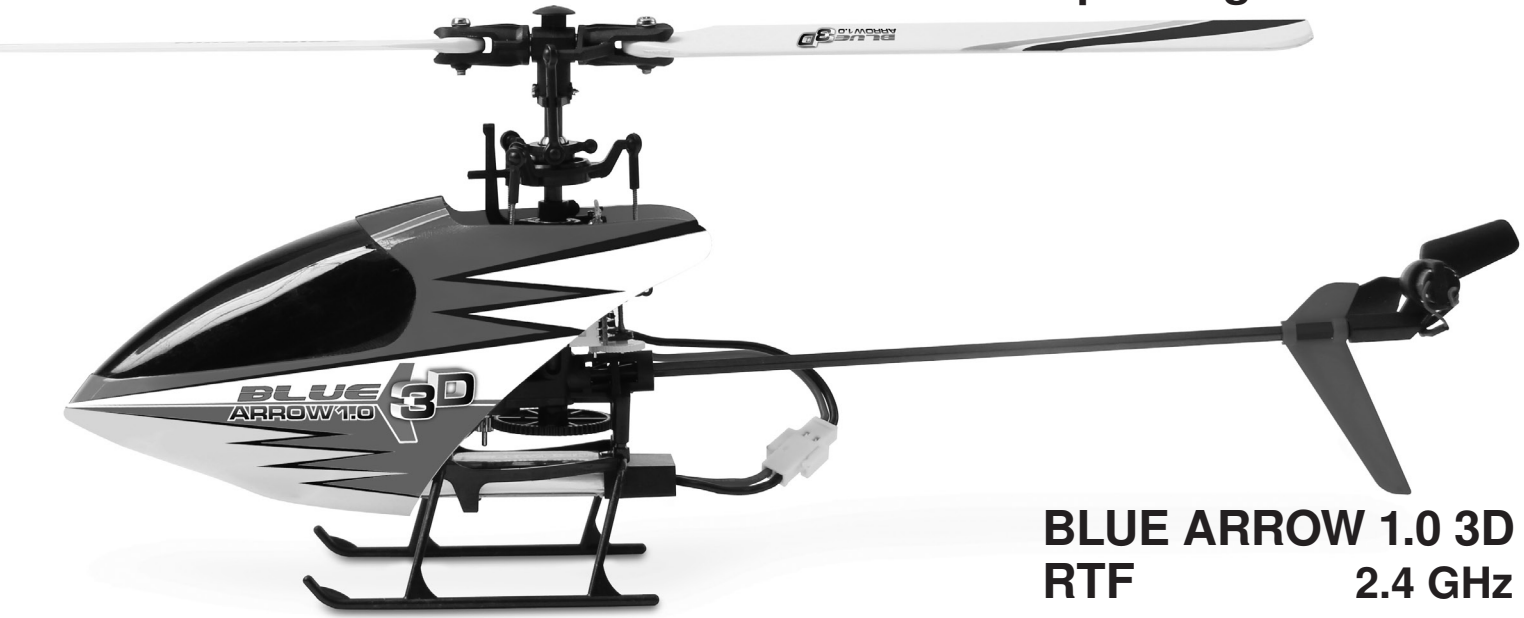
robbe

ARROW

Operating Instructions



BLUE ARROW 1.0 3D
RTF 2.4 GHz

No. S2523

Explanation of specialist terms:

Climb and descent ("collective pitch / throttle"):
This controls the model's climb and descent.

Yaw:
The model's movement around the vertical axis; the helicopter rotates to right or left.

Pitch axis:
The model's movement around the lateral axis, forward or reverse flight

Roll:
The model's movement around the longitudinal axis, sideways movement to right or left

Mode 1:
Function assignment of control movements relative to the sticks.
In this case collective pitch / motor speed (throttle) and roll are controlled by the right-hand stick; pitch-axis and tail rotor by the left-hand stick.

Mode 2:
Function assignment of control movements relative to the sticks.
In this case collective pitch / motor speed (throttle) and tail rotor are controlled by the left-hand stick; pitch-axis and roll by the right-hand stick.

Dual Rate:
Switchable travel reduction for control movements.

Binding:
Creating the radio link between transmitter and receiver.

Contents

Be sure to read right through these Safety Notes before you build your model. Always keep to the procedures and settings recommended in the instructions.

If you are operating a radio-controlled model aircraft, helicopter, car or boat for the first time, we recommend that you enlist the aid of an experienced modeller to help you.

Safety Notes

Radio-controlled models are not toys in the usual sense of the term. Young persons under fourteen years should only be allowed to operate them under the supervision of an adult.

Building and operating these models requires technical expertise, manual skills, a careful attitude and safety-conscious behaviour.
Errors, negligence and omissions in building or flying these models can result in serious personal injury and damage to property.

Since the manufacturer and vendor are not in a position to check that your models are built and operated correctly, all we can do is bring these hazards expressly to your attention. We deny all further liability.

Helicopter rotors, and all moving parts generally, constitute a constant injury hazard.
It is essential to avoid touching such parts.

Bear in mind that motors and speed controllers may become hot when operating.
It is essential to avoid touching such parts.

Do not stand close to the hazard area around rotating parts when an electric motor is connected to the flight battery.
You must take care to keep all other objects away from moving or rotating parts!

