

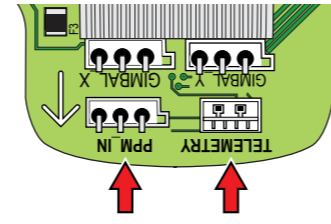
4. CALIBRATION

There are video resources available for the calibration procedures and flying of the »NovaX350. Refer to: www.rclogger.com/nova. Navigate to the "Gallery" tab.

Remove the propellers before proceeding.

Preparations:

1. Remove the propellers.
2. Transmitter: Set travel of all channels to "+100%" and trims to "0".
3. Transmitter: Make sure that the throttle stick is in its mid-position (the sticks are spring loaded and are centered by default).
4. Transmitter: Set all switches to their default positions (e.g. 1).
5. Receiver: Connect the supplied PPM receiver to the PPM_IN and TELEMETRY port at the front of the power board (see diagram).



Calibration via Android or iOS App:

The »NovaX 350 can be calibrated via App (iOS and Android). Download the App "EyeControl" for your iOS or Android device. Important! When using the App to calibrate the »NovaX 350 you do not need to perform the steps given in sections 4., 5., 6., and 7. but follow the step-by-step instructions in the App.

Manual calibration:

Only calibrate the »NovaX 350 manually if you do not have a compatible smart phone at your disposal.

Perform the following calibration procedures in sequence:

- 1. TX learning, 2. Gyro calibration, 3. Compass calibration

Start manual calibration procedure:

1. Carefully remove the canopy. Do not damage any component!
2. Connect the flight battery.
3. Press and hold the button on the flight control board for approx. 2 seconds to begin.
4. The front large RGB LED turns solid red. The front small blue LED (on front light panel) indicates operational status (solid = not active, blinking = active).
5. Tap the button two times (2x) quickly to start the calibration process. The blue LED starts to blink.

1. FULL INSTRUCTIONS

Download the latest version of the Operating Instructions from our website at www.rclogger.com/nova and Read the Safety Instructions overleaf.

2. WHAT YOU NEED

- PPM receiver (supplied)
- Transmitter (supplied)
- Flight battery (supplied)
- Balance charger (69018RC) (supplied)
- A set of propellers (supplied)
- Small diameter screw driver or metal rod

Firmware: All instructions in this quick start guide are based on firmware V1.0. Future firmware versions may change, improve or enhance functions. New firmware versions with instructions are made available to you for download from www.rclogger.com.

3. CHARGE BATTERY

- It is important that you fully charge the battery before you fly.
- Use the included balance charger (69018RC) to charge the »NovaX 350 flight battery. Read the operating instructions supplied with the charger before using it.
- Connect the flight battery's balancer connection cable to the "3S" balancer connection on the charger.

Observe the indicator lights on the charger (and their labels) while charging:

Cells	Const. Current (RED)	Const. Voltage (ORANGE)	Charged (GREEN)	Equalizer (RED)
3	Charge status	Charge status	Charge status	1S 2S 3S 4S

