



Instruction Manual Book

Item code: BH203

PRABUS

EP
version

2.64m 104" ARF COMPOSITE



95% ALMOST READY TO FLY



SPECIFICATION

- Wingspan: 2640mm (104in).
- Length: 1380 mm (54.3 in).
- Flying weight: 2600 – 2800g
- Wing area: 48 dm²
- Wing loading: 54 g/dm²
- Wing profile: RG15 modifiziert
- Radio: 6 channel minimum (not included)
- Servo: 6 servo: 2 aileron; 2 flaps; 1 elevator; 1 rudder (not included)
- Spinner: Plastic 41mm (included)
- Motor: Dimensions: 35x47.2mm
- Shaft Ø : 5,0mm
- LiPo: 3 -5 cells
- Thrust: approx.2400g
- Experience level: Intermediate

- Control throw Ailerons: 13mm up/down
- Control throw Elevators: 12mm up/down
- Control throw Rudder: 20mm right/left
- Experience level: Intermediate
- Plane type: Glider

RECOMMENDED MOTOR AND BATTERY SET UP

- Motor: Antriebsset Prabus / Boost 40 | #18375 (not included)
- Lipo: 4 LiPo Akku RED POWER 2200-4S (not included)



UNDER SAFETY PRECAUTIONS

This radio control model is not a toy!

- It is highly recommended that first-time builders seek advice of experienced modelers before beginning assembly.
- Assemble this kit only in places out of children's reach!
- Take enough safety precautions prior to operating this model. You are responsible for this model's assembly and safe operation!
- Always keep this instruction manual ready at hand for quick reference, even after completing the assembly.

Made in Vietnam

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INTRODUCTION

- Thank you for purchasing Black Horse Model products. With over 18 years experience in production and fly testing, Black Horse Model is committed to bring the best quality products and good service to customers. Along with a team of creative engineers and skilled workers, we will always accompany with customers by our great experiences, fully enthusiasm... which will burn our passion!! Joining with us to explore and conquer challenges in the sky ...

- Your satisfaction is our success. Please read through this manual before starting construction.

Academy of Model Aeronautics: If you are not already a member of the AMA, please join! The AMA is the governing body of model aviation and membership provides liability insurance coverage, protects modelers' rights and interests and is required to fly at most R/C sites.

Academy of Model Aeronautics

5151 East Memorial Drive Muncie, IN 47302-9252

Tele. (800) 435-9262

Fax (765) 741-0057

Or via the Internet at: <http://www.modelaircraft.org>



WARRANTY

- Black Horse Model guarantees the component parts in this kit to be free from defects in both material and workmanship at the date of purchase by the purchaser.
- This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or modification of or to any part of the Product.
- This warranty does not cover damage due to improper installation, operation, maintenance, or attempted repair by anyone other than Black Horse Model.
- Further, Black Horse Model reserves the right to change or modify this warranty without notice.

DISCLAIMER

Read this disclaimer carefully before using this product. Please strictly follow the instruction manual to assemble and use this.

In that Phoenix Model has no control over the final assembly or material used for final assembly, Phoenix Model is not responsible for loss of use, or other incidental or consequential damages. Furthermore, Phoenix Model cannot be held liable for personal injury or property damage caused by the use or misuse of Phoenix Model products. By the act of using the user-assembled products, the user accepts all resulting liability.

SAFETY PRECAUTION

- This is not a toy and pilots must be over the age of 14
- Be sure that no other flyers are using your radio frequency.
- Do not smoke near fuel
- Store fuel in a cool, dry place, away from children and pets.
- Wear safety glasses.
- The glow plug clip must be securely attached to the glow plug.
- Do not flip the propeller with your fingers.
- Keep loose clothing and wires away from the propeller.
- Do not start the engine if people are near. Do not stand in line with the side of the propeller.
- Make engine adjustments from behind the propeller only. Do not reach around the spinning propeller.
- Moisture causes damage to electronics. Avoid water exposure to all equipment not specifically designed and protected for this purpose.

IMPORTANT BUILDING NOTES

- Please trial fit all the parts. Make sure you have the correct parts and that they fit and are aligned properly before gluing! This will assure proper assembly. This kit is hand made from natural materials, every plane is unique and minor adjustments may have to be made. However, you should find the fit superior and assembly simple.
- The painted and plastic parts used in this kit are fuel proof. However, they are not tolerant of many harsh chemicals including the following: paint thinner, C/A glue accelerator, C/A glue debonder and acetone. Do not let these chemicals come in contact with the colors on the covering and the plastic parts.
- Some parts included in this kit such as the cowl or wheel pants are made of fiberglass, the fibers of which may cause eye, skin and respiratory tract irritation. Never blow into a part to remove fiberglass dust, as the dust will blow back into your eyes. Always wear safety goggles, a particle mask and rubber gloves when grinding, drilling and sanding fiberglass parts. Vacuum the parts and the work area thoroughly after working with fiberglass parts.

SUGGESTION

To avoid scratching your new airplane, do not unwrap the pieces until they are needed for assembly. Cover your workbench with an old towel or brown paper, both to protect the aircraft and to protect the table. Keep a couple of jars or bowls handy to hold the small parts after you open the bag.

FLIGHT WARNINGS

- Always operate in open areas, away from factories, hospitals, schools, buildings and houses etc.
- NEVER fly your aircraft close to people or built up areas.
- NEVER fly near power lines, aerials or other dangerous areas including airports, motorways etc.
- NEVER fly in wet conditions or on windy or stormy days.
- ALWAYS adjust the engine from behind the propeller, and do not allow any part of your body to be in line with the propeller.
- THE PROPELLER IS DANGEROUS Keep fingers, clothing (ties, shirt sleeves, scarves) or any other loose objects that could be caught or drawn in, away from the propeller. Take care at ALL times.
- NEVER use damaged or deformed propellers or spinners.
- Keep all onlookers (especially small children and animals) well back from the area of operation. This is a flying aircraft, which will cause serious injury in case of impact with a person or animal.
- DO NOT dispose of empty fuel containers on a fire, this can lead to an explosion.

FLIGHT WARNINGS

- When ready to fly, first extend the transmitter aerial.
- Switch on the transmitter.
- Switch on the receiver.
- Check that the wings are correctly fitted to the fuselage.
- Operate the control sticks on the transmitter and check that the control surfaces move freely and in the CORRECT directions.
- Check that the transmitter batteries have adequate power.
- ALWAYS take off into the wind.
- If the model does not respond correctly to the controls, land it as soon as possible and correct the fault.
- ALWAYS land the model INTO the wind, this ensures that the model lands at the slowest possible speed.
- Switch off the receiver.
- Switch off the transmitter.
- Empty the fuel tank after flying, fuel left in the tank can cause corrosion and lead to engine problems.

COVERING TOOLS

- Top Flite® MonoKote® Sealing Iron
- Top Flite Hot Sock Iron Cover
- Top Flite MonoKote Trim Seal Iron
- Top Flite MonoKote Heat Gun

ADHESIVES AND REQUIRED TOOLS

- Thin CA
- 30-minute epoxy
- 6-minute epoxy
- Threadlocker thread locking cement
- Mixing sticks
- Mixing cups (GPMR8056)
- Epoxy brushes
- Denatured alcohol
- Canopy Glue
- Felt-tipped pen or pencil
- Flat screwdriver
- Adjustable wrench
- Drill
- Hobby knife
- Masking tape
- Phillips screwdriver (large)
- Phillips screwdriver (small)
- Ruler
- Sandpaper
- Soldering iron
- Solder
- Hex wrench
- Drill bit: 1/16-inch (1.5mm), 5/64-inch (2mm), 1/8-inch (3,2mm), 3/16-inch (4,8mm), 11/64-inch (4.5mm), 13/64-inch (5,2mm), 1/4-inch (6,4mm)

Academy of Model Aeronautics National Model Aircraft Safety Code**Effective January 1, 2018**

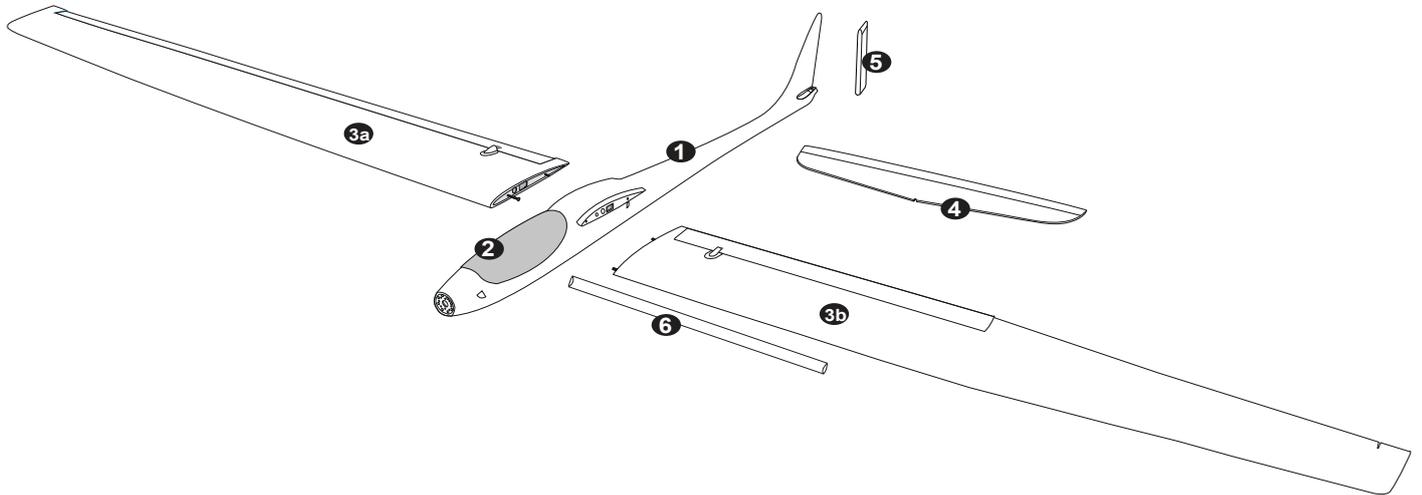
A. GENERAL: A model aircraft is a non-human-carrying device capable of sustained flight within visual line of sight of the pilot or spotter(s). It may not exceed limitations of this code and is intended exclusively for sport, recreation, education and/or competition. All model flights must be conducted in accordance with this safety code and related AMA guidelines, any additional rules specific to the flying site, as well as all applicable laws and regulations.

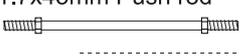
As an AMA member I agree:

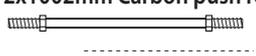
- I will not fly a model aircraft in a careless or reckless manner.
- I will not interfere with and will yield the right of way to all human-carrying aircraft using AMA's See and Avoid Guidance and a spotter when appropriate.
- I will not operate any model aircraft while I am under the influence of alcohol or any drug that could adversely affect my ability to safely control the model.
- I will avoid flying directly over unprotected people, moving vehicles, and occupied structures.
- I will fly Free Flight (FF) and Control Line (CL) models in compliance with AMA's safety programming.
- I will maintain visual contact of an RC model aircraft without enhancement other than corrective lenses prescribed to me. When using an advanced flight system, such as an autopilot, or flying First-Person View (FPV), I will comply with AMA's Advanced Flight System programming.
- I will only fly models weighing more than 55 pounds, including fuel, if certified through AMA's Large Model Airplane Program.
- I will only fly a turbine-powered model aircraft in compliance with AMA's Gas Turbine Program.
- I will not fly a powered model outdoors closer than 25 feet to any individual, except for myself or my helper(s) located at the flightline, unless I am taking off and landing, or as otherwise provided in AMA's Competition Regulation.
- I will use an established safety line to separate all model aircraft operations from spectators and bystanders.

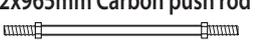
- Officially designated AMA Air Show Teams (AST) are authorized to use devices and practices as defined within the Team AMA Program Document. (AMA Document #718.)
- (j) Not operate a turbine-powered aircraft, unless in compliance with the AMA turbine regulations. (AMA Document #510-A.)
- 3. Model aircraft will not be flown in AMA sanctioned events, air shows or model demonstrations unless:
 - (a) The aircraft, control system and pilot skills have successfully demonstrated all maneuvers intended or anticipated prior to the specific event.
 - (b) An inexperienced pilot is assisted by an experienced pilot.
- 4. When and where required by rule, helmets must be properly worn and fastened. They must be OSHA, DOT, ANSI, SNELL or NOCSAE approved or comply with comparable standards.
- B. RADIO CONTROL (RC)
 - 1. All pilots shall avoid flying directly over unprotected people, vessels, vehicles or structures and shall avoid endangerment of life and property of others.
 - 2. A successful radio equipment ground-range check in accordance with manufacturer's recommendations will be completed before the first flight of a new or repaired model aircraft.
 - 3. At all flying sites a safety line(s) must be established in front of which all flying takes place. (AMA Document #706.)
 - (a) Only personnel associated with flying the model aircraft are allowed at or in front of the safety line.
 - (b) At air shows or demonstrations, a straight safety line must be established.
 - (c) An area away from the safety line must be maintained for spectators.
 - (d) Intentional flying behind the safety line is prohibited.
 - 4. RC model aircraft must use the radio-control frequencies currently allowed by the Federal Communications Commission (FCC). Only individuals properly licensed by the FCC are authorized to operate equipment on Amateur Band frequencies.
 - 5. RC model aircraft will not knowingly operate within three (3) miles of any pre-existing flying site without a frequency-management agreement. (AMA Documents #922 and #923.)
 - 6. With the exception of events flown under official AMA Competition Regulations, excluding takeoff and landing, no powered model may be flown outdoors closer than 25 feet to any individual, except for the pilot and the pilot's helper(s) located at the flightline.
 - 7. Under no circumstances may a pilot or other person touch an outdoor model aircraft in flight while it is still under power, except to divert it from striking an individual.
 - 8. RC night flying requires a lighting system providing the pilot with a clear view of the model's attitude and orientation at all times. Hand-held illumination systems are inadequate for night flying operations.
 - 9. The pilot of an RC model aircraft shall:
 - (a) Maintain control during the entire flight, maintaining visual contact without enhancement other than by corrective lenses prescribed for the pilot.
 - (b) Fly using the assistance of a camera or First-Person View (FPV) only in accordance with the procedures outlined in AMA Document #550.
 - (c) Fly using the assistance of autopilot or stabilization system only in accordance with the procedures outlined in AMA Document #560.
- C. FREE FLIGHT
 - 1. Must be at least 100 feet downwind of spectators and automobile parking when the model aircraft is launched.
 - 2. Launch area must be clear of all individuals except mechanics, officials, and other fliers.
 - 3. An effective device will be used to extinguish any fuse on the model aircraft after the fuse has completed its function.
- D. CONTROL LINE
 - 1. The complete control system (including the safety thong where applicable) must have an inspection and pull test prior to flying.
 - 2. The pull test will be in accordance with the current Competition Regulations for the applicable model aircraft category.
 - 3. Model aircraft not fitting a specific category shall use those pull-test requirements as indicated for Control Line Precision Aerobatics.
 - 4. The flying area must be clear of all utility wires or poles and a model aircraft will not be flown closer than 50 feet to any above-ground electric utility lines.
 - 5. The flying area must be clear of all nonessential participants and spectators before the engine is started.