Observe the instructions provided by the battery manufacturer.
Overcharged or incorrectly charged batteries may explode. Take care to maintain correct polarity.

Notes on the use of dry cells:
Do not attempt to recharge dry cells, do not open them, and do not incinerate them. Remove exhausted dry cells from the transmitter after use. Escaped electrolyte may ruin the transmitter.

Ensure the equipment is protected from dust, dirt and moisture contamination. Do not subject the system to excessive heat, cold or vibration.

Use the recommended charger only, and charge the batteries only for the prescribed period.

Check your equipment for damage at regular intervals, and replace defective components with genuine spare parts.

Do not re-use any devices which have been damaged in a crash or by water, even when they have dried out again.
Send the equipment to the robbe Service Department for checking, or replace the parts in question.
Crash or water damage can result in concealed defects which may lead to failure in subsequent use.

Use only those components and accessories which we specifically recommend.

Do not carry out modifications to the radio control system components apart from those described in the instructions.

Operating the model

- Never fly over or towards spectators or other pilots, and maintain a safe distance from them at all times.
- Never endanger people or animals.
- Never fly or run the model close to high-tension overhead cables or residential areas.
- Do not operate your model in the vicinity of canals, locks or open waterways.
- Do not operate your model from public roads, motorways, paths and squares etc.; use authorised model flying sites only.

- **Never operate the model in stormy weather.**

Never “point” the transmitter aerial straight at the model when operating it. The transmitter signal is at its weakest in this direction. It is always best to stand with the long side of the aerial angled towards the model.

Insurance

Ground-based models are usually covered by standard personal third-party insurance policies. In order to fly model aircraft you will need to extend the cover of your existing policy, or take out specific insurance.
Check your insurance policy and take out new cover where necessary.

Liability Exclusion

robbe Modellsport is unable to ensure that you observe the assembly and operating instructions, or the conditions and methods used for installing, operating and maintaining the model components.
For this reason we accept no liability for loss, damage or costs which are due to the erroneous use and operation of our products, or are connected with such operation in any way.

Regardless of the legal argument employed, our obligation to pay compensation is limited to the invoice value of those robbe products directly involved in the event in which the damage occurred, unless otherwise prescribed by law. This does not apply if the company is deemed to have unlimited liability according to statutory regulation due to deliberate or gross negligence.

Set contents:
1 x BLUE ARROW 1.0 3D
1 x 2.4 GHz transmitter
1 x Lithium-Ion-Polymer battery
1 x Replacement tail rotor blade
1 x Charger and mains PSU for the flight battery
1 x Adapter lead
1 x Screwdriver

Please be sure to observe the Safety Notes concerning the handling of Lithium-Ion-Polymer batteries (page 11).

Dear Customer,
Congratulations on choosing a factory-assembled model helicopter from our range. Many thanks for placing your trust in us.
The model can be completed and made ready to fly very quickly. Please read right through these instructions before attempting to fly the model for the first time, as this will make it much easier to operate the model safely.

All directions, such as “right-hand”, are as seen from the tail of the model, looking forward.

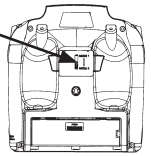
Specification:

Main rotor Ø:	approx. 246 mm
Tail rotor Ø:	approx. 37 mm
Overall length:	approx. 240 mm
Weight:	approx. 45 g
Main rotor motor:	N30
Tail rotor motor:	6.0 mm
Power supply:	LiPo battery, 3.7 V / 200 mAh

