



***THANK YOU FOR PURCHASING METABIRD***

## **INSTRUCTION MANUAL**

To read imperatively before first use.  
14 + years old. THIS IS NOT A TOY!



Scan this QR code to access our “how to?” videos and visualize the instructions below.

Et aussi - und auch:

**LE MANUEL FRANCAIS - HANDBUCH IN DEUTSCH**

### **MetaBird in a few specs:**

- Ultra light bird, weight 9.30 g.
- Custom developed micro coreless motor 1.6 Watt / aluminum heat sink.
- 1:36 Reducer (patented) ultra-compact and lightweight (0.3 g).
- Precise power control (128 steps).
- Adjustable tail angle for slow or fast flights (indoor/outdoor).
- Sharp and immediate steering control by wing distortion (patented) for aerial stunts.
- Impressive gliding due to its very low ratio weight/wing area (3.42 g/dm<sup>2</sup>).
- Full battery protection against short circuit, overload and complete discharge, for a longer life.
- Up to 7 min flight at full speed, 8 min max for normal flight, or a distance of 1.8 km.
- Short charging time of the Bird in 13 minutes.
- Charge from anu USB port (PC, Powerbank, wall charger)

### **Application "The Flying App":**

- Compatibility: Check compatibility with systems and devices on [www.bionibird.com](http://www.bionibird.com)
- Range: The controllable distance of the bird is 100m in all directions.
- Protocol: Bluetooth 4 (Bluetooth Smart).
- Multiplayer system with Bluetooth connection, ability for multiple players in one place.
- User interface: 2 intuitive modes ("Easy", "Steering Wheel") and 2 joystick modes ("One Finger", "Classic RC")
- Easy: Tactile control of the acceleration, steer by tilting the phone, all with one hand.

- Steering Wheel: Tactile control of the acceleration, steer by turning the phone like a steering wheel.
- One Finger: Control the acceleration and steering with your index finger, while holding the phone with your other hand.
- Classic RC: Tactile control of acceleration and steering (Classic remote control).
- The sensitivity of each mode is independently configurable.
- Spring back effect ("Cruise control") on throttle can be activated or not.
- Battery level of the bird and strength of the BT signal.
- Interactive Sound
- Immersive sound environment.

### **Dimensions & performance:**

Bird length: 17 cm

Bird wingspan: 33 cm

Bird weight: 9.20 g

Bird controls: Power (altitude) and steering

Onboard accumulator: LiPO 58 mAh, 20 C- 1100 mA

Autonomy of the bird in normal flight: 8 min

Charging time of the bird: 13 min

Range control of the bird in flight: 100 m

Protocol: Bluetooth 4

Engine rotation speed (no load): 53,000 rpm

Engine rotation speed (full load): 35,000rpm

Wings flapping frequency max: 18 Hz

Wings flapping amplitude: 55 °

Ratio weight/wing area: 3.42 g/dm<sup>2</sup>

Max wing thrust: 10 g

WARRANTY: This product is warranted against failures in material and workmanship under normal (except impacts and crashes) for six (6) months from the date of purchase (Keep your purchase receipt).

For any questions regarding this product, please contact our customer service by email at:

[contact@bionicbird.com](mailto:contact@bionicbird.com).

*XTIM SAS: 77, Rue de Lyon 13015 Marseille FRANCE*

*email: [contact@bionicbird.com](mailto:contact@bionicbird.com)*

*website: [www.bionicbird.com](http://www.bionicbird.com)*

### **PATENTS:**

*Patented by Edwin Van Ruymbeke - France 0855430*

*date 08/05/08 and 0901629 date 3/04/09 PCT*

*FR2009/051560*

### **MANUFACTURER NOTES:**

\*The suitcase packing must be kept and used to store and carry the product in good conditions. This will increase product lifespan a lot.

**NEVER TRY TO MOVE WINGS MANUALLY!**

\*This product was tested for a lifespan of hundreds of cycles in flight; however it remains a high technology product that should be handled with care when not flying. Avoid seizing it by the wings or tail, place it carefully and gently on the charging slot, proceed gently also when replacing wings.

\*It is strongly recommended not to let children handle the bird, or pick it up from the ground after a flight. On the other hand, according to their aptitude, they can certainly try to control it in the air, under adult monitoring. Or simply enjoy watching MetaBird flying!

## ***I – UNPACKING YOUR METABIRD***



Check your product is complete as described above.

## ***II – INSTALLING THE APPLICATION ON YOUR SMARTPHONE***

Visit the app store using your smartphone and search for “Bionic Bird”. Then, install “The Flying App” on your device. Allow all the accesses the app requires, especially the Bluetooth control.