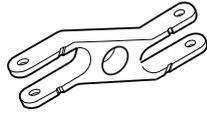
- ① : Fuselage
- ② : Canopy
- ③ : Wing
3a:(right), 3b:(left)
- ④ : Horizontal stabilizer
- ⑤ : Rudder
- ⑥ : Carbon tube wing
- ⑦ : Accessories for Wings
- ⑧ : Accessories for Horizontal stabilizer
- ⑨ : Accessories for Rudder
- ⑩ : Spinner



	Ailerons	2		2x10mm Tp Screw	16	⑦
	Flaps	2		Silicon 5mm	8	
	M2 Clip	8		1.7x45mm Push rod	4	
	Screw	2				

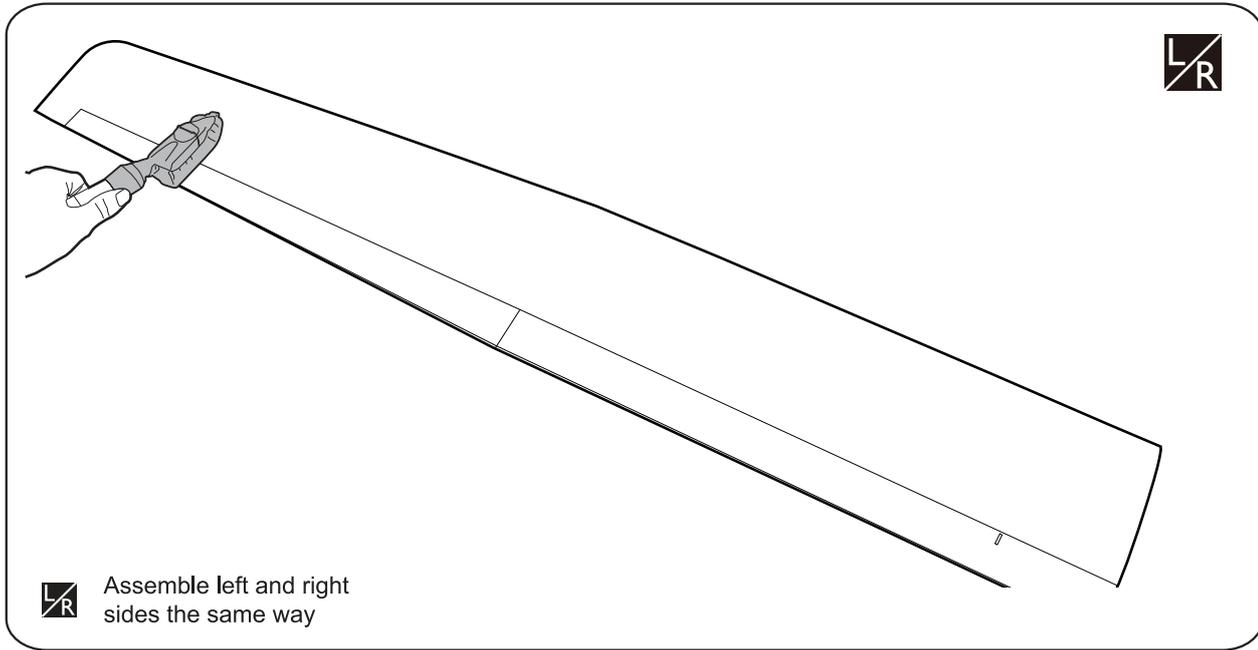
	3 x 20mm Cap Screw	1		M2 Clip	2	⑧
	3mm Washer	1		Silicon 5mm	2	
	2x1002mm Carbon push rod	1				
	Elevator	1				

	M2 Clip	2	⑨
	Silicon 5mm	2	
	2x965mm Carbon push rod	1	
	Rudder	1	

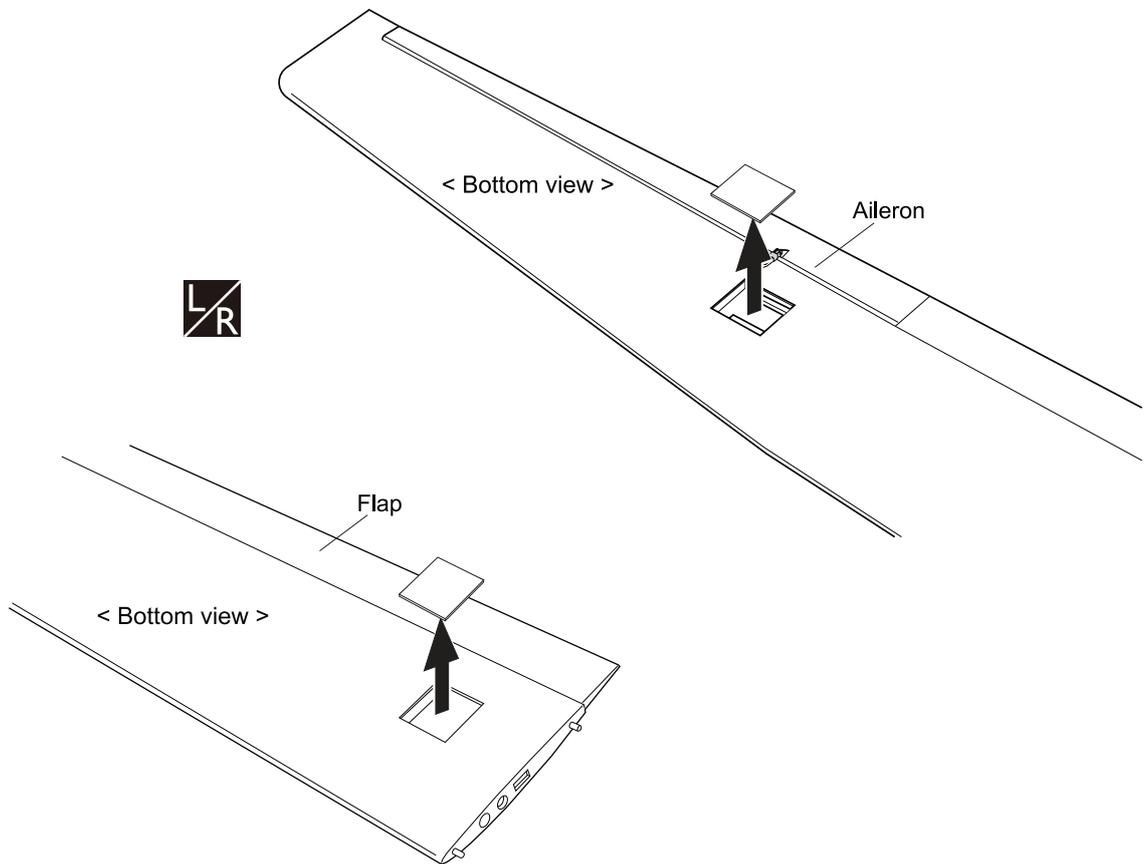
	3x12mm Screw	1	⑩
	Spinner 41mm	1	
	Rudder	1	
	Carbon tube	2	

PREPARATIONS

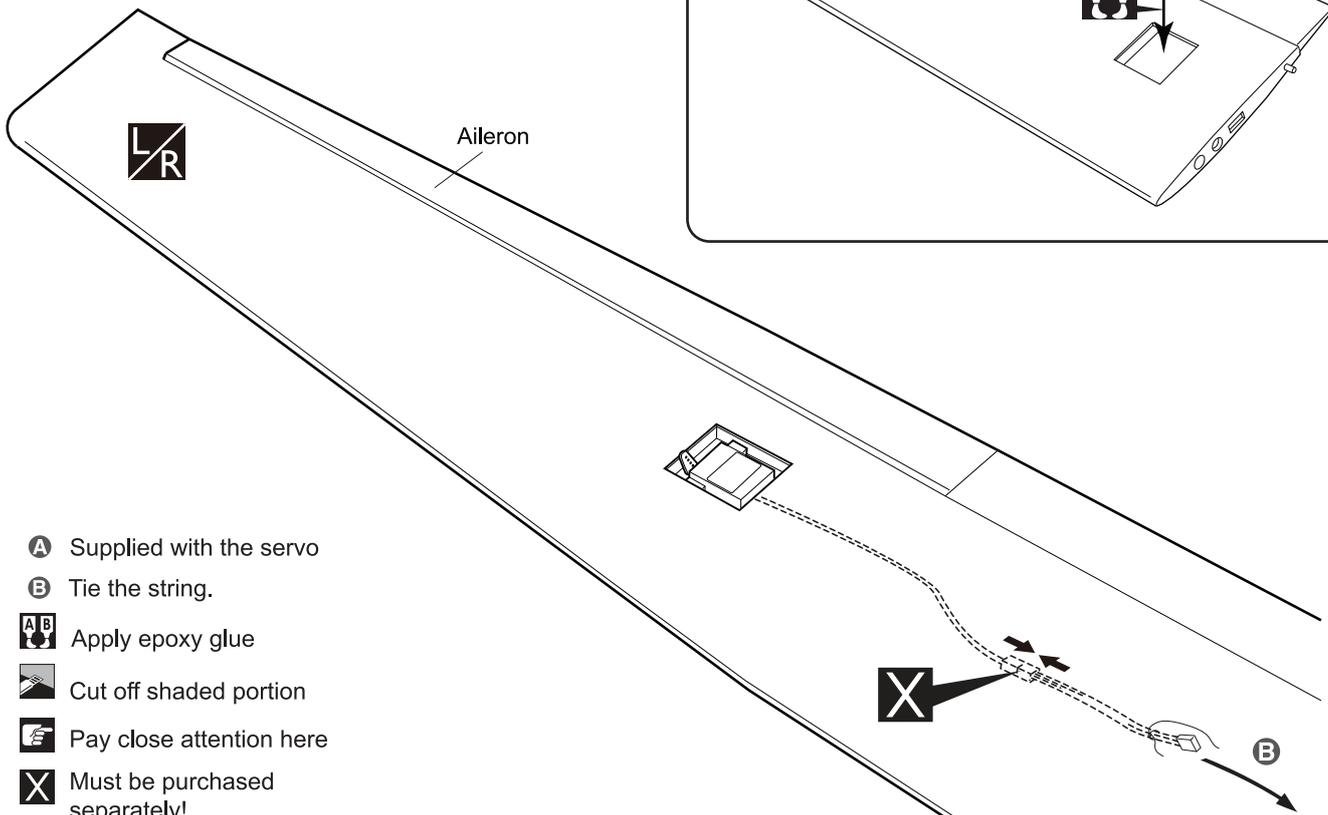
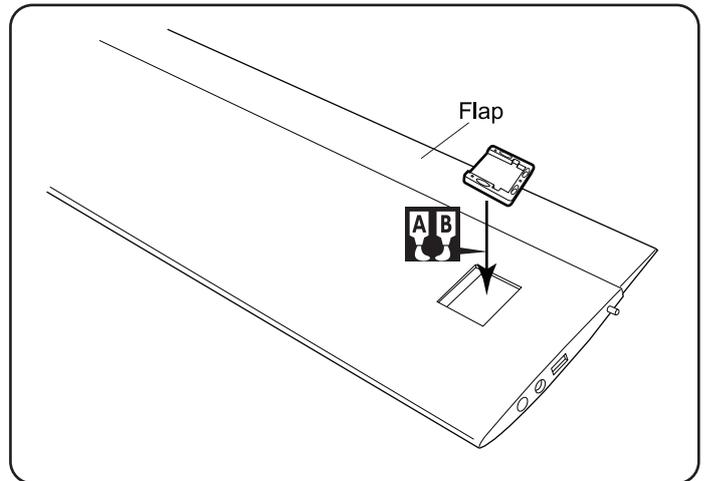
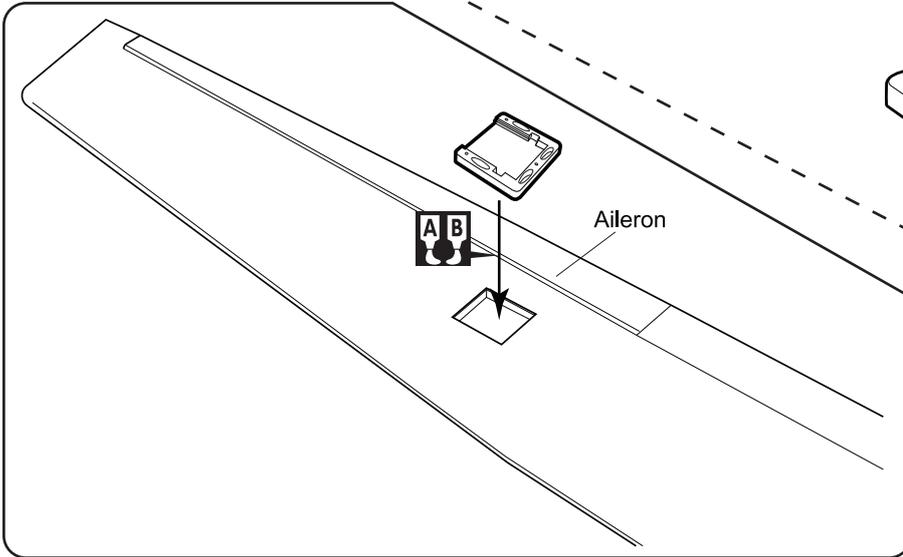
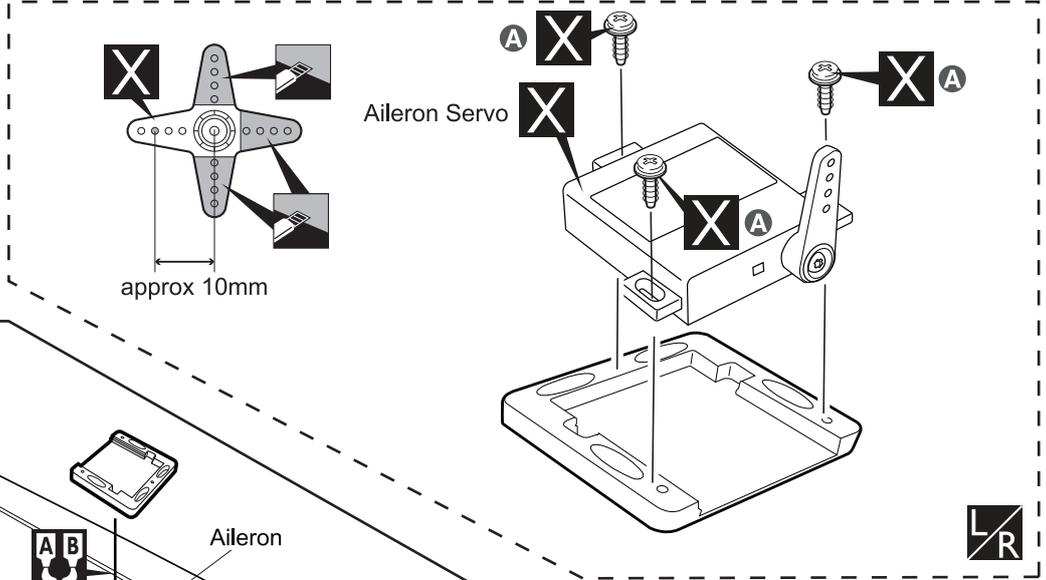
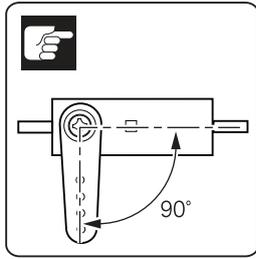
Use a covering iron with a covering sock on high heat to tighten the covering if necessary. Apply pressure over sheeted areas to thoroughly bond the covering to the wood.



