Freestyle 5" set

Manta5 SE V2 DC · Skyzone Cobra SD · SkyRC S100neo
User manual



Read the entire manual before first use, especially the safety instructions and chapter 3. This product is not a toy – it is intended for persons aged 14 and over.

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1. Safety instructions

1.1 Before you start

This set contains the Axisflying Manta5 SE V2 DC 5" freestyle drone, Skyzone Cobra SD FPV goggles, three 6S batteries, a SkyRC S100neo charger and other accessories. **An RC radio transmitter is not included in the set** – you need your own radio with the ExpressLRS 2.4 GHz system. This manual guides you through charging, binding the drone to your radio, tuning the goggles and your first flight. Read it in full before you switch the drone on for the first time, and keep it for future reference.

- This product is not a toy. It is intended for persons aged 14 and over. Younger users may use the product only under adult supervision.
- A 5" drone on a 6S battery is a powerful machine capable of high speeds. It is intended for pilots who have already mastered the basics of flying – for example in an FPV simulator or with a small drone. Improper operation can cause serious injury to you and others and damage to the product or property.
- Do not fly if you are tired, unwell or under the influence of alcohol, medication or other intoxicating substances.
- Use only parts and accessories supplied with the set or recommended by the manufacturer.

1.2 Rotating propellers

- The propellers of a 5" drone spin at very high speeds and can cause deep cuts. Never touch spinning propellers and keep your hands, hair and loose clothing away from them.
- The propellers have no guards. Do not take off from your hand or from a moving object.
- After connecting the battery, place the drone on the ground and switch it to Arm only from a distance of at least 3 m.
- In any dangerous situation, stop the motors immediately with the Disarm switch (see chapter 5.4).
- Always remove the propellers when configuring the drone on a computer and when testing the motors.
- Disconnect the battery before any handling of the drone (replacing propellers, maintenance).

1.3 Batteries

The set contains two types of batteries: three Li-Po 6S drone batteries and one Li-ion 18650 cell for the goggles.

- Always charge under supervision, on a non-flammable surface and away from flammable materials. Never charge overnight.

- Charge the drone batteries only with the charger included in the package, in balance charging mode. Charge the 18650 cell only in the goggles via USB-C.
- Do not use a swollen, mechanically damaged, overheated or otherwise defective battery.
- Do not short-circuit or puncture the battery, do not throw it into fire and do not expose it to water or to temperatures above 60 °C.
- Disconnect the drone battery immediately after the flight. Do not leave it connected in the drone or on the charger unattended.
- Carry and store the batteries in the Lipo Safe bag protective pouch included in the package.
- For detailed guidelines, see the pages Safe use of Li-Po batteries and Safe use of Li-ion batteries.

1.4 Operating environment

- Do not fly in strong wind, rain, snow, thunderstorms or fog. Neither the drone nor the goggles are waterproof or dustproof.
- Fly only in open areas without obstacles, far away from people, animals, buildings, high-voltage power lines and transmitters.
- The drone is not intended for indoor flying.
- When flying with goggles, you cannot see your surroundings. Fly with a UA observer who stands next to you and watches the surroundings (chapter 3.5).

1.5 Antennas and radio transmitters

- The video transmitter antenna must always be attached to the drone before you connect the battery. Operating without an antenna will permanently damage the video transmitter – such damage is not covered by the warranty.
- The video transmitter needs airflow for cooling. It heats up during prolonged operation on the ground; if it overheats, it reduces its power or switches off.
- Screw on the goggle antennas before switching the goggles on.
- Do not switch on the radio without an antenna fitted, and follow its manual.

2. Set description

2.1 Package contents

Qty	Item
1×	Axisflying Manta5 SE V2 DC drone with ELRS 2.4 GHz receiver and GPS module
1×	Skyzone Cobra SD FPV goggles
3×	CNHL SPD Pro 1500 mAh 6S 150C battery, XT60 connector (for the drone)
1×	EVE INR18650-35V 3500 mAh Reclaimed Li-ion cell (for the goggles)
1×	SkyRC S100neo charger with power cord
1×	Rotorama Lipo Safe bag protective battery pouch
2×	Set of propellers (for the drone)
2×	Set of Gemfan Vannystyle 5136-3 spare propellers (2× CW and 2× CCW each)
1×	Video transmitter antenna (for the drone)
1×	M3 screwdriver (hex) and screws with nuts for the action camera mount
1×	Receiver module, 2× antenna, cables and strap (goggle accessories)

❇ The set components are packed separately. Neither an RC radio transmitter nor a microSD memory card is included in the set. The drone needs to be bound to your radio – see chapter 5 for the procedure.

