

# **F100**

BRUSHLESS DRONE

## **INSTRUCTION MANUAL**



### **FOR MORE INFORMATION**

Visit us online at [force1rc.com](http://force1rc.com) for product information, replacement parts, and flight tutorials.



**ATTENTION:  
BEFORE FLYING YOUR  
DRONE, PLEASE  
WATCH THIS FLIGHT  
INSTRUCTION VIDEO**



<https://youtu.be/tk3qzsUwoWs>



# CONTENTS

Important Statement & Safety Precautions ..... 3

Li-Po Battery Care Instructions ..... 4

Drone Battery Charging Instructions ..... 5

Drone & Transmitter Overview ..... 6

Drone Assembly ..... 8

Calibration ..... 10

Preflight Checklist ..... 11

Basic Flight Controls ..... 12

Indicator Light Descriptions ..... 14

Receiver PCB Diagram ..... 15

Basic Parts ..... 16

Upgrades ..... 17

Troubleshooting Guide ..... 17

## IMPORTANT STATEMENT

- (1) This product is not a toy but a piece of complicated equipment which is integrated with professional knowledge by mechanic, electronic, air mechanics, high-frequency emission etc. It should be installed and adjusted correctly to avoid accidents. The user must always operate in a safe manner. We undertake no liability for human injury or property damage caused by improper operation, as we have no control over setup, use and operation of this drone.
- (2) This drone is suitable for experienced RC drone users aged 14 years or above. Not safe for users under the age of 14 to use.
- (3) The flying field must be legally approved by your local government.

If you have any questions about use, operation, repair etc., please contact us at [support@force1rc.com](mailto:support@force1rc.com)

## SAFETY PRECAUTIONS

Improper assembly, broken main drone, defective electronic equipment, or unskilled operation may cause unpredictable accidents such as drone damage or human injury.

Please pay special attention to the following safety procedures:

### (1) Flying area

The flying field must be legally approved by your local government. Do not fly the drone near in the airport. Keep far away from the airport more than 3.10 miles when flying a RC drone. Flying field must spacious enough and we suggest at least 26.24ft (length)\*26.24ft (width)\*16.40ft (height).

### (2) Keep away from humid environment

The drone is made of precise electronic components. Humidity or water vapor may damage electronic components causing accidents.

### (3) Safe operation

Please operate the RC drone in accordance with your flying skills. User fatigue, listlessness, and improper operation may increase the rate of accidents.

### (4) Keep away from rotating parts

Rotating parts can cause serious injury and damage. Keep face and body away from rotating motors.

### (5) Keep away from heat

The RC drone is made of metal, fiber, plastic, electronic components etc. Keep away from heat and direct sunshine to avoid distortion and damage.

### (6) To avoid being burnt, please do not touch the hot motor

## LIPO BATTERY CARE INSTRUCTIONS

### Temperature

- Heat is a known factor. If a battery is pushed beyond 60°C during discharging or charging, problems could occur due to metallic lithium generation, which damages the cell.
- After a flight, you may find your batteries are warm to touch. It may be a good idea to give the batteries a chance to cool down a little before recharging.

### Storage:

- Please store batteries at normal room temperature and avoid direct exposure to sunlight or heat. When storing LiPo / Li-Ion batteries for any length of time, they should ideally be stored at a temperature of between 5°C & 27°C.
- If you have a battery pack sitting on the shelf, fully charged, never try topping it up till it has been partially or fully discharged!

### Usage:

- There should be a time interval between charging and using battery.
- Please make sure you time your flights to leave about 20% power remaining in the batteries (instead of completely draining them down) as that would prolong battery life and you can enjoy more cycles!
- If the battery is pushed beyond its limits, the battery could get hot and the performance will drop.
- When using the battery for a long time, the quantity of heat of your battery will increase. If it is sealed, the air inside will inflate rapidly causing heating.

