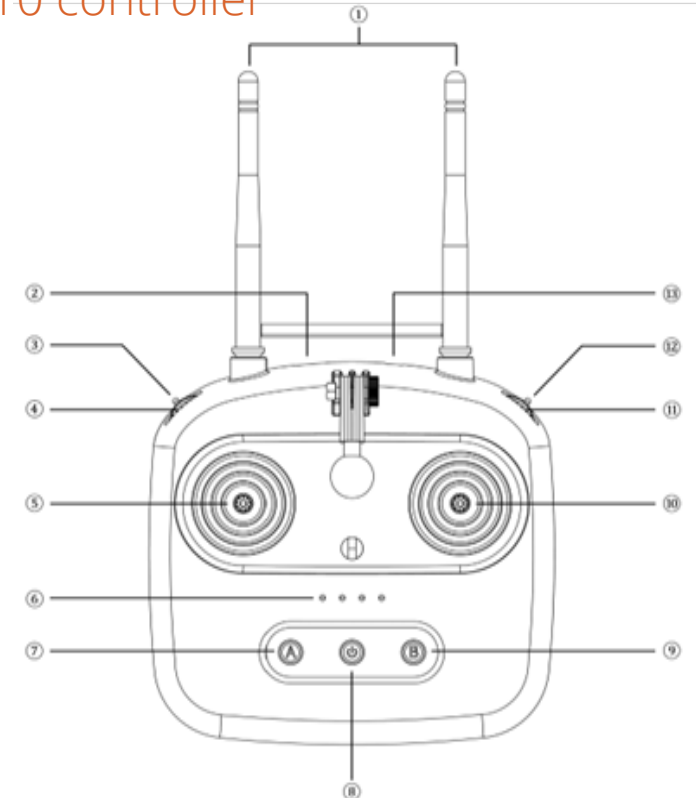
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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.

Skydroid T10 controller



No.	Annotation	No.	Annotation
1	2.4G 3db antenna	8	Power ON/OFF button
2	USB1/video output	9	Button B /Payload Release
3	Flight Mode switch Switch E	10	Right Joystick
4	Jog wheel C/Camera Up/Dn	11	Jog wheel D
5	Left Joystick	12	Three Position switch F
6	Battery indicator	13	Charging/Data Transmission Port
7	Button A/ RTH		

Pre-Check and Preparation

ATTENTION

1. Check T12 Battery level
2. Check Position of the antenna to get better performance
3. Make sure the firmware is the latest version.
4. DO NOT operate under the influence of alcohol or drugs.

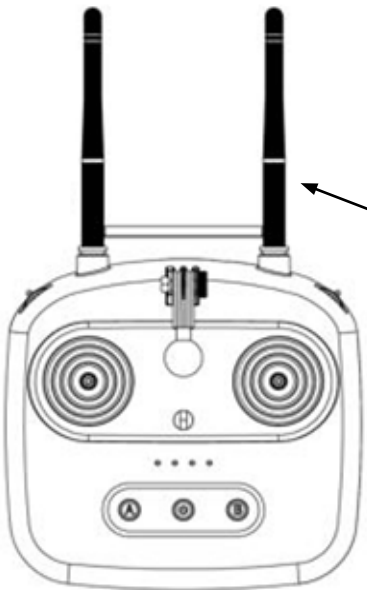
Correct Position

Pointing up and vertical



Incorrect Position

DO NOT Put antenna parallel with the controller



Environment Condition

PAY ATTENTION

Environment Temperature: -10C ~ +55C

Storage Temperature: -25C ~ +70C

Relative Humidity: Do not exceed 85%

Atmospheric pressure: 86kPa ~ 106kPa

Working environment should not contain explosive material or any corrosive or harmful gas that may cause interference in the operation of the product.

Always work under shelter to prevent rain, snow, wind, sand and dust contamination.

Working Condition Power Supply

PAY ATTENTION

The T10 main unity (ground terminal) uses two pieces of 18650 batteries, and compatible with the standard micro USB, 5v power adapter (such as mobile phone, camera and other digital products USB charger) to charge.

In case of smoke, heat or unusual smell during please stop charging the controller immediately and return to our company for servicing as soon as possible. Do not leave the product unattended while charging. Do not leave the product in a place where children can reach.

DO NOT charge when room temperature over 60C

Safety

WARNING

Beginners should pay attention for the following! Please read it carefully!

- ⊘ DO NOT fly under the influence of substances, or when tired!
- ⊘ DO NOT fly in strong wind and or rainy conditions!
- ⊘ DO NOT fly close to electric emissions towers, communication stations and crowded area!
- ⊘ DO NO fly nearby airports and other prohibited areas!
- ⊘ DO NOT fly around people or animals, or in any location where possible to damage property.
- ⚠ Check equipment before every flight and carry out maintenance and repairs as needed.
- ⓘ Use certified chargers to charge the batteries.
- ⓘ DO NOT put unnecessary force on antennas or electronic components to avoid damage.

Maintenance, Servicing

Storage for not using certain period.

Put T10 a dry and ventilated area. No direct sunlight to prevent harm to the internal Lipo battery, If Store it over three months, it is highly recommended to put room temperature between 22C to 28C. DO NOT put it down 20C or high than 45C.

Transportation, Storage

WARNING

In order to prevent lost or getting hurt, please strictly follow the rules of operation: Keep small parts of wire away from children can reach. DO NO Let children touch the small parts of T10.

ATTENTION

1. DO NOT put T10 into water, If it does, please switch of the power and dry it.
2. DO NOT crash the T10 or break the battery is prohibited.

ATTENTION

You need to wire connect with Skydroid FPV to open the floating window. Activate QGC and connect with blue tooth to start telemetry, In the future, whe QGC join Skydroid SDK then the operation will be as simple as Skydroid Tower. No need to connect blue tooth and no need to multiply another APP on QGC. Very simple. Highly recommend to use Skydroid tower.

FCC STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provided reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

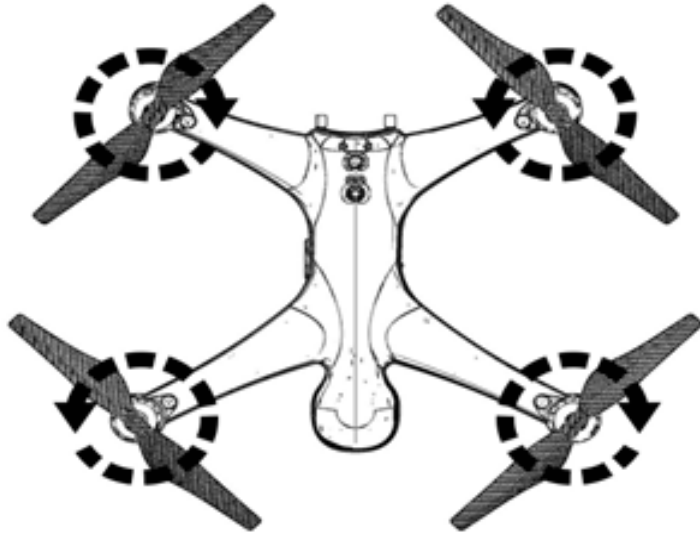
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- 1 This device may not cause harmful interference
- 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.

