



## NINJA 250 Full Function Single-Rotor Radio Control Model Helicopter Instruction Manual

[Home](#) » [Ninja](#) » NINJA 250 Full Function Single-Rotor Radio Control Model Helicopter Instruction Manual 



### Contents

- [1 NINJA 250 Full Function Single-Rotor Radio Control Model Helicopter Instruction Manual](#)
- [2 Introduction](#)
- [3 Safety precautions warning](#)
- [4 Box Contents](#)
- [5 Transmitter battery installation](#)
- [6 Charging the Ninia 250 Lipo battery](#)
- [7 Get to know your Ninja 250](#)
- [8 Co-Pilot technology](#)
- [9 Stick Controls \(Mode 2 example\)](#)
- [10 Flight Operation steps](#)
- [11 Parts replacement notes](#)
- [12 Fault Diagnosis](#)
- [13 Documents / Resources](#)
  - [13.1 References](#)
- [14 Related Posts](#)

**NINJA 250 Full Function Single-Rotor Radio Control Model Helicopter Instruction Manual**



## Introduction

Not by chance does the Ninja 250 share the same name as Twister's hugely successful 2011 original. Highly acclaimed in its day, the Mk.1 Twister Ninja was not only tough, rock solid in flight and dead easy to control, it offered a ground-breaking 10-minute duration. All enviable attributes that Twister's development team has been keen to reproduce in this revolutionary new machine. Equipped with state-of-the-art Co-Pilot technology, the high-performance Ninja 250 is noted as being one of the easiest to fly single-rotor RIC model helicopters currently available. That alone is impressive, however the 250 also retains all the performance and agility that's necessary to entertain experienced RIC pilots.

New to helicopter flying? Imagine a feature-packed flight system that not only offers rock-solid 6-axis gyro stabilisation, plus novice and advanced flight modes, it also provides unique auto take-off and land functionality coupled to an advanced altitude hold system. Pretty neat, but there's more. From the highly efficient duration-optimised blade design to the bulletproof nylon reinforced carbon fibre tail boom, damage-limiting auto shutdown feature, and outstanding 15-minute flight duration, no stone has been left unturned in Twister's desire to create a helicopter that's a technological leap ahead of the celebrated original.

**AGE RECOMMENDATION: NOT FOR CHILDREN UNDER 14 YEARS. THIS IS NOT A TOY .**

## Safety precautions warning

- As the user of this product you are solely responsible for operating it in a manner that does not endanger yourself and others or result in damage to the product or the property of others.
- Always keep your model a safe distance from persons and property to avoid collisions or injury.
- This model is controlled by a radio signal that is subject to interference from many sources that are outside your control. Interference can cause loss of control.
- Always operate your model in open spaces well away from full-size vehicles, aircraft, traffic and people.
- Always follow the directions and safety warnings for this and any optional support equipment (chargers, rechargeable battery packs, etc.).
- Never expose the electronic parts of this model to water or moisture. Moisture causes damage to electronics.
- Never operate your model with low transmitter batteries.
- Always keep your model in sight and under control.
- Always use fully charged batteries.
- Always keep the transmitter powered ON while the vehicle is powered.
- Always remove batteries before disassembly.
- Always keep moving parts clean.