### Charging:

- Do NOT overcharge the battery. It may cause overheating and in turn this overheating could damage the unit.
- Never try charging a pack that has been crashed or is damaged, you run the risk of fire! Cells that are obviously swollen or have physical damage should never be used and careful disposal is required, especially if the cells are swollen.
- Try plugging in another charger if one is available and see if the issue persists. If the charger is defective you should discard it immediately and process a warranty return if still under warranty or contact our support team at [support@force1rc.com](mailto:support@force1rc.com) so we can arrange to ship you a replacement charger and/or batteries.
- Remove the battery from the device, inspect the battery and battery connections. Ensure there is no damage to the battery, battery pins or contacts on the device. If you have damage to the battery or charging pins, please discontinue use and contact us at [support@force1rc.com](mailto:support@force1rc.com) for repair/ replacement.
- After crashing the quadcopter please check battery connectors and battery properly. If any part is damaged get spare parts from Force1 RC.
- Please use genuine factory spare parts replacements from Force1 RC.

## 7.4V 1800mAh LiPO Batteries



## DRONE BATTERY CHARGING INSTRUCTIONS

Follow the steps below to charge your battery (failure to follow instructions precisely may result in damage to your battery charger):

1. Connect the charger plug to the charger.
2. Plug in the charger.
3. **Carefully connect the battery cable to the charger as shown below.**



4. Charger indicator light will turn green when charge is complete.

**NOTE:** DO NOT plug the battery cable into the battery charger upside down. This will render the charger inoperable.



### LI-PO BATTERY DISPOSAL & RECYCLING

Do not put lithium-polymer batteries in household trash. Please contact your local waste management agency or LI-PO battery recycling center for more info.



# WARNING: DO NOT LEAVE BATTERY CHARGING UNSUPERVISED

## BOX CONTENTS



DRONE



TRANSMITTER



7.4V 1800MAH LIPO BATTERY (2)



PROPELLERS (4)



CAMERA MOUNT



BALANCE CHARGER



HIGH LANDING GEARS

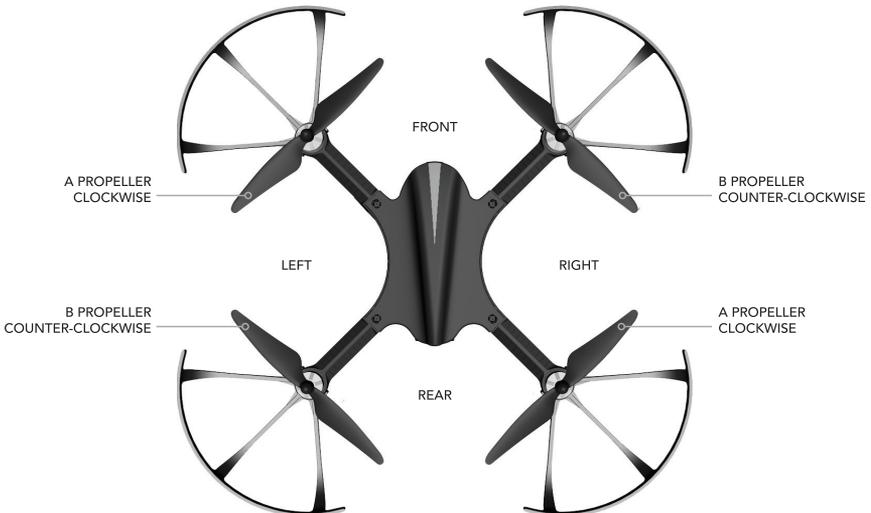


DRONE TOOLS



PROPELLER GUARDS (4)

## DRONE OVERVIEW



## TRANSMITTER OVERVIEW



## TRANSMITTER BATTERY INSTALLATION

Unscrew counter clockwise to open the battery compartment cover, install 4x AA batteries into the battery compartment according to the given polarity, screw clockwise to close the battery compartment.