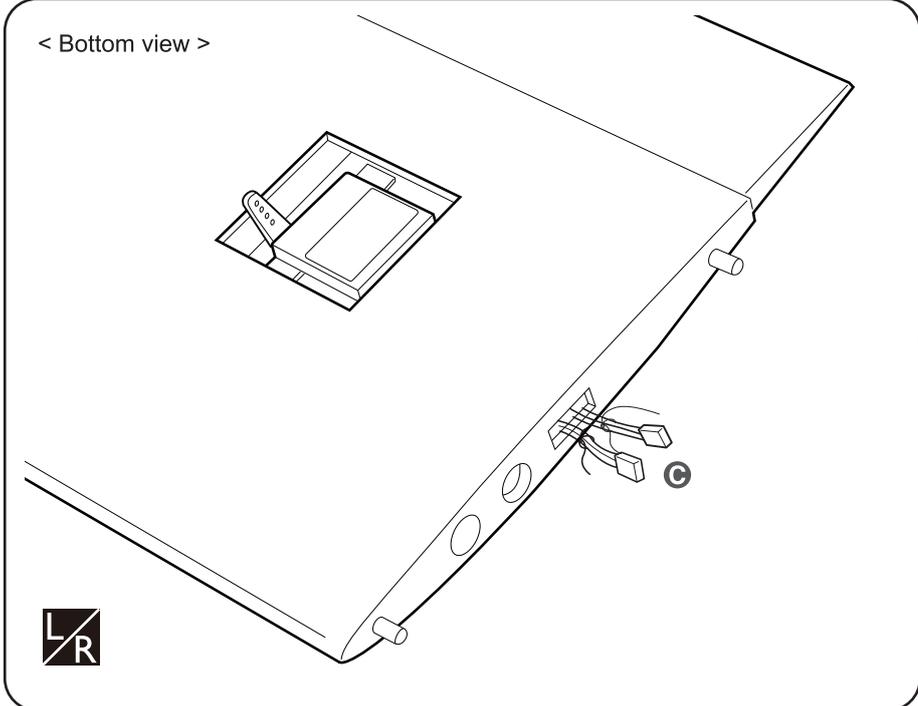
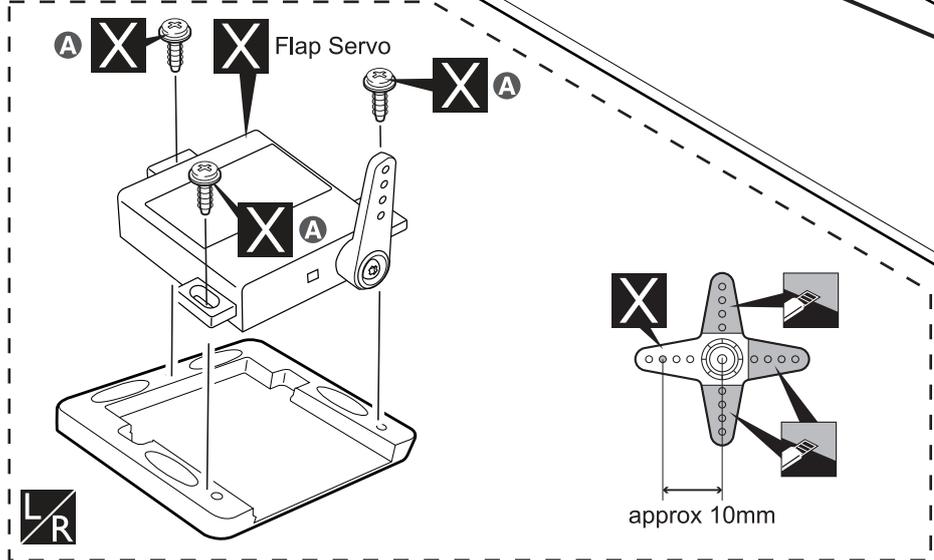
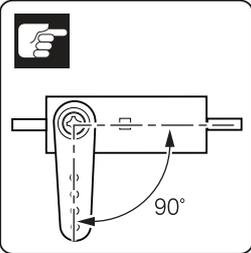
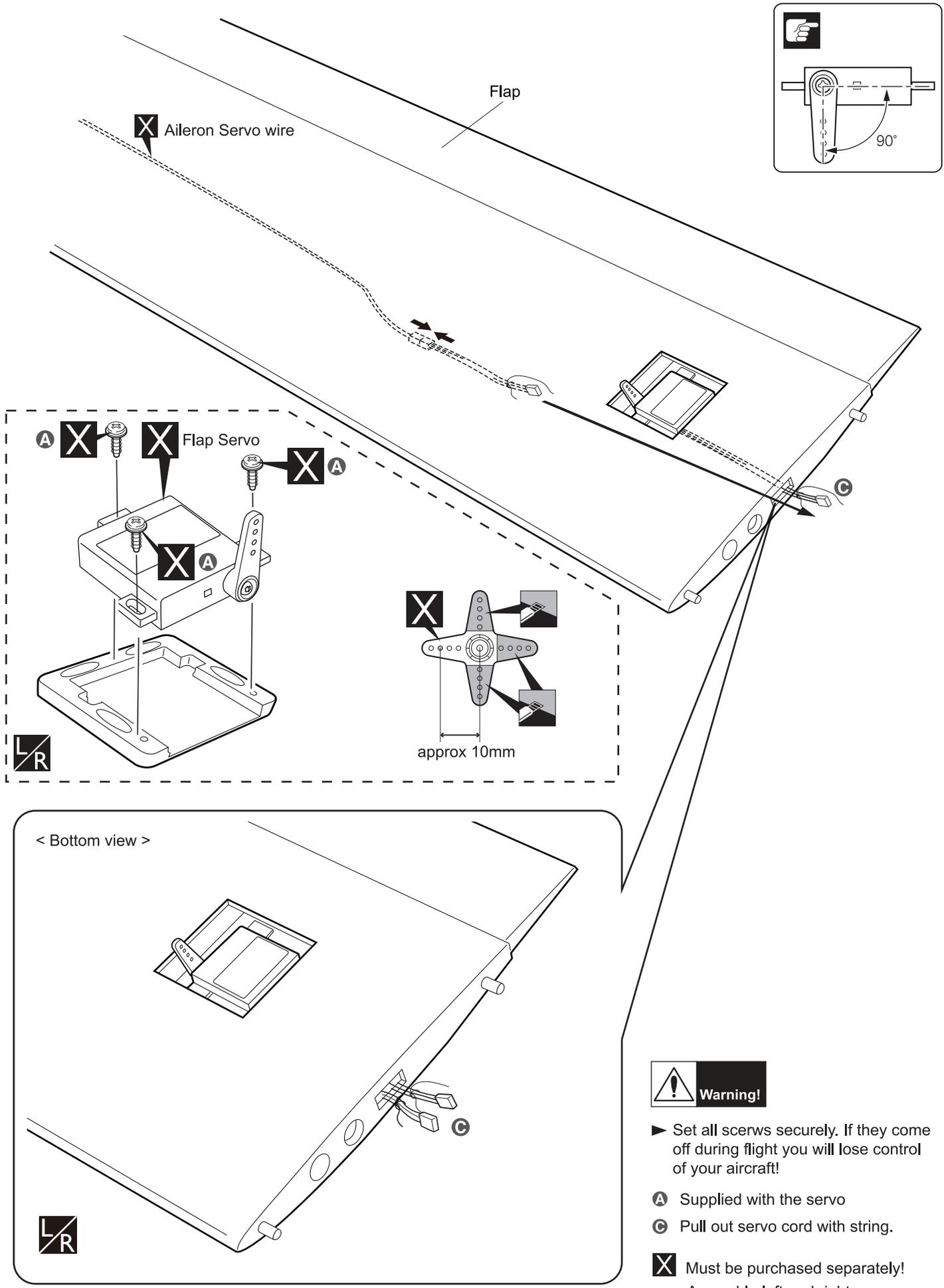
INSTALLING THE AILERONS AND FLAPS SERVOS



Assemble left and right sides the same way



- A** Supplied with the servo
- B** Tie the string.
- A B** Apply epoxy glue
- Cut off shaded portion
- Pay close attention here
- X** Must be purchased separately!
- L/R** Assemble left and right sides the same way



Warning!

▶ Set all screws securely. If they come off during flight you will lose control of your aircraft!

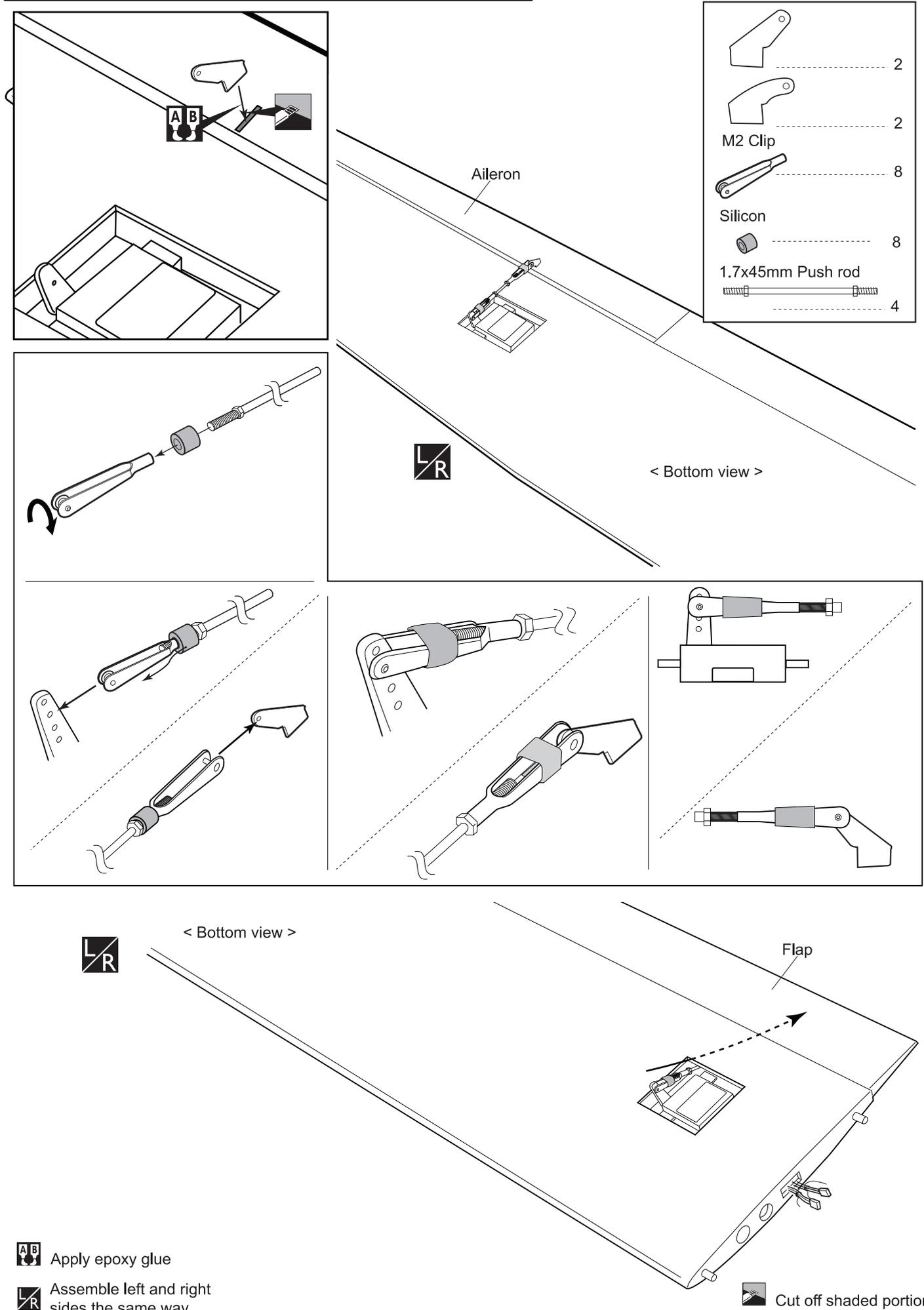
- Ⓐ Supplied with the servo
- Ⓒ Pull out servo cord with string.

X Must be purchased separately!

L/R Assemble left and right sides the same way

[Shaded Area] Cut off shaded portion

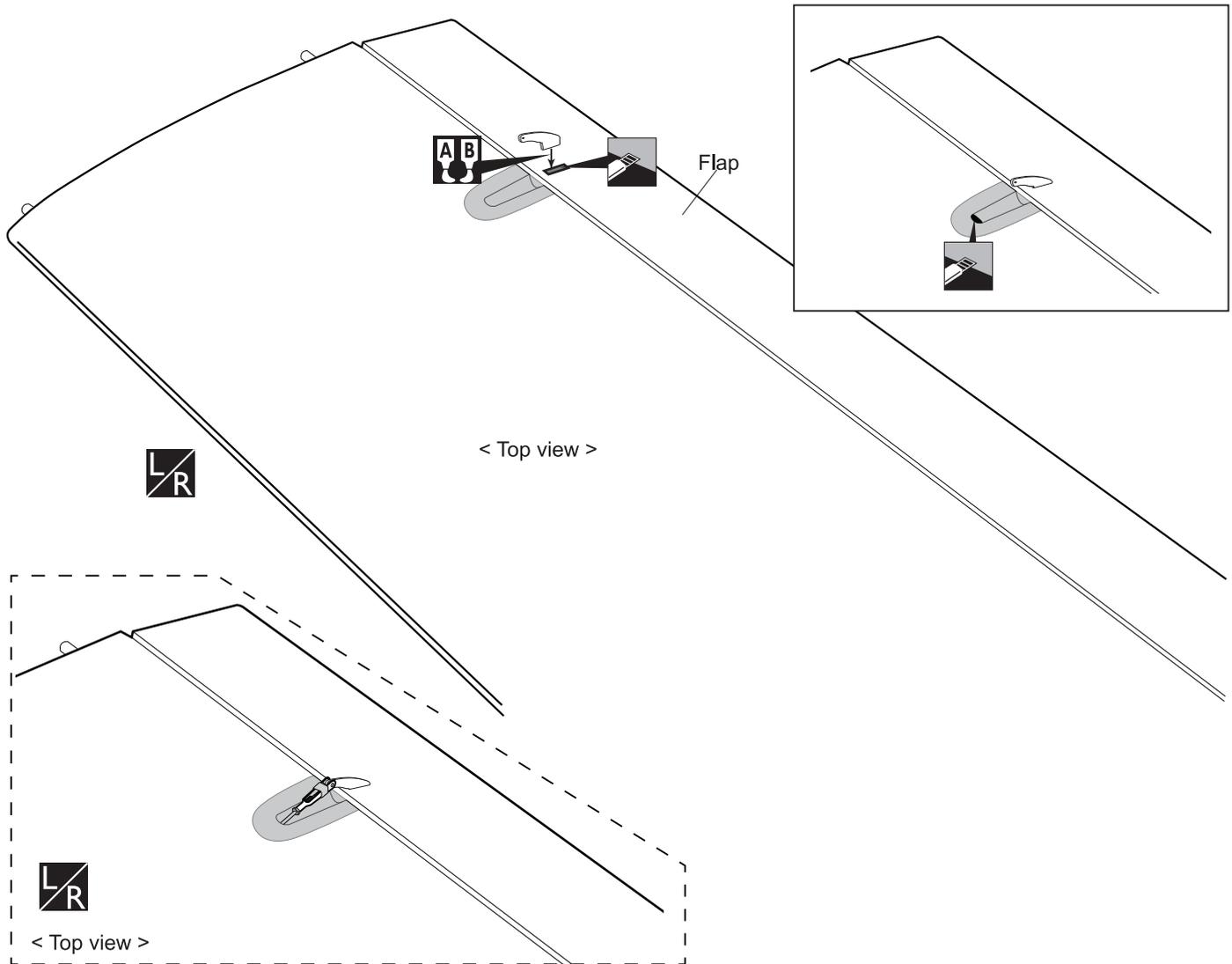
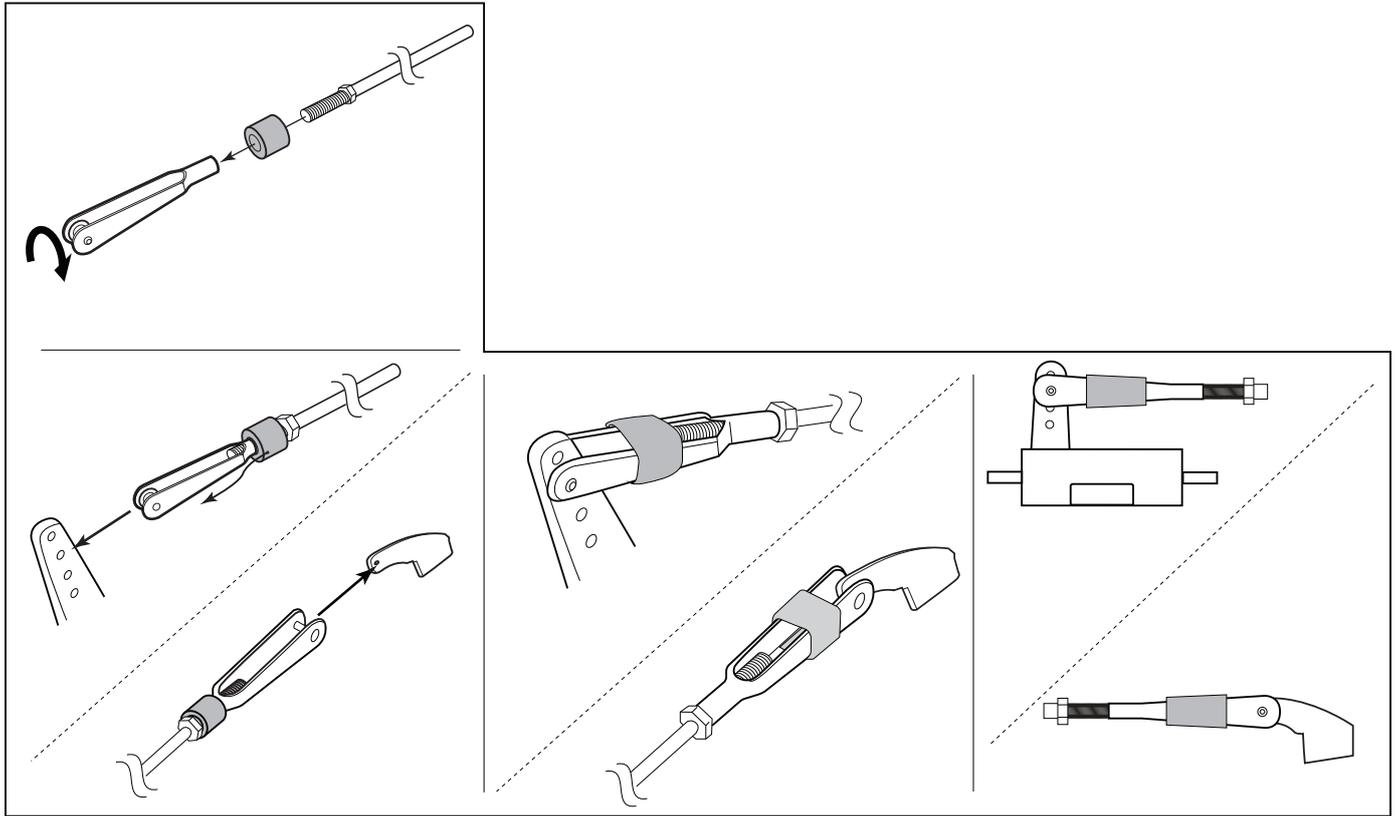
INSTALLING THE AILERONS AND FLAPS LINKAGES