## Specification

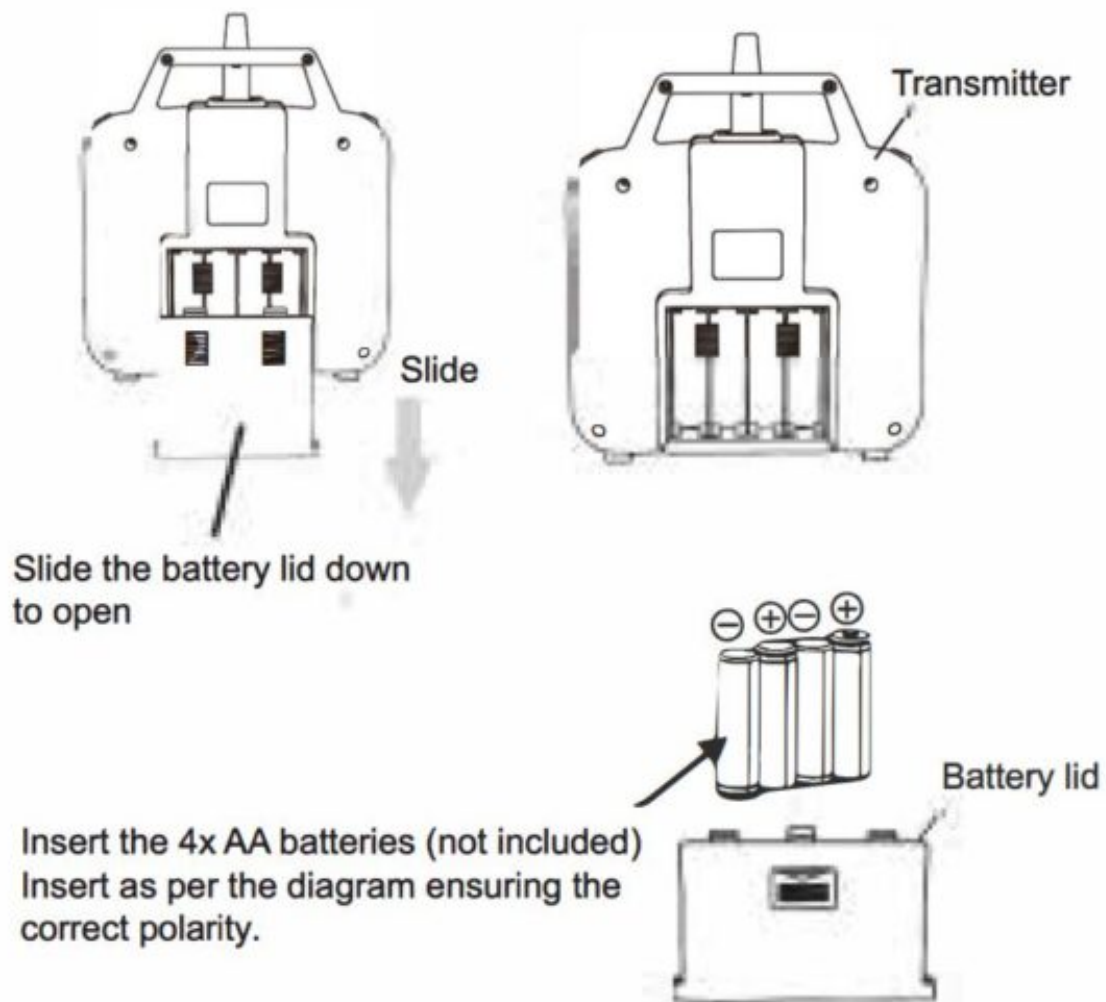
<b>Length</b>	<b>268mm</b>
<b>Height</b>	<b>80mm</b>
<b>Weight</b>	<b>52g</b>
<b>Main rotor diameter</b>	<b>250mm</b>
<b>Tail rotor diameter</b>	<b>37mm</b>
<b>Battery</b>	<b>300mAh</b>
<b>Flight time</b>	<b>15 minutes</b>

## Box Contents



1. Helicopter
2. Main blades & tail blade
3. Lipo battery
4. USB charger
5. Phillips Screwdriver & hex wrench
6. Upper connecting rod
7. Transmitter

### Transmitter battery installation



### Charging the Ninia 250 Lipo battery



Only use the supplied Ninja 250 USB charger.



1. Connect the USB charger to your USB port.
2. Connect the battery to the USB charger.

3. The LED on the charger will illuminate when charging.
4. When the LED is extinguished the battery is charged.
5. The charge time for a completely depleted battery is around 60 minutes.