STATUS INDICATION TABLE

Type	Status	Trigger	Front LED	Rear LED	Buzzer	
Flight Mode	Basic (ACC assisted)	Channel 5 : (+100)	● Magenta – Solid	Refer to chapter "GPS"	None	
	Altitude (Midstick height hold)	Channel 5 : (0)	● Green – Solid	Refer to chapter "GPS"	None	
	GPS (position hold)	GPS fixed - No signal		● Blue – Blinks (fast)	Refer to chapter "GPS"	None
		GPS fixed - Poor signal		● Blue – Solid	Refer to chapter "GPS"	None
		Channel 5 : (-100), strong GPS signal		● Blue – Solid	Refer to chapter "GPS"	None
Flight agility (Bank selection switch)	Channel 6	No indication	No indication	None		
R.T.H. Return-to-Home	Channel 5 triggered via switch or Transmitter (Tx) off		○ White – Blinks continuously (0.5 Hz)	○ White – Blinks continuously (0.5 Hz)	Beep beep ... pause 1.5 sec. ... beep beep ... ; Long beep at every step of the process.	
Flight Error	Low Battery Level 1	Battery <11.4 V	○ White – Blinks continuously (1 Hz)	○ White – Blinks continuously (1 Hz)	Continuous single beeps (1 Hz)	
	Low Battery Level 2	Battery <10.5 V	○ White – Blinks continuously (5 Hz)	○ White – Blinks continuously (5 Hz)	Continuous single beeps (2 Hz)	
	Fail safe (PPM failed)	Loss of RF signal	○ White – Blinks continuously (0.5 Hz)	○ White – Blinks continuously (0.5 Hz)	Beep at each stage of process	
Flight Check Error	GPS /Compass failed	Start up main board self test	● Red – Blinks continuously (1 Hz)	● Red – Blinks continuously (1 Hz)	None	
	Pressure sensor failed					
	Gyro failed					
	Power system failed (ESC/motor)					
Permanent system check	System error (pilot must land !)	● Red – Blinks (fast)	● Red – Blinks (fast)	Continuous beeps (5 Hz)		
Calibration	Tx	App or button on flight controller	● Red – Solid / ● Blue – Solid (small LED)	● Red – Solid	None	
	Gyro	App or button on flight controller	● Green – Solid / ● Blue – Solid (small LED)	● Green – Solid	None	
	Compass	App or button on flight controller	● Magenta – Solid / ● Blue – Solid (small LED)	● Magenta – Solid	None	
	Tx	Calibration in progress	● Red – Solid / ● Blue – Blinks (small LED)	● Red – Solid	Beep at each stage of the process	
	Gyro	Calibration in progress	● Green – Solid / ● Blue – Blinks (small LED)	● Green – Solid	Beep at each stage of process	
	Compass	Calibration in progress	● Magenta – Solid / ● Blue – Blinks (small LED)	● Magenta – Solid	Beep at each stage of process	
Factory state	Gyro or compass calibration procedure	Invalid gyro or compass calibration	● Cyan – Blinks 1Hz (alternating to rear)	● Cyan – Blinks 1Hz (alternating to rear)	None	

5. TX LEARNING (LED: RED ●)

Transmitter and receiver are bound during production. Learn the channels manually.

- A beep confirms a successfully learned channel.
- The blink code (e.g. 1 blink) indicates which channel is to be learned next.
- Auxiliary switch: Slowly move the switch through all positions and back to its starting position.

LED	Control	Illustration	
1 blink	Throttle – Move to min. and back (mid-position)		
2 blinks	Rudder – Move to left and back		
3 blinks	Elevator – Move to top and back		
4 blinks	Aileron – Move to the left and back		
5 blinks	Flight mode selection switch (3 positions): » Pos 1: GPS » Pos 2: Altitude » Pos 3: Basic		
6 blinks	Bank selection switch (3 positions): » Pos 1: AP Mode » Pos 2: Sport Mode » Pos 3: Custom Mode (Set by pilot)		
7 blinks	Retractable legs (2 positions)		1 Throttle 3 Elevator
8 blinks	Gimbal control (2 positions)		2 Rudder 4 Aileron

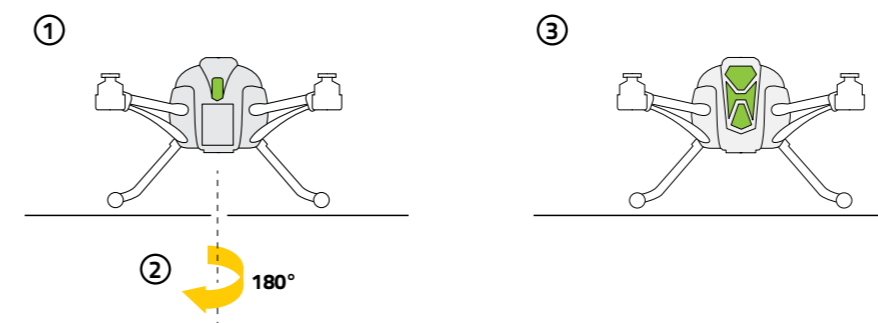
It is possible to complete the learning procedure after having learned channel 6 by waiting for at least 8 seconds. When using a 6-channel transmitter, a timeout function (8 seconds) will automatically complete the learning.

