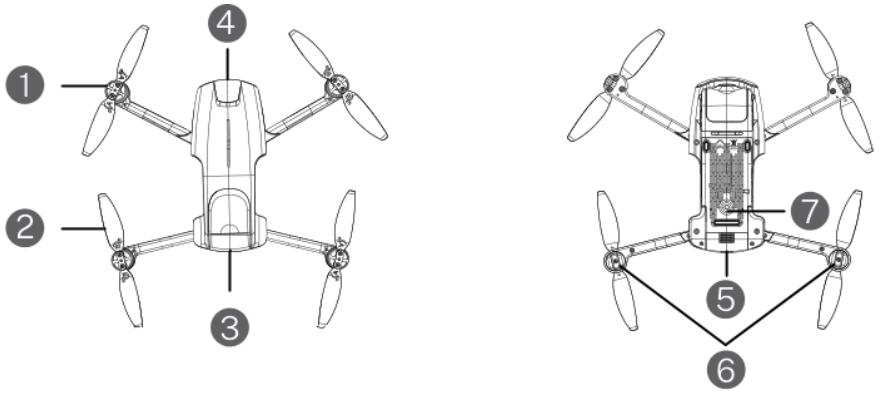
Start here

Prepare the aircraft and plan your first flight



Aircraft key: 1 Motor · 2 Propellers · 3 Flight battery · 4 Camera · 5 Power button · 6 Status lights · 7 Optical-flow lens

Before you fly

Choose an open outdoor area with a clear takeoff and return path. Keep away from people, pets, trees, buildings and overhead wires. The F11MINI **does not have obstacle avoidance**. Keep the drone in sight and follow local flight rules.

Prepare the aircraft

1. Charge the drone battery, controller and phone.
2. With the battery switched off, insert it until its latch clicks. Check that it is secure.
3. Unfold the **front arms first**, then the rear arms and all propeller blades.
4. Remove the camera protector. Inspect propellers and screws for damage or looseness.
5. Place the drone on flat ground with its camera/nose pointing away from you.

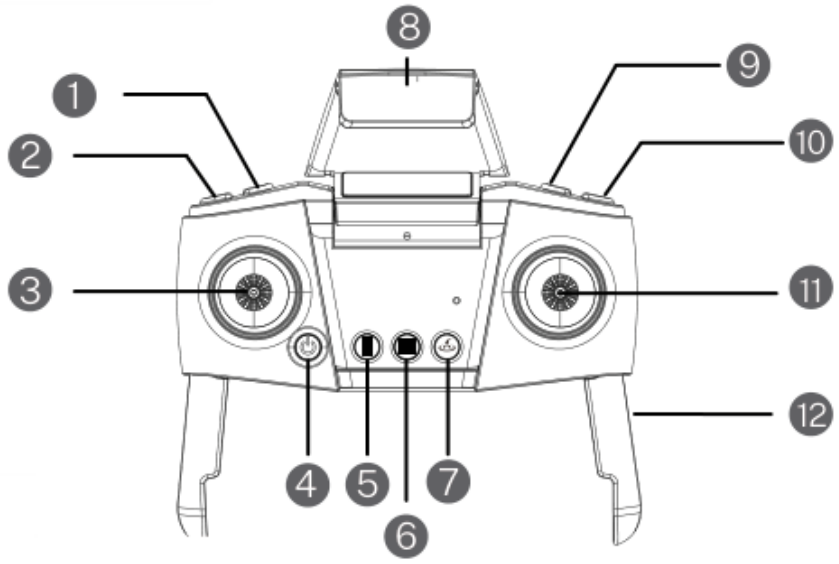
First-flight sequence

Charge → unfold → power on → pair → connect Ruko Mini → calibrate compass → calibrate level → confirm GPS → start motors → take off. The following pages explain each stage.

This Gizmo Grabs guide is based on Ruko's official **F11MINI User Manual v2.0**. Use the controls shown here for the F11MINI; other Ruko models have different procedures. Source links are on the last page.