### IMPORTANT NOTE

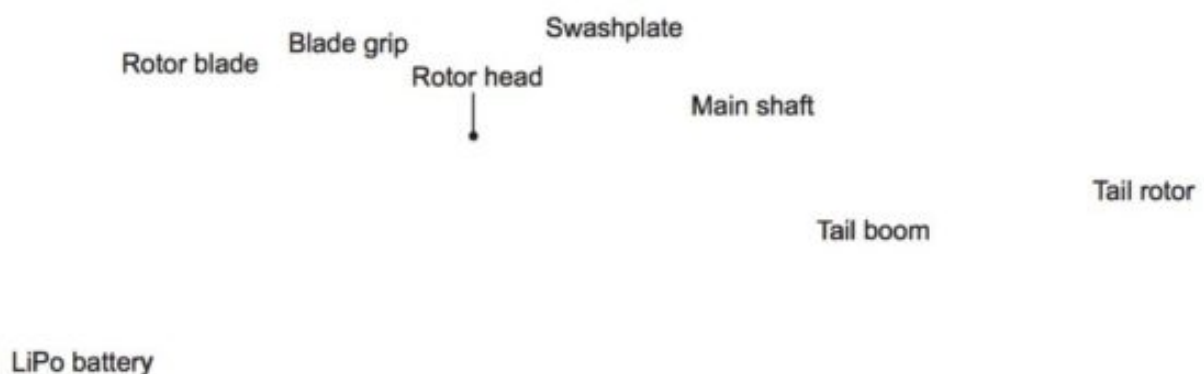
#### Charging

Although charging information should be included with your batteries and charger, it is repeated here for clarity and to ensure that you're aware of the most common things to note with regard to charging the supplied batteries.

- Never leave the battery unattended while charging and never operate the charger without adult supervision.
- Never charge a warm battery. Always allow the battery to cool to room temperature before charging.
- Always use a fireproof charge bag when charging / discharging LiPo batteries.
- Never drop the charger or battery and do not charge a damaged battery.
- Inspect the battery and charger before use. Never use a battery or charger if a wire or connector has been damaged or if the battery has previously experienced a short circuit.
- Incorrect use of the battery, connections, or charging equipment can cause personal injury or property damage.
- Never allow batteries or chargers to come into contact with moisture at any time.
- Stop charging immediately if the battery or charger becomes hot or if the battery changes form during charging.

**WARNING:** WHEN USING LIPO BATTERIES, ONLY USE THE TWISTER CHARGER DESIGNED FOR USE WITH THE LIPO SUPPLIED. USE OF OTHER CHARGERS OR CONNECTORS CAN CAUSE CATASTROPHIC FAILURES AND CAN PERMANENTLY DAMAGE YOUR BATTERY AND/ OR CONNECTED EQUIPMENT. THIS PRODUCT IS NOT A TOY AND SHOULD NOT BE CHARGED, OPERATED, OR MAINTAINED WITHOUT SUPERVISION OF AN ADULT.

### Get to know your Ninja 250



**A**

**B**

250 mm

37 mm

268 mm

80 mm

## **Co-Pilot technology**

The Ninja 250's two tier Co-Pilot technology makes it a very clever piece of kit. The first tier of the Co-Pilot software is a flight aid that constantly assists you when the helicopter is airborne and remains active in both Novice and Advanced flight modes (see below). This includes 6-axis gyro stabilisation to smooth the model's flight pattern through manoeuvres and to dampen the effect of turbulence. It also includes altitude hold functionality that works to maintain a constant height through all manoeuvres while the throttle remains untouched. The second tier of the Co-Pilot software (Co-Pilot Assist, activated using Button A) offers Auto Take-off, Auto Land and Emergency Shutdown options. For a full explanation of this see 'Button A Co-Pilot Assist' below.

### **Button A Co-Pilot Assist**

Button A operates the Co-Pilot function and has three different uses to aid you in your flying experience. With the helicopter and transmitter switched ON and ready for flight the Co-Pilot button works as follows:



1. Press the button momentarily for Auto Take-off. This will start the rotor blades of the helicopter and will automatically increase the RPM to the point where the helicopter will take-off. When it reaches a height of around 1.5m it will stop climbing and remain in the hover. Note that you will still have complete control over the helicopter during its ascent, however if you move the throttle stick it will instantly break out of Auto Take-off mode.
2. Making sure that the helicopter is within 10 feet of the ground, press Button A momentarily for Auto Landing. This has the reverse effect of Auto Take-off, i.e. as soon as the helicopter has landed the motor will shut down. During the descent you will still have full control of the helicopter but if you touch the throttle you will instantly break out of the Auto Landing sequence.
3. Press and hold Button A for 3 seconds to activate the emergency shutdown function. If you lose control of the helicopter this lets you abandon the flight by shutting down the rotor completely, allowing the helicopter to fall to the ground. In most cases the durability of the Ninja will allow a damage-free crash landing, however always check the helicopter for damage when this function has been used.

