

# REELY

® Operating Instructions

**Electric quadcopter “Drone Copter 2-in-1” RtF**

Item no. 2142121

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## 1. Introduction

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Dear customer,

Thank you for purchasing this product.

This product complies with statutory, national and European regulations.

To ensure that the product remains in this state and to guarantee safe operation, always follow the instructions in this manual.



These operating instructions are part of this product. They contain important information on setting up and using the product. Do not give this product to a third party without the operating instructions. Therefore, retain these operating instructions for reference!

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If there are any technical questions, please contact: [www.conrad.com/contact](http://www.conrad.com/contact)

## 2. Explanation of symbols

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The symbol with an exclamation mark in a triangle is used to highlight important information in these operating instructions. Always read this information carefully.



The arrow symbol indicates special information and tips on how to use the product.

## 3. Intended use

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The electric quadcopter "Drone Copter 2-in-1" is an electrically powered helicopter-like model that is wirelessly controlled using the included radio remote control. The quadcopter is designed solely for private use within the domain of model construction with the associated operating times.

The model is designed for operation in appropriately sized enclosed spaces, such as sports halls and warehouses, but may also be used outdoors in calm conditions.

It is not suitable for other purposes. Using this product for any purposes other than those described above may damage the product and result in a short circuit, fire, electric shock or other hazards.

The product must not get damp or wet.

This product is not suitable for children under 14 years of age.



Always follow the safety information in these operating instructions. It contains important information on how to use the product safely.

You are responsible for the safe operation of this model!

## 4. Package contents

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- Ready-to-fly quadcopter with built-in flight battery
- Wireless remote control transmitter
- USB charging cable
- Screwdriver
- Propeller tool
- Spare propellers (4 pcs)
- Operating instructions

### Up-to-date operating instructions

To download the latest operating instructions, visit [www.conrad.com/downloads](http://www.conrad.com/downloads) or scan the QR code on this page. Follow the instructions on the website.



## 5. Product description

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The ready-to-fly quadcopter "Drone Copter 2-in-1" has 4 separately controlled motors, each of which drives its own propeller. Using the simultaneous acceleration of all propellers, the quadcopter can lift off from the ground and hover steadily in the air at appropriate propeller speeds.

For in-flight stabilisation, the quadcopter has sophisticated electronics with position and acceleration sensors (6-axle gyro) allowing uncontrolled movements of the model to be detected and compensated for immediately. The quadcopter is equipped with an air pressure sensor so that it can stabilise its flight altitude itself.

For flight in a certain direction, the electronics in the model recognise the control impulses of the transmitter and alter the speeds of the individual motors accordingly. The quadcopter thus tilts in the desired direction and the lift thereby also acts as propulsion. The quadcopter flies in the respective direction.

On the model, the two upper propellers rotate clockwise and two lower propellers counter-clockwise. Through a targeted change of speed of the two propeller groups relative to each other (propellers turning to the right turn somewhat faster and propellers turning to the left turn somewhat slower or vice versa), it is possible to turn (yaw) the quadcopter around the vertical axis while keeping the flight altitude the same and keeping the quadcopter at the same spot.

In order to better recognise the orientation of the model in flight, there are two blue LEDs on the front and two green LEDs on the back of the housing.

As a special feature, the quadcopter can be operated in skateboard mode (skater mode) or in paraglider mode (para mode).

For beginners, the transmitter may be operated in beginner mode. In beginner mode, the control responses of the model are significantly reduced (dual rate function). In sports mode, the quadcopter responds with much greater agility. The quadcopter has maximum control sensitivity when in expert mode.

If necessary, the quadcopter can fly independent figures in demo mode or lateral flips.

For the operation of the transmitter, it is still required to have 2 AAA/Micro batteries (not included).

# 6. Safety instructions

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Damage caused due to failure to observe these instructions will void the warranty. We shall not be liable for any consequential damages!

We shall not be liable for damage to property or personal injury caused by incorrect handling or failure to observe the safety information! Such cases will void the warranty/guarantee.

The guarantee/warranty also excludes normal wear and tear during operation (such as worn motor shaft bearings) and accident damage (such as broken chassis parts or propellers).

Dear customer,

These safety instructions are designed to ensure the safe operation of the product and your personal safety. Read this section very carefully before using the product.

## a) General information

**Caution, safety hazard!**

This model has the potential to cause damage to property and/or individuals.

Ensure that you are sufficiently insured for the operation of the model, e.g. by taking out personal liability insurance. If you already have a personal liability insurance, check with your insurance company whether the operation of the model is also insured.

**Important:** In some countries, you are required to have insurance when using any model aircraft.

Familiarise yourself with the local statutory regulations for using model aircrafts. In Germany, for example, the regulations for model aircraft are stipulated in the German Air Traffic Act. Any breaches of the statutory regulations could lead to severe penalties as well as restrictions to your insurance cover.

- Unauthorised conversion and/or modification of the product is prohibited for safety and approval reasons.
- This product is not a toy and is not suitable for children under 14 years of age.
- The product must not get damp or wet.
- If you do not have sufficient knowledge of how to operate remote-controlled models, contact an experienced model user or a model club.
- Do not leave packaging material carelessly lying around, because it could become a dangerous toy for children.
- If you have any questions that are not answered by these operating instructions, contact us (see Section 1 for contact information) or an experienced technician.
- The operation and handling of remote controlled quadcopters must be learned! If you have never operated a model of this kind, start with particular care and get used to the responses of the model to the remote control commands first. Be patient!



## b) Before first use

- Select a suitable location to operate your model.
- When switching on the quadcopter, follow the procedure described below in a separate section. This ensures that the transmitter and receiver connect properly and that your model responds reliably to remote control commands from your transmitter.
- Ensure that there are no other models operating on the same frequency (2.4 GHz) within range of the remote control. Always check whether there are any other 2.4 GHz remote controls that may interfere with the model.
- Conduct regular checks to verify that the model and remote control are safe to use. Inspect the parts for any signs of damage, such as broken connectors or damaged cables. All moving parts on the model should move freely, but there must not be any slackness in the bearing.
- Check that the rotors are secure and in the correct position before each use.
- The flight battery required for operation must be charged before use.
- Always ensure that the batteries in the transmitter have enough remaining capacity (see transmitter LED). If the batteries are empty, replace all of them at the same time. Never replace individual batteries.

