



Sky Scout



Perfect for anyone who loves to fly

Fly high with Hitec's easy-to-fly Sky Scout!

Build and Fly in just 2 hours!

Kit

Instruction Manual Ver 1.0

www.hitecrad.com

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Radio, Receiver and Power Set Components for Each Version

(READY TO GO) stock# 13207

This is the version that includes everything you need to fly Sky Scout after easy steps of assembling the model.

- | | |
|--|--------------------------------------|
| Semi-assembled model | C2812-1100 Brushless Outrunner Motor |
| Hitec Lite 4 2.4GHz 4-channel Radio (w/4AA Alkaline Batteries) | HBE-18A (18AMP ESC) |
| Minima 6S Hitec Receiver | HLP-3S 1300mah Li-Po |
| HS-55 Servos | CG-115 DC Balancing Charger |

(HITEC TO GO) stock# 13209

This version allows you to fly Sky Scout with any Hitec radio you wish to purchase. Any Hitec's AFHSS 2.4GHz radios or radios with SPECTRA 2.4 Module can be linked with MINIMA 6S (included in the set) for you to fly your Sky Scout.

- | | |
|--------------------------------------|-----------------------------|
| Semi-assembled model | HBE-18A (18AMP ESC) |
| Minima 6S Hitec Receiver | HLP-3S 1300mah Li-Po |
| HS-55 Servos | CG-115 DC Balancing Charger |
| C2812-1100 Brushless Outrunner Motor | |

(PLUG-IN TO GO) stock# 13210

This version is for those who already own products needed for flying. A radio, a receiver, a charger and batteries are needed to fly the model plane.

- Semi-assembled model
- HS-55 Servos
- C2812-1100 Brushless Outrunner Motor
- HBE-18A (18AMP ESC)



This instruction manual is for the KIT version of Sky Scout. It is easy to read for the users with essential information on assembling Sky Scout. Unlike other versions (R2GO, H2GO, P2GO), the kit version requires many additional equipments in order to fly the plane. If you're a first-time RC model plane flier, consult an experienced RC flier or a RC store nearby.

Introduction & Specifications

Thank you for purchasing HITEC's SKY SCOUT.

Sky Scout, developed and manufactured by HITEC, is a model for all users regardless of age and gender who are interested in model flying. Easy-to-fly Sky Scout is manufactured so that even beginner fliers can easily fly it. The instruction manual includes not only the model specifications but also the safety precautions and cautionary notes for each version in detail. Be sure to read the section about the version you've purchased before flying your model for your safety.

Warning, Caution, Tip and Note Boxes



Warning



Caution



Tip



Note

Specifications

Wingspan 1366 mm

Overall length 977 mm

Min. all-up weight, standard 700 g

Wing area approx. 28 dm² (wing + tailplane, excl. fuselage)

Min. wing loading 25 g / dm²

RC functions Rudder, elevator and throttle; optional ailerons

Warning : Be sure to read this section for your own safety.

Caution : Be sure to read this section to prevent accidents and damages to your model.

Tip : This section will help you maximize the performance of your model.

Note : This section will provide more detailed explanations.



Caution

Sky Scout is a model plane for hobbies for those over age 14. For those under age 14, please be sure to have parents/guardians or expert fliers to help. User's negligence could lead to injuries and/or damage of other people's properties. HITEC is not responsible for any damages and injuries caused by user's negligence so be sure to read the instruction manual thoroughly before flying the model.



Caution

Sky Scout is manufactured by ELAPOR, a suitable material for model planes. ELAPOR, unlike other model plane materials, is light, durable and has superior adhesive strength when used with Cyanoacrylate (for carpentry) or ELAPOR-specific glue, Zacki. Since ELAPOR is different from Styrofoam, regular super glue could melt the model or doesn't adhere well. Be sure to purchase Cyanoacrylate or ELAPOR-specific glue, Zacki. We recommend you to wear safety goggles when using glue and be sure to keep it away from your hands, other body parts and children.

KIT 사양에 필요한 전자장비

The KIT version needs separate electronic products to fly the plane. Purchasing the following equipments will quicken the assembly process. Visit a RC store nearby or consult an experienced flier about purchasing these equipments.

1

4CH AIR TX

2

RECEIVER

3

MOTER

1. 4 Channel Air Radio
In order to fly Sky Scout, you need a radio for air with more than four channels. If you'd like to control the AILERON wing, you must purchase a 5-channel radio or higher.

2. Receiver
In order to fly Sky Scout, you need a radio for air with more than four channels receiver.

3. Motor
Purchase a BLDC motor (OUT RUNNER TYPE) for air and we recommend the 1300KV motor.

4

BATTERY

5

CHARGER

6

ESC

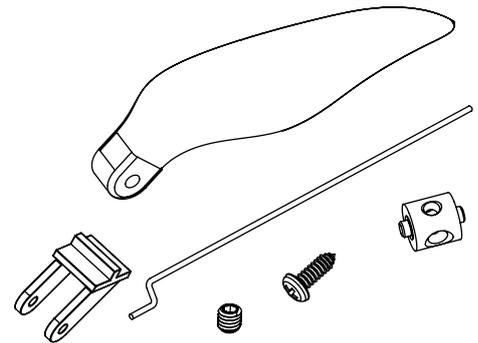
4. Battery
We recommend using LI-PO 11.1V (3 CELL) 1300mAh for a fast and safe flight.

5. Charger
Purchase a charger that is suitable for the battery type and specifications you are using.

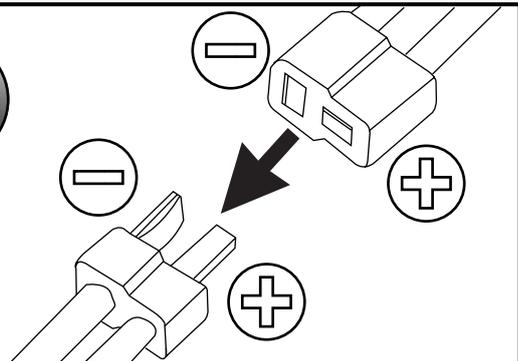
6. ESC
It may differ according to the motor specifications, but we recommend using 18A ESC or higher for air.

Safety precautions before assembling the model (1)

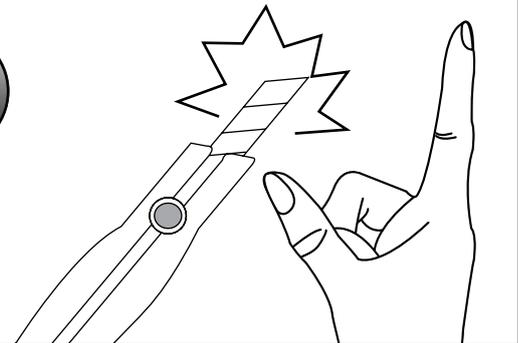
The product contains small and sharp components.
Please be sure to keep them away from children at all times.



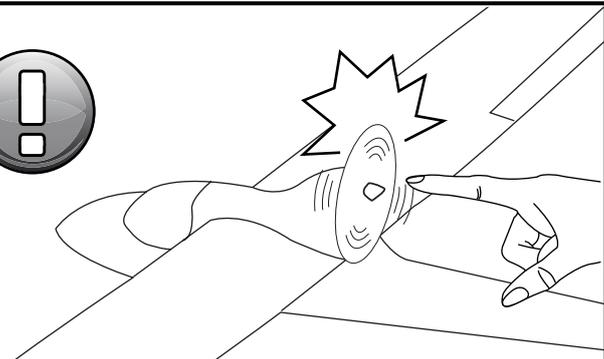
Be sure to connect the batteries to the right polarity.
Disconnect the battery if it is damaged or produces excessive heat.



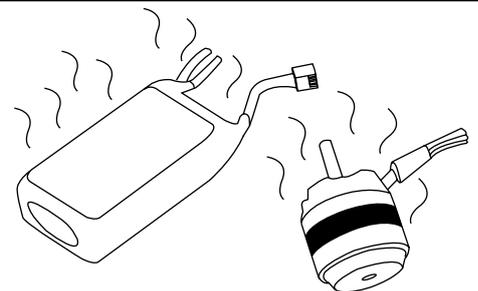
Be careful when using tools like knives, scissors and screw drivers.



Keep away from rotating propellers to prevent injuries.

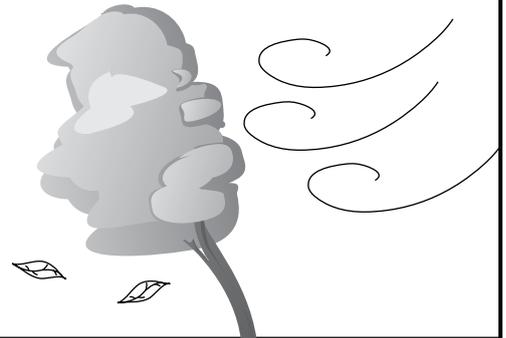


The motor and batteries may produce heat during the pre-flight test or after the flight.
Be sure to cool them off before touching them.

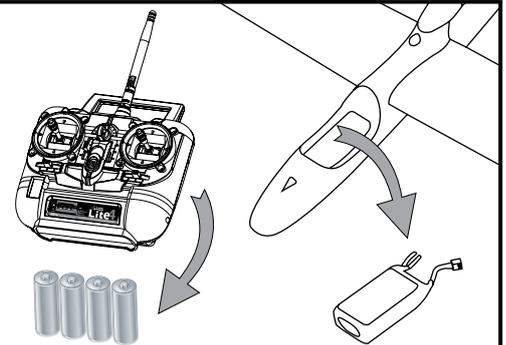


Safety precautions before assembling the model (2)

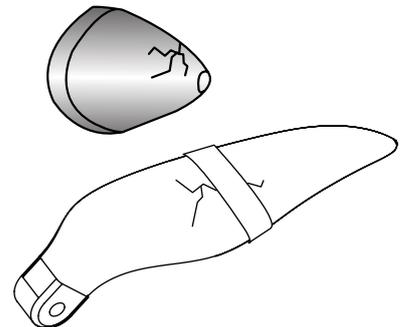
Do not fly in strong wind or storm. The model plane may not operate normally.



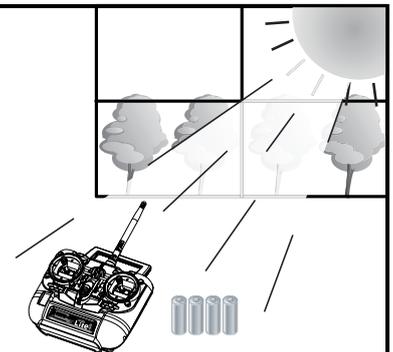
Always disconnect the batteries from the radio and the model when they are not in use. The connected battery may overheat and may damage the radio and the model when damaged.



Do not use distorted or damaged propellers. They may not operate normally and may cause problems on other equipments as well.



Do not keep the products in humid, closed area, high temperature or in direct sunlight.

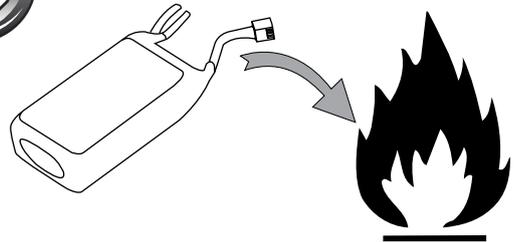


Be sure to use official Hitec products and components. Altered products may negatively influence the model's performance.

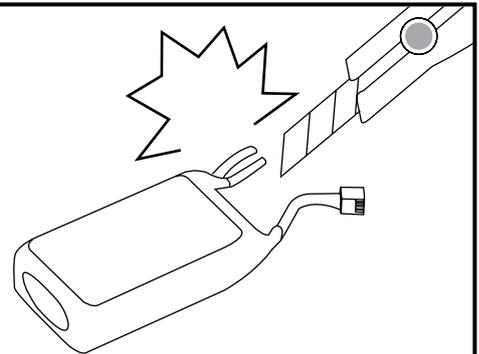


Safety precautions before assembling the model (2)

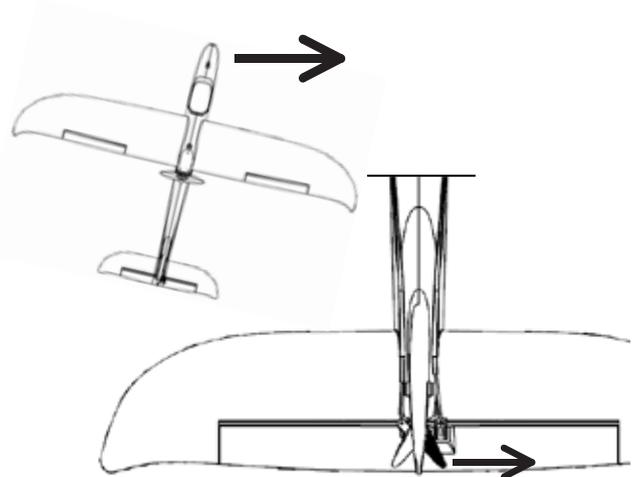
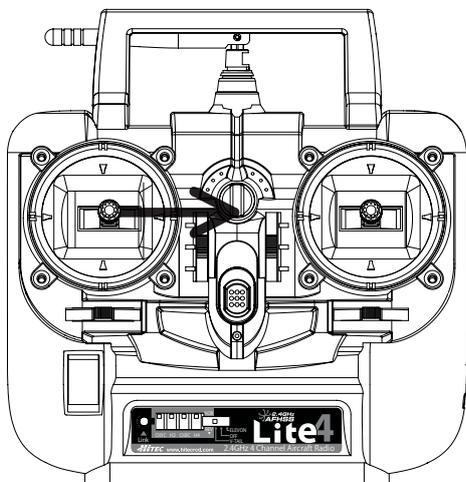
Lithium-Polymer batteries are made up of various chemicals. Keep them away from fire to prevent explosion and do not throw them.



