

BO-105

TWISTER

Full Function 4 blade head radio control model helicopter with switchable Co-Pilot technology.

- 15 minute flight time
- Altitude hold
- One touch take-off
- One touch landing
- 6-axis gyro stabilisation
- Panic shutdown mode
- Ultra durable airframe
- Spare main & tail blades



The BO-105 is available in both Grey/Red and Yellow/Red



Convenient and fuss-free, the BO-105 unique wireless LiPo simply clicks into place



A ball raced main shaft and swashplate ensure the operational longevity of the robust composite rotor head.

Introduction

Sharing the same revolutionary flight stabilisation system as Twister's highly acclaimed 2020 Ninja 250 – not to mention its celebrated novice and advanced flight modes, auto take-off and land functionality, and altitude hold feature – the new Twister BO-105 is everything the Ninja was, and more ! Not only does the '105 make supreme use of a highly efficient duration-optimised four blade rotor head to deliver an outstanding 15-minute flight duration, it offers the valuable peace of mind that can only be experienced with damage-limiting auto shutdown programming. And as if that's not enough to tempt you, all this ground-breaking technology is cloaked in a beautifully-detailed 1:48-scale BO-105 body. To cut a long story short, it looks fantastic, it's rock-solid and easy to fly and, to cap it all, it's got Ninja durability at its core.

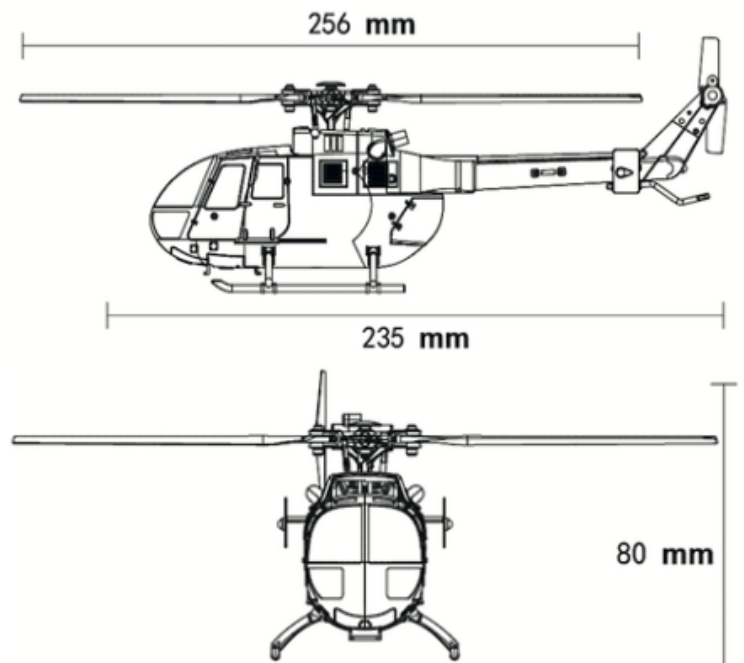
AGE RECOMMENDATION: NOT FOR CHILDREN UNDER 14 YEARS. THIS IS NOT A TOY

Safety precautions and warnings

- 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

Length	235mm
Height	80mm
Weight	95g
Main rotor diameter	256mm
Tail rotor diameter	37mm
Battery	350mAh
Flight time	15 minutes

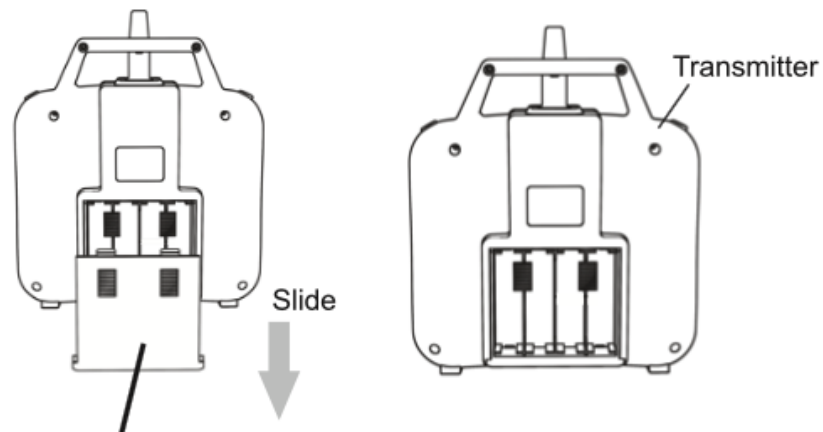


Box contents

- ① Helicopter ② Main blades & tail blade ③ Lipo battery ④ USB charger
⑤ Phillips Screwdriver & hex wrench ⑥ Transmitter