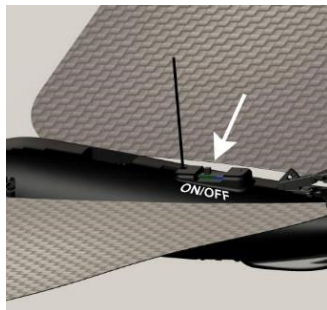
NB: For optimal and safe use, disable your Wi-Fi and call reception, and adjust your power saving options to restrict your phone from sleeping to ensure The Flying App isn’t interrupted during your flight!

The language used by the app is automatically adjusted to the language of your OS. French/English (for all other languages).

### **III –APPLICATION OPERATION**

**Guide:** When you first launch the application, the guide will initially be displayed. It consists of several simple pages with images outlining basic instructions that are essential to understand the product and its calibration. You must read these pages by scrolling from right to left, from the first to the last page, where you will find the “NEST” button, which will take you to the main screen of the application. NB: During your second use, the detection screen for the bird will be displayed when launching the application. The guide is always available by clicking on the NEST.

- On the last page of the guide, you can also find a link to video tutorials, which are very useful for understanding the main instructions “first-hand”.

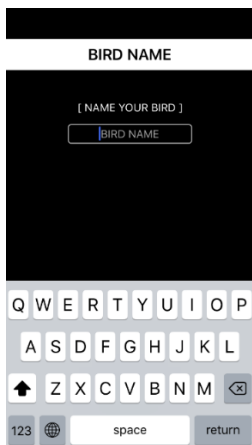


Once in the “NEST”, press the “FIND BIRD” button to launch the bird detection screen.

**Detecting the bird:** Launch the application (or click on “FIND BIRD” in the NEST) and turn on the bird. The “scanning bird” screen above will appear. The bird will be detected immediately.

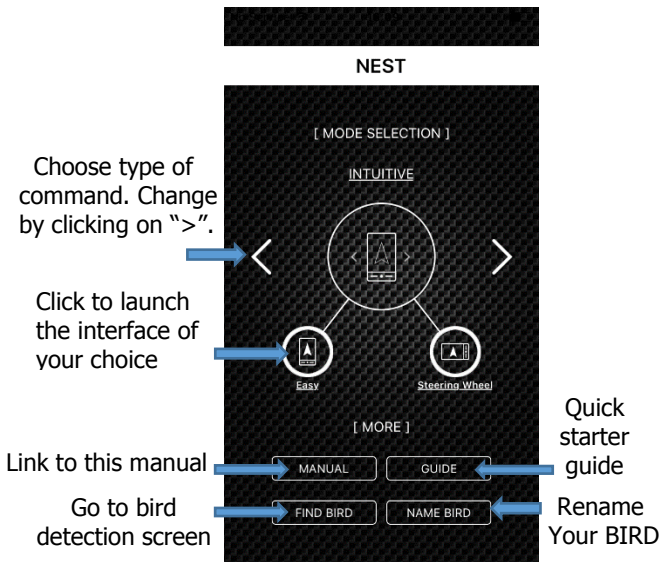
Its name will appear on the screen (by default “Bionic Bird”), and you just need to click it.

NB: If more names appear, it’s because more birds have been detected nearby. Choose your bird.



If this is the first time you use it, another screen appears to name your MetaBird. Next time, it will be recognized automatically with its name, and this screen will be skipped.

NB: The bird detection process lasts a maximum of 5 seconds. If your bird isn’t detected during this time, the “NEST” screen will appear. Use the “find bird” button to access the bird detection screen and restart the detection process.



### "NEST" screen:

The "NEST" will appear, which is the screen for choosing the type of command and flying interface on the app.

The four flying interfaces are as follows:

- The "intuitive" interfaces:

- Easy (portrait screen mode) – An interface where only the throttle is controlled by a touch slider on the screen using the thumb. Turning is controlled by tilting your hand. Everything is controlled with a single hand.
- Steering Wheel (landscape screen mode) – An interface where only the throttle is controlled by a touch slider, and changes in direction are



made by turning the smartphone with both your hands like a steering wheel.

