Instruction Manual Book

Item code: BH207

SBACH 342

SIZE 30 - 35CC CARBON ARF

95% PRE BUILT ARF ALMOST READY TO FLY



ALL BALSA - PLYWOOD CONSTRUCTION.
COVERED WITH ORACOVER.

95% ALMOST READY TO FLY

SPECIFICATION

- **Wingspan:** 1,880 mm (74 in).
- **Length:** 1,870 mm (73.62 in).
- **Flying weight:** 5.6 - 5.8 kg
- **Wing area:** 65.4 dm^2.
- **Wing loading:** 84 g/dm^2.
- **Spinner :** 86mm (included).
- **Gear type:** Carbon fiber for main gear (included) and Carbon fiber tail gear (included).
- **Covering type:** Genuine oracover.

PARTS LISTING REQUIRED (NOT INCLUDED):

- **Radio:** 06 channels minimum.
- **Servo:** 06 servos (HV High torque steel gear servo).
- **Engine:** 30 - 35CC gas.
- **Motor:** Brushless outrunner 2500 W, 250 KV.
- **Propeller:** Suit with your engine.

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

TABLE OF CONTENTS

- Introduction 2
- Warranty 3
- Important Building Notes 3
- Disclaimer 3
- Suggestion 3
- Safety Precaution 3
- Flight Warnings 3
- Flight Warnings 4
- Adhesives And Required Tools 4
- Covering Tools 4
- Academy Of Model Aeronautics National Model Aircraft Safety Code 4
- Parts Listing 6
- Tools & Supplies Needed 6
- Symbols Used Throughout This Instruction Manual, Comprise: 6
- Installing The Ailerons Servo 9
- Installing The Aileron Linkages 10
- Installing The Main Landing Gear 12
- Secure The Wing To The Fuselage 17
- Installing The Elevator Servo 18
- Installing The Elevator 20
- Installing The Rudder 21
- Installing The Rudder Servo 22
- Installing The Tail Wheel 24
- Installing The Engine 26
- Installing The Fuel Tank 28
- Installing The Throttle 30
- Installing The Spinner 32
- Installing The Receiver And Battery 33
- Installing The Switch 33
- Installing The Electric Motor 33
- Installing The Wing Side Force 36
- Balancing 36
- Lateral Balance 36
- Control Throws 38
- Flight Preparation Pre Flight Check 38
- For Your Radio Installation Basic Connection For Airplane And Adjustment Of Servos 38
- Main Gear Dimensional Detail 39
- Tail Gear Dimensional Detail 39
- Cowling Dimensional Detail 40
- UV Decal Installation Manual 41
- Decoration 42
- I/c Flying Warnings 43
- I/c Flying Guidelines 44

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 and is required to fly at most R/C sites.

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

AMA
SINCE 1939

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 Black Horse Model has no control over the final assembly or material used for final assembly, Black Horse Model is not responsible for loss of use , or other incidental or consequential damages.

• Furthermore, Black Horse Model cannot be held liable for personal injury or property damage caused by the use or misuse of Black Horse 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.)

Not operate a turbine-powered aircraft, unless in compliance with the AMA turbine regulations. (AMA Document #510-A.)

1. 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.

2. 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.

PARTS LISTING (NOT INCLUDED)

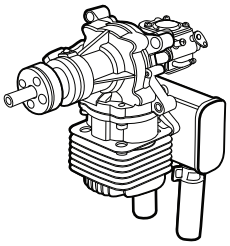
Servo extension leads.



1000 mm 3 pcs.

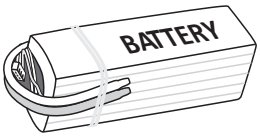


200 mm 2 pcs.



Engine: 30 - 35CC gas

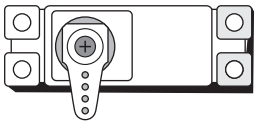
LiPo. 6S - 22.2V



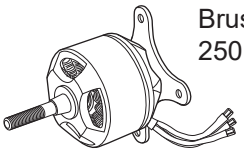
2 Packs

Propeller. Suit with your engine.

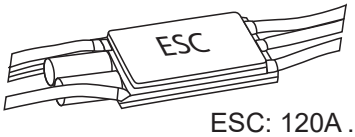




- 30-35cc Gas Engine (x1)
- Servo for Aileron 30-40 kg (x2) – Standard size 20 x 40mm
- Servo for Elevator 16-22 kg (x2) – Standard size 16 x 36mm
- Servo for Rudder 16-22 kg (x1) – Standard size 16 x 36mm
- Servo for Throttle 12 kg (x1) – Standard size 20 x 40mm



Brushless outrunner 2500 W, 250 KV.



ESC: 120A ..... 1 pcs.

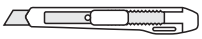
TOOLS & SUPPLIES NEEDED



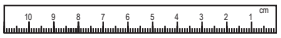
Medium C/A glue



Threadlocker (screw cement).



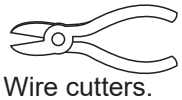
Modeling knife.



Straight edge ruler.

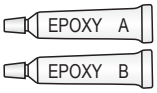


2 bender plier

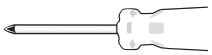


Wire cutters.

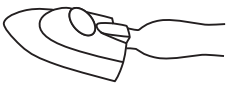




30 minute epoxy.
5 minute epoxy.



Screw driver





Hex Wrench.



Hand or electric drill.

Some more tools.

- Assorted drill bits.
- Masking tape.
- Paper towels.
- Rubbing alcohol
- 90° square or builder's triangle.

SYMBOLS USED THROUGHOUT THIS INSTRUCTION MANUAL, COMPRISE



Cut off excess.



Apply threadlocker (screw cement).



Must be purchased separately!



Cut off shaded portion carefully.



Apply instant glue (C.A glue, super glue).



Ensure smooth, non-binding movement when assembling.



Pay close attention here.



Apply epoxy glue.



Drill holes using the stated. (in this case 1.5mm Ø).



Take particular care here.



Assemble left and right sides the same way.



The number of times the same way Assembly (in this case twice).



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



Use a pencil to mark

1: Fuselage set (1a-Fuselage).

2: Wing set (2a-left; 2b-right).

3: Horizontal stabilizer set (3a-left; 3b-right).

4: Rudder set (4a-Rudder).

5: Carbon fiber tube (5a-for wings, 5b-for horizontal stabilizer.

6: Main gear set.

7: Tail gear set.

8: Fuel tank set.

9: Fuel Dot & Tank Vent.

10: Fuel tank and battery velcro.

11: Spinner spare part.

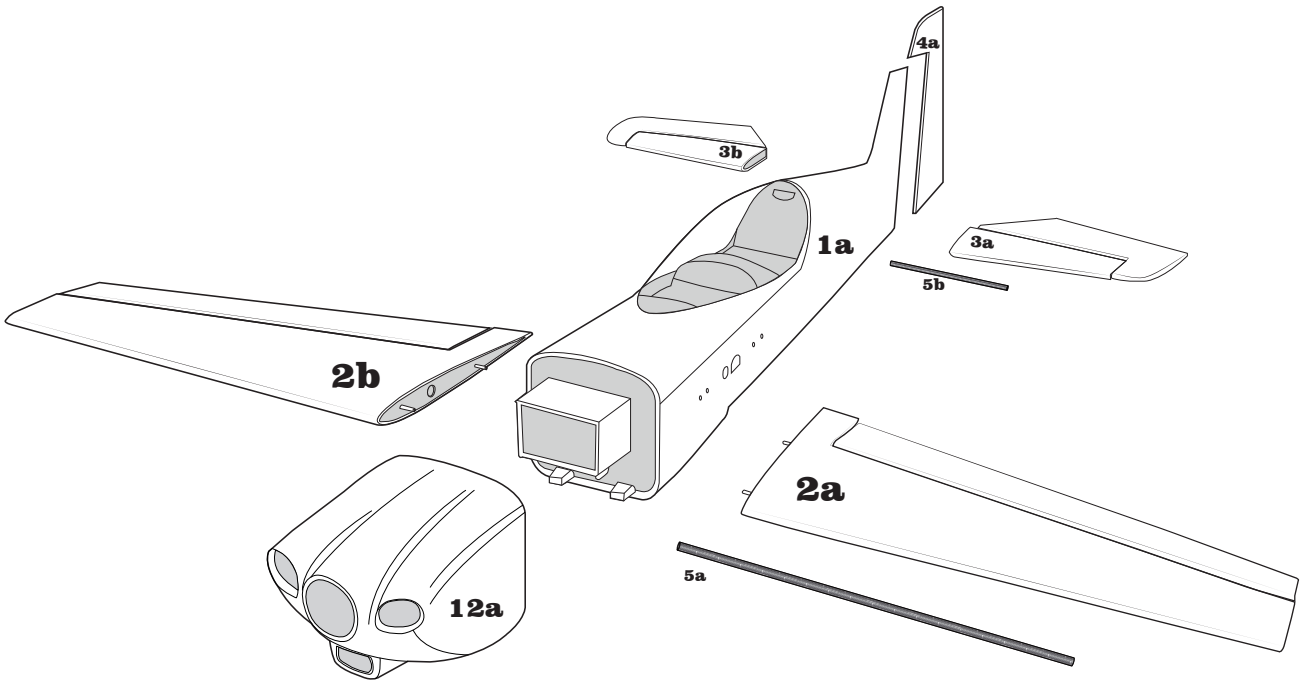
12: Cowling set (12a-Cowling).

13: Wing tip force parts.

14: CG set.

15: Accessories for throttle.

16: Electric motor and Engine set.



3

3x50mm Push Rod	2	Horn	4
Copper Ball	2		
Copper Ball	2	Hole Bracket	2
Ball Link	4		
3x16mm Button Head Cap Screw	4	3mm Lock Nut	2

2

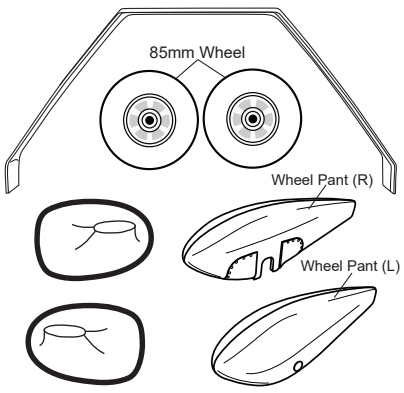
3x60mm Push Rod	2	Horn	4
Copper Ball	2		
Copper Ball	2	Hole Bracket	2
Ball Link	4		
3x16mm Button Head Cap Screw	4	3mm Lock Nut	2

4

3x60mm Push Rod	1	Horn	2
Copper Ball	1		
Copper Ball	1	Hole Bracket	1
Ball Link	2		
3x16mm Button Head Cap Screw	2	3mm Lock Nut	1

5

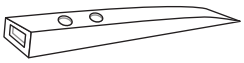
20x715mm Carbon fiber tubes for wings	1
12x338mm Carbon fiber tube for horizontal stabilizer	1



6

4x20mm Cap Screw	2	5x45mm Cap Screw	2
4mm Washer Aluminium	2	5.2mm Collar	2
5mm Nut	2	3x4mm Set Screw	2
5mm Lock nut	2	5mm Flat Washer Ø16	2
3x12mm Cap Screw	4	5mm Flat Washer Ø10	4

7



Aluminum ball 1

Ball link 1

2 x 150mm push rod 1

Tail wheel set 1

4x16mm Button Head Cap Screw 2

4mm Washer Aluminum 2

8

Fuel Tank 360ml 1

Rubber washer 4

..... 1

Plastic 1

Full CNC machining 1

..... 1

..... 1

..... 2

Zip tie 3

Brass pipes 1

Clunks 1

Tygon Fuel Tubing 1

9

Fuel Dot 1

Tank Vent 1

2 x 5 mm Tp Screw 9

10

20x330mm Fuel tank velcro 2

15x220mm Velcro battery 2

11

Spinner cone 1

Spinner 86mm 1

3x8mm Button Head Cap Screw 6

12

4x16mm Button Head Cap Screw 4

4mm Washer Aluminum 4

15

1.7 x 300mm push rod 1

Aluminium ball 1

Ball Link 1

2x10mm Cap Screw 1

2mm Lock nut 1

Snap keeper 1

2mm Flat Washer 1

13

Wing tip force parts 2

4x16mm Cap Screw 4

14

Plate of plywood 2

Ø 12x100mm Aluminium Tube 1

2000mm Wire 1

16

5x100mm Cap Screw 4

4x35mm Cap Screw 4

15mm plastic tube Ø10 4

5mm Blind Nut 4

5mm Spring Washer 4

4mm Spring Washer 4

65mm Alu tube Ø12 4

4mm Blind Nut 4

5mm Flat Washer Ø16 8

4mm Flat Washer 4

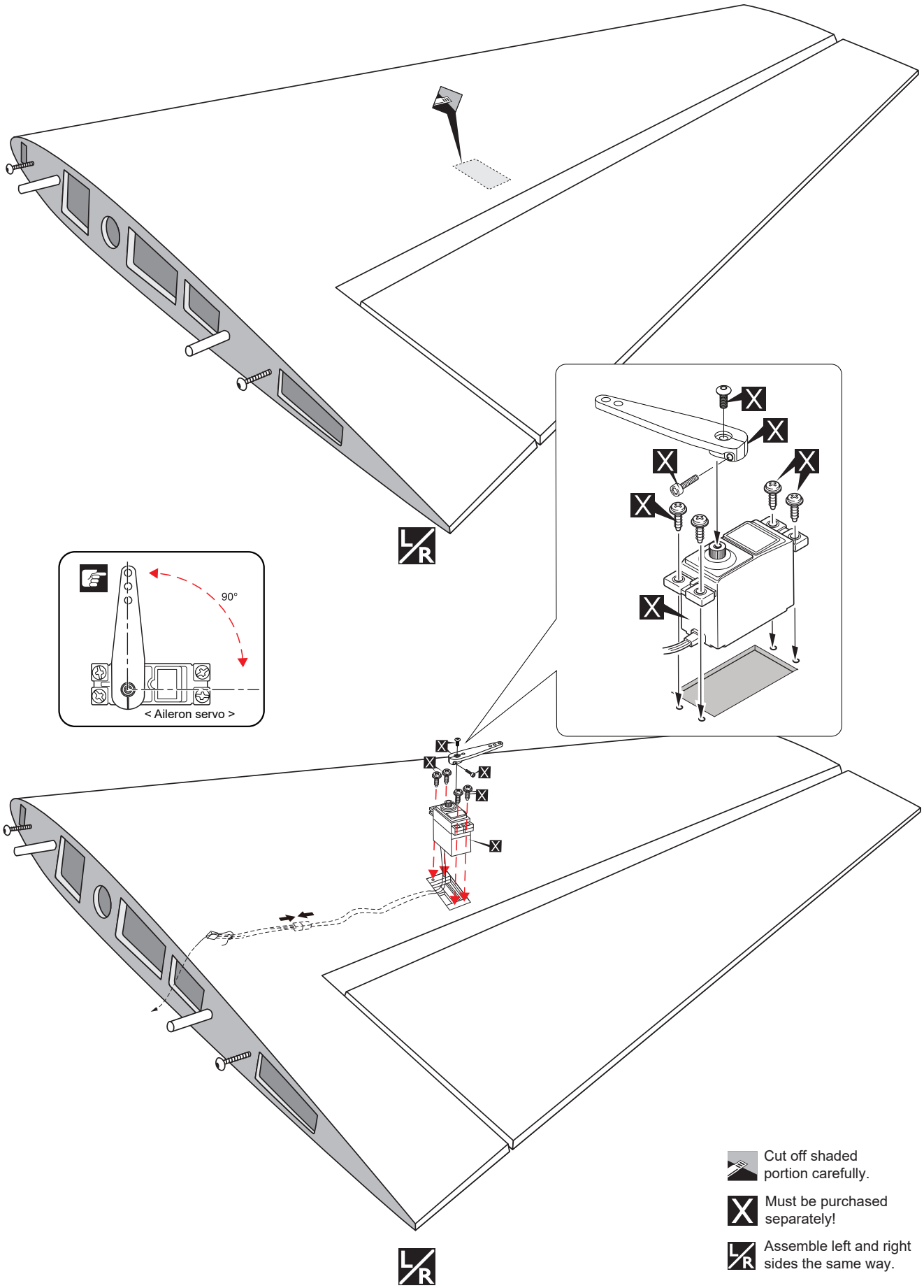
5mm Lock nut 4

Plywood Engine 2

Plywood Electric 3

INSTALLING THE AILERONS SERVO

<<BOTTOM VIEW>> LEFT



Cut off shaded portion carefully.

X Must be purchased separately!

L/R Assemble left and right sides the same way.

INSTALLING THE AILERON LINKAGES

3x60mm Push Rod 2

Copper Ball 2

Copper Ball 2

Ball Link 4

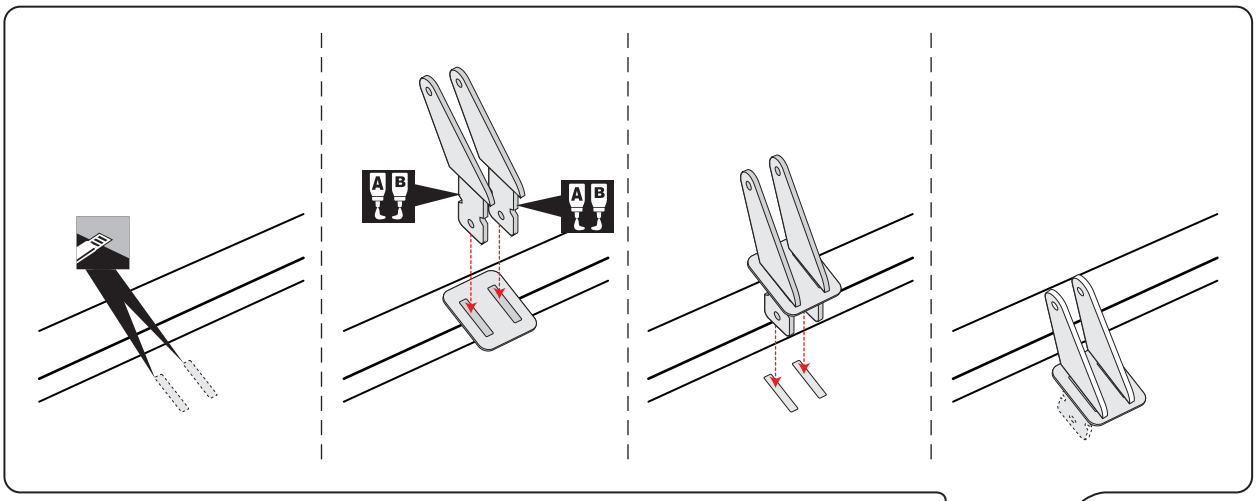
Horn 4

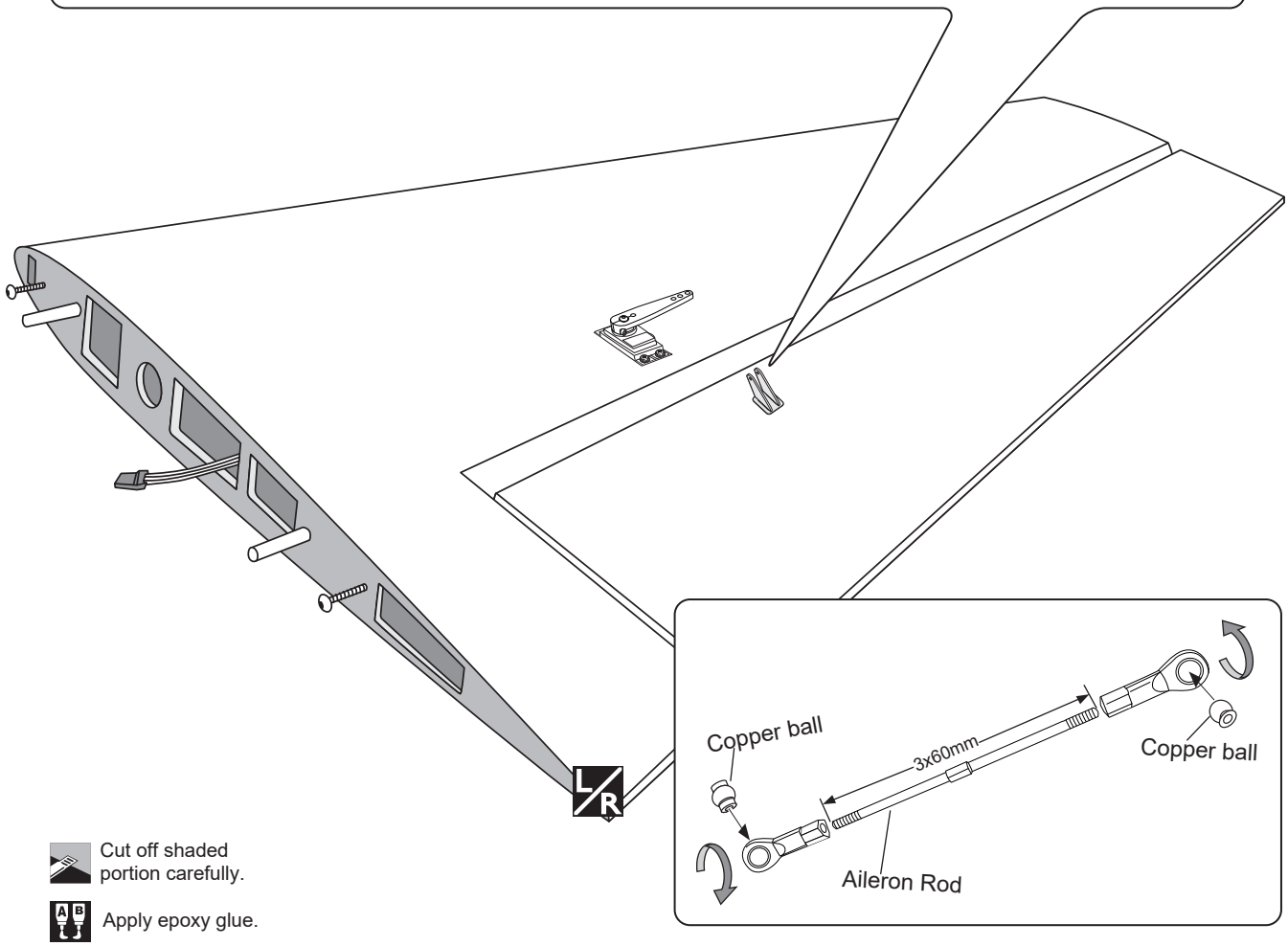
Hole Bracket 2

3x16mm Button Head Cap Screw 4

3mm Lock Nut 2

<<BOTTOM VIEW>> LEFT





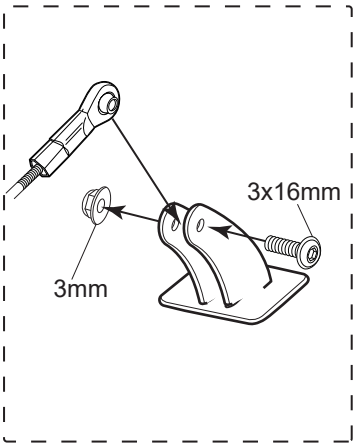
Cut off shaded portion carefully.

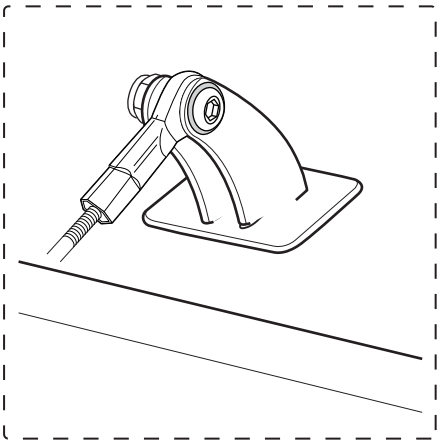
Apply epoxy glue.

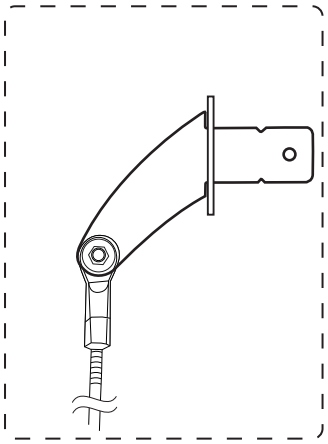
Assemble left and right sides the same way.

Warning!

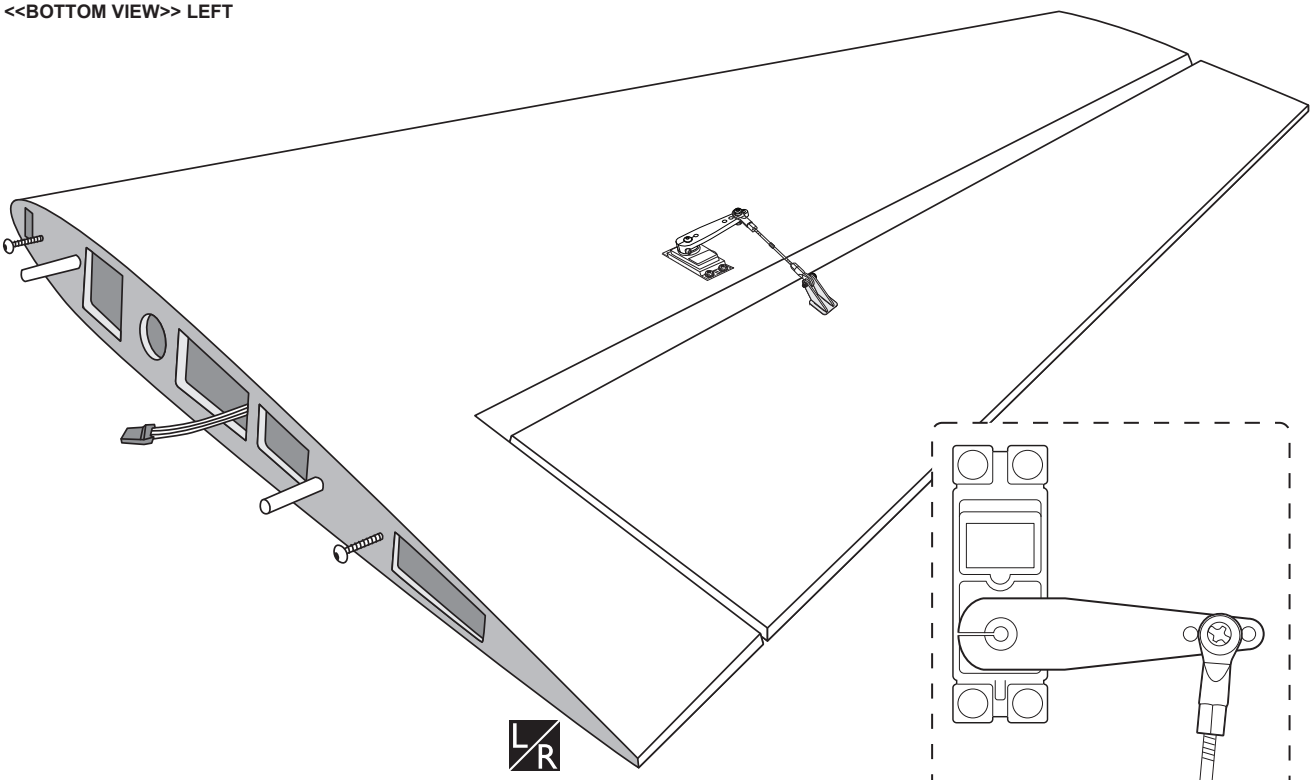
► Set all screws securely. If they come off during flight you will lose control of your aircraft!