Propellers

The Gannet II / II MAX has two pairs of propellers - two clockwise propellers and two counter-clockwise propellers. The hub of each motor is marked with a circle to indicate the propeller used for that motor. Propellers cannot be attached to the wrong motor by accident.



- ⚠ When installing or removing the propellers, place one hand under the motor to support it when installing or removing propellers. Failure to provide this support could result in bending or breaking the landing gear.

Attaching and Removing propellers:

The Gannet 11 and 11+ are now supplied with the new quick release propeller attachments that are colour coded for ease of install to correct motors.

1. Check that the propeller rotation (CW or CCW) matches the motor hub. This is the normal direction the propellers spin during flight. (as in Diagram above) Also indicated by red to red and black to black on the new quick release propellers.
2. Push the propeller down and rotate the propeller on the hub until it clicks and locks.
3. Check the propeller is completely locked by holding the motor hub firmly and ensuring that the propeller cannot be turned.

4. To remove propellers, support the motor with one hand and push down on the two pins on the side while turning the propeller in any direction until it pops up. A tool is also provided in the kit to make this process much easier.

- ⚠ The blades are sharp, please be careful to avoid accidental cutting or scratches. Prior to each flight, please check that the propellers are smooth all over and are correctly installed and securely fastened. Do not use props that show any damage.

Preparing for Flight

Before every flight, it is important to prepare your drone properly.

This section is presented in two sections:

1. Preparation before your first flight (or when the drone is more than 200km from its last flight location)
2. Preparation before every flight.

Preparation Before your First Flight (or in a new location)

The drone relies on very sensitive sensors to control flight positioning and stability. The compass sensors need to be calibrated before flying in a new location or if the drone has suffered undue shock or excessive vibration.

Be aware that take off location can or may contain Magnetic interference or anomalies that can interfere with the drones compass, if you find you are having unusual compass errors or drone acting different, please move to a new location first before calibrating compass and forcing a wrong calibration.

Compass Calibration

Compass calibration is necessary if:

- a. The drone is brand new.
- b. The drone is more than 200km from the location of its last flight and RC asks for calibration.
- c. The YAW (Y) indication on the Remote Controller screen does not show the correct compass reading (North = 0°, South = 180°) ±10°
- d. The drone has been subjected to strong magnetic fields. (ie from strong car speakers etc)
- e. The drone has been crashed or dropped accidentally
- f. The drone sways or drifts excessively during hover in GPS mode
- g. The drone Status Indicators are solid RED when trying to arm (unlock) the motors.

Compass Calibration Process

The Compass Calibration should only be done if the app asks for it to be done. Compass Calibration is performed with the drone outdoors and away from any sources of magnetic interference such as metal structures, radio masts or mobile phones.

1. Place the drone on a horizontal surface. Remove propellers and accessories. Power on the controller then the drone. Close the battery hatch cover.
2. Watch the Drone Status Indicator, when green, (light green flash or dark green flash)
3. Press the 3 bars on the top left of the screen on the Skydroid app to bring the dropdown menu, select compass calibration. Follow the onscreen directions.

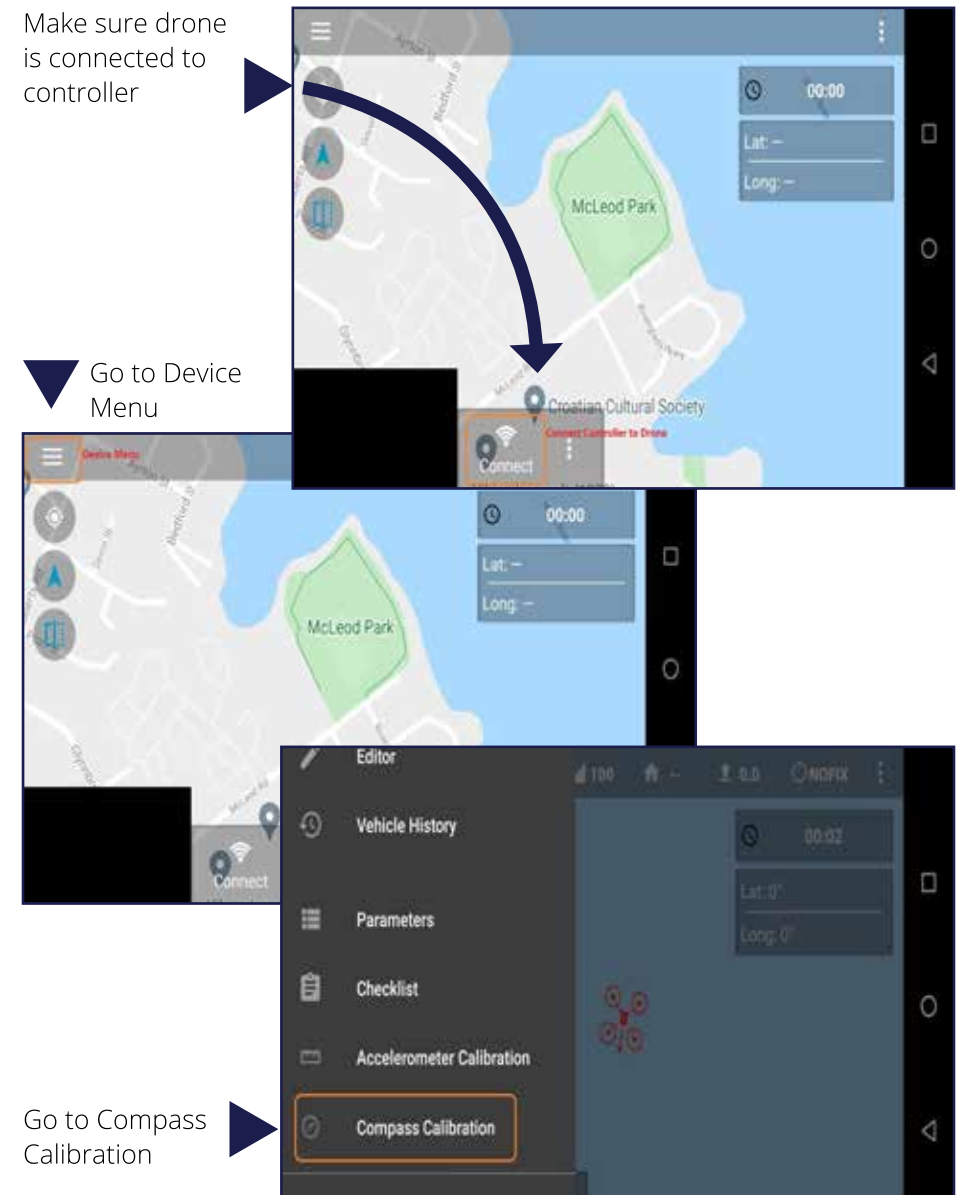


After pressing the Begin Calibration button. Follow the video demonstration. The green bar at the top of the screen will move fill from the left to right and indicate calibration complete with an audible beep as well.