Lithium Polymer battery is made up of various chemical elements so do not separate or stab it with a sharp tool. The battery may explode and cause injuries.

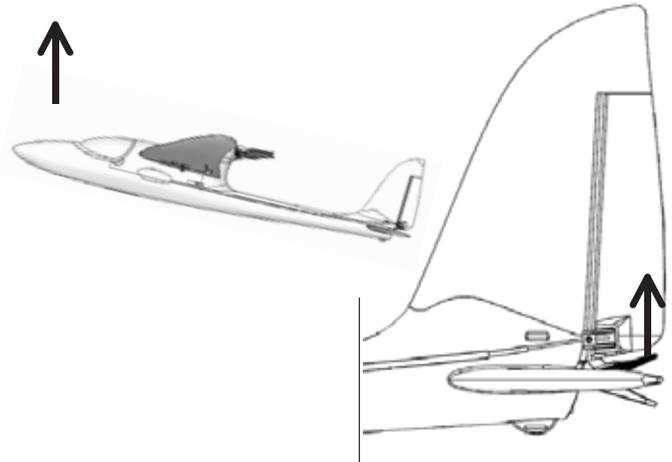
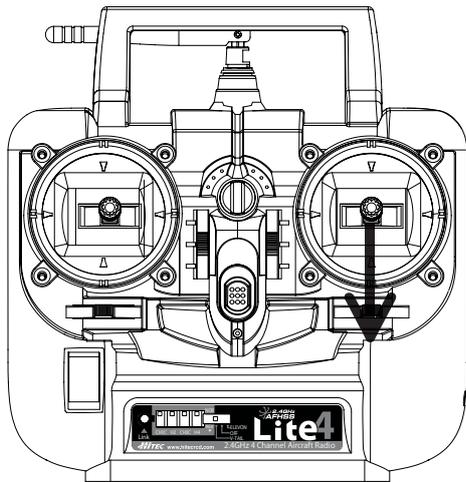


Wing movement according to the stick control mode (MODE 1)

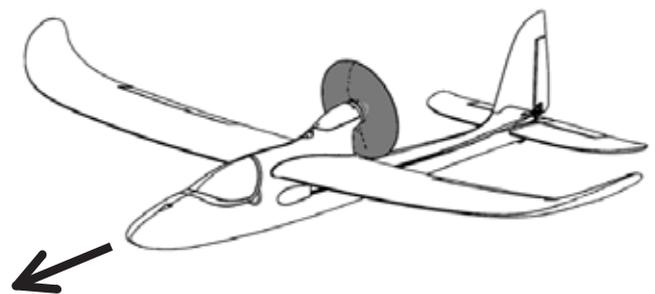
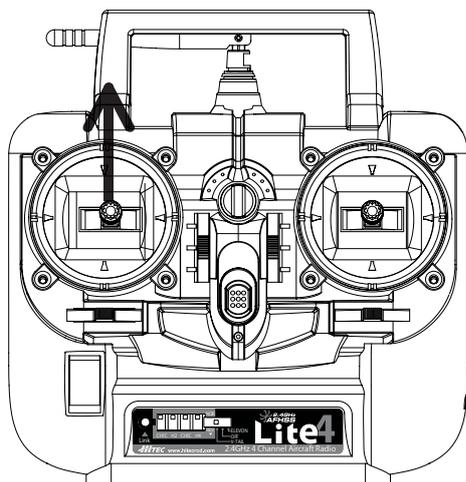


First, check the rudder wing movement which directs the model left and right in a horizontal position. When Move the left stick to the right as shown above and check if the rudder wing moves to the right. If the rudder wing moves to the left, use the REV (reverse) function to change the direction.

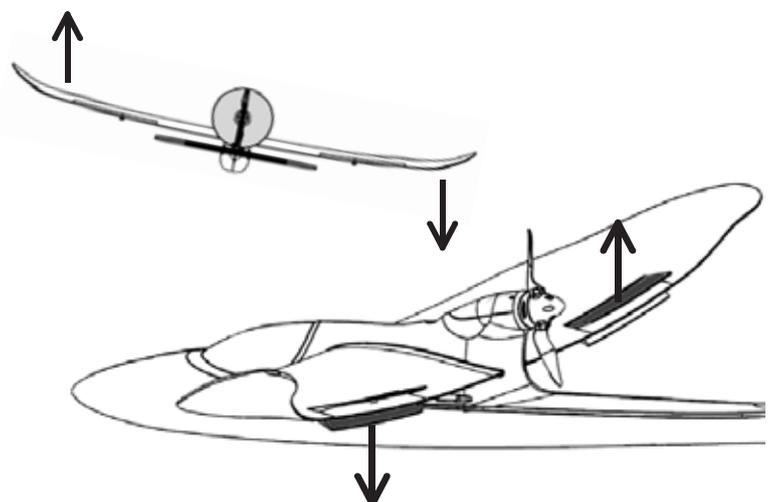
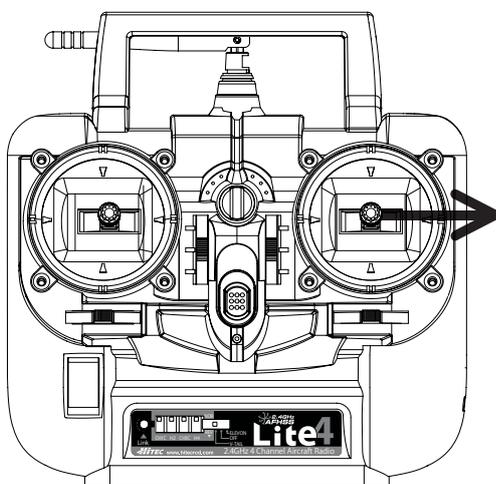
Wing movement according to the stick control mode (MODE 1)



Next, check the elevator wing movement which directs the model up and down. Move the right stick down as shown above and check if the elevator wing goes up. If the elevator wing goes down, use the REV (reverse) function to change the direction.

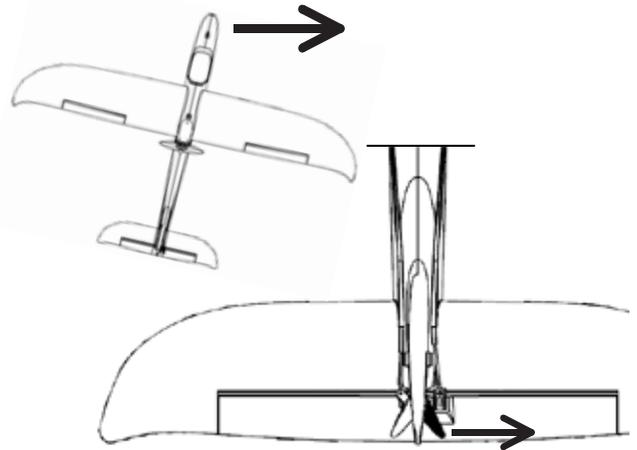
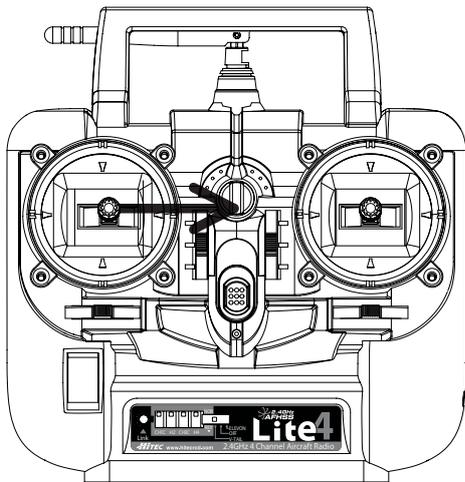


Now, it's time to check the throttle movement which moves the model forward. Move the left stick up as shown above and check if the propeller rotates and goes forward. If the plane moves when the stick is moved down, use the REV (reverse) function to change the direction.

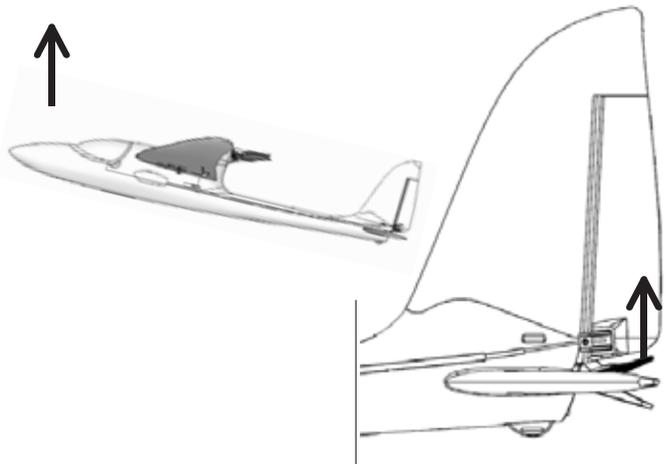
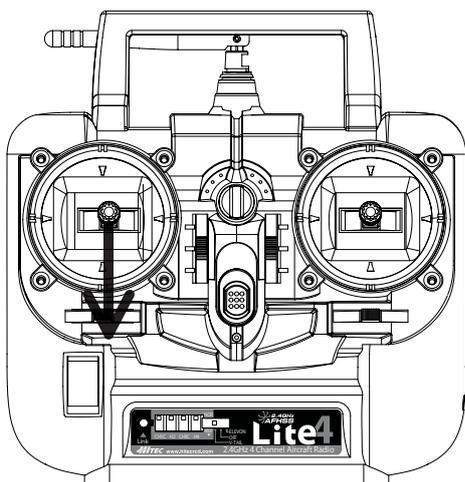


Finally, check the aileron wing that tilts the model left and right. This wing is not included in the RTF version so the wings and servos must be purchased separately. Separate mixing functions are used in controlling the aileron servos so beginner fliers should consult an expert or a nearby RC store.

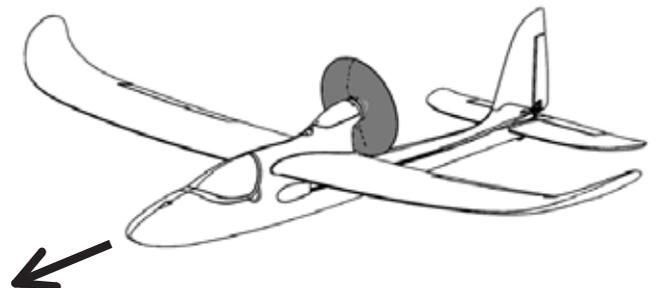
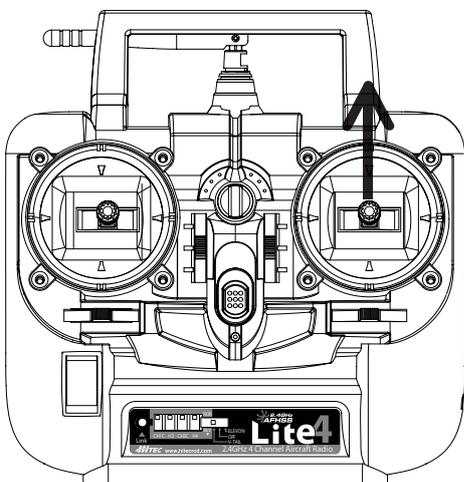
Wing movement according to the stick control mode (MODE 2)



First, check the rudder wing movement which directs the model left and right in a horizontal position. When Move the left stick to the right as shown above and check if the rudder wing moves to the right. If the rudder wing moves to the left, use the REV (reverse) function to change the direction.