### **Button B Flight Modes**

Button B operates the Flight Mode function, of which there are two options: Novice and Advanced. Novice Mode offers full control of the helicopter but employs reduced control movements to soften the helicopter's response. Advanced Mode offers full control of the helicopter with full control movement, making the Ninja far more reactive to stick input.

1. Momentarily press the button to switch to Advanced Flight Mode. This is highlighted by two audible beeps.
2. Momentarily press the button again to switch from Advanced Flight Mode back to Novice Flight Mode. This is highlighted by a single audible beep.

Note: Your Ninja 250 will default to Novice Mode whenever the transmitter is switched ON.

### **Power switch**

Before powering up the transmitter make sure you have inserted 4 AA batteries (not included).

To switch it ON, move the Power Switch to the up (ON) position. Note: Always plug the battery into the helicopter before switching the transmitter ON. This allows the transmitter to find the helicopter's signal.

### **Power indicator**

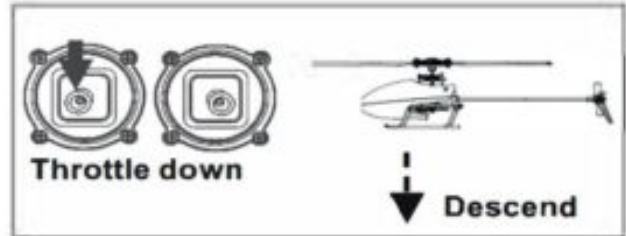
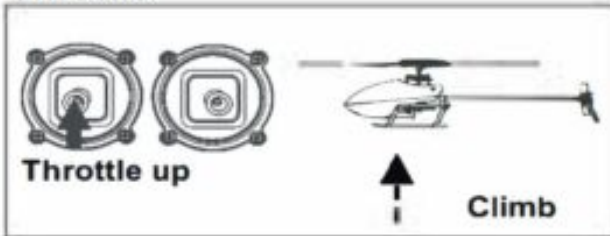
The LED power indicator keeps you informed of the battery power in the transmitter.

If the batteries begin to get low the LED will start to flash warning you that the batteries need replacing. This is not to be confused with the power LED acting as a status indicator during some of the power up procedures, as covered here in 'Transmitter mode change'.

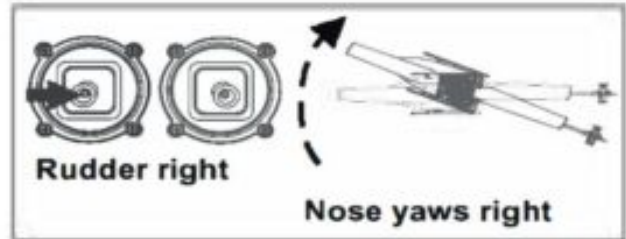
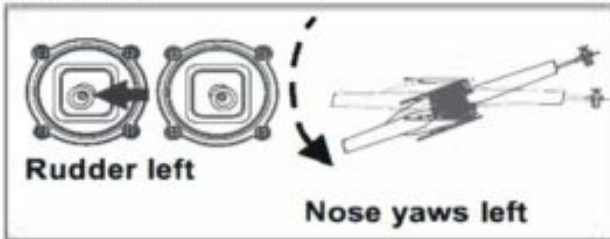
### **Stick Controls (Mode 2 example)**