- The "joystick" interfaces:

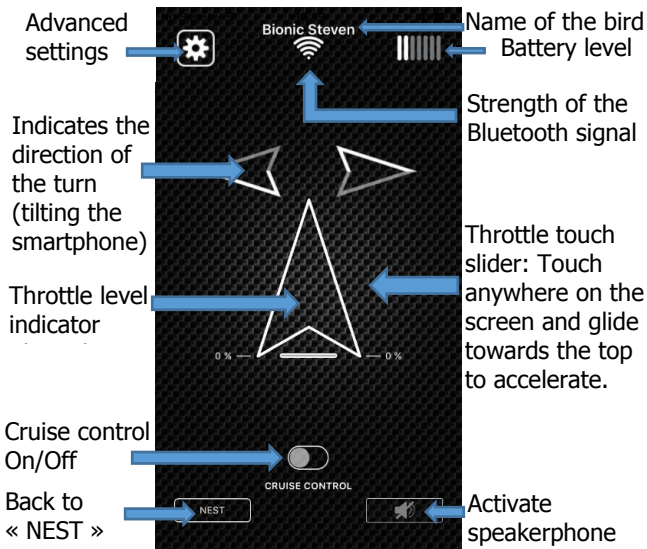
- One Finger (Portrait screen mode): An interface with a touch slider to control the throttle (vertical movement) and the steering (horizontal movement). Use your index finger to steer the bird and accelerate.
- Classic RC (Landscape screen mode): An interface with a touch slider to control the throttle and another for steering. Accelerate and steer the bird with your thumbs as if you were using a radio control. Choose between left or right-handed mode in the settings.
- 

**Launch the flying screen by clicking on the icon of your chosen flying interface.**

In the NEST you can also find:

- The link to the pdf version of the MANUAL.
- A quick start GUIDE, with a cheat sheet of information necessary for use.
- The return to the bird detection step ("FIND BIRD"), as well as where you can give the bird a NAME.

**"Easy" interface ("Intuitive" mode):** hold your smartphone with one hand, controlling the throttle with your thumb, and tilting your device to control the flight direction. This is the most immersive mode, which quickly frees your mind from the commands and allows you to become one with your MetaBird. **Tip:** Don't grasp your smartphone using your whole hand, rather rest it on your four fingers with your thumb on the front so you can give yourself the greatest freedom to tilt on both sides by turning your wrist.



**Direction:** The direction of a turn (right/left) and its angle is controlled by the tilt angle of the smartphone. The arrow becomes progressively grey when the tilting is active. Tilt sensitivity can be altered in the advanced settings screen.

**Throttle control:** This controls the power of the flapping of the wings and therefore the speed at which the bird gains altitude. The cursor position is relative - all you need to do is place your finger somewhere on the screen to create the zero position. Then, glide your finger towards the top to accelerate, and towards the bottom to reduce the throttle.

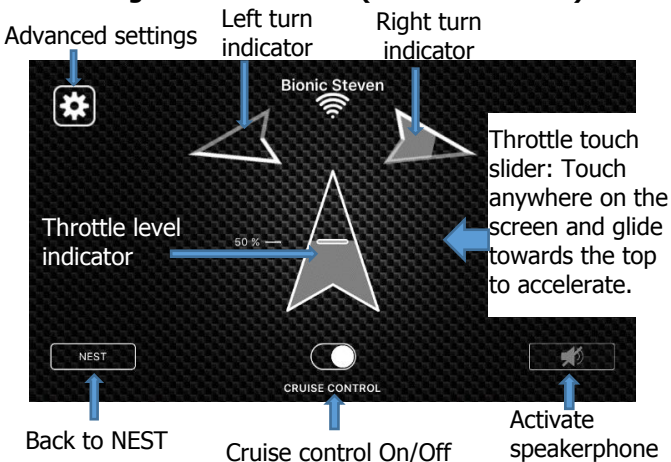
When CRUISE CONTROL is inactive, the cursor returns to zero as soon as you lift your finger (it springs back)

and the bird begins to glide. Place your finger on the screen again and slide it towards the top to set the throttle to your desired level. When CRUISE CONTROL is active, the cursor can be released and the throttle level will remain at the speed at which it's set. You can freely control the bird at a constant speed by tilting your smartphone without worrying about the screen. To regain control of the throttle, simply touch the screen again with your thumb.

**Attention:** In this scenario, there may be a lag when stopping the bird so ensure the bird has adequate space, free from risks.

**Attention:** Not touching the screen for extended periods can activate your smartphone's standby screen during the flight if the power saving controls haven't been changed.

### "Steering Wheel" interface ("Intuitive" mode):



For this mode, hold the device using two hands in front of you in landscape mode. Control the throttle using your thumb on the screen and steer the bird by turning the smartphone like a steering wheel.

Typically, for a right-handed person, the right thumb guides the speed while the hands turn the smartphone like a steering wheel to steer the bird.

**Direction:** The direction of a turn (right/left) and its angle is controlled by the tilt angle of the smartphone. The arrow becomes progressively grey when the tilting is active. Tilt sensitivity can be altered in the advanced settings screen.