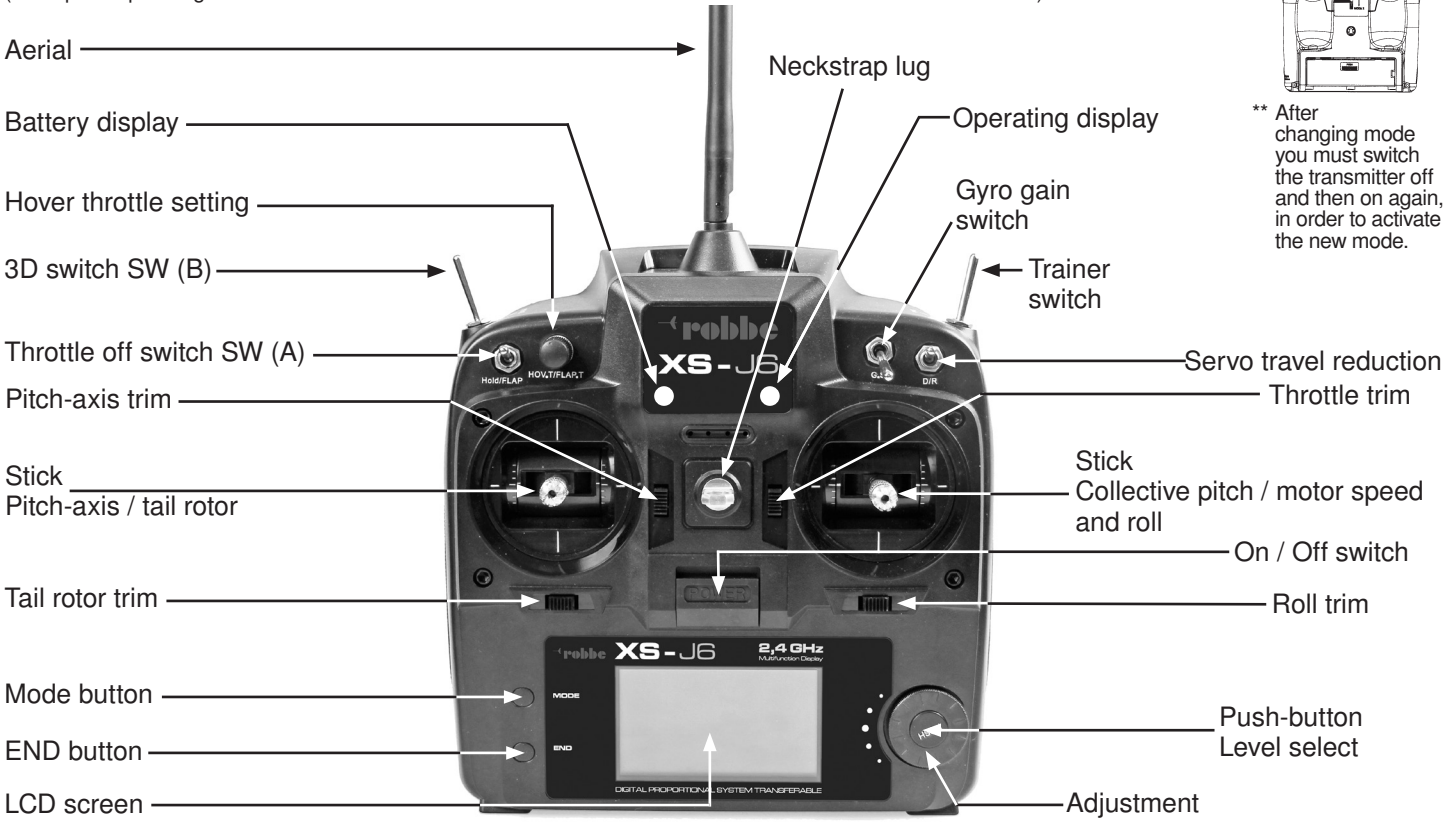
Recommended accessories:
8 x 8005 NiMH AA-cell, 1.2 V / 2500 mAh
1 x F1415 Transmitter charge lead
1 x 8564 POWER PEAK® Uni 7 EQ 230V

Transmitter description* (Mode 1) - The mode select switch is located on the back of the transmitter**

(*Complete operating instructions for the J6 transmitter can be found in the Download area at www.robbe.com)