AB Apply epoxy glue

LR Assemble left and right sides the same way

Shaded part Cut off shaded portion



< Top view >

L/R

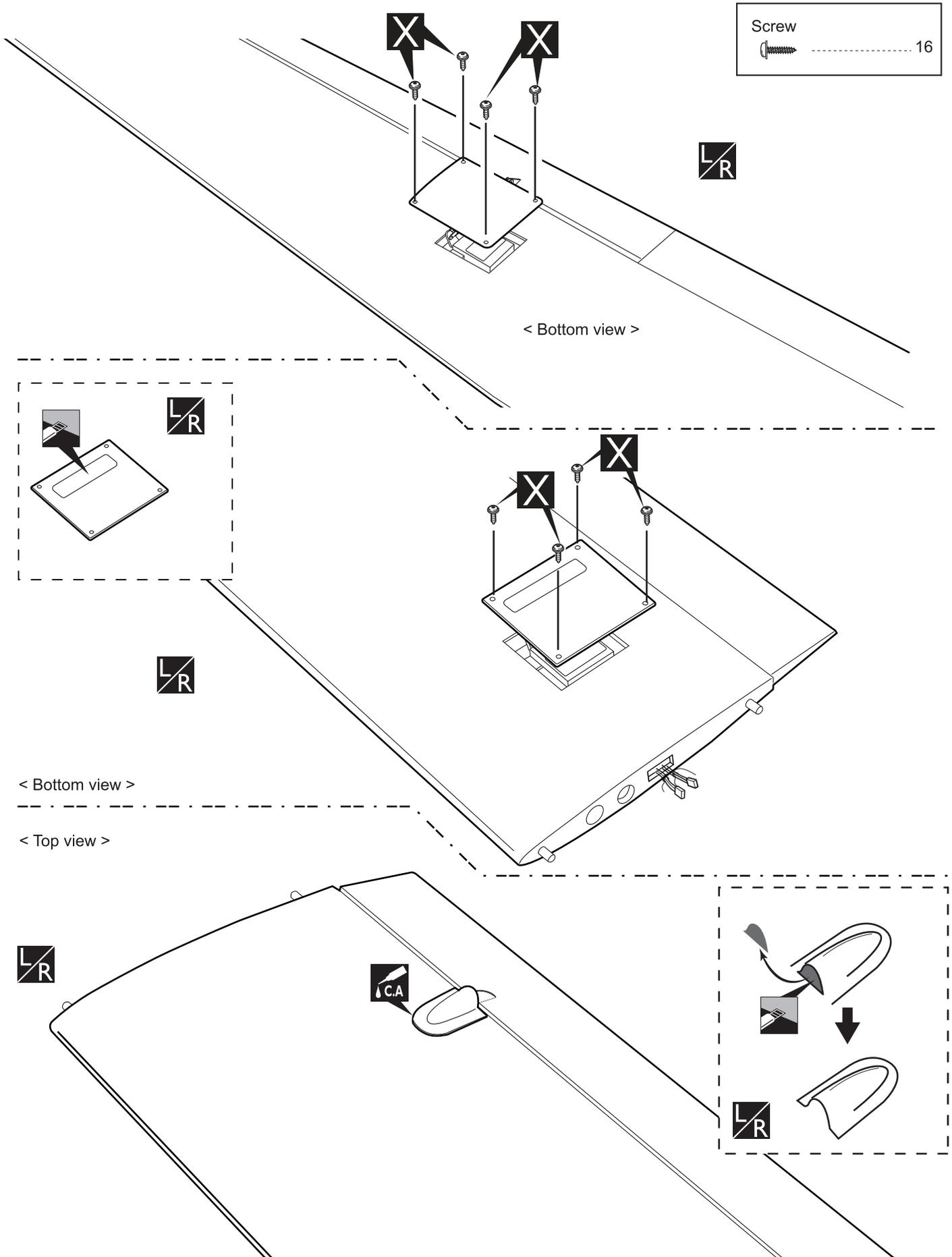
< Top view >

A/B Apply epoxy glue

[Shaded Box] Cut off shaded portion

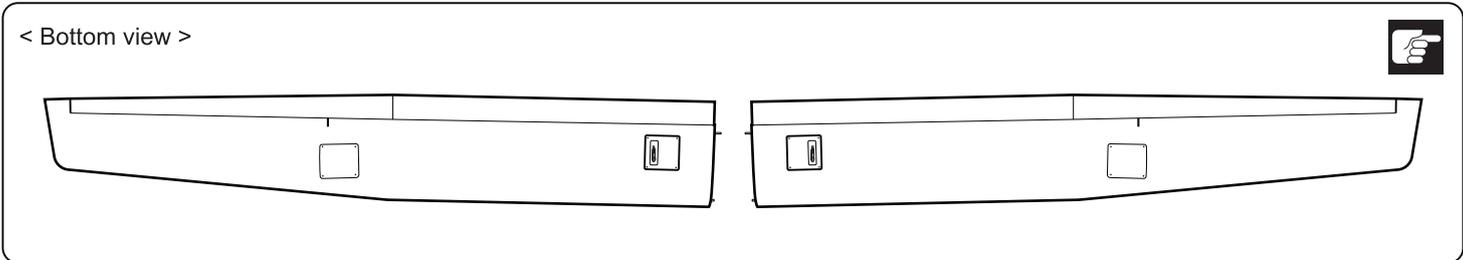
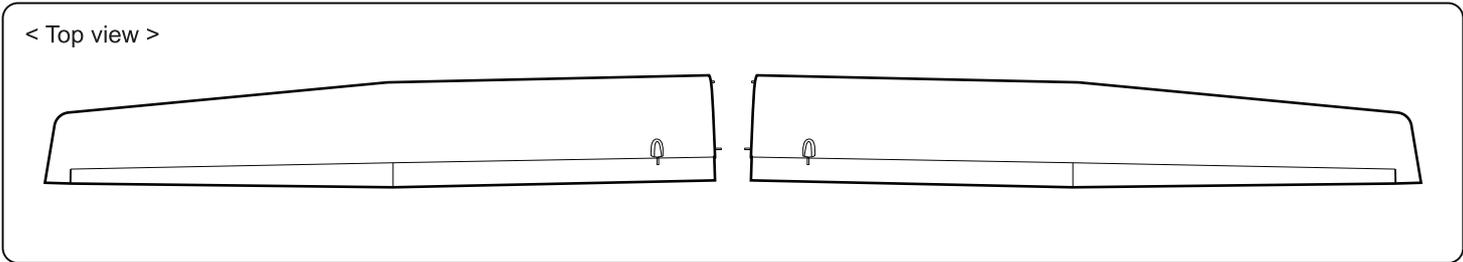
L/R Assemble left and right sides the same way

INSTALLING THE COMPOSITE COVER



- Must be purchased separately!
- Apply instant glue (CA glue, super glue).

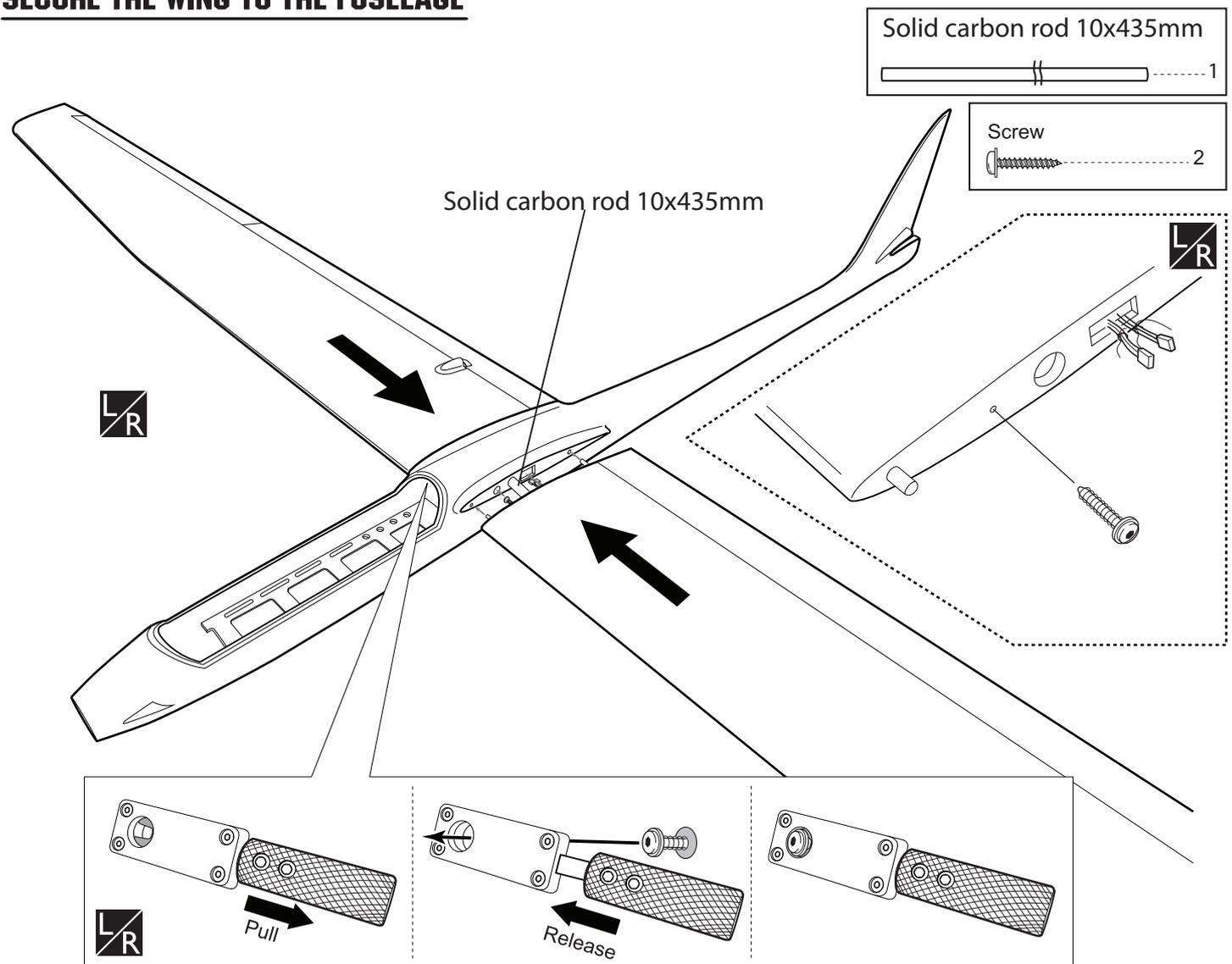
- Cut off shaded portion
- Assemble left and right sides the same way



 Pay close attention here



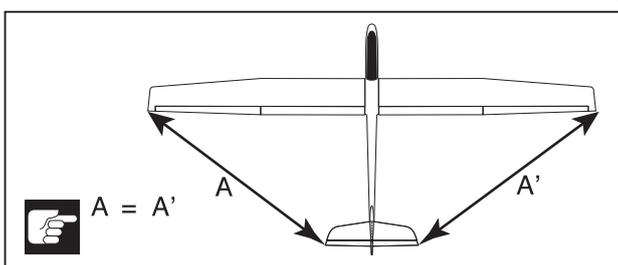
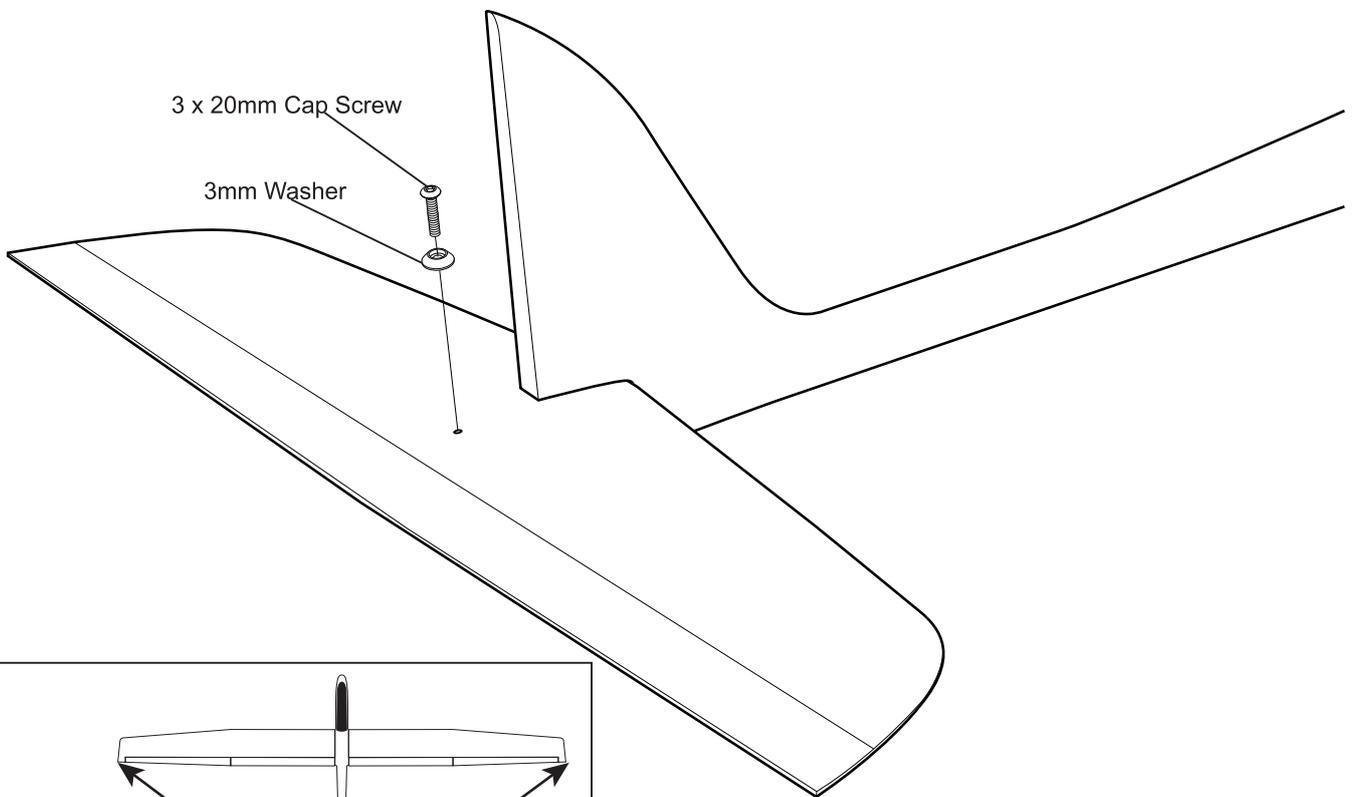
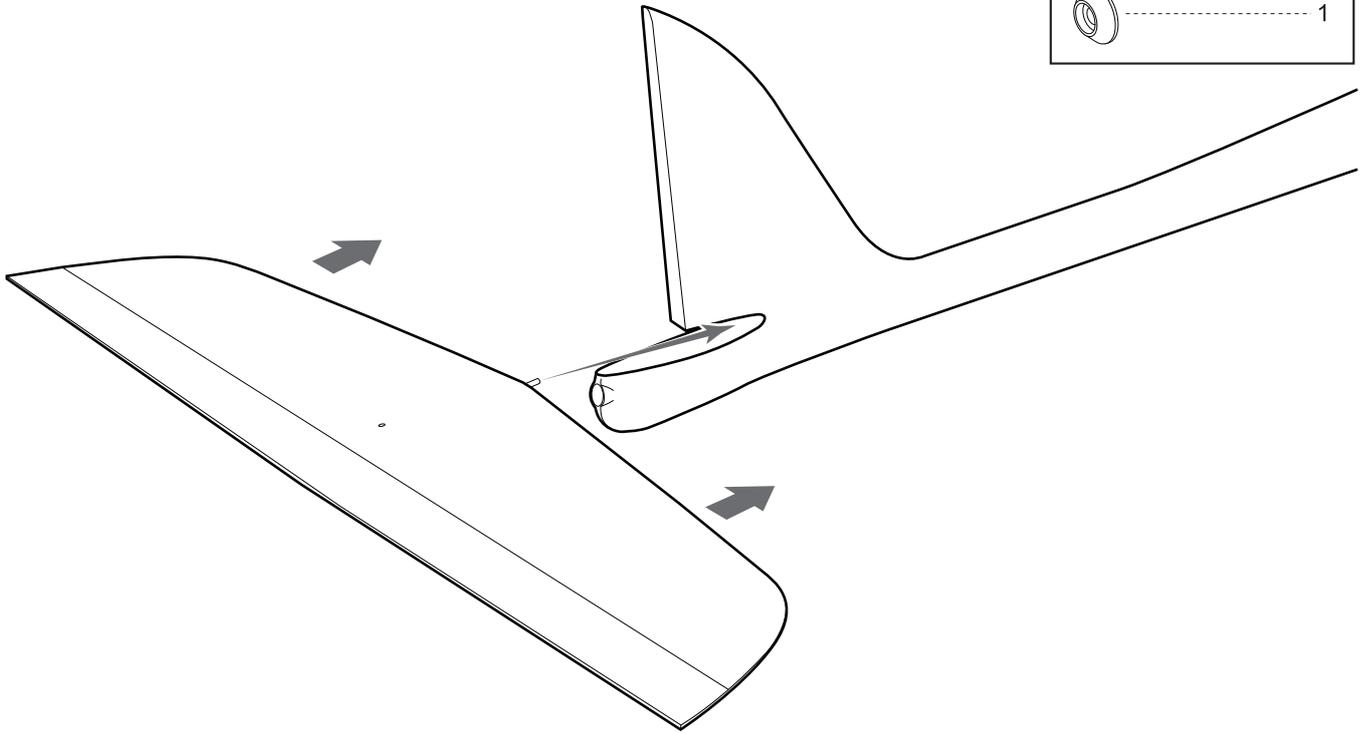
SECURE THE WING TO THE FUSELAGE