**Throttle control:** This controls the power of the flapping of the wings and therefore the speed at which the bird gains altitude. The cursor position is relative - all you need to do is place your finger somewhere on the screen to create the zero position. Then, glide your finger towards the top to accelerate, and towards the bottom to reduce the throttle.

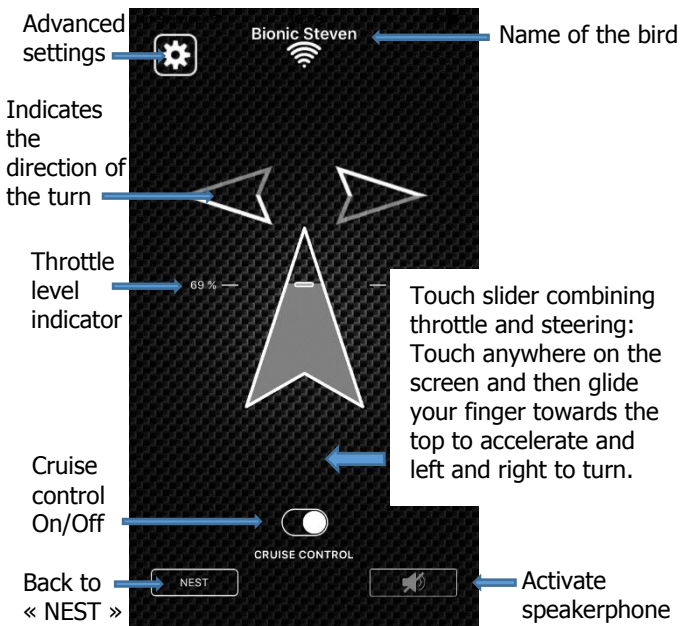
When CRUISE CONTROL is inactive, the cursor returns to zero as soon as you lift your finger (it springs back) and the bird begins to glide. Place your finger on the screen again and slide it towards the top to set the throttle to your desired level. When CRUISE CONTROL is active, the cursor can be released and the throttle level will remain at the speed at which it's set. You can freely control the bird at a constant speed by tilting your smartphone without worrying about the screen. To regain control of the throttle, simply touch the screen again with your thumb.

**Attention:** In this scenario, there may be a lag when

stopping the bird so ensure the bird has adequate space, free from risks.

**Attention:** Not touching the screen for extended periods can activate your smartphone's standby screen during the flight if the power saving controls haven't been changed.

**"One Finger" interface ("Joystick" mode):** For this mode, hold the device in one hand, and control the throttle and the steering with the index finger of your other hand.



By placing your index finger on the screen, you define the zero position of the throttle/steering cursor.

Steering: Gliding your finger either left or right allows you to control the steering.

Sensitivity can be altered in the advanced settings screen.

Throttle: Gliding your finger up and down allows you to control the throttle.

Sensitivity can be altered in the advanced settings screen.

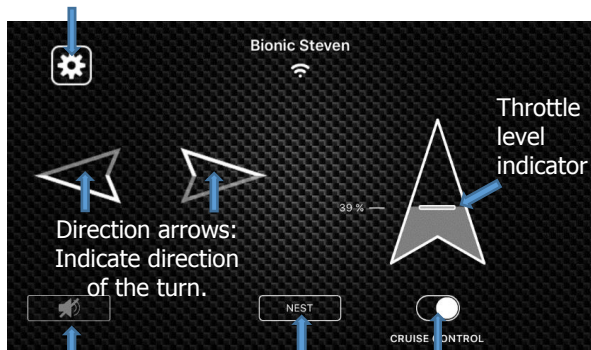
When CRUISE CONTROL is inactive, the cursor returns to zero as soon as you lift your finger (it springs back) and the bird begins to glide. Place your finger on the screen again and slide it towards the top to set the throttle to your desired level.

When CRUISE CONTROL is active, the cursor can be released and the throttle level will remain at the speed at which it's set. However, the steering always returns to the centre position.

**Attention:** In this scenario, there may be a lag when stopping the bird so ensure the bird has adequate space, free from risks.

**Attention:** Not touching the screen for extended periods can activate your smartphone's standby screen during the flight if the power saving controls haven't been changed.

## Advanced settings



Speakerphone

Back to « NEST »

Cruise control on/off

**“RC Classic” interface (“Joystick” mode):** For this mode, take the device in your two hands in landscape mode, and activate the commands using your two thumbs.