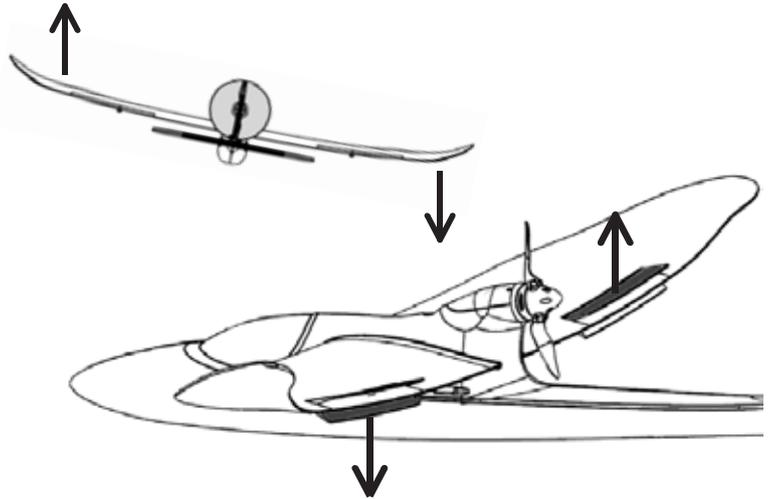
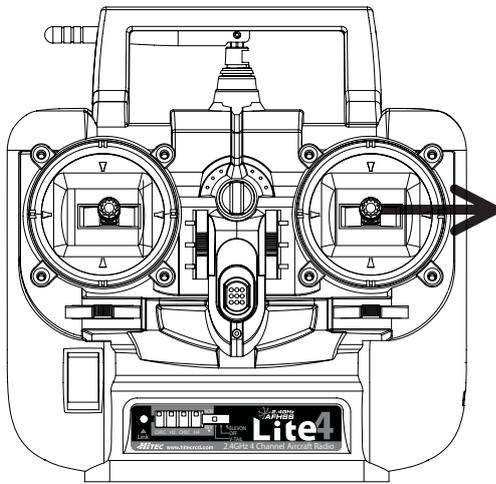


Next, check the elevator wing movement which directs the model up and down. Move the left stick down as shown above and check if the elevator wing goes up. If the elevator wing goes down, use the REV (reverse) function to change the direction.



Now, it's time to check the throttle movement which moves the model forward. Move the right stick up as shown above and check if the propeller rotates and goes forward. If the plane moves when the stick is moved down, use the REV (reverse) function to change the direction.

Caution before assembling KIT version



Finally, check the aileron wing that tilts the model left and right. This wing is not included in the RTF version so the wings and servos must be purchased separately. Separate mixing functions are used in controlling the aileron servos so beginner fliers should consult an expert or a nearby RC store.

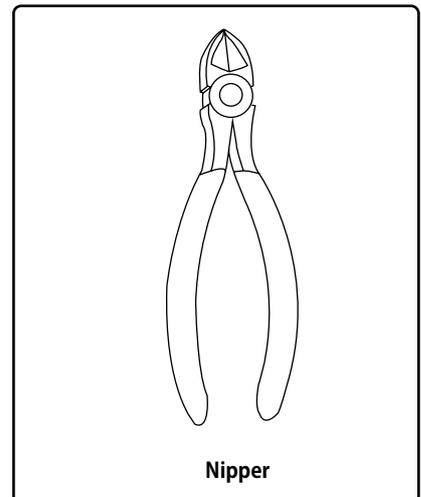
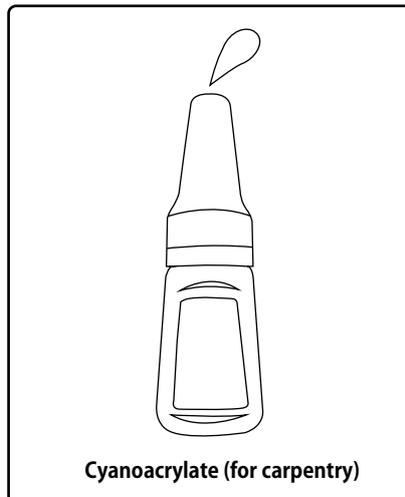
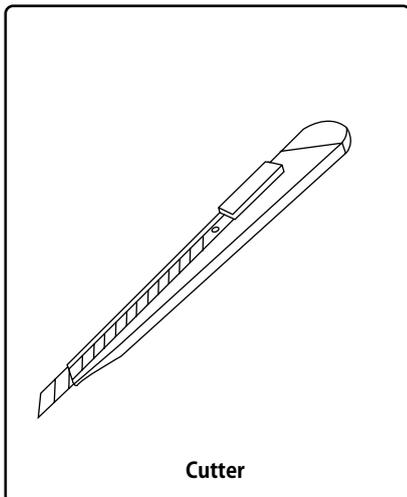
Keep in mind when assembling and flying the model:

This product is for flying and may cause accidents or damage to others' properties so always follow the warnings written in the instruction manual. As various electronic equipments are operated for flying, careless treatment could lead to damages and breakdowns. Be sure to read the instruction manual before assembling and flying the model.

Tools needed for assembly (sold separately)

This instruction manual is for the users who purchased the KIT version of Sky Scout. It contains detailed explanations of how to assemble the model plane quick and easy for the users.

Tools needed for assembly (sold separately)

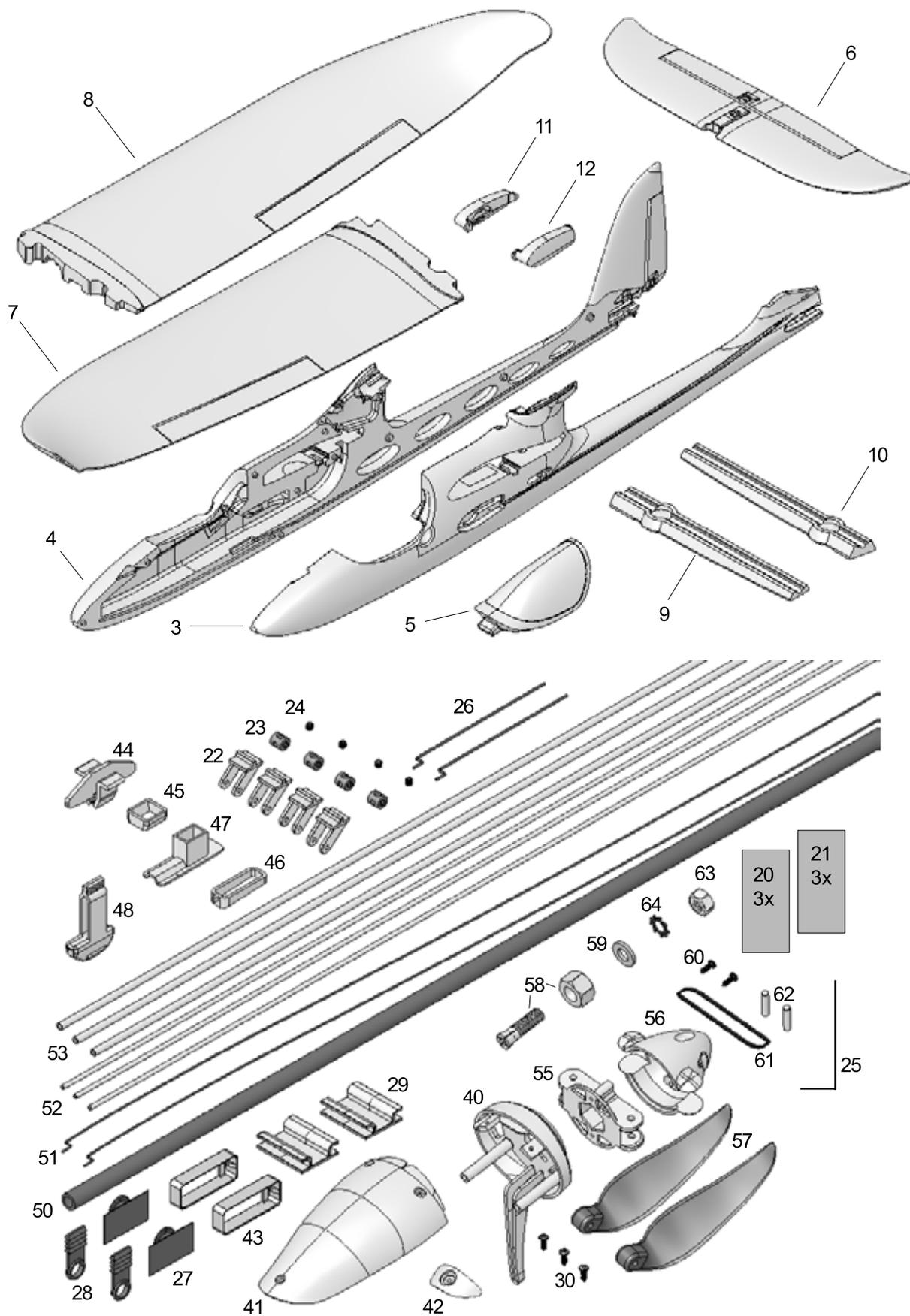


Beware of safety precautions when using sharp tools like cutters and nippers. Do not inhale or rub your eyes when using Cyanoacrylate. Consult the doctor immediately in case of emergency. The necessary tools above could be purchased in a RC store nearby.

Assembly instructions for KIT version

1. Before you start building

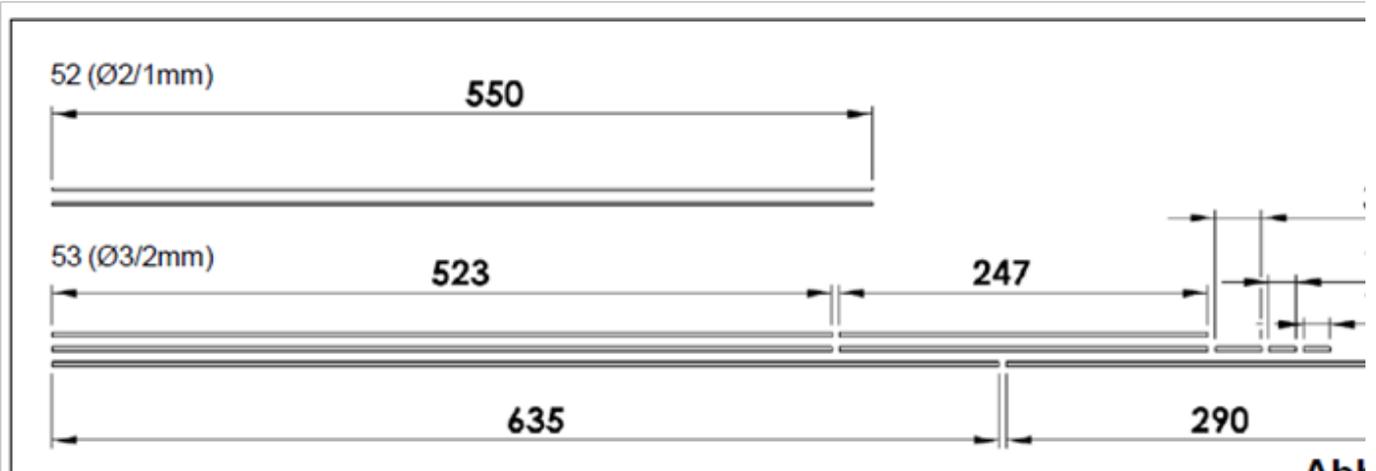
Check the contents of your kit. You will find below Figs. and the Parts List helpful here.



Assembly instructions for KIT version

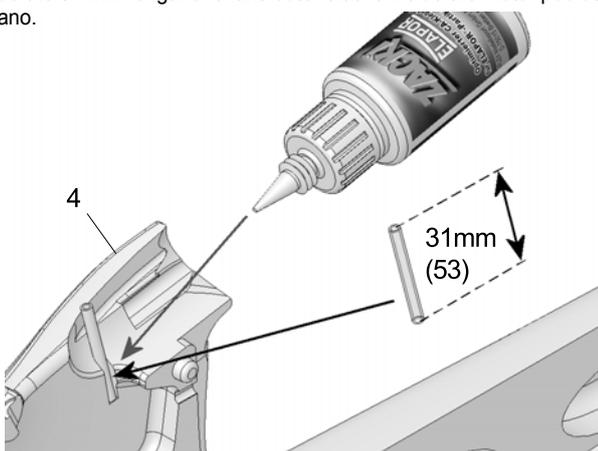
Assembly instructions for KIT version

This section is for KIT version users to fly their model as quickly as possible. Read the following instruction carefully if you are a first-time RC model flier.



3. Reinforcing the motor pod

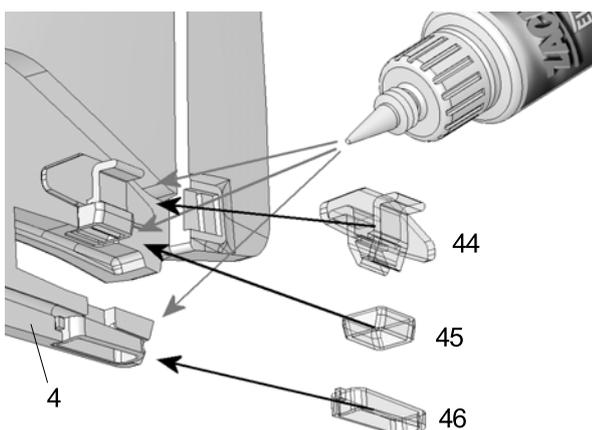
Glue the 31 mm length of snake outer sleeve inside the motor pod using cyano.



4. Installing the tailplane lock

Glue the tailplane clip 44, the upper tailplane sleeve 45 and the tailplane frame 46 in the right-hand fuselage shell 4: spray activator thinly on the plastic parts, and allow a few seconds for the fluid to air-dry.