 Assemble left and right sides the same way

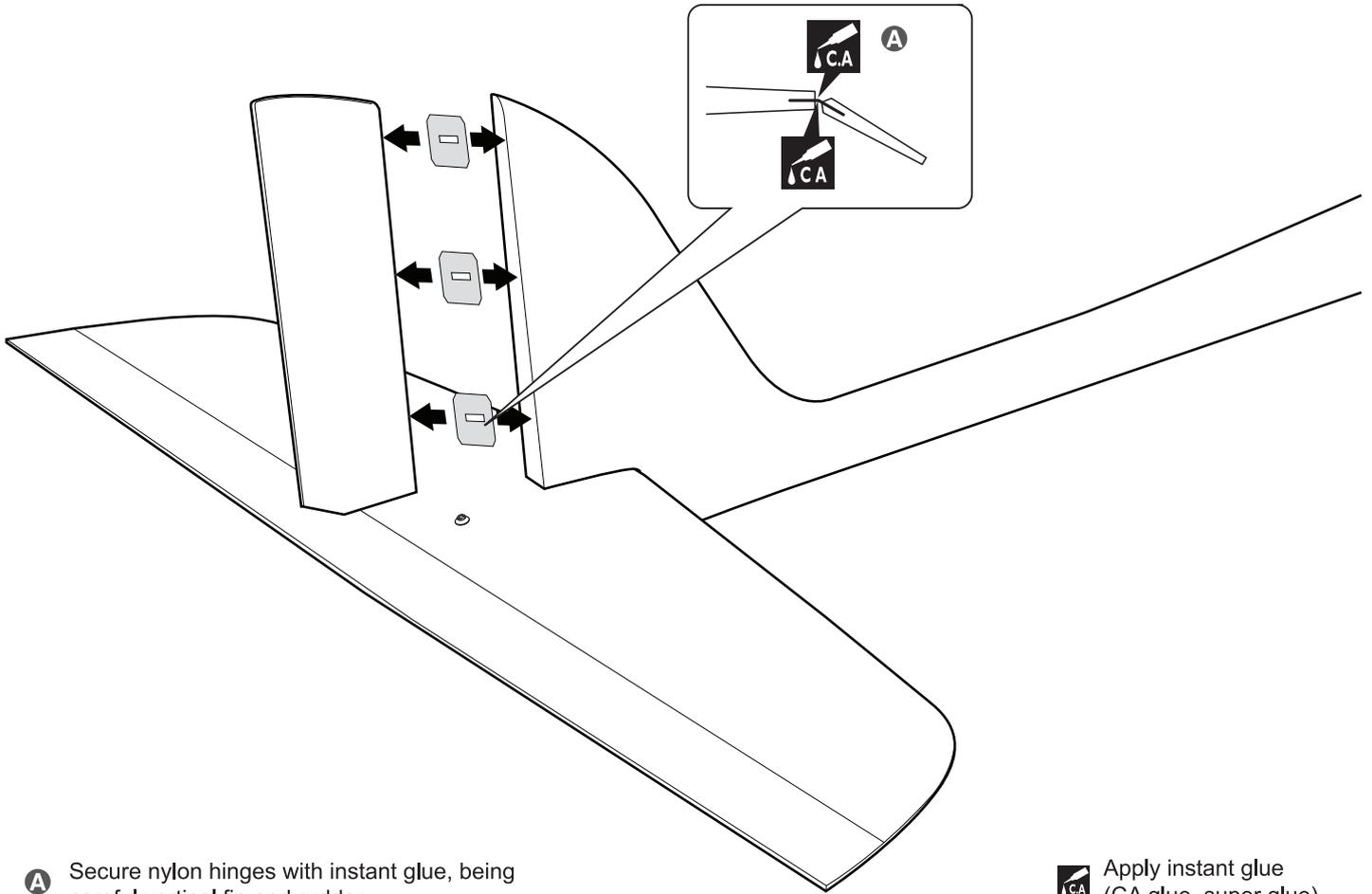
HORIZONTAL STABILIZER INSTALLATION

3 x 20mm Cap Screw	1
3mm Washer	1



Pay close attention here

INSTALLING THE VERTICAL STABILIZER

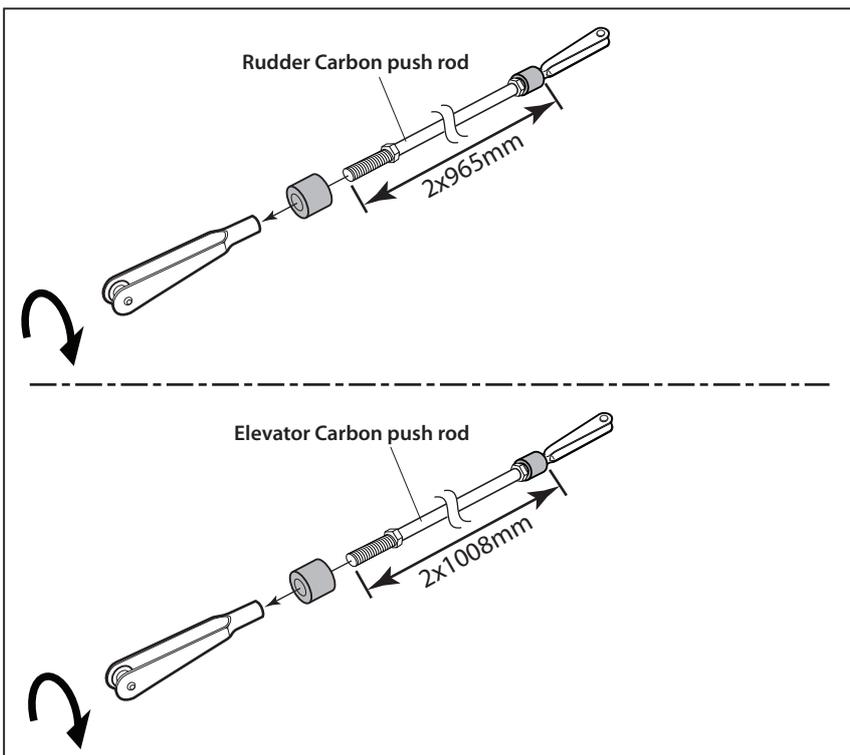


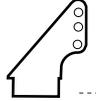
A Secure nylon hinges with instant glue, being careful vertical fin and rudder.

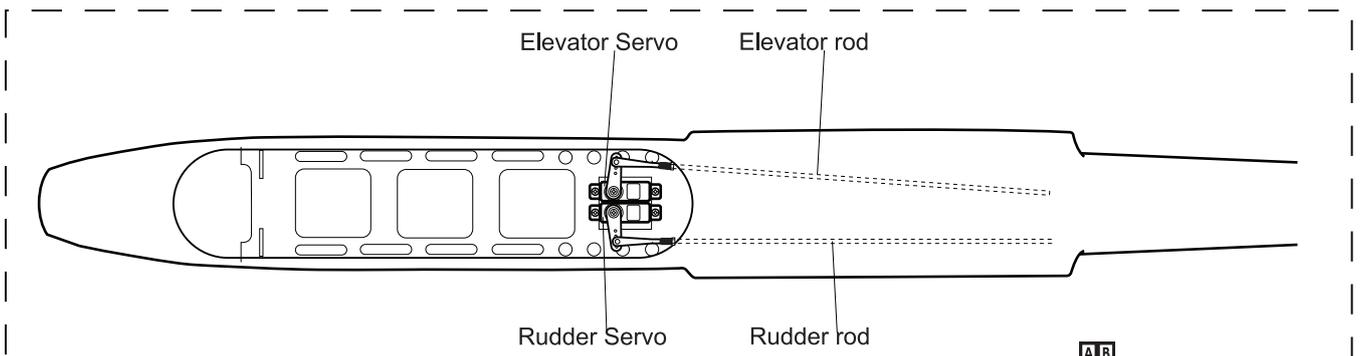
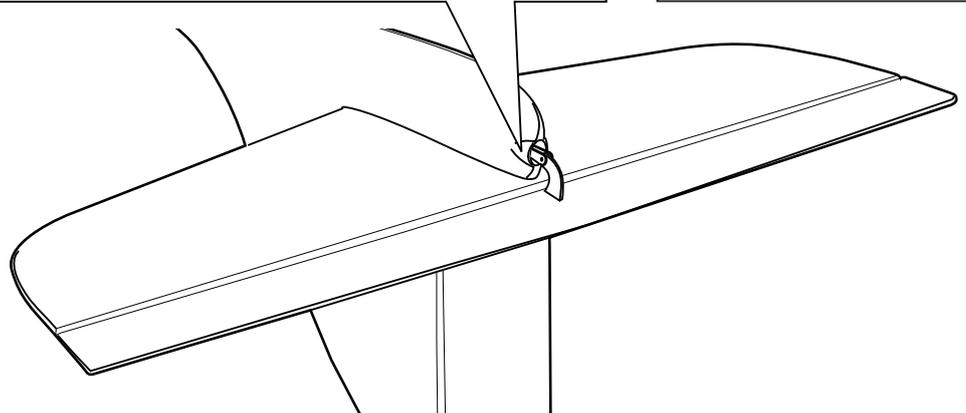
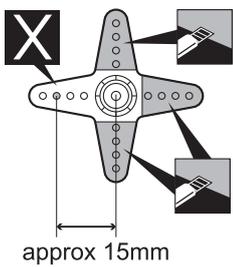
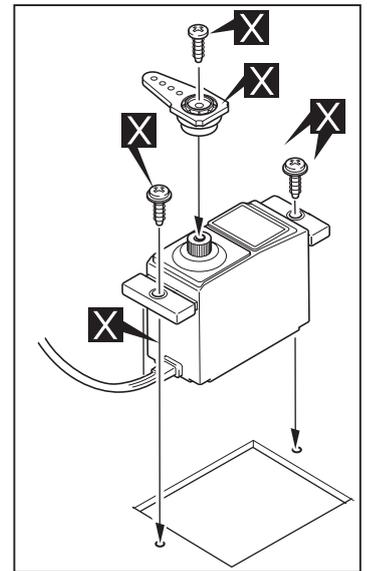
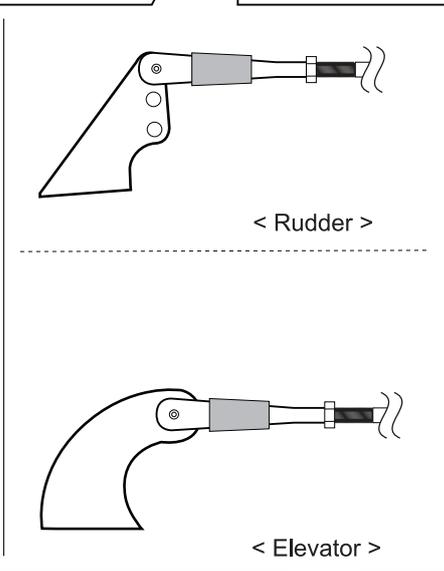
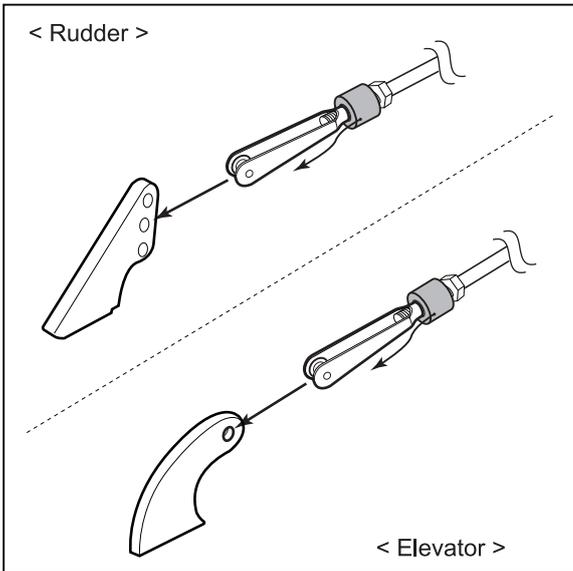
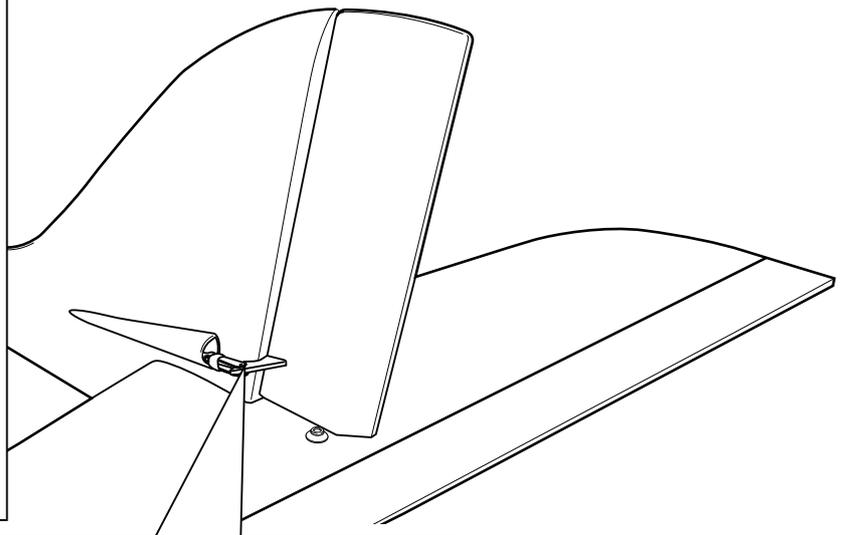
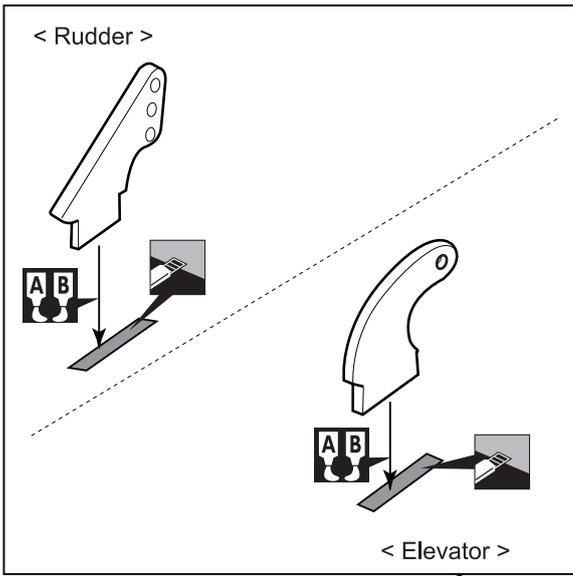
 Apply instant glue (CA glue, super glue).