Know the controls

Original numbered controller diagram from Ruko



Controls 1-7

#	Control	What it does
1	Shutter / photo	Press to take a photo; the camera button may first select photo mode.
2	Record	Press to start recording; press again to stop. It may first select video mode.
3	Left joystick	Up/down changes altitude. Left/right rotates the nose in the default American/Mode 2 layout.
4	Power	Press once to turn the controller on; press again to turn it off.
5	One-tap takeoff / landing	After the motors are unlocked, press to take off. In flight, press to land at the current position.
6	Compass / GPS mode	Short press enters compass calibration. Hold 3 seconds to switch GPS off; hold again to switch it on.
7	Smart return-to-home	Commands a return to the recorded home point; see page 8 for requirements and the source's press-duration discrepancy.

All controller functions

Camera angle, speed, grips and emergency descent

Controls 8-12

#	Control	What it does
8	Phone holder	Unfold the upper holder and secure the phone. Check that it cannot slide out.
9	Camera angle up	Raises the camera view.
10	Camera angle down	Lowers the camera view; the camera tilts from forward to approximately straight down.
11	Right joystick / speed	Up/down flies forward/backward. Left/right flies sideways. Press the stick inward to change Normal/Sport speed.
12	Folding handles / grips	Unfold the lower grips for a secure hold and check the phone mount before flying.

Normal and Sport speed

Normal is the default and is best for practice and smooth filming. Clicking the right stick inward switches to **Sport**; click again to change back. Sport needs more open space and at least 3 meters of braking clearance, according to Ruko.

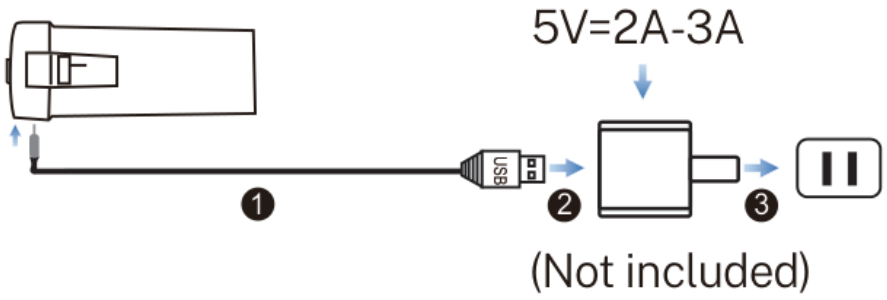
Emergency rapid descent

Hold **Record (2) and Camera angle down (10) together for 3 seconds**. The official manual describes a rapid descent at approximately **2 m/s**, intended for a loss-of-control or drift emergency.

> **This is not normal landing.** Rapid descent can bring the aircraft down hard at its current position. Use Takeoff/Landing for ordinary landings. Keep GPS enabled outdoors; switching it off removes GPS positioning and GPS return protection.

Battery and charging

Use the supplied leads and a suitable 5V USB supply



Charge the flight battery

1. Switch the battery off before removing it. Press the side latches and pull it out.
2. Let the battery cool after flight.
3. Connect the supplied USB charging lead to the battery and a **5V USB supply rated 2A or 3A**.
4. The battery indicators flash as it charges. Ruko says charging is complete when the fourth indicator remains on.
5. Disconnect the charger and fit the battery securely before use.

Allow about **3.5 hours** for a full battery charge. Do not use a higher-voltage fast-charge mode. Charge under supervision and stop using damaged, swollen or unusually hot batteries.

Power the drone on or off

Press the battery power button **once briefly, then press again and hold for about 2 seconds**. The battery LEDs show its charge level. Never install or remove the battery while it is powered on.