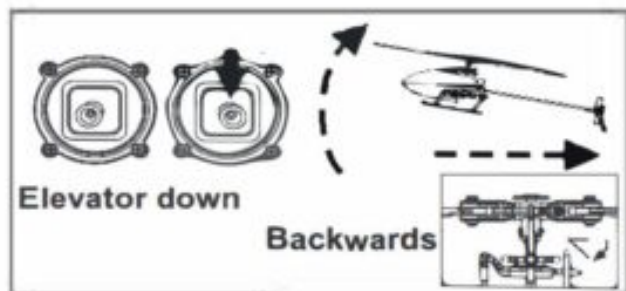
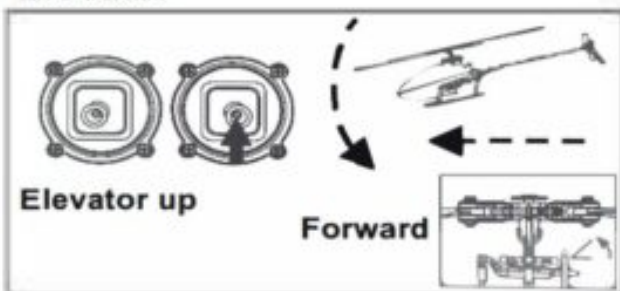
## Throttle



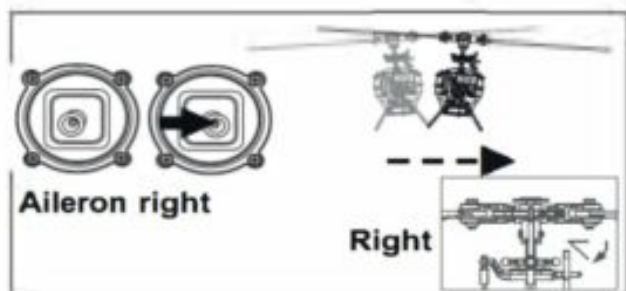
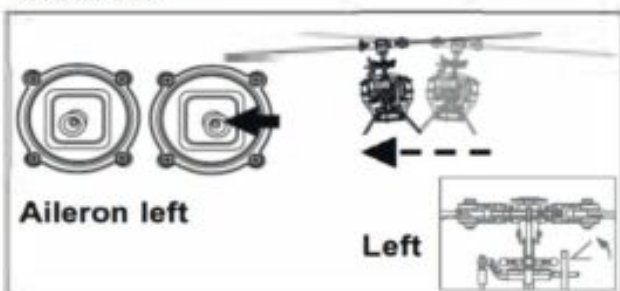
## Rudder



## Elevator



## Aileron



## Flight Operation steps

### Pre-flight checks

Before flight it is your responsibility to ensure that you have inspected your Ninja 250 for any damage that might have occurred during previous flights and that it is safe to fly again. We recommend a safe 2m distance when flying.

### Preparing for take-off

1. Connect the battery to the helicopter and place it on a level surface. The LED on the helicopter will blink slowly.
2. Switch ON the transmitter and wait for an audible tone. The LED on the transmitter will be flashing. Note that the helicopter's LED is now flashing at a higher speed. Advance the left stick (throttle) to 100%. A short audible tone will be emitted and the LED on the transmitter will start to blink faster. Now reduce the throttle to 0% which in turn will be met by a long audible tone and the LED on the transmitter will be a constant red. This procedure will arm the helicopter whose LED

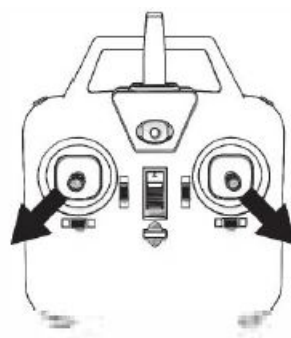
will also be a constant red. The helicopter is now ready for take-off.

### Take-off

The helicopter has two options for take-off.

1. Press Button A (Co-Pilot) momentarily for Auto Take-off. This will start the rotor blades of the helicopter and will automatically increase the RPM to the point where the helicopter will take-off. When it reaches a height of around 1.5m it will stop and remain in a hover. During the ascent you will still have full control over the helicopter but if you move the throttle stick it will break out of the Co-Pilot Auto Take-off mode.
2. The second option for taking off is without a Co-Pilot assist. Move both sticks to the bottom, outermost corners. This will start the helicopter motor and allow you to increase the RPM as needed for a fully controlled take-off. We advise this method only for intermediate and advanced pilots.