INSTALLING THE RUDDER AND ELEVATOR PUSHROD



M2 Clip	4
Silicon	4
2x1008mm Carbon push rod	1
2x965mm Carbon push rod	1
	1
	1

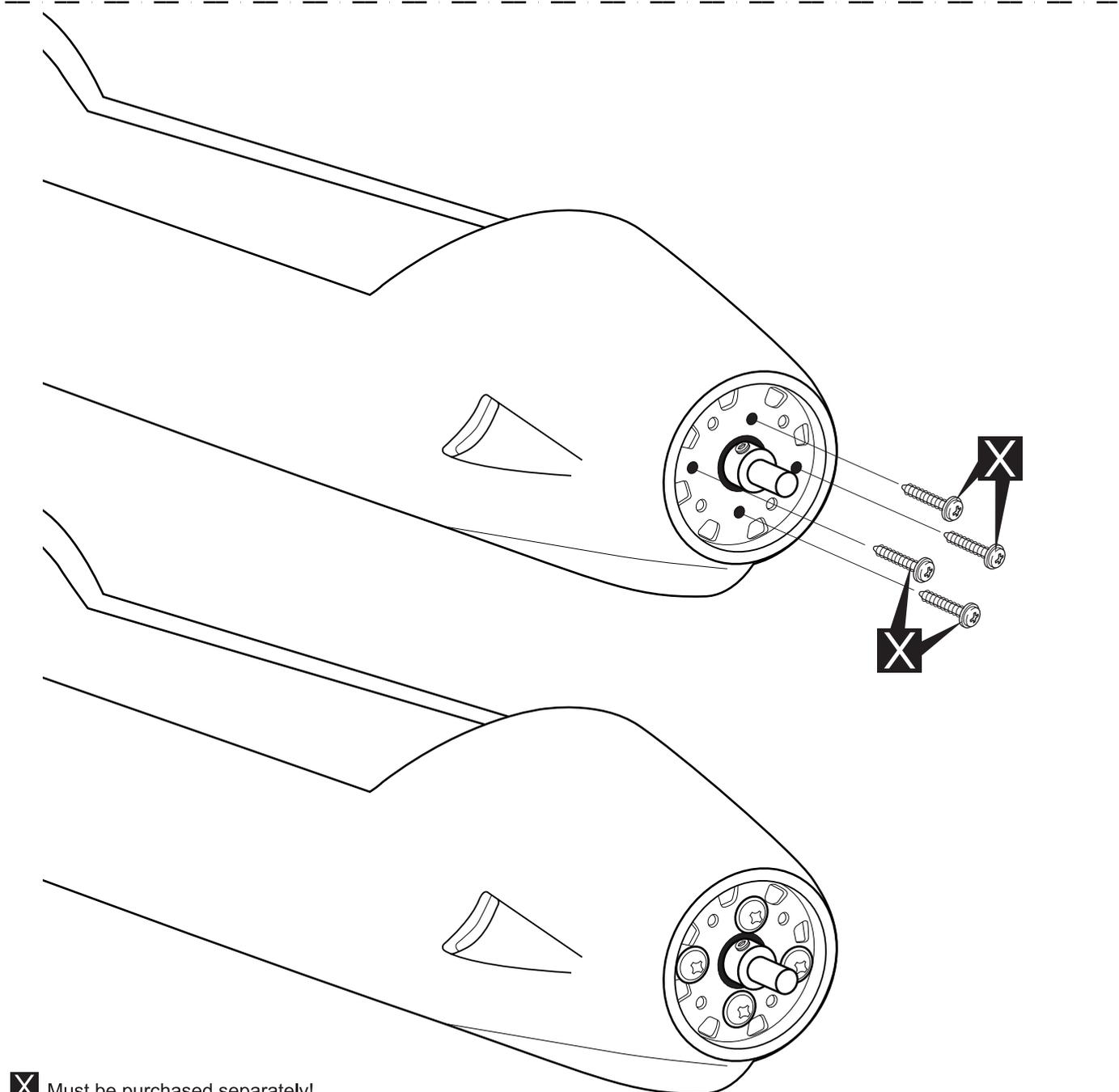
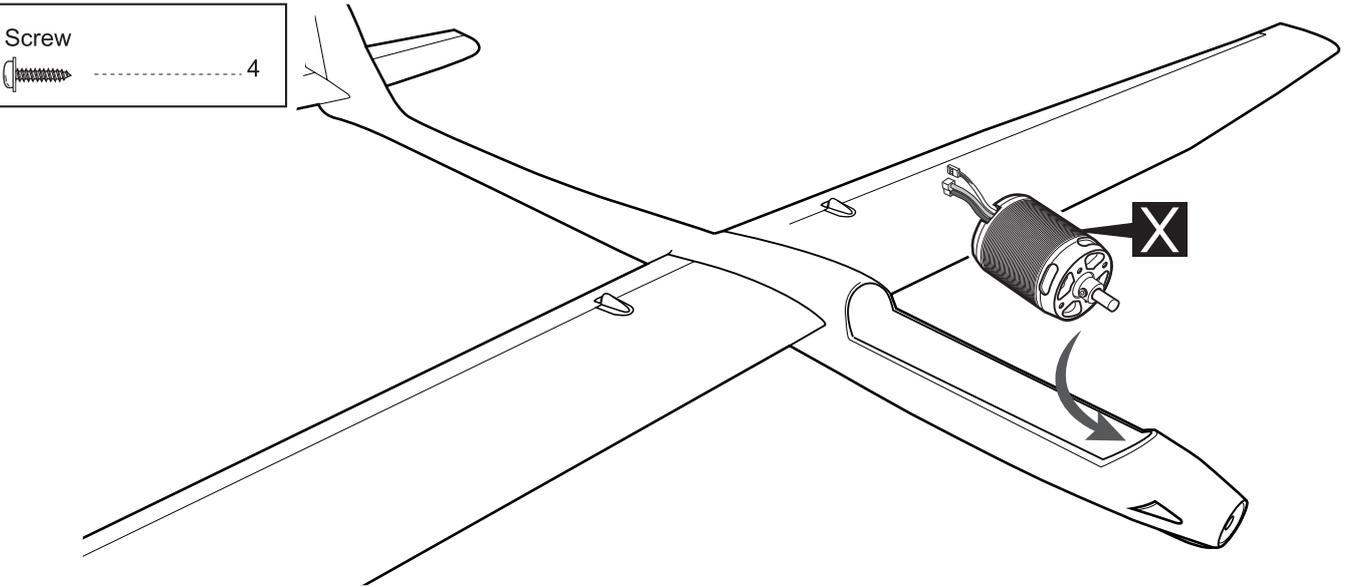


X Must be purchased separately!

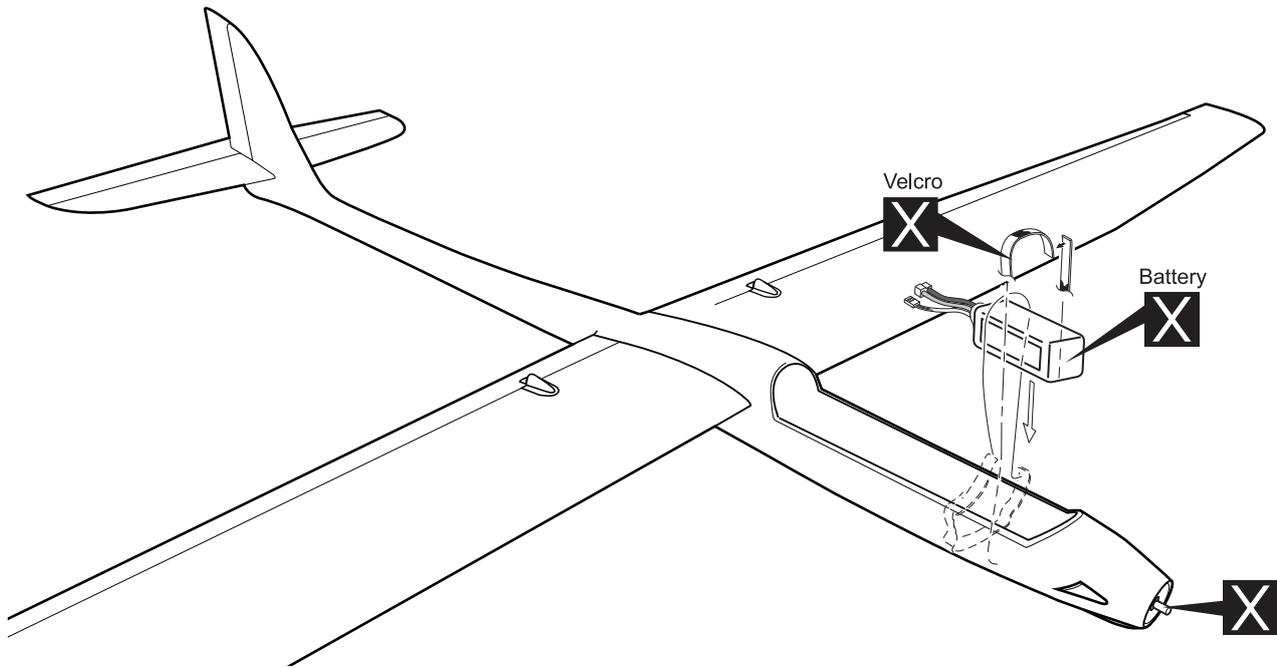
AB Apply epoxy glue

▲ Cut off shaded portion

INSTALLING THE ELECTRIC MOTOR (NOT INCLUDED WITH THE KIT, NEED TO PURCHASE SEPARATELY)



X Must be purchased separately!



X Must be purchased separately!



INSTALLING THE RECEIVER AND BATTERY

1. Plug the servo leads and the switch lead into the receiver. You may want to plug an aileron extension into the receiver to make plugging in the aileron servo lead easier when you are installing the wing. Plug the battery pack lead into the switch.
2. Wrap the receiver and battery pack in the protective foam to protect them from vibration. Use a rubber band or masking tape to hold the foam in place.

INSTALLING THE SWITCH

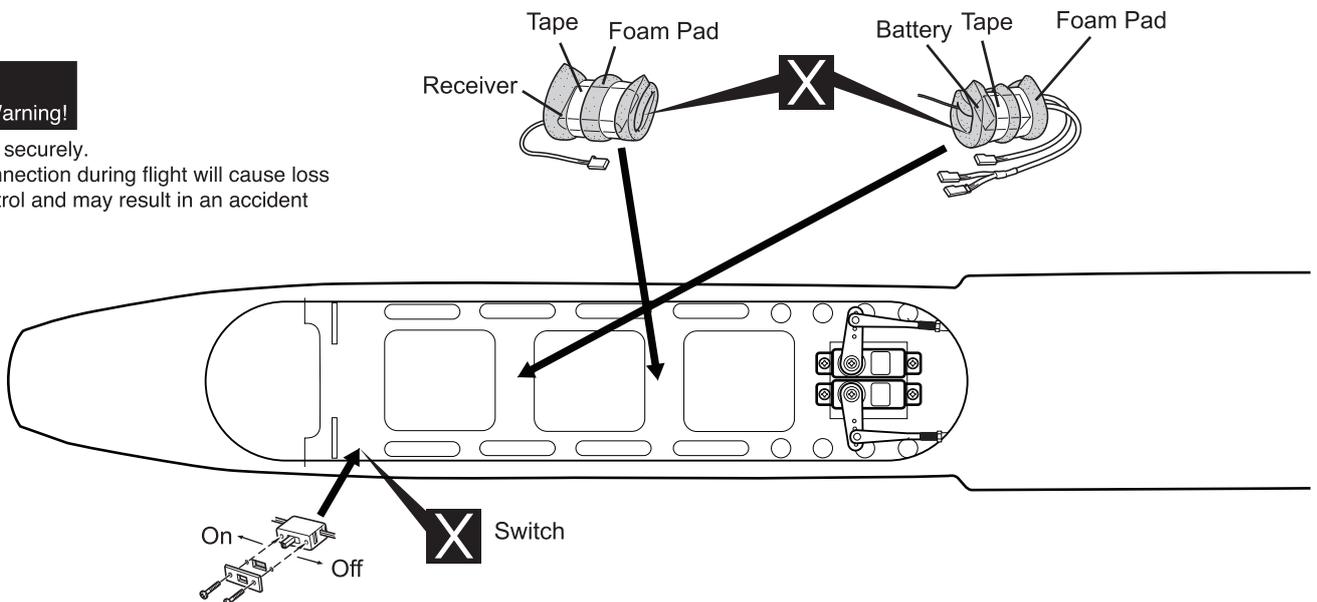
1. The switch should be mounted on the fuselage side, opposite the muffler, close enough to the receiver so the lead will reach. Use the face plate of the switch cut out and locate the mounting holes.
2. Cut out the switch hole using a modeling knife. Use a 2mm drill bit and drill out the two mounting holes through the fuselage side.
3. Secure the switch in place using the two machine screws provided with the radio system.

! Do not permanently secure the receiver and battery until after balancing the model.



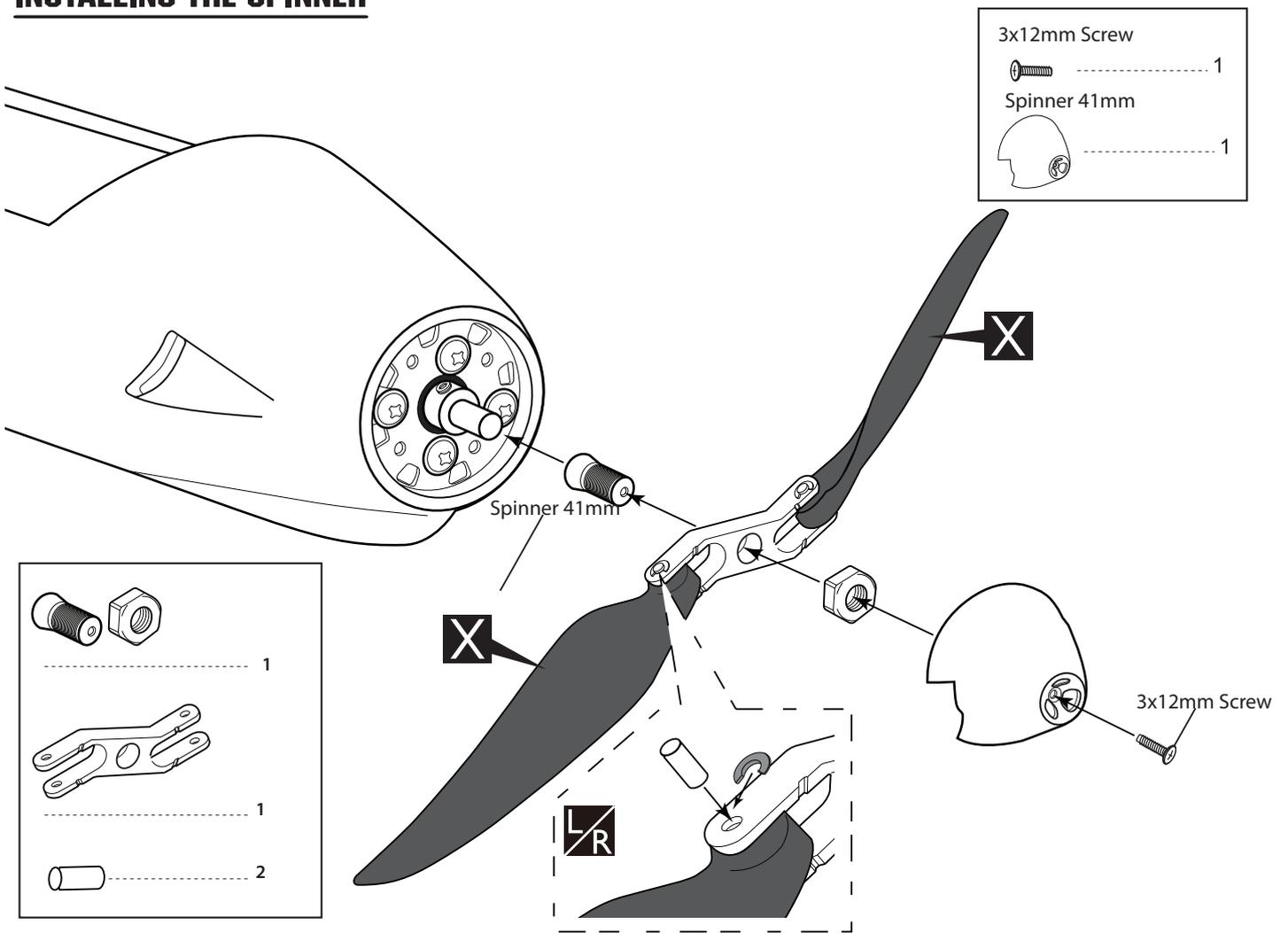
Warning!

▶ Attach securely. Disconnection during flight will cause loss of control and may result in an accident



X Must be purchased separately!