2.2 Manta5 SE V2 DC drone

The Manta5 SE V2 DC is a 5" freestyle drone in a Deadcat configuration – the front arms are moved further back so that the propeller tips are not visible in the camera image. It is built around the Argus ECO stack, i.e. the Argus ECO F722 flight controller (FC) and Argus ECO 60A ESCs. The drone carries an ExpressLRS 2.4 GHz receiver, a GPS module and a Smurfs V2 analogue video transmitter (VTX).



Manta5 SE V2 DC drone – front view

No.	Part	Description
1	Camera	1200TVL analogue FPV camera
2	Action camera mount	3D-printed mount; the GPS module is located underneath
3	VTX antenna	Prism V2, SMA connector
4	Battery straps	secure the battery on the top plate
5	Motor	Axisflying AE2505 1750KV
6	Propeller	R29, secured with a nut on the motor shaft
7	Frame arm	T700 carbon, 6 mm thick
8	Camera side plates	camera mounting

The power lead with the XT60 connector is firmly attached at the rear of the drone. The flight controller has a USB-C connector for connecting to a computer.

The video transmitter has BAND and PWR buttons and indicator LEDs on its side (chapter 5.6).

2.3 Skyzone Cobra SD FPV goggles

The Cobra SD are box-style analogue FPV goggles with an LCD display and a 5.8 GHz diversity receiver with two antennas. The image is viewed through optics without a Fresnel lens. Settings are changed with scroll wheels without taking the goggles off. The goggles can record video (DVR) to a microSD card.



Controls on the top of the goggles

No.	Control	No.	Control
1	Left scroll wheel	4	M button
2	Left button	5	Right scroll wheel
3	Power button	6	Receiver module with two antenna connectors



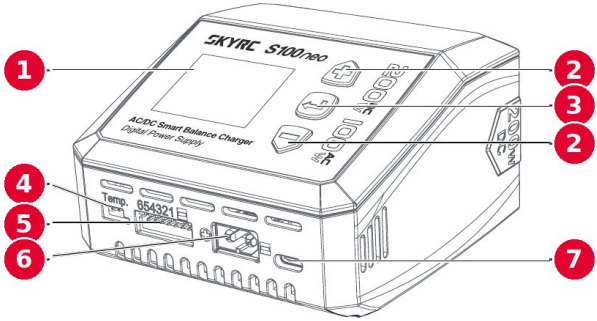
Connectors and slot on the underside of the goggles

Label	Function
HDMI IN	HDMI input – displays video from an external source

Label	Function
A/V	analogue audio/video input and output
SD CARD	microSD memory card slot (DVR)
DC IN	power input for an external 2S–6S Li-Po battery
HT OUT	head tracker output
USB-C	power supply and charging of the 18650 cell, firmware updates

2.4 SkyRC S100neo charger

The S100neo is a balance charger for Li-Po, LiHV, Li-ion and other battery types. It is powered from 100–240 V mains (charging power max. 100 W) or from a 6–30 V DC source, such as a car battery (max. 200 W). It has one charging output. A detailed description of all functions can be found in the separate charger manual.



S100neo charger – front view

No.	Control	No.	Control
1	LCD display	5	Balance port
2	+ and − buttons	6	Main (charging) port
3	ENTER button	7	USB-C port
4	Temperature sensor port		

2.5 Batteries

- **CNHL SPD Pro 1500 mAh 6S 150C** – Li-Po drone batteries with a rubber casing, an XT60 main connector and a shortened JST-XH balance connector. Weight 247 g; charge current up to 5C according to the manufacturer.
- **EVE INR18650-35V 3500 mAh Reclaimed** – Li-ion cell for powering the goggles. Reclaimed means that the cell comes from a battery pack with defective welds; it has never been charged or discharged and has been tested for internal resistance. There may be spot-welding marks on the terminals.