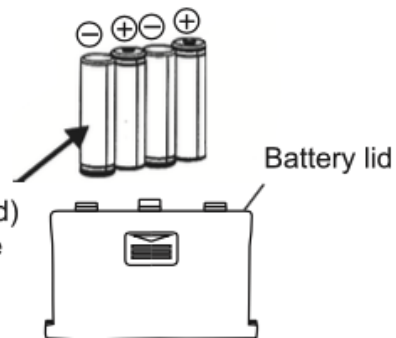


Transmitter battery installation



Slide the battery lid down to open

Insert the 4x AA batteries (not included)
Insert as per the diagram ensuring the correct polarity.

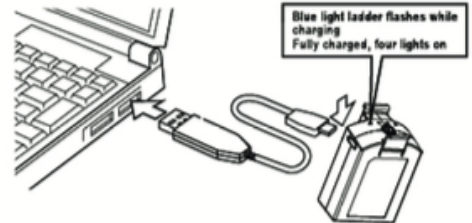


Charging the B0-105 LiPo battery



Only use the supplied B0-105 USB charger

1. Connect the USB charger to your USB outlet.
2. Connect the battery to the USB charger.
3. The blue LED lights will start to flash.
4. When all 4 LED's are solid blue, charging is complete.
5. Charge time can be upto 1 hr 30mins



IMPORTANT NOTE

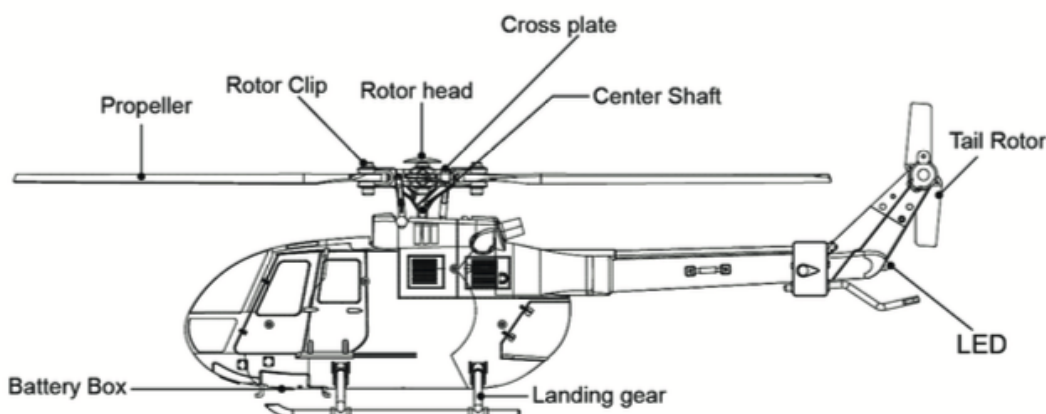
Charging

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.