Press the Go Fly button. Reboot the drone. Install the propellers.

Drone Calibration

Make sure drone is connected to controller



Preparation Before Every Flight

Drones are fun to fly, but they are not toys. Be a responsible pilot and prepare for your flight properly to fly safely and get the most out of your Gannet II / II MAX, follow this checklist before every flight.

- Are all batteries charged?
- Is calibration required? (is RC asking for calibration)
- Are propellers secured properly? (in locked Position)
- Are the Drone Status Indicator lights showing errors?
- Is the rear hatch properly closed? (screws thumb tight)
- Is the release mechanism set correctly?
- Are all switches on the remote in the correct position for take-off? (both Top Toggle switches Up)
- Are there at least 12 satellites for GPS flight and Return Home functions? (Status Light Flashing steady deep Green)
- Is the drone battery showing at least 15.7v GII / 22.3v GII MAX?
- Are antennas pointing up and out for best reception? (Vertical to drone)
- After take-off always check hover stability at low altitude.
- After flights on salt or dirty water, always thoroughly rinse all moving parts in fresh water and lubricate Motors top and bottom.

Batteries, Care & Maintenance.

The Gannet II / II MAX has two batteries required for operation. One battery powers the drone, the other powers the drone remote controller.

It is important to charge the batteries before use and install them correctly.

DO NOT charge the remote control with a charger over 5.5V.

Drone Battery Installation

When inserting the battery, observe the following precautions:

- Insert the battery with care with its cables on the underside side of the drone
- Connect the battery to the connector on the upper side of the drone- Observe the label on the battery

⚠ Once connected to the drone, the battery cables and connectors must be placed in the space between the battery and the rear case of the drone.



Do not use the battery:

- If there is any visible damage to any of the cells,
- If the battery is swollen or puffy.
- The power leads or connector is damaged.
- If the battery is not holding its charge.
- Large variance (>0.1v) in the voltage of the cells.
- These are all signs of a faulty or failing battery and failure in flight could result in a crash.

Charging the Battery

Gannet has supplied a smart charger with the Gannet II / II MAX Drone.

These chargers can charge different types of batteries including Lead-acid, Lithium Iron Phosphate (LiFe), Lithium-Ion (LiPo) and Lithium Polymer (LiPo) and Lithium Polymer (LiHV), etc. It is important to choose the correct battery type. Using the wrong battery type will damage your battery and could cause the battery to catch on fire.

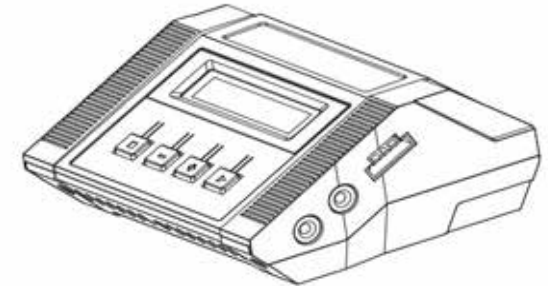
The batteries used in the Gannet II / II MAX is a LiHV battery (Lithium Polymer High Voltage). LiPo Batteries should not be left unattended with charging. Place the LiPo battery on a concrete floor or a metal tray when charging. Some people charge LiPo batteries inside a metal container.

Read the manual for the battery charger.

Before connecting the battery ensure you set up the charger to the correct settings for the battery. Setting found latter in this manual.

Battery Type

- Choose - LiHV Program if your battery is LiHV or LiPo if it is just a LiPo.
- Choose - Balance Charge for charging to 100% fully charged.
- Remember to plug the Balance cable in into the Balance plate.
- Choose - Battery Storage for storing the batteries for a week or more. Use this mode only if battery is extinguished (flat) and you want to charge to storage state, it will take days to take a full battery down to storage state in this mode. Best to drain battery by flying in drone to discharge quickly,



Checking Battery Voltage

Gannet supplies a battery checker with the Gannet II / II MAX. The battery checker will check the voltage of the battery and the voltage of each cell in the battery.

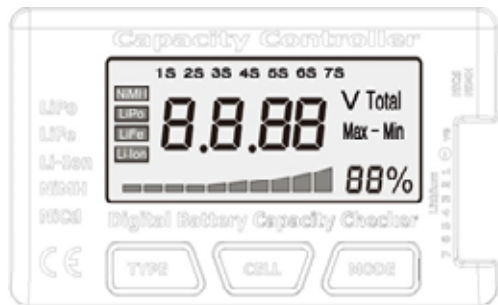
Plug the balancer cable of the battery into the battery tester. The tester will BEEP, and then show the total voltage of the battery, followed by the voltage of each cell.

A fully charged LiHV 4s battery is 17.4V and each cell should be 4.35v. The cells may vary up or down by 0.02v (range 4.18v to 4.22v) Do not use if there is a variance greater than 0.2v between the cells.

A fully charged LiPo 4s battery is 16.8V and each cell should be 4.20v. The cells may vary up or down by 0.02v (range 4.18v to 4.20v) Do not use if there is a variance greater than 0.2v between the cells.

Always fly with a fully charged battery. Do not fly with a partially discharged battery as you do not know how much energy or flight time is left in the battery.

Never fly with a battery that has a voltage reading less than 15.5 volts. This means the battery is low and the safety margin is reduced.



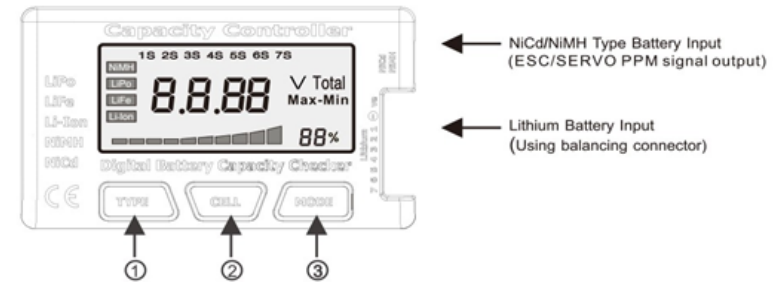
- * Battery Capacity Checker
- * Battery Balancer
- * Battery Discharger
- * Battery Internal Resistance Tester
- * ESC/SERVO PPM Tester

	LiPo	LiFe	Li-Ion	NiCd	NiMH
Input Cells	2~7Cells	2~7Cells	2~7Cells	4~7 Cells	4~7 Cells
Total Voltage	✓	✓	✓	✓	✓
Total Cell battery capacity(0~99%)	✓	✓	✓	x	x
Individual Battery Cell Voltage	✓	✓	✓	x	x
Lowest Cell Voltage	✓	✓	✓	x	x
Highest Cell Voltage	✓	✓	✓	x	x
Voltage Difference Between Highest and Lowest Cell Voltage	✓	✓	✓	x	x