Tap the button once (1x) to enter the next calibration procedure.

6. GYRO CALIBRATION (LED: GREEN ●)

You MUST perform this step with precision or the »NovaX 350 won't fly properly.

1. Tap the button two times (2x) quickly to start the calibration.
2. Important! Mount the canopy. Pay special attention to the wires and connectors; do not pinch wires! Do not apply any force when replacing the canopy.
3. Place the »NovaX 350 on a horizontal and level surface (●) and wait for a single beep.
4. Rotate the »NovaX 350 by 180° about its vertical axis (●, ●).
5. 2 beeps confirm the successful completion of the gyro calibration procedure.
6. Remove the canopy.
7. Tap the button once (1x) to enter the next calibration procedure.

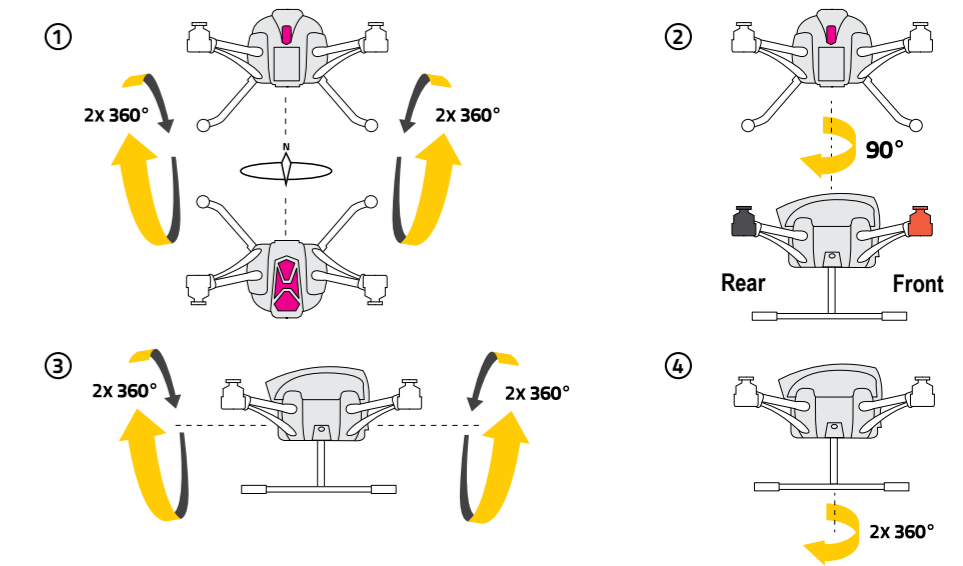


7. COMPASS CALIBRATION (LED: MAGENTA ●)

You MUST perform this step with precision or the »NovaX 350 won't fly properly. Perform the compass calibration in an open area, away from metal objects, high-voltage powerlines, radio towers/masts and any portable or stationary devices sending and receiving radio signals in order to eliminate magnetic interference.

When calibration fails: Calibration can fail in each step (3 beeps). In case of failure, move away from magnetic interferences and restart the procedure.