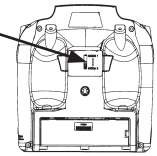


** After changing mode you must switch the transmitter off and then on again, in order to activate the new mode.

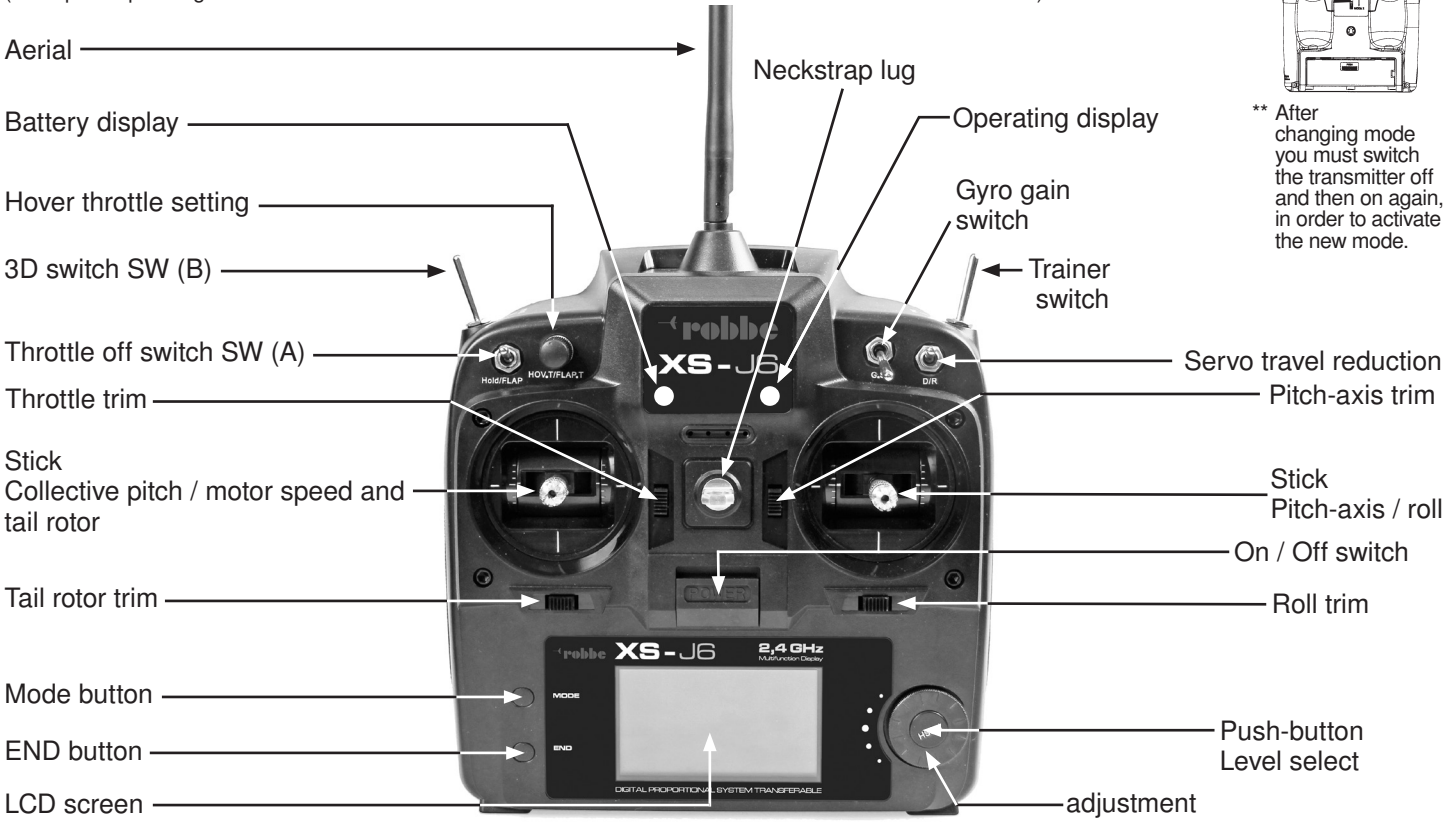


Transmitter description* (Mode 2) - The mode select switch is located on the back of the transmitter**

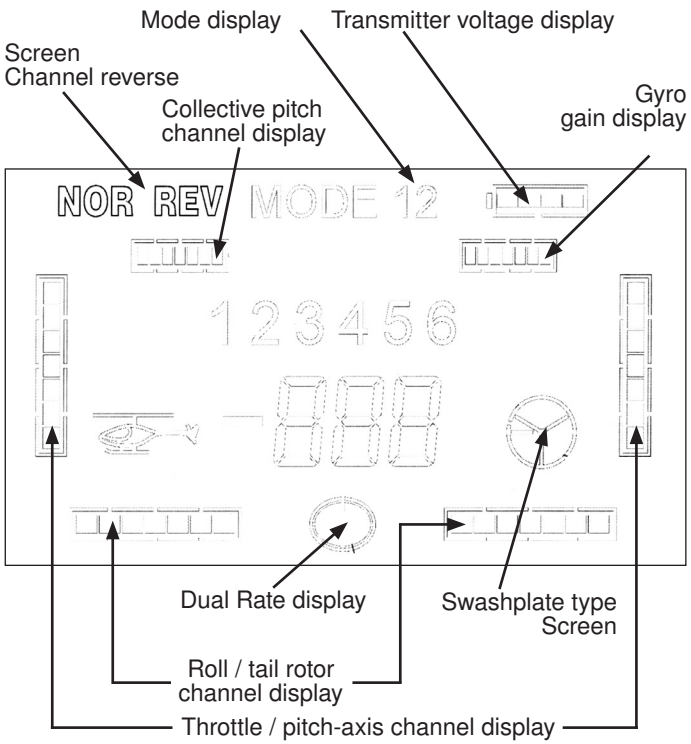
(*Complete operating instructions for the J6 transmitter can be found in the Download area at www.robbe.com)



** After changing mode you must switch the transmitter off and then on again, in order to activate the new mode.



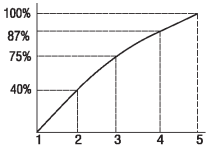
Transmitter LCD display



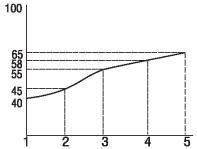
Collective pitch and throttle adjustment (default settings)