## c) During use

- Do not take any risks when using the product! Always use the model responsibly, otherwise you may endanger yourself and your surroundings.
- Improper use can cause serious injuries and damage to property! Ensure that you maintain a sufficient distance from people, animals and objects.
- Only fly the model when you are fully alert and able to respond. Fatigue, alcohol and medication can affect your ability to respond.
- Keep objects and body parts away from the rotors when the rotors are moving.
- Do not fly the model towards spectators or towards yourself.
- Never try to grab the flying quadcopter with your hand.
- Motors, motor controllers and the flight battery can become hot during operation. For this reason, take a break of 5 to 10 minutes before charging the flight battery.
- Always leave the remote control (transmitter) switched on when the model is in use. After landing, always switch off the quadcopter before you switch off the remote control.
- Never switch the transmitter off during operation while the quadcopter is still running.
- Do not expose the model or the remote control to direct sunlight or excessive heat for prolonged periods.
- In the event of a severe crash (e.g. from a high altitude), the electronic gyro sensors may be damaged. Always check that the model is functioning properly before flying it again!
- In the event of a crash, switch off the rotor motors immediately. Rotating rotors may be damaged if they come into contact with obstacles or in the event of impact. Check the rotors for any signs of cracks or damage before flying the model again!
- To avoid damaging the model in a crash caused by low voltage or by a deep discharge of the rechargeable battery, we recommend observing the low voltage light and alarm signals at all times when flying the model.

## 7. Battery information

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Batteries and rechargeable batteries present numerous hazards and problems, although their handling is a matter of course today in daily life.

Therefore, always observe the following general information and safety instructions when handling batteries and rechargeable batteries.

- Keep batteries/rechargeable batteries out of reach of children.
- Do not leave batteries/rechargeable batteries lying around, as they present a choking hazard for children and pets. Seek immediate medical advice if a battery is swallowed!
- Batteries/rechargeable batteries must never be short-circuited, taken apart or thrown into fire. This may cause an explosion!
- When handling leaking or damaged batteries/rechargeable batteries, always use suitable protective gloves to avoid burning your skin.
- Do not recharge regular batteries. This may cause a fire or explosion! Only charge rechargeable batteries which are intended for this purpose (1.2 V); use suitable battery chargers. Batteries (1.5 V) are designed to be used once and must be disposed of properly when they are empty.
- Always ensure that the batteries are inserted and connected to the charger with the correct polarity (observe the plus/+ and minus/- symbols). Inserting the batteries in the wrong polarity may damage the transmitter, the model aircraft and the rechargeable batteries. It may also cause a fire or explosion.
- Always exchange the entire set of batteries. Do not mix full batteries with half-full batteries. Always use batteries of the same type and from the same manufacturer.
- Never mix batteries with rechargeable batteries. Always use batteries to power the remote control transmitter.
- If you do not plan to use the model for an extended period (e.g. during storage), remove the batteries from the remote control to prevent them from leaking and causing damage.
- Be sure to switch off the quadcopter after the flight. Do not leave the quadcopter switched on if you are not using the model (for example, during transport or storage). Otherwise, this may cause deep discharge or permanent damage to the flight battery.
- Never charge the quadcopter's flight battery immediately after use. Always allow the flight battery to cool down until it has reached room or ambient temperature again.
- Charge intact and undamaged flight batteries only. Do not charge the rechargeable battery if the external insulation of the rechargeable battery is damaged, or if the rechargeable battery is deformed or swollen. In this case there is serious danger of fire and explosion!
- Never damage the external casing of the flight battery. Do not tear the film cover or prick the flight battery with sharp objects. This may cause a fire or explosion!
- Never charge the flight battery in the quadcopter unattended.
- Disconnect the quadcopter from the charging cable when fully charged.



# 8. Transmitter controls

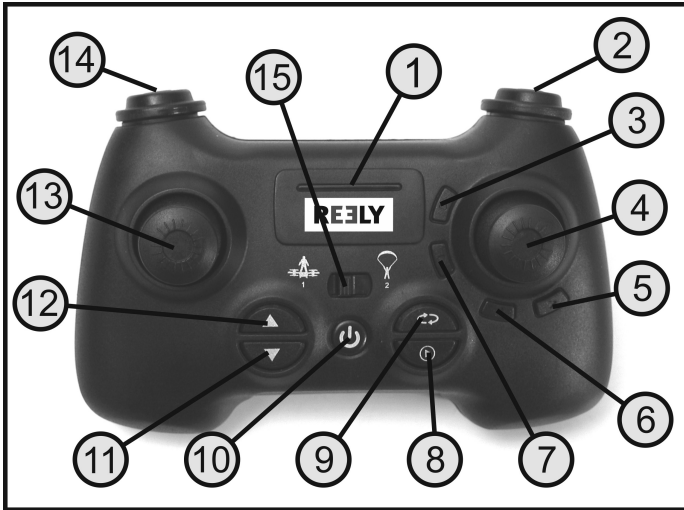


Figure 1

- 1 LED function display
- 2 Push button for the flip function
- 3 Push button for pitch trimming forward
- 4 Joystick for the pitch and roll function
- 5 Push button for roll trimming to the right
- 6 Push button for roll trimming to the left
- 7 Push button for pitch trimming backward
- 8 Push button for the slalom function
- 9 Push button for the sightseeing flight function
- 10 On/off button
- 11 Push button for the landing function
- 12 Push button for the take-off function
- 13 Joystick for the pitch and yaw function
- 14 Push button for beginner, sport and expert mode
- 15 Switch skater mode/para-mode

## 9. Using the transmitter

→ The numbers used in these instructions refer to the figure alongside the text or the figures within the respective section. For this reason, the same number represents different locations and different controls in different images. Cross-references to other figures are indicated with the corresponding figure number.

### a) Inserting the batteries

Two Micro batteries are required to supply the transmitter.



#### Important!

Use only batteries (1.5 V/cell) and do not use rechargeable batteries (1.2 V/cell) as the power supply for the transmitter.

To insert the batteries, proceed as follows:

Loosen the locking screw (1) of the battery compartment cover (2) with the included screwdriver on the transmitter rear side.

Press the locking lever (3) down and lift the battery compartment cover upwards.

Insert 2 Micro/AAA batteries at the bottom of the battery compartment (4) with the correct polarity according to the specifications. The spiral spring contact (5) must always be connected to the negative pole of the battery.

First replace the battery compartment cover and then let the locking lever snap into the transmitter housing.

Then tighten the retaining screw on the battery compartment cover (1) again.



Figure 2

## b) Switching on the transmitter



### Caution, important!

The quadcopter can be operated in skater mode or in para mode. In principle, the two modes differ only in the orientation of the quadcopter.

- **Para mode**

In para mode, the forward orientation corresponds exactly to the direction of the pilot's figure. Therefore, the orientation to the back corresponds to the back of the pilot figure.

- **Skater mode**

In skater mode, the forward orientation corresponds to the left side of the pilot figure. Therefore, the orientation to the back corresponds to the right side of the pilot figure.

Since the transmitter has to be adapted to the respective mode, a switch (see figure 1, no. 15) is provided on the transmitter housing.