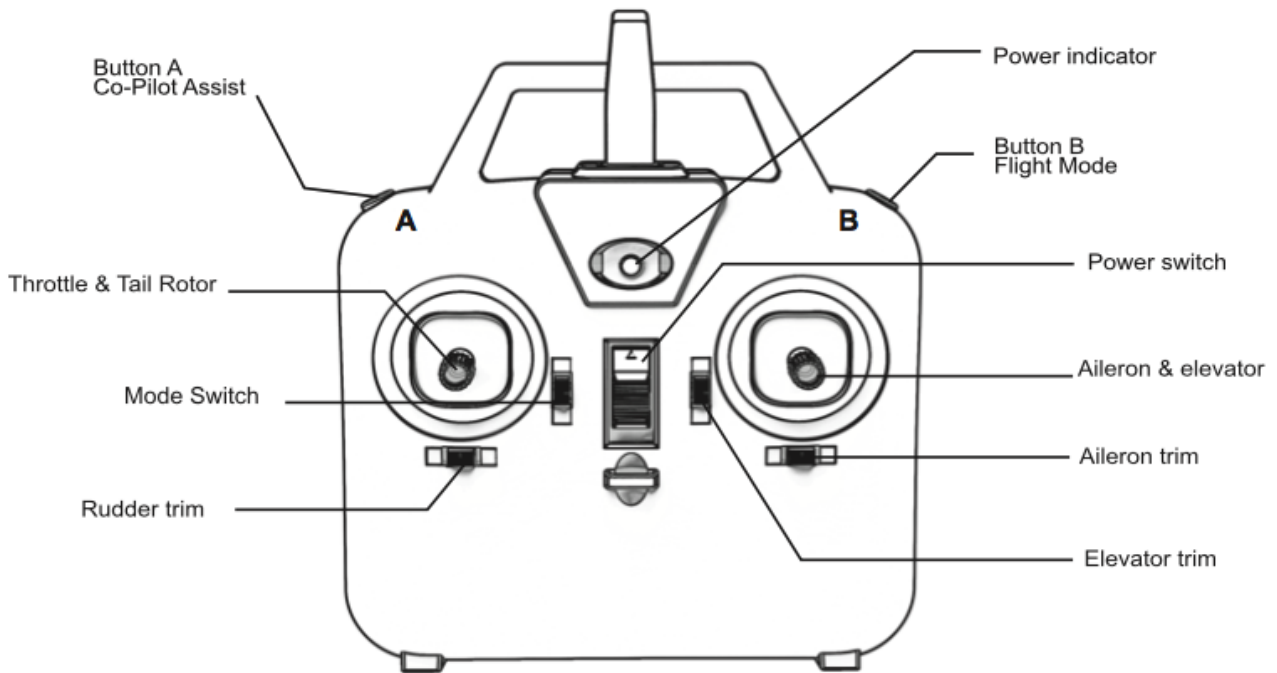
- Never leave the battery unattended while charging and never operate the charger without adult supervision.
- Never charge a warm battery. Always allow the battery to cool to room temperature before charging.
- Always use a fireproof charge bag when charging / discharging LiPo batteries.
- Never drop 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 B0-105



Transmitter switch identification



Transmitter mode change

When first switched ON the transmitter will always automatically select Mode 2. If you want to select Mode 1 you must follow the procedure noted below every time you power up the transmitter.

1. Connect the battery to the helicopter and place it on a level surface. The LED on the helicopter will blink slowly.
2. Blip the Mode switch down and hold it in the lower position.
3. Switch the transmitter ON with the Mode switch still held in position and wait for an audible tone and flashing LED on the transmitter. The helicopter LED will now flash at a higher rate. At this point you can release your hold on the Mode switch.
4. Advance the right stick (throttle Mode 1) to 100%. A short audible tone will be emitted and the LED on the transmitter will start to flash faster. Now reduce the throttle to 0% which in turn will be met by a long audible tone, whereupon the LED on the transmitter will illuminate solid red.
5. With Mode 1 now selected the LED on the helicopter will illuminate solid red. You are now ready to fly in Mode 1.

Please note that if you're a Mode 1 flyer the mode change procedure has to be performed every time the transmitter is switched ON.

Trim buttons (Mode 2 example)

Helicopter slowly moves forward			Fine-tune according to the direction of the arrow
Helicopter slowly yaws anti clockwise			Fine-tune according to the direction of the arrow
Helicopter slowly moves Left			Fine-tune according to the direction of the arrow

Co-Pilot technology

The B0-105 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 B0-105 will allow 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 B0-105 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 B0-105 will default to Novice Mode whenever the transmitter is switched ON.