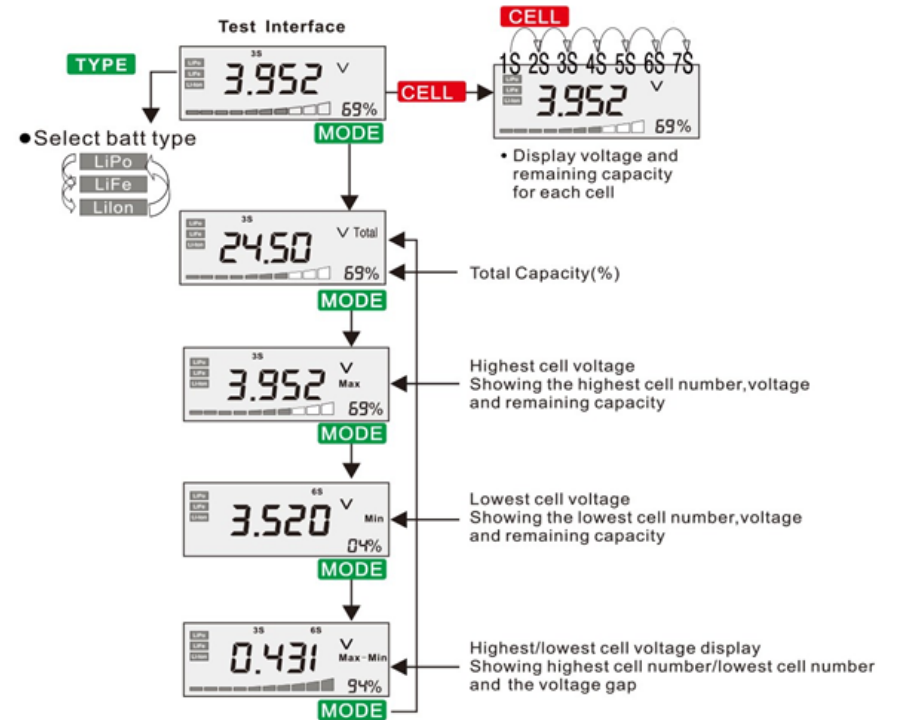
BATTERY CHECKER LAYOUT

Buttons

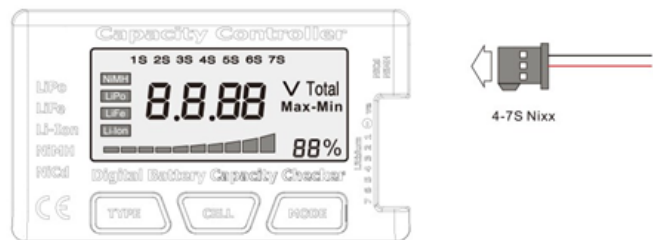
1. Battery Type: NiCd/NiMH, Li-Po, LiFe, Li-Ion
2. Cell Number: LiPo/LiFe/Li-Ion: 2~7 cells NiMH: 4~7 cells
3. Display Mode: Battery cell voltage, Total voltage, Lowest cell voltage, Highest cell voltage, Voltage gap between highest cell voltage and lowest cell voltage, Remaining battery capacity (%)



FOR 2-7S LIPO/LIFE/LI-ION BATTERIES

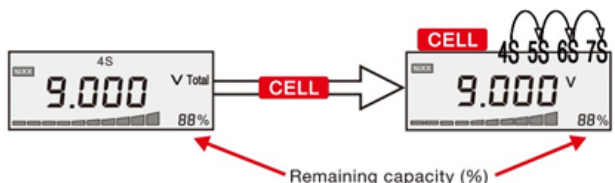


FOR 4-7S NiCd/NiMH BATTERIES



• Battery total voltage

• Set cell numbers

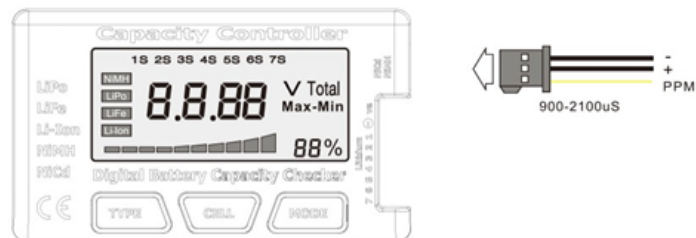


Remaining capacity (%)

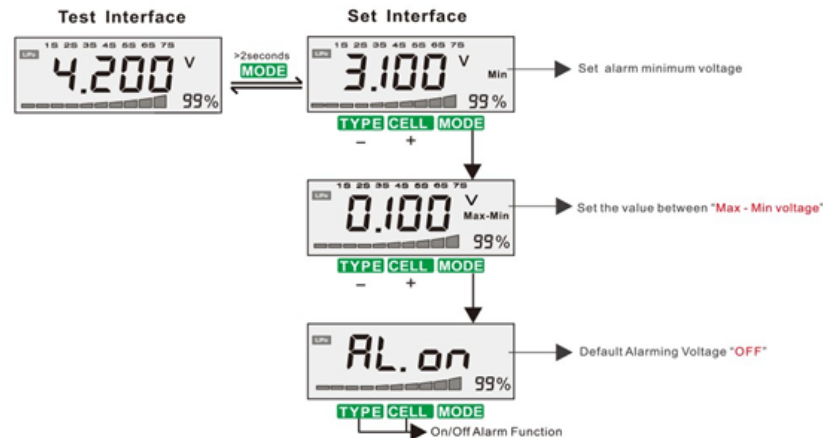
The remaining capacity is estimated based on the total number of cells connected in series. Press the "CELL" button to select the correct setting. NiCd and NiMH batteries for the TX and RX (4-7 cells) can be connected to this capacity checker.

USING THE ESC/SERVO TESTER FUNCTION

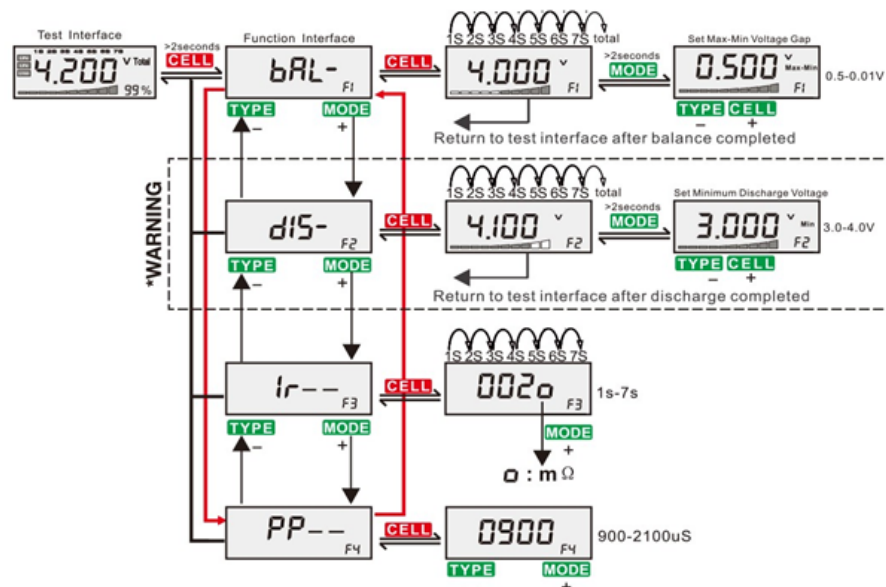
1. With a servo Y-harness, connect the single end to 5-in-1 meter, and the other two ends to the servo motor, and a 4.8-6V NiMH battery to provide power.
2. Press and hold the "Cell" button until the 5-in-1 meter's screen changes to display the servo-arm position, and then use the "Mode" and "Type" buttons to change its position in both directions.