### CAUTION:

- Insert batteries with correct polarity.
- Non rechargeable batteries are not to be charged; the transmitter needs 4 X AA batteries to work.
- Do not mix old and new batteries.
- Do not mix alkaline, standard (carbon-zinc), or rechargeable (nickel-cadmium) batteries.
- Rechargeable batteries are to be removed from the toy before being charged;
- Rechargeable batteries are only to be charged under adult supervision;
- Exhausted batteries are to be removed from the toy;
- The supply terminals are not to be short-circuited.
- The charging wire to be used with the product should be regularly examined for potential hazard, such as damage to the cable or cord, plug, enclosure of other parts and that in the event of such damage, the product must not be used until that damage had been properly removed.

## DRONE ASSEMBLY

### PROPELLERS INSTALLATION/REMOVAL

#### INSTALLATION

Install propeller A and propeller B on the corresponding motor shaft and fix the rotor propellers tightly by rotating them as per the "lock" direction showed on the propellers.

#### REMOVAL

Hold the brushless motor with rotor blade changing tool and then rotate and remove the propellers as per the "unlock" direction showed on the propellers.



INSTALLATION



REMOVAL

### CAUTION:

- Please make sure that the clockwise and the counter clockwise propellers are installed on the correct motors, because the aircraft will not fly normally with incorrect propellers installation.
- Be careful when installing the propellers, as they are a little sharp.
- Extra propellers can be ordered from Force1 RC.

### PROPELLER GUARD INSTALLATION

#### INSTALLATION

First, unscrew two screws from the bottom of the motors. Then, install the protection guard on the corresponding position, and fix the screws in clockwise rotation.



REMOVE SCREWS



SCREW IN PROPELLER GUARD

## HIGH LANDING GEAR INSTALLATION

### INSTALLATION

Insert the high landing gear plug into the socket located at the bottom of the aircraft, align the 2 screws and fix the high landing gear by screwing clockwise.

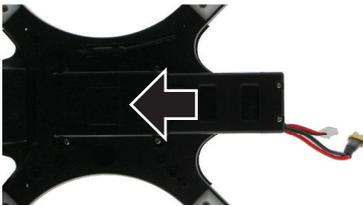


REPEAT FOR ALL HIGH LANDING GEARS

## BATTERY INSTALLATION

### INSTALLATION

Insert the battery into the battery compartment and make sure the battery is installed in place. Then, insert the power plug of the battery into the power socket located at the rear of the aircraft.



SLIDE BATTERY IN COMPARTMENT



INSERT POWER PLUG INTO POWER SOCKET

## CAUTION:

Please connect the power plug as per the indicated positive and negative polarity.

## CALIBRATION

### TRANSMITTER CALIBRATION

Turn on the transmitter. Push down the calibration button and hold on for 3 seconds. The transmitter will send out 3 beep sounds; the indicator light of the aircraft turns from flashing quickly to slowly. Maximum rotate both of the left and right control stick to any direction for 2 circles. Then, again, push down the calibration button and hold on for 3 seconds. The transmitter will send out 3 beeps; the indicator light of the model turns from flashing slowly to quickly, which means that transmitter calibration is completed.

#### NOTE

- All transmitters have been calibrated when manufactured.
- Transmitter calibration is required if pilots find the transmitter control sticks are not working normally.



PUSH DOWN CALIBRATION BUTTON



ROTATE LEFT AND RIGHT CONTROL STICKS



PUSH DOWN CALIBRATION BUTTON

### PAIRING WITH DRONE

- Press the red button on top of the transmitter and turn on the power of the transmitter. The transmitter will send out 2 beep sounds, and the indicator lights keep flashing. This indicates that the transmitter is in connection mode.
- Turn on the aircraft. Once signal connection is done. The transmitter will send out a long beep sound and the indicator light turns solid green.

#### NOTE

- Signal connection is only required once if controller has not been used with a different aircraft.
- Pair the drone and transmitter one by one to avoid signal connection error.



### DRONE CALIBRATION

Once the gyro detection of the aircraft is finished, push down both of the control sticks to the lower right corner (indicated as below photo). The aircraft front lights turn from solid to flashing. It means that drone calibration is successful.