2.6 Technical specifications

▶ Manta5 SE V2 DC drone

Motor distance (diagonal)	226 mm
Weight	448 g ±10 g (without battery)
Frame	T700 carbon, 6 mm arms, plates 2 / 3 / 3 mm
Flight controller (FC)	Argus ECO F722 – STM32F722, ICM42688P gyro, barometer, 16 MB blackbox, Betaflight target SPEDIXF722
ESCs	Argus ECO 60A 6S, 32-bit, 60 A continuous current
Motors	Axisflying AE2505 1750KV
Propellers	R29
Receiver	ExpressLRS 2.4 GHz, CRSF protocol
Video transmitter (VTX)	Smurfs V2, 5.8 GHz, 6 bands / 48 channels, 25 / 100 / 400 / 800 / 1600 mW, control via IRC Tramp and buttons
Camera	analogue, 1200TVL
VTX antenna	Prism V2, SMA
Battery connector	XT60
Recommended battery	Li-Po / LiHV 6S, 1050–1550 mAh
Flight time	5–10 min (manufacturer's figure)

▶ Skyzone Cobra SD FPV goggles

Display	LCD, 800 × 480 px, 16:9
Receiver	5.8 GHz, diversity, replaceable module, 2 antennas
Recording (DVR)	MJPEG, 25/30 fps, to a microSD card
Power supply	one Li-ion 18650 cell / USB-C 5 V / DC from a 2S–6S Li-Po battery
Current draw	DC 12 V: 0.59 A; USB 5 V: 1.4 A
Weight	332 g

▶ SkyRC S100neo charger

Power supply	100–240 V AC (50/60 Hz) or 6–30 V DC
Charging power	100 W (AC), 200 W (DC)
Charge current	0.1–12 A
Li-Po / LiHV / Li-ion / LiFe	1–6S
Dimensions, weight	105 × 105 × 62 mm, approx. 340 g

3. Legal requirements for operation in the Czech Republic and the EU

3.1 The law of the country where you fly applies

Regulations (EU) 2019/947 and 2019/945 apply in all member states of the European Union, but national implementing rules differ from country to country – registration portals, minimum pilot age, geographical zones, mandatory insurance, permitted frequency bands and maximum transmit power. The information in this chapter describes the situation in the Czech Republic. If you operate the drone in another country, you must follow the regulations of the country in which you are flying.

3.2 Drone classification and category of operation

Without the battery, the drone weighs 448 g; it is equipped with a camera and bears no class marking (C0–C6). As a **privately built** unmanned aircraft system with a maximum take-off mass below 25 kg, it may be operated in the open category, in **subcategory A3** (Article 4 of Regulation (EU) 2019/947 and point UAS.OPEN.040 of its Annex).

You may also fly within a model aircraft club or association authorised by the Civil Aviation Authority of the Czech Republic (ÚCL) under Article 16 of Regulation (EU) 2019/947 – in that case, the club's rules apply. Always check the current conditions with the ÚCL (www.caa.gov.cz).

3.3 Operator registration and pilot competency

- The operator of a drone with a camera and a mass over 250 g must register with the Civil Aviation Authority of the Czech Republic (ÚCL) (dron.caa.gov.cz). Mark the assigned registration number legibly on the drone.
- The pilot must complete the online training and test for subcategories A1/A3 on the ÚCL website.
- The minimum pilot age in the Czech Republic is 16 years. A younger pilot may fly only under the direct supervision of a pilot who meets the requirements.

3.4 Operational limits of subcategory A3

- Fly only in an area where you will not endanger any uninvolved persons within the range of the flight.
- Keep a horizontal distance of at least **150 m from residential, commercial, industrial and recreational areas**.
- The maximum flight height is 120 m above the ground.
- The drone must remain within visual line of sight (VLOS) at all times – when flying with goggles, by means of a UA observer (chapter 3.5).
- Never fly over people or over assemblies of people.

- Respect the geographical zones (airports, protected areas, prohibited areas) published by the ÚCL on the dronemap.gov.cz map.
- At night, the drone must have a flashing green light switched on. This drone does not have one – so do not fly at night, or fit such a light.