CONFIGURE VOLTAGE ALARM



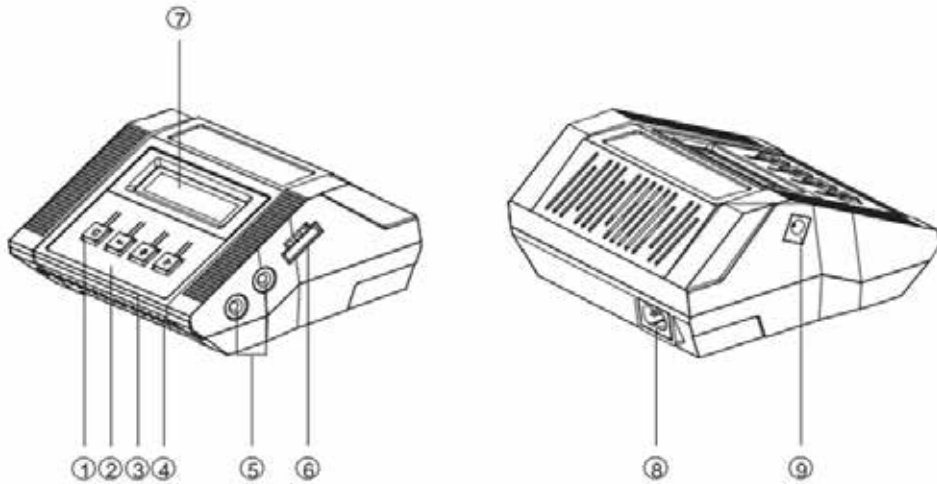
PRESS AND HOLD THE "CELL" BUTTON TO ACCESS OTHER FUNCTIONS



***WARNING:** To avoid overheating, the discharge function can only be used for less than 6 mins each time. After that, please let the unit cool down to room temperature before discharging again. **DO NOT** leave your battery discharging with this device unattended.

F1	bAL-	Battery Balancer
F2	dI5-	Battery Discharger
F3	Ir--	Battery Internal Resistance Tester
F4	PP--	ESC/SERVO.PPM.Tester

AC/DC Smart Balance Charger



- | | |
|------------------|---|
| 1. Mode Switch | 6. Balance Interface |
| 2. Decrease | 7. LCD Screen |
| 3. Increase | 8. AC Input |
| 4. Start/Confirm | 9. DC Input (for connection to a car charging port) |
| 5. Main Output | |

Connection Instructions

1. The charger can be connected to an AC outlet (100~240V AC) or to a suitable high-current DC source 11~18V such as a car charging port or cigarette lighter adapter.
2. Connect either a LiPo-2S battery or LiHV-4S (HIGH VOLTAGE).

NEVER CHARGE A HiLV-4S (different to a LiHV) BATTERY WITH THIS CHARGER AS THE HIGH VOLTAGE WILL DAMAGE THE BATTERY AND CAN BE A FIRE RISK



1. Before charging, check that the terminals and wires of the battery pack are not damaged.
2. When connecting the battery, always check that the positive (red) and negative (black) wires are connected correctly and the connector plugs are connected to the same coloured ports on the charger.

3. In order to avoid short circuits, connect the banana connector cable to the charger first, then connect the battery. When disconnecting, disconnect the battery first, then disconnect the charger.
4. Only one battery can be charged at a time.

These operating instructions are designed to ensure that you quickly become familiar with its functions. It is therefore important that you read right through the Operating instructions, Warning and Safety Notes before you attempt to use your new charger for the first time Gannet Charger integrates battery technology together with LCD screen.

It is equipped with 4 function buttons. Every operating procedure and status change can be shown on LCD screen, making the operating procedures very intuitive. When the battery is working, you can directly check the battery capacity, battery voltage, charging time and internal resistance on the screen.

Gannet Charger comes with a memory module. Users can edit and save parameters of different batteries. Once the battery parameters are edited, the shortcut for parameters will be generated on the screen, which provides a simple one click interface for users.

Gannet Charger is built-in switching power supply. It can be powered up with 12V car battery or 100-240V AC input, suitable for use with LiPo / LiFe / LiHV / Li-Ion / NiMH / NiCd / Pb battery.

Please BE SURE to read these INSTRUCTIONS, WARNING and SAFETY NOTES before you use the charger for the first time. It can be dangerous to mishandle batteries and battery chargers, as there is always a risk of batteries catching fire and exploding.

Please read this entire operating manual completely and attentively before using this product, as it covers a wide range of information on operating and safety.

Specifications

- AC input Voltage: 100V – 240V
- Control: Button
- Backlight: Blue
- Dimension: 130*115*61mm
- Charge current: 0.1A-10A
- Charge power: max. 100W
- Balance current: 400mA/cell
- DC input Voltage: 11 – 18V
- Display Type: LCD
- Cooling system: 1 cooling fan
- Weight: 380g
- Safety timer: 1-720min or turn off
- Discharge current: 0.1A-2.0A
- Discharge power: max. 5W
- Memory: 10 different charge/discharge profiles
- External port: 1-6s Balance Socket-XH, Temperature probe socket, Battery Socket, DC input, AC Input, Micro USB for PC.
- Battery Types/cells: LiPo/LiIon/LiFe/LiHV: 1-6S
NiMH/NiCd: 1-15 cells
Pb: 2-24V
- Charge Voltage: LiPo: 4.18-4.22V/cell LiIon: 4.18-4.20V/cell
LiFe: 3.68-3.80V/cell LiHV: 4.30-4.40V/cell
- Discharge cut-off voltage: NiMH/NiCd: 0.1-1.1V/cell
LiPo: 3.0-3.3V/cell LiIon: 2.9-3.2V/cell
LiFe: 2.6-2.9V/cell LiHV: 3.1-3.4V/cell
Pb: 1.8V

Dual Power Input

The power source can be 11-18V DC input, it can be powered up at any place with a 12V car battery or 100-240V AC input. The power supply is built in and users could connect the AC Power cord to the main AC socket directly. What's more the AC input voltage is 100-240V so that the users could use charger all over the world and don't need to worry about any damage caused by improper input voltage.

Charging Status Monitor

When the charger is working, you can check the charging capacity, battery voltage, charging time and internal resistance on the screen.