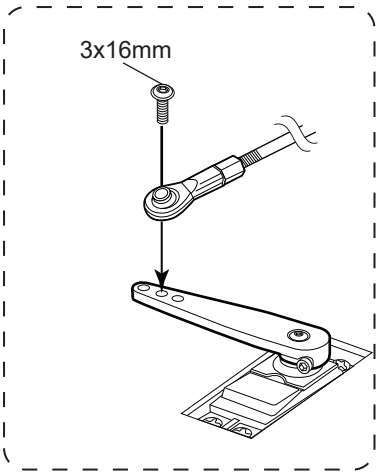


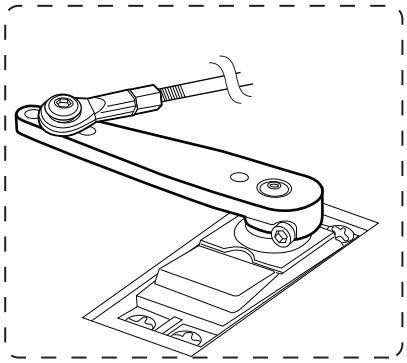


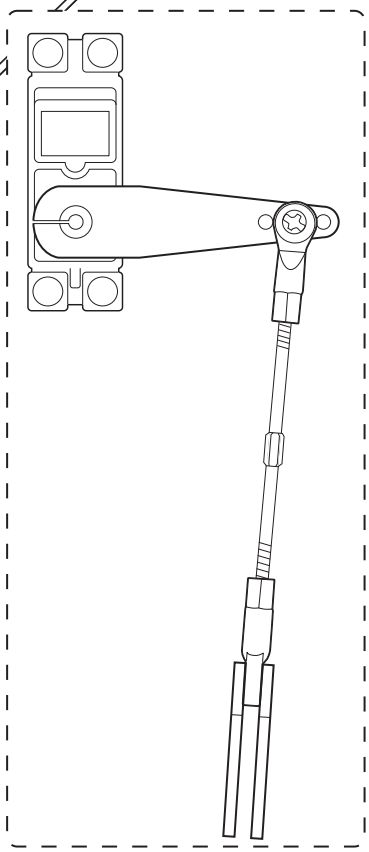


<<BOTTOM VIEW>> LEFT



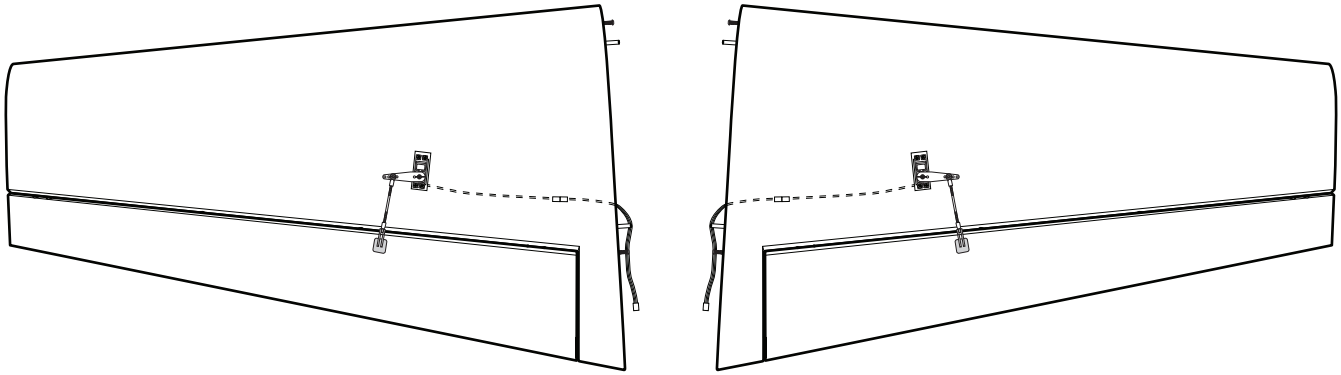




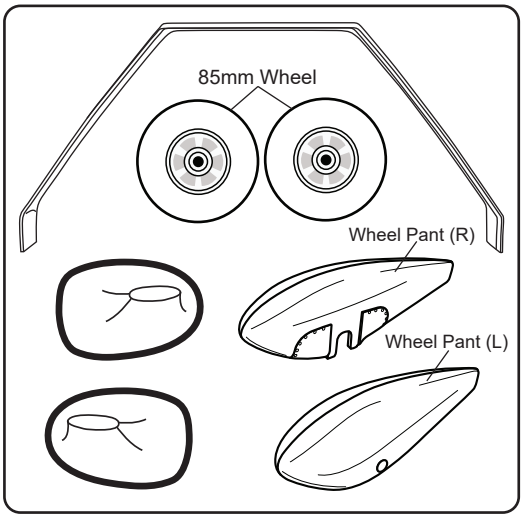


L/R Assemble left and right sides the same way.

<<BOTTOM VIEW>>



INSTALLING THE MAIN LANDING GEAR



4x20mm Cap Screw 2

4mm Washer Aluminium 2

3x12mm Cap Screw 4

5mm Nut 2

5mm Lock nut 2

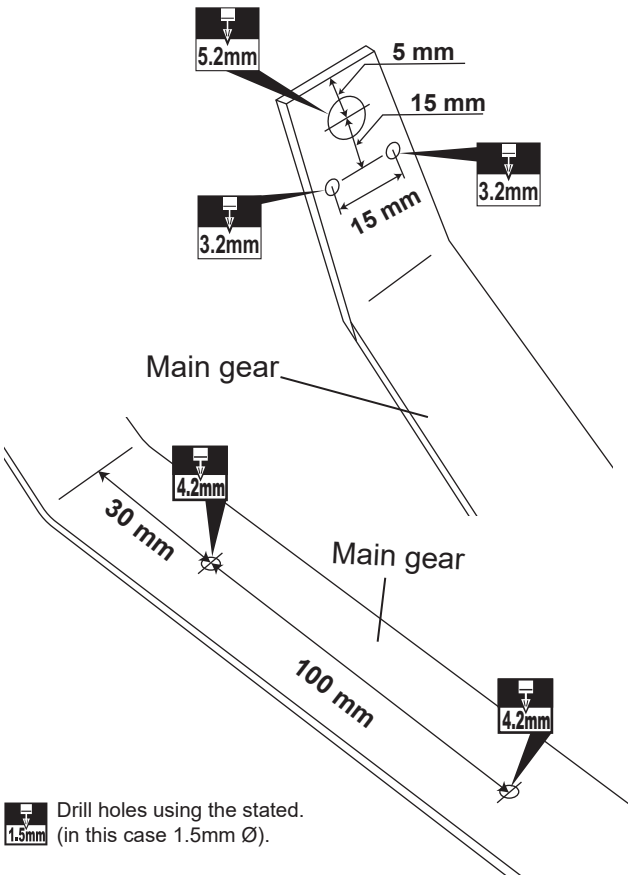
5x45mm Cap Screw 2

5.2mm Collar 2

3x4mm Set Screw 2

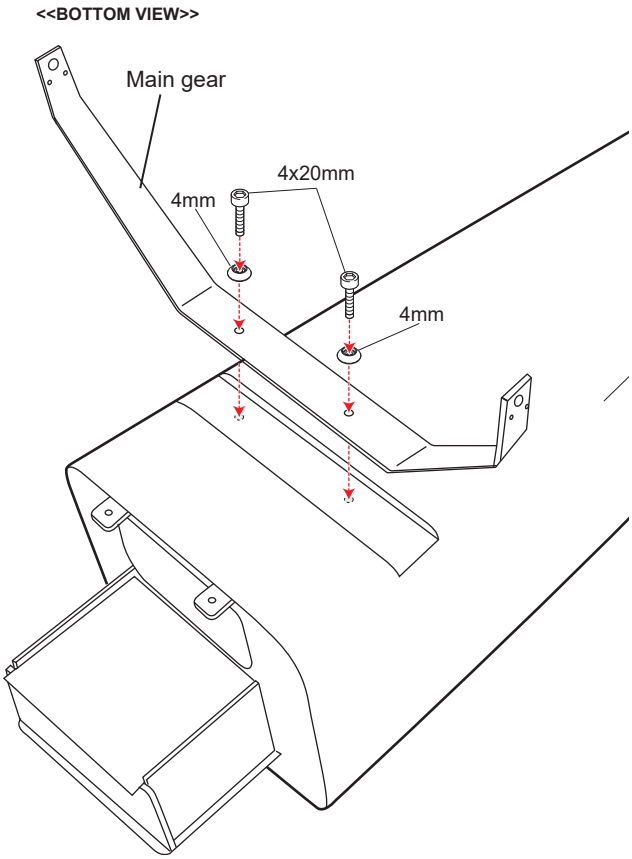
5mm Flat Washer Ø16 2

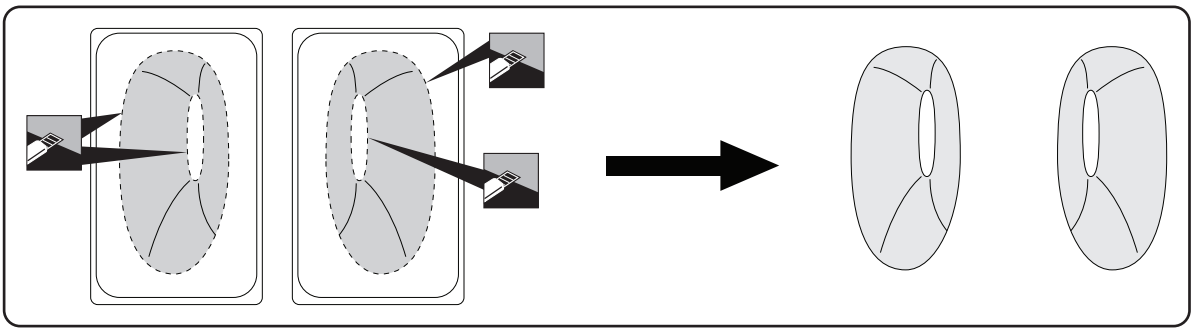
5mm Flat Washer Ø10 4

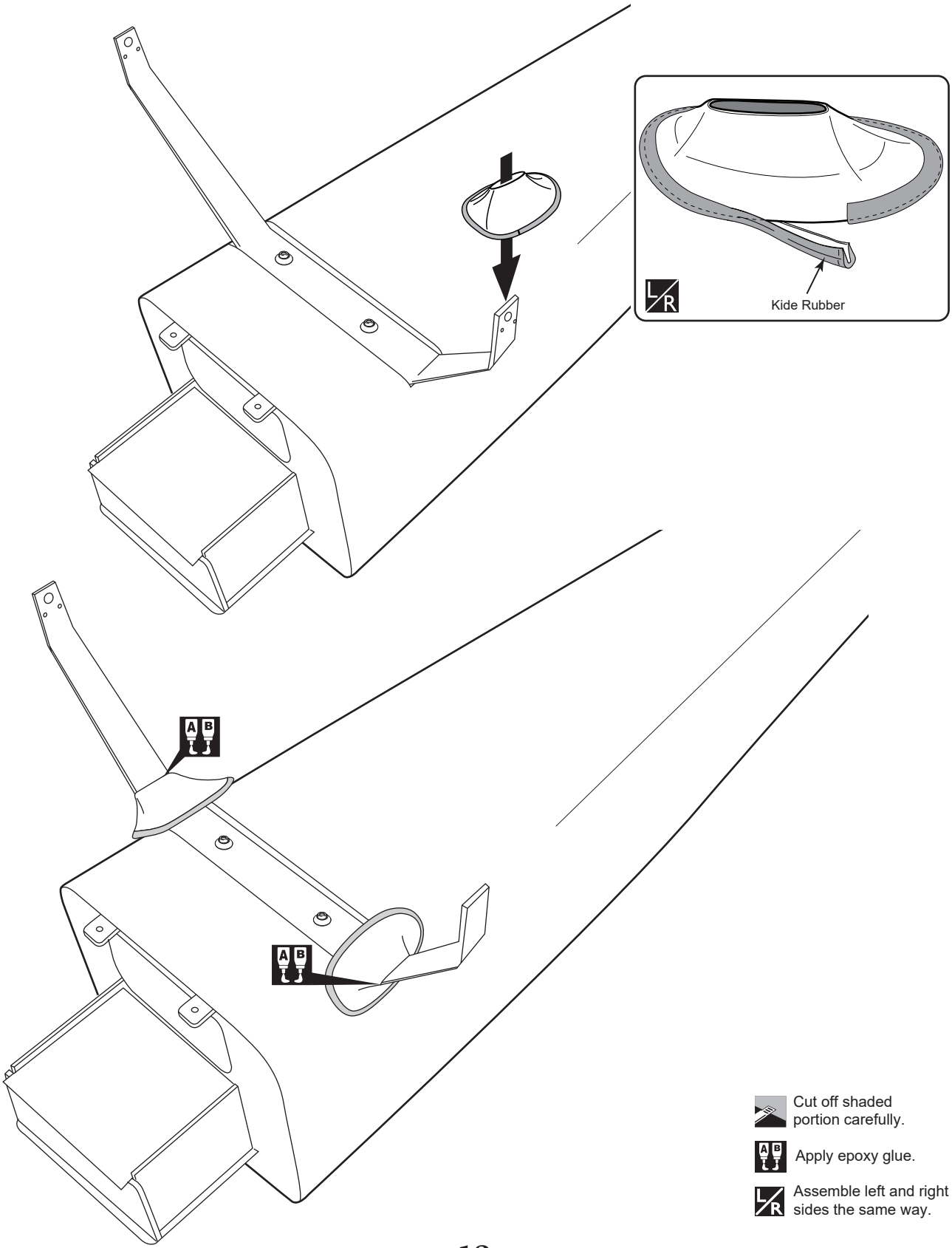


Drill holes using the stated. (in this case 1.5mm Ø).

<<BOTTOM VIEW>>



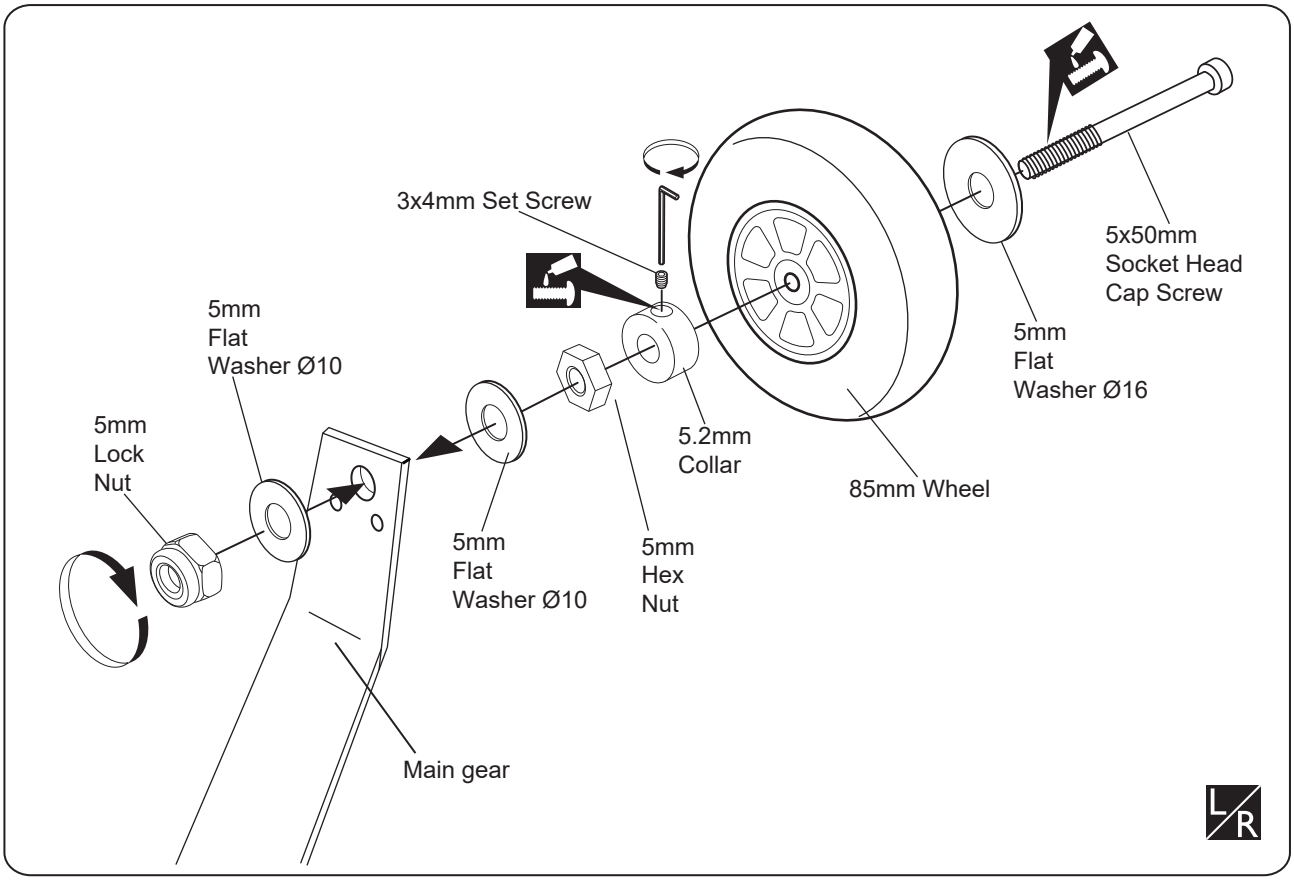


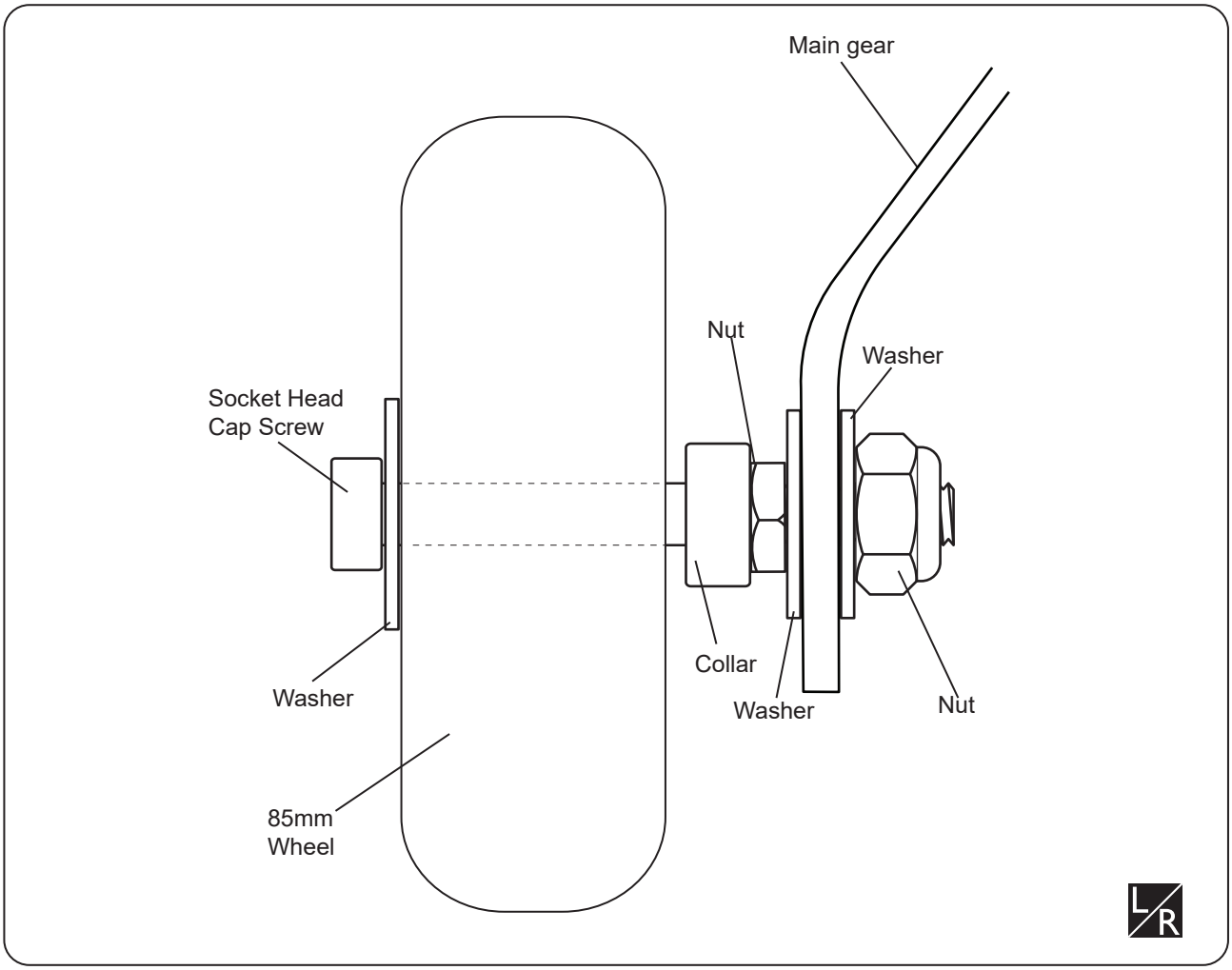


Cut off shaded portion carefully.

Apply epoxy glue.

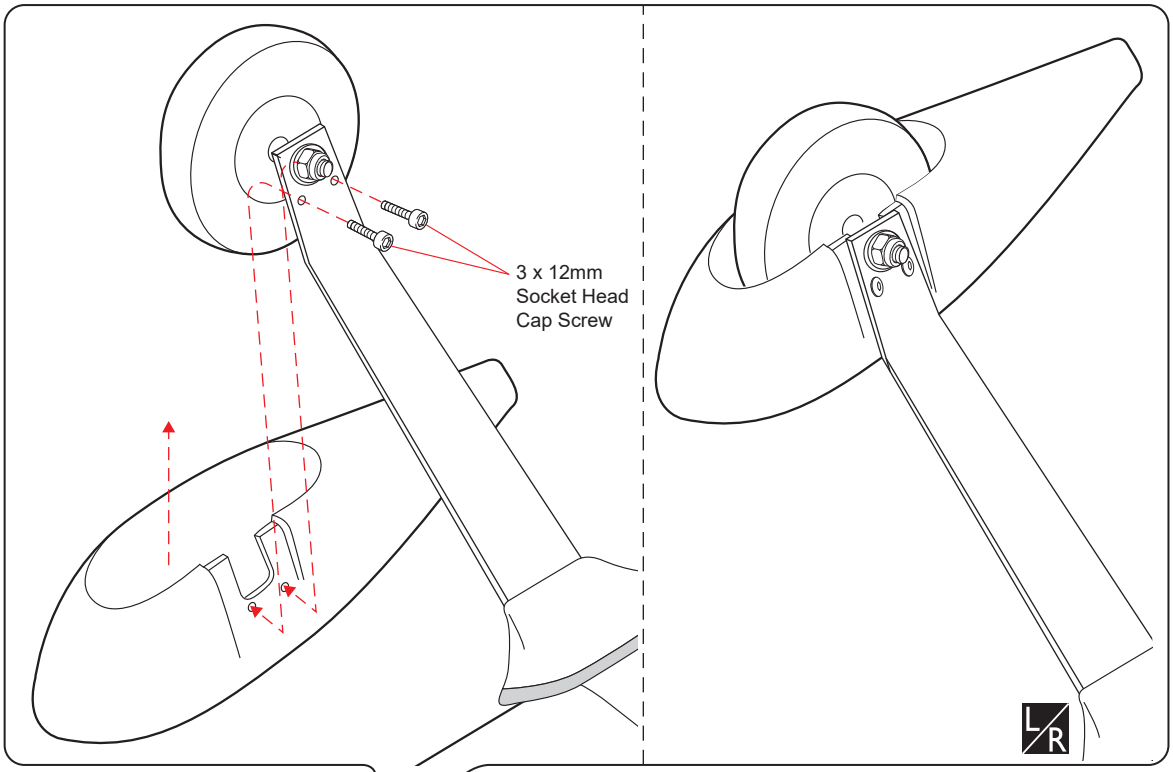
Assemble left and right sides the same way.

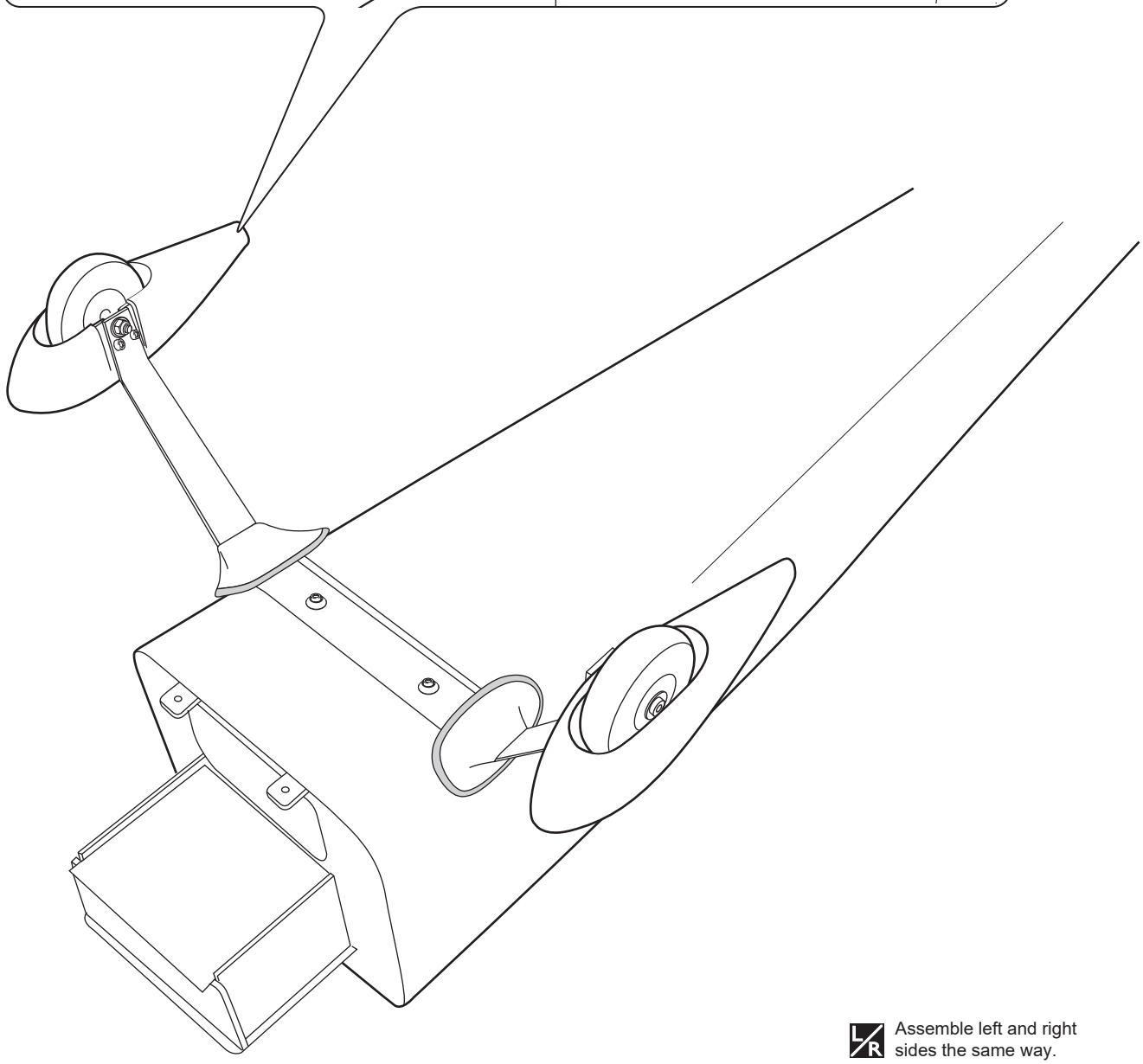




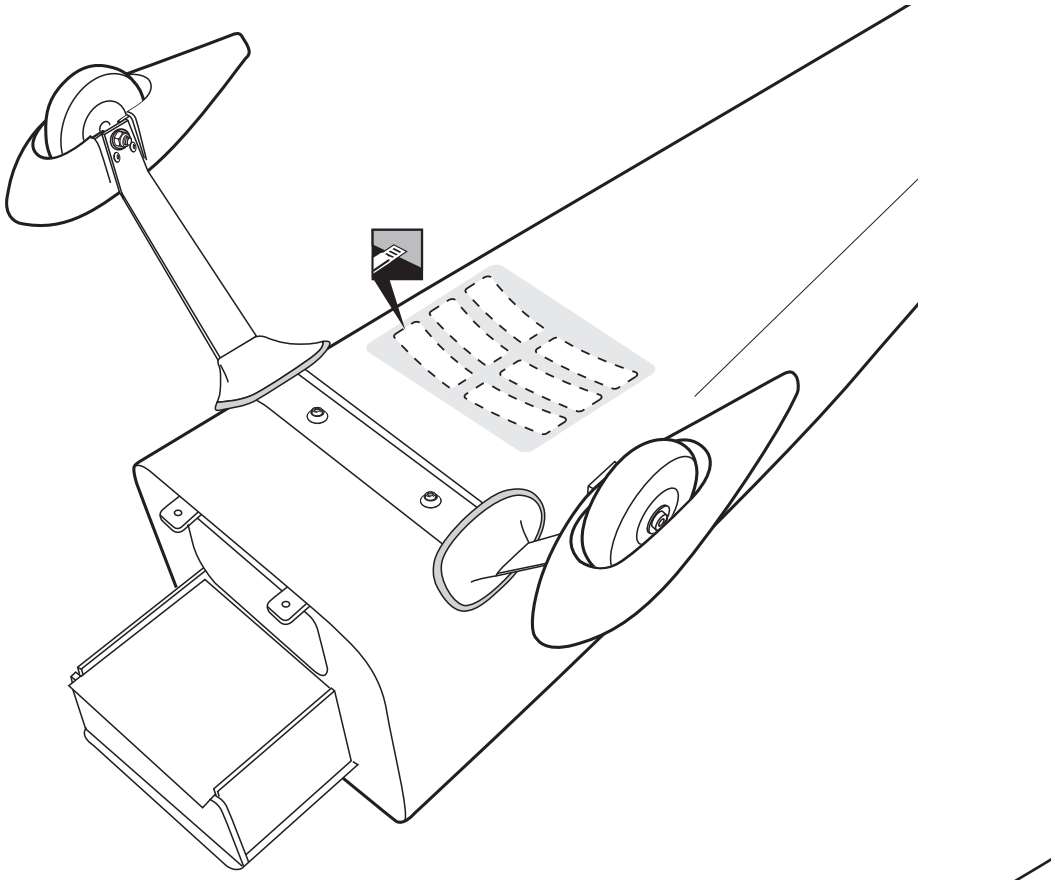
Assemble left and right sides the same way.