INSTALLING THE SPINNER

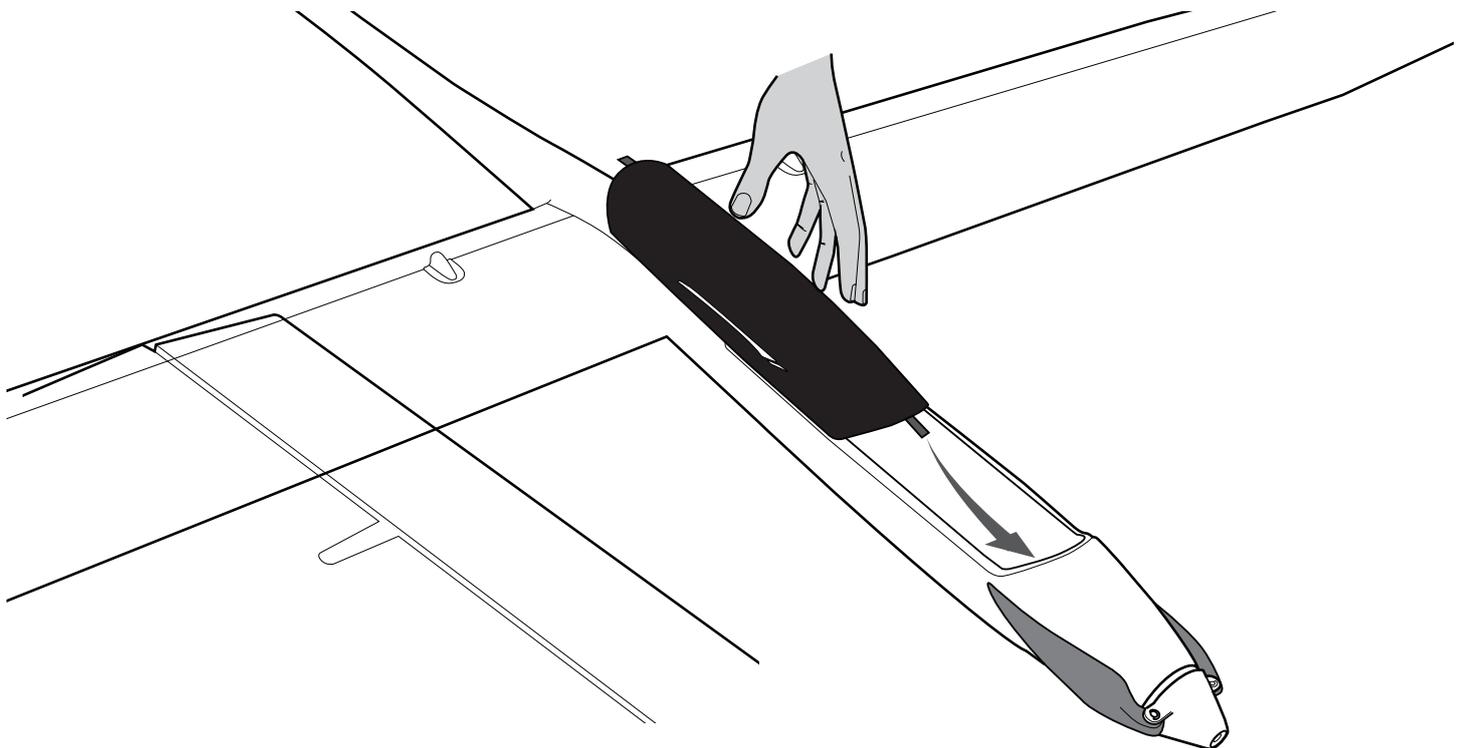


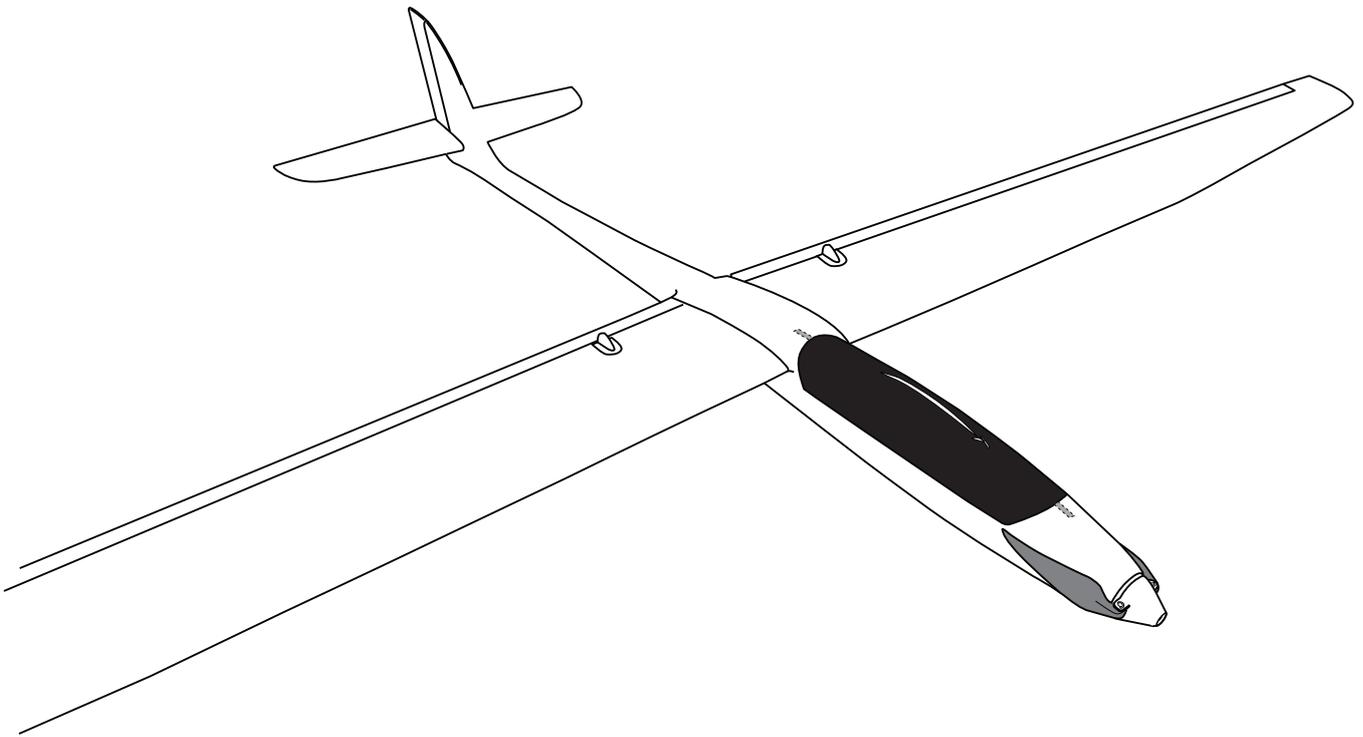
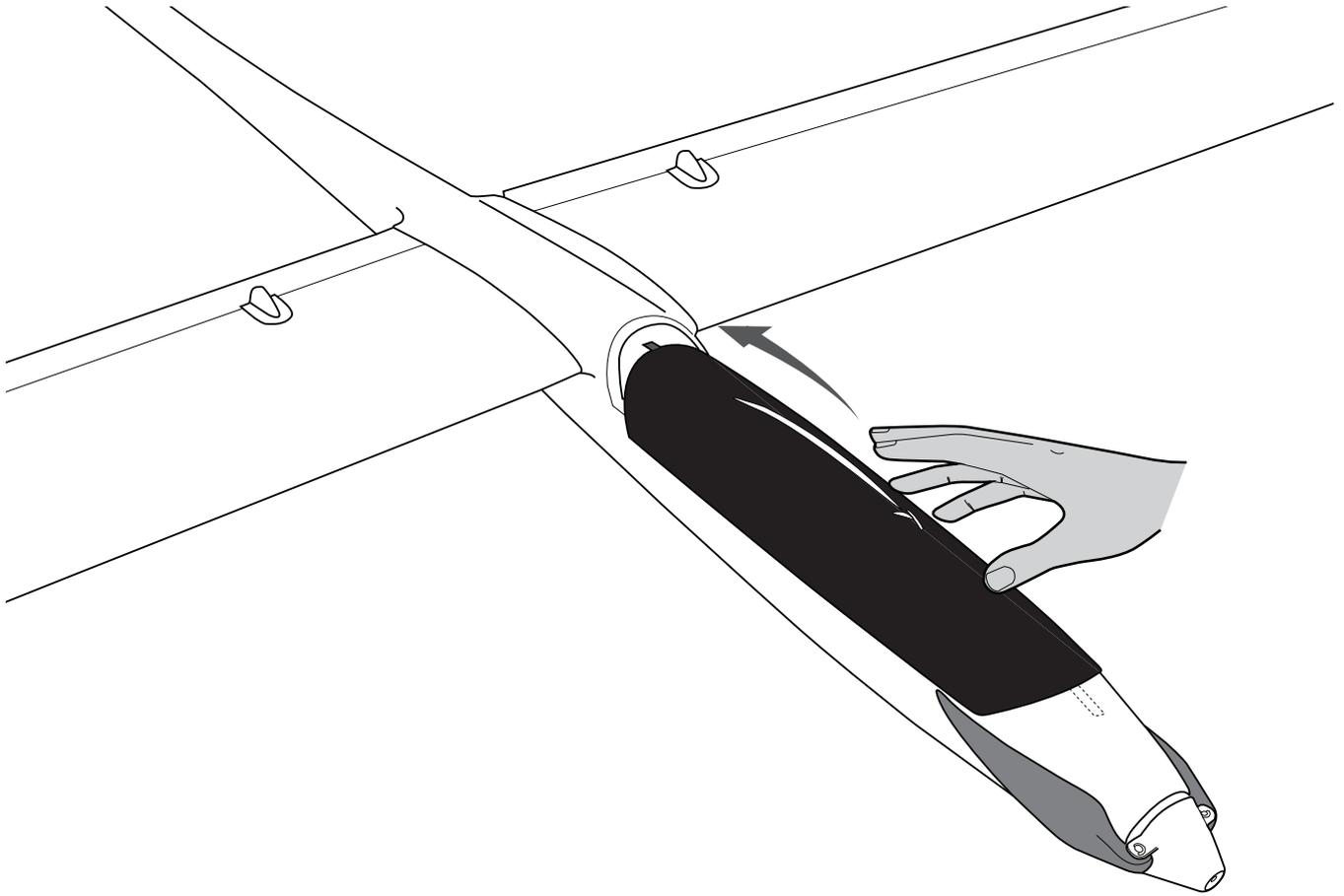
X Must be purchased separately!

L/R Assemble left and right sides the same way



INSTALLING THE CANOPY





LATERAL BALANCE

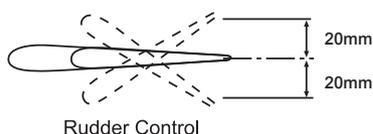
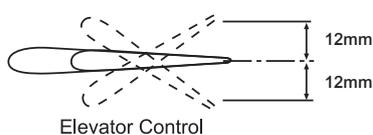
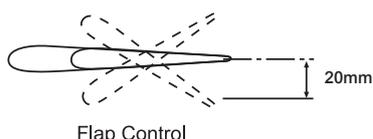
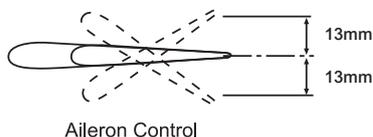
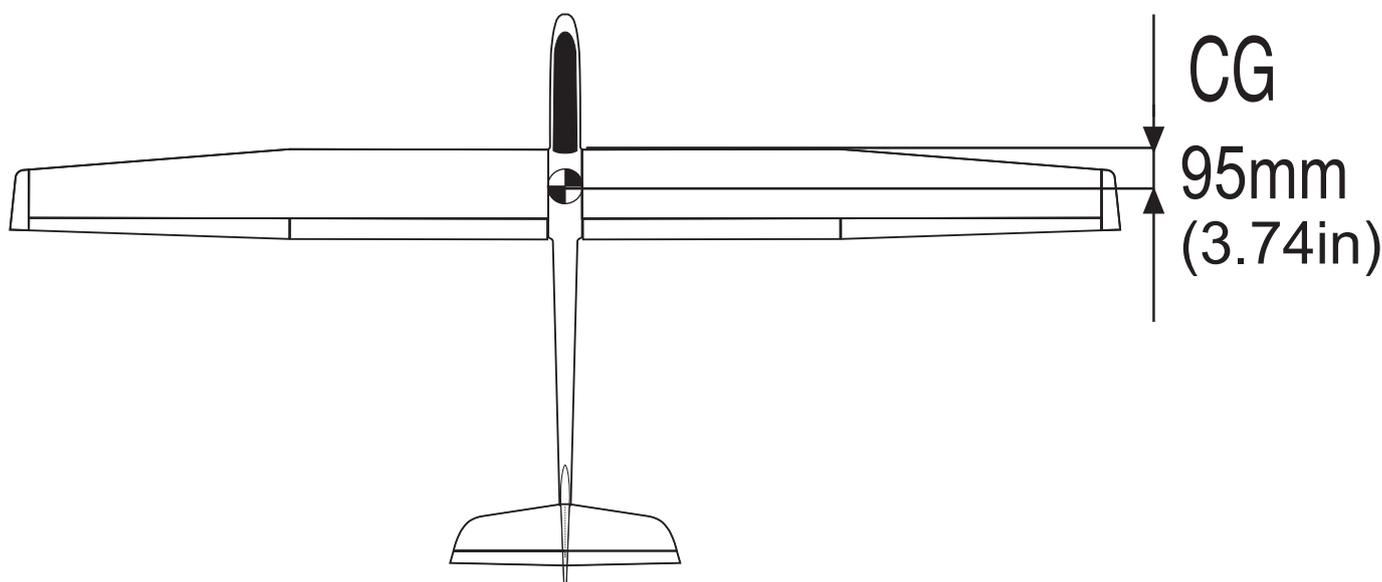
 After you have balanced a plane on the C.G. You should laterally balance it. Doing this will help the airplane track straighter.

1. Turn the airplane upside down. Attach one loop of heavy string to the engine crankshaft and one to the tail wheel wire. With the wings level, carefully lift the airplane by the string. This may require two people to make it easier.
2. If one side of the wing fall, that side is heavier than the opposite. Add small amounts of lead weight to the bottom side of the lighter wing half's wing tip. Follow this procedure until the wing stays level when you lift the airplane.

CONTROL THROWS

1. We highly recommend setting up a plane using the control throws listed.
2. The control throws should be measured at the widest point of each control surface.
3. Check to be sure the control surfaces move in the correct directions.

Aileron	13mm up	13mm down
Elevator	12mm up	12mm down
Rudder	20mm right	20mm left
Flap	20mm down	