Typically, for a right-handed person, the right thumb controls the throttle, and the left thumb controls the steering. For a left-handed person, this would be the reverse. You can select the “left-handed” option in the advanced settings.

The active zones of the cursors are larger than their graphic representations, which are there to clearly indicate the zones when glancing at the screen.

When CRUISE CONTROL is inactive, the cursor returns to zero as soon as you lift your finger (it springs back) and the bird begins to glide. Place your finger on the screen again and slide it towards the top to set the

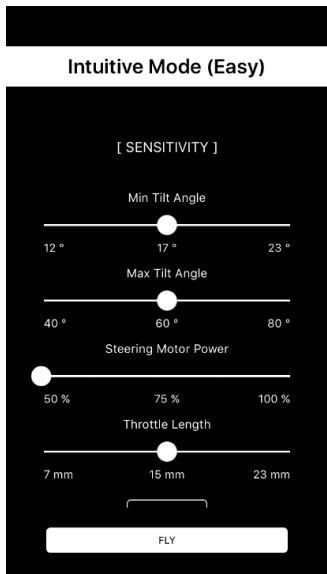
throttle to your desired level.

When CRUISE CONTROL is active, the cursor can be released and the throttle level will remain at the speed at which it's set.

**Attention:** In this scenario, there may be a lag when stopping the bird so ensure the bird has adequate space, free from risks.

**Attention:** Not touching the screen for extended periods can activate your smartphone's standby screen during the flight if the power saving controls haven't been changed.

## ***IV - ADVANCED SETTINGS***



### **“Easy” interface settings:**

#### Min and max tilt angle:

The minimum angle of the hand (horizontally) at which the steering will be activated is 17° by default. You can set the angle to be between 12° and 23°. This angle allows you to alter the tolerance for holding the smartphone at a perfectly flat position, to avoid triggering a turn by a slight movement. Similarly, it's possible to adjust the maximum



steering angle to be between 40° and 80°. The maximum angle at which the rudder is pushed to the bottom is 60° by default.

Between these two tilting angles, the power of the turn varies from 0 to 100% (17° = 0%, 60° = 100%).

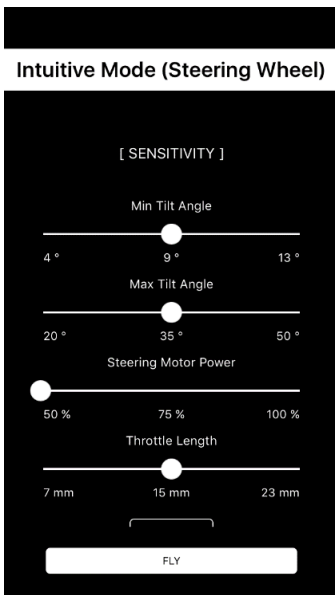
Motor steering power: In case of difficulty when turning the bird, increase the power to help by accelerating the change of direction. The default value is 50%.

Throttle path: Set the desired length of the path (movement of the finger) to go from minimum to maximum power (15mm by default).

## “Steering wheel” interface settings:

### Min and max tilt angle:

The minimum angle of the hand (horizontally) at which the steering will be activated is 9° by default. You can set the angle to be between 4° and 13°. This angle allows you to alter the tolerance for holding the smartphone at a perfectly flat position, to avoid triggering a turn by a slight movement. Similarly, it’s possible to adjust the maximum steering angle to be between 20° and 50°. The maximum angle at



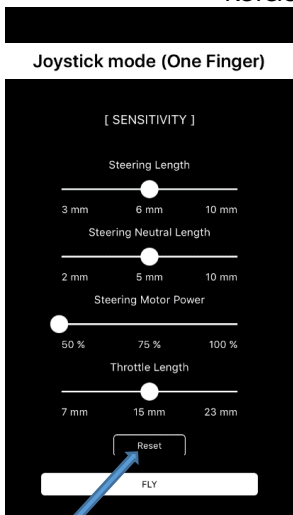
which the rudder is pushed to the bottom is 35° by default.

Between these two tilting angles, the power of the turn varies from 0 to 100% (9° = 0%, 35° = 100%).

Motor steering power: In case of difficulty when turning the bird, increase the power to help by accelerating the change of direction. The default value is 50%.

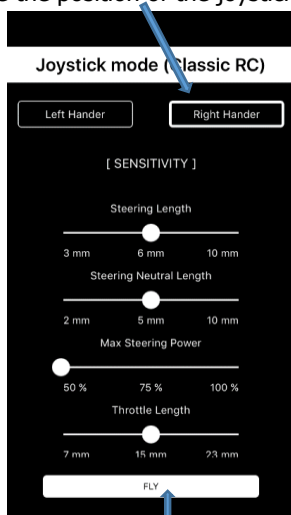
Throttle path: Set the desired length of the path (movement of the finger) to go from minimum to maximum power (15mm by default).