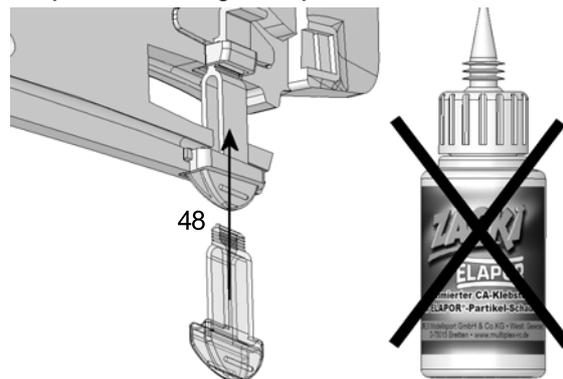
Caution Take care not to glue together the two plastic parts (tailplane clip 44 and upper tailplane sleeve 45)!



5. Inserting the tailplane slider

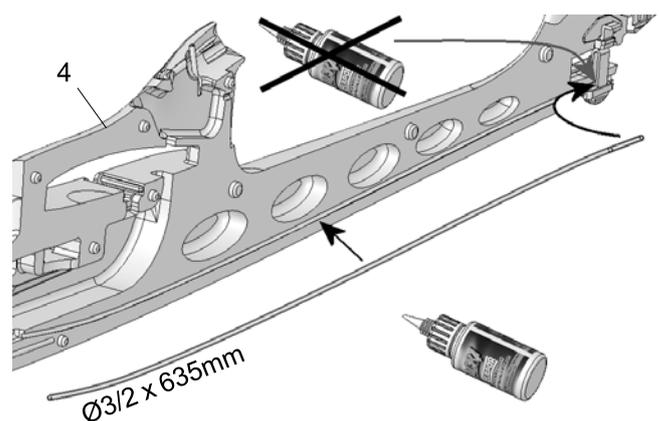
Allow the glue to set hard, then insert the tailplane slider 48 to ensure that the parts are accurately aligned.

This part must not be glued in place!



6. Reinforcing the bottom of the fuselage

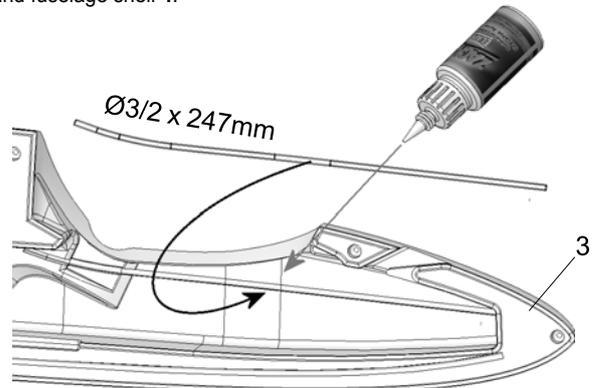
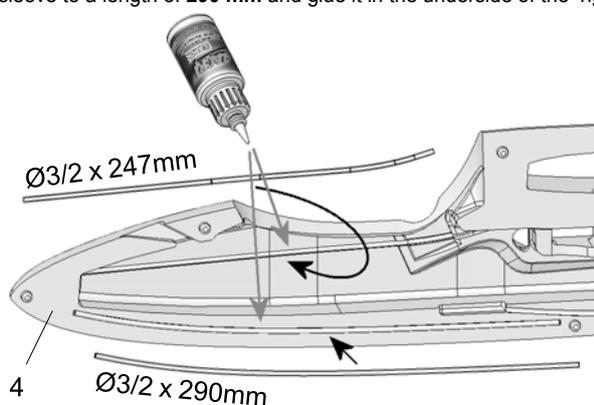
Cut the outer snake sleeve to a length of 635 mm, then glue it in the channel in the bottom of the right-hand fuselage shell 4. Temporarily fit the tailplane slider 48 to position this part accurately, but take care not to glue the parts together.



Assembly instructions for KIT version

7. Reinforcing the fuselage nose

Cut the sleeves to a length of **247 mm**, and glue them in the upper part of the two fuselage shells **3 + 4**.
Cut the sleeve to a length of **290 mm** and glue it in the underside of the right-hand fuselage shell **4**.

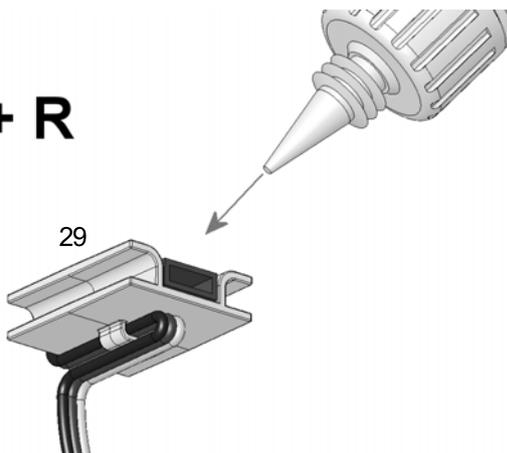


8. Preparing the cable holders (optional: required for ailerons)

Glue the plug end of the 30 cm extension lead **8 5031** to the cable holder **29**, flush with the edge. Push the cable under the lug on the underside.

Option

L + R

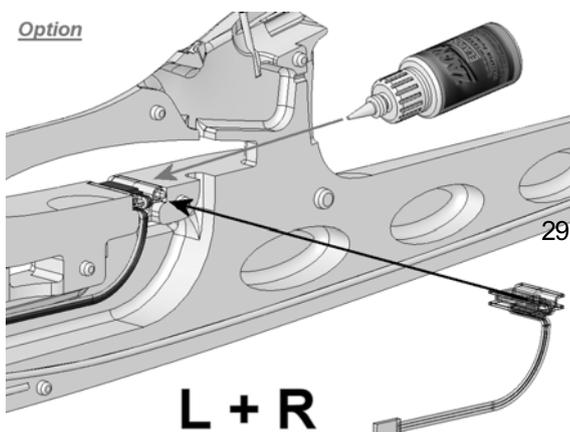


9. Installing the cable holders

First spray activator on the joint surfaces of the cable holders **29**. Allow the fluid to air-dry, then glue the parts in the appropriate recesses in both fuselage shells.

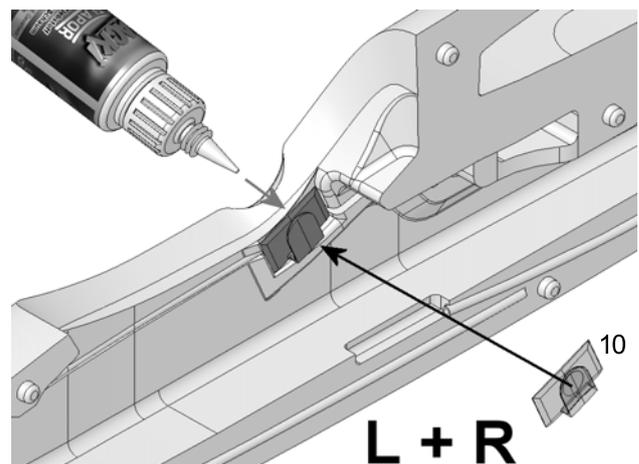
Option

L + R



10. Gluing the latch catches in place

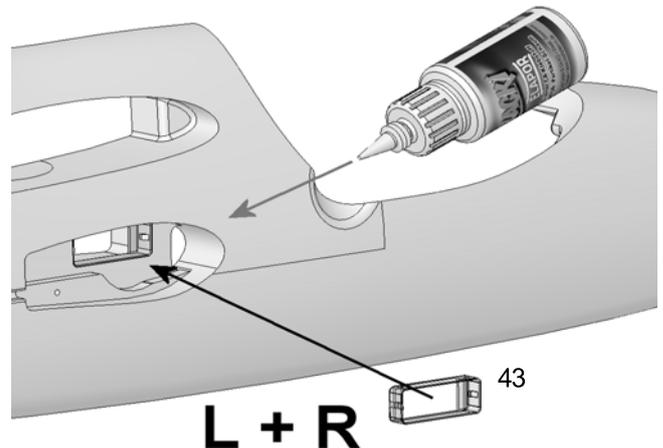
Glue the latch catches **27** in both fuselage shells. Once again, spray activator onto the plastic part, and allow it to air-dry.



L + R

11. Installing the servo mounts

Glue both servo frames **43** in the appropriate openings using cyano. Ensure that no glue gets onto the mount lugs, as this could prevent them holding the servos securely.



L + R

Assembly instructions for KIT version

12. Preparing the servos

Before installing the servos, set all of them to neutral (centre) from the transmitter: this is accomplished by connecting the servo to a receiver, switching the system on, and centring the stick at the transmitter; check that the transmitter trims are also at neutral.

Locate the "double-ended" servo output levers with three holes per side, and fit them on the servo output shafts at right-angles to the long side of the servo cases. If you find that the output arm is not accurately at right-angles to the case when the servo is at neutral, rotate the lever through 180° and try again; the output shaft features an odd number of splines, and reversing the output device will get you "closer to the target".

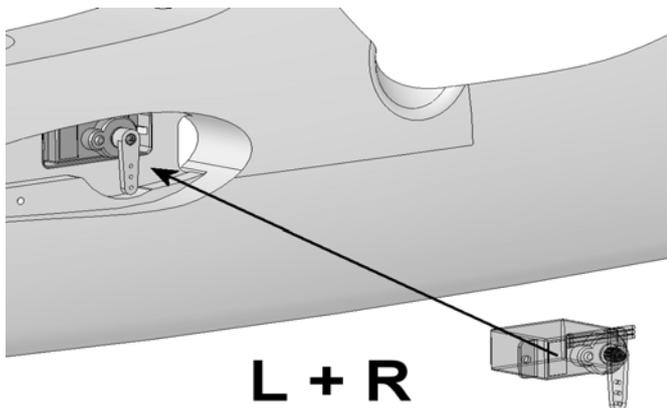
Install the elevator and rudder servos as a mirror-image pair, the same applies to the aileron servos, if you intend to install them.

Avoid moving the servo output levers by hand, as this can easily ruin the gears!

13. Installing the servos in the fuselage

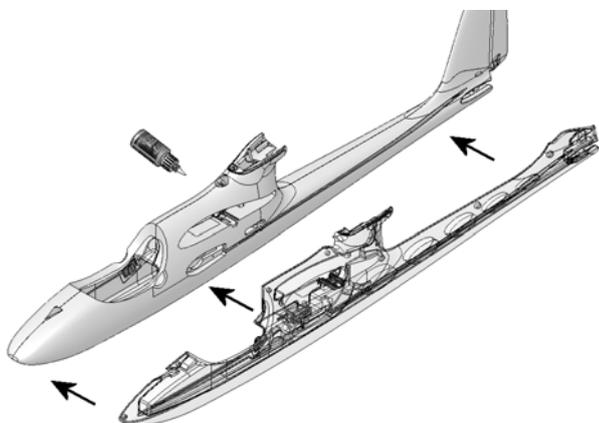
Fit the servos in the servo mounts **43**, with the output arms facing down, and the output shafts towards the nose.

Ensure that the servo mounting lugs engage fully under the "clips" of the servo mounts **43**.



14. Joining the fuselage shells

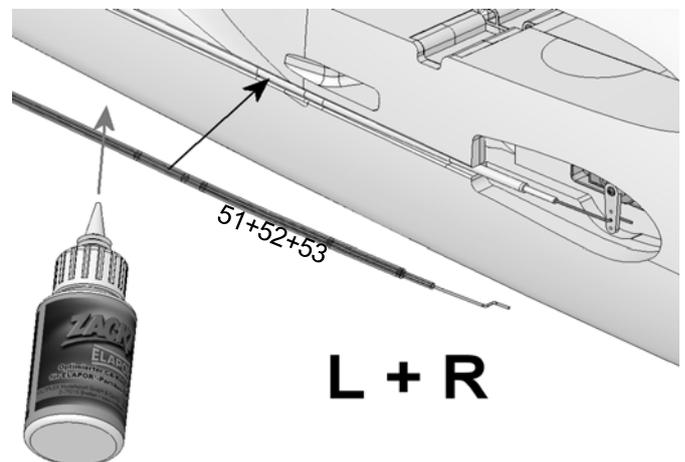
Spray the joint surfaces of one fuselage shell with cyano activator, apply medium-viscosity cyano to the joint surfaces of the other shell, then briskly join the two shells. Take care to align the parts accurately.



15. Installing the snakes

Slip the pre-formed steel pushrods **51** for the elevator and rudder into the inner tubes **52** (550 mm), and fit these into the prepared outer sleeves **53**, which are 523 mm long.

Connect the pre-formed end of the pushrod to the second hole from the outside of the servo output arm. Glue the snake outers in the appropriate channels, running cyano right along the channel.



16. Preparing the control surface horns

Fit the allen-head grub screws **24** in the swivel barrels **23**: two for elevator and rudder, four if working ailerons are to be fitted.

Engage the prepared swivel barrels in the "Twin" horns **22**.