More important, the voltage curve can be displayed on the screen, so you can monitor the charging status.

Internal Independent Lithium Battery Balancer

A20 Changer employs an individual-cell-voltage balancer. It isn't necessary to connect an external balancer for balance charging.

Balancing Individual Cells Battery Discharging

During the process of discharging, Gannet Charger can monitor and balance each cell of the battery individually. Error message will be indicated and process will be ended automatically if the voltage of any single one cell is abnormal.

Fast and Storage Mode of Lithium battery

Purposes to charge lithium battery varies, "fast" charge reduce the duration of charging, whereas "store" state can control the final voltage of your battery, so as to store for a long time and protect useful time of the battery.

Memory Pre-set

The charger can store up to 10 different charge/discharge profiles for your convenience. You can keep the data pertaining to program setting of the battery of continuous charging or discharging.

Users can call out these data at any time without any special program setting.

Terminal Voltage Control (TVC)

The charger allows user to set the charge/discharge and voltage.

Capacity Limit

The charging capacity is always calculated as the charging current multiplied by time. If the charging capacity exceeds the limit, the process will be terminated automatically when you set the maximum value.

Processing Time Limit

You can also limit the maximum process time to avoid any possible defect.

There is mini USB port in the charger which can be used to connect it to the PC. You need optional USB cable (USB A Male to Mini B Male) which is not included in the package. The free 'Charge Master' software gives you unparalleled ability to operate the charger through your computer. You can update firmware from "Charge Master".

⚠ Never attempt to charge or discharge the following types of batteries.

- A battery pack, which consists of different types of cells (including different manufacturers)
- A battery that is already fully charged or just slightly discharged.
- Non-rechargeable batteries (Explosion hazard).
- A faulty or damaged battery.
- A battery fitted with an integral charge circuit or a protection circuit.
- Batteries installed in a device or which are electrically linked to other components.

⚠ Batteries that are not expressly stated by the manufacturer to be suitable for the currents the charger delivers during the charge process.

Please bear in mind the following points before commencing charging:

- Did you select the appropriate program suitable for the type of battery you are charging?
- Did you set up adequate current for charging or discharging?
- Have you checked the battery voltage? Lithium battery packs can be wired in parallel and in series, i.e. a 2 cell pack can be 3.7V (in parallel) or 7.4V (in series).
- Have you checked that all connections are firm and secure? Make sure there are no intermittent contacts at any point in the circuit.

✂ Standard Battery Parameters

	LiPo	LiIon	LiFe	LiHV	NiCd	MiMH	Pb
Nominal Voltage	3.7V/cell	3.6V/cell	3.3V/cell	3.7V/cell	1.2V/cell	1.2V/cell	2.0V/cell
Max Charge Voltage	4.2V/cell	4.1V/cell	3.6V/cell	4.35V/cell	1.5V/cell	1.5V/cell	2.46V/cell
Storage Voltage	3.8V/cell	3.7V/cell	3.3V/cell	3.85V/cell	n/a	n/a	n/a
Allowable Fast Charge	≤1C	≤1C	≤4C	≤1C	1C-2C	1C-2C	≤0.4C
Min. Discharge Voltage	3.0-3.3V/cell	2.9-3.2V/cell	2.6-2.9V/cell	3.1-3.4V/cell	0.1-1.1V/cell	0.1-1.1V/cell	1.8V/cell

⚠ Be very careful to choose the correct voltage for different types of battery otherwise you may cause damage to the batteries. Incorrect settings could cause the cells to fire or Explode.

Charging

During charge process, a specific quantity of electrical energy is fed into the battery. The charge quantity is calculated by multiplying charge current by charge time. The maximum permissible charge current varies depending on the battery type or its performance, and can be found in the information by the battery manufacturer. Only batteries that are expressly stated to be capable of quick charge are allowed to be charged at rates higher than the standard charge current.

Connect the battery to the terminal of the charger: red is positive and black is negative. Due to the difference between resistance of cable and connector, the charger cannot detect resistance of the battery pack, the essential requirement for the charger to work properly is that the charge lead should be of adequate conductor cross-section, and high quality connectors which are normally gold-plated should be fitted to both ends.

Always refer to the manual by battery manufacturer about charging methods, recommended charging current and charging time. Especially, the lithium battery should be charged according the charging instruction provided by the manufacturer strictly.

Attention should be paid to the connection of lithium battery especially. Do not attempt to disassemble the battery pack arbitrarily. Please get highlighted that lithium battery packs can be wired in parallel and in series.

In the parallel connection, the battery's capacity is calculated by multiplying single battery capacity by the number of cells with total voltage stay the same. The voltages imbalance may cause fire or explosion .Lithium battery is recommended to charge in Series.

Discharging

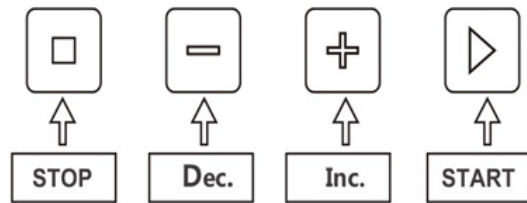
The main purpose of discharging is to clean residual capacity of the battery, or to reduce the battery voltage to a defined level. The same attention should be paid to the discharging process as charging. The final discharge voltage should be set up correctly to avoid deep-discharging. Lithium battery cannot be discharged to lower than the minimum voltage, or it will cause a rapid loss of capacity or a total failure.

Generally, lithium battery doesn't need to be discharged. Please pay attention to the minimum voltage of lithium battery to protect them.

Lithium batteries are recommended to be discharged partially rather than fully. Frequent full discharging should be avoided if possible.

Battery type	Operation Program	Description
LiPo Lilon LiFe LiHV	Balance Charge	This charging mode is for charging LiPo/ LiFe/ Lilon/ LiHV battery in normal mode.
	Storage	This program is for discharging LiPo/ LiFe/ Lilon/LiHV battery which will not be used for long time.
	Discharge	This mode is for discharging LiPo /LiFe /Lilon /LiHV battery.
	Fast charge	This charging mode is for charging LiPo /LiFe /Lilon /LiHV battery in normal mode without balancing.
NiMH NiCd	Auto mode	Charger automatically detects the connected NiMH/NiCd battery and control the charging current in the affordable range, and limit the maximum current does not exceed the setting value. Attention: Ensure to set the maximum charging current, or it may overcharge and damage the battery.
	Man mode	Charger will charge the battery with setting current.
	Discharge	Charger will discharge the battery with setting current, operation same as lithium battery.
	Cycle	To increase the remaining usable battery life, cycling is strongly recommended. charger supports 1-5 times of charge > discharge or discharge > charge cycle.
Pb	Charge	This mode is for charging Pb battery
	Discharge	This mode is for discharging Pb battery.

Explanation of Buttons



“STOP” button

It is used to stop the process or go back to the previous step.

“Dec./-” button

It is used to go through the menus and decreased the parameter value.

“Inc./+” button

It is used to go through the menus and increase the parameter value.