Charge the controller

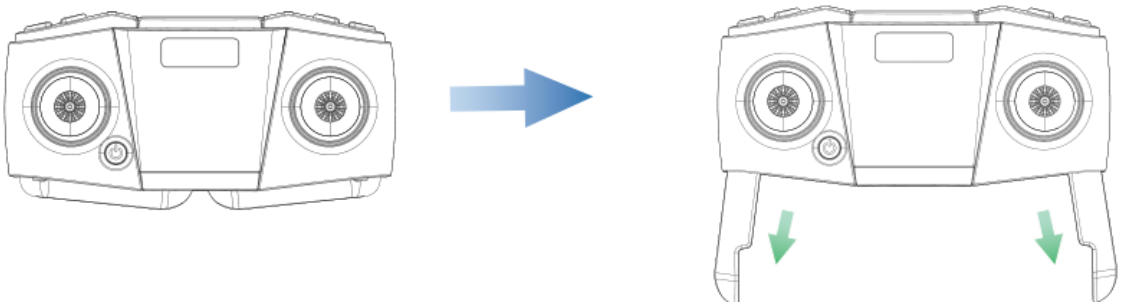
Connect its **Micro-USB** charging port to USB power. **Red light on = charging; red light off = complete.** The manual gives approximately 50-60 minutes. A flashing controller light and beeps during flight indicate a low controller battery: land promptly.

Storage

Store flight batteries around **50-60% charged** in a cool, dry place. Ruko recommends checking and cycling them about monthly. Actual flight time varies with wind, temperature and flying style; do not fly until the advertised maximum time is reached.

Pair and connect the app

Controller flight plus phone camera view



Pair the controller

1. Unfold the controller grips, phone holder and antenna.
2. Power on the prepared drone on level ground.
3. Press the controller power button once.
4. Move the **left stick fully up to 12 o'clock, then fully down to 6 o'clock**.
5. Listen for confirmation beeps. The controller indicator changes from flashing to steady when linked.

Connect Ruko Mini

1. Install **Ruko Mini** from your phone's app store. Allow the permissions needed for local-network access, location and photo/video storage. Load the map while internet access is available.
2. Open the phone's Wi-Fi settings and join **Ruko_F11_Mini_5G_******** (the final characters vary). This is Wi-Fi, not Bluetooth or cellular 5G.
3. If the phone warns that the network has no internet, choose to **stay connected**.
4. Open Ruko Mini and enter its Control/camera screen. Only one phone can connect to the drone Wi-Fi at a time.

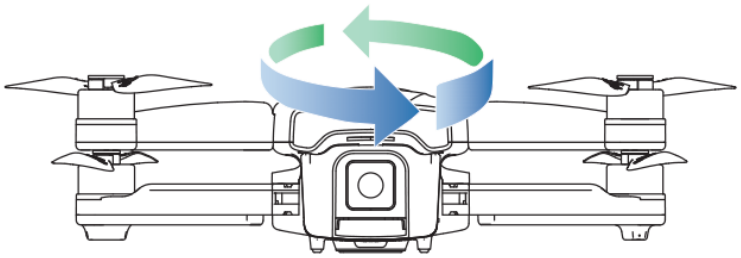
> The phone must support **5GHz / 5.8GHz Wi-Fi**. If the camera screen stays blank, check the Wi-Fi connection and app permissions, turn off the VPN, and prevent the phone from switching back to another network. In airplane mode, turn Wi-Fi back on before reconnecting.

Calibrate before flight

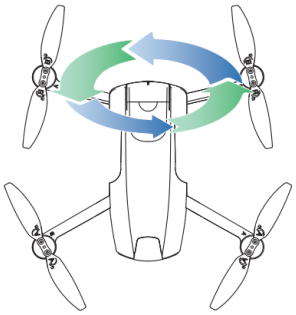
Compass first, then gyroscope on level ground

Compass: follow the app prompts each power-on

Pair and connect the app first. Unfold all arms and stay away from metal and magnetic interference. A slow-flashing yellow rear light indicates compass calibration is needed. Short-press the compass button if you need to enter calibration again.



1. Horizontal: Hold the drone level about 1 meter above the ground. Rotate it horizontally 2-3 complete turns until the app requests vertical calibration. The indicator changes from slow to fast flashing.