### Manual start up stick command



### Flying

Referring to the section entitled 'Stick controls', use all four flight controls to guide your Ninja 250 around your flying area. If you've not flown a model helicopter before this will take some practice. The helicopter's pre-set Novice Mode will help you through your flight, maintaining a constant height whilst using the 6-axis gyro to keep things steady. For the first flight it's good to stay in Novice Mode but as your skill improves you can use the Flight Mode button (described in 'Button B – Flight Modes') to switch to Advanced Mode which offers more control movement.

### Flight trimming

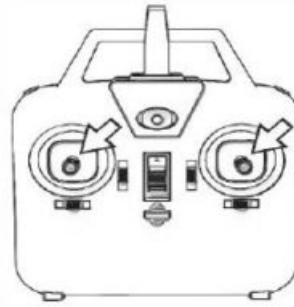
If you find the helicopter drifts in any direction, use the trim buttons described in 'Trim buttons' to tune the hover. For best results do this in calm conditions or, better still, indoors.

### Gyro calibration

If you feel that trimming the helicopter has not suitably honed any in-flight drift you can land and resolve this by calibrating the gyros. Do note, however, that even in flat-calm conditions all helicopters will drift slightly in the hover due to tiny air movements. This is normal.

1. Set the helicopter on a level surface and power it up ready for flight.
2. Move both sticks to the bottom left corners and hold them in position.
3. You will hear an audible tone from the transmitter and the helicopter will confirm the calibration with the LED changing from constant red to flashing red, then back to constant red. The calibration is now complete.

## Gyro calibration stick command

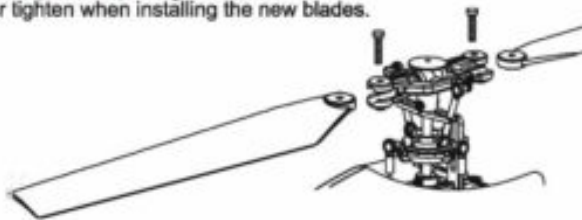


## Low battery warning

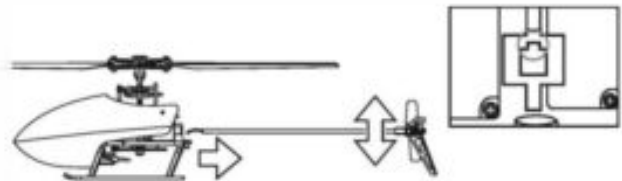
The Ninja 250 is equipped with a low battery warning. The LED at the rear of the helicopter will start to flash when the battery is nearing depletion. This allows about 30 seconds to land before the Ninja engages its low battery landing mode to protect the battery. If the helicopter enters the low battery landing mode it will slowly descend until it reaches the ground, whereupon it will shut down.

## Parts replacement notes

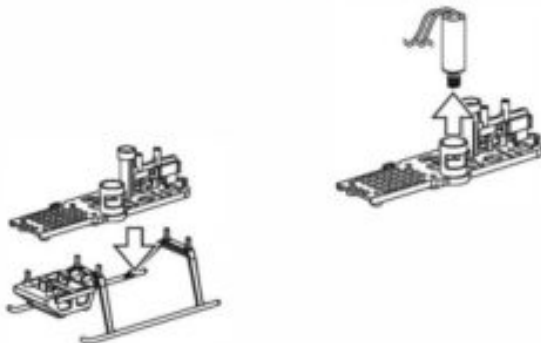
Remove the rotor blades with a hex wrench provided, being careful not to over tighten when installing the new blades.



When replacing the tail boom, pull the plug backwards forcefully. Pay attention to the direction when installing, and align the power cord with the hole.



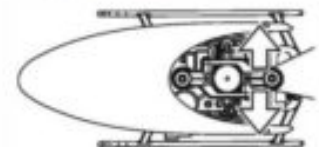
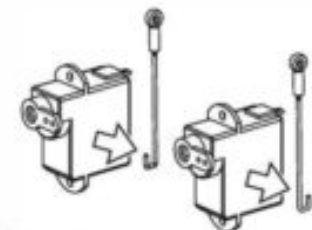
Disconnect the plug, then twist the motor left and right whilst pulling it out.