3.5 Flying with FPV goggles

When flying with goggles, you do not see the drone directly. A UA observer must therefore stand next to you, watch the drone with the naked eye (without binoculars), keep an eye on the surroundings and be able to warn you in time. The pilot nevertheless remains responsible for the flight.

3.6 Radio frequencies and transmit power

The drone contains radio equipment. In the Czech Republic, its operation is governed by the general authorisations of the Czech Telecommunication Office (ČTÚ):

Device	Band	Max. device power	Limit in the Czech Republic
ELRS receiver and your radio	2400–2483.5 MHz	depends on the radio	25 mW e.i.r.p. (VO-R/10); 100 mW e.i.r.p. for wideband data transmission (VO-R/12)
Drone video transmitter	5.8 GHz	1600 mW	25 mW e.i.r.p. in the 5725–5875 MHz range (VO-R/10)
FPV goggles	5.8 GHz	receive only	–

- The output power of the radio and of the video transmitter is set by the user, who is responsible for complying with the limits. The procedure for setting up the video transmitter is described in chapter 5.6.
- Higher video transmitter power (100–1600 mW) and channels outside the 5725–5875 MHz band may only be used by holders of an amateur radio licence, within the scope of their licence.
- Do not replace the antennas with any other than those supplied, and do not use amplifiers.

3.7 Insurance and personal data protection

- In subcategory A3, liability insurance in the Czech Republic is mandatory only for drones with a maximum take-off mass over 4 kg (Section 54d of Act No. 49/1997 Coll.). It is not mandatory for this drone, but we recommend taking it out.
- The drone's camera may capture personal data. Do not film people without their consent, respect their privacy and do not publish the recordings.

4. Preparation

4.1 What else you need

- An RC radio transmitter with the **ExpressLRS 2.4 GHz** system, ideally running EdgeTX or OpenTX.
- A computer with Betaflight Configurator and a USB-C data cable – for checking and configuring the drone.
- A microSD card if you want to record video in the goggles.
- A non-flammable surface for charging.

4.2 Charging the drone batteries

① Connect the charger to a mains socket with the power cord, or power it from a 6–30 V DC source. Never connect it to both power sources at the same time.

② Connect the charging leads to the charger first, and only then the battery: the XT60 main connector to the main port and the balance connector to the balance port (black wire on the side marked −).

③ Press ENTER and set: *Battery Type* LiPo, *Battery Cell* 6S, *Task* Balance CHG, *Charge Current* 1.5 A (1C).

④ Select *Start*. The charger ends charging automatically once full voltage is reached.

⑤ Disconnect the battery first, then the leads from the charger. The program can be stopped at any time with the ENTER button.

Li-Po 6S battery state	Per cell	Whole battery
Fully charged	4.20 V	25.2 V
End the flight	3.5 V	21.0 V
Storage	3.8 V	22.8 V

Always fit a fully charged battery to the drone before flying.

Mains power limits the charging power to 100 W. Charge the batteries one after another and let them cool down before charging.

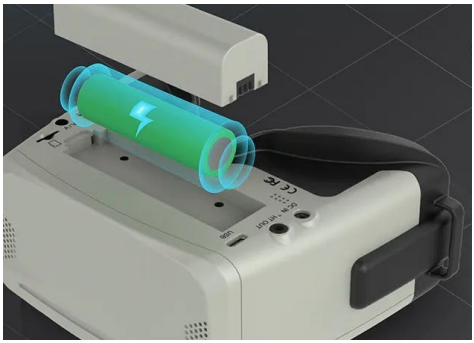
4.3 Preparing the goggles

① Check that the receiver module is inserted in the front bay of the goggles and screw on both antennas. Tighten them by hand only.

② Insert the 18650 cell into the battery compartment on the underside of the goggles with the correct polarity according to the markings, and close the compartment.

③ Charge the cell directly in the goggles – connect the goggles to a 5 V USB power source with a USB-C cable.

④ If you want to record video, insert a microSD card.



Battery compartment for the 18650 cell on the underside of the goggles

4.4 Mounting the battery on the drone

① First check that the video transmitter antenna is attached to the drone.