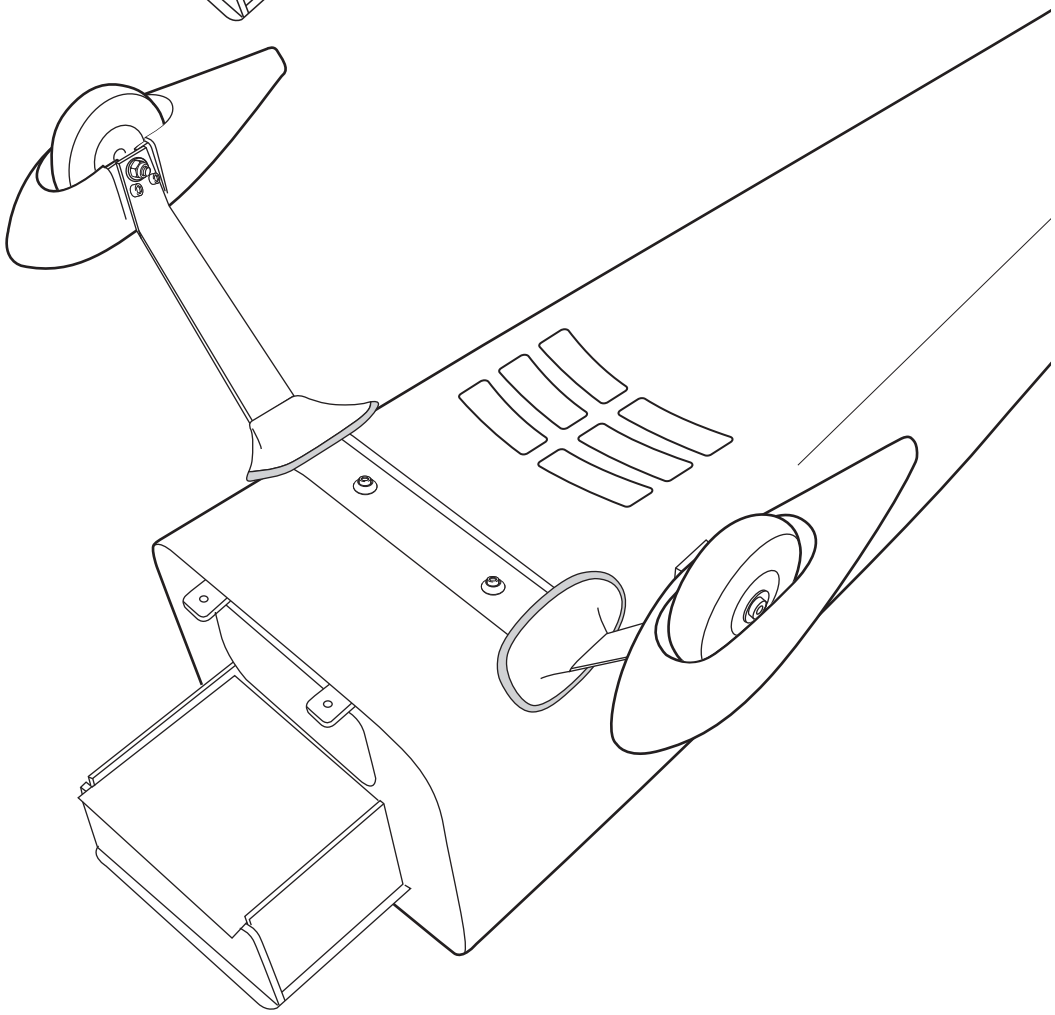
Apply threadlocker (screw cement).





L/R Assemble left and right sides the same way.



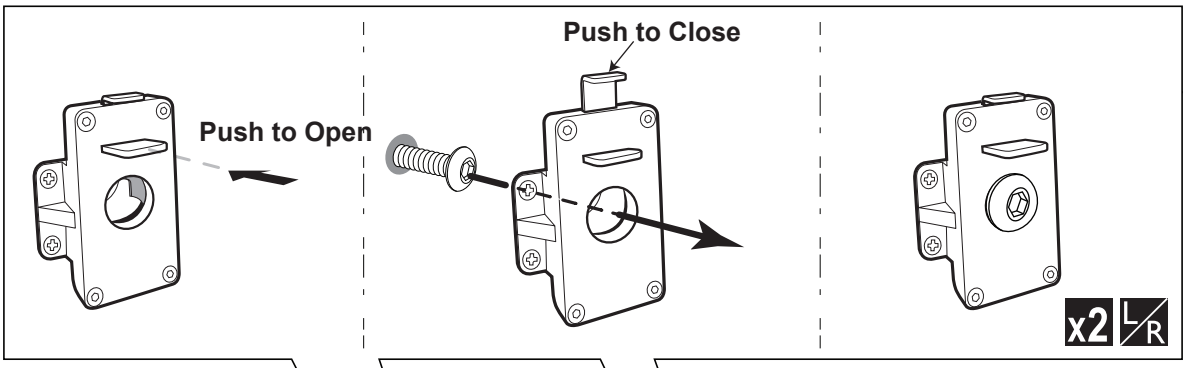


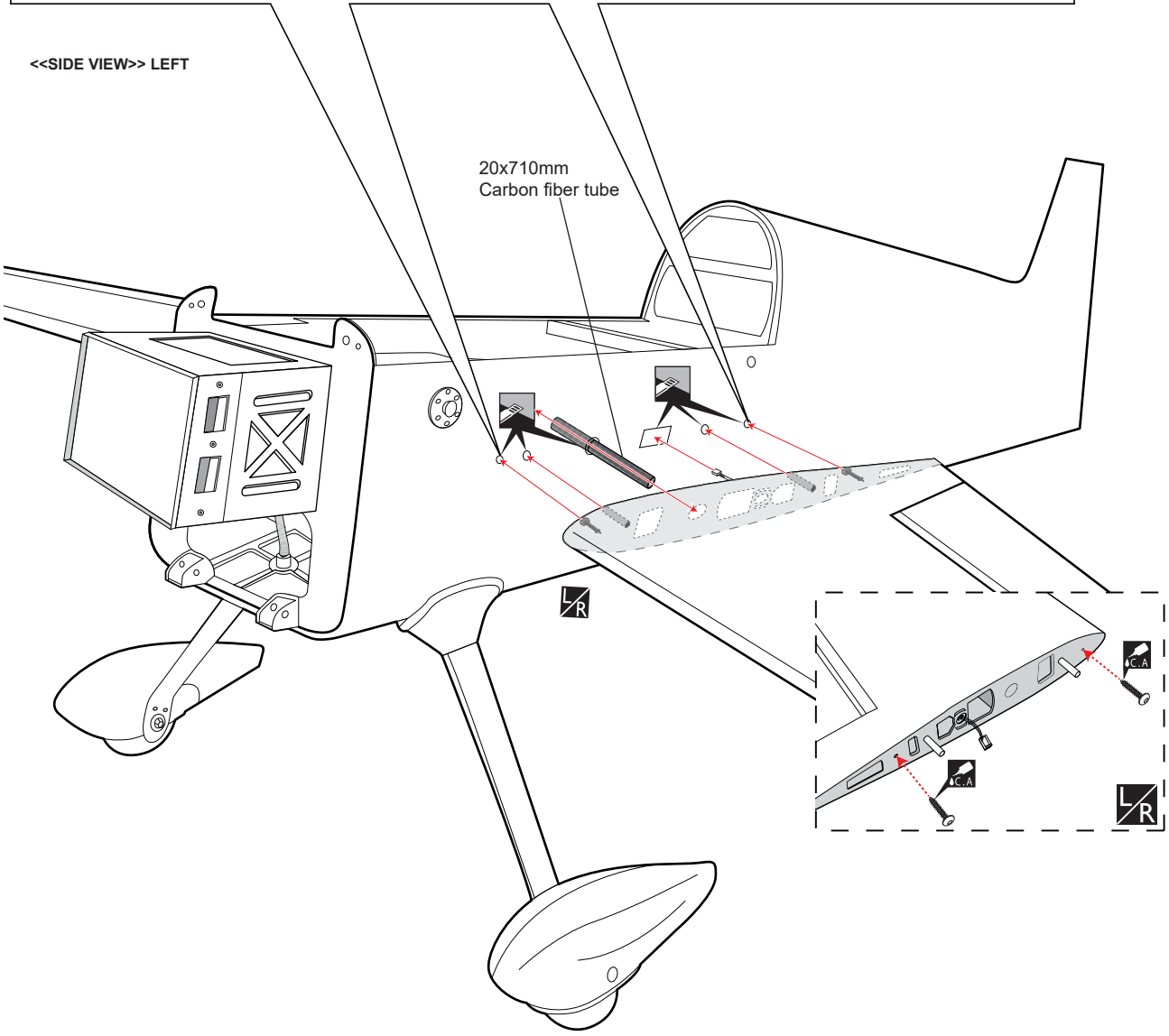
Cut off shaded portion carefully.

SECURE THE WING TO THE FUSELAGE

20x710mm Carbon fiber tubes for wings 1

Attach the wings to the fuselage and secure the wing panels.





Cut off shaded portion carefully.

Apply instant glue (C.A glue, super glue).

x2 The number of times the same way Assembly (in this case twice).

L/R Assemble left and right sides the same way.

INSTALLING THE ELEVATOR SERVO

3x50mm Push Rod 2

Copper Ball 2

Copper Ball 2

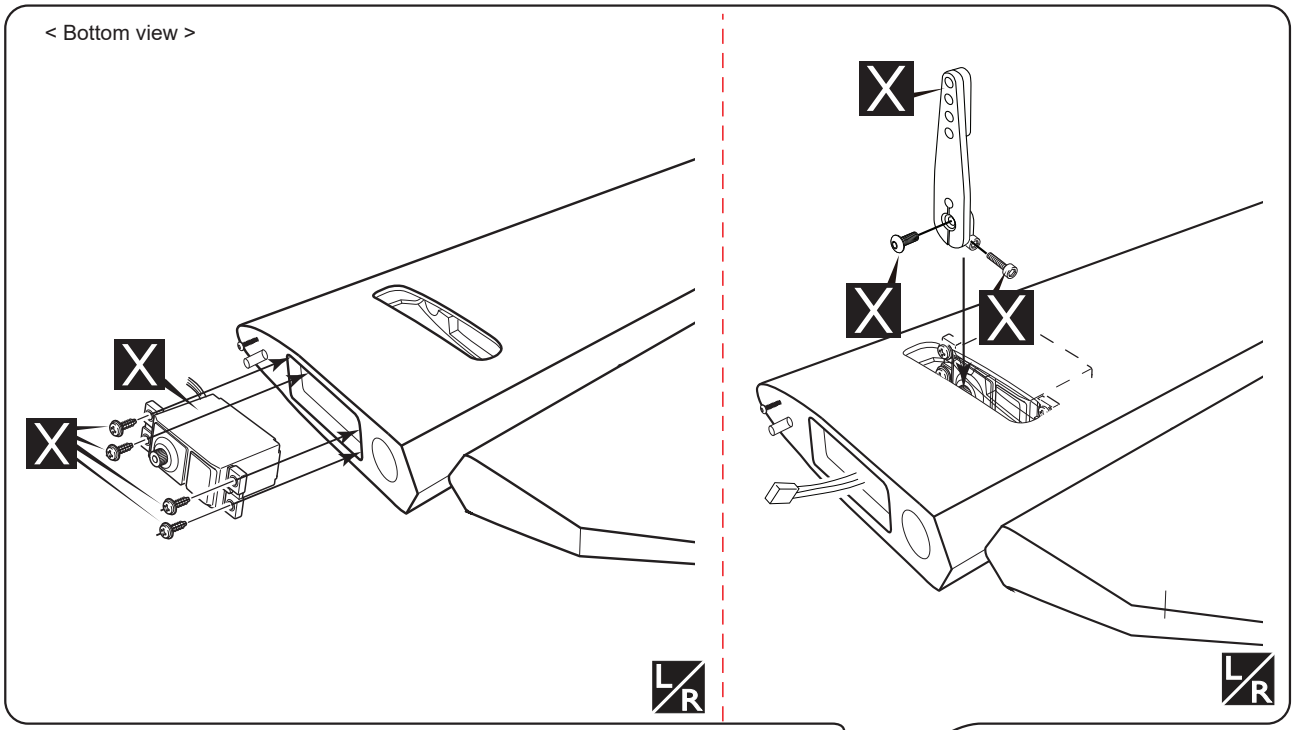
Ball Link 4

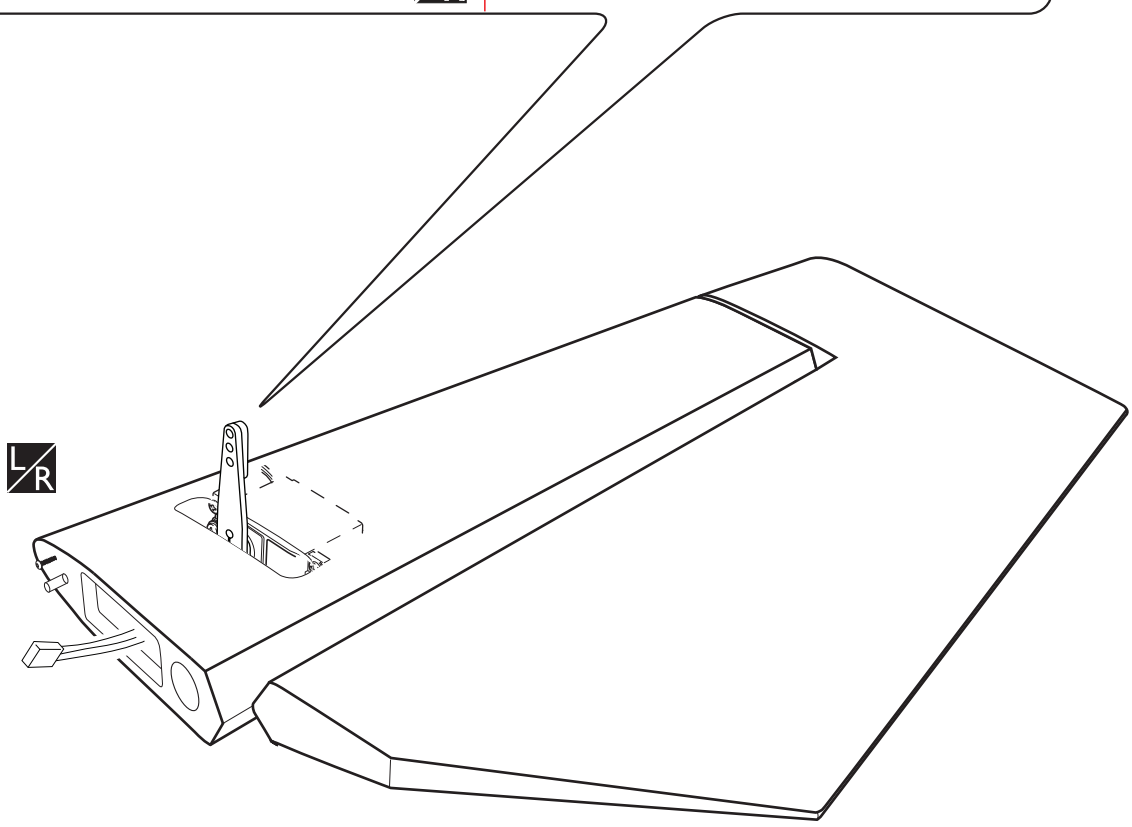
Horn 4

Hole Bracket 2

3x16mm Button Head Cap Screw 4

3mm Lock Nut 2





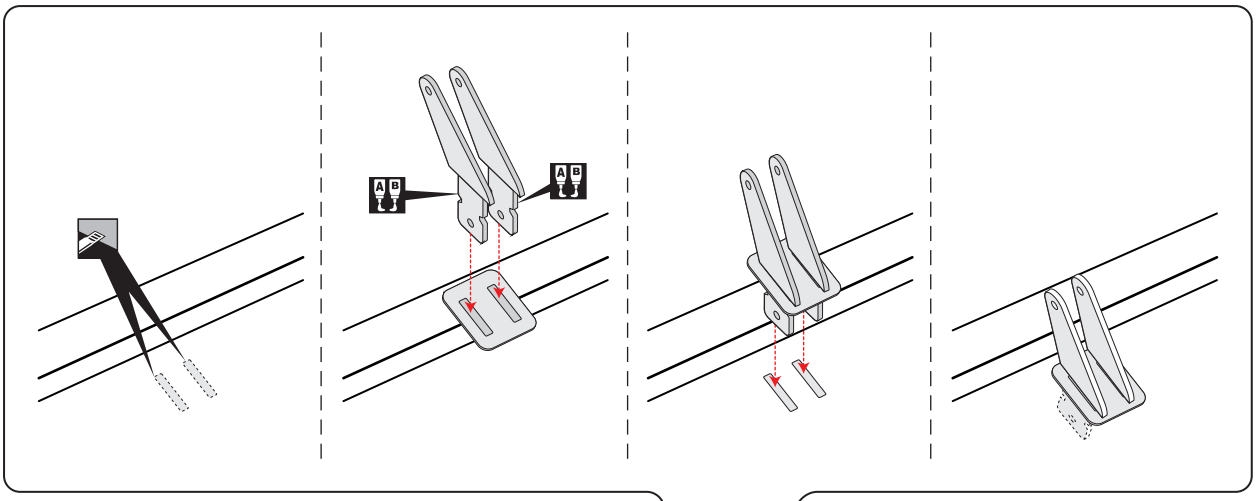
Close attention here.

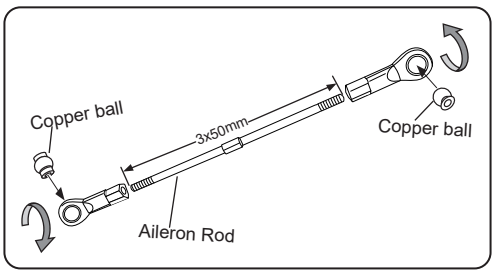
Cut off shaded portion carefully.

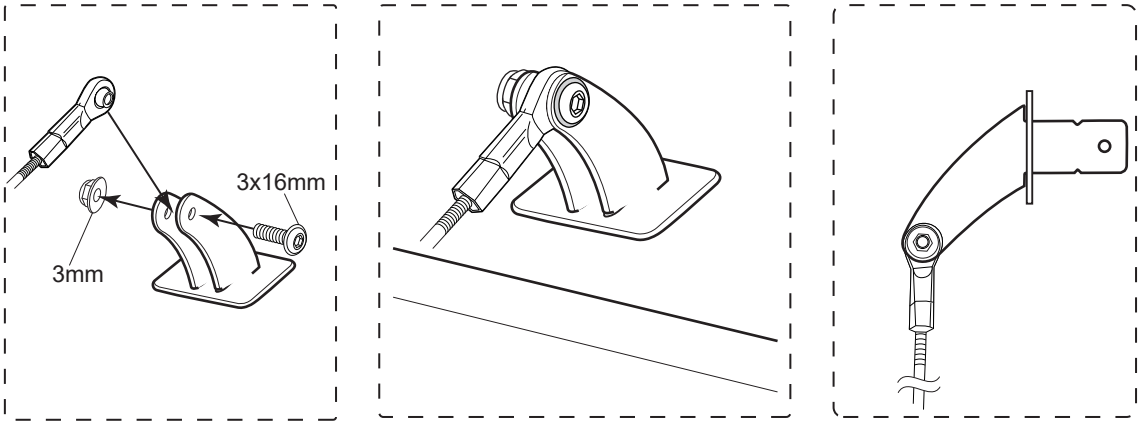
Must be purchased separately!

Assemble left and right sides the same way.

<<BOTTOM VIEW>> LEFT

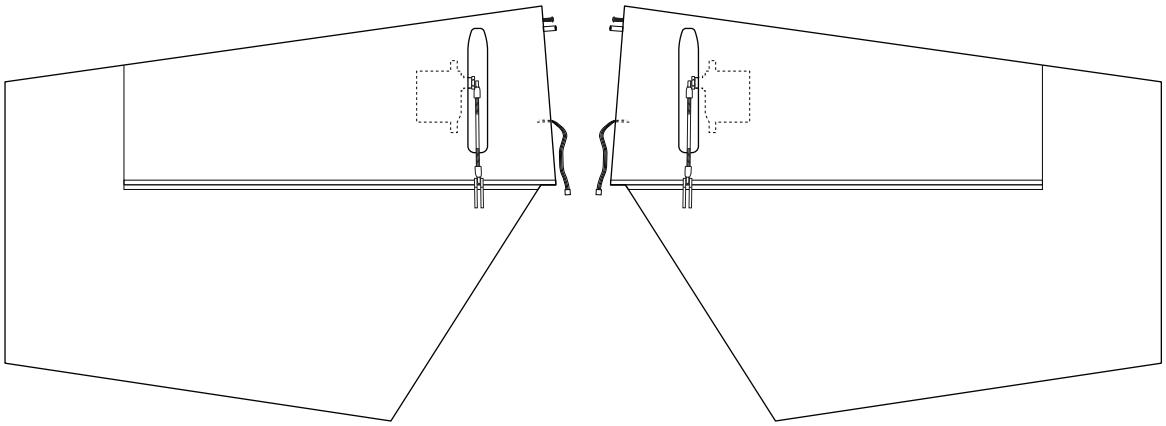






Cut off shaded portion carefully. Apply epoxy glue. Apply instant glue (C.A glue, super glue). Assemble left and right sides the same way.