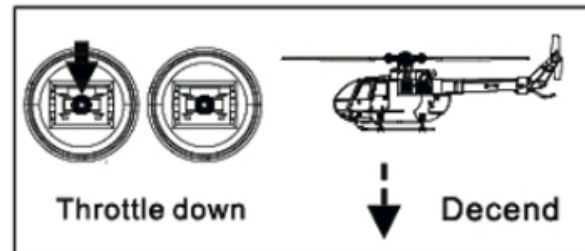
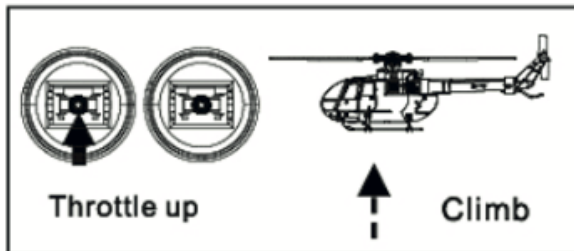
Power switch

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.

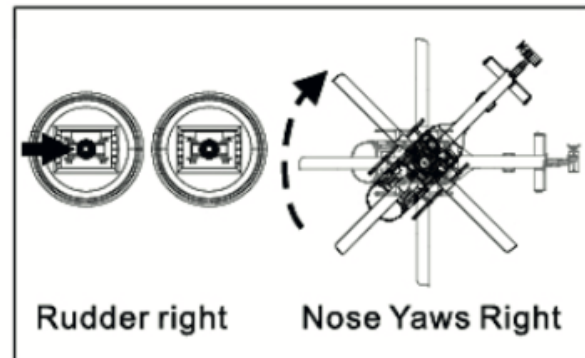
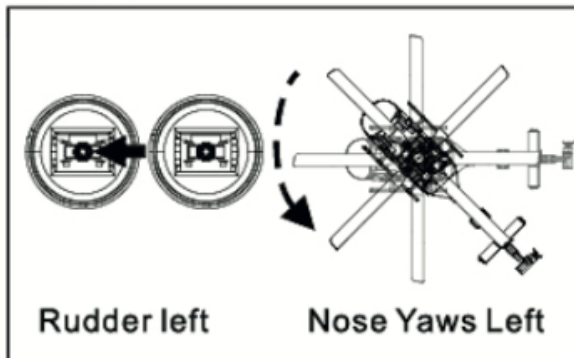
Power indicator

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'.

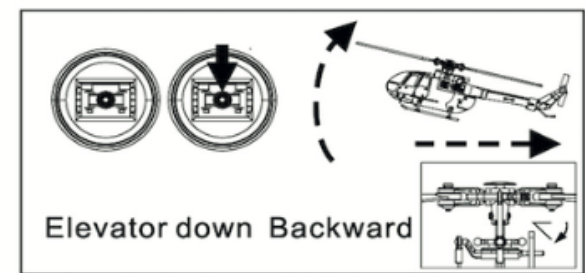
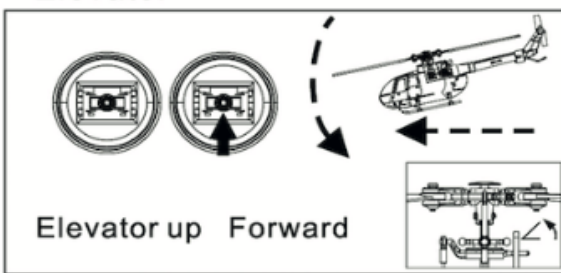
Throttle



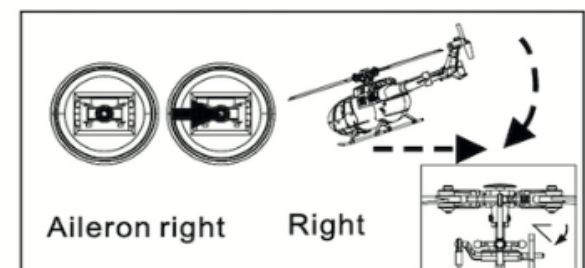
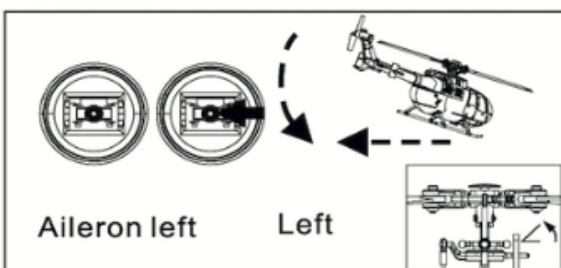
Rudder