### Important!

Set the skater mode/para mode switch to the desired position before turning on the transmitter.

Do not operate the switch when the quadcopter is flying.

Hold down the push-button for the on/off function (see also Figure 1, no. 10) for approximately 1 second.

The transmitter emits two short beeps and the two LEDs on the LED display (see also Figure 1, no. 1) start to flash slowly.

Then push the joystick for the pitch and yaw function (see Figure 1, no. 13) all the way up. The transmitter beeps once and the two LEDs flash faster.

Now move the joystick all the way down. The transmitter emits another beep. When you move the joystick back to the centre position, the LED indicator lights up steadily.

To turn off the transmitter, press and hold down the push button for the on/off function. The transmitter beeps and the LEDs go off. Then release the button.

If the power supply for the proper operation of the transmitter is no longer sufficient, the red LED indicator (see Figure 3, no. 1) starts to flash slowly.

In this case, stop flying the quadcopter immediately and insert a new set of batteries into the transmitter.

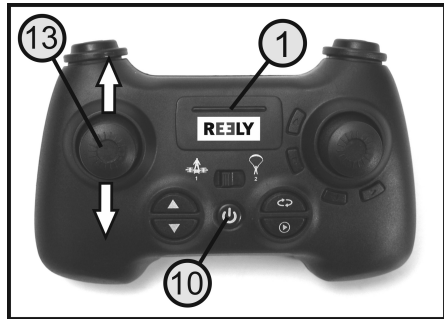


Figure 3

# 10. Operating the quadrocopter

## a) Charging the flight battery

The flight battery can be charged using the included USB charging cable.

→ The charging cable in Figure 4 is wound up for photo-technical reasons. Before first use, remove the cable tie and fully unwind the charging cable.

For charging, the quadrocopter must be switched off. The on/off switch is located on the back of the quadrocopter (see also Figure 6, no. 1) and must be in the "OFF" position.

**Carry out the charging process as follows:**

Connect the reverse polarity-proof Micro USB connector (1) of the charging cable to the charging socket (2) of the quadrocopter.

The charging socket is marked with letters CHG (charge) and is located on the front side (viewing direction of the pilot figure) of the quadrocopter.

As soon as the USB plug on the charging cable (3) is connected to a USB port on a computer/laptop or to a USB charger plug, charging begins automatically.



### Important!

The USB port output current must be at least 500 mA.

During charging, the red charging control LED lights up inside the quadrocopter housing. The LED is best seen from below through a rectangular opening (4) below the charging socket.

When charging is complete and the flight battery is fully charged, the red charging control LED goes out.

Disconnect the quadrocopter from the charging cable immediately after charging and disconnect the USB plug of the charging cable from the computer/laptop or plug-in charger.



### Caution!

Do not connect the USB cable to a USB hub without its own power supply (e.g. a USB port on a keyboard), as the charging current is not sufficient in this case.

The operating system will not recognise any new hardware when the charging cable is connected, as the USB port is only used for charging. Please note that the USB ports on computers/laptops are normally only active when the computer/laptop is turned on.

We therefore recommend that you only connect the charging cable to a computer/laptop that is switched on.



### Important!

Only charge the flight battery in the quadrocopter using the included charging cable. Never attempt to charge the rechargeable battery in the quadrocopter with a different or unsuitable charger!

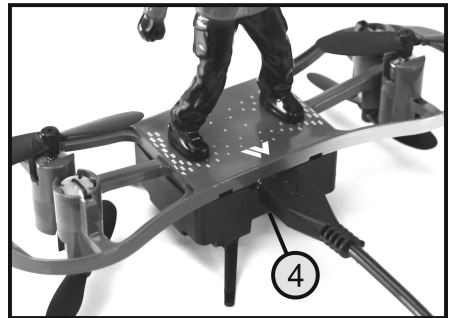
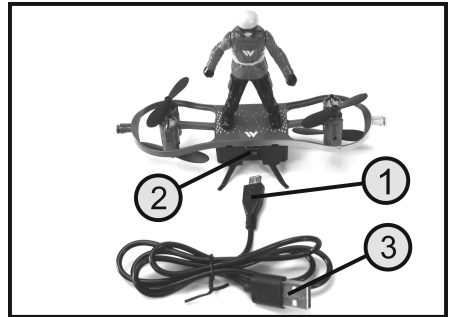


Figure 4

## b) Checking the drive

Before operating the quadcopter, test the drive. Only when all four propellers run smoothly and in a perfect circle can the model be flown with the minimum energy consumption. For this reason, you should quickly check the function of the drive propellers before each flight.

To do this, rotate each individual propeller carefully with your finger and check the concentricity and the ease of movement.

When doing this, pay attention to the directions of rotation of the various propellers.

When viewed from above, the two top propellers (A) turn clockwise, and the two bottom propellers (B) rotate counter-clockwise.

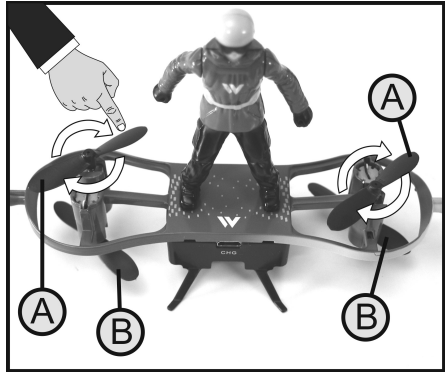


Figure 5

### c) Switching on the quadcopter

So that the receiver in the quadcopter can respond to the transmitter signals, the receiver and the transmitter must have the same digital coding (pairing). For this reason, it is important that you switch the quadcopter on as described below.

Place the fully charged quadcopter on a flat surface.

Slide the on/off switch (1) on the back of the quadcopter to the left position "ON". The blue LEDs on the front panel and the green LEDs on the back of the quadcopter flash slowly.

Set the skater mode/para mode switch (see Figure 1, no. 15) to the desired position on the transmitter.

Then switch on the transmitter with the on/off button (10).

Move the joystick for the pitch and yaw function (13) all the way forward (light arrow in Figure 6), then all the way back (dark arrow in Figure 6) and then back to the centre position.

The four LEDs on the quadcopter begin to flicker, indicating the pairing process.

After successful pairing, the blue and green LEDs on the quadcopter and the two red LEDs on the transmitter light up permanently.

The quadcopter is now ready to start.



#### Important!

There should be no other 2.4 GHz transmitters in the immediate vicinity during the switch-on process. The quadcopter must not be moved or turned during the switch-on process.

→ To switch the quadcopter off again, slide the on/off switch on the quadcopter to the "OFF" position and then switch off the transmitter.