<<BOTTOM VIEW>>

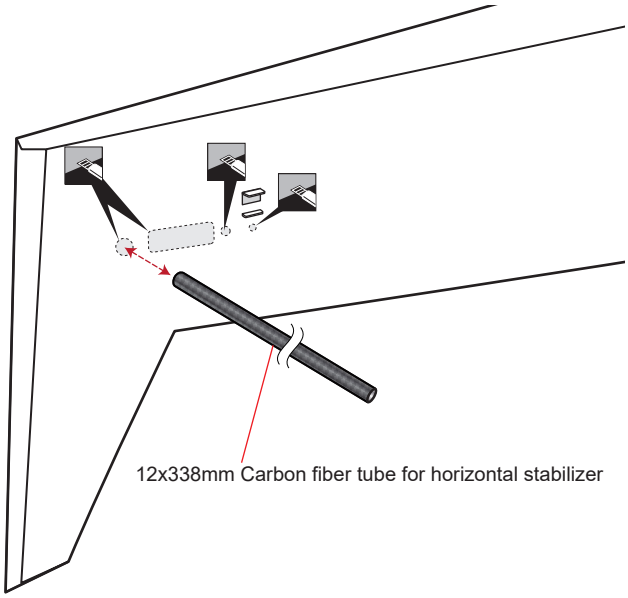


INSTALLING THE ELEVATOR

12x338mm Carbon fiber tube for horizontal stabilizer

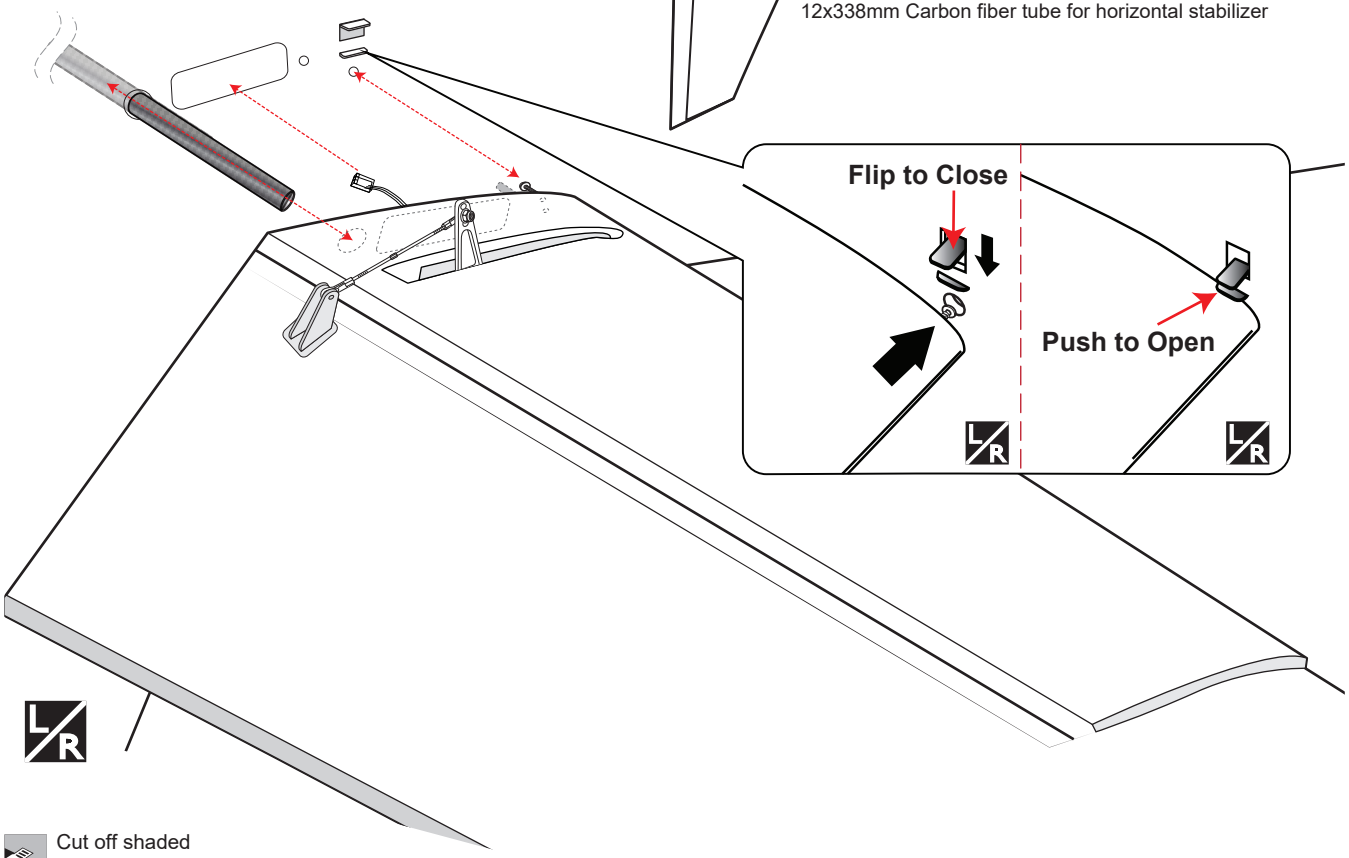


1



12x338mm Carbon fiber tube for horizontal stabilizer

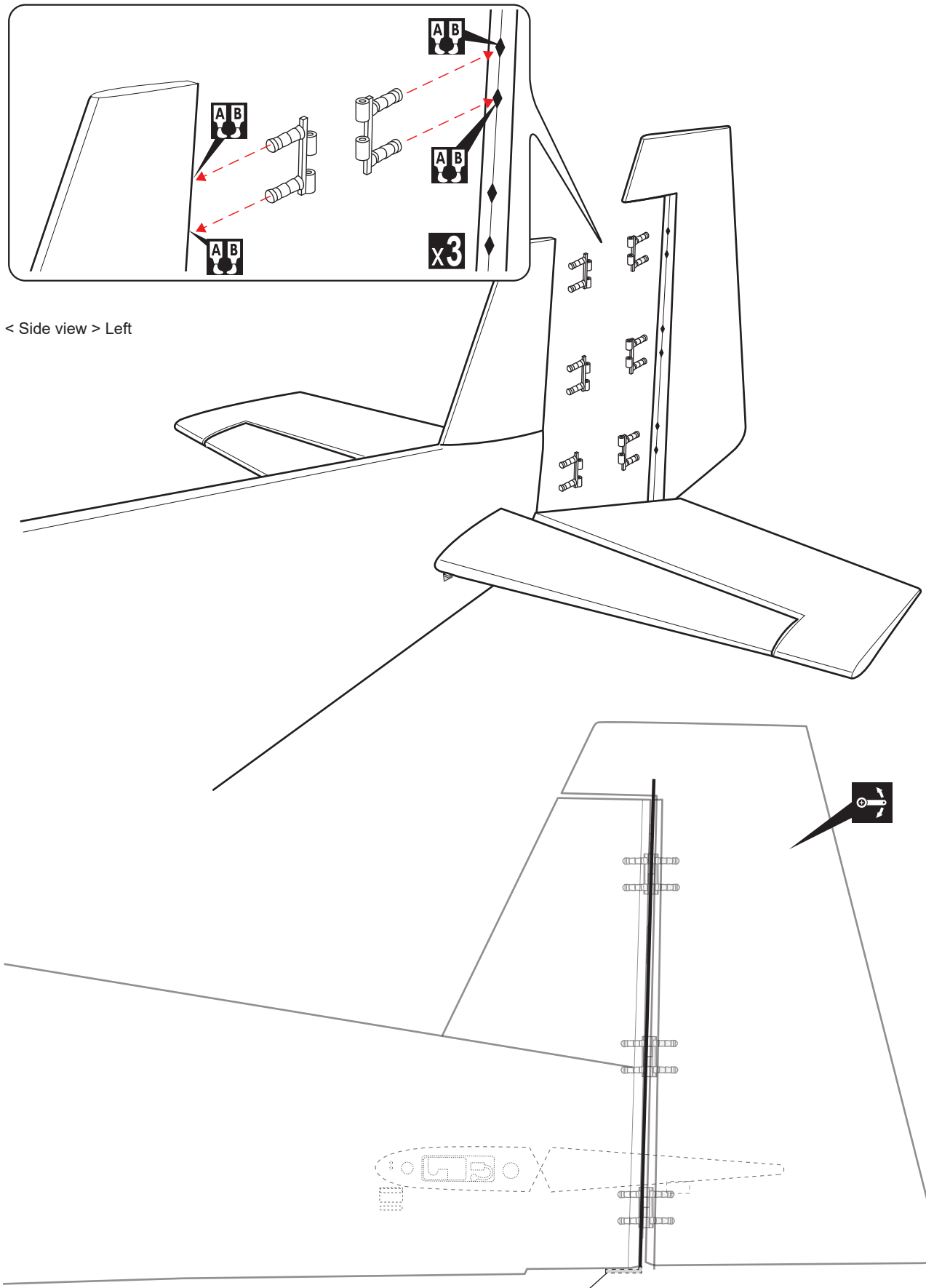
< Side view > Left



Cut off shaded portion carefully.

Assemble left and right sides the same way.

INSTALLING THE RUDDER

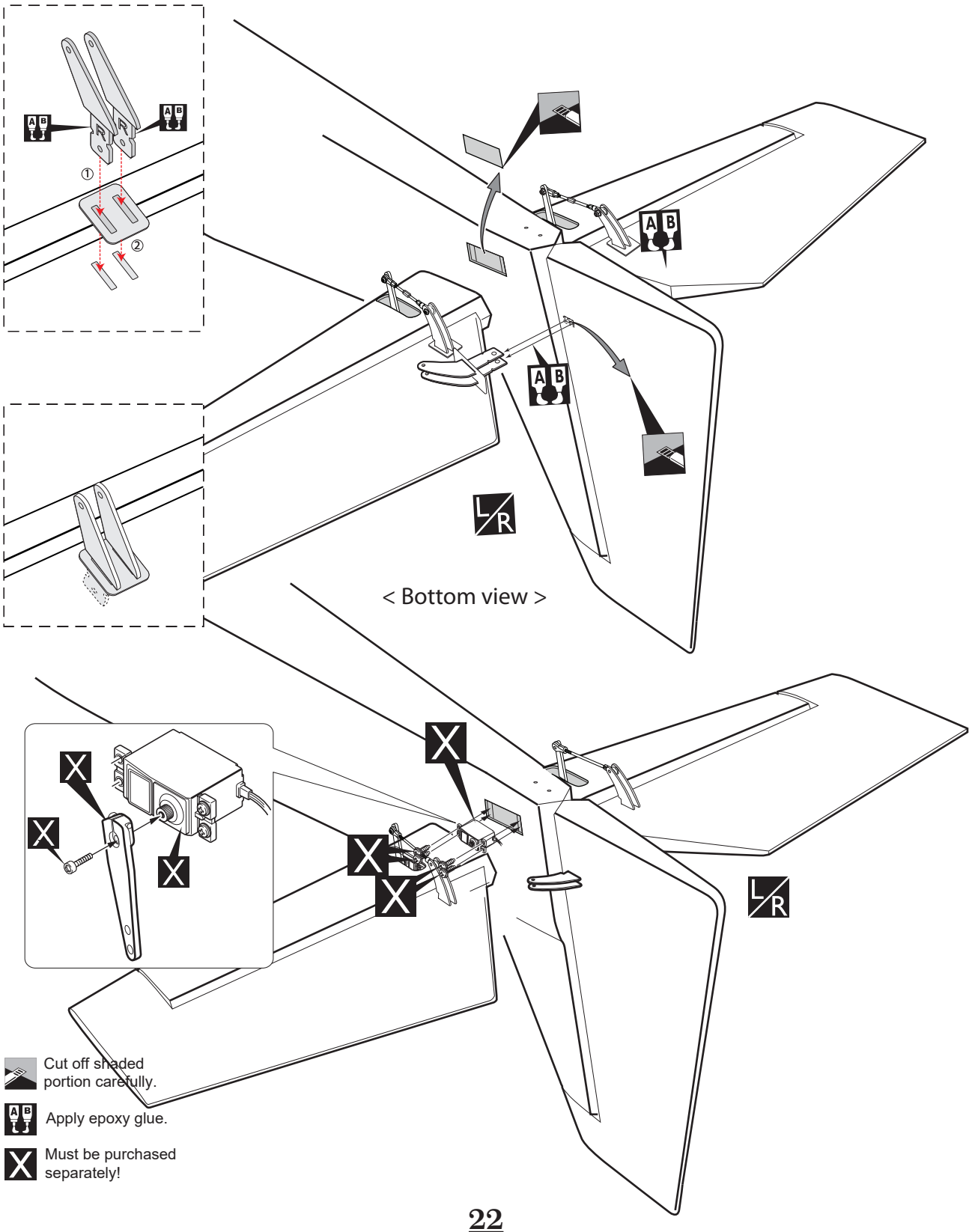


INSTALLING THE RUDDER SERVO

3x60mm Push Rod 1
Copper Ball 1
Copper Ball 1
Ball Link 2

Horn 2
Hole Bracket 1

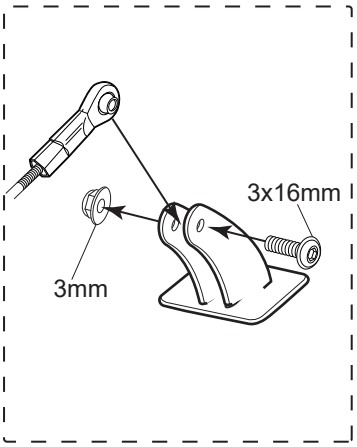
3x16mm Button Head Cap Screw 2
3mm Lock Nut 1

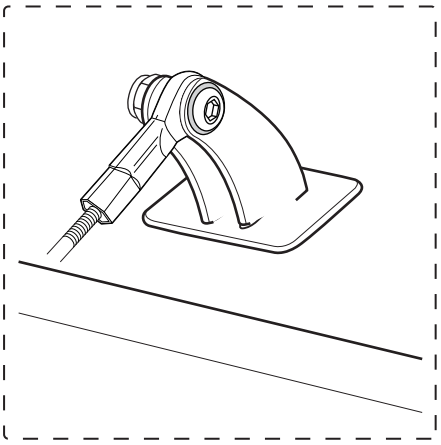


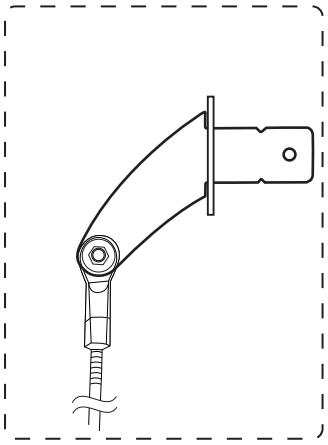
Cut off shaded portion carefully.

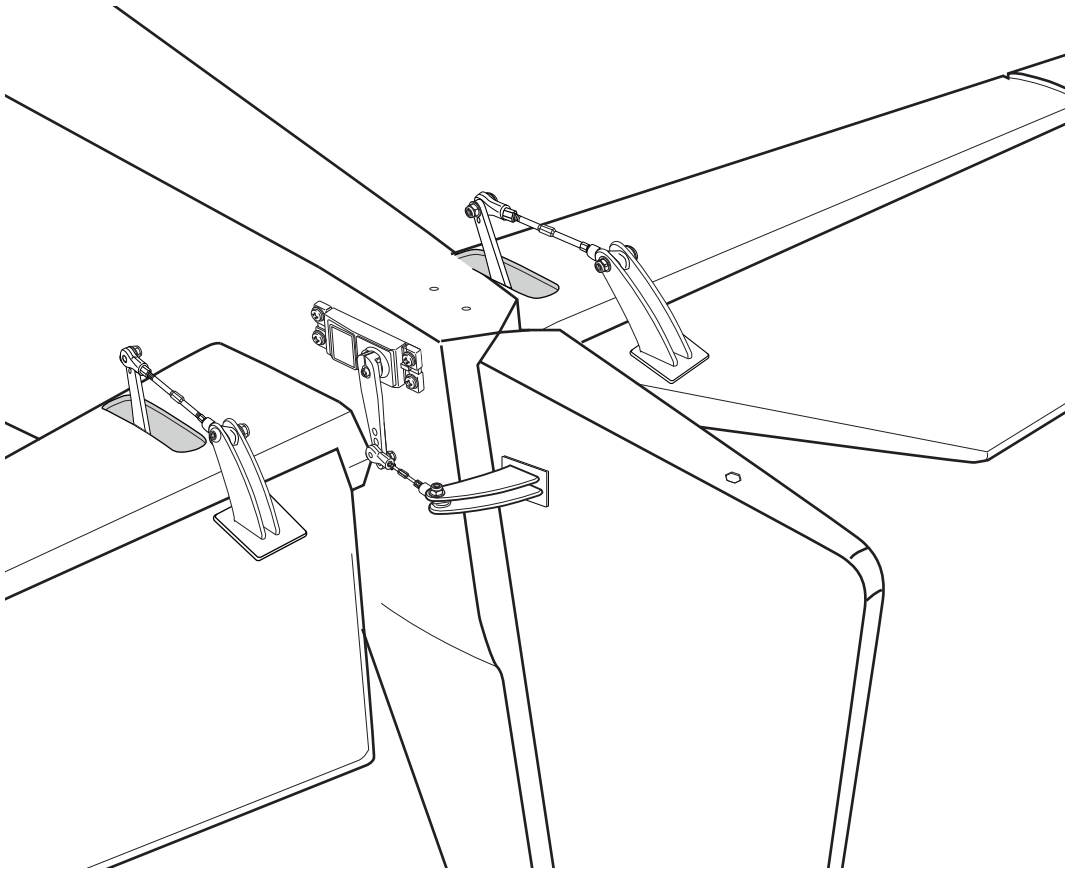
Apply epoxy glue.

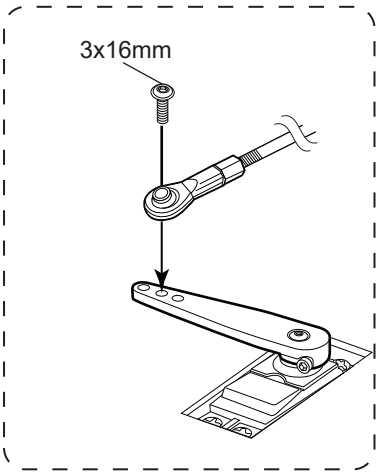
Must be purchased separately!

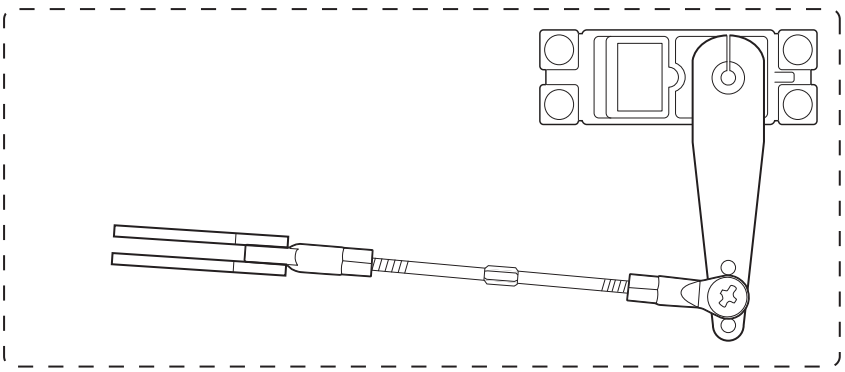

3x16mm
3mm



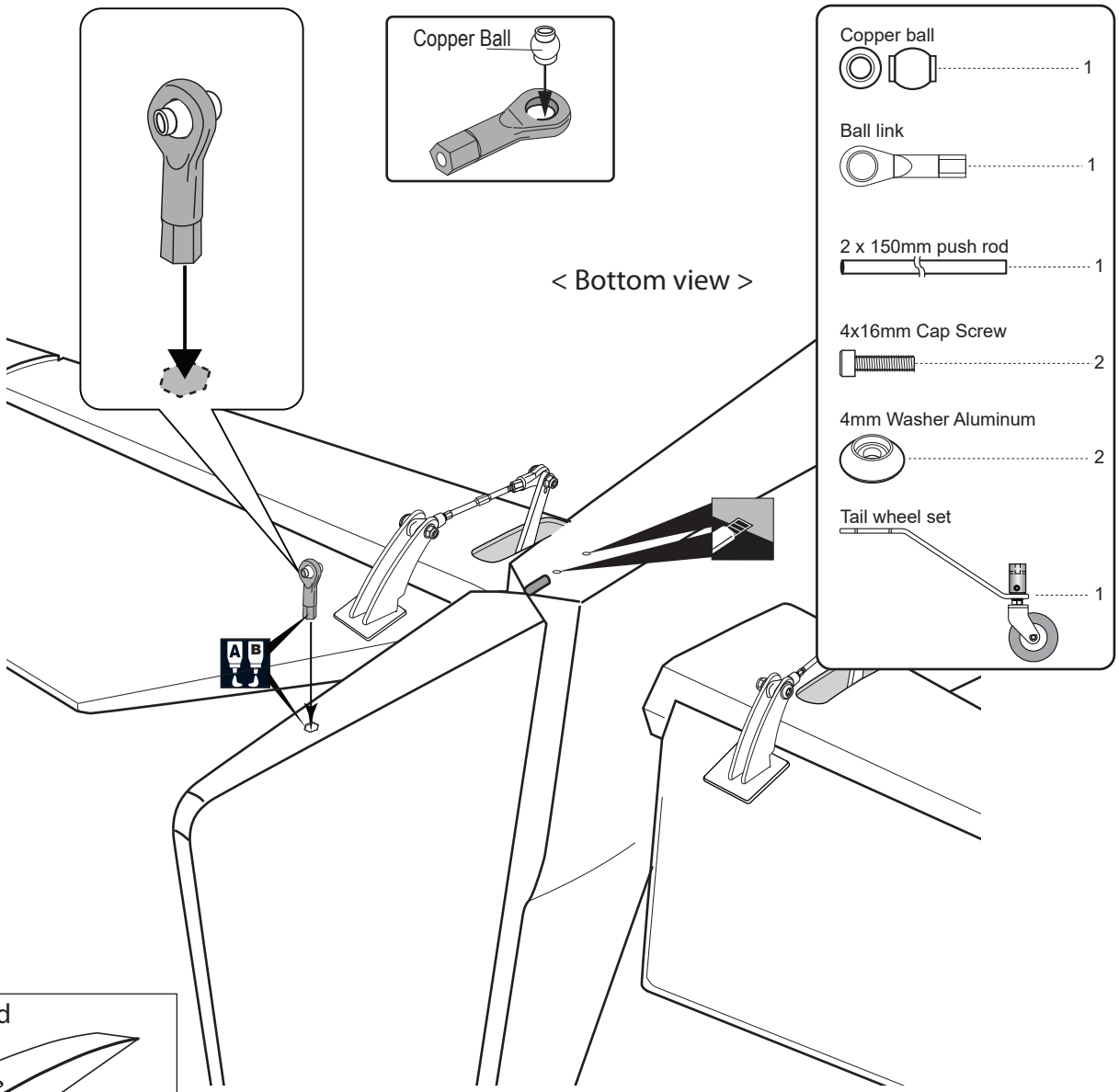


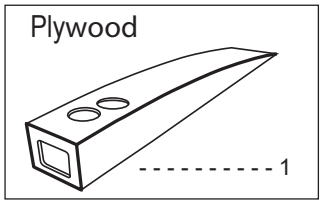


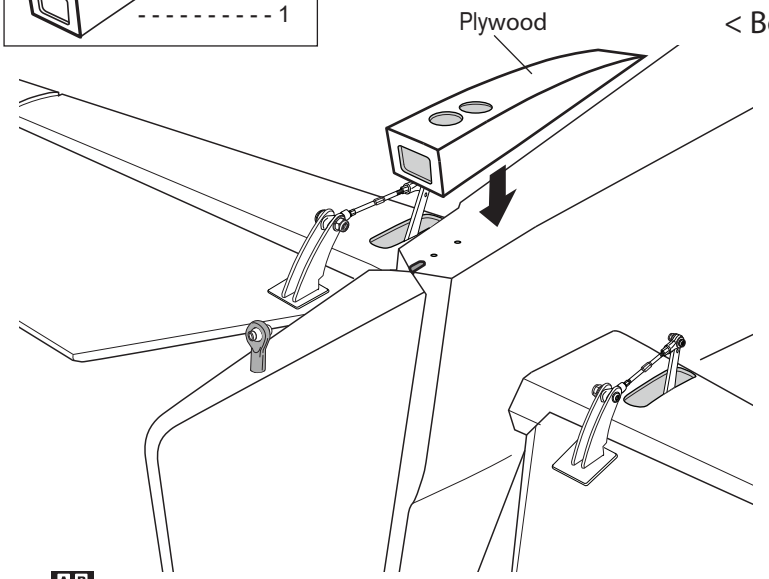

3x16mm

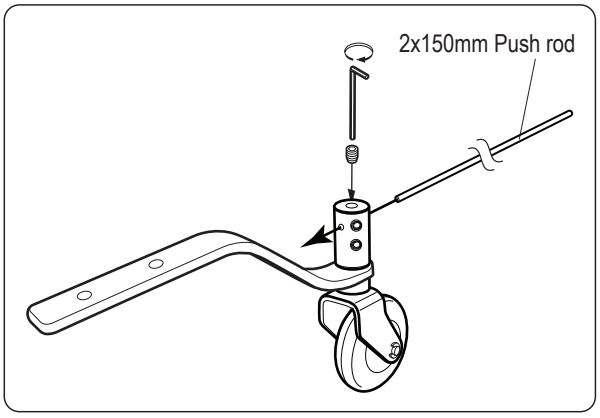


INSTALLING THE TAIL WHEEL



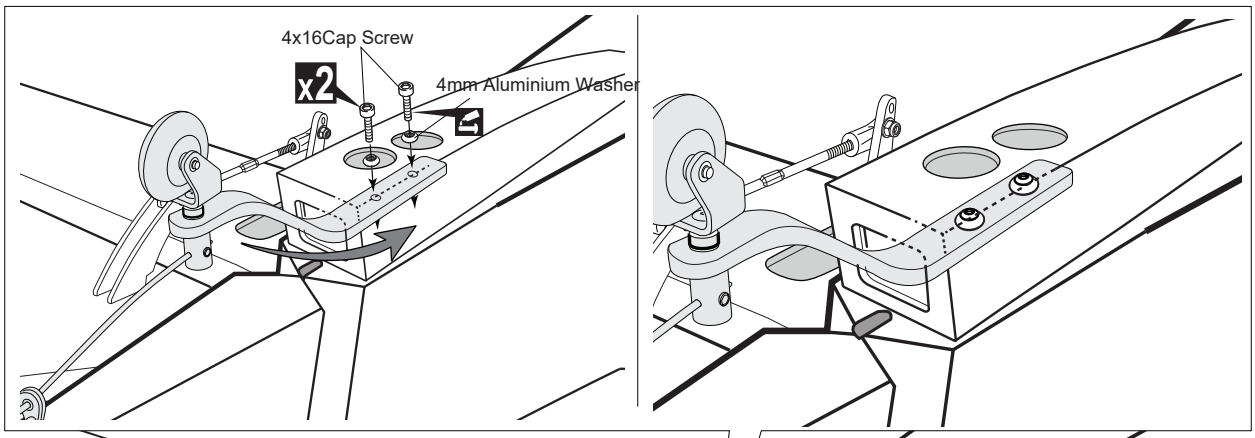


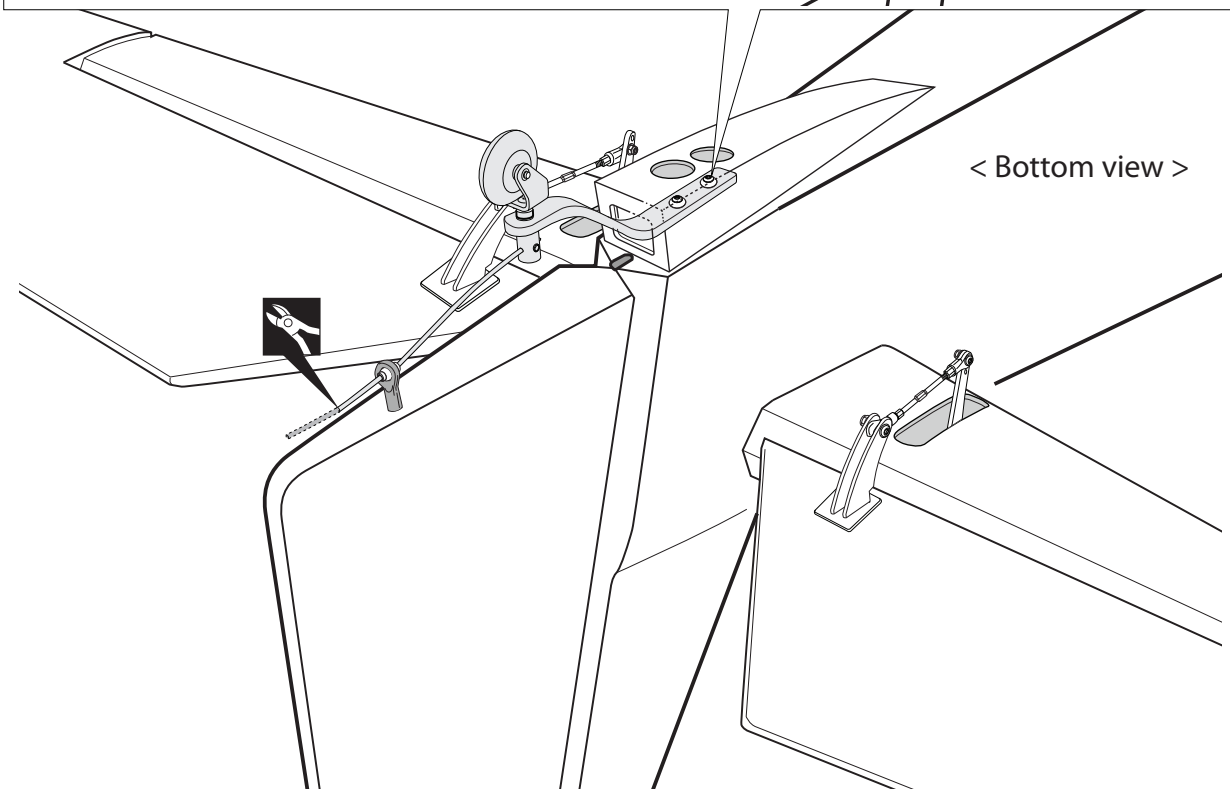


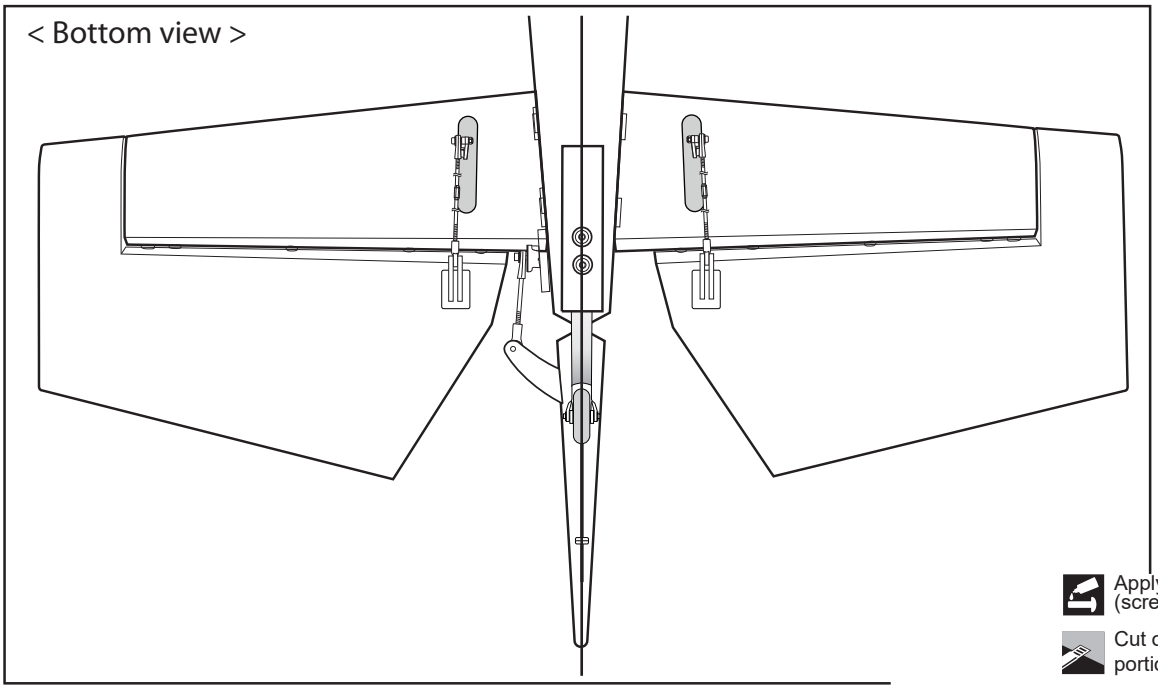


Apply epoxy glue.