② Place the battery on the top plate of the drone and secure it firmly with both straps.

③ Route and secure the battery balance lead so that it cannot get into the propellers.

④ Connect the XT60 connector only just before the flight, with the drone placed on the ground.

5. Setup and binding

The drone is supplied without a radio, so before the first flight you need to prepare your radio, bind it to the drone's receiver and check the switch settings in Betaflight Configurator. **Keep the propellers removed during all steps in this chapter.**

5.1 Connecting to a computer

① Install Betaflight Configurator on your computer.

② Connect the drone's flight controller with a USB-C data cable and select *Connect* in the program.

③ The flight controller runs Betaflight firmware with the **SPEDIXF722** target.

④ Always save any changes to the settings with the *Save* button.

USB power is not sufficient for the motors, the video transmitter or the receiver. For steps that require the receiver or the video transmitter, connect the battery (propellers removed).

5.2 Setting up the radio transmitter

① Create a new model on your radio.

② For the internal RF module (*Internal RF*), select ExpressLRS with the CRSF protocol.

③ Assign switches to channels. The sticks occupy the first four channels, so the fifth channel is AUX1, the sixth is AUX2 and so on. In EdgeTX: *MDL → Mixes*, select channel CH5, open it for editing and, in the *Source* field, flip the switch you want to use. Assign further switches to channels CH6, CH7 and CH8 in the same way.

For a detailed procedure, see your radio's manual and the EdgeTX guide (chapter 5.9).

5.3 Binding the drone to your radio (bind)

① Connect the battery to the drone, then quickly plug and unplug the connector three times in a row; leave it connected the third time. Each interval must be shorter than 1.5 s.

② The receiver LED starts double-blinking – the receiver is in binding mode.

③ On the radio, open the ExpressLRS script (in EdgeTX *SYS → Tools → ExpressLRS*) and select *Bind*.

④ Once binding is successful, the receiver LED lights up solid. The letter C (connected) appears in the top right corner of the ExpressLRS script.

Receiver LED	Meaning
Solid	bound and connected to the radio

Receiver LED	Meaning
Slow blinking	not bound / no connection
Double blinking	binding mode
Fast blinking	Wi-Fi update mode
Blinks 3× quickly, then pauses	Model Mismatch – disable the Model Match option in the ExpressLRS script, or select the correct model

- If you have set a binding phrase on your radio, you can also bind by entering the same phrase in the receiver via its Wi-Fi interface. The procedure is described in the ExpressLRS guide (chapter 5.9).
- The radio and the receiver must run the same major version of ExpressLRS firmware. If binding repeatedly fails, bring the firmware to the same version.

5.4 Checking channels and switches

① Switch on the radio, connect the drone to the computer and connect the battery (propellers removed).

② On the *Receiver* tab, check that the stick movements correspond to the Roll, Pitch, Yaw and Throttle channels. If not, adjust the channel mapping.

③ On the *Modes* tab, check which AUX channels and ranges control the individual modes, and adjust them to match the switches on your radio. The yellow bar shows the current switch position.

④ Save the changes with the *Save* button.

Mode	Function
ARM	Arm (motors on) and Disarm (motors off). The drone is armed with a switch, not with the sticks.
ANGLE	self-levelling mode – when you release the right stick, the drone returns to a level position
no mode (Acro)	the drone does not self-level; the usual mode for freestyle
BEEPER	beeping via the buzzer and motors – helps you find the drone
FLIP OVER AFTER CRASH	flips the drone back over after it lands upside down (Turtle)

Make sure the ARM switch is in the Disarm position before you connect the battery.

5.5 Accelerometer calibration

Place the drone on a flat, level surface and select *Calibrate Accelerometer* on the *Setup* tab. Calibration is required for Angle mode to work correctly.

5.6 Setting up the video transmitter and tuning the goggles

The video transmitter is set up with the buttons on its side, or from the radio via the on-screen menu (OSD). For operation in the Czech Republic, set the power to 25 mW and a channel in the 5725–5875 MHz band.