17. Attaching the horns to the rudder and elevator

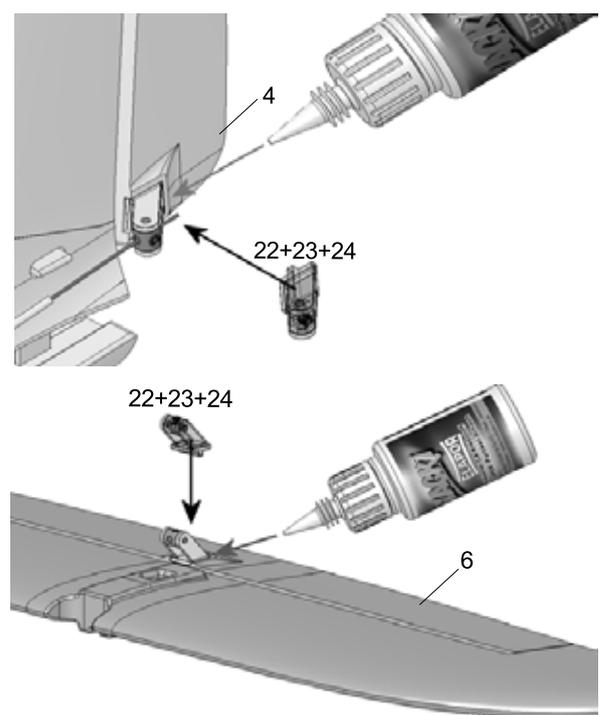
Spray activator on the joint surface (the underside) of the horns.

Apply cyano to the horn recesses in the elevator **6** and rudder.

Leave the fluid to air-dry for a few seconds, then press the horns into their recesses.

Slip the steel pushrod for the rudder linkage through the hole in the swivel barrel **23**. Check once more that the servos are at centre before tightening the allen-head grub screws **24**.

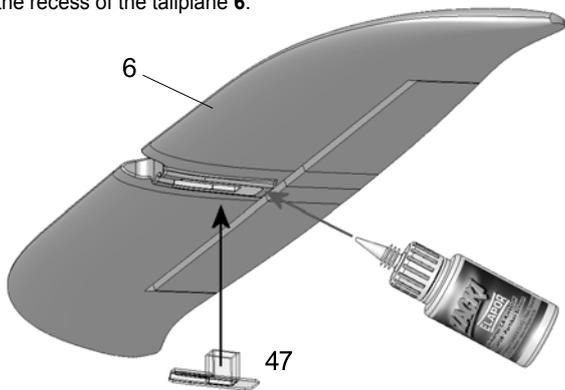
We recommend that you apply a drop of medium-strength thread-lock fluid to each grub screw to prevent them working loose over time.



Assembly instructions for KIT version

18. Installing the tailplane frame

To guarantee a secure seating, the tailplane frame **47** must be glued in the recess of the tailplane **6**.

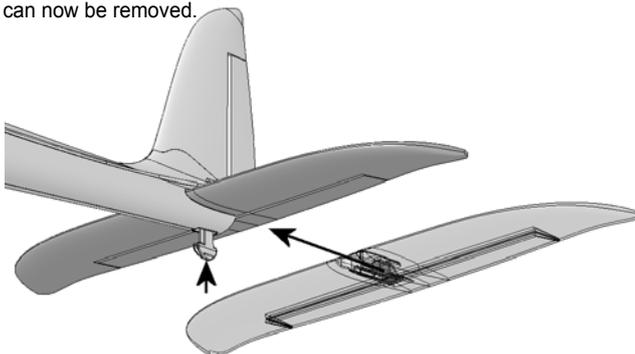


19. Attaching the tailplane

First withdraw the tailplane slider **48** slightly, then insert the tailplane **6** and push the slider back in as far as it will go to secure the tailplane.

Do not glue it! The tailplane should be left detachable for safe, convenient transport.

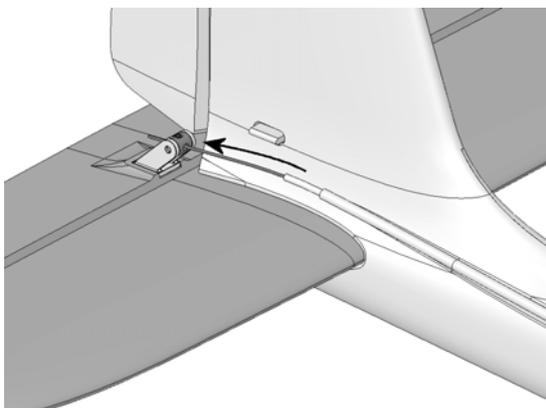
To remove the tailplane, press the tailplane clips **44** together with two fingers, and at the same time pull the tailplane slider **48** down; the tailplane can now be removed.



20. Connecting the elevator

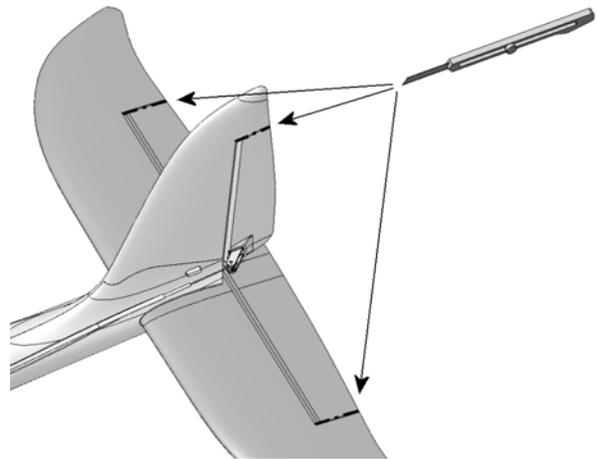
Slip the inner pushrod for the elevator through the hole in the swivel barrel **23**, and check the servo neutral position once more before tightening the allen-head grub screw **24**.

We recommend that you apply a drop of medium-strength thread-lock fluid to the grub screw to prevent it working loose over time.



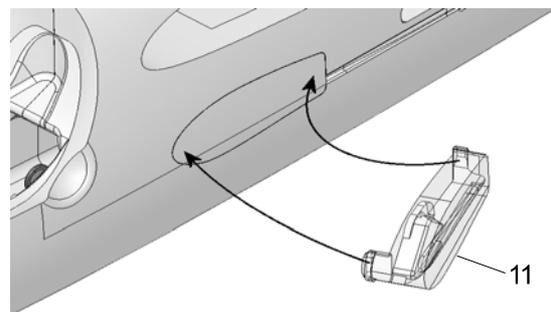
21. Releasing the control surfaces

Use a sharp balsa knife to remove the foam at the lateral ends of the control surfaces, cutting along the moulded-in channels. Repeatedly move the control surfaces to and fro in order to loosen the integral hinges and render them freemoving. Do not separate the control surfaces!



22. Attaching the servo well covers

Press the left and right servo well covers **11** and **12** into the openings in both sides of the fuselage. They should not be glued in place, as you may have to replace the servos at some time.



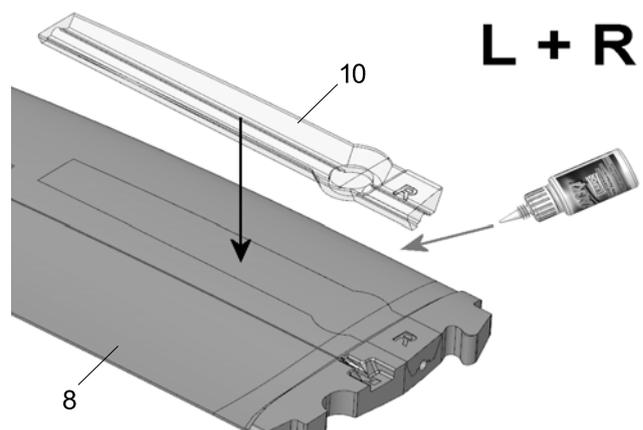
L + R

23. Installing the wing joiner channel cover

Carefully glue the wing joiner channel covers **9** and **10** in the wing panels **7** and **8**.

Take particular care to avoid glue running onto the surfaces which will later make contact with the wing joiner **50**.

Check that the wing joiner **50** is a snug fit in the wings, but only when you are absolutely confident that there is no active adhesive inside the channel. If you neglect this, you could find that the model is glued together permanently.

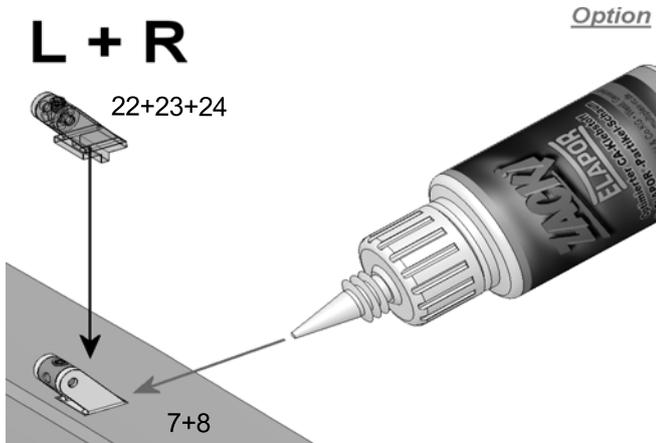


L + R

Assembly instructions for KIT version

24. Attaching the (optional) aileron horns

Assemble the "Twin" horns 22, and glue them in the recesses in both ailerons (wing panels 7 + 8) using cyano and activator, as described earlier.

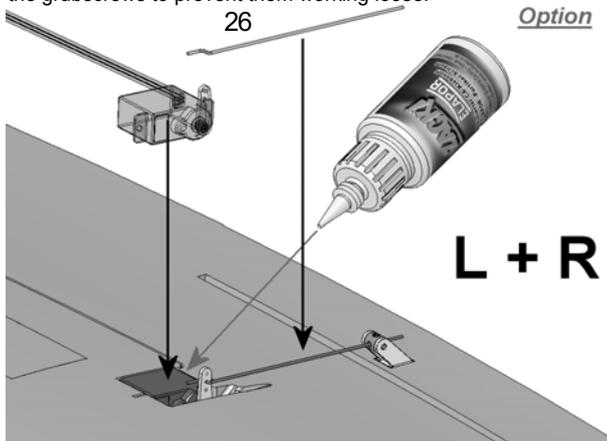


25. Preparing the aileron servos

See "12. Preparing the servos".

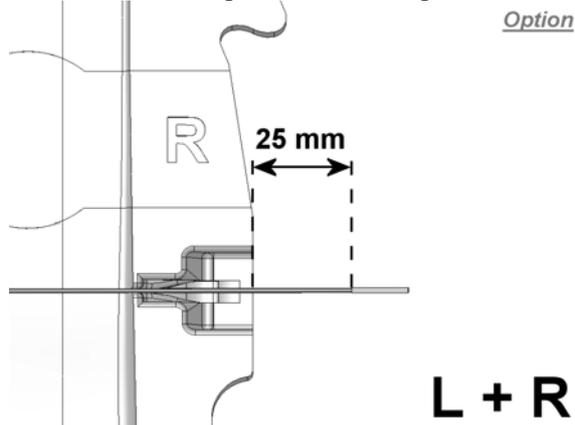
26. Installing the aileron servos

Wrap adhesive tape round the servos to prevent glue running inside the case.
Fit the pre-formed aileron pushrods 26 through the second hole from the outside of the servo output arms.
Press the servos and leads into the recesses and channels, and thread the plain end of the pre-formed aileron pushrods 26 through the swivel barrels mounted on the aileron horns.
Check once more that the servos are at centre before tightening the grub-screws 24 in the swivel barrels.
We recommend applying a drop of medium-strength thread-lock fluid to the grub-screws to prevent them working loose.



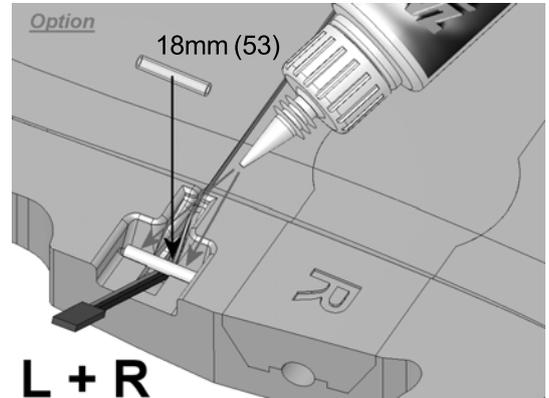
27. Servo lead length, aileron connections

Draw the servo leads out of the wings 7 + 8 where the wing meets the fuselage.



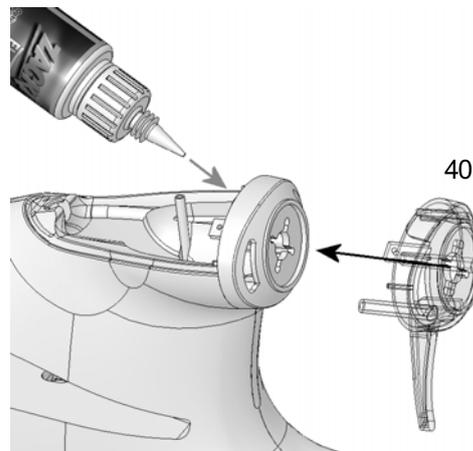
28. Installing the cable sleeves

To avoid kinking the aileron servo leads, glue 18 mm lengths of snake outer sleeve (3 mm Ø / 2 mm Ø) in the recess where the cables exit the wing.