Cut off shaded portion carefully.







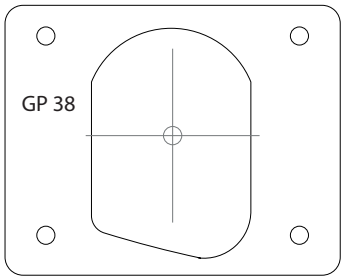
Apply threadlocker (screw cement).

Cut off shaded portion carefully.

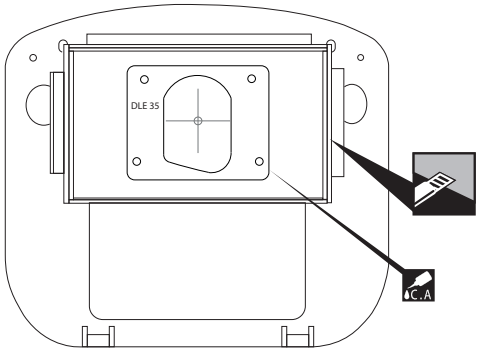
Cut off excess.

INSTALLING THE ENGINE

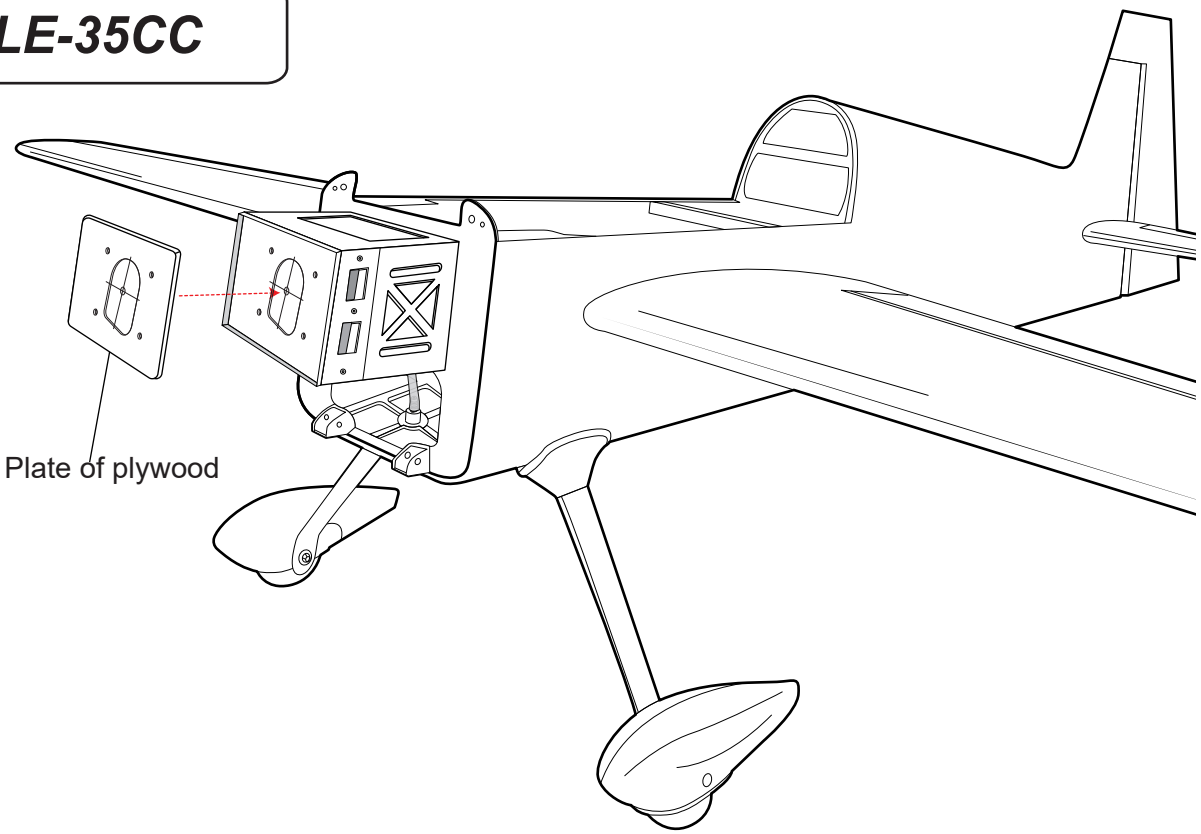
Using plate of plywood (supplied with the kit) mark the holes into the fire wall for installing the engine mount for DLE-35cc.

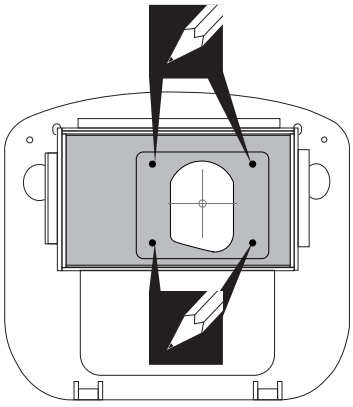


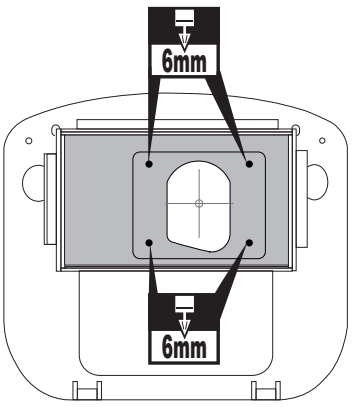
May be you also need to trim some wood from the tri-angle wood for the installation is easy.



DLE-35CC





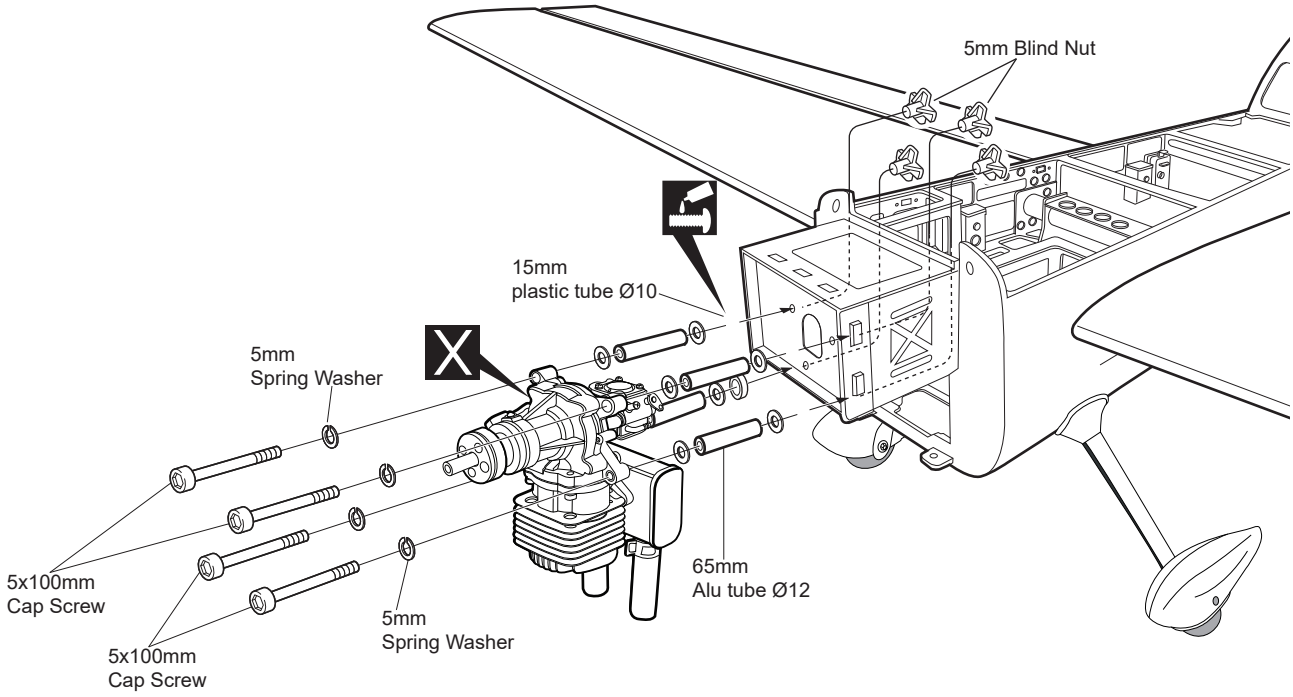


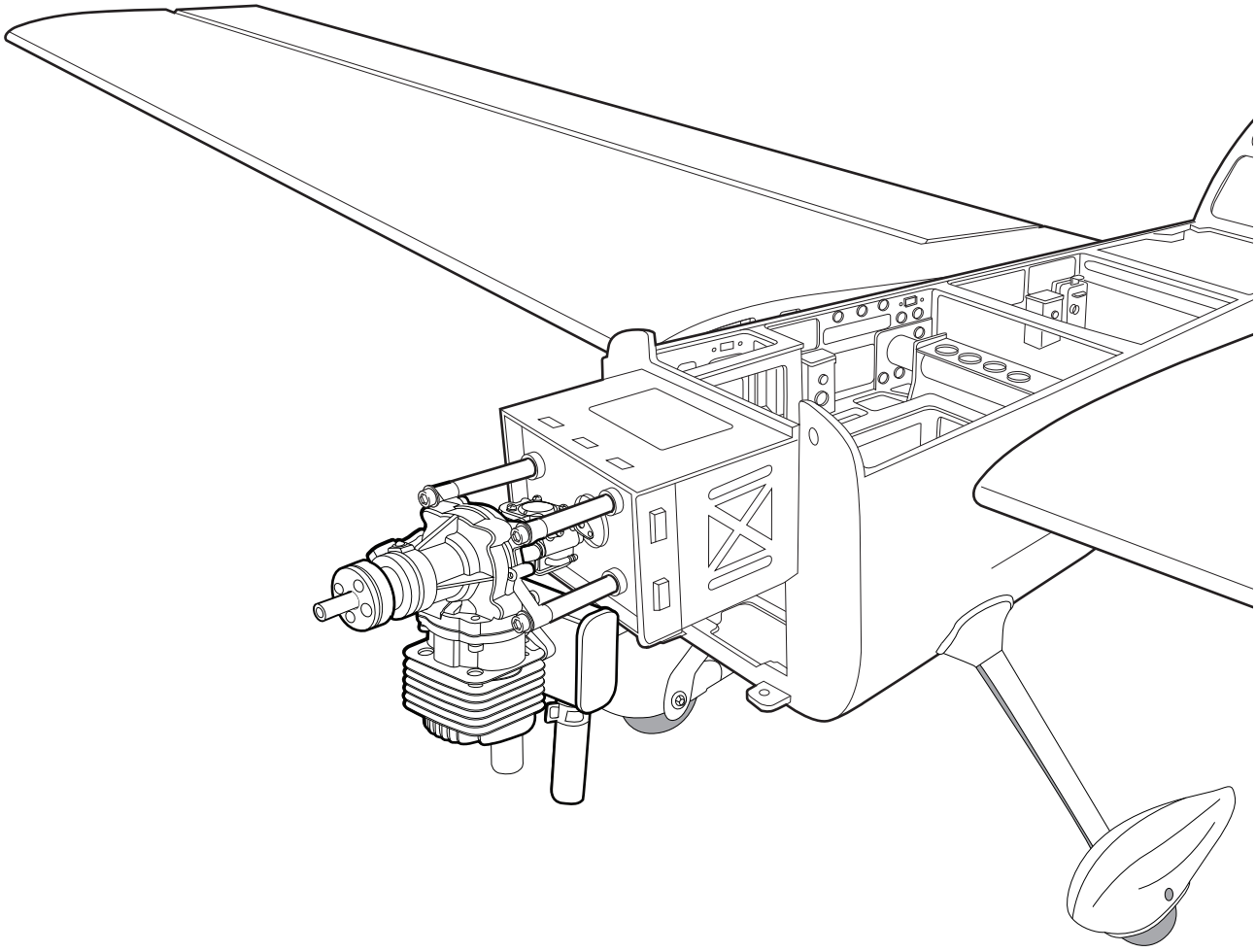
Use a pencil to mark

Drill holes using the stated. (in this case 6mm Ø).

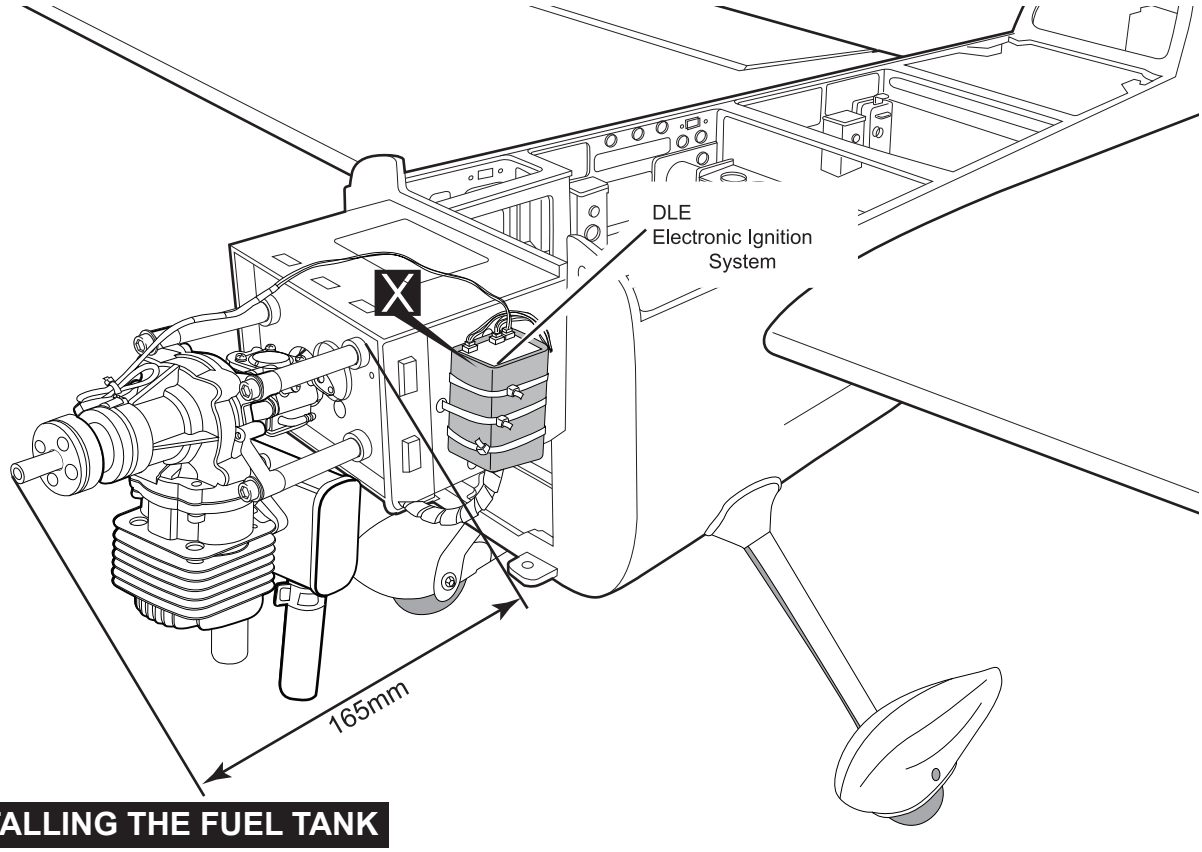
Cut off shaded portion carefully.

Apply instant glue (C.A glue, super glue).

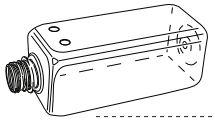




X Must be purchased separately!



INSTALLING THE FUEL TANK

Fuel Tank 360ml

1

Rubber washer
4
1

Full CNC machining
1
1
1
2

Plastic
1

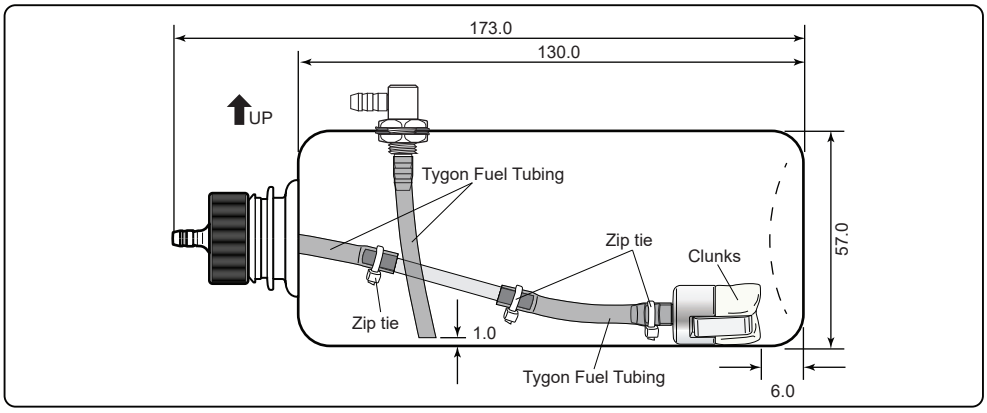
Zip tie
3

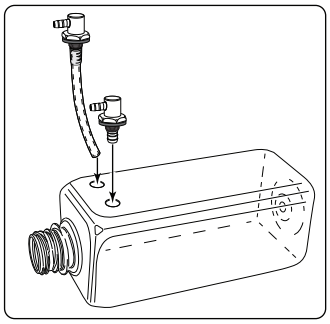
Brass pipes
1

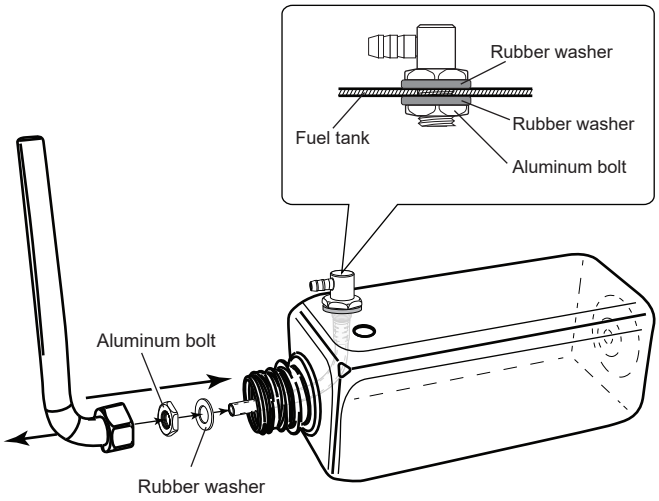
Clunks
1

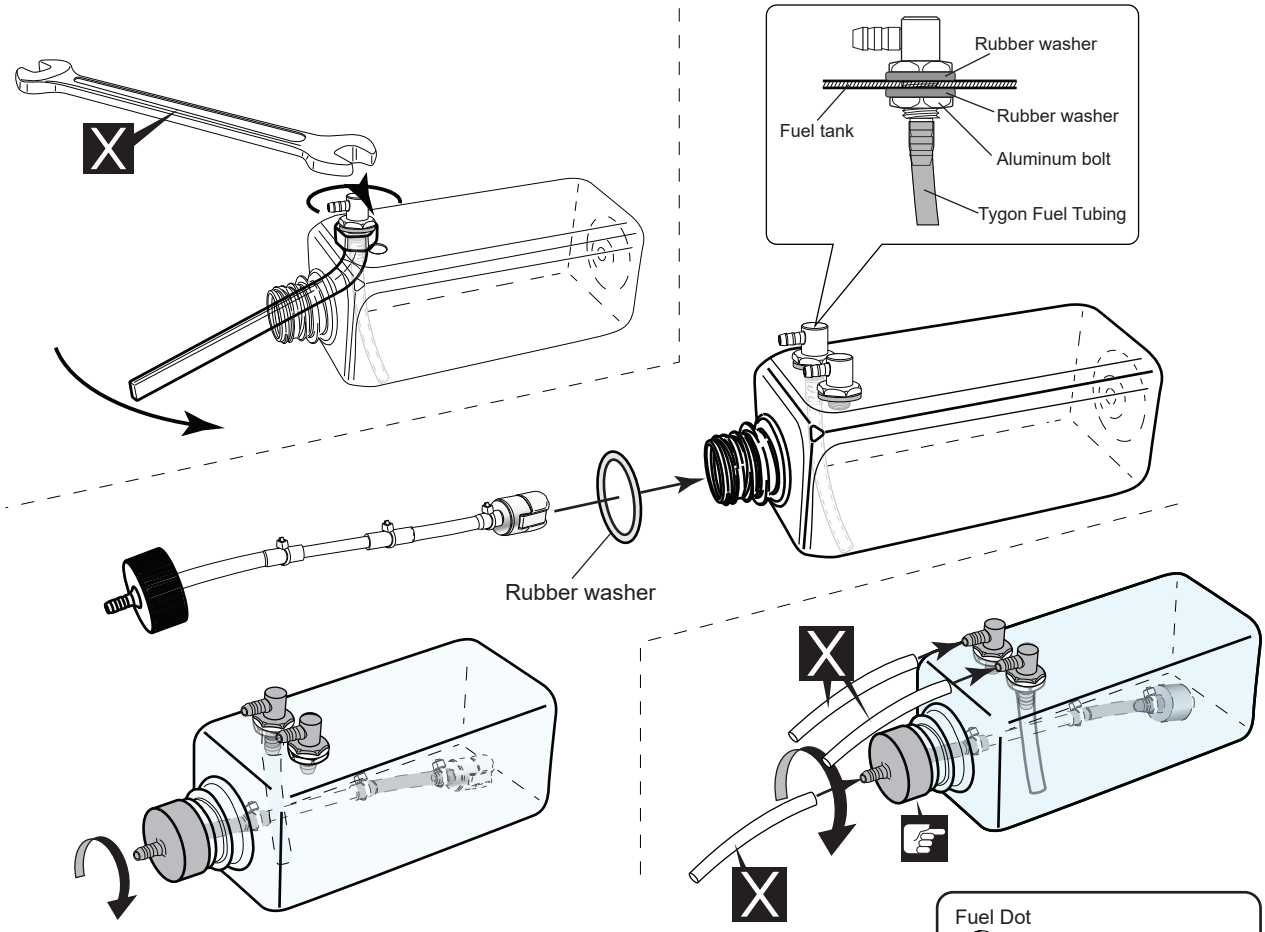
Tygon Fuel Tubing
1

X Must be purchased separately!







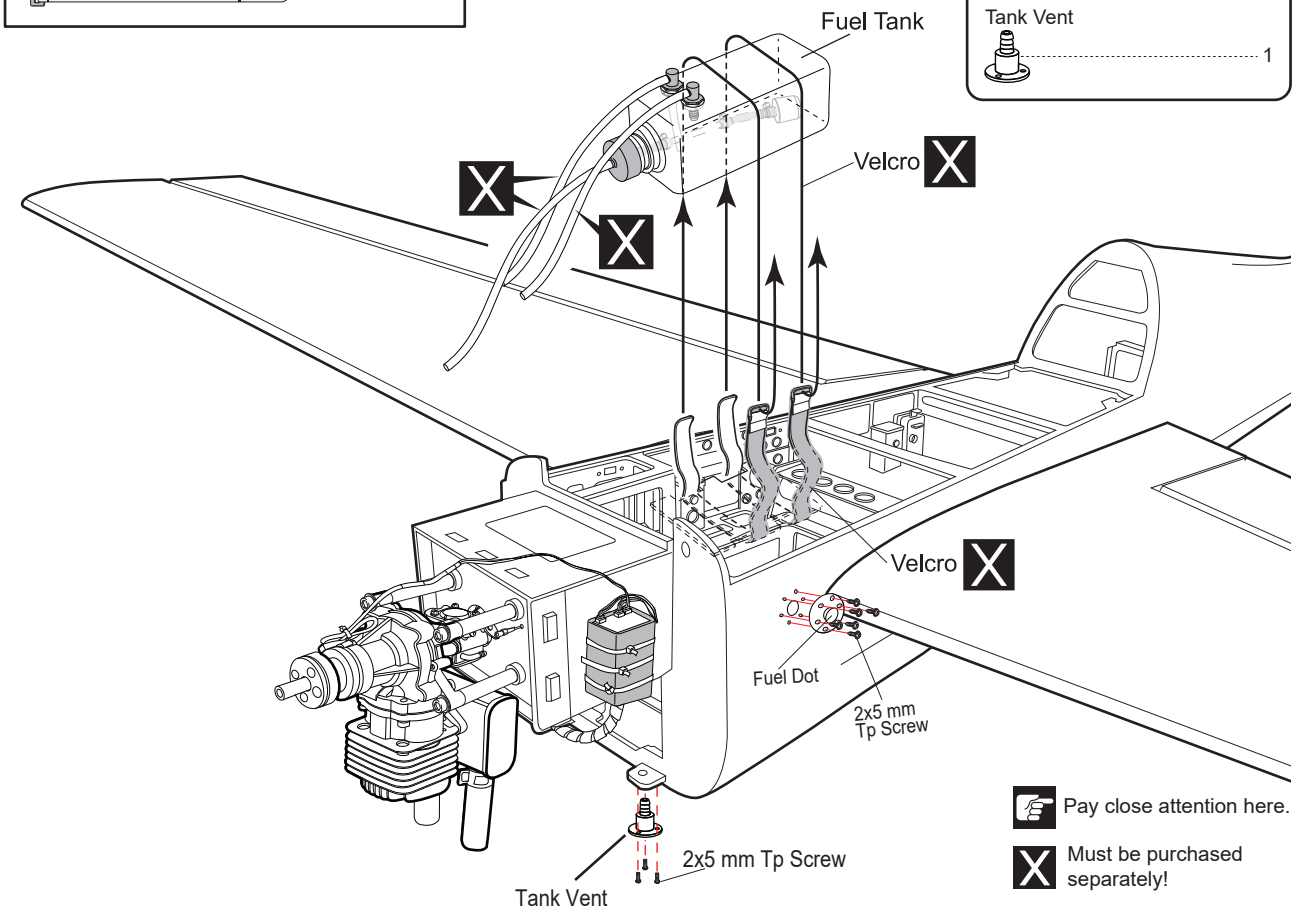


20x330mm Fuel tank velcro 2

Fuel Dot 1

2x5 mm Tp Screw 9

Tank Vent 1

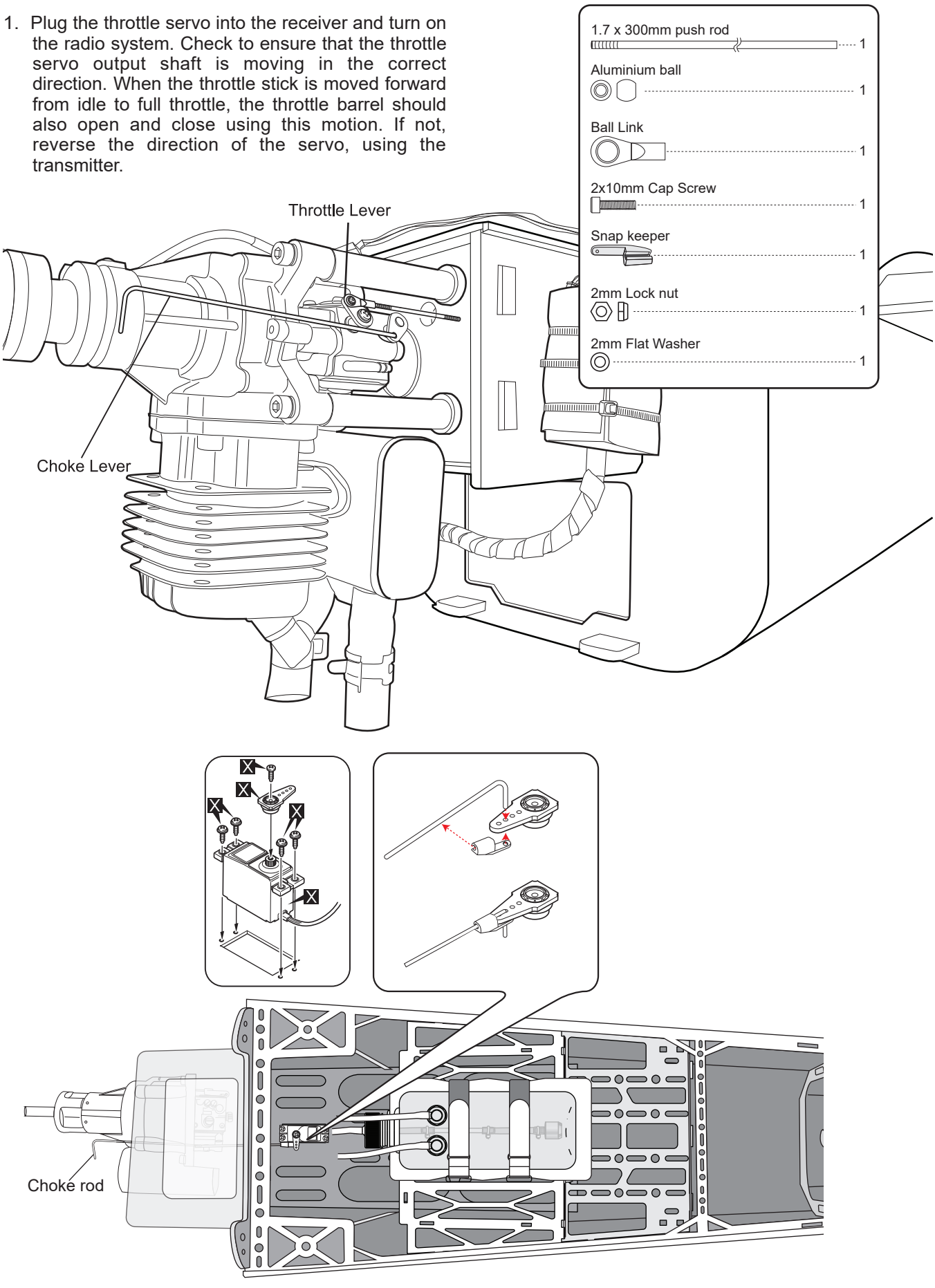


Pay close attention here.