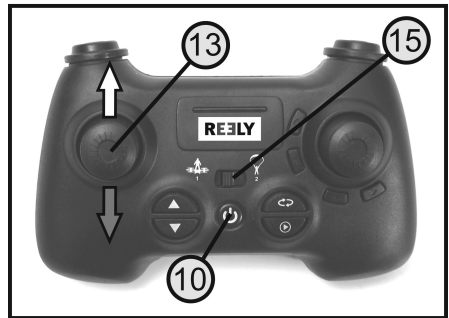
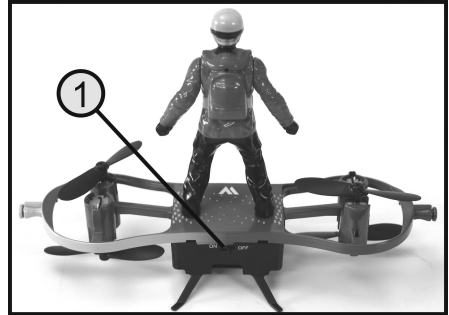


Figure 6

# 11. Basic information on controlling the quadcopter in skater mode

→ The following sections describe the operation of the quadcopter in skater mode. The conversion for the para-mode and the differences in the control are described below in a separate section.

Before you start using your model, you should first get acquainted with the control options available in skater mode in order to be able to control the model safely.

The quadcopter is controlled via the two joysticks on the remote control transmitter. The following functions are available:

### Pitch function

With the pitch function you can control the flight altitude of the quadcopter (see Figure 7). Steering is done with the left joystick (see also Figure 1, no. 13).

When the motors are started by a remote control command, they are idling. Now, if the joystick is pushed forward from its centre position and moved back to the middle position, the quadcopter takes off and hovers over the take-off spot. A built-in barometer sensor ensures that the quadcopter hovers at a constant height.

If the joystick is moved further forward from its centre position, the quadcopter ascends (see dark arrows in Figure 7). When the joystick is pulled back, the quadcopter descends (see light arrows in Figure 7).

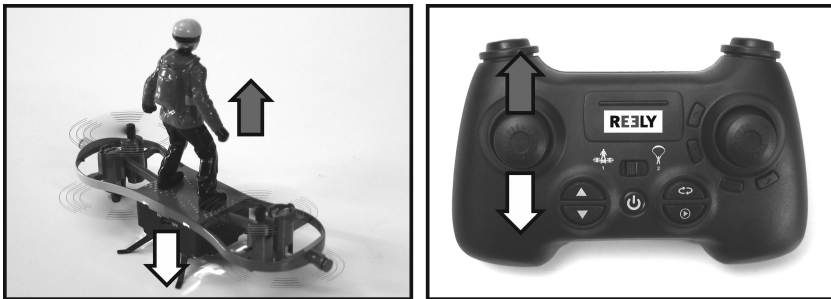


Figure 7

### Yaw function

The torques that act on the model are balanced by the two right-turning and the two left-turning propellers, and the quadcopter hovers steadily in the air.

If you move the left joystick (see Figure 1, no. 13) to the left, the electronics in the model increase the speed of the propellers that turn to the right (clockwise, as seen from above) and at the same time reduce the speed of the propellers turning to the left (counter-clockwise). As a result, the entire lifting force remains the same, but the model now has a torque that turns the quadcopter around the vertical axis to the left as viewed from above (see dark arrows in Figure 8).

When the left joystick is moved to the right, the propeller speeds are changed the opposite and the model turns to the right (see light arrows in Figure 8).

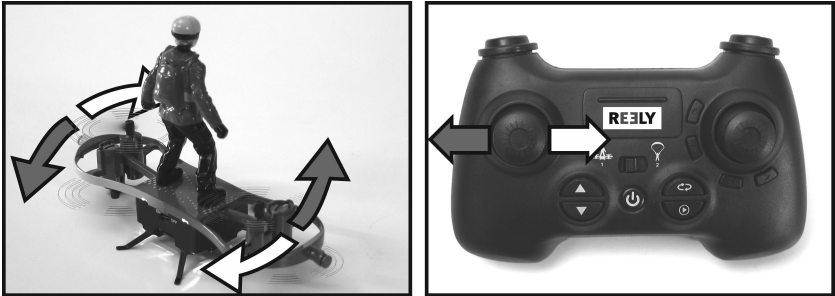


Figure 8

### Roll function

The roll function allows you to move the quadcopter sideways to the right and to the left (see Figure 9). This can be done with the right joystick (see Figure 1, no. 4).

When the right joystick is moved slightly to the left, the quadcopter electronics change the propeller speeds so that the model tilts slightly to the left and thus also flies to the left (see light arrows in Figure 9).

When the right joystick is moved to the right, the propeller speeds change the opposite way and the model flies sideways to the right (see dark arrows in Figure 9).



Figure 9



### Pitch function

The pitch function allows you to move the quadcopter forwards and backwards (see Figure 10). This steering is carried out with the right joystick (see also Figure 1, no. 4).

When the right joystick is pushed slightly forward, the quadcopter electronics change the propeller speeds so that the model tilts forward slightly and thus also flies forward (see dark arrows in Figure 10).

When the right joystick is moved backwards, the propeller speeds change the opposite way and the model flies backwards (see light arrows in Figure 10).

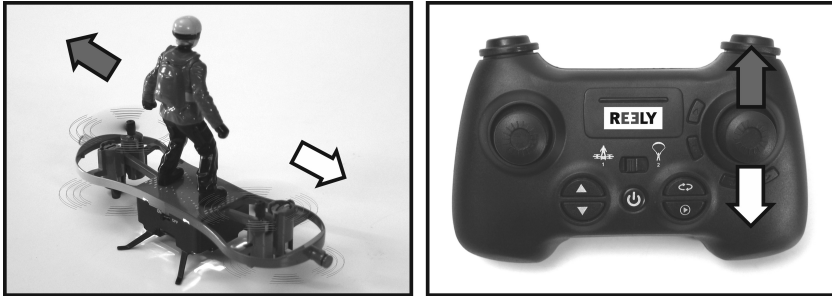


Figure 10

## 12. Practical flight tips for starting the model

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We recommend that you use a free area of at least 3 x 3 m for the first test flights, even if the model is very manoeuvrable.

When flying the quadcopter outdoors for the first time, there should be absolutely no wind.

Place yourself directly behind your quadcopter. For as long as the right side of the pilot figure points to you, and you see your model from behind, the quadcopter responds to the commands to your right, left, back and forth exactly as you control the transmitter. When the left side of the pilot figure points to you, it responds in exactly the opposite direction as you control the transmitter.

Allow the quadcopter to ascend to eye level after taking off. This enables the flight attitude to be detected optimally and the quadcopter is visibly more stable than at ground level. Because if the quadcopter flies so low that the air blown downwards by the propellers reaches the ground (ground effect), the flight attitude is significantly less stable.