Normal flight

	Throttle	Collective pitch
5	100%	65
4	87%	58
3	75%	55
2	40%	45
1	0%	40



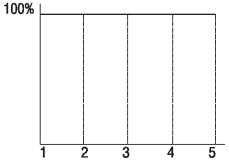
Throttle curve normal



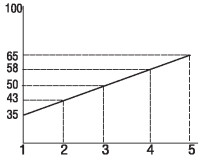
Collective pitch curve normal

3D flying

	Throttle	Collective pitch
5	100%	65
4	100%	58
3	100%	50
2	100%	43
1	100%	35



Throttle curve 3D

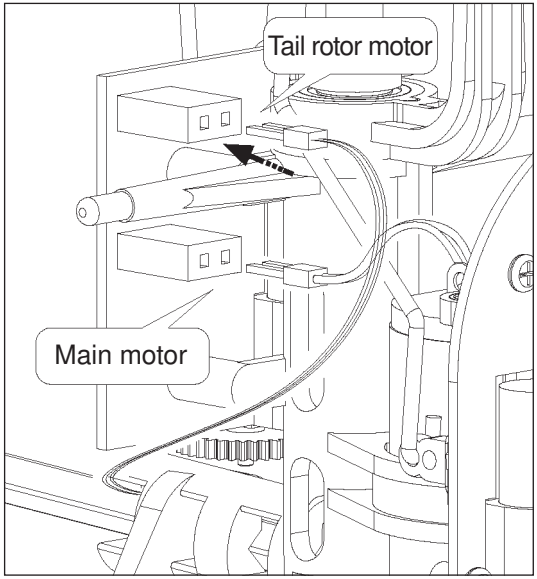


Collective pitch curve 3D

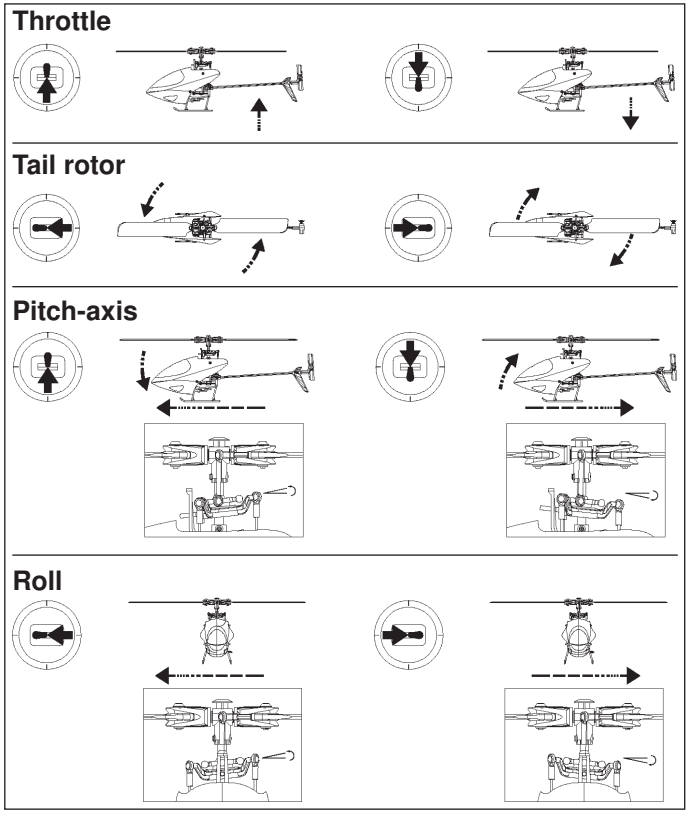
Gyro gain adjustment

20%

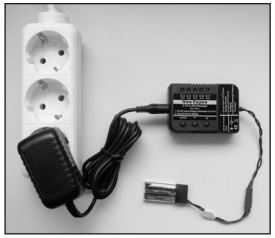
Motor connections



Flybarless check before the first flight



Charging the flight battery



Connect the battery charger to the mains PSU, and plug the PSU into a mains socket. The LED on the power supply will illuminate. Connect the battery to the charger using the adapter lead, and use "+" or "-" to set the charge current (high = fast, low = longer battery life). Press the Start button: the monitor LED flashes. When the charge process is finished, all the LEDs on the charger flash, and you will hear an audible beep. Disconnect the battery from the charger, and disconnect the mains PSU from the main socket.

Charging the transmitter: dry cells cannot be recharged - explosion hazard! The transmitter can only be charged when the switch is at the "Off" position. The charge current via the transmitter's charge socket must not exceed 1 A.

Safety Notes
The battery must not be left unsupervised during the charge process or be placed on an inflammable surface. Protect from damp. Do not subject to direct sunshine, and do not cover the charger.
Do not charge batteries that are hot to the touch. Allow batteries to cool down to ambient temperature. Charge the battery only using the charger included in the set; do not use any other charger. The charger should only be used to charge the battery included in the set. Not suitable for charging the transmitter battery!

Safety Notes regarding LiPo batteries:
- Do not place the battery in water or any other liquid.
- Do not heat or incinerate the battery; do not place it in a microwave oven.
- Avoid short-circuits, and never charge the battery with reversed polarity
- Do not subject the battery to pressure or shock loads, and never distort or throw the pack.
- Never solder directly to the battery
- Do not modify or open the battery
- Batteries must only be charged with a suitable charger never connect the battery directly to a mains power supply.
- Never charge or discharge a battery in bright sunlight, or close to a heater or open fire.
- Do not use the battery in areas subject to high levels of static discharge.
- Any of these errors can result in damage to the battery, explosion or even fire.
- Keep the battery out of the reach of children
- Do not allow escaped electrolyte to come into contact with fire, as it is highly inflammable, and may ignite.
- Avoid the fluid electrolyte contacting the eyes. If this should happen, flush with copious amounts of clean water and contact a doctor without delay.
- The fluid electrolyte can also be removed from clothing and other objects by rinsing in plenty of water.

LIABILITY EXCLUSION
Since robbe Modellsport is not in a position to monitor the handling of these batteries, we expressly deny all liability and guarantee claims where the batteries have been incorrectly charged, discharged or handled.

Flight preparation

Open the battery compartment and insert dry or rechargeable cells. Close the battery compartment. Move all the switches to the forward position, and switch the transmitter on (Fig. 1). If switch "A" or "B" is at the "ON" position, the screen will flash, and you will hear a "beep". The transmitter cannot be switched off with the switches in these positions!
Move the collective pitch / throttle stick and trim to their lowest position. Otherwise the motors will not start.
Fit the charged LiPo flight battery into the support frame on the helicopter, and connect the LiPo flight battery (Fig. 2). Take care not to touch the throttle control. Do not move the model for a minimum of three seconds, otherwise binding will not take place.