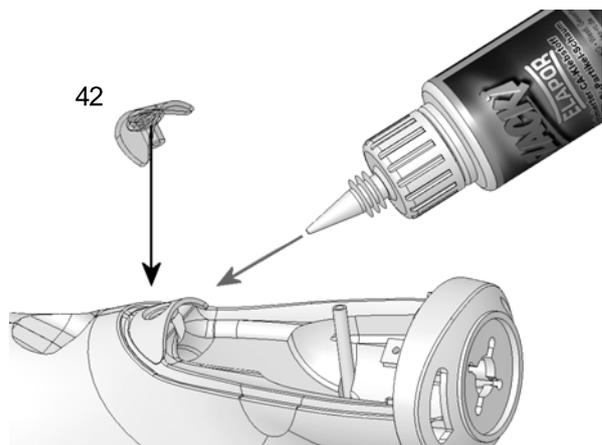
29. Installing the firewall

Glue the firewall 40 in place using thick cyano. Don't use activator for this joint, as you will need a certain amount of time to position and align the firewall correctly.



30. Gluing the cowl screw support in place

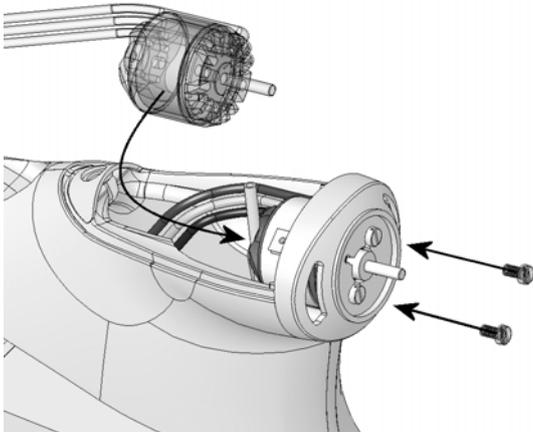
Glue the cowl screw support 42 at the front end of the motor pod.



Assembly instructions for KIT version

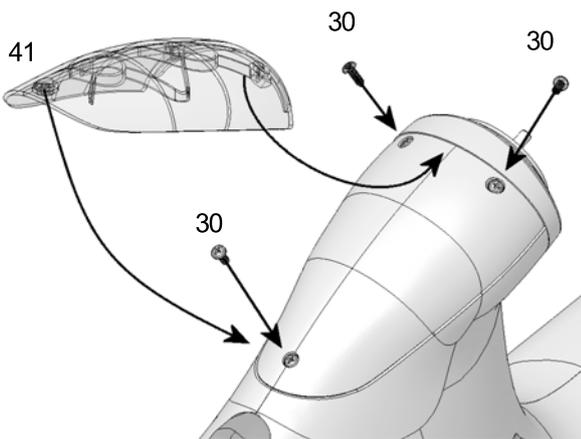
31. Installing the motor

Fix the motor in place using two M3 x 6 screws. Apply a drop of medium-strength thread-lock fluid to the screws.



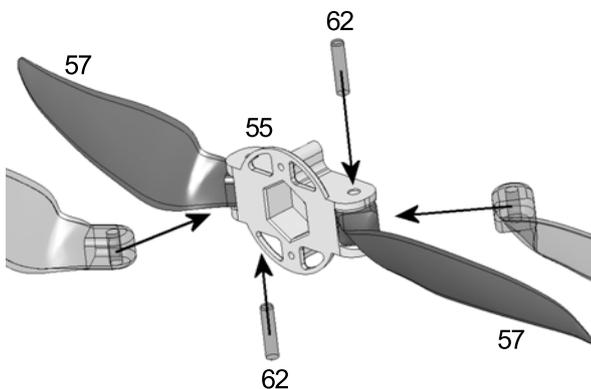
32. Installing the motor cowl

Fit the three screws 30 to secure the motor cowl 41.



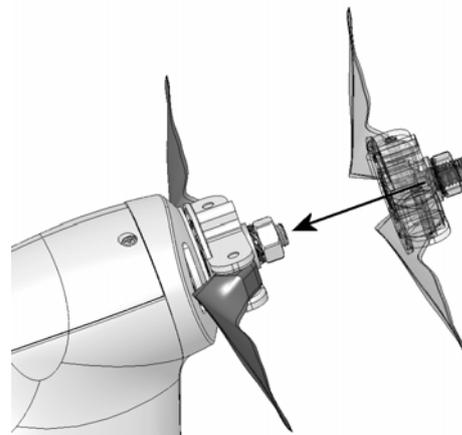
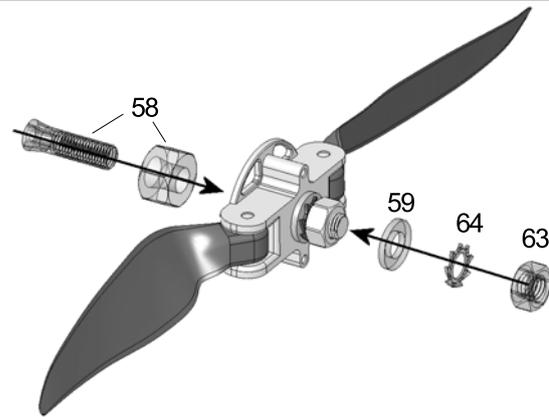
33. Assembling the propeller

Attach the propeller blades 57 to the propeller boss 55 using the two dowel pins 62.

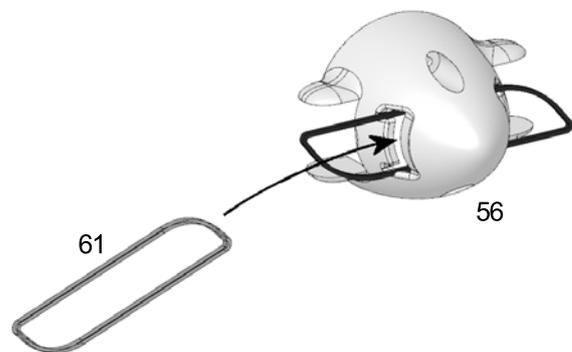


Slip the taper collet through the driver 58 and place this assembly in the propeller boss 55. The washer 59 and the shakeproof washer 64 are fitted from the other side.

Screw the M6 nut 63 on the taper collet 58. Fit the taper collet 58 on the motor shaft and tighten the nut firmly before fitting the spinner.

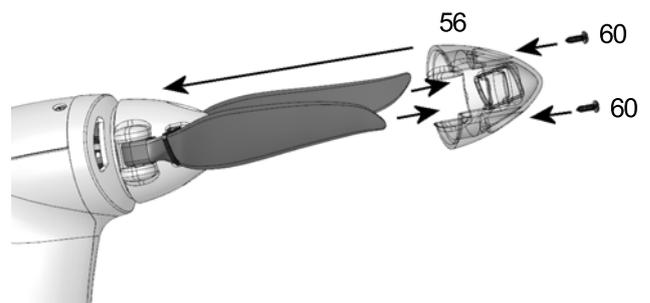


Fit the O-ring 61 through the spinner cone 56.



Fold the propeller blades 57 back, and pass them through the ends of the O-ring 61 which project from the sides of the spinner.

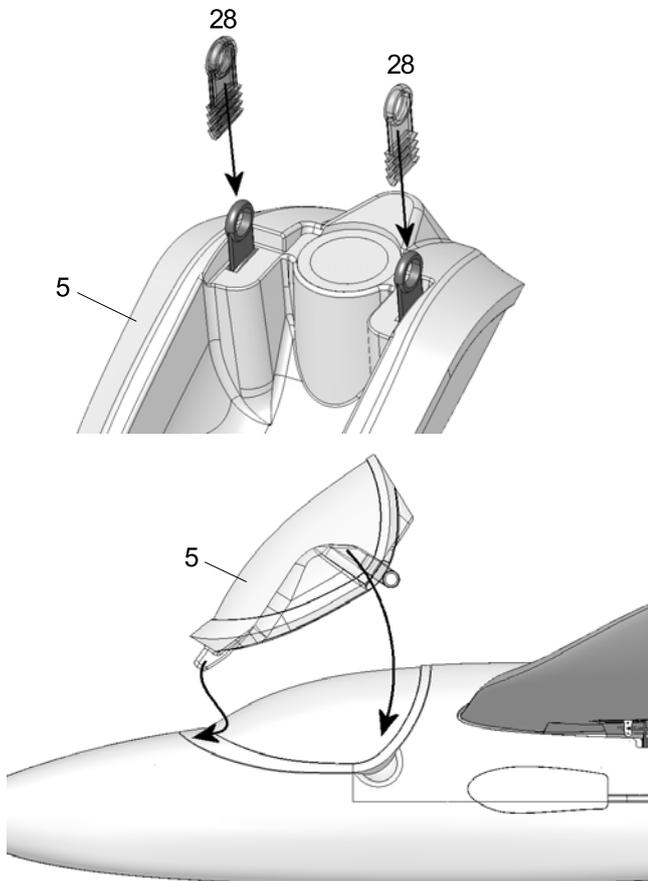
Take care to avoid the sharp edges of the propeller blades causing damage to the O-ring 61. Fix the spinner to the propeller boss 55 using the two pan-head self-tapping screws 60.



Assembly instructions for KIT version

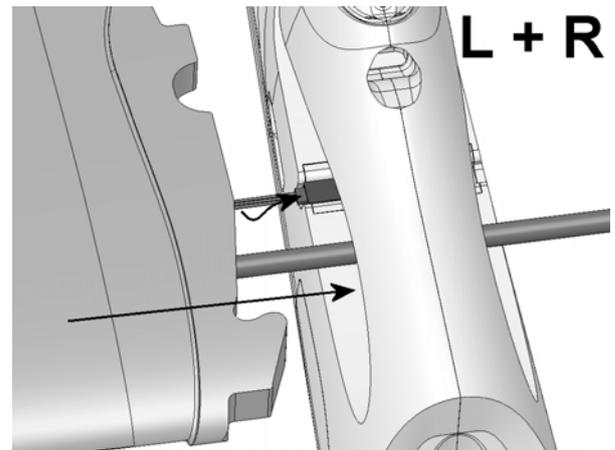
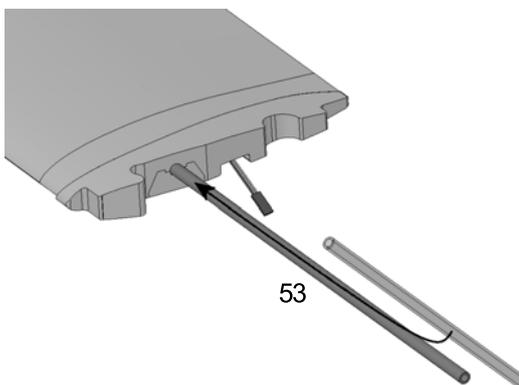
34. Completing the canopy

Glue the latch tongues **28** in the recesses in the canopy **5**. Use thick cyano initially, and fit the canopy on the model immediately, so that the latch components align themselves automatically. Wait for at least two minutes before removing the canopy, then apply drops of thin cyano to the gaps in the latches to glue them in place, flush with the foam.



35. Installing the wings

Slide the wing joiner **50** into one of the wing panels as shown in the illustration, then fit the joiner through the fuselage. Before the wing makes contact with the fuselage, connect the aileron servo lead to the extension lead already installed in the fuselage. Connect the plug and socket, then push the wing fully into place; the cable will now form itself into a loop in the space designed for it. Fit the other wing panel onto the joiner, and connect the aileron servo lead to the extension lead already installed in the fuselage, as described previously.



36. Installing the flight battery and receiver

Install the flight pack and receiver in the following arrangement: the flight battery should be at the extreme nose, the receiver directly behind it.

Deploy the receiver aerial(s) as described in the RC system instructions. The aerial tube installed in the underside of the fuselage is intended for 35 / 40 MHz systems.

File a length of wire to a point, then slip it through the tube from the tail end, and push the sharpened end into the aerial insulation; a small drop of cyano will fix the aerial to the wire.

The aerial can now be drawn through the tube to the tail.

If you are using a 2.4 GHz system, cut slits in the foam material (e.g. in the area of the canopy flange) and press the short aeriels into them.

When positioning these components you should bear in mind the recommended Centre of Gravity (CG) at point 40.

Stick the strips of Velcro tape **20** and **21** (loop side) to the inside of the fuselage floor.

Note that the adhesive on the tape is not adequate for this application, so fix the tape with cyano for additional security.

The final position of the flight battery is determined when you check the model's balance point (Centre of Gravity - CG). Check that the Velcro tape for the flight battery is firmly secured.

If you neglect this, you could lose your battery in flight.

Check that the flight pack is secure before every flight!

Temporarily complete all the electrical connections as described in the RC system instructions.

Do not connect the battery to the speed controller until you have switched the transmitter on, and are certain that the throttle control is at the "OFF" position.

Connect the servo leads to the receiver. Switch the transmitter on, then connect the flight battery in the model to the speed controller, and the controller to the receiver. This model requires a BEC-type speed controller (receiver power supply from the flight battery).