### **Caution, important!**

Should the propellers run into objects and become blocked, immediately push the pitch joystick to the lowest setting so that the affected drive motors are no longer supplied with power.

Never try to grab hold of the flying quadcopter with your hands. There is an increased risk of injury!

When the four quadcopter LEDs start to flash, the flight battery has reached its lower voltage limit. In this case, stop the flight operation immediately and recharge the flight battery in order to avoid deep discharge that can damage the flight battery.

If the quadcopter is used outdoors, pay attention to the flight distance. The further away the quadcopter is from you, the harder it is to recognise the flight attitude. In addition, the transmitter has a limited range (see technical data). Never switch the transmitter off while the quadcopter is flying.

## 13. Calibrating the position sensors

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Before starting the quadcopter, you should calibrate the position sensors. This ensures that the quadcopter hovers smoothly at one spot and does not fly in one direction spontaneously and without a control command.

### Proceed as follows:

Place the ready-to-fly quadcopter on a flat, horizontal surface.

First switch on the quadcopter and then the transmitter. Move the left joystick back and forth to get the quadcopter ready to start.

The LEDs on the quadcopter and the transmitter must glow steadily.

Then move the left joystick (see also Figure 1, no. 13) to the lower right and the right joystick (see also Figure 1, no. 4) to the lower left.

Hold the two joysticks in this position.

The transmitter emits one beep and the transmitter LEDs flash twice. At the same time, the LEDs on the quadcopter begin to flicker.

When the LEDs on the quadcopter light up again, the calibration is complete and the joysticks can be moved back to the centre position.



Figure 11

## 14. Starting the quadrocopter

With the quadrocopter and transmitter switched on and the sensors successfully calibrated, the quadrocopter can be taken off.

To do this, briefly move the left joystick all the way forward and then back to the middle position. The propellers will start to rotate at low speed.

In order to stop the propellers after starting up, the left joystick must be moved to the lowest position and held until the propellers are stopped again.

To lift off the quadrocopter, you have two options:

### Manual start:

If the propellers are turning at low speed, carefully move the left joystick (see also Figure 1, no. 13) forward.

The quadrocopter will significantly increase the propeller speeds and take off.

At the same time, you can use the two joysticks to easily correct any drifting forwards, backwards or to the side.

Once the desired flight altitude has been reached, move the joystick back to the middle position. The quadrocopter will go into hover at a constant altitude.



Figure 12

### Automatic take-off:

If the propellers are turning at low speed, briefly press the push button for the take-off function (see Figure 12, no. 12). The propellers will speed up and the quadrocopter will take off quickly. It ascends automatically to approx. 80 cm height and then automatically goes into the hover flight.

Then use the remote control transmitter to individually control the flight altitude and flight direction.

→ The quadrocopter is equipped with automatic altitude stabilisation. This stabilisation takes the air pressure as a reference for the current flight altitude. Since the measured values change only slightly with minimal change in altitude, slight fluctuations in flight altitude cannot be avoided.

# 15. Landing the quadrocopter

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There are two methods for landing the quadrocopter:

### Manual landing:

If the quadrocopter is hovering, carefully reduce the flight altitude with the left joystick (see also Figure 1, no. 13) until the quadrocopter is safely back on the ground.

Once the quadrocopter has landed, move the joystick to the lowest position and hold it in this position until the propellers stop.

### Automatic landing:

When the quadrocopter is hovering, press the push button for the landing function (see Figure 13, no. 11).

The quadrocopter will now descend automatically until it is on its landing legs again.

While charging, the quadrocopter can still be fully controlled using the yaw, pitch and roll functions and the landing point can be adjusted, if necessary.

After the quadrocopter has landed, the propellers will stop automatically.



Figure 13

## 16. Trimming the quadcopter

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If you find out while flying that the quadcopter wants to fly laterally to the left or to the right or to the front or the back without control command from the transmitter, correct the flight behaviour with the trimming.

If you have secure control of the quadcopter, you can adjust the trim during the flight. Then you can clearly see how the quadcopter responds to the changed trim setting. If you are not quite sure, you can land the quadcopter and then adjust the trim. In this case, you will see if the trim setting is sufficient after the model takes off again.

→ Every time a trim button is pushed, the trim is adjusted by one step and the adjustment confirmed by a short beep. In addition, the two LEDs on the transmitter go off briefly and on again.

When the button is pressed and held, the transmitter emits a quick sequence of beeps, and thus indicates the step-by-step adjustment of the trim. The two transmitter LEDs flash when the trim buttons are pressed and held.

Once the trim's end position has been reached, the transmitter will stop beeping.

The trim's centre position is indicated acoustically by a longer beep.

### Roll trimming:

If you want to drift the quadcopter to the right laterally (see dark arrows in Figure 14), press the push button for roll trimming to the left several times (see also Figure 1, no. 6).

If you want to drift the quadcopter to the left laterally (see light arrows in Figure 14), press the push button for roll trimming to the right several times (see also Figure 1, no. 5).



Figure 14

**Pitch trimming:**

If you want to drift the quadcopter forward (see dark arrows in Figure 15), press the button for pitch trimming backward several times (see also Figure 1, no. 7).

If you want to drift the quadcopter backward (see light arrows in Figure 15), press the push button for pitch trimming forward several times (see also Figure 1, no. 3).

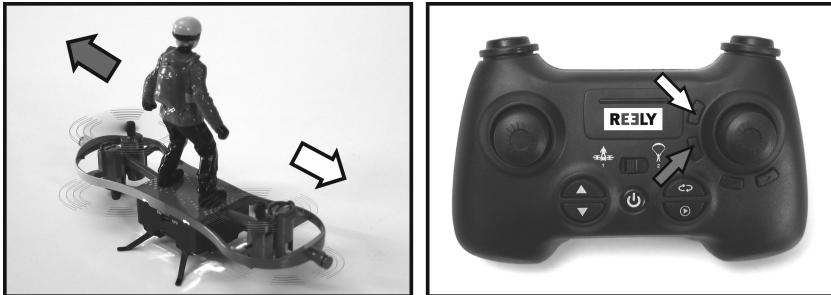


Figure 15

→ The trim setting is not saved in the transmitter. After switching the transmitter off and on, the trim is reset to the average value.



**Caution!**

If the trimming has to be adjusted very far, a recalibration of the position sensors is required.

## 17. Beginner/Sport/Expert mode

The remote control enables individual adjustment of the control sensitivity of the quadcopter by switching between beginner, sport and expert modes.

- **Beginner mode**

In beginner mode, the quadcopter responds less strictly to the transmitter control commands and can thus be controlled very gently. This mode is ideal for beginners flying the quadcopter for the first time.

- **Sport mode**

In sport mode, the quadcopter responds much more agilely to the transmitter control commands. For this reason, this mode is ideal for advanced users.