Pull the landing gear downwards to remove and press into the corresponding holes when installing.



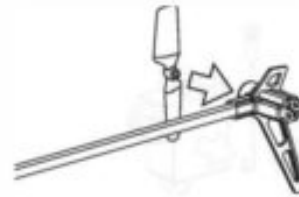
Pay attention to the connecting rod direction when disassembling and replacing the servo.



When replacing the receiver, renew the double-sided tape, align the new receiver with the edge of the rack and stick it tightly without slanting. Make sure to connect the servo and the motor to the correct sockets.



Pull the main gear straight down to remove. Make sure the new main gear is 'right side up' before installing. The pinion should align with the main gear.



When removing and replacing the tail rotor, please pay particular attention to the direction, making sure that the new rotor goes on exactly the same way round as the old rotor. Align the hole with the motor shaft and press it home.

## Fault Diagnosis

	Problem	Possible Cause	Solution
1	When connecting the battery to the Ninja 250 the LED remains Off.	Battery not charged. Battery not making good connection.	Check battery is charged. Remove canopy and make sure battery connections are making good contact.
2	When the battery is connected to the Ninja 250 and the transmitter is switched On, the Ninja 250 LED remains flashing.	The Ninja 250 needs to be correctly powered up.	Please follow the section entitled 'Flight operation steps'.
3	When trying to take-off, the LED on the Ninja 250 remains flashing.	Ninja 250 battery needs charging.	Charge the battery following the charging instruction.

4	When trying to take-off, the motor runs but the main blades do not turn.	The main shaft may have slipped down. The motor pinion may have sheared off.	Align the main shaft again with the motor pinion.  Replace the motor and pinion.
5	The Ninja 250 spins to the left after take-off.	Damages tail rotor  Damaged main blades  Gyro calibration needed	Change tail rotor  Change main blades  Calibrate Gyro as per the calibration process
6	The Ninja 250 spins to the left after take off.	Tail blade damaged.  Fluff on motor shaft.  Rudder trim out.	Replace tail blade.  Remove fluff from motor shaft.  Adjust trims as per the section entitled 'Trim buttons'

7	The Ninja 250 does not turn as it should	Damaged servos.  Damages swashplate or links.	Replace damaged servo  Damaged swashplate or links
8	Ninja 250 only flies for 5 – 10 minutes.	Check battery  Check charger  Check the main rotor is not stiff to turn	Replace battery  Replace charger  Replace damaged items.



## CONFORMITY

Europe  
J Perkins Distribution  
Northdown Business Park  
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Maidstone  
KENT, ME17 2DL  
England

Australia  
Model Engines PTY Ltd  
Unit 1/ 3 2 Bluett Drive  
Smeaton Grange  
NSW 2567  
Austalia



## CE CONFORMITY



J Perkins (Distribution) confirms this product is in compliance with the relevant harmonised UK and European directives relating to its safe operation.

To see a copy of the relevant Declaration of Conformity visit [www.jperkins.com](http://www.jperkins.com) or [modelengines.com](http://modelengines.com)


## WEEE



This appliance is labelled in accordance with European Directive, concerning Waste Electrical and Electronic Equipment (WEEE). The WEEE Directive came into force to reduce the disposal of domestic waste and promote recycling. Any electrical item that carries the crossed out wheeled bin logo must not be disposed of in domestic waste but should be taken to a designated collection facility. J Perkins (Distribution) are a member of an approved compliance scheme to encourage consumers to recycle unwanted items. Your local authority will be able to provide details of your nearest approved waste disposal site.

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## Documents / Resources

	<p><a href="#">NINJA 250 Full Function Single-Rotor Radio Control Model Helicopter</a> [pdf] Instruction Manual</p> <p>250 Full Function Single-Rotor Radio Control Model Helicopter</p>
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## References

- [modelengines.com](http://modelengines.com)
- [JPerkins.com](http://JPerkins.com)