Now switch the motor on briefly, and check once more that the propeller rotates in the correct direction.

If it spins in the reverse direction, swap over any two of the three motor wires to correct it.

Always hold the model securely when testing the power system, and remove any loose, lightweight objects before and behind the model before the propeller does it for you.



even small motors and propellers are capable of inflicting injury!

Caution

The basics of model flying

38. Setting the control surface travels

It is important to set the correct control surface travels, otherwise your model will not respond to your control commands smoothly and evenly. **Up-elevator (stick back, towards you) should be about 5 mm; down-elevator (stick forward, away from you) approx. 4 mm. Rudder 10 mm to either side of centre**, in each case measured at the widest part of the control surface.

The **ailerons should deflect 8 mm up, and 4 mm down**.

When you move the aileron stick to the right, the aileron on the righthand wing should deflect up; that on the left-hand wing down.

Please note: when we refer to a model aircraft, the terms "right" and "left" always apply to the machine when viewed from above, with the nose pointing away from the observer.

If your radio control system does not include the mixers required to set up differential aileron travel (as described above), the model will still fly well with symmetrical (non-differential) travels.

If you are a beginner, you will probably notice no difference in any case. However, accurate rolling manoeuvres are more difficult to fly with symmetrical aileron travels.

If you cannot set the recommended travels using your transmitter's adjustment facilities, you will have to re-position the pushrod connections, using different holes at the servo or horn.

39. Finishing the model

The kit includes a multi-colour decal sheet **2 (A + B)** for adding the final touches to the model.

Cut out the individual decals and apply them to the aeroplane in the arrangement shown in the kit box illustration.

The canopy **5** can be coloured black using a waterproof felt-tip pen.

If you wish to apply an all-over colour scheme, we recommend our range of "ELAPOR® Color" colour paints, # **60 2701** - # **60 2712** (surfaces must first be prepared using **MULTIPrimer # 60 2700**).

For tips on painting our models please refer to the FAQ section on our website.

40. Balancing the model

Like every aircraft, your Sky Scout must be balanced correctly if it is to fly well and stably.

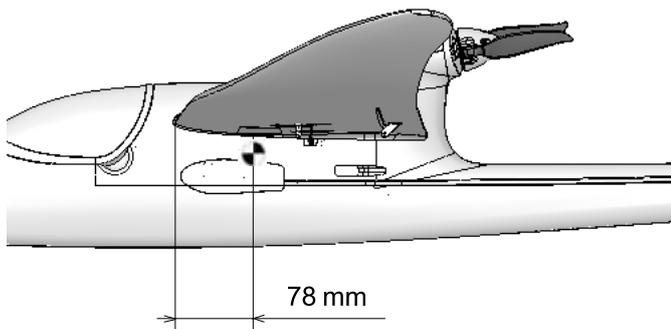
To check the Centre of Gravity (CG) you must first assemble your model completely, ready to fly, and install the flight battery.

The correct CG is marked at a point about 5 mm from the rear edge of the wing joiner cover, and the model must balance at this point.

This setting corresponds to about 78 mm aft of the wing root leading edge, measured either side of the fuselage.

Support the model under both wings on two fingertips at the marked point, and it should balance level.

Minor corrections can be made by adjusting the position of the flight battery. Once you have established the correct position for the battery, mark this in the fuselage to ensure that it is always positioned correctly.

**41. Pre-flight checks**

For the first flight wait for a day with as little breeze as possible; the evening hours often offer calmer conditions.

It is essential to carry out a range-check before the first flight! Please follow the instructions laid down by your RC system manufacturer.

The transmitter battery and flight pack must be fully charged in accordance with the manufacturer's recommendations.

Before switching the system on, ensure that your chosen channel is free; this does not apply if you are using a 2.4 GHz system.

If you are unsure about any point, do not fly the model! If you cannot identify and cure the problem, send the whole RC system (including battery, switch harness and servos) to your system manufacturer for checking.

42. Maiden flight ...

Do not attempt any hand-glides with this model!

The aircraft is designed to be hand-launched (always into wind).

If you are a beginner to model flying, we strongly recommend that you ask an experienced modeller to help you for the first few flights.

Once the model has reached a safe height, adjust the control surfaces using the trims on the transmitter, so that the model flies straight and level "hands-off".

With the aircraft flying at an adequate altitude, check how it responds when the motor is switched off, so that you are familiar with its behaviour on the glide.

Carry out repeated simulated landing approaches at a safe height, as this will prepare you for the real landing when the battery is discharged.

Avoid flying tight turns at first, especially close to the ground, and in particular during the landing approach.

It is always better to land safely some distance away than to risk a crash by forcing the model back to your feet.

If you have no prior experience in model flying, please take the time to read through the section entitled "The basics of model flying".

43. Safety

Safety is the First Commandment when flying any model aircraft.

Third party insurance is mandatory. If you join a model club, suitable cover will usually be available through the organisation.

It is your personal responsibility to ensure that your insurance is adequate (i.e. that its cover includes powered model aircraft).

Make it your job to keep your models and your radio control system in perfect order at all times.

Check and observe the correct charging procedure for the batteries you are using.

Make use of all sensible safety systems and precautions which are advised for your system.

An excellent source of practical accessories is the Hitec main catalogue, as our products are designed and manufactured exclusively by active modellers for practising modellers.

Always fly with a responsible attitude. You may think that flying low over other people's heads is proof of your piloting skill; others know better.

The real expert does not need to prove himself in such childish ways.

Let other pilots know that this is what you think too.

Always fly in such a way that you do not endanger yourself or others.

Bear in mind that even the best RC system in the world is subject to outside interference.

No matter how many years of accident-free flying you have under your belt, you have no idea what will happen in the next minute.

We - the Hitec team - hope you have many hours of pleasure building and flying your new model.

Before every flight, check that the battery, the wings and the tail panels are attached and firmly seated.

Check in turn that each control surface is operating correctly!

The basics of model flying

The basics of model flying

Any aircraft - whether model or "man-carrying" - can be controlled around three primary axes: **the vertical axis, lateral axis and longitudinal axis.**

Operating the **elevator** produces a change in the aeroplane's flight attitude around the lateral axis (pitch).

Giving a **rudder** command turns the model around the vertical axis (yaw).

If you move the aileron stick, the model rotates around the longitudinal axis (roll).

All three axes can be controlled regardless of the aeroplane's flight attitude.

All aircraft are subject to external influences, such as turbulence, which tend to disturb the aircraft, causing it to deviate from its intended flight path; the pilot's task is then to apply control commands so that the model continues to fly in the desired direction.

The power system (motor and propeller) provides control over rate of climb and speed. The rotational speed of the motor is infinitely variable using the speed controller, which follows your control commands from the transmitter.

The important point to note is that pulling up elevator by itself causes the model to climb, but only until it reaches its **minimum airspeed.**

The aeroplane's ability to climb at different angles depends on the power of the motor. If the model's speed falls below its minimum airspeed, it tips forward and dives: this is known as **stalling.**

This occurs when the airflow which generates the lift required to keep the aircraft in the air is no longer attached to the wing, and the lift collapses.

The EasyStar II is designed in such a way that it exhibits very docile stalling characteristics, and loses very little height when it does stall. In this situation it drops its nose, immediately picks up speed, and is very soon under the pilot's control once more.

If you are a beginner to model flying, we recommend that you initially control the EasyStar II using rudder and elevator only.

To turn the model (initial turns and circles), use the rudder to set up a slight angle of bank, then apply gentle up-elevator to avoid the nose dropping during the turn. Always try to turn away from you at first.

Once you have mastered basic control of the EasyStar II, it is time to try the ailerons. However, this does not mean that you can afford to forget the rudder. A smooth turn, i.e. one which makes efficient use of the airflow, is always flown best by co-ordinating rudder and aileron commands.

This is a basic skill required to fly any model aeroplane smoothly and accurately.

Without this level of co-ordination the EasyStar II will not fly so efficiently, although it is very tolerant of such abuse. However, if you concentrate on learning the art of flying smoothly right from the outset, you will find it much easier to control more demanding models at a later date, and will be able to avoid many a critical situation.

Concentrate constantly on moving the sticks slowly and gradually.

Abrupt, jerky movement of the transmitter controls often places the model in flight situations from which the beginner is unable to escape.

If this should happen, it is generally better simply to let go of the sticks and switch the motor off.

Wait a few moments until the model has "calmed down", and you will then find it easier to regain full control. If you cannot avoid a crash, at least the motor is stopped, minimizing the energy which has to be dissipated through the impact, and thereby limiting damage to the airframe.

As a beginner you are bound to find it difficult to **steer in the correct direction when the model is flying towards you.**

Learn this rule by heart: the stick must be moved to the side where the "danger" lurks, i.e. move the stick towards the low wing, and "prop it up".

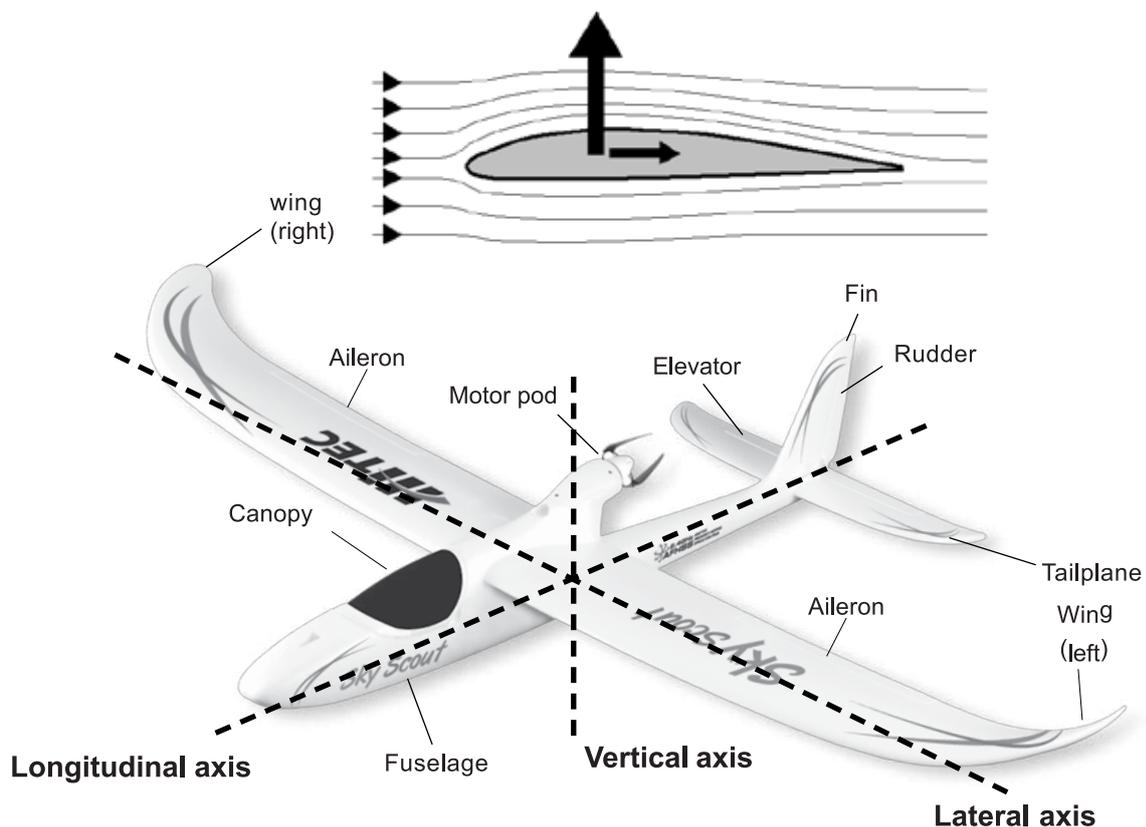
We suggest that you learn these suggestions in the period before the first flight, so that you are not surprised by the model's behaviour when you are actually flying!

Wing section (airfoil)

The wing has a curved (cambered) cross-section, known as an airfoil, over which the air flows when the model is flying.

In a given time the air above the wing covers a greater distance than the air below the wing.

This results in a reduction in pressure over the top surface of the wing, generating an upward force (lift) which keeps the aircraft in the air.



The basics of model flying

Centre of Gravity

Like any other aircraft, your model aeroplane must be balanced at a particular point if it is to have stable flying characteristics.

It is absolutely essential to balance the model correctly before its first flight.

The balance point, or Centre of Gravity (CG), is stated as a linear distance measured from the wing leading edge, close to the fuselage.

When supported at this point on your fingertips, or - preferably - using the MPX CG gauge, # 69 3054, the model should balance level.

If the model does not balance at the marked point, this can usually be corrected by re-positioning the airborne components (e.g. flight battery).

If this is not sufficient, the correct quantity of ballast (lead or modelling clay) should be fixed securely to the nose or tail of the fuselage.

If the model is tail-heavy, fit the ballast at the fuselage nose; if it is nose-heavy, attach the ballast at the tail end of the fuselage.

Refer to P12 Picture.

Neutral point

The neutral point of an aircraft is the point at which the aerodynamic forces are in equilibrium.

If an aeroplane flies in a stable attitude, then its neutral point is always aft of the Centre of Gravity.