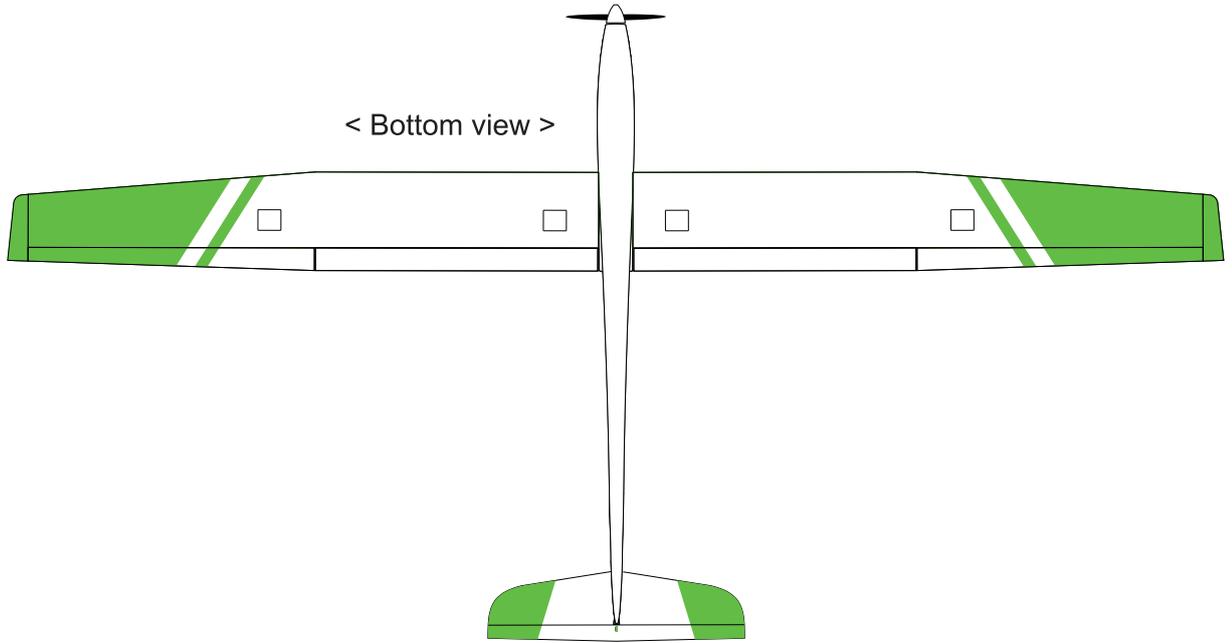


FLIGHT PREPARATION PRE FLIGHT CHECK

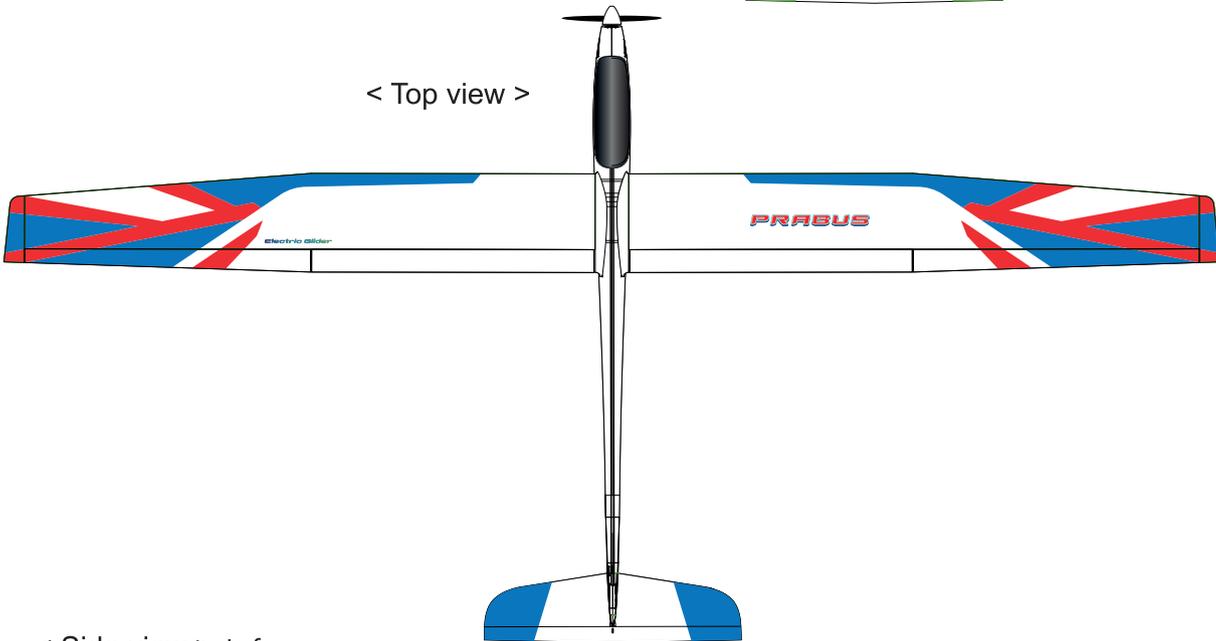
1. Completely charge your transmitter and receiver batteries before your first day of flying.
2. Check every bolt and every glue joint in your plane to ensure that everything is tight and well bonded.
3. Double check the balance of the airplane
4. Check the control surface
5. Check the receiver antenna . It should be fully extended and not coiled up inside the fuselage.
6. Properly balance the propeller.

DECORATION

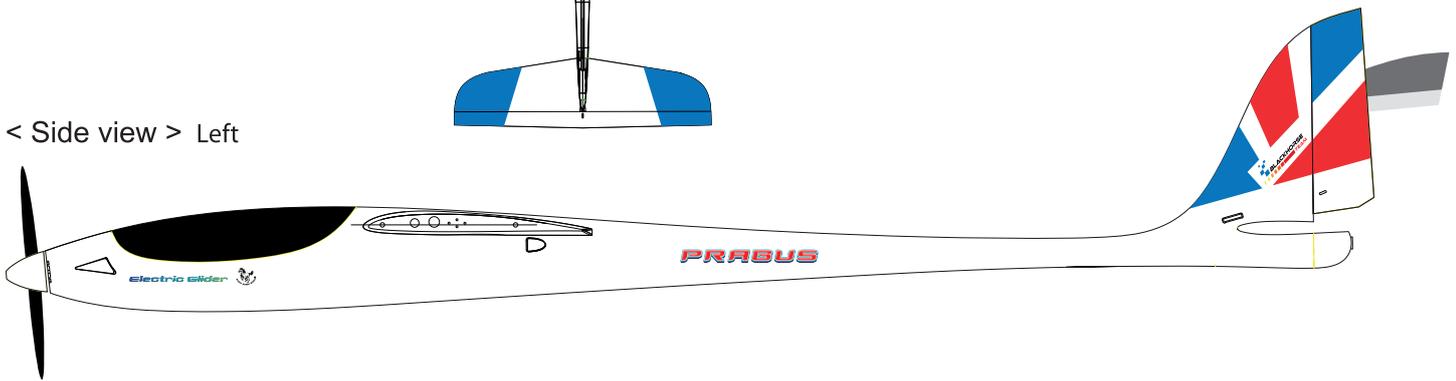
< Bottom view >



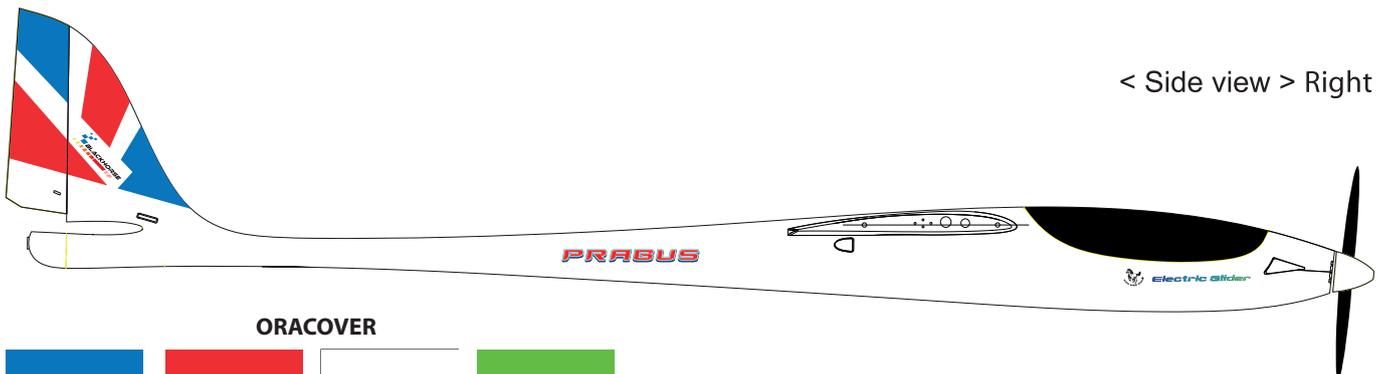
< Top view >



< Side view > Left



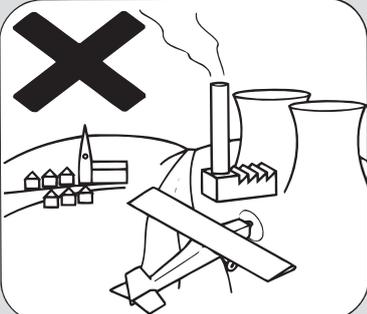
< Side view > Right



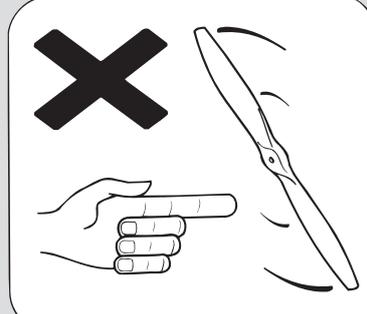
ORACOVER

			
#21-050 Blue	#21-023 Ferrari Red	#21-010 White	#21-041 Fluor. Green

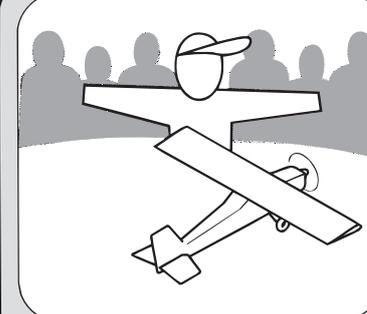
I/C FLIGHT WARNINGS



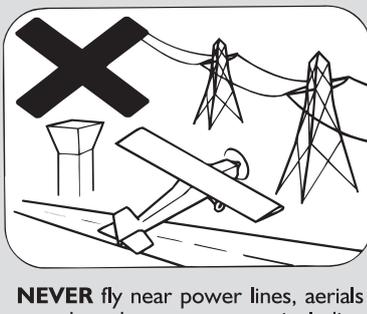
Always operate in open areas, away from factories, hospitals, schools, buildings and houses etc. **NEVER** fly your aircraft close to people or built up areas.



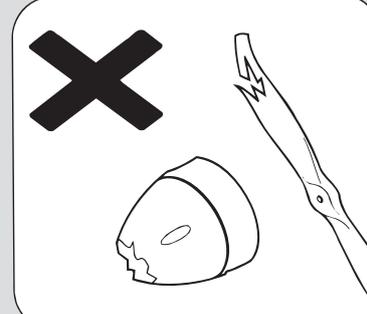
THE PROPELLER IS DANGEROUS
Keep fingers, clothing (ties, shirt sleeves, scarves) or any other loose objects that could be caught or drawn in, away from the propeller. Take care at **ALL** times.



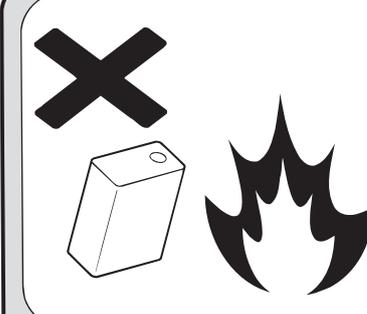
Keep all onlookers (especially small children and animals) well back from the area of operation. This is a flying aircraft, which will cause serious injury in case of impact with a person or animal.



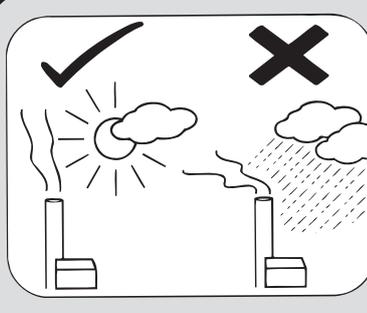
NEVER fly near power lines, aerials or other dangerous areas including airports, motorways etc.



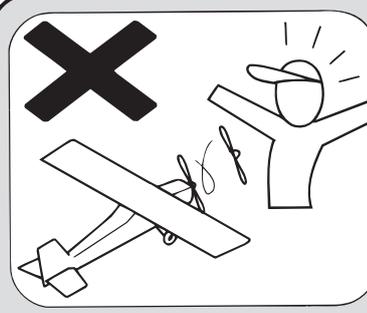
NEVER use damaged or deformed propellers or spinners.



DO NOT dispose of empty fuel containers on a fire, this can lead to an explosion.

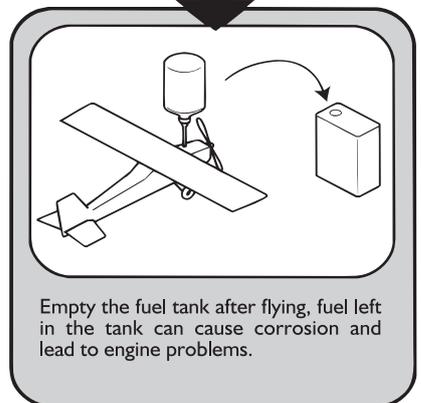
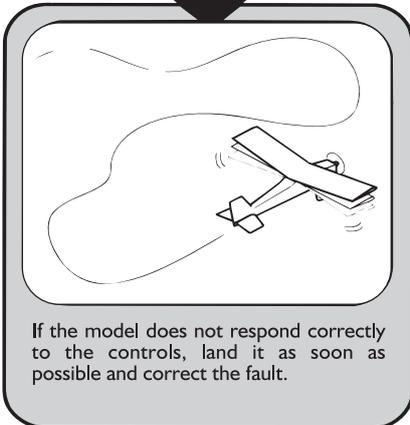
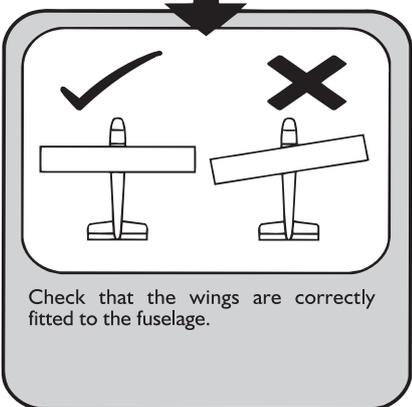
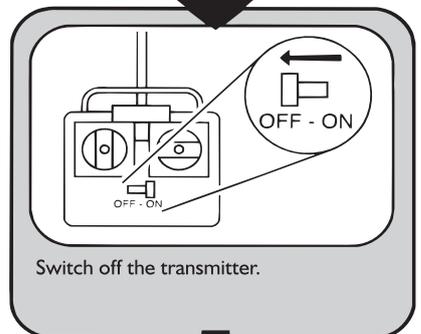
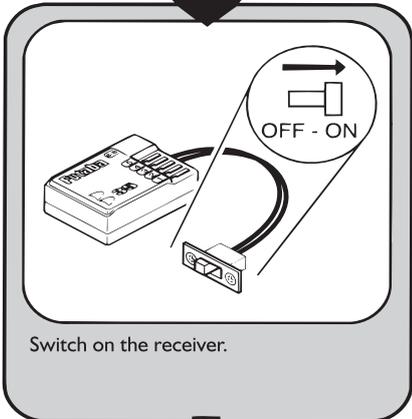
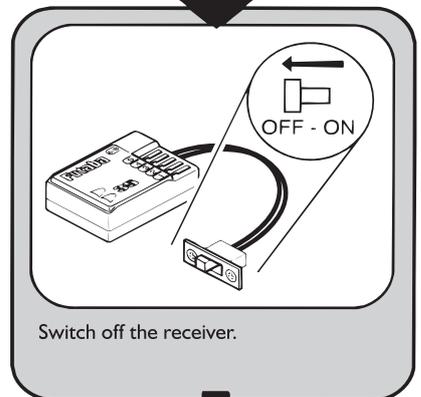
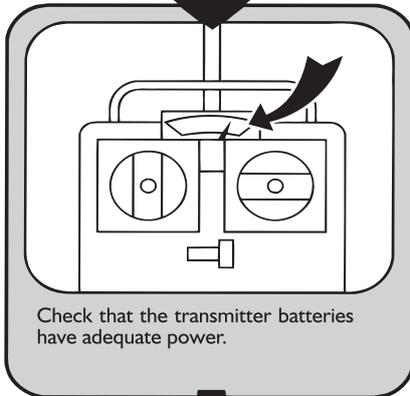
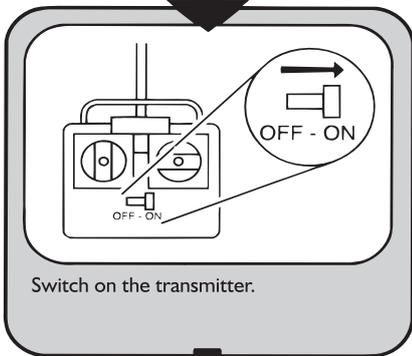
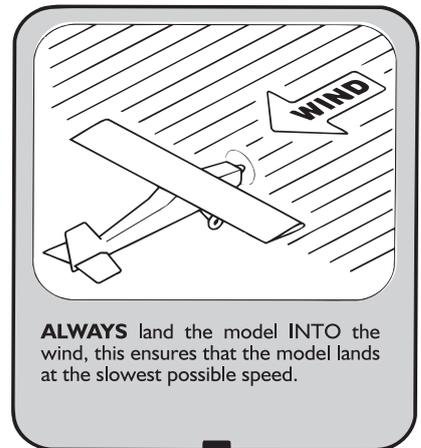
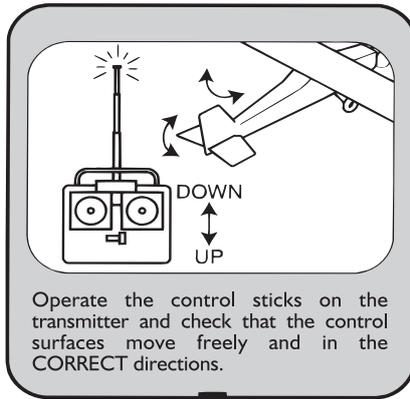
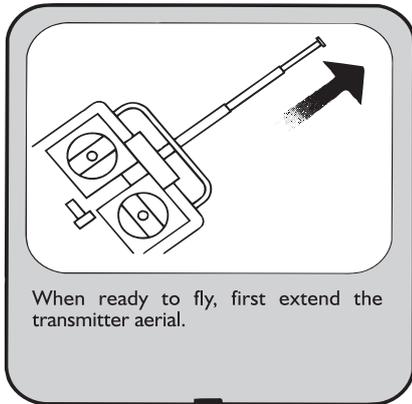


NEVER fly in wet conditions or on windy or stormy days.



ALWAYS adjust the engine from behind the propeller, and do not allow any part of your body to be in line with the propeller.

I/C FLIGHT GUIDELINES



Made in Vietnam