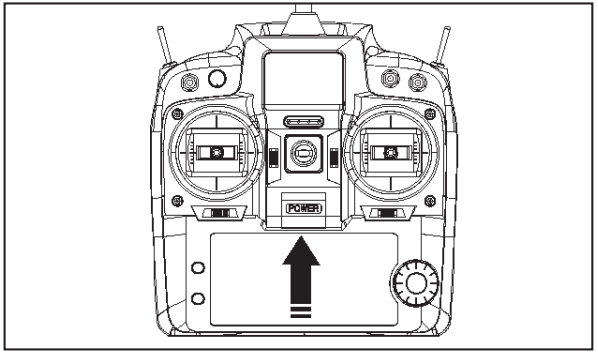


Fig. 1

Repeat this procedure every time you wish to fly the model.

The "3D" aerobatic switch SW(B) should only be operated by experienced pilots. Moving the switch to the "ON" position sets a system rotational speed suitable for aerobatics.
The hover rotor speed can be adjusted using the "Hover throttle setting" rotary knob.

Note: the 2.4 GHz transmitter and receiver are supplied already bound at the factory. It will only be necessary to bind the system again after a repair, or if you replace a component.

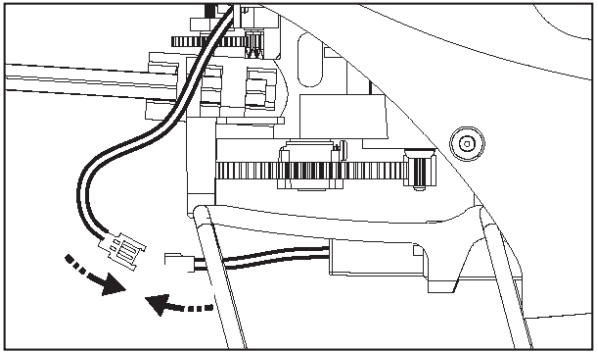


Fig. 2

Flight preparation

Check the correct position of the swashplate before the first flight. The swashplate must sit exactly horizontal when viewed from the side and front of the model. Position the model on a totally flat surface. Now move the throttle stick to the lowest throttle position, and switch the transmitter on. Switch the transmitter on. Check that the pitch-axis, roll and tail rotor trim are all in the neutral positions. Now connect the flight battery.
Remove the canopy and check the swashplate alignment. If it is not horizontal, you must adjust it manually. Remove the battery and turn the transmitter off. Disconnect the appropriate ball-link. You can now adjust the pushrod length by turning the ball-link to left or right. Re-connect the ball-link. Repeat this procedure until the swashplate is in the correct position.
Fine trimming is carried out at the transmitter during test-flying.

Check the main rotor blade attachment. The blades must be able to swivel smoothly, without jamming. They should not be too loose, otherwise vibration may occur.
We recommend running-in the motors for the period of one battery charge. Run the motors at moderate speed (around 1/4 throttle); do not allow the model to lift off. You can carry out the first flight after recharging the flight battery.

Trim adjustments, Mode 1

Throttle trim:
If the rotor starts to move without the throttle stick being touched, or does not respond to stick movements, you must adjust the throttle trim until the rotor is stationary.

Tail rotor trim:
If the model's nose turns to right or left when it lifts off, adjust the tail rotor trim buttons to correct the rotation until the model maintains a stable heading.

Pitch-axis trim:
If the model flies forward or back when it lifts off, adjust the pitch-axis trim until it hovers over one point.

Roll trim:
If the model moves bodily to left or right when it lifts off, adjust the roll trim until the model remains in a stable hover.

Trim adjustments, Mode 2

Throttle trim:
If the rotor starts to move without the throttle stick being touched, or does not respond to stick movements, you must adjust the throttle trim until the rotor is stationary.

Tail rotor trim:
If the model's nose turns to right or left when it lifts off, adjust the tail rotor trim buttons to correct the rotation until the model maintains a stable heading.

Pitch-axis trim:
If the model flies forward or back when it lifts off, adjust the pitch-axis trim until it hovers over one point.

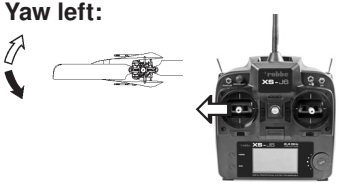
Roll trim:
If the model moves bodily to left or right when it lifts off, adjust the roll trim until the model remains in a stable hover.

Controlling the model in Mode 1

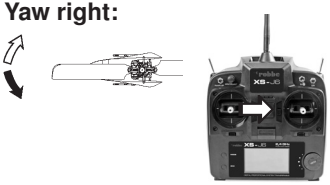
Lift off:

Landing:

Yaw left:



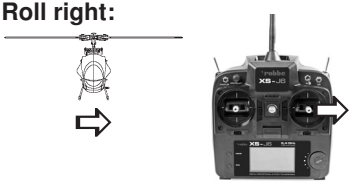
Yaw right:



Pitch forward:

Pitch back:

Roll right:



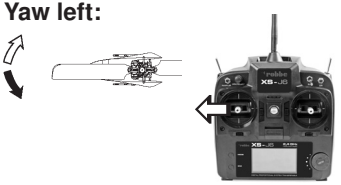
Roll left:

Controlling the model in Mode 2

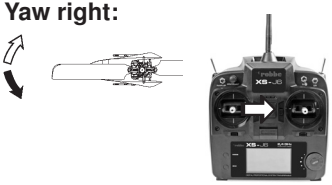
Lift off:

Landing:

Yaw left:



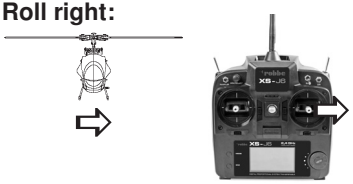
Yaw right:



Pitch forward:

Pitch back:

Roll right:



Roll left:

Important Notes

Take-off: use the 3D switch for aerobatics only. To take off, slowly and steadily increase rotor speed until the model is hovering approximately at eye-level. At the same time adjust the trims until it is flying stably and hovering over one point. At low height (approx. 10 - 15 cm above the ground) the model cannot be trimmed accurately due to the turbulence generated by the rotor.