▶ Setup using the buttons

- **BAND** button – a short press (1 s) switches the channel CH1 to CH8 (the green LED blinks according to the channel number); a long press (3 s) switches the band A → B → E → F → R → L (blue LED: A 1×, B 2×, E 3×, F 4×, R 5×, L 6×).
- **PWR** button – a short press switches the power PIT → 25 → 100 → 400 → 800 → 1600 mW. The red LED blinks: 25 mW 1×, 100 mW 2×, 400 mW 3×, 800 mW 4×, 1600 mW 5×. A long press switches Pit mode on and off (red LED lights up solid).

▶ Setup via OSD

With the drone disarmed, move the left stick to the middle and to the left and the right stick up – the Betaflight menu opens in the goggles. In the video transmitter (VTX) item, set the band, channel and power, then save by selecting *Save*.

Band	Channels in the 5725–5875 MHz band [MHz]
A	A1 5865, A2 5845, A3 5825, A4 5805, A5 5785, A6 5765, A7 5745, A8 5725
B	B1 5733, B2 5752, B3 5771, B4 5790, B5 5809, B6 5828, B7 5847, B8 5866
F	F1 5740, F2 5760, F3 5780, F4 5800, F5 5820, F6 5840, F7 5860
R	R3 5732, R4 5769, R5 5806, R6 5843

Bands E and L and the other channels lie outside the 5725–5875 MHz band; do not use them in the Czech Republic without an amateur radio licence.

▶ Tuning the goggles

① Switch on the goggles with the power button ③.

② On the receiver screen, set the same band and channel as on the video transmitter, or let the goggles scan the band and select the channel with the strongest signal.

③ Check that the image is clear and the RSSI value is high.

You will see the OSD data in the image, including the drone battery voltage. The goggles and the drone do not pair with each other – they only need to be on the same channel. No other pilot may transmit on the same channel at the same time.

5.7 GPS and failsafe

- The GPS module enables the **GPS Rescue** function – if the radio signal is lost, the drone automatically returns to the take-off point. The manufacturer sets it as the failsafe procedure (*Failsafe* tab).
- Before take-off, wait until the GPS has acquired enough satellites and recorded the take-off point – you can see the status in the OSD.

- The manufacturer points out that the default GPS Rescue settings apply to the drone without a payload. If you carry an action camera, adjust the *Throttle hover* value and other parameters on the *Failsafe* tab.
- GPS Rescue is an assistance function. Do not rely on it, and do not fly beyond the range of a reliable signal.

5.8 Motor check

① Remove the propellers, connect the drone to the computer and connect the battery.

② On the *Motors* tab, confirm the safety warning and briefly spin up each motor using its slider.

③ Check that the motors spin as shown in the figure in chapter 7.2. The manufacturer supplies the drone with reversed motor direction (the *Motor direction is reversed* option, known as props out).

5.9 EdgeTX and ExpressLRS guides

Detailed guides to the EdgeTX system on your radio and to the ExpressLRS system (binding, settings, firmware updates) can be found on the official project websites:

EdgeTX – official project website: edgetx.org

ExpressLRS – official project website: expresslrs.org

6. Flying

6.1 Pre-flight check

- The drone battery is fully charged (25.2 V); the radio and the goggles are charged.
- The propellers are undamaged, fitted in the correct direction and the nuts are tightened. A loose propeller can come off in flight.
- The battery is firmly secured with both straps and the balance lead cannot get into the propellers.
- The video transmitter antenna is attached and undamaged; the goggle antennas are screwed on.
- The ARM switch is in the Disarm position and the throttle is fully down.
- The goggles are on and nobody else is transmitting on your channel. If you detect interference, do not power up the drone so that you do not interfere with others.
- The GPS has enough satellites and has recorded the take-off point.
- The area is clear of people and obstacles, the weather is suitable and the flight complies with chapter 3.

6.2 Power-up and take-off

① Switch on the radio and the goggles.

② Place the drone on the ground and connect the battery. Step back at least 3 m.

③ Check the image in the goggles and the OSD data.

④ Flip the ARM switch – the motors start spinning at idle.

⑤ Apply throttle smoothly. Do not start with an abrupt burst of throttle – a 5" drone on 6S climbs very quickly.