Elevator



Aileron



Flight operation steps

Pre-flight Inspections

Before flight it is your responsibility to ensure you have inspected your B0-105 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. Slot the battery into the helicopter. Press and hold the power button until all Blue LED's illuminate and the white LED on the front of the helicopter slowly flashes, then place on a level flat surface.
2. Switch on the transmitter and wait for an audible tone. The LED on the front of the transmitter will start to flash slowly and at the same time the LED on the helicopter will start to flash rapidly. Advance the left stick (throttle) to 100%. A short audible tone will be emitted and the LED on the transmitter will start to flash rapidly. Now reduce the throttle to 0% which in turn will be met by a long audible tone and the LED on the transmitter and helicopter will be permanently on. This procedure will arm the helicopter and 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 your flight controls to guide your B0-105 around your flying area. If you've not flown a model before this will take some practice.

The helicopter 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 its good to stay in Novice Mode but as your skill improves you can use the Flight Mode button to switch to Advance Mode which offers more control movement.

Flight trimming

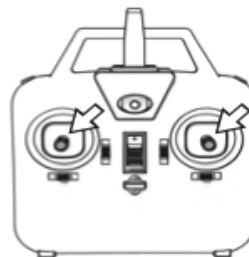
If you find the helicopter drifts in any direction, use the trim buttons described in 'Trim buttons' to tune the hover. For best results do this in calm conditions or, better still, indoors.

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 B0-105 is equipped with a low battery warning. The LED at the rear of the helicopter and on the bottom will start to flash when the battery is nearing depletion. This allows about 20 seconds to land before the B0-105 engages its low power battery landing mode to protect the battery. If the helicopter enters low battery mode it will slowly descend until it reaches the ground, whereupon it will shut down.

Landing

The helicopter has two options for landing:

1. Using Button A (Co-Pilot Assist) you must make sure the helicopter is within 10 feet of the ground. Press Button A momentarily for Auto Landing. This works in reverse of the Auto Take-off function and, accordingly, as soon as the helicopter lands it will shut down the motor. During the descent you will still have full control of the model but if you touch the throttle you will break out of the auto landing sequence.
2. Using the throttle you can manually land the helicopter by gently reducing height until it's on the ground. Once on the ground hold the throttle at zero until the motor shuts down.

Once the helicopter is safely landed and the rotors have stopped, press and hold the power button on the battery until all all LED's are off on the battery and the helicopter.

Now the helicopter is off it is safe to turn the transmitter off.

Its good practice to check your helicopter for any damage that might have occurred during flight. If you B0-105 has struck any objects pay particular attention to the rotor blades (main or tail) and replace them if any damage is spotted. The performance and safety of the helicopter relies, amongst other things, on perfectly balanced damage-free rotor blades.

If the worst happens, dont worry, a full range of spares are available from your local J Perkins Stockist.

Spare parts list

TWST4001110	Metal Rotor Head Assembly (for B0-105)
TWST4001049	Plastic Rotor Head Assembly (for B0-105)
TWST4001050	Blade Grip Bolts (4pcs) (for B0-105)
TWST400151	Blade Grip set (4pcs) (for B0-105)
TWST4001052	Swash Plate Links (3pcs) (for B0-105)
TWST4001053	Swash Plate (for B0-105)
TWST4001073	Main Shaft and Clamp (for B0-105)
TWST4001055	Support Frame (for B0-105)
TWST4001056	Main Motor and Pinion (for B0-105)
TWST4001072	Servo (for B0-105)
TWST4001013	Main Shaft Bearing (for B0-105)
TWST4001057	Main Frame (for B0-105)
TWST4001074	Main Gear (2pcs) (for B0-105)
TWST4001059	LiPo 1S 350mAh Battery (for B0-105)
TWST4001060	Skid set (for B0-105)
TWST4001061	Tail Blade (2pcs) (for B0-105)
TWST4001062	Tail Motor (for B0-105)
TWST4001063	Tail Light (for B0-105)
TWST4001064	USB Charger (for B0-105)
TWST4001065	Main Blade set (4pcs) (for B0-105)
TWST4001066	Main Flight Board (for B0-105)
TWST4001107	Rear Stabiliser Yellow (2pcs) (for B0-105)
TWST4001107-1	Rear Stabiliser Grey (2pcs) (for B0-105)
TWST4001067	Fuselage Body Yellow/Red (for B0-105)
TWST4001067-1	Fuselage Body Grey/Red (for B0-105)
TWST4001076	Screw set (for B0-105)
TWST4001078	Transmitter (for B0-105)
TWST4001048	Helicopter Landing Pad