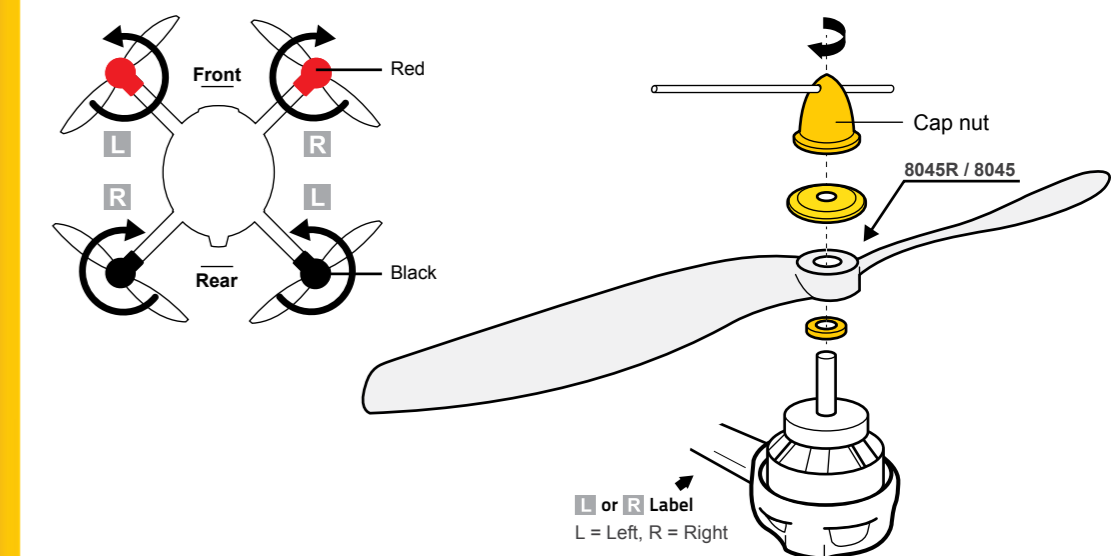
1. Tap the button two times (2x) quickly to start the calibration and wait for a single beep.
2. Replace the canopy.
3. Hold the »NovaX 350 horizontally and its nose pointing away from you.
4. Rotate the »NovaX 350 two times (2x) about its longitudinal axis by 360° as shown in step 1.
5. Rotate the »NovaX 350 clockwise about its vertical axis by 90° as shown in step 2. Wait for a single beep.
6. Rotate the »NovaX 350 two times (2x) about its lateral axis by 360° as shown in step 3.
7. Rotate the »NovaX 350 two times (2x) clockwise about its vertical axis by 360° as shown in step 4.
8. Wait for confirmation: Succeeded (2 beeps), failed (3 beeps). Remove the canopy.
9. Tap the button once (1x) to conclude and exit the calibration procedures. Replace the canopy.