⑥ After landing, pull the throttle fully down and switch to Disarm.

In an emergency, switch to Disarm immediately. The motors stop and the drone falls.

- Switch off in reverse order: first disconnect the drone battery, then switch off the goggles and finally the radio.
- Arm does not work if the throttle is not fully down or if the drone is connected to a computer by cable.

6.3 Monitoring voltage and ending the flight

Monitor the drone battery voltage in the OSD in the goggles. End the flight at 3.5 V per cell at the latest, i.e. 21.0 V for a 6S battery. Under load, the voltage drops briefly – what matters is the voltage during calm flight. Disconnect the battery immediately after landing. Deeper discharging shortens its service life.

6.4 Signal loss (failsafe)

If the drone loses the signal from the radio, the flight controller triggers the failsafe procedure. With the GPS Rescue function, the drone tries to return to the take-off point (chapter 5.7). Without a valid GPS position, the flight controller stops the motors and the drone falls. For this reason, do not fly far away or behind obstacles that may block the signal.

6.5 After a crash

▶ Flipping the drone over – Turtle mode

① The drone is lying upside down. Switch to Disarm.

② Turn on the FLIP OVER AFTER CRASH mode switch and switch to Arm.

③ Briefly push the right stick in the direction in which the drone should flip over.

④ Switch to Disarm, turn off FLIP OVER AFTER CRASH and only then Arm again.

▶ Finding the drone

Activating BEEPER mode makes the drone beep, which helps you find it. It also beeps after signal loss. You will see the last GPS position in the OSD. Before the next flight, check the drone according to chapter 6.1.

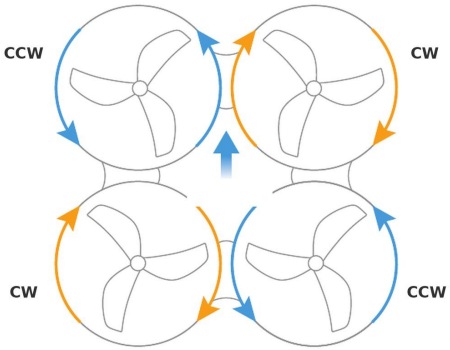
7. Maintenance and troubleshooting

7.1 After every flight

- Disconnect the drone battery and let it cool down; only then charge it.
- Check the propellers, arms, camera, antenna and battery straps. Replace damaged propellers.
- Check that the screws and propeller nuts are tight. Remove grass, dust and dirt from the motors.

7.2 Replacing propellers

The drone uses propellers with two directions of rotation, CW (clockwise) and CCW (counter-clockwise). The motors spin in props out mode – the propellers at the front rotate outwards, away from the centre of the drone.



Direction of propeller rotation viewed from above; the arrow in the centre points forward (camera direction)

① Disconnect the battery.

② Loosen the propeller nut and remove the damaged propeller.

③ Fit a propeller with the correct direction of rotation, printed side up, and tighten the nut.

④ Check that the propeller spins freely and does not touch the frame or cables.

7.3 Storage

- Store the drone batteries at 3.8 V per cell (22.8 V). The S100neo charger has a *Storage* mode for preparing batteries for storage. Do not store fully charged batteries for longer than a few days.
- Store the batteries in the Lipo Safe bag protective pouch, in a dry place at room temperature, out of the reach of children and away from flammable materials.

- Remove the 18650 cell from the goggles before storing them for a longer period.

7.4 Firmware

No firmware update is needed for the first flight. Change the flight controller settings in Betaflight Configurator only if you know what you are doing. Before making changes, save a backup of the settings (the *diff all* command on the CLI tab). The goggle firmware is updated via USB-C according to the manufacturer's instructions.