2. Vertical: Hold the camera facing **upward**. Rotate the drone 2-3 complete turns as shown until the vertical-calibration prompt disappears. Put it back on level ground. Follow the app confirmation, rather than counting turns alone.

Gyroscope / level calibration

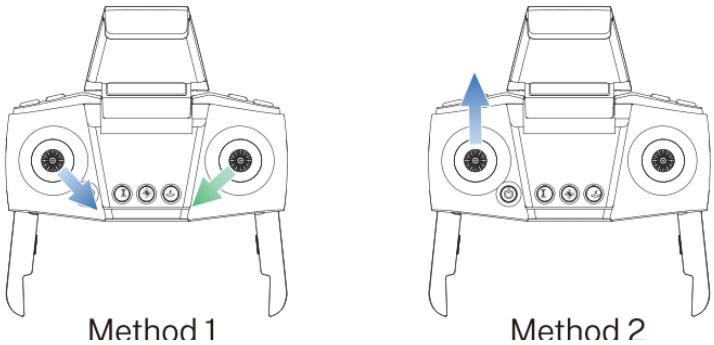
Keep the drone still on flat ground. Tap **CALIBRATE** in the app, or move **both sticks to 7 o'clock** together (both down-left). The rear light flashes quickly and returns to its previous state when finished. Recalibrate while landed if flight is tilted or unstable.

Take off and land

Default Mode 2 joystick layout

Check readiness

Wait outdoors for strong GPS: the manual uses **3 or more GPS bars** as its flight criterion. Confirm the rear status light is steady green and the app shows ready/“Fly.” Leave Beginner mode on for initial practice. Confirm that a home point has been recorded before relying on RTH.



Start the motors and take off

1. With the area clear, move the **left stick to 5 o'clock** (down-right) and the **right stick to 7 o'clock** (down-left). Release both as soon as the motors start.
2. Press **One-tap takeoff**, or gently raise the left stick to lift off.
3. Automatic takeoff rises to a low hover. The manual gives approximately 1.2-1.5 meters in different sections, so allow clearance and watch the aircraft.

Stick	Up / down	Left / right
Left	Climb / descend	Rotate nose left / right
Right	Forward / backward	Sideways left / right

Land and shut down

Choose clear, flat ground. Press **Takeoff/Landing** to descend, or lower the left stick gently. After touching down, hold the left stick fully down until the motors stop, then release it. Switch the drone off, then the controller. Do not use the motor-stop stick combination while airborne.

Return to home

GPS and a recorded home point are essential

Smart RTH

Use the controller **Smart RTH** button or the app's RTH icon to return to the last recorded home point. Confirm the aircraft is actually returning in the app and visually. Landing may be several meters from takeoff, so keep the landing area clear.

Press-duration discrepancy: The controller section describes a press/tap to start and another press to cancel. Another RTH section says long press. Use the clearly labeled app RTH control if your controller does not respond as described, and confirm the mode on screen.

What altitude will it use?

Current height	Return behavior described by Ruko
Below 20 m / 65 ft	Ascends to approximately 20 m before returning.
20-50 m / 65-164 ft	Returns at the current height.
50-120 m / 164-393 ft	Descends toward approximately 50 m, then returns.

These are manufacturer defaults, not obstacle clearance guarantees. Check the current app settings and choose a flight area where the full route is clear. The F11MINI **cannot detect or avoid obstacles**.

Low-battery and lost-signal RTH

Low battery can trigger automatic return. The manual describes an initial return/hover stage and a more urgent landing stage. **Land promptly at the first warning**; do not continue flying just because limited control remains.

If the controller signal is lost for about **10 seconds**, GPS RTH can activate. Ruko says control can resume if the signal reconnects. Weak GPS, no recorded home point or insufficient battery can prevent a successful return.

Home point is not a moving target

RTH returns to the recorded takeoff/home location. It does not automatically follow the controller. Taking off again from a different landing spot can establish a new home point.

Camera and app controls

Use the original Ruko screen as a visual guide



Read the main screen

Check **GPS strength**, **drone battery**, **controller battery** and the status/warning bar before takeoff. The compass value reports interference. **Settings** contains Beginner mode, range/height limits, storage settings, units and logs.