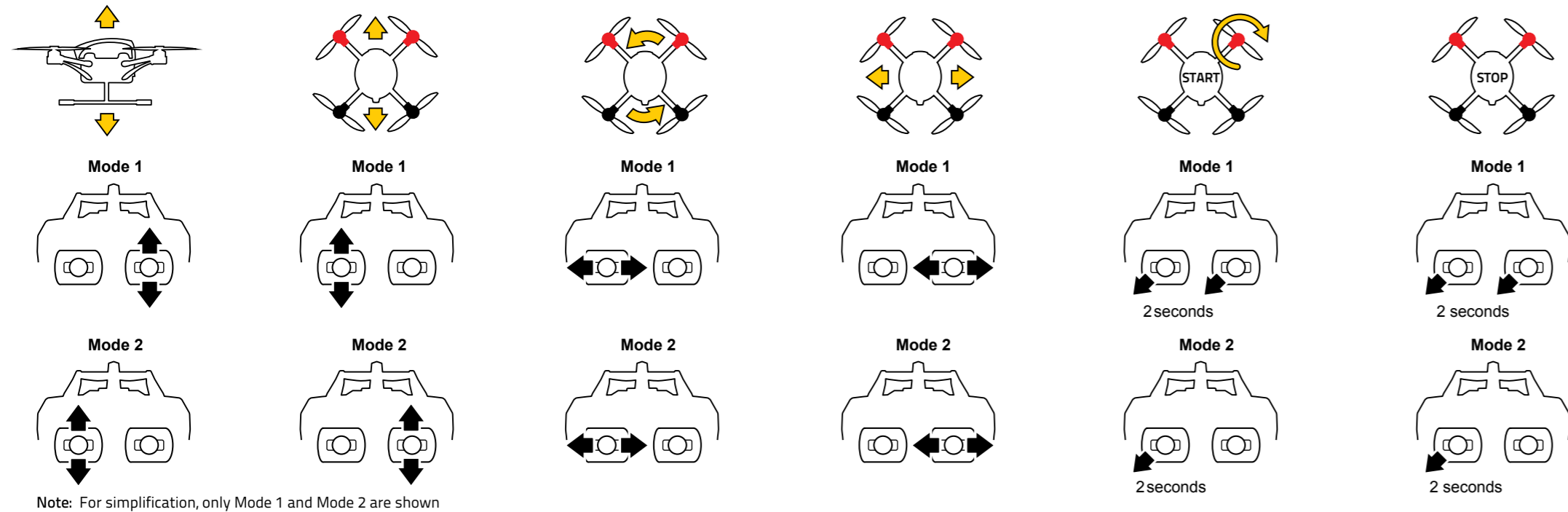
8. PROPELLER MOUNTING

Tighten the cap nut with moderate force! Overtightening will irreversibly damage the thread of the propeller mount axle. In this case you must immediately replace the propeller mount!

Install a propeller on each motor. Match up "L" (boom) and "8045" (propeller) and "R" and "8045R". Observe the diagram.



9. CONTROLS



Note: For simplification, only Mode 1 and Mode 2 are shown

⚠ In case that the »NovaX 350 circles (GPS) or spirals down (R.T.H.), the pilot must immediately manually land and recalibrate the compass.

GPS

The GPS signal strength is indicated by the front and rear LED. Depending on the GPS signal strength the solid LED light is interrupted by blinking blue light (distinct blink patterns). Carefully study the below table so that you can distinguish the different signals.

Signal	optimal	good	medium	weak	no signal
Basic (Magenta)	[Solid Magenta bar]				
Altitude (Green)	[Solid Green bar]				
GPS (Blue)	[Solid Blue bar]				

R.T.H. (RETURN TO HOME)

⚠ In order for R.T.H. to work, wait (1 - 10 min.) until the »NovaX 350 receives a good GPS signal before taking off.

R.T.H. (Return To Home) is a failsafe feature allowing the »NovaX 350 to fly back to its original take-off position and is triggered automatically or manually.

Auto triggers:

- > Receiver signal loss (receiver failure)
- > Operation outside operating range (approx. 800 – 1000 m)
- > Transmitter turned off

Manual trigger (See fig. R.T.H.):

- > Deactivated: Switch SWD in position 1
- > Activated: Switch SWD in position 2

The returning to home happens in a two-step procedure: the »NovaX 350 is automatically brought into a stable hover position, then returns home.

R.T.H. is a feature of S.M.A.R.T. (Software Managed Auto Return Technology). The pilot can configure S.M.A.R.T. through the EyeControl App. The AUTO function marks the motor start location as home and the pilot can deactivate the function again to take back control as soon as they see the situation under control. To learn more about S.M.A.R.T., refer to the product website.

For R.T.H. to work, a good GPS signal is required at all times. The »NovaX 350 may take up to 10 min. for GPS signal acquisition the first time you turn it on. For subsequent signal acquisition the time may be shorter (1 - 2 min.). Note that whenever you move the »NovaX 350 to another location, the signal acquisition time may increase again (1 - 10 min.). Depending on the GPS signal strength, the »NovaX 350 behaves differently. The below table summarizes all possible behaviours.

GPS signal	Behaviour on triggering of R.T.H.
Good signal at take-off and when R.T.H. is triggered	»NovaX 350 returns home.
Weak signal at take-off, but improved signal during flight	»NovaX 350 holds its position for 5 seconds, then descends and lands.
Signal weakens during flight	»NovaX 350 descends immediately.

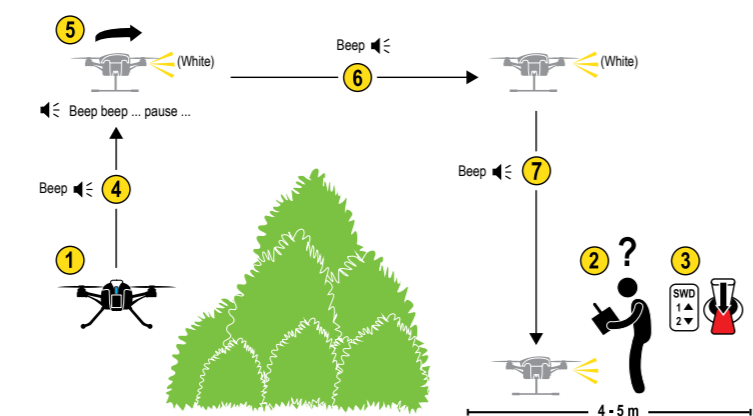


Fig. R.T.H.