Any aircraft whose Centre of Gravity is aft of the neutral point will be inherently unstable in the air.

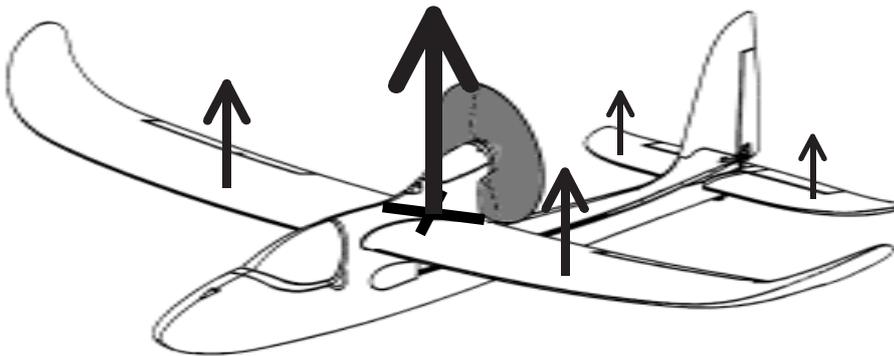
Manual control of an aircraft trimmed in this way is impossible; it requires a computer system for stabilization and control.

Longitudinal dihedral

This term refers to the difference in incidence between the wing and the tailplane.

Provided that you fit and secure the EasyStar II's wing and tailplane to the fuselage as stated in these instructions, then the longitudinal dihedral will automatically be exactly correct.

If these two settings (centre of gravity and longitudinal dihedral) are correct, you will encounter no problems when flying your aeroplane, especially at the test-flying stage.

**Control surfaces and control surface travels**

The model can only fly safely and precisely if the control surfaces are free-moving, operate in the correct "sense" (direction relative to stick movement), and are set up to deflect by the appropriate amount.

The control surface travels stated in the building instructions have been established by a test-flying programme, and we recommend that you adopt these settings initially.

You may wish to adjust them subsequently to suit your personal preferences.

Transmitter control functions

The radio control system transmitter is fitted with two primary sticks which cause the servos - and therefore the model's control surfaces - to deflect when moved.

The stated function assignment is correct for stick mode 2, but other stick modes are possible.

The following control surfaces are controlled from the transmitter:

The rudder (left / right) **Fig. A**

The elevator (up / down) **Fig. B**

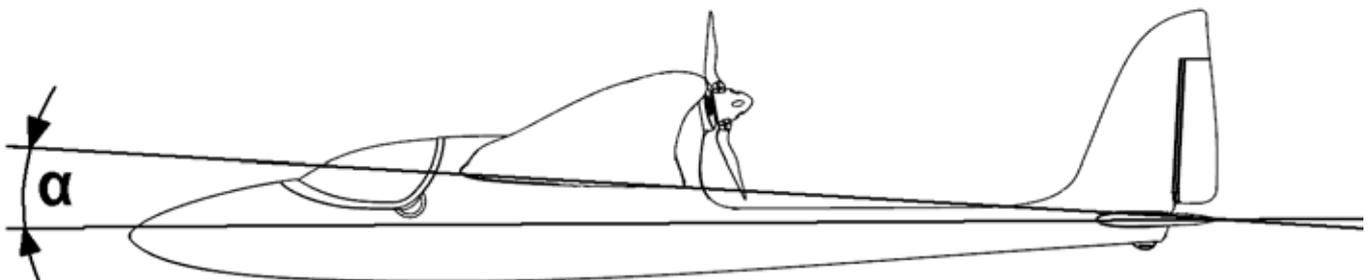
The throttle (motor off / on) **Fig. C**

The ailerons (left / right) **Fig. D**

The stick which controls the throttle (motor speed) must not be of the self-centring type.

It is usually fitted with a ratchet which operates over the full stick travel.

How this setting works you can read up in the operating instructions supplied with your radio control system.



Part numbers of the components (1)

Posizione	Designazione	Materiale	Dimensioni
1	1	Istruzioni per il montaggio KIT	
1.1	1	Comunicazione di reclamo modelli	
2A	1	Decals "A"	Foglio adesivo stampato 200 x 820mm
2B	1	Decals "B"	Foglio adesivo stampato 200 x 700mm
3	1	Metà fusoliera sinistra	Elapor espanso finito
4	1	Metà fusoliera destra con impennaggio laterale	Elapor espanso finito
5	1	Capottina cabina	Elapor espanso finito
6	1	Impennaggio elevatore	Elapor espanso finito
7	1	Ala sinistra	Elapor espanso finito
8	1	Ala destra	Elapor espanso finito
9	1	Copertura baionetta sinistra	Elapor espanso finito
10	1	Copertura baionetta destra	Elapor espanso finito
11	1	Copertura servo sinistra	Elapor espanso finito
12	1	Copertura servo destra	Elapor espanso finito
Set minuteria			
20	3	Velcro parte uncinata	materiale plastico 25 x 60 mm
21	3	Velcro parte "stoffa"	materiale plastico 25 x 60 mm
22	4	Squadretta per timone "Twin"	materiale plastico finito
23	4	Perno cardanico	metallo finito Ø6mm
24	4	Perno filettato a brugola	metallo M3 x 3mm
25	1	Chiave a brugola	metallo Apertura della chiave 1,5
26	2	Rinvii alettoni con Z	metallo Ø1 x 80mm
27	2	Clip	materiale plastico stampato ad iniezione finito
28	2	Perno di chiusura	materiale plastico stampato ad iniezione finito
29	2	Supporto cavo	materiale plastico stampato ad iniezione finito
30	3	Vite (copertura motore)	metallo 2,2 x 6,5mm
Set parti in materiale plastico			
40	1	Ordinata motore	materiale plastico stampato ad iniezione finito
41	1	Copertura motore	materiale plastico stampato ad iniezione finito
42	1	Copertura contro supporto	materiale plastico stampato ad iniezione finito
43	2	Supporto servo "Nano" verticale	materiale plastico stampato ad iniezione finito
44	1	Impennaggio elevatore clip	materiale plastico stampato ad iniezione finito
45	1	Impennaggio elevatore guarnizione in alto	materiale plastico stampato ad iniezione finito
46	1	Impennaggio elevatore guarnizione in basso	materiale plastico stampato ad iniezione finito
47	1	Impennaggio elevatore supporto	materiale plastico stampato ad iniezione finito
48	1	Impennaggio elevatore cursore	materiale plastico stampato ad iniezione finito
Set fili e baionetta			
50	1	Baionetta	Tubo in vetroresina Ø8,0 x 5,4 x 579 mm
51	2	Filo in acciaio per impennaggio elevatore / direzionale con Z.	metallo Ø0.8 x 620mm
52	2	Guaina bowden impennaggio elevatore / direzionale	materiale plastico Ø2/1 x 550mm
53	3	Guaina bowden impennaggio elevatore	materiale plastico Ø3/2 x 950mm
Set elica, mozzo, ogiva EasyStar II			
55	1	Mozzo portaeliche	materiale plastico finito
56	1	Ogiva	materiale plastico Ø 35mm
57	2	Pala elica ripiegabile	materiale plastico 7 x 6"
58	1	Mozzo con cono di serraggio	metallo Ø3,2 / M6 / esagonale apertura chiave 13
59	1	Rondella a U	metallo Øi 6,4
60	2	Vite a testa cilindrica con calotta in lamiera	metallo Ø 2,2 x 6,5mm
61	1	Guarnizione circolare	materiale plastico Ø30 x 1,5mm
62	2	Perno cilindrico	metallo Ø3 x 14mm
63	1	Dado	metallo M6
64	1	Disco dentato	acciaio per molle Øi 6,4
66	1	Cono di serraggio	metallo Ø3,0 / M6 / esagonale apertura chiave 13

Part numbers of the components (2)

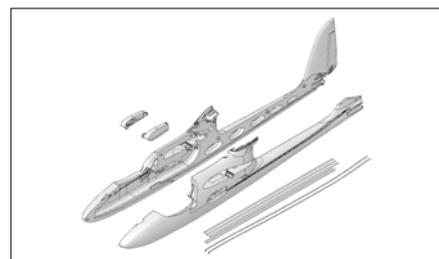
72 4607

Decal sheet



22 4239

Fuselage shells + snakes



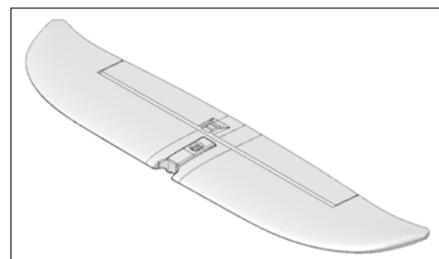
22 4240

Canopy



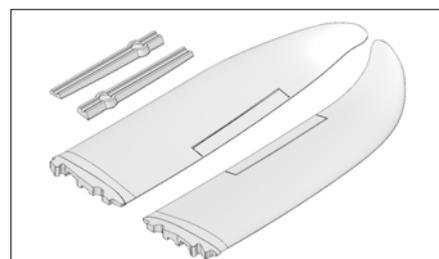
22 4241

Tailplane



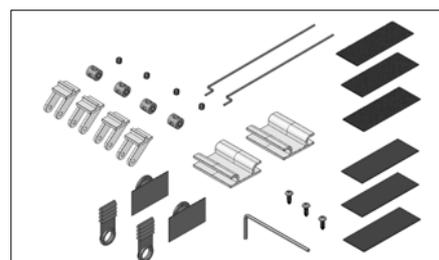
22 4242

Wings



22 4243

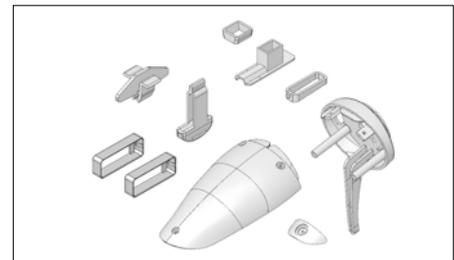
Small items set



Part numbers of the components (3)

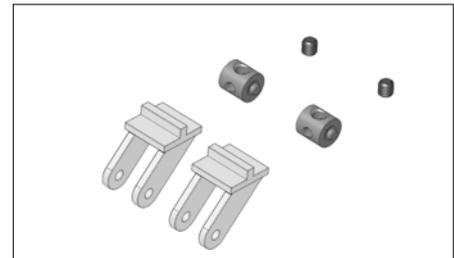
22 4244

Kunststoffteilesatz
 injected parts
 Set de pièces en plastique
 Minuteria in plastica
 Piezas de plástico



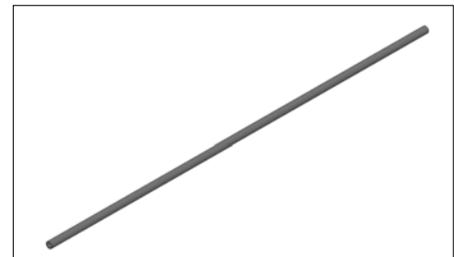
70 3457

Ruderhorn „Twin“ mit Gestängeanschluss, 2 Satz
 Horn „Twin“ and pushrod connector, 2 pcs.
 Guignol „Twin“ raccord de tringles, 2 pcs.
 Squadretta „Twin“ raccordo per rinvii, 2pz.
 Escuadra „Twin“ retén de varilla, 2 uds.



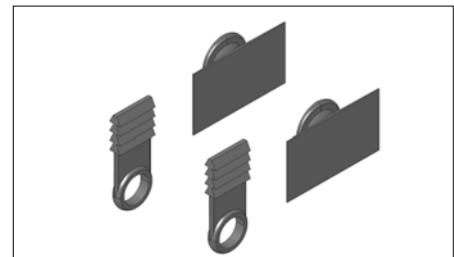
72 3193

GFK-Holmverbinde
 Spar tube
 Clé d'aile
 Tubo baionetta
 Largueo



72 5136

Canopy Lock (Haubenverschluss), 2 Paar
 Canopy-Lock (2 pair)
 Canopy-Lock (2 paires)
 Canopy-Lock (2 coppia)
 Canopy-Lock (2 par)



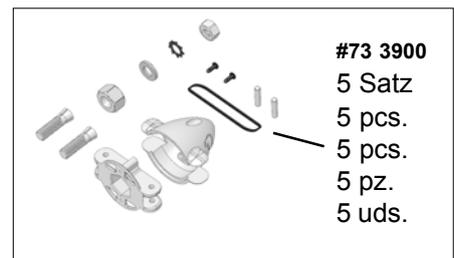
73 3194

Klappluftschraubenblätter 7 x 6"
 Blade for folding propeller (1 pair) 7"x6"
 2 pales d'hélice repliable 7"x6"
 pale elica ripiegabile 7"x6" (1 paio)
 2 hojas de hélice plegable 7"x6"



73 3506

Spinner, Blatthalter, Mitnehmer
 Driver, blade support and spinner
 Plateau, support de pales et cone
 Mozzo portapale con ogiva
 adaptador, port-palas y cono



#73 3900
 5 Satz
 5 pcs.
 5 pcs.
 5 pz.
 5 uds.

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