Reverse the position of the joysticks



Reset factory settings

"One finger" settings



Back to fly screen

"Classic RC" settings

## **“Joystick” interface settings (“Classic RC” and “One finger”):**

Neutral steering path and Steering path: These settings configure the path your finger needs to follow (movement of the finger) to start triggering a turn, and also to attain a maximum turn. They are set by default at 6mm and 5mm.

Motor steering power: In case of difficulty when turning the bird, increase the power to help by accelerating the change of direction. The default value is 50%.

Throttle path: Set the desired length of the path (movement of the finger) to go from minimum to maximum power (15mm by default).

### Setting available for the Classic RC mode only: Right-handed/Left-handed

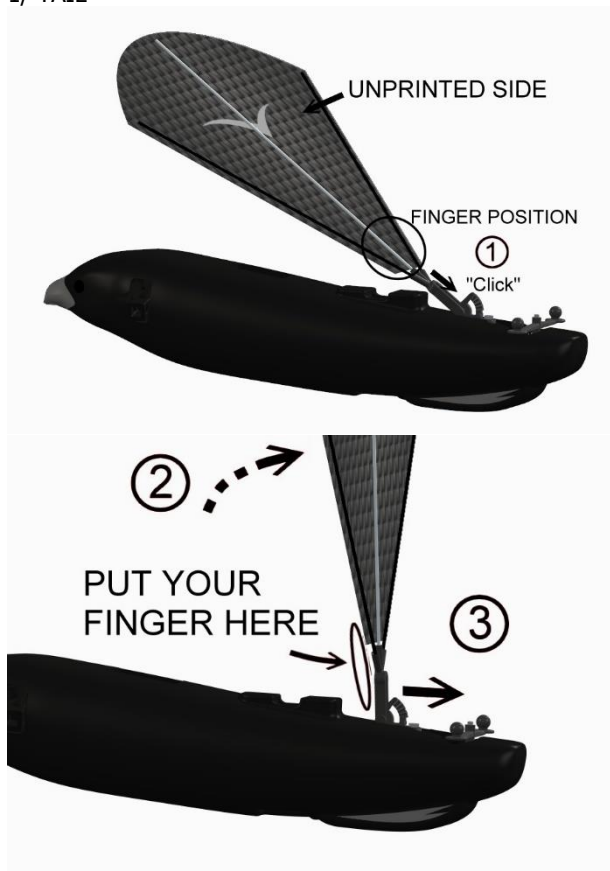
This setting allows you to reverse the position of the joysticks that control the throttle and the steering, to allow the screen to reflect your dominant hand. You can choose between right or left-handed display (or mode 1 and mode 2 for the RC enthusiasts).

Once your settings are finalised, click on the “Fly” button to return to the flying screen.

Pressing the “RESET” button on the bottom of each setting screen allows you to restore the factory settings.

## V- ASSEMBLING METABIRD

### 1/ TAIL



1 - Snap the tail end into its hole by pushing following  
MetaBird-v1-03/15/20 Page **20** on **30**

the arrow direction until you feel a “click”. Mind your fingers position as shown on the picture. (hold the tail always close to the base, which is robust).

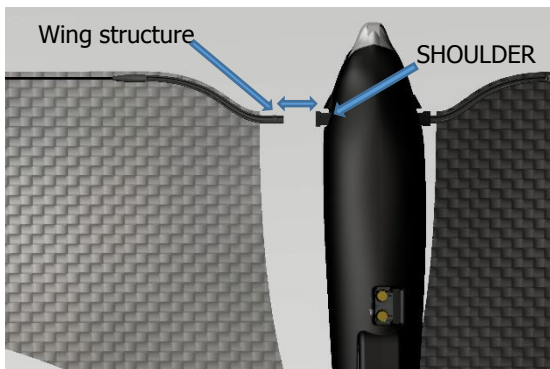
2 – Once in position, rotate the tail up to a vertical position, then 3 – **slide your forefinger down** at maximum to press it backward into the final position.

## 2/ WINGS

Select the right wing for the right side and the left wing for the left side (the upper side of the wing is the one printed).



1 – At rear, snap the back of the wing on the round knob of the steering mechanism.



2 - Align the wing bone with the shoulder and insert it in the slot. You should feel a click, meaning that the wing is correctly inserted. NB: Always hold the wings by the base, which is robust.