SAFETY INSTRUCTIONS

⚠ Read the instructions carefully and especially observe the safety information. If you do not follow the safety instructions and information on proper handling in this manual, we assume no liability for any resulting personal injury or damage to property. Such cases will invalidate the warranty/guarantee.

⚠ Only use the supplied flight battery or a suitable spare battery from RC Logger.

⚠ After the flight, the LiPo flight battery must be disconnected from the »NovaX 350.

⚠ Make sure the transmitter is turned on before connecting the battery to the »NovaX 350.

⚠ Avoid unexpected startup. This can lead to serious injury and damage the »NovaX 350.

Persons/Product

- > For safety and approval purposes (CE), you must not rebuild and/or modify this product. If you use the product for purposes other than those described above, the product may be damaged. In addition, improper use can cause hazards such as short circuiting, fire, electric shock etc. Read the instructions carefully and keep them.
- > Make this product available to third parties only together with its operating instructions.
- > This product complies with the statutory national and European requirements. All company names and product names are trademarks of their respective owners. All rights reserved.
- > The device is not a toy. Keep it out of the reach of children and pets.
- > Do not leave packaging material lying around carelessly. These may become dangerous playing material for children.
- > If it is no longer possible to operate the product safely, take it out of operation and protect it from any accidental use. Safe operation can no longer be guaranteed if the product:
 - » is visibly damaged,

- » is no longer working properly,
- » has been stored for extended periods in poor ambient conditions, or
- » has been subjected to any serious transport-related stresses. The product must not become damp or wet. The »NovaX 350 uses delicate electronic components which are sensitive to temperature fluctuations and are optimised for a particular temperature range. Operating temperatures below 0°C must be avoided.

- > Before every flight check the functional reliability of your model and the transmitter (if provided). Watch out for any visible damage such as defective plug connections or damaged cables and wires.
- > Before each operation check the correct and secure position of the propellers.
- > Always switch on the transmitter first before connecting the battery to the »NovaX 350.
- > Set the throttle to zero before connecting the battery to the »NovaX 350. The rotors might run unintentionally!
- > When the rotors are running, make sure that neither objects nor body parts are in the rotating and suction area of the propellers.
- > Do not take any risks when operating the model! Your own safety and that of your environment is solely down to you being responsible when dealing with the model.
- > Improper operation may cause serious injury and property damage! Therefore make sure to keep a sufficiently safe distance to persons, animals or objects during operation.
- > Fly the »NovaX 350 only if your ability to respond is unrestricted. The influence of tiredness, alcohol or medication can cause incorrect responses.
- > Never expose the »NovaX 350 or the transmitter to direct sunlight or excessive heat for an extended period of time.
- > In the case of a severe crash (e.g. from a high altitude) the electric gyro sensors can be damaged and/or misadjusted. Therefore, full functionality must be tested before flying again without fail!
- > Observe the warn/safety signals emitted by the »NovaX 350 at all times to avoid damage (e.g. discharged battery).

Outdoor flying locations

- > Always and only operate the »NovaX 350 in a designated RC flying area.

- > Stay away from power lines, cellphone towers and other sources of potential interference, and restricted areas.

(Rechargeable) Batteries

- > Correct polarity must be observed while inserting the batteries.
- > Remove the battery from the »NovaX 350 after every flight. Remove the batteries from the transmitter if you do not use it for a longer period of time. Discharged batteries may leak.
- > Leaking or damaged batteries can cause acid burns when in contact with skin. Therefore use suitable protective gloves to handle corrupted and leaking batteries.
- > Batteries must be kept out of the reach of children. Do not leave the batteries lying around. There is a risk that children or pets may swallow them.
- > All batteries should be replaced at the same time. Mixing old and new batteries can lead to battery leakage and device damage.
- > Batteries must not be dismantled, short-circuited or exposed to fire. Never recharge non-rechargeable batteries. There is a risk of explosion!
- > Never mix regular batteries and rechargeable batteries!