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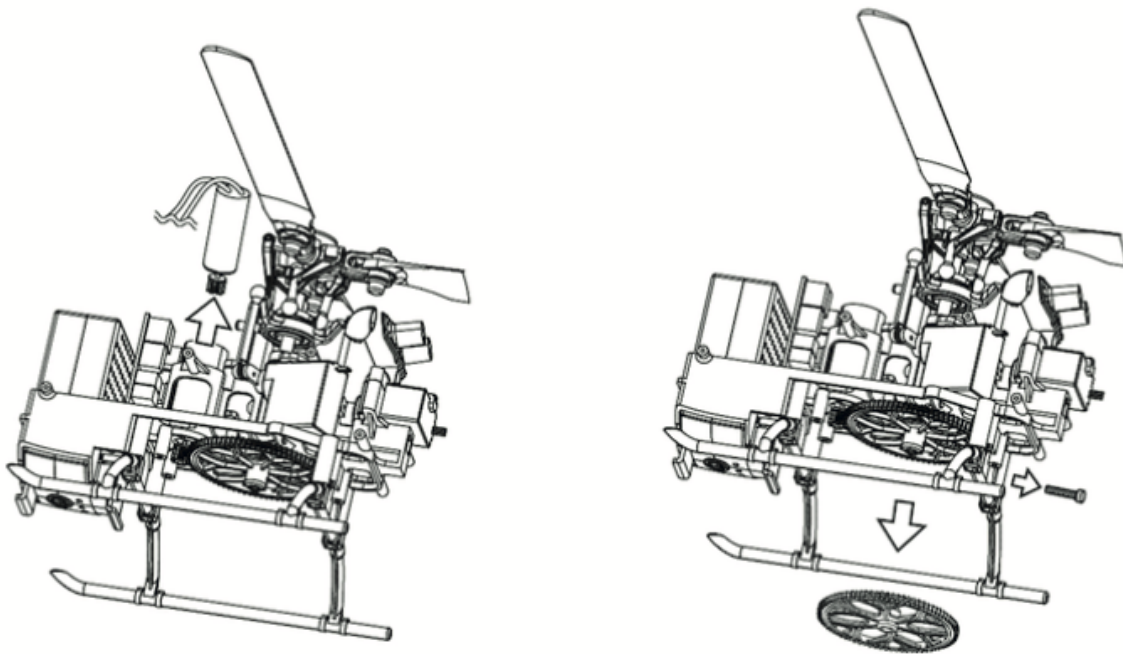
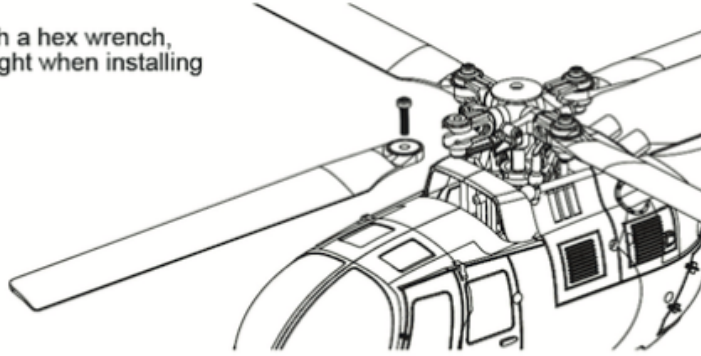
Australia

Model Engines PTY Ltd
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Smeaton Grange
NSW 2567
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modelengines.com