## ***VI - FLYING YOUR METABIRD***

### **Conditions of use:**

Indoor use doesn't require any conditions except a room big enough to fly around without obstacle. Outdoor use requires adapted weather conditions, ideally no wind at all (recommended for beginner, and compulsory to balance wings, see below), and no rain.

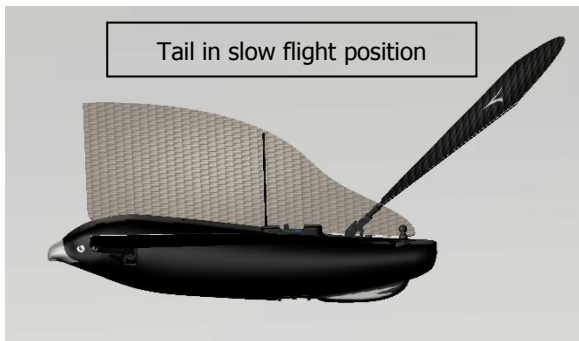
For an experienced user, wind up to 8 mph is acceptable, if it's steady. So it's better to choose an open area, far from trees or buildings, which could create whirlwinds.

Avoid flying near a road, or water, where it could fall by accident.

### **Adjusting the tail**

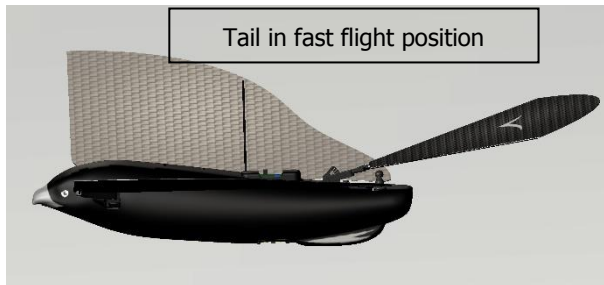
The tail angle is adjustable (5 notches), making possible to adjust the speed of MetaBird.

To change the notch, just push or pull on the base of the tail.



\* For indoor flights, in a confined space, or for slow flights: set the tail in a high position (choose the notch n° 3, starting from the bottom, among the 5 possible positions).

The notches 4 and 5 are not recommended at begin.



\* For outdoor flights, in a big space or for fast flights: adjust the tail in a low position (using the notch 1 or 2). Notch 2 is recommended for beginners. Notch 1 is for best performance but requires a bit of practice, and wings adjustment (see below).

**NB:** When picking up the bird after landing, always check that the tail hasn't moved to another notch. If so, set it back again.

### **Flying METABIRD**

\* Launching: Push the throttle stick  $\frac{3}{4}$  of the way up. Always point MetaBird facing the wind, launch the bird from your hand with a gentle horizontal toss. Let it gain some altitude before trying any turns. If it flies downward, you can try with the tail one notch higher.

\* Gliding flight: To make MetaBird glide: gain altitude, reduce speed and get the bird flying straight, then cut the throttle.

\* Out of range: If MetaBird flies out of range of the transmitter, just get closer to the bird and it will connect again immediately.

\* Emergency landing: If you need to land MetaBird quickly (in a risky situation), turn right or left to maximum and cut throttle, then release the direction stick. MetaBird will nosedive towards the ground. Generally, doing tight turns will cause MetaBird to descend. It is a good way to control its flight.

**WARNING:** do not keep the steering at maximum on one side for a long time, even when the bird is not flying because it could cause the steering micro-motor to overheat.



\* End of flight: When MetaBird flight becomes less powerful it is time to recharge it (see above). When the LiPO battery inside bird is 95% empty the power to the wings will be cut and the bird will glide down to the ground.

\* Battery power off: It may happen sometimes at the end of the flight, that the battery voltage become too low, and it powers off automatically (bird LED is OFF), although the switch is still ON.

No problem, when you put the bird back on charge, it will be reactivated.

### **First flight - Adjusting the wings**

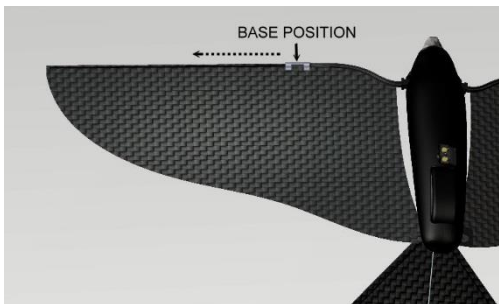
From the very first flight, it is essential to check the wings balance, and to adjust it if needed. If while flying, you notice the following unbalanced flight:

\*Immediately when launched, the MetaBird turns to one side and go directly to the ground (big unsteadiness).

\*The direction stick is in the middle position but the MetaBird turn left or right in small circles.