- **Expert mode**

Expert mode gives you maximum control sensitivity. This setting is intended for experienced users and for outdoor use of the quadcopter.

### Enabling the different flight modes:

When it is switched on, the transmitter is automatically in beginner mode.

To switch from beginner mode to the sport mode, press the push button for beginner, sport and expert mode (see also Figure 1, no. 14).

The transmitter indicates the activation of sport mode by giving two short beeps and two transmitter LEDs flashing twice.

If you press the button again, the transmitter will emit three beeps and thus signalise switching to expert mode. The transmitter LEDs flash three times.

If you press the button again, the transmitter will switch back to beginner mode. It emits one beep and the transmitter LEDs flash once.

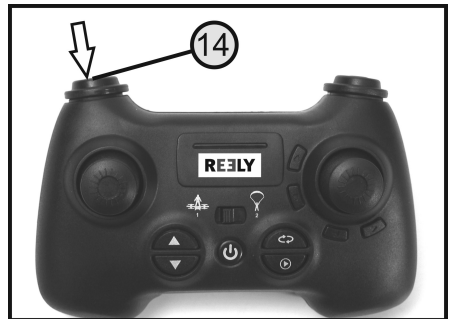


Figure 16



## 18. Flip function

---

In the skater mode, the quadcopter is able to fly lateral flips. You should fly the first flips outside when there is absolutely no wind. To do this, let the quadcopter ascend to a safe altitude of approx. 2 m and then hover in position.

To switch the transmitter to flip mode, briefly press the push button for the flip function (see also Figure 1, no. 2).

To signal that the transmitter has switched to the flip mode, it continuously emits short beeps and the two LEDs on the transmitter are flashing.

Now move the joystick for the pitch and roll function (see also Figure 1, no. 4) quickly to the right or left and immediately return it to the middle position.

The quadcopter will slightly increase the flight altitude and then make the flip in the desired direction. After the lateral flip, it will go again into the hover flight.

To be able to do another flip, push the button for flip mode again.

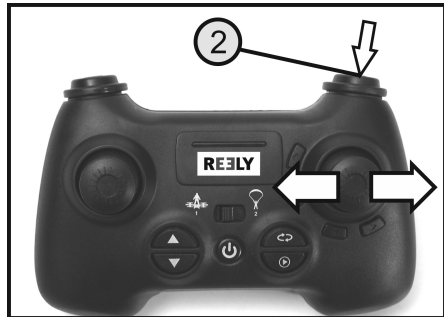


Figure 17

→ The flip function is only available in skater mode. If the LEDs on the quadcopter are flashing and thus indicate the lower voltage level of the flight battery, the flip function is disabled.

## 19. Flying in automatic mode

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The transmitter allows letting the quadcopter automatically fly two different flying figures when a button is pressed.



### Important!

Before you start an automatic flight figure, you must make sure that there is enough space for the flying figures. Otherwise, the quadcopter encounters an obstacle.

### Sightseeing flight function

If the sightseeing flight function is enabled, the quadcopter automatically flies two large circles counter-clockwise. After completion of the two circles, the quadcopter hovers again at one spot (see sketch in Figure 18).

To activate the sightseeing flight function, press the button for the sightseeing flight function on the transmitter (see also Figure 1, no. 9). The transmitter emits a beep and the quadcopter begins the sightseeing flight. The automatic sightseeing flight can be stopped at any time by pressing the joystick for the pitch and roll function (see also Figure 1, no. 4).

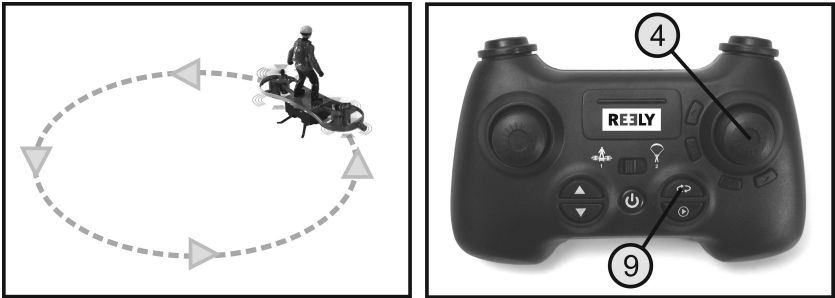


Figure 18

### Slalom function

When the slalom feature is activated, the quadcopter flies a certain distance in the zigzag course (see sketch in Figure 19).

To activate the slalom function, press the button for the slalom function on the transmitter (see also Figure 1, no. 8). The transmitter emits a beep and the quadcopter begins the slalom flight. The automatic slalom flight can be stopped at any time by pressing the joystick for the pitch and roll function (see also Figure 1, no. 4).



Figure 19

### → Important:

The direction of movement of the quadcopter in the automatically controlled flying figures is always as shown in Figures. 18 and 19. It does not matter whether the model is operated in skater mode or para mode (see following section).

# 20. Conversion of the quadrocopter to the paraglider

To convert the quadrocopter from skater to paraglider, proceed as follows:

**Step 1, see Figure 20 A:**

Pull the pilot figure (1) upwards off the quadrocopter. The shape of the connection in the soles of the shoe prevents the figure from being put back on the wrong side later.

**Step 2, see Figure 20 B:**

Turn the pilot arms upwards and insert the three small pins (2) of the pilot suspension (3) into the prepared openings in the back and hands of the pilot figure.

**Step 3, see Figure 20 C + D:**

Connect the pilot suspension (3) to the paraglider (4). For this purpose, the retaining clips are inserted from the outside through the circular opening in the bracket and pulled down to lock.

**Step 4, see Figure 20 D:**

The paraglider bar (4) is placed on the right and left on the holder of the quadrocopter (5) and pushed down to lock.

Make sure that the direction of the pilot's figure and the front of the quadrocopter (charging socket or blue LEDs) are identical.

**Step 5, see Figure 20 E:**

At the start, the pilot figure is placed on its back in front of the quadrocopter.

→ The decommissioning of the quadrocopter for use as a skater is done in reverse order.