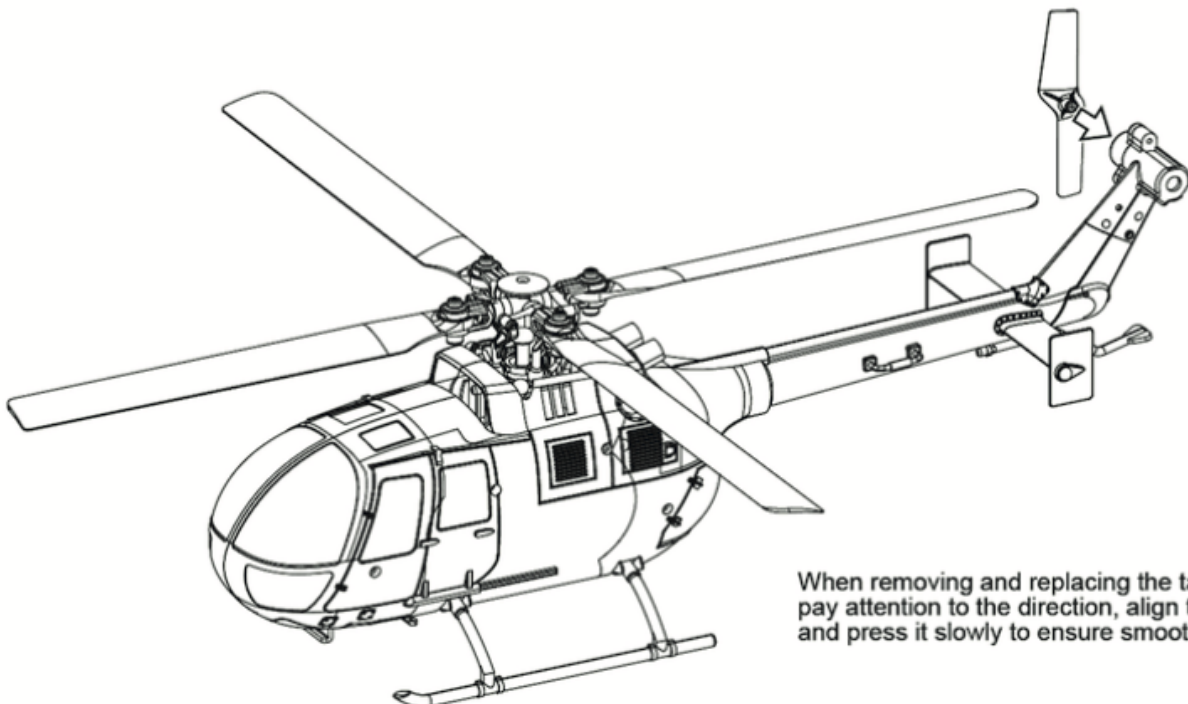
Parts replacement notes

Remove the propeller with a hex wrench.
Be careful not to be too tight when installing
the new propeller



Unplug the plug, then twist the motor
left and right to pull out

First pull out the screw, and then pull out the big gear directly downward.
Pay attention to the direction when installing the new gear.
The plane of the shaft should be aligned with the plane of the inner hole
of the gear.



When removing and replacing the tail rotor, please
pay attention to the direction, align the motor shaft
and press it slowly to ensure smooth rotation.

Fault Diagnosis

	Problem	Possible Cause	Solution
1	When power up you B0-105 the LED's remain 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 powered up the B0-105 and the transmitter is switched On, the B0-1045 LED's remain flashing.	The B0-105 needs to be correctly powered up.	Please follow the section entitled 'Flight operation steps'.
3	When trying to take-off, the LED's on the B0-105 remains flashing.	B0-105 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 B0-105 spins to the left after take-off.	Damaged tail rotor. Damaged main blades. Gyro calibration needed.	Change tail rotor Change main blades Calibrate Gyro as per the calibration process
6	The B0-105 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 B0-105 does not turn as it should	Damaged servos Damaged swashplate or links	Replace damaged servo Damaged swashplate or links
8	The B0-105 only flies 5-10 minutes	Check battery Check charger Check the main rotor is not stiff to turn	Replace battery Replace charger Replace damaged items.



CONFORMITY

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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 or 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.