## LOCKING AND UNLOCKING THE DRONE

### UNLOCK

Once the gyro detection of the aircraft is finished, the front lights of the aircraft turns solid. Using the red button to unlock the aircraft, there will be a long beep sound from the transmitter, the rear lights of the aircraft turns solid, as well. When the motors rotate slowly, the aircraft is unlocked.

### LOCK

Pull down the throttle stick to the bottom position, long-press the red button (indicated as below photo). The transmitter sends out interrupted beep sound. Then, the motors stop rotating and the rear indicator light is off, which means that the aircraft is locked.



### NOTE

The throttle control stick should be pushed to the bottom position when long-press the red button to lock the aircraft. Otherwise, the aircraft will not be locked.

## PRE-FLIGHT CHECKLIST

1. Flying area must be spacious. We suggest at least 26ft x 26ft x 18ft of flying space.
2. Make sure the drone battery and transmitter battery are fully charged.
3. Make sure the Left Stick of the transmitter in the middle position.
4. Please follow the power on and off instructions closely. Turn on the transmitter power first then turn on the drone power before flying. Turn off the drone power first and then turn off the transmitter power when you're finished flying. Improper powering on and off may cause the drone to fly out of control and crash.
5. Make sure the connection is solid between battery and motor etc. The ongoing vibrations may cause a bad connection to the power terminal which could make the drone fly out of control.

## BASIC FLIGHT CONTROLS

### HOVER UP AND DOWN

Push the THROTTLE/RUDDER STICK up to fly the drone up, and pull the THROTTLE/RUDDER STICK down to fly the drone down.



### FLY FORWARD OR BACKWARD

Push the DIRECTION CONTROL STICK up to fly the drone forward, and pull the DIRECTION CONTROL STICK down to fly the drone backward.



### FLY LEFT OR RIGHT

Move the DIRECTION CONTROL STICK to the left to fly the drone to the left, and move the DIRECTION CONTROL STICK to the right to fly the drone to the right.



### ROTATE LEFT OR RIGHT

Move the THROTTLE/RUDDER STICK to the left to rotate the drone to the left, and move the THROTTLE/RUDDER STICK to the right to rotate the drone to the right.



## FLIPS AND ROLLS

### FLIP AND ROLL BUTTON

Press and hold the **FLIP AND ROLL BUTTON**, then use the **DIRECTION CONTROL STICK**, to choose the direction that you want your drone to roll. Pressing Forward will roll the drone forward, backward to roll back, left or right to roll left or right, respectively.



## TRIM ADJUSTMENTS

### FORWARD/BACKWARD TRIM

Adjust the **FORWARD/BACKWARD TRIMMER** backwards if the drone drifts forward when taking off, and adjust the **FORWARD/BACKWARD TRIMMER** forwards if drone drifts backwards



### LEFT/RIGHT TRIM

Adjust the **LEFT/RIGHT FLYING TRIMMER** to the right if the drone drifts to the left when taking off, and adjust the **LEFT/RIGHT FLYING TRIMMER** to the left if drone drifts to the right



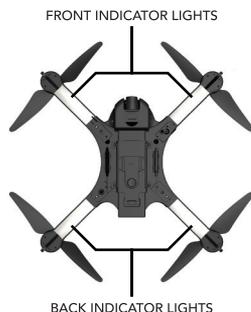
### LEFT OR RIGHT ROTATION TRIM

Adjust the **LEFT/RIGHT RUDDER TRIMMER** to the right if the drone rotates to the left when taking off, and adjust the **LEFT/RIGHT RUDDER TRIMMER** to the left if drone rotates to the right.