LiPo batteries

⚠ Lithium is a highly reactive chemical element with a high energy density. In the case of overcharging, the LiPo rechargeable battery packs might catch fire or even explode. Therefore, LiPo rechargeable battery packs must always be put on a fire-proof surface for charging and the charging process must be supervised.

⚠ In no case must the maximum permissible battery pack temperature of +60°C be exceeded. Otherwise the rechargeable battery may explode!

- > Do not leave the LiPo flight battery connected when you do not use it (e.g. during transport or storage). Otherwise, the LiPo flight battery may be fully discharged.
- > Rechargeable LiPo batteries are very susceptible to moisture due to the chemicals they contain! Do not expose them to moisture or liquids. Risk of explosion!
- > When handling LiPo batteries, observe the special safety information of the battery manufacturer!
- > Never charge the LiPo flight battery immediately after use. Always leave the LiPo flight battery to cool off first (at least 5-10 minutes).
- > Only charge intact and undamaged batteries. If the external insulation of the rechargeable battery is damaged or if the rechargeable battery is deformed or bloated, it must not be charged. In this case, there is immediate danger of fire and explosion!
- > Never damage the exterior of a LiPo flight battery. Never cut the covering foil. Never stab any LiPo flight batteries with pointed objects.
- > As the charger and the rechargeable LiPo flight battery both heat up during the charging procedure, it is necessary to ensure sufficient ventilation. Never cover the charger or the LiPo flight battery!
- > Remove the LiPo flight battery that is to be charged from the model and place it on a fire-proof support (e.g. a plate). Keep a distance to flammable objects.
- > Disconnect the LiPo flight battery from the charger when it is fully charged.
- > The contacts of the battery may not be short-circuited, as there is danger of fire and explosion!
- > Do not expose rechargeable batteries to fire, as there is a risk of explosion!
- > Keep rechargeable LiPo batteries away from children. Store rechargeable batteries in a dry, cool place.
- > If a rechargeable battery is deformed or damaged during a crash, it must no longer be used. The same applies for "swollen" rechargeable

batteries, or rechargeable batteries with other visible deformation or leaks. Do not attempt to charge such rechargeable batteries! Danger of fire and explosion!

- > Dispose of such rechargeable batteries in an ecologically sound fashion.
- > The general hazard notices for handling batteries and rechargeable batteries also apply for rechargeable LiPo batteries.
- > Since discharging below 3.0 V per cell would lead to permanent damage of the rechargeable battery pack, this total discharging is to be prevented as far as possible.
- > For safety reasons, programmable cruise controls/flight control systems should be set in such a way that the undervoltage detection has already responded before a voltage of 3.0 V per cell is reached (e.g. 3.2 V). Alternatively, the optical undervoltage displays are also recommended.

Correct dimensioning

- > As the current drawn rises, the battery pack warms and the usable capacity is lowered. The ideal operating temperature during discharge is between +20 and +40 °C and must not exceed +60 °C even under extreme load.
- > The maximum short-time discharge current is stated in the technical data sheets or can be read directly from the battery pack. The value "C" always refers to the capacity value of the respective battery pack.

Example:

A battery pack with a capacity of 2100 mAh and "20 C" can be discharged with 2100 mA x 20 = 42 A maximum.

- > However, the maximum permissible continuous current is clearly lower. If there are no precise manufacturer's specifications, the battery pack should not be discharged with more than approx. 50 % of the maximum permissible surge current over a long term.

Miscellaneous

- > Consult an expert when in doubt about operation, safety or connection of the device.
- > Maintenance, modifications and repairs are to be performed exclusively by an expert or at a qualified shop.
- > If you have questions which remain unanswered by these operating instructions, contact our technical support service or other technical personnel.

PRODUCT SUPPORT

Visit <http://www.rclogger.com/support> or call +852 2559 2662 for product support. Additionally visit our Online Ticket System at <http://support.rclogger.com> for any RC Logger inquiry.



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