Landing: Slowly and steadily reduce the throttle setting until the model descends and touches down. Never reduce the throttle setting abruptly.
After the landing disconnect the flight battery from the receiver, and only then switch the transmitter off.

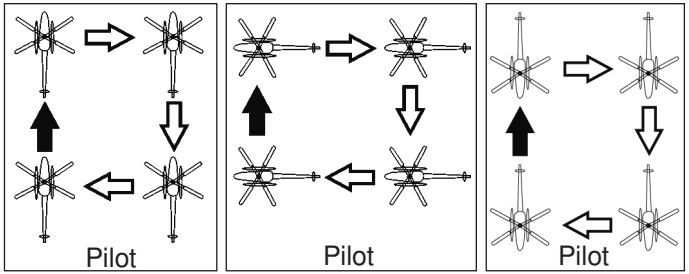
Caution: Stopping (obstructing) the rotor blades when they are turning can cause serious damage to the mechanical system, and may even result in a fire. If the rotor is forcibly stopped, immediately move the throttle stick back to Idle!

Note regarding the flight battery: as soon as you notice a reduction in motor power, land immediately and disconnect the battery. Never continue flying until the battery is flat, as this causes a deep-discharge condition, which results in permanent damage. Allow the battery to cool down before recharging it.

Replacing the rotor blades: If a rotor blade is damaged, replace it immediately. When fitting the new rotor blade, tighten the retaining screw just to the point where the blade still swivels smoothly.

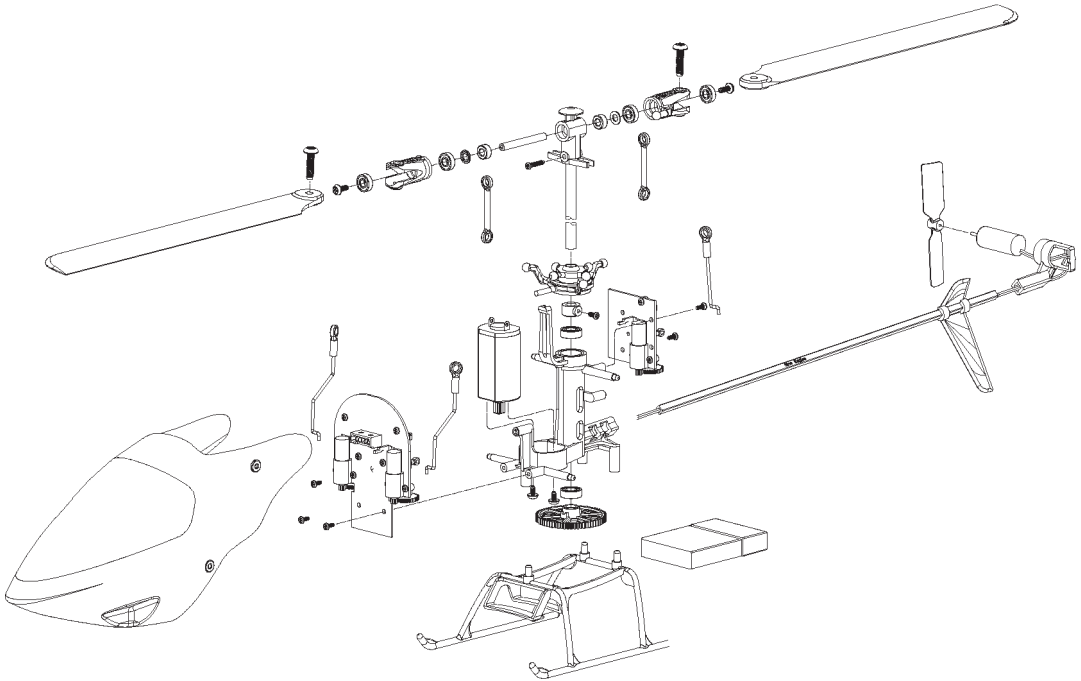
The first few flights

Ideally the first flight should take place in a large indoor space devoid of obstructions. If you have to fly the model in the open air, wait for a day with **totally flat calm conditions**. We recommend that you ask an experienced helicopter pilot to help you during the first few flights.



Once the model is properly trimmed, you can practise hovering, and carry out manoeuvres such as circles, squares, rectangles and figures-of-eight. To avoid giving incorrect control commands, always start by standing about two metres away from the model, behind it and to one side. You can fly a square pattern by alternating the direction of flight: away from the pilot, to the pilot's right, and then towards the pilot.
Important: Check the state of charge of the transmitter batteries before each flight, and recharge them when necessary. It is essential to charge the flight battery before flying the model.