Must be purchased separately!

INSTALLING THE THROTTLE

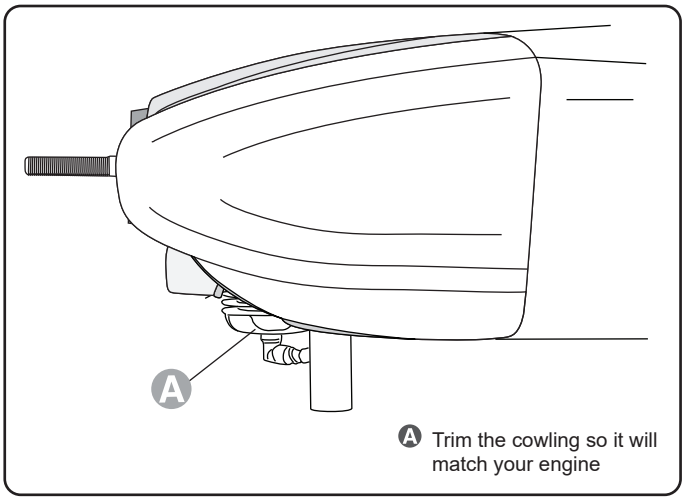
1. Plug the throttle servo into the receiver and turn on the radio system. Check to ensure that the throttle servo output shaft is moving in the correct direction. When the throttle stick is moved forward from idle to full throttle, the throttle barrel should also open and close using this motion. If not, reverse the direction of the servo, using the transmitter.



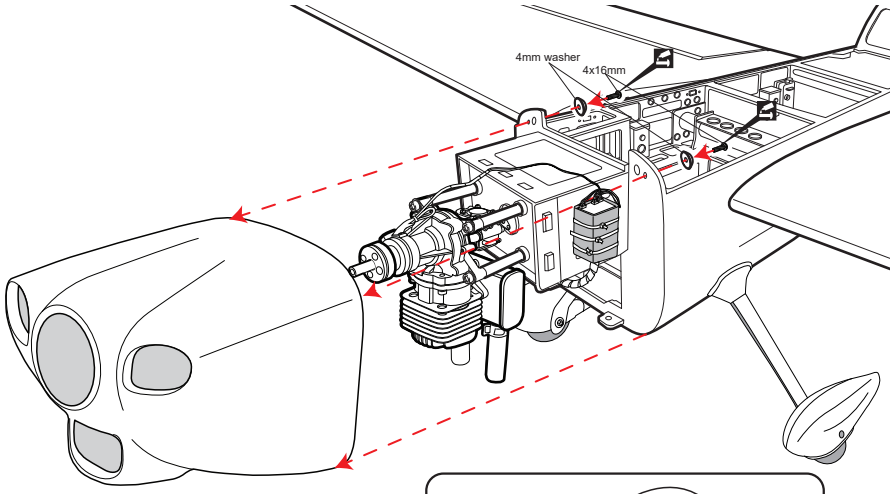
MOUNTING THE COWL

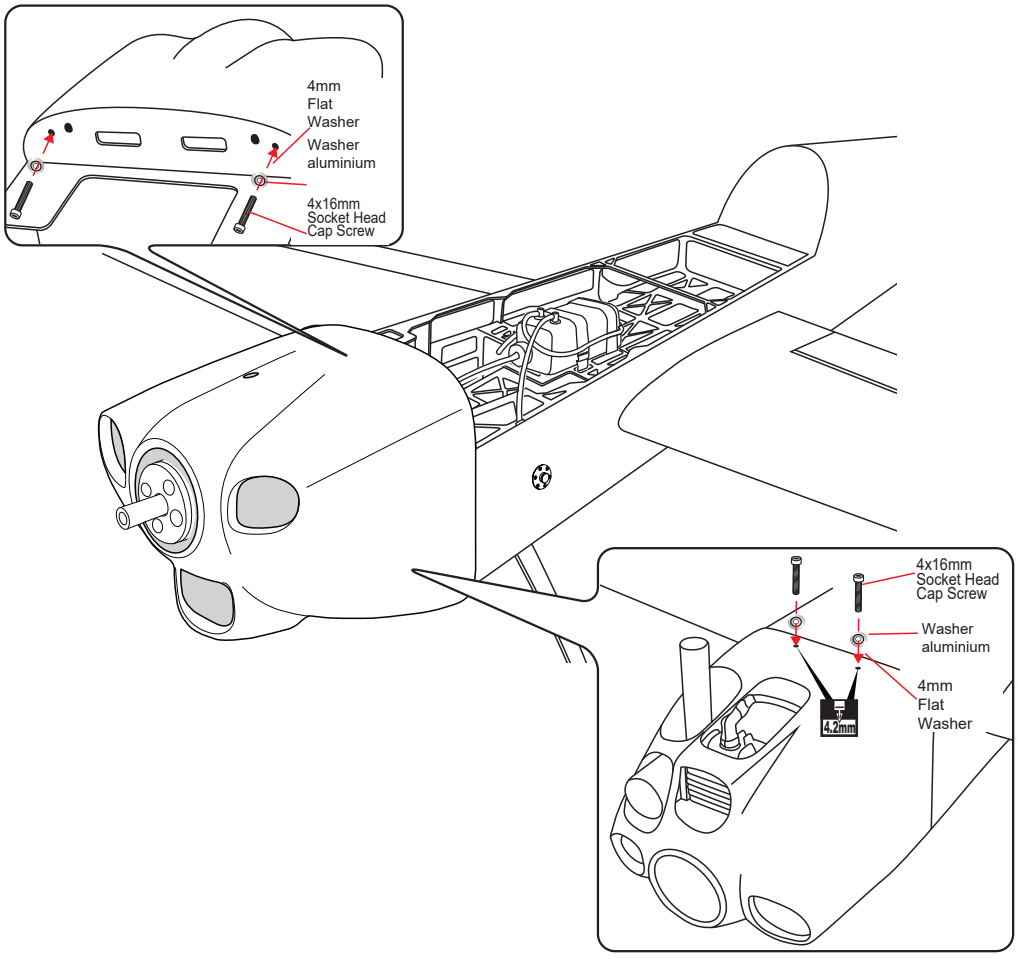
4x16mm Button Head Cap Screw 4

4mm Washer Aluminum 4



A Trim the cowling so it will match your engine





Apply threadlocker (screw cement).

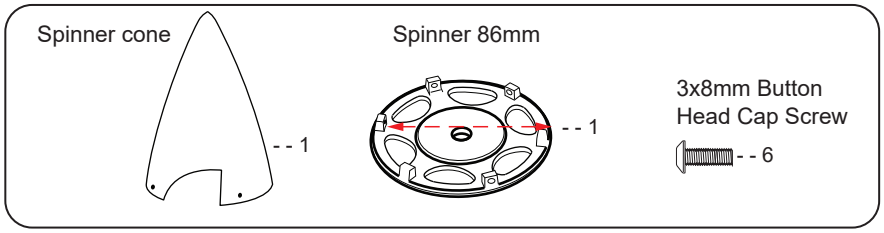
INSTALLING THE SPINNER

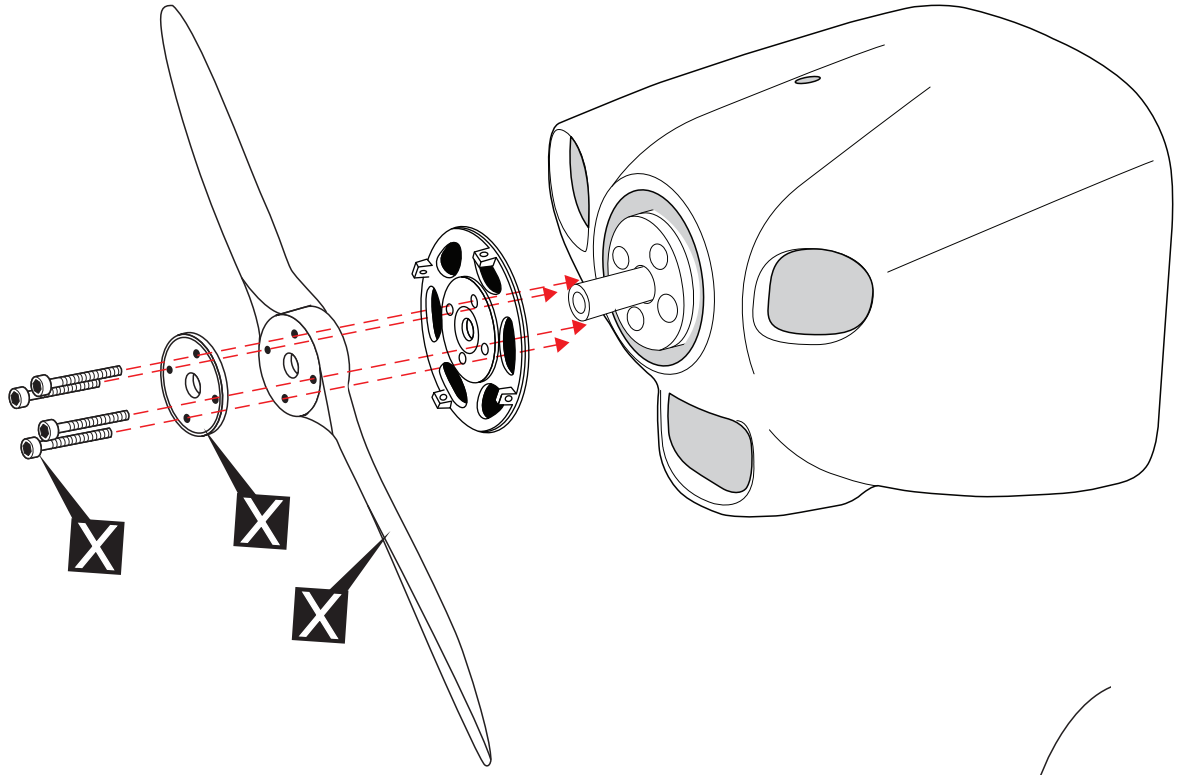
Install the spinner back-plate, propeller and spinner cone.

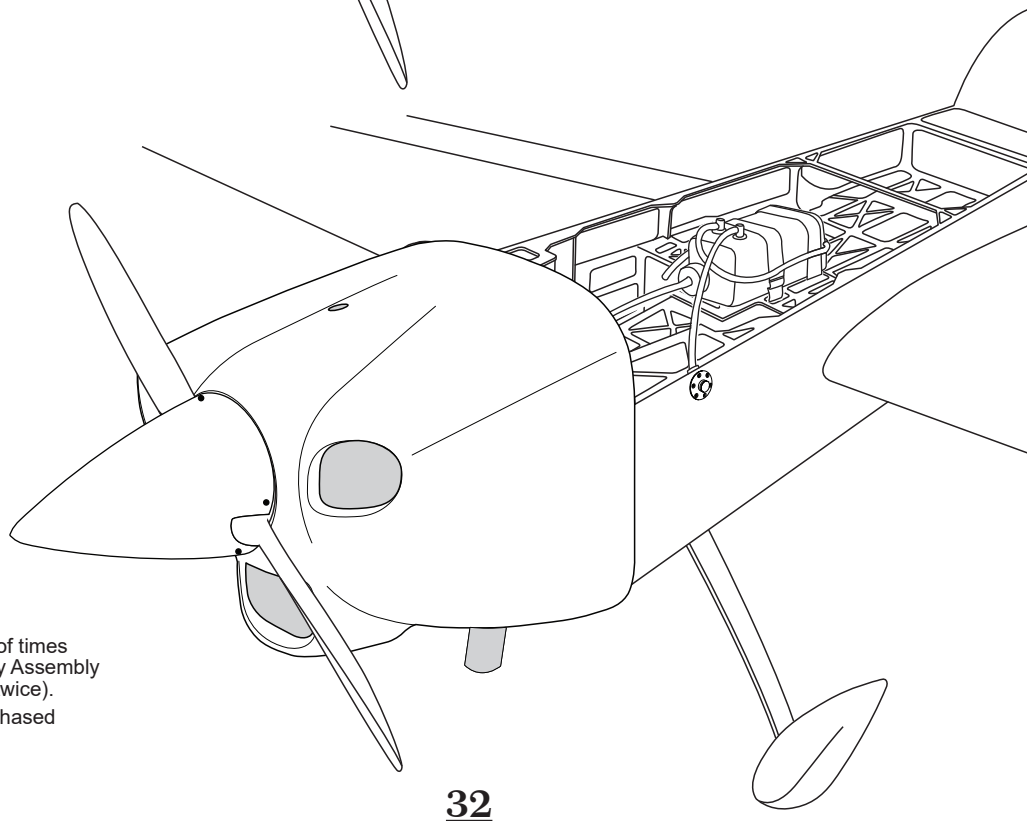
The propeller should not touch any part of the spinner cone. If it dose, use a sharp modeling knife and carefully trim away the spinner cone where the propeller comes in contact with it.

Warning!

- Securely tighten the nut holding the propeller for it not come off when the motor is spinning. If coming off, there is a high risk of injury!
- Always ensure propeller and spinner are balanced.If unbalanced, vibration may result at high rotation and cause damage or injury.







x2 The number of times the same way Assembly (in this case twice).

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.

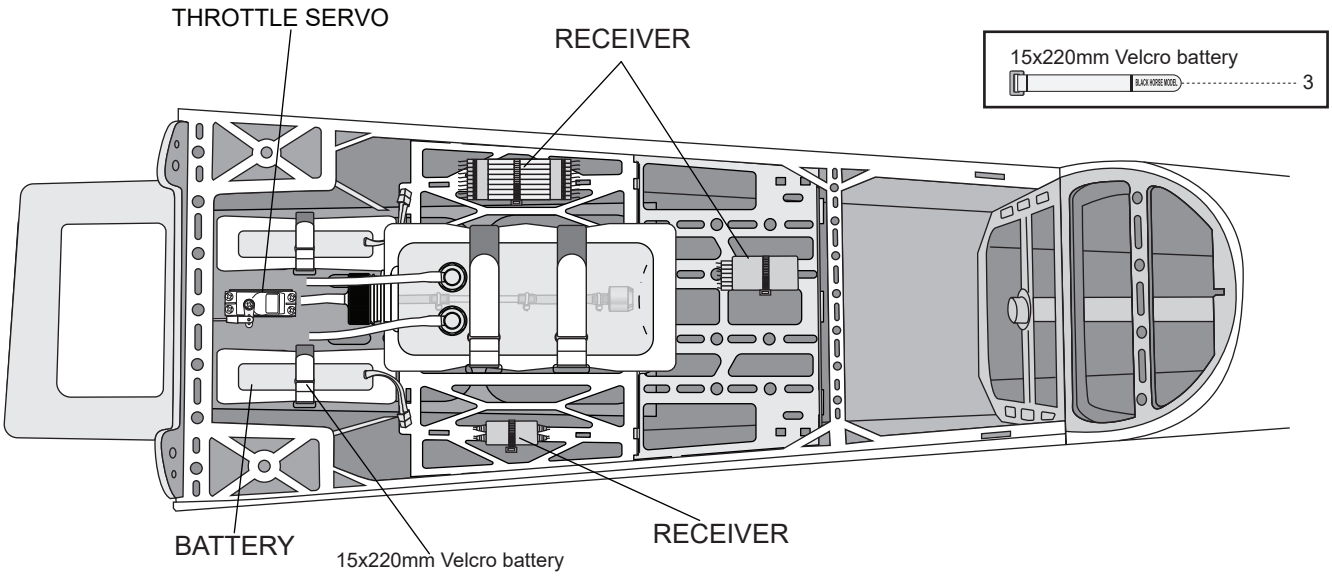
⚠ *Do not permanently secure the receiver and battery until after balancing the model.*

INSTALLING THE SWITCH

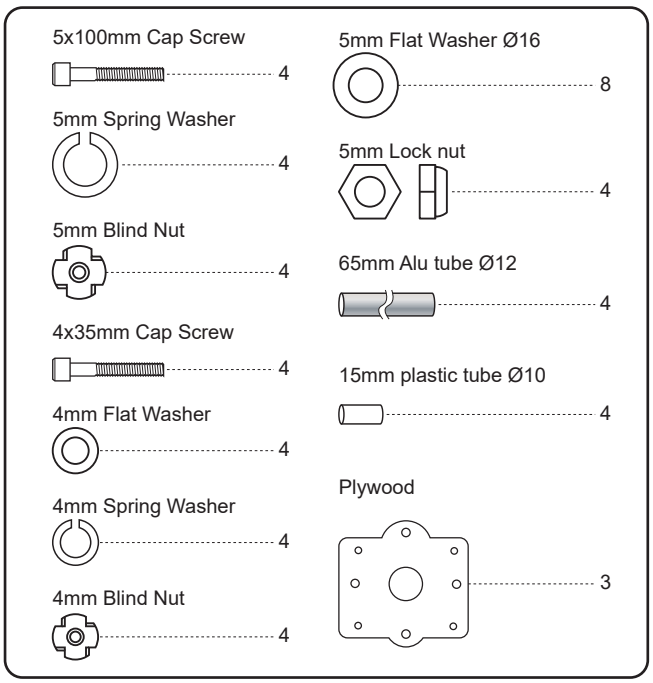
1. The switch should be mounted on the fuselage side, opposite the muffler, close enough to the receiver so the lead will reach. Use the face plate of the switch cut out and locate the mounting holes.

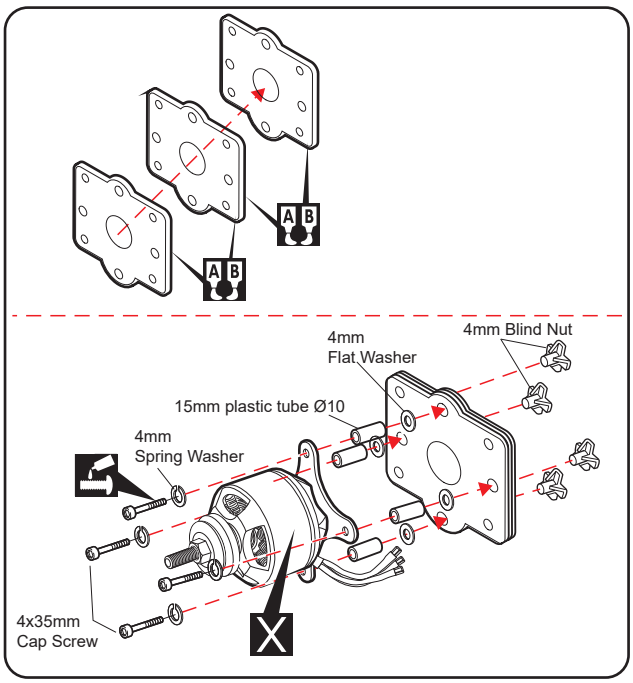
2. Cut out the switch hole using a modeling knife. Use a 2mm drill bit and drill out the two mounting holes through the fuselage side.

3. Secure the switch in place using the two machine screws provided with the radio system.



INSTALLING THE ELECTRIC MOTOR (E.P VERSION)

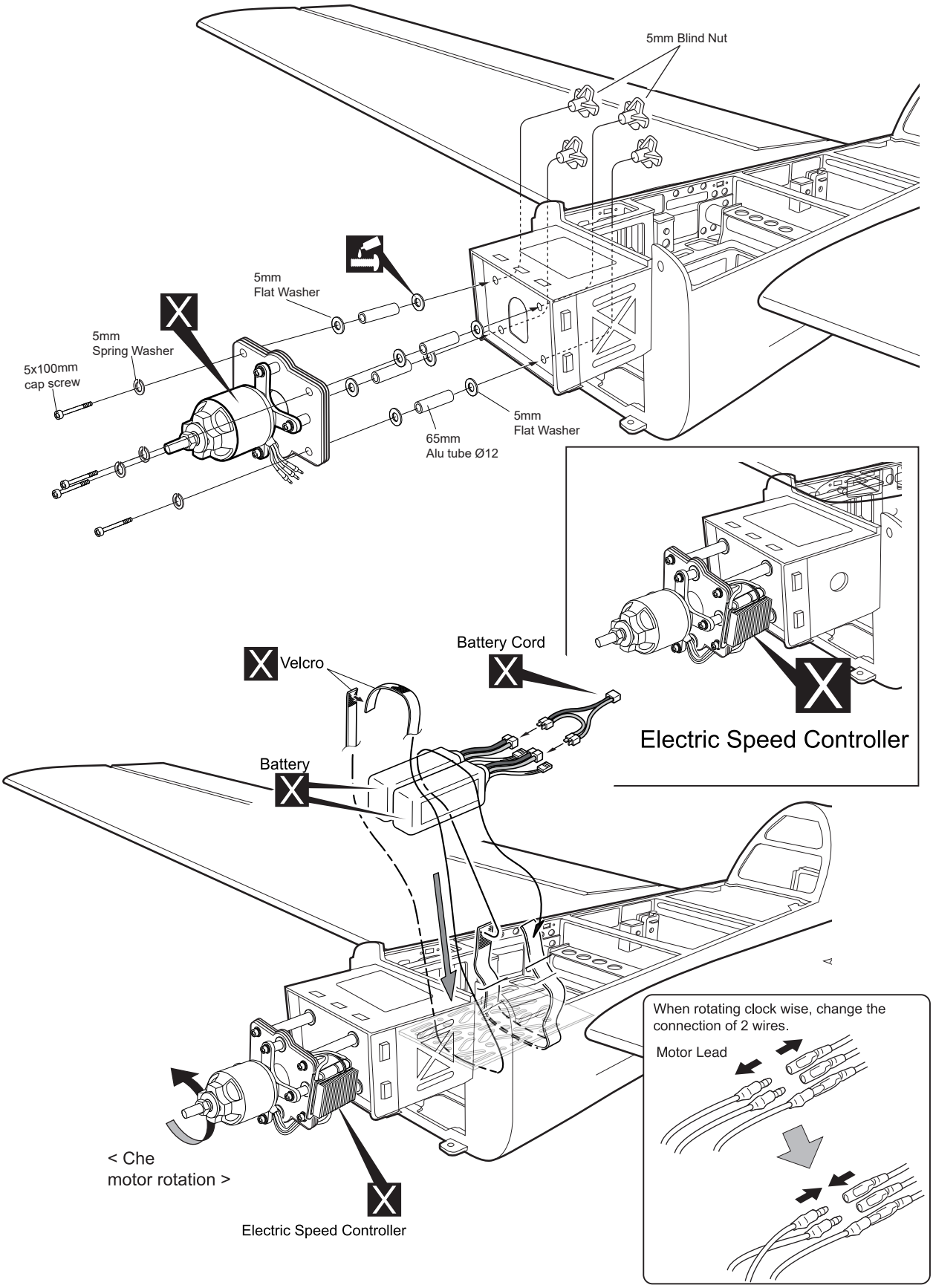




Apply threadlocker (screw cement).

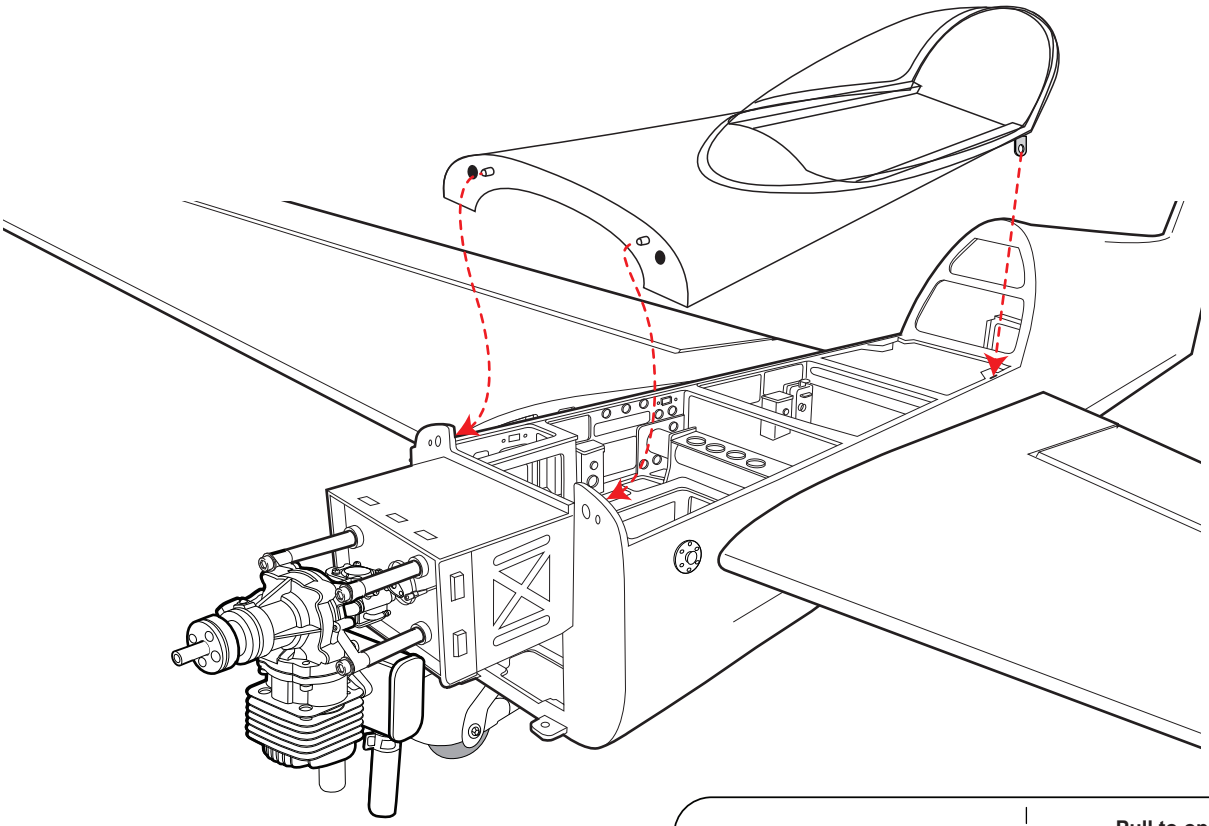
Apply epoxy glue.