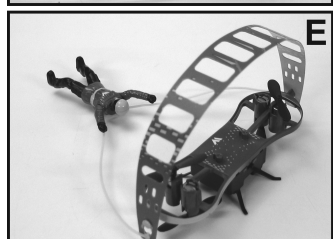
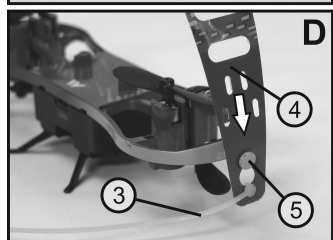
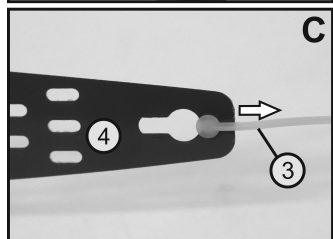
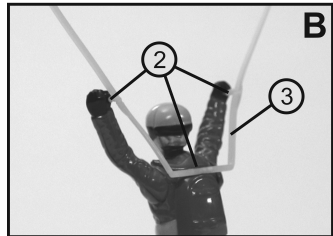
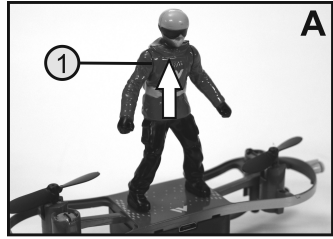


Figure 20

## 21. Basic information on controlling the quadrocopter in para mode

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Before you start using your model, you should first get acquainted with the control options available in para mode in order to be able to control the model safely. In contrast to the skater mode, where the left side of the pilot figure was directed forward, now the forward direction is identical to the viewing direction of the pilot figure. As a result, the direction of movement of the quadrocopter changes in the control of the pitch and roll function.

Even if nothing has changed in the control of the pitch and yaw function compared to the skater mode, the two control functions are listed again for better understanding.

### Pitch function

With the pitch function you can control the flight altitude of the quadrocopter (see Figure 21). Steering is done with the left joystick (see also Figure 1, no. 13).

When the motors are started by remote control, they run at idle speed. Now, if the joystick is pushed forward from its centre position and moved back to the middle position, the quadrocopter takes off and hovers over the take-off spot.

If the joystick is moved further forward from its centre position, the quadrocopter rises (see dark arrows in Figure 21). When the joystick is pulled back, the quadrocopter descends (see light arrows in Figure 21).

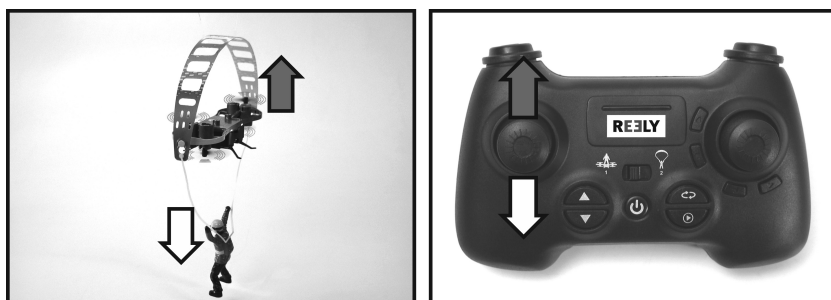


Figure 21

### Yaw function

If you move the left joystick (see Figure 1, no. 13) to the left, the electronics in the model increase the speed of the propellers that turn to the right (clockwise, as seen from above) and at the same time reduce the speed of the propellers turning to the left (counter-clockwise). As a result, the entire lifting force remains the same, but the model now has a torque that turns the quadcopter around the vertical axis to the left as viewed from above (see dark arrows in Figure 22).

When the left joystick is moved to the right, the propeller speeds change the opposite ways and the model turns to the right (see light arrows in Figure 22).

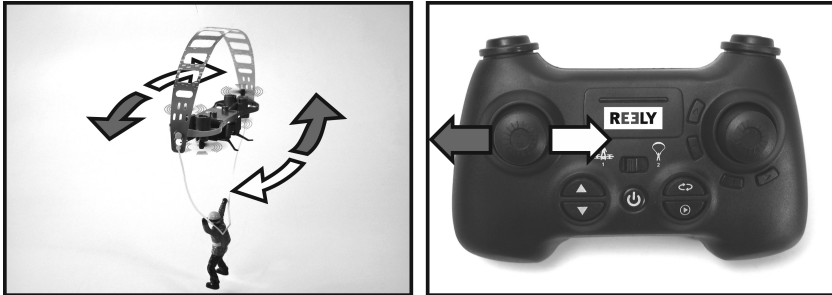


Figure 22

### Roll function

The roll function allows you to move the quadcopter sideways to the right and to the left (see Figure 23). This can be done with the right joystick (see Figure 1, no. 4).

When the right joystick is moved slightly to the left, the quadcopter electronics change the propeller speeds so that the model tilts slightly to the left and thus also flies to the left (see light arrows in Figure 23).

When the right joystick is moved to the right, the propeller speeds change the opposite way and the model flies sideways to the right (see dark arrows in Figure 23).

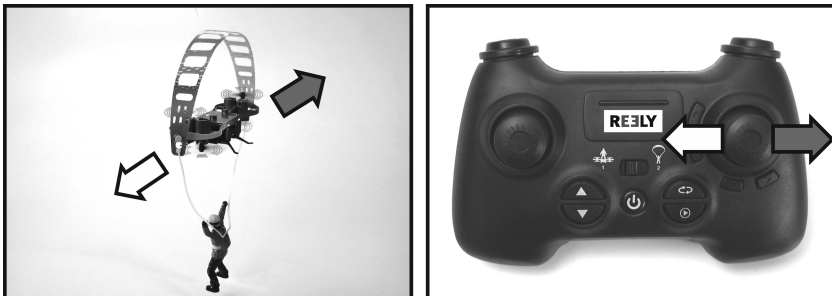


Figure 23

### Pitch function

The pitch function allows you to move the quadcopter forwards and backwards (see Figure 24). This steering is carried out with the right joystick (see also Figure 1, no. 4).

When the right joystick is pushed slightly forward, the quadcopter electronics change the propeller speeds so that the model tilts forward slightly and thus also flies forward (see dark arrows in Figure 24).

When the right joystick is moved backwards, the propeller speeds change the opposite way and the model flies backward (see light arrows in Figure 24).

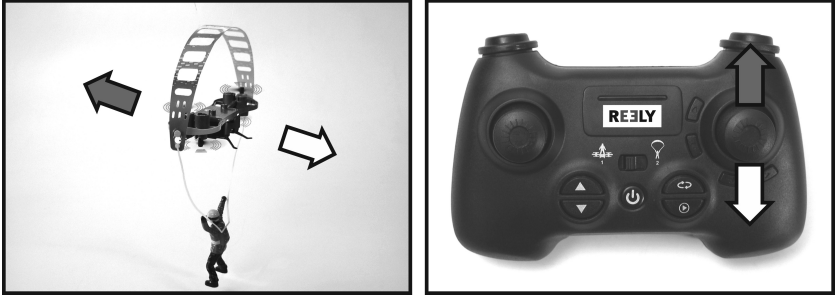


Figure 24



#### Caution, important!

Just as the pitch and roll control in para mode has changed, the pitch and roll trim has also been adjusted to para mode.