Tip: when the helicopter is flying with the nose pointing towards you, the controls are reversed (apart from the throttle control).

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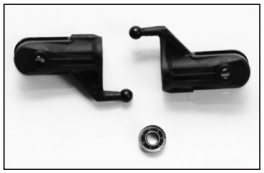
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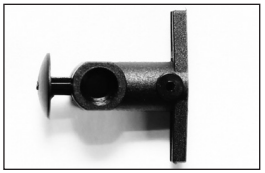
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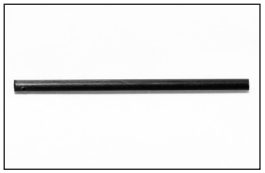
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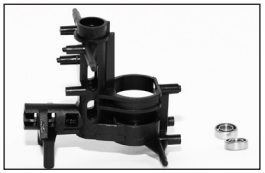
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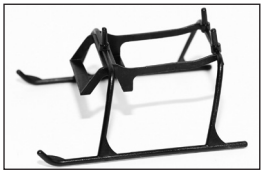
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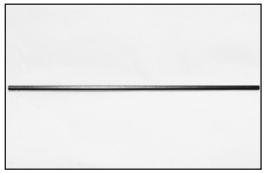
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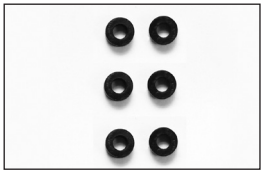
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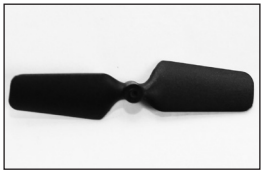
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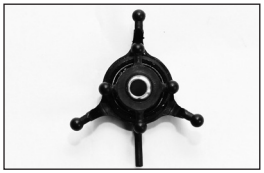
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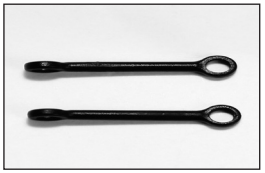
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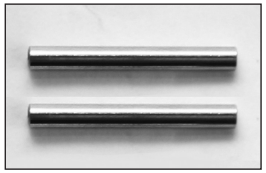
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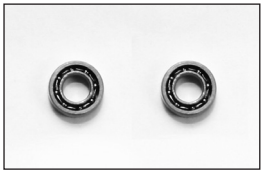
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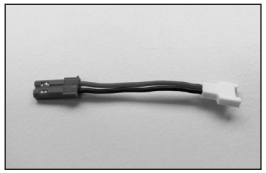
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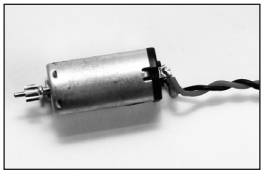
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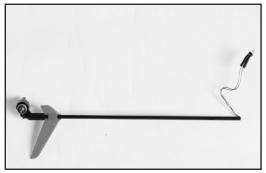
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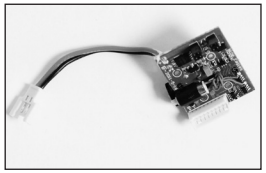
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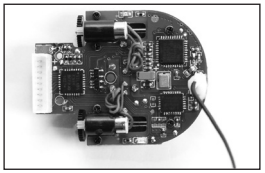
NE250925

NE250926

Replacement parts list, BLUE ARROW 1.0 3D RTF

Order No.	Description
NE250230	Mains PSU and battery charger
S2523001	Canopy
S2523002	Rotor blades
NE250903	Main rotor blade holder
NE250904	Rotor head hub
NE250905	Pushrod set
NE250906	Main rotor shaft
NE250907	Main frame
NE250908	Landing gear
NE250909	Main gearwheel
NE250910	Tail boom
NE250911	Rubber grommets
NE250912	Tail rotor
NE250913	Swashplate set
NE250914	Swashplate linkage
NE250915	Blade pivot shaft
NE250916	Flange
NE250917	Collet
NE250918	Ballrace set
NE250919	Ballrace set
NE250920	Screw set
NE250921	Adapter lead
NE250922	Motor set
NE250923	Tail boom and motor
NE250924	Servo board
NE250925	Receiver unit
NE250926	LiPo battery, 3.7 V 200 mAh

When replacing components it is very important to use the correct type of cross-point screwdriver and to tighten the screws with great care.
Do not use thread-lock fluid!

CE

robbe Modellsport GmbH & Co. KG hereby declares that this device conforms to the fundamental requirements and other relevant regulations of the appropriate CE Directive. Under www.robbe.com, you will find the original Conformity Declaration by clicking on the Logo button "Conform" shown together with the appropriate device description.

This symbol means that you should dispose of electrical and electronic equipment separately from the household waste when it reaches the end of its useful life. Take your unwanted equipment to your local council collection point or recycling centre. This requirement applies to member countries of the European Union as well as other non-European countries with a separate waste collection system.

Disposal of batteries

Batteries must not be discarded as domestic refuse. To protect the environment, always return exhausted or defective cells to your local recycling centre. These include retail sales outlets for batteries, and communal toxic waste disposal centres. Cover any bare wires with insulating tape in order to avoid short-circuits.

robbe Modellsport GmbH & Co.KG

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