“START” button

It is used to enter parameter or start program.

When you want to alter the parameter value in the program, press the START/ENTER button to make it blink and then change the value by pressing DEC and INC button. The value will be stopped by re-pressing the START/ENTER button. If there is another parameter which can be altered in the same screen, on confirming the first parameter value, the next parameter value will start to blink and you can set it.

When you are ready to start to program, press and hold the START/ENTER button for 3 seconds.

When you want to stop the program or go back to the previous step/screen, press the BATT PROG/STOP button once.

Here are the detailed procedures to make the charger work. All the screens and operations will take LiPo-CHARGE program for example

Connection

Ensure to connect the battery to balance port when charging LiPo, Lilon, LiFe and LiHV battery under balance mode.

OPERATION PROGRAM

1. Connecting to Power Source
2. Connecting the Battery
3. Balance Socket

Gannet Charger comes with the built in switching power supply. You can connect the AC power cord directly to the main AC socket (100-240V AC) or attaching directly to 12V car batteries. It is critically important that you use a fully charged 13.8V car battery.

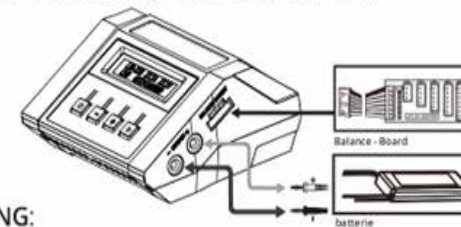
Important!!! Before connecting a battery it is absolutely essential to check one last time that you have set the parameters correctly. If the settings are incorrect, the battery may be damaged, and could even burst into flames or explode.

To avoid short circuits between the banana plugs, always connect the charge leads to the charger first, and only then to the battery. Reverse the sequence when disconnecting the pack.

The balance wire attached to the battery must be connected to the charger with the negative marking. Take care to maintain correct polarity!(See the wiring diagram below.)

This diagram shows the correct way to connect your battery to the AC while charging in the balance charge program mode only

⚠ Ensure to connect the battery to balance port when charging LiPo, Lilon, LiFe and LiHV battery under balance mode.



WARNING:

⚠ Failure to connect as shown in this diagram will damage this charger. To avoid short circuit between the charge lead always connect the charge cable to the charger first, then connect the battery. Reverse the sequence when disconnecting.

Operation Program

Charge Programme

```
PROGRAM SELECT
LiPo Battery
```

START

```
LiPo .....
C= 5000mAh 5.0A
```

Dec./Inc.

```
LiPo .....
C= 5000mAh 5.0A
```

Dec./Inc.

```
LiPo .....
C= 5000mAh 5.0A
```

START
> 2 Seconds

```
..... 2.0A 12.59V
... 022:43 00682
```

BATT/PROGRAM Select

Press "STOP" and "-" to go through all the programs and press "START/ENTER" to enter LiPo BATT program.

Mode Select

Press "+" and "-" to go through all the modes (balance charge mode, storage mode, discharge mode and fast charge mode).

Battery Setting

Press START, the present value will start to blink. Press "+" and "-" to set the battery cells. And press START to confirm your setting. At the same time, Press START, the present value will start to blink. Press "+" and "-" to change the value and press START to confirm your setting. Charger automatically recommend charging current according to the capacity and cell count setting value, Press START to confirm if no objection, or manually set the current by pressing "+" or "-" button, then press START to confirm.

Program Start

Press and hold START for 2 seconds to start the program

Charging Status

It show the real-time data during charging.

```
LIPO BAL-CHG 2S
10S 1A
```

```
LIPO BAL-CHG 2S
10S 2A
```

START
> 2 Seconds

```
LI2s 7a 8.4v
bal 005.47 00121
```

1. Standby

After the charger is powered on, it will enter standby mode. Connect the battery and the balance port. The charger will automatically detect the connected battery type.

2. Charging Current selection

After entering the main interface, you can press the "INC" and "DEC" buttons to set the charging current value. Check that the selected current does not exceed the battery specifications. Then press the "START" button to confirm the set value.

If there is no action in 10 seconds the program will automatically recommend a charging current according to the number of cells and capacity. The 10 second countdown will be displayed in the lower left corner of the current setting interface. The settings buttons will reset the countdown timer.

3. Start charging

Press and hold the "START" button for 2 seconds to start the charging program. When in charging mode, the "INC", "DEC" and "ENT" buttons are not available. Press the "ESC" to stop charging.

Error Message

REVERSE POLARITY	⇒ Incorrect polarity connected.
CONNECTION BREAK	⇒ Charger and battery connection is wrong.
SHORT ERROR	⇒ Input short circuit
INPUT VOL ERR	⇒ Input voltage less than required value
BATTERY CHECK LOW VOLTAGE	⇒ Battery total voltage is lower than setting value, please check the cell count.
BATTERY CHECK HIGH VOLTAGE	⇒ Battery total voltage is higher than setting value, please check the cell count.
BATTERY VOLTAGE CELL LOW VOL	⇒ Voltage of one cell in the battery pack is too low.
BATTERY VOLTAGE CELL HIGH VOL	⇒ Voltage of one cell in the battery pack is too high.
BATTERY VOL ERR CELL CONNECT	⇒ The battery balance connection is wrong. Please check the connector and cable.
TEMP OVER ERR	⇒ Temperature too high, please check the temperature sensor and take cooling measures.

Charging Procedure Quick Guide

5000 LiPo (4s)

Select Program (LiPo) -> Press Start
Select Balance Charge -> Press Start
Input Cell Count (4s) -> Press Start
Select Current (5000 mAh) -> Press Start
Select Charge Current (Max 5.5A) -> Press Start Press and hold Start for 2 Seconds

6600 LiHV (6s)

Select Program (LiHV) -> Press Start
Select Balance Charge -> Press Start
Input Cell Count (6s) -> Press Start
Select Current (6600 mAh) -> Press Start
Select Charge Current (Max 5.5A) -> Press Start Press and hold Start for 2 Seconds

8000 LiHV (4s)

Select Program (LiHV) -> Press Start
Select Balance Charge -> Press Start
Input Cell Count (4s) -> Press Start
Select Current (8000 mAh) -> Press Start
Select Charge Current (Max 5.5A) -> Press Start Press and hold Start for 2 Seconds

Charging the remote

Use a 5volt USB Power adapter and lead (supplied in Gannet Kit) to plug in and charge the remote controller.

 **Do not charge your remote with a charger rated above 5V**

Payload / Bait Release System



1. Tension Adjustment Wheel
2. Tension Adjustment Indicator
3. Easy Release Arm (for baits over 800g)
4. Release balls

Operation Instructions

1. Push the release switch into the closed position.
2. Load bait, sinker and 2 additional 7 ounce sinkers.
3. Adjust tension wheel until the load drops.
4. Reload the bait with the sinker, excluding the 2 sinkers for setup.
5. When in position, push the release switch to release your payload.