7.5 Troubleshooting

Problem	Cause and solution
Receiver LED blinks slowly, the drone does not respond	The receiver is not bound or the radio is not transmitting. Bind it according to chapter 5.3; check that the radio uses ExpressLRS 2.4 GHz.
Receiver LED blinks fast	The receiver has switched to Wi-Fi mode. Disconnect the battery, reconnect it and repeat the binding.
Binding repeatedly fails	Different ExpressLRS major versions on the radio and on the receiver – bring the firmware to the same version. Check that the radio uses the CRSF protocol.
LED blinks 3× and pauses	Model Mismatch – disable Model Match in the ExpressLRS script, or select the correct model.
The drone cannot be switched to Arm	The throttle is not fully down; the drone is connected to a computer; the ARM switch does not match the setting on the *Modes* tab (chapter 5.4).
No image in the goggles	Check the antennas, the battery charge and the video transmitter channel (chapter 5.6). The video transmitter may be in Pit mode.
The image is grainy or drops out	The drone is too far away or behind an obstacle; the drone or goggle antenna is damaged or loose; another transmitter nearby is causing interference – select a different channel.
The drone flips over on take-off	The propellers are on the wrong motors or upside down – compare with the figure in chapter 7.2.
Angle mode does not keep the drone level	Calibrate the accelerometer (chapter 5.5).
Short flight time	The battery is not fully charged or is worn out; the propellers are damaged.

8. Information for the EU and Czech Market

8.1 Importer and responsible person in the EU

The product is placed on the European Union market by the importer stated below, who is at the same time the responsible person within the meaning of Article 16 of Regulation (EU) 2023/988 of the European Parliament and of the Council on general product safety (GPSR).

Importer / responsible person in the EU	Rotorama, s.r.o.
Company ID (IČO)	051 57 692
VAT ID (DIČ)	CZ05157692
Registered office	Okrajová 1351, 674 01 Třebíč, Czech Republic
E-mail	info@rotorama.cz
Phone	+420 252 252 098
Website	www.rotorama.com

8.2 Product conformity

CE

- The product bears the **CE** marking and complies with the requirements of the applicable European Union harmonisation legislation.
- A copy of the **EU Declaration of Conformity** is available from the importer at the address stated above or at the e-mail address info@rotorama.cz.
- **Product identification:** the type designations of the individual components of the set (Manta5 SE V2 DC, Skyzone Cobra SD, SkyRC S100neo) are given on the products or on their packaging.

8.3 Disposal of electrical equipment and batteries



- The crossed-out wheeled bin symbol on the product, its packaging or in the documentation means that at the end of its service life the product **must not be disposed of together with mixed municipal waste**.
- Hand it over at a take-back point for electrical equipment – at a collection yard, at a take-back point of a collective system, or at the retailer when purchasing a new equivalent product. Take-back is free of charge for the end user.
- The set contains rechargeable batteries. Hand them over at a collection point for batteries – do not dispose of the batteries in mixed waste or in fire.
- The obligations under Act No. 542/2020 Coll., on end-of-life products, are fulfilled by the importer through a collective take-back system.
- Proper disposal helps prevent negative impacts on the environment and human health and contributes to the reuse of secondary raw materials.

Through its contractual partner **ASEKOL a.s.**, the company ensures the take-back of waste electrical equipment from households and the separate collection of waste electrical equipment, batteries and accumulators in accordance with the applicable legislation. The customer is entitled to hand over old electrical equipment or a battery or accumulator at any collection point of the above contractual partner. The addresses of these take-back points are listed at www.asekol.cz, www.ecobat.cz and also https://visoh2.mzp.cz/RegistrMistZO/RegistrMistZOPublic/MapaMistZpetOdberu.

9. Warranty and rights arising from defective performance

The rights and obligations of the contracting parties are governed by Czech law, in particular by Act No. 89/2012 Coll., the Civil Code, and Act No. 634/1992 Coll., on consumer protection.

- The seller is liable to the buyer for the product being free of defects on receipt. If the buyer is a consumer, a defect may be notified **within two years of receipt** of the product (Section 2165 of the Civil Code).
- If a defect appears within **one year** of receipt, the product is deemed to have been defective already at the time of receipt (Section 2161(5) of the Civil Code).
- When purchasing online, a consumer has the right to **withdraw from the contract within 14 days** of receiving the goods without giving a reason (Section 1829 of the Civil Code).
- Claims should be made with the retailer from whom you purchased the product. The importer's contact details are given in Chapter 8.1.
- The competent body for out-of-court settlement of consumer disputes is the **Czech Trade Inspection Authority**, Štěpánská 796/44, 110 00 Prague 1, www.coi.cz.