Photo/video mode selects the capture type; the round shutter starts a photo or recording. **Album** opens media. **More Features** opens intelligent flight tools. The left-side controls include **RTH** and **takeoff/landing**. App layouts can change with updates.

Capture photos and video

Use the controller shutter/record buttons or the on-screen shutter. Use the upper-right camera-angle buttons to tilt the camera up/down. Ruko describes **4K still photos** and up to **2.7K/25fps video**; “4K camera” does not mean 4K video recording.

Memory card and downloading

Use a **microSD card up to 128GB, FAT32**, with at least the manual's stated 10MB/s write speed. Card video options are 2.7K/25fps or 2K/50fps. The phone preview can be lower quality than the card recording.

With the card fitted, originals are stored on it. To copy footage to the phone, power the drone on, connect to its Wi-Fi and use the app album/download function. Stop recording before switching power off.

Intelligent flight modes

Practice ordinary GPS flight before using these tools

GPS Follow

1. Enable phone location and ensure good GPS on the drone.
2. Take off in a wide open area; Ruko recommends roughly **10-50 meters** separation for best results.
3. Choose **GPS Follow** in More Features and confirm the app says it is ready.
4. Move slowly and watch the drone. Tap the same feature again to exit.

The detailed instructions use the **phone's location** as the tracking reference. The stated operating envelope is within roughly 50 meters radius and height. It is not visual obstacle-aware subject tracking.

Route Planning / waypoints

Load the map before flight. Take off above nearby obstacles, choose **Route Planning**, mark **2-10 points** inside the permitted red circle and check the entire route. Confirm to start. Use the feature's exit/delete control to leave the mode. Good GPS is required throughout.

Fly Around / orbit

Fly to the intended center point and hover, then select **Fly Around**. The manual gives a default circle radius of **5 meters**, adjustable to **20 meters**. In this mode, right-stick forward/back changes the radius and left/right changes orbit direction/speed. Tap Fly Around again to exit.

Beginner and GPS-off modes

Beginner mode limits distance and height to about 30 meters / 98 feet in the manual. Keep it enabled until comfortable.

Holding the compass/GPS button for 3 seconds turns GPS off and enters an attitude/optical-flow mode. This reduces position-hold and return protections. Avoid GPS-off flying as a beginner; optical flow needs a suitable, well-lit surface and can drift.

None of these modes avoids obstacles. Keep a clear route, supervise the aircraft continuously and retain enough battery to land safely.

Fix common problems

Land and switch off before checking physical parts

Problem	What to check
Cannot pair	Power both devices on. Move the left stick fully up, then fully down. Wait for the controller light to become steady.
Motors will not start	Charge the battery; complete compass/level calibration; wait for adequate outdoor GPS and check the app warning. Use the correct motor-start stick positions.
Unstable / circling	Land promptly. Check for damaged propellers, compass interference and incorrect calibration. Move to an open site before recalibrating.
No phone image	Join the drone Wi-Fi, stay connected despite “no internet,” check app permissions and disable VPN. Confirm the phone supports 5GHz Wi-Fi.
Card will not save	Check space and FAT32 format. Back up footage before formatting; formatting erases it. Stop recording before power-off.
Cannot fly beyond about 30 m	Check Beginner mode and range settings. A low-battery return state can also restrict flight.
Short flight time	Wind, cold, incomplete charging and aggressive flying reduce endurance. Land based on warnings, not a timer.

Useful rear-light indications

Steady green: GPS mode. **Steady yellow:** optical-flow mode. **Slow-flashing yellow:** compass calibration needed. **Flashing red:** low battery. Fast flashing can indicate a calibration step; read the app prompt to identify which.

Official instructions and source

Prepared from **Ruko F11MINI User Manual v2.0**, including original Ruko illustrations. This is a reorganized English guide, not a new manufacturer edition.

Open Ruko's complete official F11MINI manual
Open Ruko's F11MINI support and tutorial page