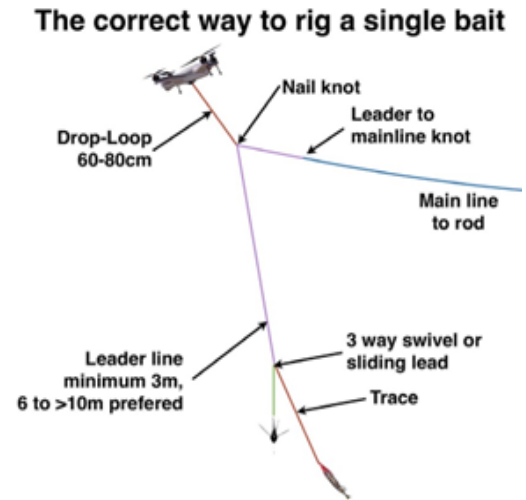
Drop Loop ⚠

A drop-loop is an essential part that has saved countless drones from failure. By utilising a drop-loop, the main line is kept far away from the drone's props.

We recommend using a long running drop loop of at least 60 - 80 cm with the bait hanging a further 3-10m below that.

By having the bait (weight) far away from the drone, the swinging of the bait (pendulum effect) is a lot slower and less violent, by doing this, it greatly increases drones stability.

The pendulum effect is magnified with a short drop line and has also caused drones to crash. Short drop loops are known to swing up and cause crashes.



Flight Modes

Loiter: (Main Mode/GPS Mode)

Loiter Mode automatically attempts to maintain the current location, heading and altitude. The pilot may fly the copter in Loiter mode as if it were in a more manual flight mode but when the sticks are released, the vehicle will slow to a stop and hold position.

Position Hold: (Fast Mode)

The PosHold flight mode is similar to Loiter in that the vehicle maintains a constant location, heading, and altitude but is generally more popular because the pilot stick inputs, directly control the vehicle's lean angle providing a more "Natural" feel.

RTH: Return to Home

The autopilot which is made up of navigation commands. The Gannet II /II MAX has an Auto Return Home function if the DPS successfully records home point.

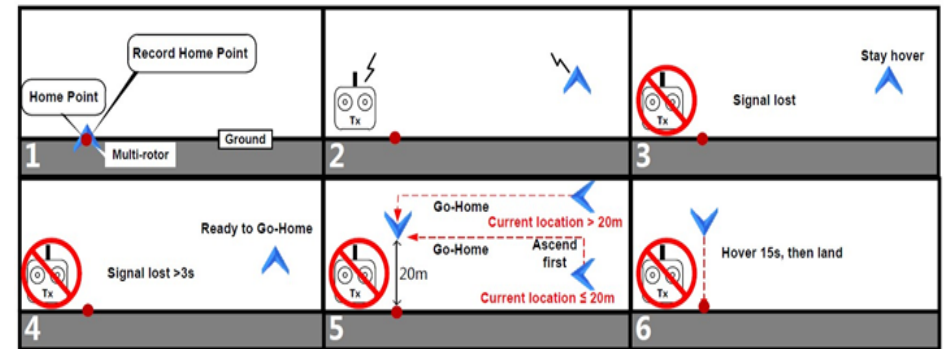
Not a recommended flight mode and should only be used if you are unsure of the Copters orientation and it is out of sight and it is totally safe to do so.

Please be fully aware that the drone can land within a 2.5m radius of the take-off position.

For more information on the other flight modes that are available via the app please see the link to full Pixhawk4 manual. https://docs.px4.io/master/en/flight_controller/pixhawk4_mini.html

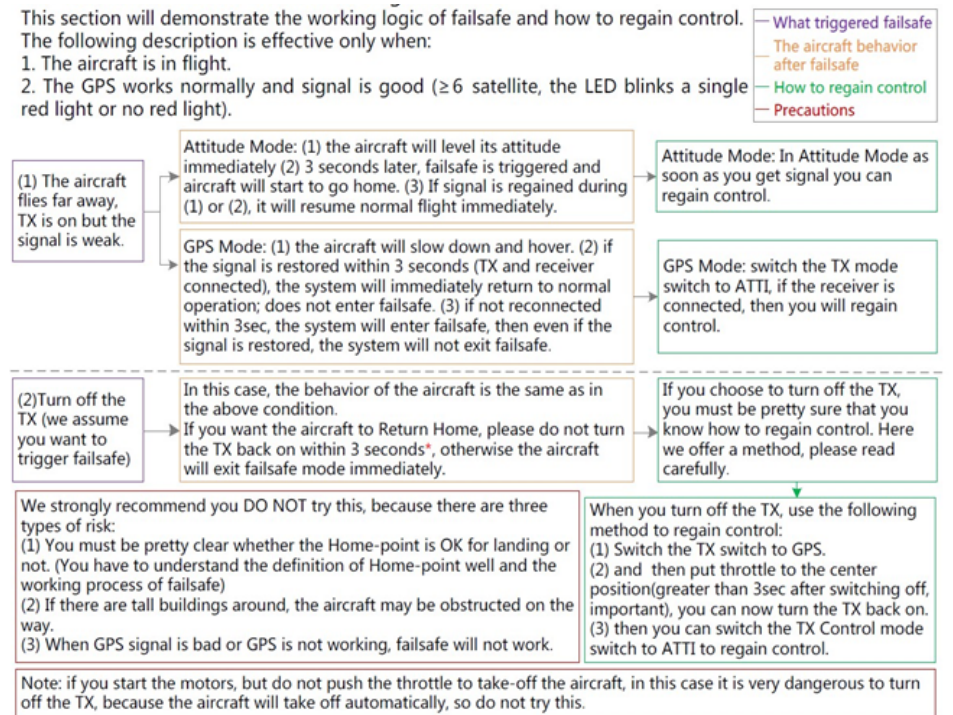
- ⚠ In both ATTI and GPS mode, it is recommended to wait for at least 9 GPS satellites before take-off to ensure that the home point is correctly registered for the Return Home function to operate.
- ⚠ In ATTI mode the drone's speed is faster and auto braking is disabled. Ensure the drone has sufficient space for the pilot to turn or brake. For emergency braking, with sufficient GPS coverage in ATTI mode, switch to GPS mode and release the joysticks.
- ⚠ If the GPS signal is poor (fewer than 5 satellites) or GPS doesn't work, the Return Home function will not be available.
- ⚠ During the return process, only the right (steering) stick is active. When the drone returns to the Home Point and commences its descent, the left joystick will only control the direction (Heading) of the drone, the right joystick controls the forward/back and sideways functions to re-tune the landing site.
- ⚠ At any point, the return home function can be cancelled by returning the Return Home switch to the Normal position

FailSafe



Home-point: Before take-off, current position of multi-rotor will be saved as home-point by MC automatically when you start the motors for the first time after 6 or more GPS satellites are found (Deep Green light blinks once every second).

The flowchart of failsafe and how to regain control



Troubleshooting and Support

Please Contact Dronetech NZ

Email: support@dronetech.co.nz

Phone: 09 836 6088

www.dronetech.co.nz