## DRONE INDICATOR LIGHT DESCRIPTION

STATUS	DESCRIPTION
Front light is flashing quickly.	Gyro of the drone is in signal detecting mode.
Front light is flashing on twice and flashing off every two seconds.	The drone hasn't received a signal from the transmitter.
Front light is flashing on once and flashing off every two seconds.	The signal of the transmitter is lost after the drone received the signal from the transmitter.
Front light is flashing slowly or front/back lights are flashing at the same time.	The drone is low on battery and the transmitter sends out the sound "Beep... beep... beep..."
Front light is on all the time, back light is off.	The drone is under lock status.
Front and back lights are both solid on.	The drone is unlocked or in flying status.



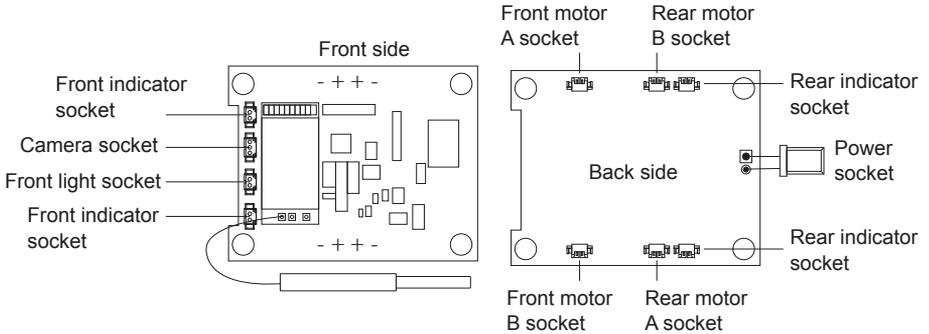
## TRANSMITTER POWER INDICATOR LIGHT DESCRIPTION



STATUS	POWER INDICATOR	DESCRIPTION
Sends out continuous beep sound quickly.	On	1. The drone is too far away. Weak Signal. 2. The drone is powered off after successful signal connection.
Sends out continuous beep sound slowly.	On	The drone is in low voltage status.
Sends out a long beep sound only.	On	The transmitter has connected with the drone successfully.
Sends out "Beep Beep" sound continuously	Flashing Slowly	The drone battery is low.
Sends out beep occasionally	On	The drone is receiving a very weak signal from the transmitter.

## RECEIVER PCB CONNECTING DIAGRAM

To make the model operate normally, the receiver PCB's installation direction and the insertion line's connecting position must be the same as below photo showed.



## BASIC PARTS

			
Upper Cover 0001	Main Frame 0002	Propeller Guards 0003	Bottom Landing Gear 0004
			
Propellers A/B 0005	High Landing Gear 0006	LED Covers 0007	Battery Compartment 0008
			
ESC 0009	LED Strips 0010	Receiver PCB 0011	Clockwise Motor 0012
			
Counter Clockwise Motor 0013	Heat Sink 0014	Propeller Changing Tool 0015	Battery 0016
			
Camera Mount 0017	Balance Charger 0018		

## UPGRADES

			
360° Panoramic WIFI Camera	5.8G FPV Camera	FHD Sport Camera	

## TROUBLESHOOTING

NO.	PROBLEM	SOLUTION
1	The lights are flashing quickly.	The Gyro of the model is under signal detection mode, set the model on any flat surface to stabilize before pairing.
2	The model can't be kept balance after taking off, and leans to one side.	1) Adjust all trimmer buttons to the middle value. 2) Lay the drone on a flat surface or ground and follow the gyro calibration instructions again.
3	The model is shaking fiercely.	The rotor blade is out of shape, change the propellers.
4	The model can't be unlocked, front indicator light flashes slowly.	The battery is low on power, please charge the battery fully.
5	The model can't be locked.	1) Push the throttle stick to the bottom first, then press the lock button for a long time. 2) Read the transmitter instructions, then push the throttle stick to the bottom. Then press the lock button for a long time.

# FCC INFORMATION

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide residential protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception. Which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on the circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced technician for help.

# FCC WARNING

The equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. Modifications not authorized by the manufacturer may void user's authority to operate this device.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.



[force1rc.com](http://force1rc.com)