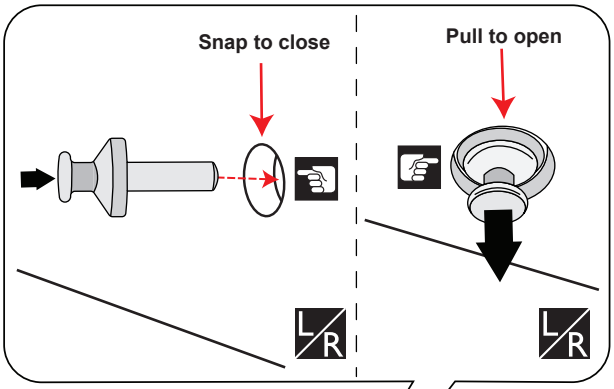
Must be purchased separately!

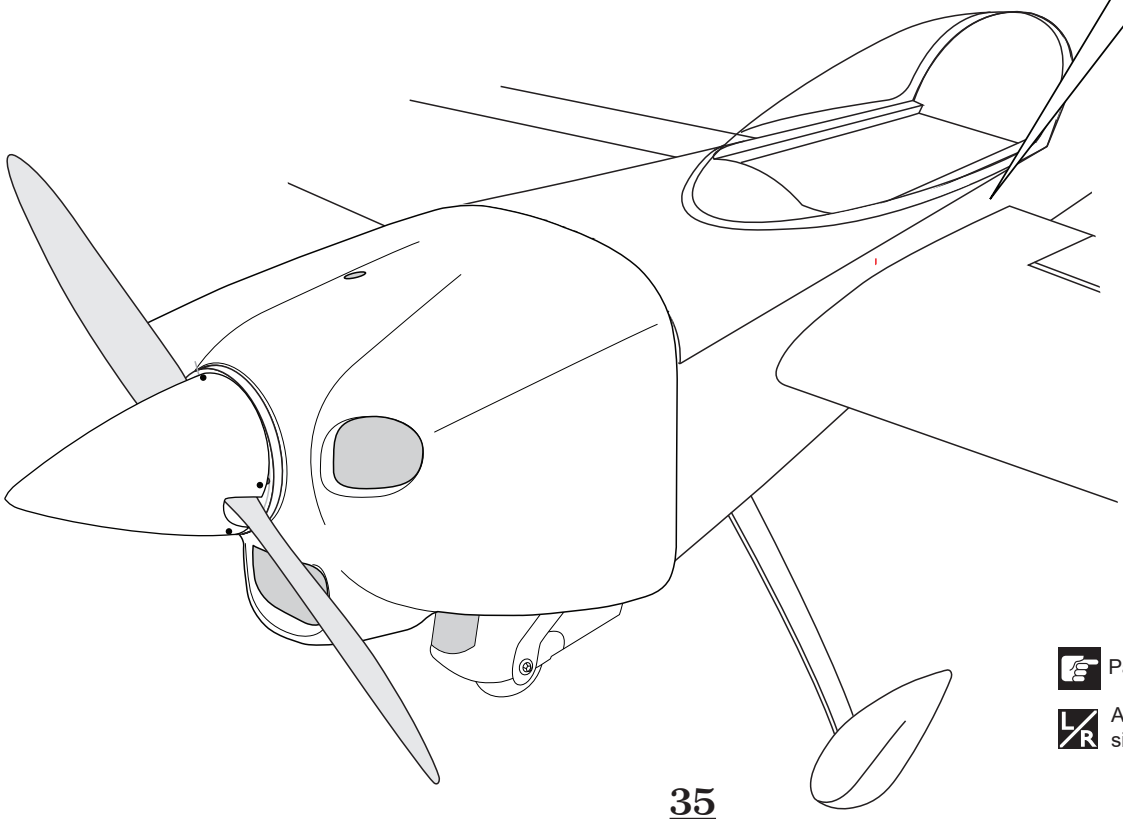


Apply threadlocker (screw cement).

Must be purchased separately!



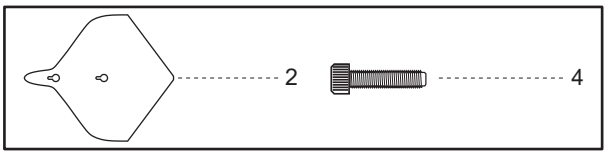


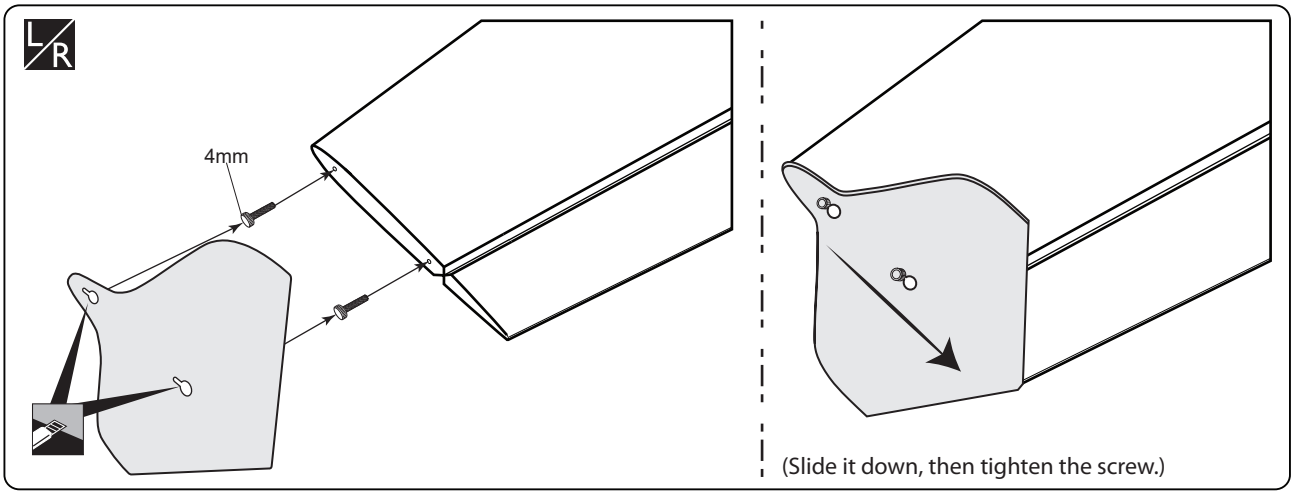


Pay close attention here.

Assemble left and right sides the same way.

INSTALLING THE WING SIDE FORCE





BALANCING

1. It is critical that your airplane be balanced correctly. Improper balance will cause your plane to lose control and crash.

THE CENTER OF GRAVITY IS LOCATED 142 mm (5.59 in) BACK FROM THE LEADING EDGE OF THE WING, AT THE FUSELAGE. BALANCE A PLANE UPSIDE DOWN WITH THE FUEL TANK EMPTY.

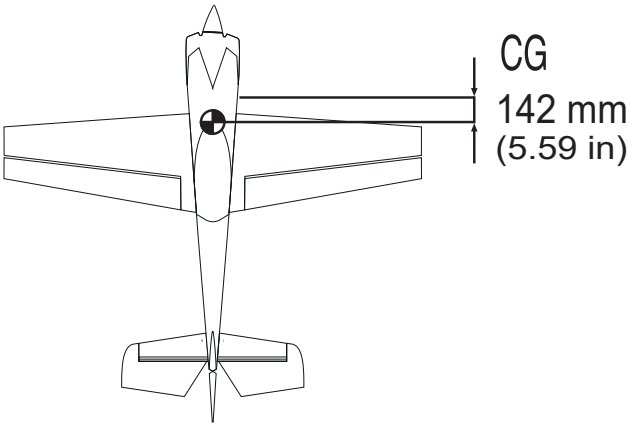
2. If the nose of the plane falls, the plane is nose heavy. To correct this first move the battery pack further back in the fuselage. If this is not possible or does not correct it, stick small amounts of lead weight on the fuselage under the horizontal stabilizer. If the tail of the plane falls, the plane is tail heavy. To correct this, move the battery and receiver forward or if this is not possible, stick weight into the firewall. When balanced correctly, the airplane should sit level or slightly nose down when you lift it up with your fingers.

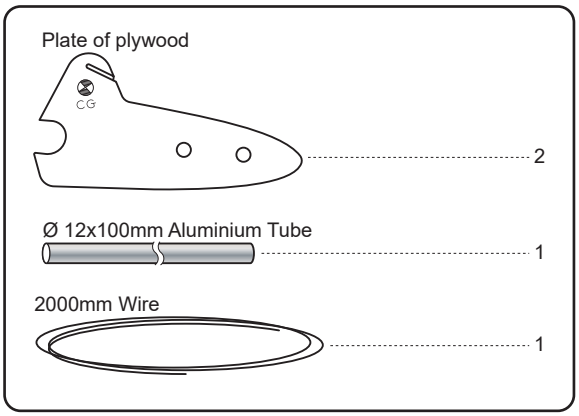
LATERAL BALANCE

⚠ 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.

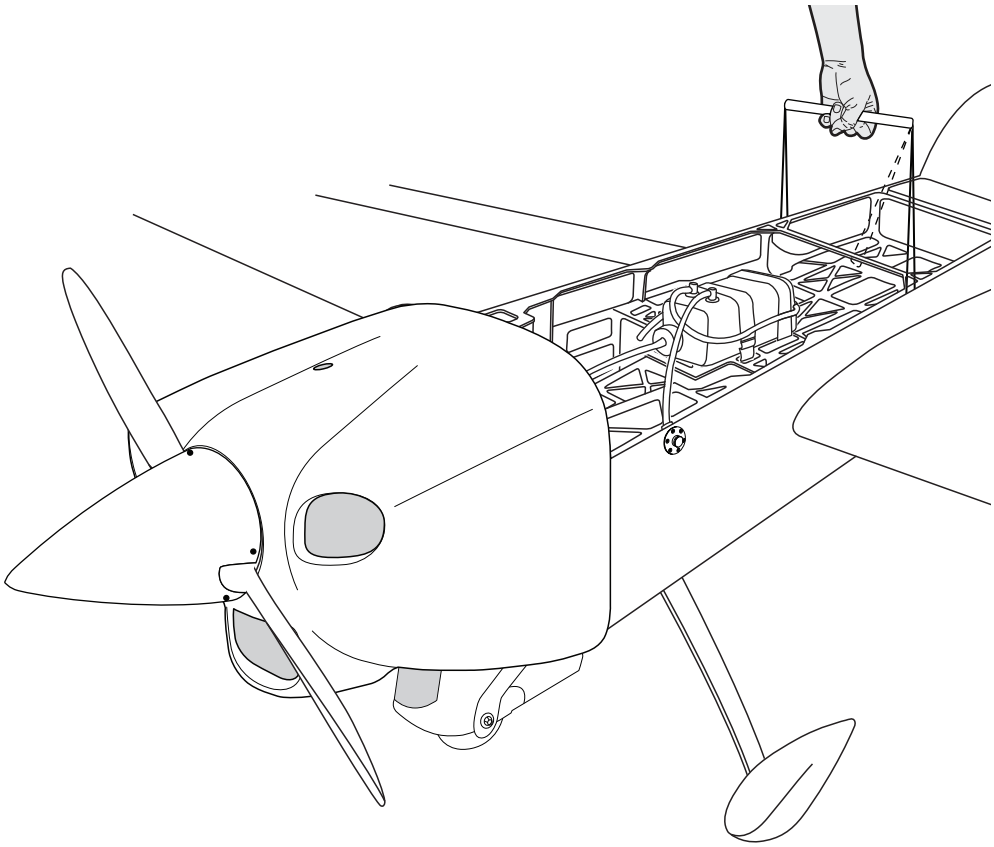
2. If one side of the wing fall, that side is heavier than the opposite. Add small amounts of lead weight to the bottom side of the lighter wing half's wing tip. Follow this procedure until the wing stays level when you lift the airplane.





Cut off shaded portion carefully.

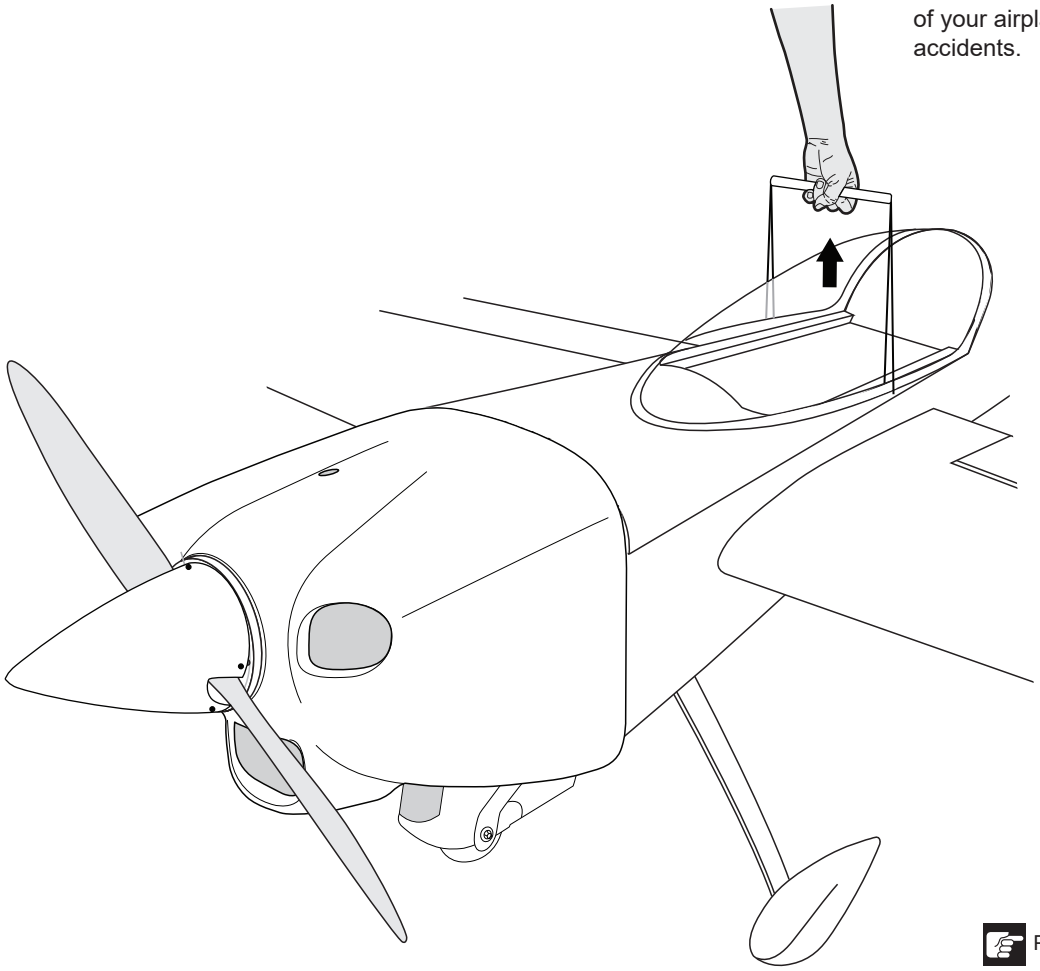
L/R Assemble left and right sides the same way.



- ► In order to obtain the CG specified, reposition the receiver and other equipment.
- ► If not obtain the CG specified, add a weight and adjust.

Warning!

► Do not fly before confirming the correct location of the CG. If the CG is incorrect, you lose control of your airplane which leads to accidents.



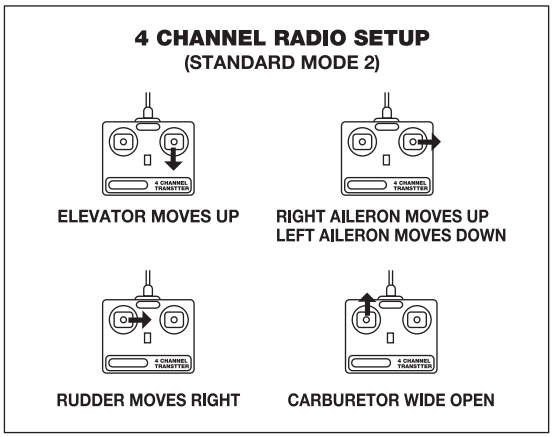
Pay close attention here.

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.



- Ailerons:

Low rate: 18-20 degrees, 30-40% exponential

High rate: 40-45 degrees, 50-60% exponential

- Elevators:

Low rate: 10-12 degrees, 18-20% exponential

High rate: 45-60 degrees, 50-60% exponential

- Rudder:

Low rate: 20 degrees, 50-60% exponential

High rate: 45-55 degrees, 60-80% exponential

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

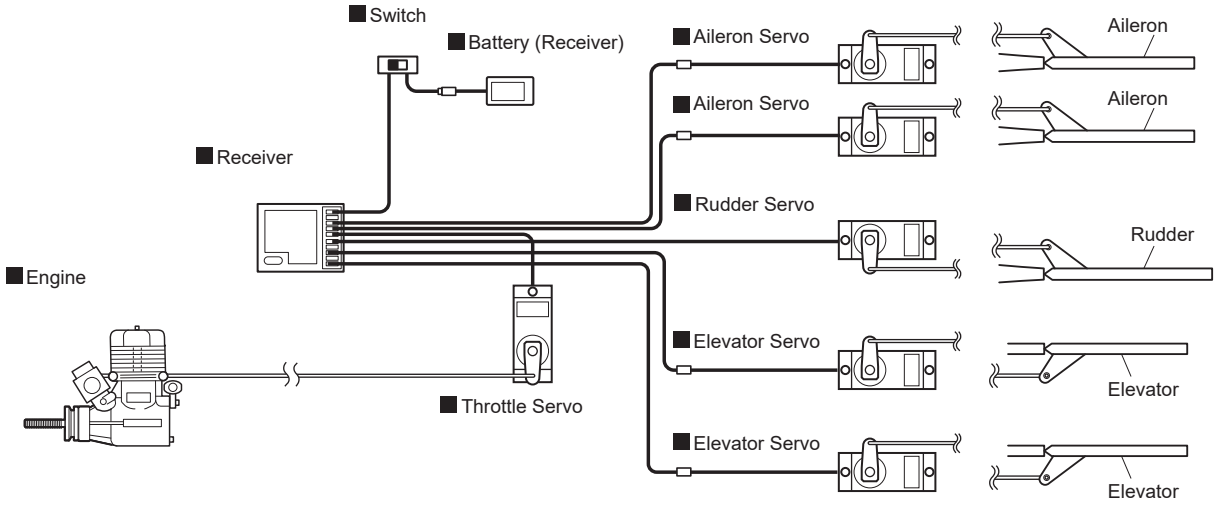
5. Check the receiver antenna . It should be fully extended and not coiled up inside the fuselage.

6. Properly balance the propeller.

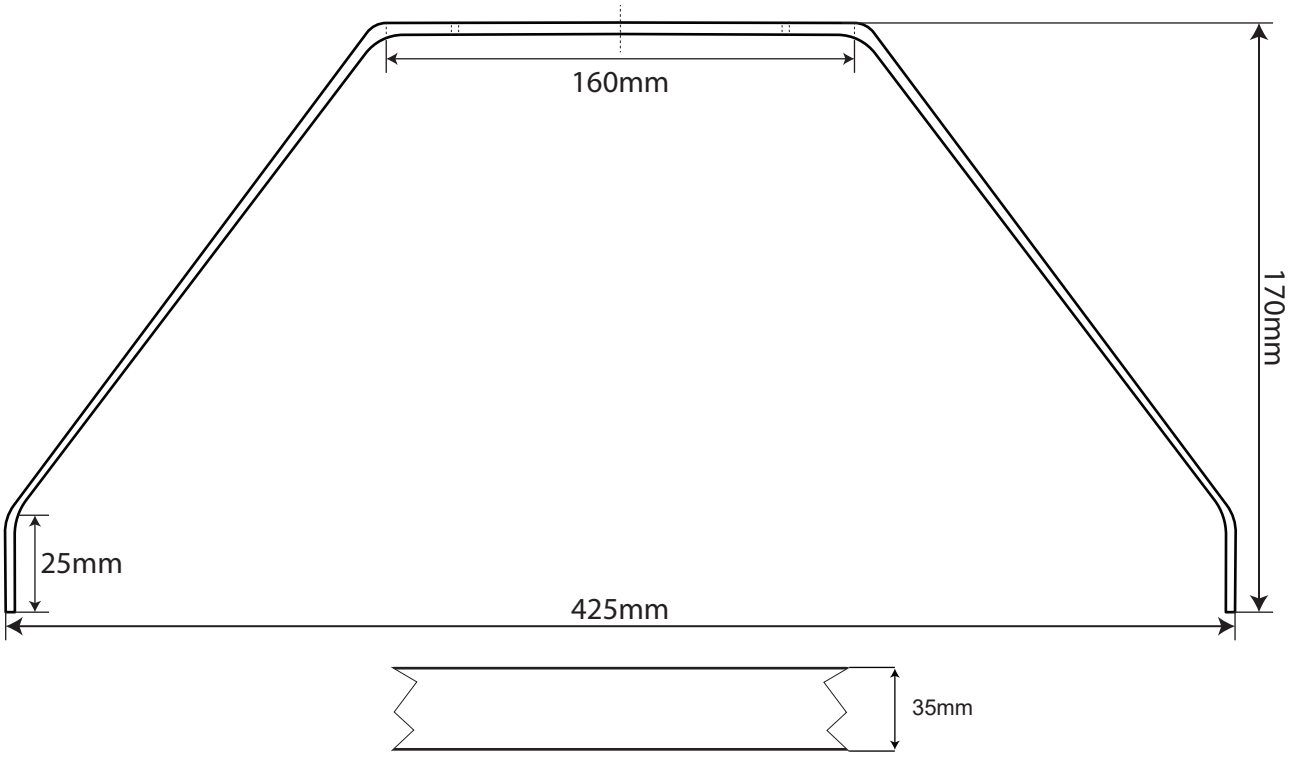
FOR YOUR RADIO INSTALLATION
BASIC CONNECTION FOR AIRPLANE AND ADJUSTMENT OF SERVOS

Example of connection

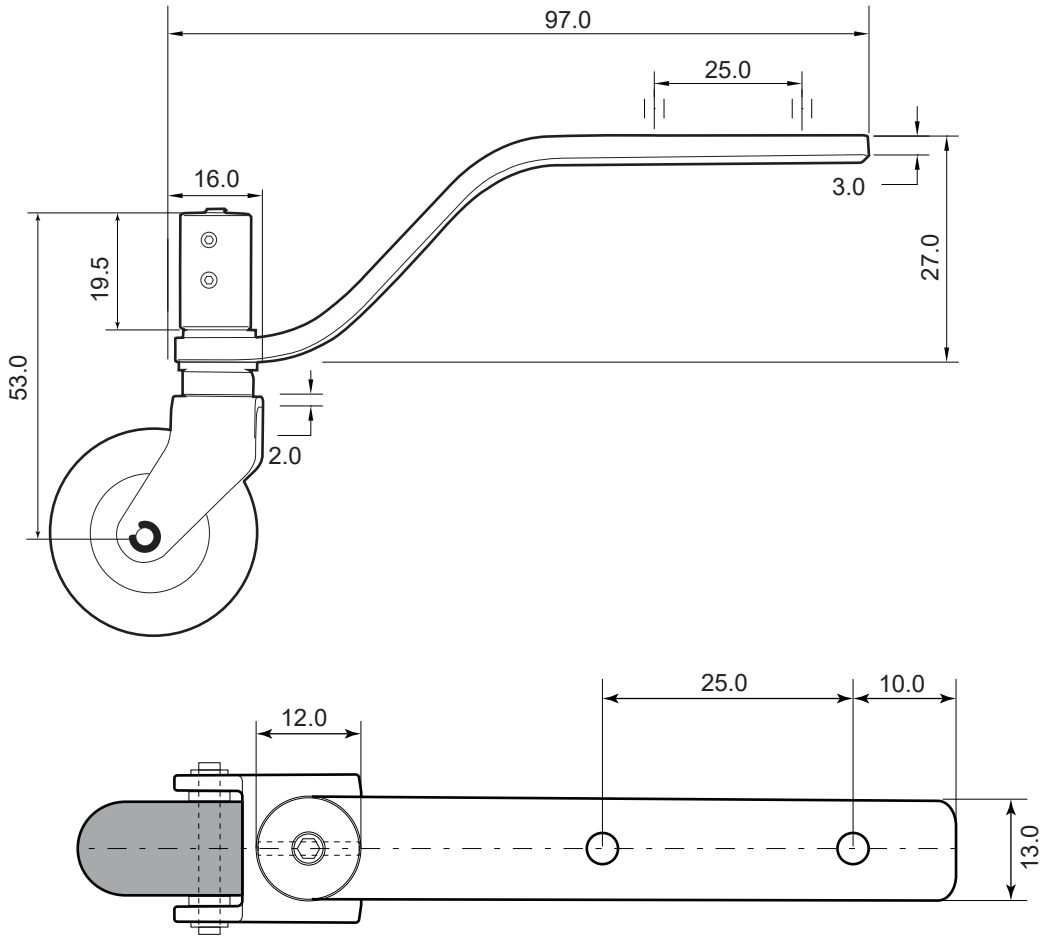
- For more information, refer to radio system instruction manual.
- Follow instruction manual of Engine and Battery.