## 22. Further information on para mode

In para mode, almost the same functions as in skater mode are available. The following table shows the functions available in the respective flight mode:

Function	Skater mode	Para mode
Using the transmitter	Turn on skater mode	Turn on para mode
Calibrating the position sensors	Yes	Yes
Automatic start	Yes	Yes
Automatic landing	Yes	Yes
Stabilisation of the flight altitude	Yes	Yes
Trimming on the transmitter	Yes	Yes
Beginner/Sport/Expert mode	Yes	Yes
Flip function	Yes	No
Flying in automatic mode	Yes	Yes

## 23. Maintenance and cleaning

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Clean the exterior of the model and the remote control with a soft, dry cloth or brush. Never use abrasive cleaning agents or chemical solutions, as these may damage the surface of the housing.

The propellers must move smoothly and motor shafts should not be bent or have any play in the bearing. Propellers that are cracked or bent or from which small pieces have broken off must always be replaced. For this purpose, model 4 spare propellers and a lever tool are included.

### Replacing the propellers

To change a propeller, proceed as follows:

Carefully lever the defective propeller off the motor shaft (2) with the included tool (1). When doing so, be careful not to deform the motor shaft.

Select the appropriate replacement propeller (3). Pay attention to the direction of rotation of the motor (see also Figure 5). The upper propellers are labelled with the letter "A" and the lower propellers are labelled with the letter "B".



When installing the new propeller, make sure that the propeller shaft is not bent. Do not exert any force!

Push the propeller completely onto the motor shaft and then check the concentricity of the propeller manually.

When replacing mechanical parts, only use original spare parts from the manufacturer.

The spare parts list can be found on our website in the download area for the respective product.

You can also order the spare parts list by calling our customer service hotline. For contact details, please refer to the "Introduction" section at the beginning of these operating instructions.

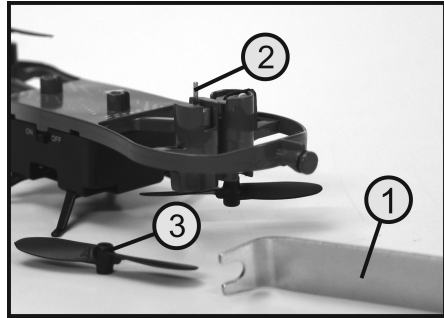


Figure 25

## 24. Disposal

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### a) General information



Electrical and electronic devices must not be discarded with domestic waste! At the end of its service life, dispose of the product according to the relevant statutory regulations.



Remove any inserted batteries/rechargeable batteries and dispose of them separately from the product.

### b) Batteries

You are required by law to return all used batteries. They must not be placed in household waste.



Batteries/rechargeable batteries containing hazardous substances are labelled with these symbols to indicate that the disposal of them in the household waste is forbidden. The abbreviations for heavy metals in batteries are: Cd = Cadmium, Hg = Mercury, Pb = Lead (name written on the battery/rechargeable battery e.g. under the rubbish bin symbol on the left).

Used batteries can be returned to local collection points, our stores or battery retailers.

You thus fulfil your statutory obligations and contribute to environmental protection.

## 25. Declaration of Conformity (DOC)

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Conrad Electronic SE, Klaus-Conrad-Straße 1, D-92240 Hirschau, hereby declares that this product conforms to Directive 2014/53/EU.



Click on the following link to read the full text of the EU Declaration of Conformity:

[www.conrad.com/downloads](http://www.conrad.com/downloads)

Select a language by clicking on the corresponding flag symbol, and then enter the product order number in the search box. The EU Declaration of Conformity is available for download in PDF format.



# 26. Troubleshooting

This model and the remote control were built using the latest technology. However, faults and malfunction may still occur. We would, therefore, like to show you how to correct potential faults.

Problem	Solution
The transmitter does not respond, the LEDs do not go on.	<ul style="list-style-type: none"> <li>• Check the batteries in the transmitter.</li> <li>• Check the polarity of the batteries in the transmitter.</li> <li>• Repeat the power on procedure.</li> </ul>
The red LED in the transmitter flashes.	<ul style="list-style-type: none"> <li>• Check or replace the batteries in the transmitter.</li> </ul>
The model does not respond, the LEDs on the quadcopter are flashing.	<ul style="list-style-type: none"> <li>• Check the function of the remote control transmitter.</li> <li>• Perform the quadcopter switch-on process again.</li> </ul>
The LEDs on the quadcopter do not light up.	<ul style="list-style-type: none"> <li>• Recharge the flight battery for testing purposes.</li> </ul>
The propellers do not start.	<ul style="list-style-type: none"> <li>• Recharge the flight battery for testing purposes.</li> <li>• Repeat the power on procedure.</li> </ul>
The quadcopter tilts to the side during take-off.	<ul style="list-style-type: none"> <li>• Repeat the switch on sequence of the quadcopter and do not move the model while doing so.</li> <li>• Verify smooth running and function of the four drive motors.</li> <li>• Calibrate the position sensors.</li> </ul>
The quadcopter has too little power or too short flight times.	<ul style="list-style-type: none"> <li>• Check the flight battery charge level.</li> <li>• Recharge the flight battery.</li> </ul>
The quadcopter always flies in one direction.	<ul style="list-style-type: none"> <li>• Adjust the trim on the transmitter.</li> <li>• Unfavourable flight conditions (wind or draughts).</li> <li>• Calibrate the position sensors.</li> </ul>
The quadcopter does not do flips.	<ul style="list-style-type: none"> <li>• Charge the flight battery.</li> <li>• Operate the quadcopter in skater mode.</li> </ul>
The quadcopter vibrates during flight.	<ul style="list-style-type: none"> <li>• Check that the propeller turns correctly.</li> </ul>
The quadcopter does not take off.	<ul style="list-style-type: none"> <li>• Check whether the propellers have been installed correctly.</li> <li>• Charge the flight battery.</li> </ul>
The quadcopter responds very slowly to the control commands.	<ul style="list-style-type: none"> <li>• Switch the transmitter to sport or expert mode.</li> </ul>

## 27. Technical data

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### a) Transmitter

Frequency band.....	2.450 – 2.478 GHz
Transmission power.....	6 dBm
Number of channels .....	4
Transmission range .....	approx. 40 m
Operating voltage .....	3 V/DC via 2x AAA/micro batteries
Dimensions (W x H x D) .....	119 x 75 x 50 mm
Weight without batteries .....	74 g

### b) Quadrocopter

Power supply .....	3.7 V/300 mAh (1S LiPo)
Charging time .....	approx. 50 – 60 minutes
Dimensions (L x W x H) .....	141 x 96 x 52 mm (skater mode including the pilot figure)
Rotor shaft spacing.....	85 mm (diagonal)
Propeller diameter .....	41 mm
Flight time .....	approx. 6 minutes
Take-off weight .....	36 g (incl. rechargeable battery)



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