\*It seems that the MetaBird turns more easily to one side than to the other.

Then you will have to trim the wings.



Each wing is equipped with a ballast. Its base position is nearest to the body. It can slide toward the end to create a ballast differential between the 2 wings.

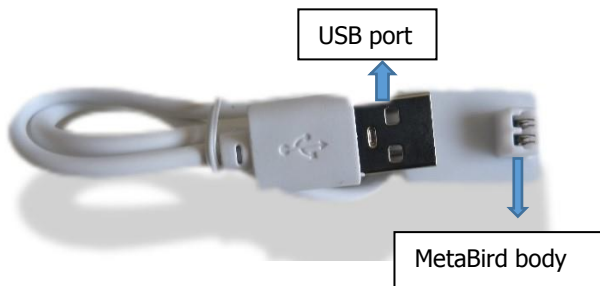
You must increase the ballast of the opposite wings to the turning side you observed. For instance, If MetaBird tends to turn to its right side, move ballast of its left wing toward the end and leave the one on the right wing unchanged (base position).

Try flying the MetaBird again, and if necessary, repeat the process until you get a straight flight or an acceptable slight turn. Your MetaBird is now balanced and its performance is optimized.

NB: Flying with tail set in a high (5) or low (1) position may require a different wing adjustment.

In order to fly the MetaBird with tail in high position in a confined space and keep a precise control, it is recommended to do a very precise wing adjustment with the tail in that position.

## ***VII – CHARGING METABIRD***



The first thing to do is to plug the USB cable to the adapter.



To charge MetaBird, simply insert MetaBird's connectors into the charging slot of the adapter. Then connect the cable to your smartphone charger or to a USB socket of your computer.

The adapter LED will flash during the charge process (about 13 min) then stop flashing when the charge is complete.

**WARNING:** It is compulsory to use the plug adapter supplied only to charge MetaBird. Any other charging device could damage the bird battery.

In order to protect the LI-PO battery inside your MetaBird, do not leave the bird totally discharged when you stop using it. Before to store it, remember to charge the bird a few minutes, and then to switch it OFF.

### **IMPORTANT NOTES ABOUT THE USE OF METABIRD:**

- It is strongly **recommended to charge** the bird at least at 50% of the battery capacity before to **store it** after use. Or the battery life will be shortened a lot.

- **At cold temperature**, the batteries are losing most of their power. It may happen that your MetaBird

performance decrease. The egg may also take more time to charge it.

It is advised to charge the bird indoor (warm temperature), then to go out for flying.

Below 0°C (32 F), the wings may also unstick. It is advisable not to play in such low temperature.

- The motor and clockworks inside MetaBird are very efficient, with very tight tolerance.

They need a training period during which they will get free of frictions.

The maximum power and flying time will be reached after about ten flights.

**WARNING:**

*This product complies with the following standard and complies with FCC part 15 (2008);*

*R&TTE 2008 (EN300440-2. EN301489-1. EN301489-3);  
DEEE (WEEE) directive 2002/96/EC.*

**FCC ID: 2ADQDBB1**

*This device complies with part 15 of the FCC rules.*

*Operation is subject to the following 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.*

*WARNING: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.*

*FCC NOTE: 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.*



***Users should keep and retain this manual for future reference.***

*Keep the packaging since it contains important information.*

*Keep name and address.*

### ***SAFETY PRECAUTIONS:***

*Not suitable for children under 36 months, small parts may be swallowed.*

*Do not play next to an animal or a person.*

*Do not use near electrical lines or during a storm.*

*Do not fly MetaBird near electrical lines, trees, buildings and any other obstacles.*

*Keep away from water.  
Never fly or follow MetaBird in the streets.  
Keep away MetaBird from face and eye.  
Never put your fingers close to MetaBird when it moves.  
Always place the MetaBird on the "OFF" position when not flying.*

**BATTERY CAUTIONS:**

*Works with 1 rechargeable LI-PO (lithium-polymer) battery (included inside the bird).  
It cannot be extracted or replaced.  
Rechargeable batteries are only to be charged by an adult.  
Respect the correct polarity (-) or (+)  
The supply terminals are not to be short-circuited.  
Only use the battery charger provided with the box to charge the LI-PO battery of your product: the USB cable to the MetaBird.*

**DEEE:**

*When this appliance is out of use, please remove all batteries and dispose of them separately. Bring electrical appliances to the local collecting points for waste electrical and electronic equipment. Do not throw in domestic refuse.*



**WARNING :**  
CHOKING HAZARD- Small Parts  
Not for children under 3 years.