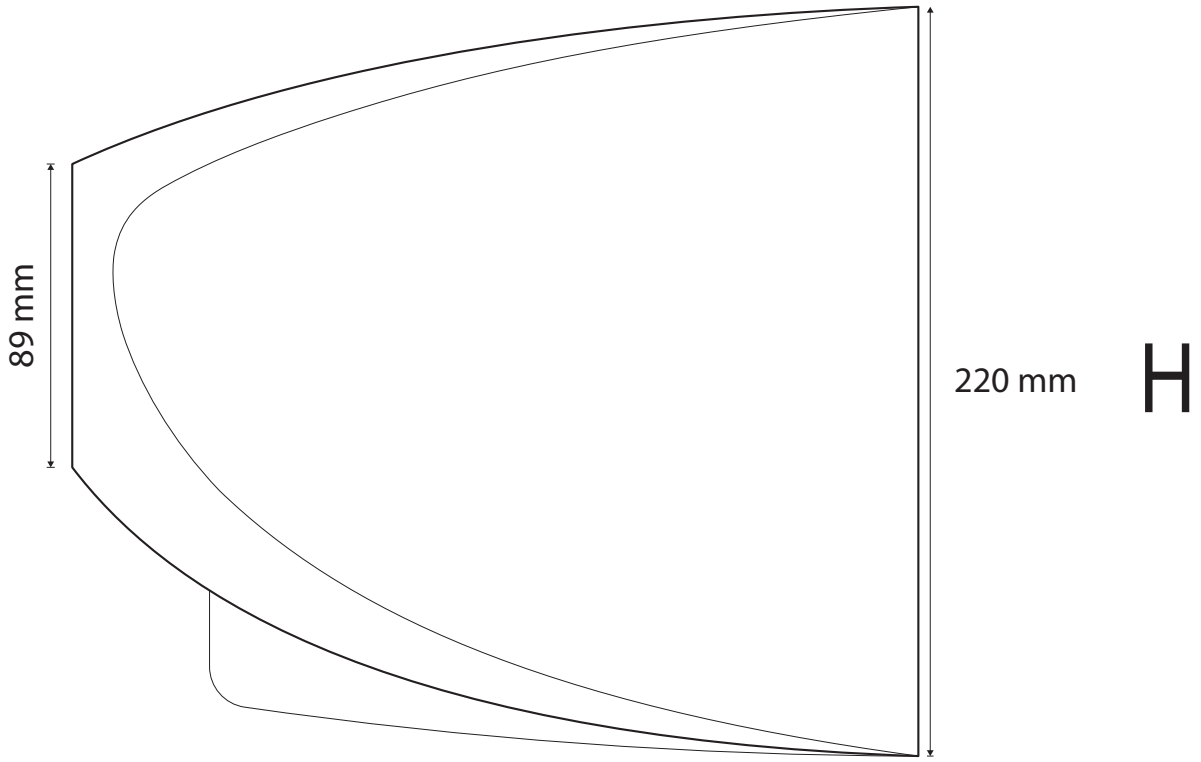
MAIN GEAR DIMENSIONAL DETAIL

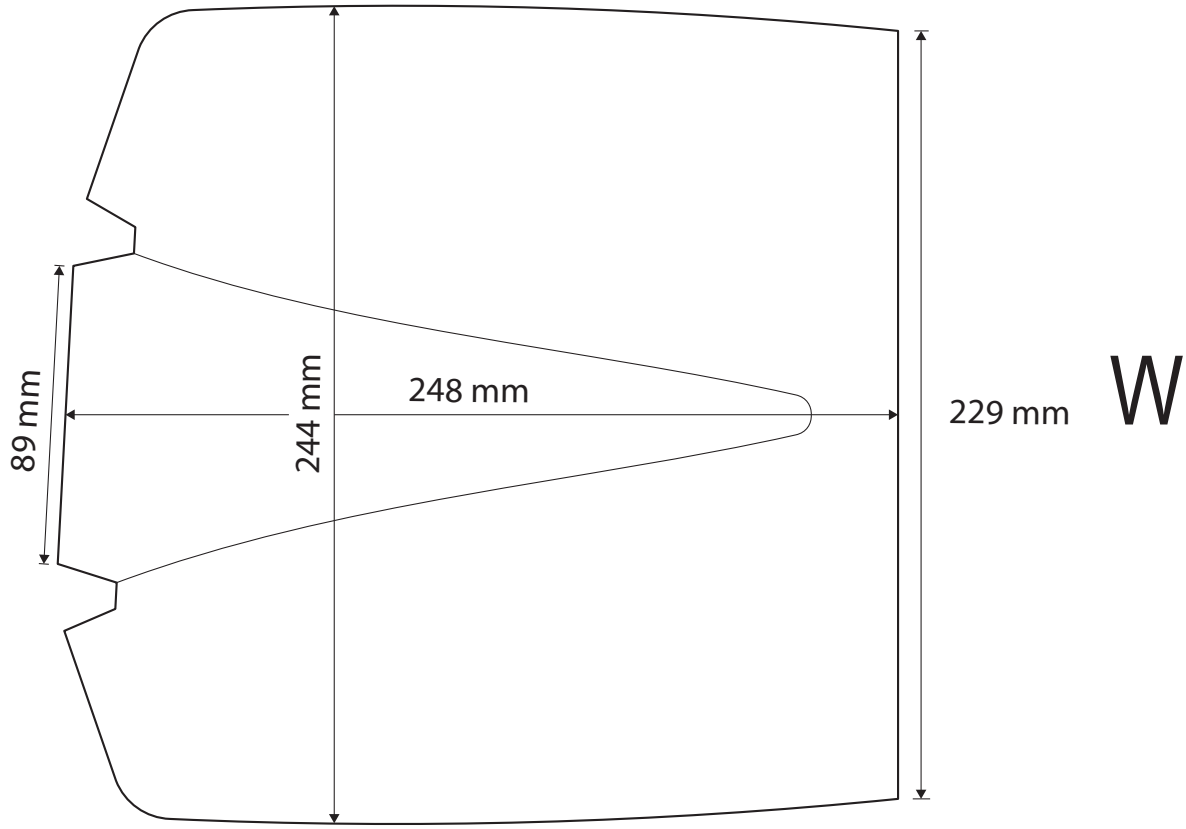


TAIL GEAR DIMENSIONAL DETAIL

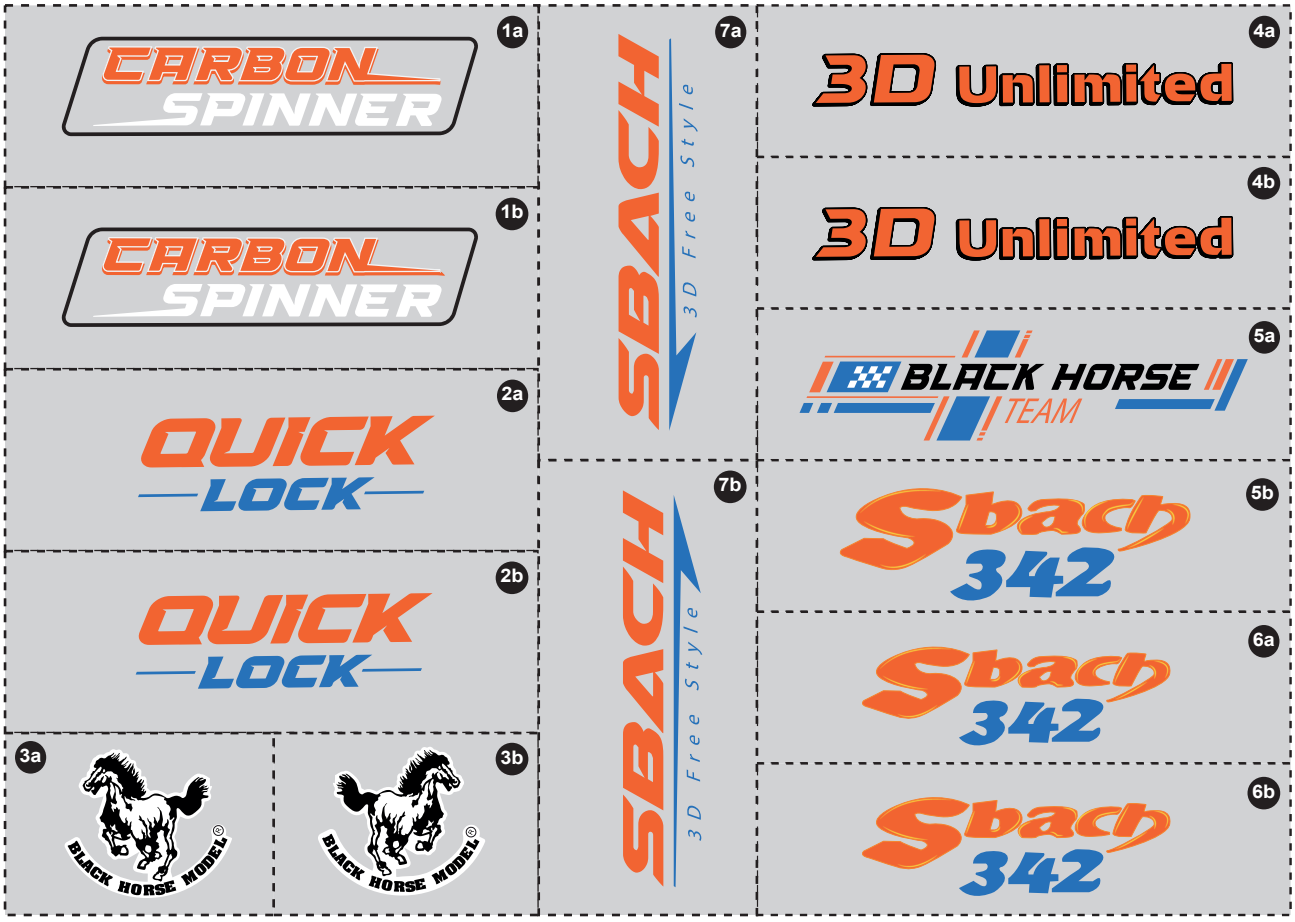


COWLING DIMENSIONAL DETAIL

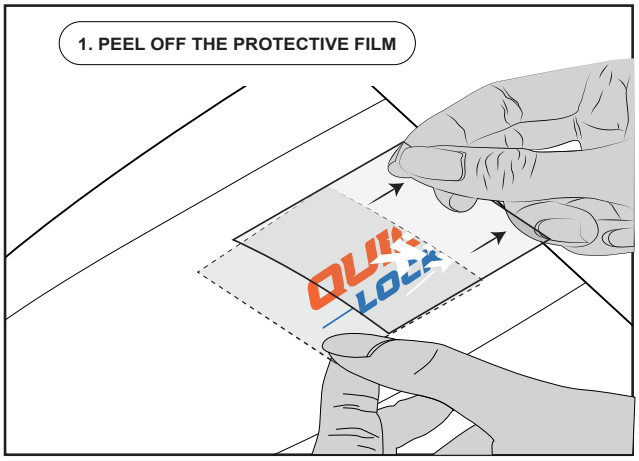


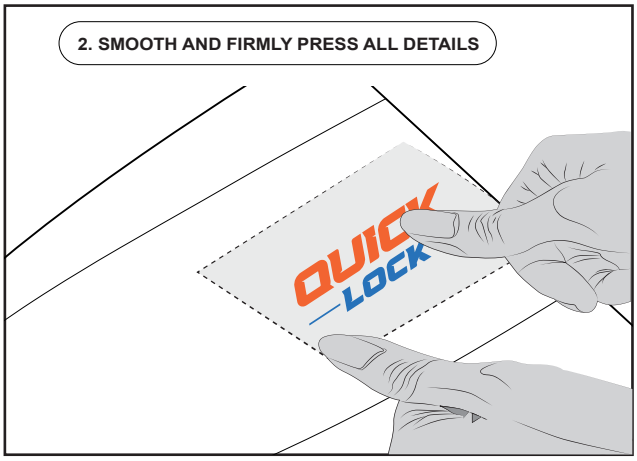


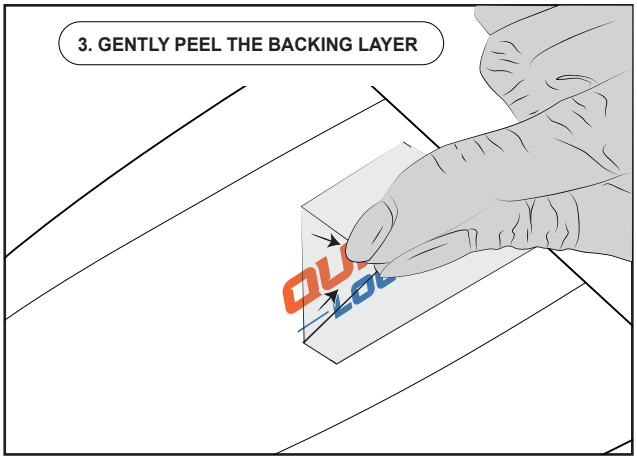
UV DECAL INSTALLATION MANUAL

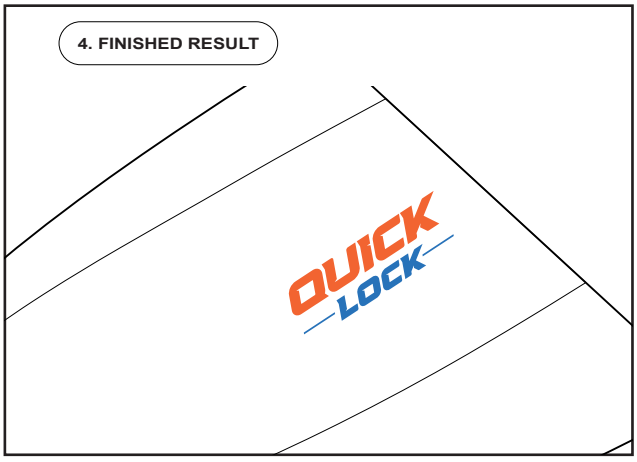


*Determine the exact area to apply the decal



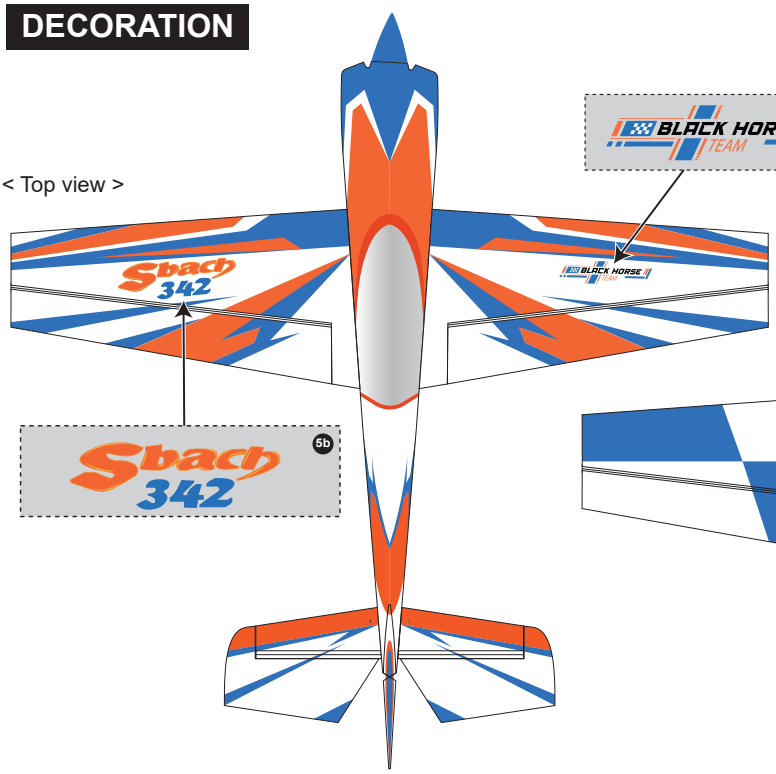




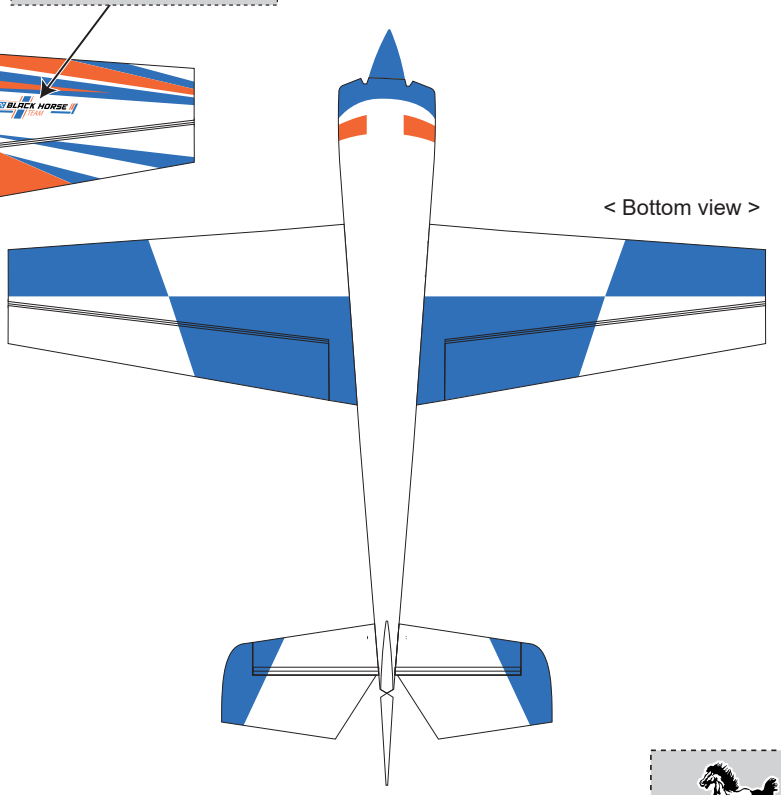


DECORATION

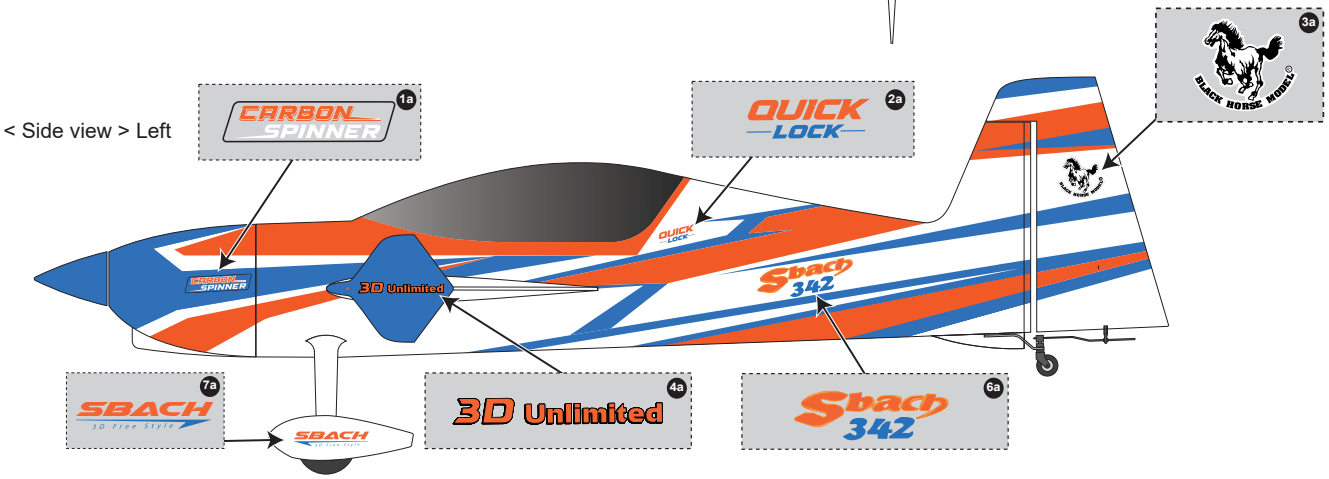
< Top view >



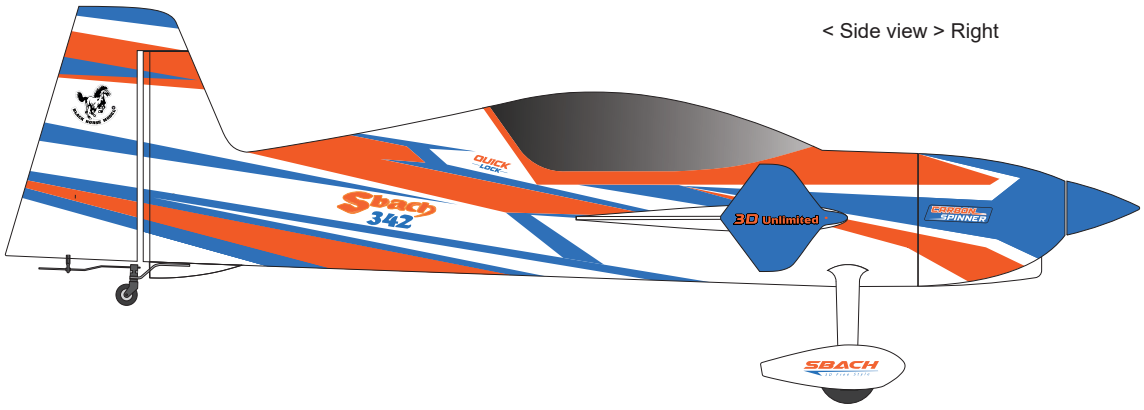
< Bottom view >



< Side view > Left



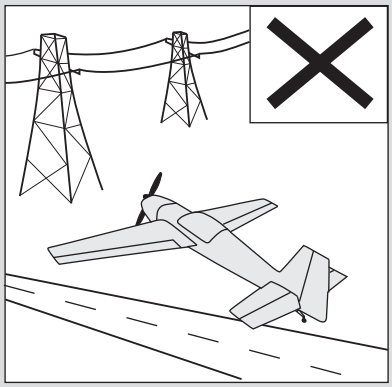
< Side view > Right



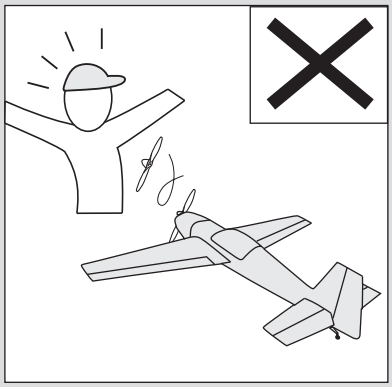
ORACOVER

#21-053 Sky Blue	#21-060 Orange	#21-010 White

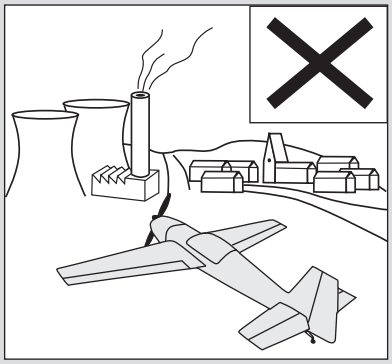
I/C FLYING WARNINGS



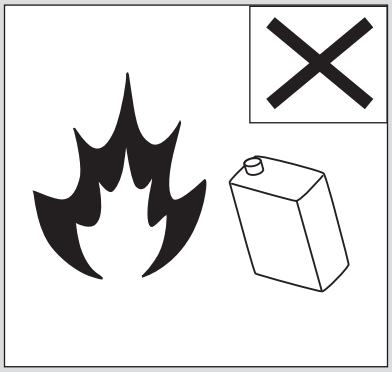
NEVER fly near power lines,aerials or other dangerous areas including airports, motorways etc.



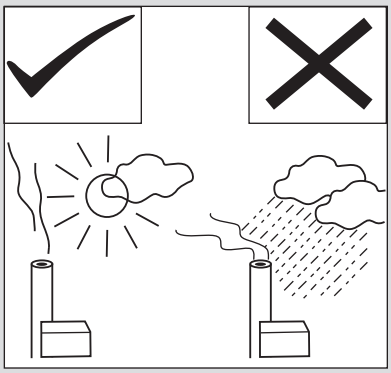
ALWAYS adjust the engine from behind the propeller, and do not allow any part of your body to be in line with the propeller.



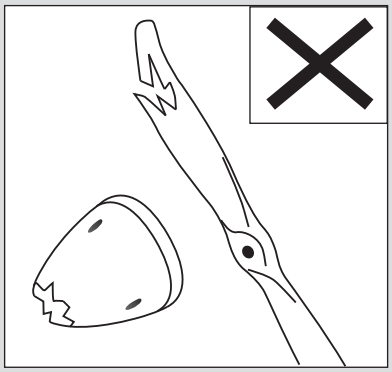
Always operate in open areas, away from factories, hospitals, schools, buildings and houses etc. NEVER fly your aircraft close to people or built up areas.



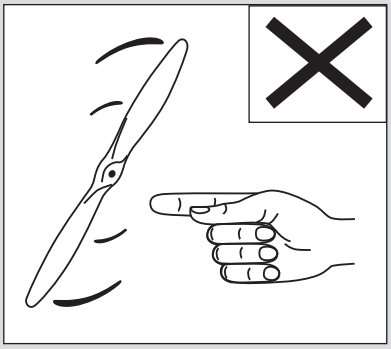
DO NOT dispose of empty fuel containers on a fire, this can lead to an explosion.



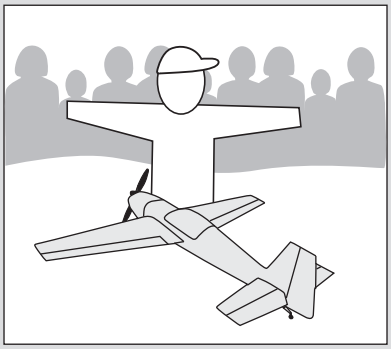
NEVER fly in wet conditions or on windy or stormy days.



NEVER use damaged or deformed propellers or spinners.

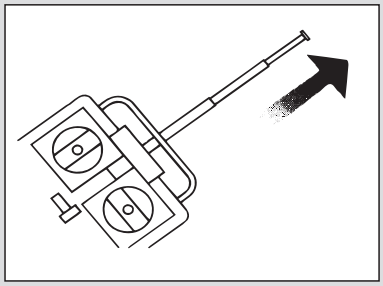


THE PROPELLER IS DANGEROUS. Keep fingers, clothing (ties, shirt sleeves, scarves) or any other loose objects that could be caught or drawn in, away from the propeller. Take care at ALL times.

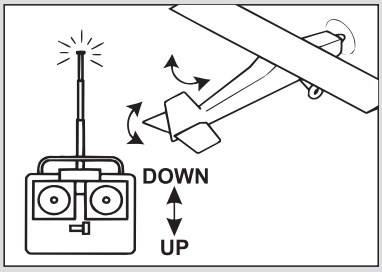


Keep all onlookers (especially small children and animals) well back from the area of operation. This is a flying aircraft, which will cause serious injury in case of impact with a person or animal.

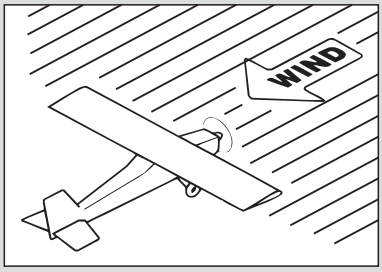
I/C FLYING GUIDELINES



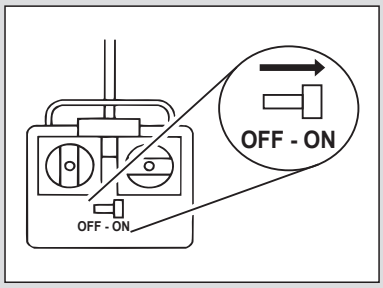
When ready to fly, first extend the transmitter aerial.



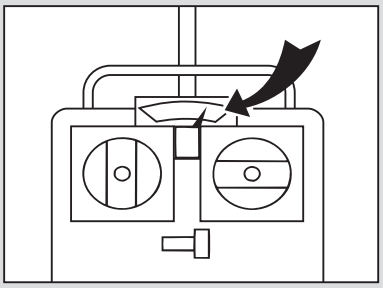
Operate the control sticks on the transmitter and check that the control surfaces move freely and in the CORRECT directions.



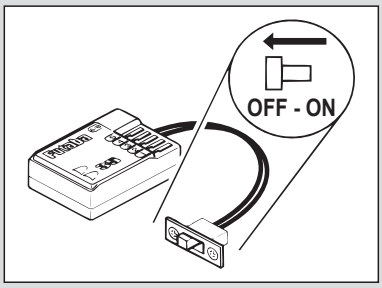
ALWAYS land the model INTO the wind, this ensures that the model lands at the slowest possible speed.



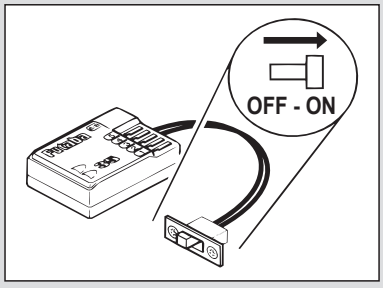
Switch on the transmitter.



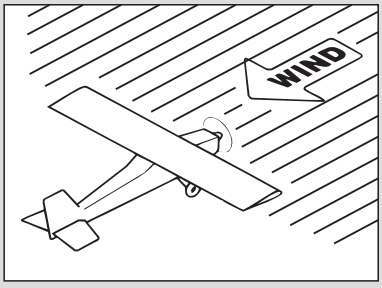
Check that the transmitter batteries have adequate power.



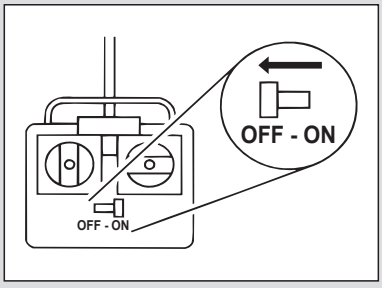
Switch off the receiver.



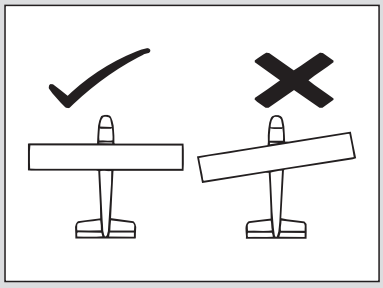
Switch on the receiver.



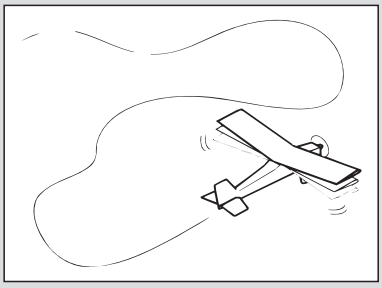
ALWAYS take off into the wind.



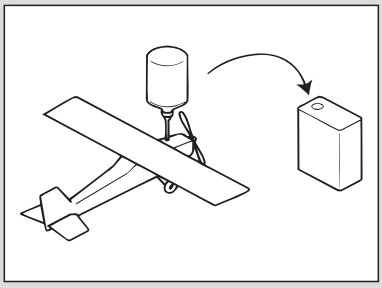
Switch off the transmitter.



Check that the wings are correctly fitted to the fuselage.



If the model does not respond correctly to the controls, land it as soon as possible and correct the fault.



Empty the fuel tank after flying, fuel left in the tank can cause corrosion and lead to engine problems.